STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

MICHAEL F. EASLEY
GOVERNOR

LYNDO TIPPETT
SECRETARY

November 25, 2008

U. S. Army Corps of Engineers
Regulatory Field Office
151 Patton Avenue, Room 208
Asheville, NC 28801-5006

ATTN: Mr. David Baker
NCDOT Coordinator

Subject: **Application for Section 404 Nationwide Permit 13 & 33, and Section 401 Water Quality Certification** for the proposed replacement of Bridge No. 123 over Scott Creek on SR 1437 (Hospital Road) in Jackson County, Federal Aid Project No. BRZ-1437 (3); Division 14; TIP No. B-4163
$240.00 debit WBS 33511.1.1

Dear Sir:

The North Carolina Department of Transportation (NCDOT) proposes to replace Bridge No. 123 over Scott Creek on SR 1437 (Hospital Road). There will be 77 feet of temporary surface water impacts and 105 feet of permanent surface water impacts due to bank stabilization.

Please see enclosed copies of the Pre-Construction Notification (PCN), permit drawings, and design plans for the above-referenced project. The Categorical Exclusion (CE) was completed in March 2007 and the Construction Consultation was completed in October 2008. Documents were distributed shortly thereafter. Additional copies are available upon request.

This project calls for a letting date of April 21, 2009 and a review date of March 3, 2009.

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

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

WEBSITE: WWW.NCDOT.ORG

LOCATION:
2728 CAPITAL BLVD
SUITE 240
RALEIGH NC 27604

A copy of this permit application will be posted on the NCDOT Website at: http://www.ncdot.org/doh/preconstruct/pe/. If you have any questions or need additional information, please call Kris Dramby at (919) 715-5526.

Sincerely,

E L. Lusk

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

w/attachment
Mr. Brian Wrenn, NCDWQ (5 copies)
Ms. Marla Chambers, NCWRC
Ms. Marella Buncick, USFWS
Mr. Harold Draper, TVA
w/o attachment
Dr. David Chang, P.E., Hydraulics
Mr. Mark Staley, Roadside Environmental
Mr. Victor Barbour, P.E., Project Services Unit
Mr. Greg Perfetti, P.E., Structure Design
Mr. J. B. Setzer, P.E., Division Engineer
Mr. Mark Davis, DEO
Mr. Jay Bennett, P.E., Roadway Design
Mr. Majed Alghandour, P. E., Programming and TIP
Mr. Art McMillan, P.E., Highway Design
Mr. Scott McLendon, USACE, Wilmington
Ms.Christy M. Wright, P.E., Project Development Engineer

Office Use Only: Form Version March 05

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

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

I. Processing

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

2. Nationwide, Regional or General Permit Number(s) Requested: NWP 13 & 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
   Raleigh, NC 27699-1598
   Telephone Number: (919) 733-3141 Fax Number: (919) 733-9794
   E-mail Address: _____

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

III. Project Information

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

1. Name of project: Replacement of Bridge No. 123 over Scott Creek on SR 1437 (Hospital Road) in Jackson County.

2. T.I.P. Project Number or State Project Number (NCDOT Only): B-4163

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

4. Location
   County: Jackson Nearest Town: Sylva
   Subdivision name (include phase/lot number): N/A
   Directions to site (include road numbers/names, landmarks, etc.): From the town of Balsam, continue traveling in a southwesterly direction on US 23/74. Just north of the town of Sylva and the intersection of U 23/74 and 23 south, make a left on 23 south. Travel a mile and make a right on SR 1437 (Hospital Road) until reaching Bridge 123 over Scott Creek.

5. Site coordinates (For linear projects, such as a road or utility line, attach a sheet that separately lists the coordinates for each crossing of a distinct waterbody.)
   Decimal Degrees (6 digits minimum): 35"23'32" N 83"17'19" W

6. Property size (acres): N/A

7. Name of nearest receiving body of water: Scott Creek

8. River Basin: Little Tennessee 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: The site is located in an urban section of Jackson County primarily surrounded by residential, commercial and forested land. The topography in the

project area is comprised of a nearly level floodplain of Scott Creek. Elevation within the project area measures approximately 2100 feet above mean sea level.

10. Describe the overall project in detail, including the type of equipment to be used: Bridge No. 123 will be replaced with a new structure at the existing location. The low level steel elevation of the new structure will match the lower steel elevation of the existing structure. The permanent structure will be approximately 75 feet in length and 45.5 feet wide (rail to rail). The typical section on the bridge will include one 5.5.foot wide sidewalk (located on the upstream or east side of the bridge) 2 foot gutters, a 12 foot turn lane and 2 12 foot travel lanes. The proposed bridge width conforms to the NCDOT's bridge policy for 3800 VPD traffic volumes and a 35 MPH design speed. A 12 foot turn lane will be provided extending from Skyland Drive across the proposed structure. Traffic will be detoured during construction. Construction equipment will consist of heavy trucks, earth moving equipment, cranes, etc.

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

IV. Prior Project History

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

V. Future Project Plans

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

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

It is the applicant's (or agent's) responsibility to determine, delineate and map all impacts to wetlands, open water, and stream channels associated with the project. Each impact must be listed separately in the tables below (e.g., culvert installation should be listed separately from riprap dissipater pads). Be sure to indicate if an impact is temporary. All proposed impacts, permanent and temporary, must be listed, and must be labeled and clearly identifiable on an

accompanying site plan. All wetlands and waters, and all streams (intermittent and perennial) should be shown on a delineation map, whether or not impacts are proposed to these systems. Wetland and stream evaluation and delineation forms should be included as appropriate. Photographs may be included at the applicant's discretion. If this proposed impact is strictly for wetland or stream mitigation, list and describe the impact in Section VIII below. If additional space is needed for listing or description, please attach a separate sheet.

1. Provide a written description of the proposed impacts: There will be 105 linear feet of permanent surface water impacts resulting from bank stabilization. Temporary surface water impacts totaling 77 linear feet will occur to construct the necessary temporary causeways.

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)
N/A					
Total Wetland Impact (acres)					

3. List the total acreage (estimated) of all existing wetlands on the property: 0.00 acre

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)
Site 1	Scott Creek	Permanent	Perennial	35-40 feet	105	0.02
Site 1	Scott Creek	Temporary	Perennial	35-40 feet	77	0.02
Total Stream Impact (by length and acreage)					182	0.04

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

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

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

Stream Impact (acres):	0.02
Wetland Impact (acres):	0
Open Water Impact (acres):	0
Total Impact to Waters of the U.S. (acres)	0.02
Total Stream Impact (linear feet):	105

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

_____

_____

8. Pond Creation
If construction of a pond is proposed, associated wetland and stream impacts should be included above in the wetland and stream impact sections. Also, the proposed pond should be described here and illustrated on any maps included with this application.
Pond to be created in (check all that apply): ☐ uplands ☐ stream ☐ wetlands
Describe the method of construction (e.g., dam/embankment, excavation, installation of draw-down valve or spillway, etc.):_____
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. 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 impacts. In addition, Best Management Practices will be followed as outlined in "NCDOT's Best Management Practices for Construction and Maintenance Activities". Design Standards for Sensitive Watersheds will be used for protection of downstream waters and Scott Creek will be spanned. Traffic will be routed to a temporary off site detour 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.

   There will be 105 linear feet of permanent surface water impacts to Scott Creek due to bank stabilization under the new bridge. This is not considered a "loss of waters" and is a minimal impact, therefore, no mitigation will be proposed for this project.

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

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

IX. Environmental Documentation (required by DWQ)

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

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

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

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

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

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

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

Zone*	Impact (square feet)	Multiplier	Required Mitigation
1		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. N/A

XII. Sewage Disposal (required by DWQ)

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

XIII. Violations (required by DWQ)

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

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

XIV. Cumulative Impacts (required by DWQ)

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

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

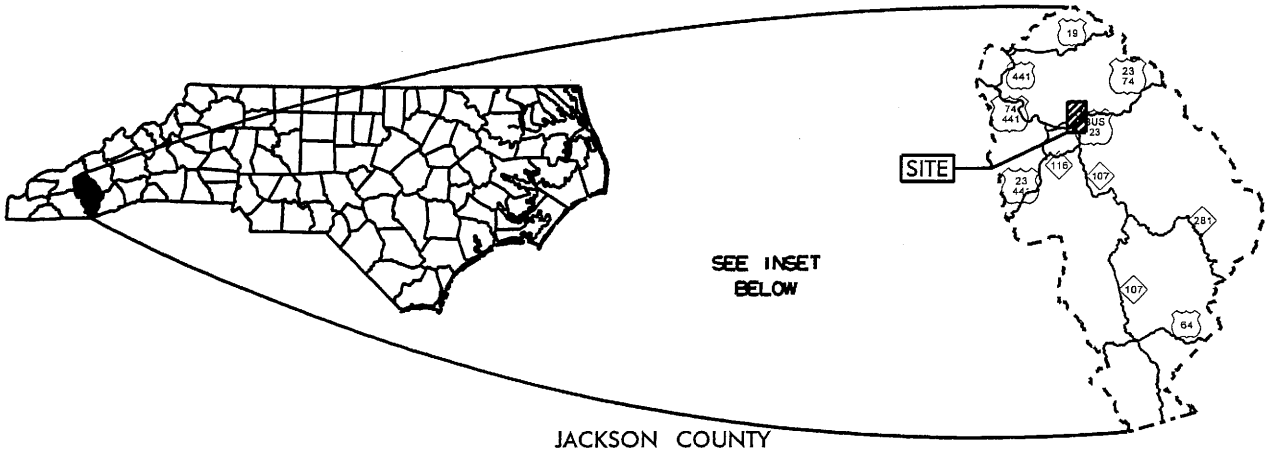
XV. Other Circumstances (Optional):

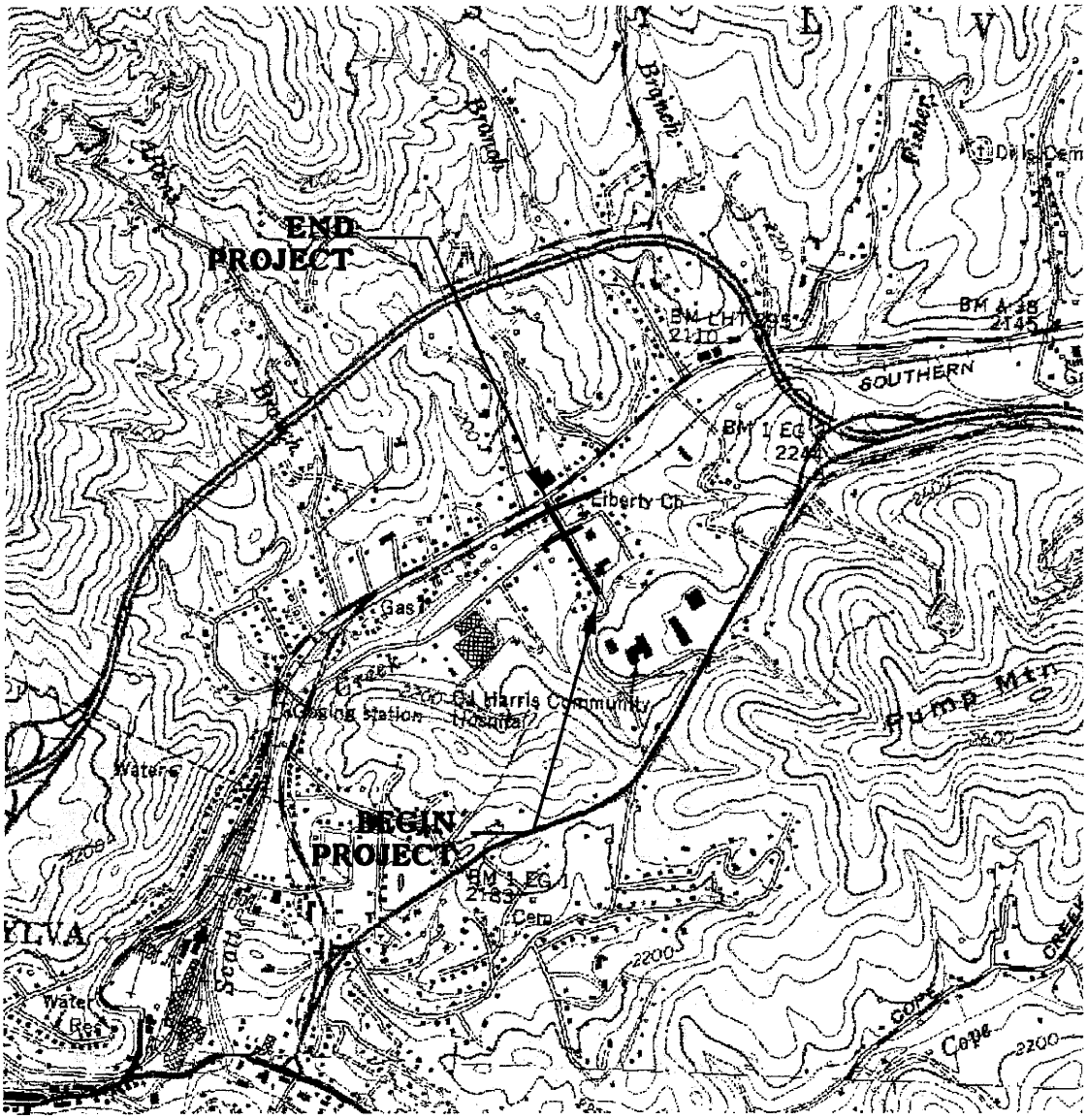
It is the applicant's responsibility to submit the application sufficiently in advance of desired construction dates to allow processing time for these permits. However, an applicant may choose to list constraints associated with construction or sequencing that may impose limits on work schedules (e.g., draw-down schedules for lakes, dates associated with Endangered and Threatened Species, accessibility problems, or other issues outside of the applicant's control). Plants and animals with federal classifications of Endangered (E), Threatened (T), Proposed Endangered (PE), Proposed Threatened (PT), are protected under provisions of Section 7 and Section 9 of the Endangered Species Act of 1973, as amended. As of November 19, 2008 the United States Fish and Wildlife Service (USFWS) lists six federally protected species and 1 threatened species due to similarity of appearance [T(S/A)] for Jackson County. A description of all seven species and their respective biological conclusion's are provided in the referenced CE document. An updated survey for small-whorled pogonia was completed on June 12, 2008. No individuals were found and the No Effect call is still warranted. Additionally, the remaining T and E species' No Effect calls are also still warranted. A trout moratorium prohibiting in-stream work and land disturbance within the 25-foot buffer is recommended from October 15 to April 15 to protect the egg and fry stages of trout.

E. L. Lusk 11.25.08

Applicant/Agent's Signature **Date**

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





WETLAND/STREAM IMPACTS
VICINITY MAP

Permit Drawing
Sheet 1 of 9

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

PROJECT: 33511.1.1 (B-4163)
BRIDGE NO. 123 OVER SCOTTS
CREEK ON SR 1437
(HOSPITAL RD)

SHEET ___ OF ___ 6/12/08

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	17+19 - 18+39 -L-	Bank Stabilization						0.02		105		
1	17+95 -L-	TEMP CAUSEWAY							0.02		77	
TOTALS:			0.00	0.00	0.00	0.00	0.00	0.02	0.02	105	77	0

Temporary causeway limits are within bank stabilization limits.

Permit Drawing
Sheet 2 of 9

NC DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

JACKSON COUNTY
PROJECT: 34511.1.1 (B-4163)

SHEET June-08

ATN Revised 3/31/05

PROPERTY OWNERS

NAMES AND ADDRESSES

PARCEL NO.	NAMES	ADDRESSES
7	KIRBY ENSLEY	P.O. BOX 696 SYLVA, NC 28779

Permit Drawing
Sheet 3 of 9

WETLAND/ STREAM IMPACTS

NCDOT

DIVISION OF HIGHWAYS

JACKSON COUNTY

PROJECT: 33511.1.1 (B-4163)
BRIDGE NO. 123 OVER
SCOTTS CREEK ON SRR 1437
(HOSPITAL RD.)

SHEET OF 06/12/08

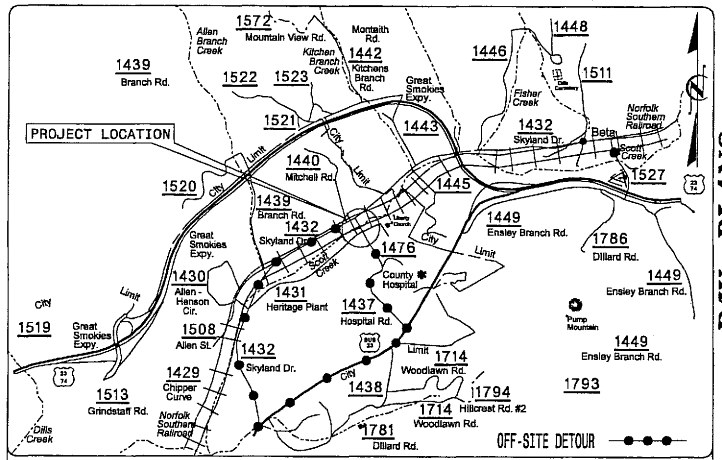
09/08/99

TIP PROJECT: B-4163

CONTRACT:

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

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



VICINITY MAP

R/W PLANS

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

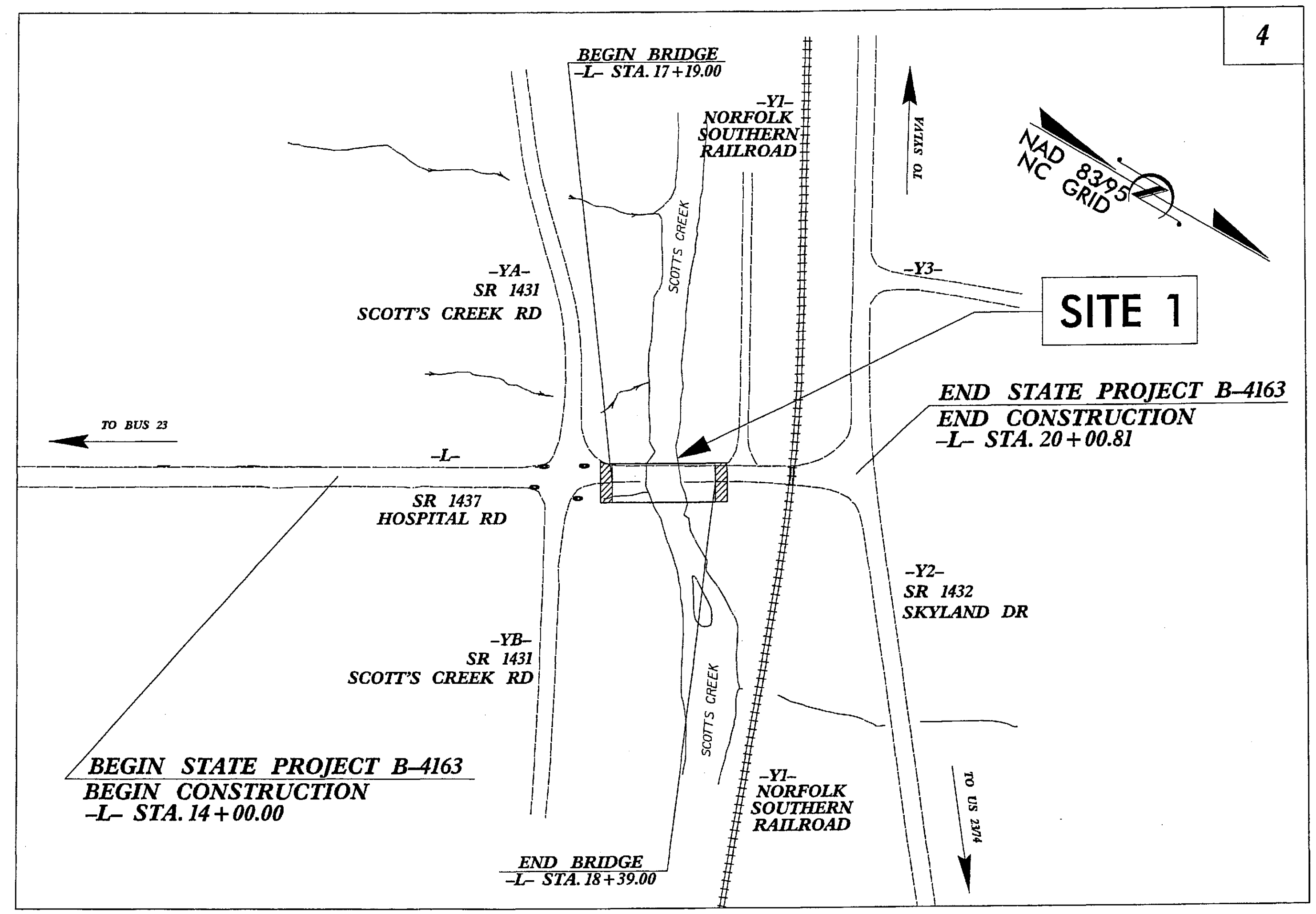
JACKSON COUNTY

LOCATION: BRIDGE NO. 123 OVER SCOTTS CREEK ON SR 1437 (HOSPITAL RD.)

TYPE OF WORK: GRADING, PAVING, DRAINAGE & STRUCTURE

STATE	STATE PROJECT REFERENCE NO.		SHEET NO.	TOTAL SHEETS
N.C.	B-4163		1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION		
33511.1.1	BRZ-1437(3)	PE		
33511.2.1	BRZ-1437(3)	R/W & UTIL.		

WETLAND/STREAM IMPACTS



Permit Drawing
Sheet 4 of 9

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

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

THIS PROJECT IS WITHIN THE MUNICIPAL BOUNDARY OF SYLVA
CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD II.

