STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

MICHAEL F. EASLEY
GOVERNOR

LYNDO TIPPETT
SECRETARY

July 17, 2008

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

ATTENTION: Mr. David Baker
NCDOT Coordinator

SUBJECT: **Application for Nationwide Permits 13, 23, 33 and Section 401 Water Quality Certification** for the proposed replacement of Bridge No. 142 over Howard's Creek on SR 1193 in Lincoln County, Division 12, Federal Aid Project No. BRZ-1193(5), State Project No. 8.2831601, WBS Element 33524.1.1, **TIP No. B-4177**. $240 Debit work order 8.2831601

Dear Sir:

Please see the enclosed PCN, Rapanos form, permit drawings and design plans. A Programmatic Categorical Exclusion was completed for this project in September 2006 and distributed shortly thereafter. Additional copies are available upon request. NCDOT proposes to replace the existing 81-foot long Bridge No. 142 with a 130-foot long bridge. This project will result in an off-site detour to minimize environmental impacts. There will be 71 linear feet of permanent stream impacts and 0.01 acre of temporary stream impacts incurred from the construction of this project.

IMPACTS TO WATERS OF THE UNITED STATES

General Description:
The water resource on project B-4177 includes Howard's Creek. Howard's Creek is located in the Catawba River Basin (Division of Water Quality (DWQ)) subbasin 03-08-35. The DWQ Index number for Howard's Creek is 11-129-4 and the Hydrological Cataloguing Unit is 03050102.

The North Carolina Department of Environmental and Natural Resources has designated Howard's Creek as class **"C"**. There are no High Quality Waters (HQW), Water Supplies (WS-I or WSII), or Outstanding Resource Waters (ORW) within 1.0 mile of the project study area. Howard's Creek does not appear on the North Carolina DWQ 303(d) List (updated 2006) and there are no 303(d) streams within one mile of the project. Lincoln County is not a trout county. There are no jurisdictional wetlands within the project area.

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

TELEPHONE: 919-733-3141
FAX: 919-715-1501
WEBSITE: WWW.NCDOT.ORG

LOCATION:
PARKER LINCOLN BUILDING,
2728 CAPITAL BLVD., SUITE 240
RALEIGH NC 27604

Permanent Impacts:
There will be 71 linear feet of permanent impacts to Rabbit Creek associated with the installation of the new bridge bent (32 feet) and rip-rap bank stabilization (39 feet). The following narrative from the NCDOT hydraulics unit further discusses the structure type:

"Early on during the preliminary design process, several bridge span arrangements were evaluated from the hydraulics, roadway & structures perspective. The 2-65' Spans (using 45" pre-stressed concrete girder) arrangement minimized the number of bents within the stream & banks while avoiding the existing bents. It was the preferred structure type for the existing field conditions and should provide the best performance of the options evaluated, while still maintaining the proper roadway grade that was needed to meet the design criteria for this roadway classification."

Temporary Impacts:
There will be 0.01 acre of temporary impacts associated with the installation of a causeway as part of the bent installation process.

Utility Impacts:
There will be no jurisdictional impacts associated with relocation of utility lines on the project site.

Bridge Demolition
Bridge No. 142 is constructed entirely of timber and steel. It should be possible to remove the existing structure without dropping any debris into Howard's Creek.

PROJECT SCHEDULE

The project schedule calls for a January 20, 2009 let date with a review date of December 2, 2008.

FEDERALLY PROTECTED SPECIES

Plants and animals with federal classifications of Endangered (E), Threatened (T), Proposed Endangered (PE) and Proposed Threatened (PT) are protected under provisions of Section 7 and Section 9 of the Endangered Species Act of 1973, as amended. As of January 31, 2008, the United States Fish and Wildlife Service (USFWS) lists two federally protected species for Lincoln County (Table 1). The biological conclusion for the two listed species is No Effect. A dwarf-flowered heartleaf survey was conducted in June 2005 and a Michaux's sumac survey was conducted in June 2008.

Table 1. Federally Protected Species for Lincoln County.

COMMON NAME	SCIENTIFIC NAME	STATUS	HABITAT	BIOLOGICAL CONCLUSIO N
Bald eagle	*Haliaeetus leucocephalus*	Delisted	No	N/A
Dwarf-flowered heartleaf	*Hexastylis naniflora*	T	Yes	No Effect
Michaux's sumac	*Rhus michauxii*	E	Yes	No Effect

It should be noted that the Bald Eagle was previously listed as "Threatened", however it was delisted August 8, 2007. It is still protected under the Bald and Golden Eagle Protection Act. Suitable habitat for the bald eagle does not exist within the project study area. No large bodies of water (i.e. lakes or large rivers) occur within 1.0 mile of the project study area.

AVOIDANCE, MINIMIZATION AND MITIGATION

Avoidance and Minimization:
Avoidance examines all appropriate and practicable possibilities of averting impacts to "Waters of the United States." The NCDOT is committed to incorporating all reasonable and practicable design features to avoid and minimize jurisdictional stages; minimization measures were incorporated as part of the project design. The use of best management practices for construction should reduce impacts to plant communities. The following avoidance and minimization measures will apply to this project.

- The existing bridge demolition will not result in any fill being dropped into waters of the United States.
- Traffic will be detoured off-site during construction. This eliminates the need for an on-site detour.
- Water will not be directly discharged into Howard's Creek via deck drains.

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

Compensatory Mitigation:
The NCDOT proposes no mitigation for the 32 feet of bridge bent installation and 39 feet of bank stabilization impacts associated with this project.

REGULATORY APPROVALS

Section 404 Permit:
It is anticipated that the bank stabilization and temporary causeway installation will be authorized under Section 404 Nationwide Permits 13 and 33 (Bank Stabilization and Temporary Construction Access and Dewatering). We are, therefore, requesting the issuance of Nationwide Permits 13 and 33. All other aspects of this project are being processed by the Federal Highway Administration as a "Programmatic Categorical Exclusion". The NCDOT requests that these activities be authorized by a Nationwide Permit 23.

Section 401 Permit:
We anticipate 401 General Certification numbers 3701, 3688 and 3689 will apply to this project. We are hereby requesting a water quality certification from DWQ. We are submitting five copies of this application to the North Carolina Department of Environmental and Natural Resources, Division of Water Quality, for their review and approval.

This project is not located in a trout county; therefore comments from the North Carolina Wildlife Resources Commission (NCWRC) will not be required prior to authorization by the Corps of Engineers.

Thank you for your assistance with this project. If you have any questions or need additional information, please contact Jeremy T. Leamer at jtleamer@dot.state.nc.us or (919) 715-7726.

Sincerely,

E. L. Lurk

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

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

W/o attachment (see website for attachments)
Dr. David Chang, P.E., Hydraulics
Mr. Victor Barbour, P.E., Project Services Unit
Mr. Greg Perfetti, P.E., Structure Design
Mr. Mark Staley, Roadside Environmental
Mr. Mike Holder, P.E., Div. 12 Engineer
Mr. Trish Simon, Div. 12 DEO
Mr. Jay Bennett, P.E., Roadway Design
Mr. Majed Alghandour, P.E., Program.
Mr. Art McMillan, P.E., Highway Design
Mr. Scott McLendon, USACE, Wilmington
Mr. Todd Jones, NCDOT External Audit Branch
Ms. Hank Schwab, PDEA 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:
   - x Section 404 Permit
   - ☐ Section 10 Permit
   - x 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: 13, 23, 33

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

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

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

II. Applicant Information

1. Owner/Applicant Information
   Name: Gregory J. Thorpe, Ph.D., Environmental Management Director
   Mailing Address: NC DOT - PDEA
   1598 Mail Service Center, Raleigh, NC 27699-1548
   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: N/A

2. T.I.P. Project Number or State Project Number (NCDOT Only): **B-4177**

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

4. Location
   County: Lincoln Nearest Town: Lincolnton
   Subdivision name (include phase/lot number):
   Directions to site (include road numbers/names, landmarks, etc.):
   Bridge # 142 On SR 1193 over Howard's 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.)
   One water body: Garden Creek
   Decimal Degrees (6 digits minimum): 353016 °N 0812139 °W

6. Property size (acres): N/A

7. Name of nearest receiving body of water: South Fork Catawba River

8. River Basin: Catawba River
   (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: Bridge No. 142 is located on SR 1193 (Wise Road) south or Reepsville and west of Lincolnton. The bridge was constructed in 1956 and is posted to

restrict weight limits to 7 tons for single vehicles. This prevents Lincoln County school buses from crossing the structure.

10. Describe the overall project in detail, including the type of equipment to be used: Bridge removal project involving heavy construction equipment and manual labor to replace a spanning structure with another spanning structure.

11. Explain the purpose of the proposed work: Public transportation improvement project.

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. No prior permits have been issued/ withdrawn for this project.

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.
No.

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 71 linear feet of permanent surface water impacts associated with the bridge replacement and bank stabilization. Temporary impacts for a causeway used for bent removal and installation will result in 37 linear feet of surface water impacts.

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)
Total Wetland Impact (acres)					

3. List the total acreage (estimated) of all existing wetlands on the property: 0

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 Designation (indicate on map)	Stream Name	Type of Impact	Perennial or Intermittent?	Average Stream Width Before Impact	Impact Length (linear feet)	Area of Impact (acres)
S	Howard's Creek	permanent	perennial	12'	71	<0.01
TS	Howard's Creek	temporary	perennial	12'	37	0.01
Total Stream Impact (by length and acreage)					108	0.01

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

Open Water Impact Site Number (indicate on map)	Name of Waterbody (if applicable)	Type of Impact	Type of Waterbody (lake, pond, estuary, sound, bay, ocean, etc.)	Area of Impact (acres)
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):	0.01
Wetland Impact (acres):	N/A
Open Water Impact (acres):	N/A
Total Impact to Waters of the U.S. (acres) Permanent	0.01
Total Impact to Waters of the U.S. (acres) Temporary	0.01
Total Stream Impact (linear feet) Permanent	71
Total Stream Impact (linear feet) Temporary	37

7. Isolated Waters
Do any isolated waters exist on the property? ☐ Yes x 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. The "do-nothing" alternative was not considered due to it eliminating the use of SR 1193 and closing the bridge. Rehabilitation was not considered due to the deck being constructed of wood. Impacts will be minimized by replacing the existing bridge with another spanning structure and surficial bridge runoff will not be directed into Howard's Creek via deck drains.

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 (see DWQ website for most current version.).

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.

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://www.nceep.net/pages/inlieureplace.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):_____
   Amount of buffer mitigation requested (square feet):_____
   Amount of Riparian wetland mitigation requested (acres):_____
   Amount of Non-riparian wetland mitigation requested (acres):_____
   Amount of Coastal wetland mitigation requested (acres):_____

IX. Environmental Documentation (required by DWQ)

1. Does the project involve an expenditure of public (federal/state/local) funds or the use of public (federal/state) land? Yes x 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 x - A Programmatic Categorical Exclusion dated September 2006 has been submitted. 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 x 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 x

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

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

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

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

XI. Stormwater (required by DWQ)

Describe impervious acreage (existing and proposed) versus total acreage on the site. Discuss stormwater controls proposed in order to protect surface waters and wetlands downstream from the property. If percent impervious surface exceeds 20%, please provide calculations demonstrating total proposed impervious level. Impervious acreage is not expected to significantly increase as a result of this bridge replacement project. Deck drains will not be used.

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 x

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

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 x

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).

_____

_____

E. L. Lusk 7.17.08

Applicant/Agent's Signature **Date**

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

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

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

SECTION I: BACKGROUND INFORMATION

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

B. DISTRICT OFFICE, FILE NAME, AND NUMBER: B-4177 (Replacement of Bridge 142 on SR 1193 over Howard's Creek)

C. PROJECT LOCATION AND BACKGROUND INFORMATION:
State:NC County/parish/borough: Lincoln City: Lincolnton
Center coordinates of site (lat/long in degree decimal format): Lat. 35'30'16'° N, Long. 81'21'39'° W.
Universal Transverse Mercator:
Name of nearest waterbody: South Fork Catawba River
Name of nearest Traditional Navigable Water (TNW) into which the aquatic resource flows: South Fork Catawba R
Name of watershed or Hydrologic Unit Code (HUC): 03050102
☒ Check if map/diagram of review area and/or potential jurisdictional areas is/are available upon request.
☐ Check if other sites (e.g., offsite mitigation sites, disposal sites, etc…) are associated with this action and are recorded on a different JD form.

D. REVIEW PERFORMED FOR SITE EVALUATION (CHECK ALL THAT APPLY):
☒ Office (Desk) Determination. Date: 6/28/2008
☐ Field Determination. Date(s):

SECTION II: SUMMARY OF FINDINGS

A. RHA SECTION 10 DETERMINATION OF JURISDICTION.

There **Are no** *"navigable waters of the U.S."* within Rivers and Harbors Act (RHA) jurisdiction (as defined by 33 CFR part 329) in the review area. [*Required*]
☐ Waters subject to the ebb and flow of the tide.
☐ Waters are presently used, or have been used in the past, or may be susceptible for use to transport interstate or foreign commerce. Explain: The Linville River is navigable and continuous from the project site to Lake James. There are regular whitewater kayak trips that run this stretch year-round.

B. CWA SECTION 404 DETERMINATION OF JURISDICTION.

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

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

   b. **Identify (estimate) size of waters of the U.S. in the review area:**
      Non-wetland waters: 110 linear feet: 27 width (ft) and/or acres.
      Wetlands: acres.

   c. **Limits (boundaries) of jurisdiction** based on: **Not Applicable.**
      Elevation of established OHWM (if known): .

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

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

SECTION III: CWA ANALYSIS

A. TNWs AND WETLANDS ADJACENT TO TNWs

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

1. **TNW**
   Identify TNW: .

   Summarize rationale supporting determination: .

