STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

MICHAEL F. EASLEY
GOVERNOR

LYNDO TIPPETT
SECRETARY

January 6, 2006

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

ATTENTION: Mr. William J. Biddlecome
NCDOT Coordinator

Subject: **Nationwide 23 and 33 Permit Application** for the replacement of Bridge No. 6 on SR 1110 over Great Ditch (Lake Landing Canal) in Hyde County; NCDOT Division 1. Federal Project No. BRZ-1110 (3), State Project No. 8.2080101; TIP No. B-3858.

Dear Madam:

The project involves the removal and replacement of Bridge Number 6 on SR 1110 over Great Ditch (Lake Landing Canal) in Hyde County. A new bridge approximately 55 feet long with a clear width of 40 feet will be constructed to carry SR 1110 over the canal. The proposed new structure is to be built south of the existing structure with no detour required during construction. The proposed project will impact 80 linear feet of jurisdictional stream, but will have no impacts to jurisdictional wetlands. The project is shown in the attached Categorical Exclusion and permit drawings.

Water Resources

General Description: The project is located within the 03020105 hydrologic unit of the Tar-Pamlico River Basin. Lake Landing Canal originates north of SR 1110 in Hyde County and flows south to its confluence with Wysocking Bay, which in turn flows into the Pamlico Sound. Lake Landing Canal has been assigned a best usage classification of "SC."

MAILING ADDRESS:
NC DEPARTMENT OF TRANSPORTATION
PROJECT DEVELOPMENT AND ENVIRONMENTAL ANALYSIS
1598 MAIL SERVICE CENTER
RALEIGH NC 27699-1598

TELEPHONE: 919-733-3141
FAX: 919-715-1501
WEBSITE: WWW.DOH.DOT.STATE.NC.US

LOCATION:
TRANSPORTATION BUILDING
1 SOUTH WILMINGTON STREET
RALEIGH NC

Impacts to Waters of the United States

It is anticipated that there will be no impacts to Lake Landing Canal for the proposed project. However, a jurisdictional stream will be crossed to align the roadway approaches to the new bridge. This stream will be crossed using a 36-inch reinforced concrete pipe, permanently impacting 80 linear feet of stream. Per DCM regulations, this structure will be buried 1-foot to allow passage of aquatic organisms and proper hydraulic connectivity. There are no impacts to jurisdictional wetlands in the project area.

Land Disturbing Activities

Land use within the project area is a mixture of undeveloped land, rural residential properties, and agricultural land. The immediate project area is known as Watson's corner because of the landowners who resided in the area. An abandoned building that was constructed in 1856 is located in the northeast quadrant of the intersection of SR 1110 and SR 1116. This building was a store constructed by the Watson family and is part of the "George Israel Watson" historic property that is located in the northeast quadrant of the intersection of SR 1110 and SR 1116.

The NCDOT will not encroach upon the George Israel Watson historic property. The existing edge of pavement will be maintained on the store side of SR 1110 and SR 1116.

There is an unoccupied commercial building, several above ground fuel storage tanks, and a boat ramp located on the south side of SR 1110 east of the canal.

Bridge No. 6, a single span bridge, will be replaced with concrete cored slab sections on concrete end bents. The new bridge and roadway approach will be constructed approximately 50 feet downstream of the existing bridge. There will be approximately 880 cubic yards of excavation from upland areas to remove the approach sections to the existing bridge after construction of the new bridge. Per request of DCM field representative Lynn Mathis, the bulkheads from the existing structure will not be removed.

Also, as part of high ground excavation, it is necessary to create new roadside ditches for the new approach sections. Class "B" rip rap is proposed for the outlet of the new roadside ditches.

No stabilization is necessary under the bridge, as the increased length of the bridge will allow for a lower gradient leading to the abutment of the bridge.

Utility Relocation Impacts

The will be no impacts to utilities in the project area.

Bridge Demolition

The superstructure of Bridge No. 6 consists of a timber deck on a steel floor beam system. The substructure of the bridge consists of timber end bents with timber caps on timber piles. The bridge has one span that totals 35.6 feet in length. As stated in "NCDOT Best Management Practices for Construction and Maintenance Activities," (Section 402-2 of NCDOT's Standard Specification for Roads and Structures) because a CAMA permit is required; dropping of any component of a bridge into the water will not be permitted. All components from the existing bridge must be removed.

The North Carolina Wildlife Resources Commission (NCWRC) requests a moratorium on in-water work between February 15 and June 15. Because a moratorium applies, this project falls under Case 2 (allowing no in-water work during moratorium periods) of the Best Management Practices for Bridge Demolition and Removal.

Avoidance and Minimization

The construction of this project has avoided and minimized any potential impacts of the proposed bridge by locating the bridge adjacent to the existing structure. Also, the new bridge will completely span the canal. Realignment of the existing roadway will be minimized by being located next to the existing structure. Traffic will be maintained during construction by utilizing the existing bridge. The new pipe will be buried 1-foot to allow the passage of aquatic organisms and proper hydraulic connectivity. Best management practices (BMP's) will be utilized to minimize any potential water quality impacts.

Mitigation

On-site mitigation has been proposed to compensate for the 75 linear feet of jurisdictional stream impact. Please see attached restoration plan for more information. In the event on site mitigation is not approved, the Ecosystem Enhancement Program has accepted 80 feet of permanent jurisdictional stream impact for this project and is attached to this application.

Federally Protected Species

As of January 29, 2003, the United States Fish and Wildlife Service lists thirteen federally protected species for Hyde County (Table 1). A description of each species and biological conclusions are provided in the referenced CE document.

Table 1. Federally Protected Species for Hyde County.

COMMON NAME	SCIENTIFIC NAME	STATUS	HABITAT	BIOLOGICAL CONCLUSION
American alligator	*Alligator mississippiensis*	T (S/A)	No	N/A
Bald eagle	*Haliaeetus leucocephalus*	T	Yes	May Affect, Not Likely to Adversely Affect
Green sea turtle	*Chelonia mydas*	E	No	No Effect
Hawksbill turtle	*Eretmochelys imbricata*	E	No	No Effect
Kemp's ridley sea turtle	*Lepidochelys kempii*	E	No	No Effect
Leatherback sea turtle	*Dermochelys coriacea*	E	No	No Effect
Loggerhead sea turtle	*Caretta caretta*	T	No	No Effect
West Indian Manatee	*Trichechus manatus*	E	Yes	May Affect, Not Likely to Adversely Affect
Piping Plover	*Charadrius melodus*	T	No	No Effect
Red-cockaded woodpecker	*Picoides borealis*	E	No	No Effect
Red wolf	*Canis rufus*	EXP	No	No Effect
Seabeach amaranth	*Amaranthus pumilus*	T	No	No Effect
Sensitive jointvetch	*Aeschynomene virginica*	T	Yes	No Effect
E= Endangered, T= Threatened, EXP= Experimental, T(S/A)= Threatened due to Similarity of Appearance				

Surveys and habitat assessments were conducted by NCDOT biologists in May of 2001 and February of 2004. No populations of the above listed species were identified.

Habitat exists for the West Indian manatee (*Trichechus manatus*) in the project study area. The USFWS states that because the water is approximately five feet deep, the water is deep enough to support habitat for the manatee. NCDOT will implement "Guidelines for Avoiding Impacts to the West Indian Manatee, Precautionary Measures for Construction Activities in North Carolina Waters," during construction of project B-3858. Also, potential foraging habitat for the bald eagle (*Haliaeetus leucocephalus*) exists within the project study area located in and along Lake Landing Canal. NCDOT biologists conducted a ½ mile radius survey for eagles and eagle's nests on August 17, 2004. No eagles or eagle nests were observed. (See attached USFWS letter dated September 13, 2004.)

Regulatory Approvals

Section 404 Permit: NCDOT requests the issuance of a Nationwide Permit 33 authorizing the temporary dewatering of the UT to Lake Landing Canal. All other aspects of this project are being processed by the Federal Highway Administration as a "Categorical Exclusion" in accordance with 23 CFR § 771.115(b). The NCDOT requests that these activities be authorized by a Nationwide Permit 23 (FR number 10, pages 2020-2095; January 15, 2002).

Section 401 Water Quality Certification: We anticipate 401 General Certification numbers 3403 and 3366 will apply to this project. In accordance with 15A NCAC 2H, Section .0500(a) we are providing two copies of this application to the North Carolina Department of Environmental and Natural Resources, Division of Water Quality, for their review.

The NCDOT hereby requests that this project be authorized by the North Carolina Division of Water Quality and the U. S. Army Corps of Engineers. The NCDOT has also requested authorization by the issuance of a Coastal Area Management Act Major Development Permit under separate cover. If there are any questions, please contact Mr. Michael Turchy of my staff at maturchy@dot.state.nc.us or (919) 715-1468.

Attached to this cover letter are the following supplemental documents:

- Appropriate permit drawings
- Categorical Exclusion
- Onsite Mitigation Restoration Plan
- Ecosystem Enhancement Program Mitigation Acceptance, and
- FWS Concurrence

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

Sincerely,

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

Cc:

W/attachment
Mr. John Hennessy, NCDWQ (2 Copies)
Mr. Travis Wilson, NCWRC
Mr. Gary Jordan, USFWS
Mr. Ron Sechler, NMFS
Mr. Michael Street, NCDMF
Ms. Cathy Brittingham, NCDCM
Ms. Wanda Gooden, NCDCM
Dr. David Chang, P.E., Hydraulics
Mr. Greg Perfetti, P.E., Structure Design
Mr. Mark Staley, Roadside Environmental
Mr. Anthony Roper, P.E., Division 1 Engineer
Mr. Clay Willis, Division 1 Environmental Officer

W/o attachment
Mr. Scott McLendon, USACE, Wilmington
Mr. Jay Bennett, P.E., Roadway Design
Mr. Majed Alghandour, P. E., Programming and TIP
Mr. Art McMillan, P.E., Highway Design
Ms. Beth Harmon, EEP
Mr. Todd Jones, NCDOT External Audit Branch
Ms. Theresa Ellerby, PDEA Project Planning Engineer

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: NW 23 & 33

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

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

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

II. Applicant Information

1. Owner/Applicant Information
   Name: Gregory J. Thorpe, Ph.D., Environmental Management Director
   Mailing Address: 1598 Mail Service Center
   Telephone Number: (919) 733-3141 Fax Number: (919) 733-9794
   E-mail Address: maturchy@dot.state.nc.us

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: B-3858

2. T.I.P. Project Number or State Project Number (NCDOT Only): B-3858

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

4. Location
   County: Hyde Nearest Town: Nebraska
   Subdivision name (include phase/lot number): N/A
   Directions to site (include road numbers/names, landmarks, etc.): US 264 to SR 1110

5. Site coordinates (For linear projects, such as a road or utility line, attach a sheet that separately lists the coordinates for each crossing of a distinct waterbody.)
   Decimal Degrees (6 digits minimum): 35.4593° °N 76.0752° °W

6. Property size (acres): N/A

7. Name of nearest receiving body of water: Lake Landing Canal/ Gray Ditch

8. River Basin: Tar-Pamlico
   (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: The land area surrounding bridge No. 6 is used for agricultural and residential purposes.

10. Describe the overall project in detail, including the type of equipment to be used:

Project will replace bridge no. 6 over Lake Landing Canal/ Gray Ditch with a new 55-foot bridge just south of the existing structure. Heavy earth moving machinery, and cranes will be to construct and remove the bridge.

11. Explain the purpose of the proposed work: To replace bridge no. 6.

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. State Stormwater General Permit SW7040816; issued 11/23/04

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.
None

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: In order to replace the current birdge, the approach to the new bridge will traverse an unnamed tributary to Lake Landing Canal/ Gray Ditch using an 80-foot 36" reinforced concrete pipe.

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)
no	wetland	impacts			
Total Wetland Impact (acres)					

3. List the total acreage (estimated) of all existing wetlands on the property: no wetlands impacted

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)
1	UT to Gray Ditch	Pipe Crossing	Perennial	3'	80'	0.006
Total Stream Impact (by length and acreage)					80'	0.006

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)
No Open	Water	Impacts		
Total Open Water Impact (acres)				

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

Stream Impact (acres):	0.006
Wetland Impact (acres):	Zero
Open Water Impact (acres):	Zero
Total Impact to Waters of the U.S. (acres)	0.006
Total Stream Impact (linear feet):	80

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.

8. Pond Creation
If construction of a pond is proposed, associated wetland and stream impacts should be included above in the wetland and stream impact sections. Also, the proposed pond should be described here and illustrated on any maps included with this application.
Pond to be created in (check all that apply): ☐ uplands ☐ stream ☐ wetlands
Describe the method of construction (e.g., dam/embankment, excavation, installation of draw-down valve or spillway, etc.): n/a
Proposed use or purpose of pond (e.g., livestock watering, irrigation, aesthetic, trout pond, local stormwater requirement, etc.): n/a
Current land use in the vicinity of the pond: n/a
Size of watershed draining to pond: n/a Expected pond surface area: n/a

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. Bridge number 6 will be replaced with a single span sturcture, resulting in no jurisdictional impacts to Lake Landing Canal, the impact to the unnamed tributary will be the only jurisdictional impact for the project.

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.
   See attached mitigation plan.

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): see attached mitigation plan
   Amount of buffer mitigation requested (square feet):_____
   Amount of Riparian wetland mitigation requested (acres):_____
   Amount of Non-riparian wetland mitigation requested (acres):_____
   Amount of Coastal wetland mitigation requested (acres):_____

IX. Environmental Documentation (required by DWQ)

1. Does the project involve an expenditure of public (federal/state/local) funds or the use of public (federal/state) land? Yes ☒ No ☐

2. If yes, does the project require preparation of an environmental document pursuant to the requirements of the National or North Carolina Environmental Policy Act (NEPA/SEPA)? Note: If you are not sure whether a NEPA/SEPA document is required, call the SEPA coordinator at (919) 733-5083 to review current thresholds for environmental documentation. Yes ☒ No ☐

3. If yes, has the document review been finalized by the State Clearinghouse? If so, please attach a copy of the NEPA or SEPA final approval letter. Yes ☒ No ☐

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

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

1. Will the project impact protected riparian buffers identified within 15A NCAC 2B .0233 (Neuse), 15A NCAC 2B .0259 (Tar-Pamlico), 15A NCAC 02B .0243 (Catawba) 15A NCAC 2B .0250 (Randleman Rules and Water Supply Buffer Requirements), or other (please identify_____)? Yes ☐ No ☒

2. If "yes", identify the square feet and acreage of impact to each zone of the riparian buffers. If buffer mitigation is required calculate the required amount of mitigation by applying the buffer multipliers.

Zone*	Impact (square feet)	Multiplier	Required Mitigation
1		3 (2 for Catawba)	
2		1.5	
Total			

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

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

_____

XI. Stormwater (required by DWQ)

Describe impervious acreage (existing and proposed) versus total acreage on the site. Discuss stormwater controls proposed in order to protect surface waters and wetlands downstream from the property. If percent impervious surface exceeds 20%, please provide calculations demonstrating total proposed impervious level. State Stormwater General Permit SW7040816; issued 11/23/04

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)

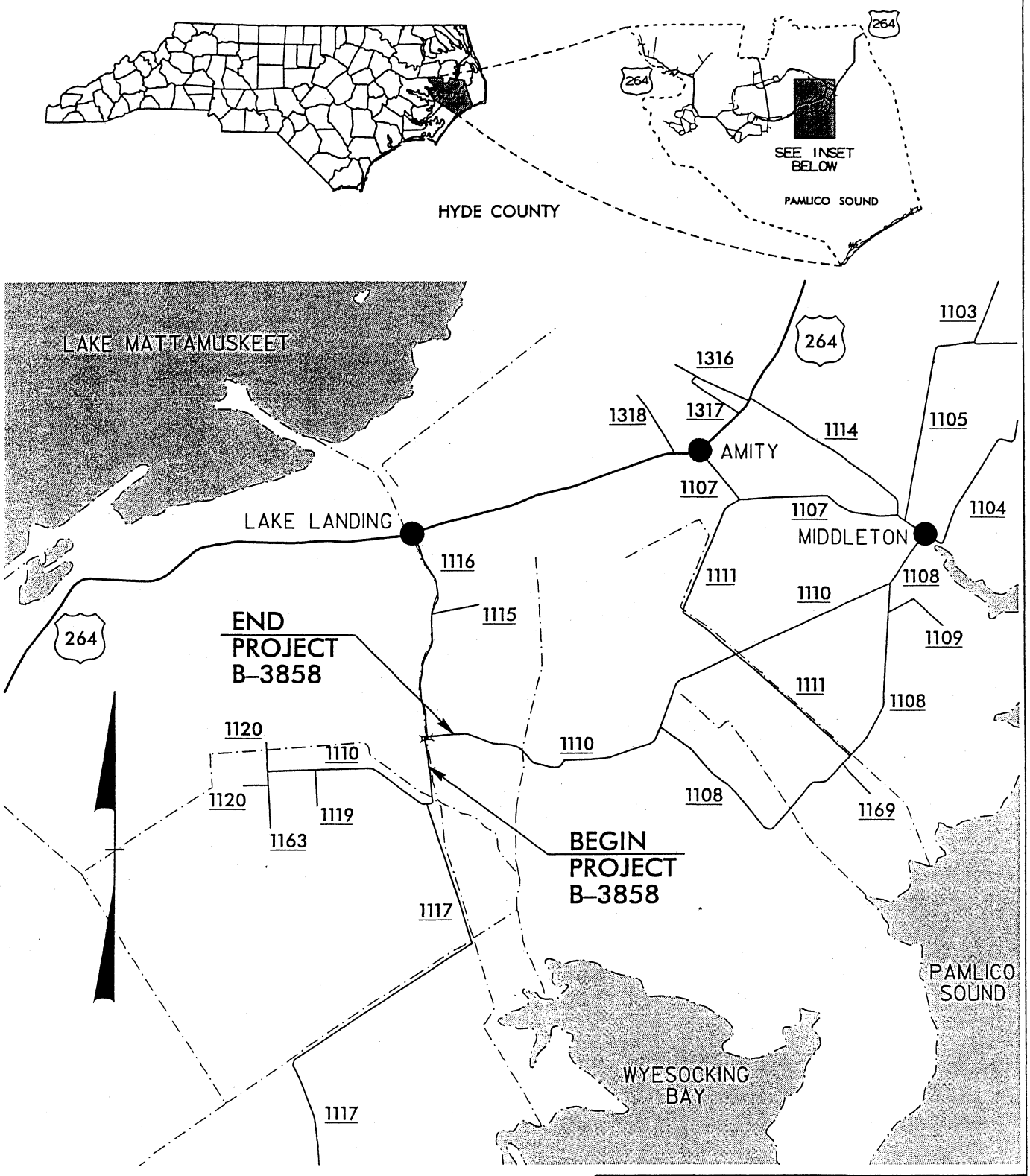
Will this project (based on past and reasonably anticipated future impacts) result in additional development, which could impact nearby downstream water quality? Yes ☐ No ☒
If yes, please submit a qualitative or quantitative cumulative impact analysis in accordance with the most recent North Carolina 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:

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).
none

[signature] 1/6/06

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



N.C. DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS

HYDE COUNTY

PROJECT: 8.2080101 (B-3858)
BRIDGE NO. 6
ON SR 1110 OVER
LAKE LANDING CANAL

SHEET 1 OF 9 7/21/04

LEGEND

---WLB---- WETLAND BOUNDARY

WLB WETLAND WLB

WETLAND

F F DENOTES FILL IN WETLAND

S S DENOTES FILL IN SURFACE WATER

P P DENOTES FILL IN SURFACE WATER (POND)

T T DENOTES TEMPORARY FILL IN WETLAND

E E DENOTES EXCAVATION IN WETLAND

TS TS DENOTES TEMPORARY FILL IN SURFACE WATER

DENOTES MECHANIZED CLEARING

— BZ — RIPARIAN BUFFER ZONE

FLOW DIRECTION

TB TOP OF BANK

WE EDGE OF WATER

C PROP. LIMIT OF CUT

F PROP. LIMIT OF FILL

PROP. RIGHT OF WAY

— NG — NATURAL GROUND

PL PROPERTY LINE

— TDE — TEMP. DRAINAGE EASEMENT

— PDE — PERMANENT DRAINAGE EASEMENT

— EAB — EXIST. ENDANGERED ANIMAL BOUNDARY

— EPB — EXIST. ENDANGERED PLANT BOUNDARY

WATER SURFACE

LIVE STAKES

BOULDER

COIR FIBER ROLLS

PROPOSED BRIDGE

PROPOSED BOX CULVERT

PROPOSED PIPE CULVERT

(DASHED LINES DENOTE EXISTNG STRUCTURES)

SINGLE TREE

WOODS LINE

DRAINAGE INLET

ROOTWAD

RIP RAP

5 ADJACENT PROPERTY OWNER OR PARCEL NUMBER IF AVAILABLE

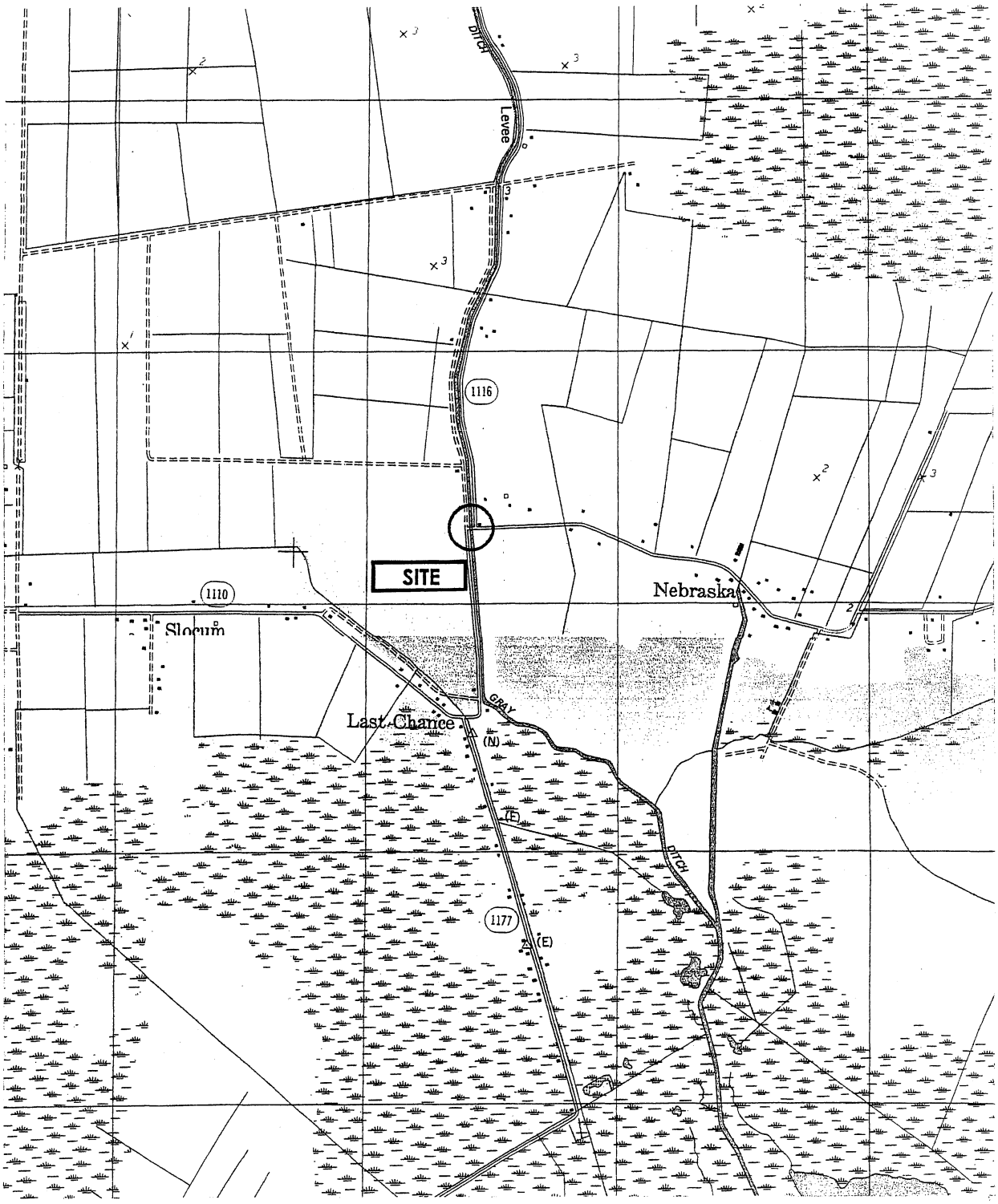
RIP RAP ENERGY DISSIPATOR BASIN

N.C. DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS

HYDE COUNTY

PROJECT: 8.2080101 (B-3858)
BRIDGE NO. 6
ON SR 1110 OVER
LAKE LANDING CANAL

SHEET 2 OF 9 7/21/04



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N.C. DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS

