STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

MICHAEL F. EASLEY
GOVERNOR

LYNDO TIPPETT
SECRETARY

September 27, 2006

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

Attention: Mr. William Wescott
NCDOT Coordinator

Dear Sir:

Subject: **Nationwide 23 Permit Application and Neuse River Buffer Authorization,** for the proposed replacement of Bridge 74 on SR 1615 over Branch Upper Broad Creek (Morgan Swamp) in Craven County. Federal Aid Project No. BRSTP-1615(2), State Project No. 8.2171301, TIP No. B-4088.

Please find enclosed the permit drawings, Categorical Exclusion (CE) Action Classification Form, Natural Resource Technical Report (NRTR) Executive Summary, and half-size plan sheets for the above referenced project. The North Carolina Department of Transportation (NCDOT) proposes to replace existing Bridge No. 74 on SR 1615 over Branch Upper Broad Creek (Morgan Swamp) in Craven County. The project involves replacement of the existing bridge structure with a 90-foot bridge at approximately the same location and roadway elevation of the existing structure using top-down construction. Permanent impacts will consist of 0.04-acre to surface waters, 0.12-acre of to wetlands adjacent to Morgan Swamp, and 8,842 ft^2 of riparian buffer. Traffic will be detoured off-site along surrounding roads, during construction.

Impacts to Waters of the United States

General Description: The project is located in the Neuse River Basin (Hydrologic Unit 03020102). A best usage classification of "C SW NSW" has been assigned to Morgan Swamp [DWQ Index # 03-04-10]. Neither High Quality Waters (HQW), Water Supplies (WS-I: undeveloped watersheds or WS-II: predominately undeveloped watersheds), listed Section 303(d) impairments, nor Outstanding Resource Waters (ORW) occur within 1.0 mile (1.6 km) of project study area. Morgan Swamp is not designated as a North Carolina Natural or Scenic River, or as a National Wild and Scenic River.

Permanent Impacts: Morgan Swamp and its adjacent wetlands will be impacted by the proposed project. Construction of the proposed project will result in permanent impacts, including 0.08-acre of fill, 0.03-acre of mechanized clearing, and 0.04-acre of impacts to surface water (see permit drawings).

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

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

LOCATION:
TRANSPORTATION BUILDING
1 SOUTH WILMINGTON STREET
RALEIGH NC

Temporary Impacts: Construction of the proposed project will result in 0.12-acre of temporary impacts to wetlands from hand-clearing activities (see permit drawings).

Utility Impacts: No impacts to jurisdictional resources will occur due to relocation of utilities in the project area. Existing utility lines are in conflict with the proposed project; however, all utility work will be conducted in upland areas and existing road fill. The existing 6-inch PVC and ductile iron water line will be replaced by means of open-cut in the existing and proposed road fill and will not impact wetlands or buffer zones. All telephone and electrical lines will be replaced via directional drill method from upland to upland, and existing buried lines will be abandoned in place.

Neuse River Basin Buffer Rules

This project is located in the Neuse River Basin; therefore, the regulations pertaining to the buffer rules apply. There will be a total of 6,638 ft^2 of impacts to riparian buffers. This includes 2,499 ft^2 (2,400 ft^2 in Zone 1 and 99 ft^2 in Zone 2) due to the bridge crossing. According to the buffer rules, bridges are allowable. Uses designated as allowable may proceed within the riparian buffer provided that there are no practical alternatives to the requested use pursuant to Item (8) of this Rule. In addition, 6,343 ft^2 (4,440 ft^2 in Zone 1 and 1,903 ft^2 in Zone 2) of impacts will occur from approach fill and mechanized clearing activities. According to the buffer rules, road crossings greater than 150 feet, are allowable with mitigation. Uses designated as allowable with mitigation may proceed within the riparian buffer provided that there are no practical alternatives to the requested use pursuant to Item (8) of this Rule and an appropriate mitigation strategy has been approved pursuant to Item (10) of this Rule. All practicable measures to minimize impacts within buffer zones were followed. These uses require written authorization from the Division of Water Quality.

Bridge Demolition

The existing bridge is a four-span structure consisting of a concrete deck on timber joists with an asphalt-wearing surface. The substructure is composed of timber caps on timber piles. The bridge can be removed without dropping components into Waters of the United States during construction. Best Management Practices for Bridge Demolition and Removal will be followed to avoid any temporary fill from entering Waters of the United States. During project development, the NC Division of Marine Fisheries (DMF) recommended an in-water work moratorium for anadromous fish between February 15 and June 30.

Federally Protected Species

As of April 27, 2006 the US Fish and Wildlife Service (USFWS) has listed six federally protected species for Craven County (see Table 1). A biological conclusion of "no effect" remains valid for each species due to lack of suitable habitat. A biological conclusion is not required for the American alligator due to its designation of Threatened (due to similarity of appearance). No species have been added or deleted from the list since the completion of the CE (March 31, 2004).

Table 1. Federally protected species of Craven County.

Scientific Name	Common Name	Federal Status	Survey Notes	Biological Conclusion
Alligator mississippiensis	American alligator	T(S/A)	N/A	N/A
Haliaeetus leucocephalus	Bald eagle	T(PFD)	No Habitat	No Effect
Dermochelys coriacea	Leatherback sea turtle	E	No Habitat	No Effect
Trichechus manatus	West Indian Manatee	E	No Habitat	No Effect
Picoides borealis	Red-cockaded woodpecker	E	No Habitat	No Effect
Aeschynomene virginica	Sensitive joint-vetch	T	No Habitat	No Effect

(E) – Endangered T(S/A) – "Similarity of Appearance"
(T) – Threatened T(PFD) – "Proposed for Delisting".

Avoidance and Minimization

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

- Use of an off-site detour during construction.
- Construction of a 21-foot longer bridge
- The new structure will have only one bent in Morgan Swamp.
- Best Management Practices will also be utilized during demolition of the existing bridge and construction of the new bridge.

Mitigation

The North Carolina Department of Environment and Natural Resources Ecosystem Enhancement Program (EEP) will assume responsibility for satisfying the federal Clean Water Act compensatory mitigation requirements for the unavoidable impacts to 0.12-acre of wetlands and 3,787 ft^2 of riparian buffer. A copy of the EEP Acceptance Letter, dated August 28, 2006, is attached.

Regulatory Approvals

Section 404 Permit: All 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 Certification: We anticipate 401 General Water Quality Certification number 3403 will apply to this project. All general conditions of the Water Quality Certifications will be met. Therefore, in accordance with 15A NCAC 2H, Section .0500(a) and 15A NCAC 2B.0200, we are providing copies of this application to the North Carolina Department of Environmental and Natural Resources, Division of Water Quality for their review.

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

CAMA: According to attached email dated July 23, 2003 from NCDCM, the project site does not fall under NCDCM jurisdiction.

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

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

Sincerely,

E. L. Lusk

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

Cc:
W/attachment:
- Mr. John Hennessy, NCDWQ (5 Copies)
- Mr. Travis Wilson, NCWRC
- Mr. Gary Jordan, USFWS
- Mr. Ron Sechler, NMFS
- Mr. Michael Street, NCDMF
- Mr. Steve Sollod, NCDCM
- Ms. Tere Barrett, District Manager, NCDCM
- Dr. David Chang, P.E., Hydraulics
- Mr. Greg Perfetti, P.E., Structure Design
- Mr. Mark Staley, Roadside Environmental
- Mr. C. E. Lassiter, P.E., Division 2 Engineer
- Mr. Jay Johnson, Division 2 Environmental Officer

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

Office Use Only: Form Version March 05

USACE Action ID No. _____ **DWQ No.** _____

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

I. Processing

1. Check all of the approval(s) requested for this project:
   - ☒ Section 404 Permit
   - ☐ Section 10 Permit
   - ☒ 401 Water Quality Certification
   - ☒ Riparian or Watershed Buffer Rules
   - ☐ Isolated Wetland Permit from DWQ
   - ☐ Express 401 Water Quality Certification

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

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

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

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

II. Applicant Information

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

2. Agent/Consultant Information (A signed and dated copy of the Agent Authorization letter must be attached if the Agent has signatory authority for the owner/applicant.)
   Name:
   Company Affiliation:
   Mailing Address:
   Telephone Number: Fax Number:
   E-mail Address:

III. Project Information

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

1. Name of project: _____

2. T.I.P. Project Number or State Project Number (NCDOT Only): B-4088

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

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

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): -77.0025 °N 35.1772 °W

6. Property size (acres): N/A

7. Name of nearest receiving body of water: Morgan Swamp

8. River Basin: Neuse
   (Note – this must be one of North Carolina's seventeen designated major river basins. The River Basin map is available at http://h2o.enr.state.nc.us/admin/maps/.)

9. Describe the existing conditions on the site and general land use in the vicinity of the project at the time of this application: Rural with forested areas and scattered residential and farms.

10. Describe the overall project in detail, including the type of equipment to be used: Replacement of the existing bridge structure with a 90-foot bridge at approximately the same location and roadway elevation of the existing structure using top-down construction.

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

IV. Prior Project History

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

V. Future Project Plans

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

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

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

1. Provide a written description of the proposed impacts: approach fill, hand clearing, mechanized clearing

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)
17+62 to 24+35-L-	Permanent Fill	Forested/Riverine	Yes		0.08
17+62 to 24+35-L-	Mechanized Clearing	Forested/Riverine	Yes		0.03
17+62 to 24+35-L-	Hand Clearing	Forested/Riverine	Yes		0.12
			Total Wetland Impact (acres)		0.23

3. List the total acreage (estimated) of all existing wetlands on the property: N/A

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

Stream Impact Number (indicate on map)	Stream Name	Type of Impact	Perennial or Intermittent?	Average Stream Width Before Impact	Impact Length (linear feet)	Area of Impact (acres)
N/A						
Total Stream Impact (by length and acreage)					0	0

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

Open Water Impact Site Number (indicate on map)	Name of Waterbody (if applicable)	Type of Impact	Type of Waterbody (lake, pond, estuary, sound, bay, ocean, etc.)	Area of Impact (acres)
17+62 to 24+35-L-	Morgans Swamp	Fill	Impounded Creek	0.04
17+62 to 24+35-L-	Morgans Swamp	Bent	Creek	0.00
Total Open Water Impact (acres)				0.04

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

Stream Impact (acres):	0.0
Wetland Impact (acres):	0.23
Open Water Impact (acres):	0.04
Total Impact to Waters of the U.S. (acres)	0.27
Total Stream Impact (linear feet):	0

7. Isolated Waters
Do any isolated waters exist on the property? ☐ Yes ☒ No
Describe all impacts to isolated waters, and include the type of water (wetland or stream) and the size of the proposed impact (acres or linear feet). Please note that this section only applies to waters that have specifically been determined to be isolated by the USACE.
N/A

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

VII. Impact Justification (Avoidance and Minimization)

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

techniques to be followed during construction to reduce impacts. Use of an off-site detour during construction, construction of a 21-foot longer single-span bridge, Best Management Practices will also be utilized during demolition of the existing bridge and construction of the new bridge.

VIII. Mitigation

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

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

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

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

2. Mitigation may also be made by payment into the North Carolina Ecosystem Enhancement Program (NCEEP). Please note it is the applicant's responsibility to contact the NCEEP at (919) 715-0476 to determine availability, and written approval from the NCEEP indicating that they are will to accept payment for the mitigation must be attached to this form. For

additional information regarding the application process for the NCEEP, check the NCEEP website at http://h2o.enr.state.nc.us/wrp/index.htm. If use of the NCEEP is proposed, please check the appropriate box on page five and provide the following information:

Amount of stream mitigation requested (linear feet): 0
Amount of buffer mitigation requested (square feet): 3,787
Amount of Riparian wetland mitigation requested (acres): 0.12
Amount of Non-riparian wetland mitigation requested (acres): 00
Amount of Coastal wetland mitigation requested (acres): 0

IX. Environmental Documentation (required by DWQ)

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

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

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

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

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

1. Will the project impact protected riparian buffers identified within 15A NCAC 2B .0233 (Neuse), 15A NCAC 2B .0259 (Tar-Pamlico), 15A NCAC 02B .0243 (Catawba) 15A NCAC 2B .0250 (Randleman Rules and Water Supply Buffer Requirements), or other (please identify Neuse)? 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	6840	3 (2 for Catawba)	7011
2	2002	1.5	2175
Total	8842		9186**

* 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.

** Total offset by compensatory wetland mitigation

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.
   The NCEEP will provide compensatory mitigation for buffer impacts from this project

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. See Stormwater Management Plan

XII. Sewage Disposal (required by DWQ)

Clearly detail the ultimate treatment methods and disposition (non-discharge or discharge) of wastewater generated from the proposed project, or available capacity of the subject facility.
N/A

XIII. Violations (required by DWQ)

Is this site in violation of DWQ Wetland Rules (15A NCAC 2H .0500) or any Buffer Rules?
Yes ☐ No ☒

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

XIV. Cumulative Impacts (required by DWQ)

Will this project (based on past and reasonably anticipated future impacts) result in additional development, which could impact nearby downstream water quality? Yes ☐ No ☒
If yes, please submit a qualitative or quantitative cumulative impact analysis in accordance with the most recent North Carolina Division of Water Quality policy posted on our website at http://h2o.enr.state.nc.us/ncwetlands. If no, please provide a short narrative description:
N/A

XV. Other Circumstances (Optional):

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

E. L. Lusk 9.27.06

Applicant/Agent's Signature **Date**

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

CATEGORICAL EXCLUSION ACTION CLASSIFICATION FORM

TIP Project No.	**B-4088**
State Project No.	**8.2171301**
W.B.S. No.	**33446.1.1**
Federal Project No.	**BRSTP-1615(2)**

A. Project Description:

The purpose of this project is to replace Craven County Bridge No. 74 on SR 1615 over Upper Broad Creek. The replacement structure will be a bridge 75 feet long and 40 feet wide. The cross section will include two 12-foot lanes and 8-foot offsets. The south approach will be approximately 345 feet and north approach will be approximately 364 feet long. The approach cross section will include two 12-foot lanes and 8-foot shoulders. Traffic will be detoured offsite during construction (see Figure 1). The roadway will be designed as a Rural Major Collector with a 60 mile per hour design speed.

B. Purpose and Need:

Bridge Maintenance Records indicate the bridge has a sufficiency rating of 47.2 out of 100. The bridge's four- span superstructure is composed of a concrete deck on timber joists. The substructure is composed of timber caps on timber piles. The bridge's timber substructure including a timber abutment is deteriorating (currently rated 4 out of 10) qualifying the bridge as structurally deficient and therefore eligible for FHWA's Highway Bridge Replacement Program.