GRAPHIC SCALES

50 25 0 50 100
PLANS

50 25 0 50 100
PROFILE (HORIZONTAL)

10 5 0 10 20
PROFILE (VERTICAL)

DESIGN DATA

ADT 2009 = 2830
ADT 2029 = 4045
DHV = 10 %
D ≐ 60 %
T = 5 % *
V = 35 MPH
* TTST 2 DUAL 3
CLASS. – URBAN LOCAL

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT B-4163 = 0.091 MILES
LENGTH STRUCTURE TIP PROJECT B-4163 = 0.023 MILES
TOTAL LENGTH TIP PROJECT B-4163 = 0.114 MILES

Prepared for the North Carolina Department Of Transportation In the Office of:

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

2006 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE: APRIL 1, 2008
LETTING DATE: APRIL 21, 2009

EDWARD G. WETHERILL, PE
PROJECT ENGINEER

BOB A. MAY, PE
PROJECT DESIGN ENGINEER

NCDOT CONTACT DOUG B. TAYLOR, PE
ENGINEERING COORDINATION SECTION ENGINEER

HYDRAULICS ENGINEER

SIGNATURE: ______ *P.E.*

ROADWAY DESIGN ENGINEER

SIGNATURE: ______ *P.E.*

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

STATE OF NORTH CAROLINA • DEPARTMENT OF TRANSPORTATION •

______ *P.E.*
STATE HIGHWAY DESIGN ENGINEER

PROJECT REFERENCE NO.	SHEET NO.
B-4163	4
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

WETHERILL ENGINEERING
859 James Franklin Rd. Suite 144
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.
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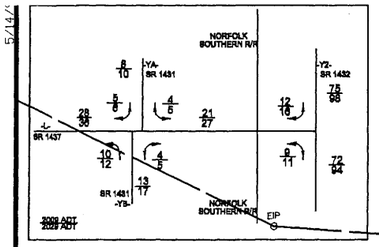
RALEIGH, NORTH CAROLINA 27606
TEL. (919) 859-2243 FAX (919) 851-6258

ENGLISH



TS TS DENOTES TEMPORARY IMPACTS IN SURFACE WATER

S S DENOTES IMPACTS IN SURFACE WATER

Permit Drawing
Sheet 5 of 7

SEE SHEET 5 FOR PROFILES

20-JUN-2008 07:41
J:\ics\permits\environmental\drawings\b4163_hyd_prm_wet_psh04.dgn

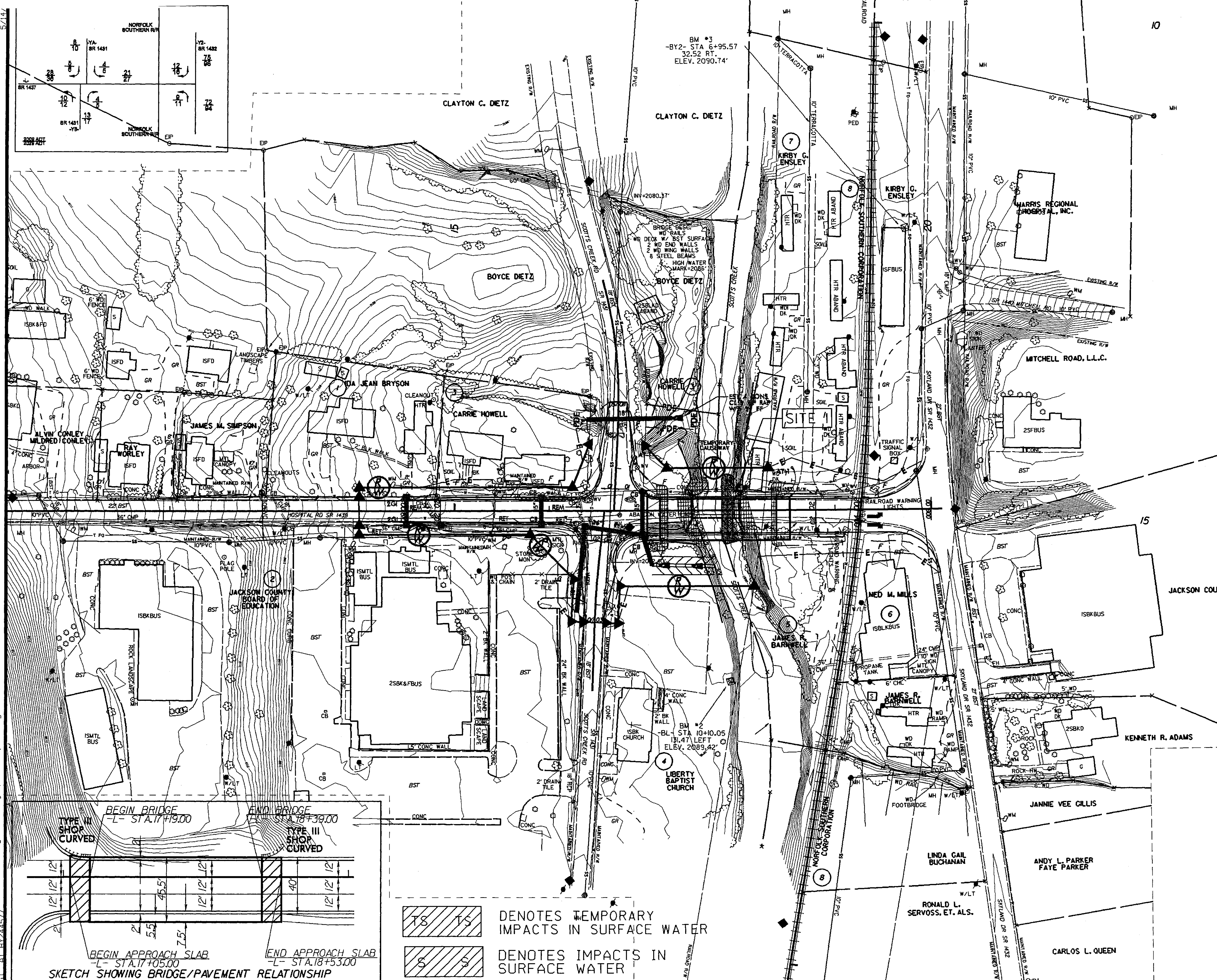
PROJECT REFERENCE NO.	SHEET NO.
B-4163	4
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

WETHERILL ENGINEERING
889 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



TS | TS — DENOTES TEMPORARY IMPACTS IN SURFACE WATER

S | S — DENOTES IMPACTS IN SURFACE WATER

Permit Drawing
Sheet 6 of 9

SEE SHEET 5 FOR PROFILES

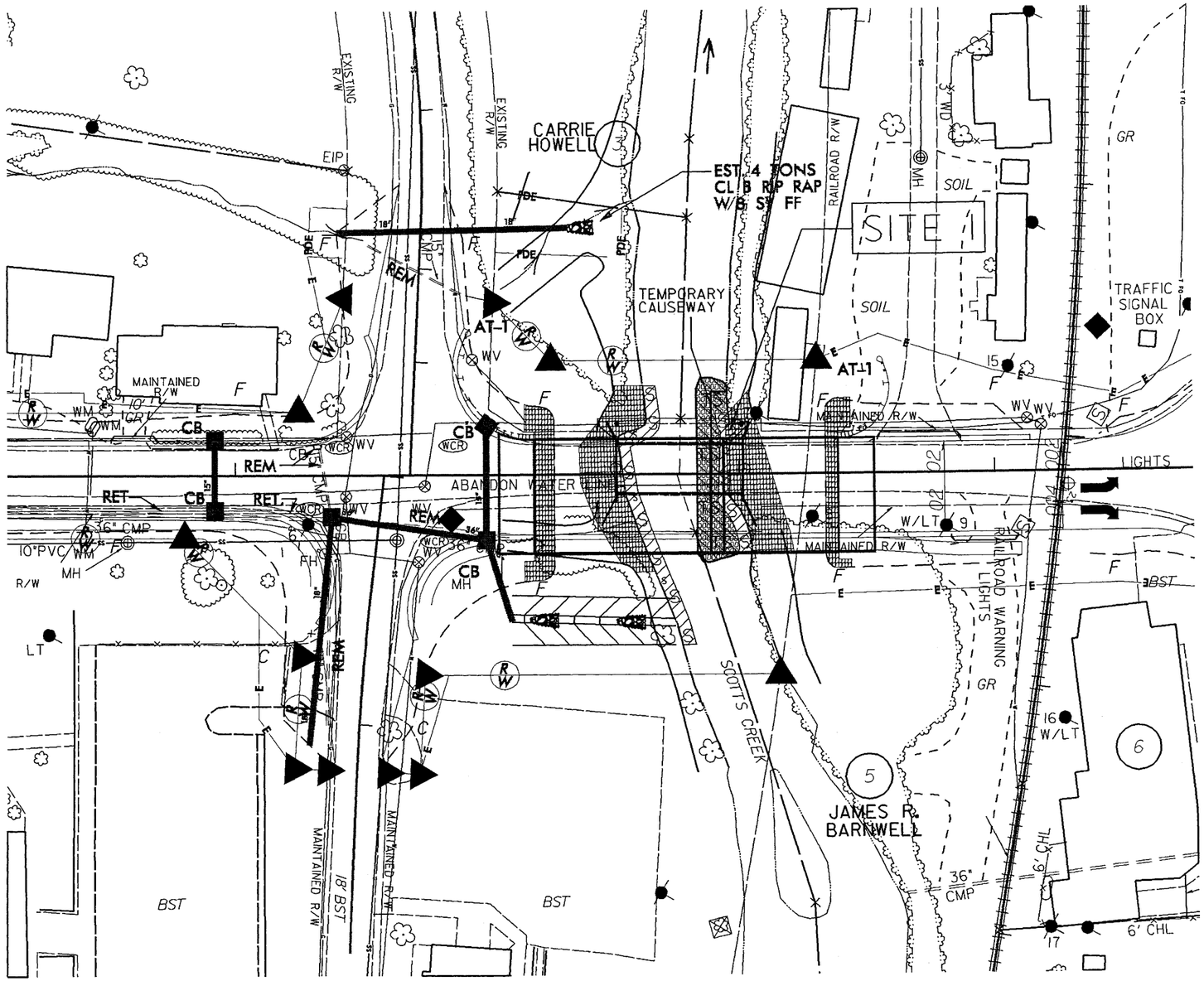
20-JUN-2008 07:45
...\permits\environmental\drawings\b4163_hyd_prm_wet_psh04.dgn

PROJECT REFERENCE NO.	SHEET NO.
B-4163	
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

50' 0' 50' 100' 150'

ENGLISH



NAD 83/95 NC GRID

TS TS DENOTES TEMPORARY IMPACTS IN SURFACE WATER

S S DENOTES IMPACTS IN SURFACE WATER

Permit Drawing
Sheet 7 of 9

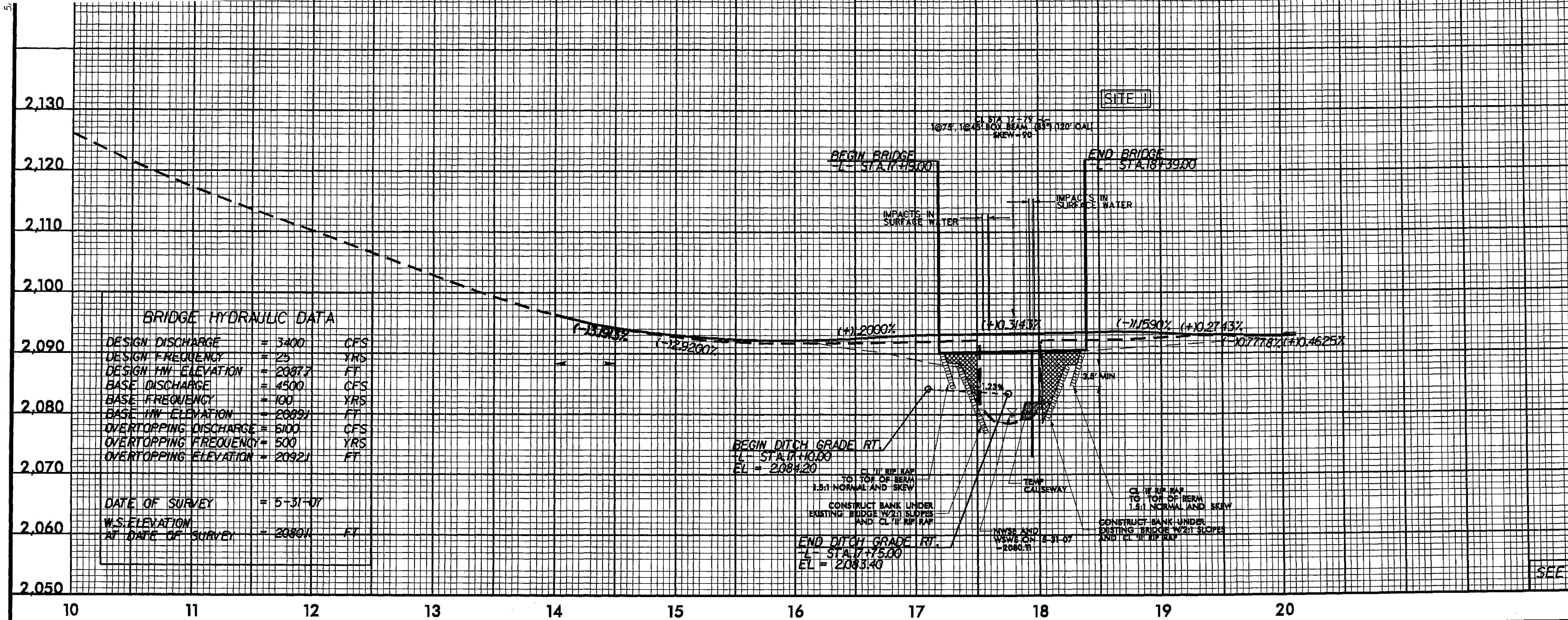
20-JUN-2008 12:52

ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

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

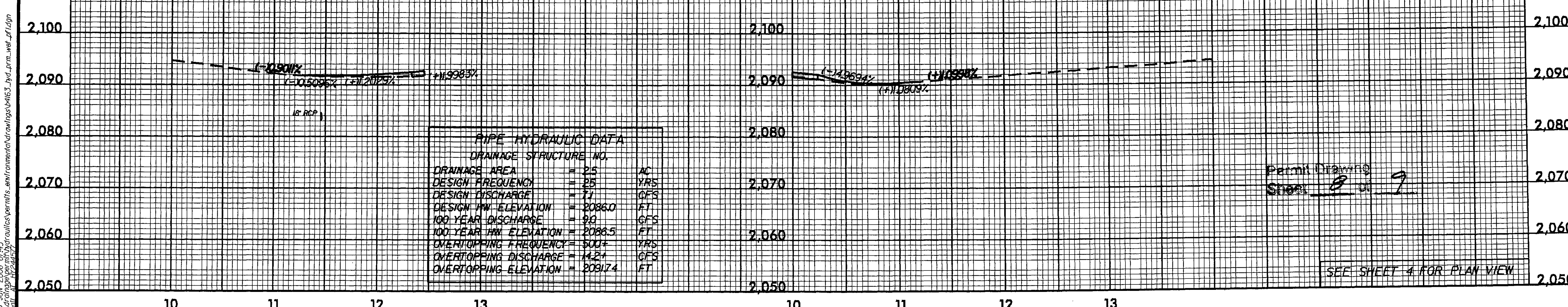
SUNGATE DESIGN GROUP, P.A.
915 JONES FRANKLIN ROAD
RALEIGH, NORTH CAROLINA 27606
TEL (919) 859-2243 FAX (919) 859-6258



BRIDGE HYDRAULIC DATA

DESIGN DISCHARGE	= 3400	CFS
DESIGN FREQUENCY	= 25	YRS
DESIGN HW ELEVATION	= 2087.7	FT
BASE DISCHARGE	= 4500	CFS
BASE FREQUENCY	= 100	YRS
BASE HW ELEVATION	= 2089.1	FT
OVERTOPPING DISCHARGE	= 6100	CFS
OVERTOPPING FREQUENCY	= 500	YRS
OVERTOPPING ELEVATION	= 2092.1	FT
DATE OF SURVEY	= 5-31-07	
W.S. ELEVATION AT DATE OF SURVEY	= 2080.11	FT

SEE SHEET 4 FOR PLAN VIEW



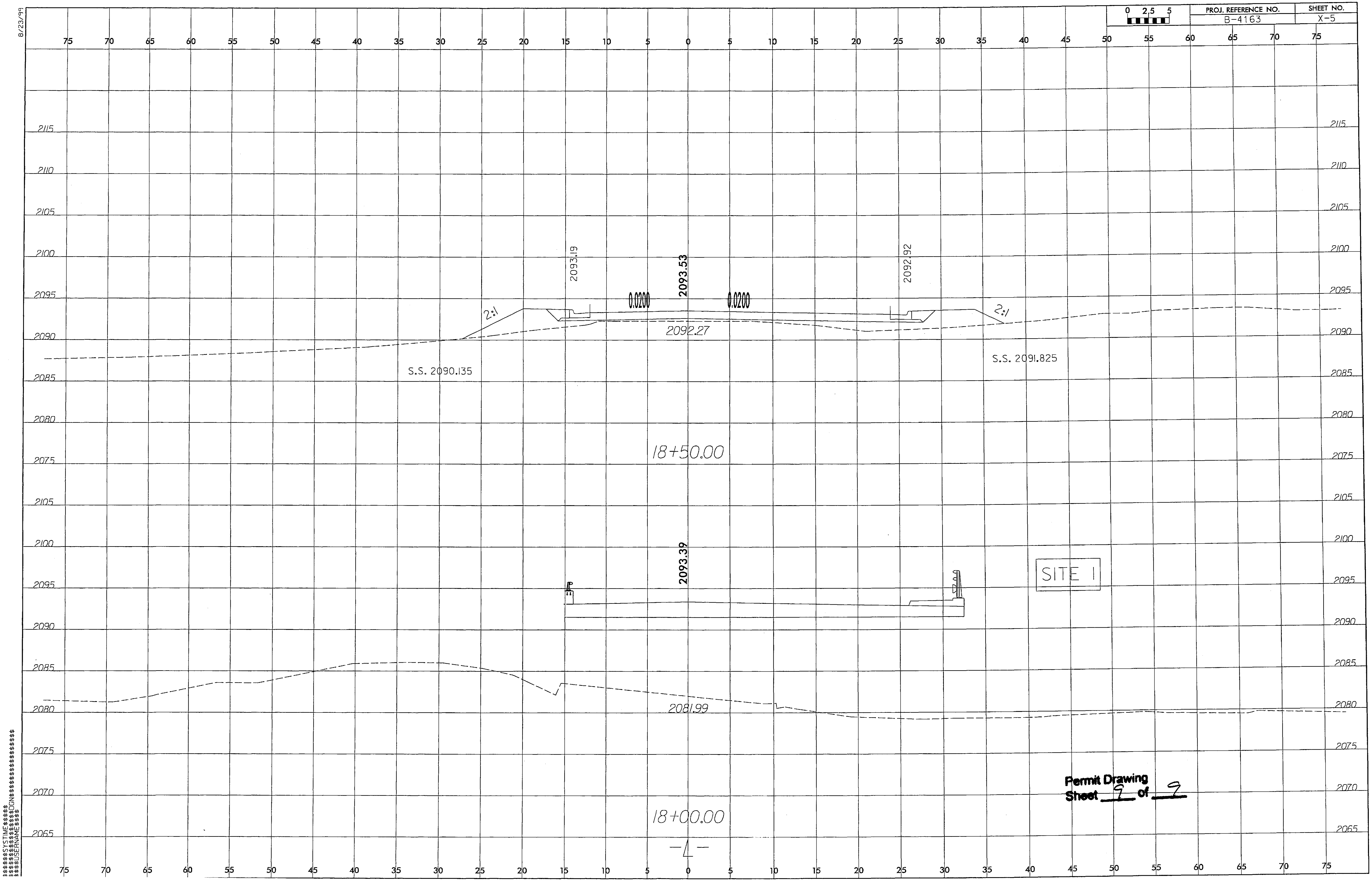
PIPE HYDRAULIC DATA

DRAINAGE STRUCTURE NO.

DRAINAGE AREA	= 2.5	AC
DESIGN FREQUENCY	= 25	YRS
DESIGN DISCHARGE	= 7.1	CFS
DESIGN HW ELEVATION	= 2086.0	FT
100 YEAR DISCHARGE	= 9.0	CFS
100 YEAR HW ELEVATION	= 2086.5	FT
OVERTOPPING FREQUENCY	= 500+	YRS
OVERTOPPING DISCHARGE	= 14.2+	CFS
OVERTOPPING ELEVATION	= 2091.74	FT

Permit Drawing
Sheet 8 of 9

SEE SHEET 4 FOR PLAN VIEW

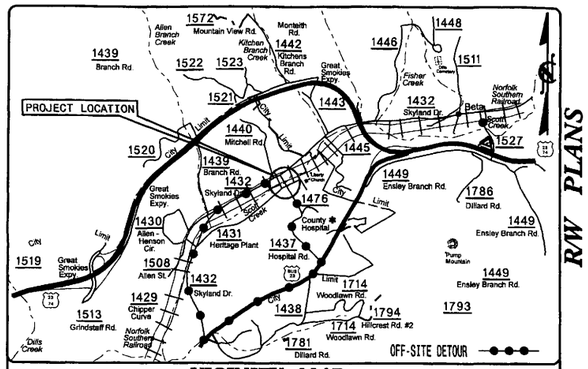

8/23/99
0 2.5 5
PROJ. REFERENCE NO.
B-4163
SHEET NO.
X-5
2093.19
2093.53
2092.92
0.0200
0.0200
2:1
2:1
2092.27
S.S. 2090.135
S.S. 2091.825
18+50.00
2093.39
SITE 1
2081.99
Permit Drawing
Sheet 9 of 9
18+00.00
-L-
$$$$$$SYSTIME$$$$$
$$$$$$$$$$$$$$DGN$$$$$$$$$$$$$$$$$$$
$$$$USERNAME$$$$

09/08/9

TIP PROJECT: B-4163

CONTRACT:

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



VICINITY MAP

R/W PLANS

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

JACKSON COUNTY

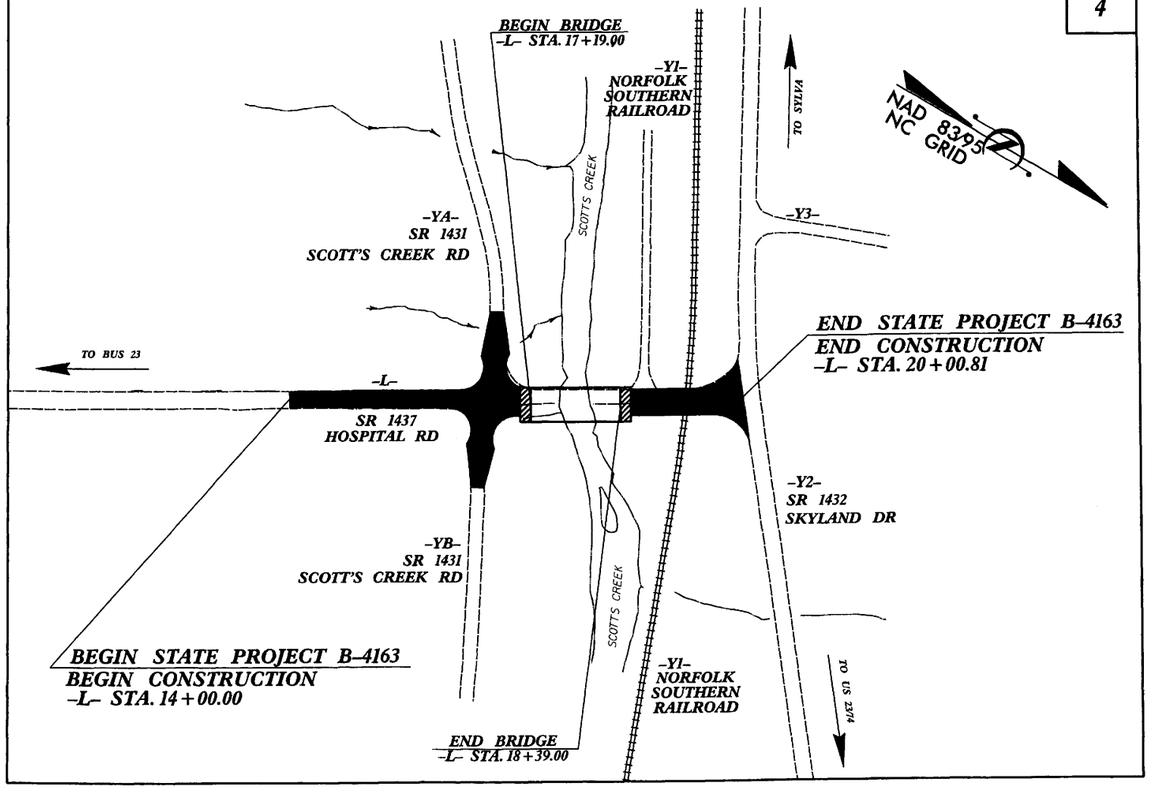
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-4163	1	

STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION
33511.1.1	BRZ-1437(3)	PE
33511.2.1	BRZ-1437(3)	R/W & UTIL.

