STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

MICHAEL F. EASLEY
GOVERNOR

LYNDO TIPPETT
SECRETARY

March 4, 2005

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

ATTN: Ms. Angie Pennock
NCDOT Coordinator

Dear Madam:

Subject: **Nationwide 23 & 33 Permit Application** for the proposed replacement of Bridge No. 61 on NC 197 over The North Toe River, Yancey/Mitchell Counties. Federal Aid Project No. BRSTP-197(1), State Project No. 8.1900401, TIP Project No. B-1443.

Please find enclosed three copies of the project planning report along with the Pre-Construction Notification form (PCN), permit drawings, and stormwater management plan for the above referenced project. The North Carolina Department of Transportation (NCDOT) proposes to replace existing Bridge No. 61 on NC 197 over The North Toe River [DWQ Index # 7-2-(38.5), Class "C; TR"] on the Yancey and Mitchell County line. The project involves replacing Bridge No. 61 on a new alignment to the southeast of the existing structure. During construction, traffic will be maintained on the existing bridge.

BRIDGE DEMOLITION

Bridge No. 61 is currently a 270-foot, 5 span structure, that consists of a reinforced concrete slab and continuous closed spandrel arch supported by reinforced concrete post and web bents with reinforced concrete vertical abutments. Removal of the bridge will result in dropping components into Waters of the United States during demolition; subsequently, any temporary fill will be removed. The resulting temporary fill is calculated to be approximately 260 cubic yards.

The NCDOT will adhere to appropriate guidelines for bridge demolition and removal including those presented in "Pre-Construction Guidelines for Bridge Demolition and Removal", "Policy: Bridge Demolition and Removal in Waters of the United States",

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

TELEPHONE: 919-715-1500
FAX: 919-715-1501
WEBSITE: WWW.NCDOT.ORG

LOCATION:
2728 CAPITAL BLVD.
PARKER LINCOLN BUILDING, SUITE 168
RALEIGH NC 27604

"Best Management Practices for Bridge Demotion and Removal", "Best Management Practices for the Protection of Surface Waters", and "Design Standards in Sensitive Watersheds".

BRIDGE CONSTRUCTION

The proposed bridge will be on a curved alignment. The proposed structure will be approximately 340.4 feet in length with a width of 24.6 feet due to the curved alignment. Bridge No. 61 will include three spans, two at 107 feet and one at 142 feet, and a reinforced concrete deck superstructure. The substructure will consist of steel girders and the two bridge piers will be single drilled shaft columns.

IMPACTS TO WATERS OF THE UNITED STATES

Permanent Impacts: The North Toe River will be impacted by the proposed project. Construction of the proposed project will result in total equaling less than 0.01 acre (100 square feet) of permanent impacts to jurisdictional surface waters, from the construction of bridge piers.

Temporary Impacts: The North Toe River will be temporarily impacted by the proposed project. Construction of the proposed project will result in a total of 0.21 acre of temporary impacts to jurisdictional streams, in the form of temporary rock causeways (see permit drawings). Temporary rock causeways will be used to provide access for equipment during construction of the new structure and removal of the old bridge once the new bridge is in place. It is assumed that the contractor will begin construction of the proposed temporary rock causeways shortly after the date of availability for the project. The Let date is June 21, 2005 with a review date of May 3, 2005.

Restoration Plan: Upon completion of the new bridge, the temporary fill will be removed to natural grade and the area will be planted with native grasses and or tree species as appropriate.

AVOIDANCE AND MINIMIZATION

The NCDOT is committed to incorporating all reasonable and practicable design features to avoid and minimize jurisdictional impacts. Avoidance measures were taken during the planning and NEPA compliance stages; minimization measures were incorporated as part of the project design.

Of the five reasonable and feasible alternatives considered, the chosen, best minimizes impacts to the sensitive natural ecosystems in the vicinity of the project site and provides the most economic design. In addition, "Design Standards in Sensitive Watersheds", NCDOT's guidelines for "Best Management Practices for the Protection of Surface Waters", and "Guidelines for Construction Adjacent to Trout Waters" will be enforced throughout the duration of the project construction.

Since, this project will be affecting the federally-protected Appalachian elktoe, areas adjacent to the project site will be regarded as "Environmentally Sensitive Areas" on the Erosion Control Plans. Please refer to the project commitments for additional detail.

FEDERALLY-PROTECTED SPECIES

Plants and animals with federal classifications of Endangered, Threatened, Proposed Endangered, and Proposed Threatened are protected under provisions of Section 7 and Section 9 of the Endangered Species Act of 1973, as amended. As of January 29, 2003, the U.S. Fish and Wildlife Service (USFWS) lists ten federally protected species (Table 1) for Yancey County, and eight for Mitchell County (Table 2). Federal Status and Biological conclusions are listed in the following tables. A Biological Assessment (BA) for Appalachian elktoe has been submitted to FHWA to initiate a formal consultation with the USFWS, additional copies are available upon request.

Table 1. Federally protected species of Yancey County.

Scientific Name	Common Name	Federal Status	Biological Conclusion
Clemmys muhlenbergii	Bog turtle	T S/A	No Survey Required
Corynorhinus townsendii virginianus	Virginia big-eared bat	E	No Effect
Felis concolor couguar	Eastern cougar	E	No Effect
Glaucomys sabrinus coloratus	Carolina northern flying squirrel	E	No Effect
Alasmidonta raveneliana	Appalachian elktoe	E	May Affect, Likely to Adversely Affect
Microhexura montivaga	Spruce-fir moss spider	E	No Effect
Geum radiatum	Spreading avens	E	No Effect
Houstonia montana	Roan mountain bluet	E	No Effect
Spiraea virginiana	Virginia spiraea	T	No Effect
Gymnoderma lineare	Rock gnome lichen	E	No Effect

Table 2. Federally protected species of Mitchell County.

Scientific Name	Common Name	Federal Status	Biological Conclusion
Glaucomys sabrinus coloratus	Carolina northern flying squirrel	E	No Effect
Myotis sodalis	Indiana bat	E	No Effect
Alasmidonta raveneliana	Appalachian elktoe	E	May Affect, Likely to Adversely Affect
Microhexura montivaga	Spruce-fir moss spider	E	No Effect
Geum radiatum	Spreading avens	E	No Effect
Liatris helleri	Heller's blazing star	T	No Effect
Solidago spithamaea	Blue Ridge goldenrod	T	No Effect
Spiraea virginiana	Virginia spiraea	T	No Effect
Gymnoderma lineare	Rock gnome lichen	E	No Effect

Endangered (E) – is defined as a taxon that is threatened with extinction throughout all or a significant portion of its range.

Threatened (T) – A taxon "likely to become endangered within the foreseeable future throughout all or a significant portion of it's range."

T S/A – "Similarity of Appearance" (a species that is listed as threatened due to similarity of appearance with other rare species).

REGULATORY APPROVALS

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

Section 401 Certification: We anticipate 401 General Certifications numbers 3403 and 3366 will apply to this project. In accordance with 15A NCAC 2H .0501(a) we are providing two copies of this application to the North Carolina Department of Environmental and Natural Resources, Division of Water Quality, for their records.

A copy of this permit application will be posted on the DOT website at: http://www.ncdot.org/planning/pe/naturalunit/Permit.html. If you have any questions or need additional information, please contact Tyler Stanton at tstanton@dot.state.nc.us or (919) 715-1439.

Sincerely,

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

cc: w/attachment

Mr. John Hennessy, Division of Water Quality (7 copies)
Ms. Marella Buncick, USFWS
Ms. Marla Chambers, NCWRC
Mr. Harold Draper, TVA
Mr. David Chang, P.E., Hydraulics
Mr. Greg Perfetti, P.E., Structure Design
Mr. J.J.Swain, P.E., Division Engineer
Mr. Roger Bryan, DEO

w/o attachment

Mr. Jay Bennett, P.E., Roadway Design
Mr. Omar Sultan, Programming and TIP
Mr. Art McMillan, P.E., Highway Design
Mr. Mark Staley, Roadside Environmental
Mr. David Franklin, USACE, Wilmington (Cover Letter Only)
Mr. John Williams, P.E., PD&EA Project Planning Engineer

Office Use Only: Form Version May 2002

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

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

I. Processing

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

2. Nationwide, Regional or General Permit Number(s) Requested: Nationwide 12, 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 Wetlands Restoration Program (NCWRP) is proposed for mitigation of impacts (verify availability with NCWRP prior to submittal of PCN), 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: North Carolina Department of Transportation
   Mailing Address: 1548 Mail Service Center, Raleigh, NC 27699
   _____
   _____
   Telephone Number: 919-733-7844 Fax Number: 919-715-1501
   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: N/A
   Company Affiliation: _____
   Mailing Address: _____
   _____
   _____
   _____
   Telephone Number: _____ Fax Number: _____
   E-mail Address: _____

III. Project Information

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

1. Name of project: Replacement of Bridge 61 on NC 197 over The North Toe River.

2. T.I.P. Project Number or State Project Number (NCDOT Only): B-1443

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

4. Location
   County: Mitchell / Yancey Nearest Town: Burnsville
   Subdivision name (include phase/lot number):
   Directions to site (include road numbers, landmarks, etc.): Located 0.64 miles south of NC 226 and NC 197 Junction

5. Site coordinates, if available (UTM or Lat/Long): 82.229 / 36.013
   (Note – If project is linear, such as a road or utility line, attach a sheet that separately lists the coordinates for each crossing of a distinct waterbody.)

6. Property size (acres): N/A

7. Nearest body of water (stream/river/sound/ocean/lake): North Toe River

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

9. Describe the existing conditions on the site and general land use in the vicinity of the project at the time of this application Rural Major Collector. Project area is mixture of rural. residential and agriculture.

10. Describe the overall project in detail, including the type of equipment to be used:
    Bridge replacement using mechanical highway construction equipment

11. Explain the purpose of the proposed work: Investigations by the Bridge Maintenance Unit indicate that rehabilitation of the existing structure is not feasible due to its age and deteriorated condition. Bridge No. 61 is fast approaching the end of its useful life. It carries a sufficiency rating of 49.2 out of a possible 100, and is considered functionally deficient due to deteriorating structural integrity and functionally obsolete due to narrow roadway geometry on the bridge.

IV. Prior Project History

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

N/A

V. Future Project Plans

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

N/A

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

It is the applicant's (or agent's) responsibility to determine, delineate and map all impacts to wetlands, open water, and stream channels associated with the project. The applicant must also provide justification for these impacts in Section VII below. All proposed impacts, permanent and temporary, must be listed herein, and must be clearly identifiable on an accompanying site plan. All wetlands and waters, and all streams (intermittent and perennial) must 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.

Provide a written description of the proposed impacts: There will be no impacts to jurisdictional streams from the construction of the proposed bridge.

1. Individually list wetland impacts below:

Wetland Impact Site Number (indicate on map)	Type of Impact*	Area of Impact (acres)	Located within 100-year Floodplain** (yes/no)	Distance to Nearest Stream (linear feet)	Type of Wetland***
No Impact	No Impact	0	N/A	N/A	N/A

* List each impact separately and identify temporary impacts. 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.

** 100-Year floodplains are identified through the Federal Emergency Management Agency's (FEMA) Flood Insurance Rate Maps (FIRM), or FEMA-approved local floodplain maps. Maps are available through the FEMA Map Service Center at 1-800-358-9616, or online at http://www.fema.gov.

*** List a wetland type that best describes wetland to be impacted (e.g., freshwater/saltwater marsh, forested wetland, beaver pond, Carolina Bay, bog, etc.) Indicate if wetland is isolated (determination of isolation to be made by USACE only).

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

Total area of wetland impact proposed: 0

2. Individually list all intermittent and perennial stream impacts below:

Stream Impact Site Number (indicate on map)	Type of Impact*	Length of Impact (linear feet)	Stream Name**	Average Width of Stream Before Impact	Perennial or Intermittent? (please specify)
No Impact	No Impact		N/A	N/A	N/A

* List each impact separately and identify temporary impacts. Impacts include, but are not limited to: culverts and associated rip-rap, dams (separately list impacts due to both structure and flooding), relocation (include linear feet before and after, and net loss/gain), stabilization activities (cement wall, rip-rap, crib wall, 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.

** Stream names can be found on USGS topographic maps. If a stream has no name, list as UT (unnamed tributary) to the nearest downstream named stream into which it flows. USGS maps are available through the USGS at 1-800-358-9616, or online at www.usgs.gov. Several internet sites also allow direct download and printing of USGS maps (e.g., www.topozone.com, www.mapquest.com, etc.).

Cumulative impacts (linear distance in feet) to all streams on site: 0

3. Individually list all open water impacts (including lakes, ponds, estuaries, sounds, Atlantic Ocean and any other water of the U.S.) below:

Open Water Impact Site Number (indicate on map)	Type of Impact*	Area of Impact (acres)	Name of Waterbody (if applicable)	Type of Waterbody (lake, pond, estuary, sound, bay, ocean, etc.)
13+00.000	Piers in streambed	>0.01	North Toe River	Stream
12+40 – 13+48	Temporary Causeway	0.12	North Toe River	Stream
Old Bridge	Temporary Causeway	0.09	North Toe River	Stream
Old Bridge	Temporary Fill	0.16	North Toe River	Stream

* List each impact separately and identify temporary impacts. Impacts include, but are not limited to: fill, excavation, dredging, flooding, drainage, bulkheads, etc.

4. Pond Creation
   If construction of a pond is proposed, associated wetland and stream impacts should be included above in the wetland and stream impact sections. Also, the proposed pond should be described here and illustrated on any maps included with this application.
   Pond to be created in (check all that apply): ☐ uplands ☐ stream ☐ wetlands
   Describe the method of construction (e.g., dam/embankment, excavation, installation of draw-down valve or spillway, etc.): N/A

   Proposed use or purpose of pond (e.g., livestock watering, irrigation, aesthetic, trout pond, local stormwater requirement, etc.):

   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 selected design was chosen to minimize the impacts to Jurisdictional resources and is more cost-effective.

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 March 9, 2000, 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 NCWRP concurrence shall be placed on hold as incomplete. An applicant may also choose to review the current guidelines for stream restoration in DWQ's Draft Technical Guide for Stream Work in North Carolina, available at http://h2o.enr.state.nc.us/ncwetlands/strmgide.html.

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

2. Mitigation may also be made by payment into the North Carolina Wetlands Restoration Program (NCWRP). Please note it is the applicant's responsibility to contact the NCWRP at (919) 733-5208 to determine availability and to request written approval of mitigation prior to submittal of a PCN. For additional information regarding the application process for the NCWRP, check the NCWRP website at http://h2o.enr.state.nc.us/wrp/index.htm. If use of the NCWRP is proposed, please check the appropriate box on page three and provide the following information:

   Amount of stream mitigation requested (linear feet): N/A
   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)

Does the project involve an expenditure of public (federal/state) funds or the use of public (federal/state) land?

Yes ☒ No ☐

If yes, does the project require preparation of an environmental document pursuant to the requirements of the National or North Carolina Environmental Policy Act (NEPA/SEPA)? Note: If you are not sure whether a NEPA/SEPA document is required, call the SEPA coordinator at (919) 733-5083 to review current thresholds for environmental documentation.

Yes ☒ No ☐

If yes, does the project require preparation of an environmental document pursuant to the requirements of the National or North Carolina Environmental Policy Act (NEPA/SEPA)? Note: If you are not sure whether a NEPA/SEPA document is required, call the SEPA coordinator at (919) 733-5083 to review current thresholds for environmental documentation.

Yes ☒ No ☐

If yes, has the document review been finalized by the State Clearinghouse? If so, please attach a copy of the NEPA or SEPA final approval letter.