HYDE COUNTY

PROJECT: 8.2080101 (B-3858)
BRIDGE NO. 6
ON SR 1110 OVER
LAKE LANDING CANAL

SHEET 3 OF 9 7/21/04

WETLAND PERMIT IMPACT SUMMARY

			WETLAND IMPACTS					SURFACE WATER IMPACTS				
Site No.	Station (From/To)	Structure Size / Type	Permanent Fill In Wetlands (ac)	Temp. Fill In Wetlands (ac)	Excavation in Wetlands (ac)	Mechanized Clearing in Wetlands (ac)	Hand Clearing in Wetlands (ac)	Permanent SW impacts (ac)	Temp. SW impacts (ac)	Existing Channel Impacts Permanent (ft)	Existing Channel Impacts Temp. (ft)	Natural Stream Design (ft)
1	-L- 12+50 / 13+25 LT	36" RCP Pipe						0.002		80		
TOTALS:								0.002		80		

NC DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

HYDE COUNTY
B-3858

SHEET 4 of 9 #########

ATN Revised 3/31/05

Project No. 8.20801011 (B-3858)

Property Owner List

Property Number	Name	Address
1	Ruth Jolly Wilson	P.O. Box 2493 Manteo, NC 27954
2	George I. Watson, et ux	3746 Swarthmore Road Durham, NC 27707
3	Mr. James L. Overton Sr. C/O Albemarle Engineering Inc.	115 W St. Clair Street PO Box 3989 Kill Devil Hills, NC 27949

No property owners impacted

N.C. DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS

HYDE COUNTY

PROJECT: 8.2080101 (B-3858)
BRIDGE NO. 6
ON SR 1110 OVER
LAKE LANDING CANAL

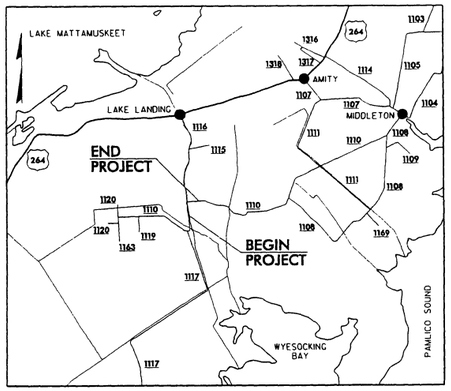
7/21/04

Permit Application Sheet 0 of 1

09/08/99

CONTRACT: C20241 TIP PROJECT: B-3858

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



VICINITY MAP

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

HYDE COUNTY

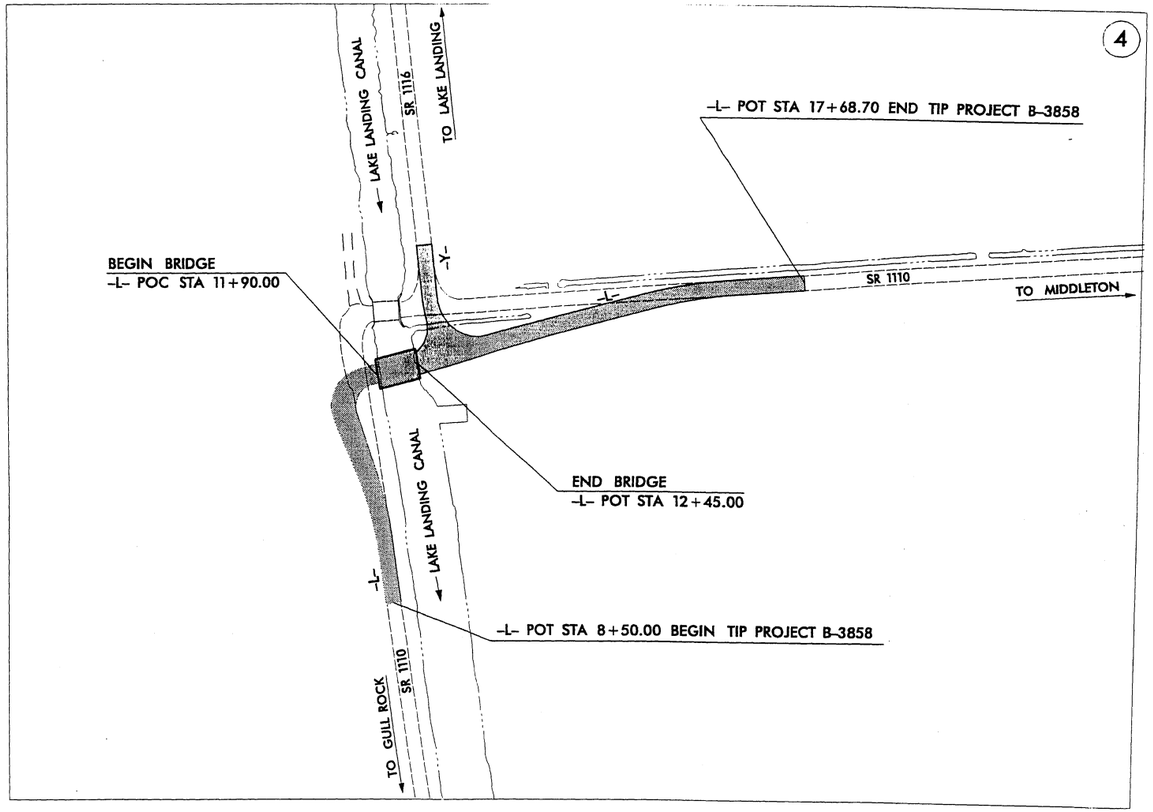
LOCATION: REPLACE BRIDGE NO. 6 AND APPROACHES ON SR 1110 OVER LAKE LANDING CANAL

TYPE OF WORK: GRADING, PAVING, DRAINAGE AND STRUCTURE

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-3858	1	

STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION
33305.1.1	BRZ-1110(3)	P.E.
33305.2.1	BRZ-1110(3)	RW, UTIL.
33305.3.1	BRZ-1110(5)	CONST.

ROADWAY DESIGN UNIT
OCT 5, 2005
ALLEN — BLEVINS
BREW — C. HOUSER
LOVERING — D. TAYLOR
J. MOORE — C. HOIRE
B. MOORE
MUMFORD
THOMAS
WALLS
THOMPSON
PREPARE REPLY FOR ___ SIGNATURE
F.Y.I.
REVIEW/DISCUSS WITH



** DESIGN EXCEPTION FOR HORIZONTAL ALIGNMENT REQUIRED.

GRAPHIC SCALES

50 25 0 50 100
PLANS

50 25 0 50 100
PROFILE (HORIZONTAL)

5 2.5 0 5 10
PROFILE (VERTICAL)

DESIGN DATA

ADT 2005 = 700
ADT 2025 = 1,200
DHV = 12 %
D = 60 %
T = 5 % *
V = 40 MPH **

* TTST 3% DUAL 2%

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT B-3858 = 0.164 mi
LENGTH STRUCTURE TIP PROJECT B-3858 = 0.010 mi
TOTAL LENGTH TIP PROJECT B-3858 = 0.174 mi

Plans prepared in the office of:
Ramey Kemp & Associates, Inc.
Transportation Consulting Engineers
4928-A Windy Hill Drive
Raleigh, North Carolina 27609
(919) 872-5115 fax (919) 878-5416
for the North Carolina Department of Transportation

2002 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE: JUNE 30, 2004

LETTING DATE: MAY 16, 2006

N.C.D.O.T. CONTACT:
CATHY HOUSER
PROJECT ENGINEER
ROADWAY DESIGN

HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 18442 ENGINEER RICHARD LEON BOLLINGER, JR.
RICHARD LEON BOLLINGER, JR. P.E.

ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 27171 ENGINEER MATTHEW B COPPLE
MATTHEW B. COPPLE P.E.

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

STATE DESIGN ENGINEER P.E.

DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

APPROVED
DIVISION ADMINISTRATOR DATE

SYSTINE
DGN
USERNAME

REVISIONS

RW SHEET NO.

ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 27771 ENGINEER MATTHEW B. COPPLE

HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 18442 ENGINEER RICHARD LEON BOLLINGER JR.

Permit Application
Sheet 7 of 9

PAVEMENT DESIGN FOR DRIVEWAY
1½" S9.5A
8" ABC

PROPOSED LIMITS OF GRADING NOT TO EXCEED EXIST. EDGE OF PAVEMENT FROM:
-L- STA 13+00 +/- TO 13+85 LT
-Y- STA 10+70 +/- TO 11+50 LT.

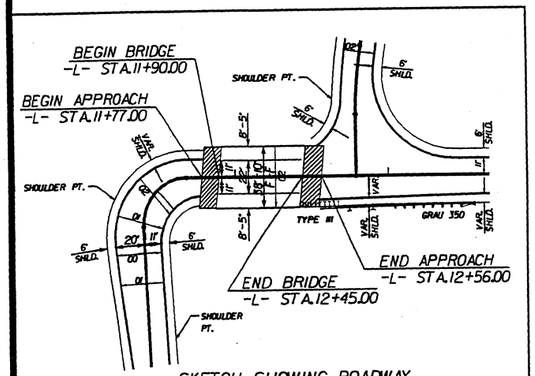
NOTE: SAFETY FENCE TO BE PLACED ALONG TDE.

DO NOT DISTURB STORE

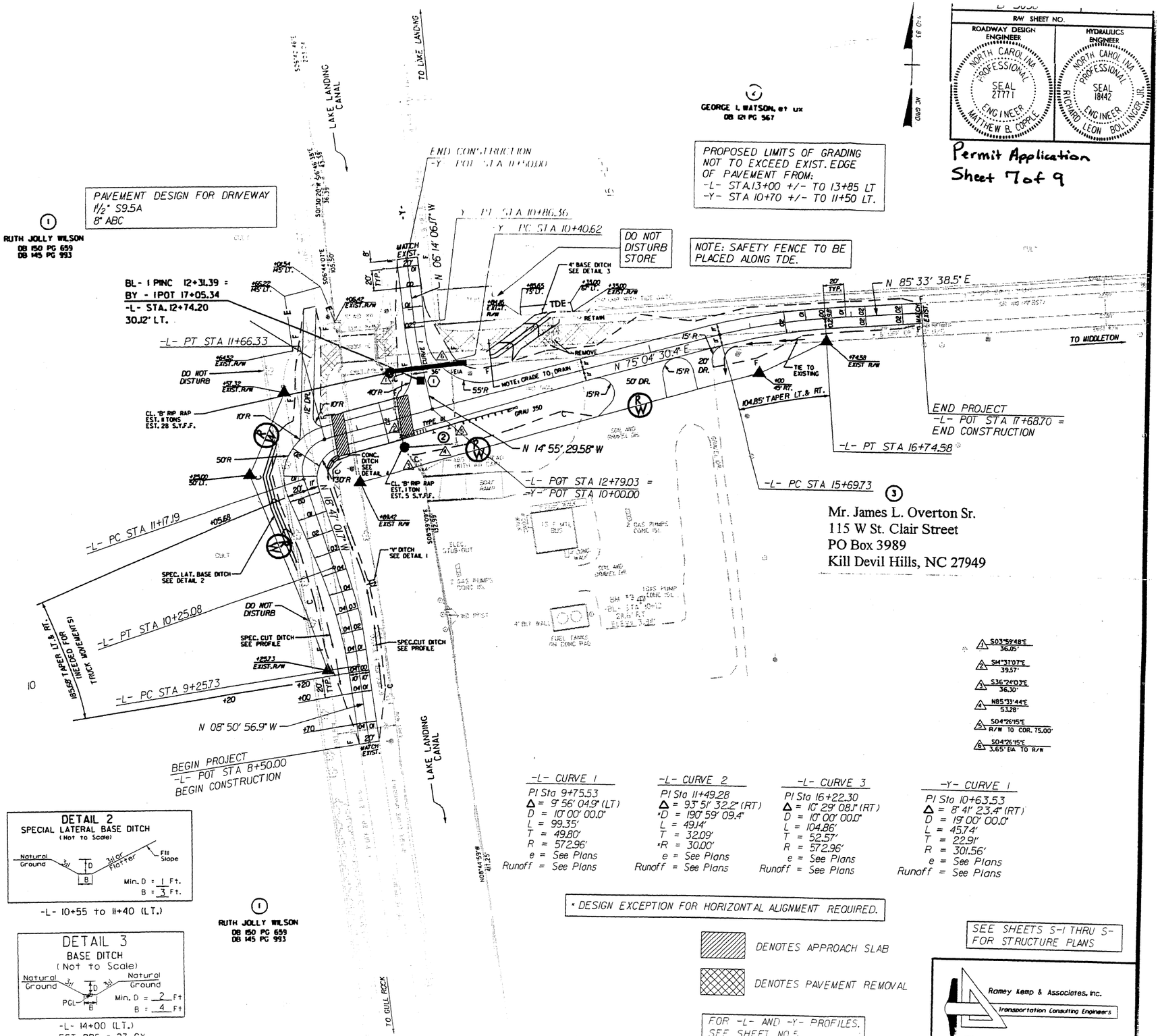
(1) RUTH JOLLY WILSON
DB 150 PG 659
DB 145 PG 993

(4) GEORGE L WATSON, et ux
DB 121 PG 567

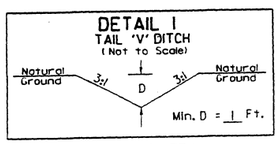
(3) Mr. James L. Overton Sr.
115 W St. Clair Street
PO Box 3989
Kill Devil Hills, NC 27949



SKETCH SHOWING ROADWAY IN RELATION TO STRUCTURE



DETAIL 1
TAIL 'V' DITCH
(Not to Scale)

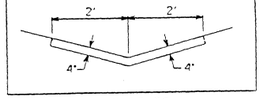


-L- 10+00 (RT.)
EST. DDE = 2 CY.

DETAIL 2
SPECIAL LATERAL BASE DITCH
(Not to Scale)

-L- 10+55 to 11+40 (LT.)

DETAIL 4
CONCRETE PAVED DITCH
(Not to Scale)



-L- 11+25 RT.

DETAIL 3
BASE DITCH
(Not to Scale)

-L- 14+00 (LT.)
EST. DDE = 27 CY.

(1) RUTH JOLLY WILSON
DB 150 PG 659
DB 145 PG 993

-L- CURVE 1	-L- CURVE 2	-L- CURVE 3	-Y- CURVE 1
PI Sta 9+75.53	PI Sta 11+49.28	PI Sta 16+22.30	PI Sta 10+63.53
Δ = 9° 56' 04.9" (LT)	Δ = 93° 51' 32.2" (RT)	Δ = 10° 29' 08.1" (RT)	Δ = 8° 41' 23.4" (RT)
D = 10° 00' 00.0"	*D = 190° 59' 09.4"	D = 10° 00' 00.0"	D = 19° 00' 00.0"
L = 99.35'	L = 49.14'	L = 104.86'	L = 45.74'
T = 49.80'	T = 32.09'	T = 52.57'	T = 22.91'
R = 572.96'	*R = 30.00'	R = 572.96'	R = 301.56'
e = See Plans	e = See Plans	e = See Plans	e = See Plans
Runoff = See Plans	Runoff = See Plans	Runoff = See Plans	Runoff = See Plans

(1) S03°59'48"E 36.05'
(2) S14°37'07"E 39.57'
(3) S36°24'02"E 36.30'
(4) N85°33'44"E 53.28'
(5) S04°26'15"E R/W TO COR. 75.00'
(6) S04°26'15"E 3.65' EIA TO R/W

* DESIGN EXCEPTION FOR HORIZONTAL ALIGNMENT REQUIRED.

DENOTES APPROACH SLAB

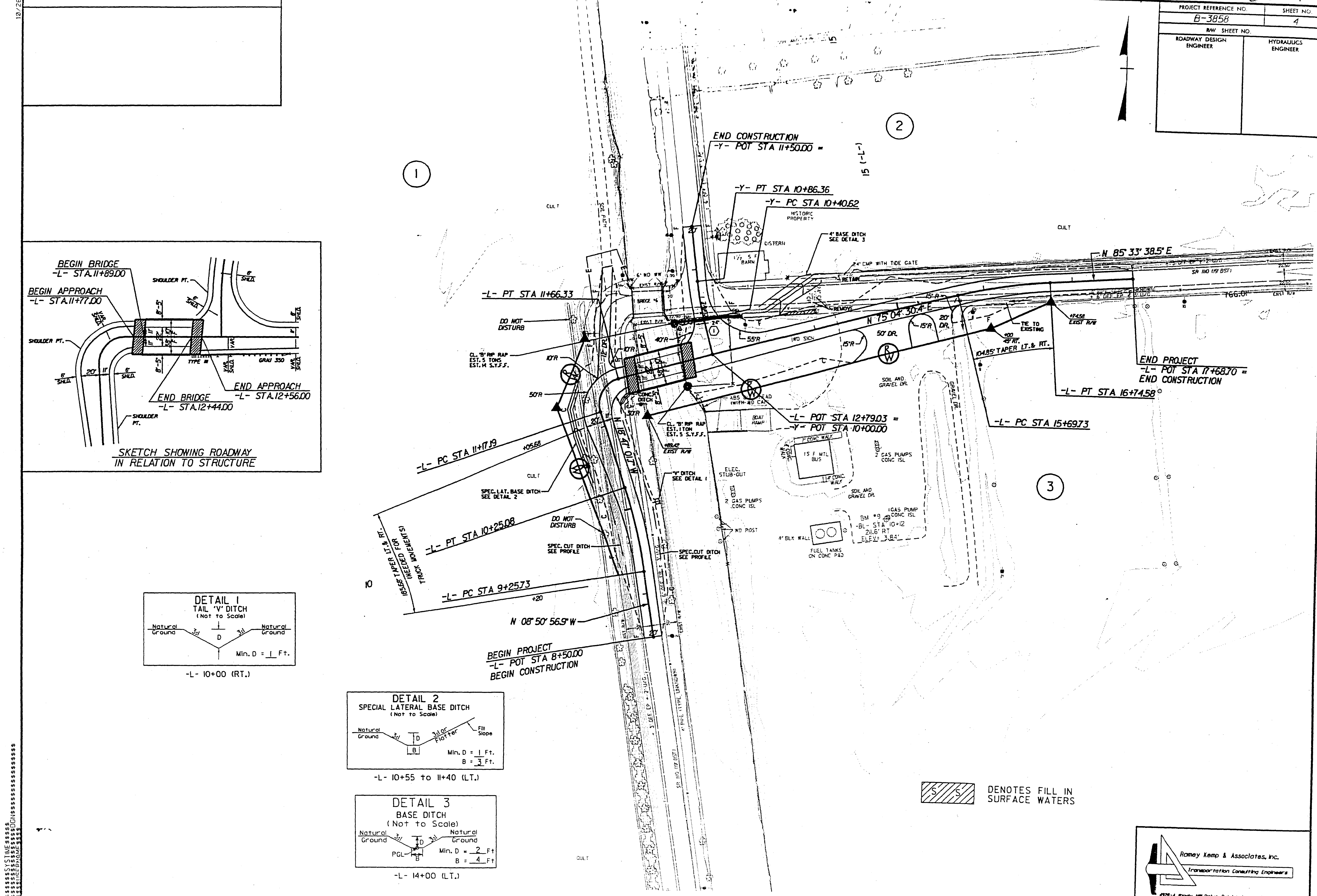
DENOTES PAVEMENT REMOVAL

FOR -L- AND -Y- PROFILES, SEE SHEET NO. 5

SEE SHEETS S-1 THRU S- FOR STRUCTURE PLANS

Ramey Kemp & Associates, Inc.
Transportation Consulting Engineers
4928-A Windy Hill Drive Raleigh, North Carolina 27609
(919) 872-5115 fax (919) 878-5462

Permit Application Sheet 8 of 9

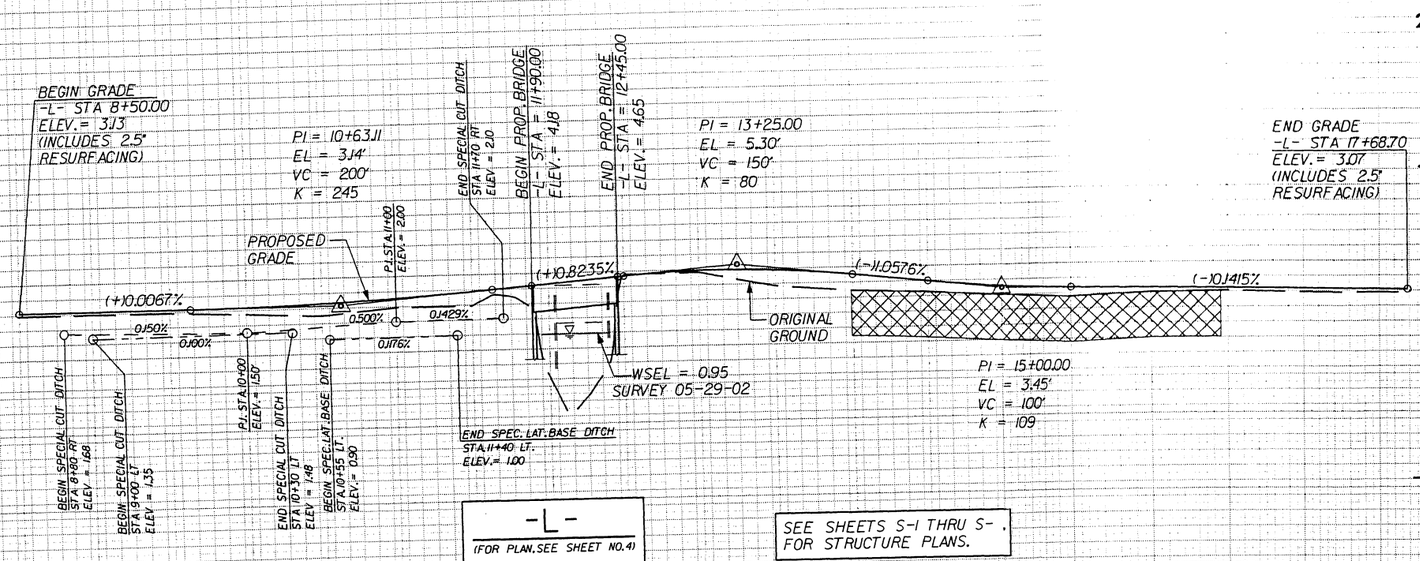


PROJECT REFERENCE NO.	SHEET NO.
B-3858	5

ROADWAY DESIGN ENGINEER — NORTH CAROLINA PROFESSIONAL SEAL 27771 ENGINEER MATTHEW B COPPLE

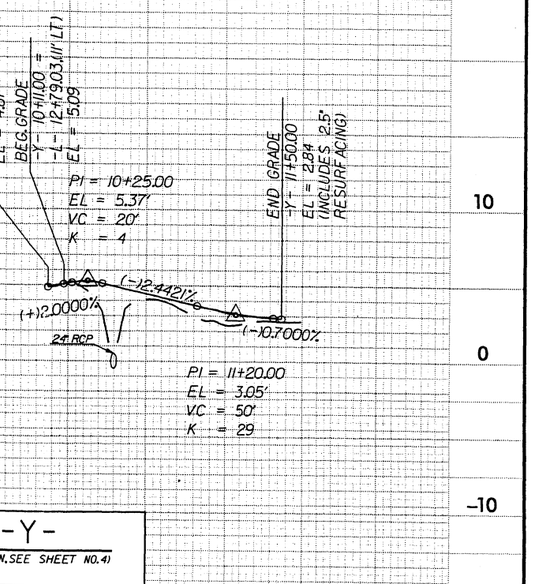
HYDRAULICS ENGINEER — NORTH CAROLINA PROFESSIONAL SEAL 18442 ENGINEER RICHARD LEON BOLLINGER JR.