LOCATION: BRIDGE NO. 123 OVER SCOTTS CREEK ON SR 1437 (HOSPITAL RD.)

TYPE OF WORK: GRADING, PAVING, DRAINAGE & STRUCTURE

4



PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

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

THIS PROJECT IS WITHIN THE MUNICIPAL BOUNDARY OF SYLVA
CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD II.

GRAPHIC SCALES

PLANS: 50 25 0 50 100

PROFILE (HORIZONTAL): 50 25 0 50 100

PROFILE (VERTICAL): 10 5 0 10 20

DESIGN DATA

ADT 2009	=	2830
ADT 2029	=	4045
DHV	=	10 %
D	=	60 %
T	=	5 % *
V	=	35 MPH

* TTST 2 DUAL 3

CLASS. – URBAN LOCAL

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT B-4163	=	0.091 MILES
LENGTH STRUCTURE TIP PROJECT B-4163	=	0.023 MILES
TOTAL LENGTH TIP PROJECT B-4163	=	0.114 MILES

Prepared for the North Carolina Department Of Transportation In the Office of:

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

2006 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE: APRIL 1, 2008

LETTING DATE: APRIL 21, 2009

EDWARD G. WETHERILL, PE
PROJECT ENGINEER

BOB A. MAY, PE
PROJECT DESIGN ENGINEER

NCDOT CONTACT DOUG B. TAYLOR, PE
ENGINEERING COORDINATION SECTION ENGINEER

HYDRAULICS ENGINEER

SIGNATURE: *P.E.*

ROADWAY DESIGN ENGINEER

SIGNATURE: *P.E.*

DIVISION OF HIGHWAYS STATE OF NORTH CAROLINA

P.E.
STATE HIGHWAY DESIGN ENGINEER

7:32:51 AM
P:\B-4163\Roadway\Proj\B4163_Rdy_tsh.dgn
6/11/2008

3/15/0

PROJECT REFERENCE NO.	SHEET NO.
B-4163	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 Endangered Animal Boundary — EAB
- Existing Endangered Plant Boundary — EPB

BUILDINGS AND OTHER CULTURE:

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

HYDROLOGY:

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

RAILROADS:

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

RIGHT OF WAY:

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

ROADS AND RELATED FEATURES:

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

VEGETATION:

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

EXISTING STRUCTURES:

MAJOR:

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

MINOR:

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

UTILITIES:

POWER:

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

TELEPHONE:

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

WATER:

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

TV:

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

GAS:

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

SANITARY SEWER:

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

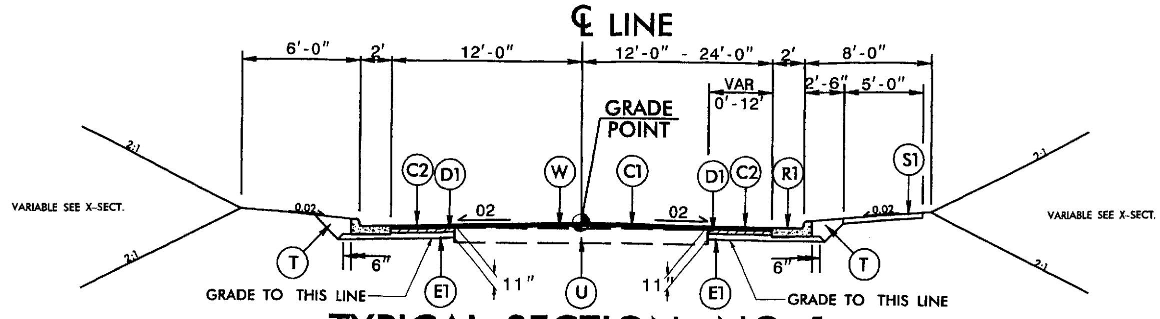
MISCELLANEOUS:

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

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-4163	2
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER

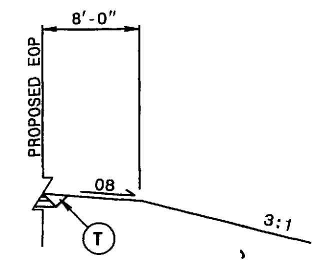
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION



TYPICAL SECTION NO. 1

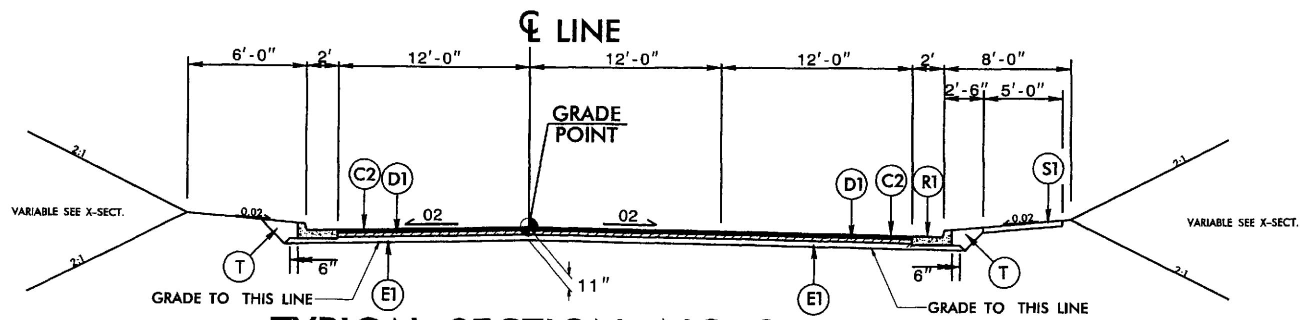
NOTE: TRANSITION FROM EXIST. PAVEMENT TO TYPICAL SECTION NO. 1
-L- STA. 14+50.00 TO -L- STA. 15+00.00

USE TYPICAL SECTION NO. 1
-L- STA. 15+00.00 TO 17+00.00
-L- STA. 18+89.00 TO 19+20.50
-L- STA. 19+38.50 TO 20+00.81



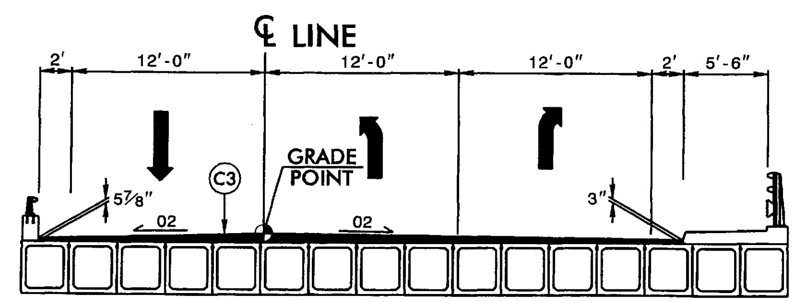
TYPICAL SECTION NO. 1A

USE TYPICAL NO. 1A IN CONJUCTION WITH TYPICAL NOS. 1 & 2
-L- STA. 19+14.51 TO -L- STA.20+00.81 LT.
-L- STA. 19+10.58 TO -L- STA. 20+00.81 RT.



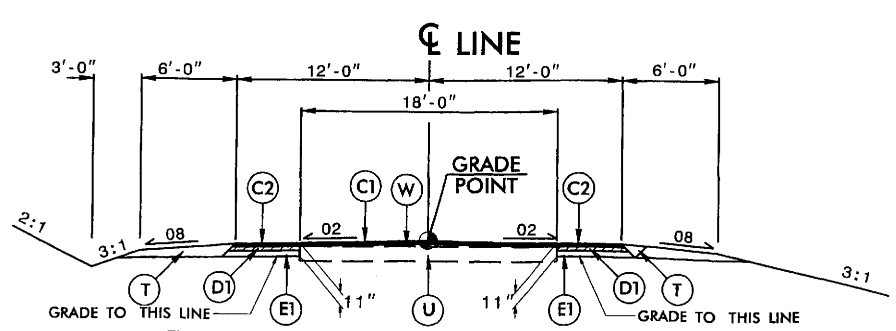
TYPICAL SECTION NO. 2

USE TYPICAL SECTION NO. 2
-L- STA. 17+00.00 TO 17+19.00 (BEGIN BRIDGE)
-L- STA. 18+39.00 (END BRIDGE) TO 18+89.00
-L- STA. 19+20.50 TO 19+38.50



TYPICAL SECTION NO. 3

USE TYPICAL SECTION NO. 3
-L- STA. 17+19.00 TO 18+39.00

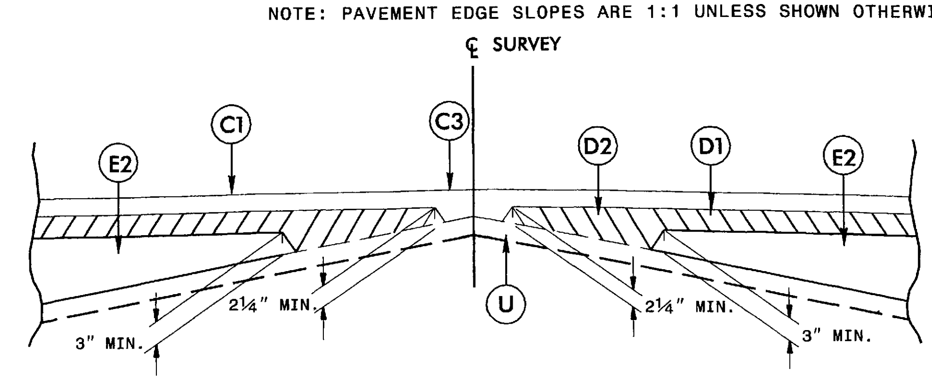


TYPICAL SECTION NO. 4

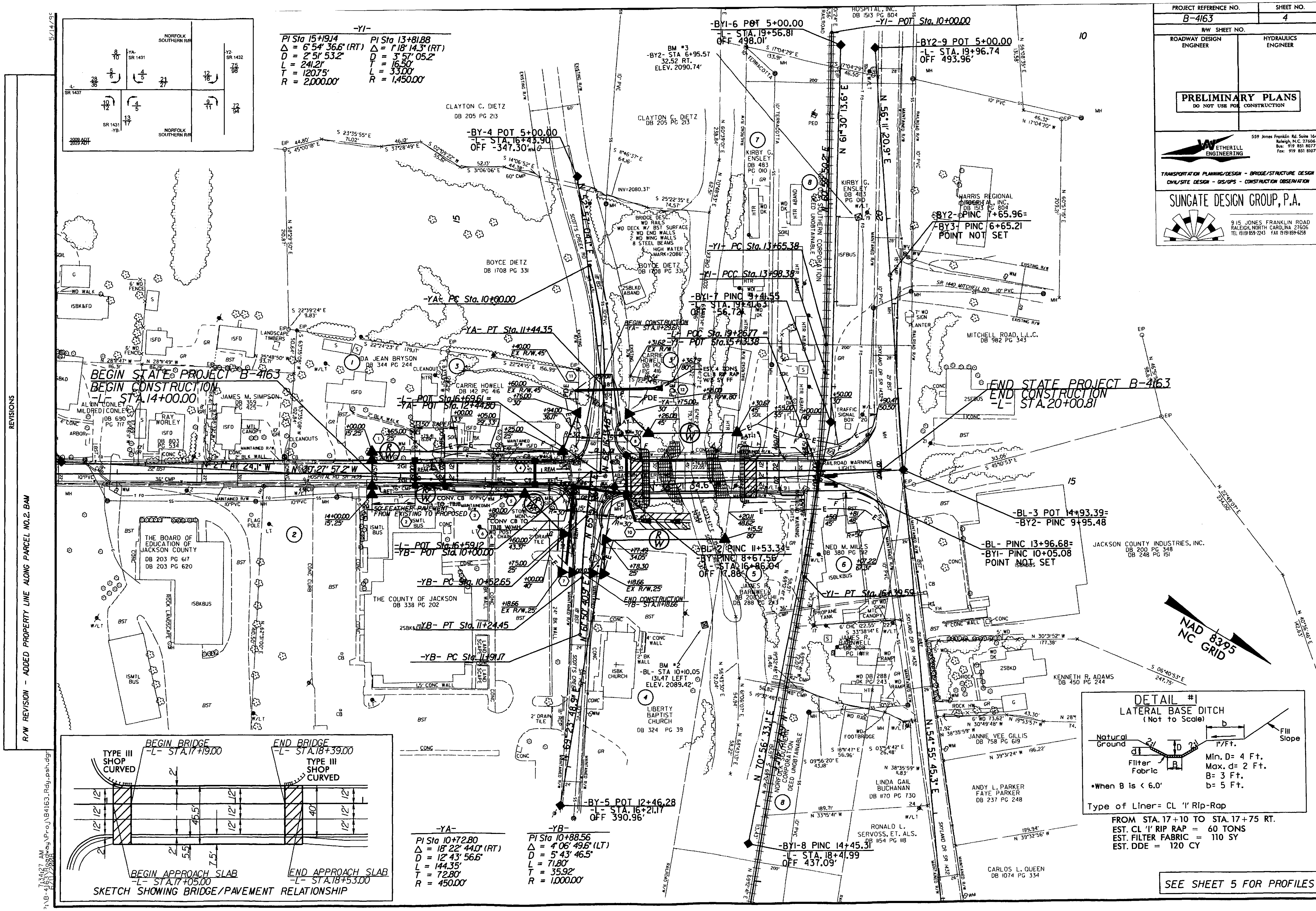
USE TYPICAL SECTION NO. 4
-YA- STA. 13+66.79 TO 14+69.96
-YB- STA. 10+24.15 TO 11+18.66

PAVEMENT SCHEDULE	
C1	PROP. APPROX. 1½" ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 165 LBS. PER SQ. YD.
C2	PROP. APPROX. 3" ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 165 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 TO EXCEED 1½" IN DEPTH.
D1	PROP. APPROX. 4" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0B, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.
D2	PROP. VAR. DEPTH ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0B, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1" DEPTH, TO BE PLACED IN LAYERS NOT LESS THAN 2¼" IN DEPTH OR GREATER THAN 4" 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. 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.
R1	2'-6" CONCRETE CURB AND GUTTER.
S1	4" CONCRETE SIDEWALK.
T	EARTH MATERIAL.
U	EXISTING PAVEMENT.
W	VARIABLE DEPTH ASPHALT PAVEMENT (SEE STANDARD WEDGING DETAIL)

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



Detail Showing Method of Wedging


PROJECT REFERENCE NO. B-4163
SHEET NO. 4
R/W SHEET NO.
ROADWAY DESIGN ENGINEER
HYDRAULICS ENGINEER
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION
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SUNGATE DESIGN GROUP, P.A.
915 JONES FRANKLIN ROAD RALEIGH, NORTH CAROLINA 27606
REVISIONS
R/W REVISION - ADDED PROPERTY LINE ALONG PARCEL NO. 2 BAM
-Y1-
PI Sta 15+19.14
Δ = 6°54' 36.6" (RT)
D = 2°51' 53.2"
L = 241.21'
T = 120.75'
R = 2,000.00'
PI Sta 13+81.88
Δ = 1°18' 14.3" (RT)
D = 3°57' 05.2"
T = 16.50'
L = 33.00'
R = 1,450.00'
BEGIN STATE PROJECT B-4163
BEGIN CONSTRUCTION
-L- STA. 14+00.00
END STATE PROJECT B-4163
END CONSTRUCTION
-L- STA. 20+00.81
NAD 83/95 NC GRID
DETAIL #1
LATERAL BASE DITCH
(Not to Scale)
Min. D= 4 Ft.
Max. d= 2 Ft.
B= 3 Ft.
b= 5 Ft.
•When B is < 6.0'
Type of Liner= CL 'I' Rip-Rap
FROM STA. 17+10 TO STA. 17+75 RT.
EST. CL 'I' RIP RAP = 60 TONS
EST. FILTER FABRIC = 110 SY
EST. DDE = 120 CY
SEE SHEET 5 FOR PROFILES
BEGIN BRIDGE -L- STA. 17+19.00
END BRIDGE -L- STA. 18+39.00
TYPE III SHOP CURVED
BEGIN APPROACH SLAB -L- STA. 17+05.00
END APPROACH SLAB -L- STA. 18+53.00
SKETCH SHOWING BRIDGE/PAVEMENT RELATIONSHIP
-YA-
PI Sta 10+72.80
Δ = 18°22' 44.0" (RT)
D = 12°43' 56.6"
L = 144.35'
T = 72.80'
R = 450.00'
-YB-
PI Sta 10+88.56
Δ = 4°06' 49.6" (LT)
D = 5°43' 46.5"
L = 71.80'
T = 35.92'
R = 1,000.00'
LIBERTY BAPTIST CHURCH
THE BOARD OF EDUCATION OF JACKSON COUNTY
THE COUNTY OF JACKSON
JACKSON COUNTY INDUSTRIES, INC.
NORFOLK SOUTHERN CORPORATION DEED UNOBTAINABLE