C. Proposed Improvements:

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

1. Modernization of a highway by resurfacing, restoration, rehabilitation, reconstruction, adding shoulders, or adding auxiliary lanes (e.g., parking, weaving, turning, climbing).

    a. Restoring, Resurfacing, Rehabilitating, and Reconstructing pavement (3R and 4R improvements)
    b. Widening roadway and shoulders without adding through lanes
    c. Modernizing gore treatments
    d. Constructing lane improvements (merge, auxiliary, and turn lanes)
    e. Adding shoulder drains
    f. Replacing and rehabilitating culverts, inlets, and drainage pipes, including safety treatments
    g. Providing driveway pipes
    h. Performing minor bridge widening (less than one through lane)
    i. Slide Stabilization
    j. Structural BMP's for water quality improvement

2. Highway safety or traffic operations improvement projects including the installation of ramp metering control devices and lighting.

a. Installing ramp metering devices
b. Installing lights
c. Adding or upgrading guardrail
d. Installing safety barriers including Jersey type barriers and pier protection
e. Installing or replacing impact attenuators
f. Upgrading medians including adding or upgrading median barriers
g. Improving intersections including relocation and/or realignment
h. Making minor roadway realignment
i. Channelizing traffic
j. Performing clear zone safety improvements including removing hazards and flattening slopes
k. Implementing traffic aid systems, signals, and motorist aid
l. Installing bridge safety hardware including bridge rail retrofit

3. Bridge rehabilitation, reconstruction, or replacement or the construction of grade separation to replace existing at-grade railroad crossings.

a. Rehabilitating, reconstructing, or replacing bridge approach slabs
b. Rehabilitating or replacing bridge decks
c. Rehabilitating bridges including painting (no red lead paint), scour repair, fender systems, and minor structural improvements
d. Replacing a bridge (structure and/or fill)

4. Transportation corridor fringe parking facilities.

5. Construction of new truck weigh stations or rest areas.

6. Approvals for disposal of excess right-of-way or for joint or limited use of right-of-way, where the proposed use does not have significant adverse impacts.

7. Approvals for changes in access control.

8. Construction of new bus storage and maintenance facilities in areas used predominantly for industrial or transportation purposes where such construction is not inconsistent with existing zoning and located on or near a street with adequate capacity to handle anticipated bus and support vehicle traffic.

9. Rehabilitation or reconstruction of existing rail and bus buildings and ancillary facilities where only minor amounts of additional land are required and there is not a substantial increase in the number of users.

10. Construction of bus transfer facilities (an open area consisting of passenger shelters, boarding areas, kiosks and related street improvements) when located in a commercial area or other high activity center in which there is adequate street capacity for projected bus traffic.

11. Construction of rail storage and maintenance facilities in areas used predominantly for industrial or transportation purposes where such construction is not inconsistent with existing zoning and where there is no significant noise impact on the surrounding community.

12. Acquisition of land for hardship or protective purposes, advance land acquisition loans under section 3(b) of the UMT Act. Hardship and protective buying will be permitted only for a particular parcel or a limited number of parcels. These types of land acquisition qualify for a CE only where the acquisition will not limit the evaluation of alternatives, including shifts in alignment for planned construction projects, which may be required in the NEPA process. No project development on such land may proceed until the NEPA process has been completed.

13. Acquisition and construction of wetland, stream and endangered species mitigation sites.

14. Remedial activities involving the removal, treatment or monitoring of soil or groundwater contamination pursuant to state or federal remediation guidelines.

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

Estimated Costs:

Total Construction	$ 675,000
Right of Way	$ 50,000
Total	$ 715,000

Estimated Traffic:

Current	-	1500 vpd
Year 2025	-	2600 vpd
TTST	-	1%
Dual	-	2%

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

Functional Classification: Rural Major Collector

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

Alternatives Discussion: An offsite detour will be utilized during construction including SR 1620, SR 1617, and back to SR 1615. The average road user would follow a detour requiring 1.3 miles additional travel resulting in a delay of approximately 2.5 minutes. Division 2 and the School Bus Transportation Director for Craven County have no objection to an offsite detour at this location. Craven County EMS has firmly requested that the time of construction be kept to an absolute minimum.

E. Threshold Criteria

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

ECOLOGICAL		YES	NO
(1)	Will the project have a substantial impact on any unique or important natural resource?		X
(2)	Does the project involve habitat where federally listed endangered or threatened species may occur?		X
(3)	Will the project affect anadromous fish?	X	
(4)	If the project involves wetlands, is the amount of permanent and/or temporary wetland taking less than one-tenth (1/10) of an acre and have all practicable measures to avoid and minimize wetland takings been evaluated?	X	
(5)	Will the project require the use of U. S. Forest Service lands?		X
(6)	Will the quality of adjacent water resources be adversely impacted by proposed construction activities?		X
(7)	Does the project involve waters classified as Outstanding Water Resources (OWR) and/or High Quality Waters (HQW)?		X
(8)	Will the project require fill in waters of the United States in any of the designated mountain trout counties?		X
(9)	Does the project involve any known underground storage tanks (UST's) or hazardous materials sites?		X

PERMITS AND COORDINATION		YES	NO
(10)	If the project is located within a CAMA county, will the project significantly affect the coastal zone and/or any "Area of Environmental Concern" (AEC)?		X
(11)	Does the project involve Coastal Barrier Resources Act resources?		X
(12)	Will a U. S. Coast Guard permit be required?		X
(13)	Will the project result in the modification of any existing regulatory floodway?		X

		YES	NO
(14)	Will the project require any stream relocations or channel changes?		X
	SOCIAL, ECONOMIC, AND CULTURAL RESOURCES	**YES**	**NO**
(15)	Will the project induce substantial impacts to planned growth or land use for the area?		X
(16)	Will the project require the relocation of any family or business?		X
(17)	Will the project have a disproportionately high and adverse human health and environmental effect on any minority or low-income population?		X
(18)	If the project involves the acquisition of right of way, is the amount of right of way acquisition considered minor?	X	
(19)	Will the project involve any changes in access control?		X
(20)	Will the project substantially alter the usefulness and/or land use of adjacent property?		X
(21)	Will the project have an adverse effect on permanent local traffic patterns or community cohesiveness?		X
(22)	Is the project included in an approved thoroughfare plan and/or Transportation Improvement Program (and is, therefore, in conformance with the Clean Air Act of 1990)?	X	
(23)	Is the project anticipated to cause an increase in traffic volumes?		X
(24)	Will traffic be maintained during construction using existing roads, staged construction, or on-site detours?	X	
(25)	If the project is a bridge replacement project, will the bridge be replaced at its existing location (along the existing facility) and will all construction proposed in association with the bridge replacement project be contained on the existing facility?	X	
(26)	Is there substantial controversy on social, economic, or environmental grounds concerning the project?		X
(27)	Is the project consistent with all Federal, State, and local laws relating to the environmental aspects of the project?	X	
(28)	Will the project have an "effect" on structures/properties eligible for or listed on the National Register of Historic Places?		X

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

F. Additional Documentation Required for Unfavorable Responses in Part E

Question 3. Will the project affect anadromous fish?

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

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

G. CE Approval

TIP Project No.	**B-4088**
State Project No.	**8.2171301**
W.B.S. No.	**33446.1.1**
Federal Project No.	**BRSTP-1615(2)**

Project Description:

The purpose of this project is to replace Craven County Bridge No. 74 on SR 1615 over Upper Broad Creek. The replacement structure will be a bridge 85 feet long and 40 feet wide. The cross section will include two 12-foot lanes and 8-foot offsets. The south approach will be approximately 345 feet and north approach will be approximately 364 feet long. The approach cross section will include two 12-foot lanes and 8-foot shoulders. Traffic will be detoured offsite during construction (see Figure 1). The roadway will be designed as a Rural Major Collector with a 60 mile per hour design speed.

Categorical Exclusion Action Classification: (Check one)

_____ TYPE II(A)
__X__ TYPE II(B)

Approved:

3-31-04 — Date
Assistant Manager
Project Development & Environmental Analysis Branch

3-31-04 — Date
Project Planning Unit Head
Project Development & Environmental Analysis Branch

3-31-04 — Date
Project Planning Engineer
Project Development & Environmental Analysis Branch

For Type II(B) projects only:

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

PROJECT COMMITMENTS:

Craven County
Bridge No. 74 on SR 1615
Over Branch of Upper Broad Creek
Federal Aid Project No. BRSTP-1615(2)
State Project No. 8.2171301
W.B.S. No. 33446.1.1
T.I.P. No. B-4088

All Pre-Construction Units/ Resident Engineer – EMS Concerns

Craven County EMS has indicated that SR 1615 is a critical route. Road closure is tolerable but its duration should be kept to a minimum. All aspects of design and construction should facilitate the shortest reasonable duration of road closure.

Resident Engineer –EMS Notification

Craven County EMS must be provided a minimum 2 weeks notice prior to road closure.

All Pre-Construction Units/ Resident Engineer – Anadramous Fish

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

Strong consideration should be given to spanning the stream completely.

To the extent practical, construction should be accomplished without getting into the water.

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

Hydraulics – Anadramous Fish

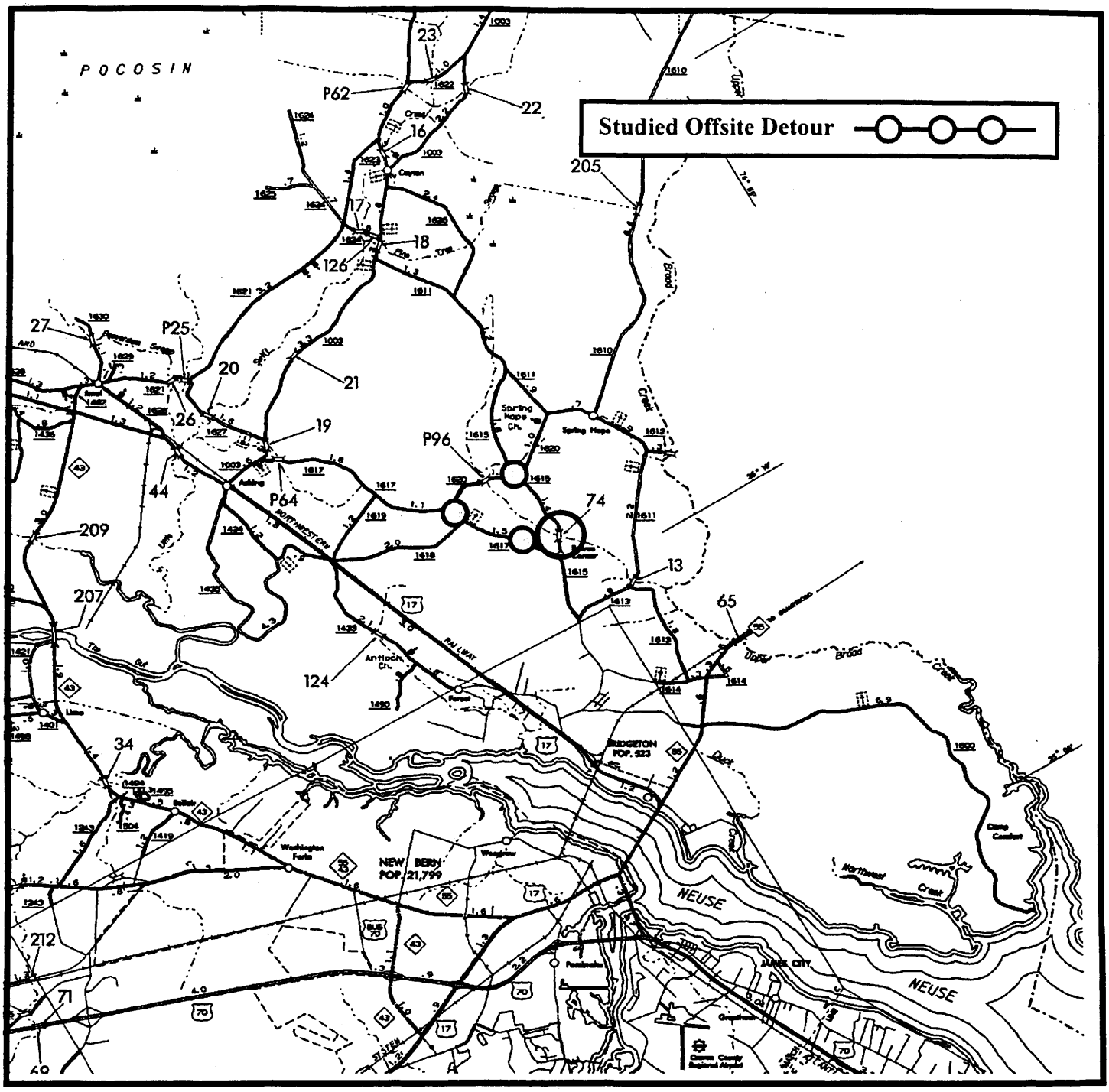
NCDOT will implement Stream Crossing Guidelines for Anadramous Fish

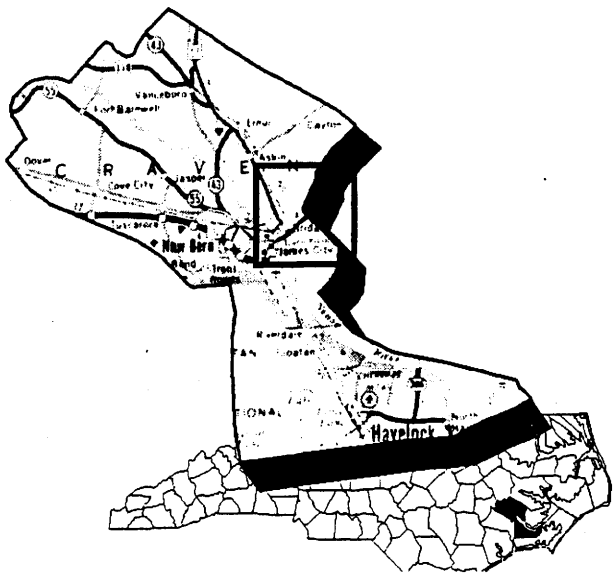
Resident Engineer – School Bus Turnaround

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

Office of Natural Environment – Bridge Demolition –404 Permit

It should be possible to remove all portions of the bridge without any resulting debris/fill in the stream.





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

CRAVEN COUNTY
REPLACE BRIDGE NO. 74 ON SR 1615
OVER BRANCH UPPER BROAD CREEK
B-4088

Figure 1

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

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

Division of Historical Resources

October 28, 2003

MEMORANDUM

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

FROM: David Brook for David Brook

SUBJECT: Replacement of Bridge No. 74 on SR 1615 over Br. Upper Broad Creek, B-4088, Craven County, ER03-0929

On September 4, 2003, Sarah McBride, our preservation specialist for transportation projects met with the North Carolina Department of Transportation (NCDOT) staff for a meeting of the minds concerning the above project. We reported on our available information on historic architectural and archaeological surveys and resources along with our recommendations. DOT provided project area photographs and aerial photographs at the meeting.

Based on our review of the photographs and the information discussed at the meeting, we offer our preliminary comments regarding this project.

In terms of historic architectural resources, we are aware of no historic structures located within the areas of potential effect. We recommend that no historic architectural survey be conducted for this project.

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

Having provided this information, we look forward to receipt of either a Categorical Exclusion or Environmental Assessment which indicates how NCDOT addressed our comments.

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.

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

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

Preston P. Pate, Jr., Director

MEMORANDUM

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

FROM: Mike Street

DATE: July 8, 2003

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

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

MS/sw

3441 Arendell St. P.O. Box 769, Morehead City, North Carolina 28557
Phone: 252-726-7021 Fax: 252-726-6127 Internet: www.ncdmf.net

DMF

Memo

To: Mike Street

From: Mike Marshall

Date: 06/27/03

Re: Review of bridge replacement projects

The three bridge replacement projects in the Central District should be classified as yellow light projects due to anadromous fish spawning concerns. Bachelor Creek B-4085, and Upper Broad Creek B-4088 are river herring spawning areas and Mussel Shell Creek B-4168 is adjacent to river herring spawning activity in the Trent River and neighboring creeks indicating it may also have spawning activity. An in-stream construction moratorium from Feb.15 to June 30 should be implemented for these projects. Best management practices and restoration measures should be undertaken to minimize impacts to wetland habitats in these areas.