Yes ☒ No ☐

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

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

Will the project impact protected riparian buffers identified within 15A NCAC 2B .0233 (Neuse), 15A NCAC 2B .0259 (Tar-Pamlico), 15A NCAC 2B .0250 (Randleman Rules and Water Supply Buffer Requirements), or other (please identify_____)?

Yes ☐ No ☒ If you answered "yes", provide the following information:

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	3023.0		Allowable
2	3659.0		Allowable
Total	6682.0		Allowable

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

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

XI. Stormwater (required by DWQ)

Describe impervious acreage (both 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.

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.

XIII. Violations (required by DWQ)

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

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

XIV. 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).

3/21/05

Applicant/Agent's Signature **Date**

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

Yancey County
Bridge No. 61 on NC 197
over North Toe River
Federal Aid Project No. BRSTP-197(1)
State Project No. 8.1900401
T.I.P. No. B-1443

CATEGORICAL EXCLUSION & PROGRAMMATIC SECTION 4(f)

UNITED STATES DEPARTMENT OF TRANSPORTATION

FEDERAL HIGHWAY ADMINISTRATION

AND

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

DIVISION OF HIGHWAYS

9-02-03
DATE

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

9/2/03
DATE

John F. Sullivan III
Division Administrator, FHWA

Yancey County
Bridge No. 61 on NC 197
over North Toe River
Federal Aid Project No. BRSTP-197(1)
State Project No. 8.1900401
T.I.P. No. B-1443

CATEGORICAL EXCLUSION & PROGRAMMATIC SECTION 4(f)

Documentation Prepared in
Project Development and Environmental Analysis Branch By:

9-02-03
DATE

John L. Williams, PE,
Project Planning Engineer

9-02-03
DATE

William T. Goodwin Jr., PE, Unit Head
Bridge Replacement Planning Unit

PROJECT COMMITMENTS:

Yancey County
Bridge 61 on NC 97
Over North Toe River
Federal Project BRSTP-197()
State Project 8.1900401
TIP # B-1443

"**Design Standards in Sensitive Watersheds**" will be applied for this project

"**Guidelines for Construction Adjacent to Trout Waters**" will be applied for this project.

The Historic Bridge has been recorded in accordance with the attached Memorandum of Agreement.

The driveway access to the property immediately south of the bridge will be re-established as part of the design and construction of the project.

Appalachian elktoe

This project will be affecting the endangered Appalachian elktoe and as such the following commitments will be implemented in project construction.

Erosion Control Measures: The areas adjacent to the North Toe River will be identified as "Environmentally Sensitive Areas" on the Erosion Control plans for this project.

Within the Environmentally Sensitive Areas the following shall apply:

1. Provide 50-Foot buffer Zone (both sides of river) which allows clearing but not grubbing until immediately before grading operations.
2. Limit grubbing operations to within 10 days of grading.
3. Erosion and Sediment Control Measures to be installed immediately after clearing.
4. Require "Seeding and Mulching" to be performed immediately following grade establishment.
5. Require "Staged Seeding" – 20 foot fill sections or 2 acres, whichever is less.
6. Erosion and sediment Control Measures must be cleaned out when ½ full.
7. Increase sediment storage capacity by 50% above standard BMP guidelines.

Agency Coordination: NCDOT will invite representatives from the U.S. Fish and Wildlife Service and the North Carolina Wildlife resource Commission to the pre-construction meeting for these projects, along with all subsequent field inspections prior to construction, to insure compliance with all special project commitments.

Bridge Drainage: Deck drains will be placed at the ends of the replacement bridge so no drainage will occur over the North Toe River channel. Currently drainage from the decks of both of the existing structures flows directly into the river. The amount of discharge from the roadway entering the river will be reduced with the new structure. This commitment will be incorporated in the Structure Design Plans.

Preconstruction Survey: NCDOT conducts final surveys (just prior to construction) in the project footprint of projects impacting waters known to contain protected mussel species. NCDOT is anticipating that a few individuals will be found in surveys of the project footprint and is proposing to relocate these mussels to appropriate habitat to be defined in the forthcoming Biological Assessment.

Bridge Demolition: A plan for Bridge Demolition has been developed and tentatively agreed upon by U.S. Fish & Wildlife Service. The plan will be included with the forthcoming Biological Assessment (B.A.). Upon completion of a U.S. Fish & Wildlife Service approved B.A., then the full details of the plan will be included in the final Greensheet as part of the permit package.

Yancey County
Bridge No. 61 on NC 197
over North Toe River
Federal Aid Project No. BRSTP-197(1)
State Project No. 8.1900401
T.I.P. No. B-1443

INTRODUCTION: Bridge No. 61 is included in the latest North Carolina Department of Transportation (NCDOT) Transportation Improvement Program and is eligible for the Federal-Aid Bridge Replacement and Rehabilitation Program. The location is shown in Figure 1. No substantial environmental impacts are anticipated. The project is classified as a Federal "Categorical Exclusion".

I. PURPOSE AND NEED STATEMENT

Bridge Maintenance Unit records indicate the bridge has a sufficiency rating of 49.2 out of a possible 100 for a new structure. The bridge is fast approaching the end of its useful life. It is considered to be structurally deficient due to deteriorating structural integrity and functionally obsolete due to narrow roadway geometry on the bridge. The replacement of this inadequate structure will result in safer traffic operations.

II. EXISTING CONDITIONS

The project is located on NC 197 over the North Toe River on the Yancey-Mitchell County line. The project is in a rural area that includes a combination of residential, rural, and agricultural areas. The topography in the project vicinity is characterized by rolling hills with steep slopes in some places.

NC 197 is classified as a rural major collector in the Statewide Functional Classification System and is not on the National Highway System. This route is not a designated bicycle route and there is no indication that an unusual number of bicyclists use this roadway.

In the vicinity of the bridge, NC 197 has a 20-foot (6.0-meter) pavement width with approximately 2-foot (0.6-meter) grass shoulders. The roadway grade begins in a slight sag vertical curve and then reverses to a slight crest vertical curve at the end of the project. The existing bridge has straight alignment with sharp curves on both approaches. The northeast approach crosses a CSX railroad line. The roadway is situated approximately 31 feet (9.4 meters) above the river bed.

Bridge No. 61 is a five-span structure. The existing bridge (see Figure 3) was constructed in 1925 and has an overall length of 270 feet (82.3 meters). The structure consists of a reinforced concrete slab and continuous closed spandrel arch supported by reinforced concrete post and web

bents with reinforced concrete vertical abutments. The clear roadway width is 15.6 feet (4.8 meters). There are no weight limitations posted for the bridge.

There are no utilities attached to the existing structure. Overhead power lines are located parallel to the railroad tracks on the east end of the bridge. An overhead telephone line crosses the river above the bridge.

The current traffic volume of 1450 vehicles per day (VPD) is expected to increase to 2800 VPD by the year 2025. The projected volume includes two-percent truck-tractor semi-trailer (TTST) and six-percent dual-tired vehicles (DT). The speed limit is not posted in the area and is therefore statutory 55 miles (90 kilometers) per hour in the project area.

There were two accidents reported in the vicinity of Bridge No. 61 during a recent three-year period. The accidents resulted in personal injuries and property damage. The accidents ocurred in the sharp curves on the approaches to the bridge.

There are currently no school buses utilizing this bridge.

III. ALTERNATIVES

A. Project Description

Existing Bridge No. 61 will be replaced with a bridge of sufficient width to provide, at a minimum, two 11-foot (3.3-meter) lanes with 3.0-foot (1.0-meter) offsets. The roadway grade of the new structure will be approximately the same as the existing grade at this location. Traffic will be maintained on the existing bridge during construction. Upon completion of the project the existing bridge will be removed.

The existing roadway will be widened to a pavement width of 22-foot (6.6-meter); providing two 11-foot (3.3-meter) lanes and shoulder widths of 8-foot (2.4-meter). The project will be designed as a rural major collector.

B. Reasonable and Feasible Alternatives

Five alternates were studied for the replacement of Bridge No. 61. They are described as follows. The speed limit through the area is 55 mph. This as a design speed can not be met due to economic and environmental constraints. Therefore, a Design Exception will be required for a design speed of 30 mph (90 kph).

Alternate 1 involves replacing Bridge No. 61 on new alignment approximately 92 feet (28 meters) to the east of the existing structure (see Figure 2A). The proposed structure would be approximately 312 feet (95 meters) in length with a travelway of 22 feet (6.6 meters) and shoulders of 3.0 feet (1.0 meter). The proposed bridge would be on a straight alignment. Improvements to the approach roadways would be required for a distance of approximately 920 feet (280 meters) to the south and 480 feet (146 meters) to the north.

Alternate 2 involves replacing Bridge No. 61 on new alignment approximately 197 feet (60 meters) to the east of the existing structure (see Figure 2A). The proposed structure would be approximately 312 feet (95 meters) in length with a travelway of 22 feet (6.6 meters) and shoulders of 3.0 feet (1.0 meter). The proposed bridge would be mostly straight with short curved section on the south end. Improvements to the approach roadways would be required for a distance of approximately 902 feet (275 meters) to the south and 380 feet (116 meters) to the north.

Alternate 3 involves replacing Bridge No. 61 on new alignment approximately 121 feet (37 meters) to the west of the existing structure (see Figure 2A). The proposed structure would be approximately 345 feet (105 meters) in length with a travelway of 12 feet (6.6 meters) and shoulders of 3.0 feet (1.0 meter). The proposed bridge would be straight. Improvements to the approach roadways would be required for a distance of approximately 985 feet (300 meters) to the south and 540 feet (165 meters) to the north.

Alternate 4 involves replacing Bridge No. 61 on new alignment approximately 131 feet (40 meters) to the east of the existing structure (see Figure 2B). The proposed structure would be approximately 312 feet (95 meters) in length with a travelway of 12 feet (6.6 meters) and shoulders of 3.0 feet (1.0 meter).). The proposed bridge would be mostly straight with short curved section on the south end. Improvements to the approach roadways would be required for a distance of approximately 223 feet (68 meters) to the south and 197 feet (60 meters) to the north.

Alternate 4A (Preferred) involves replacing Bridge No. 61 on new alignment approximately 180 feet (55 meters) to the east of the existing structure. The proposed bridge will be on a curved alignment. The proposed structure will be approximately 360 feet (109 meters) in length with a travelway of 36 feet (10.9 meters) due to the curved alignment. The inside shoulder will be 8 feet (2.4 meters) to accommodate horizontal sight distance. The outside shoulder will be 3 feet (1 meter). Improvements to the approach roadways will be required for a distance of approximately 213 feet (65 meters) to the south and 59 feet (18 meters) to the north.

C. Alternatives Eliminated From Further Consideration

The "do-nothing" alternative will eventually necessitate closure of the bridge. This is not acceptable due to the traffic service provided by NC 197.

Rehabilitation of the old bridge is not practical due to its age and deteriorated condition. Rehabilitation of the existing bridge would require the following; repair to cracked and spalling concrete, rail retrofits to the bridge rail, and would need to be widened to accommodate two lanes of traffic. Scouring of the substructure would also have to be addressed. Given the expense of a temporary onsite detour and lack of an offsite detour, these alternatives are not feasible and prudent.

D. Preferred Alternative

After coordination with numerous resource agencies, it has been determined that Bridge No. 61 will be replaced on new alignment as shown by Alternate 4A (See Figure 2B). Alternate 4A is recommended because it minimizes impacts on the sensitive natural ecosystems in the vicinity of the site and provides a safe, economic design.

The NCDOT Division 13 Engineer concurs with the selection of Alternate 4A as the preferred alternative.

IV. ESTIMATED COSTS

The estimated costs for the five alternatives are summarized below.

	Alternate 1	Alternate 2	Alternate 3	Alternate 4	Alternate 4A
Existing Structure Removal	$ 31,800	$ 31,800	$ 31,800	$ 31,800	$ 31,800
New Structure	531,000	531,100	587,000	531,000	559,000
Roadway Approaches	1,016,000	822,300	976,700	131,900	134,000
Misc. & Mob.	477,100	415,800	478,500	208,300	217,200
Eng. & Contingencies	344,000	299,000	326,000	147,000	158,000
Total Construction Cost	$ 2,400,000	$ 2,100,000	$ 2,400,000	$ 1,050,000	$ 1,100,000
Right-of-way Costs	$ 436,500	$ 450,500	$ 262,500	$ 282,000	$ 299,000
Total Project Cost	$ 2,836,500	$ 2,550,500	$ 2,662,500	$ 1,332,000	$ 1,399,000

V. NATURAL RESOURCES

A. Physiography

The proposed project lies on the Yancey/Mitchell County Line approximately 7 miles (11 kilometers) northeast of Burnsville, North Carolina and approximately 13 miles (21 kilometers) east of the Tennessee state line. The project is in a rural area in the northwestern portion of North Carolina, which lies within the Blue Ridge Physiographic Province. Elevations in the project area are approximately 2200 feet (671 meters) National Geodetic Vertical Datum (NGVD). The topography of the project vicinity is characterized by rolling hills with steep slopes in some places. Within the project area, the stream banks are steep along North Toe River. The project vicinity includes a combination of residential, rural, and agricultural areas.

B. Soils

Published soil surveys were not available for Yancey or Mitchell Counties. According to the available NRCS mapping (Mitchell County 1989), the detailed map units within the project area include Biltmore sand, Dillsboro clay loam, Fannin sandy loam, and Chandler-Micaville complex.

Biltmore sand is mapped along the floodplain areas of the North Toe River. This soil occurs on 0 to 3 % slopes and it is a non-hydric soil that is described as frequently flooded. The Chandler-Micaville complex is mapped in the northwestern quadrant of the project. This soil occurs on 50 to 95 % slopes and is non-hydric. Dillsboro clay loam (2 to 8 % slopes) is a non-hydric soil, which is mapped along NC 197, to the north of the river. Fannin sandy loam is mapped adjacent to the areas of Dillsboro clay loam. This soil occurs on 15 to 30 % slopes, is non-hydric, and is described as well-drained micaceous soil on side slopes.

According to the available mapping for Yancey County (1998) the project area includes:

1). Porters-Unaka complex, mapped to the south of the river, is the main map unit within the study corridor. This non-hydric soil occurs on 50 to 95 % slopes and is described as rocky and well-drained.

2). Saunook-Thunder complex (15 to 30 %) slopes is mapped in a small area just south of the existing bridge. This stony soil is non-hydric and well drained.

C. Water Resources

1. Physical Characteristics of Surface Waters

The project is located in the French Broad River basin. Two surface water resources, North Toe River and an unnamed tributary to North Toe River, will be impacted by the proposed project. North Toe River originates in northern Avery County, approximately 50 miles (80 kilometers) upstream of the project area. From its origin, the river flows south to Mitchell County, then turns to the northwest. North Toe River is 64 miles (103 kilometers) long from its headwaters to its confluence with the Nolichucky River, which is approximately 14.3 miles (23 kilometers) downstream of the project area.

North Toe River is 140 to 150 feet (43 to 46 meters) wide within the project area. The bed and channel materials consist of bedrock and boulders, as well as micaceous sand. Within the project area, the river flows west and consists mainly of a straight run. The riparian vegetation consists mostly of deciduous trees, and the floodplain appears to be seasonally flooded along some areas of the bank. At the time of the field survey, the river ranged from a few inches deep over rapids and riffles to several feet deep in pools. The water was slightly turbid and streamflow was rapid.

An unnamed perennial tributary to North Toe River parallels the east side of NC 197, on the north side of the river. The stream is 4 to 5 feet (1.2 to 1.5 meters) wide with a cobble, silt, and sand substrate. On the day of the site visit the stream was 3 to 8 inches (7.6 to 20.3 centimeters) deep. The confluence with North Toe River is just east of the existing bridge (Figure 2).