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Primary tributary substrate composition (check all that apply):

☐ Silts	☐ Sands	☐ Concrete
☐ Cobbles	☐ Gravel	☐ Muck
☐ Bedrock	☐ Vegetation. Type/% cover:	
☐ Other. Explain: .		

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

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

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

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

Tributary has (check all that apply):
☐ Bed and banks
☐ OHWM[6] (check all indicators that apply):

☐ clear, natural line impressed on the bank	☐ the presence of litter and debris
☐ changes in the character of soil	☐ destruction of terrestrial vegetation
☐ shelving	☐ the presence of wrack line
☐ vegetation matted down, bent, or absent	☐ sediment sorting
☐ leaf litter disturbed or washed away	☐ scour
☐ sediment deposition	☐ multiple observed or predicted flow events
☐ water staining	☐ abrupt change in plant community
☐ other (list):	

☐ Discontinuous OHWM.[7] Explain: .

If factors other than the OHWM were used to determine lateral extent of CWA jurisdiction (check all that apply):

☐ High Tide Line indicated by:	☐ Mean High Water Mark indicated by:
☐ oil or scum line along shore objects	☐ survey to available datum;
☐ fine shell or debris deposits (foreshore)	☐ physical markings;
☐ physical markings/characteristics	☐ vegetation lines/changes in vegetation types.
☐ tidal gauges	
☐ other (list):	

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

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

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

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

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

(i) Physical Characteristics:

(a) General Wetland Characteristics:

Properties:

Wetland size: acres

Wetland type. Explain: .

Wetland quality. Explain: .

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

(b) General Flow Relationship with Non-TNW:

Flow is: **Intermittent flow**. Explain: .

Surface flow is: **Discrete and confined**

Characteristics: .

Subsurface flow: **Unknown**. Explain findings: .

- ☐ Dye (or other) test performed: .

(c) Wetland Adjacency Determination with Non-TNW:

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

(d) Proximity (Relationship) to TNW

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

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

Flow is from: **Pick List.**

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

(ii) Chemical Characteristics:

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

Identify specific pollutants, if known: .

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

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

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

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

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

For each wetland, specify the following:

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

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

C. SIGNIFICANT NEXUS DETERMINATION

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

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

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

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

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

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

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

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

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

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

Provide estimates for jurisdictional waters in the review area (check all that apply):
☒ Tributary waters: **110** linear feet**27**width (ft).
☐ Other non-wetland waters: acres.
Identify type(s) of waters: .

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

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

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

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

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

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

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

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

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

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

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

Identify water body and summarize rationale supporting determination: .

---

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

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

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

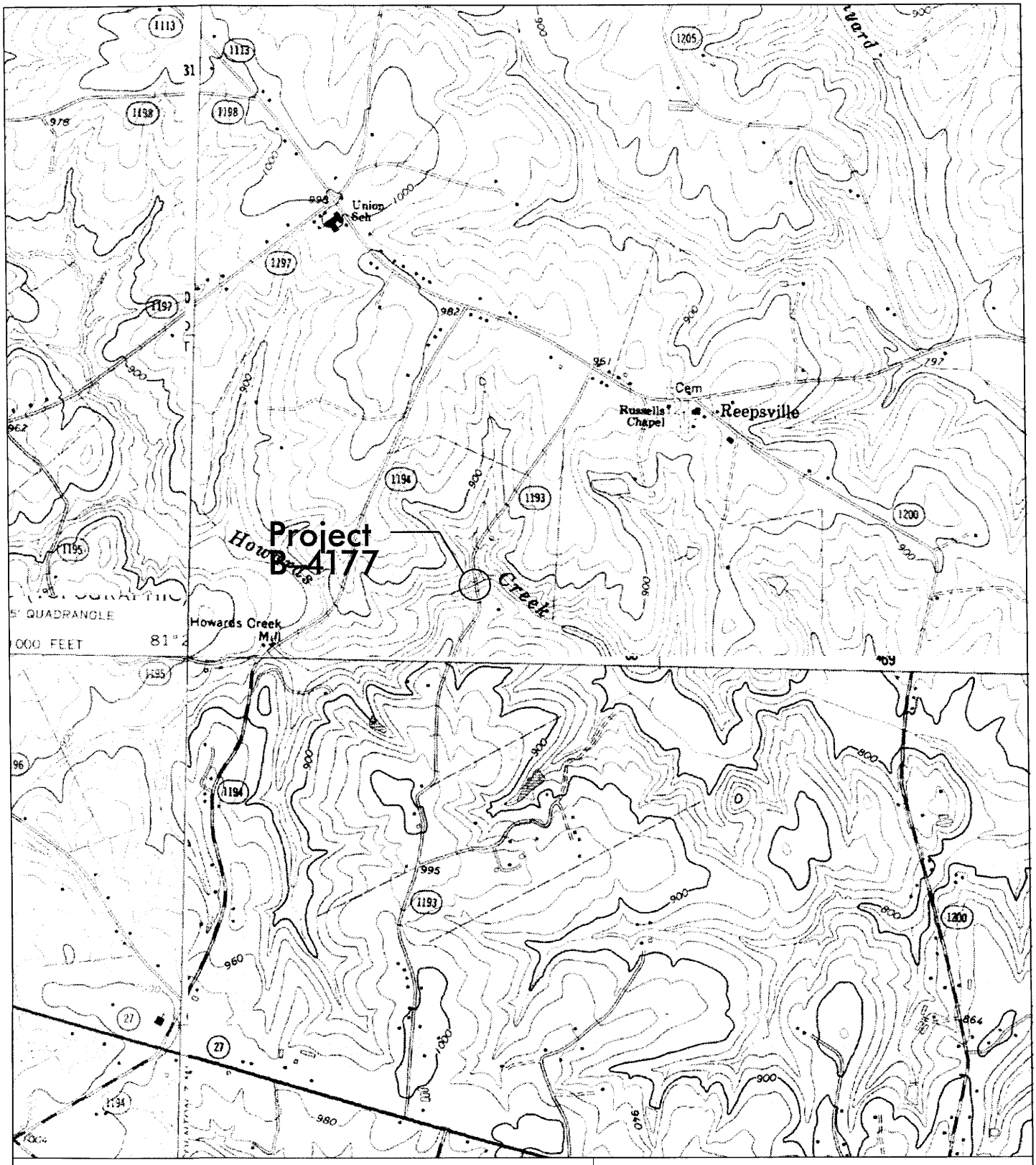
Provide acreage estimates for non-jurisdictional waters in the review area, where the sole potential basis of jurisdiction is the MBR factors (i.e., presence of migratory birds, presence of endangered species, use of water for irrigated agriculture), using best professional judgment (check all that apply):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

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

SECTION IV: DATA SOURCES.

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

B. ADDITIONAL COMMENTS TO SUPPORT JD: .



Permit Drawing
Sheet 1 of 6

TOPO MAP

SCALE: 1" : 2000'

NCDOT

DIVISION OF HIGHWAYS
LINCOLN COUNTY
PROJECT: 33524.1.1 (B-4177)
BRIDGE NO. 142 OVER
HOWARDS CREEK ON
SR 1193 (WISE ROAD)

SHEET OF 3 / 25 / 2008

PROPERTY OWNERS

NAMES AND ADDRESSES

	NAMES	ADDRESSES
1	KENNETH M. McCURRY & KATHERINE B. McCURRY	735 WISE ROAD LINCOLNTON, NC 28079
2	KENNETH WAYNE HOVIS & LINDA WEAVER HOVIS	P.O. BOX LINCOLNTON, NC 28093
3	JARVIS MARIE JAMES	1002 WISE ROAD VALE, NC 28168

Permit Drawing
Sheet 2 of 6

NCDOT

DIVISION OF HIGHWAYS
LINCOLN COUNTY
PROJECT: 33524.1.1 (B-4177)
BRIDGE NO. 142 OVER
HOWARDS CREEK ON
SR 1193 (WISE ROAD)

SHEET OF 3/25/2008

WETLAND PERMIT IMPACT SUMMARY

Site No.	Station (From/To)	Structure Size / Type	WETLAND IMPACTS					SURFACE WATER IMPACTS				
			Permanent Fill In Wetlands (ac)	Temp. Fill In Wetlands (ac)	Excavation in Wetlands (ac)	Mechanized Clearing in Wetlands (ac)	Hand Clearing in Wetlands (ac)	Permanent SW impacts (ac)	Temp. SW impacts (ac)	Existing Channel Impacts Permanent (ft)	Existing Channel Impacts Temp. (ft)	Natural Stream Design (ft)
1	-L- 18+85 LT & RT	Bent						<0.01		32		
1	-L- 18+72 +/- LT	RipRap						<0.01		8		
1	-L- 18+81 +/- RT	RipRap						<0.01		13		
1	-L- 18+72 to 18+94	Causeway							0.01		37	
1	-L- 19+05 +/- LT	RipRap						<0.01		9		
1	-L- 19+12 +/- RT	RipRap						<0.01		9		
TOTALS:								<0.01	0.01	71	37	

Permit Drawing
Sheet 3 of 6

NC DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

LINCOLN COUNTY
WBS - 33524.1.1 (B-4177)

SHEET 4/7/2008

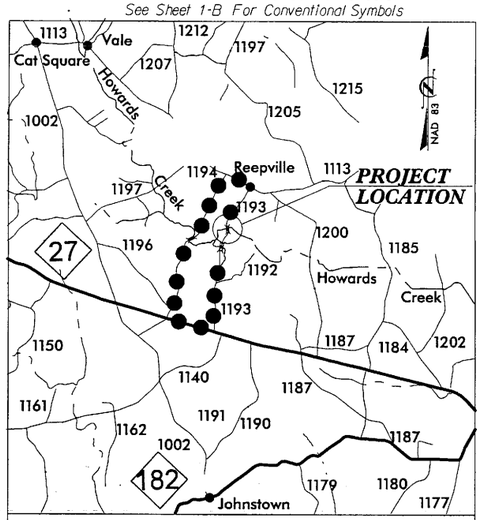
ATN Revised 3/31/05

09/08/99

TIP PROJECT: B-4177

CONTRACT: 33524.1.1

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



VICINITY MAP

OFF-SITE DETOUR

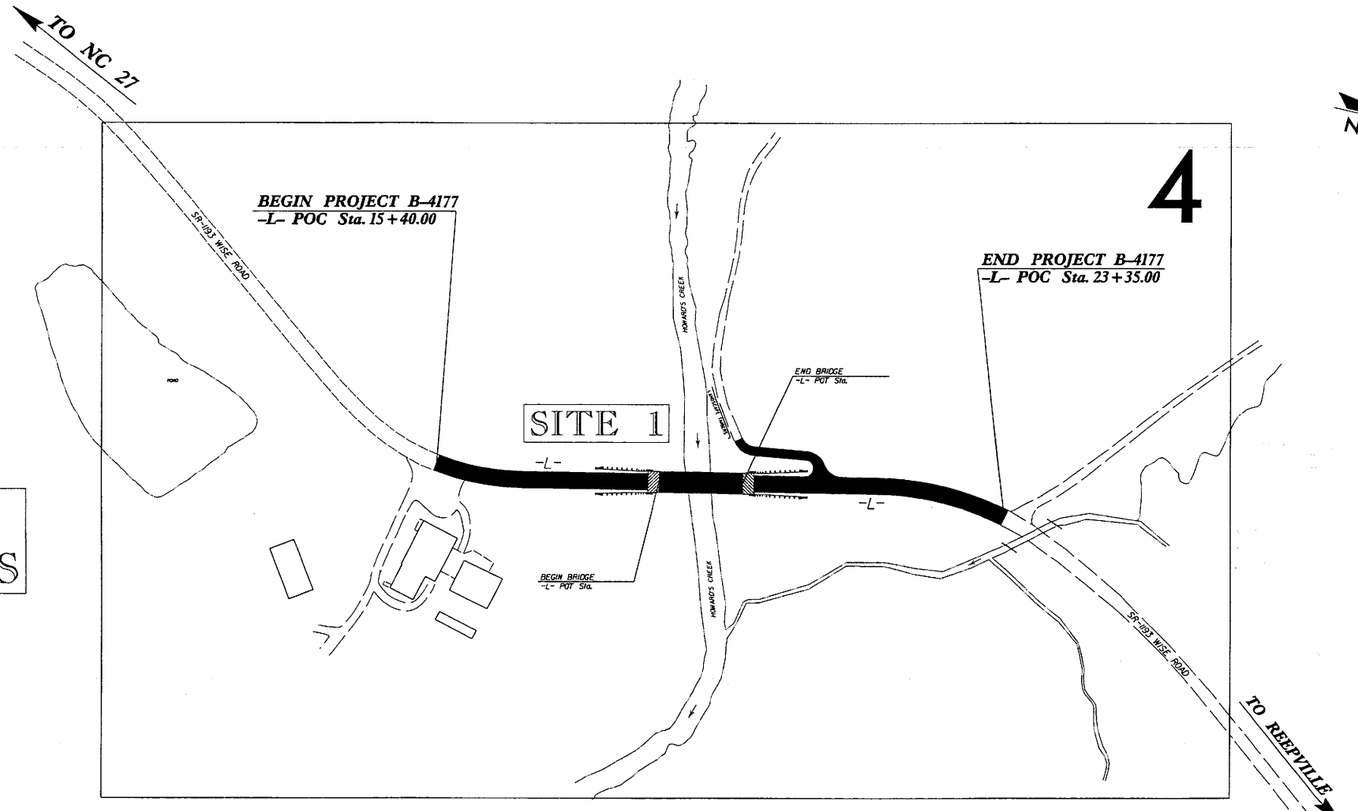
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

LINCOLN COUNTY

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-4177	1	
STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION	
33524.1.1	BRZ-1193(5)	PE	