Natural Systems Technical Report

Replacement of Bridge No. 74 on SR 1615
Over Branch Upper Broad Creek
Craven County, North Carolina

State Project No. 8.2171301
TIP Project No. B-4088

North Carolina Department of Transportation
Project Development and Environmental Analysis Branch

March 2003

Executive Summary

The following is a Natural Systems Technical Report for the proposed replacement of Bridge No. 74 on Saints Delight Church Road (SR1615) over Morgan Swamp (Branch - Upper Broad Creek) in Craven County, North Carolina (TIP No. B-4088).

Introduction

The proposed project will replace Bridge No. 74 on Saints Delight Church Road over Morgan Swamp in Craven County, North Carolina. The project study area is primarily disturbed urban and agricultural lands and forested land. The project study area is located in the Coastal Plain physiographic region, approximately 19 to 25 feet (5.8 to 7.6 meters) above mean sea level (msl). Two hydric soil mapping units are depicted within the project study area – undivided Masontown mucky fine sandy loam and Muckalee sandy loam, and Rains fine sandy loam.

Physical Characteristics

Water Resources

Water resources located within the project study area lie in North Carolina Division of Water Quality (NCDWQ) Subbasin 03-04-10 and the United States Geological Survey (USGS) Subbasin 03020202 of the Neuse River Drainage Basin. The best usage classification of Morgan Swamp (NCDWQ Stream Index #27-106-3-1) is Class C, Sw, NSW (NCDEM 2002). No water resources classified as High Quality Waters, Water Supplies, Outstanding Resource Waters, or listed Section 303(d) impairments are located within the project study area.

Biotic Resources

The following three plant communities were found within the project study area: Coastal Plain small stream swamp, Coastal Plain mixed pine/hardwood forest, and agricultural/disturbed lands. The table that follows shows the acreage of the plant communities within the project study area.

List of Plant Communities

Community	Area
Coastal Plain Small Stream Swamp	7.3 acres (3.0 ha)
Coastal Plain Mixed Pine/Hardwood Forest	1.8 acres (0.7 ha)
Urban/Agricultural Disturbed Lands	32.6 acres (13.2 ha)

Jurisdictional Topics

Surface Waters and Wetlands

Morgan Swamp is considered jurisdictional surface waters under Section 404 of the Clean Water Act. Based upon the results of the field investigation, the project study area also contains jurisdictional wetlands. The total amount of jurisdictional wetlands within the project area is 7.3 acres (3.0 hectares). The NCDWQ rating for the wetland area is 74. Since no alternatives have been selected, impacts to these "Waters of the United States" cannot be determined.

Due to the potential for water quality impacts during construction, in-stream construction moratoriums to limit the effects on fishery resources have been suggested. The moratorium applies if the following species are supported by the stream: sturgeon (February 1 to June 30), brown and brook trout (October 15 to April 15), rainbow trout (January 1 to April 15), spotfin chub (May 15 to August 15), smallmouth bass (May 1 to July 15), eastern sunfish (April 1 to June 30), western sunfish (May 1 to June 30), and other anadromous fish (February 15 to June 30). A 25 foot (7.6 meter) buffer moratorium exists relative to the smallmouth bass. Qualified biologists from the NCDOT will assess the stream for the abovementioned species. Once the fish have been identified as being supported by the stream, the appropriate moratorium will be applied.

Essential fish habitat (EFH) is defined as "those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity." The aforementioned waters include aquatic areas and their associated physical, chemical, and biological properties used by fish and include aquatic areas historically used by fish where appropriate. The aforementioned substrate includes sediment, hard bottom, structures underlying the waters, and associated biological communities. The proposed project is not anticipated to involve EFH.

Permits

A Nationwide Permit #23 (Approved Categorical Exclusions) should cover the impacts to jurisdictional streams in the project study area. A Nationwide Permit #33 (Temporary Construction, Access, and Dewatering) may be needed for temporary construction access if that is not addressed in the National Environmental Policy Act (NEPA) document. A final permitting strategy cannot be developed until a design alternative is selected.

A Section 401 General Water Quality Certification is also required for any activity that may result in a discharge into "Waters of the United States" or for which an issuance of a federal permit or license is issued. Certifications are administered through the NCDWQ. Final determination of permit applicability lies with the U.S. Army Corps of Engineers (USACE).

A Coastal Area Management Act (CAMA) permit is required for any development within Areas of Environmental Concern (AEC). Craven County is one of the 20 CAMA counties in North Carolina. The AECs include navigable waters, marshes and wetlands, areas within 75 feet of mean high water line along an estuarine shoreline, the ocean beach, inlets, areas designated as inland fishing water by the N.C. Marine Fisheries Commission (NCMFC), and areas near a public water supply. A Major Permit is required if there is any dredging or filling of water or marsh, or if another state or federal permit is required. Section 103(5)(b) of the CAMA exempts road maintenance within a public right-of-way. The North Carolina Division of Coastal Management (NCDCM) administers CAMA permits within the state. The NCDCM will review the design plans and determine the permit requirements for the project. Permit requirements cannot be determined until a design alternative is selected.

Federally Protected Species

Plants and animals with federal classifications of Endangered, Threatened, Proposed Endangered, and Proposed Threatened are protected under provisions of Section 7 and Section 9 of the Endangered Species Act. As of February 11, 2003, the United States Fish and Wildlife Service (USFWS) identified three endangered species, two threatened species, and one threatened species due to similarity of appearance as potentially occurring in Craven County. The table that follows lists each species, its status and biological conclusion.

Common Name	Scientific Name	Federal Status	Biological Conclusion
American alligator	*Alligator mississippiensis*	Threatened (S/A)	No Effect
Bald Eagle	*Haliaeetus leucocephalus*	Threatened	No Effect
Leatherback sea turtle	*Dermochelys coriacea*	Endangered	No Effect
West Indian Manatee	*Trichechus manatus*	Endangered	No Effect
Red-cockaded woodpecker	*Picoides borealis*	Endangered	No Effect
Sensitive jointvetch	*Aeschynomene virginica*	Threatened	No Effect

American Alligator

Suitable habitat for the American alligator does exist within the project area in Morgan Swamp. A review of the North Carolina Natural Heritage Program (NCNHP) database of rare species and unique habitats on December 11, 2002 has no record for the presence of the American alligator within the project vicinity. A survey for the American alligator was conducted within the project area; however, no individuals or their nests were observed.

Bald Eagle **Biological Conclusion: No Effect**

Suitable habitat for the bald eagle (i.e., large bodies of water) does not exist within the project study area. In addition, a large amount of human disturbance has occurred within and around the project study area. Review of NCNHP maps indicated no known populations of this species within 1 mile of the project study area. No impacts to this species from project construction are anticipated.

Leatherback Sea Turtle **Biological Conclusion: No Effect**

Suitable habitat for the leatherback sea turtle (i.e., high-sloped beaches) does not exist within the project area. A review of the NCNHP database of rare species and unique habitats on December 11, 2002, depicts no occurrences of the leatherback sea turtle within or near the project area.

West Indian Manatee **Biological Conclusion: No Effect**

Suitable habitat for the West Indian manatee (i.e., sufficient depth of at least five feet [1.5 meters]) does not exist within the project study area. The NCNHP has no records

of any known populations of the West Indian Manatee within a one-mile radius of the project study area. No impacts to this species from project construction are anticipated.

Red-Cockaded Woodpecker **Biological Conclusion: No Effect**

Suitable habitat for the red-cockaded woodpecker (RCW) (i.e., old pine stands) within or near the project study area does not exist. In addition, large agricultural fields fracture the landscape generating boundaries that RCW do not typically cross. Therefore, a large enough area of appropriate habitat is not located within the project study area. The NCNHP lists no documented occurrences of the RCW within 5 miles of the project study area. No impacts are anticipated to the RCW because of project construction

Sensitive Jointvetch **Biological Conclusion: No Effect**

Suitable habitat for the sensitive jointvetch (i.e., intertidal zones near the edge of the tidal fluctuation) does not exist within the project study area. A review of the NCNHP database of rare species and unique habitats on December 11, 2002, depicts no occurrences of the sensitive jointvetch within or near the project area.

Surveys for these species are valid for two years from the survey data. If the project is not constructed within those two years, the species may need to be resurveyed before the let date.

Conclusions

The project study area contains an approximately 7.2-acre (3.0 ha) jurisdictional wetland area. Since no alternatives have been selected, impacts to these "Waters of the United States" cannot be determined. Nationwide Permit #23 and #33 and a Section 401 General Water Quality Certification may also be required for the project. No federally protected species are likely to be impacted by this project.

During replacement of the bridge, construction of an onsite temporary detour bridge, use of existing roadways for an off-site detour, or construction of an offsite temporary detour bridge will be required. Approximately 7.2 acres (3.0 ha) of riverine wetlands are located within the floodplain of Branch Upper Broad Creek throughout the project study area. If an off-site detour is not feasible and an onsite temporary bridge crosses the riverine wetlands, a geotechnical investigation of the wetland substrate's consolidation potential will have to be performed. Construction of a temporary detour bridge within the wetland area will potentially degrade the ability of the wetland to

function as well as it did before extreme compaction or distortion of the substrate occurred from the weight of the bridge.

The existing causeway is comprised of compacted soils and is abutted by wetlands to the north and south. The causeway extends beyond the wetlands associated with the floodplain of Branch Upper Broad Creek. Removal of sections of the existing causeway, thereby lengthening the bridge, has the potential to impact abutting wetlands. Based on the width of the stream channel relative to the existing causeway, lengthening the bridge will not improve surface flows.

Subject: 2006 Bridge Projects
Date: Wed, 23 Jul 2003 14:37:10 -0400
From: Bill Arrington <Bill.Arrington@ncmail.net>
Organization: NC DENR DCM
To: "Goodwin, William" <bgoodwin@dot.state.nc.us>
CC: "Brittingham, \"Cathy" <Cathy.Brittingham@ncmail.net>

Hi Bill,

I finally visited all the sites in the coastal counties.

The following are my comments for the proposed bridge replacement sites:

B-3811 - No DCM jurisdiction

B-4021 - No DCM jurisdiction

B-4022 - I have received no request or information

B-4023 - Public Trust Area (PTA) and Public Trust Shoreline (PTS) Areas of Environmental Concern (AEC's) Yellow light project - Access to the farm road approximately 50' from the bridge in the north east quadrant should be maintained

B-4025 - PTA and PTS AEC's. Yellow light project - Access to the roads along the creek in the north east and north west quadrants should be maintained.

B-4027 - PTA and PTS AEC's. Green light project

B-4073 - PTA and PTS AEC's. Yellow light project - Access to driveway approximately 180 feet from the south east corner of the bridge should be maintained.

B-4085 - PTA and PTS AEC's. Green light project

B-4088 - No DCM jurisdiction

B-4151 - No DCM jurisdiction

B-4224 - PTA and PTS AEC's. Green light project

B-4225 - No DCM jurisdiction

B-4226 - No DCM jurisdiction

B-4228 - No DCM jurisdiction

B-4313 - No DCM jurisdiction

B-4420 - No DCM jurisdiction

B-4431 - PTA and PTS AEC's. Green light project

B-4486 - PTA and PTS AEC's. Green light project

Replacing the bridges that have DCM AEC impacts with a similar bridge on the same alignment would qualify for a general permit and require little time to permit after the required complete application, fee and adjacent riparian property notifications are received. Adding additional lanes to the bridge, requesting a work bridge or causeway, requesting an on site

detour bridge or causeway exceeding the allowable impacts for the general permit or constructing the bridge on a new alignment would require the application for a CAMA major permit as well as more coordination between DOT and DCM and additional time to process the permit application

Thank you for explaining the process for this years bridge scopings I appreciate your efforts to distribute the lists of projects well in advance of the comment deadline I believe next year will work more smoothly

Bill

Ecosystem Enhancement
PROGRAM

August 28, 2006

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-4088, Replace Bridge 74 over Upper Broad Creek on SR 1615, Craven County

The purpose of this letter is to notify you that the Ecosystem Enhancement Program (EEP) will provide the compensatory riparian wetland mitigation and buffer mitigation for the subject project. Based on the information supplied by you in a letter dated August 8, 2006, the impacts are located in CU 03020202 of the Neuse River Basin in the Southern Outer Coastal Plain (SOCP) Eco-Region, and are as follows:

Riparian:	0.38 acre
Zone 1 Buffer:	2,236 square feet
Zone 2 Buffer:	1,903 square feet

The NCDOT estimated buffer impacts in the 7-year Impact Projection Database submitted to EEP in February 2006. The buffer mitigation required for the NCDOT's impact projections was incorporated into EEP's biennial budget that was submitted to the NCDOT for approval in April 2006. All buffer mitigation requests and approvals are administrated through the Riparian Buffer Restoration Fund.

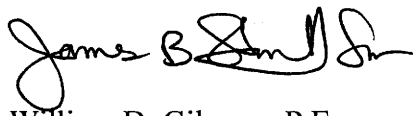
The NCDOT will be responsible to ensure that the appropriate compensation for the buffer mitigation will be provided in the agreed upon method of fund transfer. Upon receipt of the NCDWQ's Buffer Certification, the NCDOT will provide the EEP a copy of the Certification along with a letter verifying the buffer impact/mitigation amounts and

requesting a fund transfer to provide the required compensation. The EEP will transfer funds from the MOA Account (Fund 2984) into the Riparian Buffer Restoration Fund (Fund 2982) and commit to provide the appropriate buffer mitigation to offset the impacts associated with this project. At that time, the EEP will be responsible for the buffer mitigation required for this project.

Mitigation for this project will be provided in accordance with the Memorandum of Agreement between the N. C. Department of Environment and Natural Resources, the N. C. Department of Transportation, and the U. S. Army Corps of Engineers. EEP will commit to implementing sufficient compensatory riparian wetland mitigation to offset the impacts associated with this project by the end of the MOA year in which this project is permitted. If the above referenced impacts amounts are revised, then this mitigation acceptance letter will no longer be valid and a new mitigation acceptance letter will be required from EEP.