PROJECT REFERENCE NO.	SHEET NO.
B-4163	5

ROADWAY DESIGN ENGINEER

HYDRAULICS ENGINEER

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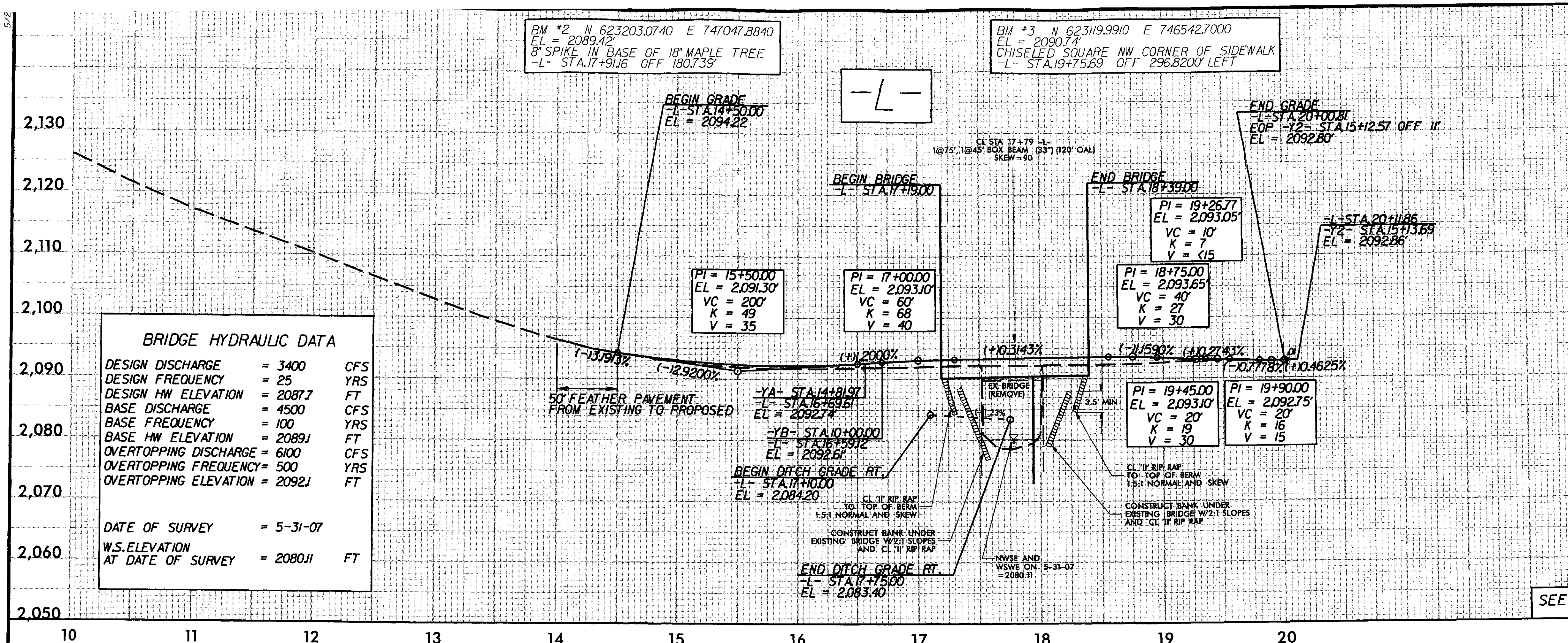
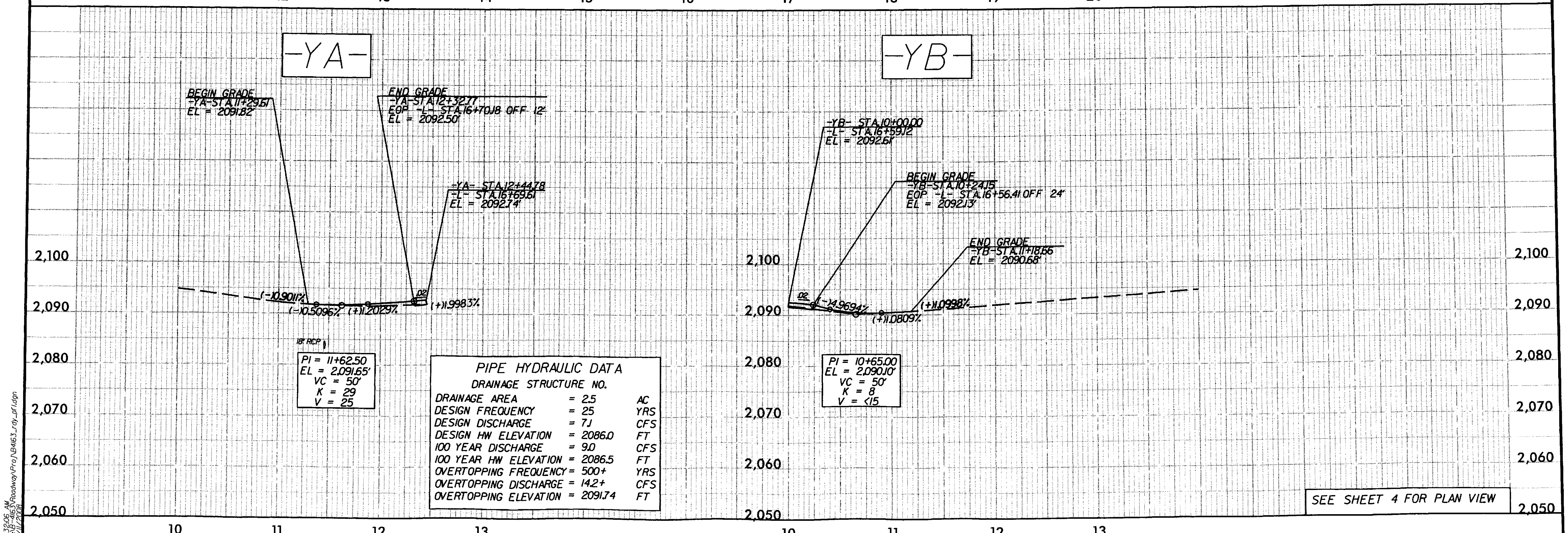


BM #2 N 623203.0740 E 747047.8840
EL = 2089.42'
8" SPIKE IN BASE OF 18" MAPLE TREE
-L- STA.17+91.16 OFF 180.739'
BM #3 N 623119.9910 E 746542.7000
EL = 2090.74'
CHISELED SQUARE NW CORNER OF SIDEWALK
-L- STA.19+75.69 OFF 296.8200' LEFT
-L-
BEGIN GRADE
-L-STA.14+50.00
EL = 2094.22
CL STA 17+79 -L-
1@75', 1@45' BOX BEAM (33") (120' OAL)
SKEW=90
BEGIN BRIDGE
-L- STA.17+19.00
END BRIDGE
-L- STA.18+39.00
END GRADE
-L-STA.20+00.81
EOP -Y2- STA.15+12.57 OFF 11'
EL = 2092.80'
PI = 19+26.77
EL = 2,093.05'
VC = 10'
K = 7
V = <15
-L-STA.20+11.86
-Y2- STA.15+13.69
EL = 2092.86'
PI = 15+50.00
EL = 2,091.30'
VC = 200'
K = 49
V = 35
PI = 17+00.00
EL = 2,093.10'
VC = 60'
K = 68
V = 40
PI = 18+75.00
EL = 2,093.65'
VC = 40'
K = 27
V = 30
(-)3.1913%
(-)2.9200%
(+)1.2000%
(+)0.3143%
(-)1.1590%
(+)0.2743%
(-)0.7778%
(+)0.4625%
50' FEATHER PAVEMENT
FROM EXISTING TO PROPOSED
-YA- STA.14+81.97
-L- STA.16+69.61
EL = 2092.74'
-YB- STA.10+00.00
-L- STA.16+59.12
EL = 2092.61'
BEGIN DITCH GRADE RT.
-L- STA.17+10.00
EL = 2084.20
EX. BRIDGE (REMOVE)
3.5' MIN
(-)1.23%
PI = 19+45.00
EL = 2,093.10'
VC = 20'
K = 19
V = 30
PI = 19+90.00
EL = 2,092.75'
VC = 20'
K = 16
V = 15
CL 'II' RIP RAP
TO TOP OF BERM
1.5:1 NORMAL AND SKEW
CONSTRUCT BANK UNDER
EXISTING BRIDGE W/2:1 SLOPES
AND CL 'II' RIP RAP
NWSE AND
WSWE ON 5-31-07
=2080.11
END DITCH GRADE RT.
-L- STA.17+75.00
EL = 2,083.40
2,130
2,120
2,110
2,100
2,090
2,080
2,070
2,060
2,050
10
11
12
13
14
15
16
17
18
19
20

BRIDGE HYDRAULIC DATA

DESIGN DISCHARGE	= 3400	CFS
DESIGN FREQUENCY	= 25	YRS
DESIGN HW ELEVATION	= 2087.7	FT
BASE DISCHARGE	= 4500	CFS
BASE FREQUENCY	= 100	YRS
BASE HW ELEVATION	= 2089.1	FT
OVERTOPPING DISCHARGE	= 6100	CFS
OVERTOPPING FREQUENCY	= 500	YRS
OVERTOPPING ELEVATION	= 2092.1	FT
DATE OF SURVEY	= 5-31-07	
W.S.ELEVATION AT DATE OF SURVEY	= 2080.11	FT

SEE SHEET 4 FOR PLAN VIEW



-YA-
BEGIN GRADE
-YA-STA.11+29.61
EL = 2091.82'
END GRADE
-YA-STA.12+32.77
EOP -L- STA.16+70.18 OFF 12'
EL = 2092.50'
-YA- STA.12+44.78
-L- STA.16+69.61
EL = 2092.74'
(-)0.9011%
(-)0.5096%
(+)1.2029%
(+)1.9983%
02
18" RCP
PI = 11+62.50
EL = 2,091.65'
VC = 50'
K = 29
V = 25
-YB-
-YB- STA.10+00.00
-L- STA.16+59.12
EL = 2092.61'
BEGIN GRADE
-YB-STA.10+24.15
EOP -L- STA.16+56.41 OFF 24'
EL = 2092.13'
END GRADE
-YB-STA.11+18.66
EL = 2090.68'
02
(-)4.9694%
(+)1.0809%
(+)1.0998%
PI = 10+65.00
EL = 2,090.10'
VC = 50'
K = 8
V = <15
2,100
2,090
2,080
2,070
2,060
2,050
10
11
12
13

PIPE HYDRAULIC DATA
DRAINAGE STRUCTURE NO.

DRAINAGE AREA	= 2.5	AC
DESIGN FREQUENCY	= 25	YRS
DESIGN DISCHARGE	= 7.1	CFS
DESIGN HW ELEVATION	= 2086.0	FT
100 YEAR DISCHARGE	= 9.0	CFS
100 YEAR HW ELEVATION	= 2086.5	FT
OVERTOPPING FREQUENCY	= 500+	YRS
OVERTOPPING DISCHARGE	= 14.2+	CFS
OVERTOPPING ELEVATION	= 2091.74	FT

SEE SHEET 4 FOR PLAN VIEW

8/23

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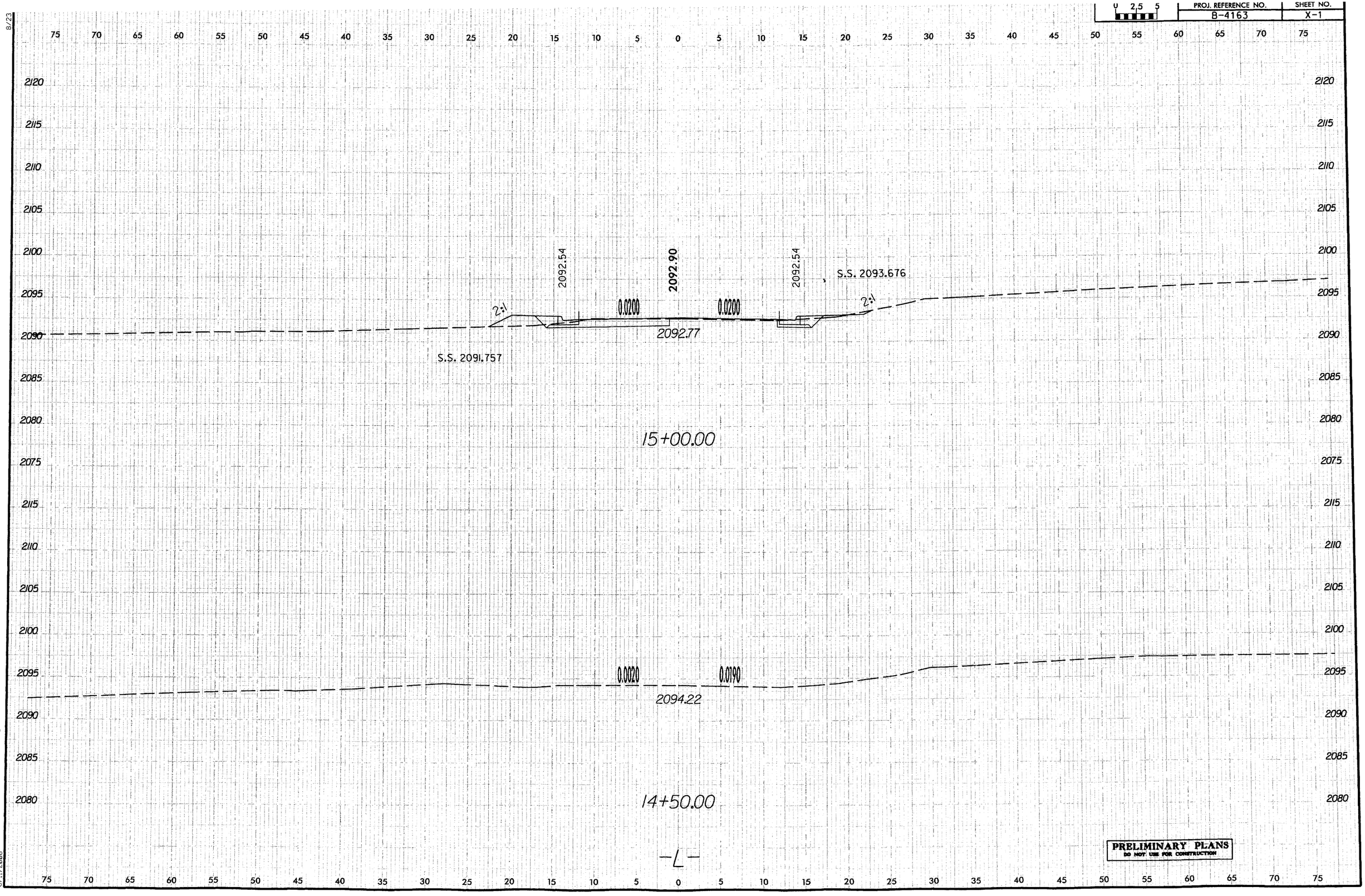
	B-4163	X-1



PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

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6/11/2008

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8/23

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2115 2110 2105 2100 2095 2090 2085 2080 2075

2091.63 2091.99 2091.63

0.0200 0.0200

2:1 2:1

2091.70

S.S. 2089.949

S.S. 2091.958

16+00.00

2115 2110 2105 2100 2095 2090 2085 2080 2075

2091.79 2092.16 2091.79

0.0200 0.0200

2:1 2:1

2091.93

S.S. 2091.550

S.S. 2092.297

15+50.00

-L-

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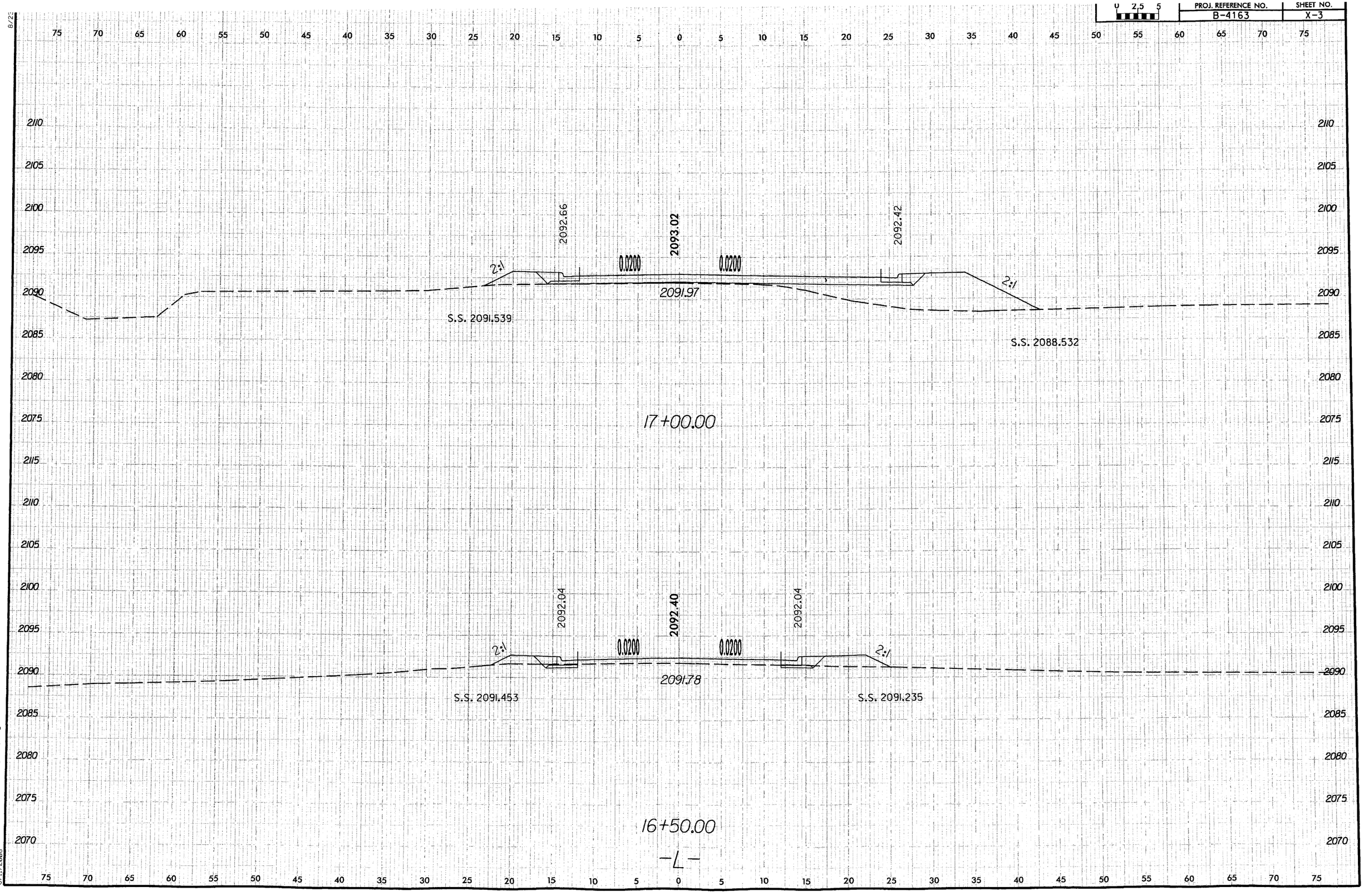

8/23

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2125
2120
2115
2110
2105
2100
2095
2090
2085
2080
2075
2070
2065

2093.24

2092.26

2:1

2:1

2083.708

17+50.00

-L-

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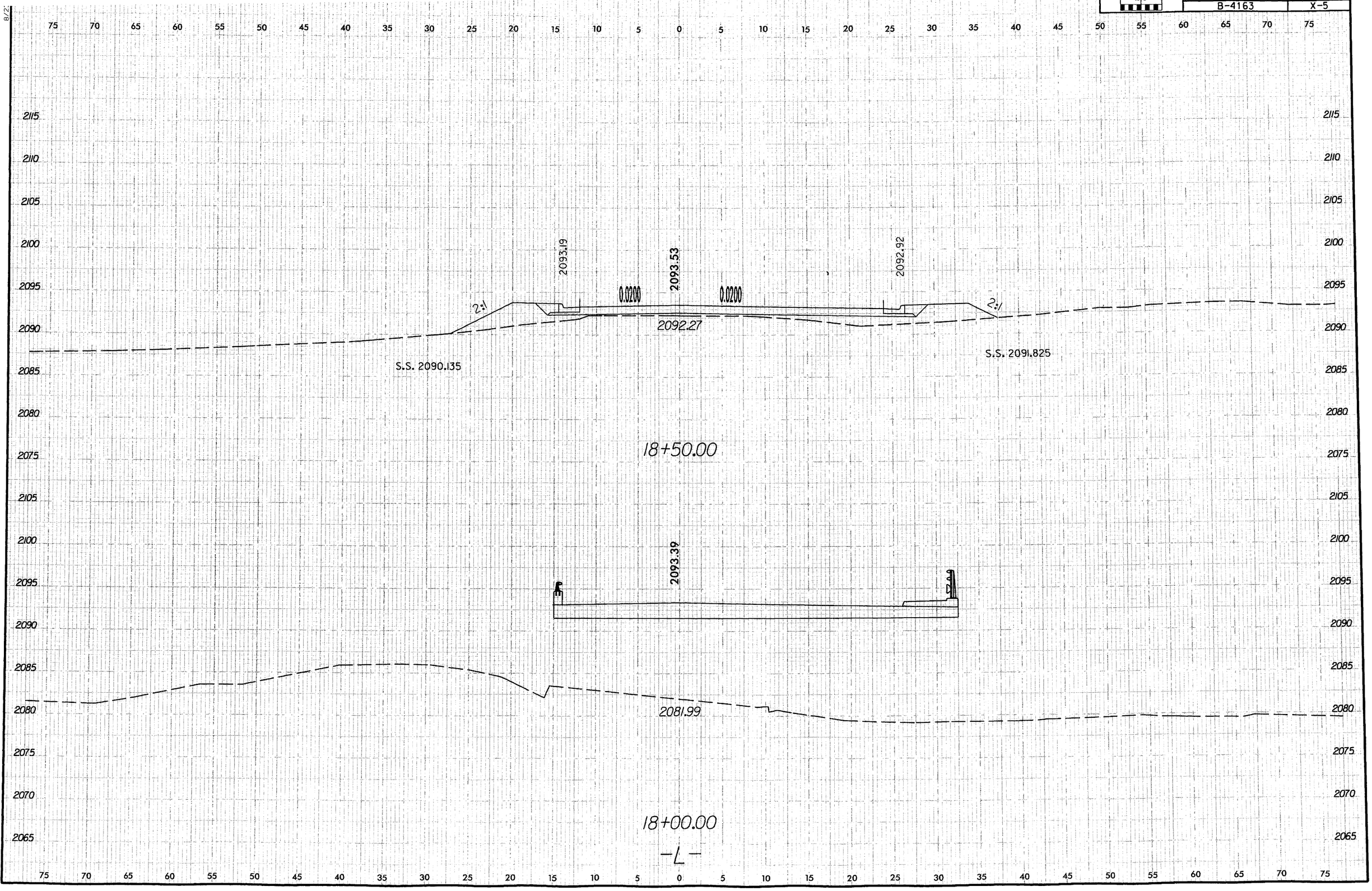
6/11/2008



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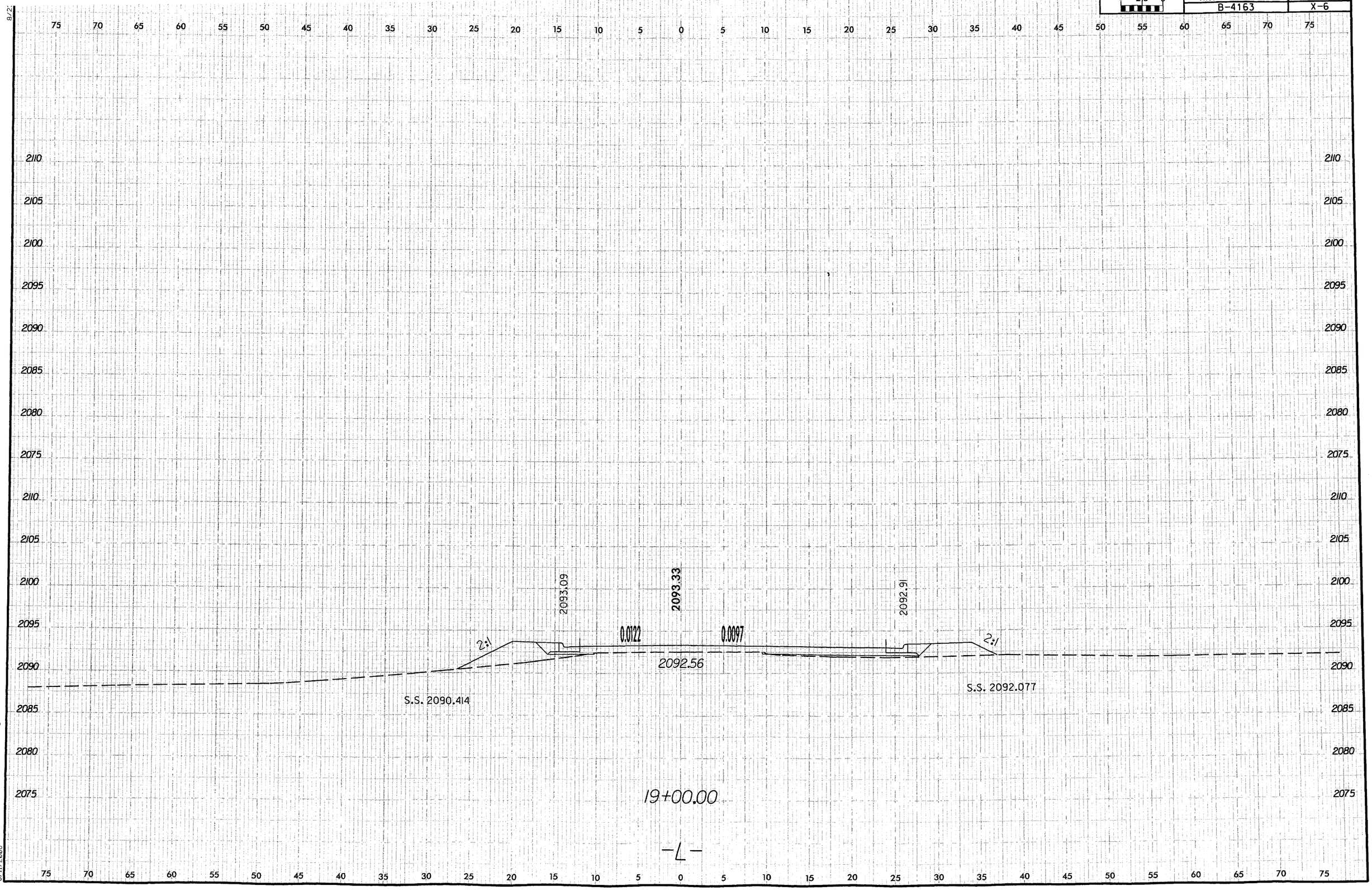