2. Best Usage Classification

Surface waters in North Carolina are assigned a classification by the Division of Water Quality (DWQ) that is designed to maintain, protect, and enhance water quality within the state. North Toe River and the unnamed tributary [Index # 7-2-(38.5)] is classified as a Class C Tr waterbody. Class C water resources are used for aquatic life propagation and survival, fishing, wildlife, secondary recreation, and agriculture. The supplemental Tr classification indicates freshwaters protected for natural trout propagation and survival of stocked trout.

No waters classified as High Quality Waters (HQW), Water Supplies (WS-I of WS-II) or Outstanding Resource Waters (ORW) occur within 1 miles (1.6 kilometers) of the project study area.

3. Water Quality

The Benthic Macroinvertebrate Ambient Network (BMAN), managed by the Division of Water Quality (DWQ) and established in 1982, is part of an on-going ambient long-term water quality monitoring program. The program has established fixed water quality monitoring stations for selected benthic macroinvertebrates.

Several BMAN stations have been established along North Toe River upstream of the project area. One station is located at SR 1315 near Loafers Glen in Yancey County, which is approximately 4 kilometers (2.5 miles) upstream of Bridge No. 61. This station was sampled in July, 1992 and received a bioclassification of "good". A second station has been established at SR 1162, near Penland in Mitchell County, approximately 15 miles (24 kilometers) upstream of the project area. This station was sampled seven times between 1984 and 1992. Bioclassification at this station ranged from "fair" to "good". Other stations along the North Toe River, which are located further upstream than the stations described, also ranged from "fair" to "good".

Point source discharges in North Carolina are permitted through the National Pollutant Discharge Elimination System (NPDES) program administered by the DWQ. All discharges are required to obtain a permit to discharge. There are no known permitted point source dischargers to North Toe River within the project vicinity.

4. Summary of Anticipated Impacts

Any action that affects water quality can adversely affect aquatic organisms. Temporary impacts during the construction phases may result in long-term impacts to the aquatic community. Alternate 3 would result in the greatest impacts to the aquatic and terrestrial communities due to its longer length and skewed alignment. Alternate 4 will have approximately the same impacts on the North Toe River as Alternate 3 due to the skewed alignment. Alternate 4A offers the least amount of impacts because of its curved alignment. This alignment requires only two bents, which can be placed at the edge of the river. The other alternates would require a bent to be placed in the middle of the river. Physical impacts will be the most severe at the point of bridge replacement.

Project construction may result in the following impacts to surface water resources:

1). Increased sediment loading and siltation as a consequence of watershed vegetation removal, erosion/and or construction.
2). Decreased light penetration/water clarity from increased sedimentation.
3). Changes in water temperature with vegetation removal.
4). Changes in the amount of available organic matter with vegetation removal.
5). Increased concentration of toxic compounds from highway runoff, construction activities and construction equipment, and spills.
6). Alteration of water levels and flows due to interruptions and/or additions to surface and groundwater flow from construction.
7). Increased scouring of the existing channel due to increased water flows from the stormwater runoff associated with curb and gutter systems.

It is important to understand that construction impacts may not be restricted to the communities in which the construction activity occurs. Efforts should be made to ensure that no sediment leaves the construction site. NCDOT's Best Management Practices for the Protection of Surface Waters should be followed during the construction phase of the project. In addition, Design Standards in Sensitive Watersheds and "Guidelines for Construction Adjacent to Trout Waters" will be adhered to during the project construction.

D. Biotic Resources

Terrestrial and aquatic communities are included in the description of biotic resources. Living systems described in the following sections include communities of associated plants and animals. These descriptions refer to the dominant flora and fauna in each community and the relationship of these biotic components. Descriptions of the terrestrial systems are presented in the context of plant community classifications. These classifications follow Schafale and Weakley (1990) where possible. Representative animal species, which are likely to occur in these habitats (based on published range distributions) are also cited. Scientific nomenclature and common names (when applicable) are used for the plant and animal species described. Subsequent references to the same species are by the common name only.

1. Terrestrial Communities

Three distinct terrestrial communities were identified within the project area: a man-dominated/disturbed community, a floodplain community, and a forested upland (Figure 2). Dominant faunal components associated with these terrestrial areas will be discussed in each community description. Many species are adapted to the entire range of habitats found along the project alignment, but may not be mentioned separately in each community description.

Man-Dominated/Disturbed Community

The man-dominated or disturbed community includes road shoulders, residential areas, the field south of the river, and areas associated with the railroad on the north side of the river.

Many plant species are adapted to these disturbed areas. Regularly maintained areas along road shoulders, lawns, and fields are dominated by various grasses such as fescue (*Festuca* sp.) and ryegrass (*Lolium* sp.), as well as plantain (*Plantago virginica*), wild onion (*Allium cernuum*), white clover (*Trifolium repens*), and dandelion (*Taraxacum officinale*). The irregularly maintained areas, which include the transition areas between the regularly maintained and the forested communities, are dominated by weedy invasive species such as Japanese honeysuckle (*Lonicera japonica*), greenbrier (*Smilax* sp.), goldenrod (*Solidago* sp.), and blackberry (*Rubus* sp.). Along the railroad track, which parallels North Toe River to the north, thick mats of scouring rush (*Equisetum hyemale*) dominate the embankment.

The animal species present in these disturbed habitats are opportunistic and capable of surviving on a variety of resources, ranging from vegetation (flowers, leaves, fruits, and seeds) to both living and dead faunal components. A turkey vulture (*Cathartes aura*) was observed during the site visit. House sparrows (*Passer domesticus*), northern mockingbirds (*Mimus polyglottos*), northern juncos (*Junco hyemalis*), and mourning doves (*Zenaida macroura*) are other common birds that use these habitats. The field and residential lawn areas may be utilized by gray squirrel (*Sciurus carolinensis*), Virginia opossum (*Didelphis virginiana*), several species of mice (*Peromyscus* sp.), American toad (*Bufo americanus*), and Eastern garter snake (*Thamnophis sirtalis sirtalis*).

Floodplain Community

There is an alluvial floodplain present along the northern bank of North Toe River within the project area. This area had recently been flooded by high water. Vegetation along this floodplain is somewhat sparse and includes scattered sycamore (*Platanus occidentalis*), spicebush (*Lindera benzoin*), black willow (*Salix nigra*), and iris (*Iris* sp.). The alluvial soils along the floodplain consist of a dark brown (10YR 3/3) well-drained sand. This community corresponds most closely to the Montane Alluvial Forest community described in Schafale and Weakley (1990).

The banks of the North Toe River are steep and rocky. Dominant species along the banks include sycamore, tulip poplar (*Liriodendron tulipifera*), American beech (*Fagus grandifolia*), eastern hemlock (*Tsuga canadensis*), black walnut (*Juglans nigra*), and yellow buckeye (*Aesculus octandra*). The understory is dominated by great rhododendron (*Rhododendron maximum*) which is dense in some places. The shrub and herbaceous layer includes dog's hobble (*Leucothoe fontanesiana*), nannyberry (*Viburnum lentago*), Christmas fern (*Polystichum acrostichoides*), poison ivy (*Toxicodendron radicans*), and greenbrier (*Smilax* sp.).

Although only Carolina chickadee (*Parus carolinensus*) was observed during the field activities, other species which may utilize the trees and shrubs in this habitat include white-breasted nuthatch (*Sitta carolinensis*), tufted titmouse (*Parus bicolor*), hairy woodpecker (*Picoides villosus*), white-eyed vireo (*Vireo griseus*), and yellow warbler (*Dendroica petechia*). Species which may forage and reside along the river banks include raccoon (*Procyon lotor*), Virginia opossum, white-tailed deer (*Odocoileus virginianus*), red-spotted newt (*Notophthalmus viridescens viridescens*), and ground skink (*Scincella lateralis*).

Upland Forest

An upland forest community is present on the south side of the river and north of the floodplain forest on the north side. The forested areas are mostly open communities dominated by beech (*Fagus grandifolia*), black oak (*Quercus velutina*), hickories (*Carya* spp.), eastern hemlock, and black locust (*Robinia pseudo-acacia*), with Christmas fern in the herbaceous layer. This community corresponds most closely to the Montane Oak-Hickory Forest community of the NHP classification system.

Although only a northern mockingbird was observed, a variety of species likely utilizes these well-developed upland communities. Birds may include blue-gray gnatcatcher (*Polioptila caerulea*), Acadian flycatcher (*Empidonax virescens*), black-and-white warbler (*Mniotilta varia*), scarlet tanager (*Piranga olivacea*), and purple finch (*Carpodacus purpureus*). Other species may include eastern chipmunk (*Tamias triatus*), white-footed mouse (*Peromyscus leucopus*), striped skunk (*Mephitis mephitis*), Fowler's toad (*Bufo woodhousei fowleri*), timber rattler (*Crotalus horridus*), copperhead (*Agkistrodon contortrix*), eastern box turtle (*Terrapene carolina*), and five-lined skink (*Eumeces fasciatus*).

2. Aquatic Communities

Within the project area North Toe River is a mid-gradient, high order river. The bed material consists of bedrock and boulders, as well as sand substrates. An unnamed perennial tributary to North Toe River parallels the east side of NC 197, on the north side of the river. The confluence with North Toe River is just east of the existing bridge. The stream is 4 to 5 feet (1.2 to 1.5 meters) wide with a cobble, silt, and sand substrate. On the day of the site visit the stream was 3 to 8 inches (7.6 to 20.3 centimeters) deep. Water clarity was fair to good in the North Toe and the unnamed tributary on the day of the site visit. The riparian community contains mostly trees.

North Toe River provides habitat for a variety of species of fish. According to Christopher Goudreau, the District 8 Biologist for the North Carolina Wildlife Resources Commission (WRC), the North Toe River was sampled at Bridge No. 61 in 1992. Fish species collected include central stoneroller (*Campostoma anomalum*), warpaint shiner (*Luxilus coccogenis*), rosyface shiner (*Notropis rubellus*), telescope shiner (*N. telescopis*), mirror shiner (*N. spectrunculus*), Tennessee shiner (*N. leuciodus*), mimic shiner (*N. volucellus*), silver shiner (*N. photogenis*), whitetail shiner (*Cyprinella galactura*), river chub (*Nocomis micropogon*), longnose dace (*Rhinichthys cataractae*), northern hog sucker (*Hypentelium nigricans*), blotched chub (*Erimystax insignis*), bigeye chub (*Hybopsis amblops*), fatlips minnow (*Phenacobius crassilabrum*), channel catfish (*Ictalurus punctatus*), rock bass (*Ambloplites rupestris*), smallmouth bass (*Micropterus dolomieu*), greenside darter (*Etheostoma blennioides*), greenfin darter (*E. chlorobranchium*), banded darter (*E. zonale*), Swannanoa darter (*E. swannanoa*), tangerine darter (*Percina aurantiaca*), gilt darter (*P. evides*), and mottled sculpin (*Cottus bairdi*).

The sharphead darter (*Etheostoma acuticeps*), which is a state listed threatened species, was also collected at this location. These species may also utilize the unnamed tributary in the vicinity of the bridge. Yancey and Mitchell counties are designated as "trout" counties by the WRC.

Reptiles and amphibians which may inhabit this community include hellbender (*Cryptobranchus alleganiensis*), shovelnose salamander (*Leurognathus marmoratus*) and northern water snake (*Nerodia sipedon sipedon*).

3. Summary of Anticipated Impacts

Project construction will have various impacts to the previously described terrestrial and aquatic communities. Any construction activities in or near these resources have the potential to impact biological functions. This section quantifies and qualifies potential impacts to the natural communities within the project area in terms of the area impacted and the plants and animals affected. Temporary and permanent impacts are considered here along with recommendations to minimize or eliminate impacts.

Terrestrial Communities

Terrestrial communities in the project area will be impacted by project construction from clearing and paving and loss of the terrestrial community area along NC 197. Estimated impacts are derived based on the study corridor lengths of 515 (1690 feet) for Alternate 1; 1590 feet (485 meters) for Alternate 2; and 1804 feet (550 meters) for Alternate 3; and the entire proposed study corridor width of 80 feet (24.4 meters). Table 1 details the potential impacts to terrestrial communities by habitat type. It should be noted that impacts are based on the entire study corridor width and actual loss of habitat will likely be less.

Table 1
Estimated Area Impacts to Terrestrial Communities

Community	Impacted Area in ac (ha)		
	Alternate 1	**Alternate 2**	**Alternate 3**
Upland Forest	0.59 (0.24)	0.43 (0.17)	0.92 (0.37)
Floodplain Forest	0.18 (0.07)	1.33 (0.54)	0.81 (0.33)
Man-dominated/Disturbed	1.64 (0.66)	0.18 (0.07)	0.11 (0.04)
Total Impacts	2.41 (0.97)	1.94 (0.78)	1.84 (0.74)

Note: Alternates 4 and 4A will have impacts to the Terrestrial Communities very similar to Alternate 2.

Destruction of natural communities along the project alignment will result in the loss of foraging and breeding habitats for the various animal species which utilize the area. Animal species will be displaced into surrounding communities. Adult birds, mammals, and some reptiles are mobile

enough to avoid mortality during construction. Young animals and less mobile species, such as many amphibians, may suffer direct loss during construction. Plants and animals found in these upland communities are generally common throughout western North Carolina.

Impacts to terrestrial communities, particularly in locations having steep to moderate slopes, can result in the aquatic community receiving heavy sediment loads as a consequence of erosion. It is important to understand that construction impacts may not be restricted to the communities in which the construction activity occurs, but may affect downstream communities. Efforts should be made to ensure that no sediment leaves the construction site.

Aquatic Communities

Impacts to aquatic communities include fluctuations in water temperatures due to the loss of riparian vegetation. Shelter and food resources, both in the aquatic and terrestrial portions of these organisms' life cycles, will be affected by losses in the terrestrial communities. The loss of aquatic plants and animals will affect terrestrial fauna which rely on them as a food source.

Temporary and permanent impacts may result to aquatic organisms from increased sedimentation. Aquatic invertebrates may drift downstream during construction and recolonize the disturbed area once it has been stabilized. Sediments have the potential to affect fish and other aquatic life in several ways, including the clogging and abrading of gills and other respiratory surfaces; affecting the habitat by scouring and filling of pools and riffles; altering water chemistry; and smothering different life stages. Increased sedimentation may caused decreased light penetration through an increase in turbidity. Each alternate will cause temporary increases in sedimentation from construction. However, Alternate 3, which proposes the longest replacement structure, will have greater impact as well as destruction of additional riparian habitat.

Wet concrete should not come into contact with surface water during bridge construction in order to minimize effects of runoff on the stream water quality. Potential adverse effects can be minimized through the implementation of NCDOT Best Management Practices for Protection of Surface Waters. In addition, Design Standards in Sensitive Watersheds and "Guidelines for Construction Adjacent to Trout Waters" will be adhered to during the project construction.

E. JURISDICTIONAL TOPICS

This section provides inventories and impact analyses for two federal and state regulatory issues: Waters of the U.S. and rare and protected species.

1. Waters of the United States

Wetlands and surface waters fall under the broad category of "Waters of the United States" as defined in 33 CFR 328.3 and in accordance with provisions of Section 404 of the Clean Water Act (33 U.S.C. 1344), and are regulated by the U.S. Army Corps of Engineers (USACE). Any action that proposes to dredge or place fill material into surface waters or wetlands falls under these provisions.

2. Characteristics of Wetlands and Surface Waters

Jurisdictional wetlands do not occur within the project area. North Toe River meets the definition of surface waters. North Toe River is therefore classified as Waters of the United States. The channel is approximately 140 to 150 feet (43 to 46 meters) wide within the project area.