LOCATION: BRIDGE No. 142 OVER HOWARDS CREEK ON SR-1193 (WISE ROAD), SOUTH OF REEPVILLE

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



STREAM AND WETLAND IMPACTS

METHOD OF CLEARING III

RECEIVED
APR 07 2008
DIVISION OF HIGHWAYS
HYDRAULICS UNIT

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

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 2002 = 500
ADT 2025 = 800
DHV = 10 %
D ÷ 60 %
T = 3 % *
V = 30 MPH

* TTST 1 % DUAL 2 %

PROJECT LENGTH

LENGTH OF ROADWAY PROJECT TIP No. B-4177 = 0.130 miles
LENGTH OF STRUCTURE PROJECT TIP No. B-4177 = 0.021 miles
TOTAL LENGTH OF PROJECT TIP No. B-4177 = 0.151 miles

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

2006 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE: DECEMBER 15, 2006

LETTING DATE: DECEMBER 18, 2007

J. S. GOODNIGHT
PROJECT ENGINEER

S. D. KENDALL
PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

SIGNATURE: *P.E.*

ROADWAY DESIGN ENGINEER

SIGNATURE: *P.E.*

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

STATE HIGHWAY DESIGN ENGINEER *P.E.*

Permit Drawing Sheet 4 of 6

4/7/2008
R:\Hydraulics\Permits\B4177_hyd_prm_tsh_wet.dgn
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8/17/99

PROJECT REFERENCE NO.	SHEET NO.
B-4177	4
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

NOTE: SEE SHEET No. 2-A FOR BRIDGE SKETCH
SEE SHEET No. 5 FOR PROFILES

DENOTES TEMPORARY FILL IN SURFACE WATERS

DENOTES FILL IN SURFACE WATERS

LINCOLN COUNTY, NC
BRIDGE 124 ON SR 1193
OVER HOWARDS CREEK
3/25/08

ENGLISH

CAUSEWAY QUANTITIES

VOLUME OF CLASS II RIP RAP BELOW ORDINARY HIGH WATER= 55 YD^3

NAD 83

(1) KENNETH M. McCURRY & KATHERINE B. McCURRY DB 426 PG 639

(2) KENNETH WAYNE HOVIS & LINDA WEAVER HOVIS DB 859 PG 714

JARVIS MARIE JAMES DB 687 PG 487

DEBBIE M. CASH DB 916 PG 094

(3) JARVIS MARIE JAMES DB 583 PG 047 DB 599 PG 073

CAUSEWAY

HAUL ROAD

SITE 1

RETAIN EXIST. DITCH Sta. 15+40 to 17+00 LT. REPLACE EXIST. RIP-RAP w/48 Tons CLASS 'B' RIP-RAP w/110 Sq. Yds. Filter Fabric

SPECIAL 3' LATERAL BASE DITCH 135 Tons CLASS 'I' RIP-RAP w/330 Sq. Yds. Filter Fabric DDE = 250 Cu. Yds. SEE DETAIL 'A'

28 Tons CLASS 'II' RIP-RAP w/16 Sq. Yds. Filter Fabric AT EACH EMBANKMENT SEE DETAIL 'B'

CLASS 'II' RIP-RAP (See Structure Plans)

TIE PROP. WOVEN WIRE FENCE TO EXIST. +59.95

TIE PROP. WOVEN WIRE FENCE TO EXIST. +66.79

PROP. WOVEN WIRE FENCE

RETAIN EXIST. DITCH Sta. 16+00 to 18+00 RT. REPLACE EXIST. RIP-RAP w/60 Tons CLASS 'B' RIP-RAP w/140 Sq. Yds. Filter Fabric

28 Tons CLASS 'II' RIP-RAP w/16 Sq. Yds. Filter Fabric AT EACH EMBANKMENT SEE DETAIL 'B'

2GI w/NARROW SLOT GRATE

FALSE SUMP SEE DETAIL 'D'

REMOVE & RESET FENCE AS NEEDED

FALSE SUMP SEE DETAIL 'E'

2GI w/NARROW SLOT GRATE

SPECIAL 'V' DITCH 40 Tons CLASS 'B' RIP-RAP W/99 Sq. Yds. Filter Fabric SEE DETAIL 'C'

SPECIAL CUT DITCH SEE DETAIL 'F'

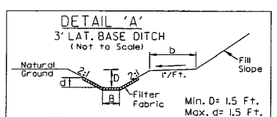
TBDI w/NARROW SLOT FLAT GRATE

SPECIAL DITCH SEE DETAIL 'F'

REMOVE EXISTING BRIDGE

RETAIN

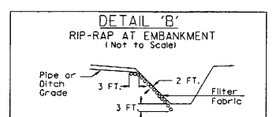
DETAIL 'A'
3' LAT. BASE DITCH
(Not to Scale)



Type of Liner= Class 'I' Rip-Rap

Sta. 16+75 to Sta. 18+10 LT.

DETAIL 'B'
RIP-RAP AT EMBANKMENT
(Not to Scale)

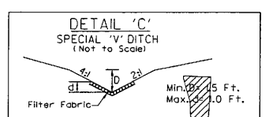


Type of Liner= Est. 28 Tons Class 'I' Rip-Rap w/ 16 Sq. Yds. Filter Fabric

Sta. 18+60 to Sta. 18+70 LT.
Sta. 19+05 to Sta. 19+15 LT.

Sta. 18+70 to Sta. 18+80 RT.
Sta. 19+10 to Sta. 19+20 RT.

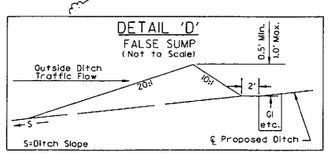
DETAIL 'C'
SPECIAL 'V' DITCH
(Not to Scale)



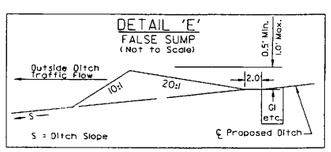
Type of Liner= Class 'B' Rip-Rap

Sta. 19+50 to Sta. 20+25 LT.

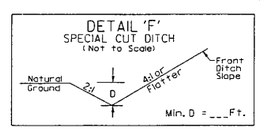
DETAIL 'D'
FALSE SUMP
(Not to Scale)



DETAIL 'E'
FALSE SUMP
(Not to Scale)



DETAIL 'F'
SPECIAL CUT DITCH
(Not to Scale)



Sta. 19+75 to 20+25 RT.
Sta. 20+65 to 21+00 LT.
Sta. 22+00 to 23+00 LT.

Permit Drawing Sheet 5 of 6

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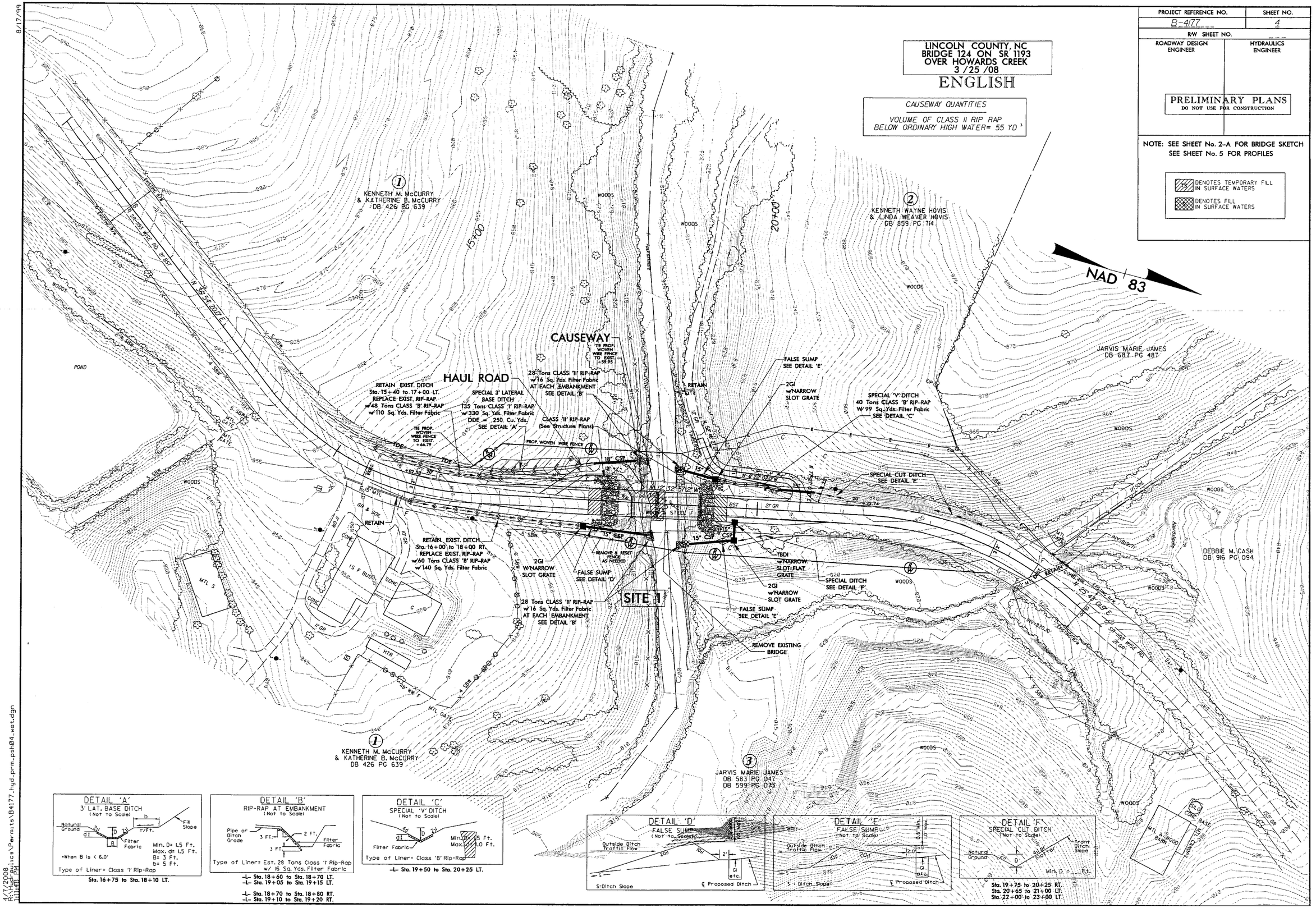

8/17/99

PROJECT REFERENCE NO.	SHEET NO.
B-4177	4

R/W SHEET NO.

ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

NOTE: SEE SHEET No. 2-A FOR BRIDGE SKETCH
SEE SHEET No. 5 FOR PROFILES

▨ TS	DENOTES TEMPORARY FILL IN SURFACE WATERS
▩ S	DENOTES FILL IN SURFACE WATERS

LINCOLN COUNTY, NC
BRIDGE 124 ON SR 1193
OVER HOWARDS CREEK
3/25/08
ENGLISH

CAUSEWAY QUANTITIES
VOLUME OF CLASS II RIP RAP
BELOW ORDINARY HIGH WATER= 55 YD³

Sta. 16+75 to Sta. 18+10 LT.

-L- Sta. 18+60 to Sta. 18+70 LT.
-L- Sta. 19+05 to Sta. 19+15 LT.

-L- Sta. 18+70 to Sta. 18+80 RT.
-L- Sta. 19+10 to Sta. 19+20 RT.

-L- Sta. 19+50 to Sta. 20+25 LT.

Sta. 19+75 to 20+25 RT.
Sta. 20+65 to 21+00 LT.
Sta. 22+00 to 23+00 LT.

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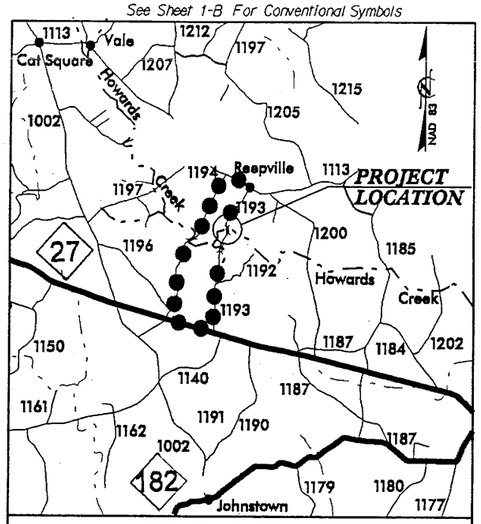
Permit Drawing
Sheet 6 of 6