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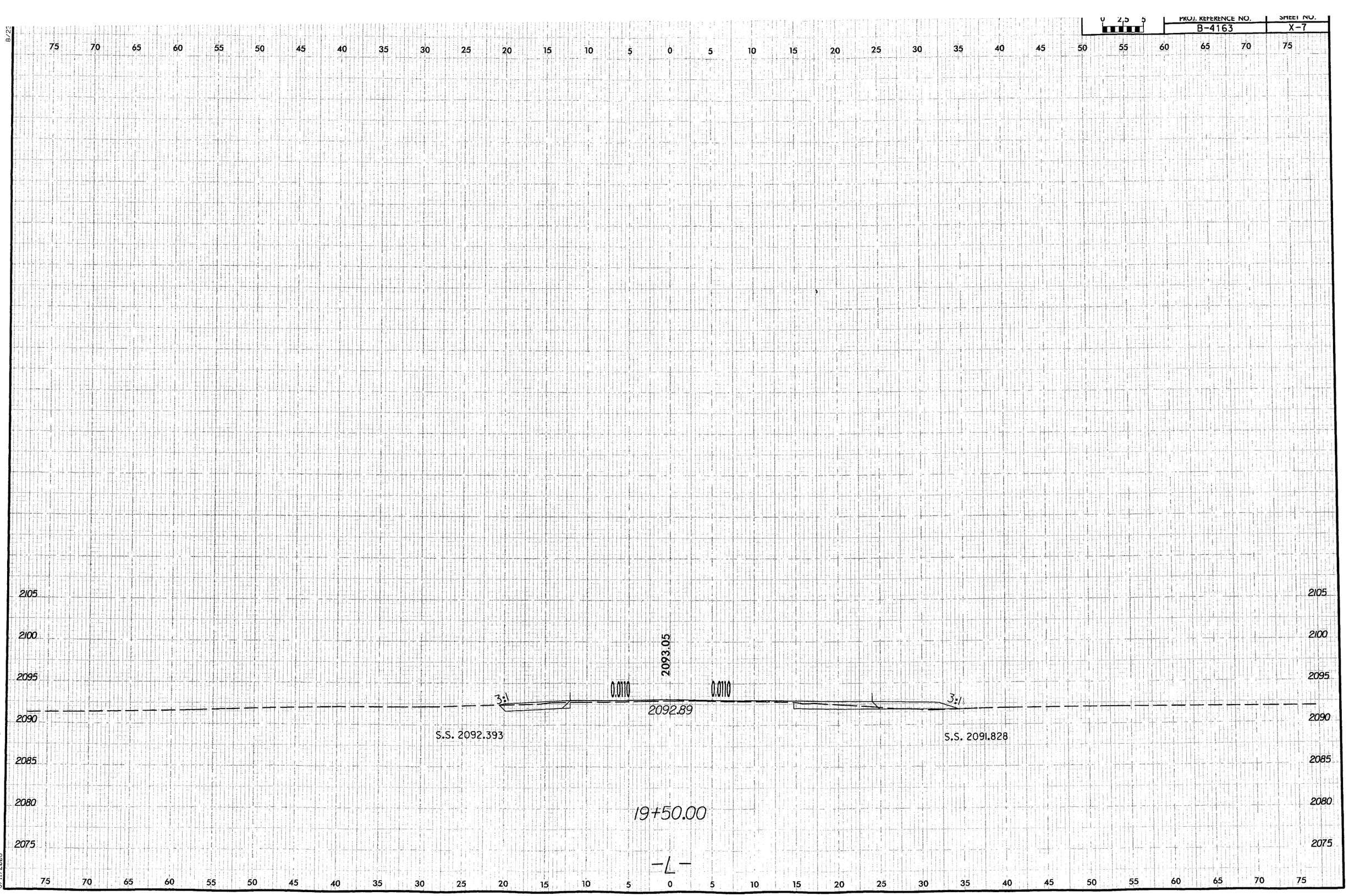

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8/23

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2100
2095
2090
2085
2080

S.S. 2091.140
3:1
0.0130
2092
0.0140
3:1
2091.60
12+00.00

S.S. 2091.381
3:1
0.0158
2091.74
0.0395
2091.69
3:1
S.S. 2085.501
11+50.00

2092.24
11+00.00
-YA-

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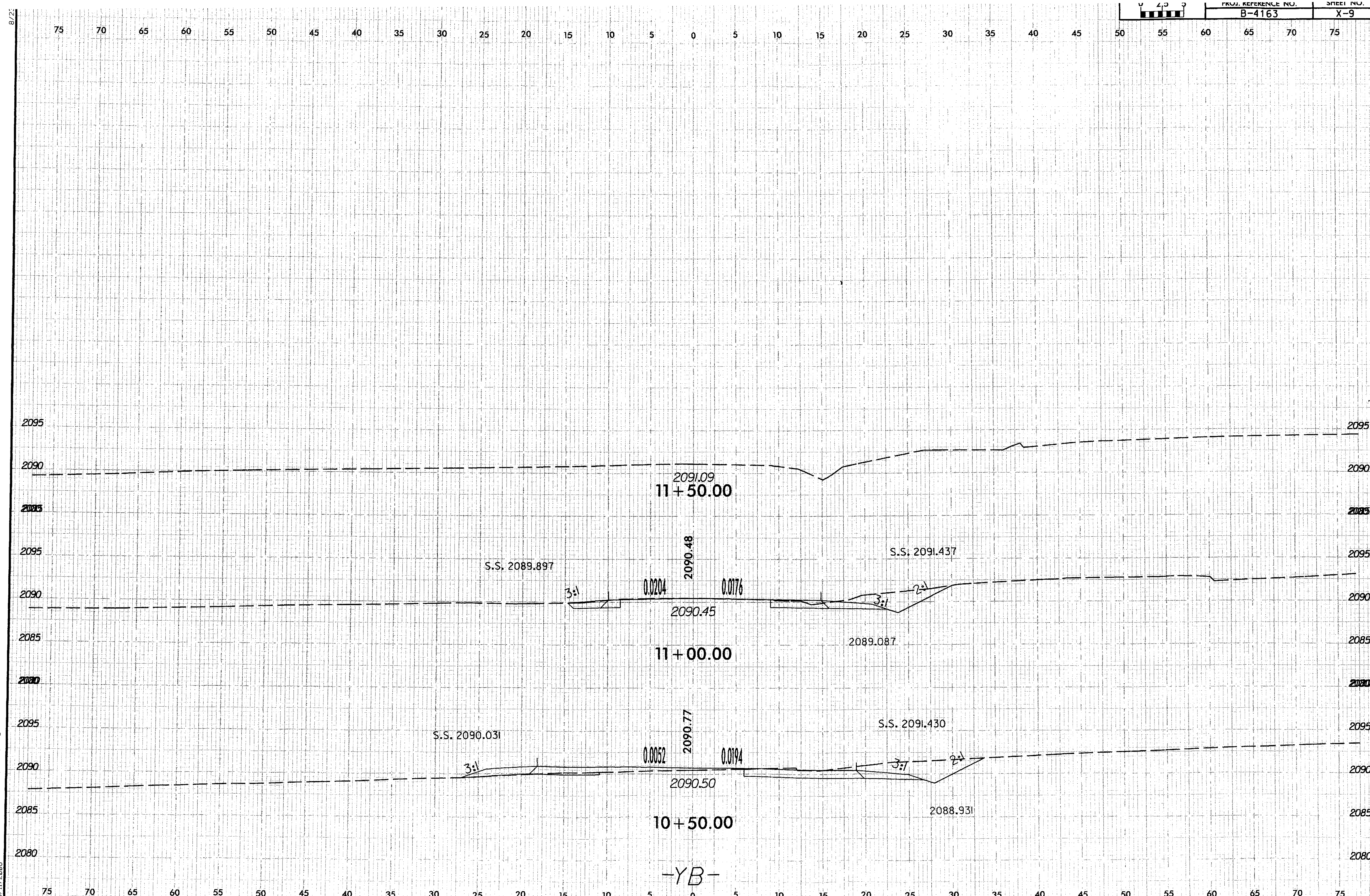

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6/17/2008

JACKSON COUNTY
BRIDGE NO. 123 ON SR 1437 (HOSPITAL ROAD)
Over Scott Creek
Federal-Aid Project BRZ-1437 (3)
WBS NO. 33511.1.1
State Project 8.2962001
TIP Project B-4163

CATEGORICAL EXCLUSION

UNITED STATES DEPARTMENT OF TRANSPORTATION

FEDERAL HIGHWAY ADMINISTRATION

AND

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

DIVISION OF HIGHWAYS

3-7-07
DATE

for Gregory J. Thorpe, PhD
Environmental Management Director, PDEA

3-7-07
DATE

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

Jackson County

Bridge No. 123 on SR 1437 (Hospital Road)

over Scott Creek

Federal-Aid Project BRZ-1437 (3)

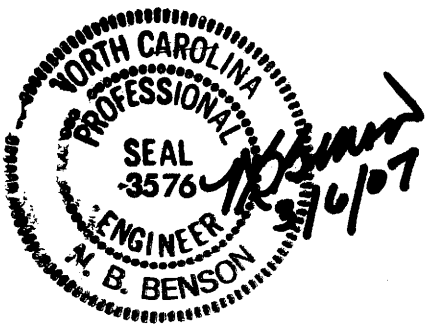
WBS No. 33511.1.1

State Project 8.2962001

T.I.P. Project B-4163

CATEGORICAL EXCLUSION

Document Prepared
by
Wetherill Engineering, Inc.



3-6-2007
DATE

Nathan B. Benson, PE

In coordination with
North Carolina Department of Transportation
Project Development and Environmental Analysis Branch

3/06/07
DATE

Christy M. Wright, PE
Project Planning Engineer
Bridge Project Development Unit

3-06-07
DATE

John L. Williams, PE
Project Engineer
Bridge Project Development Unit

PROJECT COMMITMENTS

Jackson County
Bridge No. 123 on SR 1437 (Hospital Road)
over Scott Creek
Federal-Aid Project BRZ-1437 (3)
WBS No. 33511.1.1
State Project 8.2962001
T.I.P. Project B-4163

COMMITMENTS DEVELOPED THROUGH PROJECT DEVELOPMENT AND DESIGN

Roadway Design Unit, Roadside Environmental Unit, Division 14 Construction Unit
Since NCDWQ has classified Scott Creek as trout waters (Tr), in-stream construction is prohibited from January 1 to April 15 to avoid impacts on trout reproduction. The NCWRC will be given the opportunity to review the project for additional measures to protect trout and trout habitat prior to the issuance of the Section 404 permit.

Resident Engineer's Office / Division 14 – Offsite Detour
In order to allow time to prepare the NCDOT Resident Engineer will notify 30 days prior to road closure: 1) the Jackson County School Officials (Telephone no. 828-586-2311, extension 222), 2) the Jackson County Emergency Management Service (telephone no. 828-586-7592), and 3) WestCare Health System (828-586-7790).

Project Services Unit / Contract Time Engineer
Consideration will be given to minimizing the road closure time due to the proximity of Harris Regional Hospital.

Structure Design / TVA Permit
The proposed project is located in the Tennessee Valley Authority's (TVA) Land Management District. If the bridge is replaced along the existing alignment, as proposed, approval under Section 26a of the TVA Act will not be needed. However, TVA will review the final bridge design plans to confirm this determination.

Roadside Environmental Unit, Division 14 Construction , Structure Design Unit
Bridge Demolition: Best Management Practices for Construction and Maintenance Activities will be implemented. The superstructure consists of a timber floor on steel I-Beams. The substructure consists of timber caps, timber posts and sills. There is only a slight potential for these components to be dropped into Scott Creek. The existing bridge is a spanning bridge and it will be replaced with a spanning bridge. It is unlikely that any work will occur in the stream. However if it is determined construction work within the stream is required, the in-water work moratorium for trout will be adhered to.

Jackson County
Bridge No. 123 on SR 1437 (Hospital Road)
Over Scott Creek
Federal-Aid Project BRZ-1437 (3)
WBS NO. 33511.1.1
State Project 8.2962001
TIP Project B-4163

INTRODUCTION: The replacement of Bridge No. 123 is included in the 2007-2013 North Carolina Department of Transportation (NCDOT) Transportation Improvement Program (TIP) and on the Federal-Aid Bridge Replacement Program. The location is shown in Figure 1. No substantial environmental impacts are anticipated. The project is classified as a Federal "Categorical Exclusion".

I. PURPOSE AND NEED

Bridge No. 123 was built in 1960, and is classified as structurally deficient (structural evaluation rating: 2) due to decay and deterioration. According to the Bridge Maintenance Unit at NCDOT, at the time the bridge was inspected on November 18, 2002, the sufficiency rating was 37.4 out of a possible 100. The bridge is posted with a weight limit of 14 tons. The bridge is also signed as a narrow bridge (19.1 feet clear roadway width with a deck geometry rating of 2). The replacement of this inadequate structure will allow the restrictive posted weight limit to be removed. The replacement will result in a wider, safer bridge and more efficient traffic operations.

II. EXISTING CONDITIONS

SR 1437 (Hospital Road) is a two-lane highway. Hospital Road extends from US 23 Business to Skyland Drive (SR 1432/Old US 23). Hospital Road is located within the corporate limits of Sylva. Roadside development includes Harris Regional Hospital, residential development, a mobile home park and the Liberty Baptist Church. Several industries are located on intersecting roads, which use SR 1437. Hospital Road provides the major access from Skyland Drive north of Bridge No. 123 to the hospital and other county services buildings located near the bridge.

The speed limit on SR 1437 is posted 25 mph.

SR 1437 is classified as an urban local in the Statewide Classification System. This route is not a designated bicycle route.

The horizontal alignment of Hospital Road (SR 1437) in the immediate vicinity of Bridge 123 consists of a tangent alignment. Approximately 125 feet north of the bridge, Hospital Road crosses the Norfolk Southern Railroad. Hospital Road tees into SR 1432 and ends approximately 75 feet north of the at-grade railroad crossing. The recently installed crossing signals and gates at this railroad crossing will be reset by the proposed project. Estimated costs are included in this project for their removal and placement. The intersection of Hospital Road and SR 1432 (Skyland Drive) is stop sign controlled with the stop condition on Hospital Road. SR 1431 intersects Hospital Road approximately 100 feet south of the bridge. The pavement width of the approach roadway on SR 1437 is 18 feet and the grass shoulders are approximately 2 feet wide. The right of way width is estimated to be 50 feet, symmetrical about the centerline of the existing roadway. Bridge No. 123 was completed in 1960. The superstructure consists of a timber floor on steel I-Beams. The substructure on Bridge No. 123 consists of timber caps, timber posts and sills. Bridge No. 123 is 51

feet long and 19.1 feet wide (clear roadway width). This width provides for two 9-foot travel lanes and about 0.5-foot lateral clearances to the bridge rails. The bridge is signed as a narrow bridge. It crosses Scott Creek at an approximate 90-degree angle. Photographs of the existing bridge are included on Figure 4A and 4B.

The Average Annual Daily Traffic (AADT) volume for the year 2007 is estimated to be 2700 vehicles per day (VPD) and is projected to increase to 3800 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.

No accidents were recorded in the vicinity of the bridge during the last three years.

The following utilities are located in the vicinity of the bridge:

- Overhead telephone/cable and power lines run parallel on the upstream (east) side of the bridge and cross over to the west side just north of the bridge.
- An 8-inch water line is attached to the bridge girders on the upstream (underneath) side of the bridge.
- An 8-inch utility line runs parallel to the bridge on the downstream (west) side of the bridge.

III. ALTERNATIVES

A. Project Description

Bridge No. 123 will be replaced with a new structure at the existing location. The low level steel elevation of the new structure will match the low steel elevation of the existing structure. The permanent structure will be approximately 75 feet in length and 45.5 feet wide (rail to rail). The typical section on the bridge will include one 5.5-foot wide sidewalk (located on the upstream or east side of the bridge) 2-foot gutters, a 12-foot turn lane and two 12-foot travel lanes.

The proposed bridge width conforms to the NCDOT's bridge policy for 3800 VPD traffic volumes and a 35 MPH design speed. A 12-foot turn lane will be provided extending from Skyland Drive across the proposed structure.

B. Reasonable and Feasible Alternatives

Two alternatives were studied for B-4163. A cost comparison for the alternatives is provided in Item V, Estimated Cost. Two residential structures will be relocated by each alternative. A relocation report is included in the Appendix. The two alternatives are:

Alternate 1 (Figure 2)

Alternate 1 would replace the existing bridge with a permanent bridge at its existing location. During the construction period, traffic will be routed to a temporary on-site detour. The temporary on-site detour would be located on the upstream side (east side) of the existing bridge and would include an 85-foot length bridge. Upon completion of the permanent bridge the temporary detour bridge and its approaches would be removed. Alternate 1 would include approximately 435 feet of approach work (175 feet from the end of the bridge north and 260 feet from the south end of the bridge). The typical section for the permanent roadway approaches would include a 28-foot curb and gutter section. In addition, a 12-foot turn lane would be included from Skyland Drive to the south end of the bridge. A traffic study was performed at the intersection of Skyland Drive and Hospital Road. It was

determined that, primarily due to proximity of the railroad crossing between Skyland Drive and the bridge, that there was insufficient storage capacity at the intersection.

Alternate 2(Preferred) (Figure 3)

The typical section for the roadway approaches would include a 28-foot curb and gutter section. In addition, a 12-foot turn lane would be included from Skyland Drive to the south end of the bridge (as described previously in Alternate 1). Alternate 2 would replace the bridge with a bridge at its existing location. Alternate 2 would include approximately 435 feet of approach work (175 feet from the end of the bridge north and 260 feet from the south end of the bridge). Minimization of the time of the road closure is proposed because of the proximity to the hospital. During the construction period, traffic will be routed to a temporary off-site detour. The off-site detour route which would be signed would consist of SR 1432 (Skyland Drive), Business 23 and SR 1437 (Hospital Road). This detour route is approximately 2.3 miles in length and is shown on Figure 1. A shorter detour route would follow SR 1431 to its intersection with SR 1432. This route would be unacceptable for a detour route due to the poor sight distance at the intersection of SR 1432 and SR 1431. The poor sight distance is due to a narrow bridge on SR 1431 located near its intersection with SR 1432 and the sharp skew angle between SR 1431 and SR 1432. Improvements will be provided by Division 14 at this intersection prior to closure of Bridge No. 123. This will include installing a no right turn ordinance from SR 1431 to SR 1432 and include other measures to improve sight distance.

NCDOT Guidelines for Evaluation of Off-site Detours for Bridge Replacement Projects considers multiple project variables beginning with the additional time traveled by the average road user resulting from the off-site detour. Due to the proximity of bridge to the County Hospital, it is critical that a reasonable length off-site detour route is provided. Affected traffic is estimated to be 1000 vehicles per day or less. This effected traffic is based upon the assumption that not all of the traffic crossing the bridge would be required to travel the entire detour route of 2.3 miles. Detoured traffic can be reasonably detoured without any major problems by using SR 1432 (Skyland Drive), Business 23 and SR 1437 (Hospital Road). The detour length for the average road user would result in approximately 4-5 minutes delay. According to the Off-site Detour Guidelines, the detour is acceptable from a traffic operational standpoint.

The Jackson County School Transportation Director has been contacted regarding the bridge replacement. Information received from the Director stated that eight school bus crossings occur on the bridge and that the buses can be re-routed to accommodate the proposed replacement (letter attached in the Appendix).

Emergency Management and C.J. Harris Community Hospital were contacted by letters. They responded that after consideration and discussions with WestCare EMS that the temporary closure of Bridge No. 123 would not pose a potential problem for the hospital. EMS and the hospital (WestCare EMS) officials were also contacted by telephone and both agencies responded that the off-site detour would not pose a problem for the hospital. It was requested that they be informed of the timeline for construction so that they can prepare accordingly.

B. Alternatives Eliminated from Further Study

The following alternatives were eliminated from further study. Alternatives that would locate the permanent bridge on new alignment on either side of the bridge are not practical. Either alternative would worsen the horizontal alignment and require sharp curvature on their permanent alignments. Also considered was an alternative that would replace the

permanent bridge at the existing location and would provide a temporary on-site detour on the downstream (west) side of the existing bridge. This alternative offered no advantages over the other alternatives. For the above reasons, these alternatives were eliminated from further study.

In addition, a "do-nothing" alternative, and a rehabilitation alternative were considered for the improvement of Bridge No. 123. Rehabilitation of this existing narrow and structurally 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" alternative is not feasible. This will require the closing of the road as the existing bridges deteriorates to a point where it is unsafe at any posted weight limits.

