STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

MICHAEL F. EASLEY
GOVERNOR

LYNDO TIPPETT
SECRETARY

July 21, 2008

U. S. Army Corps of Engineers
Regional Office
3331 Heritage Trade Drive, Suite 105
Wake Forest, NC 27587

ATTENTION: Mr. Monte Matthews
NCDOT Coordinator

Dear Sir:

SUBJECT: **Application for Nationwide Permit 23, 33 and Section 401 Water Quality Certification** for the replacement of Bridge No. 165 over Big Horse Creek on SR 1362 (Big Horse Creek Rd.) in Ashe County. Federal Project No. BRZ-1362(1), State Project No. 8.2712401, Division 11, T.I.P. No. B-4015. $240.00 Debit Work Order 8.2712401, WBS Element 33383.1.1.

Please see the enclosed Pre-Construction Notification (PCN), Approved Jurisdictional Determination Form, permit drawings and design plans for the above referenced project. A Categorical Exclusion and Right of Way Consultation were completed for this project in February 26, 2004 and August 15, 2006, respectively, and distributed shortly thereafter. Additional copies are available upon request. The North Carolina Department of Transportation (NCDOT) proposes to replace the 63-foot, two-span Bridge No. 165 with a new 85-foot, two-span cored slab bridge over Big Horse Creek. The existing bridge will be replaced in place and traffic will be maintained with an on-site detour during construction. There will be 20 linear feet of permanent impacts to Big Horse Creek from a ditch tie-in and 0.03 acre of temporary impacts to Big Horse Creek from a temporary workpad.

MAILING ADDRESS:
NC DEPARTMENT OF TRANSPORTATION
PROJECT DEVELOPMENT AND ENVIRONMENTAL ANALYSIS
1598 MAIL SERVICE CENTER
RALEIGH NC 27699-1548

TELEPHONE: 919-715-1334
FAX: 919-715-5501

WEBSITE: WWW.NCDOT.ORG

LOCATION:
PARKER LINCOLN BUILDING,
2728 CAPITAL BLVD.
RALEIGH NC 27604

IMPACTS TO WATERS OF THE UNITED STATES

General Description:
The single water resource impacted for project B-4015 is Big Horse Creek. Big Horse Creek is located in the New River Basin (Division of Water Quality (DWQ) subbasin 05-07-02) and is approximately 37 feet wide and 1.5 feet deep within the project area. The DWQ Index number for this section of Big Horse Creek is 10-2-21-(4.5) and the Hydrological Cataloguing Unit is 03040101. The DWQ classifies Big Horse Creek as "C Tr +". The "+" symbol identifies waters that are subject to a special management strategy in order to protect downstream waters designated as Outstanding Resource Waters (ORW). In this case, waters from Big Horse Creek ultimately flow into the main stem of the New River via North Fork New River. The main stem of the New River is an ORW and is over 20 miles downstream of the project area. There are no High Quality Waters (HQW), Water Supplies (WS-I or WSII), ORW or 303(d) streams within one mile of the project study area.

Permanent Impacts:
There will be 20 linear feet of permanent impacts to Big Horse Creek as a result of the tie-in between a new roadside ditch and Big Horse Creek. In addition, there will be <0.01 acre (22 square feet) of permanent impacts from installation of the new piers.

Temporary Impacts:
There will be 0.03 acre of temporary impacts to Big Horse Creek from a temporary workpad, which will be used to remove the existing bridge and piers.

Bridge Demolition:
Bridge No. 165 consists of a two-span superstructure composed of a timber deck on steel I-beams. The substructure consists of reinforced concrete abutments and piers. The removal of the concrete abutments and pier may create some disturbance in the streambed. Temporary fill resulting from bridge demolition will be minimal due to the construction of a temporary workpad for bridge and pier removal. All guidelines for bridge demolition and removal will be followed in addition to Best Management Practices (BMPs) for the Protection of Surface Waters and BMPs for Bridge Demolition and Removal.

Utility Impacts:
There will be no jurisdictional impacts associated with utilities for this project.

Schedule:
The project schedule calls for a December 16, 2008 Let date and a review date of October 28, 2008. The date of availability for construction is on January 27, 2009.

FEDERALLY PROTECTED SPECIES

Plants and animals with federal classifications of Endangered (E), Threatened (T), Proposed Endangered (PE) and Proposed Threatened (PT) are protected under provisions of Section 7 and Section 9 of the Endangered Species Act of 1973, as amended. As of January 31, 2008, the USFWS lists seven federally protected species for Ashe County (Table 1). Within the project area, there is habitat present for one species, Virginia spiraea. The project was last surveyed for Virginia spiraea on June 18, 2008. No individuals were found within the project

area. Therefore, this project will have No Effect on Virginia spiraea. The biological conclusion for the six remaining species is No Effect due to lack of habitat.

Table 1. Federally Protected Species for Ashe County

Common Name	Scientific Name	Status	Survey Notes	Biological Conclusion
Bog turtle	*Clemmys muhlenbergii*	T(S/A)	Not Required	N/A
Heller's blazing star	*Liatris helleri*	T	No Habitat	No Effect
Roan mountain bluet	*Hedyotis purpurea* var. *montana*	E	No Habitat	No Effect
Rock gnome lichen	*Gymnoderma lineare*	E	No Habitat	No Effect
Spreading avens	*Geum radiatum*	E	No Habitat	No Effect
Swamp pink	*Helonias bullata*	T	No Habitat	No Effect
Virginia spiraea	*Spiraea virginiana*	T	Habitat Present	No Effect

Avoidance and Minimization:
Avoidance examines all appropriate and practicable possibilities of averting impacts to "Waters of the United States." The NCDOT is committed to incorporating all reasonable and practicable design features to avoid and minimize jurisdictional stages; minimization measures were incorporated as part of the project design.

- There is a moratorium on in-stream activities from October 15 to April 15 to protect the egg and fry stages of trout.
- The new bridge will be longer than the existing bridge.
- Water will not be directly discharged into Big Horse Creek via deck drains.
- The project will adhere to Design Standards for Sensitive Watersheds.

In addition, Best Management Practices will be followed as outlined in "NCDOT's Best Management Practices for Construction and Maintenance Activities".

Compensatory Mitigation:
NCDOT proposes no mitigation for the 20 linear feet of permanent impacts to Big Horse Creek because the permanent impacts total less than 150 linear feet. In addition, the 20 linear feet of permanent impacts from the ditch tie-in will not have a significant adverse effect in waters of the United States.

REGULATORY APPROVALS

Section 404 Permit:
It is anticipated that the temporary dewatering of Big Horse Creek will be authorized under Section 404 Nationwide Permit 33 (Temporary Construction Access and Dewatering). We are, therefore, requesting the issuance of a Nationwide Permit 33 authorizing the temporary dewatering of Big Horse Creek. All other aspects of this project are being processed by the Federal Highway Administration as a "Categorical Exclusion" in accordance with 23 CFR § 771.115(b). The NCDOT requests that these activities be authorized by a Nationwide Permit 23 (FR number 10, pages 2020-2095; January 15, 2002).

Section 401 Permit:
This project would normally not require a written Section 401 permit. However, the NCDOT is asking that concurrence on the NC state stormwater permit be included in the Section 401 Certification for TIP B-4015. In compliance with Section 143-215.D9(e) of the NCAC, we will provide $240.00 to act as payment for processing the Section 401 (General Certification Numbers 3688 and 3701) permit application previously noted in this application (see Subject line). We are providing five copies of this application to the North Carolina Department of Environmental and Natural Resources, Division of Water Quality, for their review.

Comments from the North Carolina Wildlife Resources Commission (NCWRC) will be required prior to authorization by the Corps of Engineers. By copy of this letter and attachment, NCDOT hereby requests NCWRC review. NCDOT requests that NCWRC forward their comments to the Corps of Engineers and the NCDOT within 30 calendar days of receipt of this application.

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

Thank you for your assistance with this project. If you have any questions or need additional information, please contact Erin Cheely at ekcheely@ncdot.gov or (919) 715-5529.

Sincerely,

E. L. Lusk

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

cc:
W/attachment
Mr. Brian Wrenn, NCDWQ (5 Copies)
Ms. Marla Chambers, NCWRC
Ms. Marella Buncick, USFWS

W/o attachment (see website for attachments)
Dr. David Chang, P.E., Hydraulics
Mr. Victor Barbour, P.E., Project Services Unit
Mr. Mark Staley, Roadside Environmental
Mr. Greg Perfetti, P.E., Structure Design
Mr. Michael A. Pettyjohn, P.E. Division 11 Engineer
Mr. Heath Slaughter, Division 11 Environmental Officer
Mr. Jay Bennett, P.E., Roadway Design
Mr. Majed Alghandour, P. E., Programming and TIP
Mr. Art McMillan, P.E., Highway Design
Mr. Derrick Weaver, Consultant Engineering Unit Head
Mr. Scott McLendon, USACE, Wilmington

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 and 33

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

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

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

II. Applicant Information

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

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: Bridge No. 165 over Big Horse Creek on SR 1362

2. T.I.P. Project Number or State Project Number (NCDOT Only): B-4015

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

4. Location
   County: Ashe Nearest Town: Brandon
   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): 36°32'07.77" °N -81°31'47.19" °W

6. Property size (acres): N/A

7. Name of nearest receiving body of water: North Fork New River

8. River Basin: New River Basin
   (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: 60% wooded, 40% agriculture

10. Describe the overall project in detail, including the type of equipment to be used: Standard construction equipment will be used (backhoes, bulldozers, cranes and/or other heavy machinery)

11. Explain the purpose of the proposed work: The purpose of the project is to replace a functionally and structurally obsolete structure (sufficiency rating 44.1 out of 100).

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: Permanent: 20 linear feet (<0.01 acre) of impact to Big Horse Creek due to ditch tie-in and <0.01 acre (22 sq ft) due to new piers. Temporary: 0.03 acre of impact due to temporary work pad in Big Horse Creek.

2. Individually list wetland impacts. Types of impacts include, but are not limited to mechanized clearing, grading, fill, excavation, flooding, ditching/drainage, etc. For dams, separately list impacts due to both structure and flooding.

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

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)
New Bridge Piers	Big Horse Creek	Permanent	Perennial	37 ft.	N/A	<0.01
Site 1	Big Horse Creek	Temporary	Perennial	37 ft.	65	0.03
Site 2	Big Horse Creek	Permanent	Perennial	37 ft.	20	<0.01
Total Permanent Stream Impact (by length and acreage)					20	<0.01

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

Open Water Impact Site Number (indicate on map)	Name of Waterbody (if applicable)	Type of Impact	Type of Waterbody (lake, pond, estuary, sound, bay, ocean, etc.)	Area of Impact (acres)
No open water impacts				
Total Open Water Impact (acres)				

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

Stream Impact (acres):	0.03 (temp) <0.01 (permanent)
Wetland Impact (acres):	0
Open Water Impact (acres):	0
Total Impact to Waters of the U.S. (acres)	0.03 (temp) <0.01 (permanent)
Total Stream Impact (linear feet):	65 (temp) 20 (permanent)

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.):_____
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. There is a moratorium on in-stream activities from October 15 to April 15 to protect trout. No deck drains will be used and NCDOT's Best Management Practices will be followed. A temporary work pad will minimize in-stream activities during construction.

VIII. Mitigation

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

freshwater wetlands or greater than or equal to 150 linear feet of total impacts to perennial streams.

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

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

1. Provide a brief description of the proposed mitigation plan. The description should provide as much information as possible, including, but not limited to: site location (attach directions and/or map, if offsite), affected stream and river basin, type and amount (acreage/linear feet) of mitigation proposed (restoration, enhancement, creation, or preservation), a plan view, preservation mechanism (e.g., deed restrictions, conservation easement, etc.), and a description of the current site conditions and proposed method of construction. Please attach a separate sheet if more space is needed.
   No mitigation is proposed for this project because the 20 linear feet of impacts from the ditch tie-in will not cause an adverse effect or significant loss of waters of the United States.

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

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

IX. Environmental Documentation (required by DWQ)

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

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

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

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

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

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

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

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

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

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

XI. Stormwater (required by DWQ)

Describe impervious acreage (existing and proposed) versus total acreage on the site. Discuss stormwater controls proposed in order to protect surface waters and wetlands downstream from the property. If percent impervious surface exceeds 20%, please provide calculations demonstrating total proposed impervious level. Impervious surfaces will not significantly increase as a result of this project. There will be no deck drains installed.

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:
The new bridge will be constructed in the same location as the old bridge.

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).
N/A

E. L. Lusk 7-18-08

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

APPROVED JURISDICTIONAL DETERMINATION FORM
U.S. Army Corps of Engineers

This form should be completed by following the instructions provided in Section IV of the JD Form Instructional Guidebook.

SECTION I: BACKGROUND INFORMATION

A. REPORT COMPLETION DATE FOR APPROVED JURISDICTIONAL DETERMINATION (JD):

B. DISTRICT OFFICE, FILE NAME, AND NUMBER: B-4015 - Replacement of Bridge No. 165 over Big Horse Creek on SR 1362 (Big Horse Creek Road)

C. PROJECT LOCATION AND BACKGROUND INFORMATION:

State: North Carolina County/parish/borough: Ashe City: Brandon
Center coordinates of site (lat/long in degree decimal format): Lat. 36 32'07.77° N, Long. -81 31'47.19° W.
Universal Transverse Mercator:
Name of nearest waterbody:
Name of nearest Traditional Navigable Water (TNW) into which the aquatic resource flows:
Name of watershed or Hydrologic Unit Code (HUC):

☒ Check if map/diagram of review area and/or potential jurisdictional areas is/are available upon request.
☐ Check if other sites (e.g., offsite mitigation sites, disposal sites, etc…) are associated with this action and are recorded on a different JD form.

D. REVIEW PERFORMED FOR SITE EVALUATION (CHECK ALL THAT APPLY):

☐ Office (Desk) Determination. Date:
☐ Field Determination. Date(s):

SECTION II: SUMMARY OF FINDINGS

A. RHA SECTION 10 DETERMINATION OF JURISDICTION.

There **Are no** *"navigable waters of the U.S."* within Rivers and Harbors Act (RHA) jurisdiction (as defined by 33 CFR part 329) in the review area. [*Required*]

☐ Waters subject to the ebb and flow of the tide.
☐ Waters are presently used, or have been used in the past, or may be susceptible for use to transport interstate or foreign commerce.
Explain: .

B. CWA SECTION 404 DETERMINATION OF JURISDICTION.

There **Are** *"waters of the U.S."* within Clean Water Act (CWA) jurisdiction (as defined by 33 CFR part 328) in the review area. [*Required*]

1. **Waters of the U.S.**
   a. **Indicate presence of waters of U.S. in review area (check all that apply):** [1]
      ☐ TNWs, including territorial seas
      ☐ Wetlands adjacent to TNWs
      ☒ Relatively permanent waters[2] (RPWs) that flow directly or indirectly into TNWs
      ☐ Non-RPWs that flow directly or indirectly into TNWs
      ☐ Wetlands directly abutting RPWs that flow directly or indirectly into TNWs
      ☐ Wetlands adjacent to but not directly abutting RPWs that flow directly or indirectly into TNWs
      ☐ Wetlands adjacent to non-RPWs that flow directly or indirectly into TNWs
      ☐ Impoundments of jurisdictional waters
      ☐ Isolated (interstate or intrastate) waters, including isolated wetlands

   b. **Identify (estimate) size of waters of the U.S. in the review area:**
      Non-wetland waters: 1300 linear feet: 37 width (ft) and/or acres.
      Wetlands: acres.

   c. **Limits (boundaries) of jurisdiction** based on: **Established by OHWM.**
      Elevation of established OHWM (if known): .

2. **Non-regulated waters/wetlands (check if applicable):**[3]
   ☐ Potentially jurisdictional waters and/or wetlands were assessed within the review area and determined to be not jurisdictional.
   Explain: .

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[1] Boxes checked below shall be supported by completing the appropriate sections in Section III below.
[2] For purposes of this form, an RPW is defined as a tributary that is not a TNW and that typically flows year-round or has continuous flow at least "seasonally" (e.g., typically 3 months).
[3] Supporting documentation is presented in Section III.F.

SECTION III: CWA ANALYSIS

A. TNWs AND WETLANDS ADJACENT TO TNWs

The agencies will assert jurisdiction over TNWs and wetlands adjacent to TNWs. If the aquatic resource is a TNW, complete Section III.A.1 and Section III.D.1. only; if the aquatic resource is a wetland adjacent to a TNW, complete Sections III.A.1 and 2 and Section III.D.1.; otherwise, see Section III.B below.

1. **TNW**
   Identify TNW: .

   Summarize rationale supporting determination: .

2. **Wetland adjacent to TNW**
   Summarize rationale supporting conclusion that wetland is "adjacent": .

B. CHARACTERISTICS OF TRIBUTARY (THAT IS NOT A TNW) AND ITS ADJACENT WETLANDS (IF ANY):

This section summarizes information regarding characteristics of the tributary and its adjacent wetlands, if any, and it helps determine whether or not the standards for jurisdiction established under *Rapanos* have been met.

The agencies will assert jurisdiction over non-navigable tributaries of TNWs where the tributaries are "relatively permanent waters" (RPWs), i.e. tributaries that typically flow year-round or have continuous flow at least seasonally (e.g., typically 3 months). A wetland that directly abuts an RPW is also jurisdictional. If the aquatic resource is not a TNW, but has year-round (perennial) flow, skip to Section III.D.2. If the aquatic resource is a wetland directly abutting a tributary with perennial flow, skip to Section III.D.4.

A wetland that is adjacent to but that does not directly abut an RPW requires a significant nexus evaluation. Corps districts and EPA regions will include in the record any available information that documents the existence of a significant nexus between a relatively permanent tributary that is not perennial (and its adjacent wetlands if any) and a traditional navigable water, even though a significant nexus finding is not required as a matter of law.

If the waterbody[4] is not an RPW, or a wetland directly abutting an RPW, a JD will require additional data to determine if the waterbody has a significant nexus with a TNW. If the tributary has adjacent wetlands, the significant nexus evaluation must consider the tributary in combination with all of its adjacent wetlands. This significant nexus evaluation that combines, for analytical purposes, the tributary and all of its adjacent wetlands is used whether the review area identified in the JD request is the tributary, or its adjacent wetlands, or both. If the JD covers a tributary with adjacent wetlands, complete Section III.B.1 for the tributary, Section III.B.2 for any onsite wetlands, and Section III.B.3 for all wetlands adjacent to that tributary, both onsite and offsite. The determination whether a significant nexus exists is determined in Section III.C below.

1. **Characteristics of non-TNWs that flow directly or indirectly into TNW**

   (i) General Area Conditions:
   Watershed size: **Pick List**
   Drainage area: **Pick List**
   Average annual rainfall: inches
   Average annual snowfall: inches

   (ii) Physical Characteristics:
   (a) Relationship with TNW:
   ☐ Tributary flows directly into TNW.
   ☐ Tributary flows through **Pick List** tributaries before entering TNW.

   Project waters are **Pick List** river miles from TNW.
   Project waters are **Pick List** river miles from RPW.
   Project waters are **Pick List** aerial (straight) miles from TNW.
   Project waters are **Pick List** aerial (straight) miles from RPW.
   Project waters cross or serve as state boundaries. Explain: .

   Identify flow route to TNW[5]: .
   Tributary stream order, if known: .

[4] Note that the Instructional Guidebook contains additional information regarding swales, ditches, washes, and erosional features generally and in the arid West.
[5] Flow route can be described by identifying, e.g., tributary a, which flows through the review area, to flow into tributary b, which then flows into TNW.

(b) General Tributary Characteristics (check all that apply):

Tributary is: ☐ Natural
☐ Artificial (man-made). Explain: .
☐ Manipulated (man-altered). Explain: .

Tributary properties with respect to top of bank (estimate):
Average width: feet
Average depth: feet
Average side slopes: **Pick List.**

Primary tributary substrate composition (check all that apply):
☐ Silts ☐ Sands ☐ Concrete
☐ Cobbles ☐ Gravel ☐ Muck
☐ Bedrock ☐ Vegetation. Type/% cover:
☐ Other. Explain: .

Tributary condition/stability [e.g., highly eroding, sloughing banks]. Explain: .
Presence of run/riffle/pool complexes. Explain: .
Tributary geometry: **Pick List**
Tributary gradient (approximate average slope): %

(c) Flow:
Tributary provides for: **Pick List**
Estimate average number of flow events in review area/year: **Pick List**
Describe flow regime: .
Other information on duration and volume: .

Surface flow is: **Pick List.** Characteristics: .

Subsurface flow: **Pick List**. Explain findings: .
☐ Dye (or other) test performed: .

Tributary has (check all that apply):
☐ Bed and banks
☐ OHWM[6] (check all indicators that apply):
☐ clear, natural line impressed on the bank ☐ the presence of litter and debris
☐ changes in the character of soil ☐ destruction of terrestrial vegetation
☐ shelving ☐ the presence of wrack line
☐ vegetation matted down, bent, or absent ☐ sediment sorting
☐ leaf litter disturbed or washed away ☐ scour
☐ sediment deposition ☐ multiple observed or predicted flow events
☐ water staining ☐ abrupt change in plant community
☐ other (list):
☐ Discontinuous OHWM.[7] Explain: .

If factors other than the OHWM were used to determine lateral extent of CWA jurisdiction (check all that apply):
☐ High Tide Line indicated by: ☐ Mean High Water Mark indicated by:
☐ oil or scum line along shore objects ☐ survey to available datum;
☐ fine shell or debris deposits (foreshore) ☐ physical markings;
☐ physical markings/characteristics ☐ vegetation lines/changes in vegetation types.
☐ tidal gauges
☐ other (list):

(iii) Chemical Characteristics:
Characterize tributary (e.g., water color is clear, discolored, oily film; water quality; general watershed characteristics, etc.).
Explain: .
Identify specific pollutants, if known: .

---

[6]A natural or man-made discontinuity in the OHWM does not necessarily sever jurisdiction (e.g., where the stream temporarily flows underground, or where the OHWM has been removed by development or agricultural practices). Where there is a break in the OHWM that is unrelated to the waterbody's flow regime (e.g., flow over a rock outcrop or through a culvert), the agencies will look for indicators of flow above and below the break.
[7]Ibid.

(iv) **Biological Characteristics. Channel supports (check all that apply):**

- ☐ Riparian corridor. Characteristics (type, average width): .
- ☐ Wetland fringe. Characteristics: .
- ☐ Habitat for:
  - ☐ Federally Listed species. Explain findings: .
  - ☐ Fish/spawn areas. Explain findings: .
  - ☐ Other environmentally-sensitive species. Explain findings: .
  - ☐ Aquatic/wildlife diversity. Explain findings: .

2. Characteristics of wetlands adjacent to non-TNW that flow directly or indirectly into TNW

(i) Physical Characteristics:

(a) General Wetland Characteristics:

Properties:

Wetland size: acres

Wetland type. Explain: .

Wetland quality. Explain: .

Project wetlands cross or serve as state boundaries. Explain: .

(b) General Flow Relationship with Non-TNW:

Flow is: **Pick List**. Explain: .

Surface flow is: **Pick List**

Characteristics: .

Subsurface flow: **Pick List**. Explain findings: .

- ☐ Dye (or other) test performed: .

(c) Wetland Adjacency Determination with Non-TNW:

- ☐ Directly abutting
- ☐ Not directly abutting
  - ☐ Discrete wetland hydrologic connection. Explain: .
  - ☐ Ecological connection. Explain: .
  - ☐ Separated by berm/barrier. Explain: .

(d) Proximity (Relationship) to TNW

Project wetlands are **Pick List** river miles from TNW.

Project waters are **Pick List** aerial (straight) miles from TNW.

Flow is from: **Pick List**.

Estimate approximate location of wetland as within the **Pick List** floodplain.

(ii) Chemical Characteristics:

Characterize wetland system (e.g., water color is clear, brown, oil film on surface; water quality; general watershed characteristics; etc.). Explain: .

Identify specific pollutants, if known: .

(iii) Biological Characteristics. Wetland supports (check all that apply):

- ☐ Riparian buffer. Characteristics (type, average width): .
- ☐ Vegetation type/percent cover. Explain: .
- ☐ Habitat for:
  - ☐ Federally Listed species. Explain findings: .
  - ☐ Fish/spawn areas. Explain findings: .
  - ☐ Other environmentally-sensitive species. Explain findings: .
  - ☐ Aquatic/wildlife diversity. Explain findings: .

3. Characteristics of all wetlands adjacent to the tributary (if any)

All wetland(s) being considered in the cumulative analysis: **Pick List**

Approximately ( ) acres in total are being considered in the cumulative analysis.

For each wetland, specify the following:

Directly abuts? (Y/N)	Size (in acres)	Directly abuts? (Y/N)	Size (in acres)

Summarize overall biological, chemical and physical functions being performed: .

C. SIGNIFICANT NEXUS DETERMINATION

A significant nexus analysis will assess the flow characteristics and functions of the tributary itself and the functions performed by any wetlands adjacent to the tributary to determine if they significantly affect the chemical, physical, and biological integrity of a TNW. For each of the following situations, a significant nexus exists if the tributary, in combination with all of its adjacent wetlands, has more than a speculative or insubstantial effect on the chemical, physical and/or biological integrity of a TNW. Considerations when evaluating significant nexus include, but are not limited to the volume, duration, and frequency of the flow of water in the tributary and its proximity to a TNW, and the functions performed by the tributary and all its adjacent wetlands. It is not appropriate to determine significant nexus based solely on any specific threshold of distance (e.g. between a tributary and its adjacent wetland or between a tributary and the TNW). Similarly, the fact an adjacent wetland lies within or outside of a floodplain is not solely determinative of significant nexus.

Draw connections between the features documented and the effects on the TNW, as identified in the *Rapanos* Guidance and discussed in the Instructional Guidebook. Factors to consider include, for example:

- Does the tributary, in combination with its adjacent wetlands (if any), have the capacity to carry pollutants or flood waters to TNWs, or to reduce the amount of pollutants or flood waters reaching a TNW?
- Does the tributary, in combination with its adjacent wetlands (if any), provide habitat and lifecycle support functions for fish and other species, such as feeding, nesting, spawning, or rearing young for species that are present in the TNW?
- Does the tributary, in combination with its adjacent wetlands (if any), have the capacity to transfer nutrients and organic carbon that support downstream foodwebs?
- Does the tributary, in combination with its adjacent wetlands (if any), have other relationships to the physical, chemical, or biological integrity of the TNW?

Note: the above list of considerations is not inclusive and other functions observed or known to occur should be documented below:

1. **Significant nexus findings for non-RPW that has no adjacent wetlands and flows directly or indirectly into TNWs.** Explain findings of presence or absence of significant nexus below, based on the tributary itself, then go to Section III.D: .

2. **Significant nexus findings for non-RPW and its adjacent wetlands, where the non-RPW flows directly or indirectly into TNWs.** Explain findings of presence or absence of significant nexus below, based on the tributary in combination with all of its adjacent wetlands, then go to Section III.D: .

3. **Significant nexus findings for wetlands adjacent to an RPW but that do not directly abut the RPW.** Explain findings of presence or absence of significant nexus below, based on the tributary in combination with all of its adjacent wetlands, then go to Section III.D: .

D. DETERMINATIONS OF JURISDICTIONAL FINDINGS. THE SUBJECT WATERS/WETLANDS ARE (CHECK ALL THAT APPLY):

1. **TNWs and Adjacent Wetlands.** Check all that apply and provide size estimates in review area:
   - ☐ TNWs: linear feet width (ft), Or, acres.
   - ☐ Wetlands adjacent to TNWs: acres.

2. **RPWs that flow directly or indirectly into TNWs.**
   - ☒ Tributaries of TNWs where tributaries typically flow year-round are jurisdictional. Provide data and rationale indicating that tributary is perennial: The NCDWQ stream form score for Big Horse Creek is >30.
   - ☐ Tributaries of TNW where tributaries have continuous flow "seasonally" (e.g., typically three months each year) are jurisdictional. Data supporting this conclusion is provided at Section III.B. Provide rationale indicating that tributary flows seasonally: .

Provide estimates for jurisdictional waters in the review area (check all that apply):
☒ Tributary waters: **1300** linear feet **37** width (ft).
☐ Other non-wetland waters: acres.
Identify type(s) of waters: .

3. **Non-RPWs[8] that flow directly or indirectly into TNWs.**
☐ Waterbody that is not a TNW or an RPW, but flows directly or indirectly into a TNW, and it has a significant nexus with a TNW is jurisdictional. Data supporting this conclusion is provided at Section III.C.

Provide estimates for jurisdictional waters within the review area (check all that apply):
☐ Tributary waters: linear feet width (ft).
☐ Other non-wetland waters: acres.
Identify type(s) of waters: .

4. **Wetlands directly abutting an RPW that flow directly or indirectly into TNWs.**
☐ Wetlands directly abut RPW and thus are jurisdictional as adjacent wetlands.
☐ Wetlands directly abutting an RPW where tributaries typically flow year-round. Provide data and rationale indicating that tributary is perennial in Section III.D.2, above. Provide rationale indicating that wetland is directly abutting an RPW: .

☐ Wetlands directly abutting an RPW where tributaries typically flow "seasonally." Provide data indicating that tributary is seasonal in Section III.B and rationale in Section III.D.2, above. Provide rationale indicating that wetland is directly abutting an RPW: .

Provide acreage estimates for jurisdictional wetlands in the review area: acres.

5. **Wetlands adjacent to but not directly abutting an RPW that flow directly or indirectly into TNWs.**
☐ Wetlands that do not directly abut an RPW, but when considered in combination with the tributary to which they are adjacent and with similarly situated adjacent wetlands, have a significant nexus with a TNW are jurisidictional. Data supporting this conclusion is provided at Section III.C.

Provide acreage estimates for jurisdictional wetlands in the review area: acres.

6. **Wetlands adjacent to non-RPWs that flow directly or indirectly into TNWs.**
☐ Wetlands adjacent to such waters, and have when considered in combination with the tributary to which they are adjacent and with similarly situated adjacent wetlands, have a significant nexus with a TNW are jurisdictional. Data supporting this conclusion is provided at Section III.C.

Provide estimates for jurisdictional wetlands in the review area: acres.