09/08/99

TIP PROJECT: B-4177

CONTRACT: 33524.1.1

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



VICINITY MAP

OFF-SITE DETOUR

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

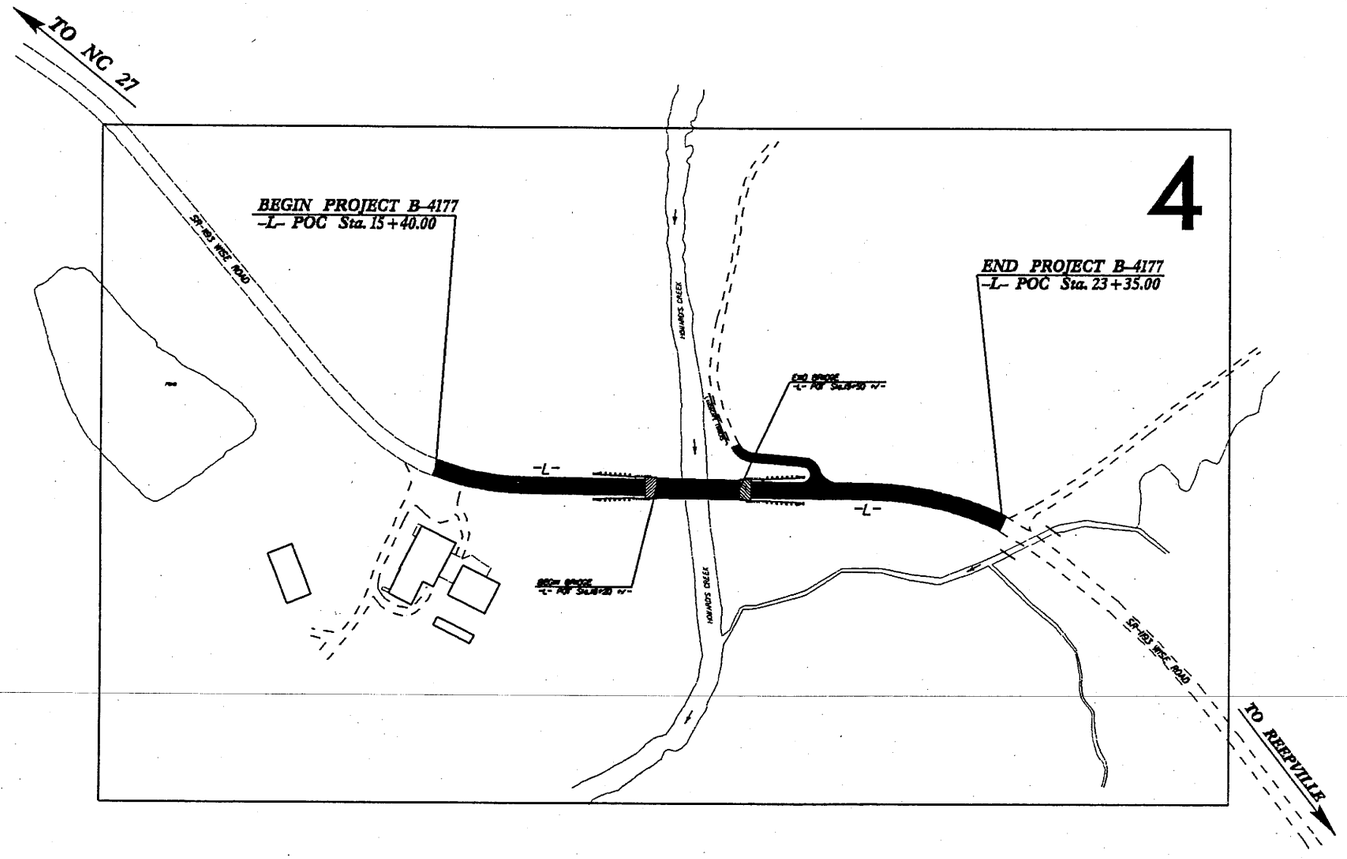
LINCOLN COUNTY

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-4177	1	
STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION	
33524.1.1	BRZ-1193(5)	PE	

LOCATION: BRIDGE No. 142 OVER HOWARDS CREEK ON SR-1193 (WISE ROAD), SOUTH OF REEPVILLE

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

NAD 83



METHOD OF CLEARING III

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

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 2002 = 500
ADT 2025 = 800
DHV = 10 %
D = 60 %
T = 3 % *
V = 30 MPH

* TTST 1 % DUAL 2 %

PROJECT LENGTH

LENGTH OF ROADWAY PROJECT TIP No. B-4177 = 0.126 miles
LENGTH OF STRUCTURE PROJECT TIP No. B-4177 = 0.025 miles
TOTAL LENGTH OF PROJECT TIP No. B-4177 = 0.151 miles

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

2006 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE: JANUARY 9, 2008

LETTING DATE: JANUARY, 2009

J. S. GOODNIGHT, PE
PROJECT ENGINEER

S. D. KENDALL, PE
PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

SIGNATURE: P.E.

ROADWAY DESIGN ENGINEER

SIGNATURE: P.E.

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

P.E.
STATE HIGHWAY DESIGN ENGINEER

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10/25/05

Note: Not to Scale

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

PROJECT REFERENCE NO.	SHEET NO.
B-4177	1-B

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

CONVENTIONAL PLAN SHEET SYMBOLS

BOUNDARIES AND PROPERTY:

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

BUILDINGS AND OTHER CULTURE:

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

HYDROLOGY:

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

RAILROADS:

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

RIGHT OF WAY:

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

ROADS AND RELATED FEATURES:

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

VEGETATION:

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

EXISTING STRUCTURES:

MAJOR:

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

MINOR:

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

UTILITIES:

POWER:

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

TELEPHONE:

- Existing Telephone Pole
- Proposed Telephone Pole
- Telephone Manhole — T
- Telephone Booth
- Telephone Pedestal — T
- Telephone Cell Tower
- U/G Telephone Cable Hand Hole — TH
- 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 — TH
- 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 — PUTL
- 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.

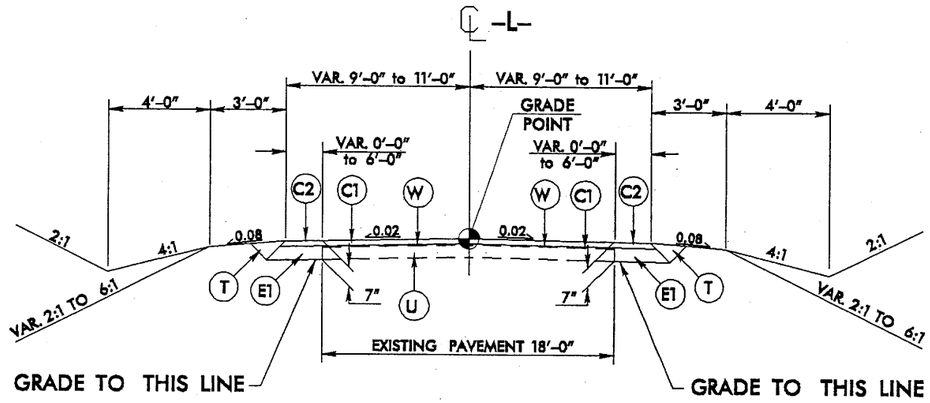
PROJECT REFERENCE NO.	SHEET NO.
B-4177	2
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

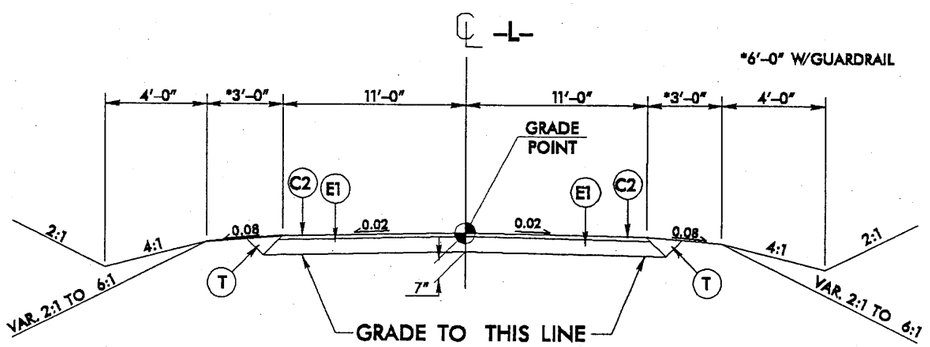
PAVEMENT SCHEDULE

C1	PROP. APPROX. 1¼" ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 165 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.
C2	PROP. APPROX. 2½" ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 137.5 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.	T	EARTH MATERIAL.
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 2" IN DEPTH.	U	EXISTING PAVEMENT.
E1	PROP. APPROX. 4½" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 513 LBS. PER SQ. YD.	W	VARIABLE DEPTH ASPHALT PAVEMENT (SEE STANDARD WEDGING DETAIL).

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



TYPICAL SECTION NO. 1

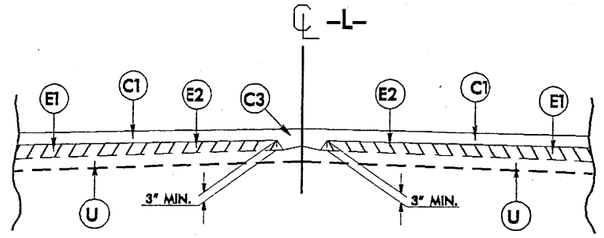


TYPICAL SECTION NO. 2

NOTE:

RESURFACE EXISTING PAVEMENT FROM –L– Sta. 15+40 TO 15+90

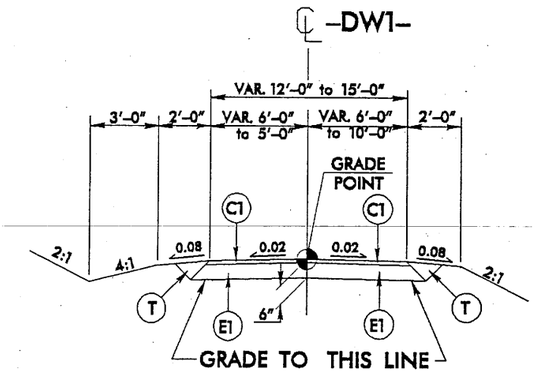
GRADE EXISTING GRAVEL ROAD FROM TYPICAL SECTION No. 2 TO EXISTING –L– Sta. 22+75 TO –L– Sta. 23+35



Detail Showing Method of Wedging

USE TYPICAL SECTION NO. 1

–L– Sta. 15+90.00 TO Sta. 17+01.55



TYPICAL SECTION NO. 3

–DW1– Sta. 10+25.00 TO Sta. 11+66.93

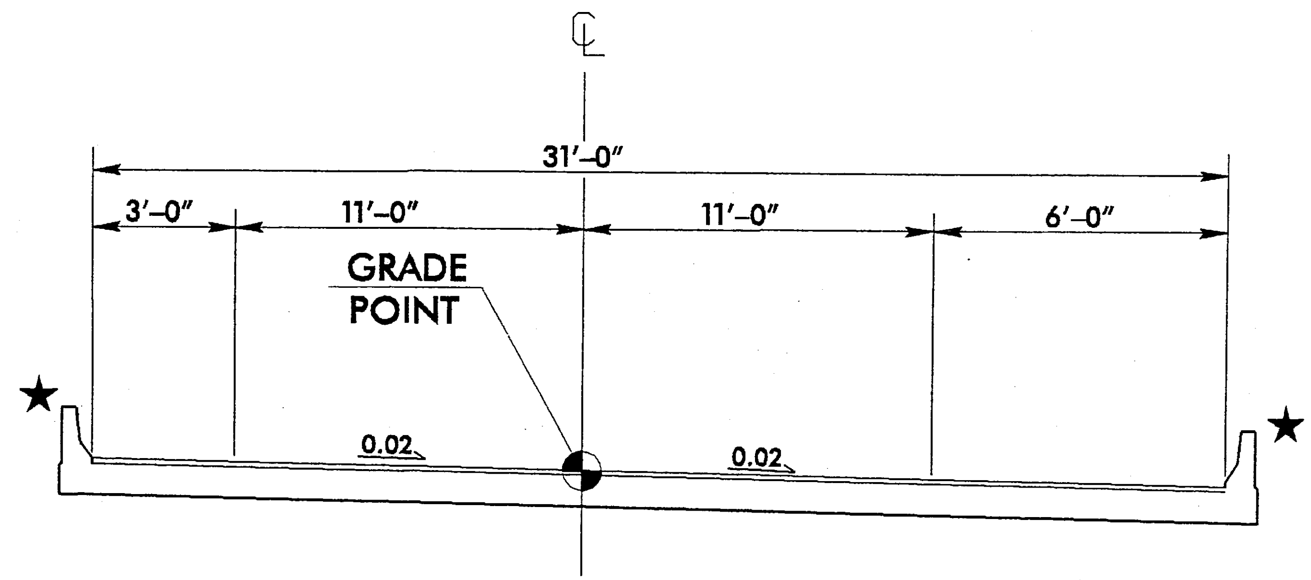
USE TYPICAL SECTION NO. 2

–L– Sta. 17+00.00 TO Sta. 18+20.00 +/– (BRIDGE)
–L– Sta. 19+50.00+/– (BRIDGE) TO Sta. 22+75.00

PROJECT REFERENCE NO.	SHEET NO.
B-4177	2-A

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

STRUCTURE TYPICAL SECTIONS



TYPICAL SECTION NO. A

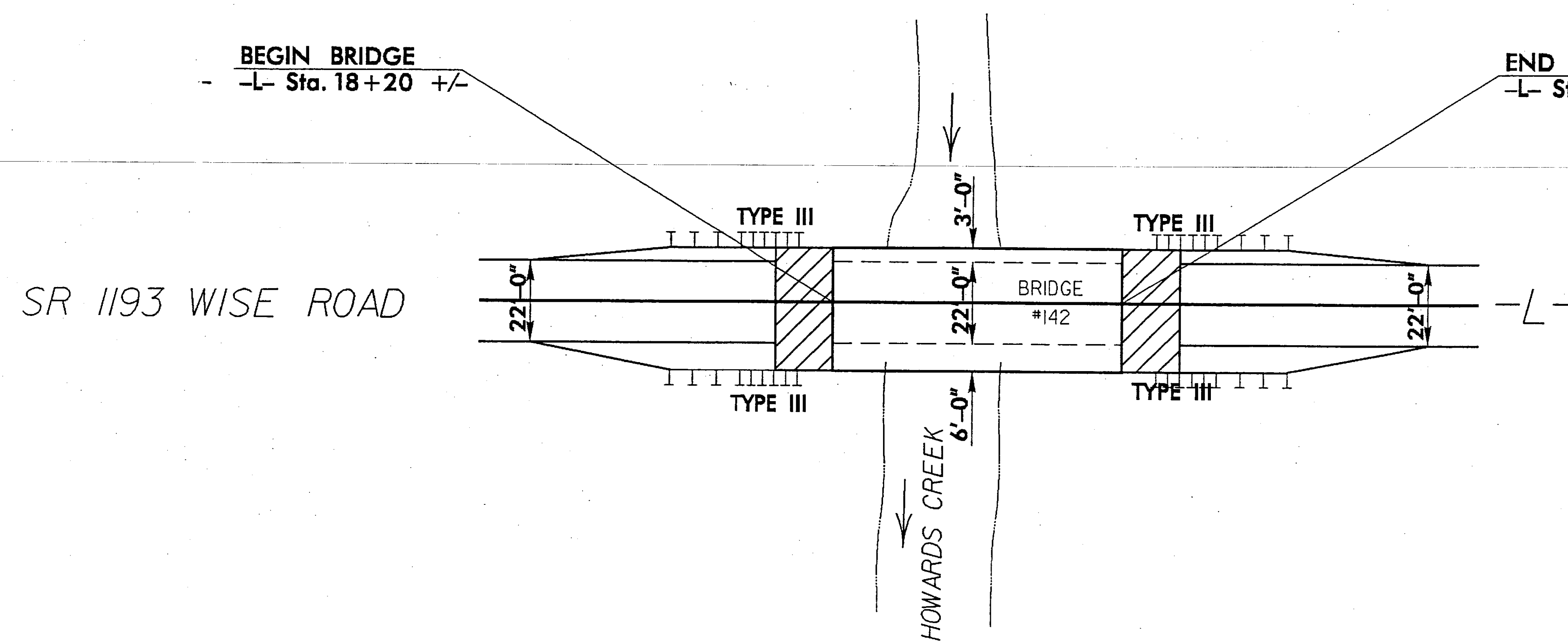
DESIGN DATA

ADT 2002 =	500
ADT 2025 =	800
DHV =	10 %
D =	60 %
T =	3 % *
V =	30 MPH
* TTST 1 %	DUAL 2%
FUNCTIONAL CLASSIFICATION =	LOCAL

★BRIDGE RAIL TO BE DETERMINED BY STRUCTURE DESIGN UNIT

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

SKETCH SHOWING BRIDGE/PAVEMENT RELATIONSHIP



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PROJECT REFERENCE NO.	SHEET NO.
B-4177	4

R/W SHEET NO.