3. Summary of Anticipated Impacts

No wetlands will be impacted by the project. Project construction cannot be accomplished without infringing on surface waters. Anticipated surface water impacts fall under the jurisdiction of the U.S. Army Corps of Engineers (USACE) and DWQ.

Within the project area, North Toe River is 140 to 150 feet (43 to 46 meters) wide. Assuming a 24.4 meters (80 feet) wide study corridor for the replacement structure, the construction of either alternate will impact a total of 80 linear feet (24.4 linear meters). Alternate 2 will impact approximately 0.28 ac (0.11 hectares) of surface waters; Alternates 1 and 3 will each impact approximately 0.37 ac (0.15 ha) of surface waters. Alternates 4 and 4A will have comparable surface water impacts to Alternate 2. Additionally, the linear stream impacts are approximately the same as Alternate 2. Please note that these estimates are based on the study corridor for each alternate. The actual length and area of the stream impacts will likely be less, depending on final design plans.

4. Permits

Impacts to jurisdictional surface waters are anticipated from the proposed project. Permits and certifications from various state and federal agencies may be required prior to construction activities.

Construction is likely to be authorized by provisions of CFR 330.5 (a) Nationwide Permit (NWP) No. 23, which authorizes activities undertaken, assisted, authorized, regulated, funded, or financed in whole or in part, by another Federal agency or department where that agency or department has determined, pursuant to the Council on Environmental Quality Regulations for Implementing the Procedural Provisions of the National Environmental Policy Act:

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

that the Office of the Chief Engineer has been furnished notice of the agency's or department's application for the categorical exclusion and concurs with that determination.

This project will also require a 401 Water Quality Certification or waiver thereof, from DEHNR prior to issuance of the NWP 23. Section 401 of the Clean Water Act requires that the state issue or deny water certification for any federally permitted or licensed activity that results in a discharge into Waters of the U.S. In addition, the project is located in a designated "trout" county where NCDOT is required to obtain a letter of approval from the NC Wildlife Resources Commission. Final permit decision rests with the USACE.

5. Avoidance, Minimization, Mitigation

Since this project will likely be authorized under a Nationwide permit, mitigation for impacts to surface waters may or may not be required by the USACE. In accordance with the Division of Water Quality Wetland Rules [15A NCAC 211 .0506 (h)] "Fill or alteration of more than one acre of wetlands will require compensatory mitigation; and fill or alteration of more than 150 linear feet (45.7 linear meters) of streams may require compensatory mitigation. Since there are no wetlands within the study corridor, and the length of stream impacts will be less than the 150 linear foot (45.7 linear meter) threshold, wetland or stream mitigation should not be required for this project.

6. Rare and Protected Species

Some populations of plants and animals are declining either due to natural forces or due to their inability to coexist with man. Rare and protected species listed for Yancey and Mitchell counties, and any likely impacts to these species as a result of the proposed project construction, are discussed in the following sections.

Federally Protected Species

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

The Fish and Wildlife Service (FWS) lists 11 federally protected species for Yancey County and nine for Mitchell County as of January 2003. These species are listed in Tables 2 and 3.

Table 2
Federally Protected Species for Yancey County

Scientific Name	Common Name	Federal Status
Clemmys muhlenbergii	Bog turtle	T S/A
Corynorhinus townsendii virginianus	Virginia big-eared bat	E
Falco peregrinus	Peregrine falcon	E
Felis concolor couguar	Eastern cougar	E
Glaucomys sabrinus coloratus	Carolina northern flying squirrel	E
Alasmidonta raveneliana	Appalachian elktoe	E
Microhexura montivaga	Spruce-fir moss spider	E
Geum radiatum	Spreading avens	E
Houstonia montana	Roan mountain bluet	E
Spiraea virginiana	Virginia spiraea	T
Gymnoderma lineare	Rock gnome lichen	E

Notes:
"E" Denotes Endangered (a species that is threatened with extinction throughout all or a significant portion of its range).
"T" Denotes Threatened (a species that is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range).
"T S/A" Denotes Similarity of Appearance (a species that is listed as threatened due to similarity of appearance with other rare species).

Table 3 Federally Protected Species for Mitchell County		
Scientific Name	Common Name	Federal Status
Glaucomys sabrinus coloratus	Carolina northern flying squirrel	E
Myotis sodalis	Indiana bat	E
Alasmidonta raveneliana	Appalachian elktoe	E
Geum radiatum	Spreading avens	E
Liatris helleri	Heller's blazing star	T
Solidago spithamaea	Blue Ridge goldenrod	T
Spiraea virginiana	Virginia spiraea	T
Gymnoderma lineare	Rock gnome lichen	E
Notes: "E" Denotes Endangered (a species that is threatened with extinction throughout all or a significant portion of its range). "T" Denotes Threatened (a species that is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range).		

A brief description of the characteristics and habitat requirements of each species, along with a conclusion regarding potential project impact, follows.

Clemmys muhlenbergii (Bog turtle)
Vertebrate Family: Emydidae
Federally Listed: 1997

Threatened due to Similarity of Appearance

The bog turtle is a small freshwater turtle reaching a maximum carapace length of 4.5 inches (11.4 centimeters). These turtles have a domed carapace which is weakly keeled and is light brown to ebony in color. The scutes have a lighter-colored starburst pattern. The plastron is brownish-black with contrasting yellow or cream areas along the midline. This species is distinguished by a large conspicuous orange, yellow, or red blotch on each side of the head.

The bog turtle is semi-aquatic and is typically found in freshwater wetlands characterized by open fields, meadows, or marshes with slow moving streams, ditches, and boggy areas. The bog turtle is also found in wetlands in agricultural areas subject to light to moderate livestock grazing which helps to maintain an intermediate stage of succession. During the winter, this species hibernates just below the upper surface of mud. Mating occurs in May and June, and the female deposits two to six eggs in sphagnum moss or sedge tussocks in May, June or July. The diet of the bog turtle is varied consisting of beetles, lepidopteran and caddisfly larvae, snails, millipedes, pondweed and sedge seeds, and carrion.

The southern population of the bog turtle is listed as Threatened due to Similarity of Appearance to the northern population, therefore, the southern population is not afforded protection under Section 7 of the Endangered Species Act. No habitat exists in the project area for the bog turtle. There are no freshwater wetlands characterized by open fields, meadows, or marshes with slow moving streams, ditches, or boggy areas near the bridge. A search of the NHP database found no occurrence of the bog turtle in the project vicinity.

Corynorhinus townsendii virginianus (Virginia big-eared bat) **Endangered**
Vertebrate Family: Vespertilionidae
Federally Listed: 1979

The big-eared bat (*Corynorhinus townsendii*) includes two subspecies which are federally protected: the Virginia big-eared bat (*C. t. virginianus*), and the Ozark big-eared bat (*C. t. ingen*). The Virginia big-eared bat is known from West Virginia, Virginia, Kentucky, and North Carolina, with a current population estimated at 13,566. The Ozark big-eared bat is currently known from Oklahoma and Arkansas, with an estimated population of 1,800.

Big-eared bats have light to dark brown fur and are medium in size, weighing 0.25 to .42 ounces (7 to 12 grams). The total body length is about 3.9 inches (9.8 centimeters). Distinguishing characteristics include facial glands on either side of the snout and long ears (over 1.0 inch /2.5 centimeters).

Virginia big-eared bats roost in caves year-round. From December through February, the bats hibernate in caves which range in temperature from 36.5 to 49.1 F (2.5 to 9.5 C). In the summer, the females gather in warmer caves which range in temperature from 59 to 64 F (15 to 18 C). While females are raising young in these "maternity caves", males disperse into smaller groups separate from the females. The diet of the big-eared bat consists primarily of moths captured in the air along forest edges after dark.

Biological Conclusion: No Effect

No habitat exists in the project area for the Virginia big-eared bat. There are no caves located near the bridge. A search of the NHP database found no occurrence of the Virginia big-eared bat in the project vicinity. It can be concluded that the project will not impact this endangered species.

Felis concolor couguar (Eastern cougar) **Endangered**
Vertebrate Family: Felidae
Federally Listed: 1973

Cougars are tawny colored with the exception of the muzzle, the backs of the ears, and the tip of the tail, which are black. Young cougars are paler with a spotted coat until about six months of age. Adult males from the eastern United States weigh 188 to 240 pounds (70 to 90 kilograms) females are 30 to 40 % smaller.

The eastern cougar is found in large remote wilderness areas where there is an abundance of their primary food source, white-tailed deer. A cougar will usually occupy a range of 25 miles (40 kilometers), and they are most active at night. In North Carolina, the cougar is thought to occur in only a few scattered areas, possibly including coastal swamps and the southern Appalachian mountains. There have not been any official cougar sightings in North Carolina since the 1960s.

Biological Conclusion: **No Effect**

No habitat exists in the project area for the eastern cougar. The project area is characterized by residential, agricultural, and other disturbed areas. A search of the NHP database found no occurrence of the eastern cougar in the project vicinity. It can be concluded that the project will not impact this endangered species.

Glaucomys sabrinus coloratus (Carolina northern flying squirrel) **Endangered**
Vertebrate Family: Sciurdiae
Federally Listed: 1985

The Carolina northern flying squirrel is a small mammal weighing about 3 to 5 oz (95 to 140 g). The adult squirrel is gray with a reddish or brownish wash on the back, and a grayish white to white underside. It has a large flap of skin along either side of its body which is connected at the wrist in the front and at the ankle in the rear. The skin flaps and its broad flattened tail allow the northern flying squirrel to glide from tree to tree. It is a solely nocturnal animal with large dark eyes.

There are several isolated populations of the northern flying squirrel in the western part of North Carolina along the Tennessee border. This squirrel is found above 5000 feet (1517 meters) in the vegetation transition zone between hardwood and coniferous forests. Both forest types are used to search for food and the hardwood forest is used for nesting sites. The squirrel can subsist on lichens and fungi throughout much of its range, however, the diet can also include seeds, buds, fruits, cones, and insects.

Biological Conclusion: **No Effect**

No habitat exists in the project area for the Carolina northern flying squirrel. The project area is characterized by agricultural and residential areas at an elevation of 2200 feet (671 meters). A search of the NHP database found no occurrence of the Carolina northern flying squirrel in the project vicinity. It can be concluded that the project will not impact this endangered species.

Myotis sodalis (Indiana bat) **Endangered**
Vertebrate Family: Vespertilionidae
Federally Listed: 1967

The Indiana bat is medium in size 0.24 to 0.32 ounces (7 to 9 grams) with dull grayish chestnut colored fur with pinkish to cinnamon underparts. This species is very similar to the little brown

myotis (*Myotis lucifugus*) except that the heel of the foot (calcar) of the Indian bat is strongly keeled.

The Indiana bat breeds on the ceilings of large rooms near cave entrances. Mating takes place at night during the first ten days of October. During the winter, the bats hibernate in limestone caves which have a temperature of 37 to 43 F (2.7 to 6.1 C) and 87 % humiditiy. The bats hang from the ceiling in tight clusters. The hibernating colonies disperse in late March and migrate to a more northern habitat for the summer. Females give birth to a single new offspring in June. Development to the flying stage and independent feeding usually takes about one month.

Indiana bats feed on insects, preferring the orders Hymenoptera (bees and wasps), Homoptera (cicadas), and Coleoptera (beetles). The bats forage in the air near the foliage of riparian and floodplain trees. The ideal foraging habitat is along a riparian corridor with a width of at least 98 feet (30 meters) of woody vegetation on each bank.

Biological Conclusion: No Effect

No breeding or hibernating habitat exists in the project area for the Indiana bat. The project area is characterized by agricultural and residential areas with no caves or cave entrances present near the bridge. Foraging habitat may exist along the riparian corridor, however, a search of the NHP database found no occurrence of the Indiana bat in the project vicinity. If the Indiana bat utilizes this area for foraging, construction of the bridge should have little effect, as the bats can forage upstream or downstream of the project. It can be concluded that the project will not impact this endangered species.

Falco peregrinus (Peregrine falcon) **Endangered**
Vertebrate Family: Falconidae
Federally Listed: 1970; 1984

The peregrine falcon is a medium sized raptor (15 to 20 inches/ 38 to 50 cm) with a long narrow tail and long pointed wings. The coloring of the adult bird is slate gray with black bars on the wings, tail and flanks. The lower body is white and reddish buffy and it is extensively spotted and barred with black. The throat is white with black moustache marks on the sides of the face.

The typical nesting habitat of the peregrine falcon is along a cliff or series of cliffs, however, nests have also been constructed in river cutbanks, trees, and ledges of large buildings. The diet of the falcon consists primarily of small birds which are hunted in the air. Hunting grounds include open waterways, fields, and marshes where the falcon has known to dive at speeds up to 200 miles (322 kilometers) per hour. The peregrine falcon may travel as far as 10 to 12 miles (16 to 19 kilometers) from its nest in search of prey.

Biological Conclusion: No Effect

The project area is characterized by agricultural and residential areas with no cliffs or ledges of large buildings present near the bridge. A search of the NHP database found no occurrence of the peregrine falcon in the project vicinity. No nests were observed along the river banks or in nearby trees. It can be concluded that the project will not impact this endangered species.

Alasmidonta raveneliana (Appalachian elktoe) **Endangered**
Invertebrate Family: Unionidae
Federally Listed: 1993

The Appalachian elktoe is a small mussel with a maximum length reaching up to 3 inches (8 centimeters). Its shell is thin although the shell is not fragile nor subovate (kidney-shaped). The periostracum (outer shell) of the adult Appalachian elktoe is dark brown in color, while juvenile have a yellowish-brown color.

Known populations of Appalachian elktoe in North Carolina have been reported in the main stem of the Nolichucky River and a short reach of the Toe River, with a single specimen reported in the Cane River. Specimens have also been reported in the Little Tennessee River and its tributaries. The Appalachian elktoe has been observed in gravelly substrates often mixed with cobble and boulders, in cracks of bedrock and in relatively silt-free, coarse sandy substrates.

Biological Conclusion: Unresolved

The U.S. Fish & Wildlife Service and FHWA are currently engaged in a Section 7 Consultation regarding this project. The species is present at the project site and will likely be impacted by the construction of the new bridge and by the demolition of the old bridge but it is not anticipated that the impact will result in a jeopardy opinion. A Biological Assessment (B.A.) and consequently Biological Opinion (B.O.) cannot be rendered until mitigation occurs. Mitigation cannot occur until the document is signed and Right of Way can be purchased. Multiple alternatives have been evaluated and alternate 4A has been determined to be the preferred alternative by the U.S. Fish & Wildlife Service as it minimizes impacts to the river and surrounding landscape. The placement of the piers has been designed so as to minimize impacts to the river. A plan for demolition of the old bridge has been submitted to U.S. Fish & Wildlife Service who have reviewed and tentatively agreed with the plan which will be included as part of the biological assessment. The Greensheet for this Categorical Exclusion will only make reference to the plan. When the B.O. is ultimately rendered, the final Greensheet, to be included as part of the permit package, will include a full description of the plan for demoltion.

Microhexura montivaga (Spruce-fir moss spider) **Endangered**
Invertebrate family: Dipluridae
Federally Listed: 1995

The spruce-fir moss spider is a small spider, approximately 0.1 to .15 inches (0.25 to 0.38 centimeters) in length, which ranges from light brown to yellow-brown to a darker reddish brown with no markings on its abdomen. This species is distinguished by chelicerae which project forward beyond the anterior edge of the carapace. Other characteristics include long posterior

spinnerets, and a second pair of book lungs which appear as light patches behind the genital furrow.

The spruce-fir moss spider constructs tube-shaped webs in the interface between damp, well-drained moss mats and rock surfaces. It prefers well-shaded areas of mature Fraser fir and red spruce forest communities in the highest elevations of the Southern Appalachian Mountains. The spider has not been observed feeding and prey has not been found in the webs. It is likely that the abundant springtails (collembolans) which occur in the moss mats are the food source for the spider.