7. **Impoundments of jurisdictional waters.[9]**
As a general rule, the impoundment of a jurisdictional tributary remains jurisdictional.
☐ Demonstrate that impoundment was created from "waters of the U.S.," or
☐ Demonstrate that water meets the criteria for one of the categories presented above (1-6), or
☐ Demonstrate that water is isolated with a nexus to commerce (see E below).

E. ISOLATED [INTERSTATE OR INTRA-STATE] WATERS, INCLUDING ISOLATED WETLANDS, THE USE, DEGRADATION OR DESTRUCTION OF WHICH COULD AFFECT INTERSTATE COMMERCE, INCLUDING ANY SUCH WATERS (CHECK ALL THAT APPLY):[10]
☐ which are or could be used by interstate or foreign travelers for recreational or other purposes.
☐ from which fish or shellfish are or could be taken and sold in interstate or foreign commerce.
☐ which are or could be used for industrial purposes by industries in interstate commerce.
☐ Interstate isolated waters. Explain: .
☐ Other factors. Explain: .

Identify water body and summarize rationale supporting determination: .

---

[8]See Footnote # 3.
[9] To complete the analysis refer to the key in Section III.D.6 of the Instructional Guidebook.
[10] **Prior to asserting or declining CWA jurisdiction based solely on this category, Corps Districts will elevate the action to Corps and EPA HQ for review consistent with the process described in the Corps/EPA *Memorandum Regarding CWA Act Jurisdiction Following Rapanos.***

Provide estimates for jurisdictional waters in the review area (check all that apply):
- ☐ Tributary waters: linear feet width (ft).
- ☐ Other non-wetland waters: acres.
  - Identify type(s) of waters: .
- ☐ Wetlands: acres.

F. NON-JURISDICTIONAL WATERS, INCLUDING WETLANDS (CHECK ALL THAT APPLY):
- ☐ If potential wetlands were assessed within the review area, these areas did not meet the criteria in the 1987 Corps of Engineers Wetland Delineation Manual and/or appropriate Regional Supplements.
- ☐ Review area included isolated waters with no substantial nexus to interstate (or foreign) commerce.
  - ☐ Prior to the Jan 2001 Supreme Court decision in "*SWANCC*," the review area would have been regulated based solely on the "Migratory Bird Rule" (MBR).
- ☐ Waters do not meet the "Significant Nexus" standard, where such a finding is required for jurisdiction. Explain: .
- ☐ Other: (explain, if not covered above): .

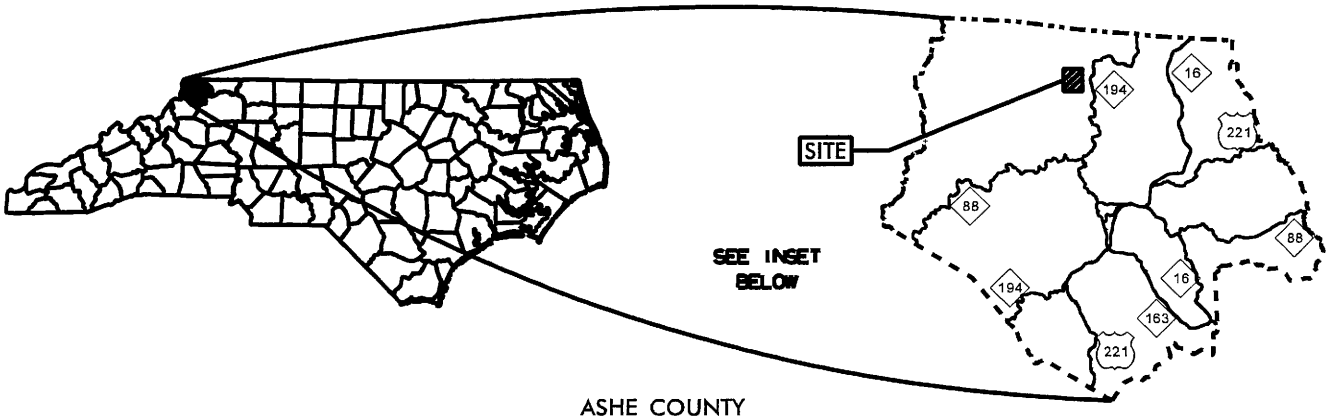
Provide acreage estimates for non-jurisdictional waters in the review area, where the sole potential basis of jurisdiction is the MBR factors (i.e., presence of migratory birds, presence of endangered species, use of water for irrigated agriculture), using best professional judgment (check all that apply):
- ☐ Non-wetland waters (i.e., rivers, streams): linear feet width (ft).
- ☐ Lakes/ponds: acres.
- ☐ Other non-wetland waters: acres. List type of aquatic resource: .
- ☐ Wetlands: acres.

Provide acreage estimates for non-jurisdictional waters in the review area that do not meet the "Significant Nexus" standard, where such a finding is required for jurisdiction (check all that apply):
- ☐ Non-wetland waters (i.e., rivers, streams): linear feet, width (ft).
- ☐ Lakes/ponds: acres.
- ☐ Other non-wetland waters: acres. List type of aquatic resource: .
- ☐ Wetlands: acres.

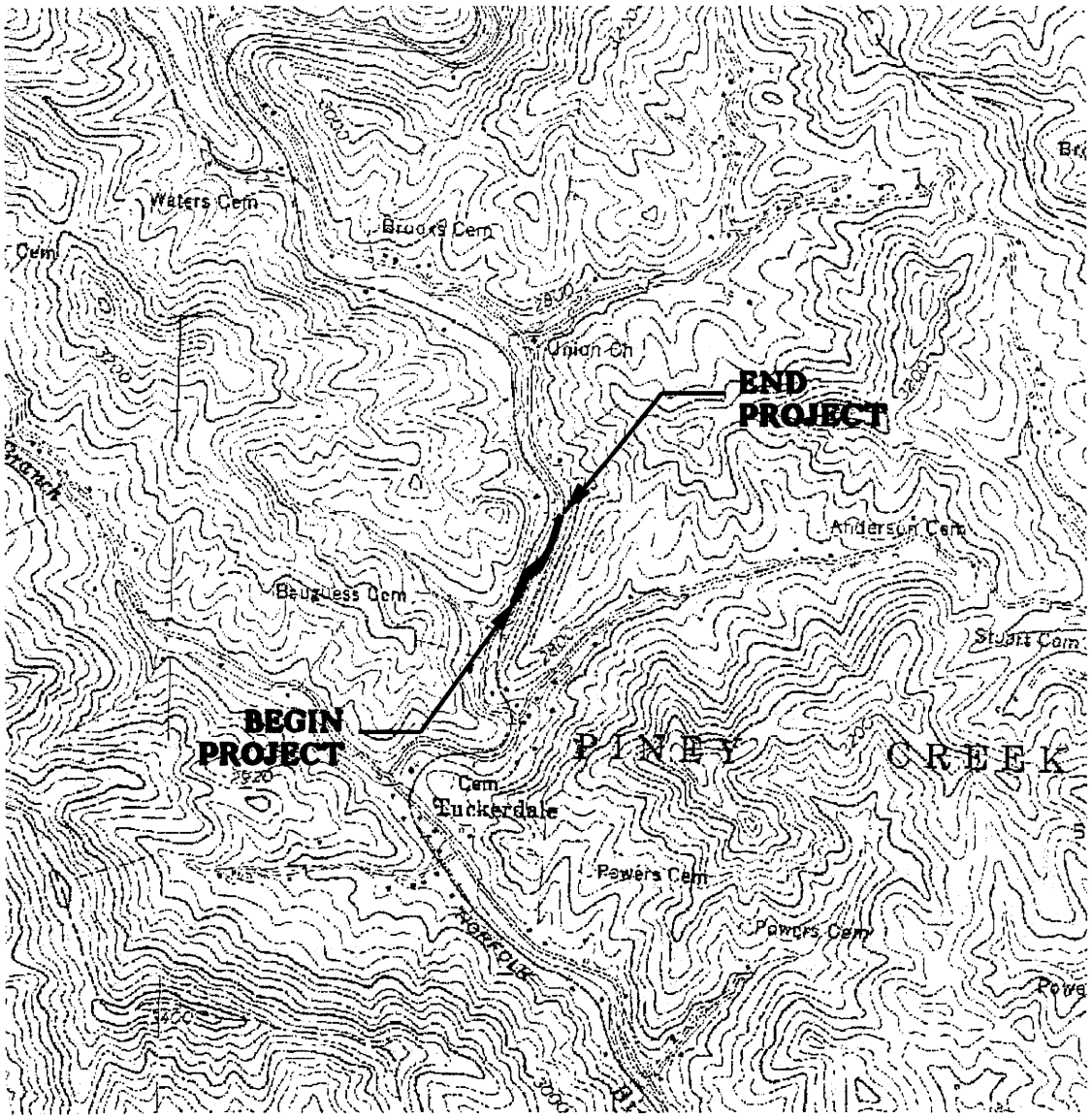
SECTION IV: DATA SOURCES.

A. SUPPORTING DATA. Data reviewed for JD (check all that apply - checked items shall be included in case file and, where checked and requested, appropriately reference sources below):
- ☐ Maps, plans, plots or plat submitted by or on behalf of the applicant/consultant: .
- ☐ Data sheets prepared/submitted by or on behalf of the applicant/consultant.
  - ☐ Office concurs with data sheets/delineation report.
  - ☐ Office does not concur with data sheets/delineation report.
- ☐ Data sheets prepared by the Corps: .
- ☐ Corps navigable waters' study: .
- ☐ U.S. Geological Survey Hydrologic Atlas: .
  - ☐ USGS NHD data.
  - ☐ USGS 8 and 12 digit HUC maps.
- ☐ U.S. Geological Survey map(s). Cite scale & quad name: .
- ☐ USDA Natural Resources Conservation Service Soil Survey. Citation: .
- ☐ National wetlands inventory map(s). Cite name: .
- ☐ State/Local wetland inventory map(s): .
- ☐ FEMA/FIRM maps: .
- ☐ 100-year Floodplain Elevation is: (National Geodectic Vertical Datum of 1929)
- ☐ Photographs: ☐ Aerial (Name & Date): .
  - or ☐ Other (Name & Date): .
- ☐ Previous determination(s). File no. and date of response letter: .
- ☐ Applicable/supporting case law: .
- ☐ Applicable/supporting scientific literature: .
- ☐ Other information (please specify): .

B. ADDITIONAL COMMENTS TO SUPPORT JD: .



ASHE COUNTY



WETLAND/STREAM IMPACTS
VICINITY MAP

Permit Drawing
Sheet 1 of 10

N.C. DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
ASHE COUNTY

PROJECT: 33383.1.1 (B-4015)
BRIDGE NO. 166 OVER
BIG HORSE CREEK ON
SR 1362 (BIG HORSE CREEK RD)

SHEET ___ OF ___ **4/22/08**

PROPERTY OWNERS

NAMES AND ADDRESSES

PARCEL NO.	NAMES	ADDRESSES
4	GUY BROOKS (MOODY BROOKS, HEIRS)	4716 WILLARD ST. CHARLOTTE, NC 28208

Permit Drawing
Sheet 2 of 10

NCDOT

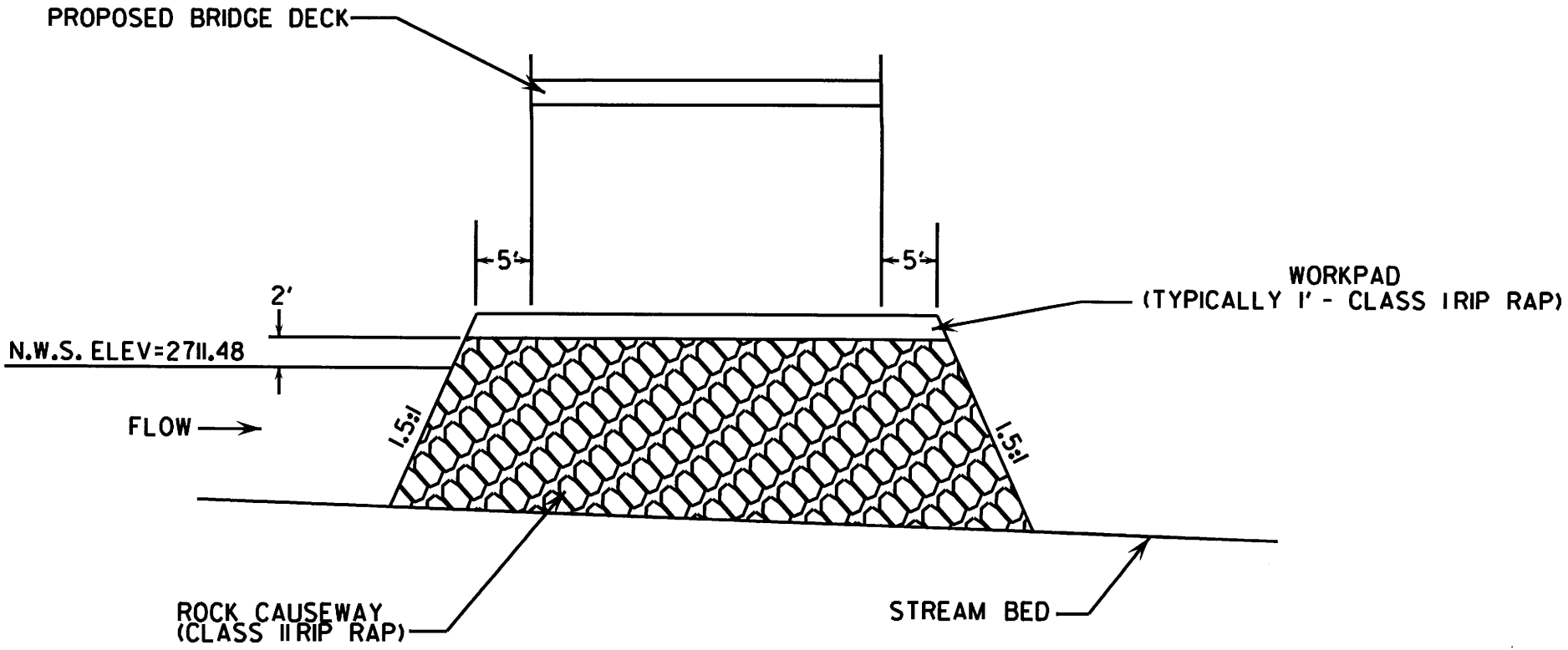
DIVISION OF HIGHWAYS

ASHE COUNTY

PROJECT: 33383.1.1 (B-4015)
BRIDGE NO. 165 OVER
BIG HORSE CREEK ON
SR 1362 (BIG HORSE CREEK RD)

SHEET OF 4/22/08

WORKPAD DETAIL
(NOT TO SCALE)



Permit Drawing
Sheet 3 of 10

QUANTITIES OF ESTIMATES

VOLUME OF CLASS II RIP RAP= 160 yds^3
AREA OF CLASS II RIP RAP= 0.029 ac
Estimate 227 Tons Class II Rip Rap

N.C. DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS

ASHE COUNTY

PROJECT: 3338.1.1 (B-4015)
BRIDGE NO. 165 OVER
BIG HORSE CREEK ON
SR 1362 (BIG HORSE CREEK RD)

SHEET ___ OF ___ **4/22/08**

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	13+15/13+45 -L-	WORKPAD TO REMOVE EXISTING BRIDGE AND PIER							0.03		65	
2	14+15 -L- LT	DITCH						<.01		20		
TOTALS:			0.00	0.00	0.00	0.00	0.00	<.01	0.03	20	65	0

* PROPOSED SURFACE WATER IMPACTS DUE TO PIERS = 22 SQ FT

Permit Drawing
Sheet 4 of 10

NC DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

ASHE COUNTY
PROJECT: 33383.1.1 (B-4015)

SHEET REVISED 5/27/08

ATN Revised 3/31/05

09/08/99

$$$$SYSTIME$$$$
$$$$DGN$$$$$$$$$$$$$$$$$$$$$$
$$$$USERNAME$$$$

TIP PROJECT: B-4015

CONTRACT:

See Sheet 1-A For Index of Sheets

VICINITY MAP

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

ASHE COUNTY

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-4015	1	

STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION
33383.1.1	BRZ-1362(1)	PE
33383.2.1	BRZ-1362(1)	UTIL. & R/W
33383.3.1	BRZ-1362(1)	CONST.

LOCATION: BRIDGE NO. 165 OVER BIG HORSE CREEK ON SR 1362 (BIG HORSE CREEK RD)

TYPE OF WORK: GRADING, DRAINAGE, PAVING & STRUCTURES

Permit Drawing
Sheet 5 of 10

WETLAND/STREAM IMPACTS

** NOTE - A DESIGN EXCEPTION IS NEEDED FOR THE MINIMUM HORIZONTAL CURVE RADIUS.*

GRAPHIC SCALES

50 25 0 50 100
PLANS

50 25 0 50 100
PROFILE (HORIZONTAL)

10 5 0 10 20
PROFILE (VERTICAL)

DESIGN DATA

ADT 2008 = 685
ADT 2028 = 940
DHV = 12 %
D = 60 %
T = 3 % *
V = 40 MPH
* TTST 1% DUAL 2%
FUNC CLASS = LOCAL

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT B-4015	= 0.098 MILE
LENGTH STRUCTURE TIP PROJECT B-4015	= 0.016 MILE
TOTAL LENGTH TIP PROJECT B-4015	= 0.114 MILE

SUNGATE DESIGN GROUP, P.A.
915 JONES FRANKLIN ROAD
RALEIGH, NORTH CAROLINA 27606
TEL (919) 859-2243 FAX (919) 859-6258

WETHERILL ENGINEERING

Prepared for the North Carolina Department of Transportation in the Office of:

559 JONES FRANKLIN ROAD
SUITE 164
Raleigh, N.C. 27606
Bus: 919 851 8077
Fax: 919 851 8107

2006 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
AUGUST 18, 2006

LETTING DATE:
DECEMBER 16, 2008

EDWARD G. WETHERILL, PE
PROJECT ENGINEER

BOB A. MAY, PE
PROJECT DESIGN ENGINEER

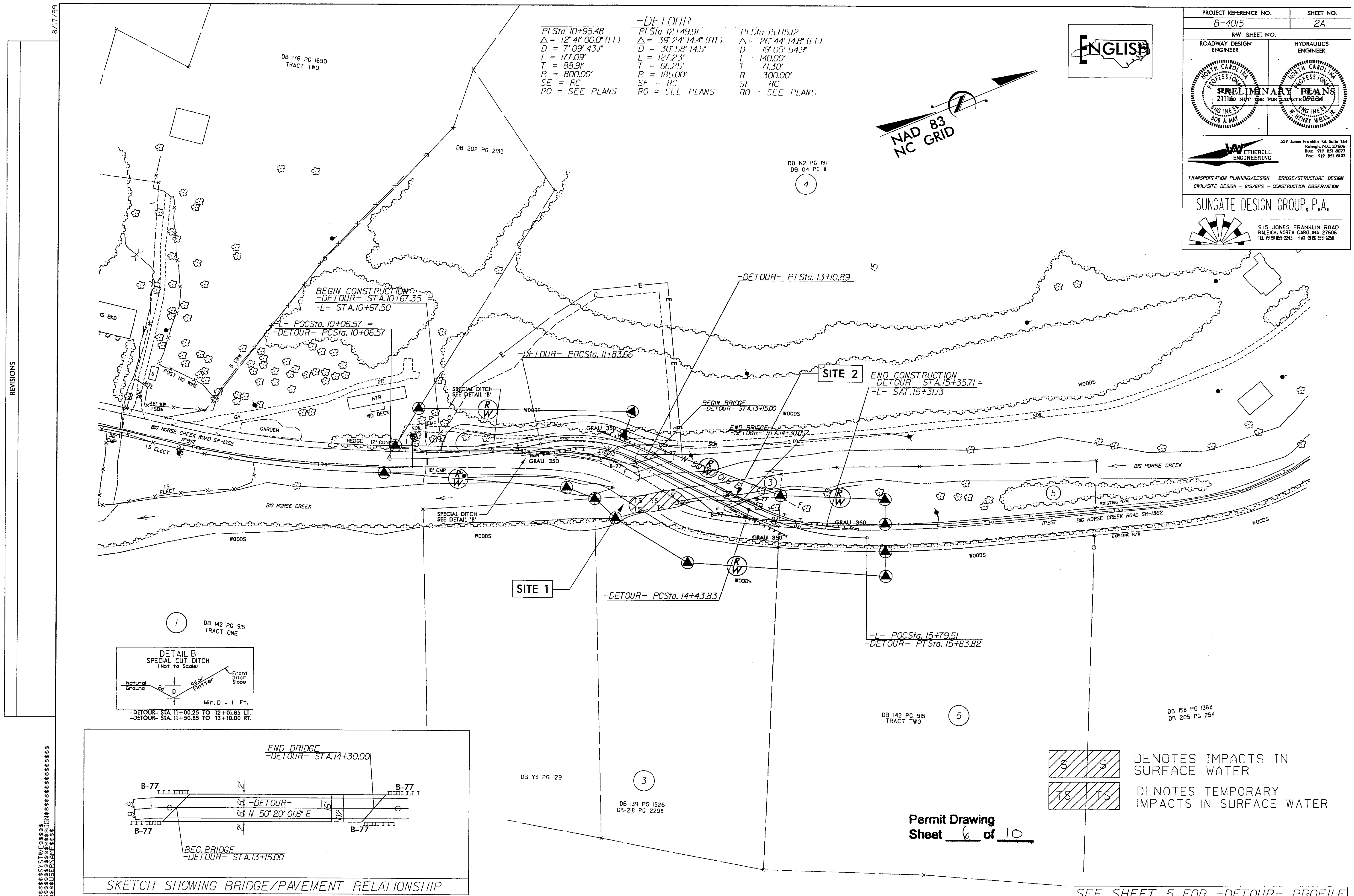
NCDOT CONTACT: DOUG TAYLOR, PE
ROADWAY DESIGN: ENGINEERING COORDINATION SECTION ENGINEER

HYDRAULICS ENGINEER
SEAL 09334
W. HENRY WELLS, JR.
SIGNATURE: P.E.

ROADWAY DESIGN ENGINEER
SEAL 21116
BOB A. MAY
SIGNATURE: P.E.

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

STATE HIGHWAY DESIGN ENGINEER P.E.


PROJECT REFERENCE NO. B-4015
SHEET NO. 2A
RW SHEET NO.
ROADWAY DESIGN ENGINEER
HYDRAULICS ENGINEER
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION
ENGLISH
WETHERILL ENGINEERING
559 Jones Franklin Rd. Suite 164 Raleigh, N.C. 27606
TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN
CIVIL/SITE DESIGN - GIS/GPS - CONSTRUCTION OBSERVATION
SUNGATE DESIGN GROUP, P.A.
915 JONES FRANKLIN ROAD RALEIGH, NORTH CAROLINA 27606
-DETOUR-
PI Sta 10+95.48
Δ = 12° 41' 00.0" (LT)
D = 7° 09' 43.1"
L = 177.09'
T = 88.91'
R = 800.00'
SE = RC
RO = SEE PLANS
PI Sta 12+49.91
Δ = 39° 24' 14.4" (RT)
D = 30° 58' 14.5"
L = 127.23'
T = 66.25'
R = 185.00'
SE = RC
RO = SEE PLANS
PI Sta 15+15.12
Δ = 26° 44' 14.8" (LT)
D = 19° 05' 54.9"
L = 140.00'
T = 71.30'
R = 300.00'
SE = RC
RO = SEE PLANS
NAD 83 NC GRID
DB 176 PG 1690 TRACT TWO
DB 202 PG 2133
DB N2 PG 191
DB 04 PG 11
BEGIN CONSTRUCTION -DETOUR- STA.10+67.35 = -L- STA.10+67.50
-L- POCSta. 10+06.57 = -DETOUR- PCSta. 10+06.57
-DETOUR- PRCSta. 11+83.66
-DETOUR- PT Sta. 13+10.89
SITE 2
END CONSTRUCTION -DETOUR- STA.15+35.71 = -L- SAT.15+31.13
BEGIN BRIDGE -DETOUR- STA.13+15.00
END BRIDGE -DETOUR- STA.14+30.00
SPECIAL DITCH SEE DETAIL 'B'
BIG HORSE CREEK ROAD SR-1362
BIG HORSE CREEK
WOODS
GARDEN
HEDGE
GRAU 350
SITE 1
-DETOUR- PCSta. 14+43.83
-L- POCSta. 15+79.51
-DETOUR- PT Sta. 15+83.82
DB 142 PG 915 TRACT ONE
DETAIL B
SPECIAL CUT DITCH (Not to Scale)
Natural Ground
Front Ditch Slope
Min. D = 1 Ft.
-DETOUR- STA. 11+00.25 TO 12+01.85 LT.
-DETOUR- STA. 11+50.85 TO 13+10.00 RT.
DB 142 PG 915 TRACT TWO
DB 158 PG 1368
DB 205 PG 254
DB Y5 PG 129
DB 139 PG 1526
DB-218 PG 2208
END BRIDGE -DETOUR- STA.14+30.00
B-77
-DETOUR-
N 50° 20' 01.6" E
BEG. BRIDGE -DETOUR- STA.13+15.00
SKETCH SHOWING BRIDGE/PAVEMENT RELATIONSHIP
DENOTES IMPACTS IN SURFACE WATER
DENOTES TEMPORARY IMPACTS IN SURFACE WATER
Permit Drawing
Sheet 6 of 10
SEE SHEET 5 FOR -DETOUR- PROFILE
REVISIONS
8/17/99

PROJECT REFERENCE NO.	SHEET NO.
B-4015	2A

R/W SHEET NO.

ROADWAY DESIGN ENGINEER — HYDRAULICS ENGINEER

PRELIMINARY PLANS — DO NOT USE FOR CONSTRUCTION

WETHERILL ENGINEERING — 559 Jones Franklin Rd. Suite 164, Raleigh, N.C. 27606, Bus: 919 851 8077, Fax: 919 851 8107

TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN
CIVIL/SITE DESIGN - GIS/GPS - CONSTRUCTION OBSERVATION

SUNGATE DESIGN GROUP, P.A.
915 JONES FRANKLIN ROAD, RALEIGH, NORTH CAROLINA 27606
TEL (919) 859-2243 FAX (919) 859-6258

ENGLISH

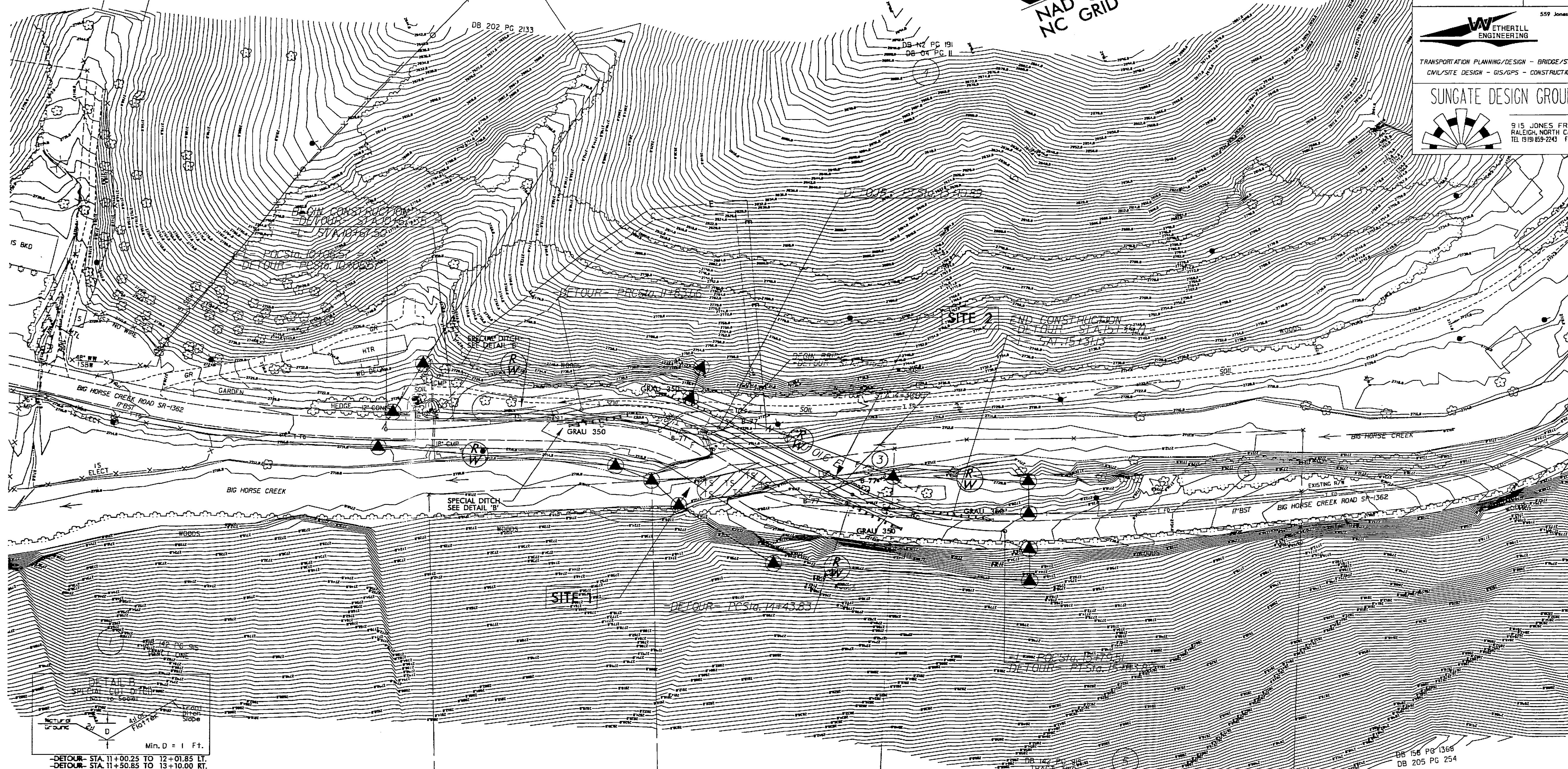
NAD 83 NC GRID

8/17/99

REVISIONS

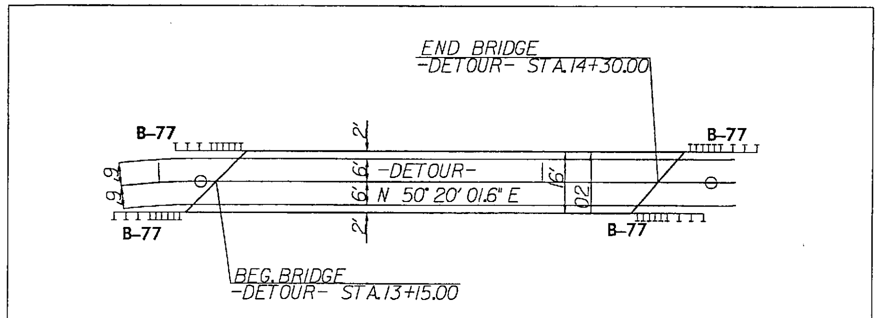
-DETOUR-

PI Sta 10+95.48	PI Sta 12+49.91	PI Sta 15+15.12
△ = 12° 41' 00.0" (LT)	△ = 39° 24' 14.4" (RT)	△ = 26° 44' 14.8" (LT)
D = 7° 09' 43.1"	D = 30° 58' 14.5"	D = 19° 05' 54.9"
L = 177.09'	L = 127.23'	L = 140.00'
T = 88.91'	T = 66.25'	T = 71.30'
R = 800.00'	R = 185.00'	R = 300.00'
SE = RC	SE = RC	SE = RC
RO = SEE PLANS	RO = SEE PLANS	RO = SEE PLANS



DB Y5 PG 129

DB 139 PG 1526
DB-218 PG 2208



SKETCH SHOWING BRIDGE/PAVEMENT RELATIONSHIP

S / S	DENOTES IMPACTS IN SURFACE WATER
TS / TS	DENOTES TEMPORARY IMPACTS IN SURFACE WATER

Permit Drawing
Sheet 7 of 10

SEE SHEET 5 FOR -DETOUR- PROFILE

8/17/99

REVISIONS

DENOTES IMPACTS IN SURFACE WATER

DENOTES TEMPORARY IMPACTS IN SURFACE WATER

NAD 83 NC GIRD

ENGLISH

PROJECT REFERENCE NO.	SHEET NO.
B-4015	4
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER — NORTH CAROLINA PROFESSIONAL SEAL 21116 ENGINEER BOB A. MAY

HYDRAULICS ENGINEER — NORTH CAROLINA PROFESSIONAL SEAL 09334 ENGINEER W. HENRY WELLS, JR.