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

Sincerely,



William D. Gilmore, P.E.
EEP Director

cc: Mr. William Wescott, USACE-Washington
Mr. John Hennessy, Division of Water Quality, Wetlands/401 Unit
File: B-4088

STORMWATER MANAGEMENT PLAN

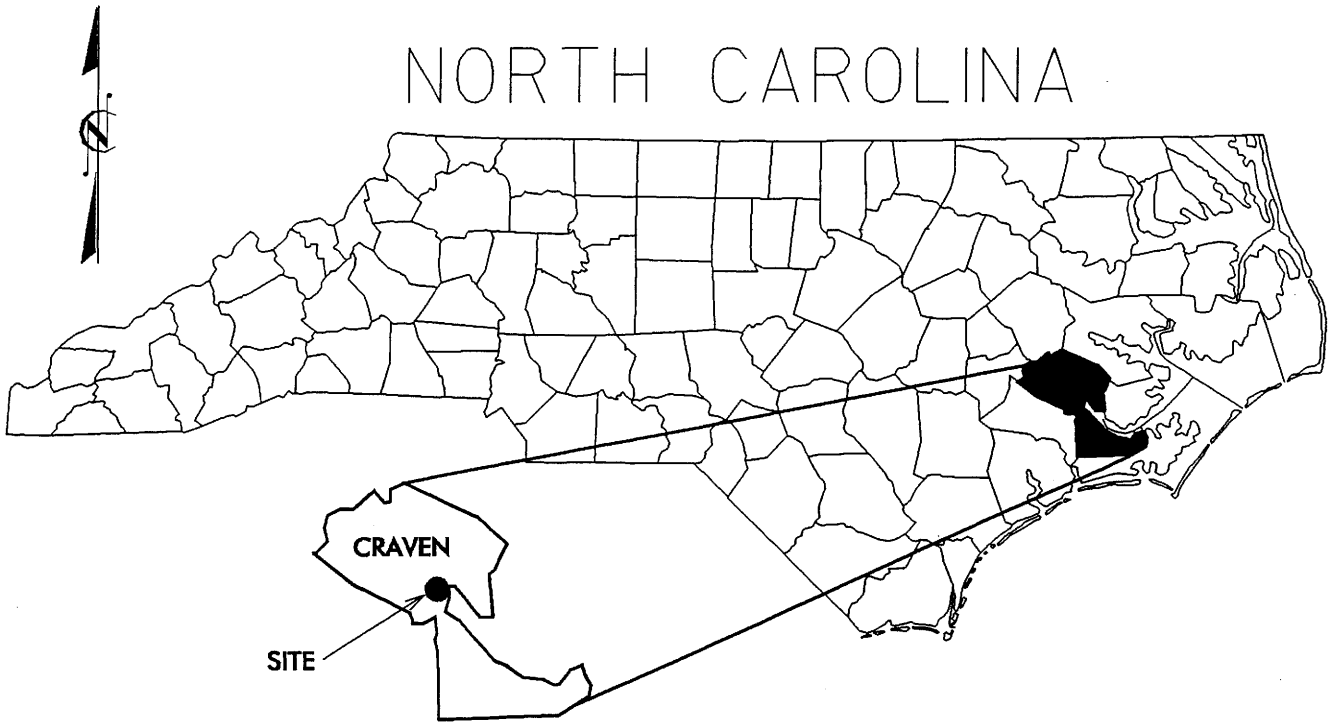
State Project: 33446.1.1 (B-4088)
Craven County
April 18, 2005

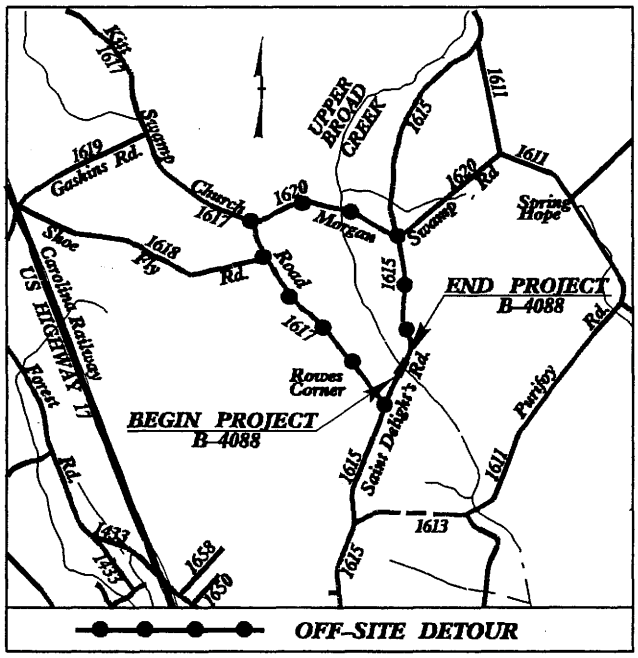
The project involves the removal and replacement of Bridge Number 74, in its existing location, carrying SR 1615 over Morgan Swamp in Craven County. The existing two lane, sixty nine foot long bridge will be replaced with a two lane, ninety foot long cored slab bridge. Morgan Swamp has a Class C, Sw, and NSW classification. The overall length of the project is 0.15 miles. SR 1615 will be closed during construction.

The existing roadway is a two lane (nine foot lanes), eighteen foot paved road with six foot wide grassed shoulders . The proposed roadway will be a two lane (twelve foot lanes), twenty four foot paved road, with eight foot wide grassed shoulders. The proposed bridge width will be thirty three feet wide while the existing bridge width is twenty nine feet. Approximately 0.11 acres of additional pavement will be added as a result of the project.

The following best management practices and measures were taken during the design of the project to reduce the stormwater impacts:

1. Drainage from the proposed bridge deck will be conveyed off the bridge and into a drainage system located beyond the end of the low side of the bridge and outside of Buffer Zone 2. A rip rap pad located at the end of the pipe system will dissipate the waters energy before draining into adjacent wetlands.
2. The roadway typical section width has been narrowed to the extent practical in order to minimize impacts to the wetlands (existing on both sides of the roadway) and to a blue line stream running along the toe of the fill slope at the north east approach.
3. Ditching through the wetlands is being avoided.
4. The roadway typical section consists of grass shoulders, fill slopes, and ditches with side slopes of 3:1 or flatter.





WETLAND IMPACT VICINITY MAPS

PERMIT DRAWINGS

NCDOT

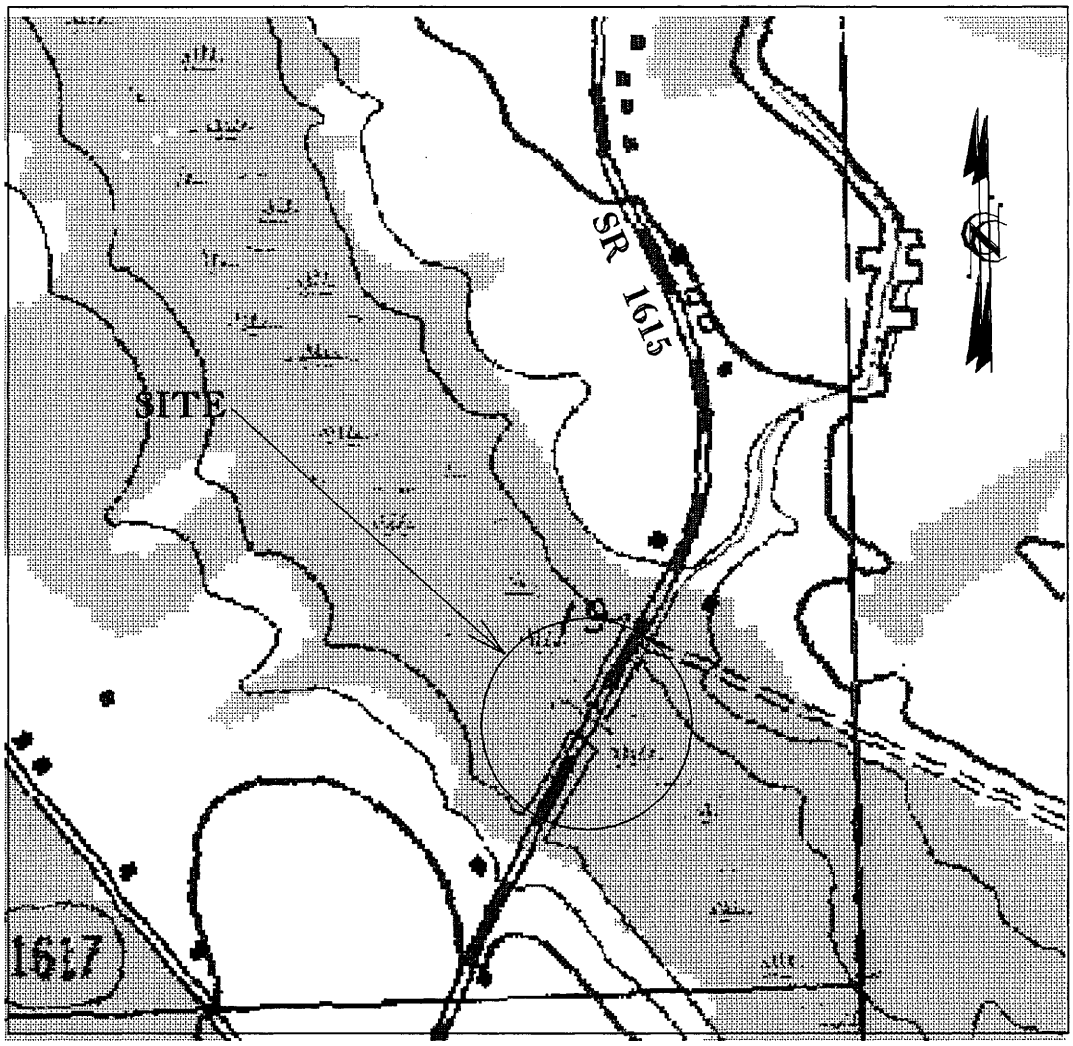
DIVISION OF HIGHWAYS

CRAVEN COUNTY

PROJECT: 8.2171301 (B-4088)

REPLACEMENT OF BRIDGE NO.74
ON SR 1615 OVER MORGAN SWAMP

SHEET 1 OF 7 11/07/05



NOT TO SCALE

WETLAND IMPACT

SITE MAP

NCDOT

DIVISION OF HIGHWAYS

CRAVEN COUNTY

PROJECT: 8.2171301 (B-4088)

REPLACEMENT OF BRIDGE NO.74
ON SR 1615 OVER MORGAN SWAMP

WETLAND LEGEND

WLB WETLAND BOUNDARY

WETLAND

DENOTES FILL IN WETLAND

DENOTES FILL IN SURFACE WATER

DENOTES FILL IN SURFACE WATER (POND)

DENOTES TEMPORARY FILL IN WETLAND

DENOTES EXCAVATION IN WETLAND

DENOTES TEMPORARY FILL IN SURFACE WATER

DENOTES MECHANIZED CLEARING

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
12"-48" PIPES
54" PIPES & ABOVE

(DASHED LINES DENOTE EXISTNG STRUCTURES)

SINGLE TREE

WOODS LINE

DRAINAGE INLET

ROOTWAD

RIP RAP

5 ADJACENT PROPERTY OWNER OR PARCEL NUMBER IF AVAILABLE

PREFORMED SCOUR HOLE

LEVEL SPREADER (LS)

DITCH / GRASS SWALE

NCDOT

DIVISION OF HIGHWAYS

CRAVEN COUNTY

PROJECT: 8.2171301 (B-4088)

REPLACEMENT OF BRIDGE NO.74 ON SR 1615 OVER MORGAN SWAMP

PROPERTY OWNERS

NAMES AND ADDRESSES

PARCEL NO.	NAMES	ADDRESSES

Note: This entire project can be built within the existing right of way.

NCDOT

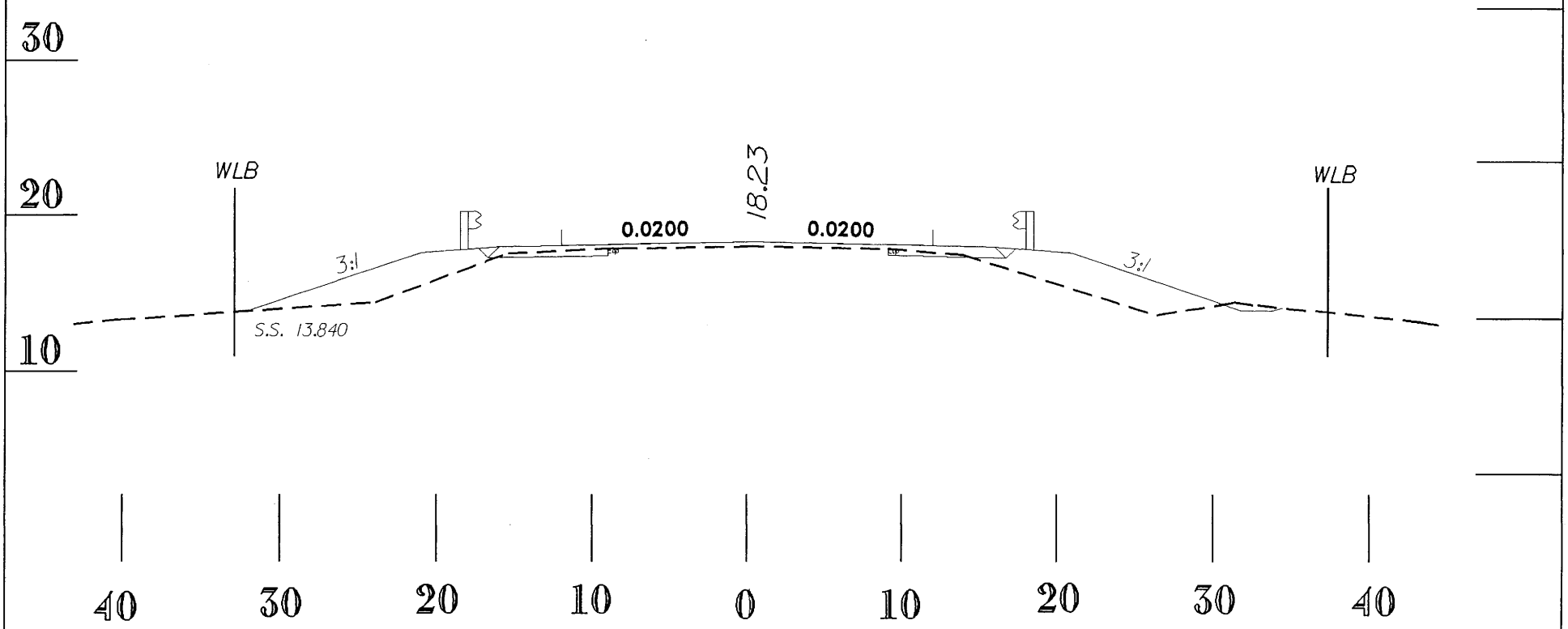
DIVISION OF HIGHWAYS

CRAVEN COUNTY

PROJECT: 8.2171301 (B-4088)

REPLACEMENT OF BRIDGE NO.74
ON SR 1615 OVER MORGAN SWAMP

A-A



CROSS SECTION
STATION 23 + 50-L-

Scale: 1 inch = 10 feet

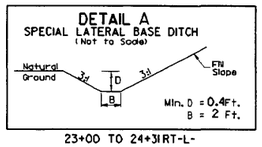
NCDOT
DIVISION OF HIGHWAYS
CRAVEN COUNTY
PROJECT: 8.2171301 (B-4088)

REPLACEMENT OF BRIDGE NO.74
ON SR 1615 OVER MORGAN SWAMP

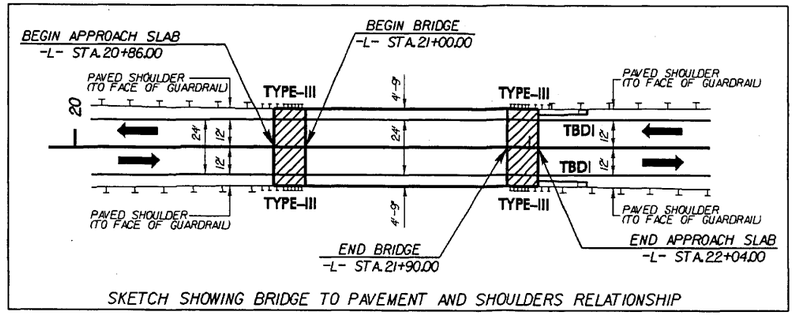
PROJECT REFERENCE NO.	SHEET NO.
B-4088	4
R/W SHEET NO.	6 of 7
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

DETAIL A
SPECIAL LATERAL BASE DITCH
(Not to Scale)