Biological Conclusion: No Effect

No habitat exists in the project area for the spruce-fir moss spider. There are no well-shaded areas of mature Fraser fir and red spruce forest near the bridge. A search of the NHP database found no occurrence of this species in the project vicinity. It can be concluded that the project will not impact this endangered species.

Geum radiatum (Spreading avens) **Endangered**
Plant Family: Rosaceae
Federally Listed: 1990

Spreading avens is a perennial herb having stems with an indefinite cyme of bright yellow radially symmetrical flowers. Flowers of spreading avens are present from June to early July. Spreading avens has basal leaves which are odd-pinnately compound; terminal leaflets are kidney shaped and much larger than the lateral leaflets, which are reduced or absent.

Spreading avens is found only in the North Carolina and Tennessee section of the Southern Appalachian Mountains. Spreading avens occurs on scarps, bluffs, cliffs and escarpments on mountains, hills and ridges. Known populations of this plant has been found to occur at elevations from 5060 to 5800 feet (1535 to 1759 meters). Other habitat requirements for this species include full sunlight and shallow acidic soils. These soils contain a composition of sand, pebbles, humus, sandy loam and clay loam. Most populations are pioneers on rocky outcrops.

Biological Conclusion: No Effect

No habitat exists in the project area for spreading avens. The elevation of the project area is approximately 2200 feet (671 meters) and known populations occur above 5000 feet (1524 meters). A search of the NHP database found no occurrence of spreading avens in the project vicinity. It can be concluded that the project will not impact this endangered species.

Houstonia montana (Roan Mountain bluet) **Endangered**
Plant Family: Rubiaceae
Federally Listed: 1990

Roan Mountain bluet is a cespitose perennial herb with erect or ascending, unbranched or weakly terminally branched stems to 8 inches (21 centimeters) tall from a basal winter rosette. Cauline leaves are opposite, sessile and ovate, 0.3 to 1.2 inches (0.8 to 3.0 centimeters) long and 0.2 to 0.5 inches (0.6 to 1.3 centimeters) wide. Flowers are reddish purple and funnel-shaped. The inflorescence is few flowered, with flowers occurring from late May through August, with peak flowering in June and July. There is considerable disagreement among the experts concerning whether the Roan Mountain bluet belongs to the *Hedyotis* or *Houstonia* genus, and whether it is a variety or deserves a full species ranking.

Roan Mountain bluet grows on rocky exposures at high elevations ranging from 4600 to 6270 feet (1400 to 1911 meters). Bedrock geology is critical for the growth of this species. All sites are on mafic (i.e. basic) rock, which contrasts with most other high elevation rocky-summit sites, which are typically on felsic or acidic rock. The plants typically grow in gravel-filled pockets found on north or northwest facing cliff ledges, or on talus slopes associated with outcrop exposures on the south or southwest slopes of mountain balds. Most sites are kept moist by frequent fog, mid-elevation clouds, or summer thunderstorms.

Biological Conclusion: No Effect

No habitat exists in the project area for Roan Mountain bluet. The elevation of the project area is approximately 2200 feet (671 meters) and this species occurs above 4600 feet (1400 meters). A search of the NHP database found no occurrence of Roan Mountain bluet in the project vicinity. It can be concluded that the project will not impact this endangered species.

Liatris helleri (Heller's blazing star) **Threatened**
Plant Family: Asteraceae
Federally Listed: 1987

Heller's blazing star is a perennial herb with an erect stem growing from a cormlike rootstock. The stiff stems are purple near the base turning to green, and are strongly ribbed and angulate. Both basal and cauline leaves are numerous, decreasing in size upward. The leaves are long and narrow, with those at the base 8 to 12 inches (20 to 30 centimeters) in length. The stems reach up to 16 inches (40 centimeters) in height and are topped by a showy spike of lavender flowers 7 to 0.3 to 8 inches (20 centimeters) long. Flowering occurs from July through September.

Heller's blazing star typically occurs on sandy soil on rocky summits, cliffs, ledges and rocky woods at high elevation [3500 to 6000 feet (1067 to 1829 meters)]. The plants grow in humus or clay loams on igneous and metasedimentary rock. Soils are generally acidic (pH 4) and shallow. Sites occupied by the Heller's blazing star are generally exposed to full sun.

Biological Conclusion: No Effect

No habitat exists in the project area for Heller's blazing star. The elevation of the project area is approximately 2200 feet (671 meters) and this species occurs above 3500 feet (1067 meters). A search of the NHP database found no occurrence of Heller's blazing star in the project vicinity. It can be concluded that the project will not impact this threatened species.

Solidago spithamaea (Blue Ridge goldenrod) **Threatened**
Plant Family: Asteraceae
Federally Listed: 1995

The Blue Ridge goldenrod is a perennial herb with an erect, angled stem 4 to 16 inches (10.2 to 40.6 centimeters) tall This sparsely to densely pubescent herb arises from a stout, short rhizome. The elliptic leaves are serrate 3.9 to 9.8 inches (10 to 25 centimeters) long. The flowers are yellow and are borne in heads of 20 to 30 flowers in a compact corymb. Flowering occurs during July and August.

The Blue ridge goldenrod occurs at elevations above 4600 feet (1402 meters). It is an early successional species which occurs in the crevices of granite outcrops in full sun.

Biological Conclusion: No Effect

No habitat exists in the project area for Blue Ridge goldenrod. The elevation of the project area is approximately 2200 feet (671 meters) and this species occurs above 4600 feet (1402 meters). A search of the NHP database found no occurrence of Blue Ridge goldenrod in the project vicinity. It can be concluded that the project will not impact this threatened species.

Spiraea virginiana (Virginia spiraea) **Threatened**
Plant Family: Rosaceae
Federally Listed: 1990

Virginia spiraea is a colonial, perennial shrub that has a modular growth form. Its growth form is described as "plastic" and varies depending upon age and environmental conditions. The roots are a complex system of horizontal rootstock with mats of small fibrous roots. If exposed, the horizontal rootstock gives rise to upright stems. Virginia spiraea typically has a diffuse branching pattern and grows to 3 to 10 feet (1 to 3 meters) in height. Leaves are simple, ovate to lanceolate, with an acute base. The leave margins range from entire to completely serrate. Virginia spiraea flowers from late May to late July, with bright to creamy white flowers forming a corymb.

Virginia spiraea is a clonal species, with a root system and vegetative characteristics that allow it to grow in appropriate disturbed habitats. It is typically found in disturbed sites along rivers and streams. It requires disturbance sufficient to inhibit arboreal competition, yet without scour that will remove most organic material or root stock. Typical habitat includes scoured banks of high

gradient streams, or on meander scrolls, point bars, natural levees and braided features of lower stream reaches.

Biological Conclusion: **No Effect**

A search of the NHP database found no occurrence of Virginia spiraea in the project vicinity. Habitat exists along the banks of North Toe River within the project area for this species. The project area was surveyed in June 1998 where a plant by plant survey was conducted and the plant was not found at the project site. The site was revisited in 2002 and the species was again determined not to be present.

Gymnoderma lineare (Rock gnome lichen) **Endangered**
Family: Cladoniaceae
Federally Listed: 1994

The rock gnome lichen is a squamose lichen in the reindeer moss family. The lichen can be identified by its fruiting bodies which are born singly or in clusters, black in color, and are found at the tips of the squamules. The fruiting season of the rock gnome lichen occurs from July through September.

The rock gnome lichen is a narrow endemic, restricted to areas of high humidity. These high humidity environments occur on high elevation (4000 feet/ 1220 meters) mountaintops and cliff faces which are frequently bathed in fog or lower elevation (2500 feet /762 meters) deep gorges in the Southern Appalachians. The rock gnome lichen primarily occurs on vertical rock faces where seepage water from forest soils above flows only at very wet times. The rock gnome lichen is almost always found growing with the moss *Adreaea* in these vertical intermittent seeps. The major threat of extinction to the rock gnome lichen relates directly to habitat alternation/loss of high elevation coniferous forests. These coniferous forest usually lie adjacent to the habitat occupied by the rock gnome lichen. The high elevation habitat occurs in the counties of Ashe, Avery, Buncombe, Graham, Haywood, Mitchell, Swain, and Yancey. The lower elevation habitat of the rock gnome lichen can be found in the counties of Jackson, Rutherford and Transylvania.

Biological Conclusion: **No Effect**

No habitat exists in the project area for the rock gnome lichen. The elevation of the project area is approximately (2200 feet 671 meters). In Yancey and Mitchell counties, this species occurs on high elevation (4000 feet/1220 meters) mountaintops and cliff faces. A search of the NHP database found no occurrence of rock gnome lichen in the project vicinity. It can be concluded that the project will not impact this threatened species.

Federal Species of Concern and State Listed Species

Federal Species of Concern (FSC) are not legally protected under the Endangered Species Act and are not subject to any of its provisions, including Section 7, until they are formally proposed

or listed as Threatened or Endangered. Tables 4 and 5 includes FSC species listed for Yancey and Mitchell counties and their state classifications. Organisms which are listed as Endangered (E), Threatened (T), or Special Concern (SC) by the North Carolina Natural Heritage Program list of Rare Plant and Animal Species are afforded state protection under the State Endangered Species Act and the North Carolina Plant Protection and Conservation Act of 1979; however, the level of protection given to state listed species does not apply to NCDOT activities.

Table 4
Federal Species of Concern and NC Protected Species for Yancey County

Scientific Name	Common Name	NC Status	Habitat present
Contopus borealis	Olive-sided flycatcher	SC	No
Cryptobranchus alleganiensis	Hellbender	SC	Yes
Microtus chrotorrhinus carolinensis	Southern rock vole	SC	No
Myotis leibii	Eastern small-footed myotis	SC	No
Percina squamata	Olive darter	SC	Yes
Sylvilagus obscurus	Appalachian cottontail	SR	No
Glyphyalinia clingmani	Fragile glyph	E	No
Paravitrea varidens *	Roan supercoil	T	Yes
Stygobromus carolinensis *	Yancey sideswimmer	SR	No
Abies fraseri	Fraser fir	C	No
Calamagrostis cainii	Cain's reedgrass	E	No
Cardamine clematitis	Mountain bittercress	C	Yes
Euphorbia purpurea	Glade spurge	C	No
Juglans cinerea	Butternut	W5	Yes
Lilium grayi	Gray's lily	T-SC	No
Saxifraga caroliniana	Carolina saxifrage	C	No
Silene ovata	Mountain catchfly	C	Yes
Plagiochila sharpii	A liverwort	C	No
Plagiochila sullivantii var. sullivantii	A liverwort	C	No
Sphenolobopsis pearsonii	A liverwort	C	No

Notes: Source, Amoroso & Weakley, 1995, LeGrand, 1995
T-Threatened, E-Endangered, SC-Special Concern, SR-State Rare, C-Candidate,
W5 - rare because of severe decline
* - Denotes historic record - species was last observed in the county more than 50 years ago.

Table 5
Federal Species of Concern and NC Protected Species for Mitchell County

Scientific Name	Common Name	NC Status	Habitat present
Contopus borealis	Olive-sided flycatcher	SC	N
Neotoma magister *	Alleghany woodrat	SC	Y
Percina squamata	Olive darter	SC	Y
Sylvilagus obscurus	Appalachian cottontail	SR	N
Paravitrea varidens	Roan supercoil	T	Y
Speyeria diana*	Diana fritillary butterfly	SR	Y
Abies fraseri	Fraser fir	C	N
Astilbe crenatiloba *	Roan false goat's beard	C	Y
Buckleya distichophylla	Piratebush	E	N
Carex roanensis	Roan sedge	C	Y
Delphinium exaltatum *	Tall larkspur	E-SC	N
Euphorbia purpurea	Glade spurge	C	Y
Geum geniculatum	Bent avens	T	Y
Juglans cinerea	Butternut	W5	Y
Lilium grayi	Gray's lily	T-SC	N
Paxistima canbyi *	Canby's mountain lover	W4	N
Plagiochila sullivantii var. sullivantii	A liverwort	C	N
Sphenolobopsis pearsonii	A liverwort	C	N

Notes: Source: Amoroso and LeGrand; 1995 Weakley, 1995
T - Threatened, E - Endangered, SC - Special Concern, SR - State Rare, C - Candidate,
W4 - rare, but believed not native, W5 - rare because of severe decline
* - Denotes a historic record - the species was last observed in the county more than 50 years ago.

A review of the NHP data base of rare species and unique habitats revealed no occurrence of any FSC species within the project area. There was an occurrence of sharphead darter, which is a state listed threatened species, during a fish sampling effort at Bridge No. 61.

This section of the North Toe River is part of the NHP Priority Area known as North Toe River/Nolichucky River Aquatic Habitat. This priority area is described as a medium-sized mountain stream in the Tennessee River drainage, which provides habitat for several rare fish including the sharphead darter, olive darter, and logperch. Water quality in this area is

threatened from sedimentation. Surveys for FSC and state listed species were not conducted during the site visit.

VI. CULTURAL RESOURCES

A. Compliance Guidelines

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

B. Historic Architecture

The Federal Highway Administration (FHWA), in consultation with the State Historic Preservation Officer (SHPO), has determined that Bridge No. 61, on NC 197 over the North Toe River, is eligible for the National Register of Historic Places. The replacement of this bridge will have an impact on the structure. Subsequently, a Memorandum of Agreement (MOA) has been drafted and executed by the SHPO, FHWA, and the North Carolina Department of Transportation (NCDOT) to mitigate the effects of the proposed undertakings on the bridge. The MOA states that prior to the demolition of Bridge No. 61 the NCDOT will record the bridge in accordance with the Historic Structures Recordation Plan (Appendix A to the MOA).

C. Archaeology

No archaeological sites or historic structures were identified within the project area by background research or field survey. Therefore, none of the proposed replacement alternatives are deemed likely to have any effect on archaeological sites that are on or eligible for nomination to the National Register of Historic Places.

VII. GENERAL ENVIRONMENTAL EFFECTS

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

The project will involve taking one home and several outbuildings immediately south of the bridge. Access to the remainder of the owner's property will be maintained during and after construction.

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

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

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

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

The proposed project will not require right-of-way acquisition or easement from any land protected under Section 4(f) of the Department of Transportation Act of 1966. Bridge No. 61 is considered to be eligible for the National Register of Historic Places and will be removed as part of this project. The Section 4(f) documentation is included as Section VIII of this document.

The Farmland Protection Policy Act requires all federal agencies or their representatives to consider the potential impact to prime farmland of all land acquisition and construction projects. There are no soils classified as prime, unique, or having state or local importance in the vicinity of the project. Therefore, the project will not involve the direct conversion of farmland acreage within these classifications.

This project is an air quality "neutral" project, so it is not required to be included in the regional emissions analysis and a project level CO analysis is not required. If vegetation is disposed of by burning, all burning shall be done in accordance with applicable local laws and regulations of the North Carolina State Implementation Plan (SIP) for air quality in compliance with 15 NCAC 2D.0520.

Noise levels could increase during construction but will be temporary. This evaluation completes the assessment requirements for highway traffic noise of Title 23, Code of Federal Regulation (CFR), Part 772 and for air quality (1990 Clean Air Act Amendments and the National Environmental Policy Act) and no additional reports are required.

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

Yancey and Mitchell Counties are participants in the National Flood Insurance Program. The approximate 100-year floodplain in the project area is shown in Figure 6. There are no practical alternatives to crossing the floodplain area. Any shift in alignment will result in an impact area of about the same magnitude. The proposed project is not anticipated to increase the level or extent of upstream flood potential.

On the basis of the above discussion, it is concluded that no substantial adverse environmental impacts will result from implementation of the project.