WETHERILL ENGINEERING
559 Jones Franklin Rd. Suite 164
Raleigh, N.C. 27606
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Fax: 919 851 8107

TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN
CIVIL/SITE DESIGN - GIS/GPS - CONSTRUCTION OBSERVATION

SUNGATE DESIGN GROUP, P.A.
915 JONES FRANKLIN ROAD
RALEIGH, NORTH CAROLINA 27606
TEL (919) 859-2243 FAX (919) 859-6258

-L-
PI Sta 12+46.46
Δ = 32° 18' 10.0" (RT)
D = 49° 49' 20.7"
L = 64.84'
T = 33.30'
R = 115.00'
SE = RC
RO = 36'
V_{DES} = 20MPH

PI Sta 13+88.32
Δ = 29° 32' 41.0" (LT)
D = 49° 49' 20.7"
L = 59.30'
T = 30.32'
R = 115.00'
SE = RC
RO = 36'
V_{DES} = 20MPH

DB 176 PG 1690 TRACT TWO

DB 202 PG 2133

DB N2 PG 191
DB 04 PG 11

BEGIN TIP PROJECT B-4015
BEGIN CONSTRUCTION
-L- POT STA.10+00.00

-L- PT Sta. 12+78.00

-L- PCSta. 12+13.16

-L- PCSta. 13+58.00

-L- PT Sta. 14+17.30

-L- PT Sta. 16+99.18

-L- POT Sta. 19+28.62

SITE 2

SITE 1

SPECIAL DITCH SEE DETAIL B

LAT "V" DITCH SEE DETAIL 'A'

BIG HORSE CREEK ROAD SR-1362

N 23° 56' 29.7" E

N 26° 41' 58.7" E

N 12° 36' 46.1" E

BIG HORSE CREEK

DO NOT DISTURB STREAM

CL B RIP RAP
EST 17 TONS
EST 39 SY FF

END TIP PROJECT B-4015
END CONSTRUCTION
-L- POT STA.16+00.00

-L- PCSta. 15+17.45

DB 142 PG 915 TRACT ONE

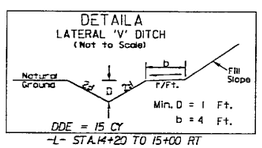
DB 142 PG 915 TRACT TWO

DB 158 PG 1368
DB 205 PG 254

DB 139 PG 1526
DB-218 PG 2208

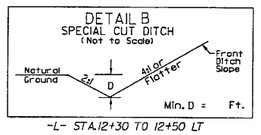
DB Y5 PG 129

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



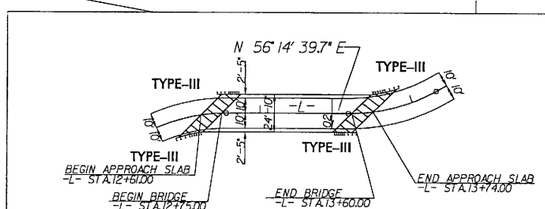
DDE = 15 CY
-L- STA.14+20 TO 15+00 RT

DETAIL B
SPECIAL CUT DITCH
(Not to Scale)



-L- STA.12+30 TO 12+50 LT

SKETCH SHOWING BRIDGE/PAVEMENT RELATIONSHIP



Permit Drawing
Sheet 8 of 10

SEE SHEETS 2-A & 5 FOR DETOUR ALIGNMENT & GRADE
SEE SHEET S-1 THRU S- FOR STRUCTURE PLANS
SEE SHEET 2-B FOR DRIVEWAY ALIGNMENT & PROFILE
SEE SHEET 5 FOR -L- PROFILE

8/17/99

REVISIONS

PROJECT REFERENCE NO.	SHEET NO.
B-4015	4
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER
SEAL 21116
BOB A. MAY

HYDRAULICS ENGINEER
SEAL 09334
W. HENRY WELLS, JR.

WETHERILL ENGINEERING
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TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN
CIVIL/SITE DESIGN - GIS/GPS - CONSTRUCTION OBSERVATION

SUNGATE DESIGN GROUP, P.A.
915 JONES FRANKLIN ROAD
RALEIGH, NORTH CAROLINA 27606
TEL (919) 859-2243 FAX (919) 859-6258

ENGLISH

▨ S	DENOTES IMPACTS IN SURFACE WATER
▨ TS	DENOTES TEMPORARY IMPACTS IN SURFACE WATER

-L-

PI Sta 12+46.46	PI Sta 13+88.32
△ = 32° 18′ 10.0″ (RT)	△ = 29° 32′ 41.0″ (LT)
D = 49° 49′ 20.7″	D = 49° 49′ 20.7″
L = 64.84′	L = 59.30′
T = 33.30′	T = 30.32′
R = 115.00′	R = 115.00′
SE = RC	SE = RC
RO = 36′	RO = 36′
V_{DES} = 20MPH	V_{DES} = 20MPH

DB Y5 PG 129

③
DB 139 PG 1526
DB-218 PG 2208

SKETCH SHOWING BRIDGE/PAVEMENT RELATIONSHIP

Permit Drawing
Sheet 9 of 10

SEE SHEETS 2-A & 5 FOR DETOUR ALIGNMENT & GRADE
SEE SHEET S-1 THRU S- FOR STRUCTURE PLANS
SEE SHEET 2-B FOR DRIVEWAY ALIGNMENT & PROFILE
SEE SHEET 5 FOR -L- PROFILE

$$$$SYSTIME$$$$
$$$$$$$$$$$$$$$DGN$$$$$$$$$$$$$$$$$$$$
$$$$USERNAME$$$$

BM *1
RAILROAD SPIKE IN 8" MAPLE
-L- STA.12+99.63, 77.74' LEFT
N 1023331 E 1256652 EL = 2726.45'

WETHERILL ENGINEERING
559 Jones Franklin Rd. Suite 164
Raleigh, N.C. 27606
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Fax: 919 851 8107
TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN
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RALEIGH, NORTH CAROLINA 27606
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PROJECT REFERENCE NO.	SHEET NO.
B-4015	5

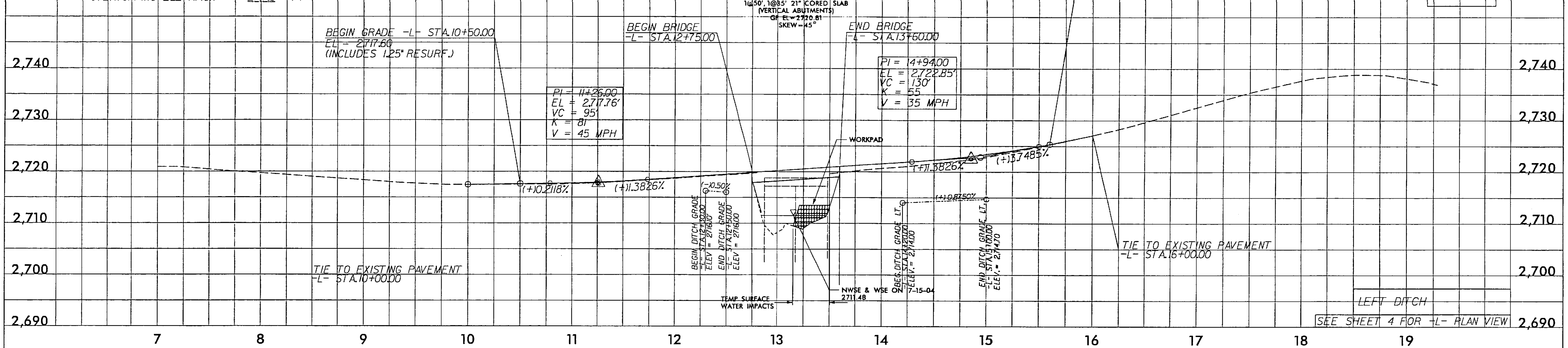
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 21116 ENGINEER BOB A. MAY	NORTH CAROLINA PROFESSIONAL SEAL 09334 ENGINEER W. HENRY WELLS, JR.

SITE 1

-L-

STRUCTURE HYDRAULIC DATA

DESIGN DISCHARGE	= 3900	CFS
DESIGN FREQUENCY	= 25	YRS
DESIGN HW ELEVATION	= 2722.2	FT
BASE DISCHARGE	= 5700	CFS
BASE FREQUENCY	= 100	YRS
BASE HW ELEVATION	= 2724.2	FT
OVERTOPPING DISCHARGE	= 2200	CFS
OVERTOPPING FREQUENCY	= 5	YRS
OVERTOPPING ELEVATION	= 2717.6	FT

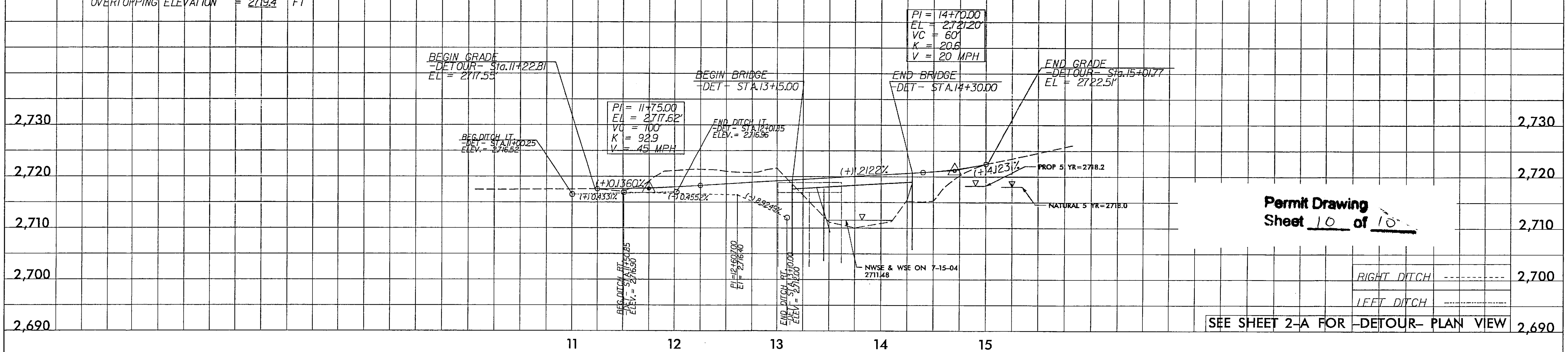


SEE SHEET 4 FOR -L- PLAN VIEW

-DETOUR-

STRUCTURE HYDRAULIC DATA

DESIGN DISCHARGE	= 2200	CFS
DESIGN FREQUENCY	= 5	YRS
DESIGN HW ELEVATION	= 2718.2	FT
BASE DISCHARGE	= ---	CFS
BASE FREQUENCY	= ---	YRS
BASE HW ELEVATION	= ---	FT
OVERTOPPING DISCHARGE	= 2900	CFS
OVERTOPPING FREQUENCY	= 10	YRS
OVERTOPPING ELEVATION	= 2719.4	FT



Permit Drawing
Sheet 10 of 10

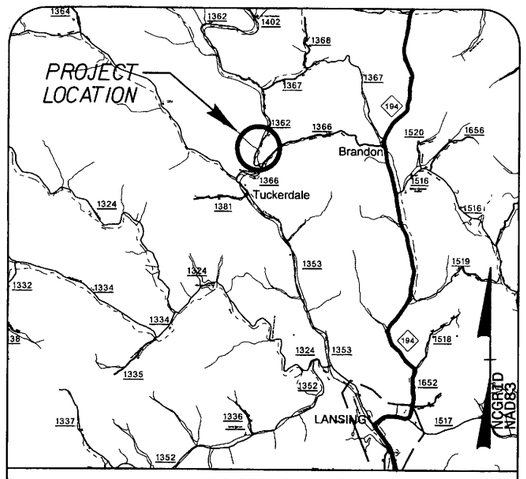
SEE SHEET 2-A FOR -DETOUR- PLAN VIEW

09/08/99

TIP PROJECT: B-4015

CONTRACT:

See Sheet 1-A For Index of Sheets



VICINITY MAP

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

ASHE COUNTY

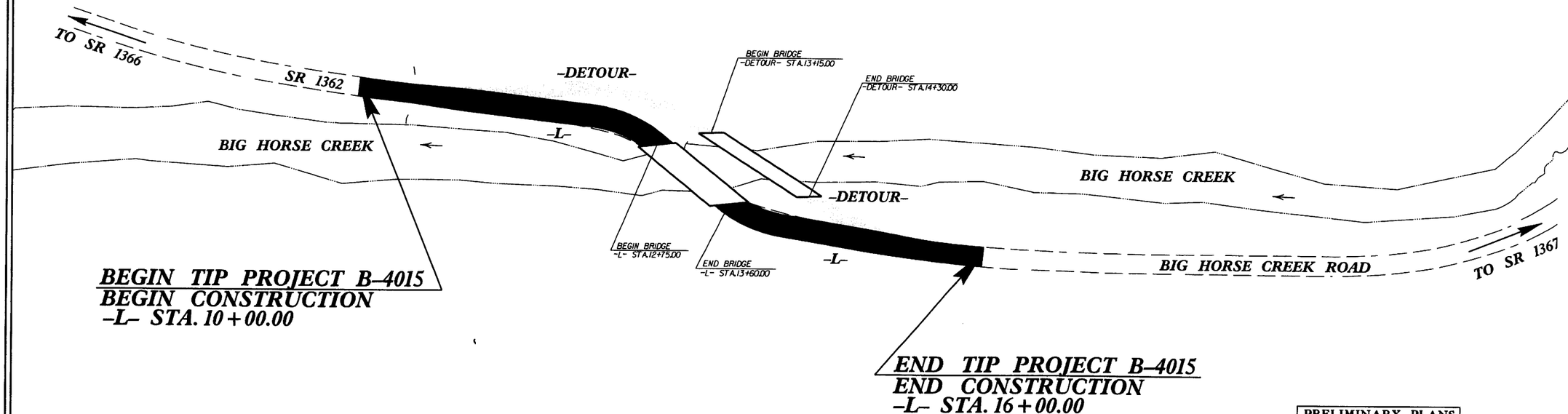
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-4015	1	

STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION
33383.1.1	BRZ-1362(1)	PE
33383.2.1	BRZ-1362(1)	UTIL. & R/W
33383.3.1	BRZ-1362(1)	CONST.

LOCATION: BRIDGE NO. 165 OVER BIG HORSE CREEK ON SR 1362 (BIG HORSE CREEK RD)

TYPE OF WORK: GRADING, DRAINAGE, PAVING & STRUCTURES

NAD 83 NC GRID



BEGIN TIP PROJECT B-4015
BEGIN CONSTRUCTION
-L- STA. 10+00.00

END TIP PROJECT B-4015
END CONSTRUCTION
-L- STA. 16+00.00

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

** NOTE - A DESIGN EXCEPTION IS NEEDED FOR THE MINIMUM HORIZONTAL CURVE RADIUS.*

GRAPHIC SCALES

PLANS: 50 25 0 50 100

PROFILE (HORIZONTAL): 50 25 0 50 100

PROFILE (VERTICAL): 10 5 0 10 20

DESIGN DATA

ADT 2008	=	685
ADT 2028	=	940
DHV	=	12 %
D	=	60 %
T	=	3 % *
V	=	40 MPH
* TTST 1%		DUAL 2%
FUNC CLASS	=	LOCAL

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT B-4015	=	*0.098 MILE*
LENGTH STRUCTURE TIP PROJECT B-4015	=	*0.016 MILE*
TOTAL LENGTH TIP PROJECT B-4015	=	*0.114 MILE*

SUNGATE DESIGN GROUP, P.A.
915 JONES FRANKLIN ROAD
RALEIGH, NORTH CAROLINA 27606
TEL (919) 859-2243 FAX (919) 859-6298

Prepared for the North Carolina Department of Transportation in the Office of:
WETHERILL ENGINEERING
559 JONES FRANKLIN ROAD
SUITE 164
Raleigh, N.C. 27606
Bus. 919 851 8077
Fax. 919 851 8107

2006 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE: AUGUST 18, 2006

LETTING DATE: DECEMBER 16, 2008

NCDOT CONTACT: DOUG TAYLOR, PE
ROADWAY DESIGN: ENGINEERING COORDINATION SECTION ENGINEER

EDWARD G. WETHERILL, PE
PROJECT ENGINEER

BOB A. MAY, PE
PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

SIGNATURE: *P.E.*

ROADWAY DESIGN ENGINEER

SIGNATURE: *P.E.*

DIVISION OF HIGHWAYS STATE OF NORTH CAROLINA

P.E.

8:44:49 AM
R:\Roadway\Proj\B4015_RDY_tsh.dgn
5/27/2008

PROJECT REFERENCE NO.	SHEET NO.
B-4015	1-B

Note: Not to Scale

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

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

CONVENTIONAL PLAN SHEET SYMBOLS

BOUNDARIES AND PROPERTY:

- State Line
- County Line
- Township Line
- City Line
- Reservation Line
- Property Line
- Existing Iron Pin — EIP
- Property Corner
- Property Monument — 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 High Quality Wetland Boundary — HQ 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
- River Basin Buffer — RBB
- Flow Arrow
- Disappearing Stream
- Spring
- Swamp Marsh
- Proposed Lateral, Tail, Head Ditch — FLOW
- False Sump

RAILROADS:

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

RIGHT OF WAY:

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

ROADS AND RELATED FEATURES:

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

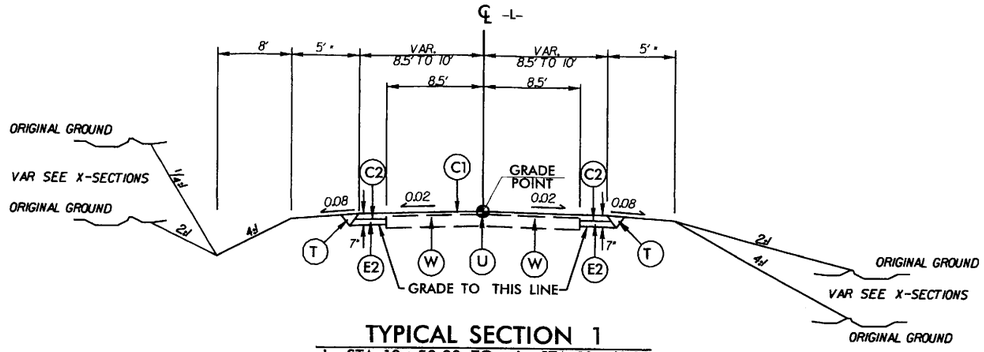
- Sanitary Sewer Manhole
- Sanitary Sewer Cleanout
- U/G Sanitary Sewer Line — SS
- Above Ground Sanitary Sewer — A/G Sanitary Sewer
- Recorded SS Forced Main Line — FSS
- Designated SS Forced Main Line (S.U.E.*) — FSS

MISCELLANEOUS:

- Utility Pole
- Utility Pole with Base
- Utility Located Object
- Utility Traffic Signal Box — S
- Utility Unknown U/G Line — ?UTL
- 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.

PAVEMENT SCHEDULE	
C1	PROP. APPROX. 1¼" ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 137.5 LBS PER SQ. YD.
C2	PROP. APPROX. 2½" ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 137.5 LBS PER SQ. YD. IN EACH OF TWO LAYERS.
C3	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 110 LBS. PER SQ. YD. PER 1" DEPTH TO BE PLACED IN LAYERS NOT LESS THAN 1" IN DEPTH OR GREATER THAN 1½" IN DEPTH.
E1	PROP. APPROX. 4" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.
E2	PROP. APPROX. 4½" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 513 LBS. PER SQ. YD.
E3	PROP. VAR. DEPTH ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 114 LBS PER SQ. YD. PER 1" DEPTH TO BE PLACED IN LAYERS NOT LESS THAN 3" IN DEPTH OR GREATER THAN 5½" IN DEPTH.
J	6" AGGREGATE BASE COURSE
T	EARTH MATERIAL
U	EXISTING PAVEMENT
W	WEDGING

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

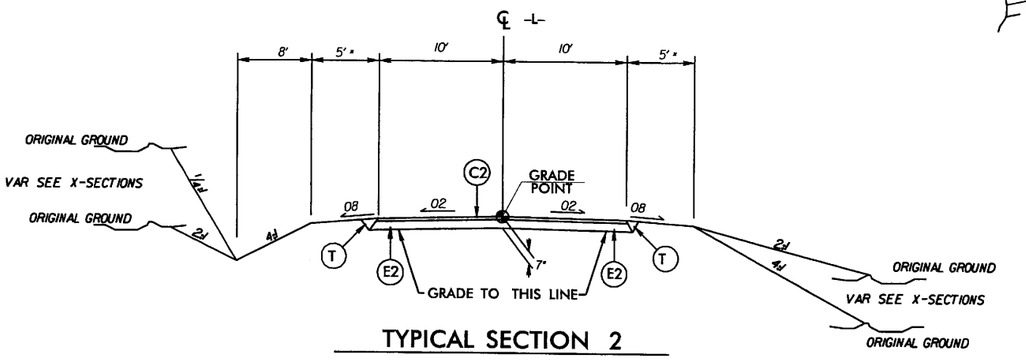


TYPICAL SECTION 1

-L- STA. 10+50.00 TO -L- STA. 12+61.00
-L- STA. 14+35.00 TO -L- STA. 15+60.00
* 8' W/GUARDRAIL

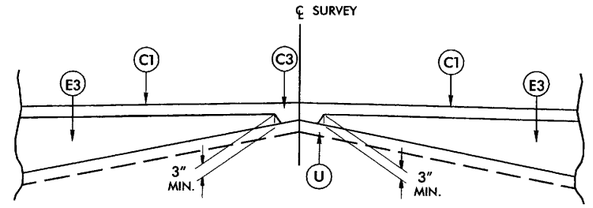
TRANSITION FROM EXISTING TO TYPICAL SECTION NO. 1
-L- STA. 10+00.00 TO -L- STA. 10+50.00

TRANSITION FROM TYPICAL SECTION NO. 1 TO EXISTING
-L- STA. 15+60.00 TO -L- STA. 16+00.00

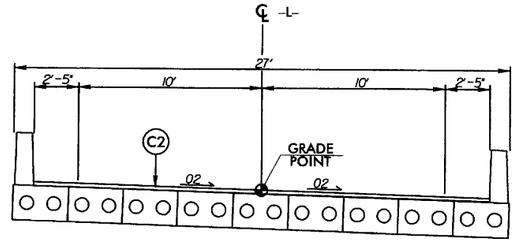


TYPICAL SECTION 2

-L- STA. 12+61.00 TO -L- STA. 12+75.00 (BEGIN BRIDGE)
-L- STA. 13+60.00 (END BRIDGE) TO -L- STA. 14+35.00
* 8.25' W/GUARDRAIL

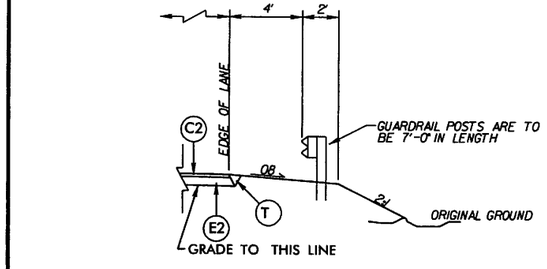


Detail Showing Method of Wedging



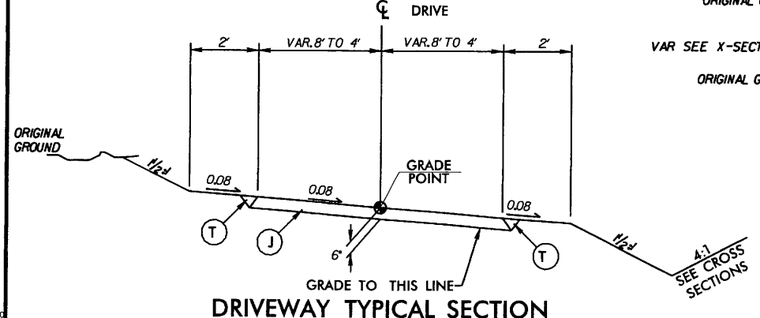
TYPICAL SECTION 3

-L- STA. 12+75 TO -L- STA. 13+60



PARTIAL TYPICAL SECTION 1

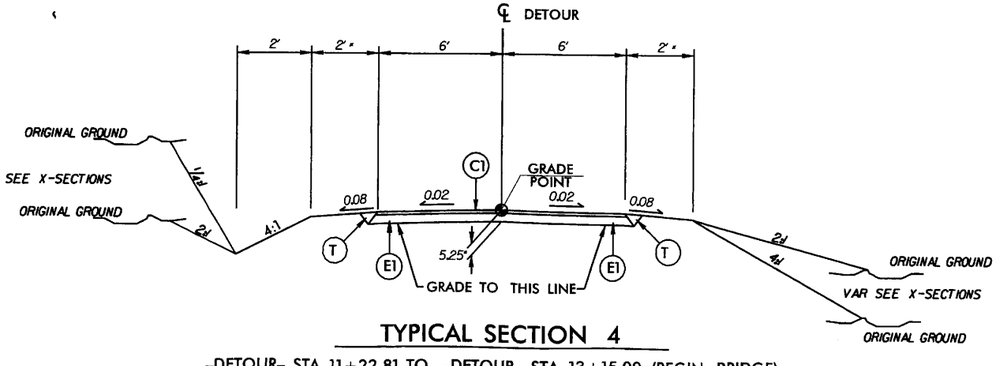
USE IN CONJUNCTION WITH TYPICAL SECTIONS NO. 1 & 2
-L- STA. 11+19.00 TO -L- STA. 12+75.00 RT.