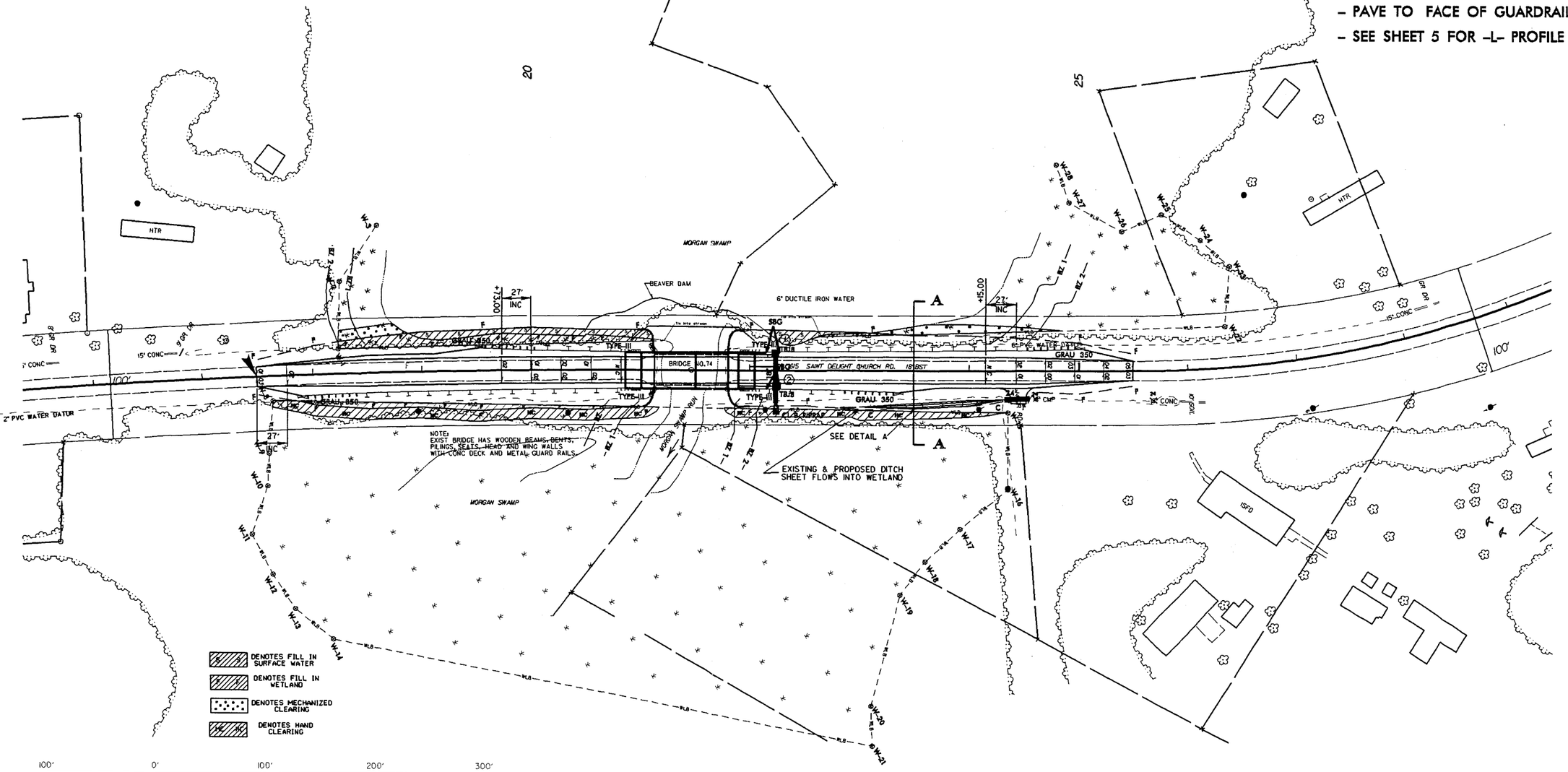
23+00 TO 24+31RT-L-



SKETCH SHOWING BRIDGE TO PAVEMENT AND SHOULDERS RELATIONSHIP

NOTES:

- THERE IS NO PROPOSED RIGHT OF WAY FOR THIS PROJECT.
- PAVE TO FACE OF GUARDRAIL
- SEE SHEET 5 FOR -L- PROFILE



DENOTES FILL IN SURFACE WATER
DENOTES FILL IN WETLAND
DENOTES MECHANIZED CLEARING
DENOTES HAND CLEARING

100' 0' 100' 200' 300'
SCALE: 1"= 100'

REVISIONS

8/17/99

28-JUN-2006 08:51
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Darrion Al HYDRAULICS

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	17+62 To 24+35 -L-	APPROACH FILL	0.081			0.034	0.117	0.044				
	21+50-L-	*Bent 1										
TOTALS:			0.081			0.034	0.117	0.044				

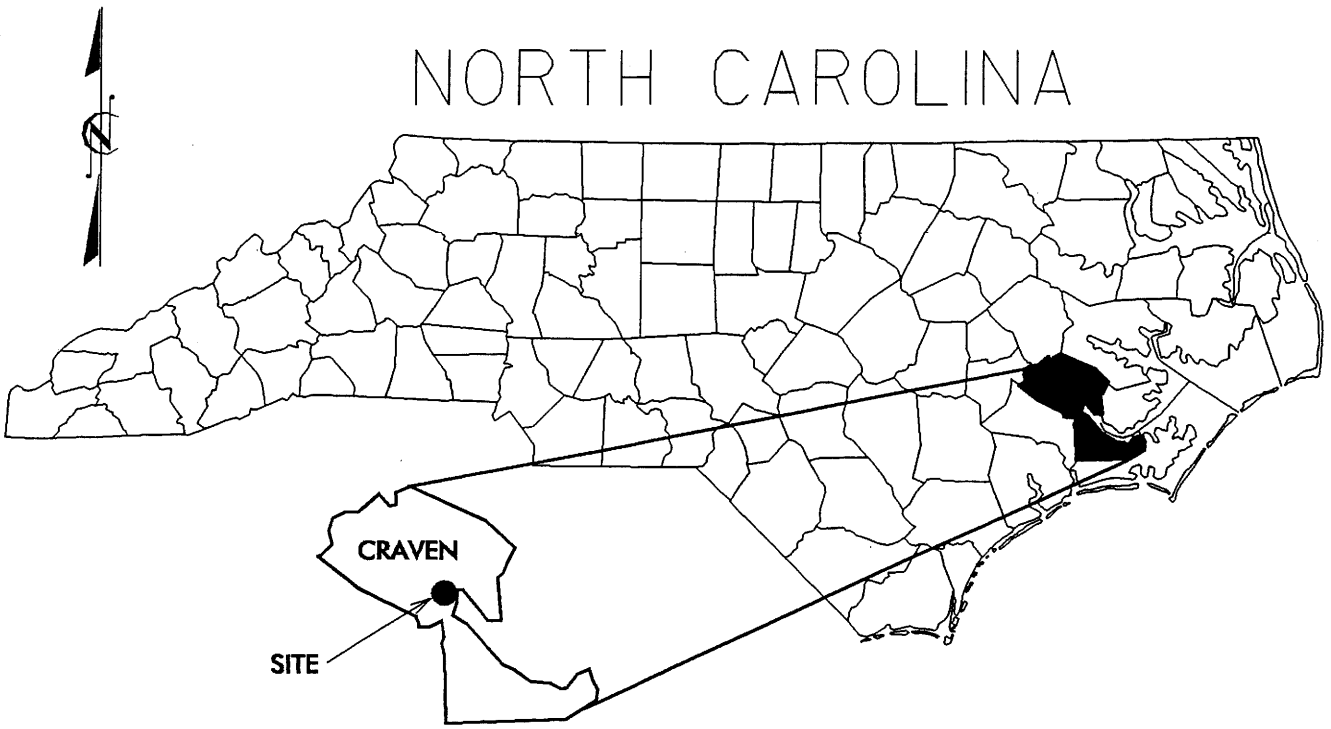
*Note: Structure Design had deterimined that impacts to the surface water for construction of the interior bent will be 11 sq.ft.

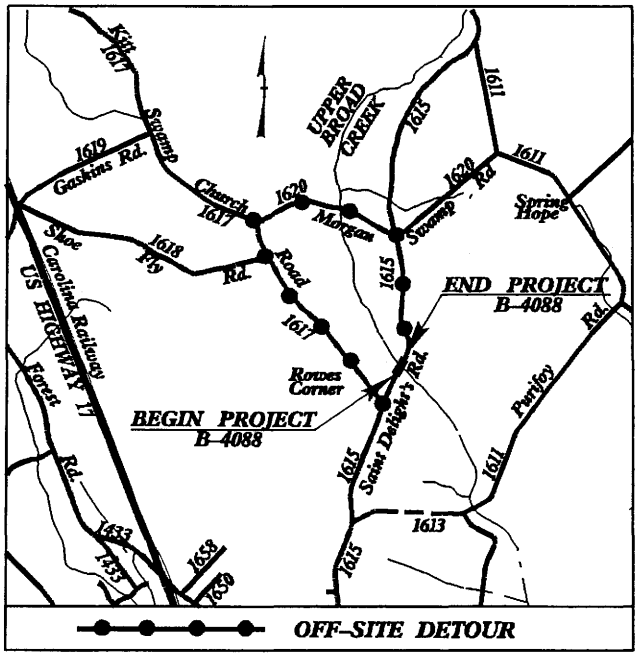
NC DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

CRAVEN COUNTY
WBS - 33446.1.1 (B-4088)

SHEET 7 of 7 6/28/2006

ATN Revised 3/31/05





NEUSE R. BUFFER VICINITY MAPS

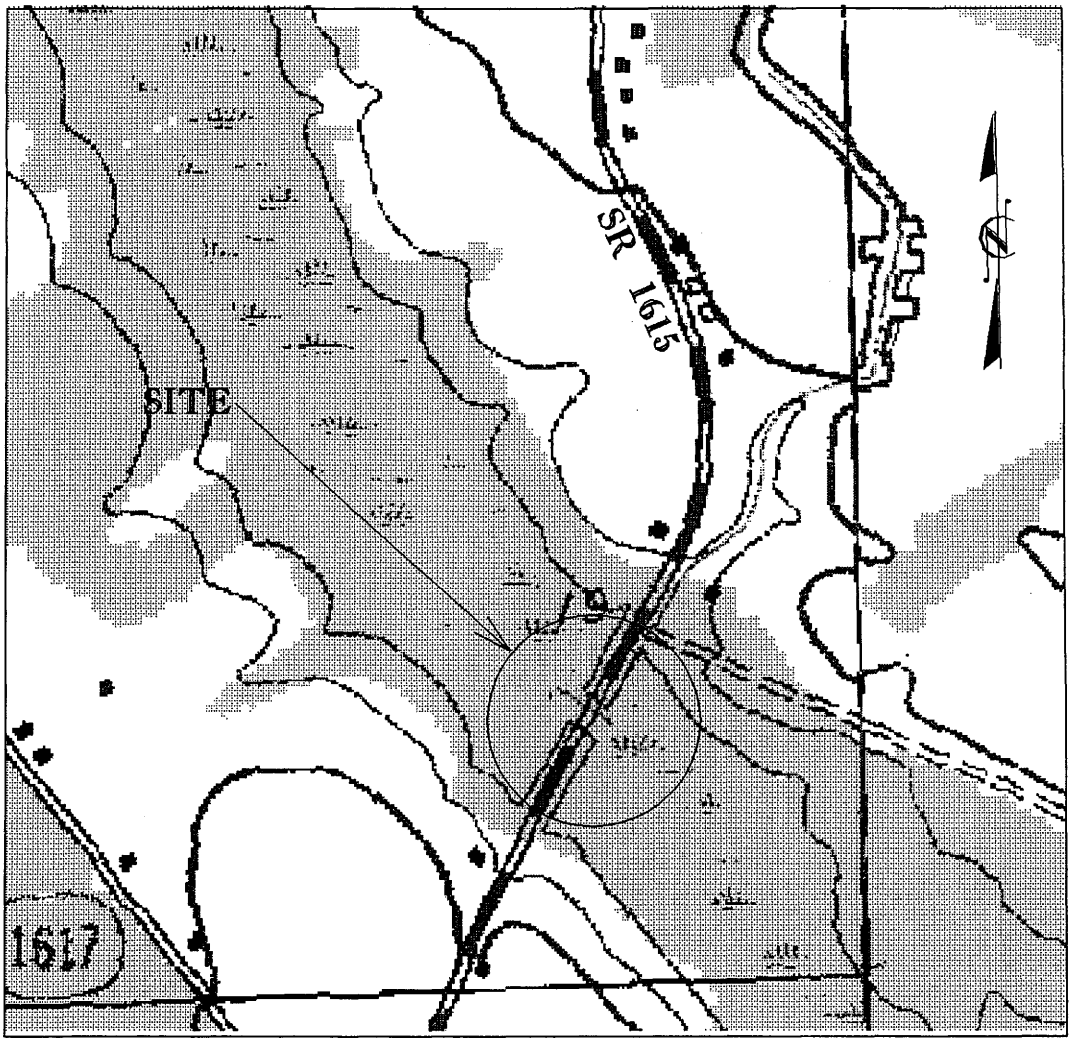
NCDOT

DIVISION OF HIGHWAYS

CRAVEN COUNTY

PROJECT: 8.2171301 (B-4088)

REPLACEMENT OF BRIDGE NO.74
ON SR 1615 OVER MORGAN SWAMP



NOT TO SCALE

NEUSE R. BUFFER

SITE MAP

NCDOT

DIVISION OF HIGHWAYS

CRAVEN COUNTY

PROJECT: 8.2171301 (B-4088)

REPLACEMENT OF BRIDGE NO.74
ON SR 1615 OVER MORGAN SWAMP

BUFFER LEGEND

WLB WETLAND BOUNDARY

WETLAND

ALLOWABLE IMPACTS ZONE 1

ALLOWABLE IMPACTS ZONE 2

MITIGABLE IMPACTS ZONE 1

MITIGABLE IMPACTS ZONE 2

BZ RIPARIAN BUFFER ZONE

BZ1 RIPARIAN BUFFER ZONE 1
30 ft (9.2m)

BZ2 RIPARIAN BUFFER ZONE 2
20 ft (6.1m)

FLOW DIRECTION

TB TOP OF BANK

WE EDGE OF WATER

C PROP. LIMIT OF CUT

F PROP. LIMIT OF FILL

PROP. RIGHT OF WAY

NG NATURAL GROUND

PL PROPERTY LINE

TDE TEMP. DRAINAGE EASEMENT

PDE PERMANENT DRAINAGE EASEMENT

EAB EXIST. ENDANGERED ANIMAL BOUNDARY

EPB EXIST. ENDANGERED PLANT BOUNDARY

WATER SURFACE

LIVE STAKES

BOULDER

COIR FIBER ROLLS

PROPOSED BRIDGE

PROPOSED BOX CULVERT

PROPOSED PIPE CULVERT
12"-48" PIPES
54" PIPES & ABOVE

(DASHED LINES DENOTE EXISTNG STRUCTURES)

SINGLE TREE

WOODS LINE

DRAINAGE INLET

ROOTWAD

RIP RAP

5 ADJACENT PROPERTY OWNER OR PARCEL NUMBER IF AVAILABLE

PREFORMED SCOUR HOLE (PSH)

LEVEL SPREADER (LS)

DITCH/ GRASS SWALE

NCDOT

DIVISION OF HIGHWAYS

CRAVEN COUNTY

PROJECT: 8.2171301 (B-4088)

REPLACEMENT OF BRIDGE NO.74 ON SR 1615 OVER MORGAN SWAMP

SHEET 3 OF 7 11/07/05

PROPERTY OWNERS

NAMES AND ADDRESSES

PARCEL NO.	NAMES	ADDRESSES

Note: This entire project can be built within the existing right of way.