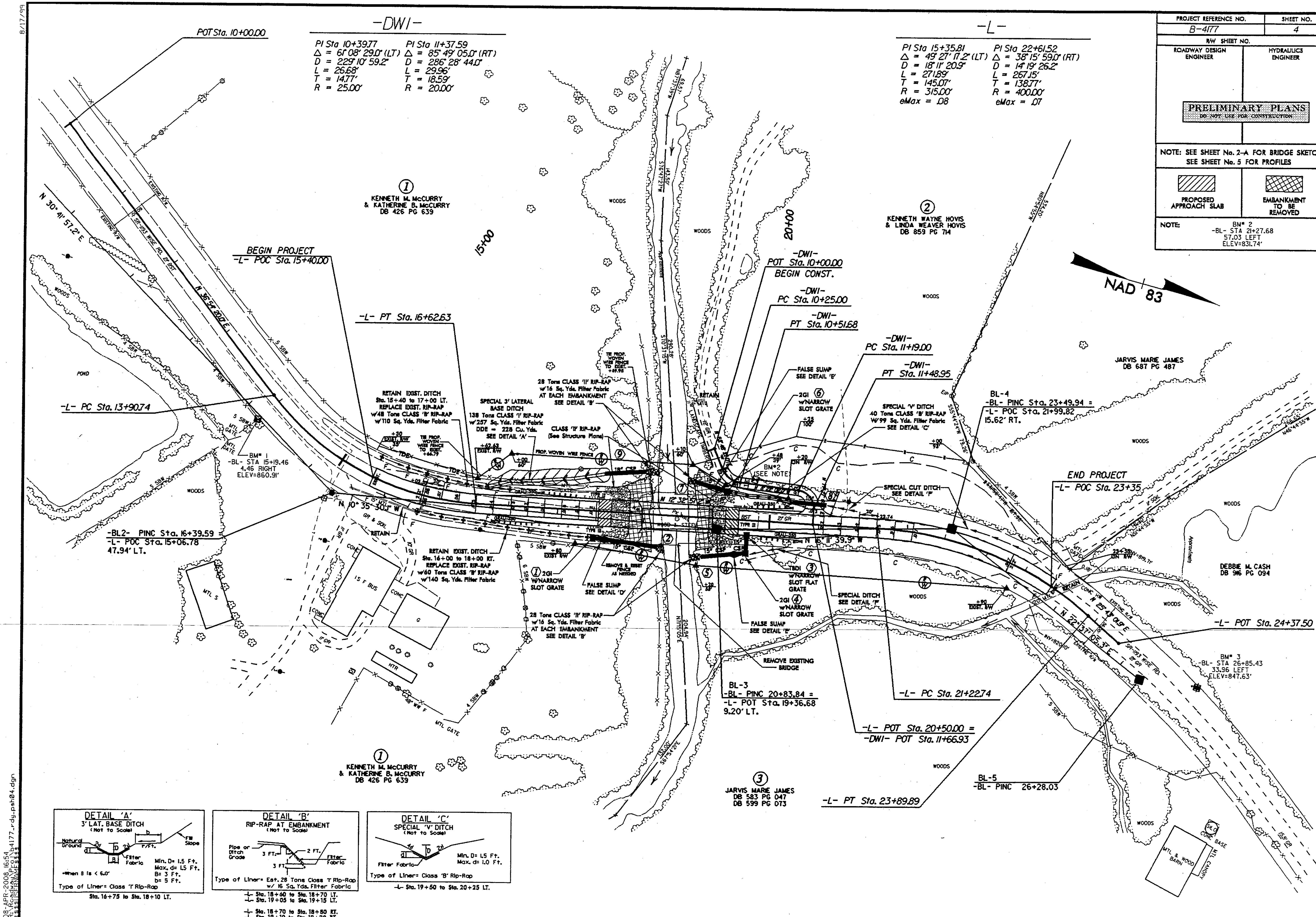
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

NOTE: SEE SHEET No. 2-A FOR BRIDGE SKETCH
SEE SHEET No. 5 FOR PROFILES

PROPOSED APPROACH SLAB	EMBANKMENT TO BE REMOVED

NOTE: BM# 2
-BL- STA 21+27.68
57.03 LEFT
ELEV=831.74'



-DWI-
PI Sta 10+39.77
Δ = 61° 08' 29.0" (LT)
D = 229° 10' 59.2"
L = 26.68'
T = 14.77'
R = 25.00'
PI Sta 11+37.59
Δ = 85° 49' 05.0" (RT)
D = 286° 28' 44.0"
L = 29.96'
T = 18.59'
R = 20.00'
-L-
PI Sta 15+35.81
Δ = 49° 27' 17.2" (LT)
D = 18° 11' 20.9"
L = 271.89'
T = 145.07'
R = 315.00'
eMax = .08
PI Sta 22+61.52
Δ = 38° 15' 59.0" (RT)
D = 14° 19' 26.2"
L = 267.15'
T = 138.77'
R = 400.00'
eMax = .07
POT Sta. 10+00.00
NAD 83
1 KENNETH M. McCURRY & KATHERINE B. McCURRY DB 426 PG 639
2 KENNETH WAYNE HOVIS & LINDA WEAVER HOVIS DB 859 PG 714
3 JARVIS MARIE JAMES DB 583 PG 047 DB 599 PG 073
JARVIS MARIE JAMES DB 687 PG 487
DEBBIE M. CASH DB 916 PG 094
BEGIN PROJECT -L- POC Sta. 15+40.00
-L- PT Sta. 16+62.63
-L- PC Sta. 13+90.74
-BL2- PINC Sta. 16+39.59 = -L- POC Sta. 15+06.78 47.94' LT.
BM# 1 -BL- STA 15+19.46 4.46 RIGHT ELEV=860.91'
-DWI- POT Sta. 10+00.00 BEGIN CONST.
-DWI- PC Sta. 10+25.00
-DWI- PT Sta. 10+51.68
-DWI- PC Sta. 11+19.00
-DWI- PT Sta. 11+48.95
BL-4 -BL- PINC Sta. 23+49.94 = -L- POC Sta. 21+99.82 15.62' RT.
END PROJECT -L- POC Sta. 23+35
-L- POT Sta. 24+37.50
BM# 3 -BL- STA 26+85.43 33.96 LEFT ELEV=847.63'
BL-3 -BL- PINC 20+83.84 = -L- POT Sta. 19+36.68 9.20' LT.
-L- PC Sta. 21+22.74
-L- POT Sta. 20+50.00 = -DWI- POT Sta. 11+66.93
BL-5 -BL- PINC 26+28.03
-L- PT Sta. 23+89.89
RETAIN EXIST. DITCH Sta. 15+40 to 17+00 LT. REPLACE EXIST. RIP-RAP w/48 Tons CLASS 'B' RIP-RAP w/110 Sq. Yds. Filter Fabric
SPECIAL 3' LATERAL BASE DITCH 138 Tons CLASS 'I' RIP-RAP w/257 Sq. Yds. Filter Fabric DDE = 228 Cu. Yds. SEE DETAIL 'A'
28 Tons CLASS 'II' RIP-RAP w/16 Sq. Yds. Filter Fabric AT EACH EMBANKMENT SEE DETAIL 'B'
CLASS 'II' RIP-RAP (See Structure Plans)
FALSE SUMP SEE DETAIL 'E'
2GI W/NARROW SLOT GRATE
SPECIAL 'V' DITCH 40 Tons CLASS 'B' RIP-RAP W/99 Sq. Yds. Filter Fabric SEE DETAIL 'C'
SPECIAL CUT DITCH SEE DETAIL 'F'
RETAIN EXIST. DITCH Sta. 16+00 to 18+00 RT. REPLACE EXIST. RIP-RAP w/60 Tons CLASS 'B' RIP-RAP w/140 Sq. Yds. Filter Fabric
FALSE SUMP SEE DETAIL 'D'
TBDI W/NARROW SLOT FLAT GRATE
SPECIAL DITCH SEE DETAIL 'F'
REMOVE EXISTING BRIDGE
WOODS
POND
DETAIL 'A' 3' LAT. BASE DITCH (Not to Scale)
Min. D= 1.5 Ft. Max. d= 1.5 Ft. B= 3 Ft. b= 5 Ft.
Type of Liner= Class 'I' Rip-Rap
Sta. 16+75 to Sta. 18+10 LT.
DETAIL 'B' RIP-RAP AT EMBANKMENT (Not to Scale)
Type of Liner= Est. 28 Tons Class 'II' Rip-Rap w/ 16 Sq. Yds. Filter Fabric
-L- Sta. 18+60 to Sta. 18+70 LT.
-L- Sta. 19+05 to Sta. 19+15 LT.
-L- Sta. 18+70 to Sta. 18+80 RT.
-L- Sta. 19+10 to Sta. 19+20 RT.
DETAIL 'C' SPECIAL 'V' DITCH (Not to Scale)
Min. D= 1.5 Ft. Max. d= 1.0 Ft.
Type of Liner= Class 'B' Rip-Rap
-L- Sta. 19+50 to Sta. 20+25 LT.
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PROJECT REFERENCE NO.	SHEET NO.
B-4177	5
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

BM 1: R.R. SPIKE IN BASE OF WOOD FENCE CORNER
-BL- Sta. 15+19.46 (4.46' RT.)
ELEV. = 860.91'
N 645984 E 1297438

BM 2: R.R. SPIKE IN BASE OF 10" OAK TREE
-BL- Sta. 21+27.68 (57.03' LT.)
ELEV. = 831.74'
N 646552 E 1297347

-L-

PI = 18+07.00
EL = 825.49'
VC = 434'
K = 42

BEGIN GRADE
Sta.15+90.00
ELEV.= 845.05'

BEGIN RESURFACE
Sta.15+40.00

END PAVEMENT Sta.22+75.00
BEGIN GRADING TO EXISTING

END GRADING TO
EXISTING Sta.23+35

END GRADE
Sta.23+00.00
ELEV.= 831.47'

(-) 1.90% (-) 1.40% (-) 0.10% (+) 0.50% (+) 1.20% (+) 0.50%

PI = 17+00.00 LT.
EL = 832.00'
PI = 17+25.00 LT.
EL = 830.50'
PI = 17+45.00 LT.
EL = 829.50'
END 3' BASE DITCH
PI = 18+10 LT.
EL = 827.60'
BEGIN SPECIAL DITCH
PI = 19+90.00 LT.
EL = 820.00'
PI = 20+00 LT.
EL = 825.00'
END SPECIAL DITCH
BEGIN SPECIAL DITCH
PI = 20+25 LT.
EL = 826.37'
BEGIN 3' BASE DITCH
PI = 16+75 LT.
EL = 835.28'
PI = 19+75 LT.
EL = 827.00'
PI = 20+75 LT.
EL = 827.08'
END SPECIAL DITCH
PI = 21+00.00 LT.
EL = 828.40'
BEGIN SPECIAL DITCH
PI = 22+00.00 LT.
EL = 830.03'
END SPECIAL DITCH
PI = 23+00.00 LT.
EL = 830.53'
PI = 20+45.00 RT.
EL = 825.40'

VERT. CLEARANCE
FOR BIKE TRAIL = 10'
MIN. LOW STEEL
ELEV.= 823.5

TOTAL EST. EXCAVATION
(CY & RD) = 900 CY

CLASS II RIP RAP TO SHOULDER
W/ FILTER FABRIC (0.1 FT. THICK)
KEY-IN 3.5'

15' MIN FROM
TOP OF BANK
FOR BIKE TRAIL

-L- Sta. 18+85.00
℄ ELEV. 828.71'
SKEW = 90°
2 @65' 45" PRESTRESSED
CONCRETE GIRDERS
39' CLEAR ROADWAY
NO DECK DRAINS REQ'D.