DRIVEWAY TYPICAL SECTION

-DRIVE- STA. 10+10.00 TO STA. 12+87.51

TRANSITION FRON DRIVEWAY TYPICAL SECTION TO EXISTING
STA. 12+87.51 TO STA. 13+02.24

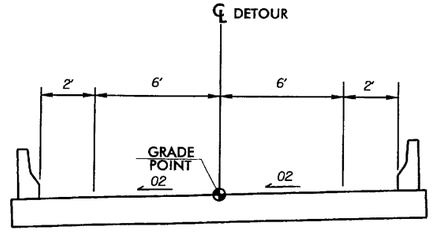


TYPICAL SECTION 4

-DETOUR- STA. 11+22.81 TO -DETOUR- STA. 13+15.00 (BEGIN BRIDGE)
-DETOUR- STA. 14+30.00 (END BRIDGE) TO -DETOUR- STA. 15+01.77
* 5' W/GUARDRAIL

TRANSITION FROM EXISTING TO TYPICAL SECTION NO. 4
-DETOUR- STA. 10+67.35 TO -DETOUR- STA. 11+22.81

TRANSITION FROM TYPICAL SECTION NO. 4 TO EXISTING
-DETOUR- STA. 15+01.77 TO -DETOUR- STA. 15+35.71



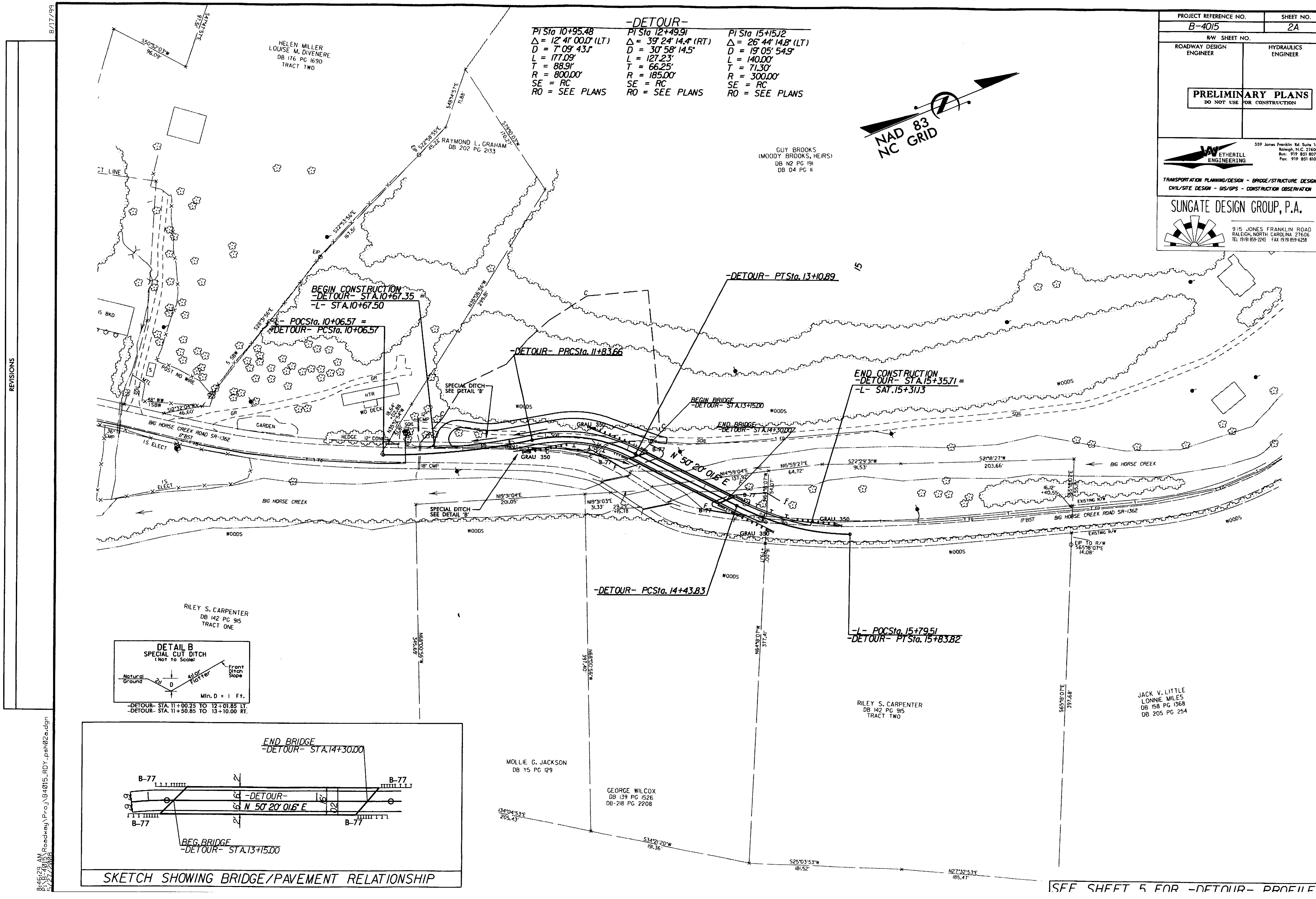
TYPICAL SECTION 5

-DETOUR- STA. 13+15.00 TO -DETOUR- STA. 14+30.00

WETHERILL ENGINEERING
559 Jones Franklin Rd. Suite 164
Raleigh, N.C. 27606
Bus: 919 851 8077
Fax: 919 851 8107
TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN
CIVIL/SITE DESIGN - GIS/GPS - CONSTRUCTION OBSERVATION

PROJECT REFERENCE NO.	SHEET NO.
B-4015	2
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION



PROJECT REFERENCE NO. B-4015
SHEET NO. 2A
R/W SHEET NO.
ROADWAY DESIGN ENGINEER
HYDRAULICS ENGINEER
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION
559 Jones Franklin Rd. Suite 164 Raleigh, N.C. 27606
WETHERILL ENGINEERING
TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN
CIVIL/SITE DESIGN - GIS/GPS - CONSTRUCTION OBSERVATION
SUNGATE DESIGN GROUP, P.A.
915 JONES FRANKLIN ROAD RALEIGH, NORTH CAROLINA 27606
-DETOUR-
PI Sta 10+95.48
Δ = 12° 41' 00.0" (LT)
D = 7° 09' 43.1"
L = 177.09'
T = 88.91'
R = 800.00'
SE = RC
RO = SEE PLANS
PI Sta 12+49.91
Δ = 39° 24' 14.4" (RT)
D = 30° 58' 14.5"
L = 127.23'
T = 66.25'
R = 185.00'
SE = RC
RO = SEE PLANS
PI Sta 15+15.12
Δ = 26° 44' 14.8" (LT)
D = 19° 05' 54.9"
L = 140.00'
T = 71.30'
R = 300.00'
SE = RC
RO = SEE PLANS
NAD 83 NC GRID
HELEN MILLER
LOUISE M. DIVENERE
DB 176 PG 1690
TRACT TWO
RAYMOND L. GRAHAM
DB 202 PG 2133
GUY BROOKS
(MOODY BROOKS, HEIRS)
DB N2 PG 191
DB 04 PG 11
BEGIN CONSTRUCTION
-DETOUR- STA.10+67.35 =
-L- STA.10+67.50
-L- POCSta. 10+06.57 =
-DETOUR- PCSta. 10+06.57
-DETOUR- PRCSta. 11+83.66
-DETOUR- PTSta. 13+10.89
BEGIN BRIDGE
-DETOUR- STA.13+15.00
END BRIDGE
-DETOUR- STA.14+30.00
END CONSTRUCTION
-DETOUR- STA.15+35.71 =
-L- SAT.15+31.13
-DETOUR- PCSta. 14+43.83
-L- POCSta. 15+79.51
-DETOUR- PTSta. 15+83.82
SPECIAL DITCH
SEE DETAIL 'B'
N 50° 20' 01.6" E
BIG HORSE CREEK ROAD SR-1362
BIG HORSE CREEK
GRAU 350
WOODS
GARDEN
HTR
WD DECK
RILEY S. CARPENTER
DB 142 PG 915
TRACT ONE
RILEY S. CARPENTER
DB 142 PG 915
TRACT TWO
JACK V. LITTLE
LONNIE MILES
DB 158 PG 1368
DB 205 PG 254
MOLLIE G. JACKSON
DB Y5 PG 129
GEORGE WILCOX
DB 139 PG 1526
DB-218 PG 2208
DETAIL B
SPECIAL CUT DITCH
(Not to Scale)
Natural Ground
Front Ditch Slope
4:1 or Flatter
Min. D = 1 Ft.
-DETOUR- STA. 11+00.25 TO 12+01.85 LT.
-DETOUR- STA. 11+50.85 TO 13+10.00 RT.
END BRIDGE
-DETOUR- STA.14+30.00
B-77
-DETOUR-
N 50° 20' 01.6" E
BEG. BRIDGE
-DETOUR- STA.13+15.00
SKETCH SHOWING BRIDGE/PAVEMENT RELATIONSHIP
REVISIONS
SEE SHEET 5 FOR -DETOUR- PROFILE
8/17/99

PROJECT REFERENCE NO.	SHEET NO.
B-4015	2-B

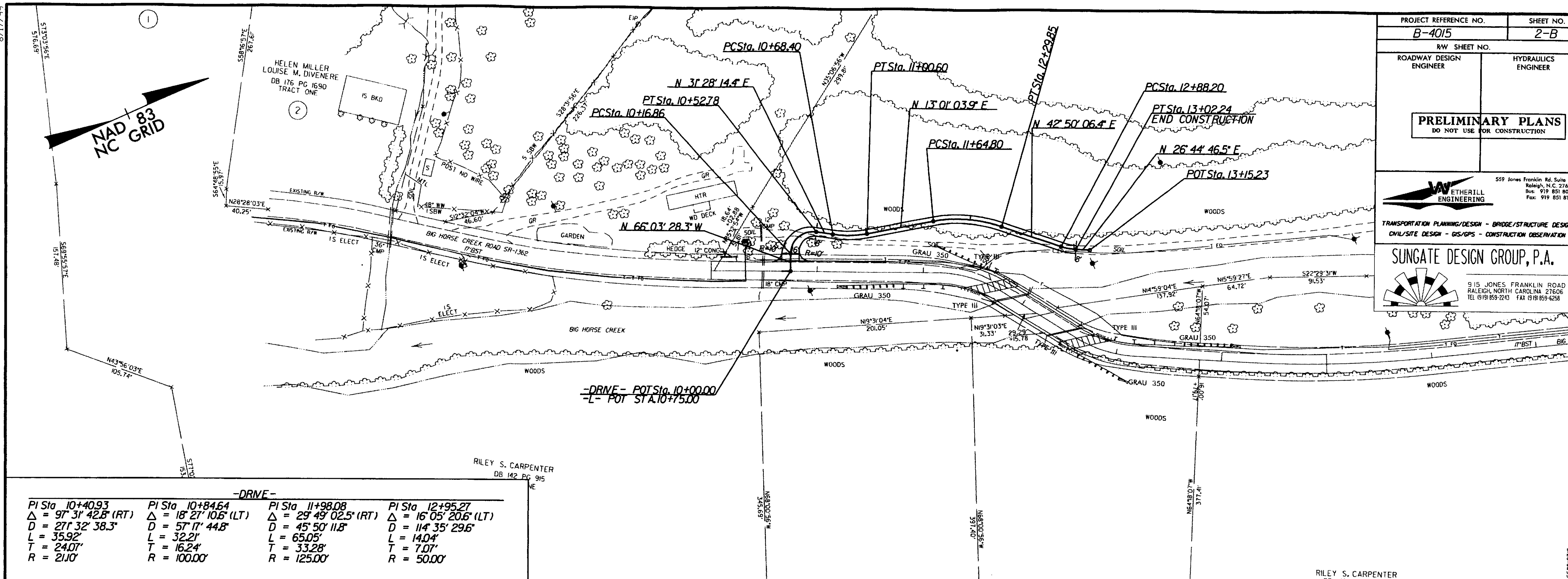
R/W SHEET NO.

ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

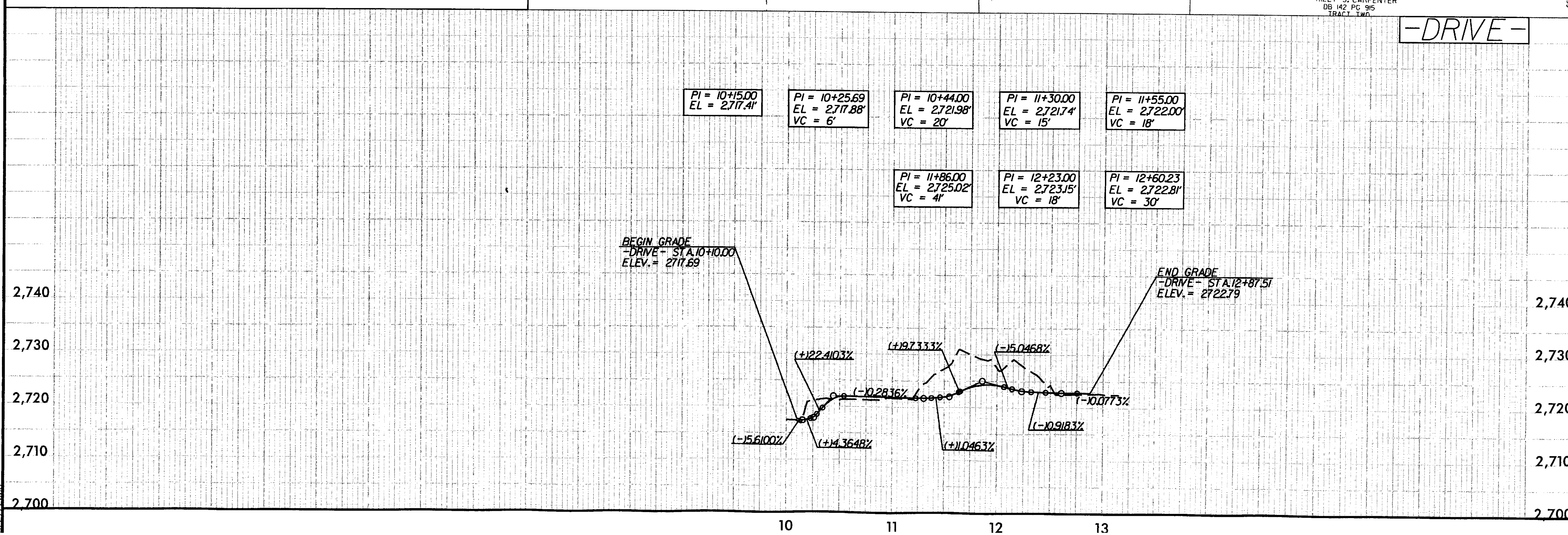
WETHERILL ENGINEERING
559 Jones Franklin Rd. Suite 164
Raleigh, N.C. 27606
Bus: 919 851 8077
Fax: 919 851 8107
TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN
CIVIL/SITE DESIGN - GIS/GPS - CONSTRUCTION OBSERVATION

SUNGATE DESIGN GROUP, P.A.
915 JONES FRANKLIN ROAD
RALEIGH, NORTH CAROLINA 27606
TEL (919) 859-2243 FAX (919) 859-6258


8/17/99
NAD 83
NC GRID
HELEN MILLER
LOUISE M. DIVENERE
DB 176 PG 1690
TRACT ONE
BIG HORSE CREEK ROAD SR-1362
BIG HORSE CREEK
PCSta. 10+68.40
PTSta. 11+00.60
PTSta. 12+29.85
PCSta. 12+88.20
PTSta. 13+02.24
END CONSTRUCTION
N 31° 28' 14.4" E
PTSta. 10+52.78
PCSta. 10+16.86
N 13° 01' 03.9" E
N 42° 50' 06.4" E
PCSta. 11+64.80
N 26° 44' 46.5" E
POTSta. 13+15.23
N 66° 03' 28.3" W
-DRIVE- POTSta. 10+00.00
-L- POT STA.10+75.00
GRAU 350
TYPE III
WOODS
GARDEN
RILEY S. CARPENTER
DB 142 PG 915
TRACT TWO

-DRIVE-

PI Sta 10+40.93	PI Sta 10+84.64	PI Sta 11+98.08	PI Sta 12+95.27
△ = 97° 31' 42.8" (RT)	△ = 18° 27' 10.6" (LT)	△ = 29° 49' 02.5" (RT)	△ = 16° 05' 20.6" (LT)
D = 271° 32' 38.3"	D = 57° 17' 44.8"	D = 45° 50' 11.8"	D = 114° 35' 29.6"
L = 35.92'	L = 32.21'	L = 65.05'	L = 14.04'
T = 24.07'	T = 16.24'	T = 33.28'	T = 7.07'
R = 21.10'	R = 100.00'	R = 125.00'	R = 50.00'


-DRIVE-
PI = 10+15.00
EL = 2,717.41'
PI = 10+25.69
EL = 2,717.88'
VC = 6'
PI = 10+44.00
EL = 2,721.98'
VC = 20'
PI = 11+30.00
EL = 2,721.74'
VC = 15'
PI = 11+55.00
EL = 2,722.00'
VC = 18'
PI = 11+86.00
EL = 2,725.02'
VC = 41'
PI = 12+23.00
EL = 2,723.15'
VC = 18'
PI = 12+60.23
EL = 2,722.81'
VC = 30'
BEGIN GRADE
-DRIVE- STA.10+10.00
ELEV.= 2717.69
END GRADE
-DRIVE- STA.12+87.51
ELEV.= 2722.79
(+)22.4103%
(+)9.7333%
(-)15.0468%
(-)10.2836%
(-)10.0773%
(-)15.6100%
(+)4.3648%
(+)11.0463%
(-)10.9183%
2,740
2,730
2,720
2,710
2,700
10
11
12
13

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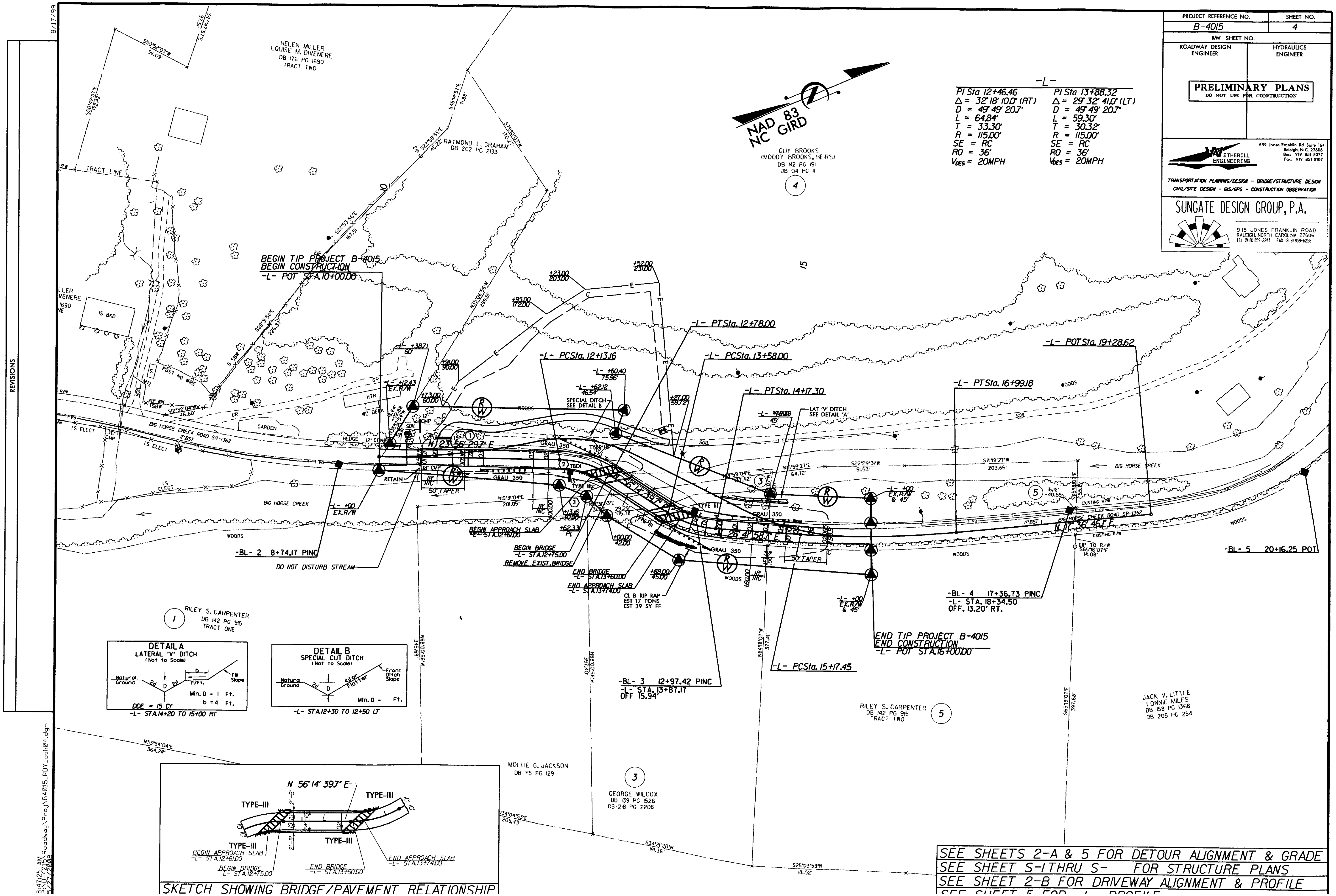
B-4015\Roadway\Proj\B4015_RDY_psh02B.dgn
5/27/2008



PROJECT REFERENCE NO.
SHEET NO.
B-4015
4
R/W SHEET NO.
ROADWAY DESIGN ENGINEER
HYDRAULICS ENGINEER
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION
WETHERILL ENGINEERING
559 Jones Franklin Rd. Suite 164
Raleigh, N.C. 27606
TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN
CIVIL/SITE DESIGN - GIS/GPS - CONSTRUCTION OBSERVATION
SUNGATE DESIGN GROUP, P.A.
915 JONES FRANKLIN ROAD
RALEIGH, NORTH CAROLINA 27606
-L-
PI Sta 12+46.46
Δ = 32° 18' 10.0" (RT)
D = 49° 49' 20.7"
L = 64.84'
T = 33.30'
R = 115.00'
SE = RC
RO = 36'
VDES = 20MPH
PI Sta 13+88.32
Δ = 29° 32' 41.0" (LT)
D = 49° 49' 20.7"
L = 59.30'
T = 30.32'
R = 115.00'
SE = RC
RO = 36'
VDES = 20MPH
NAD 83
NC GIRD
HELEN MILLER
LOUISE M. DIVENERE
DB 176 PG 1690
TRACT TWO
RAYMOND L. GRAHAM
DB 202 PG 2133
GUY BROOKS
(MOODY BROOKS, HEIRS)
DB N2 PG 191
DB 04 PG 11
BEGIN TIP PROJECT B-4015
BEGIN CONSTRUCTION
-L- POT STA.10+00.00
-L- PT Sta. 12+78.00
-L- PC Sta. 12+13.16
-L- PC Sta. 13+58.00
-L- PT Sta. 14+17.30
-L- PT Sta. 16+99.18
-L- POT Sta. 19+28.62
SPECIAL DITCH SEE DETAIL B
LAT 'V' DITCH SEE DETAIL 'A'
BIG HORSE CREEK ROAD SR-1362
BIG HORSE CREEK
N 23° 56' 29.7" E
N 56° 14' 39.7" E
N 26° 41' 58.1" E
N 17° 36' 46.1" E
BEGIN APPROACH SLAB -L- STA.12+61.00
BEGIN BRIDGE -L- STA.12+75.00
REMOVE EXIST. BRIDGE
END BRIDGE -L- STA.13+60.00
END APPROACH SLAB -L- STA.13+74.00
CL B RIP RAP EST 17 TONS EST 39 SY FF
-BL- 2 8+74.17 PINC
DO NOT DISTURB STREAM
-BL- 3 12+97.42 PINC
-L- STA. 13+87.17
OFF 15.94'
-BL- 4 17+36.73 PINC
-L- STA. 18+34.50
OFF. 13.20' RT.
-BL- 5 20+16.25 POT
END TIP PROJECT B-4015
END CONSTRUCTION
-L- POT STA.16+00.00
-L- PC Sta. 15+17.45
RILEY S. CARPENTER
DB 142 PG 915
TRACT ONE
RILEY S. CARPENTER
DB 142 PG 915
TRACT TWO
JACK V. LITTLE
LONNIE MILES
DB 158 PG 1368
DB 205 PG 254
MOLLIE G. JACKSON
DB Y5 PG 129
GEORGE WILCOX
DB 139 PG 1526
DB-218 PG 2208
DETAIL A
LATERAL 'V' DITCH
(Not to Scale)
Min. D = 1 Ft.
b = 4 Ft.
DDE = 15 CY
-L- STA.14+20 TO 15+00 RT
DETAIL B
SPECIAL CUT DITCH
(Not to Scale)
-L- STA.12+30 TO 12+50 LT
TYPE-III
BEGIN APPROACH SLAB -L- STA.12+61.00
BEGIN BRIDGE -L- STA.12+75.00
END BRIDGE -L- STA.13+60.00
END APPROACH SLAB -L- STA.13+74.00
SKETCH SHOWING BRIDGE/PAVEMENT RELATIONSHIP
SEE SHEETS 2-A & 5 FOR DETOUR ALIGNMENT & GRADE
SEE SHEET S-1 THRU S- FOR STRUCTURE PLANS
SEE SHEET 2-B FOR DRIVEWAY ALIGNMENT & PROFILE
REVISIONS
8/17/99

5/28/99

STRUCTURE HYDRAULIC DATA		
DESIGN DISCHARGE	= 3900	CFS
DESIGN FREQUENCY	= 25	YRS
DESIGN HW ELEVATION	= 2722.2	FT
BASE DISCHARGE	= 5700	CFS
BASE FREQUENCY	= 100	YRS
BASE HW ELEVATION	= 2724.2	FT
OVERTOPPING DISCHARGE	= 2200	CFS
OVERTOPPING FREQUENCY	= 5	YRS
OVERTOPPING ELEVATION	= 2717.6	FT

BM #1
RAILROAD SPIKE IN 8" MAPLE
-L- STA.12+99.63, 77.74' LEFT
N 1023331.E 1256652 EL = 2726.45'

WETHERILL ENGINEERING
559 Jones Franklin Rd. Suite 164
Raleigh, N.C. 27606
Bus: 919 851 8077
Fax: 919 851 8107
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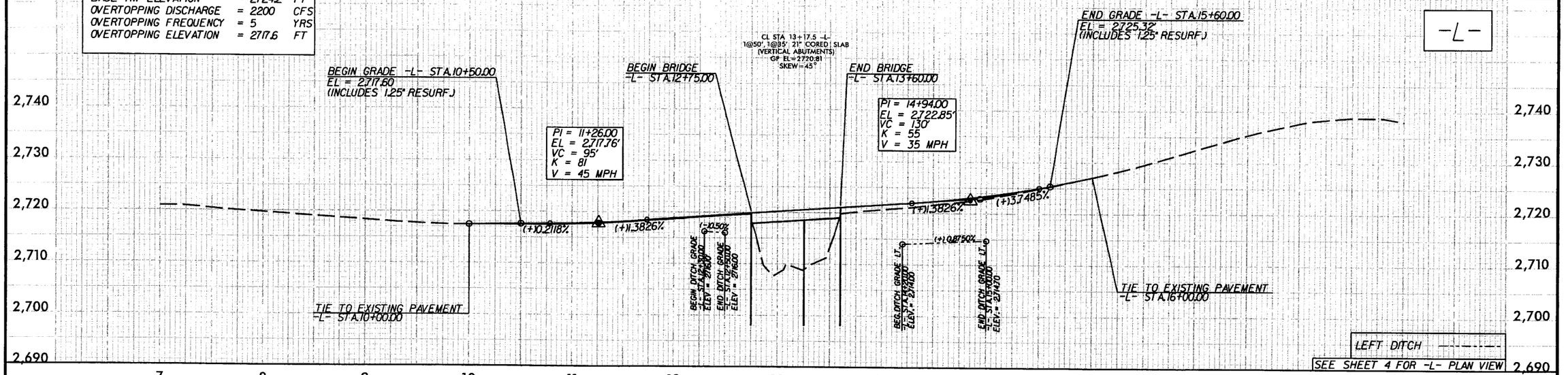
CIVIL/SITE DESIGN - GIS/GPS - CONSTRUCTION OBSERVATION
SUNGATE DESIGN GROUP, P.A.
915 JONES FRANKLIN ROAD
RALEIGH, NORTH CAROLINA 27606
TEL (919) 859-2243 FAX (919) 859-6258

PROJECT REFERENCE NO.	SHEET NO.
B-4015	5
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

-L-

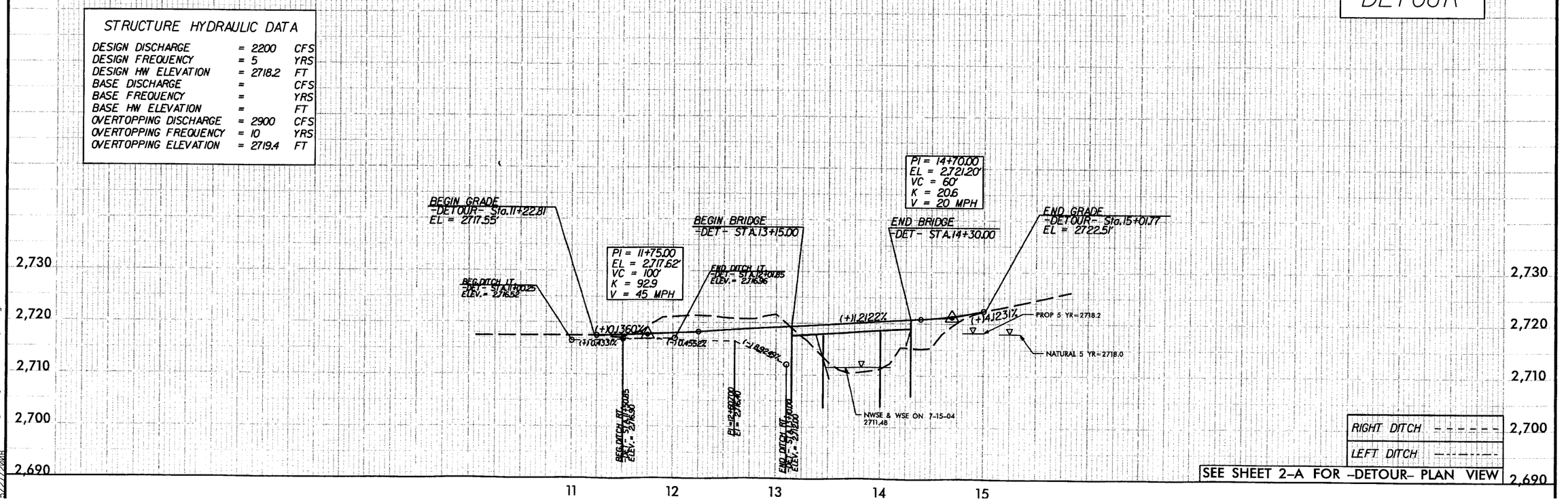


LEFT DITCH - - - - - -

SEE SHEET 4 FOR -L- PLAN VIEW

-DETOUR-

STRUCTURE HYDRAULIC DATA		
DESIGN DISCHARGE	= 2200	CFS
DESIGN FREQUENCY	= 5	YRS
DESIGN HW ELEVATION	= 2718.2	FT
BASE DISCHARGE	=	CFS
BASE FREQUENCY	=	YRS
BASE HW ELEVATION	=	FT
OVERTOPPING DISCHARGE	= 2900	CFS
OVERTOPPING FREQUENCY	= 10	YRS
OVERTOPPING ELEVATION	= 2719.4	FT



RIGHT DITCH - - - - - -
LEFT DITCH - - - - - -

SEE SHEET 2-A FOR -DETOUR- PLAN VIEW

9:22:53 AM
5/27/2008
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Ashe County
SR 1362(Big Horse Creek Road)
Bridge No. 165 Over Big Horse Creek
Federal-Aid Project BRZ-1362 (1)
State Project 8.2712401
WBS 33383.1.1
TIP Project B-4015

Categorical Exclusion

US Department of Transportation
Federal Highway Administration
and
NC Department of Transportation

Approved:

2/26/04
Date:

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

2/26/04
Date

for John F. Sullivan, III
Division Administrator, FHWA

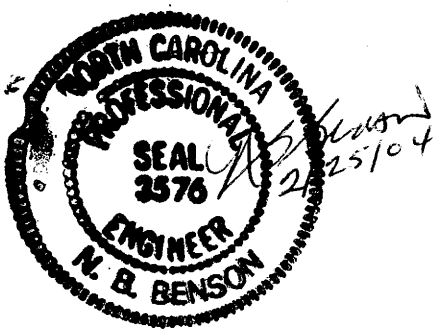
Ashe County
SR 1362 (Big Horse Creek Road)
Bridge No. 165 Over Big Horse Creek
Federal-Aid Project BRZ-1362 (1)
State Project 8.2712401
WBS 33383.1.1
TIP Project B-4015

Categorical Exclusion

US Department of Transportation
Federal Highway Administration
and
NC Department of Transportation

February 2004

Document Prepared
By



Wetherill Engineering, Inc.