B.M. #9 ELEV. = 3.84
CROSS CHISELED IN SW CORNER
OF GAS PUMP ISLAND
211.6' RT OF -BL- STA.10+12.00



-L-
(FOR PLAN, SEE SHEET NO.4)

SEE SHEETS S-1 THRU S-
FOR STRUCTURE PLANS.



-Y-
(FOR PLAN, SEE SHEET NO.4)

BRIDGE HYDRAULIC DATA

DESIGN DISCHARGE	= N/A	CFS
DESIGN FREQUENCY	= 25	YRS
DESIGN HW ELEVATION	= N/A	FT
BASE DISCHARGE	= N/A	CFS
BASE FREQUENCY	= 100	YRS
BASE HW ELEVATION	= 4.9	FT
OVERTOPPING DISCHARGE	= N/A	CFS
OVERTOPPING FREQUENCY	= <10	YRS
OVERTOPPING ELEVATION	= 2.66	FT
	=	FT
DATE OF SURVEY	= 5/29/02	
W.S. ELEVATION AT DATE OF SURVEY	= 0.95	FT

DENOTES UNDERCUT

LEGEND
— - - — DITCH LEFT
— — — DITCH RIGHT

Ramey Kemp & Associates, Inc.
Transportation Consulting Engineers
4928-A Windy Hill Drive Raleigh, North Carolina 27609
(919) 872-585 fax (919) 878-5416

Restoration Plan for the UT to Lake Landing Canal at Bridge No. 6 on SR 1110
Federal Aid Project No. BRZ-1110(3), WBS No. 33305.1.1
TIP B-3858, Hyde County

December 19, 2005

The North Carolina Department of Transportation (NCDOT) will perform on-site mitigation for tidal creek impacts to an unnamed tributary to Lake Landing Canal at Bridge No. 6 on SR 1110. This mitigation site occurs within Transportation Improvement Program (TIP) B-3858. The TIP project begins approximately 350 feet west of Bridge No. 6 and continues to approximately 575 feet to the east of the bridge. NCDOT will restore approximately 75 feet of the UT to Lake Landing Canal by removing an existing pipe and a portion of the causeway fill of SR1110.

EXISTING CONDITIONS:

The project is located in Hyde County west of the community of Nebraska. The bridge is located near the intersection of SR 1110 and SR 1116. Surrounding land use is mainly agricultural.

The UT to Lake Landing Canal is approximately 4 feet wide and 2 feet deep. The UT runs parallel to the north side of SR 1110 before crossing under the causeway of the SR 1110 in a corrugated metal pipe. The UT then runs parallel to the south side of SR 1110 to its confluence with Lake Landing Canal. The causeway of SR 1110 at Bridge No. 6 is approximately 20 feet wide.

PROPOSED CONDITIONS:

The proposed tidal creek mitigation will consist of restoring approximately 80 feet of UT to Lake Landing Canal. The restored UT will connect the sections of the UT that currently run on either side of SR 1110. After the project construction, the UT will run along the north side of SR 1110 to its confluence with Lake Landing Canal.

The Categorical Exclusion (CE) for TIP B-3858, dated November 2002, provides further details concerning existing and proposed roadway conditions.

DESIGN/CONSTRUCTION:

The design of the tidal creek area shall consist of removing fill associated with the existing causeway. The channel will be constructed at 4 feet wide and 2 feet deep. The cross-section detail is shown on the roadway plan sheet 4. The channel will be approximately 80 feet long running southwest across the removed section of SR 1110.

After grading, the channel will be stabilized with vegetation.

The Natural Environment Unit shall be contacted to provide construction oversight to ensure that restoration of the tidal creek is constructed appropriately.

MONITORING:

The proposed channel dimensions and profile will be verified during construction.
Upon successful completion of construction, NCDOT shall monitor the channel for stability and vegetation establishment by visual observation and photo points. Any remediation necessary will be coordinated with the appropriate agencies.

Ecosystem Enhancement PROGRAM

November 30, 2005

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

Dear Dr. Thorpe:

Subject: EEP Mitigation Acceptance Letter:

B-3858, Bridge 6 over the Lake Landing Canal on SR 1110**,** Hyde County

The purpose of this letter is to notify you that the Ecosystem Enhancement Program (EEP) will provide the compensatory stream mitigation for the subject project. Based on the information supplied by you in a letter dated November 18, 2005, the impacts are located in CU 03020105 of the Tar-Pamlico River Basin in the Northern Outer Coastal Plain (NOCP) Eco-Region, and are as follows:

Stream Impacts: 80 feet

The subject project is listed in Exhibit 2 of the Memorandum of Agreement among the North Carolina Department of Environment and Natural Resources, the North Carolina Department of Transportation, and the U. S. Army Corps of Engineers, Wilmington District dated July 22, 2003. Mitigation for this project will be provided in accordance with the above referenced agreement. EEP will commit to implementing sufficient compensatory stream mitigation to offset the impacts associated with this project by the end of the MOA year in which this project is permitted, in accordance with Section X of the Tri-Party MOA.

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

Sincerely,

William D. Gilmore, P.E.
EEP Director

cc: Mr. Bill Biddlecome, USACE-Washington
Mr. John Hennessy, Division of Water Quality, Wetlands/401 Unit
File: B-3858

Restoring Enhancing Protecting Our Waters

Turchy

United States Department of the Interior

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

September 13, 2004

Gregory J. Thorpe, Ph.D.
North Carolina Department of Transportation
Project Development and Environmental Analysis
1598 Mail Service Center
Raleigh, North Carolina 27699-1598

Dear Dr. Thorpe:

This letter is in response to your letter of August 23, 2004 and August 26, 2004 addendum which provided the U.S. Fish and Wildlife Service (Service) with the biological determination of the North Carolina Department of Transportation (NCDOT) that the replacement of Bridge No. 6 on SR 1110 over Great Ditch (Lake Landing Canal) in Hyde County (TIP No. B-3858) may affect, but is not likely to adversely affect the federally protected bald eagle (*Haliaeetus leucocephalus*) and West Indian manatee (*Trichechus manatus*). In addition, NCDOT has determined that the project will have no effect on the green sea turtle (*Chelonia mydas*), hawksbill sea turtle (*Eretomochelys imbricata*), Kemp's ridley sea turtle (*Lepidochelys kempii*), leatherback sea turtle (*Dermochelys coriacea*), loggerhead sea turtle (*Caretta caretta*), piping plover (*Charadrius melodus*), red-cockaded woodpecker (*Picoides borealis*), seabeach amaranth (*Amaranthus pumilus*) and sensitive jointvetch (*Aeschynomene virginica*). These comments are provided in accordance with section 7 of the Endangered Species Act (ESA) of 1973, as amended (16 U.S.C. 1531-1543).

According to the information you submitted, a survey was conducted at the project site on August 17, 2004 for bald eagles and nests. The survey extended in a ½ mile radius around the project area. No eagles or nests were observed. Also on August 17, 2004, a survey was conducted for sensitive jointvetch. No specimens of the plant were observed. Potential habitat exists at the project site for the West Indian manatee. NCDOT has agreed to implement the Service's *Guidelines for Avoiding Impacts to the West Indian Manatee – Precautionary Measures for Construction Activities in North Carolina Waters*. No habitat exists at the project site for the remaining species listed for Hyde County.

Based on the information provided and other information available, the Service concurs with your determination that the proposed project may affect, but is not likely to adversely affect the bald eagle and West Indian manatee. Based on the survey results, the Service also concurs with your determination that the project will have no effect on sensitive jointvetch. Due to the lack of habitat, the Service concurs with your determination that the project will have no effect on the remaining listed species in Hyde County. 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,

Tom Augspurger
Acting Ecological Services Supervisor

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

HYDE COUNTY
SR 1110
BRIDGE NO. 6 OVER GREAT DITCH (LAKE LANDING CANAL)

FEDERAL-AID PROJECT NO. BRZ-1110 (3)
STATE PROJECT NO. 8.2080101
TIP NO. B-3858

CATEGORICAL EXCLUSION
& PROGRAMMATIC SECTION 4(F)

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
AND
N.C. DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

APPROVED:

11-13-02
DATE

for Gregory J. Thorpe, Ph.D.
Environmental Management Director
Project Development & Environmental Analysis Branch
North Carolina Department of Transportation

11-21-02
DATE

for Nicholas L. Graf, P.E., Division Administrator
Federal Highway Administration

HYDE COUNTY
SR 1110
BRIDGE NO. 6 OVER GREAT DITCH (LAKE LANDING CANAL)

FEDERAL-AID PROJECT NO. BRZ-1110 (3)
STATE PROJECT NO. 8.2080101
TIP NO. B-3858

CATEGORICAL EXCLUSION
& PROGRAMMATIC SECTION 4(F)

OCTOBER 2002

Document Prepared by Ramey Kemp & Associates, Inc.
4928-A Windy Hill Dr.
Raleigh, NC 27609

Montell W. Irvin

Montell W. Irvin, P.E., PTOE, Project Manager
Ramey Kemp & Associates, Inc.

10/30/02
Date

For the North Carolina Department of Transportation
Project Development and Environmental Analysis Branch

Theresa Ellerby

Theresa Ellerby, Project Development Engineer
Project Development and Environmental Analysis Branch

PROJECT COMMITMENTS

HYDE COUNTY
SR 1110
BRIDGE NO. 6 OVER GREAT DITCH (LAKE LANDING CANAL)

FEDERAL-AID PROJECT NO. BRZ-1110 (3)
STATE PROJECT NO. 8.2080101
TIP NO. B-3858

In addition to the standard Nationwide Permit #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, Design Standards for Sensitive Watersheds, NCDOT's Guidelines for Best Management Practices for Bridge Demolition and Removal, General Certification Conditions, and Section 401 Conditions of Certification, the following special commitments have been agreed to by NCDOT:

NCDOT Division 1 and Structure Design

1.) The NCDOT will observe a moratorium on in-water work between February 15 through June 15 to protect fish spawning. The NCDOT will follow the "Stream Crossing Guidelines for Anadromous Fish Passage".

NCDOT Division 1 and Design Services

1.) The NCDOT will not physically touch the abandoned building (old store) located in the northeast quadrant of the intersection of SR 1110 and SR 1116.

2.) The NCDOT will not encroach upon the property located in the northeast quadrant of the intersection of SR 1110 and SR 1116. The existing edge of pavement will be maintained on the (old store) side of SR 1110 and SR 1116.

3.) All landscaping impacted by this project will be replaced to replicate existing conditions.

NCDOT Structure Design and Design Services

1.) NCDOT shall use a 2 bar steel bridge rail in aluminum color.

2.) NCDOT shall restore landscaping disturbed during construction.

3.) NCDOT shall provide HPO details of guardrail design prior to final plans for HPO comment.

HYDE COUNTY
SR 1110
BRIDGE NO. 6 OVER GREAT DITCH (LAKE LANDING CANAL)

FEDERAL-AID PROJECT NO. BRZ-1110 (3)
STATE PROJECT NO. 8.2080101
TIP NO. B-3858

INTRODUCTION

Bridge No. 6 is located on SR 1110 over Great Ditch, commonly referred to (and throughout the remainder of this report) as the Lake Landing Canal, in Hyde County. This project is included in the 2002-2008 North Carolina Department of Transportation (NCDOT) Transportation Improvement Program (TIP) as B-3858 and in the Federal-Aid Bridge Replacement Program.

Based on the assessment of the existing human and natural environment, it is concluded no substantial impacts will result from the replacement of Bridge No. 6. The bridge location is shown in Figure 1. This project is being processed as a Federal "Categorical Exclusion".

I. PURPOSE AND NEED

Bridge Maintenance Unit records indicate Bridge No. 6 has a sufficiency rating of 40.8 out of a possible 100 for a new structure. The bridge is considered structurally deficient and functionally obsolete. The replacement of this inadequate structure will result in safer and more efficient traffic operations.

II. EXISTING CONDITIONS

Bridge No. 6 is located approximately 1.5 miles (2.4 km) south of US 264 in an area referred to as Lake Landing in Hyde County. The bridge is located on SR 1110 between the intersection of SR 1110 and SR 1116 and where SR 1110 takes an almost 90° turn to the south after crossing Lake Landing Canal.

A. Bridge Information

Bridge No. 6, which was constructed in 1952, has a sufficiency rating of 40.8 out of a possible 100 and is considered structurally deficient. The bridge is currently posted for a weight limit of 20 tons (18.1 metric tons) for single vehicles and 25 tons (22.7 metric tons) for truck-tractor semi-trailers (TTST).

The overall length of the single-span structure is 35.6 ft (10.9 m). It has a clear roadway width of 24.4 ft (7.4 m) that includes two travel lanes over the bridge. The superstructure consists of a timber deck on a steel floor beam system with timber curbs and rails. The substructure consists of vertical timber end bents with timber caps on timber piles. The existing structure has a crown-to-bed height of 9.4 ft (2.9 m) and the normal depth of flow in the canal is approximately 5 ft (1.6 m).

B. Roadway Information

SR 1110 is classified as a rural minor collector in the Statewide Functional Classification System. The 2001 average daily traffic volume on SR 1110 over Bridge No. 6 is estimated to be 600 vehicles per day (vpd), which includes 3 percent TTST vehicles and 2 percent dual-tired vehicles. The 2025 design year average daily traffic volume over the bridge is expected to be 1,200 vpd.

The two-lane facility measures approximately 22.5 ft (6.9m) in width and has variable (4-ft (1.2-m) to 6-ft (1.8-m)) grassed shoulders on each side of the roadway. The horizontal alignment of SR 1110 is straight and the vertical alignment is flat within the project area; however, SR 1110 takes a very sharp turn (almost 90°) to the south immediately past the west end of Bridge No. 6. The speed limit in the vicinity of the project is 55 miles per hour (mph) (90 km/h); however, actual travel speed across the bridge is significantly lower due to the existing horizontal alignment. The calculated design speed over the bridge is less than 20 mph (30 km/h). Existing right-of-way is approximately 60 ft (18.3 m) in width.

SR 1110 is not part of a designated bicycle route nor is it listed in the 2002-2008 Transportation Improvement Program as needing incidental bicycle accommodations. There is no indication that an unusual number of bicyclists use this roadway.

C. General Information

Land use within the project area is a mixture of undeveloped land, rural residential properties, and agricultural land. The immediate project area is known as Watson's corner because of the landowners who resided in the area. An old abandoned building that was constructed by 1856 is located in the northeast quadrant of the intersection of SR 1110 and SR 1116. This building was a store constructed by the Watson family and is part of the "George Israel Watson" historic property that is located in the northeast quadrant of the intersection of SR 1110 and SR 1116.

There is an unoccupied commercial building, several above ground fuel storage tanks, and a boat ramp located on the south side of SR 1110 east of the canal.

Hyde County school officials report that two school buses cross Bridge No. 6 four times a day for a total of eight trips a day.

Crash records maintained by the NCDOT indicate there has been one crash reported on SR 1110 within the project area between August 1, 1997 and July 31, 2000. No fatalities resulted from the crash.

III. ALTERNATIVES

A. Project Description

Based upon the preliminary hydraulics report, the proposed replacement structure for Bridge No. 6 will consist of a single-span structure approximately 55 ft (16.7 m) long that would have a minimum 28 ft (8.6 m) clear roadway width that would include two 11 ft (3.3 m) travel lanes with 3 ft (1.0 m) of lateral clearance on each side of the bridge.

The length and opening size of the proposed structure may increase or decrease as necessary to accommodate peak flows, as determined by a more detailed hydraulic analysis to be performed during the final design phase of the project.

The roadway approaches would provide two 11 ft (3.3 m) travel lanes with 6 ft (1.8m) grassed shoulders. The roadway approach and bridge grades will be approximately the same as the existing.

B. Build Alternatives

Alternate A

Alternate A consists of replacing the bridge in-place using an on-site detour located south (downstream) of the existing bridge to maintain traffic during construction. The estimated overall length of this alternative is expected to be 350 ft (107 m) with approximately 100 ft (30 m) of improvement to SR 1116. Improvement to SR 1116 will be mostly in the form of resurfacing. Refer to Figures 4A and 4B for illustration of this alternate.

The temporary structure would be approximately 55 ft (16.7 m) in length and would have a clear roadway width of 26 ft (8.0 m), which would include two 10-ft (3.0-m) travel lanes and 3 ft (1.0 m) of lateral clearance on each side of the bridge. The detour roadway approaches would provide two 10-ft (3.0-m) travel lanes and 4-ft (1.2-m) shoulders on each side. The overall length of the temporary detour is estimated to be 1,140 ft (348 m). Alternate A was not selected as the preferred because of the potential adverse impacts to the Lake Landing Historic District. The State Historic Preservation Office (SHPO) indicated Alternate A would result in a determination of "Conditional No Adverse Effect" on the Lake Landing Historic District.

Alternate B

Alternate B consists of replacing Bridge No. 6 on a new alignment immediately south (downstream) of the existing bridge. Traffic will be maintained on the existing bridge during construction. The overall length of the new location alternative is estimated to be 1,140 ft (348 m). The curvature of the new alignment south of the existing bridge, shown on Figure 5, was provided to obtain a more desirable design speed. Alternate B was not selected as the preferred because of the potential adverse impacts to the Lake Landing Historic District. The SHPO indicated Alternate B would result in a determination of "Adverse Effect" on the Lake Landing Historic District.

Alternate C (Preferred)

Alternate C consists of replacing Bridge No. 6 on a new alignment immediately south (downstream) of the existing bridge. Traffic will be maintained on the existing bridge during construction. The overall length of the new alignment alternative is estimated to be 675 ft (206 m). Refer to Figure 6 for illustration of Alternate C.

The proposed replacement structure for Bridge No. 6 will consist of a single-span structure approximately 55 ft (16.7 m) long that would have a 40 ft (12 m) clear roadway width that would include one 17 ft (5.1 m) travel lane with 3 ft (1.0 m) of lateral clearance on the southern side and one 11 ft (3.3 m) travel lane with 9 ft (2.7 m) of lateral clearance on the northern side of the bridge. This typical section is required to accommodate trucks.

The roadway approaches would provide for a transition from a 11 ft (3.3 m) travel lane to 17 ft (5.1 m) on the southern side and a 11 ft (3.3 m) travel lane on the northern side, both with 6 ft (1.8m) grassed shoulders. The roadway approach and bridge grades would approximately match existing bridge and roadway elevations.

C. Alternatives Eliminated From Further Consideration

The entire study area of this project is within the Lake Landing Historic District which is listed on the National Register. It has been determined that the property located in the northeast quadrant of the SR 1116/SR 1110 intersection is eligible for the National Register of Historic Places. Study alternatives that would have physically impacted this property were eliminated from further study.

A "Do-Nothing" alternate was considered for this project; however, this alternative would eventually necessitate closure of the bridge due to its poor condition. The "Do-Nothing" alternate was eliminated from further consideration because closure of SR 1110 is not acceptable due to the traffic service it provides.

"Rehabilitation" of the existing bridge was considered as a study alternate. The "Rehabilitation" alternate was eliminated from further consideration due to the deteriorated condition and age of the bridge.

There is no feasible off-site detour available.

D. Preferred Alternative

Alternate C was selected as the preferred alternate because it will allow the existing bridge to be replaced with minimal damage to the historic district and Watson's Store. However, it will not allow for the improvement of the existing design speed of SR 1110. This alternate also specifies that the new structure will be constructed with a 2 bar steel bridge rail in aluminum color.

E. Design Exception

A design exception will be required for the horizontal alignment of Alternate C due to the curvature of the roadway required on the western end of the bridge.

IV. ESTIMATED COSTS

The estimated costs of each alternate, based on current dollars, are shown below:

Table 1
Estimated Project Costs

	Alternate A	Alternate B	Alternate C (Preferred)
Structure Removal (Existing)	$7,300	$7,300	$7,300
Structure Proposed	$73,800	$137,000	$143,000
Roadway Approaches	$80,500	$284,400	$138,300
Temporary Structure	$68,600	$0	$0
Detour Approaches	$206,600	$0	$0
Miscellaneous and Mobilization	$196,200	$192,300	$129,400
Engineering and Contingencies	$92,000	$104,000	$82,000
Total Construction Cost	**$725,000**	**$725,000**	**$500,000**
Right-of-Way/Easement and Utilities	$74,675	$81,800	$93,500
Total Project Cost	**$799,675**	**$806,800**	**$593,500**

The estimated cost of the project, as shown in the 2002-2008 NCDOT Transportation Improvement Program is $485,000, including $100,000 spent in prior years, $35,000 for right-of-way and $350,000 for construction.

V. NATURAL RESOURCES

Natural resources within the project study area were evaluated to provide: 1) an assessment of existing vegetation, wildlife, protected species, streams, wetlands, and water quality; 2) an evaluation of probable impacts resulting from construction; and 3) a preliminary determination of permit needs.

A. Methodology

Materials and research data in support of this investigation have been derived from a number of sources. The U.S. Geological Survey (USGS) 7.5-minute quadrangle topographic map of Middletown, NC (USGS 1978) was consulted to determine physiographic relief and to assess landscape characteristics. U.S. Fish and Wildlife Service (USFWS) National Wetlands Inventory mapping was also consulted to determine what potential wetland types may be encountered in the field. Detailed soils information was obtained from the Natural Resource Conservation Service (NRCS) *Hyde County Soil Survey* (USDA 1999).

Recent aerial photographs served as the basis for mapping plant communities and wetlands. Plant community patterns were identified from available mapping sources and then field verified in May 2001. Plant community descriptions are based on a classification system utilized by the NC Natural Heritage Program (NHP) (Schafale and Weakley 1990). When appropriate, community classifications were modified to better reflect field observations. Vascular plant names typically follow nomenclature found in Radford *et al.* (1968).

Jurisdictional areas were identified using the three parameter approach (hydrophytic vegetation, hydric soils, wetland hydrology) following U.S. Army Corps of Engineers (COE) delineation guidelines (DOA 1987). Jurisdictional areas were characterized according to a classification scheme established by Cowardin *et al.* (1979).

Water resource information for Lake Landing Canal was derived from the most recent versions of the *Tar-Pamlico River Basinwide Water Quality Plan* (DWQ 1999), *Basinwide Assessment Report-Tar-Pamlico River Basin* (DWQ 1998), and several NC Division of Water Quality (DWQ) internet resources. Quantitative sampling was not undertaken to support existing data.