BRIDGE HYDRAULIC DATA

DESIGN DISCHARGE	=	2,700 CFS.
DESIGN FREQUENCY	=	25 YRS.
DESIGN HW ELEVATION	=	815.7 FT.
BASE DISCHARGE	=	4,100 CFS.
BASE FREQUENCY	=	100 YRS.
BASE HW ELEVATION	=	817.4 FT.
OVERTOPPING DISCHARGE	=	17,000 CFS.
OVERTOPPING FREQUENCY	=	500+ YRS.
OVERTOPPING ELEVATION	=	827.6 FT.
DATE OF SURVEY	=	MAY 17, 2006
W.S. ELEVATION AT DATE OF SURVEY	=	806.7 FT.

USE FOR ROADWAY VERTICAL ALIGNMENT ONLY.
SEE STRUCTURE PLANS FOR BRIDGE DESIGN

-DW1-

BEGIN GRADE
Sta.10+25.00
ELEV.= 818.44'

END GRADE
Sta.11+55.93
ELEV.= 828.67'

(-) 1.30% (-) 1.00%

PI = 11+03.71
EL = 829.19'
VC = 90'
K = 6

08-APR-2008 16:54
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8/23/99

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	B-4177	X-2

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855 850 845 840

VAR.

0.0722

844.16

0.0500

4:1

841.397

843.479

843.99

16+00.00

EXIST.

EXIST.

846.34

15+75.00

EXIST.

EXIST.

848.86

15+50.00

851.37

15+25.00

853.34

15+00.00

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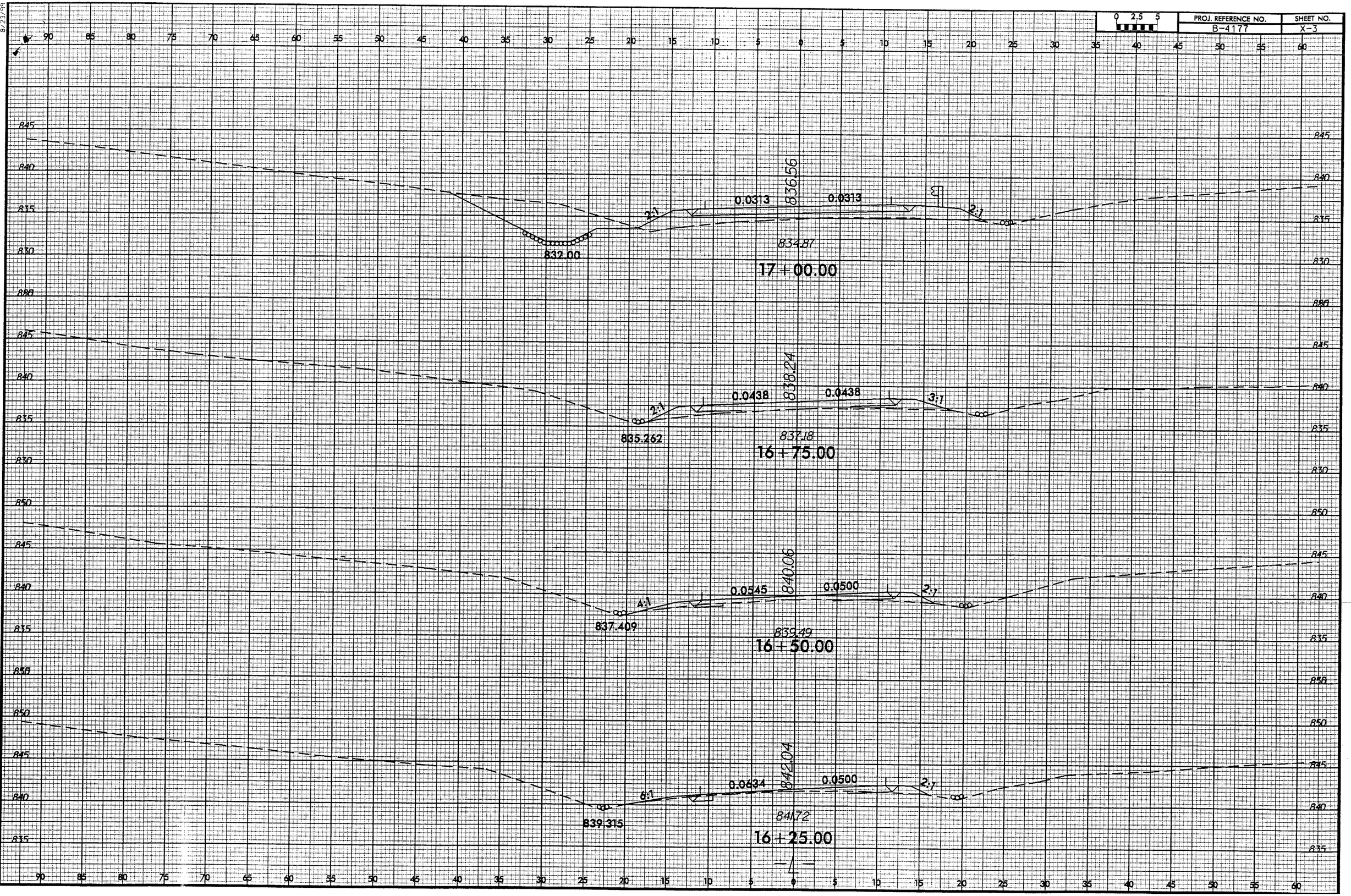

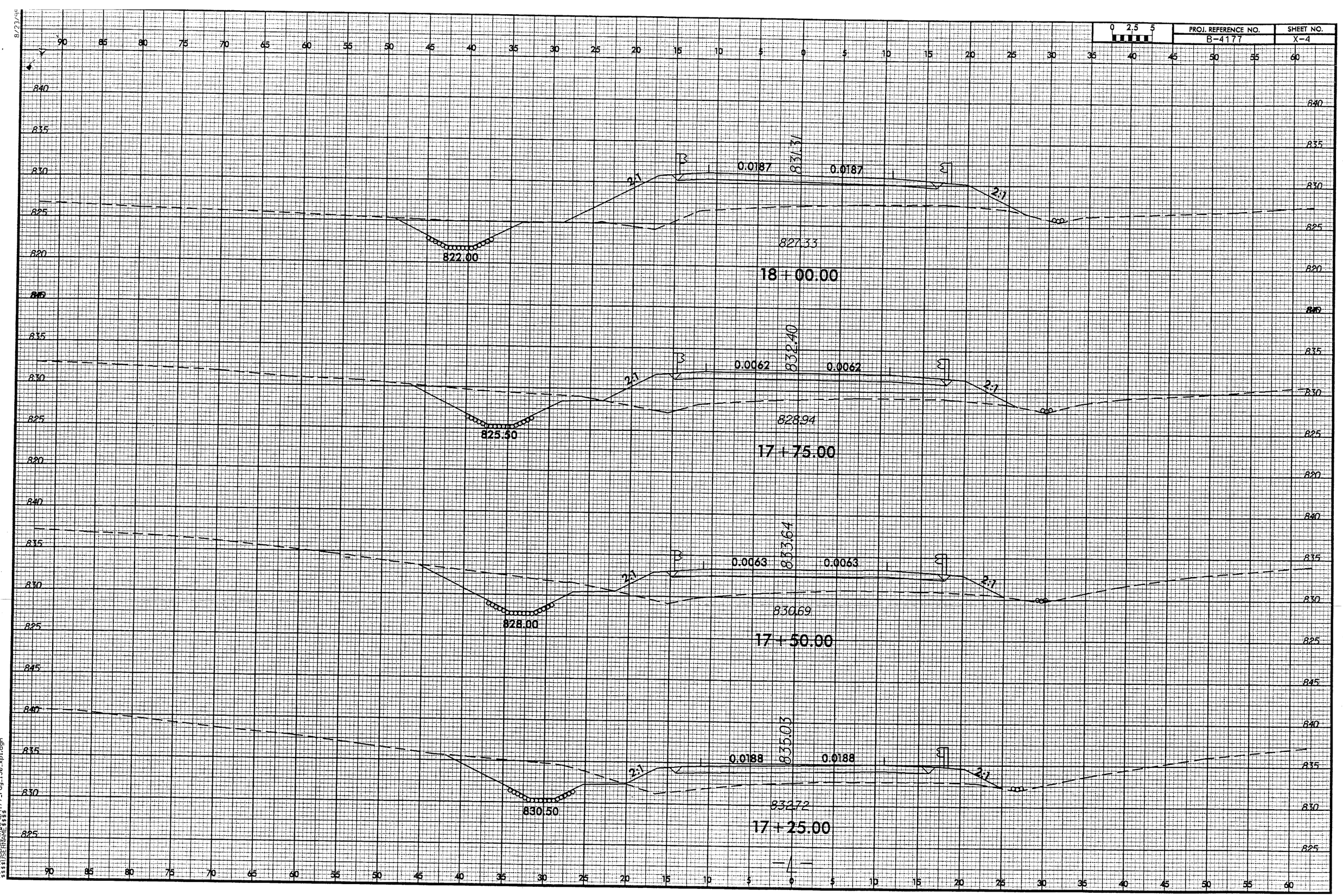

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828.93

0.0200 0.0200

807.37

18+75.00

829.58

0.0200 0.0200

825.07

18+50.00

830.35

0.0200 0.0200

826.01

18+25.00

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8/23/99

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835 830 825 820 815 810 805 800

0.0200 828.07 0.0200

815.75
19+25.00

0.0200 828.43 0.0200

805.92
19+00.00

90 85 80 75 70 65 60 55 50 45 40 35 30 25 20 15 10 5 0 5 10 15 20 25 30 35 40 45 50 55 60

835 830 825 820 815 810 805 800

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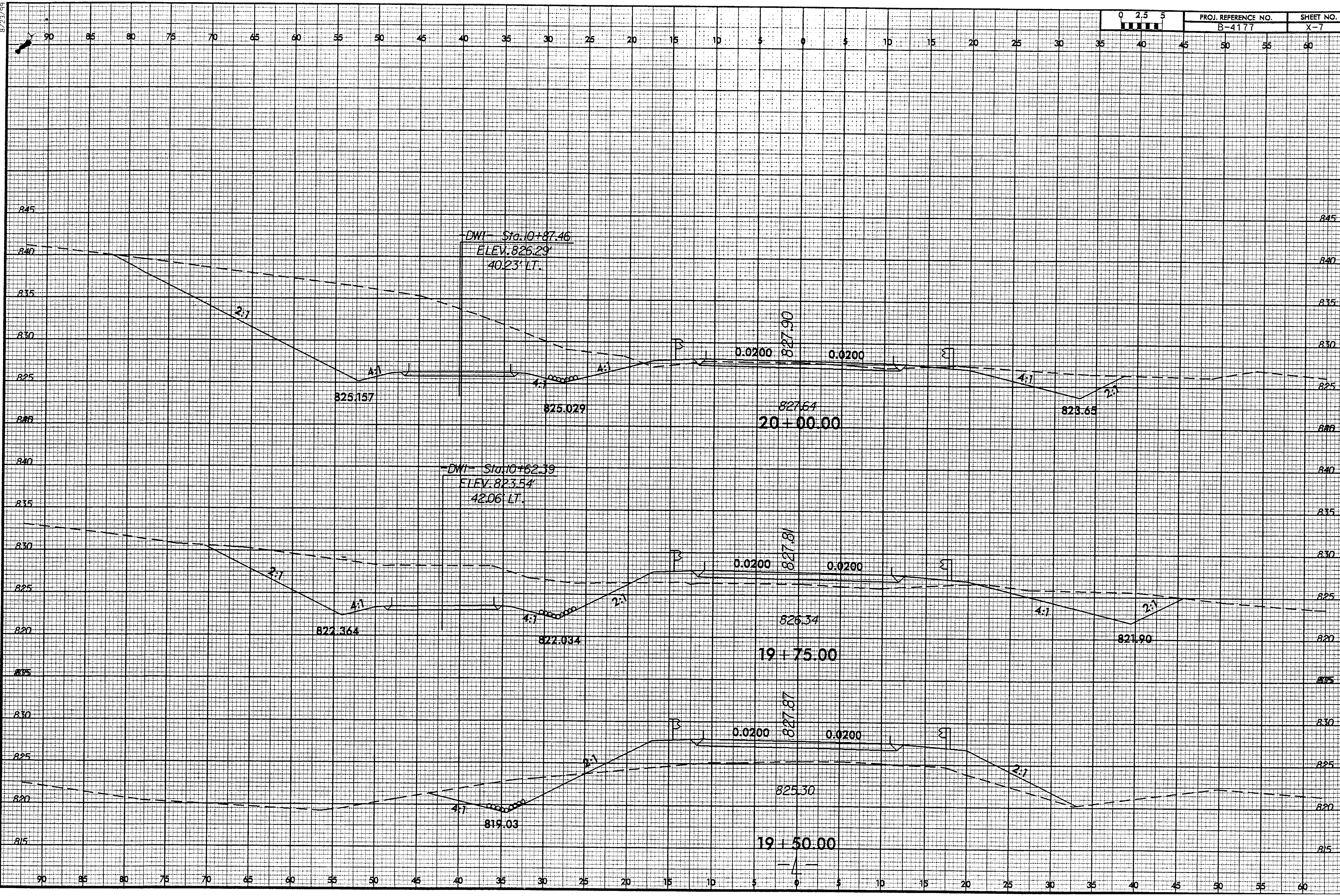
B-4177	X-7



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8/23/99

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	B-4177	X-8

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855 850 845 840 835 830 825 820 815

2:1

4:1

827.746

0.0200

828.44

0.0200

4:1

2:1

825.980

831.03

20+50.00

-DW1- Sta.10+62.39
ELEV.823.54'
42.06' LT.