Nathan B. Benson, P.E.

in coordination with
North Carolina Department of Transportation

Mary Alice Dickens, PE, Project Manager
Project Development and Environmental Analysis Branch

Ashe County
SR 1362 (Big Horse Creek Road)
Bridge No. 165 Over Big Horse Creek
Federal-Aid Project BRZ-1362 (1)
State Project 8.2712401
WBS 33383.1.1
TIP Project B-4015

SUMMARY OF ENVIRONMENTAL COMMITMENTS

Roadside Environmental and Division 11

Sedimentation and Erosion Control for Sensitive Watersheds (15A NCAC 4B.0124) will be incorporated into the design and followed during the construction of this project.

Division 11 and Design Services

Big Horse Creek is Designated Public Mountain Trout Water. Wild brown trout and rainbow trout are found in this stream; therefore, in-stream construction is prohibited from November 1 to April 15 to avoid impacts on trout reproduction.

Hydraulics and Structure Design

The bridge deck drains will be designed and constructed so that no discharge will go directly into the stream.

Project Development and Environmental Analysis

Since Big Horse Creek is classified as trout waters the NCWRC will be given the opportunity to review the project for additional measures to protect trout and trout habitat prior to issuance of the Section 404 permit.

A pre-construction survey for Virginia spiraea will be conducted to insure that no plants have germinated since the last survey (July 24, 2001).

A survey for bog turtle habitat will be conducted prior to project letting.

A survey for green floater will be conducted prior to project letting.

Ashe County
SR 1362 (Big Horse Creek Road)
Bridge No. 165 Over Big Horse Creek
Federal-Aid Project BRZ-1362 (1)
State Project 8.2712401
WBS 33383.1.1
TIP Project B-4015

INTRODUCTION: The replacement of Bridge No.165 is included in the 2004-2010 North Carolina Department of Transportation (NCDOT) Transportation Improvement Program (TIP) as a Federal-Aid Bridge Replacement. The location is shown in Figure 1. No substantial environmental impacts are anticipated. The project is classified as a Federal "Categorical Exclusion" (CE).

I. PURPOSE AND NEED STATEMENT

The existing one-lane bridge was built in 1960, and is functionally obsolete. According to the Bridge Maintenance Unit at NCDOT, at the time the bridge was last inspected on May 21, 2002, the bridge sufficiency rating was 44.1 out of a possible 100 for a new structure. Due to structural deterioration the bridge is posted with a weight limit of 14 tons for a single vehicle and 19 tons for truck tractor semi-trailers (TTST). The replacement of this inadequate structure will result in safer and more efficient traffic operations. The replacement structure will allow the removal of the restrictive posted load limits for trucks.

II. EXISTING CONDITIONS

SR 1362 (Big Horse Creek Road) is a two-lane highway and narrows to one lane over the bridge. The speed limit along SR 1362 is not posted. The functional classification is rural "local" route in that it provides highway access to abutting properties. The project vicinity is rural with scattered residents.

The horizontal alignment consists of a tangent alignment across the bridge located between two curves. The approach roadway is 18-foot (5.5-meter) wide. The width of the grass shoulder on each side is approximately 3 feet (0.9 meter). According to the NCDOT right of way agent in Division 11, the claimed right of way width is 40 feet (12.2 meters), symmetrical about the center- line of the existing roadway.

The existing bridge was completed in 1960. The superstructure consists of a timber floor on I-beams. The substructure consists of reinforced concrete abutments and piers. It is 63 feet (19.2 meters) long and 19.1 feet (5.8 meters) wide (clear roadway width from inside curb to inside curb). This provides for one travel lane or one-way traffic operation on the bridge. The bridge crosses Big Horse Creek at an approximate 45^{0} angle. Photographs of the existing bridge are included on Figures 2A and 2B.

The Average Annual Daily Traffic (AADT) volume for the year 2002 is estimated to be 600 vehicles per day (VPD) and is projected to increase to 900 VPD in the year 2025. The percent of tractor-truck-semi-trailer (TTST) and dual tired trucks (DTT) are estimated to be 1 percent and 2 percent, respectively.

There were two recorded accidents that occurred in the vicinity of the bridge. These accidents involved a "sideswipe" with two vehicles going in the opposite direction and a "Ran off Road" accident.

The Ashe County School Transportation Director has been contacted regarding the bridge replacement (letter attached in Appendix A). Two school buses (four crossings daily) are currently routed on the bridge.

Overhead power lines are located in proximity of the bridge and may be affected by the proposed project. There are no other utilities, either underground or attached to the bridge, which would be affected by the proposed project. Impact to utilities is anticipated to be low.

The land use in the project vicinity is residential. One residence (a mobile home) is located near the existing the bridge.

Research of public records and an on-site inspection did not indicate any evidence of the presence of hazardous/toxic material in the immediate project area.

III. ALTERNATIVES

A. Project Description

Bridge No. 165 will be replaced with a new structure at or near the existing bridge. The proposed design speed is 40 mph, except for the horizontal curvature, which will require a design exception. The design speed (horizontal curvature) is proposed to be reduced to primarily avoid the relocation of a nearby mobile home. The grade on SR 1362 will be approximately the same as the existing. The permanent structure will be approximately 105 feet (32 meters) in length with a 26-foot (7.9-meter) clear roadway width (rail to rail). The 26-foot clear roadway width includes a 20-foot (6.1-meter) travelway with 3-foot (0.9 meter) offsets to the bridge rail to provide two lanes for two-way traffic operation. The bridge typical section is shown on Figure 3.

The roadway approaches to the bridge will consist of 20-foot (6.1-meter) wide pavement and five-foot (1.5-meter) grassed shoulders. The typical section for the roadway portion of the project is shown in Figure 3.

The width of the proposed bridge's clear roadway, 26 feet (7.9 meters) is in conformance with the NCDOT's bridge policy for rural local bridges located in mountainous terrain and designed for a 40 mph design speed.

Traffic will be maintained at the site during the construction period, which is expected to be approximately one year.

B. Build Alternatives

Two build alternatives were studied for the replacement of Bridge No. 165 on SR 1362 over Big Horse Creek. Both build alternatives provide a 40 mph design speed except the horizontal curvature, which would provide 30 mph and required design exception. Alternative 1 and 2 would avoid the relocation of the mobile home located just south and west of the existing bridge. A comparison of the estimated cost of the two alternatives is provided in Item V. Cost Estimate (Table 1). Traffic would be maintained on-site. The alternatives are described below:

Alternative 1 would replace the bridge on a realignment of SR 1362 immediately north (upstream) of the existing bridge. Traffic would be maintained on the existing bridge during construction. The existing bridge would be removed upon completion of the new bridge and approaches. Alternative 1 is shown on Figure 4A. Alternative 1 was not selected because it costs more, has more environmental impact, and does not provide a better alignment than Alternative 2.

Alternative 2 (Preferred) would replace the bridge at the existing location. During construction, a temporary detour bridge and approaches would be provided on an alignment located immediately on the north side (up-stream) of the existing bridge. The temporary detour would provide for one-way traffic just as the existing bridge provides. Upon completion of the permanent bridge and approaches, the temporary bridge and approaches would be removed. Alternative 2 is shown on Figure 4B.

C. Alternatives Eliminated from Further Study

Three alternatives were eliminated from further study as discussed below:

NCDOT examined replacing the bridge at its existing location and closing SR 1362 during construction. A 9.5-mile (15.3-km) detour route is available by using SR 1367 north of the bridge, but this route is not considered to be desirable. A portion of this route is unpaved and also crosses steep mountain terrain and would be of particular concern during inclement weather conditions during the winter. According to EMS officials in Ashe County approximately 10-15 minutes of additional response time would be required. Ashe County school officials responded that a lengthy detour (thirty minutes or longer) would be required for rerouting the two school buses (four trips daily) that are currently routed over bridge No. 165. Correspondences from the Ashe County officials are attached in Appendix A. Division 11 staff also investigated the possibility of an off-site detour and recommended that an acceptable off-site detour was not available. This alternative was eliminated from further study because of the undesirable routing effects to the EMS and the school bus traffic.

An alternative located south of the existing bridge was eliminated from further study because of the steep mountainous terrain located on this side and the anticipated cost of the required rock excavation.

Alternatives or modifications of Alternatives 1 and 2 were investigated that would provide for a 40 mph design speed. These alternatives, in addition to providing flatter curves, required the relocation of a mobile home. These modifications would also increase the length of the temporary detour bridge (Alternative 2) or the permanent bridge (Alternative 1) and would require additional excavation in the mountainous terrain. Modification of either of the build alternatives to provide the additional design speed is not proposed in view of the above impacts and in the context of the overall poor alignment and roadway characteristics of the existing SR 1362.

In addition, a "do-nothing" alternative, and a rehabilitation alternative were considered for the improvement of Bridge No.165.

Rehabilitation of the existing deteriorating bridge is neither practical nor economically feasible. It would require significant repairs to the substructure and superstructure because of their overall poor condition.

The "do-nothing" alternate is not feasible. This will require the closing of the road as the existing bridge deteriorates to a point where it is unsafe at any posted weight limits.

D. Preferred Alternative

Alternative 2 is the preferred alternative. Bridge No. 165 will be replaced on existing SR 1362 over Big Horse Creek (see Figure 4B). Traffic will be maintained on-site. A temporary one-lane bridge and roadway approaches will be constructed to provide the on-site detour. The temporary detour and approaches will be located on the north side of the existing bridge and will be removed upon completion of the permanent bridge and approaches.

Alternative 2 was selected as the preferred alternative because it costs less and will have less environmental impact than Alternative 1, while providing an alignment that is just as good. Both Alternatives 1 and 2 have the same design speed with a similar design exception. However, Alternative 1 would require an increased skew angle across Big Horse Creek and a longer permanent bridge than Alternative 2. Alternative 2 would allow the construction of a one-way bridge on the temporary on-site detour rather than a wider permanent structure on new alignment, as Alternative 1 does. Consequently, Alternative 2 would utilize more of the existing roadway and would involve less excavation and fill in proximity to the Big Horse Creek, which is classified as trout waters.

Alternative 1 is estimated to cost $753,300. A breakdown of the estimated cost is shown in Item V. Estimated Cost (Table 1).

It appears that the use of pre-cast concrete cored slab components may be appropriate for this bridge replacement.

The proposed design speed is 40 miles per hour (60 kilometers per hour). However, the horizontal curvature will require a design exception. This portion of SR 1362 is not posted.

The NCDOT Division 11 Engineer has reviewed the proposed project and concurs with the recommended replacement.

Ashe County Officials have been made aware the project and concur with the recommended replacement.

IV. DESIGN EXCEPTIONS ANTICIPATED

A design exception will be required for the horizontal curvature.

V. ESTIMATED COST

Table 1

Item	Alternative 1	Alternative 2
Structure Temporary Structure	$204,750	$117,000 $61,425
Mobilization and clearing and grubbing	$188,885	$156,610
Removal of existing bridge	$9,600	$9,600
Roadway and misc. costs (including pavement removal, detour traffic control, constr. surveys)	$264,765	$245,365
Engineering & contingencies	$107,000	$85,000
Right of way	$78,300	$78,300
Total Cost	$853,300	$753,300

The 2004-2010 North Carolina Transportation Improvement Program has $50,000 programmed for right of way and $500,000 programmed for construction.

VI. NATURAL RESOURCES

A. General

A study was performed to inventory and describe the various natural resources likely to be impacted by the proposed action. Assessments of the nature and severity of probable impacts to these natural resources are provided, along with recommendations for measures that will minimize resource impacts. This study is included in the natural system technical report on the subject bridge replacement prepared by Stantec Consulting Services, Inc., dated March 12, 2002.

This report identifies areas of particular concern that may have affected the selection of a preferred alignment or may necessitate changes in design criteria. Such environmental concerns have been addressed during the preliminary planning stages of the proposed project in order to maintain environmental quality in the most efficient and effective manner. The analyses contained in this document are relevant only in the context of the existing preliminary project boundaries. It may become necessary to conduct additional field investigations should design parameters and/or criteria change.

1. Methodology

Prior to the field investigation published resource information pertaining to the project study area was gathered and reviewed. The information sources used to prepare this report include:

- U.S. Geological Survey (USGS) quadrangle map (Baldwin Gap);
- Soil Survey of Ashe County, North Carolina (1985);

- United States Fish and Wildlife Service (USFWS) National Wetlands Inventory Map;
- USFWS list of protected species (March 22, 2001);
- North Carolina Natural Heritage Program (NCNHP) database of rare species and unique habitats (January 2001);
- North Carolina Department of Transportation (NCDOT) aerial photography of the project study area (1:100); and
- North Carolina Division of Water Quality (DWQ) water resource data.

A general field survey was conducted within the project study area on July 25, 2001. Water resources were identified and their physical characteristics were recorded. Terrestrial community classifications generally follow Schafale and Weakley (1990) where possible, and plant taxonomy follows Radford, *et al.* (1968). Vegetative communities were mapped utilizing aerial photography of the project site. Wildlife were identified using a variety of observation techniques including active searching, visual observations with binoculars, and identifying characteristic signs of wildlife (sounds, tracks, scat, and burrows). Cursory surveys for aquatic organisms, including tactile searches for benthic macroinvertebrates, were performed as well.

Investigation into wetland occurrence in the project study area was conducted using methods outlined in the 1987 Corps of Engineers Wetlands Delineation Manual (Environmental Laboratory, 1987).

The project study area consists of an area approximately 1200 feet (366 meters) long and ranging from 50 to 200 feet (15 to 61 meters) wide.

C. Physical Resources

1. Physiography and Soils

The project lies within the Blue Ridge Mountain Physiographic Province. The topography of the project vicinity is characterized as rolling hills with moderate to steeply sloping banks along the major streams. Elevations in the project vicinity range from approximately 2720 to 3,200 feet (829 to 975 meters) above mean sea level (msl). The elevation in the project study area varies from approximately 2,720 to 3,200 feet (829 to 975 meters) above msl.

According to the general soil map for Ashe County (USDA, 1985), the project study area is found within the Edneyville-Ashe soil association. The soils in this association are described as moderately steep to very steep, well-drained soils that have loamy subsoil and are found on uplands at elevations of 3,000 to 4,000 feet (914 to 1,219 meters). Soil series found within the project study area are described below.

Colvard fine sandy loam is mapped along the creek. This soil is a nearly level, well-drained soil found along the major streams in the county. Permeability is moderately rapid and surface runoff is slow. The seasonal high water table is below a depth of 48 inches. This soil is subject to occasional flooding for very brief periods. This mapping unit is not listed on the hydric soils list.

Edneyville loam, 25 to 45 percent slopes, is mapped on the hillside west of the creek. This soil is a well-drained soil found on side slopes. Permeability is moderate. Surface runoff is very rapid and the hazard of erosion is very severe on bare and exposed areas. This mapping unit is not listed on the hydric soils list.

2. Water Resources

The proposed project falls within the New River Basin, with a sub-basin designation of 05-07-02. Waters within the project study area include Big Horse Creek.

a. Water Resource Characteristics

The Big Horse Creek flows south through the proposed project study area with a width of approximately 37 feet (11.3 meters). The flow was moderate on the day of the field investigation. The substrate consisted of cobbles, gravel, sand, and silt. The depth of the water ranged from a few inches in the riffles to over two feet (0.6 meters) in the pools.

Streams have been assigned a best usage classification by the North Carolina Division of Water Quality (DWQ) [formerly the Division of Environmental Management (DEM)], which reflects water quality conditions and potential resource usage. Within the project study area, the classification Big Horse Creek (Index No. 10-2-21-(4.5), 2/1/93) is "C Tr +". Class "C" waters are suitable for secondary recreation, fishing, wildlife, fish and aquatic life propagation and survival, and agriculture. "Tr" denotes trout waters, which is a supplemental classification to protect freshwaters for natural trout propagation and survival of stocked trout. The "+" symbol identifies waters subject to a special management strategy in order to protect downstream waters that are designated Outstanding Resource Waters (ORW).

No waters classified as High Quality Waters (HQW), Water Supplies (WS-I: undeveloped watershed, or WS-II: predominately undeveloped watersheds), or ORW occur within one mile (1.6 kilometers) of the project study area. Big Horse Creek is listed as HQW upstream of the project study area.

Point sources, such as wastewater discharges, located throughout North Carolina are permitted through the National Pollutant Discharge Elimination System (NPDES) program. No NPDES permitted facilities are located in or directly upstream of the project study area.

Non-point source refers to runoff that enters surface waters through stormwater flow or no defined point of discharge. Stormwater runoff from SR 1362 and the surrounding residential properties may reach Big Horse Creek and cause water quality degradation through the addition of fertilizers, oil or gas residuals, particulate rubber, or other sources of contamination.

The Basinwide Monitoring Program, managed by the DWQ, is part of an ongoing ambient water quality monitoring program that addresses long-term trends in water quality. The program monitors ambient water quality by sampling at fixed sites for selected benthic macroinvertebrates, which are sensitive to water quality conditions. Samples are evaluated on the number of taxa present of intolerant groups [Ephemeroptera, Plecoptera, Trichoptera (EPT)] and a taxa richness value (EPT S) is calculated. A biotic index value is also calculated for the sample that summarizes tolerance data for all species in each collection. The two rankings are given equal weight in final site classification. The biotic index and taxa richness values primarily reflect the effects of chemical pollution and are a poor measure of the effects of such physical pollutants as sediment. Stream and river reaches are assigned a final bioclassification of Excellent, Good, Good/Fair, Fair, or Poor.

According to the information obtained from the New River Basinwide Water Quality Management Plan (NCDENR, 2000), the DWQ does have a sampling station at Big Horse Creek at the project site. The station was last sampled in March 1990 and received a rating of Good-Fair.

b. Anticipated Impacts to Water Resources

Impacts to water resources in the project study area are likely to result from activities associated with project construction, such as clearing and grubbing on streambanks, riparian canopy removal, instream construction, fertilizers and pesticides used in revegetation, and pavement construction. The following impacts to surface water resources are likely to result from the above mentioned construction activities:

- Increased sedimentation and siltation downstream of the crossing and increased erosion in the project study area;
- Changes in light incidence and water clarity due to increased sedimentation and vegetation removal;
- Alteration of water levels and flows due to interruptions and/or additions to surface and ground water flow from construction;
- Changes in and destabilization of water temperature due to vegetation removal;
- Changes in dissolved oxygen (DO) levels;
- Increased nutrient loading during construction via runoff from exposed areas;
- Increased concentrations of toxic compounds in roadway runoff;
- Increased potential for release of toxic compounds such as fuel and oil from construction equipment and other vehicles; and
- Alteration of stream discharge due to silt loading and changes in surface and groundwater drainage patterns.

In order to minimize potential impacts to water resources in the project study area, NCDOT's Best Management Practices (BMPs) for the Protection of Surface Waters will be strictly enforced during the construction phase of the project. Impacts can be further reduced by limiting instream activities and revegetating stream banks immediately following the completion of grading.

D. Biotic Resources

Living systems described in the following sections include communities of associated plants and animals. These descriptions refer to the dominant flora and fauna in each community and the relationship of these biotic components. Classification of plant communities is based on a system used by the NCNHP (Schafale and Weakley, 1990). If a community is modified or otherwise disturbed such that it does not fit into an NCNHP classification, it is given a name that best describes current characteristics. Scientific nomenclature and common names (when applicable) are used for the plant and animal species described. Subsequent references to the same species include the common name only.

1. Terrestrial Communities

The predominant terrestrial community found in the project study area is the maintained/disturbed community. Dominant faunal components associated with these terrestrial areas are discussed in each community description. Many species are adapted to the entire range of habitats found within the project study area but may not be mentioned separately in each community description.

a. Maintained/Disturbed Community

The maintained/disturbed community includes the road shoulders, power line right-of-way, and residential properties. A dilapidated shed surrounded by an overgrown field is located on the west side of the bridge. Many plant species are adapted to these disturbed and regularly maintained areas. The dominant species within the project study area include fescue (*Festuca* sp.), ryegrass (*Lolium* sp.), white clover (*Trifolium repens*), red clover (*Trifolium pratense*), Queen Anne's lace (*Daucus carota*), thistle (*Cirsium* sp.), aster (*Aster* sp.), blackberry (*Rubus* sp.), poison ivy (*Toxicodendron radicans*), Solomon's seal

(*Polygonatum bilforum*), milkweed (*asclepias sp.*), morning glory (*Ipomo sp.*), black-eyed susan (*Rudbeckia hirta*), Phlox (*Phlox sp.*), sneezeweed (*Helenium autumnale*), fringed loosestrife (*Lysimchia ciliata*), Oswego tea (*Monarda didyma*), Turk's cap lily (*Lilium superbum*), soapwort (*Saponaria officinalis*), and plantain (*Plantago* sp.).

The animal species present in these disturbed habitats are opportunistic and capable of surviving on a variety of resources, ranging from vegetation (flowers, leaves, fruits, and seeds) to both living and dead faunal components. *A* Gray Catbird (*Dumetella carolinensis*), Carolina Chickadee (*Poecile carolinensis*), Carolina Wren (*Thryothorus ludovicianus*), Northern Cardinal (*Cardinalis cardinalis*), Eastern Phoebe (*Sayornis phoebe*), Eastern Meadowlark (*Sturnella magna*), Fox Sparrow (*Passerella iliaca*), and Red-tailed Hawk (*Buteo jamaicensis*) were observed during the site visit. Other species such as Eastern chipmunk (*Tamias striatus*),Eastern mole (*Scalopus aquaticus*) and garter snake (*Thamnophis sirtalis*) are often attracted to these disturbed habitats.

b. Oak-Hickory Forest Community

The community is found along the hillside west of Big Horse Creek. The canopy layer includes white oak (*Quercus alba*), red oak (*Quercus rubra*), mockernut hickory (*Carya tomentosa*), tulip poplar (*Liriodendron tulipifera*), red maple (*Acer rubrum*), and black locust (*Robinia pseudoacacia*). The understory consists of dogwood (*Cornus florida*) and sassafras (*Sassafras albidum*). The herbaceous layer includes miterwort (*Mitella diphylla*), violet (*Viola sp.*), common greenbrier (*Smilax rotundifolia*), poison ivy (*Toxicodendron radicans*), and honeysuckle (*Lonicera sp.*).

2. Aquatic Communities

The aquatic community in the project area includes Big Horse Creek. The vegetation along the east bank of the creek (along SR 1362) is dominated by tree species such as sycamore (*Platanus occidentalis*), yellow birch (*Betula lutea*)), sugar maple (*Acer saccharum*), cottonwood (*Populus deltoids*), black walnut (*Juglans nigra*), tulip poplar (Liriodendron *tulipifera*), black locust (*Robinia pseudoacacia*), and yellow buckeye (*Aesculus octandra*). Rhododendron (*Rhododendron sp.*) is found along a steep, rocky portion of the east bank while black willow (*Salix nigra*) and elderberry (Sambucus Canadensis) are scattered along both banks. The west bank of the creek is dominated by the weedy herbaceous species mentioned above in the maintained/disturbed community. Stoneflies (*Plecoptera*), mayflies (*Ephemeroptera*), caddisflies (*Trichoptera*), and water pennies (*Coleoptera*) were found under stones and logs in the creek.

According to Mr. Kevin Hining, District 7 Assistant Fisheries Biologist for the North Carolina Wildlife Resource Commission (NCWRC), Big Horse Creek contains wild brown trout (*Salmo trutta*) and rainbow trout (*Oncorhynchus mykiss).*

3. Summary of Anticipated Impacts to Biotic Communities

Biotic community impacts resulting from project construction are addressed separately as terrestrial impacts and aquatic impacts. Impacts to terrestrial communities, particularly in locations exhibiting slopes, can result in the aquatic community receiving heavy sediment loads as a consequence of erosion. Construction impacts may not be restricted to the communities in which the construction activity occurs.

a. Terrestrial Communities

The maintained/disturbed community serves as nesting, foraging, and shelter habitat for fauna. Removal of plants and other construction related activities would result in the displacement and mortality of faunal species in residence. Individual mortalities are likely to occur to terrestrial animals from construction machinery used during clearing activities.

Project construction will result in clearing and degradation of portions of these communities. Often, project construction does not require the use of the entire right-of-way; therefore, actual impacts may be considerably less.

b. Aquatic Communities

Impacts to the aquatic community of Big Horse Creek will result from the replacement of Bridge No. 165. Impacts are likely to result from the physical disturbance of aquatic habitat. Activities such as the removal of trees, as well as the construction of the bridge and approach work will likely result in an increase in sediment loads and water temperatures and a decrease in dissolved oxygen. Construction activities can also increase the possibility of toxins, such as engine fluids and particulate rubber, entering the waterways. The combination of these factors can potentially cause the displacement and mortality of fish and local populations of invertebrates that inhabit these areas.

Impacts to aquatic communities will be minimized by strict adherence to NCDOT's BMPs.

E. Special Topics

1. Waters of the United States: Jurisdictional Issues

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

Investigation into wetland occurrence in the project impact area was conducted using methods outlined in the 1987 Corps of Engineers Wetlands Delineation Manual (Environmental Laboratory, 1987). No jurisdictional wetlands were found within the project study area.

Project construction cannot be accomplished without infringing on jurisdictional

surface waters. Anticipated surface water impacts fall under the jurisdiction of the USACE.

2. Permits

In accordance with Section 404 of the Clean Water Act (33 U.S.C. 1344), a permit is required from the USACE for projects of this type for the discharge of dredged or fill material into "Waters of the United States."

A Nationwide Permit 23 is likely to be applicable for all impacts to Waters of the United States resulting from the proposed project. This permit authorizes activities undertaken, assisted, authorized, regulated, funded or financed, in whole or part, by another federal agency or department where that agency or department has determined, pursuant to the Council on Environmental Quality (CEQ) Regulation for

the Implementing the Procedural Provisions of the National Environmental Policy Act:

(1) That the activity, work, or discharge is categorically excluded from environmental documentation because it is included within a category of actions which neither individually nor cumulatively have a significant effect on the environment, and

(2) The office of the Chief of Engineers has been furnished notice of the agency's or department's application for the categorical exclusion and concurs with that determination.

A Nationwide Permit 33 will be required if an on-site temporary detour is needed during construction of Bridge No. 165. This permit authorizes temporary structures, work and discharges, including cofferdams, necessary for construction activities or access fills or dewatering of construction sites; provided the associated primary activity is authorized by the USACE or the U.S. Coast Guard, or for other construction activities not subject to the USACE or U.S. Coast Guard regulations.

A 401 Water Quality Certification, administered through the DWQ, will also be required. This certification is issued for any activity that may result in a discharge into waters for which a federal permit is required.

a. Bridge Demolition

NCDOT's BMPs for Bridge Demolition (Case 2) will be implemented. The removal of the concrete abutments and pier may create some disturbance in the streambed. The existing bridge consists of timber and steel components with the exception of concrete abutments and pier. The total volume of concrete in the abutments and pier (potential fill) is estimated to be approximately 32.6 cubic yards.

b. Mitigation

The USACE has adopted, through the Council on Environmental Quality (CEQ), a wetland mitigation policy which embraces the concept of "no net loss of wetlands" and sequencing. The purpose of this policy is to restore and maintain the chemical, biological, and physical integrity of waters of the United States, specifically wetlands. Mitigation of wetland impacts has been defined by the CEQ to include: avoiding impacts, minimizing impacts, rectifying impacts, reducing impacts over time, and compensating for impacts (40 CFR 1508.20). Each of these three aspects (avoidance, minimization, and compensatory mitigation) must be considered sequentially.

Avoidance - Avoidance examines all appropriate and practicable possibilities of averting impacts to waters of the United States. According to a 1990 Memorandum of Agreement (MOA) between the Environmental Protection Agency (EPA) and the USACE, in determining "appropriate and practicable" measures to offset unavoidable impacts, such measures should be appropriate to the scope and degree of those impacts and practicable in terms of cost, existing technology, and logistics in light of overall project purposes.

Minimization - Minimization includes examination of appropriate and practicable steps to reduce adverse impacts to waters of the United States. Implementation of these steps will be required through project modifications and permit conditions. Minimization typically focuses on decreasing the footprint of the proposed project through reduction of median widths, right-of-way widths, fill slopes and/or road shoulder widths.

Compensatory Mitigation - Compensatory mitigation is not normally considered until anticipated impacts to waters of the United States have been avoided and minimized to the maximum extent possible. It is recognized that

"no net loss of wetlands" functions and values may not be achieved in each and every permit action. Appropriate and practicable compensatory mitigation is required for unavoidable adverse impacts which remain after all appropriate and practicable minimization has been required. Compensatory actions often include restoration, creation and enhancement of Waters of the United States. Such actions should be undertaken in areas adjacent to or contiguous with the discharge site.

Compensatory mitigation is required for those projects authorized under Section 404 Nationwide Permits that result in the fill or alteration of more than 0.5 acre (0.2 hectare) of wetlands and/or 300 linear feet (91.4 meters) of streams.

3. Rare and Protected Species

Some populations of plants and animals have been or are in the process of decline due to factors such as natural forces, competition from introduced species, or human related impacts such as destruction of habitat. Rare and protected species listed for Ashe County and any likely impacts to these species as a result of the proposed project construction are discussed in the following sections.

a. Federally Protected Species

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

The United States Fish and Wildlife Service (USFWS) list seven federally protected species for Ashe County as of the March 25, 2003 listing (Table 2).