C. Preferred Alternative

The preferred alternative (Alternate 2) consists of replacing the existing bridge with a new bridge over Scott Creek on the existing alignment (see Figure 3). The utility line attached to the girder will be relocated. The low level steel elevation of the new structure will match the low steel elevation of the existing structure. The typical section for the approaches to the bridge will include a 28-foot curb and gutter section with 6-8 feet berms behind the curbs. This typical section would include two 12 foot wide travel lanes. In addition, a 12-foot wide center turn lane would be included from Skyland Drive to the south end of the bridge. A traffic study was performed for the intersection of Skyland Drive and Hospital Road. Due to the proximity of the railroad crossing to Skyland Drive and the bridge, there is insufficient storage capacity at the intersection of Skyland Drive and Hospital Road. The storage lane will need to be extended across the bridge. The existing bridge will be closed to traffic during construction and traffic will be detoured to the off-site detour route. The period of the road closure will be minimized. Division 14 will provide the following measures for the off-site detour: no right turn ordinance from SR 1431 to SR 1432, other improvements to improve the sight distance at the SR 1431 and SR 1432 intersection, and the use the signed detour as shown on Figure 1. Alternate 2 (preferred) avoids the cost of a temporary on-site bridge and approaches. Alternate 2 meets the project objective to provide a wider, safer and structurally improved bridge on Hospital Road, and to accomplish this with the minimum potential for undesirable environmental effects. The undesirable effects avoided include less construction activities in crossing Scott Creek, which is designated a trout stream.

The NCDOT Division 14 Engineer has reviewed the proposed project and concurs with the recommended alternative.

IV. DESIGN EXCEPTIONS ANTICIPATED

A design exception is not anticipated.

V. ESTIMATED COST

Table 1

Item	Alternate 1	Alternate 2 (Preferred)
Permanent Structure	$349,000	$349,000
Temporary Structure	$112,000	Not Applicable
Mobilization	$273,000	$202,000
Removal of existing bridge	$14,000	$14,000
Utility Relocations	$41,000	$41,000
Roadway Approaches (includes $60,000 for removal & reinstallation of RR Signal and Gate)	$426,000	$313,000
Engineering & contingencies	$201,000	$138,000
Total Construction Costs	$1,416,000	$1,057,000
Right of way	$257,000	$256,000
Total Cost	$1,673,000	$1,313,000

VI. NATURAL RESOURCES

A. PHYSICAL RESOURCES

1. Physiography and Soils

The project study area is located within the Southern Crystalline Ridges and Mountains ecoregion within the Blue Ridge Mountains physiographic province of North Carolina. This ecoregion is characterized by low to high mountains with gently rounded to steep slopes and narrow valleys containing high gradient, clear streams with boulder/bedrock substrates (Griffith et al. 2002). The crystalline rock types associated with this ecoregion are mostly gneiss and schist, covered by well-drained, acidic, loamy soils. Elevations within the project study area range from a high of approximately 2120 feet National Geodetic Vertical Datum (NGVD) to a low of approximately 2080 feet NGVD (USGS Sylva North, NC 7.5-minute topographic quadrangle [1978]). Land uses within and adjacent to the project study area consist of a railroad, woodlands, church grounds, residential lots, commercial lots, and roadside shoulders.

Based on soil mapping for Jackson County (NRCS 1997a), the project study area is underlain by a single soil series: Udorthents-Urban land complex (*Udorthents*). This soil series is considered non-hydric in Jackson County (NRCS 1997b). Udorthents consist of soils in which the natural soil layers and characteristics have been destroyed by earthmoving activities. The original soil series cannot be identified. These well drained to moderately well drained soils can be found in any landscape position and are most often used as foundation material for roads and buildings. Udorthents are generally over 20 inches in thickness, and are over 100 feet deep in some areas.

2. Water Resources

The project study area is located within sub-basin 04-04-02 of the Little Tennessee River Basin (NCDWQ 1997). This area is part of USGS Hydrologic Unit 06010203 of the Tennessee Region (Seaber et al. 1987). Three streams are located within the project study area: Scott Creek and two unnamed tributaries (UT) to Scott Creek (UTs 1 and 2). The structure targeted for replacement spans Scott Creek. The portion of Scott Creek that lies within the project study area has been assigned Stream Index Number 2-79-39 by N.C. Division of Water Quality (NCDWQ) (NCDWQ 2004b). All streams within the project study area have been assigned a coldwater habitat designation (USACE et al. 2003).

Scott Creek flows from east to west and enters the project study area as a well-defined, fourth-order, perennial stream with strong flow over a substrate of sand, gravel, cobble, and boulders. The banks of Scott Creek range from approximately 3 to 10 feet in height. At Bridge No. 123, Scott Creek is approximately 50 feet wide with banks of approximately 10 feet in height. During field investigations, the water level ranged from 0.5 to 4 feet deep. Water clarity was fair and flow velocity was strong. No persistent emergent aquatic vegetation was observed within the stream. Opportunities for habitat within Scott Creek include overhanging trees, boulders, and leaf packs. UT1 is an intermittent stream located in the southeastern quadrant of the project study area within a deeply incised drainage ditch. UT1 originates at the outfall of a culvert and drains north with low flow velocity and good clarity over a substrate of sand, gravel, and cobble to discharge into Scott Creek. UT2 an intermittent stream located in the southwestern quadrant of the project study area, which forms at a seep in the hillside and flows north with low flow velocity and good clarity over sand and mud substrate to discharge into Scott Creek.

NCDWQ has assembled a list of impaired waterbodies according to the Clean Water Act Section 303(d) and 40 CFR 130.7, hereafter referred to as the N.C. 2004 draft Section 303(d) list. The list is a comprehensive public accounting of all impaired waterbodies. An impaired waterbody is one that does not meet water quality standards including designated uses, numeric and narrative criteria, and anti-degradation requirements defined in 40 CFR 131. The standards violation may be due to an individual pollutant, multiple pollutants, or an unknown cause of impairment. The impairment could be from point sources, non-point sources, and/or atmospheric deposition. Some sources of impairment exist across state lines. North Carolina's methodology is strongly based on the aquatic life use support guidelines available in the Section 305(b) guidelines (EPA-841-B-97-002A and -002B). Those streams attaining only Partially Supporting or Not Supporting status are listed on the N.C. 2004 draft Section 303(d) list. Streams are further categorized into one of six parts within the N.C. 2004 draft Section 303(d) list, according to source of impairment and degree of rehabilitation required for the stream to adequately support aquatic life. Within Parts 1, 4, 5, and 6 of the list, North Carolina has developed a priority ranking scheme (low, medium, high) that reflects the relative value and benefits those waterbodies provide to the State. Scott Creek is not listed in any section of the N.C. 2004 draft Section 303(d) list (NCDWQ 2004c).

Classifications are assigned to waters of the State of North Carolina based on the existing or contemplated best usage of various streams or segments of streams in the basin. A Best Usage Classification of **C Tr** has been assigned to Scott Creek and its unnamed tributaries. Class **C** waters are suitable for aquatic life propagation and protection, agriculture, and secondary recreation. Secondary recreation includes wading, boating, and other uses not involving human body contact with waters on an organized or frequent basis. The supplemental classification of Trout Waters (**Tr**) indicates waters that are suitable for trout propagation and maintenance of stocked trout. No Outstanding Resource Waters (**ORW**), High Quality Waters (**HQW**), Water Supply I (**WS-I**), Water Supply II (**WS-II**), or watershed Critical Areas (**CA**) occur within 1.0 mile of the project study area (NCDWQ 1997).

NCDWQ has initiated a whole-basin approach to water quality management for the 17 river basins within the state. Water quality for the proposed project study area is summarized in the *Little Tennessee Basinwide Water Quality Plan* (NCDWQ 1997). Scott Creek is currently listed by NCDWQ as **Supporting** its designated uses.

Sub-basin 04-04-02 of the Little Tennessee River Basin supports 20 permitted, point source dischargers. One of the permitted dischargers is classified as a major discharger, discharging 1.5 million gallons per day. The 19 remaining permitted dischargers are minor and discharge over 32 million gallons per day, with one discharger, the Fontana Hydro Plant, having no limits set on discharges (NCDWQ 2004a). One permitted discharger, the Sylva Wastewater Treatment Plant, discharges into Scott Creek downstream of the project study area. Major non-point sources of pollution within the Little Tennessee River Basin include stormwater runoff from land development, construction, mining, agriculture, animal feeding lots, failing septic systems, landfills, roads and parking lots. Sedimentation and nutrient inputs are major problems associated with non-point source discharges (NCDWQ 1997).

3. Summary of Potential Impacts to Water Resources

Impacts to water resources in the project study area may result from activities associated with project construction. Activities that would result in impacts are clearing and grubbing

on streambanks, riparian canopy removal, in-stream construction, fertilizers and pesticides used in revegetation, and pavement/culvert installation. The following impacts to surface water resources could result from the construction activities mentioned above.

- Increased sedimentation and siltation downstream of the crossing and increased erosion in the project study area.
- Alteration of stream discharge due to silt loading and changes in surface and groundwater drainage patterns.
- Changes in light incidence and water clarity due to increased sedimentation and vegetation removal.
- Changes in and destabilization of water temperature due to vegetation removal.
- Alteration of water levels and flows due to interruptions and/or additions to surface and ground water flow from construction.
- 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.

Temporary construction impacts due to erosion and sedimentation will be minimized through implementation of a stringent erosion-control schedule and the use of Best Management Practices (BMPs). The contractor will follow contract specifications pertaining to erosion control measures as outlined in 23 CFR 650 Subpart B and Article 107-13 entitled *Control of Erosion, Siltation, and Pollution* (NCDOT, Specifications for Roads and Structures). These measures include the use of dikes, berms, silt basins, and other containment measures to control runoff; elimination of construction staging areas in floodplains and adjacent to waterways; re-seeding of herbaceous cover on disturbed sites; management of chemicals (herbicides, pesticides, de-icing compounds) with potential negative impacts on water quality; and avoidance of direct discharges into streams by catch basins and roadside vegetation. The existing bridge is expected to be removed without dropping components into waters of the United States.

B. BIOTIC RESOURCES

1. Terrestrial Communities

Two distinct plant communities were identified within the project study area: disturbed/maintained land and alluvial forest. Plant communities were delineated to allow for a determination of the approximate area and location of each. In addition to terrestrial communities, approximately 0.1 acre (5 percent), 0.4 acre (17 percent), and 0.6 acre (27 percent) of the project study area is encompassed by the railroad, Scott Creek, and impermeable surfaces of streets and parking lots, respectively.

2. Aquatic Communities

The project study area contains one perennial, coldwater stream which provides diverse habitats for fish and wildlife (riffle-pool complexes, undercut banks, and rock and organic debris in the stream beds) and may be expected to support fish and benthic populations which serve as a food source for aquatic herptiles such as northern water snake (*Nerodia sipedon*), queen snake (*Regina septemvittata*), green frog (*Rana clamitans*), blackbelly salamander (*Desmognathus quadramaculatus*), shovelnose salamander (*Leurognathus marmoratus*), and two-lined salamander (*Eurycea bislineata*).

No sampling was undertaken in Scott Creek to determine fishery potential, and no fish species were observed during the field survey. Scott Creek is listed by the NCWRC as Designated Public Mountain Trout Waters for the majority of its reach, including the reach within the project study area. Within this designation, Scott Creek is classified as Hatchery Supported Trout Waters (NCWRC 2004) due to the presence of reproducing rainbow trout (*Oncorhynchus mykiss*). In addition to rainbow trout, Scott Creek may contain brook trout (*Salvelinus fontinalis*) and brown trout (*Salmo trutta*). Other game fish that may be found in Scott Creek include redbreast sunfish (*Lepomis auritus*) and smallmouth bass (*Micropterus dolomieu*). Other fish species possibly occurring within the project study area include mountain brook lamprey (*Ichthyomyzon greeleyi*), central stoneroller (*Campostoma anomalum*), rosyside dace (*Clinostomus funduloides*), longnose dace (*Rhinichthys cataractae*), whitetail shiner (*Cyprinella galactura*), warpaint shiner (*Luxilus coccogenis*), creek chub (*Semotilus atromaculatus*), and river chub (*Nocomis micropogon*). Due to the presence of reproducing rainbow trout within Scott Creek, the NCWRC is requesting a moratorium on all in-water and trout buffer work from January 1 until April 15 (Personal communication, Marla Chambers, NCWRC; March 23, 2005).

The NCWRC has developed a Significant Aquatic Endangered Species Habitat database to enhance planning and impact analysis in areas proposed by NCWRC as being critical due to the presence of Endangered or Threatened aquatic species. The entire reach of Scott Creek is listed as Significant Aquatic Endangered Species Habitat (NCWRC 1998). Four species of State and/or Federal concern have been documented approximately 4 miles downstream from the project study area in the Tuckasegee River near the mouth of Scott Creek: Appalachian elktoe (*Alasmidonta raveneliana*), wavy-rayed lampmussel (*Lampsilis fasciola*), wounded darter (*Etheostoma vulneratum*), and olive darter (*Percina squamata*). Appalachian elktoe is listed as Federally Endangered and State Endangered; wavy-rayed lampmussel has a State Status of Special Concern; and the olive darter and wounded darter are listed as Federal Species of Concern and State Species of Concern. Mussel surveys were performed although the proposed project was unlikely to affect the mussel population due to the location of known mussel populations 3.9 miles downstream and since the replacement of Bridge No. 123 is not expected to impact surface waters of Scott Creek. The surveys found no mussels. As known occurrences of protected species are located downstream of Bridge No. 123 and habitat for olive darter and wounded darter is present within Scott Creek, the NCWRC wishes to ensure that sediment and erosion control practices for sensitive watersheds are followed (Personal communication, Marla Chambers, NCWRC; March 23, 2005).

3. Summary of Potential Impacts

Plant communities within the project study area were delineated to allow for a determination of the approximate area and location of each. A summary of impacts to plant communities is presented by alternative in Table 2.

Table 2. Plant Communities within Cut/Fill Limits of Respective Alternatives

	Alternate 1			Alternate 2 (Preferred)
Plant Community	**Permanent (Acres)**	**Temporary (Acres)**	**Total (Acres)**	**Permanent (Acres)**
Maintained/Disturbed Land	0.29	0.10	0.39	0.29
Alluvial Forest	0.02	--	0.02	0.02
Total	**0.31**	**0.10**	**0.41**	**0.31**

Projected permanent impacts will occur primarily within the disturbed/maintained plant community along roadside shoulders. No significant habitat fragmentation is expected as a result of project activities since potential impacts will be restricted to adjoining roadside margins. Construction noise and associated disturbances are anticipated to have short-term impacts on avifauna and migratory wildlife movement patterns.

Potential downstream impacts to aquatic communities and habitat are anticipated to be avoided by bridging the stream system to maintain regular flow and stream integrity. Impacts associated with turbidity and suspended sediments resulting from bridge replacement may affect benthic populations and will be minimized through stringent erosion control measures. Scott Creek is listed as Designated Public Mountain Trout Waters (Hatchery Supported Trout Waters) (NCWRC 2004) and also receives a NCDWQ supplemental classification of Trout Water (Tr) (NCDWQ 2004b). There may be additional restrictions beyond those outlined in Best Management Practices for Protection of Surface Waters.

C. JURISDICTIONAL TOPICS

1. Waters of the United States

Surface waters within the project study area are subject to jurisdictional consideration under Section 404 of the Clean Water Act as waters of the United States (33 CFR Section 328.3). Three streams are located within the project study area: Scott Creek, UT1, and UT2.

Scott Creek flows from east to west through the project study area and enters the project study area as a well-defined, fourth-order, perennial stream with strong flow over a substrate of sand, gravel, cobble, and boulders. Scott Creek may be classified as riverine and upper perennial with an unconsolidated bottom composed primarily of cobble and gravel (R3UB1) (Cowardin et al. 1979).

UT1, located in the southeastern quadrant of the project study area, is a deeply incised drainage ditch which forms at the outfall of a culvert. UT1 flows north with low velocity and good clarity over a substrate of sand, gravel, and cobble to discharge into Scott Creek. UT1 may be defined as riverine and intermittent with a streambed composed of sand, gravel, and cobble (R4SB3/4) (Cowardin et al. 1979).

UT2, located in the southwestern quadrant of the project study area, is a small stream which forms at a seep in the hillside. UT2 flows north with low velocity and good clarity

over a sand and mud substrate to discharge into Scott Creek. UT2 may be defined as riverine and intermittent with a streambed composed of sand and mud (R4SB4/5) (Cowardin et al. 1979).

No vegetated wetland areas are located within the project study area.

Two alternatives have been proposed for the replacement of Bridge No. 123. Both alternatives result in permanent impacts to UT1. The existing bridge is expected to be removed without dropping components into waters of the United States. The replacement will allow no work at all in the water during moratorium periods associated with fish migration, spawning, and larval recruitment into nursery areas. A summary of jurisdictional area classifications (Cowardin et al. 1979), USACE Stream Quality Assessment Worksheet ratings (potential range of 0 to 100), and alternative impacts are presented in Table 3.

Table 3. Jurisdictional Areas within Cut/Fill Limits of Respective Alternatives

Jurisdictional Area	Cowardin Classification	USACE Rating	Alternate 1 (acres)	Alternate 2 (Preferred) (acres)
Scott Creek	R3UB1	56	--	--
UT1	R4SB3/4	29	0.01	0.01
UT2	R4SB4/5	47	--	--
Total	--	--	**0.01**	**0.01**

2. Permits

Impacts to jurisdictional streams are anticipated from the proposed project. This project may be processed as a Categorical Exclusion (CE) under Federal Highway Administration (FHWA) guidelines. USACE has made available Nationwide Permit (NWP) 23 (67 FR 2020, 2082; January 15, 2002) for CEs due to minimal impacts to waters of the United States expected with bridge construction. NCDWQ has made available a General 401 Water Quality Certification for NWP 23 (GC 3403). If temporary structures are necessary for construction activities, access fills, or dewatering of the site, then a NWP 33 (67 FR 2020, 2087; January 15, 2002) permit and the associated General 401 Water Quality Certification (GC 3366) will be required.

On-site mitigation potential is minimal and appears to be limited primarily to the enhancement of UT1, the waterbody to be impacted by both alternatives proposed for this project. Utilization of BMPs is always recommended in an effort to minimize potential impacts. A final determination regarding mitigation rests with USACE and NCDWQ.

The proposed project is located in the Tennessee Valley Authority's (TVA) Land Management District. A permit pursuant to Section 26a of the TVA Act is required for all construction or development involving streams or floodplains in the Tennessee River drainage basin.

3. Protected Species

Species with the federal classification of Endangered, Threatened, or officially Proposed for such listing are protected under the Endangered Species Act (ESA) of 1973, as amended (16 U.S.C. 1531 et seq.). The term "Endangered Species" is defined as "any species which is in danger of extinction throughout all or a significant portion of its range;" and the term "Threatened Species" is defined as "any species which is likely to become an Endangered species within the foreseeable future throughout all or a significant portion of its range" (16 U.S.C. 1532). Federally protected species with ranges extending into Jackson County as of February 24, 2003 (USFWS 2003) are summarized in Table 4.

Table 4. Federally Protected Species Listed For Jackson County

Common Name	Scientific Name	Status*
Carolina northern flying squirrel	*Glaucomys sabrinus coloratus*	E
Indiana bat	*Myotis sodalist*	E
Appalachian elktoe	*Alasmidonta raveneliana*	E
Small-whorled pogonia	*Isotria medeoloides*	T
Swamp pink	*Helonias bullata*	T
Rock gnome lichen	*Gymnoderma lineare*	E
*Status: E = Endangered, T = Threatened		

***Glaucomys sabrinus coloratus* (Carolina northern flying squirrel) Endangered**

Elevations within the project study area are too low to provide suitable habitat for the Carolina northern flying squirrel. Spruce-fir forests and adjacent hardwoods at elevations above 4000 feet do not occur in or near the project study area. NCNHP records (reviewed February 18, 2005) document no occurrence of Carolina northern flying squirrels within 2.0 miles of the project study area. Based on NCNHP records, field observations, and habitat characteristics, this project will have NO EFFECT on the Carolina northern flying squirrel.

BIOLOGICAL CONCLUSION **NO EFFECT**

***Myotis sodalis* (Indiana Bat)** **Endangered**

A habitat assessment for Indiana bats was conducted on April 26, 2006 by NCDOT biologists. The underside of the bridge was checked for evidence of bats, but none were found. The area is largely residential and commercial with few trees present and a high degree of disturbance. The bridge itself is a steel I-beam and therefore not the type preferred by bats for roosting. The area was checked for caves, mines and rock outcrops but none were located. This area did not appear to be suitable habitat for the Indiana

bat. Based on the above information, this project has a biological conclusion of NO EFFECT on federally endangered Indiana bats.

BIOLOGICAL CONCLUSION **NO EFFECT**

***Alasmidonta raveneliana* (Appalachian elktoe)** **Endangered**

A mussel screening was conducted on May 23, 2006 by NCDOT biologists. The Scott Creek crossing at SR 1437 (Hospital Road) contains runs, riffles and pool area with compact substrate compactness. The substrate above and below the bridge on SR 1437 consists of silt and sand, with medium to fast current. The portion of Scott Creek that was surveyed had a narrow stream buffer. The stream banks were very stable in the screening area. The land use was urban. Scott Creek is shallow with 90 percent of the stream less than 2 feet deep. Scott Creek was 12.0 meters wide and the bank heights were 2.0 meters. The survey was conducted by wading using a batiscope from approximately 400 meters downstream to 100 meters upstream of the project crossing. No freshwater mussels were found in 3.5 man-hours of survey time.

The North Carolina Natural Heritage Program (NCNHP) does not list a known population up or downstream in Scott Creek. Scott Creek flows into the Tuckasegee River and there is a known population at the confluence, which is approximately 3.9 miles downstream of the proposed project and this portion of the Tuckasegee has been designated as critical habitat by the USFWS.

Due to the lack of mussels found in Scott's Creek from past and recent surveys, the Sylva Waste Water Treatment Plant downstream of the bridge, that Scott Creek is still a high gradient stream at this point, the distance between the project and the confluence, and coordination with the USFWS biologist that the proposed project will have no effect if sediment and erosion control standards for sensitive watersheds are used, it was concluded that the proposed bridge replacement will have NO EFFECT on the Appalachian elktoe.