NCDOT

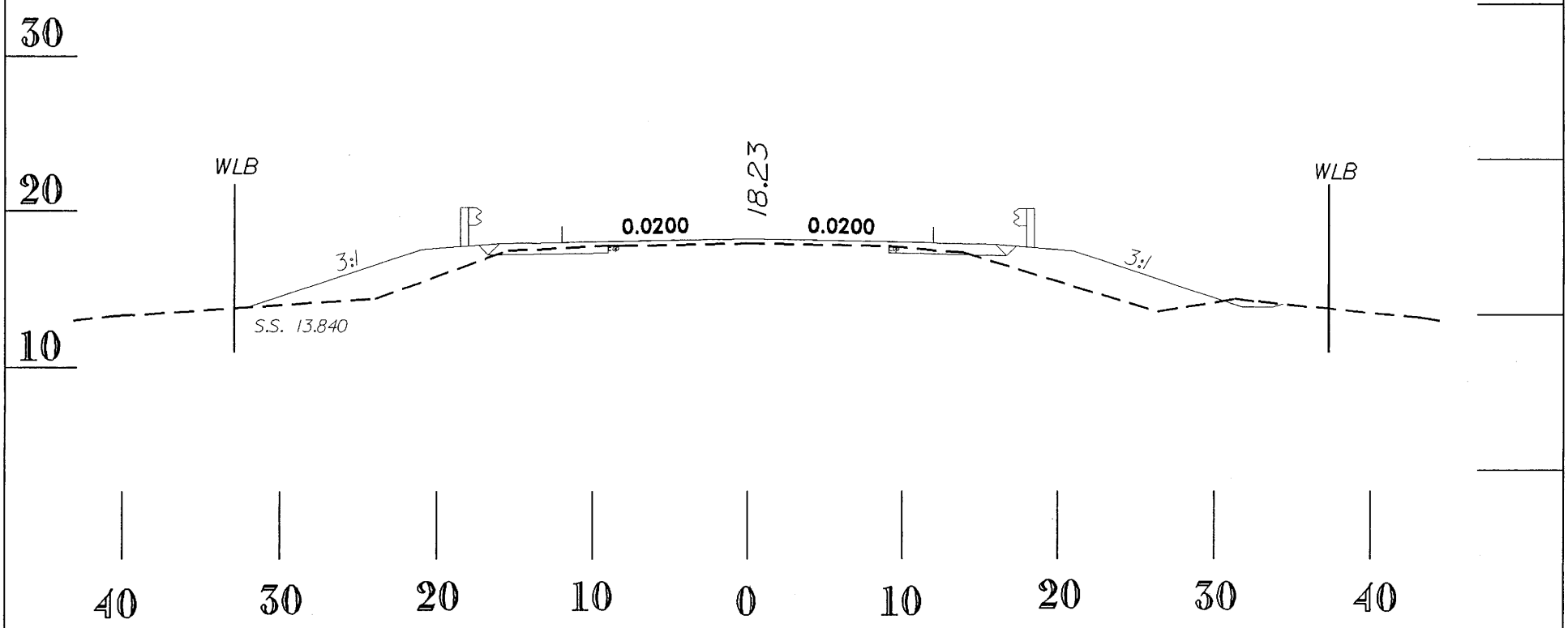
DIVISION OF HIGHWAYS

CRAVEN COUNTY

PROJECT: 8.2171301 (B-4088)

REPLACEMENT OF BRIDGE NO.74
ON SR 1615 OVER MORGAN SWAMP

A-A



CROSS SECTION
STATION 23+50-L-

Scale: 1inch = 10 feet

NCDOT
DIVISION OF HIGHWAYS
CRAVEN COUNTY
PROJECT: 8.2171301 (B-4088)

REPLACEMENT OF BRIDGE NO.74
ON SR 1615 OVER MORGAN SWAMP

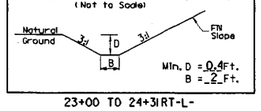
8/17/99

REVISIONS

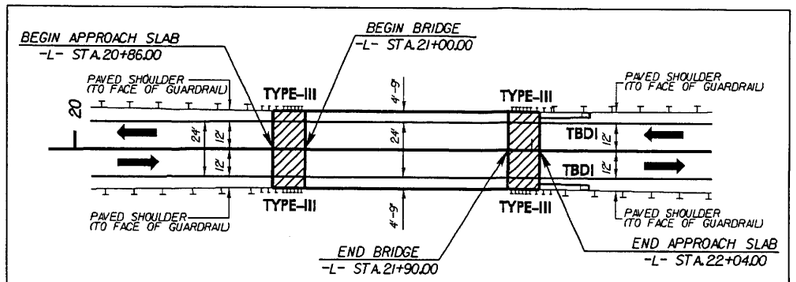
PROJECT REFERENCE NO.	SHEET NO.
B-4088	4
R/W SHEET NO.	6 OF 7
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

DETAIL A
SPECIAL LATERAL BASE DITCH
(Not to Scale)



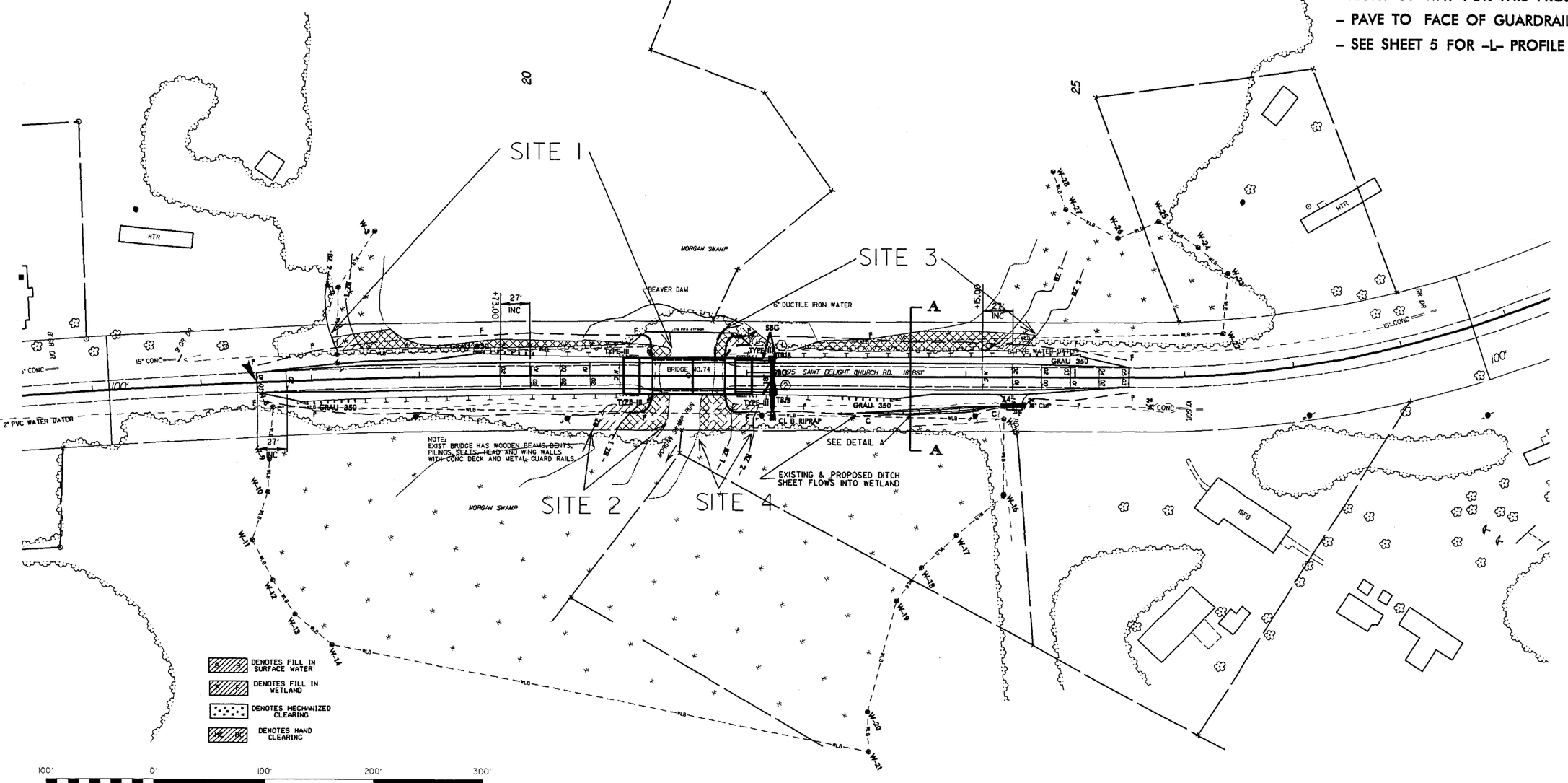
23+00 TO 24+31 RT-L-



SKETCH SHOWING BRIDGE TO PAVEMENT AND SHOULDERS RELATIONSHIP

NOTES:

- THERE IS NO PROPOSED RIGHT OF WAY FOR THIS PROJECT.
- PAVE TO FACE OF GUARDRAIL
- SEE SHEET 5 FOR -L- PROFILE



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pcerman
At HYDRAULICS

BUFFER IMPACTS SUMMARY

SITE NO.	STRUCTURE SIZE / TYPE	STATION (FROM/TO)	IMPACT TYPE: ROAD CROSSING	IMPACT TYPE: BRIDGE	IMPACT TYPE: PARALLEL IMPACT	ALLOWABLE: ZONE 1 (ft^2)	ALLOWABLE: ZONE 2 (ft^2)	ALLOWABLE: TOTAL (ft^2)	MITIGABLE: ZONE 1 (ft^2)	MITIGABLE: ZONE 2 (ft^2)	MITIGABLE: TOTAL (ft^2)	BUFFER REPLACEMENT: ZONE 1 (ft^2)	BUFFER REPLACEMENT: ZONE 2 (ft^2)
1	Bridge	18+19LT TO		x		247		247					
		21+30LT-L-	x						1599	334	1933		
2	Bridge	20+56RT TO		x		802		802					
		21+28RT-L-	x						284	581	865		
3	Bridge	21+71LT TO		x		362		362					
		24+64LT-L-	x						2557	576	3133		
4	Bridge	21+53RT TO		x		989	99	1088					
		22+11RT-L-	x							412	412		
TOTAL:						2400	99	2499	4440	1903	6343		

REMARKS:
Wetland Impacts inside of buffer impacts: (sq.ft.)

SITE NO.	ALLOWABLE ZONE 1	ALLOWABLE ZONE 2	MITIGABLE ZONE 1	MITIGABLE ZONE 2
1	16	0	1599	304
2	0	0	0	50
3	0	0	916	99
4	0	0	0	0
TOTALS:	16	0	2515	453

N.C. DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS

CRAVEN COUNTY
PROJECT: 33446.1.1 (B-4088)

9/20/2006

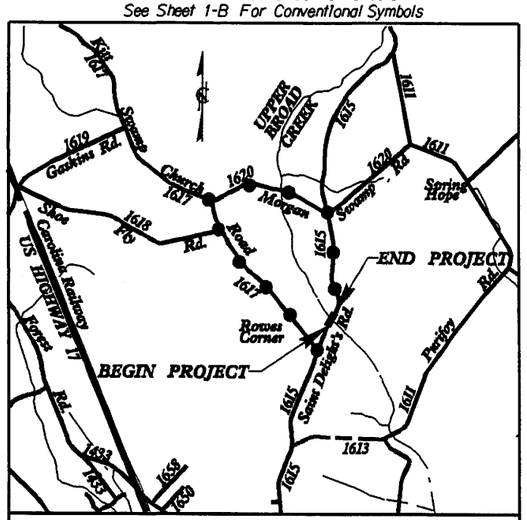
SHEET 7 OF 7

09/28/99

TIP PROJECT: B-4088

CONTRACT:

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



VICINITY MAP SHOWING LOCATION OF PROJECT B-4088

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

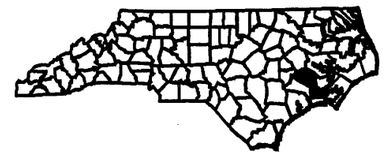
CRAVEN COUNTY

LOCATION: BRIDGE NO 74 OVER A BRANCH OF UPPER BROAD CREEK ON SR 1615

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

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-4088	1	

STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION
33446.1.1	BRSTP-1615(2)	PE



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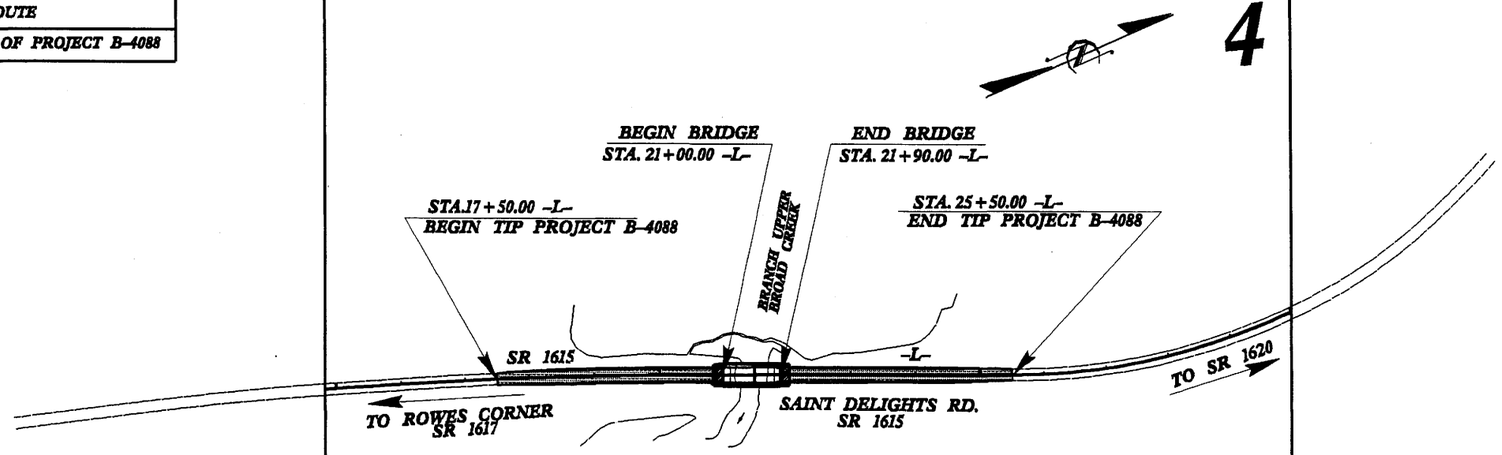


PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

THERE IS NO CONTROL OF ACCESS ON THIS PROJECT.
THIS PROJECT IS NOT WITHIN ANY MUNICIPAL BOUNDARIES.
CLEARING ON THIS PROJECT SHALL BE PREFORMED TO THE LIMITS ESTABLISHED BY METHOD III