USFWS Endangered, Threatened, and Candidate Species and Federal Species of Concern in North Carolina were reviewed prior to initiation of the field investigation in May 2001. In addition, NHP records documenting occurrences of federal or state-listed species listed within the project study area were consulted before commencing the field investigation. An updated NHP records search was performed on April 12, 2002. Direct observations of terrestrial and aquatic wildlife were documented, and expected population distributions were determined through observations of available habitat and review of supportive documentation found in Martof *et al.* (1980), Webster *et al.* (1985), Menhinick (1991), Hamel (1992), Rohde *et al.* (1994), and Palmer and Braswell (1995). The project study area is approximately 1,600 ft (488 m) in length and approximately 1200 ft (366 m) in width. Impacts to terrestrial communities were calculated using 100 ft (30.5 m) right-of-way. The actual construction impacts are expected to be less.

B. Physiography and Soils

The project study area is located in the Coastal Plain physiographic province of North Carolina. The topography in the project study area is generally characterized as level. Elevations in the project study area range from 2 to 5 ft (0.6 to 1.5 m) above mean sea level (USGS 1978). The project study area consists mainly of existing maintained right-of-way and agricultural fields with a small mixed pine/hardwood forest tract in the vicinity of the project area.

The project study area crosses two soil mapping units (USDA 1999); the Hatboro loam and Codorus loam units. The Hatboro series *(Typic Fluvaquents),* which is poorly drained, is a hydric soil. The Codorus series (*Fluvaquentic Dystrochrepts*), which is moderately well drained to somewhat poorly drained, is a non-hydric soil that may contain hydric inclusions. Hydric soil inclusions which may be present in depressional areas within the mapped Codorus loam are Hatboro and Toxaway silt loam (*Cumulic Humaquepts*).

C. Water Resources

C.1. Waters Impacted

The project study area is located within sub-basin 030308 of the Tar-Pamlico River Basin (DEM 1998) and is part of USGS hydrologic unit 03020105 (USGS 1974). Lake Landing Canal originates north of SR 1110 as a drainage system for agricultural operations in Hyde County and flows south to its confluence with Wysocking Bay, which in turn flows into the Pamlico Sound. This canal has been assigned Stream Index Number (SIN) 29-60-4 by the DWQ from its source to Wysocking Bay. Lake Landing Canal within the project study area is considered "Joint" waters (NCMFC 2001). This indicates that both the NC Division of Marine Fisheries (NCDMF) and the North Carolina Wildlife Resources Commission (NCWRC) have jurisdiction over these fishing waters.

C.2. Water Resources Characteristics

Lake Landing Canal is a perennial canal with slow flow over substrate consisting of mud and silt. Water clarity was relatively good with no obvious signs of turbidity. The channel is approximately 50 ft (15 m) wide and greater than 6 ft (1.8 m) deep. A geomorphic characterization of the stream section within the project study area indicates Lake Landing Canal is a "G" type channel (Rosgen 1996). This is a man-made canal constructed to assist agricultural drainage. The "G" designation indicates that the canal has an entrenched "gully" channel on a low gradient with low width/depth ratio (Rosgen 1996).

A Best Usage Classification is assigned to waters of the State of North Carolina based on the existing or contemplated best usage of various streams or segments of streams in the basin. Lake Landing Canal has been assigned a best usage classification of **SC** (DEM 1993, DENR 2001). The **SC** designation indicates tidal salt waters that support aquatic life propagation and survival, fishing, wildlife, and secondary recreation. Secondary recreation is any activity involving human body contact with water on an infrequent or incidental basis. High Quality Waters (**HQW)** occur approximately 1.5 miles (2.4 km) downstream of the project study area. Lake Landing Canal has been identified as an anadromous fish spawning area as well as a Primary Nursery Area (CGIA 2001). The classification as a Primary Nursery Area also gives **HQW** status to the waters within the project study area. Lake Landing Canal is not designated as a North Carolina Natural and Scenic River, nor as a National Wild and Scenic River.

One method used by DWQ to monitor water quality is through long-term monitoring of macroinvertebrates. In 1997, benthic macroinvertebrate samples were taken in the subbasin; however, no samples were taken on Lake Landing Canal.

Another measure of water quality being used by the DWQ is the North Carolina Index of Biotic Integrity (NCIBI), which assesses biological integrity using the structure and health of the fish community. No NCIBI sampling has been completed on this canal or its receiving waters within subbasin 030308 in Hyde County (DWQ 1998).

C.3. Essential Fish Habitat Assessment

An Essential Fish Habitat (EFH) assessment is typically required for bridge replacement in coastal counties. EFH is defined by the National Marine Fisheries Service (NMFS) as "those waters and substrate necessary for fish spawning, breeding, feeding, or growth to maturity" (NMFS 1999). For the purpose of interpreting the definition of EFH: "Waters" include aquatic areas and their associated physical, chemical, and biological properties that are used by fish and may include aquatic areas historically used by fish where appropriate; "substrate" includes sediment, hard bottom, structures underlying the waters, and associated biological communities; "necessary" means the habitat required to support a sustainable fishery and the managed species' contribution to a healthy ecosystem; and "spawning, breeding, feeding, or growth to maturity" covers a species' full life cycle (NMFS 1999). An EFH Assessment is an analysis of the effects of a proposed action on EFH. Pursuant to 50 CFR 600.920 (g) mandatory contents include: a description of the proposed action, an analysis of the effects of that action on EFH, the Federal action agency's views on those effects; and proposed mitigation, if applicable. An adverse effect includes any impact which reduces the quality and/or quantity of EFH. Pursuant to 50 CFR 600.810 adverse effects may include direct (*e.g.*, contamination or physical disruption), indirect (*e.g.*, loss of prey, or reduction in a species' fecundity), site-specific or habitat-wide impacts, including individual, cumulative, or synergistic consequences of actions.

The COE makes the initial determination of whether or not a proposed project "may adversely affect" EFH. This determination by the COE is submitted to the NMFS for their review and comment. NMFS will then determine if additional consultation is necessary regarding the proposed project or if they concur with COE's decision. Any significant stream or river in a county under the jurisdiction of the Coastal Area Management Act (CAMA) may be considered EFH unless otherwise documented by the NMFS. The current species list prepared by the NMFS pertaining to EFH, and all listed species are either marine or estuarine species has been reviewed.

Lake Landing Canal is designated as tidal salt waters by DENR and as a Primary Nursery Area by the North Carolina Marine Fisheries Commission. Therefore, the area will also be designated Essential Fish Habitat by NMFS and the COE. The Primary Nursery Area designation also gives the canal High Quality Water (HQW) status.

C.4. Permitted Dischargers

Discharges that enter surface waters through a pipe, ditch or other well-defined point of discharge are broadly referred to as "point sources." Wastewater point source discharges include municipal (city and county) and industrial wastewater treatment plants and small domestic wastewater treatment systems serving schools, commercial offices, residential subdivisions, and individual homes (DWQ 1999). Stormwater point source discharges include stormwater collection systems for municipalities and

stormwater discharges associated with certain industrial activities. Point source dischargers in North Carolina must apply for and obtain a National Pollutant Discharge Elimination System (NPDES) permit. Discharge permits are issued under the NPDES program, delegated to DWQ by the Environmental Protection Agency (EPA). Four (4) permitted dischargers are located in this subbasin. There are no permitted point source dischargers located on Lake Landing Canal or any of its upstream tributaries (DWQ 1999, DENR 2000).

C.5. Anticipated Impacts to Water Resources

Short-term impacts to water quality, such as sedimentation and turbidity, may result from construction-related activities. Temporary construction impacts due to erosion and sedimentation will be minimized through implementation of a stringent erosion control schedule and the use of BMP's. Development activities which require an Erosion and Sedimentation Control Plan in accordance with rules established by the NC Sedimentation Control Commission or local erosion and sedimentation control program approved in accordance with 15 NCAC 4B .0218, and which drain to and are within one mile of HQW shall be required to follow stormwater management rules as specified in 15A NCAC 2H .1000. These measures include: the use of dikes, berms, silt basins, and other containment measures to control runoff and elimination of construction staging areas in floodplains and adjacent waterways. Disturbed sites will be revegetated with herbaceous cover after any temporary construction impacts. Stormwater controls are required under CAMA.

Other impacts to water quality, such as changes in water temperature as a result of increased exposure to sunlight due to the removal of stream-side vegetation or increased shade due to the construction of the bridges, and changes in stormwater flows due to changes in the amount of impervious surface adjacent to the stream channels, can be anticipated as a result of this project. However, due to the limited amount of overall change in the surrounding areas, impacts are expected to be temporary in nature.

No adverse long-term impacts to water resources are expected to result from the alternatives being considered. The proposed project calls for replacement of the bridge in-place or new location across Lake Landing Canal, which will allow for continuation of present stream flow within the existing channel, thereby protecting stream integrity.

C.6. Impacts Related to Bridge Demolition and Removal

Section 402-2 of NCDOT's Standard Specifications for Roads and Structures is labeled **Removal of Existing Structure**. This section outlines restrictions and Best Management Practices for Bridge Demolition and Removal (BMP-BDRs), as well as guidelines for calculating maximum potential fill in the canal resulting from demolition. These standards will be followed for the removal of existing Bridge No. 6.

The superstructure of Bridge No. 6 consists of a timber deck on steel floor beam system. The substructure of the bridge consists of timber end bents with timber caps on timber piles. The bridge has one span that totals 35.6 ft (10.8 m) in length. Components of the superstructure will be removed without dropping them into Waters of the United States. Since the substructure consists of timber, this will also be removed without dropping any portion into Waters of the United States.

It is anticipated that there will be no additional fill in Lake Landing Canal associated with the demolition and removal of the superstructure and substructure. In-stream construction activities will be scheduled to avoid

and minimize impacts to aquatic resources/organisms. A moratorium on in-water work will be required between February 15 through June 15 to protect fish spawning.

D. Biotic Resources

D.1. Plant Communities

Distribution and composition of plant communities throughout the project study area reflect landscape-level variations in topography, soils, hydrology, and past and present land use practices. When appropriate, the plant community names have been adopted and modified from the NHP classification system (Schafale and Weakley 1990) and the descriptions written to reflect local variations within the project study area. Two plant communities were identified within the project study area: agricultural land and maintain/disturbed areas. These communities total approximately 41.7 acres (16.9 ha) within the entire project study area, which does not include the open water attributed to Lake Landing Canal. The total open water area is approximately 1.7 acres (0.7 ha).

Agricultural Land – Agricultural land covers approximately 23.2 acres (9.4 ha) [55.6 percent] of the project study area. The agricultural land consists of fields currently in corn production. The corn fields are located west and north of SR 1110.

Maintained/Disturbed Areas – Maintained/disturbed land covers approximately 18.5 acres (7.5 ha) [44.4 percent] of the project study area. The maintained/disturbed areas located within the project study area include: roads, rights-of-way, maintained residential yards, a new marina facility, and areas where human related activities dominate. Roadsides are typically maintained by mowing and/or herbicides. The residential yard is dominated by various grasses, such as fescue (*Festucs* sp.), bermuda grass (*Cynodon dactylon*), shrubs, and trees, such as sweetgum (*Liquidambar styraciflua*).

D.2. Wildlife

The project study area was visually surveyed for signs of terrestrial and aquatic wildlife; however, little evidence of wildlife was observed during the field effort. The project study area is surrounded by a state-maintained road, agricultural fields, a new marina facility, and a residential yard. The agricultural fields and maintained areas in the project study area provide little cover or food. These communities provide poor travel corridors for wildlife to travel between more optimal habitats. Expected wildlife species are those adapted to ecotones between the maintained roadsides and adjacent agricultural fields.

Bird species observed include American crow (*Corvus brachyrhynchos*), mourning dove (*Zenaida macroura*), American robin (*Turdus migratorius*), and blue jay (*Cyanocitta cristata*). Expected bird species include such species as great egret (*Casmerodius albus*), great blue heron (*Ardea herodias*), kingfisher (*Ceryle alcyon*), and osprey (*Pandion haliaetus*).

No mammals were observed within the project study area. White-tailed deer (*Odocoileus virginianus*) tracks were found in one of the corn fields within the project study area. Other species expected to be found in and around roadside and urban settings include raccoon (*Procyon lotor*), Virginia opossum (*Didelphis virginiana*), red fox (*Vulpes vulpes*), gray squirrel (*Sciurus carolinensis*), and eastern cottontail (*Sylvilagus floridanus*). Other species that may use the agricultural fields are black bears (*Ursus americanus*).

No terrestrial reptiles were observed within the project study area. Species expected to occur within the project study area include eastern box turtle (*Terrapene carolina*), eastern garter snake (*Thamnophis sirtalis*), ringneck snake (*Diadophis punctatus*), and black rat snake (*Elaphe obsoleta*).

No terrestrial amphibians were observed within the project study area. Species expected to occur within the project study area include American toad (*Bufo americanus*), spring peeper (*Pseudacris crucifer*), and northern cricket frog (*Acris crepitans*).

D.3. Aquatic Communities

The aquatic habitat located within the project study area includes Lake Landing Canal and an adjacent drainage ditch. Limited kick-netting, seining, dip-netting, electro-shocking and visual observation of stream banks and channel within the project study area were conducted to document the resident, aquatic wildlife populations. Electrofishing was ineffective due to the high salinity of the water in the canal.

No fish species were documented in the segment of Lake Landing Canal within the project study area. Species expected to occur include a mix of freshwater and saltwater species due to the brackish nature of the waterbody.

No aquatic reptiles were observed within the project study area. Species expected to occur within the project study area include the northern water snake (*Nerodia sipedon*), painted turtle (*Chrysemys picta*), mud turtle (*Kinosternon subrubrum*), and common snapping turtle (*Chelydra serpentina*).

No aquatic amphibians were observed within the project study area. Species expected to occur within the project study area include red-spotted newt (*Notophthalmus viridescens*), bullfrog (*Rana catesbeiana*), southern cricket frog (*Acris gryllus*) and pickerel frog (*Rana palustris*).

Aquatic invertebrate surveys were limited dip-netting and walking the bank of the canal due to the depth and unstable substrate of the canal bottom. Visual observation of the bank along Lake Landing Canal revealed the presence of fiddler crab (*Uca* sp.), blue crab (*Callinectes sapidus*), and jellyfish (Cnidaria: Semaeostomeae).

Benthic macroinvertebrates were sampled based on current DWQ protocol. Benthic organisms collected within Lake Landing Canal were identified to at least Order and Family, if possible, and include dragonflies (Odonota: Lestidae) and shrimp (Decapoda). Identifications are based on McCafferty (1998).

D.4. Anticipated Impacts to Biotic Communities

D.4.a Terrestrial Communities Impacts

Potential impacts to plant communities are estimated based on the approximate area of each plant community present within the proposed right-of-way and temporary construction limits. A summary of potential plant community impacts is presented in Table 2.

Permanent impacts due to bridge replacement will result from expansion of the existing right-of-way and are generally limited to narrow strips adjacent to the existing bridge structure and roadway approach segments. Additional clearing of natural plant communities will not be necessary because the new right-of-way will be located in agricultural or maintained areas.

Table 2
Potential Impacts to Plant Communities

PLANT COMMUNITY	POTENTIAL IMPACTS acres (hectares)			
	ALT A		ALT B	ALT C
	Impacts	Temporary Impacts *	Impacts	Impacts
Agricultural Land	0.00	0.84 (0.34)	1.00 (0.41)	0.00
Maintained/Disturbed	0.00	0.35 (0.14)	0.32 (0.13)	0.50 (0.20)
TOTAL FOR ALT	**1.19 (0.48)**		**1.32 (0.54)**	**0.50 (0.20)**

* Note: Temporary detour impacts are based on the portion of the on-site detour not included in the final construction limits for the permanent structure.

D.4.b. Aquatic Communities Impacts

The proposed bridge replacement will not result in significant loss or displacement of known aquatic wildlife populations. Potential down-stream impacts to aquatic habitat will be avoided by bridging Lake Landing Canal to maintain regular flow and stream integrity. In addition, temporary impacts to downstream habitat from increased sediment during construction will be reduced by limiting in-stream work to an absolute minimum, except for the removal of the portion of the sub-structure below the water. BMP's and BMP-BDRs will be followed to minimize impacts.

E. Special Topics

E.1. Waters of the United States

Surface waters and wetlands associated with Lake Landing Canal are subject to jurisdictional consideration under Section 404 of the Clean Water Act as "waters of the United States" (33 CFR 328.3). Wetlands subject to review under Section 404 of the Clean Water Act (33 U.S.C. 1344) are defined by the presence of three primary criteria: hydric soils, hydrophytic vegetation, and evidence of hydrology at or near the surface for a portion (12.5 percent) of the growing season (DOA 1987). Pursuant to Cowardin *et al.* (1979), the jurisdictional surface water associated with the project, Lake Landing Canal, is classified as estuarine, sub-tidal unconsolidated sand bottom that has been excavated (E1UB2Lx). Lake Landing Canal is a jurisdictional surface water, and impacts will be assessed by the linear feet of canal channel impacted and the area of open water.

E.2. Potential Impacts to Waters of the United States

Temporary and permanent impacts to surface waters are estimated based on the amount of each jurisdictional area within the proposed construction easement limits. Temporary impacts include those impacts that will result from temporary construction activities associated with staging areas and/or temporary detours. These temporary impact areas will be restored to their original condition after the project has been completed. Permanent impacts are those areas that will be in the final construction limits and/or the final right-of-way of the new structure and approaches. Potential wetland and surface water impacts are illustrated in Table 3.

Table 3
Potential Impacts to Jurisdictional Surface Waters

JURISDICTIONAL AREAS	ALT A		ALT B	ALT C
	Impacts	Temporary Impacts*	Impacts	Impacts
E1UB2Lx Surface Water acres (hectares)	0.04 (0.02)	0.08 (0.03)	0.12 (0.05)	0.12 (0.05)
TOTAL FOR ALT: acres (hectares)	**0.12 (0.05)**		**0.12 (0.05)**	**0.12 (0.05)**
Canal Channel Impacts in Linear feet (meters)	40 (12)	75 (23)	115 (35)	80 (24.4)
TOTAL FOR ALT: feet (meters)	**115 (35)**		**115 (35)**	**80 (24.4)**

* Note: Temporary detour impacts are based on the portion of the onsite detour not included in the final construction limits for the permanent structure.

These potential impacts are calculated based on the proposed right-of-way limits and include open water areas that may be spanned by the new bridge and the bridge associated with the temporary on-site detours. The amounts depicted in Table 3 should be considered worst-case scenarios. Most impacts can be avoided by using BMP's and not working directly in streams.

E.3. Permits

This project is being processed as a Categorical Exclusion (CE) under Federal Highway Administration (FHWA) guidelines. It is anticipated that the COE will issue Nationwide Permit (NWP) #23 [33 CFR 330.5(a)(23)] and the DWQ will issue the General 401 Water Quality Certification for this project due to its minimal impact. In the event that NWP #23 will not suffice, minor impacts attributed to bridging and associated approach improvements are expected to qualify under General Bridge Permit 031 issued by the Wilmington COE District. Notification to the Wilmington COE office is required if this general permit is utilized. NWP #33 should be used if temporary structures, work and discharges, including cofferdams are necessary for this project. Bridge replacement or construction over navigable waters used for commerce or that have a maintained navigation channel may require United States Coast Guard (USCG) authorization pursuant to 33 CFR 114-115.

Hyde County is a coastal county and certain areas known as Areas of Environmental Concern (AECs) are under the additional jurisdiction of the Coastal Area Management Act (CAMA) as regulated by the N.C. Coastal Resources Commission (CRC) and the N.C. Division of Coastal Management (NCDCM). Activities that impact AECs require CAMA approval through the NCDCM. Portions of the project study area will qualify as an AEC because of the following four criteria defining CAMA'a AECs: 1) public trust waters; 2) estuarine waters; 3) coastal shorelines; and 4) coastal wetlands. Public trust waters are the coastal waters and submerged lands that every North Carolinian has the right to use. These areas often overlap with estuarine waters, but also include many "inland" fishing waters. Estuarine waters are the state's oceans, sounds, tidal rivers and their tributaries, which stretch across coastal North Carolina and link to the other

parts of the estuarine system: public trust areas, coastal wetlands and coastal shorelines. Coastal shorelines include all lands within 75 feet (23 m) of the normal high water level of estuarine waters. Coastal wetlands include any marsh in the 20 coastal counties that regularly or occasionally flood by lunar or wind tides, and include one or more of the ten listed CAMA plant species.

Lake Landing Canal is described as tidal salt waters under it's Best Usage Classification and will therefore qualify as estuarine waters under CAMA's AEC criteria. The land surrounding the canal may also be considered coastal shoreline pursuant to CAMA's AEC criteria; however, this designation may be insignificant due to the disturbed nature of the project study area surrounding the canal. CAMA authorization and/or concurrence will be required for this project.

E.4. Tar-Pamlico River Buffer Rules

Since the project study area is within the Tar-Pamlico River Drainage Basin, jurisdictional surface waters are subject to the Tar-Pamlico River Riparian Buffer Rules. The Buffer Rules apply to a 50 ft (15 m) wide riparian buffer directly adjacent to surface waters in the Tar-Pamlico River Drainage Basin. This includes intermittent streams, perennial streams, lakes, ponds, and estuaries that are depicted on either USGS topographic maps or county soil survey maps, but does not include jurisdictional wetlands (non-surface waters) regulated under Section 404 of the Clean Water Act. Lake Landing Canal is mapped on the USGS map and the Hyde County soils map and are subject to the Buffer Rules. The riparian buffer consists of two distinct zones. Zone 1 comprises a 30 ft (9 m) wide area adjacent to the surface water that can not be disturbed except for those specific activities that are allowed by the Buffer Rules. Zone 2 comprises a 20 ft (6 m) wide area adjacent to Zone 1 that is to be left undisturbed except for those activities specifically allowed by the Buffer Rules.

Activities in the buffer area beyond the footprint of the existing use as classified as either "exempt", "allowable"," allowable with mitigation", or " prohibited." Table 4 provides a list of activities that may be subject to Buffer Rules within the project study area along with their classifications. Depending upon project alternatives, not all of the uses listed may apply, and other uses not listed here, such as utility crossings and roadside drainage ditches, among others, may be regulated under the Buffer Rules. Guidelines will be consulted in their entirety to review all project related uses subject to the Buffer Rules. Bridge replacements are allowable activities under the Buffer Rules.

Activities deemed "exempt" will be designed, constructed, and maintained to minimize soil disturbance and to provide the maximum water quality protection practicable. "Allowable" activities may proceed within the riparian buffer provided that there are no practicable alternatives to the requested use. Prior to initiating impacts, written authorization from the DWQ or delegated local authority is required. Activities deemed "allowable with mitigation" may proceed within the riparian buffer if there are no practicable alternatives to the requested to the requested use and an appropriate mitigation strategy has been approved. Written authorization from the DWQ or delegated local authority is required. "Prohibited" activities, none of which are listed above, may not proceed within the riparian buffer unless a variance is granted from the DWQ or delegated local authority.

Table 4
Activities That May Be Subject To the Buffer Rules in the Project Study Area

Use	Exempt	Allowable	Allowable With Mitigation	Prohibited
Bridges		X		
Road crossings that impact less than or equal to 40 linear ft (12 m)	X			
Road crossings that impact greater than 40 linear feet (12 m) but less than or equal to 150 linear feet (46 m) or 0.33 acres (0.13 ha) of riparian area.		X		
Road crossings that impact greater than 150 linear feet (46 m) or greater than 0.33 acres (0.13 ha) of riparian buffer			X	
Temporary roads used for bridge construction or replacement provided that restoration activities such as soil stabilization and revegetation occur immediately after construction.		X		

E.5. Mitigation Evaluation

Avoidance – Each alternate contains jurisdictional open water areas, which will be subject to impact. However, open water will be bridged from high ground to high ground such that no fill will be placed in the Waters of the United States for any of the alternatives. Each alternate also contains riparian buffers, which will be subject to impact resulting from change of use from maintained right-of-way to impervious surface.