BIOLOGICAL CONCLUSION **NO EFFECT**

***Isotria medeoloides* (Small-whorled pogonia)** **Threatened**

Within the project study area, there is suitable habitat for small-whorled pogonia along roadsides, in some of the maintained/disturbed areas, and within the alluvial forest along Scott Creek. NCNHP records (reviewed February 18, 2005) document no occurrence of small-whorled pogonia within 2.0 miles of the project study area. A survey for small-whorled pogonia was conducted within the project study area on July 19, 2005. Habitat for small-whorled pogonia was very limited on the site due to disturbance and an excess of herbaceous competition. A road bank and small sections of wooded areas may provide marginal habitat. No individuals of small-whorled pogonia were found. The biological conclusion is no effect.

BIOLOGICAL CONCLUSION **NO EFFECT**

***Helonias bullata* (Swamp pink)** **Threatened**

Suitable habitat for swamp pink does not exist within the project study area due to the lack of swamps and bogs. NCNHP records (reviewed February 18, 2005) document no occurrence of swamp pink within 2.0 miles of the project study area. Based on NCNHP records and field observations, there will be No Effect on swamp pink as a result of this project.

BIOLOGICAL CONCLUSION **NO EFFECT**

***Gymnoderma lineare* (Rock gnome lichen)** **Endangered**

Suitable habitat for rock gnome lichen is discounted in the project study area due to insufficient elevations and lack of exposed vertical rock faces. NCNHP records (reviewed February 18, 2005) document no occurrence of the rock gnome lichen within 2.0 miles of the project study area. Based on NCNHP records and field observations, there will be No Effect on the rock gnome lichen as a result of this project.

BIOLOGICAL CONCLUSION **NO EFFECT**

VII. HUMAN ENVIRONMENT

A. CULTURAL RESOURCES

1. Compliance Guidelines

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

2. Historic Architecture

The State Historic Preservation Office (HPO) requested surveys for historic structures in their memo to NCDOT dated May 10, 2005. A field survey of the Area of Potential Effects (APE) was conducted by an NCDOT architectural historian and 5 structures over 50 years of age within the APE were recorded. The photographs of these structures along with their evaluations were shown to the HPO in a meeting on August 2, 2005. At that meeting HPO staff concurred that all 5 structures were not eligible for the National Register and a form was signed that reflects these findings. Therefore there are no National Register-listed or National Register-eligible properties within the APE for this project. Copies of all correspondence are included in the Appendix.

3. Archaeology

The State Historic Preservation Officer (SHPO), in a memorandum dated May 10, 2005, recommended an archaeological survey not be done. A copy of the SHPO memorandum is included in the Appendix.

B. COMMUNITY IMPACTS

No adverse effect on public facilities or services is expected. The project is not expected to adversely affect social, economic, or religious opportunities in the area. The design of the new bridge will not change the visual character of the area and should be aesthetically acceptable to residences near the bridge. The proposed improvement is anticipated to require a limited amount of additional right of way. It is anticipated that two residences will be relocated by the preferred Alternate 2 (This would also be the case with Alternate 1). A relocation report is attached in the Appendix which indicates adequate replacement housing is available.

A detour route is available and this will not require the cost of providing a temporary structure or other costly staging features. The off-site detour proposed is of reasonable length and acceptable delay.

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.

The school buses (eight crossings) can be rerouted using the existing detour route without causing undue hardships (see letter in the Appendix).

The following utilities are located in the vicinity of the bridge and will require relocation:

- Overhead telephone/cable and power lines run parallel on the upstream (east) side of the bridge and crosses over to the west side just north of the bridge.
- An 8-inch water line is attached to the bridge girders on the upstream (underneath) side of the bridge.
- An 8-inch utility line runs parallel to the bridge on the downstream (west) side of the bridge.

C. NOISE AND AIR QUALITY

This project is an air quality neutral project in accordance with 40 CFR 93.126. It is not required to be included in the regional emissions analysis (if applicable) and project level CO or PM2.5 analyses are not required. This project will not result in any meaningful changes in traffic volumes, vehicle mix, location of the existing facility, or any other factor that would cause an increase in emissions impacts relative to the no-build alternative. Therefore, FHWA has determined that this project will generate minimal air quality impacts for Clean Air Act criteria pollutants and has not been linked with any special MSAT concerns. Consequently, this effort is exempt from analysis for MSATs. Any burning of vegetation shall be performed in accordance with applicable local laws and regulations of the North Carolina State Implementation Plan (SIP) for air quality compliance with 15 NCAC 2D.0520.

Noise levels may increase during project construction; however, these impacts are not expected to be substantial considering the relatively short-term nature of construction noise and the limitation of construction to daytime hours. The transmission loss characteristics of nearby natural elements and man-made structures are believed to be sufficient to moderate the effects of intrusive construction noise.

D. FARMLAND

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 at the existing location the Farmland Protection Policy Act does not apply.

VIII. GENERAL ENVIRONMENTAL EFFECTS

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.

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

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

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.

No controversial issues have been identified during the project planning process and none are anticipated.

IX. AGENCY COMMENTS

Scoping letters were sent to the following agencies. Agencies that responded are marked with an asterisk. Comment letters are included in the Appendix. There are no issues raised in the attached letters which have not been adequately addressed in the document.

Federal Agencies

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

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

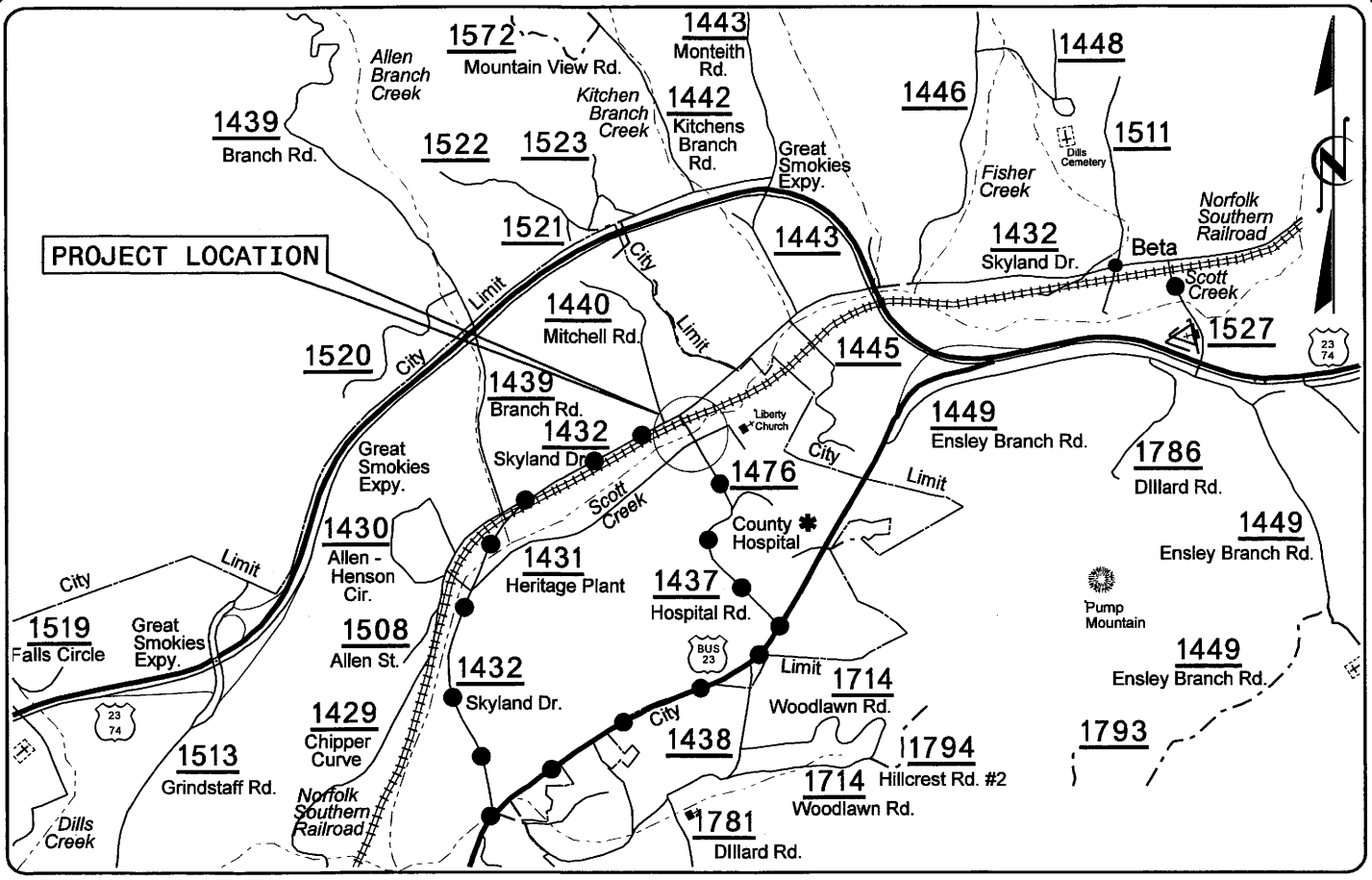
Regional and Local Agencies

Region A Council of Government
Jackson County Commissioner, chairperson
Jackson County /Emergency Management Director
Jackson County Board of Education*
C.J. Harris Hospital*

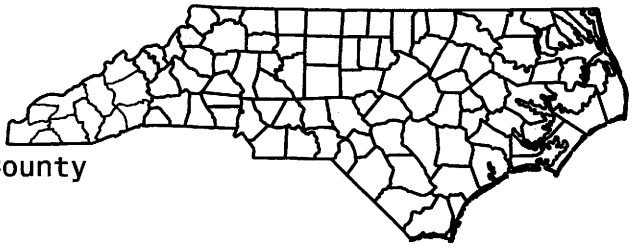
X. PUBLIC INVOLVEMENT

A mailing list was developed for property owners living near the bridge. The mailing list had approximately 35 names including local officials and news media. A newsletter was mailed to those on the list. Another newsletter, dated September 2005, announced a Citizens Informational Workshop. The workshop was held on October 11, 2005 from 5 pm to 7 pm at the Jackson County Administrative Building in Sylva. The meeting consisted of an open house format. Alternative 1 and Alternative 2 were displayed and included in handouts provided at the workshop. Two citizens attended the workshop. Comments received from the public at this time included the following:

- A representative from Jackson County attended the meeting and was briefed on the project. The person requested that the county be kept informed of the project.
- A reporter from WRGC (radio station) attended.

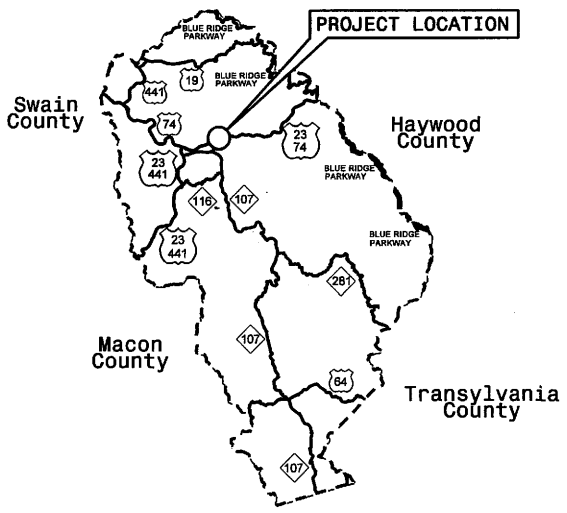


OFF-SITE DETOUR



Jackson County

Jackson County



SR 1437 (HOSPITAL RD)
REPLACE BRIDGE NO. 123
over SCOTT CREEK

B-4163

Jackson County, North Carolina

PROJECT VICINITY

Figure 1

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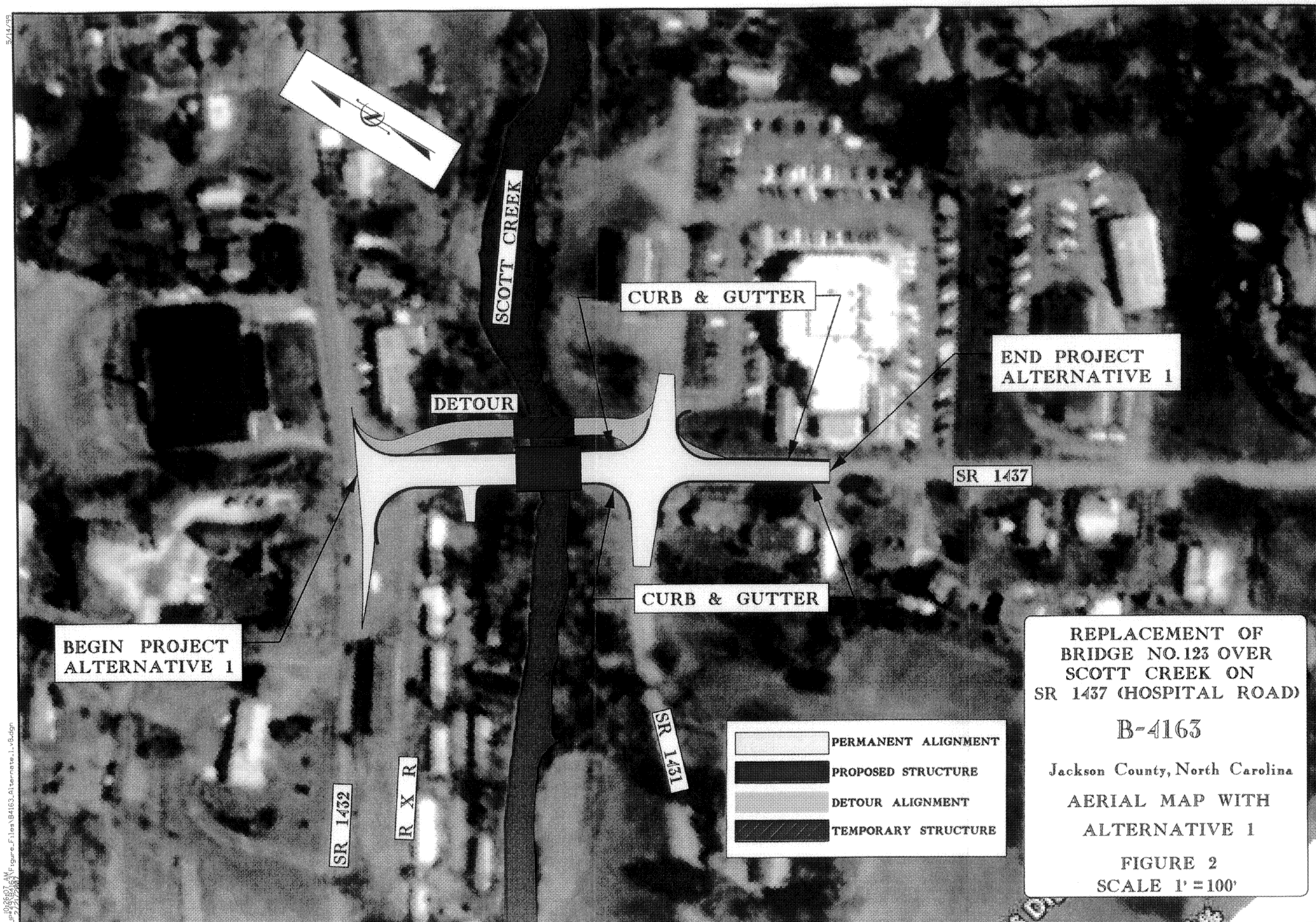


REPLACEMENT OF BRIDGE NO. 123 OVER SCOTT CREEK ON SR 1437 (HOSPITAL ROAD)

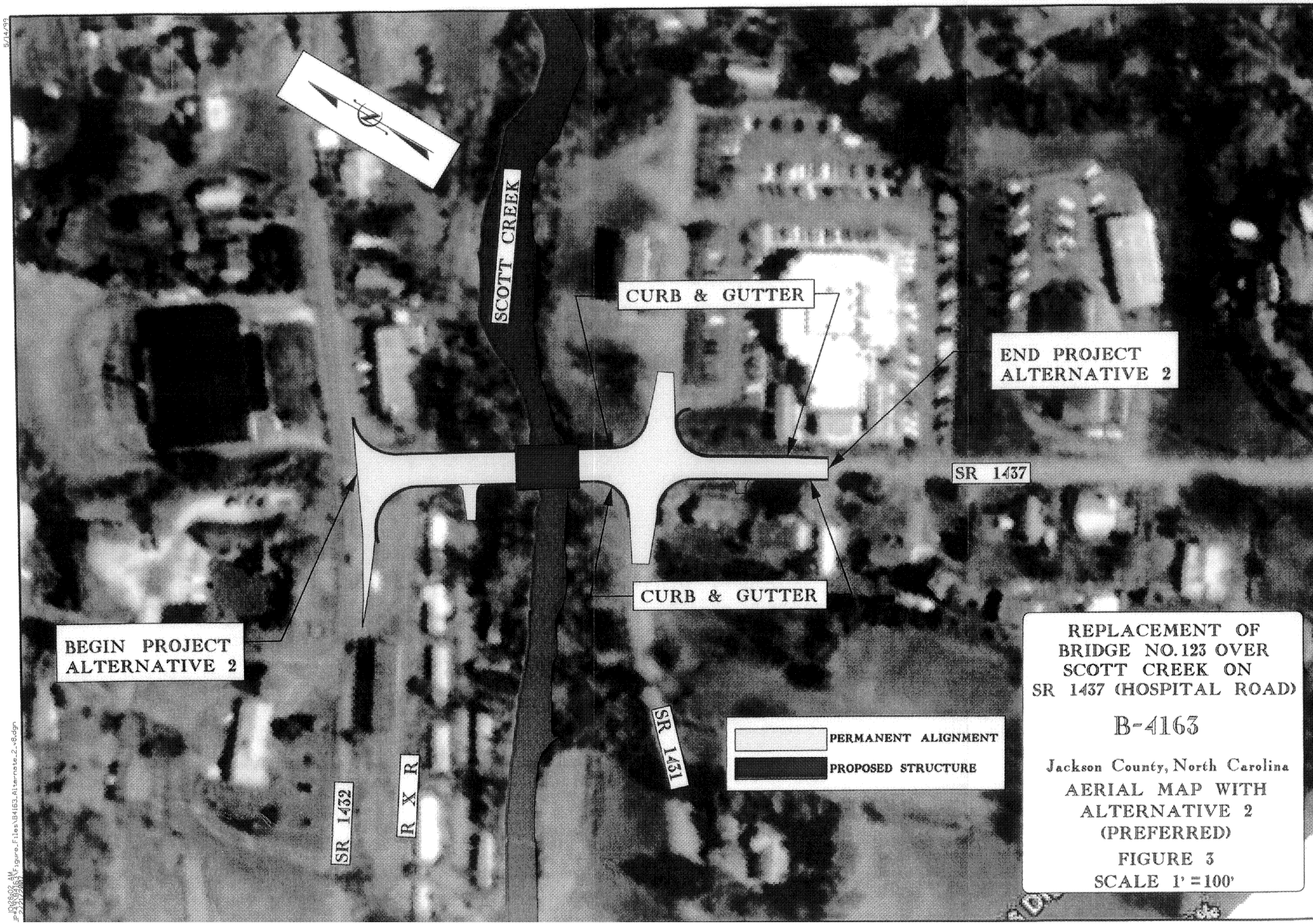
B-4163

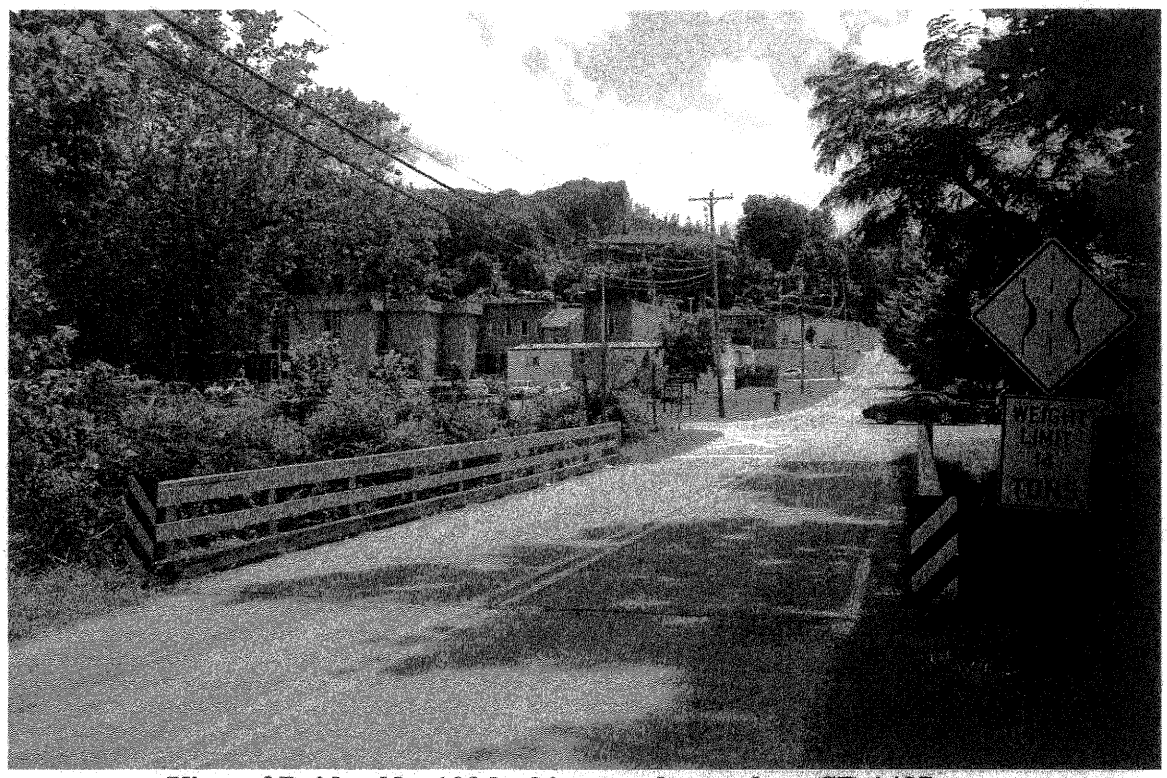
Jackson County, North Carolina

AERIAL MAP WITH ALTERNATIVE 1

FIGURE 2

SCALE 1" = 100'


SCOTT CREEK
CURB & GUTTER
END PROJECT
ALTERNATIVE 2
SR 1437
CURB & GUTTER
BEGIN PROJECT
ALTERNATIVE 2
SR 1431
SR 1432
R X R
PERMANENT ALIGNMENT
PROPOSED STRUCTURE
REPLACEMENT OF
BRIDGE NO.123 OVER
SCOTT CREEK ON
SR 1437 (HOSPITAL ROAD)
B-4163
Jackson County, North Carolina
AERIAL MAP WITH
ALTERNATIVE 2
(PREFERRED)
FIGURE 3
SCALE 1' =100'
5/14/99



View of Bridge No. 123 looking southeast along SR 1437

View of Scott Creek from Bridge No. 123 looking upstream (northeast)

FIGURE 4A

View of Bridge No.123 looking northwest towards the RR crossing and SR 1432

View of Bridge No. 123 from the adjacent RR crossing

FIGURE 4B

APPENDIX

Picked up 3-15-05

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Asheville Field Office
160 Zillicoa Street
Asheville, North Carolina 28801

March 8, 2005

Ms. Missy Dickens, P.E.
Project Development Engineer
Project Development and Environmental Analysis Branch
North Carolina Department of Transportation
1548 Mail Service Center
Raleigh, North Carolina 27699-1548

Dear Ms. Dickens:

Subject: Bridge Replacements: Buncombe County (TIP No. B-4034), Cherokee County (TIP No. B-4072), Henderson County (TIP No. B-4147), Jackson County (TIP Nos. B-4162 and B-4163), and Transylvania County (TIP No. B-4289), North Carolina

We have reviewed the subject bridge replacement projects and are providing the following comments in accordance with the Fish and Wildlife Coordination Act, as amended (16 U.S.C. 661-667e), and section 7 of the Endangered Species Act of 1973, as amended (16 U.S.C. 1531-1543) (Act).