GRAPHIC SCALES

PLANS: 50 25 0 50 100
PROFILE (HORIZONTAL): 50 25 0 50 100
PROFILE (VERTICAL): 10 5 0 10 20

DESIGN DATA

2005 = 1644
2025 = 2600
DHV = 11 %
D = 65 %
T = 3 % *
V = 60 MPH
* TTST 1 DUAL 2
CLASS = RURAL COLLECTOR

PROJECT LENGTH

Length of Roadway TIP PROJECT B-4088 = 0.135 MI
Length of Structure TIP PROJECT B-4088 = 0.017 MI
Total Length of TIP PROJECT B-4088 = 0.152 MI

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

2006 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE: DEC. 16, 2005

LETTING DATE: April 17, 2007

TONY HOUSER, PE
PROJECT ENGINEER

LEE ANN MOORE
PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

SIGNATURE:

ROADWAY DESIGN ENGINEER

SIGNATURE:

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

STATE DESIGN ENGINEER

DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

APPROVED
DIVISION ADMINISTRATOR DATE

13-MAR-2006 11:45
r:\roadway\proj\b4088_rdy_tsh.dgn
$$$$USERNAME$$$$

10/25/05

PROJECT REFERENCE NO.	SHEET NO.
B-4088	1B

Note: Not to Scale

****S.U.E. = Subsurface Utility Engineering***

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

CONVENTIONAL PLAN SHEET SYMBOLS

BOUNDARIES AND PROPERTY:

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

BUILDINGS AND OTHER CULTURE:

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

HYDROLOGY:

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

RAILROADS:

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

RIGHT OF WAY:

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

ROADS AND RELATED FEATURES:

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

VEGETATION:

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

EXISTING STRUCTURES:

MAJOR:

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

MINOR:

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

UTILITIES:

POWER:

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

TELEPHONE:

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

WATER:

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

TV:

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

GAS:

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

SANITARY SEWER:

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

MISCELLANEOUS:

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

5/14/99

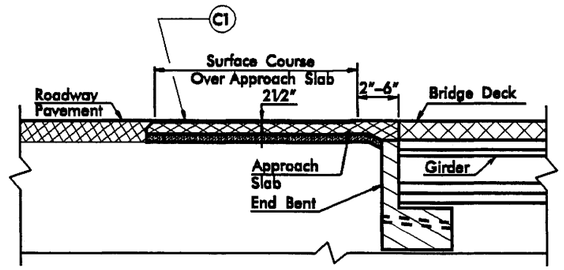
PROJECT REFERENCE NO.	SHEET NO.
B-4088	2
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
NOT FOR CONSTRUCTION

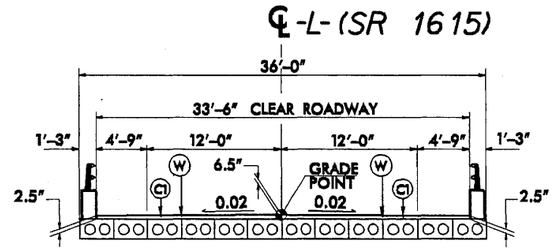
PAVEMENT SCHEDULE

C1	PROP. APPROX. 2½" ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 137.5 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.
C2	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 110 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT LESS THAN 1¼" IN DEPTH OR GREATER THAN 1 1/2" IN DEPTH.
E1	PROP. APPROX. 4½" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 513 LBS. PER SQ. YD.
E2	PROP. VAR. DEPTH ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT LESS THAN 8" IN DEPTH OR GREATER THAN 8½" IN DEPTH.
R	SHOULDER BERM & GUTTER
T	EARTH MATERIAL
U	EXISTING PAVEMENT
W	VARIABLE DEPTH ASPHALT PAVEMENT (SEE WEDGING DETAIL)

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

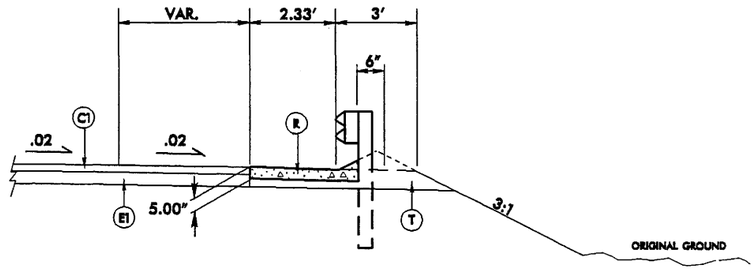


DETAIL OF ASPHALT WEARING SURFACE ON APPROACH SLAB



TYPICAL SECTION ON STRUCTURE

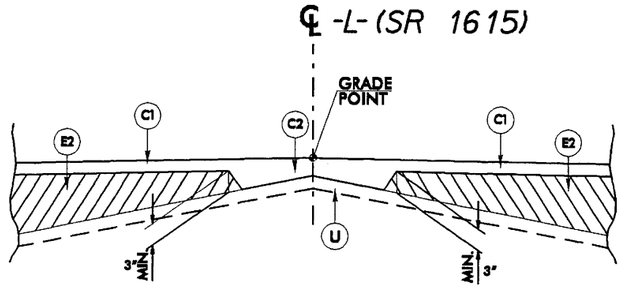
USE STRUCTURE TYPICAL SECTION FOR THE FOLLOWING:
-L- STA 21+00.00 TO STA 21+90.00
(Use Bicycle Safe Two-Bar Metal Rail)



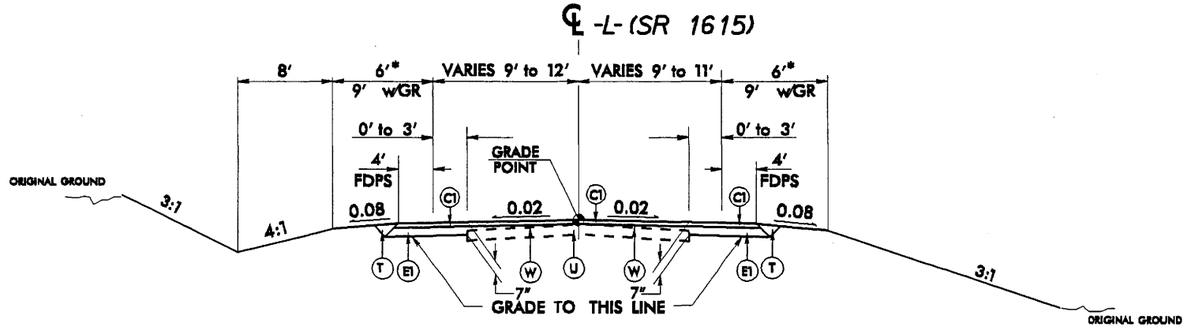
DETAIL SHOWING PAVED SHOULDER IN RELATION TO GUARDRAIL

USE SHOULDER BERM GUTTER FOR THE FOLLOWING :

LT. SHOULDER: -L- STA. 21+90.00 (APPROACH SLAB) TO -L- STA. 22+25.00
RT. SHOULDER: -L- STA. 21+90.00 (APPROACH SLAB) TO -L- STA. 22+25.00



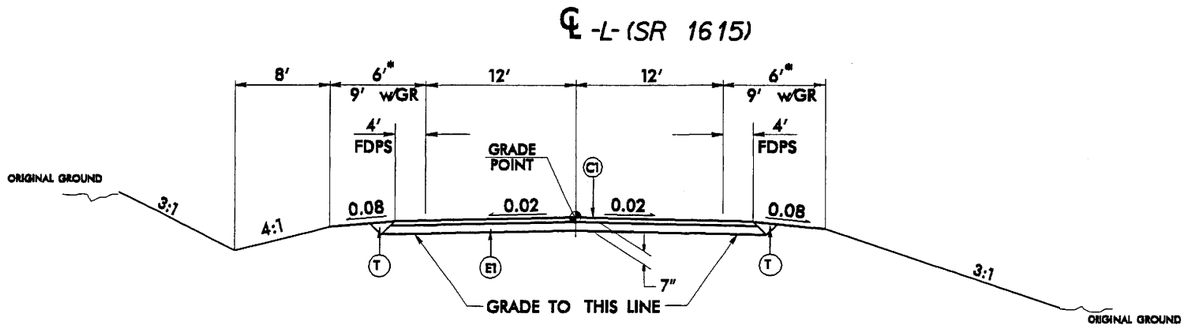
DETAIL SHOWING METHOD OF WEDGING



TYPICAL SECTION NO. 1

* USED 6' SHOULDER TO MINIMIZE IMPACTS TO WETLANDS

USE TYPICAL SECTION NO. 1 FOR THE FOLLOWING:
-L- STA 17+50.00 TO -L- STA 20+00.00
-L- STA 23+00.00 TO -L- STA 25+50.00



TYPICAL SECTION NO. 2

* USED 6' SHOULDER TO MINIMIZE IMPACTS TO WETLANDS

USE TYPICAL SECTION NO. 2 FOR THE FOLLOWING:
-L- STA 20+00.00 TO -L- STA 21+00.00
-L- STA 21+90.00 TO -L- STA 23+00.00

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6/21/00

COMPUTED BY:	T. Cao	DATE:	3/15/05
CHECKED BY:	J. Braxton	DATE:	

PROJECT REFERENCE NO.	SHEET NO.
B-4088	3A

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

PAVEMENT REMOVAL

LINE	STATION	LOCATION	S. YARD
-L-	20+00.00 to 21+11.08	RT & LT	12.34
-L-	21+80.33 to 23+00.00	RT & LT	13.29
		TOTAL	25.63
		SAY	30.00

SUMMARY OF EARTHWORK
(IN CUBIC YARDS)

LINE	STATION	TOTAL EXCAV (UNCL)	UNDERCT.	EMB. +3 %	BORROW	WASTE
-L-	17+50.00 - 21+00.00	5		985	980	
-L-	21+90.00 - 25+50.00	59		573	514	
SUB-TOTAL:		64		1558	1494	
TOTAL PROJ.:		64		1558	1494	
5% TO REPLACE TOPSOIL ON BORROW PITS:					75	
GRAND TOTAL:		64		1558	1569	
SAY:		70			1600	

LIST OF PIPES, ENDWALLS, ETC. (FOR PIPES 48" & UNDER)

STATION / SIZE / THICKNESS OR GAUGE	LOCATION (LT,RT, OR CL)	STRUCTURE NO. FROM	STRUCTURE NO. TO	TOP ELEVATION	INVERT ELEVATION IN	INVERT ELEVATION OUT	SLOPE CRITICAL	CLASS III R.C. PIPE (UNLESS NOTED OTHERWISE) 12"	15"	18"	24"	30"	36"	42"	48"	BITUMINOUS COATED C.S. PIPE TYPE B (UNLESS NOTED OTHRWISE) 12" .064	15" .064	18" .064	24" .064	30" .079	36" .079	42" .109	48" .109
22+23.8	Lt	1		18.250																			
		1	2		15.500	15.413				32													
22+23.8	Rt	2		18.250																			
		2	Out		15.413	14.100				16													
24+30.0	Rt																						
						TOTAL:				48													

STATION	LOCATION	15" SIDE DRAIN PIPE	18" SIDE DRAIN PIPE	24" SIDE DRAIN PIPE	ENDWALLS STD. 838.01 OR STD. 838.11 (UNLESS NOTED OTHERWISE) CU. YDS. R.C.P.	C.S.P.	QUANTITIES FOR DRAINAGE STRUCTURES * TOTAL L.F. FOR PAY QUANTITY SHALL BE COL. 'A' + (1.3 X COL.'B') PER EACH (0' THRU 5.0')	LIN. *FT. A 5.0' THRU 10.0'	B 10.0' AND ABOVE	C.B. STD. 840.01 OR STD. 840.02	FRAME, GRATES AND HOOD STANDARD 840.03 TYPE OF GRATE E	F	G		D.I. STD. 840.14 OR STD. 840.15	D.I. FRAME & GRATE STD. 840.16	M.D.I. TYPE "A" STD. 840.17 OR 840.26	M.D.I. TYPE "B" STD. 840.18 OR 840.27	M.D.I. TYPE "D" STD. 840.19 OR 840.28	M.D.I. FRAME WITH GRATE STD. 840.22	M.D.I. FRAME WITH TWO GRATES STD. 840.22	M.D.I. (N.S.) FRAME WITH GRATE STD. 840.24	M.D.I. (N.S.) FRAME WITH TWO GRATES STD. 840.24	J.B. STD. 840.31 OR 840.32	M.D.I. (N.S.) FRAME WITH TWO GRATES STD. 840.29	T.B.D.I. STD. 840.35							CORR. STEEL ELBOWS NO. & SIZE	CONC. COLLARS CL. "B" C.Y. STD 840.72	CONC. & BRICK PIPE PLUG, C.Y. STD. 840.71	PIPE REMOVAL LIN.FT.	REMARKS
22+23.8	Lt						1																		1	1											
22+23.8	Rt						1																		1	1											
24+30.0	Rt			24																																24	
TOTAL:				24			2																		2	2										24	

ABBREVIATIONS

C.B.	CATCH BASIN
N.D.I.	NARROW DROP INLET
D.I.	DROP INLET
M.D.I.	MEDIAN DROP INLET
M.D.I. (N.S.)	MEDIAN DROP INLET (NARROW SLOT)
J.B.	JUNCTION BOX
M.H.	MANHOLE
T.B.D.I.	TRAFFIC BEARING DROP INLET
T.B.J.B.	TRAFFIC BEARING JUCTION BOX

"N" = DISTANCE FROM EDGE OF LANE TO FACE OF GUARDRAIL.
TOTAL SHOULDER WIDTH = DISTANCE FROM EDGE OF TRAVEL LANE TO SHOULDER BREAK POINT.
FLARE LENGTH = DISTANCE FROM LAST SECTION OF PARALLEL GUARDRAIL TO END OF GUARDRAIL.
W = TOTAL WIDTH OF FLARE FROM BEGINNING OF TAPER TO END OF GUARDRAIL.
G = GATING IMPACT ATTENUATOR TYPE 350
NG = NON-GATING IMPACT ATTENUATOR TYPE 350

GUARDRAIL SUMMARY

SURVEY LINE	BEG. STA.	END STA.	LOCATION	LENGTH STRAIGHT	LENGTH SHOP CURVED	LENGTH DOUBLE FACED	WARRANT POINT APPROACH END	WARRANT POINT TRAILING END	"N" DIST. FROM E.O.L.	TOTAL SHOUL. WIDTH	FLARE LENGTH APPROACH END	FLARE LENGTH TRAILING END	W APPROACH END	W TRAILING END	ANCHORS XI MOD	XI	GRAU 350	M-350	TYPE-III	CAT-I	VI MOD	BIC	AT-1	IMPACT ATTENUATOR TYPE 350 EA	G	NG	SINGLE FACED GUARDRAIL	REMOVE EXISTING GUARDRAIL	REMOVE AND STOCKPILE EXISTING GUARDRAIL	REMARKS
-L-	19+56.25	21+00(Br)	Lt	143.75				21+00 (Br)	8	11		125.0		2.5			1		1											
-L-	17+93.75	21+00(Br)	Rt	306.25			21+00 (Br)		8	11	287.5		5.75				1		1											
-L-	21+90(Br)	24+96.25	Lt	306.25			21+90 (Br)		8	11	287.5		5.75				1		1											
-L-	21+90(Br)	23+33.75	Rt	143.75				21+90 (Br)	8	11		125.0		2.5			1		1											
			Sub. Total:	900													4		4											
			Anc. Deduction :	-275																										
			Total:	625																										
			Say :	650																										

Anchor Deductions:
Grau-350 4 @ 50 = 200 } = 275
Type-III 4 @ 18.75 = 75 }
Add Guardrail Posts: 5