VIII. PROGRAMMATIC SECTION 4(f)

NORTH CAROLINA DIVISION
FINAL NATIONWIDE SECTION 4(f) EVALUATION AND APPROVAL
FOR FEDERALLY-AIDED HIGHWAY PROJECTS
THAT NECESSITATE THE USE OF HISTORIC BRIDGES

F. A. Project: BRSTP-197(1)
State Project: 8.1900401
T. I. P. No. B-1443

Description:
Bridge No. 61 is scheduled to be replaced with a new structure on new alignment shifted to the southeast of the existing structure. The existing bridge is functionally obsolete due to the existing horizontal alignment and narrow bridge width and is in a deteriorated condition.

Bridge No. 61 was built by the engineering firm of Steel & Lebby of Knoxville, Tennessee. Completed in 1925, it is an intact example of a reinforced-concrete closed spandrel arch bridge (type 111). The bridge is also distinguished from other structures of the time by its open two-bar concrete bridge safety rail and distinctively profile endposts. The bridge possesses integrity of location, materials, design, and setting. Therefore, Bridge No. 61 in Yancey and Mitchell Counties is eligible for the National Register under Criterion C for design and construction.

		Yes	No
1.	Is the bridge to be replaced or rehabilitated with Federal funds?	X	☐
2.	Does the project require the use of a historic bridge structure which is on or eligible for listing on the National Register of Historic Places?	X	☐
3.	Is the bridge a National Historic Landmark?	☐	X
4.	Has agreement been reached among the FHWA, the State Historic Preservation Officer (SHPO), and the Advisory Council on Historic Preservation (ACHP) through procedures pursuant to Section 106 of the National Historic Preservation Act (NHPA)?	X	☐

ALTERNATIVES CONSIDERED AND FOUND NOT TO BE FEASIBLE AND PRUDENT

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

	Yes	No
1. Do nothing	X	☐
Does the "do nothing" alternative:		
(a) correct the problem situation that caused the bridge to be considered deficient?	☐	X
(b) pose serious and unacceptable safety hazards?	X	☐

	Yes	No
2. Build a new structure at a different location without affecting the historic integrity of the structure.	X	☐

(a) The following reasons were reviewed: (circle, as appropriate)

(i) The present bridge has already been located at the only feasible and prudent site

and/or (ii) Adverse social, environmental, or economic impacts were noted

and/or (iii) Cost and engineering difficulties reach extraordinary magnitude

and/or (iv) The existing bridge cannot be preserved due to the extent of rehabilitation, because no responsible party will maintain and preserve the historic bridge, or the permitting authority requires removal or demolition.

3. Rehabilitate the historic bridge without affecting the historic integrity of the structure.	X	☐

(a) The following reasons were reviewed: (circle, as appropriate)

(i) The bridge is so structurally deficient that it cannot be rehabilitated to meet the acceptable load requirements and meet National Register criteria

and/or (ii) The bridge is seriously deficient geometrically and cannot be widened to meet the required capacity and meet National Register criteria

MINIMIZATION OF HARM

		Yes	No
1.	The project includes all possible planning to minimize harm.	X	☐

2. Measures to minimize harm include the following: (circle, as appropriate)

a. For bridges that are to be rehabilitated, the historic integrity of the bridge is preserved to the greatest extent possible, consistent with unavoidable transportation needs, safety, and load requirements.

b. For bridges that are to be rehabilitated to the point that the historic integrity is affected or that are to be removed or demolished, the FHWA ensures that, in accordance with the Historic American Engineering Record (HAER) standards, or other suitable means developed through consultation, fully adequate records are made of the bridge.

c. For bridges that are to be replaced, the existing bridge is made available for an alternative use, provided a responsible party agrees to maintain and preserve the bridge.

d. For bridges that are adversely affected, agreement among the SHPO, ACHP, and FHWA is reached through the Section 106 process of the NHPA on measures to minimize harm and those measures are incorporated into the project.

3. Specific measures to minimize harm are discussed below:

Prior to the demolition of Yancey County Bridge 61, NCDOT shall record the bridge in accordance with the attached Historic Structures Recordation Plan. (Note: This has been accomplished and the documentation delivered to the State Historic Preservation Office.)

Note: Any response in a box requires additional information prior to approval. Consult Nationwide 4(f) evaluation.

COORDINATION

The proposed project has been coordinated with the following (attach correspondence):

a. State Historic Preservation Officer	x
b. Advisory Council on Historic Preservation	x
c. Local/State/Federal Agencies	x
d. US Coast Guard (for bridges requiring bridge permits)	n/a

SUMMARY AND APPROVAL

The project meets all criteria included in the programmatic 4(f) evaluation approved on July 5, 1983.

All required alternatives have been evaluated and the findings made are clearly applicable to this project.

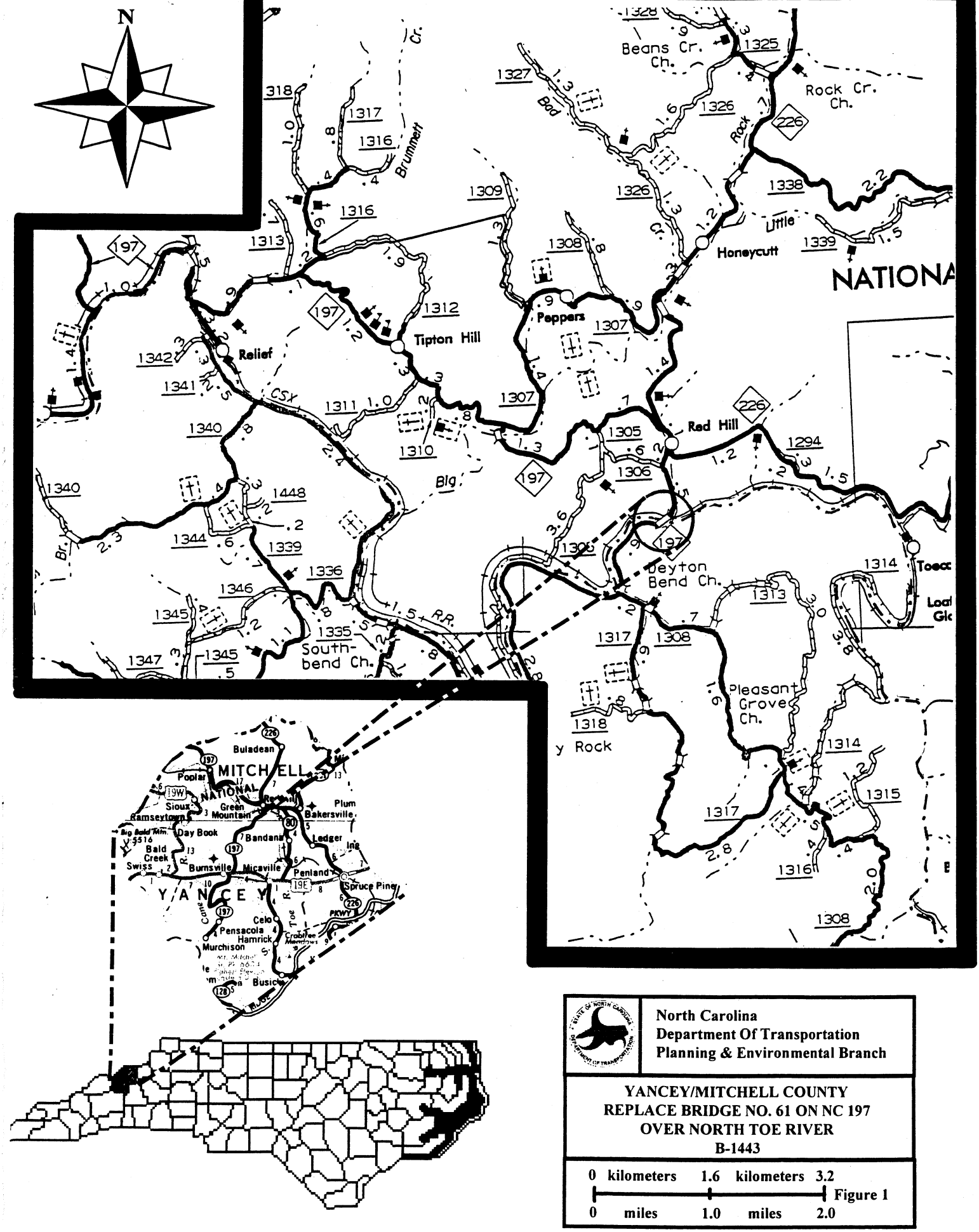
There are no feasible and prudent alternatives to the use of the historic bridge. The project includes all possible planning to minimize harm, and there are assurances that the measures to minimize harm will be incorporated in the project.

All appropriate coordination has been successfully completed.

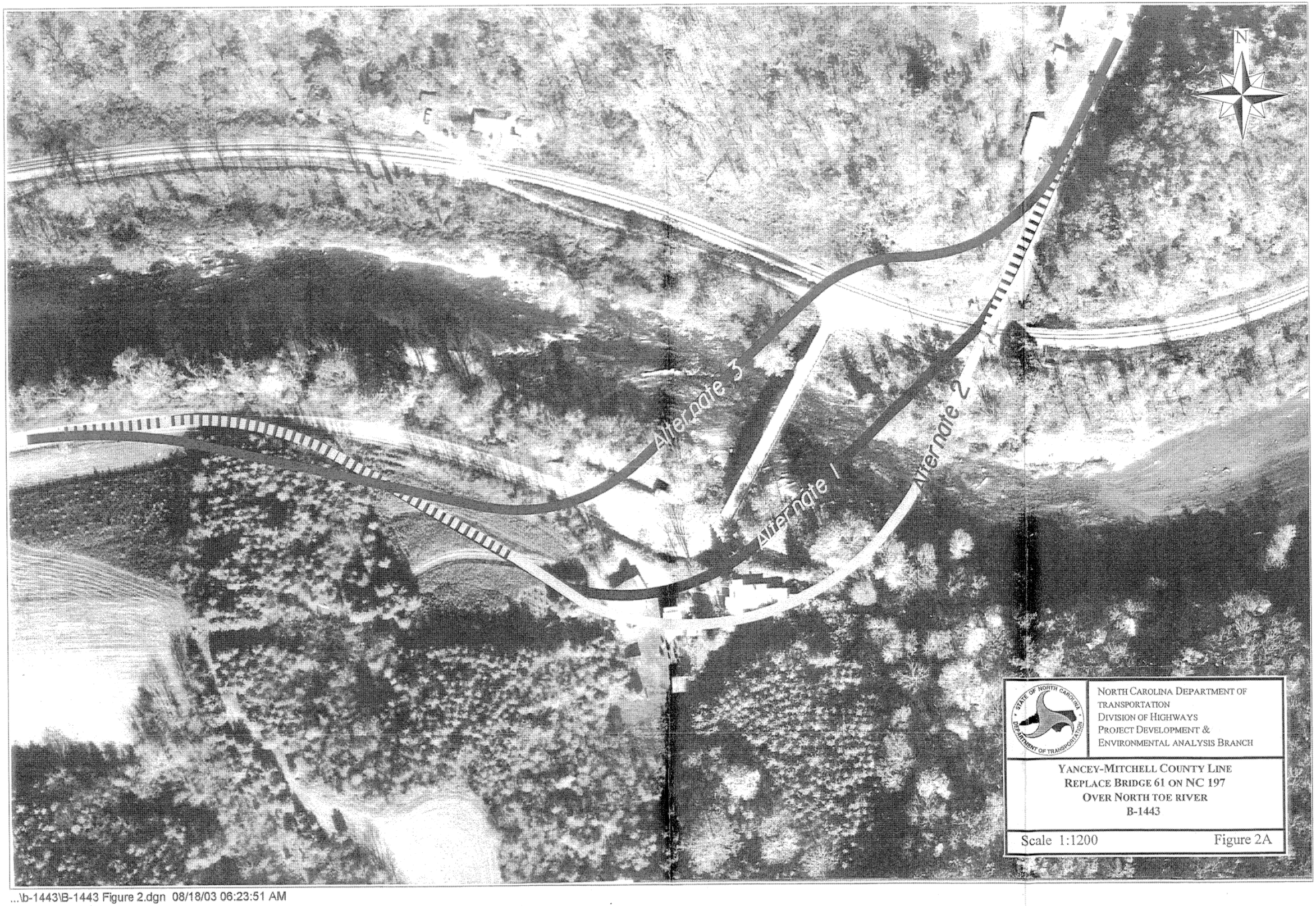
Approved:

9-02-03 Teresa Hart
Date Manager, Project Development and Environmental Analysis Branch

9/2/03
Date for Division Administrator, FHWA



	North Carolina Department Of Transportation Planning & Environmental Branch
	YANCEY/MITCHELL COUNTY REPLACE BRIDGE NO. 61 ON NC 197 OVER NORTH TOE RIVER B-1443
	0 kilometers 1.6 kilometers 3.2 Figure 1 0 miles 1.0 miles 2.0