Minimization – Further efforts to minimize impacts to surface waters will be made during the final design phase of this project.

Mitigation - Compensatory mitigation is not proposed for this project due to the limited nature of project impacts. However, BMPs will be used in an effort to minimize impacts, including avoiding placing staging areas within wetlands. Temporary impacts associated with the construction activities could be mitigated by replanting disturbed areas with native species and removal of any temporary structures associated with the on-site detour. Mitigation may be required for the potential buffer impacts based on Table 4.

F. Rare and Protected Species

F.1. Federal Protected Species

Species with the federal classification of Endangered (E) or Threatened (T), or officially proposed (P) for such listing, are protected under the Endangered Species Act (ESA) of 1973, as amended (16 U.S.C. 1531 *et seq.*). Table 5 shows the federally protected species for Hyde County (USFWS list dated April 12, 2002):

American alligator - American alligator is listed as threatened based on the similarity in appearance [T(SA)] to other federally-listed crocodilians; however, there are no other crocodilians within North Carolina. American alligators can be found in a variety of freshwater to estuarine aquatic habitats including swamp forests, marshes, large streams and canals, and ponds and lakes (Martof *et al.* 1980).

BIOLOGICAL CONCLUSION: None Required

Potential habitat for American alligator exists within the project study area. Construction activities may temporarily displace any American alligators in the vicinity; however, no long-term impact to the American alligator is anticipated as a result of this project.

Table 5
Federally Protected Species for Hyde County

Common Name	Scientific Name	Status	Biological Conclusion
American alligator	*Alligator mississippiensis*	T(S/A)	None required
Red wolf	*Canis rufus*	EXP	No effect
Loggerhead sea turtle	*Caretta caretta*	T	No effect
Piping plover	*Charadrius melodus*	T	No effect
Green sea turtle	*Chelonia mydas*	T	No effect
Leatherback sea turtle	*Dermochelys coriacea*	E	No effect
Hawksbill sea turtle	*Eretomochelys imbricata*	E	No effect
Bald eagle	*Haliaeetus leucocephalus*	T	No effect
Kemps' ridley sea turtle	*Lepidochelys kempii*	E	No effect
Red-cockaded woodpecker	*Picoides borealis*	E	No effect
Manatee	*Trichechus manatus*	E	No effect
Sensitive joint-vetch	*Aeschynomene virginica*	T	No effect
Seabeach amaranth	*Amaranthus pumilus*	T	No effect

Endangered (E) – any native or once-native species in danger of extinction throughout all or a significant portion of its range.
Threatened (T) - any native or once-native species which is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range.
Threatened (T(S/A)) – a species carrying the threatened status due to having a similar appearance to another listed species.
Extirpated (EXP) – a species that has been destroyed or eradicated from all or a significant portion of its range.

Red wolf - The red wolf is a medium sized mammal that resembles the coyote but is larger and more robust. Adults measure 4.5 to 5.5 ft (1.4 to 1.7 m) in length, and weigh from 35 to 90 pounds (15.9 to 40.8 kg). This species is slightly smaller than the gray wolf (*C. lupus*) (Webster *et al.* 1985). The red wolf

prefers habitat that provides large amounts of cover, including both upland and swamp forests, coastal marshes, and prairies (Webster *et al.* 1985). The red wolf was once found throughout the southeastern United States, but was extirpated from most of its range by 1920. Captive-bred animals were released at Alligator River National Wildlife Refuge in the fall of 1987 (USFWS 1990).

BIOLOGICAL CONCLUSION: No Effect

This species requires large forested tracts away from human disturbance. The project study area is surrounded by agricultural fields and roadways. This habitat is not suitable for the red wolf and the project should not affect any red wolf populations. An updated NHP records search on April 12, 2002 did not document any occurrences of the red wolf within 1 mile (1.6 km) of the project study area.

Loggerhead sea turtle - The loggerhead sea turtle is the most common sea turtle on the coast of the Carolinas. This species averages 31 to 47 inches (79 to 120 cm) in length and weighs from 170 to 500 pounds (77 to 227 kg) (Martof *et al.* 1980). The loggerhead sea turtle is basically temperate or subtropical in nature, and is primarily oceanic, but it may also be found in fresh water bays, sounds, and large rivers. This species occurs along the coast of North Carolina from late April to October. Preferred nesting habitat is ocean beaches, generally south of Cape Lookout. Traditionally, the largest concentration of loggerhead sea turtle nests each year is on Smith Island, at the mouth of the Cape Fear River (Palmer and Braswell 1995).

BIOLOGICAL CONCLUSION: No Effect

Suitable habitat for the loggerhead sea turtle does not exist in the project study area. An updated NHP records search on April 12, 2002 did not document any occurrences of the loggerhead sea turtle within 1 mile (1.6 km) of the project study area. No loggerhead sea turtle populations should be impacted by the project.

Piping plover - Piping plovers are small shorebirds that occur along beaches above the high tide line, sand flats at the ends of sand spits and barrier islands, gently sloping foredunes, blowout areas behind primary dunes, and washover areas cut into or between dunes (FWS 1996a). Nests are typically found on open, wide sandy stretches of beach similar to those associated with inlets and capes.

BIOLOGICAL CONCLUSION: No Effect

There are no sand flats or beaches located in the project study area. Therefore, no suitable habitat exists for the piping plover. An updated NHP records search on April 12, 2002 did not document any occurrences of the piping plover within 1 mile (1.6 km) of the project study area. This project should not affect any piping plover populations.

Green sea turtle - The green sea turtle is a medium to large turtle 30 to 60 inches (76 to 152 cm) long, 220 to 650 pounds (100 to 295 kg) in weight) with a smooth, heart-shaped shell (Martof *et al.* 1980). They are most commonly found in the Caribbean where they breed, although individuals, usually young individuals, are occasionally found along the North Carolina coast. Green sea turtles are omnivorous, primarily eating jellyfish and seaweed. Preferred nesting habitat is ocean-fronting beaches.

BIOLOGICAL CONCLUSION: No Effect

Suitable habitat for the green sea turtle does not exist in the project study area. An updated NHP records search on April 12, 2002 did not document any occurrences of the green sea turtle within 1 mile (1.6 km) of the project study area.

No green sea turtle populations should be impacted by the project.

Leatherback sea turtle - The leatherback sea turtle is distinguished by its large size (46- to 70-inch [116.8 to 177.8 cm] carapace) and a shell of soft, leathery skin. This species is primarily tropical in nature, but the range may extend to Nova Scotia and Newfoundland (Martof *et al.* 1980). The leatherback sea turtle is a powerful swimmer, often seen far from land; however, it sometimes moves into shallow bays, estuaries, and even river mouths. Its preferred food is jellyfish, although the diet includes other sea animals and seaweed. The leatherback sea turtle generally nests on sandy, tropical beaches.

BIOLOGICAL CONCLUSION: No Effect

Suitable habitat for the leatherback sea turtle does not exist in the project study area. An updated NHP records search on April 12, 2002 did not document any occurrences of the leatherback sea turtle within 1 mile (1.6 km) of the project study area. No leatherback sea turtle populations should be impacted by the project.

Hawksbill sea turtle – The hawksbill sea turtle is a small to medium-sized marine turtle. This species averages 34 inches (87 cm) in curved carapace length and 176 pounds (80 kg) in weight. This species is widely distributed in the Caribbean Sea and western Atlantic Ocean but sightings north of Florida are rare. Hawksbill sea turtles feed primarily on sponges but also feed on eggs of pelagic fish and seaweed. Preferred nesting habitat is ocean-fronting beaches in tropical oceans of the world (National Marine Fisheries Service 1993).

BIOLOGICAL CONCLUSION: No Effect

Suitable habitat for the hawksbill sea turtle does not exist in the project study area. An updated NHP records search on April 12, 2002 did not document any occurrences of the hawksbill sea turtle within 1 mile (1.6 km) of the project study area. No hawksbill sea turtle populations should be impacted by the project.

Bald eagle - The bald eagle occurs throughout North America, primarily in association with large lakes and coastal bays and sounds where food is plentiful. Mature eagles (usually 4 to 6 years and older) are identified by a white tail and head, dark brown to black body and wingspreads to 6 feet (1.8 m), and yellow eyes, bill, and feet. Juveniles are uniformly chocolate-brown and sometimes have whitish mottling on their tail, belly, and wing linings. As the birds mature they become lighter in color and the mottling increases until they acquire their adult plumage pattern. Nest sites occur close to feeding grounds in large trees (predominately pine or cypress), either living or dead. Eagles are opportunistic hunters and scavengers, feeding on a wide variety of aquatic-dependent organisms including fish, snakes, small mammals and large water birds. Their primary source of food is carrion and fish taken from ospreys (Potter *et al.* 1980).

BIOLOGICAL CONCLUSION: No effect

No bald eagles or potential nesting habitat was located in the project study area. An updated NHP records search on April 12, 2002 did not document any occurrences of the bald eagle within 1 mile (1.6 km) of the project study area. No impacts to the bald eagle should occur as a result of this project.

Kemp's ridley sea turtle - The Kemp's ridley sea turtle is the smallest of the sea turtles, measuring only 23 to 30 inches (58.4 to 76.2 cm) at the carapace. It is generally considered the most endangered species of sea turtle in the world (Palmer and Braswell 1995). This species ranges from the Gulf of Mexico and the east coast, to Nova Scotia and Europe. In addition to its small size, this species is discernible by the heart shaped carapace and gray coloration. This sea turtle prefers shallow coastal waters, including sounds and the lower portions of large rivers, where it feeds on crabs, shrimp, snails, clams, and some saltwater plants. Nearly all members of this species are believed to nest on a short strand of ocean beach in the state of Tamaulipas, Mexico. Only a single nesting record exists for North Carolina exists, and it comes from on Long Beach in Brunswick County in 1992. The nearest suitable nesting habitat for this species is the Outer Banks ocean beaches.

BIOLOGICAL CONCLUSION: No Effect

Suitable habitat for the Kemp's ridley sea turtle does not exist in the project study area. An updated NHP records search on April 12, 2002 did not document any occurrences of the Kemp's ridley sea turtle within 1 mile (1.6 km) of the project study area. No Kemp's ridley sea turtle populations should be impacted by the project.

Red-cockaded woodpecker - This small woodpecker measuring 7 to 8.5 inches (17.8 to 21.6 cm) long has a black head, prominent white cheek patch, and black-and-white barred back. Males often have red markings (cockades) behind the eye, but the cockades may be absent or difficult to see (Potter *et al.* 1980). Primary nest sites for RCWs include open pine stands greater than 60 years of age with little or no mid-story development. Foraging habitat is comprised of open pine or pine/mixed hardwood stands 30 years of age or older (Henry 1989). Primary habitat consists of mature to over-mature southern pine forests dominated by loblolly (*Pinus taeda*), long-leaf (*P. palustris*), slash (*P. elliotii*), and pond (*P. serotina*) pines. Nest cavities are constructed in the heartwood of living pines, generally older than 70 years, that have been infected with red-heart disease. Nest cavity trees tend to occur in clusters, which are referred to as colonies. The woodpecker drills holes into the bark around the cavity entrance, resulting in a shiny, resinous buildup around the entrance that allows for easy detection of active nest trees. Pine flatwoods or pine-dominated savannas which have been maintained by frequent natural fires serve as ideal nesting and foraging sites for this woodpecker. Development of a thick understory may result in abandonment of cavity trees.

BIOLOGICAL CONCLUSION: No Effect

Suitable stands of pine trees do not exist in the project study area. An updated NHP records search on April 12, 2002 did not document any occurrences of the red-cockaded woodpecker within 1 mile (1.6 km) of the project study area. This project should not affect any red-cockaded woodpecker populations.

Manatee - The manatee is a large, gray or brown aquatic mammal that averages 10 to 13 ft (3 to 4 m) in length and weighs up to 1,000 pounds (454 kg). During summer months manatees migrate from their normal Florida wintering areas to as far north as coastal Virginia. These mammals inhabit warm waters, both fresh and salt, where their diet consists mostly of aquatic vegetation (Webster *et al.* 1985).

BIOLOGICAL CONCLUSION: No Effect

Suitable habitat for the manatee does not exist within the project study area. This species is a rare transient in North Carolina waterbodies with an oceanic connection. An updated NHP records search on April 12, 2002 did not document any occurrences of the manatee within 1 mile (1.6 km) of the project study area. This project should not effect any West Indian manatee populations.

Sensitive joint-vetch – Sensitive joint-vetch is a robust, bushy-branched, annual legume often exceeding 3 feet (0.9 m) in height. The alternate, compound leaves are even-pinnate, approximately 1.25 to 2 inches (3.2 to 5.1 cm) wide, with 30 to 56 toothless leaflets (Radford *et al.* 1968). Flowers are bright greenish-yellow with red veins, about 0.5 inch (1.3 cm) long, and are subtended by bractlets with toothed margins. The flowers are produced on few-flowered racemes from July to October. The jointed legume (loment) is about 2 inches (5.1 cm) long, has 6 to 10 segments, and a 0.5 to 1.0 inch-long (1.3 to 2.5 cm) stalk. Habitat for this species in North Carolina consists of moist to wet coastal roadside ditches and moist fields that receive tidal influence (USFWS 1994). This species seems to favor microhabitats where there is a reduction in competition from other plant species, and usually some form of soil disturbance (USFWS 1994).

BIOLOGICAL CONCLUSION: No Effect

A systematic survey for sensitive joint-vetch was performed on August 20, 2001. Prior to surveying the project study area, a reference population of sensitive joint-vetch located along US 264 in Hyde County was visited to confirm the species flowering status and growth stage. The individuals at the reference site were flowering and positively identified. The systematic survey of the project study area involved pedestrian transects along the canal and a roadside ditch. The habitat along the canal consisted of maintained roadside right-of-way on the west side of the canal and a thick herbaceous fringe along the east side of the canal. No sensitive joint-vetch was located within the project study area. An updated NHP records search on April 12, 2002 did not document any occurrences of sensitive joint-vetch within 1 mile (1.6 km) of the project study area. However, this species has been documented approximately 2.0 miles (3.2 km) north of the project study area along US 264 near Lake Landing. This project should not impact any sensitive joint-vetch.

Seabeach amaranth – Seabeach amaranth is an annual herb that grows on barrier island beaches. It is a succulent annual that is sprawling or trailing and may reach 2 feet (0.6 m) or more in length. Inconspicuous flowers and fruits are produced in the leaf axils, typically beginning in July and continuing until frost. Primary habitat for seabeach amaranth consists of bare sand, especially on over wash flats at accreting ends of islands, and lower foredunes and upper strands of non-eroding beaches. The only remaining large populations are in coastal North Carolina (USFWS 1996b).

BIOLOGICAL CONCLUSION: No Effect

This project will not affect seabeach amaranth because there is no suitable habitat (barrier beaches) within the project study area. An updated NHP records search on April 12, 2002 did not document any occurrences of seabeach amaranth within 1 mile (1.6 km) of the project study area. No impacts to this species should result from this project.

F.2. Federal species of concern

The April 12, 2002 USFWS list also includes a category of species designated as "Federal species of concern" (FSC). The FSC designation provides no federal protection under the ESA for the species listed. The presence of potential suitable habitat (Amoroso 1999, LeGrand and Hall 1999) within the project study area has been evaluated for the following FSC species listed for Hyde County as seen in Table 6.

Table 6
Federal Species of Concern (FSC) for Hyde County, NC.

Common Name	Scientific Name	Potential Habitat	State Status *
Black rail	*Laterallus jamaicensis*	Y	SR
Dune blue curls	*Trichostema* sp.	N	C

Candidate(C) – a species for which USFWS has enough information on file to support proposals for listing as endangered or threatened.
Significantly Rare (SR) – species which are very rare, generally with 1-20 populations in the state, and generally reduced in numbers by habitat destruction.

NHP files document an occurrence of one FSC within 3.0 miles (4.8 km) of the project study area. The black rail has been documented 2.0 miles (3.2 km) south of the project study area near Wysocking Bay. Habitat for this species consists of brackish marshes (Amorose 1999). No FSC were identified during the site visit.

F.3. State Protected Species

Plant and animal species which are on the North Carolina state list as Endangered (**E**), Threatened (**T**), or Special Concern (**SC**), receive limited protection under the North Carolina Endangered Species Act (G.S. 113-331 *et seq.*) and the North Carolina Plant Protection Act of 1979 (G.S. 106-202 *et seq.*).

An updated NHP records search on April 12, 2002 was conducted by ESI. NHP records indicated that in addition to the aforementioned FSC, one other state-listed species has been documented within 3.0 miles (4.8 km) of the project study area. The Carolina salt marsh snake was found 2.0 miles (3.2 km) south, and 2.5 miles (4.0 km) southeast of the project study area. Habitat for this species includes salt or brackish marshes (LeGrand and Hall 1999).

VI. CULTURAL RESOURCES

A. Compliance Guidelines

This project is subject to compliance with Section 106 of the National Historic Preservation Act of 1966, as amended, and implemented by the Advisory Council on Historic Preservation's Regulations for Compliance with Section 106, codified as 36 CFR Part 800. Section 106 requires Federal agencies to take into account the effect of their undertakings (federally funded, licensed, or permitted) 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 if Potential Effects (APE) was conducted by the historic architecture consulting firm, Mattson, Alexander, and Associates, Inc. in July 2001. All structures over fifty years of age within the APE were photographed and a report was prepared by the consultants on November 8, 2001. The report concluded that the entire bridge replacement project was within the boundaries of the Lake Landing Historic District, a community listed in the National Register of Historic Places. The report specifically addressed the contributing/non-contributing status of five resources within the historic district and these are: Bridge No. 6 (non-contributing), Watson's Store (contributing), Fulford-Watson House (contributing), George Israel Watson House (contributing), and the Great Ditch (contributing). The report was then forwarded to FHWA and the State Historic Preservation Office (HPO) for their concurrence. HPO concurred with the report in a letter dated January 7, 2002, a copy of which is located in the appendix. In a meeting between NCDOT, FHWA, and HPO on January 8, 2002 it was determined that Alternate A would have no adverse effect upon the historic district provided NCDOT met certain environmental commitments and Alternate B would have an adverse effect on the historic district. A third alternate was developed and on February 6, 2002 NCDOT, FHWA, and HPO met again to discuss Alternate C. At that meeting it was determined that Alternative C would have no effect on the Lake Landing Historic District provided that NCDOT use wooden (or Glulam Timber) railings on the concrete deck bridge and that NCDOT provide bridge design plans prior to construction to HPO for their comment. In a later meeting on July 18, 2002, the bridge railing design was modified. It was determined at that meeting that Alternate C would have no effect on the Lake Landing Historic District provided that NCDOT (1) use a 2 bar steel bridge rail in aluminum color, (2) restore landscaping disturbed during construction, and (3) provide HPO details of the guardrail design prior to final plans for HPO comment. A copy of the signed concurrence form is included in the Appendix. Construction of Alternate C involves NCDOT in a 4(f) situation since it requires use of land from an eligible property and the Nationwide Section 4(f) evaluation follows the Agency Comments section of this document.

C. Archaeology

The State Historic Preservation Officer (SHPO), in a memorandum dated May 28, 2002, recommended that "no archaeological investigation be conducted in connection with this project". A copy of the SHPO memorandum is included in the Appendix.

VII. ENVIRONMENTAL EFFECTS

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

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

Replacement of Bridge No. 6 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 should have an overall positive impact due to the improvement of existing, poor bridge conditions.

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

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

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.

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

The studied route does not contain any bicycle accommodations, nor is it a designated bicycle route; therefore, no bicycle accommodations have been included as part of this project.

This project has been coordinated with the United States Department of Agriculture, Natural Resources Conservation Service. The Farmland Protection Policy Act requires all federal agencies or their representatives to consider the potential impact to prime and important farmland soils for all land acquisition and construction projects. This project is not expected to have an adverse impact on farmlands.

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

The proposed project will require right-of-way acquisition or easement from land protected under Section 4(f) of the Department of Transportation Act of 1966. The preferred alternate will have the least impact on the historic district and historic properties in the vicinity of the project. Section 4(f) documentation is provided in Section X of this report. It is unlikely that any archaeological resources listed in or eligible for listing in the National Register of Historic Places will be affected by this project.

No adverse effects to air quality are expected to result from this project. This project is an air quality "neutral" project, so it is not required to be included in the regional emissions analysis (if applicable), and a project level CO analysis is not required. Since the project is located in an attainment area, 40 CFR Part 51 is not applicable. If vegetation or wood debris is disposed of by open burning, it 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 and 1990 Clean Air Act Amendments and the National Environmental Policy Act. This evaluation completes the assessment requirements for air quality, and no additional reports are required.

Ambient noise levels may increase during the construction of this project; however this increase will be only temporary and usually confined to daylight hours. There should be no notable change in traffic volumes after this project is complete. Therefore, this project will have no adverse effect on existing noise levels. Noise receptors in the project area will not be impacted by this project. This evaluation completes

the assessment requirements for highway noise set forth in 23 CFR Part 772. No additional reports are required.

An examination of records at the North Carolina Department of Environment and Natural Resources, Division of Environmental Management, Groundwater Section and the North Carolina Department of Human Resources, Solid Waste Management Section revealed no underground storage tanks or hazardous waste sites in the project area.

Hyde County is a participant in the National Flood Insurance Regular Program. The project is located in a Detailed Study Area. There is no increase anticipated in floodplain levels as a result of the proposed project. Therefore, the proposed project is not expected to have any adverse effect on adjacent properties. Refer to Figure 8.

Geotechnical borings for the bridge foundation will be necessary.

Based on the assessment of the existing human and natural environment, it is concluded that no significant adverse environmental effect will result from the replacement of Bridge No. 6.

VIII. PUBLIC INVOLVEMENT

Due to the isolated nature of this bridge replacement project, no formal public involvement program was initiated. Efforts were undertaken early in the planning process to contact local officials to involve them in the project development with a scoping letter.

IX. AGENCY COMMENTS

Agency comments are summarized below. Letters from the commenting agencies are included in the appendix.

National Marine Fisheries Services (NMFS): The NMFS recognizes the NCDOT's efforts to minimize losses of wetland and avoid impediments to upstream migration of anadromous fishes by replacing bridges with bridges. We also note the commitment to a seasonal restriction on work in waters that provide anadromous fish spawning and nursery habitat.

Response: See response below to NCWRC comment.

North Carolina Wildlife Resources Commission (NCWRC): Due to the potential for anadromous fish at this location, NCDOT should closely follow the "Stream Crossing Guidelines for Anadromous Fish Passage". This includes an in-water moratorium from February 15 to June 15.

Response: The NCDOT will observe a moratorium on in-water work between February 15 to June 15 to protect fish spawning and will follow the "Stream Crossing Guidelines for Anadromous Fish Passage".