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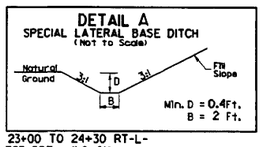
PROJECT REFERENCE NO.	SHEET NO.
B-4088	4
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

REVISIONS

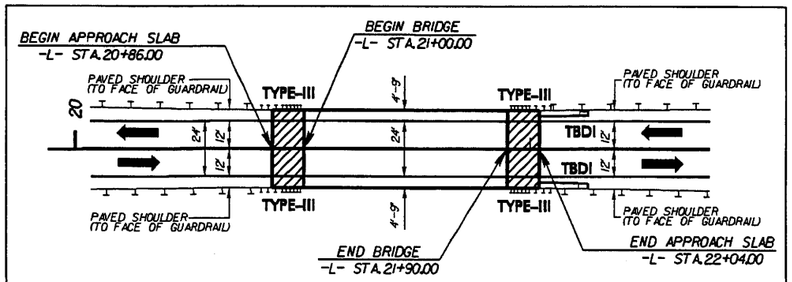
DETAIL A
SPECIAL LATERAL BASE DITCH
(Not to Scale)



23+00 TO 24+30 RT-L-
EST. DDE = 11.0 CY

-L-

PI Sta 15+43.16	PI Sta 29+93.67
Δ = 8°05'18.0" (RT)	Δ = 41°56'56.0" (LT)
D = 0°46'47.6"	D = 5°52'23.5"
L = 1,037.10'	L = 816.40'
T = 519.41'	T = 433.82'
R = 7,346.55'	R = 975.54'
RO = SEE PLANS	RO = SEE PLANS
SE = 0.02	SE = SEE PLANS



SKETCH SHOWING BRIDGE TO PAVEMENT AND SHOULDERS RELATIONSHIP

NOTES:

- THERE IS NO PROPOSED RIGHT OF WAY FOR THIS PROJECT.
- PAVE TO FACE OF GUARDRAIL
- SEE SHEET 5 FOR -L- PROFILE

-L- POC STA 17+50.00
BEGIN TIP PROJECT B-4088

-L- POT STA. 25+50.00
END TIP PROJECT B-4088

-L- PCSta. 25+59.85

NITA BAKER, et vir
DB 512 - PG 941
DB 992 - PG 380

RAY EARL GASKINS
DB 1491 - PG 179
DB 354 - PG 46
DB 385 - PG 5

RAY EARL GASKINS
DB 839 - PG 190

JOSEPH ANDREW SPENCE, et ux
DB 223 - PG 54

CLASS II RIP RAP
SEE STRUCTURE PLANS

BEGIN BRIDGE
-L- Sta. 21+00.00

BEGIN APPROACH SLAB
-L- Sta. 20+86.00

-L- PTSta. 20+60.85

END BRIDGE
-L- Sta. 21+90.00

END APPROACH SLAB
-L- Sta. 22+04.00

MORGAN SWAMP

6" DUCTILE IRON WATER

BEAVER DAM

100' UNIFORM TAPER
LT. & RT.

TAPER P.S. TO EXISTING EOP

6" PVC WATER DATUM

2" PVC WATER DATUM

WATER VALVE

BLOW OFF

-BL-2
-L- STA. 20+94.15 (13.38' RT) =
-BL- STA. 12+11.44

-BL-3
-L- STA. 26+59.17 (15.95 RT) =
-BL- STA. 27+77.92

CLASS II RIP RAP
SEE STRUCTURE PLANS

CLASS "B" RIP RAP
W/FILTER FABRIC LINER
EST. 3 TONS STONE
EST. 10 S.Y. FABIC

BMI
-BL-STA 12+95.26 74.38' RT
-L- STA 21+78.30 87.38' RT
ELEV= 45.04'
RR SPIKE SET IN 20" HARDWOOD

KENNETH KLEIN
DB 1890 - PG 330
MB 5 - PG 5

VAUGHN PAUL PURNELL, et ux
DB. 1329 - PG 1002
MB 14 - PG 24

CHARLES L. RICHARDSON, et ux
DB 792 - PG 190
DB 1839 - PG 189

CHARLES L. RICHARDSON, et ux
DB 792 - PG 190
DB 1839 - PG 189

SHIRLEY RICHARDSON
DB 1303 - PG 1042

PROP. SPECIAL LAT. 2' BASE DITCH
SEE DETAIL A

14' DRIVE

SR 1165 SAINT DELIGHT CHURCH RD

SHOULDER BERM GUTTER LOCATIONS:
BEGIN: -L- STA. 21+90.00 LT.
END: -L- STA 22+25.00 LT
BEGIN: -L- STA. 21+90.00 RT.
END : -L- STA 22+25.00 RT

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PROJECT REFERENCE NO.	SHEET NO.
B-4088	5
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

STRUCTURE HYDRAULIC DATA

DESIGN DISCHARGE	= 1000 CFS
DESIGN FREQUENCY	= 25 YRS
DESIGN HW ELEVATION	= 16.3 FT
BASE DISCHARGE	= 1600 CFS
BASE FREQUENCY	= 100 YRS
BASE HW ELEVATION	= 17.7 FT
OVERTOPPING DISCHARGE	= 2230 CFS
OVERTOPPING FREQUENCY	= 200 YRS
OVERTOPPING ELEVATION	= 18.2 FT

-L-

℄ STATION = 21+45 -L-
℄ ELEVATION = 16.62'
SKEW = 90 DEGREES
SPANS= 1@50', 1@40'
TYPE STRUCTURE: 21in CORED SLAB

BEGIN GRADE
-L- STA 17+50.00
ELEVATION 18.62

BEGIN BRIDGE
-L- STA 21+00.00

END BRIDGE
-L- STA 21+90.00

END GRADE
-L- STA 25+50.00
ELEVATION 18.62

SEE SHEET 4 FOR -L- ALIGNMENT

PI = 19+70.00
EL = 19.34'
K = 287
VC = 180'
V = 60 MPH

PI = 24+00.00
EL = 18.05'
K = 265
VC = 180'
V = 60 MPH

30
20
10

17+00 18+00 19+00 20+00 21+00 22+00 23+00 24+00 25+00 26+00

BM1 RR SPIKE SET IN 20" HARDWOOD
-L- STA 21+78.32 87.39' RT
ELEV = 15.04'

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8/23/99

0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	B-4088	X-1

18+95

0.0200 0.0200

3:1 3:1

S.S. 14.378 S.S. 14.295

18+50.00

18+78

0.0200 0.0200

3:1 3:1

S.S. 15.802 S.S. 15.351

18+00.00

BEGIN PROJECT B-4088
BEGIN GRADE
-L- STA. 17+50.00

17+50.00

17+00.00

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

APPROXIMATE QUANTITIES ONLY. UNCLASSIFIED EXCAVATION, BORROW EXCAVATION, SHOULDER BORROW, FINE GRADING, CLEARING AND GRUBBING, BREAKING OF EXISTING PAVEMENT, AND REMOVAL OF EXISTING PAVEMENT WILL BE PAID FOR AT THE CONTRACT LUMP SUM PRICE FOR "GRADING".

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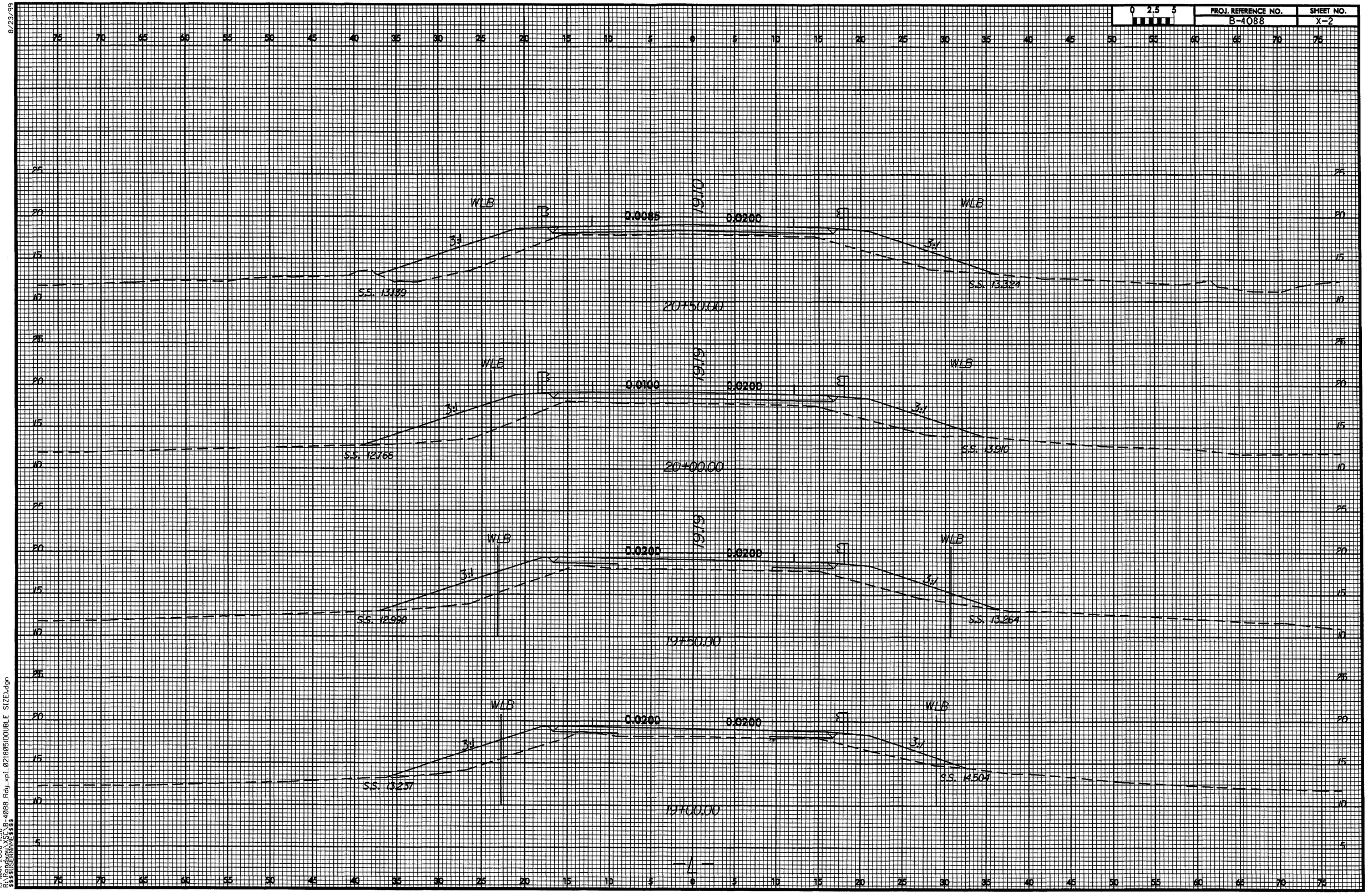
0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	B-4088	X-2



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8/23/99

0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	B-4088	X-3

WLB

3H

0.0200

0.0200

3H

WLB

S.S. 12.25%

S.S. 13.75%

END BRIDGE
STA. -L- 21+90.00

22+00.00

21+50.00

WLB

0.0200

0.0200

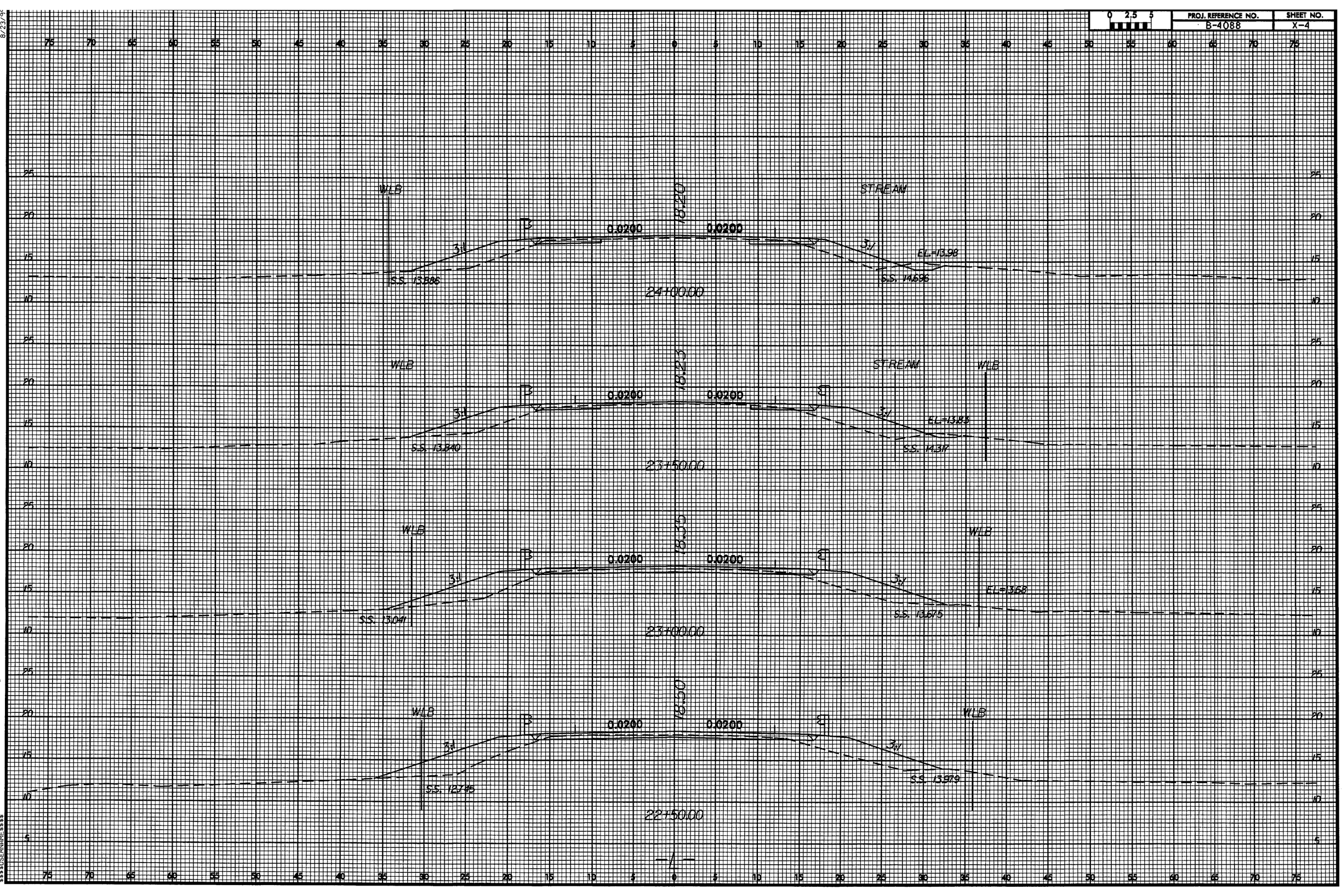
WLB

BEGIN BRIDGE
STA. -L- 21+00.00

21+00.00

—L—

0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	B-4088	X-4



0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	B-4088	X-5

26+00.00

WLB

STREAM

END PROJECT B-4088
END GRADE
-L- STA. 25+50.00

25+50.00

WLB

STREAM

EL 20.45

0.0145

0.0115

3:1

3:1

14.944

S.S. 16.598

25+00.00

WLB

DRIVEWAY TIE

STREAM

EL 20.17

0.0200

0.0070

3:1

S.S. 15.002

24+50.00

-L-

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