2:1

4:1

826.967

4:1

826.314

4:1

828.13

0.0200

0.0200

4:1

2:1

825.40

829.31

20+25.00

-4-

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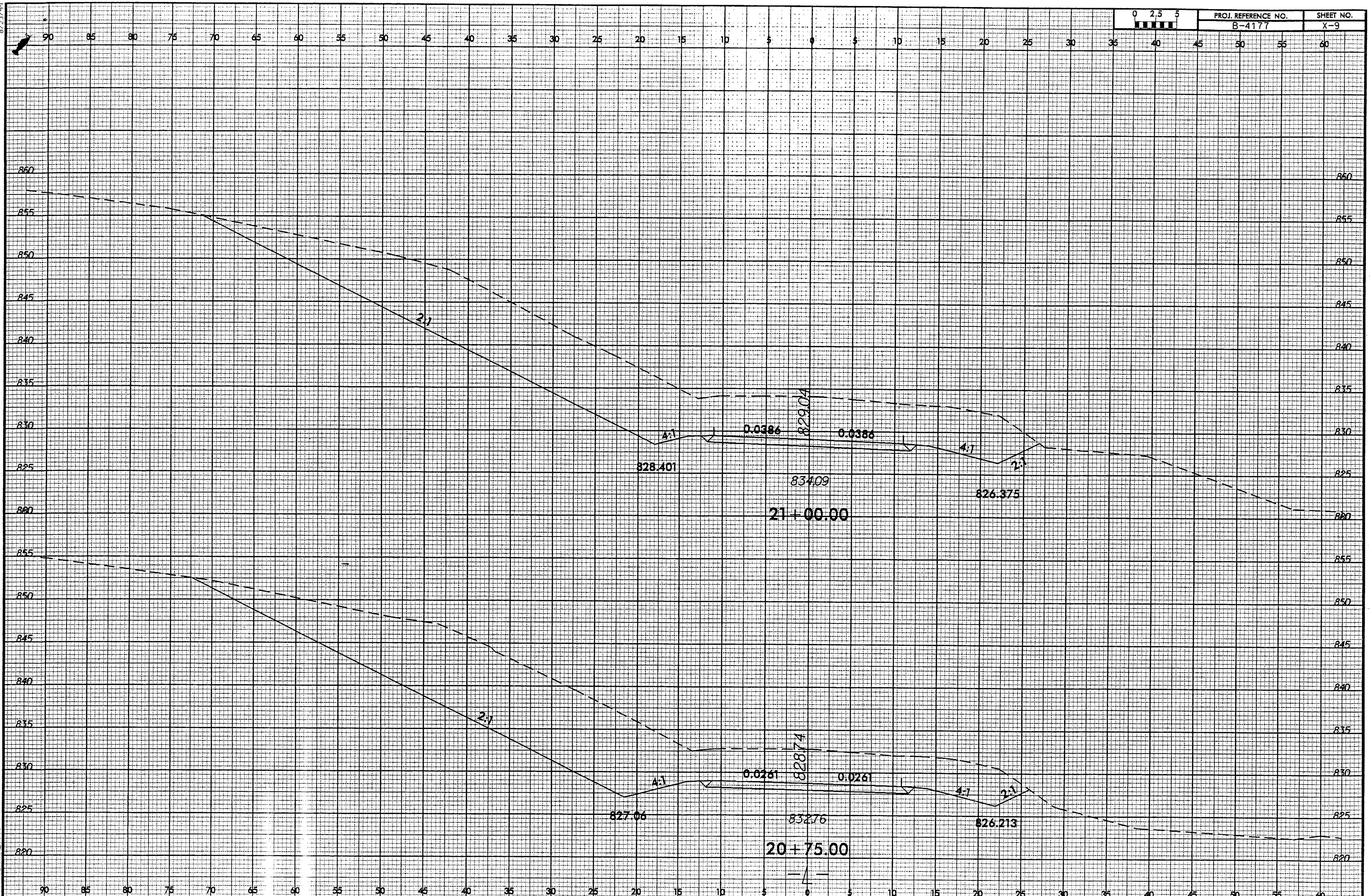

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	B-4177	X-10

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865
860
855
850
845
840
835
830
825
820

2:1

4:1

828.870

0.0500

829.35

0.0500

4:1

2:1

836.05

826.560

21 + 25.00

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8/23/99

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	B-4177	X-11

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865 860 855 850 845 840 835 830 825 820 815

2:1

4:1

0.0634

0.0634

4:1

2:1

829.317

826.713

835.32

21+50.00

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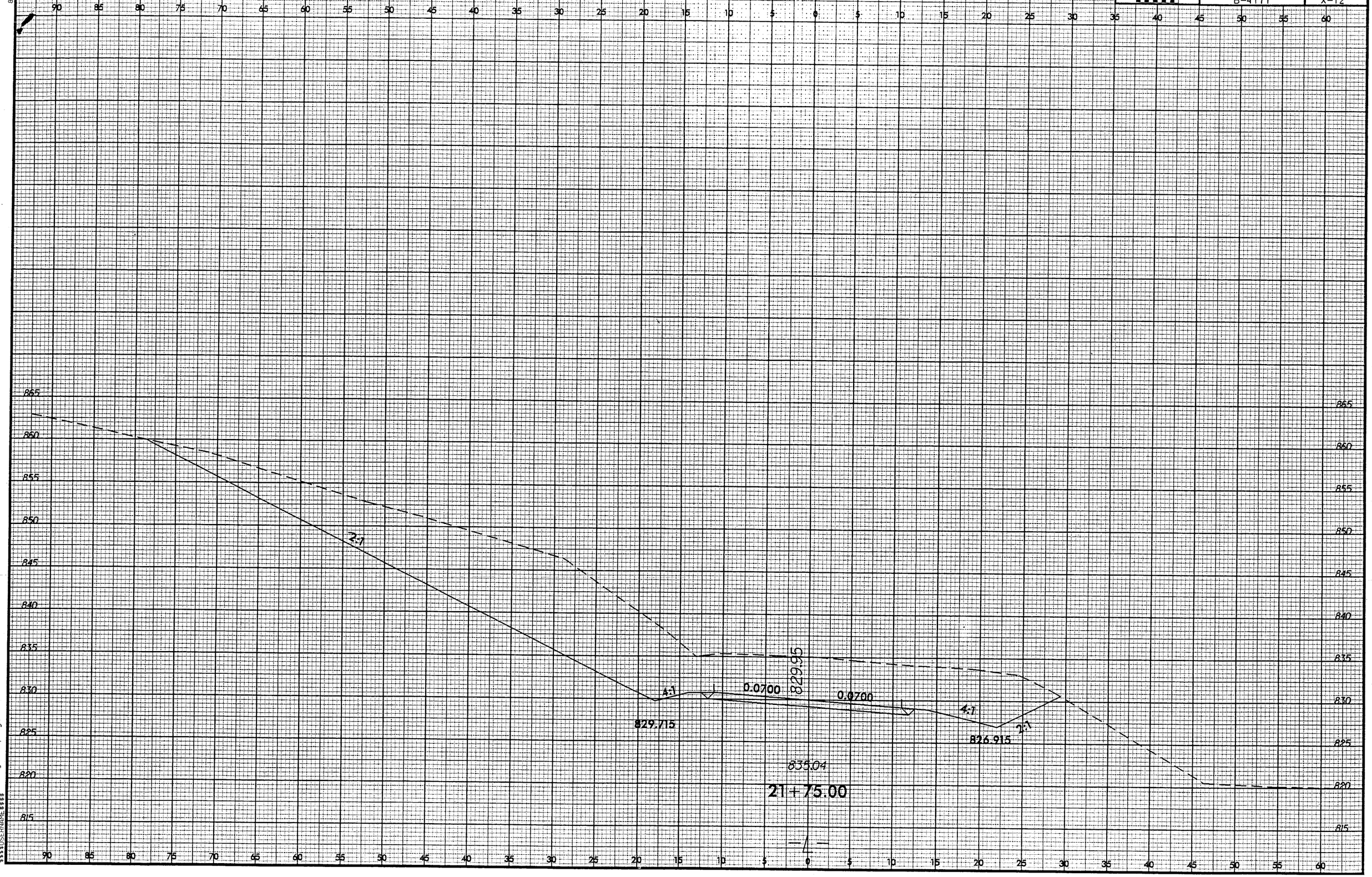

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8/23/99

PROJ. REFERENCE NO.	SHEET NO.
B-4177	X-13

0 2.5 5

90 85 80 75 70 65 60 55 50 45 40 35 30 25 20 15 10 5 0 5 10 15 20 25 30 35 40 45 50 55 60

865
860
855
850
845
840
835
830
825
820

2:1

4:1

0.0700

830.026

0.0700

4:1

2:1

830.025

827.225

831.44

22+00.00

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8/23/99

0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	B-4177	X-14

2:1

4:1

830.280

0.0700

830.86

0.0700

4:1

827.825

2:1

832.61

22+50.00

2:1

4:1

830.160

0.0700

830.56

0.0700

4:1

827.525

2:1

833.46

22+25.00

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8/23/99

0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	B-4177	X-15

90 85 80 75 70 65 60 55 50 45 40 35 30 25 20 15 10 5 0 5 10 15 20 25 30 35 40 45 50 55 60

850 845 840 835 830 825 820

VAR.

830.531

0.0100

831.47

0.0800

831.47

23+00.00

2:1

4:1

830.410

0.0700

831.17

0.0700

831.95

22+75.00

8/23/99

0 2.5 5

PROJ. REFERENCE NO.	SHEET NO.
B-4177	X-16

90 85 80 75 70 65 60 55 50 45 40 35 30 25 20 15 10 5 0 5 10 15 20 25 30 35 40 45 50 55 60

845
840
835
830
825
820
815

831.39

23+25.00

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$$$$USERNAME$$$$

CATEGORICAL EXCLUSION ACTION CLASSIFICATION FORM

TIP Project No.	**B-4177**
State Project No.	**8.2831601**
W.B.S. No.	**33524.1.1**
Federal Project No.	**BRZ-1193(5)**

A. Project Description:

The purpose of this project is to replace Lincoln County Bridge No. 142 on SR 1193 (Wise Road) over Howard's Creek. Bridge No. 142 is 81 feet long. The replacement structure will be a bridge approximately 110 feet long providing a minimum 28 feet clear deck width. The bridge will include two 11 foot lanes and 3 foot offsets. The roadway grade of the new structure will be approximately three feet higher than the existing structure.

The approach roadway improvements will extend approximately 290 feet from the south end of the new bridge and 390 feet from the north end of the new bridge. The approaches will be widened to include a 22-foot pavement width providing two 11 foot lanes. Three foot grass shoulders will be provided on each side (6 foot shoulders where guardrail is included). The roadway will be designed as a Rural Local Route using 3R guidelines with a 30 mile per hour design speed.

Traffic will be detoured off-site during construction (see Figure 1).

B. Purpose and Need:

NCDOT Bridge Maintenance Unit records indicate Bridge No. 142 has a sufficiency rating of 35.5 out of a possible 100 for a new structure. The bridge is considered functionally obsolete due to a structural appraisal of 2 out of a possible 9 and a deck geometry appraisal of 3 out of a possible 9. Therefore, based on Federal Highway Administration (FHWA) standards, bridge No. 142 is eligible for FHWA's Bridge Replacement Program.

Bridge No. 142 has a fifty year old timber substructure with a typical life expectancy between 40 to 50 years due to the natural deterioration rate of wood. Rehabilitation of a timber structure is generally practical only when a few members are damaged or prematurely deteriorated. However, past a certain degree of deterioration, timber structures become impractical to maintain and upon eligibility are programmed for replacement.

The posted weight limit on the bridge is 7 tons for single vehicles and 7 tons for truck-tractor semi-trailers. Due to this posted weight limit, Lincoln County School busses are unable to cross this structure. The bridge is approaching the end of its useful life. Replacement of the bridge will result in safer traffic operations.

C. Proposed Improvements:

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

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

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

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

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

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

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

4. Transportation corridor fringe parking facilities.

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

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

7. Approvals for changes in access control.

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

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

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

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

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

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

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

D. Special Project Information:

The estimated costs, based on 2005 prices, are as follows:

Structure	$ 275,000
Roadway Approaches	$ 375,000
Detour Structure and Approaches	- 0 -
Structure Removal	$ 20,000
Misc. & Mob.	$ 47,500
Eng. & Contingencies	$ 107,500
Total Construction Cost	$ 825,000
Right-of-way Costs	$ 52,000
Total Project Cost	$ 877,000

Estimated Traffic:

Current	-	550 vpd
Year 2025	-	800 vpd
TTST	-	1%
Dual	-	2%

Accidents: Traffic Engineering has evaluated a recent three year period and found no accidents occurring in the vicinity of the project.

Design Exceptions: There are no design exceptions anticipated.

Bridge Demolition: Best Management Practices for Bridge Demolition & Removal will be implemented. Although the timber columns for the interior bents are encased in concrete, temporary fill is not anticipated with respect to bridge demolition. All other components will be removed without dropping components into Waters of the United States during construction.

Alternatives Discussion:

No Build – The no build alternative would result in eventually closing the road which is unacceptable.

Rehabilitation – The bridge was constructed in 1956 and the timber materials within the bridge are reaching the end of their useful life. Rehabilitation would require replacing the timber components which would constitute effectively replacing the bridge.

Offsite Detour – Bridge No. 142 will be replaced on the existing alignment. Traffic will be detoured offsite (see Figure 1) during the construction period. NCDOT Guidelines for Evaluation of Offsite Detours for Bridge Replacement Projects considers multiple project variables beginning with the additional time traveled by the average road user resulting from the offsite detour. The offsite detour for this project would

include NC 27, SR 1194, and SR 1113. The majority of traffic on the road is local traffic. The detour for the average road user would result in 4 minutes additional travel time (2 miles additional travel). Up to a seven month duration of construction is expected on this project.