A review of the NCNHP database of rare species and unique habitats showed no recorded occurrences of any federally protected species in the project vicinity.

TABLE 2

FEDERALLY-PROTECTED SPECIES FOR ASHE COUNTY

Scientific Name (Common Name)	**Status**
Clemmyst muhlenbergii (Bog turtle)	T(S/A)
Geum radiatum (Spreading avens)	E
Helonias bullata (Swamp pink)	T
Houstonia montana (Roan mountain bluet)	E
Liatris helleri (Heller's blazing star)	T
Spiraea virginiana (Virginia spiraea)	T
Gymnoderma lineare (Rock gnome lichen)	E

NOTES:

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

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

T(S/A) Threatened Due to Similarity of Appearance (a species that is threatened due to similarity of appearance with other rare species and is listed for its protection).

Clemmyst muhlenbergii	(Bog turtle)	T(S/A)
Family:	Emydidae	
Date Listed:	November 4, 1997	

Bog turtles are small [three to 4.5 inches (7.6 to 11.4 centimeters)] semiaquatic turtles that have a dark brown carapace and black plastrons.

They usually exhibit distinctive orange or yellow blotches on each side of the head and neck.

The bog turtle inhabits shallow, spring fed fens, sphagnum bogs, swamps, marshy meadows, pastures which have soft, muddy bottoms, and clear, cool, slow-flowing water, often forming a network of rivulets. Bog turtles inhabit damp grassy fields, bogs, and marshes in the mountains and upper Piedmont.

The bog turtle is not biologically endangered or threatened and is not subject to Section 7 consultation.

Geum radiatum	(Spreading avens)	E
Family:	Rosaceae	
Date Listed:	April 5, 1990	

Spreading avens is a perennial herb topped with an indefinite cyme of large, bright, yellow flowers. Its leaves are mostly basal with large terminal lobes and small laterals, and they arise from horizontal rhizomes. Plant stems grow

eight to 20 inches (20 to 51 centimeters) tall. Flowering occurs from June to September, and the fruits are produced from August to October.

Spreading avens inhabits high elevation cliffs, outcrops, and steep slopes which are exposed to full sun. It is also found in thin, gravelly soils or grassy balds near summit outcrops. The adjacent spruce/fir forests [generally found above 5,500 feet (1,676 meters) in elevation] are dominated by red spruce and Fraser fir. The substrate at all the population sites is composed of various igneous, metamorphic, and sedimentary rocks.

No habitat is located in the project study area for this species; the project study area is approximately 2,960 feet (902 meters) above msl, which is well below the elevation for suitable habitat. A search of the NCNHP database showed no recorded occurrences of this species within the project vicinity. It can be concluded that the construction of the proposed project will not impact spreading avens.

BIOLOGICAL CONCLUSION: NO EFFECT

Helonias bullata	(Swamp pink)	T
Family:	Liliaceae	
Date Listed:	September 9, 1988	

The **swamp pink** is a perennial plant that blooms in early spring. Its flowers are pink and occur in a cluster of 30 to 50. The flowers are located at the tip of the stem in a bottlebrush shape. Dark green, lance-shaped, and parallel-veined leaves form a basal rosette around a stout, hollow stem. The stem can

grow eight to 35 inches (20 to 89 centimeters) during flowering and up to five feet (1.5 meters) during seed maturation.

Swamp pink occurs in a variety of wetland habitats that are saturated but not flooded. These include southern Appalachian bogs and swamps, Atlantic white cedar swamps, swampy forested wetlands which border small streams, boggy meadows, and spring seepage areas. It is commonly associated with evergreen trees such as white cedar, pitch pine, American larch, and black spruce.

Habitat is not present in the project study area; no wetlands are located within the project study area. A search of the NCNHP database showed no recorded occurrences of this species within the project vicinity. It can be concluded that the construction of the proposed project will not impact swamp pink.

BIOLOGICAL CONCLUSION: NO EFFECT

Houstonia montana	(Roan mountain bluet)	E
Family:	Rubiaceae	
Date Listed:	April 5, 1990	

Roan mountain bluet is a perennial herb with erect or ascending, unbranched or weakly terminally branched stems up to 8.5 inches (21 centimeters) tall. Its inflorescence is a few-flowered cyme with bright, deep purple flowers. Flowering occurs from late May through August, with peak flowering usually in June and July. This variety is distinguished from other bluets by its relatively large reddish purple flowers, compact stature and clump-forming growth habit, and its exposed mountaintop habitat.

Roan mountain bluet inhabits high elevation [4,200 to 6,300 feet (1,280 to 1,920 meters)] cliffs, outcrops, and steep slopes which are exposed to full sunlight.

No habitat is located in the project study area for Roan mountain bluet; the project study area is located at approximately 2,960 feet (902 meters) above msl, which is well below the elevation for suitable habitat. A search of the NCNHP database showed no recorded occurrences of this species within the project vicinity. It can be concluded that the construction of the proposed project will not impact Roan mountain bluet.

BIOLOGICAL CONCLUSION: NO EFFECT

Liatris helleri	(Heller's blazing star)	T
Family:	Asteraceae	
Date Listed:	November 19, 1987	

Heller's blazing star is a perennial herb with one or more erect or arching stems which arise from a tuft of narrow pale green basal leaves. Its stems reach up to 16 inches (41 centimeters) in height and are topped by a showy spike of lavender flowers [three to eight inches (eight to 20 centimeters) long] which are present from July through September. Fruits are present from September through October.

Heller's blazing star is endemic to the northern Blue Ridge Mountains where it occurs on high elevation rocky summits. It grows in shallow, acidic soils which are exposed to full sunlight.

No habitat is located in the project study area for Heller's blazing star; the project study area is located at approximately 2,640 feet (805 meters) above msl, is well below the summit, and contains no rocky outcrops. A search of the NCNHP database showed no recorded occurrences of this species within the project vicinity. It can be concluded that the construction of the proposed project will not impact Heller's blazing star.

BIOLOGICAL CONCLUSION: NO EFFECT

Spiraea virginiana	(Virginia spiraea)	T
Family:	Rosaceae	
Date Listed:	June 15, 1990	

Virginia spiraea is a shrub growing from two to 10 feet (0.6 to three meters) tall with arching, upright stems and cream-colored flowers. The leaves are alternate and of different sizes and shapes. The flowers are found on branched and flat-topped axes. Spiraea spreads clonally and forms dense clumps that spread in rock crevices and around boulders.

Virginia spiraea occurs along rocky, flood-scoured riverbanks in gorges or canyons. Flood scouring is essential to this plant's survival because it eliminates taller woody competitors and creates riverwash deposits and early successional habitats. These conditions are apparently essential for this plant's colonization of new sites. The bedrock underlying spiraea habitat is primarily sandstone and soils are acidic and moist. Spiraea grows best in full sun, but it can tolerate some shade. Spiraea is found in thickets with common woody vine associates including fox grape (*Vitis labrusca*), summer grape

(*Vitis aestivalis*), riverbank grape (*Vitis riparia*), and muscadine (*Vitis rotundifolia*). Other plant associates include royal fern (*Osmunda regalis*), wing-stem (*Actinomeris alternifolia*), ninebark (*Physocarpus opulifolius*), smooth alder (*Alnus serrulata*), and shrubby yellowroot (*Xanthorrhiza simplicissima*).

Habitat does exist in the project study area along Big Horse Creek for this species. A survey was conducted on July 25, 2001 to determine the presence or absence of this species. No specimens were found during the survey. A search of the NCNHP database showed no recorded occurrences of this species within the project vicinity. Another survey for Virginia spiraea will be conducted prior to project letting to veify that plants do not occur in the project area. It can be concluded that the construction of the proposed project is not likely to adverse affect Virginia spiraea.

BIOLOGICAL CONCLUSION: NOT LIKELY TO ADVERSELY EFFECT

Gymnoderma lineare	(Rock gnome lichen)	E
Family:	Cladoniaceae	
Date Listed:	January 18, 1995	

Rock gnome lichen is a squamulose lichen in the reindeer moss family. It occurs in dense colonies of narrow straps (squamules) that are blue-grey on the upper surface and generally shiny-white on the lower surface; near the base they grade to black. The squamules are nearly parallel to the rock surface, but the tips curl away from the rock, approaching or reaching a perpendicular orientation to the rock surface. The fruiting bodies (found

from July through September) are borne at the tips of the squamules and are black.

Rock gnome lichen occurs only in areas of high humidity, either at high elevations, where it is frequently bathed in fog, or in deep river gorges at lower elevations. It is primarily limited to vertical rock faces where seepage water from forest soils above the cliff flows at, and only at, very wet times. Most populations occur above an elevation of 5,000 feet (1,524 meters).

Habitat does not exist in the project study area for this species; the project study area is approximately 2,960 feet (902 meters) above msl, which is located well below the elevation for suitable habitat. A search of the NCNHP database showed no recorded occurrences of this species within the project vicinity. It can be concluded that the construction of the proposed project will not impact rock gnome lichen.

BIOLOGICAL CONCLUSION: NO EFFECT

---

b. Federal Species of Concern

Federal Species of Concern (FSC) are not legally protected under the Endangered Species Act and are not subject to any of its provisions, including Section 7, until they are formally proposed or listed as Threatened of Endangered. FSC are defined as species that are under consideration for listing for which there is insufficient information to support listing.

Some of these species are listed as Endangered, Threatened, or Special Concern by the NCNHP list of Rare Plant and Animal Species and are afforded state protection under the State Endangered Species Act and the

North Carolina Plant Protection and Conservation Act of 1979. Table 3 includes listed FSC species for Ashe County and their state classifications (March 25, 2003).

A review of the NCNHP database of rare species and unique habitats showed no recorded occurrences of any FSC species in the project vicinity.

TABLE 3

FEDERAL SPECIES OF CONCERN FOR ASHE COUNTY

Scientific Name (Common Name)	**North Carolina Status**	**Habitat Present**
Thryomanes bewickii altus (Appalachian Bewick's Wren)	E	Yes
Sylvilagus obscurus (Appalachian cottontail)	SR	Yes
Phenacobius teretulus (Kanawha minnow)	SC	Yes
*Speyeria diana** (Diana fritillary butterfly)	SR	Yes
Stenelmis gammoni (Gammon's stenelmis riffle beetle)	SR	No
Lasmigona subviridus (Green floater)	E	Yes
Ophiogomphus howei (Pygmy snaketail)	SR	No
*Speyeria idalia** (Regal fritillary butterfly)	SR	No
Gymnocarpium appalachianum (Appalachian oak fern)	E	No
Poa paludigena (Bog bluegrass)	E	No

Scientific Name (Common Name)	North Carolina Status	Habitat Present
Juglans cinerea (Butternut)	W5	No
Saxifraga caroliniana (Carolina saxifrage)	C	No
Euphorbia purpurea (Glade spurge)	C	No
Lilium grayi (Gray's lily)	T-SC	No
Delphinium exaltatum (Tall larkspur)	E-SC	No
Cladonia psoromica (Bluff Mountain reindeer lichen)	C	No

NOTES:

C	Candidate (species for which population monitoring and conservation action is recommended).
E	Endangered (species which are afforded protection by state laws).
T	Threatened (species which are afforded protection by state laws).
SC	Special Concern (species which are afforded protection by state laws).
SR	Significantly Rare (species for which population monitoring and conservation action is recommended).
W	Watch list (any other species believed to be rare and of conservation concern in the state but not warranting active monitoring at this time)
*	Historic record - the species was last observed in the county more than 50 years ago (USFWS)

c. Summary of Anticipated Impacts

Habitat is present in the project study area for Virginia spiraea. A search for this plant was conducted in the project study area on July 25, 2001; no specimens were found. The field survey determined that no habitat is present for any other federally protected species. Additionally, there have been no recorded occurrences of any rare or protected species within the project vicinity according to the NCNHP. Therefore, no impacts to either federal or

state listed species are anticipated. A survey for green floater, a federal species of concern, will be conducted prior to project letting per request of the USFWS.

VII. CULTURAL RESOURCES

A. Compliance Guidelines

This project is subject to compliance with Section 106 of the National Historic Preservation Act of 1966, as amended, implemented by the Advisory Council on Historic Preservation for Compliance with Section 106, codified as 35 CFR Part 800. Section 106 requires that for federally funded, licensed, or permitted projects having an effect on properties listed in or eligible for the National Register of Historic Places, the Advisory Council on Historic Preservation will be given the opportunity to comment.

B. Historic Architecture

A field survey of the Area of Potential Effect (APE) was conducted on September 24, 2002. All structures within the APE were photographed, and later reviewed by the State Historic Preservation Office (SHPO). One property over fifty years of age, the Graham-Brooks Farm, was identified within the APE. Circa, Inc., a Historic Architectural firm was retained to conduct an intensive historic architectural survey of the APE, and the survey report, dated April 2003 is appended by reference. According to the survey report, while the house itself is not within the APE, a corner of the 31.6-acre farm lies within the APE. The property was evaluated and considered not eligible for the National Register. In a memorandum dated June 18, 2003, the State Historic Preservation Officer (SHPO) concurred there are no historic architectural resources either listed in or eligible for listing in the National Register of Historic places within the APE. A copy of the memorandum is included in Appendix A.

C. Archaeology

The State Historic Preservation Officer (SHPO) has reviewed the subject project and no archaeological investigation was recommended. A copy of the SHPO memorandum is included in Appendix A.

VIII. ENVIRONMENTAL EFFECTS

The project will have the following benefits: The proposed improvements will cost effectively replace the functionally obsolete single lane and structurally deteriorating bridge with a structurally sound two-lane bridge. The load restriction will be removed from the bridge for truck traffic. The new bridge will provide improved safety due to the improved sight distance. Utilizing pre-cast bridge components are anticipated and would allow minimal time for construction and less inconvenience to vehicular traffic. The design of the new bridge will not change the visual character of the area and should be aesthetically acceptable to the residences in proximity to the bridge. The proposed improvement is anticipated to be constructed with limited additional right of way required. No impacts are anticipated to residential or business development with the preferred alternative. An acceptable off-site detour route is not available and traffic will be maintained by an on-site detour. In summary, the project is expected to have an overall positive impact. Replacement of the inadequate bridge and construction of safety improvements will result in safer and overall more efficient traffic operations.

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

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

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

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

No adverse effects to air quality are expected to result from this project. This project is an air quality "neutral" project, so it is not required to be included in the regional emissions analysis (if applicable), and a project level CO analysis is not required. Since the project is located in an attainment area, 40 CFR Part 51 is not applicable. If vegetation or wood debris is disposed of by open burning, it shall be done in accordance with applicable local laws and regulations of the North Carolina State Implementation Plan (SIP) for air quality in compliance with 15 NCAC 2D.0520 and 1990 Clean Air Act Amendments and the National Environmental Policy Act. This evaluation completes the assessment requirements for air quality, and no additional reports are required.

Ambient noise levels may increase during the construction of this project; however this increase will be only temporary and usually confined to daylight hours. There should be no notable change in traffic volumes after this project is completed. Therefore, this project will have no adverse effect on existing noise levels. Noise Receptors in the project area will not be impacted by this project. This evaluation completes the assessment requirements for highway noise set forth in 23 CFR Part 772. No additional reports are required.

The proposed project is not likely to adversely affect threatened or endangered species.

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

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

No adverse impact on families or communities is anticipated. No relocatees are expected with the implementation of the proposed project.

The proposed project will not involve lands protected in Section 4(f) of the U.S. Department of Transportation Act of 1966.

No geodetic survey markers will be impacted.

The Farmland Protection Policy Act requires all federal agencies or their representatives to consider the potential impacts to prime and important farmland soils by all land acquisition and construction projects. Since the bridge will be replaced, essentially at the existing location, the Farmland Protection Policy Act does not apply.

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

Ashe County is a participant in the National Flood Insurance Program. The bridge is within an Approximate Study Area. The new structure will be designed to match or lower the existing 100-year storm elevation upstream of the roadway. Since the proposed replacement for the bridge will be a structure similar in waterway opening size, it is not anticipated to have any significant adverse impact on the existing floodplain and floodway. Additional hydraulic information is included in the technical memorandum prepared by Sungate Design Group, P.A.

All borrow and solid waste sites will be the responsibility of the Contractor. Solid waste will be disposed of in strict adherence to the NC Division of Highways "Standard Specifications for Roads and Structures." The Contractor will observe and comply with all laws, ordinances, regulations, orders, and decrees regarding the disposal of solid waste. Solid waste will not be placed into any existing land disposal site that is in violation of state or local rules and regulations. Waste and debris will be disposed of in areas that are outside the right of way and provided by the Contractor.

On the basis of the above discussion, it is concluded that no significant adverse environmental effects will result from the implementation of this project. The project is a Federal "Categorical Exclusion" due to its limited scope and lack of significant environmental consequences.

IX. PUBLIC INVOLVEMENT

A mailing list was developed based upon property owners located near the bridge. Approximately thirty names are included on the list. Newsletters were mailed early in the planning process to the nearby property owners, local officials and the local newspapers. A copy of the newsletter is attached in Appendix B. No responses in opposition to replacing the bridge were received. NCDOT held a local public officials meeting on March 25, 2003, in the Ashe County Courthouse in West Jefferson. The Ashe County Manager and Planning Director attended the meeting and concurred in the proposed bridge replacement.

X. AREAS OF CONTROVERSY

No unresolved issues or areas of controversy have been identified during the planning process and none are anticipated.

XI. AGENCY COMMENTS

Scoping letters were sent to the following agencies. Agencies that responded are marked with an asterisk. Comment letters are included in Appendix A.

Federal Agencies

US Fish and Wildlife Service-Asheville*
US Army Corps of Engineers-Asheville
US Army Corps of Engineers-Wilmington
Environmental Protection Agency-Raleigh

State Agencies

NC Wildlife Resources Commission*

NC Department of Environment and Natural Resources*

NC Division of Water Quality/Wetlands*

NC Division of Archives and History*

The Eastern Band of Cherokee Indians, Tribal Historic Preservation Office*

State Clearinghouse

NC Department of Public Instruction*

Regional and Local Agencies

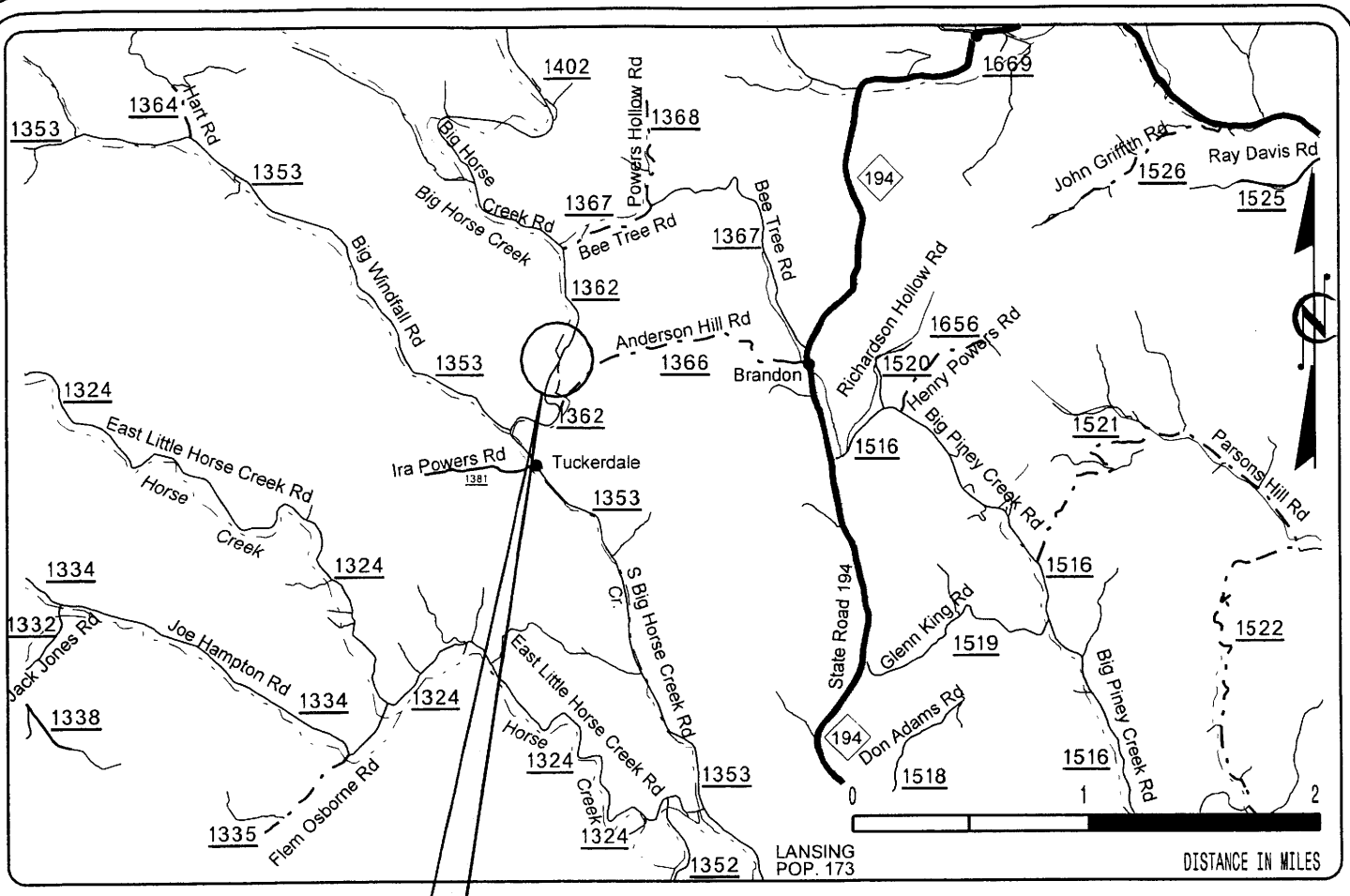
Region D Council of Government

Ashe County Commissioner, chairperson

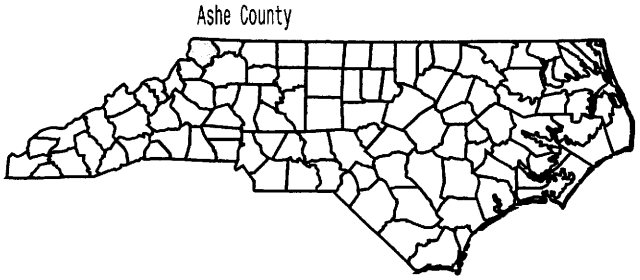
Ashe County /Emergency Management Coordinator*

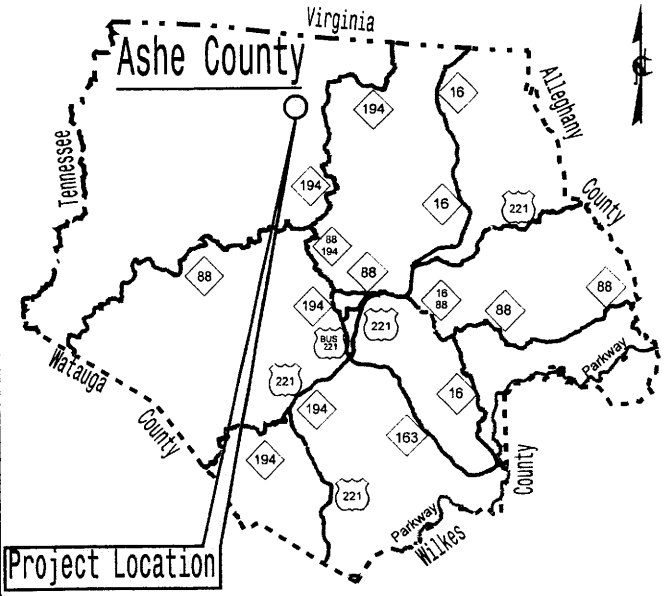
Ashe County Board of Education*

FIGURES



PROJECT LOCATION





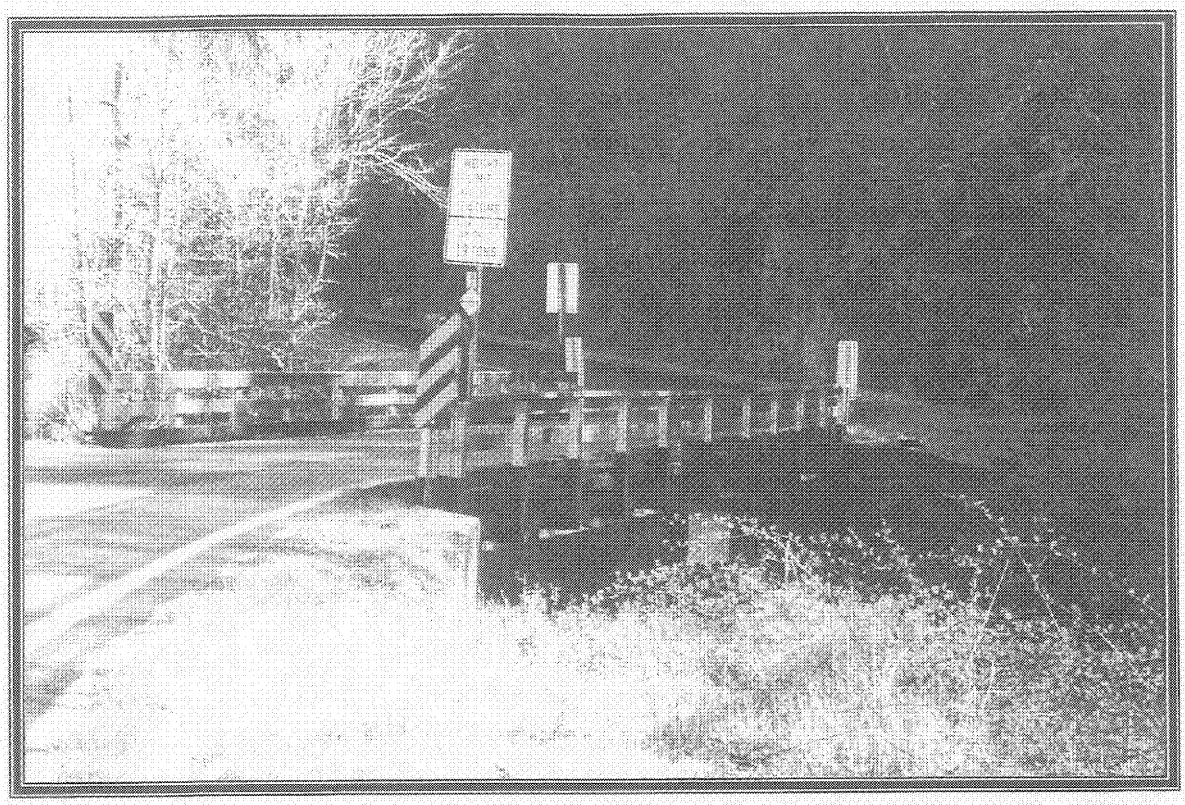
SR 1362
(BIG HORSE CREEK ROAD)
REPLACE BRIDGE NO. 165 over BIG HORSE CREEK