X. **SECTION 4 (f)**

NORTH CAROLINA DIVISION
FINAL NATIONWIDE SECTION 4(f) EVALUATION AND APPROVAL
FOR FEDERALLY-AIDED HIGHWAY PROJECTS WITH MINOR INVOLVEMENTS WITH HISTORIC SITES

F. A. PROJECT: **BRZ-110 (3)**

STATE PROJECT: **8.2080101**

T. I. P. NO. : **B-3858 Hyde County, NC**

Description: **Replace Bridge No. 6 on SR 1110 over Grey Ditch (Lake Landing Canal), Hyde County, NC.**

		YES	NO	
1.	Is the proposed project designed to improve the operational characteristics, safety, and/or physical condition of the existing highway facility on essentially the same alignment?	X		
2.	Is the project on new location?	X		Adjacent to and immediately south of existing roadway.
3.	Is the historic site adjacent to the existing highway?	X		
4.	Does the project require the removal or alteration of historic buildings, structures, or objects?		X	
5.	Does the project disturb or remove archaeological resources which are important to preserve in place rather than to recover for archaeological research?		X	
6.	a. Is the impact on the Section 4(f) site considered minor (i.e. no effect, no adverse effect)?	X		
	b. If the project is determined to have "no adverse effect" on the historic site, does the Advisory Council on Historic Preservation object to the determination of "no adverse effect"?		X	
7.	Has the SHPO agreed, in writing, with the assessment of impacts and the proposed mitigation?	X		
8.	Does the project require the preparation of an EIS?		X	

ALTERNATIVES CONSIDERED AND FOUND NOT TO BE FEASIBLE AND PRUDENT

The following alternatives were evaluated and found not to be feasible and prudent:

		Yes	No
1.	Do nothing	X	
	Does the "do nothing" alternative:		
	(a) correct capacity deficiencies?		X
or	(b) correct existing safety hazards?		X
or	(c) correct deteriorated conditions?		X
and	(d) create a cost or impact of extraordinary measure?	X	
2.	Improve the highway without using the adjacent historic site	X	
	(a) Have minor alignment shifts, changes in standards, use of retaining walls, etc., or traffic management measures been evaluated?	X	
	(b) The items in 2(a) would result in: (circle, as appropriate)		
	(i) substantial adverse environmental impacts		
	or (ii) substantial increased costs		
	or (iii) unique engineering, transportation, maintenance, or safety problems		
	or (iv) substantial social, environmental, or economic impacts		
	or (v) a project which does not meet the need		
	or (vi) impacts, costs, or problems which are of extraordinary magnitude		

		Yes	No
3.	Build an improved facility on new location without using the historic site.	X	

(a) An alternate on new location would result in: (circle, as appropriate)

(i) a project which does not solve the existing problems

or (ii) substantial social, environmental, or economic impacts

or (iii) a substantial increase in project cost or engineering difficulties

and (iv) such impacts, costs, or difficulties of truly unusual or unique or extraordinary magnitude

MINIMIZATION OF HARM

		Yes	No
1.	The project includes all possible planning to minimize harm necessary to preserve the historic integrity of the site.	X	
2.	Measures to minimize harm have been agreed to, in accordance with 36 CFR Part 800, by the FHWA, the SHPO, and as appropriate, the ACHP.		

3. Specific measures to minimize harm are described as follows:

1: NCDOT shall use a 2 bar steel bridge rail in aluminum color.
2: NCDOT shall restore landscaping disturbed during construction.
3: NCDOT shall provide HPO details of guardrail design prior to final plans for HPO comment.

COORDINATION

The proposed project has been coordinated with the following:

a. State Historic Preservation Officer	see appendix
b. Advisory Council on Historic Preservation	see appendix
c. Property owner	no correspondence received
d. Local/State/Federal Agencies	see appendix
e. US Coast Guard (for bridges requiring bridge permits)	not applicable

SUMMARY AND APPROVAL

The project meets all criteria included in the programmatic 4(f) evaluation approved on December 23, 1986.

All required alternatives have been evaluated and the findings made are clearly applicable to this project. There are no feasible and prudent alternatives to the use of the historic site.

The project includes all possible planning to minimize harm, and the measures to minimize harm will be incorporated in the project.

All appropriate coordination has been successfully completed with local and state agencies.

Approved:

11-13-02 Nancy C Shelton

Date FOR Gregory J. Thorpe, Ph.D
Environmental Management Director
Project Development & Environmental Analysis Branch
North Carolina Department of Transportation

11-21-02 Ronald G Lucas

Date for Nicholas L. Graf, P.E.
Division Administrator
Federal Highway Administration

XI. REFERENCES

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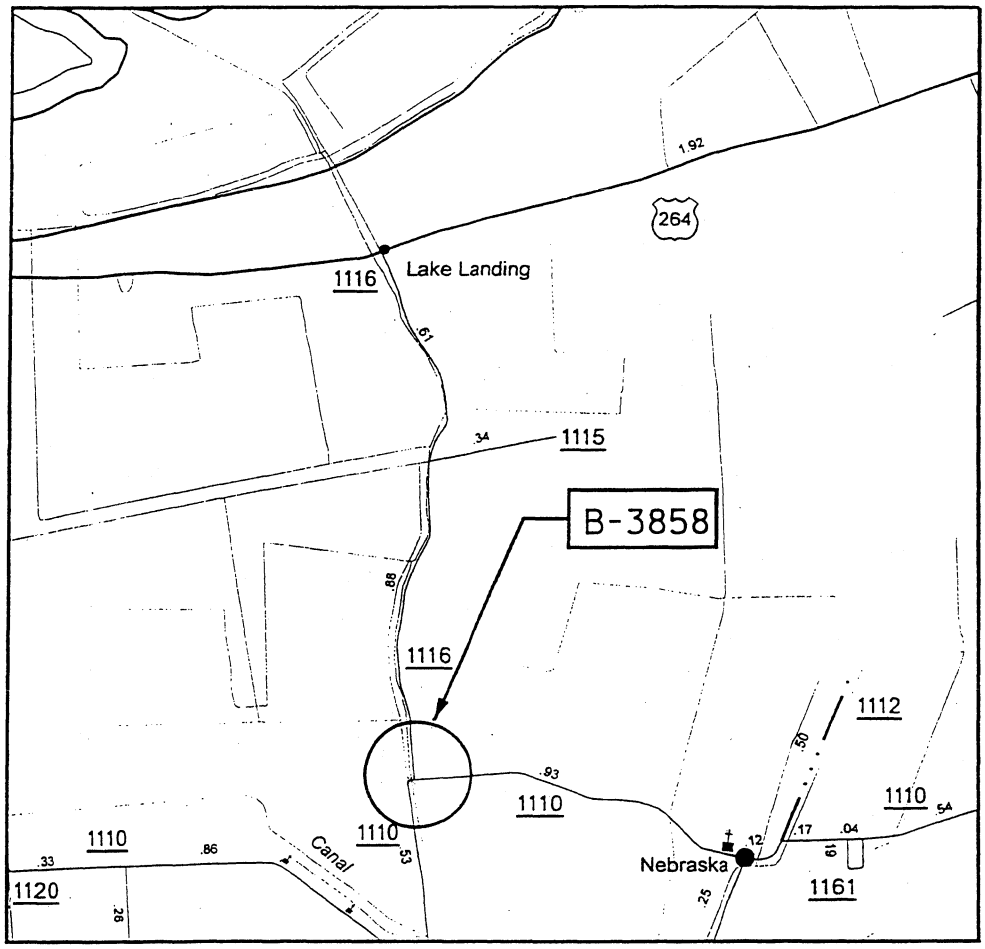
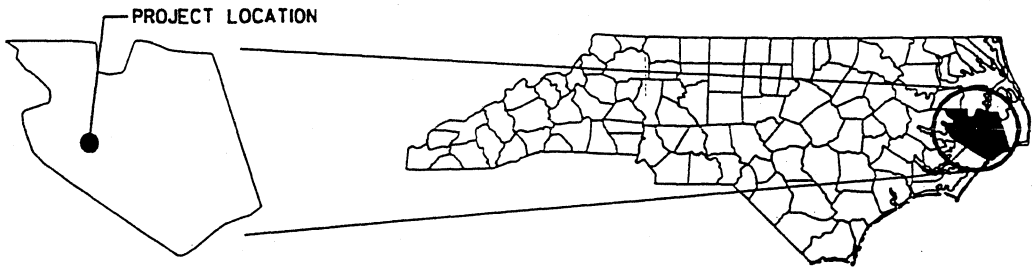
FIGURES



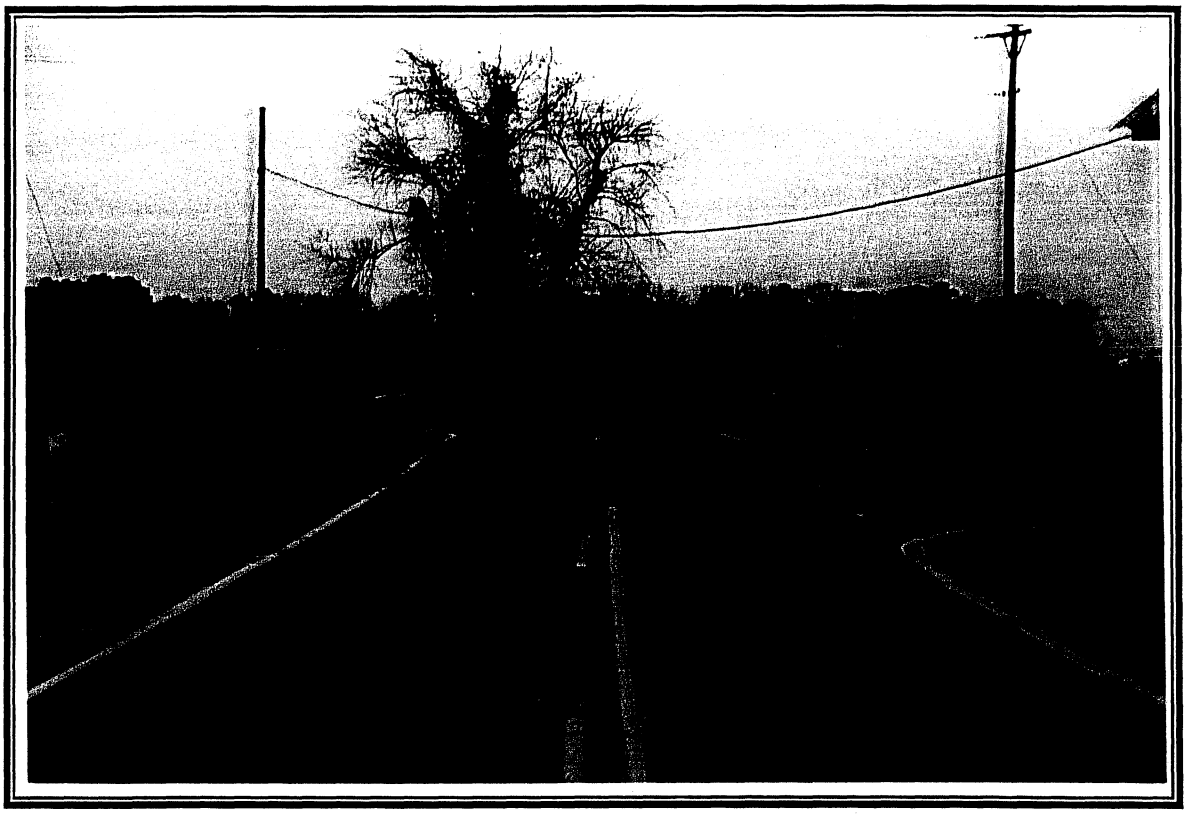


SCALE IN MILES

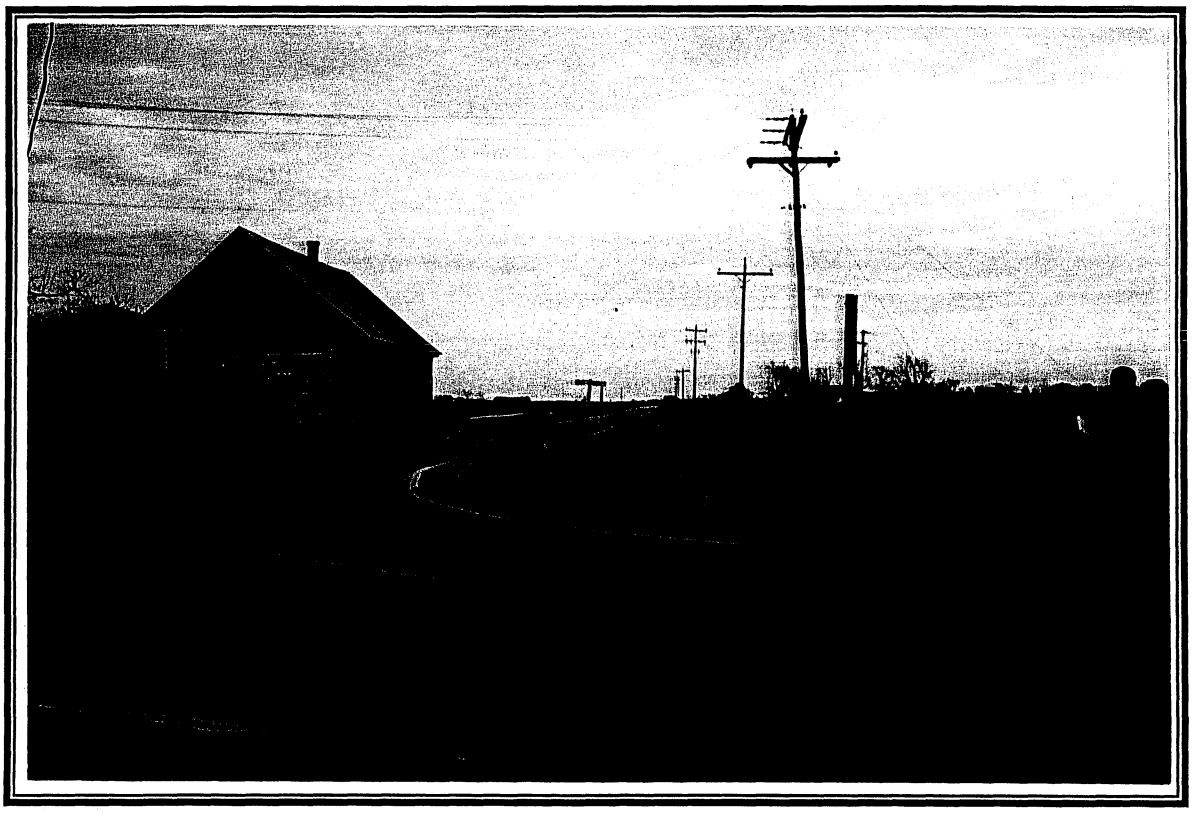
0 0.5 1

North Carolina Department of Transportation
Division of Highways
Project Development & Environmental Analysis Branch

FIGURE 1
AREA LOCATION MAP
BRIDGE NO. 6
ON SR 1110 OVER CANAL
HYDE COUNTY, NORTH CAROLINA
TIP PROJECT B-3858



ON SR 1110 LOOKING WEST AT BRIDGE NO. 6

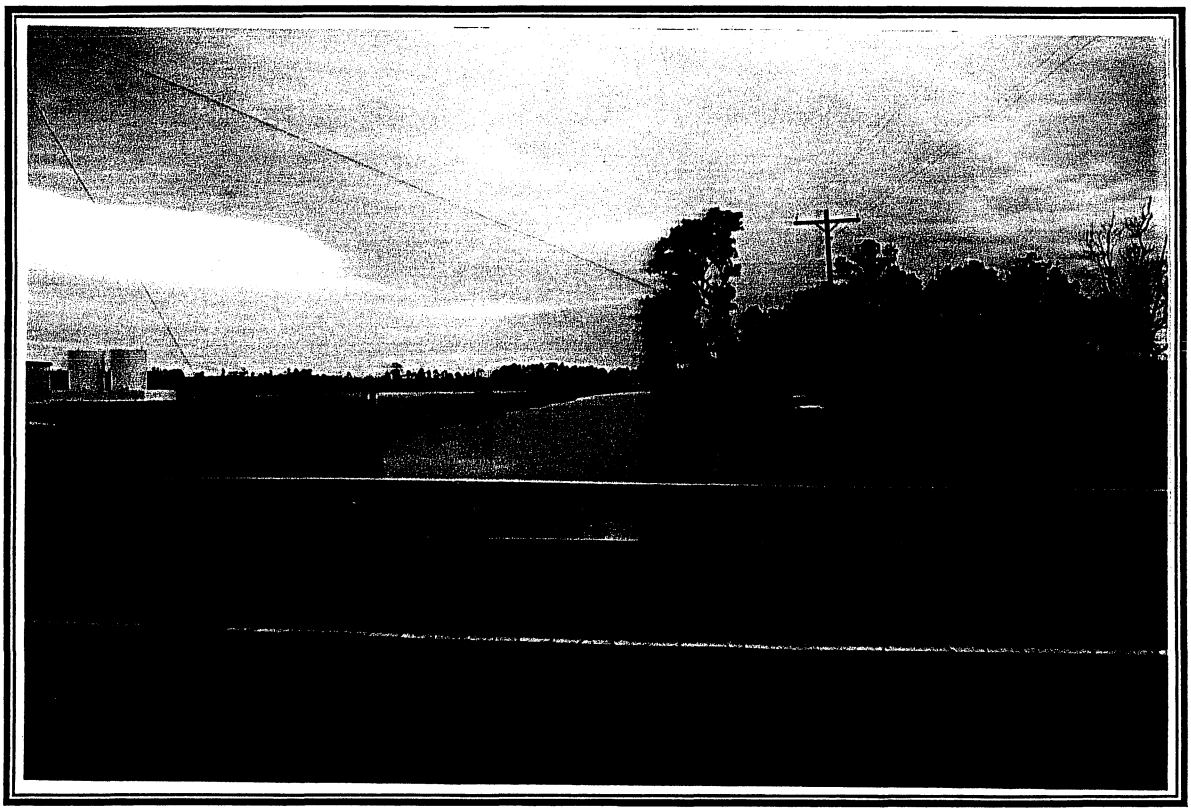


ON SR 1110 LOOKING EAST AT BRIDGE NO. 6

B-3858 HYDE COUNTY
REPLACE BRIDGE NO. 6 ON SR 1110 OVER CANAL

FIGURE 2
PROJECT PHOTOGRAPHS

ON BRIDGE NO. 6 LOOKING NORTH



ON BRIDGE NO. 6 LOOKING SOUTH

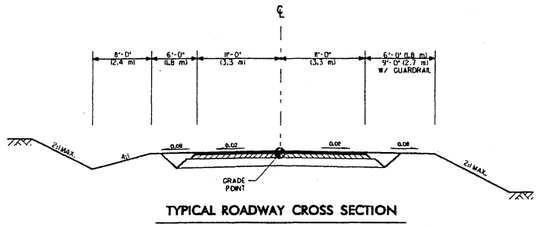
B-3858 HYDE COUNTY
REPLACE BRIDGE NO. 6 ON SR 1110 OVER CANAL

FIGURE 3
PROJECT PHOTOGRAPHS

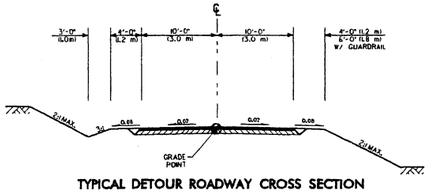
PROJECT REFERENCE NO.	SHEET NO.
B-3858	1
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

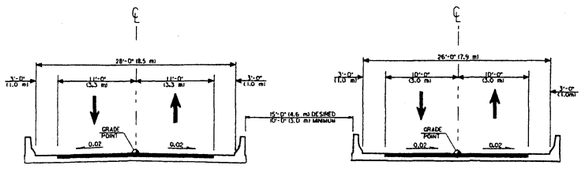
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION



TYPICAL ROADWAY CROSS SECTION



TYPICAL DETOUR ROADWAY CROSS SECTION



TYPICAL BRIDGE CROSS SECTION

TYPICAL DETOUR BRIDGE CROSS SECTION

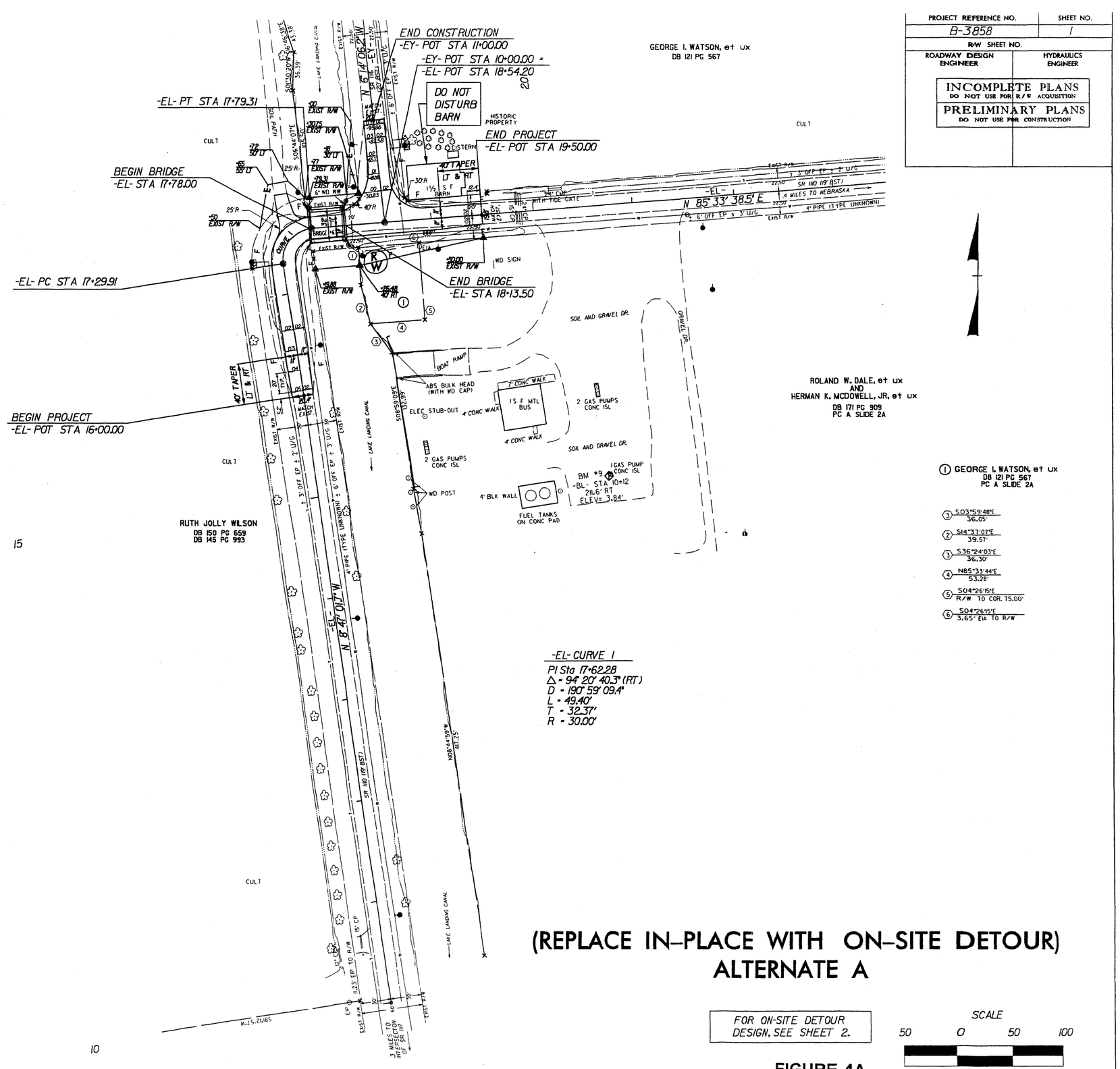
DESIGN CRITERIA

DESIGN SPEED	40 mph (65 km/h)*
POSTED SPEED	35 mph (60 km/h)
CURRENT YEAR ADT (2001)	600 vpd
DESIGN YEAR ADT (2025)	1200 vpd
% TTST ,% DUALS	3% ,2%
FUNCTIONAL CLASSIFICATION	Rural Minor Collector
TERRAIN	Flat
MAX RADIUS	468 ft (143 m)
MAXIMUM GRADE	7%
SUPERELEVATION RATE	Se - 0.08

DETOUR DESIGN CRITERIA

DESIGN SPEED	30 mph (50 km/h)*
MAX RADIUS	273 ft (83 m)
MAX GRADE	12%
SUPERELEVATION RATE	Se - 0.06

*DESIGN EXCEPTION REQUIRED



① GEORGE I. WATSON, et ux
DB 121 PG 567
PC A SLIDE 2A

③ S03°59'48"E 36.05'
② S14°37'07"E 39.57'
③ S36°24'03"E 36.30'
④ N85°33'44"E 53.28'
⑤ S04°26'15"E R/W TO COR. 75.00'
⑥ S04°26'15"E 3.65' EIA TO R/W

(REPLACE IN-PLACE WITH ON-SITE DETOUR) ALTERNATE A

FOR ON-SITE DETOUR DESIGN, SEE SHEET 2.