Fish and Wildlife Resources - The information provided for these six projects does not include detailed descriptions of the structures that will replace the existing bridges. In all cases, we recommend that an existing bridge be replaced with a new bridge. We recommend that each new bridge design include provisions for the roadbed and deck drainage to flow through a vegetated buffer prior to reaching the affected stream. This buffer should be large enough to alleviate any potential effects from the runoff of storm water and pollutants. The bridge designs should not alter the natural stream or the stream-bank morphology or impede fish passage. Any piers or bents should be placed outside the bank-full width of the streams. The bridges and approaches should be designed to avoid any fill that will result in the damming or constriction of the channel or floodplain. If spanning the flood plain is not feasible, culverts should be installed in the floodplain portion of the approaches in order to restore some of the hydrological functions of the floodplain and reduce high velocities of floodwaters within the affected areas. Measures to control erosion and sedimentation should be in place prior to any ground-disturbing activities. Wet concrete should never be allowed to come into contact with the stream. When the categorical exclusions are prepared and more information is available regarding environmental effects, we can then offer more substantive comments.

Federally Listed Species - The information provided does not include any environmental information regarding the streams or whether habitat assessments or surveys for rare species have been conducted for any of the projects. Therefore, our comments about listed species are limited primarily to the known locations of listed species and federal species of concern.

Buncombe County - TIP No. B-4034, Bridge No. 135 over Stony Fork Creek, our Log No. 4-2-05-104. Our records for Buncombe County indicate occurrences of the endangered rock gnome lichen (*Gymnoderma lineare*), which typically occurs above 5,000 feet. There are also occurrences of the endangered Carolina northern flying squirrel (*Glaucomys sabrinus coloratus*) and spreading avens (*Geum radiatum*) at elevations above 4,000 feet. Since this project occurs below 2,500 feet, we do not believe there is suitable habitat within the project area for federally listed species.

Cherokee County - TIP No. B-4072, Bridge No. 98 over Brasstown Creek Overrun, our Log No. 4-2-05-105. Our records for Cherokee County indicate no known locations of listed species within the project area. However, there are occurrences in Cherokee County of the threatened small whorled pogonia (*Isotria medeoloides*). We recommend conducting habitat assessments and surveying any suitable habitat in the project area for this species. Cherokee County could contain suitable summer habitat for the endangered Indiana bat (*Myotis sodalis*). If there is suitable habitat--trees with loose bark--within the project area which must be removed between April 15 and October 15, we recommend that you conduct a survey for the Indiana bat before the trees are removed and construction begins. The bog turtle (*Clemmys muhlenbergii*) also occurs in Cherokee County. We encourage the North Carolina Department of Transportation (NCDOT) to assess habitat for the bog turtle. If impacts are anticipated, you should avoid those impacts and contact the North Carolina Wildlife Resources Commission, who participates actively in surveys and conservation efforts for the bog turtle. While the bog turtle technically does not require section 7 consultation, it is a species of concern, and the NCDOT is actively managing mitigation sites or parts of sites for this species.

Henderson County - TIP No. B-4147, Bridge No. 75 over Right Prong Mud Creek and Bridge No. 76 over Little Prong Mud Creek, our Log No. 4-2-05-106. Known locations of the federally endangered bunched arrowhead (*Sagittaria fasciculata*) and mountain sweet pitcher plant (*Sarracenia jonesii*) and the federally threatened small whorled pogonia (*Isotria medeloides*) and swamp pink (*Helonias bullata*) occur in the vicinity of this project. We recommend conducting a suitable habitat analysis and surveying the project area for these species prior to any further planning or on-the-ground activities. If these species occur in the project area, further consultation will be required. There are also occurrences of the bog turtle (*Clemmys muhlenbergii*) near the project area.

Jackson County - TIP No. B-4162, Bridge No. ~~123~~ 320 over Norfolk Southern Railroad, our Log No. 4-2-05-107. There are no known occurrences of federally listed species within the project area. Given that the project will involve the replacement of a bridge at the same site location over the railroad, there are no aquatic resource concerns, and the habitat does not appear to be

suitable for any listed plant species. Therefore, we do not believe this project will affect any listed species.

Jackson County - TIP No. B-4162, Bridge No. 320 over Scotts Creek, our Log No. 4-2-05-108. Scotts Creek is a tributary to the Tuckasegee River, where there are occurrences of the federally endangered Appalachian elktoe *(Alasmidonta raveneliana)*. We do not have records of the Appalachian elktoe in Scotts Creek. However, we are not familiar with the habitat along the upper stretch of the creek and recommend conducting habitat assessments and surveying any suitable habitat in the project area for this species.

Transylvania County - TIP No. B-4289, Bridge No. 93 over North Fork French Broad River, our Log No. 4-2-05-109. Our records for Transylvania County indicate occurrences of the endangered rock gnome lichen (*Gymnoderma lineare*), which typically occurs above 5,000 feet. There are also occurrences of the endangered Carolina northern flying squirrel (*Glaucomys sabrinus coloratus*) and spreading avens (*Geum radiatum*) in Transylvania County at elevations above 4,000 feet. Given that this project occurs below 3,000 feet, we do not believe there is suitable habitat within the project area for these three federally listed species. There are also occurrences of the threatened swamp pink (*Helonias bullata*) and small whorled pogonia (*Isotria medeloides*) and the endangered mountain sweet pitcher plant (*Sarracenia jonesii*) in Transylvania County. We recommend conducting habitat assessments and surveying any suitable habitat in the project area for these species. There are occurrences less than 3 miles from the project area of the French Broad heartleaf (*Hexastylis rhombiformis*), a federal species of concern. Federal species of concern are not legally protected under the Act and are not subject to any of its provisions, including section 7, unless they are formally proposed or listed as endangered or threatened. However, measures taken to protect and conserve the French Broad heartleaf may help to preclude the need to list this species.

If you have questions about these comments, please contact Ms. Denise Moldenhauer of our staff at 828/258-3939, Ext. 226.

Sincerely,

Brian P. Cole

Brian P. Cole
Field Supervisor

cc:
Ms. Marla J. Chambers, Highway Projects Coordinator, North Carolina Wildlife Resources Commission, 12275 Swift Road, Oakboro, NC 28129

Tennessee Valley Authority, 400 West Summit Hill Drive, Knoxville, Tennessee 37902-1499

January 10, 2005

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

Dear Dr. Thorpe:

SR 1437 (HOSPITAL ROAD), BRIDGE NO. 123 OVER SCOTT CREEK, JACKSON COUNTY, NORTH CAROLINA, FEDERAL-AID PROJECT NO. BRZ-1437(3), TIP PROJECT NO. B-4163, WBS NO. 33511.1.1

TVA has reviewed the December 3, 2004, request for comments on the proposed improvements to the SR 1437 bridge over Scott Creek in Sylva. We are not aware of any unique environmental issues associated with this project. The environmental documentation prepared for this project should note that an approval under Section 26a of the TVA Act would be required if the new bridge is constructed upstream or downstream of the existing alignment.

Should you have any questions, please contact Harold M. Draper at (865) 632-6889 or hmdraper@tva.gov.

Sincerely,

Jon M. Loney, Manager
NEPA Administration
Environmental Policy and Planning

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

Biscmbarlc

February 2, 2005

MEMORANDUM

TO: Missy Dickens, NCDOT Project Development Engineer

FROM: Brian L. Wrenn, NC Division of Water Quality BW

SUBJECT: Scoping Review of NCDOT's proposed bridge replacement projects: B-4163, B-4162, B-4289, B-4072, B-4147, and B-4034

In reply to your correspondence dated December 3, 2004 (received December 15, 2004) in which you requested comments for the referenced projects, the NC Division of Water Quality has the following comments:

I. Project-Specific Comments

B-4163 Bridge No. 123 over Scotts Creek, Jackson Co.

Scott Creek are class C; Tr waters of the State. DWQ recommends that the most protective sedimentation and erosion control BMPs be implemented to reduce the risk of turbidity violations in trout waters. In addition, all disturbances within trout buffers should be conducted in accordance with Division of Land Resource requirements.

B-4162 Bridge No. 320 over the Norfolk Southern Railroad, Jackson Co.

This project site is adjacent to Scotts Creek. Scott Creek are class C; Tr waters of the State. DWQ recommends that the most protective sedimentation and erosion control BMPs be implemented to reduce the risk of turbidity violations in trout waters. In addition, all disturbances within trout buffers should be conducted in accordance with Division of Land Resource requirements.

B-4289 Bridge No. 93 over North Fork French Broad River, Transylvania Co.

North Fork French Broad River are class B; Tr waters of the State. DWQ recommends that the most protective sedimentation and erosion control BMPs be implemented to reduce the risk of turbidity violations in trout waters. In addition, all disturbances within trout buffers should be conducted in accordance with Division of Land Resource requirements.

B-4072 Bridge No. 98 over Brasstown Creek Overrun, Cherokee Co.

This project site is adjacent to Brasstown Creek. Brasstown Creek are WS-IV waters of the State. Water supply IV waters are subject to 30-foot vegetated buffer requirements as well as requirements to minimize storm water runoff and to maximize use of BMPs. Refer to 15A NCAC 2B .0216(3)(b)(i)(F) and (G).

B-4147 Bridge No. 75 over Right Prong Mud Creek and Bridge No. 76 over Little Prong Mud Creek, Henderson Co.

Mud Creek are class C waters of the State and Greer Creek are class B waters of the State. Mud Creek is on the 303(d) list for turbidity and biological integrity. DWQ is very concerned with sedimentation and erosion impacts that could result from this project. DWQ recommends that the most protective sedimentation and erosion control BMPs be implemented to reduce the risk of turbidity in Mud Creek. DWQ requests that road design plans provide treatment of the storm water runoff through best management practices as detailed in *Best Management Practices for the Protection of Surface Waters*. Refer to 15A NCAC 2B .0224(2) and 15A NCAC 2H .1006.

Transportation Permitting Unit
1650 Mail Service Center, Raleigh, North Carolina 27699-1650
2321 Crabtree Boulevard, Suite 250, Raleigh, North Carolina 27604
Phone: 919-733-1786 / FAX 919-733-6893 / Internet: http://h2o.enr.state.nc.us/ncwetlands

B-4034 Bridge No. 134 over Stony Fork Creek, Buncombe Co.

Stony Fork are class C; Tr waters of the State. DWQ recommends that the most protective sedimentation and erosion control BMPs be implemented to reduce the risk of turbidity violations in trout waters. In addition, all disturbances within trout buffers should be conducted in accordance with Division of Land Resource requirements.

II. General Comments Regarding Bridge Replacement Projects

1. If corrugated metal pipe arches, reinforced concrete pipes, or concrete box culverts are used to replace the bridge, then DWQ recommends the use of Nationwide Permit No. 14 rather than Nationwide Permit 23.

2. If the old bridge is removed, no discharge of bridge material into surface waters is preferred. Strict adherence the Corps of Engineers guidelines for bridge demolition will be a condition of the 401 Water Quality Certification.

3. DWQ prefers 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.

4. Bridge deck drains should not discharge directly into the stream; stormwater should be directed across the bridge and pre-treated through site-appropriate means (grassed swales, pre-formed scour holes, vegetated buffers, etc.) before entering the stream. Please refer to NCDOT Best Management Practices for the Protection of Surface Waters

5. Live concrete should not be allowed to contact the water in or entering into the stream. Concrete is mostly made up of lime (calcium carbonate) and when in a dry or wet state (not hardened) calcium carbonate is very soluble in water and has a pH of approximately 12. In an unhardened state concrete or cement will change the pH of fresh water to very basic and will cause fish and other macroinvertebrate kills.

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

7. 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 re-vegetate naturally and minimizes disturbed soil.

8. A clear bank (rip rap-free) area of at least 10 feet should remain on each side of the steam underneath the bridge.

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

10. Bare soil should be stabilized through vegetation or other means as quickly as feasible to prevent sedimentation of water resources.

11. 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.

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

III. General Comments if Replacing the Bridge with a Culvert

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). 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 should 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.

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 Brian Wrenn 919-733-5715.

pc: Angie Pennock, USACE Asheville Field Office
Chris Militscher, USEPA
Marla Chambers, NCWRC
Marella Buncick, USFWS
File Copy

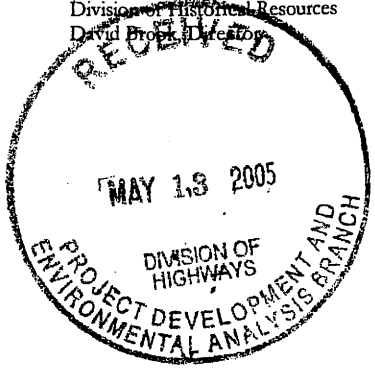
North Carolina Department of Cultural Resources

State Historic Preservation Office

Peter B. Sandbeck, Administrator

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

Office of Archives and History
Division of Historical Resources
David Brook, Director



May 10, 2005

MEMORANDUM

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

FROM: Peter B. Sandbeck PBS for PBS

SUBJECT: Bridge No. 123 over Scotts Creek, B-4163, Jackson County, ER 04-3219

Thank you for your letter of December 3, 2004, concerning the above project. We regret the delay in our response to your request.

We have reviewed the project information you have submitted and it appears that the project is within the Sylva Historic District, listed in the National Register of Historic Places. Therefore, we recommend that a Department of Transportation architectural historian identify and evaluate any structures over fifty years of age and report the findings to us.

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

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

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

cc: Mary Pope Furr, NCDOT
Matt Wilkerson, NCDOT

Federal Aid #: **BRZ-1437(3)** *TIP # :* **B-4163** *County*: **Jackson**

CONCURRENCE FORM FOR PROPERTIES NOT ELIGIBLE FOR THE NATIONAL REGISTER OF HISTORIC PLACES

Project Description: **Replace Bridge No. 123 on SR 1437 over the Scotts Creek in Jackson County**

On **August 2, 2005**, representatives of the

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

Reviewed the subject project at

- ☐ Scoping meeting
- ☒ Historic architectural resources photograph review session/consultation
- ☐ Other

All parties present agreed

- ☐ There are no properties over fifty years old within the project's area of potential effects.
- ☒ There are no properties less than fifty years old which are considered to meet Criteria Consideration G within the project's area of potential effects.
- ☒ There are properties over fifty years old within the project's Area of Potential Effects (APE), but based on the historical information available and the photographs of each property, the properties identified as **(List below)** are considered not eligible for the National Register and no further evaluation of them are necessary.

Bridge No. 123 & buildings 1-4

- ☒ There are no National Register-listed or Study Listed properties within the project's area of potential effects.
- ☒ All properties greater than 50 years of age located in the APE have been considered at this consultation, and based upon the above concurrence, all compliance for historic architecture with Section 106 of the National Historic Preservation Act and GS 121-12(a) has been completed for this project.
- ☒ There are no historic properties affected by this project. (*Attach any notes or documents as needed*)

Signed:

Jennifer Cathey — 8/2/05
Representative, NCDOT — Date

n/a
FHWA, for the Division Administrator, or other Federal Agency — Date

[signature] — 8/2/05
Representative, HPO — Date

Renee Gledhill-Earley — 8-2-05
State Historic Preservation Officer — Date

If a survey report is prepared, a final copy of this form and the attached list will be included.

Jackson County Public Schools

398 Hospital Road
Sylva, NC 28779

C.E. McCary III, Ed.D.
Superintendent

(828) 631-3331
Fax (828) 631-1956
Cell Phone 507-4054

Winston C. Reed
Transportation Director
Driver's Ed. Instructor

12-03-02

MEMORANDUM

TO; Mr. Davis Moore
NC Department of Transportation
Project Development & Environmental Analysis
1548 Mail Service Center
Raleigh, NC 27699-1548

From: Winston Reed
School Transportation Director
Jackson County Schools
398 Hospital Road
Sylva, NC 28779

SUBJECT; Replacement of Bridges

Bridge No. B-4159 has six bus crossings, No. B-4160 has four crossings, No. B4162 and B-4163 have eight crossings per day.

We can work with you and re-route our buses to accommodate these improvements for all these bridges. Thank you for helping our buses operate with a higher level of safety.

WESTCARE HEALTH SYSTEM

68 Hospital Road
Sylva, NC
28779-2795
828/586-7000
Fax 828/586-7467

Bacon Specialty Clinic
Fontana Medical Center
Hospice of Harris Regional
Mountain Regional Cancer Center
Mountain Trace Nursing Center
New Direction Weight Control System
Occupational Health Management
WestCare Emergency Medical Service
WestCare Home Health Services
WestCare Home Medical Equipment
WestCare Medical Park of Franklin

July 14, 2005

Mr. Derrick Weaver, PE
Project Development and Environmental Analysis Branch
State of North Carolina
Department of Transportation
1548 Mail Service Center
Raleigh, NC 27699-1548

Dear Mr. Weaver:

We are in receipt of your letter dated June 21, 2005, pertaining to Bridge #123 on Hospital Road (SR 1437) over Scotts Creek in Jackson County (TIP Project B-4163). After consideration and discussions with WestCare EMS, we believe the temporary closure of Bridge #123 would not pose a potential problem for Harris Regional Hospital. We would request, however, that you continue to keep us informed regarding the timeline of construction so that we can prepare accordingly.

In any future correspondence regarding bridge construction on Scotts Creek, please use the contact information below. Thank you for keeping us informed.

Sincerely,

Ronnie Sloan
Vice President
WestCare Health System
68 Hospital Road
Sylva, NC 28779

cc: Mark Leonard, President & CEO
Don Schlagle, Director Environmental Services
Toby Moore, Director EMS

lls

Harris Regional Hospital
68 Hospital Road
Sylva, NC 28779-2795
828/586-7000
Fax 828/586-7467

Swain County Hospital
45 Plateau Street
Bryson City, NC 28713
828/488-2155
Fax 828/488-4039

EIS RELOCATION REPORT

North Carolina Department of Transportation
RELOCATION ASSISTANCE PROGRAM

X E.I.S. ☐ CORRIDOR ☐ DESIGN

WBS ELEMENT:		COUNTY	Jackson	Alternate 1&2 of	Alternate
T.I.P. NO.:	B-4163				
DESCRIPTION OF PROJECT:	Bridge # 123 on SR 1437 over Scotts Creek				

ESTIMATED DISPLACEES

Type of Displacees	Owners	Tenants	Total	Minorities
Residential	0	2	2	1
Businesses	0	0	0	0
Farms	0	0	0	0
Non-Profit	0	0	0	0

INCOME LEVEL

0-15M	15-25M	25-35M	35-50M	50 UP
1	0	1	0	0

VALUE OF DWELLING				DSS DWELLING AVAILABLE			
Owners		Tenants		For Sale		For Rent	
0-20M	0	$ 0-150	1	0-20M	0	$ 0-150	0
20-40M	0	150-250	1	20-40M	0	150-250	2
40-70M	0	250-400	0	40-70M	0	250-400	2
70-100M	0	400-600	0	70-100M	0	400-600	1
100 UP	0	600 UP	0	100 UP	0	600 UP	0
TOTAL	0		2		0		5

ANSWER ALL QUESTIONS

Yes	No	Explain all "YES" answers.	
	x	1.	Will special relocation services be necessary?
	x	2.	Will schools or churches be affected by displacement?
x		3.	Will business services still be available after project?
	x	4.	Will any business be displaced? If so, indicate size, type, estimated number of employees, minorities, etc.
	x	5.	Will relocation cause a housing shortage?
x		6.	Source for available housing (list).
	x	7.	Will additional housing programs be needed?
	x	8.	Should Last Resort Housing be considered?
	x	9.	Are there large, disabled, elderly, etc. families?
	x	10.	Will public housing be needed for project?
x		11.	Is public housing available?
x		12.	Is it felt there will be adequate DSS housing housing available during relocation period?
	x	13.	Will there be a problem of housing within financial means?
	NA	14.	Are suitable business sites available (list source).
		15.	Number months estimated to complete RELOCATION? **Nine Monthsl**

REMARKS (Respond by Number)

3. Will not be disrupted due to the project

6. Available housing listed by local real estate firms and local newspaper.

11. Public housing is available if necessary.

12. From information listed in local paper and knowledge of the area. DSS housing will be available during relocation period.

Kevin D Monteith	1/19/07	Ann Simpson	1-22-07
Kevin Monteith Right of Way Agent	Date	Relocation Coordinator	Date

FRM15-E