B-4015

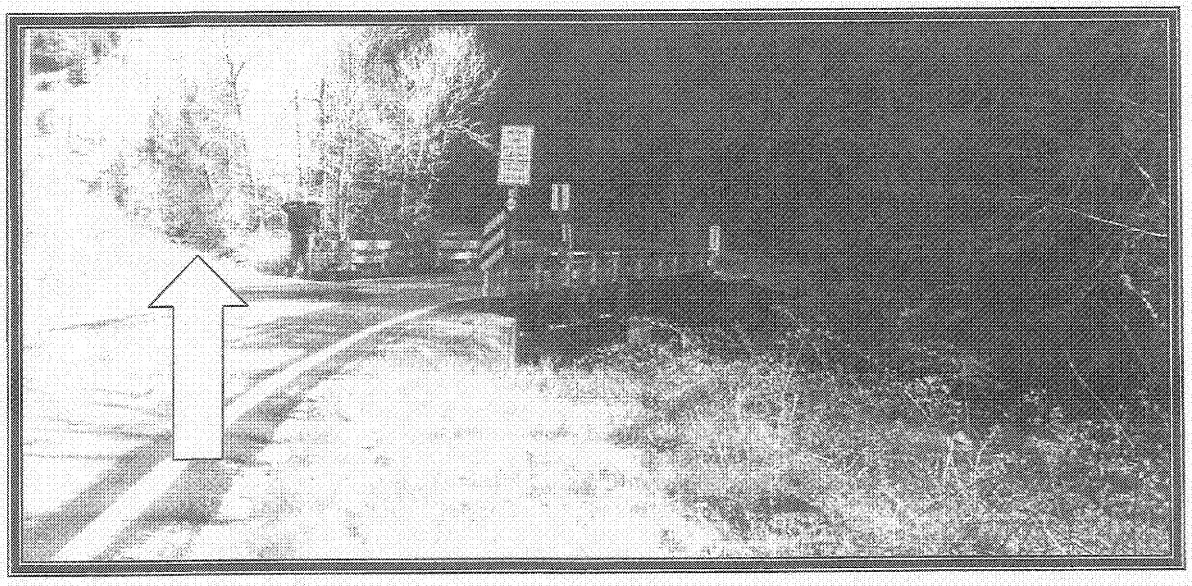
Ashe County, North Carolina

PROJECT VICINITY

Figure 1

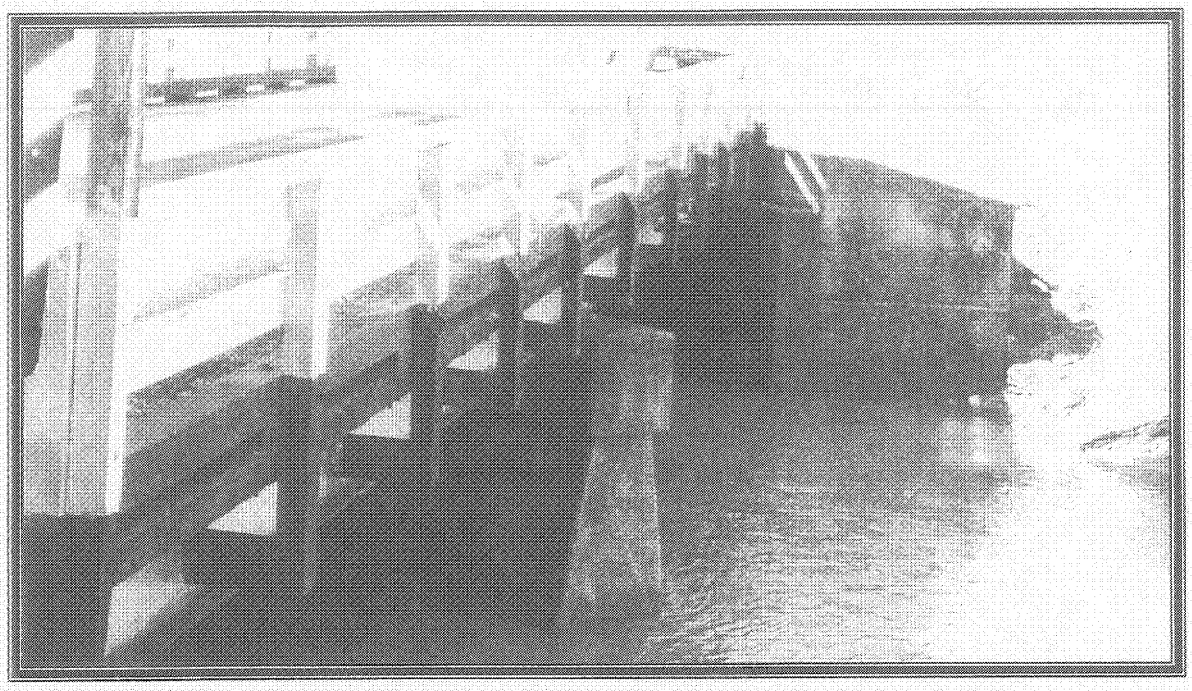


B-4015-ASHE COUNTY, VIEW OF BRIDGE NO. 165
OVER BIG HORSE CREEK, LOOKING NORTH

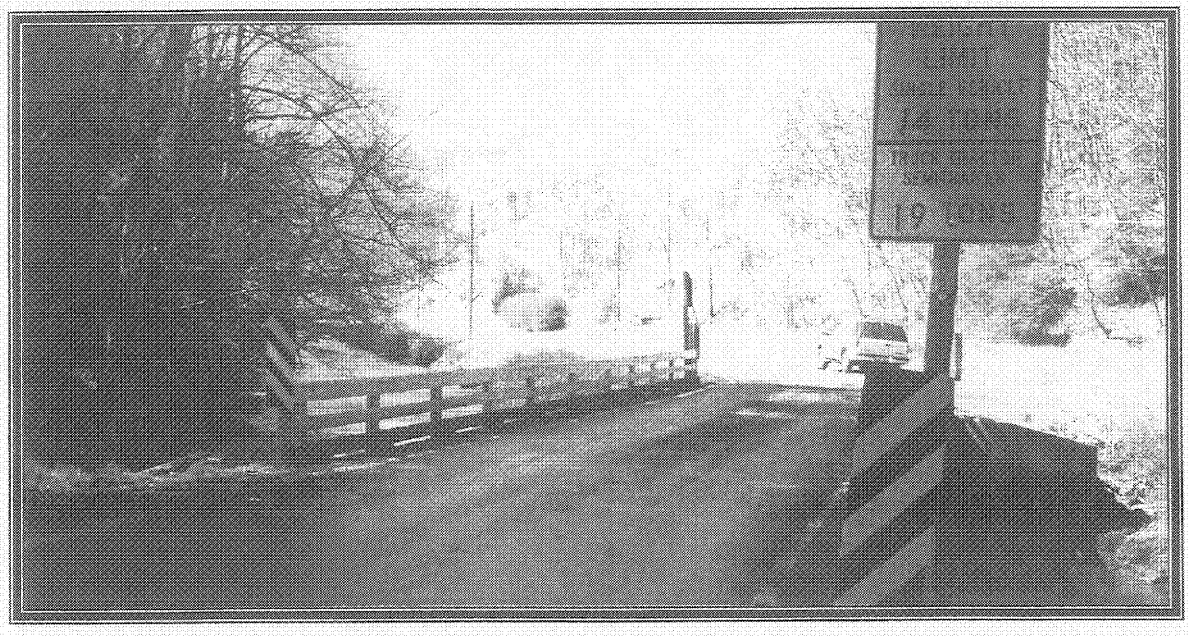


B-4015, ASHE COUNTY- VIEW OF BRIDGE , LOOKING NORTH, SHOWING
OLD RAILROAD BED NEAR END OF BRIDGE

FIGURE 2 A

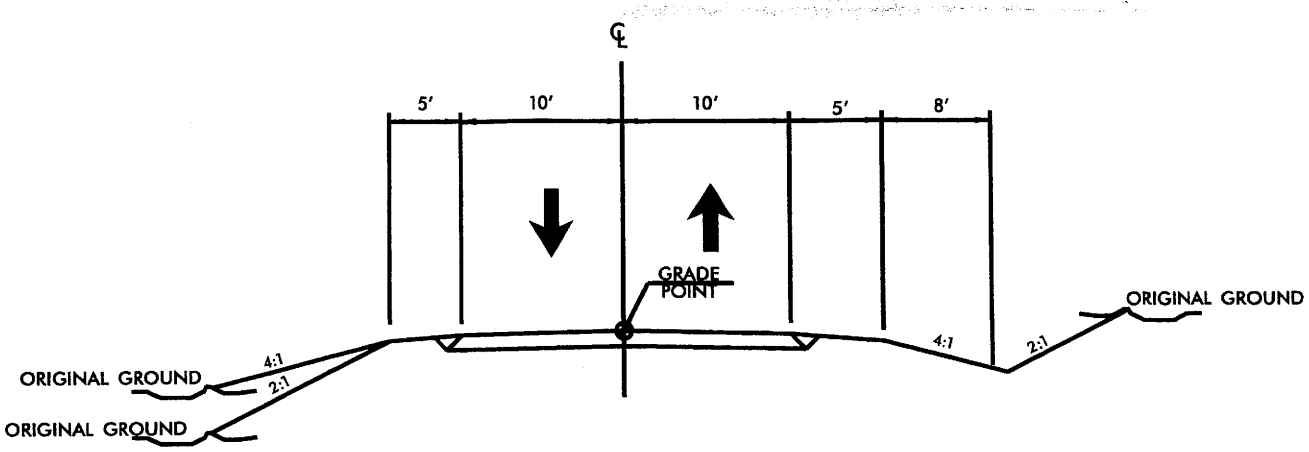


B-4015, ASHE COUNTY, VIEW BENEATH BRIDGE NO 165
OVER BIG HORSE CREEK

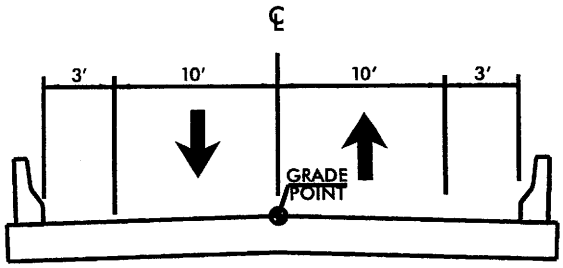


B-4015, ASHE COUNTY, VIEW OF BRIDGE LOOKING SOUTH

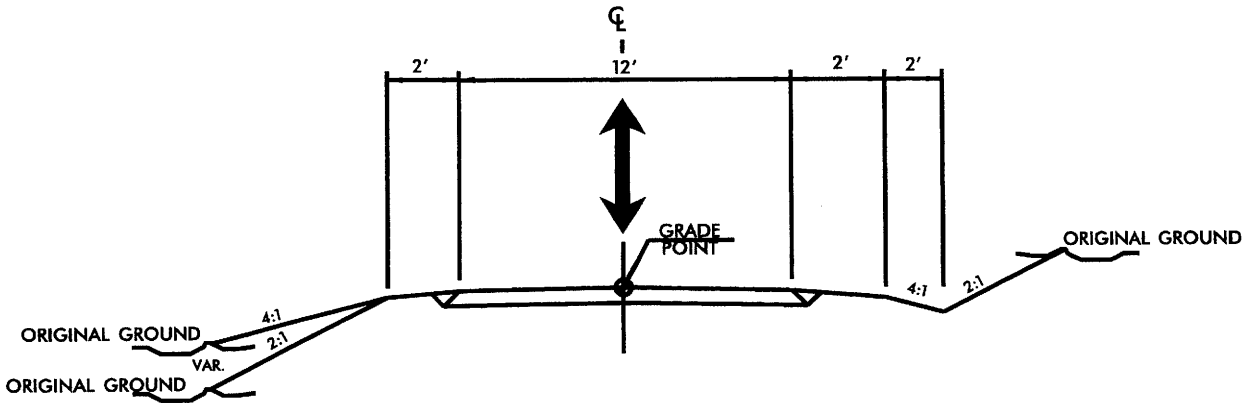
FIGURE 2 B



ROADWAY TYPICAL SECTION



BRIDGE TYPICAL SECTION



DETOUR ROADWAY TYPICAL SECTION (ONE WAY)

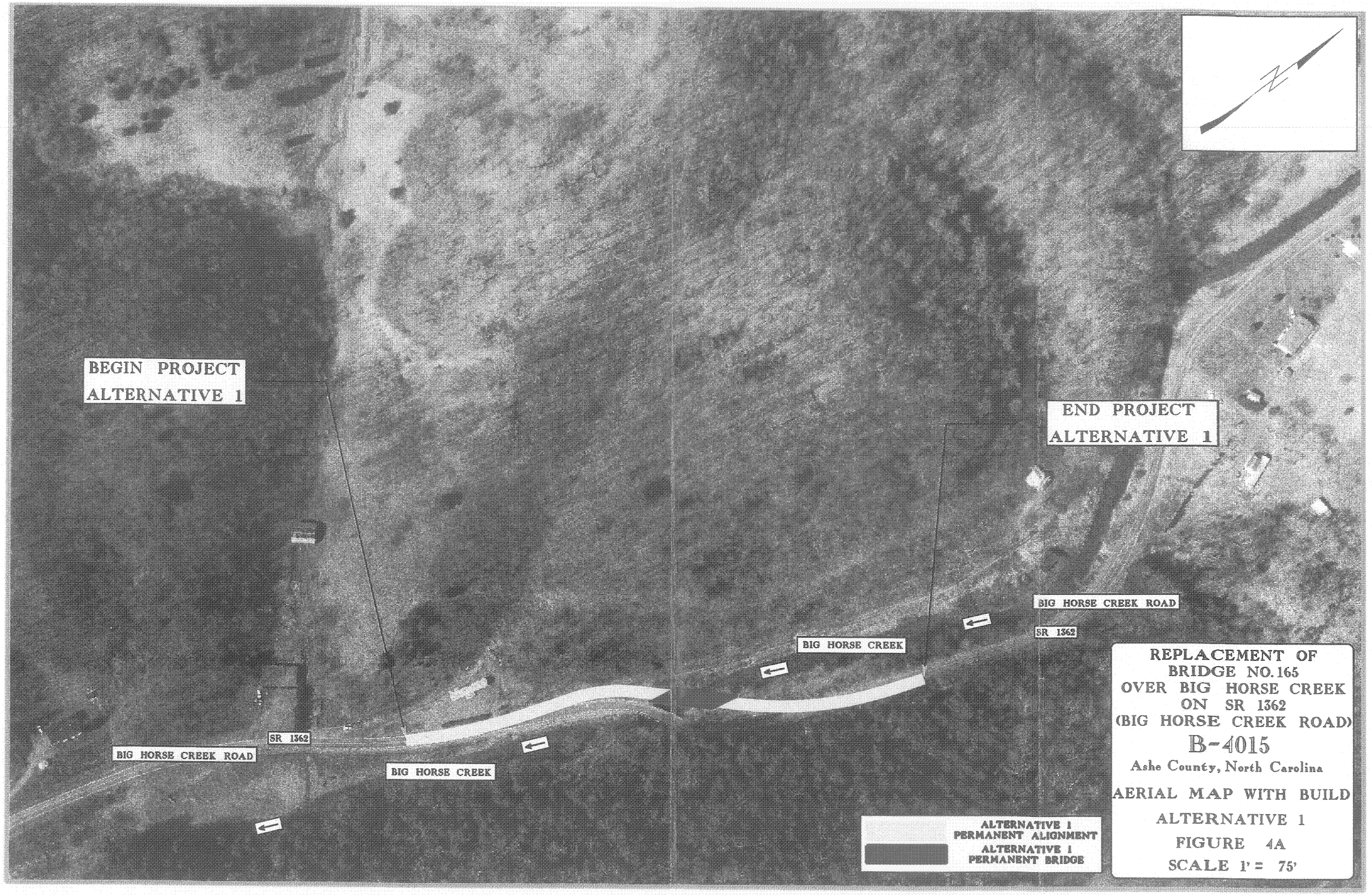
REPLACEMENT OF BRIDGE NO. 165 OVER BIG HORSE CREEK ON SR 1362 (BIG HORSE CREEK ROAD)

B-4015

Ashe County, North Carolina

TYPICAL SECTIONS FOR ALTERNATIVES 1 & 2

FIGURE 3



REPLACEMENT OF BRIDGE NO. 165 OVER BIG HORSE CREEK ON SR 1362 (BIG HORSE CREEK ROAD)

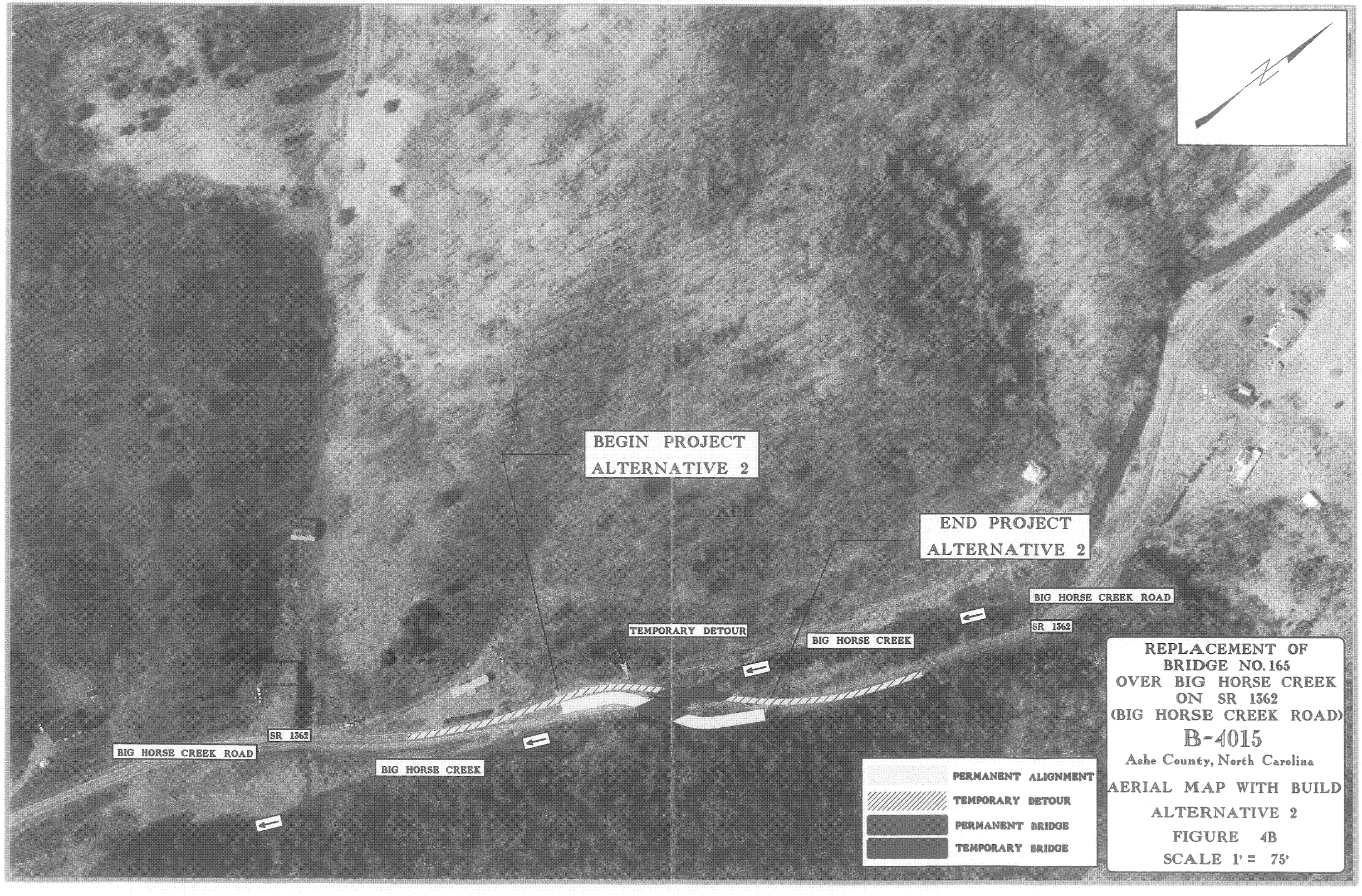
B-4015

Ashe County, North Carolina

AERIAL MAP WITH BUILD ALTERNATIVE 1

FIGURE 4A

SCALE 1" = 75'



REPLACEMENT OF BRIDGE NO. 165 OVER BIG HORSE CREEK ON SR 1362 (BIG HORSE CREEK ROAD)

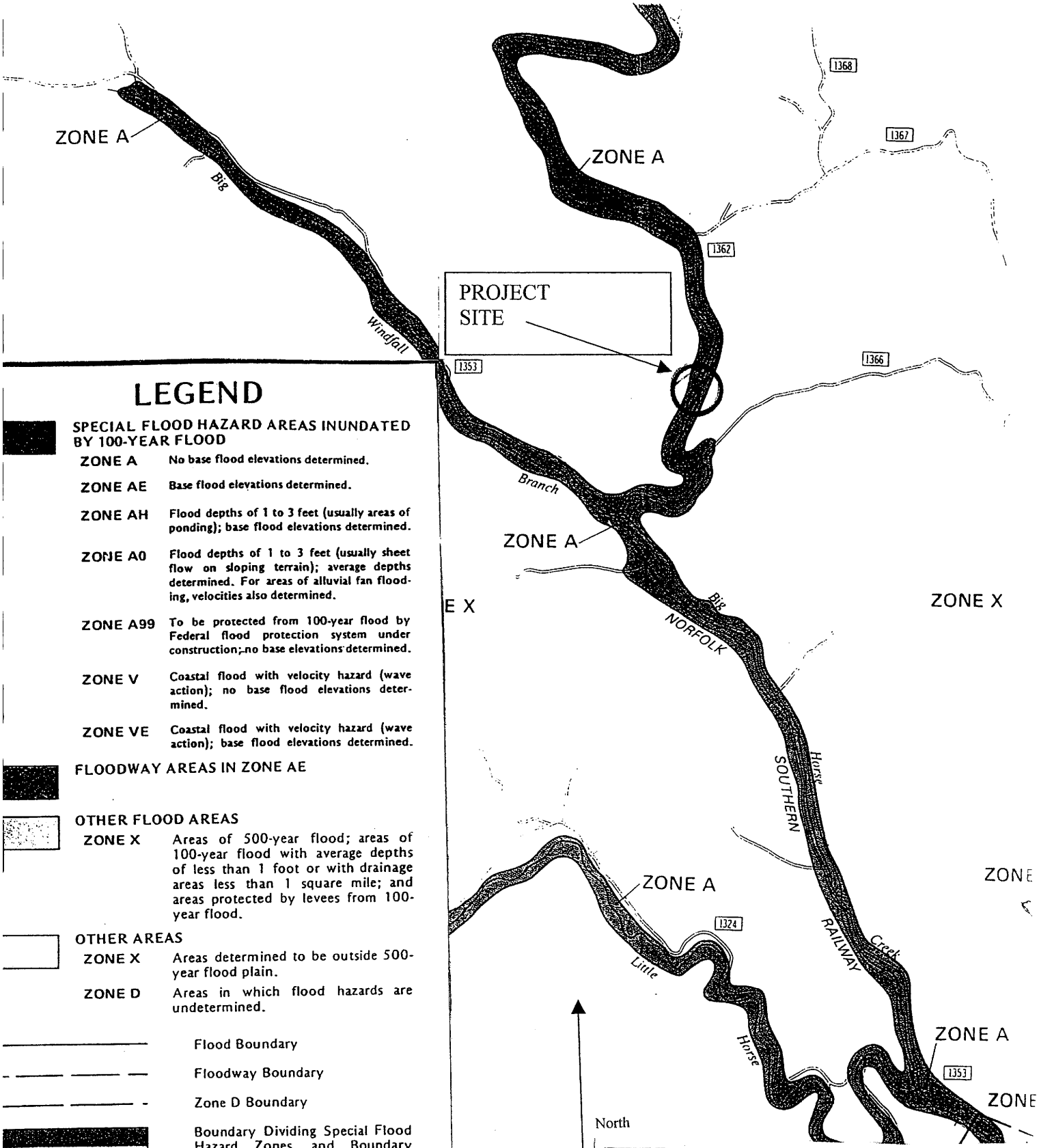
B-4015

Ashe County, North Carolina

AERIAL MAP WITH BUILD ALTERNATIVE 2

FIGURE 4B

SCALE 1" = 75'



LEGEND

SPECIAL FLOOD HAZARD AREAS INUNDATED BY 100-YEAR FLOOD

ZONE A	No base flood elevations determined.
ZONE AE	Base flood elevations determined.
ZONE AH	Flood depths of 1 to 3 feet (usually areas of ponding); base flood elevations determined.
ZONE AO	Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined. For areas of alluvial fan flooding, velocities also determined.
ZONE A99	To be protected from 100-year flood by Federal flood protection system under construction; no base elevations determined.
ZONE V	Coastal flood with velocity hazard (wave action); no base flood elevations determined.
ZONE VE	Coastal flood with velocity hazard (wave action); base flood elevations determined.

FLOODWAY AREAS IN ZONE AE

OTHER FLOOD AREAS

ZONE X	Areas of 500-year flood; areas of 100-year flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 100-year flood.

OTHER AREAS

ZONE X	Areas determined to be outside 500-year flood plain.
ZONE D	Areas in which flood hazards are undetermined.

- Flood Boundary
- Floodway Boundary
- Zone D Boundary
- Boundary Dividing Special Flood Hazard Zones, and Boundary Dividing Areas of Different Coastal Base Flood Elevations Within Special Flood Hazard Zones.
- 513 — Base Flood Elevation Line; Elevation in Feet*
- D — Cross Section Line
- (EL 987) — Base Flood Elevation in Feet Where Uniform Within Zone*
- RM7 X — Elevation Reference Mark
- •MI.5 — River Mile

SR 1362, ASHE COUNTY, REPLACE BRIDGE NO. 165 OVER BIG HORSE CREEK, TIP NO. B-4015 FLOODPLAIN MAP FIGURE 5

Town of Lansing

APPENDIX A

US Fish and Wildlife Service

160 Zillicoa Street
Asheville, NC 28801
Phone 828-258-3939 Ext 237, Fax 828-258-5330

MEMO FOR: William T. Goodwin, P.E. **DATE:** June 27, 2002

FROM: Marella Buncick

SUBJECT: Review of NCDOT 2005 Bridge Program

I have completed initial review of the approximately 70 proposed bridge replacements for NCDOT Divisions 9-14 for the year 2005. I would like to commend NCDOT for obtaining the natural resource information up front and allowing the agencies to review the proposals and provide comments so early in the process. It was a large volume of work for everyone involved but I feel that the input will be much more meaningful at this early planning stage.

Attached is a spreadsheet with specific comments for each project reviewed. All of the projects have been assigned a Green, Yellow, or Red ranking depending on the resources affected and the need for future consultation. As you will note, the majority of the projects received a Yellow ranking. This is due in large part to the fact that there are unresolved issues related to listed species. Many of these projects likely will become Green projects after further field review. However, obligations under Section 7 of the Act must be reconsidered if: (1) new information reveals impacts of this identified action that may affect listed species or critical habitat in a manner not previously considered, (2) actions are subsequently modified in a manner that was not considered in this review, or (3) a new species is listed or critical habitat is determined that may be affected by the identified action.

I also have general comments regarding the process and reports. My general comments follow.

Report Content and Organization

1. The reports would be more easily handled if they were not spiral or otherwise bound.
2. Maps need to be much better. Without a significant landmark-- highway, larger town, other feature – it sometimes took a long time to figure out the location of the project within a county.
3. The reports were organized somewhat similarly, but more consistency would aid in the review process. Perhaps a table that has the significant features ---stream width, depth, DWQ class, etc.--also would help.

4. For listed species, it often was difficult to tell whether field surveys had been conducted or whether the information was limited to a database search.
5. In the future, I would appreciate having the Rosgen stream classification included as part of the information.

Listed Species Surveys

Projects currently ranked as Yellow will need to be reviewed in the future after the stated issues are resolved. For those reports with unresolved issues related to listed species, I would recommend that NCDOT wait until closer to implementation time to conduct final surveys. In general, after three to five years we need updated information regarding the project and listed species. Additionally, when aquatic species are involved (particularly mussels) several surveys may be required to adequately determine presence or absence.

The three projects receiving a Red ranking will need to be followed very closely to determine future consultation requirements. These include B-4287 (actually 2 bridge replacements), B-4286, and B-4282. These projects were ranked as Red because of the significance of the number of listed resources potentially affected and the river (either main stem or tributary) involved.

I would encourage NCDOT to require consultants to at least assess habitat for the bog turtle. While the bog turtle technically does not require Section 7 consultation, it is a species of concern and NCDOT is actively managing mitigation sites or parts of sites for this species. Additionally, the Wildlife Resources Commission considers this animal rare in NC and participates actively in surveys and conservation efforts on its behalf.

Bridge Design and Construction Practices

I am assuming that FWS comments/recommendations in the past regarding bridge design, demolition, and construction practices will be folded into each of these projects. Since NCDOT is also working on a BMP manual that covers these practices, I think it would be redundant to state them again. However, if any questions arise, please let me know. I would like to emphasize that we prefer off-site detours wherever possible, to minimize effects to resources.

Each of these projects has been assigned a log number. Please refer to these numbers in future requests regarding the subject projects. Thank you again for the opportunity to provide these comments. If you have questions, please let me know.