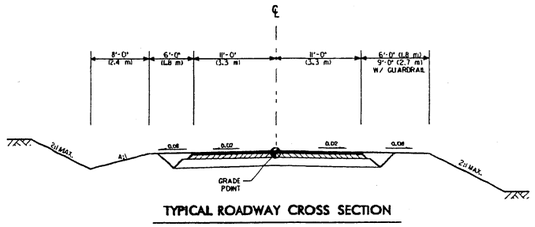
SCALE
50 0 50 100

FIGURE 4A

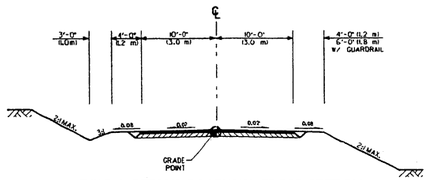
PROJECT REFERENCE NO.	SHEET NO.
B-3858	2
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

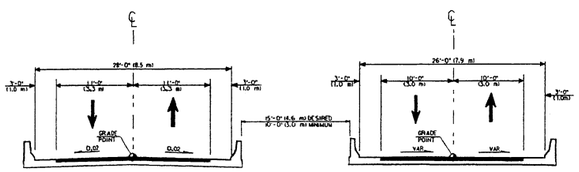
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION



TYPICAL ROADWAY CROSS SECTION



TYPICAL DETOUR ROADWAY CROSS SECTION



TYPICAL DETOUR BRIDGE CROSS SECTION

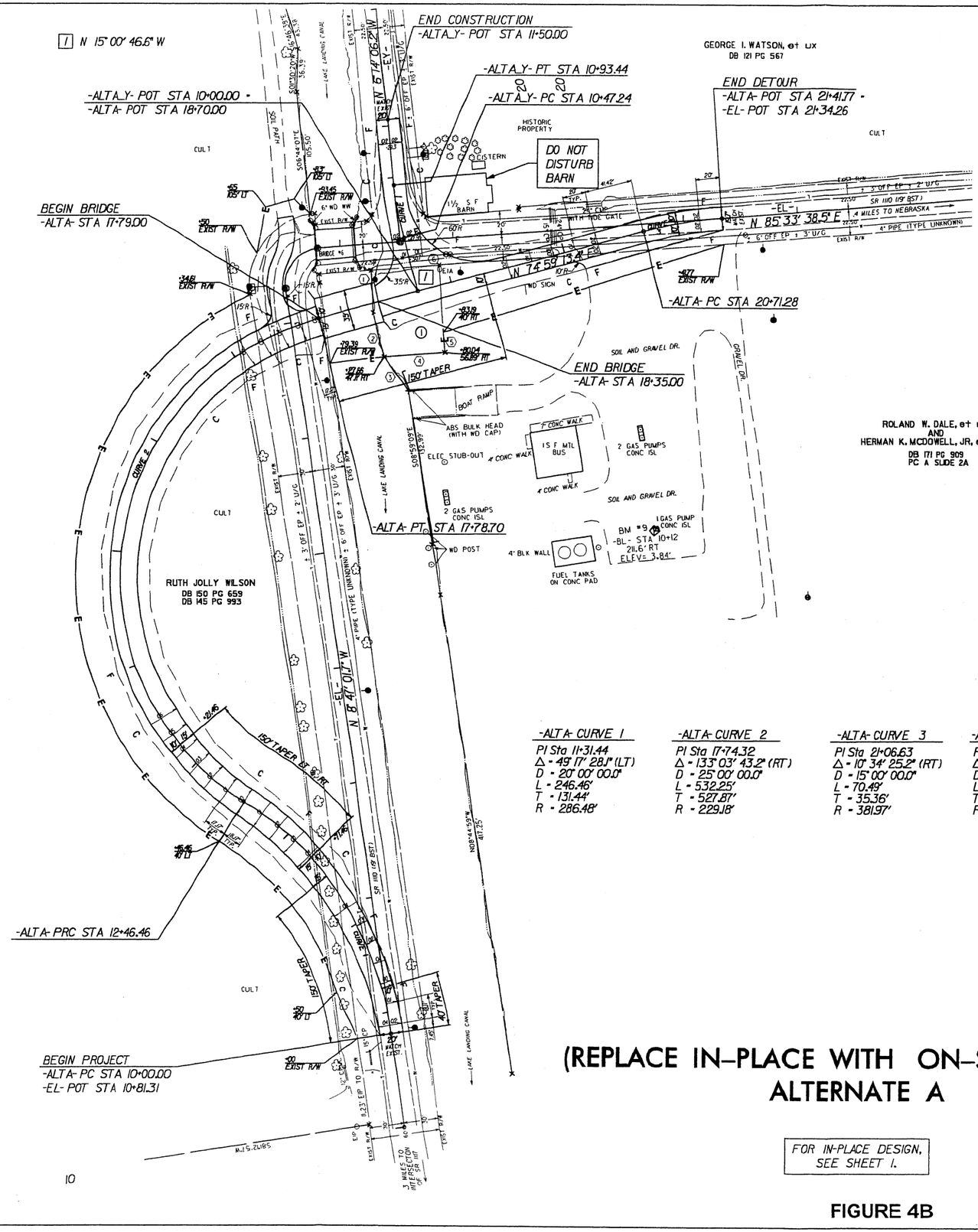
DESIGN CRITERIA

DESIGN SPEED	40 mph (65 km/h)*
POSTED SPEED	35 mph (60 km/h)
CURRENT YEAR ADT (2000)	600 vpd
DESIGN YEAR ADT (2025)	1200 vpd
% TTST ,% DUALS	3% ,2%
FUNCTIONAL CLASSIFICATION	Rural Minor Collector
TERRAIN	Flat
MAX RADIUS	468 ft (143 m)
MAXIMUM GRADE	7%
SUPERELEVATION RATE	Se - 0.08

DETOUR DESIGN CRITERIA

DESIGN SPEED	30 mph (50 km/h)*
MAX RADIUS	273 ft (83 m)
MAX GRADE	12%
SUPERELEVATION RATE	Se - 0.06

*DESIGN EXCEPTION REQUIRED



① GEORGE I. WATSON, et ux
DB 121 PG 567
PC A SLIDE 2A

1. S03°59'48"E 36.05'
2. S14°37'07"E 39.57'
3. S36°24'03"E 36.30'
4. N85°33'44"E 53.28'
5. S04°26'15"E R/W TO COR. 75.00'
6. S04°26'15"E 3.65' EIA TO R/W

-ALTA- CURVE 1
PI Sta 11+31.44
Δ = 49° 17' 28.1" (LT)
D = 20° 00' 00.0"
L = 246.46'
T = 131.44'
R = 286.48'

-ALTA- CURVE 2
PI Sta 17+74.32
Δ = 133° 03' 43.2" (RT)
D = 25° 00' 00.0"
L = 532.25'
T = 527.87'
R = 229.18'

-ALTA- CURVE 3
PI Sta 21+06.63
Δ = 10° 34' 25.2" (RT)
D = 15° 00' 00.0"
L = 70.49'
T = 35.36'
R = 381.97'

-ALTA_Y- CURVE 1
PI Sta 10+70.39
Δ = 8° 46' 40.4" (RT)
D = 19° 00' 00.0"
L = 46.20'
T = 23.14'
R = 301.56'

(REPLACE IN-PLACE WITH ON-SITE DETOUR) ALTERNATE A

FOR IN-PLACE DESIGN, SEE SHEET 1.

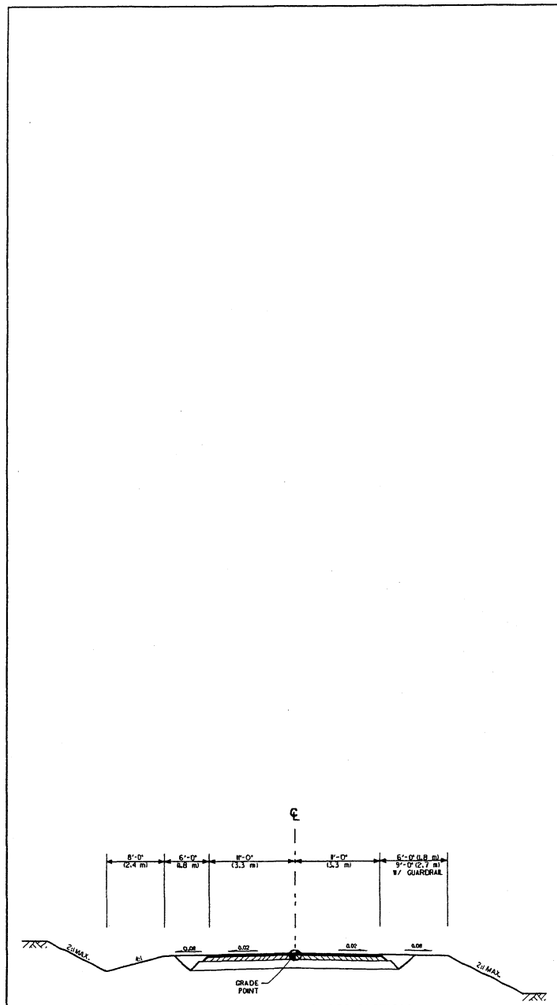
SCALE
50 0 50 100

FIGURE 4B

PROJECT REFERENCE NO.	SHEET NO.
B-3858	3
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



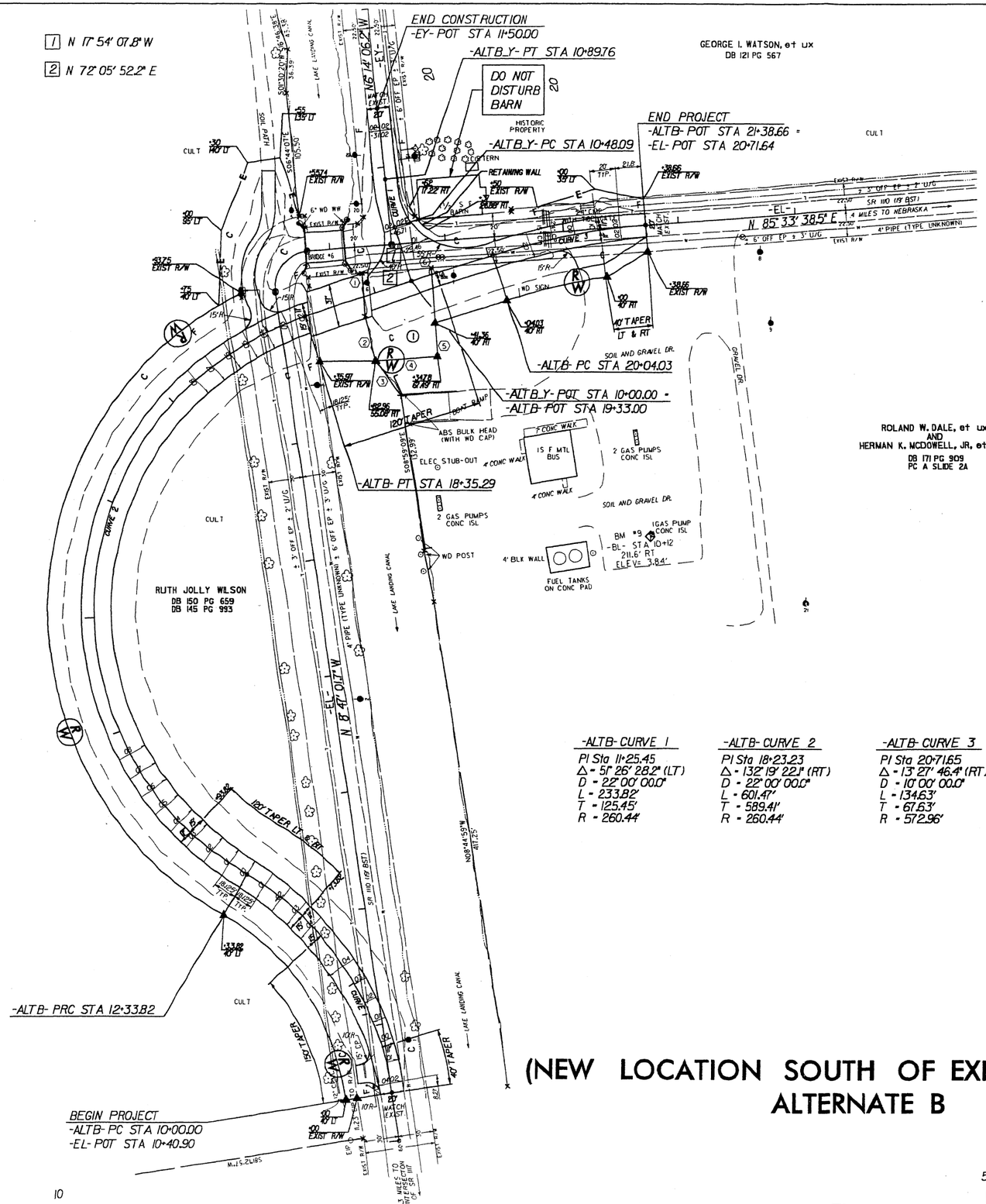
TYPICAL ROADWAY CROSS SECTION

TYPICAL BRIDGE CROSS SECTION

DESIGN CRITERIA

DESIGN SPEED	40 mph (65 km/h)*
POSTED SPEED	35 mph (60 km/h)
CURRENT YEAR ADT (2000)	600 vpd
DESIGN YEAR ADT (2025)	1200 vpd
% TTST _% DUALS	3% 2%
FUNCTIONAL CLASSIFICATION	Rural Minor Collector
TERRAIN	Flat
MAX. RADIUS	458 ft (143 m)
MAXIMUM GRADE	7%
SUPERELEVATION RATE	Se - 0.08

*DESIGN EXCEPTION REQUIRED



① GEORGE I. WATSON, et ux
DB 121 PG 567
PC A SLIDE 2A

③ S03°59'48"E 36.05'
② S14°37'07"E 39.57'
③ S36°24'03"E 36.30'
④ N85°33'44"E 53.28'
⑤ S04°26'15"E R/W TO COR. 75.00'
⑥ S04°26'15"E 3.65' EIA TO R/W

(NEW LOCATION SOUTH OF EXISTING BRIDGE) ALTERNATE B

SCALE
50 0 50 100

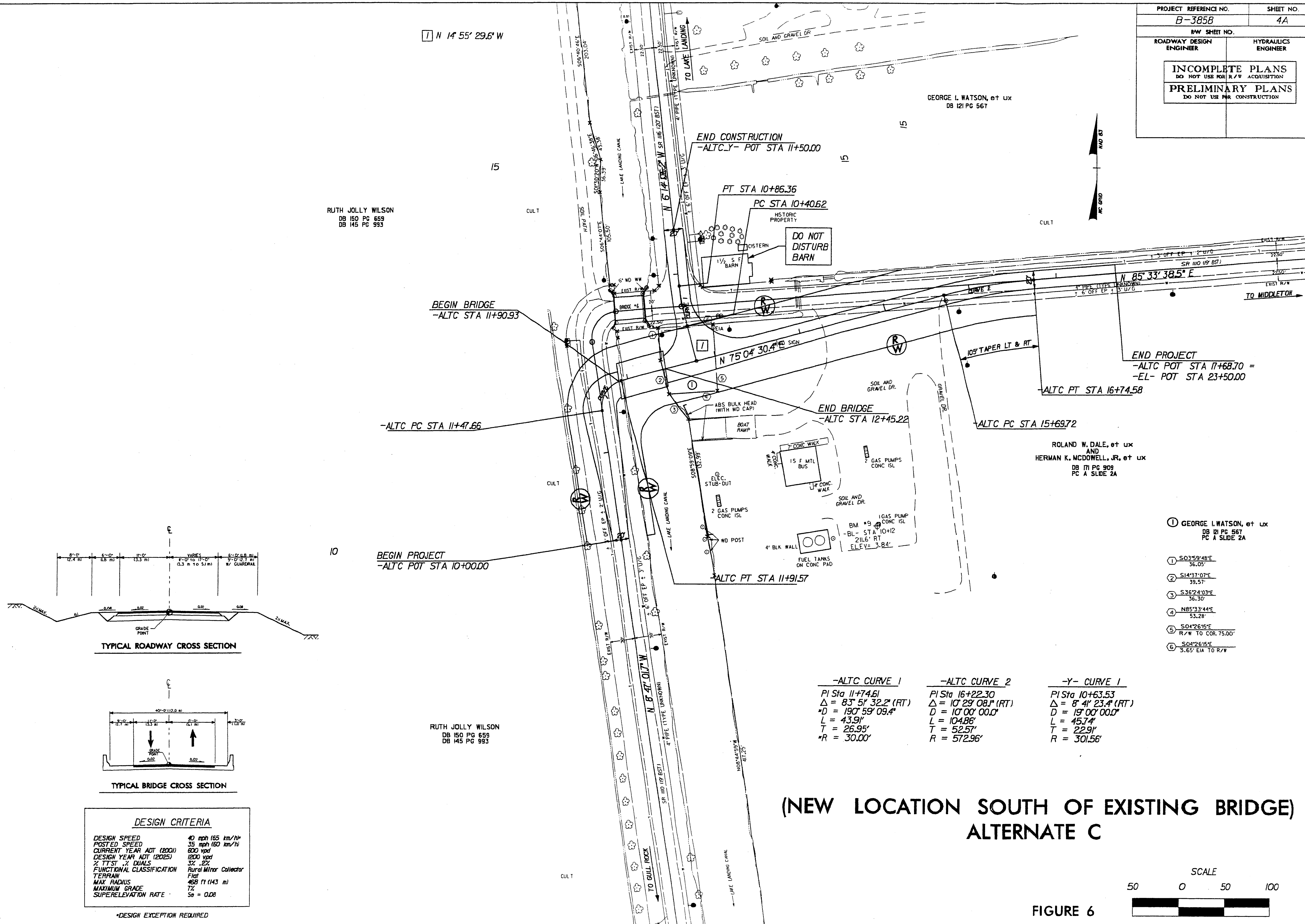
FIGURE 5

Ditch (Lake Lancelot canal)

PROJECT REFERENCE NO.	SHEET NO.
B-3858	4A
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



DESIGN CRITERIA

DESIGN SPEED	40 mph (65 km/h)*
POSTED SPEED	35 mph (60 km/h)
CURRENT YEAR ADT (2001)	600 vpd
DESIGN YEAR ADT (2025)	1200 vpd
% TTST ,% DUALS	3% ,2%
FUNCTIONAL CLASSIFICATION	Rural Minor Collector
TERRAIN	Flat
MAX RADIUS	468 ft (143 m)
MAXIMUM GRADE	7%
SUPERELEVATION RATE	Se = 0.08

*DESIGN EXCEPTION REQUIRED

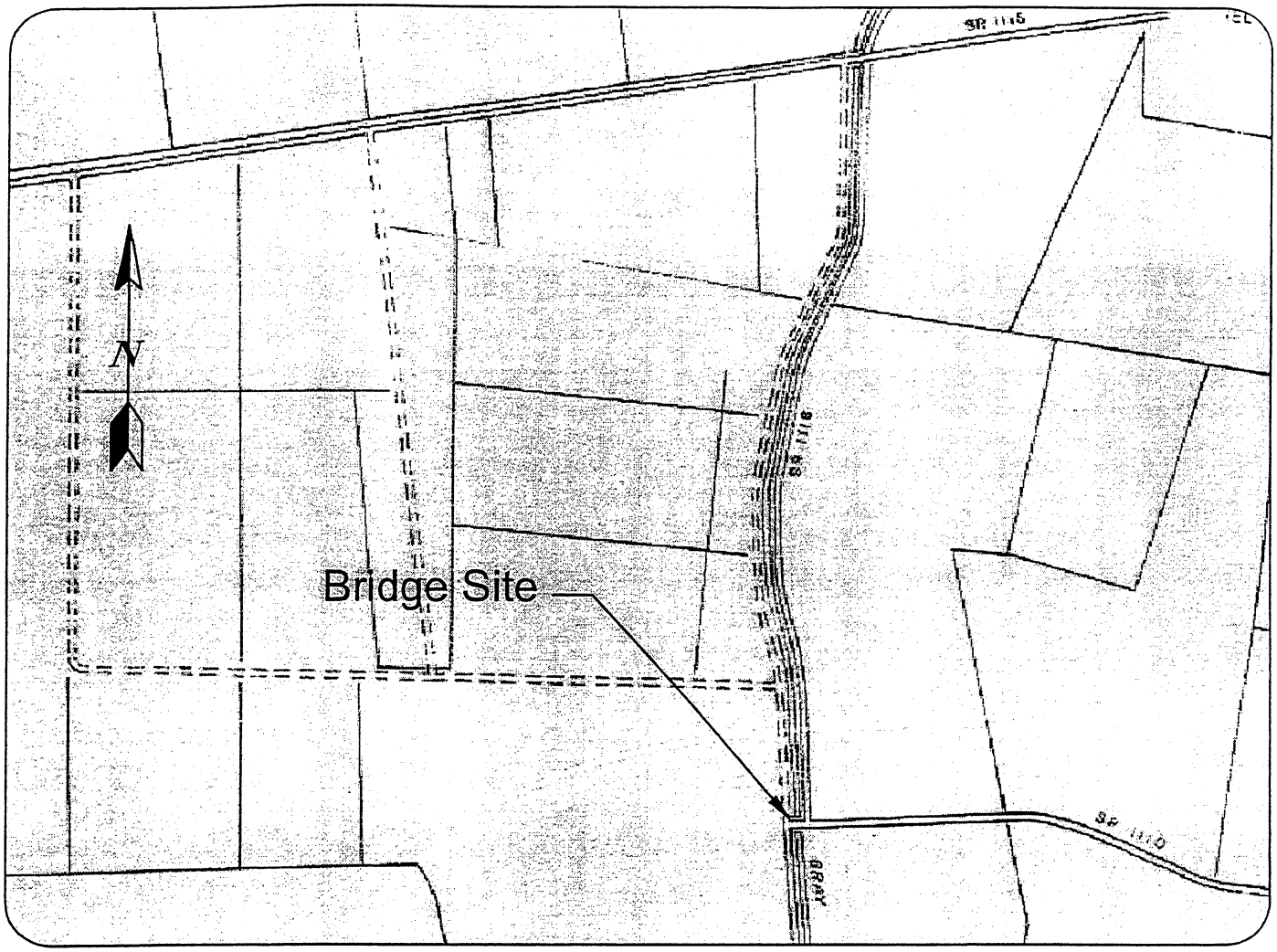
-ALTC CURVE 1
PI Sta 11+74.61
Δ = 83° 51' 32.2" (RT)
*D = 190° 59' 09.4"
L = 43.91'
T = 26.95'
*R = 30.00'

-ALTC CURVE 2
PI Sta 16+22.30
Δ = 10° 29' 08.1" (RT)
D = 10° 00' 00.0"
L = 104.86'
T = 52.57'
R = 572.96'

-Y- CURVE 1
PI Sta 10+63.53
Δ = 8° 41' 23.4" (RT)
D = 19° 00' 00.0"
L = 45.74'
T = 22.91'
R = 301.56'

(NEW LOCATION SOUTH OF EXISTING BRIDGE)
ALTERNATE C

FIGURE 6



FIRM
FLOOD INSURANCE RATE MAP

HYDE COUNTY,
NORTH CAROLINA
(UNINCORPORATED AREAS)

PANEL 430 OF 830

COMMUNITY-PANEL NUMBER
370133 0430 B

EFFECTIVE DATE:
FEBRUARY 4, 1987

NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

SR 1110
Replace Bridge No. 6
over Great Ditch (Lake Landing Canal)
Hyde County, North Carolina

TIP NO. B-3858
FEMA 100-YEAR FLOOD PLAIN MAP

Not to Scale

FIGURE 8

APPENDIX

Theresa Eberley

United States Department of the Interior

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

August 10, 2001

Mr. William D. Gilmore, P.E., Manager
NCDOT
Project Development and Environmental Analysis Branch
1548 Mail Service Center
Raleigh, NC 27699-1548

Dear Mr. Gilmore:

Thank you for your June 21, 2001 request for information from the U.S. Fish and Wildlife Service (Service) on the potential environmental impacts of proposed bridge replacements in Hyde and Pasquotank Counties, North Carolina. This report provides scoping information and is provided in accordance with provisions of the Fish and Wildlife Coordination Act (FWCA) (16 U.S.C. 661-667d) and Section 7 of the Endangered Species Act (ESA) of 1973, as amended (16 U.S.C. 1531-1543). This report also serves as initial scoping comments to federal and state resource agencies for use in their permitting and/or certification processes for this project.