Based on the Guidelines, the criteria above indicate that on the basis of delay alone the detour is acceptable. Lincoln County Emergency Services have indicated that the detour is acceptable. NCDOT Division 12 has indicated the condition of all roads, bridges and intersections on the offsite detour are acceptable without improvement and concurs with the use of the detour. Presently Lincoln County Schools do not use the bridge due to weight restrictions.

Onsite Detour – An onsite detour was not evaluated due to the presence of an acceptable offsite detour.

Staged Construction – Staged construction was not considered because of the availability of an acceptable offsite detour.

New Alignment – Given that the alignment for SR 1193 is acceptable, a new alignment was not considered as an alternative.

Other Agency Comments:

The **N.C. Wildlife Resource Commission** and **U.S. Fish & Wildlife Service** in standardized letters provided a request that they prefer any replacement structure to be a spanning structure.

Response: Proposed replacement structure is a spanning structure.

Public Involvement:

A letter was sent by the Location & Surveys Unit to all property owners affected directly by this project. Property owners were invited to comment. No comments have been received to date.

A newsletter was sent to local residents notifying them of the intended project and the preferred alternate. No comments have been received to date.

E. Threshold Criteria

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

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

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

(13)	Will the project result in the modification of any existing regulatory floodway?		X
(14)	Will the project require any stream relocations or channel changes?		X

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

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

F. Additional Documentation Required for Unfavorable Responses in Part E

Response to Question 2: Habitat for Michaux's sumac and Dwarf-flowered heartleaf exists within the project area. The project area was surveyed on June 29, 2005 and no examples of either species were found. Therefore, the biological conclusion is "No effect" for both species.

G. CE Approval

TIP Project No.	**B-4177**
State Project No.	**8.2831601**
W.B.S. No.	**33524.1.1**
Federal Project No.	**BRZ-1193(5)**

A. Project Description:

The purpose of this project is to replace Lincoln County Bridge No. 142 on SR 1193 (Wise Road) over Howard's Creek. Bridge No. 142 is 81 feet long. The replacement structure will be a bridge approximately 110 feet long providing a minimum 28 feet clear deck width. The bridge will include two 11 foot lanes and 3 foot offsets. The roadway grade of the new structure will be approximately three feet higher than the existing structure.

The approach roadway improvements will extend approximately 290 feet from the south end of the new bridge and 390 feet from the north end of the new bridge. The approaches will be widened to include a 22-foot pavement width providing two 11 foot lanes. Three foot grass shoulders will be provided on each side (6 foot shoulders where guardrail is included). The roadway will be designed as a Rural Local Route using 3R guidelines with a 30 mile per hour design speed.

Traffic will be detoured off-site during construction (see Figure 1).

Categorical Exclusion Action Classification:

____ TYPE II(A)
_X_ TYPE II(B)

Approved:

9/19/06 — Date
Bridge Project Development Unit Head
Project Development & Environmental Analysis Branch

9/19/06 — Date
Project Development Group Leader
Project Development & Environmental Analysis Branch

9/19/06 — Date
Project Development Engineer
Project Development & Environmental Analysis Branch

For Type II(B) projects only:

11-13-06 — Date
John F. Sullivan, III, PE, Division Administrator
Federal Highway Administration

PROJECT COMMITMENTS:

Lincoln County
Bridge No. 142 on SR 1193
Over Howard's Creek
Federal Aid Project No. BRZ-1193(5)
State Project No. 8.831601
W.B.S. No. 33524.1.1
T.I.P. No. B-4177

Division Construction, Resident Engineer's Office – Offsite Detour

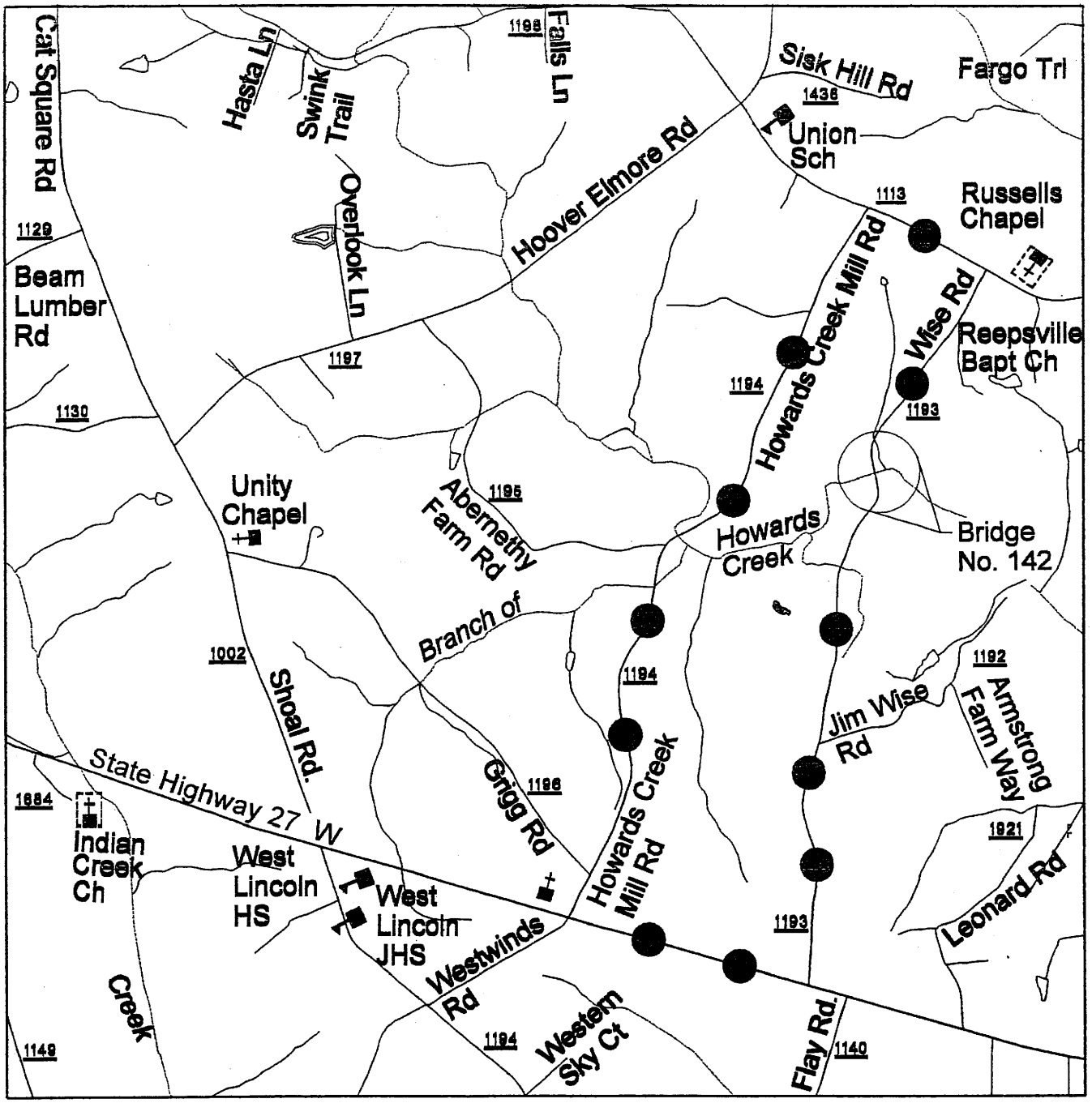
Lincoln County Emergency Services shall be notified a minimum of 30 days prior to closing the road for construction.

Natural Environment Unit – Bridge Demolition

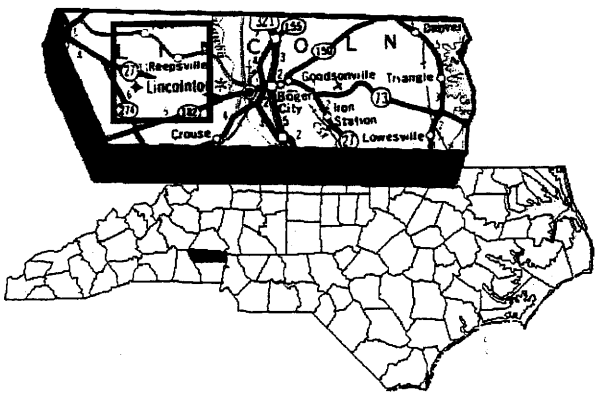
The entire bridge is constructed of timber and steel. Therefore, it is unlikely that there will be any temporary fill resulting from bridge demolition.

Roadway Design / Division 12 Traffic Engineering

The existing roadway in this area is not designed for a 55-mph statutory speed limit. A 30-mph design speed was used to make the roadway safer for the traveling public. Division 12 will post the speed limit at 25 mph in the area of the bridge.



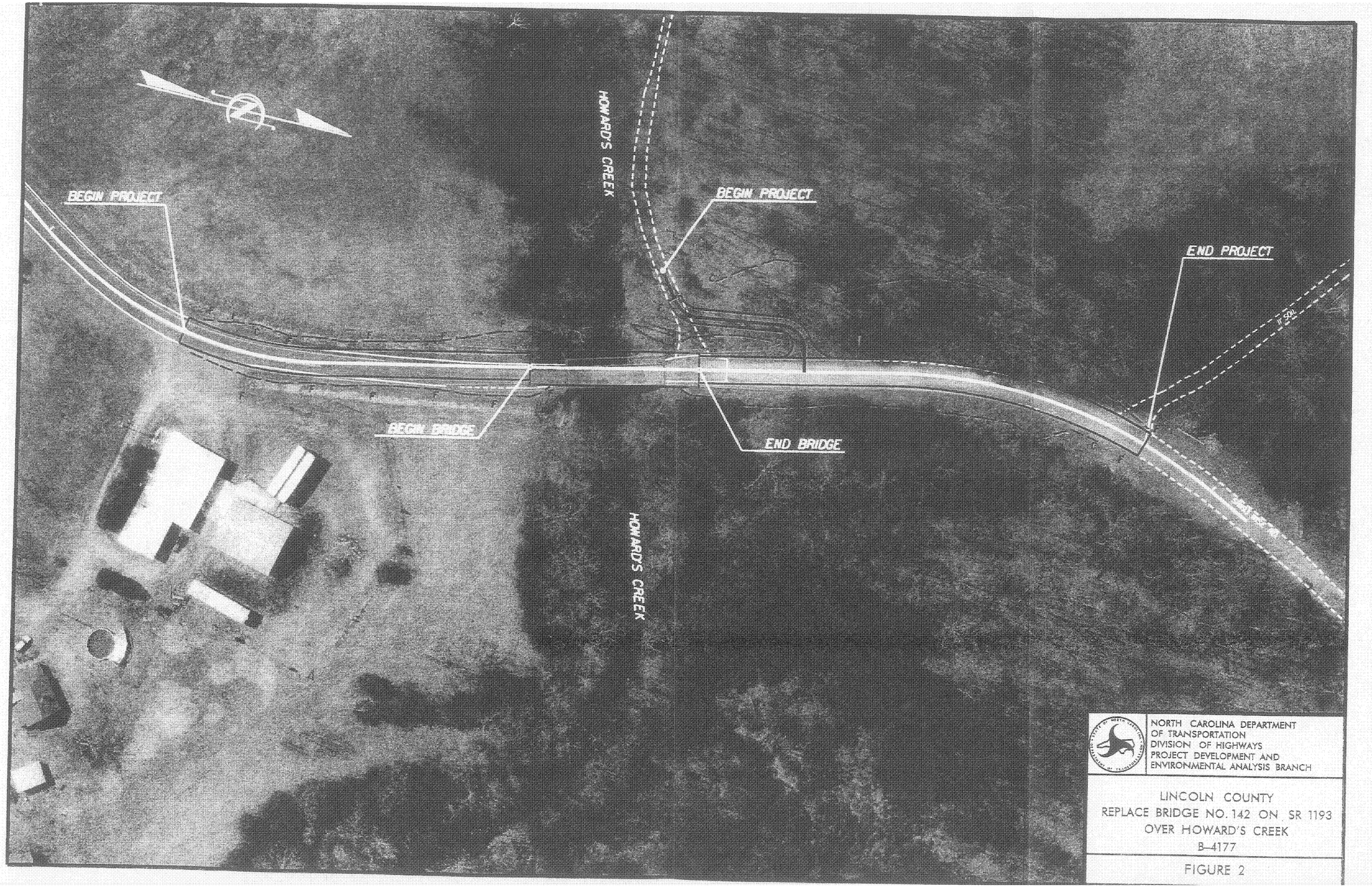
Denotes off-site detour



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

LINCOLN COUNTY
REPLACE BRIDGE NO. 142 ON SR 1193
OVER HOWARD'S CREEK
B-4177

Figure 1



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

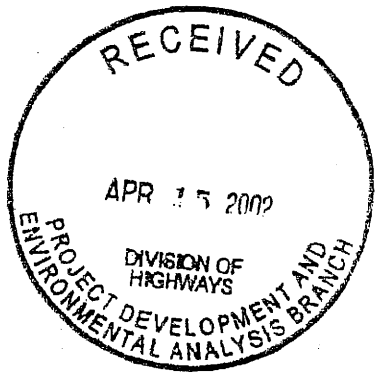
LINCOLN COUNTY
REPLACE BRIDGE NO. 142 ON SR 1193
OVER HOWARD'S CREEK
B-4177

FIGURE 2

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

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

Division of Historical Resources
David J. Olson, Director



April 10, 2002

MEMORANDUM

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

FROM: David Brook BJS for DB

SUBJECT: Replace Bridge No. 142 on SR 1193 over Howards Creek, B-4177, Lincoln County, 02-8586

Thank you for your memorandum of September 25, 2001, concerning the above project.

We have conducted a review of the proposed undertaking and are aware of no historic resources which would be affected by the project. Therefore, we have no comment on the undertaking as proposed.

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

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

DB:kgc