PDE	TIP	County	Rank	Reason for Rank	FWS Log Number
SH	B-2988	Haywood	Y	unresolved for listed species, FWS requests review of bridge design	4-2-02-391
MD	B-4011	Ashe	Y	FWS requests resurvey for spiraea, assessment for bog turtle and green floater, review bridge plans	4-2-02-405
MD	B-4012	Ashe	Y	FWS requests resurvey for spiraea and habitat assessment for bog turtle	4-2-02-404
MD	B-4013	Ashe	Y	FWS requests resurvey for spiraea and habitat assessment for bog turtle, review bridge design	4-2-02-403
MD	B-4015	Ashe	Y	FWS requests resurvey for spiraea and habitat assessment for bog turtle, review bridge design	4-2-02-402
MD	B-4016	Ashe	Y	FWS requests resurvey for spiraea and habitat assessment for bog turtle, review bridge design	4-2-02-401
SH	B-4032	Buncombe	G	FWS requests review of bridge design	4-2-02-387
SH	B-4036	Buncombe	Y	unresolved for mussels, FWS requests review of bridge design	4-2-02-395
SH	B-4037	Buncombe	Y	unresolved for mussels, FWS requests review of bridge design	4-2-02-396
DW	B-4038	Burke	Y	unresolved for listed species, be careful of downstream effects	4-2-02-379
DW	B-4039	Burke	Y	unresolved for heartleaf	4-2-02-380
RY	B-4040	Burke	Y	FWS requests resurvey for heartleaf	4-2-02-381
DW	B-4041	Burke	Y	FWS requests resurvey for heartleaf	4-2-02-382
RY	B-4043	Burke	Y	FWS requests mussel survey, requests bridge to bridge and review of bridge design	4-2-02-383
RY	B-4044	Burke	Y	FWS requests resurvey for heartleaf and pogonia, bridge to bridge	4-2-02-384
RY	B-4045	Burke	Y	FWS requests resurvey for heartleaf, new occurrence w/in 1 mile	4-2-02-385
RY	B-4046	Burke	Y	unresolved for pogonia, FWS requests resurvey for heartleaf, request bridge for high quality stream	4-2-02-408
RY	B-4047	Burke	Y	unresolved for heartleaf	4-2-02-386
MD	B-4052	Caldwell	Y	unresolved for heartleaf, be careful of the USGS gaging station at this location	4-2-02-407
JJ	B-4059	Cawtaba	Y	Need survey for heartleaf--habitat assessment inadequate	4-2-02-409
DW	B-4060	Cawtaba	Y	Need survey for heartleaf--habitat assessment inadequate	4-2-02-410
RY	B-4067	Cherokee	Y	unresolved for listed species, close coordination w/USFS, high quality stream	4-2-02-394
DW	B-4070	Cherokee	Y	all listed species unresolved, FWS requests special consideration here for sicklefin redhorse	4-2-02-371
JJ	B-4076	Cleveland	Y	Need survey for heartleaf--habitat assessment inadequate	4-2-02-413
SH	B-4103	Davidson	Y	FWS requests mussel survey, requests bridge to bridge because of stream quality	4-2-02-370
JJ	B-4116	Gaston	Y	Need resurvey for heartleaf	4-2-02-416
DW	B-4123	Graham	Y	unresolved for listed species, Indiana Bat, close coordination w/USFS, high quality stream	4-2-02-393
SH	B-4144	Haywood	Y	unresolved for listed species, FWS requests review of bridge design	4-2-02-392
DP	B-4155	Iredell	G	FWS requests survey for bog turtle	4-2-02-412
DP	B-4158	Iredell	G	FWS requests survey for bog turtle, contractor suggested survey for heartleaf, FWS requests bridge	4-2-02-41
DW	B-4161	Jackson	Y	unresolved for listed species, FWS requests review of bridge design	4-2-02-388
JJ	B-4177	Lincoln	Y	Need resurvey for heartleaf	4-2-02-414
DW	B-4178	Lincoln	Y	Need resurvey for heartleaf	4-2-02-415
DW	B-4179	Macon	Y	unresolved for listed species, FWS requests review of bridge design	4-2-02-389
RY	B-4180	Macon	Y	unresolved for listed species, FWS requests bridge to bridge, consideration for green salamander	4-2-02-390
RY	B-4183	Madison	**These 2 bridge replacements are part of R-2518 and 2519 merger process, review by merger team**		

PDE	TIP	County	Rank	Reason for Rank	FWS Log Number
DW	B-4192	McDowell	Y	Need to assess pogonia	4-2-02-418
JJ	B-4194	McDowell	Y	Need to assess pogonia	4-2-02-419
JJ	B-4195	McDowell	Y	Need to assess pogonia	4-2-02-420
JJ	B-4196	McDowell	Y	Need to assess pogonia	4-2-02-421
DW	B-4197	McDowell	Y	Need to assess pogonia, FWS requests mussel surveys, bridge to bridge for high quality stream	4-2-02-422
JJ	B-4198	McDowell	Y	Need to assess pogonia	4-2-02-423
DW	B-4199	McDowell	Y	Need to assess pogonia	4-2-02-424
DW	B-4202	Mitchell	Y	Unresolved for Elktoe, FWS requests bridge to bridge, **NO SURVEY NEEDED FOR INDIANA BAT**	4-2-02-417
DW	B-4239	Polk	Y	unresolved for small-whorled pogonia and heartleaf	4-2-02-369
DW	B-4240	Polk	Y	unresolved for small-whorled pogonia and heartleaf	4-2-02-361
SH	B-4255	Rowan	G	may need resurvey for Schweinitz's sunflower	4-2-02-375
SH	B-4258	Rutherford	Y	unresolved for small-whorled pogonia	4-2-02-362
RY	B-4259	Rutherford	Y	unresolved for small-whorled pogonia, FWS requests another heartleaf survey	4-2-02-363
RY	B-4260	Rutherford	Y	unresolved for small-whorled pogonia	4-2-02-364
SH	B-4261	Rutherford	Y	unresolved for small-whorled pogonia and heartleaf	4-2-02-365
RY	B-4264	Rutherford	Y	unresolved for small-whorled pogonia, FWS requests another survey for heartleaf	4-2-02-368
RY	B-4265	Rutherford	Y	unresolved for small-whorled pogonia, FWS requests another survey for heartleaf and irisette	4-2-02-366
RY	B-4266	Rutherford	Y	unresolved for small-whorled pogonia, FWS requests another survey for heartleaf	4-2-02-367
	note for Rutherford Co projects--No survey is required for Indiana bat because the record is a winter record.				
SH	B-4282	Stokes	R	unresolved for cardamine and James spiny mussel, FWS concerned about bridge design	4-2-02-376
DP	B-4284	Surry	Y	unresolved for pogonia, FWS requests assessment for bog turtle and brook floater, bridge to bridge	4-2-02-426
DP	B-4285	Surry	Y	unresolved for pogonia, FWS requests assessment for bog turtle and brook floater	4-2-02-425
RY	B-4286	Swain	R	unresolved for listed species, esp. Indiana bat, FWS concerned with bridge design	4-2-02-378
DW	B-4287	Swain	R	unresolved for listed species, esp. Indiana bat, FWS concerned with bridge design	4-2-02-377
RY	B-4288	Transylvania	Y	unresolved for listed species, FWS requests survey for bunched arrowhead	4-2-02-374
SH	B-4290	Transylvania	Y	unresolved for listed species	4-2-02-373
SH	B-4291	Transylvania	Y	need mussel surveys	4-2-02-371
MD	B-4316	Watauga	Y	FWS requests bridge to bridge for high quality stream, FWS requests survey for green floater	4-2-02-39
JJ	B-4317	Watauga	G	FWS requests bridge to bridge for high quality stream	4-2-02-39
MD	B-4318	Watauga	G	FWS requests bridge to bridge for high quality stream, FWS requests survey for green floater	4-2-02-40
MD	B-4322	Wilkes	G	FWS requests bridge to bridge for high quality stream, assessment for bog turtle	4-2-02-40
DW	B-4330	Yancey	Y	unresolved for elktoe, FWS requests resurvey for Spiraea, be careful of downstream effects	4-2-02-39

North Carolina Wildlife Resources Commission

Charles R. Fullwood, Executive Director

TO: Gregory J. Thorpe, Environmental Management Director
Project Development and Environmental Analysis, NCDOT

FROM: Marla Chambers, Highway Projects Coordinator *Marla Chambers*
Habitat Conservation Program, NCWRC

DATE: August 27, 2003

SUBJECT: Scoping review of NCDOT's proposed replacement of Bridge No. 165 over Big Horse Creek on SR 1362 (Big Horse Creek Road), Ashe County. TIP No. B-4015.

North Carolina Department of Transportation (NCDOT) has requested comments from the North Carolina Wildlife Resources Commission (NCWRC) regarding impacts to fish and wildlife resources resulting from the subject project. Staff biologists have reviewed the information provided. The following preliminary comments are provided in accordance with the provisions of the National Environmental Policy Act (42 U.S.C. 4332(2)(c)) and the Fish and Wildlife Coordination Act (48 Stat. 401, as amended; 16 U.S.C. 661-667d).

Our standard recommendations for bridge replacement projects of this scope are as follows:

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

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

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

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

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

5. If temporary access roads or detours are constructed, they should be removed back to original ground elevations immediately upon the completion of the project. Disturbed areas should be seeded or mulched to stabilize the soil and native tree species should be planted with a spacing of not more than 10'x10'. If possible, when using temporary structures the area should be cleared but not grubbed. Clearing the area with chain saws, mowers, bush-hogs, or other mechanized equipment and leaving the stumps and root mat intact, allows the area to revegetate naturally and minimizes disturbed soil.

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

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

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

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

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

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

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

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

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

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

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

17. If culvert installation is being considered, conduct subsurface investigations prior to structure design to determine design options and constraints and to ensure that wildlife passage issues are addressed.

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

1. The culvert must be designed to allow for aquatic life and fish passage. Generally, the culvert or pipe invert should be buried at least 1 foot below the natural streambed (measured from the natural thalweg depth). If multiple barrels are required, barrels other than the base flow barrel(s) should be placed on or near stream bankfull or floodplain bench elevation (similar to Lyonsfield design). These should be reconnected to floodplain benches as appropriate. This may be accomplished by utilizing sills on the upstream end to restrict or divert flow to the base flow barrel(s). Silled barrels should be filled with sediment so as not to cause noxious or mosquito breeding conditions. Sufficient water depth should be provided in the base flow barrel during low flows to accommodate fish movement. If culverts are longer than 40-50 linear feet, alternating or notched baffles should be installed in a manner that mimics existing stream pattern. This should enhance aquatic life passage: 1) by depositing sediments in the barrel, 2) by maintaining channel depth and flow regimes, and 3) by providing resting places for fish and other aquatic organisms. In essence, the base flow barrel(s) should provide a continuum of water depth and channel width without substantial modifications of velocity.

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

3. Culverts or pipes should be situated along the existing channel alignment whenever possible to avoid channel realignment. Widening the stream channel must be avoided. Stream channel widening at the inlet or outlet end of structures typically decreases water velocity causing sediment deposition that requires increased maintenance and disrupts aquatic life passage.

4. Riprap should not be placed in the active thalweg channel or placed in the streambed in a manner that precludes aquatic life passage. Bioengineering boulders or structures should be professionally designed, sized, and installed.

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

down to the natural ground elevation. The area should be stabilized with grass and planted with native tree species. Tall fescue should not be used in riparian areas. If the area that is reclaimed was previously wetlands, NCDOT should restore the area to wetlands. If successful, the site may be used as wetland mitigation for the subject project or other projects in the watershed.

Project specific comments:

1. B-4015, Ashe Co., Bridge No. 165 over Big Horse Creek on SR 1362 (Big Horse Creek Road). Big Horse Creek is classified as C Tr + and is Hatchery Supported Designated Public Mountain Trout Waters. The Kanawha minnow (*Phenacobius teretulus*), Federal Species of Concern and state Special Concern, Kanawha darter (*Etheostoma kanawhae*), state Significantly Rare, the tonguetied minnow (*Exoglossum laurae*), state Significantly Rare, and several rare insect species have been observed in Big Horse Creek. A moratorium prohibiting in-stream work and land disturbance within the 25-foot trout buffer is recommended from October 15 to April 15 to protect the egg and fry stages of brown and rainbow trout. Sediment and erosion control measures should adhere to the design standards for sensitive watersheds. The bridge should be replaced with another spanning structure.

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

If you need further assistance or information on NCWRC concerns regarding bridge replacements, please contact me at (704) 485-2384. Thank you for the opportunity to review and comment on these projects.

cc: Cynthia Van Der Wiele, DWQ
Marella Buncick, USFWS
Sarah McRae, NHP

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

Michael Easley, Governor
Bill Ross, Secretary
Alan Klimek, Director

NCDENR
NORTH CAROLINA DEPARTMENT OF
ENVIRONMENT AND NATURAL RESOURCES

June 18, 2002

Memorandum To: William T. Goodwin, Jr., PE, Unit Head
Bridge Replacement Planning Unit
Project Development and Environmental Analysis Branch

Through: John Dorney
NC Division of Water Quality, 401 Unit

From: Robert Ridings
NC Division of Water Quality, 401 Unit

Subject: Review of Natural Systems Technical Reports for bridge replacement projects scheduled for construction in CFY 2005: "Yellow Light" Projects: B-4037, B-4076, B-4116, B-4016, B-4052, B-4015, B-4013, B-4012, B-4011, B-4202, B-4199, B-4196, B-4195, B-4322, B-4317, B-4316, B-4285, & B-4028.

On all projects, use of proper sediment and erosion control will be needed. Sediment and erosion control measures should not be placed in wetlands. Sediment should be removed from any water pumped from behind a cofferdam before the water is returned to the stream. Sedimentation and Erosion Control Guidelines for Sensitive Watersheds (15A NCAC 4B .0024) must be implemented prior to any ground-disturbing activities to minimize impacts to downstream aquatic resources. Temporary or permanent herbaceous vegetation must be planted on all bare soil *within 10 days* of ground-disturbing activities to provide long term erosion control.

This office would prefer bridges to be replaced with new bridges. However if the bridge must be replaced by a culvert and 150 linear feet or more of stream is impacted, a stream mitigation plan will be needed prior to the issuance of a 401 Water Quality Certification. While the NCDWQ realizes that this may not always be practical, it should be noted that for projects requiring mitigation, appropriate mitigation plans will be required prior to issuance of a 401 Water Quality Certification.

Any proposed culverts shall be installed in such a manner that the original stream profile is not altered (i.e. the depth of the channel must not be reduced by a widening of the streambed). Existing stream dimensions are to be maintained above and below locations of culvert extensions.

For permitting, any project that falls under the Corps of Engineers' Nationwide Permits 23 or 33 do not require written concurrence by the NC Division of Water Quality. Notification and courtesy copies of materials sent to the Corps, including mitigation plans, are required. For projects that fall under the Corps of Engineers Nationwide Permit 14 or Regional General Bridge Permit 31, the formal 401 application process will be required including appropriate fees and mitigation plans.

Do not use any machinery in the stream channels unless absolutely necessary. Additionally, vegetation should not be removed from the stream bank unless it is absolutely necessary. NCDOT should especially avoid removing large trees and undercut banks. If large, undercut trees must be removed, then the trunks should be cut and the stumps and root systems left in place to minimize damage to stream banks.

Use of rip-rap for bank stabilization must be minimized; rather, native vegetation should be planted when practical. If necessary, rip-rap must be limited to the stream bank below the high water mark, and vegetation must be used for stabilization above high water.

Rules regarding stormwater as described in (15A NCAC 2b.0216 (3) (G)) shall be followed for these projects. These activities shall minimize built-upon surface area, divert runoff away from surface waters and maximize utilization of BMPs. Existing vegetated buffers shall not be mowed in order to allow it to be most effectively utilized for storm water sheet flow.

Special Note on projects B-4037 and B-4076: these waters are classified as 303(d) waters. Special measures for sediment control will be needed.

Also note that projects B-4037, B-4052, B-4015,B-4013, B-4012, B-4011, B-4202, B-4196, B-4322, B-4317, and B-4316 occur in Trout waters. Any trout-specific conditions that would be determined by the North Carolina Wildlife Resources Commission, to protect the egg and fry stages of trout from sedimentation during construction, would be required on any 401 certifications.

Streams classified as "+" signify a stream draining into another stream that is ORW or HQW. Projects that occur in "+" streams are: B-4016, B-4012, B-4011, and B-4317.

Thank you for requesting our input at this time. The DOT is reminded that issuance of a 401 Water Quality Certification requires that appropriate measures be instituted to ensure that water quality standards are met and designated uses are not degraded or lost.

Michael F. Easley, Governor
William G. Ross Jr., Secretary
North Carolina Department of Environment and Natural Resources

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

November 12, 2002

MEMORANDUM

TO: Missy Dickens, P.E., Project Development Engineer
NCDOT, Project Development & Environmental Analysis

FROM: Cynthia F. Van Der Wiele, NCDOT Coordinator cvdw

SUBJECT: Scoping Comments for Ashe County, SR 1362, Bridge No. 165 over Big Horse Creek, F.A. Project No. BRZ-1362(1), State Project No. 8.2712401,TIP Project B-4015.

This letter is in response to your request for comments on the above-referenced project. Big Horse Creek (index 10-2-21(4.5); HU 050702) is classified as C trout +. The "+" symbol identifies waters that are subject to a special management strategy specified in 15A NCAC 2B .0225, the Outstanding Resources Waters (ORW) rule, in order to protect downstream waters designated as ORW.

During 1998 basinwide monitoring, DWQ aquatic biologists reported streambank erosion and sedimentation throughout the New River basin that was moderate to severe. The Wildlife Resources Commission's *Fisheries Management Direction for the New River Basin* also lists sedimentation of the New River and tributary streams as one of three major concerns in the basin (NCWRC, May 1998). Substantial amounts of erosion can be prevented by planning to minimize the amount and time the land is exposed. Care should be taken to prevent loss of material into Big Horse Creek during construction.

The NC Division of Water Quality staff has the following recommendations:

- The proposed alternatives were not discussed sufficiently in the scoping letter to be able to provide comments as to the potential environmental impacts of these options. A Natural Systems Technical Report may be able to provide more insight into the impacts.
- The bridge should be designed as a single span with *no piers* in the stream.
- Storm water shall be designed to be carried across the bridge (no deck drains over the stream) and diverted through grass-lined ditches, vegetated buffers or directed to a storm water collection device prior to entering Big Horse Creek.
- Use *Sedimentation and Erosion Control Guidelines for Sensitive Watersheds* [15A NCAC 4B .0124(a)-(d)] prior to any ground-disturbing activities to minimize impacts to downstream aquatic resources.
- Temporary or permanent herbaceous vegetation shall be planted on all bare soil *within 5 days* of ground-disturbing activities to provide long term erosion control.
- Use a turbidity curtain or other methods (BMPs) proven to prevent violation of the turbidity standard for trout waters.
- Use BMPs for bridge demolition and removal, Case 1 (9-20-99 NCDOT policy; see http://www.ncdot.org/planning/pe/bmp.pdf).

Thank you for requesting our input at this time. The DOT is reminded that issuance of a §401 Water Quality Certification requires that appropriate measures be instituted to ensure that water quality standards are met and designated uses are not degraded or lost. If you have any questions or require additional information, please contact Cynthia Van Der Wiele at (919) 733.5715.

pc: John Thomas, USACE Raleigh Field Office

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

Michael F. Easley, Governor
[illegible]beth C. Evans, Secretary
[illegible]ffrey J. Crow, Deputy Secretary

Division of Historical Resources
David J. Olson, Director

RECEIVED
JUN 25 2003
DIVISION OF HIGHWAYS
PROJECT DEVELOPMENT AND ENVIRONMENTAL ANALYSIS BRANCH

June 18, 2003

MEMORANDUM

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

FROM: David Brook [signature]

SUBJECT: Historic Architectural Resources Survey Report, Replacement of Bridge No. 165 on SR 1362 over Big Horse Creek, B-4015, Ashe County, ER02-8494

Thank you for your letter of May 6, 2003, transmitting the survey report by Circa, Inc.

We concur that there are no properties within the Area of Potential Effect (APE) that are eligible for listing in the National Register.

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

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

cc: Circa, Inc.
Mary Pope Furr, NCDOT

The Eastern Band of Cherokee Indians
Tribal Historic Preservation Office
P.O. Box 455, Cherokee, NC 28719
(828) 497-1594 / Fax (828) 497-1590

October 28, 2003

Greg Thorpe, PhD, Manager
Project Development and Environmental Analysis Branch
NC Department of Transportation
1548 Mail Service Center
Raleigh, NC 27699-1548

RE: **Wilkes County, Bridge No. 71 on SR 1167 Over Fork Creek, Federal-Aid Project BRZ-1167(1), State Project 8.2761301, TIP No. B-4322**

Caldwell County, Bridge No. 7 on NC 268 Over Yadkin River, Federal Aid Project BRSTP-0268 (9), State Project 8.1731801, TIP No. B-4052

Ashe County, Bridge No. 338 on SR 1320 Over Roaring Fork Creek, Federal Aid Project BRZ-1320 (4), State Project 8.2712301, TIP No. B-4013

Ashe County, Bridge No. 273 on SR 1347 Over Big Horse Creek, Federal Aid Project BRZ-1347 (1), State Project 8.2712501, TIP No. B-4016

Ashe County, Bridge No. 165 on SR 1362 Over Big Horse Creek, Federal Aid Project BRZ-1362 (1), State Project 8.2712401, TIP No. B-4015

Bridge No. 117 on SR 1118 North Folk New River, Federal-Aid Project BRZ-1118(3), State Project 8.2712201, TIP No. B-4012

Watauga County, Bridge No. 320 on SR 1153 Over Beech Creek, Federal Aid Project BRZ-1153 (6), State Project 8.2752301, TIP No. B-4316

Dear Dr. Thorpe,

The Eastern Band of Cherokee Indians appreciates the invitation to participate as a consulting party in compliance with 36CFR800. According to the information you provided, the EBCI THPO is unaware of any known cultural resources or archaeological sites in the project area significant to our Tribe, or any known cultural resources or archaeological sites eligible for the National Register of Historic Places. However, should any cultural resources or human remains be encountered during the proposed project's activities, work should cease and this office should be contacted immediately.
As a consulting party we request that you send all information pertaining to cultural resources within the above-referenced project(s) area of potential effect (APE) for our review and comment. If you have any questions, please direct them to me at (828) 497-1589. Thank you.

Sincerely,

Michelle Hamilton
Tribal Historic Preservation Specialist
Eastern Band of Cherokee Indians

Public Schools of North Carolina

DEC - 2 2002

C Department of Public Instruction
chool Planning, Division of School Support
2 Mail Service Center
leigh, NC 27699-6322

Phone: (919) 807-3554
Fax: (919) 807-3558
Www.schoolclearinghouse.org

November 25, 2002

MEMORANDUM

TO: Gregory J. Thorpe, Ph.D.
Project Development and Environmental Analysis Branch

FROM: J. David Edwards, Section Chief, School Planning *d*

SUBJECT: Ashe County, SR 1118, Replace Bridge No. 117 Over North Fork New River, Federal-Aid Project No. BRZ 1118(3), State Project No. 8.2712201, TIP No. B-4012

Ashe County, SR 1320, Replace Bridge No. 338 over Roaring Fork Creek, Federal-Aid No. BRZ-1320(4), State Project No. 8.2712301, TIP No. B-4013

Ashe County, SR 1362, Replace Bridge No. 165 over Big Horse Creek, Federal-Aid Project BRZ-1362(1), State Project No. 8.2712401, TIP No. B-4015

Ashe County, SR 1347, Replace Bridge No. 273 over Big Horse Creek, Federal-Aid Project No. BRZ-1347(1), State Project No. 8.2712501, B-4016

Enclosed is a response from Ashe County Schools in regard to the National Environmental Policy Act inquiry.

/ed
Enclosure

Ashe County Board of Education

PO Box 604, 320 South Street • Courier No. 15-65-01 • Jefferson, North Carolina 28640
(336) 246-7175 • (336) 246-7609 Fax

October 28, 2002

Mr. Gerald H. Knott, Section Chief
School Planning
Department of Public Instruction

Mr. Knott:

In regard to your letter concerning the replacement of bridge No. 165 over Big Horse Creek on SR 1362 and the impact on an existing or proposed school site or bus routes.

We currently have two buses routed in this area that pass through both the a.m. and the p.m. hours. If traffic is maintained on the existing bridge, we will not be affected; otherwise this will result in a lengthy detour.

There is not any impact on an existing or proposed school site in the immediate area. I hope this information is beneficial. If I can be of further assistance, please contact me at (336) 246-9103.

Sincerely,

Stan Douglas
Transportation Director
Ashe County School Bus Garage

B-4015

County of Ashe

Jefferson
North Carolina

286-10

June 7, 2001

Davis Moore
NC Department of Transportation
Project Development & Environmental Analysis Branch
1548 Mail Service Center
Raleigh, NC 27699-1548

RE: Proposed Replacement of Bridges 85, 117, 165, 273 and 338

Dear Mr. Moore,

In regard to the proposed NCDOT bridge replacements, we offer the following information on how emergency response/emergency medical services will be affected by the proposed projects:

1. Replacement of Bridge No. 85 on SR 1106, over Creek, Ashe County, Federal Aid Project No. BRZ-1106(4), State Project No. 8.2712101, TIP No. B-4011: Closure of this bridge could be handled by re-routing and would add an estimated 10 minute additional response time for emergency response/emergency medical services.

2. Replacement of Bridge No. 117 on SR 1118 over Hoskin Fork Creek, Ashe County, Federal Aid Project No. BRZ-1118(3), State Project No. 8.2712201, TIP No. B-4012: Closure of this bridge would create an unworkable situation for for emergency response/emergency medical services as there is no other route to access the upper portion of Sutherland Road (SR 1118).

3. Replacement of Bridge No. 165 on SR 1362 over Big Horse Creek, Ashe County, Federal Aid Project No. BRZ-1362(1), State Project No. 8.2712401, TIP No. B-4015: Closure of this bridge could be handled by re-routing and would add an estimated 10-15 minute additional response time for emergency response/emergency medical services.

4. Replacement of Bridge No. 273 on SR 1347 over Big Horse Creek, Ashe County, Federal Aid Project No. BRZ-1347(1), State Project No. 8.2712501, TIP No. B-4016: Closure of this bridge could be handled by re-routing and would add an estimated 10-15 minute additional response time for emergency response/emergency medical services.

5. Replacement of Bridge No. 338 on SR 1320(4), State Project No. 8.2712301, TIP No. B-4013: Closure of this bridge could be handled by re-routing and would add an estimated 10 minute additional response time for emergency response/emergency medical services.

For further information, please contact my office at (336) 219-2521, or emc@ashecountygov.com.

Sincerely,

Patty McMeans

Patty McMeans,
Emergency Management Coordinator,
County of Ashe
150 Government Circle Suite 2400
Jefferson, NC 28640

Ashe County Board of Education

PO Box 604, 320 South Street • Courier No. 15-65-01 • Jefferson, North Carolina 28640
(336) 246-7175 • (336) 246-7609 Fax

November 6, 2001

Davis Moore
Project Development & Environmental
Analysis Branch
NC Department of Transportation
1548 mail Service Center
Raleigh, NC 27699-1548

Dear Mr. Moore:

The following information is in response to your letter addressing TIP projects.

Bridge No. 85 on Highway SR 1106 B-4011
We (Ashe County Board of Education) currently have two buses crossing this bridge twice daily. These buses can be rerouted around this bridge.

Bridge No. 117 on Highway SR 1118 B-4012
We (ACBE) currently have one bus crossing this bridge twice daily. Two students live across the bridge, one near the bridge and one one-half mile away. They could walk to the bridge and catch the bus or parents could bring them out to meet the bus. The distance would be too great to reroute through Watauga County. Route time would be one hour plus.

Bridge No. 338 on Highway SR 1320 B-4013
We (ACBE) currently have two buses crossing this bridge twice daily. It would be difficult to reroute for this bridge. Route time would be forty-five minutes plus, with additional ride time. More in the winter.

Bridge No. 165 on Highway SR 1362 B-4015
We (ACBE) currently have two buses crossing this bridge twice daily. Rerouting around this bridge would take thirty minutes plus. More in the winter.

Bridge No. 273 on Highway SR 1347 B-4016
We (ACBE) currently have one bus crossing this bridge twice daily. There would be no problem rerouting for this bridge.

If you have any questions concerning this information, please contact me at (336) 246-9103.

Sincerely,

Stan Douglas
Director of Transportation
Ashe County Board of Education

Pll

APPENDIX B

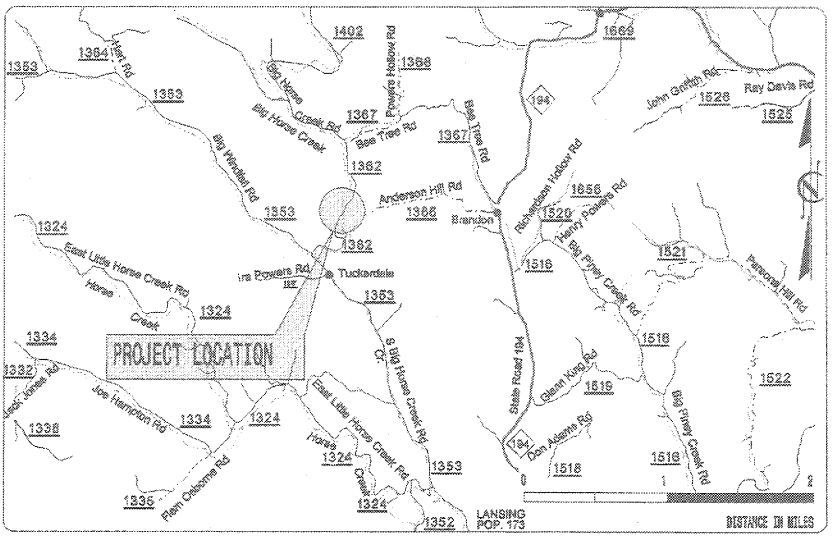
BIG HORSE CREEK ROAD (SR 1362) BRIDGE OVER BIG HORSE CREEK - NEWSLETTER

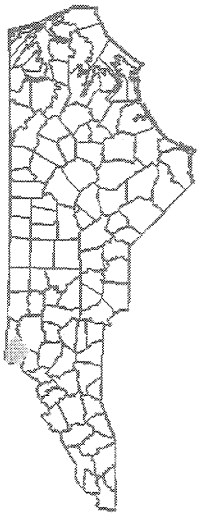
TRANSPORTATION IMPROVEMENT PROGRAM PROJECT B-4015

March 2003

North Carolina Department of Transportation

NCDOT has begun the project planning studies to replace Bridge #165 on Big Horse Creek Road (SR 1362) over Big Horse Creek, Ashe County (Transportation Improvement Program Project B-4015)





ASHE COUNTY

BRIDGE TO BE REPLACED

Bridge No. 165 on Big Horse Creek Road (SR 1362) over Big Horse Creek was built in 1960. The bridge is narrow, provides a single traffic lane, and does not meet current design standards. NCDOT proposes to replace the old, narrow bridge with a new, wider bridge at the same location. Traffic on Big Horse Creek Road will be maintained at the site during construction. Construction of the new bridge should take about one year. No relocation of homes or businesses will be required. The need for additional right of way will be limited to properties near the bridge.

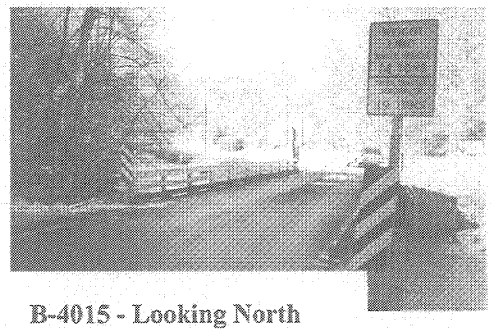
YOUR COMMENTS ARE NEEDED

NCDOT appreciates and encourages input and comments from local citizens. If you have comments or concerns or know of any issues that may help us in our planning, please contact us (see back page).

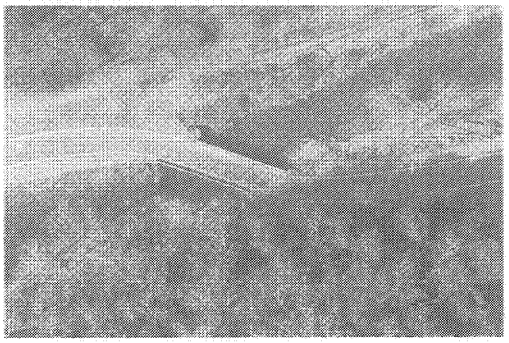
PROJECT PLANNING AND THE ENVIRONMENT

The NCDOT project planning studies include the development of an environmental document - a federal categorical exclusion (CE). The CE will document the project proposal and the environmental effects of the proposed bridge replacement.

Citizen comments will be considered in developing the best over-all plans for replacing the bridge and documented in the environmental document. The document will be available to the public.



B-4015 - Looking North



B-4015 - Aerial Photo

The replacement of Bridge #165 is included on the 2002-2008 Transportation Improvement Program (TIP). Designated in the TIP as Project No. B-4015, the bridge project is scheduled for right-of-way acquisition to begin in 2004 and construction to begin in 2005.

CONTACT US:

Please send your comments, concerns, information, or questions to:

Nate Benson, PE, Project Manager - - Wetherill Engineering, Inc. • 559 Jones Franklin Road, Suite 164 • Raleigh • North Carolina 27606 • 919- 851-8077 • nbenson@wetherilleng.com;

or

Missy Dickens, PE, Project Manager - - North Carolina Department of Transportation• Project Development and Environmental Analysis Branch • 1548 Mail Service Center • Raleigh • North Carolina 27699-1548 • 919-733-7844 ext. 218 • mdickens@dot.state.nc.us

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