The North Carolina Department of Transportation (NCDOT) proposes to replace the following bridge structures:

1. B-3858 Bridge No. 6 on SR 1110 over Canal; and,

2. B-4222 Bridge No. 24 on SR 1140 over Halls Creek.

The following recommendations are provided to assist you in your planning process and to facilitate a thorough and timely review of the project.

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

should be stabilized by using appropriate erosion control devices and techniques. Wherever appropriate, construction in sensitive areas should occur outside fish spawning and migratory bird nesting seasons.

The National Wetlands Inventory (NWI) maps of the Middletown and Nixonton 7.5 Minute Quadrangles show wetland resources in the specific work areas. However, while the NWI maps are useful for providing an overview of a given area, they should not be relied upon in lieu of a detailed wetland delineation by trained personnel using an acceptable wetland classification methodology. Therefore, in addition to the above guidance, we recommend that the environmental documentation for this project include the following in sufficient detail to facilitate a thorough review of the action.

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

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

The document presents a number of scenarios for replacing each bridge, ranging from in-place to relocation, with on-site and off-site detours. The Service recommends that each bridge be replaced on the existing alignment with an off-site detour.

The enclosed list identifies the federally-listed endangered and threatened species, and Federal Species of Concern (FSC) that are known to occur in Hyde and Pasquotank Counties. The Service recommends that habitat requirements for the listed species be compared with the available habitats at the respective project sites. If suitable habitat is present within the action area of the project, biological surveys for the listed species should be performed. Environmental documentation that includes survey methodologies, results, and NCDOT's recommendations based on those results, should be provided to this office for review and comment.

FSC's are those plant and animal species for which the Service remains concerned, but further biological research and field study 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.

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

Sincerely,

for Dr. Garland B. Pardue
Ecological Services Supervisor

Enclosures

cc: COE, Washington, NC (Michael F. Bell)
NCDWQ, Raleigh, NC (John Hennessey)
NCDNR, Creedmoor, NC (David Cox)

FWS/R4:TMcCartney:TM:08/10/01:919/856-4520 extension 32:\2bdghyde.pas

COMMON NAME	SCIENTIFIC NAME	STATUS
Conferva pondweed	*Potamogeton confervoides*	FSC
Spiked medusa	*Pteroglossaspis ecristata*	FSC
Sandhills pyxie-moss	*Pyxidanthera barbulata* var. *brevifolia*	FSC
Awned meadowbeauty	*Rhexia aristosa*	FSC
Michaux's sumac	*Rhus michauxii*	Endangered
Alabama beaksedge	*Rhynchospora crinipes*	FSC
American chaffseed	*Schwalbea americana*	Endangered
Spring-flowering goldenrod	*Solidago verna*	FSC
Pickering's dawnflower	*Stylisma pickeringii* var. *pickeringii*	FSC
Carolina aspholdel	*Tofieldia glabra*	FSC
Roughleaf yellow-eyed grass	*Xyris scabrifolia*	FSC

HYDE COUNTY

Vertebrates

American alligator	*Alligator mississippiensis*	T(S/A)
Red wolf	*Canis rufus*	EXP
Loggerhead sea turtle	*Caretta caretta*	Threatened
Piping plover	*Charadrius melodus*	Threatened
Green sea turtle	*Chelonia mydas*	Threatened*
Leatherback sea turtle	*Dermochelys coriacea*	Endangered
Hawksbill sea turtle	*Eretomochelys imbricata*	Endangered
Peregrine falcon	*Falco peregrinus anatum*	Endangered
Bald eagle	*Haliaeetus leucocephalus*	Threatened
Black rail	*Laterallus jamaicensis*	FSC
Kemp's ridley sea turtle	*Lepidochelys kempii*	Endangered
Red-cockaded woodpecker	*Picoides borealis*	Endangered
Manatee	*Trichechus manatus*	Endangered

Vascular Plants

Sensitive jointvetch	*Aeschynomene virginica*	Threatened
Seabeach amaranth	*Amaranthus pumilus*	Threatened
Dune blue curls	*Trichostema* sp. *1*	FSC*

IREDELL COUNTY

Vertebrates

Bog turtle	*Clemmys muhlenbergii*	T(S/A)[1]
Alleghany woodrat	*Neotoma magister*	FSC

Vascular Plants

Tall larkspur	*Delphinium exaltatum*	FSC*
Heller's trefoil	*Lotus helleri*	FSC

COMMON NAME	SCIENTIFIC NAME	STATUS
Atlantic pigtoe	*Fusconaia masoni*	FSC
Yellow lampmussel	*Lampsilis cariosa*	FSC
Green floater	*Lasmigona subviridis*	FSC
Savanna lilliput	*Toxolasma pullus*	FSC
Vascular Plants		
Smooth coneflower	*Echinacea laevigata*	Endangered*
Small-whorled pogonia	*Isotria medeoloides*	Threatened
Butternut	*Juglans cinerea*	FSC
Sweet pinesap	*Monotropsis odorata*	FSC
Michaux's sumac	*Rhus michauxii*	Endangered
Nonvascular Plants		
A liverwort	*Plagiochila columbiana*	FSC
PAMLICO COUNTY		
Vertebrates		
American alligator	*Alligator mississippiensis*	T(S/A)
Black rail	*Laterallus jamaicensis*	FSC
Kemp's ridley sea turtle	*Lepidochelys kempii*	Endangered
Northern diamondback terrapin	*Malaclemys terrapin terrapin*	FSC
Red-cockaded woodpecker	*Picoides borealis*	Endangered
Manatee	*Trichechus manatus*	Endangered
Vascular Plants		
Venus flytrap	*Dionaea muscipula*	FSC
Rough-leaved loosestrife	*Lysimachia asperulaefolia*	Endangered
Spring-flowering goldenrod	*Solidago verna*	FSC
PASQUOTANK COUNTY		
Vertebrates		
Bald eagle DE-LISTED	*Haliaeetus leucocephalus*	Threatened
~~Dismal Swamp Southeastern shrew~~	*Sorex longirostris fisheri*	Threatened*
PENDER COUNTY		
Vertebrates		
Shortnose sturgeon	*Acipenser brevirostrum*	Endangered
Bachman's sparrow	*Aimophila aestivalis*	FSC
American alligator	*Alligator mississippiensis*	T(S/A)
Henslow's sparrow	*Ammodramus henslowii*	FSC
Loggerhead sea turtle	*Caretta caretta*	Threatened
Piping plover	*Charadrius melodus*	Threatened
Rafinesque's big-eared bat	*Corynorhinus (=Plecotus) rafinesquii*	FSC**
Southern hognose snake	*Heterodon simus*	FSC*
Southeastern myotis	*Myotis austroriparius*	FSC

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Habitat Conservation Division
101 Pivers Island Road
Beaufort, North Carolina 28516

JUL 18 2001

July 11, 2001

William D. Gilmore, P.E., Manager
Project Development and Environmental
Analysis Branch
North Carolina Department of Transportation
1548 Mail Service Center
Raleigh, North Carolina 27699-1548

Attention: Ms. Theresa Ellerby, Project Development Engineer

Dear Mr. Gilmore,

This responds to your June 21, 2001, request for the National Marine Fisheries Service's (NMFS) input on the proposed replacement of Bridges Nos. 6 (B-3858)and 24 (B-4222) by the North Carolina Department of Transportation (NCDOT) in Hyde and Pasquotank Counties, North Carolina. Bridge No. 6 cross a canal that flows into Wysocking Bay a tributary of the Pamlico Sound and Bridge No 24 crosses the Little River a tributary of the Albemarle Sound. These waters and wetlands provide habitat for anadromous fishery resources for which the NMFS is responsible. The NMFS recognizes the NCDOT's efforts to minimize losses of wetland and avoid impediments to upstream migration of anadromous fishes by replacing bridges with bridges. We also note the commitment to a seasonal restriction on work in waters that provide anadromous fish spawning and nursery habitat. Generally the spawning and nursery season for anadromous fishes in North Carolina's coastal river is between February 1 and March 31. For specific information on anadromous fish spawning and nursery sites within the project areas and appropriate seasonal restrictions, we recommend coordination with the North Carolina Division of Marine Fisheries and/or the Wildlife Resources Commission.

If detours are required during bridge construction to maintain traffic flow, off-site detours are preferable because they avoids and minimizes impacts to wetlands. If onsite detour are necessary, we recommend the use of a temporary bridge rather than temporary fill in wetlands. Our recent experience with temporary fills for construction access, indicates that subsidence of wetlands is likely, making onsite restoration of impacted wetlands difficult. If unavoidable losses of wetland are identified in the Categorical Exclusion for these projects, appropriate mitigation should be considered as a part of the project plans. In addition, demolition of the existing bridges, should follow the Bridge Demolition Guidelines developed by the NCDOT in cooperatively with the Corps of Engineers and the State and Federal resource agencies.

Finally, these comments do not satisfy federal action agencies consultation responsibilities under Section 7 of the Endangered Species Act of 1973, as amended. If any activity(ies) "may effect" listed

species and habitats under NMFS purview, consultation should be initiated with the NMFS, Protected Resources Division at 9721 Executive Center Drive North, St. Petersburg, FL 33702-2432.

Please direct related comments or questions to the attention of the Beaufort Facility which can be reached at 101 Pivers Island Rd, Beaufort, North Carolina 28516, or at (252) 728-5090.

Sincerely,

Ron Sechler

Ron Sechler
Fishery Biologist
Beaufort Facility

cc: FWS, Raleigh, NC
EPA, ATLA, GA
NCDMF
NCWRC
F/SER4
F/SER45

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

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

Division of Historical Resources
David J. Olson, Director

May 28, 2002

MEMORANDUM

TO: William D. Gilmore, Manager
Project Development and Environmental Analysis Branch
Division of Highways
Department of Transportation

FROM: David Brook DB for David Brook

SUBJECT: Replace Bridge 6 over canal, B-3858, Hyde County, ER 01-10077

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

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

Thank you for your cooperation and consideration. If you have questions concerning the above comment, contact Renee Gledhill-Earley, environmental review coordinator, at 919/733-4763. In all future communication concerning this project, please cite the above-referenced tracking number.

DB:kgc

cc: Theresa Jackson, PDEA/NCDOT

North Carolina Wildlife Resources Commission

Charles R. Fullwood, Executive Director

TO: Derrick Weaver
Project Development Engineer, NCDOT

FROM: David Cox, Highway Project Coordinator
Habitat Conservation Program

DATE: March 18, 2002

SUBJECT: NCDOT Bridge Replacements in Hyde, Nash, Pasquotank, and Wayne counties of North Carolina. TIP Nos. B-3858, B-3681, B-4222, and B-4320.

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

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

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

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

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

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

5. If temporary access roads or detours are constructed, they should be removed back to original ground elevations immediately upon the completion of the project. Disturbed areas should be seeded or mulched to stabilize the soil and native tree species should be planted with a spacing of not more than 10'x10'. If possible, when using temporary structures the area should be cleared but not grubbed. Clearing the area with chain

Mailing Address: Division of Inland Fisheries • 1721 Mail Service Center • Raleigh, NC 27699-1721
Telephone: (919) 733-3633 ext. 281 • Fax: (919) 715-7643

saws, mowers, bush-hogs, or other mechanized equipment and leaving the stumps and root mat intact, allows the area to revegetate naturally and minimizes disturbed soil.

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

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

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

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

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

11. Sedimentation and erosion control measures sufficient to protect aquatic resources must be implemented prior to any ground disturbing activities. Structures should be maintained regularly, especially following rainfall events.

12. Temporary or permanent herbaceous vegetation should be planted on all bare soil within 15 days of ground disturbing activities to provide long-term erosion control.

13. All work in or adjacent to stream waters should be conducted in a dry work area. Sandbags, rock berms, cofferdams, or other diversion structures should be used where possible to prevent excavation in flowing water.

14. Heavy equipment should be operated from the bank rather than in stream channels in order to minimize sedimentation and reduce the likelihood of introducing other pollutants into streams.

15. Only clean, sediment-free rock should be used as temporary fill (causeways), and should be removed without excessive disturbance of the natural stream bottom when construction is completed.

16. During subsurface investigations, equipment should be inspected daily and maintained to prevent contamination of surface waters from leaking fuels, lubricants, hydraulic fluids, or other toxic materials.

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

1. The culvert must be designed to allow for fish passage. Generally, this means that the culvert or pipe invert is buried at least 1 foot below the natural stream bed. If multiple cells are required the second and/or third cells should be placed so that their bottoms are at stream bankful stage (similar to Lyonsfield design). This could be

accomplished by constructing a low sill on the upstream end of the other cells that will divert low flows to another cell. This will allow sufficient water depth in the culvert or pipe during normal flows to accommodate fish movements. If culverts are long, notched baffles should be placed in reinforced concrete box culverts at 15 foot intervals to allow for the collection of sediments in the culvert, to reduce flow velocities, and to provide resting places for fish and other aquatic organisms moving through the structure.

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

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

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

In most cases, we prefer the replacement of the existing structure at the same location with road closure. If road closure is not feasible, a temporary detour should be designed and located to avoid wetland impacts, minimize the need for clearing and to avoid destabilizing stream banks. If the structure will be on a new alignment, the old structure should be removed and the approach fills removed from the 100-year floodplain. Approach fills should be removed down to the natural ground elevation. The area should be stabilized with grass and planted with native tree species. If the area that is reclaimed was previously wetlands, NCDOT should restore the area to wetlands. If successful, the site may be used as wetland mitigation for the subject project or other projects in the watershed.

Project specific comments:

1. B-3858 – Hyde County – Bridge No. 6 on SR 1110 over Lake Landing Canal (Grays Ditch). Due to the potential for anadromous fish at this location, NCDOT should closely follow the "Stream Crossing Guidelines for Anadromous Fish Passage". This includes an in-water work moratorium from February 15 to June 15. We are not aware of any threatened of endangered species in the project vicinity. Standard comments apply.

2. B-3681 – Nash County – Bridge No. 277 on SR 1555 over CSX Railroad. No Comment.

3. B-4222 – Pasquotank County – Bridge No. 24 on SR 1140 over Halls Creek. Due to the potential for anadromous fish at this location, NCDOT should closely follow the "Stream Crossing Guidelines for Anadromous Fish Passage". This includes an in-water work moratorium from February 15 to June 15. We are not aware of any threatened of endangered species in the project vicinity. Standard comments apply.

4. B-4320 – Wayne County – Bridge No. 24 on NC 403 over the Northeast Cape Fear River. Due to the potential for anadromous fish at this location, NCDOT should closely follow the "Stream Crossing Guidelines for Anadromous Fish Passage". This includes an in-water work moratorium from February 15 to June 15. We are not aware of any threatened of endangered species in the project vicinity. Standard comments apply.

We request that NCDOT routinely minimize adverse impacts to fish and wildlife resources in the vicinity of bridge replacements. The NCDOT should install and maintain

sedimentation control measures throughout the life of the project and prevent wet concrete from contacting water in or entering into these streams. Replacement of bridges with spanning structures of some type, as opposed to pipe or box culverts, is recommended in most cases. Spanning structures allow wildlife passage along streambanks, reducing habitat fragmentation and vehicle related mortality at highway crossings.

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

Federal Aid # **BRZ-1110(3)** *TIP* # **B-3858** *County*: **Hyde**

CONCURRENCE FORM FOR ASSESSMENT OF EFFECTS

Project Description: Replace Bridge No. 6 on SR 1110 over canal

On August 20, 2002, representatives of the

- [x] North Carolina Department of Transportation (NCDOT)
- [ ] 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.
- [x] 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:

Mary Pope Furr — 8-20-2002
Representative, NCDOT — Date

8/26/02
FHWA, for the Division Administrator, or other Federal Agency — Date

8/20/02
Representative, HPO — Date

8/20/02
State Historic Preservation Officer — Date

Federal Aid # **BRZ-1110(3)** *TIP* # **B-3858** *County*: **Hyde**

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.

Lake Landing Historic District (NR)
Alternative C - no adverse effect w/ conditions

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

Alt. C - conditions. -1) NCDOT shall use 2 bar steel bridge rail in aluminum color 2) NCDOT shall restore landscaping disturbed during construction 3) NCDOT shall provide HPO details of guardrail design & prior to final plans for HPO comment

Initialed: NCDOT MPJ FHWA _____ HPO SDM

Federal Aid # **BRZ-1110(3)** *TIP #* **B-3858** *County*: **Hyde**

CONCURRENCE FORM FOR ASSESSMENT OF EFFECTS

Project Description: Replace Bridge No. 6 on SR 1110 over canal

On 2/6/02, 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.
- [x] 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:

Mary Pope Furr — 2/6/02
Representative, NCDOT — Date

Richard C. Dawson — 2/6/02
FHWA, for the Division Administrator, or other Federal Agency — Date

Renee Gledhill-Earley — 2/6/02
Representative, HPO — Date

David Brook pyr — 2/6/02
State Historic Preservation Officer — Date

Brunswick
County
RF

Federal Aid # **BRZ-1110(3)** *TIP #* **B-3858** *County*: **Hyde**

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.

Lake Landing Historic District (NR)

Alt. C no effect w/ environmental commitment that NCDOT ~~will~~ shall provide bridge design to HPO for comment. (bridge shall have wooden rails)

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

Initialed: NCDOT MPF FHWA [illegible] HPO RGE

File
See Note

Federal Aid # **BRZ-1110(3)** *TIP* # **B-3858** *County*: **Hyde**

CONCURRENCE FORM FOR ASSESSMENT OF EFFECTS

Project Description: Replace Bridge No. 6 on SR 1110 over canal

On 1/8/2002, representatives of the

- [x] North Carolina Department of Transportation (NCDOT)
- [ ] 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:

Mary Pope Furr — 1/8/2002
Representative, NCDOT — Date

Michael C. Dawson — 1/8/02
FHWA, for the Division Administrator, or other Federal Agency — Date

Renee Gledhill-Earley — 1/8/02
Representative, HPO — Date

David Brook — 1-15-02
State Historic Preservation Officer — Date

Federal Aid # **BRZ-1110(3)** *TIP* # **B-3858** *County*: **Hyde**

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.

Lake Landing Historic District (NR) -
Adverse Effect for Alt. B
Conditional No Adverse Effect for Alt. A.

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

Conditions -
1) Bridge replaced on existing alignment
2) NCDOT will not disturb Watson's store during construction & edge of pavement will remain the same or move away from store
3) ~~NCDOT~~ New structure will be similar to existing structure & not use "Jersey Barriers" - Design reviewed by SHPO
4) NCDOT will replace landscaping disturbed during construction including

Initialed: NCDOT MPF FHWA _____ HPO RGE

/

Yamamoto

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

January 7, 2002

MEMORANDUM

TO: William D. Gilmore, Manager
Project Development and Environmental Analysis Branch
Division of Highways
Department of Transportation

FROM: David Brook RSE for David Brook

SUBJECT: Replace Bridge No. 6 on SR 1110 over canal, B-3858, Hyde County, ER 02-8284

Thank you for your letter of November 28, 2001, transmitting the survey report by Mattson, Alexander and Associates, Inc. for the above project.

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:

> Lake Landing Historic District remains eligible for the National Register of Historic Places under Criteria A, B, C, and D, the Great Ditch should be considered a contributing element within the listed district.

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

Thank you for your cooperation and consideration. If you have questions concerning the above comment, contact Renee Gledhill-Earley, environmental review coordinator, at 919/733-4763. In all future communication concerning this project, please cite the above-referenced tracking number.

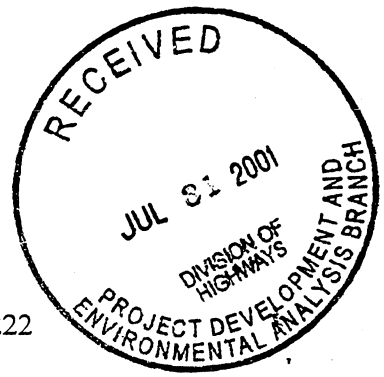
DB:kgc

cc: Mary Pope Furr

	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

North Carolina
Department of Environment and Natural Resources
Division of Coastal Management

Michael F. Easley, Governor
William G. Ross Jr., Secretary
Donna D. Moffitt, Director



July 26, 2001

Mr. William D. Gilmore, P.E., Manager
Project Development and Environmental Analysis Branch
State of North Carolina Department of Transportation
1548 Mail Service Center
Raleigh, NC 27699-1548

Subject: Request for Environmental Input for B-3858 and B-4222

Dear Mr. Gilmore,

I have reviewed the Department of Transportation's (DOT's) written request for comments dated 6/21/01 and visited the site for the projects referenced above.

The proposed replacement of Bridge No. 24 on SR 1140 over Hall's Creek in Pasquotank County, B-4222, would be crossing and impacting Coastal Management Areas of Environmental Concern of Public Trust Waters and Coastal Shoreline. The only alternative presented is to replace the existing bridge with another bridge on the current alignment, with off site detour. A CAMA General Permit would cover the impacts associated with this project provided no significant expansion occurs. 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 2500 square feet except that the wetland component shall not exceed 500 square feet.

The proposed replacement of Bridge No. 6 on SR 1110 over the canal in Hyde County, B-3858, would be crossing and impacting Coastal Management Areas of Environmental Concern of Public Trust Waters and Coastal Shoreline. The alternatives presented were; replacing the bridge on the existing alignment with an on site detour, and replacing the bridge to the south and using the existing bridge during construction. Both alternatives would require a CAMA Major Permit.

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 (252) 808-2808 or via e-mail at bill.arrington@ncmail.net if you have any questions or concerns.

Sincerely,

Bill Arrington
DOT Project Field Representative

Morehead City District \ 151-B Hwy. 24, Hestron Plaza II
Morehead City, North Carolina 28557
Phone: 252-808-2808 \ FAX: 252-247-3330 \ Internet: http://dcm2.enr.state.nc.us

Hyde County Schools

1430 Main Street
P. O. Box 217
Swan Quarter, NC 27885
Office (252) 926-3281 Fax (252) 926-3083

DR. RONALD MONTGOMERY
Superintendent

July 18, 2001

Mr. Gerald H. Knott, AIA
Section Chief School Planning
North Carolina Department of Public Instruction
301 N. Wilmington Street
Raleigh, NC 28701-2825

Dear Mr. Knott:

In response to your letter dated June 25, 2001 concerning the Department of Transportation project to replace Bridge No. 6 on SR 1110, please be aware that this will affect two of our buses both morning and afternoon.

Please feel free to call if your have further questions or concerns.

Sincerely,

Ronald L. Montgomery

RLM/dc

"CHILDREN FIRST"

"Building For The Future Today"