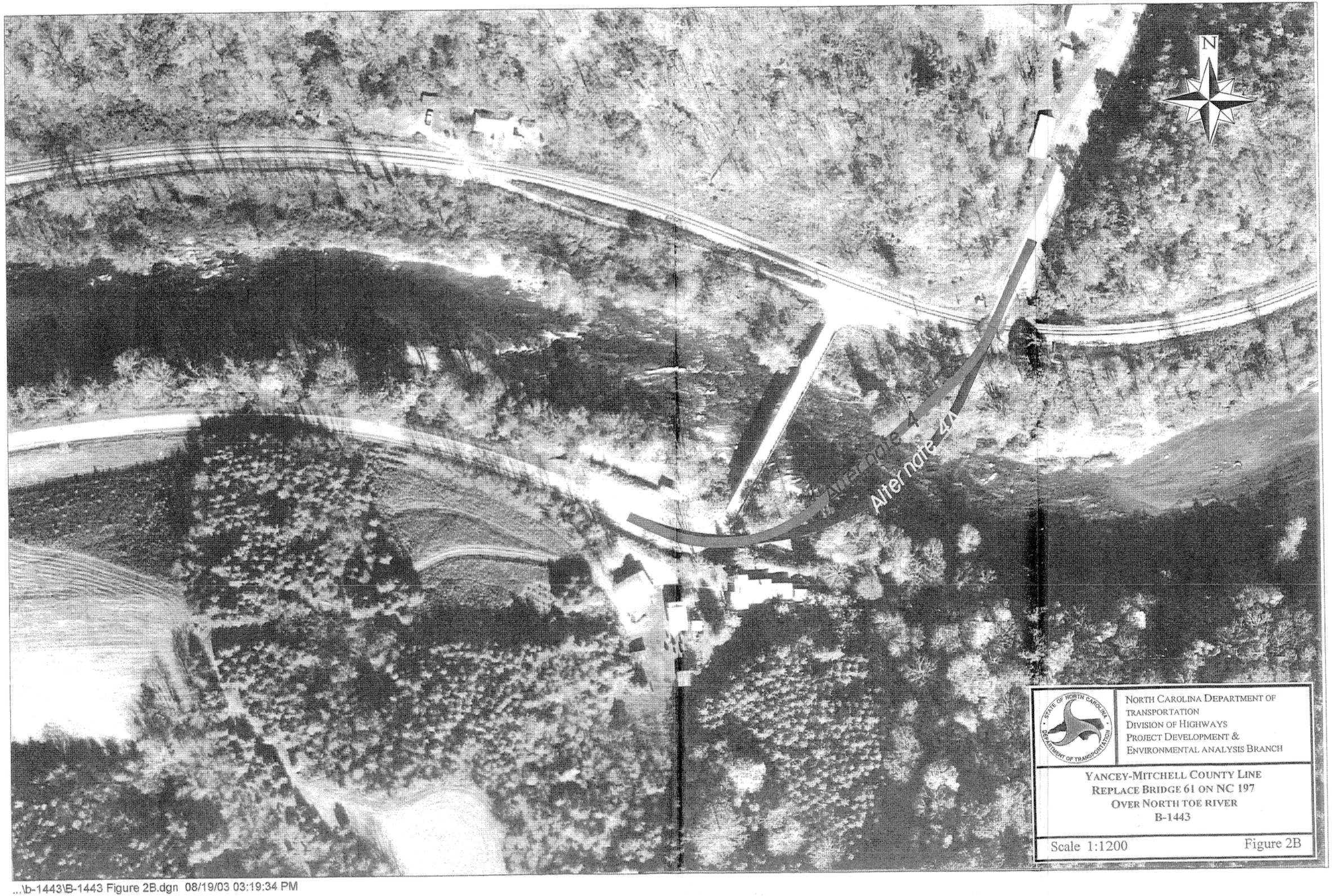


NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
PROJECT DEVELOPMENT & ENVIRONMENTAL ANALYSIS BRANCH

YANCEY-MITCHELL COUNTY LINE
REPLACE BRIDGE 61 ON NC 197
OVER NORTH TOE RIVER
B-1443

Scale 1:1200 Figure 2A

...\b-1443\B-1443 Figure 2.dgn 08/18/03 06:23:51 AM



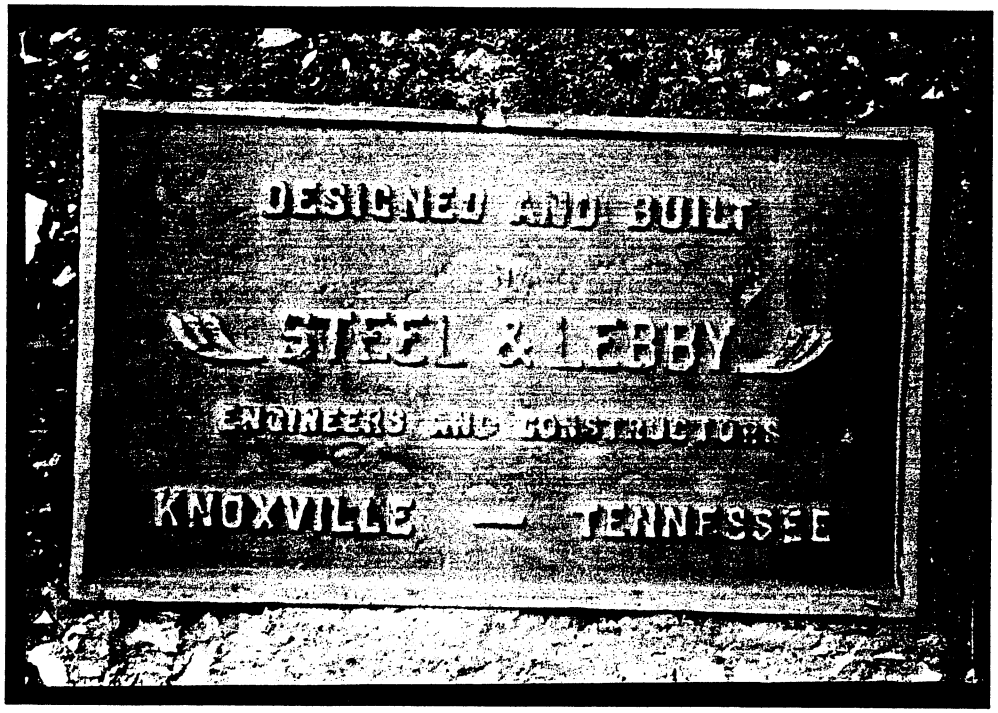
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
PROJECT DEVELOPMENT & ENVIRONMENTAL ANALYSIS BRANCH

YANCEY-MITCHELL COUNTY LINE
REPLACE BRIDGE 61 ON NC 197
OVER NORTH TOE RIVER
B-1443

Scale 1:1200 Figure 2B

...\b-1443\B-1443 Figure 2B.dgn 08/19/03 03:19:34 PM

Bridge No. 61



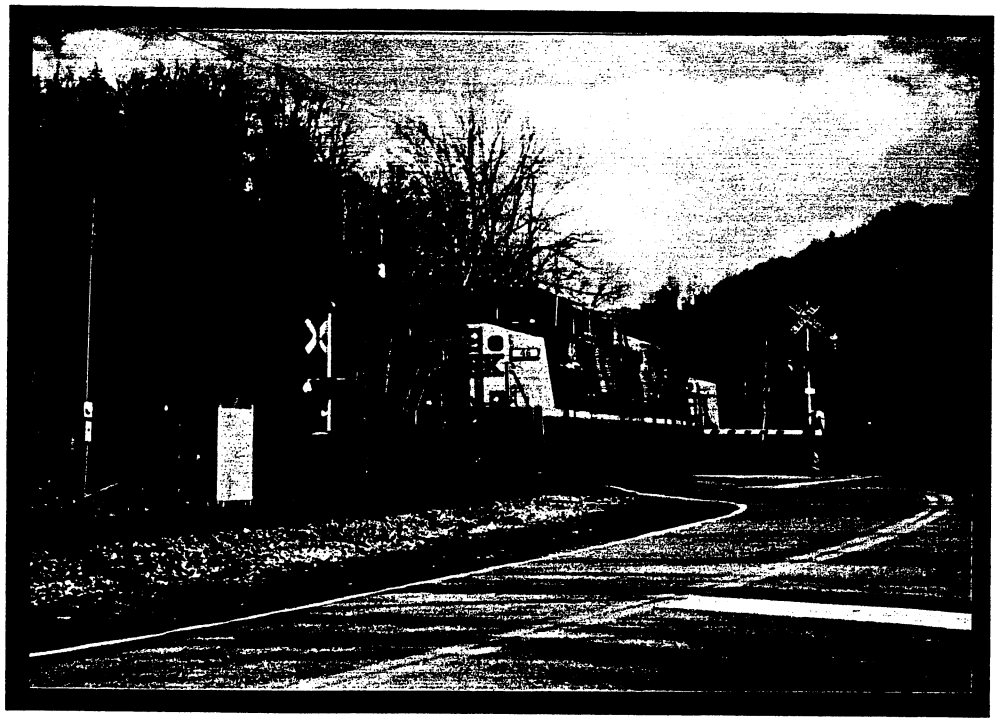
Name Plate on Bridge

North Carolina Department of Transportation

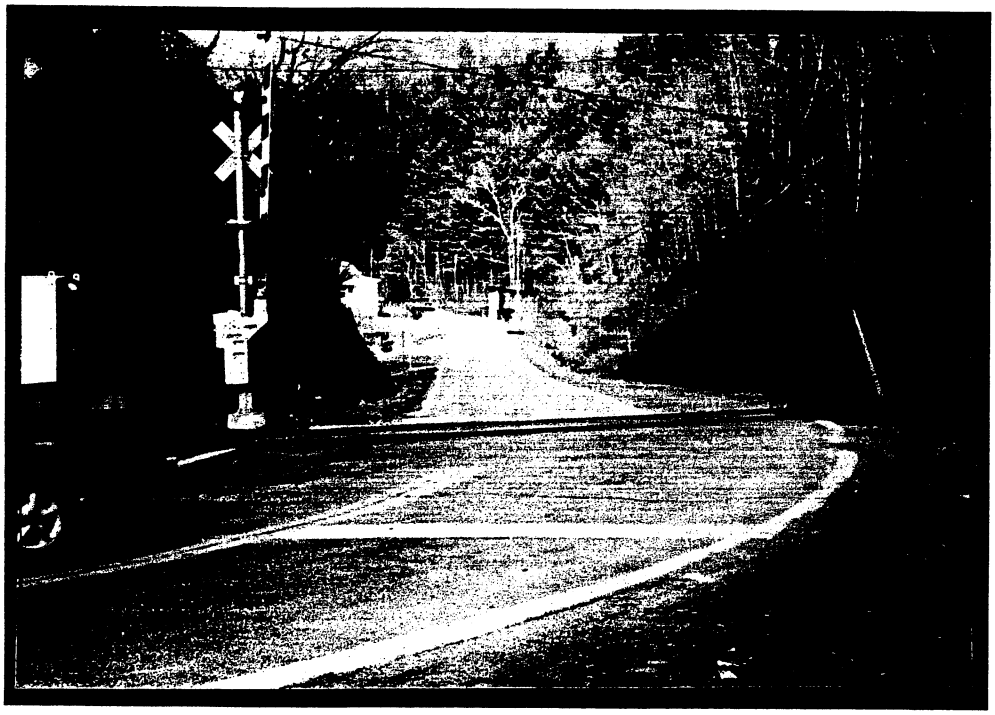
Division of Highways
Project Development &
Environmental Analysis Branch

Yancey-Mitchell County Line
Replace Bridge No. 61 on NC 197
Over North Toe River
B-1443

Figure Three



View of Railroad Crossing



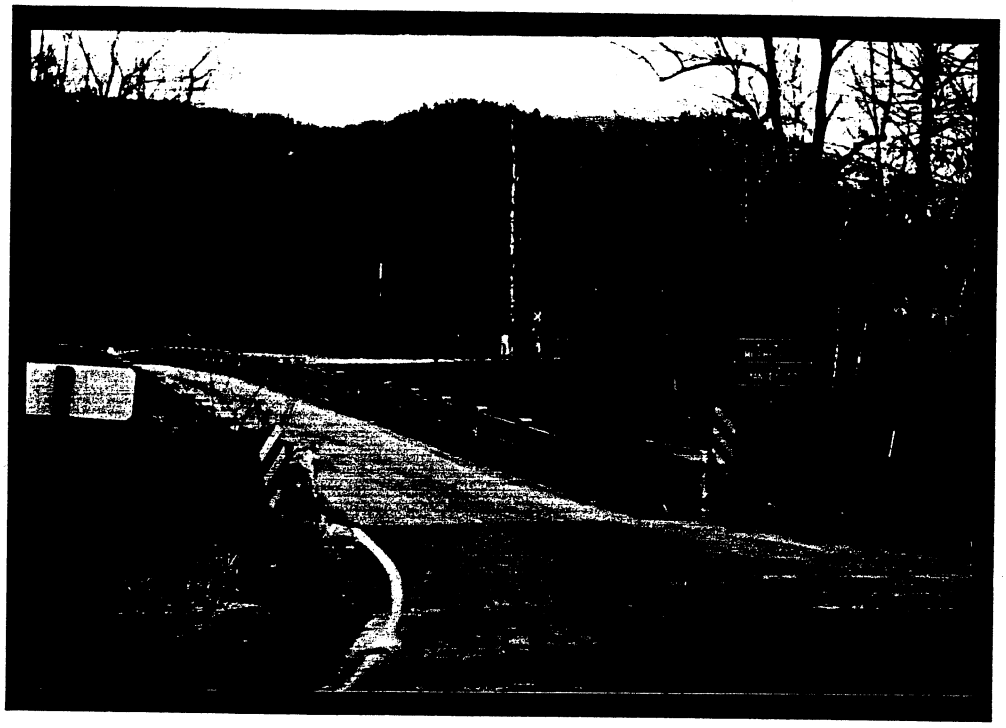
View of Railroad Crossing

North Carolina Department of Transportation

Division of Highways
Project Development &
Environmental Analysis Branch

Yancey-Mitchell County Line
Replace Bridge No. 61 on NC 197
Over North Toe River
B-1443

Figure Four



View Approaches to Bridge from South End of Bridge

Home to be impacted by new alignment

North Carolina Department of Transportation

Division of Highways
Project Development &
Environmental Analysis Branch

Yancey-Mitchell County Line
Replace Bridge No. 61 on NC 197
Over North Toe River
B-1443

Figure Five

Elliott/Ingham

North Carolina Department of Cultural Resources

James B. Hunt Jr., Governor
Betty Ray McCain, Secretary

Division of Archives and History
Jeffrey J. Crow, Director

April 4, 1997

Nicholas L. Graf
Division Administrator
Federal Highway Administration
Department of Transportation
310 New Bern Avenue
Raleigh, N.C. 27601-1442

Re: Bridge 61 on NC 197 on North Toe River, Mitchell and Yancey Counties, B-1443, Federal Aid Project BRSTP-197(1), State Project 8.1900401, ER 97-8345

Dear Mr. Graf:

On March 11, 1997, Debbie Bevin of our staff met with North Carolina Department of Transportation (NCDOT) staff for a meeting of the minds concerning the above project. We reported our available information on historic architectural and archaeological surveys and resources along with our recommendations. NCDOT provided project area photographs and aerial photographs at the meeting.

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

In terms of historic architectural resources, Bridge 61 is the only structure over fifty years of age within the general project area. We recommend that an architectural historian from NCDOT evaluate the bridge for National Register eligibility and report the findings to us.

We recommend that an archaeological survey be conducted for bridge replacement on a new alignment.

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

The above comments are made pursuant to Section 106 of the National Historic Preservation Act of 1966 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, please contact Renee Gledhill-Earley, environmental review coordinator, at 919/733-4763.

Sincerely,

David Brook
Deputy State Historic Preservation Officer

DB:slw

cc: H. F. Vick
B. Church
T. Padgett

Federal Aid # BRSTP-197(1) *TIP* # B-1443 *County*: Yancey/Mitchell

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

Project Description: Replace Bridge No. 61 on NC 197 over North Toe River

On February 19, 1998, representatives of the

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

reviewed the subject project at

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

All parties present agreed

☐ there are no properties over fifty years old within the project's area of potential effects.

☒ there are no properties less than fifty years old which are considered to meet Criteria Consideration G within the project's area of potential effects.

☒ there are properties over fifty years old within the project's area of potential effects, but based on the historical information available and the photographs of each property, the property identified as **House #1** is considered not eligible for the National Register and no further evaluation of it is necessary.

☒ there are no National Register-listed properties within the project's area of potential effects.

Signed:

Representative, NCDOT — 19 Feb. 1998 Date

FHWA, for the Division Administrator, or other Federal Agency — 3/2/98 Date

Representative, SHPO — 2/19/98 Date

State Historic Preservation Officer — 3/12/98 Date

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

Federal Aid #STP-197(1) *TIP* #B-1443 *County*: Yancey/Mitchell

CONCURRENCE FORM FOR ASSESSMENT OF EFFECTS

Project Description: Replace Bridge No. 61 on NC 197 over North Toe River

On May 28, 1998, representatives of the

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

reviewed the subject project and agreed

☐ there are no effects on the National Register-listed property/properties located within the project's area of potential effect and listed on the reverse.

☐ there are no effects on the National Register-eligible property/properties located within the project's area of potential effect and listed on the reverse.

☐ there is an effect on the National Register-listed property/properties located within the project's area of potential effect. The property/properties and the effect(s) are listed on the reverse.

☒ there is an effect on the National Register-eligible property/properties located within the project's area of potential effect. The property/properties and effect(s) are listed on the reverse.

Signed:

Representative, NCDOT — 5-28-98 Date

FHWA, for the Division Administrator, or other Federal Agency — 6/2/98 Date

Representative, SHPO — 5/28/98 Date

State Historic Preservation Officer — 6/18/98 Date

North Carolina Department of Cultural Resources

mes B. Hunt Jr., Governor
tty Ray McCain, Secretary

Division of Archives and History
Jeffrey J. Crow, Director

April 6, 1998

Nicholas L. Graf
Division Administrator
Federal Highway Administration
Department of Transportation
310 New Bern Avenue
Raleigh, N.C. 27601-1442

Re: Bridge 61 on NC 197 over North Toe River, Mitchell and Yancey Counties, B-1443, Federal Aid Project STP-197(1), State Project 8.1900401, ER 98-8760

Dear Mr. Graf:

Thank you for your letter of March 18, 1998, transmitting the historic structures survey report by Clay Griffith concerning the above project.

For purposes of compliance with Section 106 of the National Historic Preservation Act, we concur that the following property is eligible for the National Register of Historic Places under the criterion cited:

> Bridge 61. This bridge is an intact example of the rare reinforced-concrete closed-spandrel arch bridge, and is distinguished by its open, two-bar concrete bridge safety rail and distinctive imposts. It is eligible under Criterion C for construction/design.

The report meets our office's guidelines and those of the Secretary of the Interior.

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, please contact Renee Gledhill-Earley, environmental review coordinator, at 919/733-4763.

Sincerely,

David Brook
Deputy State Historic Preservation Officer

DB:slw

cc: H. F. Vick
B. Church

Federal Aid # STP-197(1) *TIP* # B-1443 *County*: Yancey/Mitchell

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

Project Description: Replace Bridge No. 61 on NC 197 over North Toe River

On July 16, 1998, representatives of the

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

reviewed the subject project at

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

All parties present agreed

☐ there are no properties over fifty years old within the project's area of potential effects.

☒ there are no properties less than fifty years old which are considered to meet Criteria Consideration G within the project's area of potential effects.

☒ there are properties over fifty years old within the project's area of potential effects, but based on the historical information available and the photographs of each property, the property identified as **House #2** is considered not eligible for the National Register and no further evaluation of it is necessary.

☒ there are no National Register-listed properties within the project's area of potential effects.

Signed:

Representative, NCDOT — Date 7.16.98

FHWA, for the Division Administrator, or other Federal Agency — Date 7/16/98

Representative, SHPO — Date 7/16/98

State Historic Preservation Officer — Date 7/21/98

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

North Carolina Department of Cultural Resources

James B. Hunt Jr., Governor
Betty Ray McCain, Secretary

Division of Archives and History
Jeffrey J. Crow, Director

July 21, 1998

Nicholas L. Graf
Division Administrator
Federal Highway Administration
Department of Transportation
310 New Bern Avenue
Raleigh, N.C. 27601-1442

Re: Archaeological study, Replace Bridge 61 on NC 197, Mitchell and Yancey Counties, TIP B-1443, Federal Aid No. BRSTP-197(1), ER 98-9337

Dear Mr. Graf:

Thank you for your letter of June 15, 1998, transmitting the archaeological survey report by Nick Harper concerning the above project. We concur with your determination of no eligible archaeological properties within the area of potential effect.

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, please contact Renee Gledhill-Earley, environmental review coordinator, at 919/733-4763.

Sincerely,

David Brook

David Brook
Deputy State Historic Preservation Officer

DB:slw

cc: W. D. Gilmore
T. Padgett

North Carolina Department of Cultural Resources

James B. Hunt Jr., Governor
Betty Ray McCain, Secretary

Division of Archives and History
Jeffrey J. Crow, Director

September 10, 1998

Nicholas L. Graf
Division Administrator
Federal Highway Administration
Department of Transportation
310 New Bern Avenue
Raleigh, N.C. 27601-1442

Re: Bridge 61 on NC 197 over North Toe River, Yancey and Mitchell Counties, TIP B-1443, State Project 8.1900401, Federal Aid BRSTP-197(1), ER 99-7286

Dear Mr. Graf:

Thank you for your letter of August 17, 1998, forwarding the Memorandum of Agreement for Bridge 61. I have signed the Memorandum of Agreement and am returning it to you for submission to the Advisory Council on Historic Preservation.

Thank you for your cooperation and consideration. If you have questions concerning the above comment, please contact Renee Gledhill-Earley, environmental review coordinator, at 919/733-4763.

Sincerely,

Jeffrey J. Crow
State Historic Preservation Officer

JJC:slw

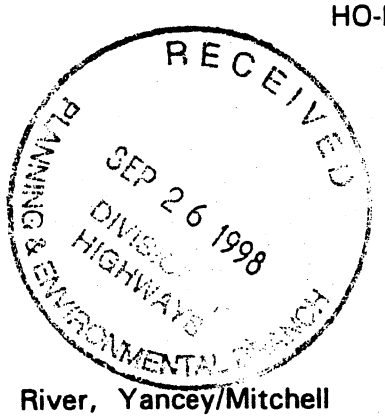
Enclosure

cc: W. D. Gilmore
B. Church

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
Region Four
310 New Bern Avenue, Suite 410
Raleigh, North Carolina 27601

September 23, 1998

IN REPLY REFER TO
HO-NC



Mr. Don Klima, Director
Eastern Office of Project Review
Advisory Council on Historic Preservation
The Old Post Office Building
1100 Pennsylvania Ave., N.W. No. 809
Washington, D.C. 20004

Subject: Bridge No. 61 on NC 197 over North Toe River, Yancey/Mitchell Counties, Tip No. B-1443, State Project No. 8.1900401, Federal Aid No. STP-197(1)

Dear Mr. Klima:

Enclosed for your review are copies of the following information:

1) A description of the undertaking;
2) A description of the efforts to identify historic properties;
3) A description of the affected historic property;
4) A description of the undertaking's effects on the historic property;
5) A description of any proposed mitigation measures or alternatives considered dealing with the undertaking's effects on the historic property;
6) A summary of the views of the State Historic Preservation Officer (SHPO) and any interested parties.

The Federal Highway Administration (FHWA), in consultation with the State Historic Preservation Officer (SHPO), has determined that Bridge # 61, on NC 197 over the North Toe River, is eligible for the National Register of Historic Places. The replacement of this bridge will have an impact on the structure. Subsequently, a Memorandum of Agreement (MOA) has been drafted and executed by the SHPO, FHWA, and the North Carolina Department of Transportation (NCDOT) to mitigate the effects of the proposed undertakings on the bridge. The MOA states that prior to the demolition of bridge #61 the NCDOT will record the bridge in accordance with the Historic Structures Recordation Plan (Appendix A to the MOA).

This information is provided to your office pursuant to 36 CFR 800.8(b) and (c). Please review the attached MOA. If the MOA is acceptable to your office please execute and return to the

FHWA. Should you have any questions please contact Mr. David Snyder of my staff at (919)856-4350, Extension 104.

Sincerely yours,

Nayc Shetton

For Nicholas L. Graf, P.E.
Division Administrator

Enclosures

cc: Mr. William D. Gilmore, PE, NCDOT
Mr. David Brook, SHPO, NC Department of Cultural Resources

BRSTP 1-197(1)

Advisory Council On Historic Preservation

The Old Post Office Building
1100 Pennsylvania Avenue, NW, #809
Washington, DC 20004

OCT 14 1998

Mr. Nicholas L. Graf, P.E.
Division Administrator
Region Four
Federal Highway Administration
U.S. Department of Transportation
310 New Bern Avenue, Suite 410
Raleigh NC 27601

REF: Replacement of Bridge 61 on NC 197 over North Toe River
Yancey/Mitchell Counties, North Carolina

Dear Mr. Graf:

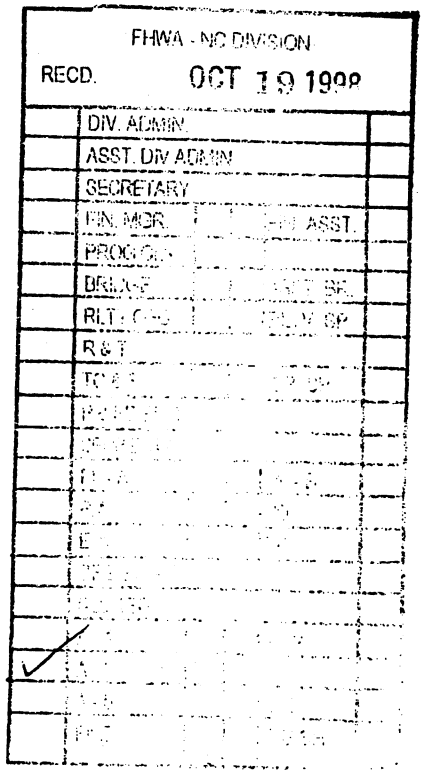
The enclosed Memorandum of Agreement for the referenced project has been accepted by the Council. This acceptance completes the requirements of Section 106 of the National Historic Preservation Act and the Council's regulations. We recommend that you provide a copy of the fully-executed Agreement to the North Carolina State Historic Preservation Officer.

Should you have any questions, please contact me at (202) 606-8528.

Sincerely,

Ralston Cox
Historic Preservation Analyst
Office of Planning and Review

Enclosure



Execution of this Memorandum of Agreement by FHWA and the North Carolina SHPO and implementation of its terms evidence that FHWA has afforded the Advisory Council on Historic Preservation an opportunity to comment on the replacement of Bridge No. 61 on NC 197 over North Toe River and its effect on the historic property, and that FHWA has taken into account the effects of the undertaking on the historic property.

Mary C Shelton for 8/17/98

FEDERAL HIGHWAY ADMINISTRATION DATE

Jeffrey J. Crow 9/11/98

NORTH CAROLINA STATE HISTORIC PRESERVATION OFFICER DATE

Richard D. Moore 8-6-98

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION DATE
Concurring Party

John M. Fowler 10/13/98

ACCEPTED for DATE
ADVISORY COUNCIL ON HISTORIC PRESERVATION

APPENDIX A

Historic Structures Recordation Plan
for the Replacement of Bridge No. 61
Yancey and Mitchell Counties, North Carolina

Description

A brief physical description and narrative statement of significance

Photographic Requirements

Photographic views of Bridge No. 61 including:

Overall views (elevations and oblique views)

Overall views of the bridge in its setting

Details of construction or design

Format:

Representative color transparencies

35 mm or larger black and white negatives (all views)

8 x 10 inch black and white contact print (all negatives)

All processing to be done to archival standards

All photographs and negatives to be labeled according to Division of Archives and History standards

Copies and Curation

One (1) set of all photographic documentation will be deposited with the North Carolina Division of Archives and History/State Historic Preservation Office to be made a permanent part of the statewide survey and iconographic collection.

North Carolina Wildlife Resources Commission

512 N. Salisbury Street, Raleigh, North Carolina 27604-1188, 919-733-3391
Charles R. Fullwood, Executive Director

MEMORANDUM

TO: Jeff Ingham
North Carolina Department of Transportation

FROM: Stephanie E. Goudreau, Eastern Mt. Region Coordinator
Habitat Conservation Program

Stephanie E. Goudreau

DATE: April 23, 1997

SUBJECT: Preliminary comments for the replacement of Bridge #61 on NC 197 over North Toe River, Yancey and Mitchell Counties, TIP #B-1443

This correspondence responds to a request by you for our preliminary comments regarding the subject project.

The North Toe River does not likely support trout this far downstream; however, it does support several species of gamefish (black bass, sunfish, muskellunge) and nongame fish. In addition, the river supports a population of the Appalachian elktoe, a federally threatened freshwater mussel species. We have the following recommendations regarding this project:

1) The U.S. Fish and Wildlife Service should be contacted to determine if the project has the potential to impact the Appalachian elktoe. Contact is Mr. John Fridell at 704/258-3939, extension 225. The Service may make additional recommendations if this species could be impacted by the project.

2) If concrete will be used, work must be accomplished so that wet concrete does not contact river water. This will lessen the chance of altering the river's water chemistry and causing a fish kill.

3) If possible, heavy equipment should be operated from the bank rather than in the river channel in order to minimize sedimentation and reduce the likelihood of introducing other pollutants into the river.

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

5) If the bridge is replaced on new location, native species of trees and shrubs should be planted along the river at the site of the existing bridge over the North Toe River upon removal of this structure to add bank stability, shade, and a travel corridor for wildlife.

Thank you for the opportunity to review and comment during the early stages of this project. If you have any questions regarding these comments, please contact me at 704/652-4257.

cc: Mr. John Fridell, USFWS

STORMWATER MANAGEMENT PLAN

State Project 8.1900401 (B-1443)
Mitchell/Yancey County

The project involves the removal and replacement of Bridge Number 61 carrying NC 197 over the North Toe River in Mitchell and Yancey Counties. The existing two lane 82.7 m (270 ft.) long bridge will be replaced with a two lane 109 m (360 ft.) long bridge. The North Toe River has a Class 'C' Trout water classification and supports a population of the Appalachian Elktoe, a federally listed endangered freshwater mussel species. The overall length of the project is 0.191 km (0.07 mi.). Traffic will be maintained on site during construction.

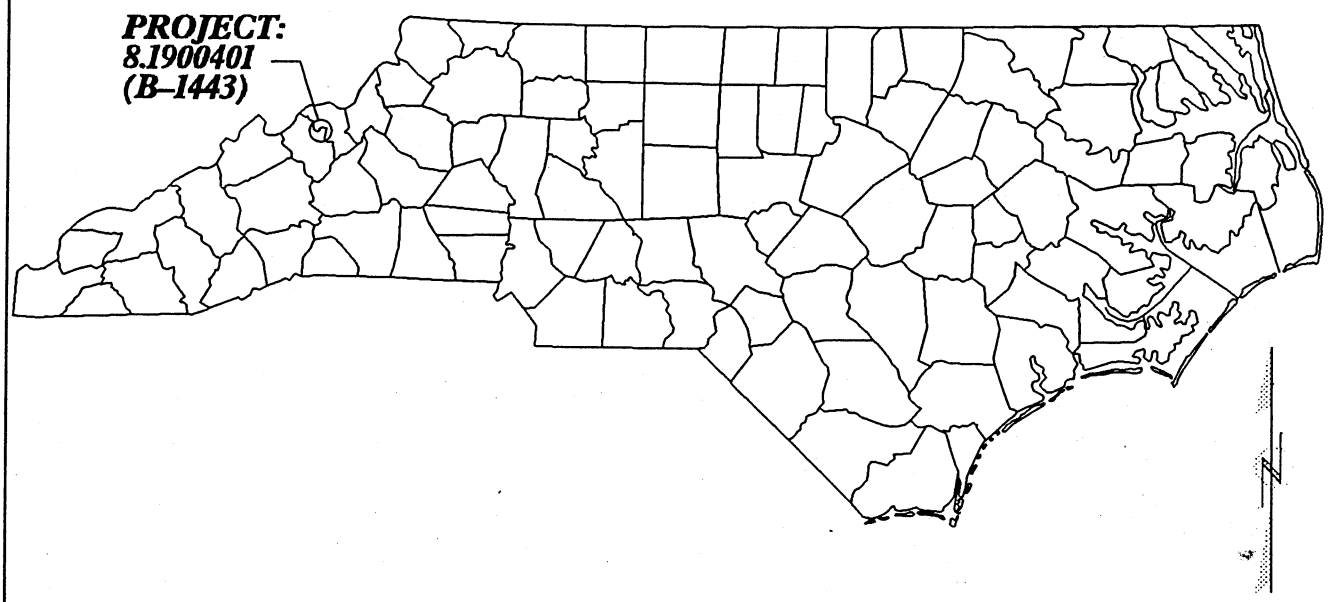
The existing 7.2 m (24 ft.) roadway is a two-lane road with 3.0 m (10 ft.) lanes and 0.6 m (2 ft.) grassed shoulders. The proposed 11.4 m (38 ft.) paved road is a two-lane road with two 3.3 m (11 ft.) lanes and 2.4 m (8 ft.) shoulders. Where there is guardrail at the beginning of the bridge the entire shoulder will be paved to help prevent erosion of the fill slopes. The proposed structure will have a travelway of 10.9 m (36 ft.). This will include an inside shoulder of 2.4 m (8 ft.) to accommodate sight distance and an outside shoulder of 1.0 m (3 ft.). The existing bridge is 5.2 m (17 ft.) wide. Approximately 561 sq m (6.032 sq ft) of additional pavement will be added as a result of the project.

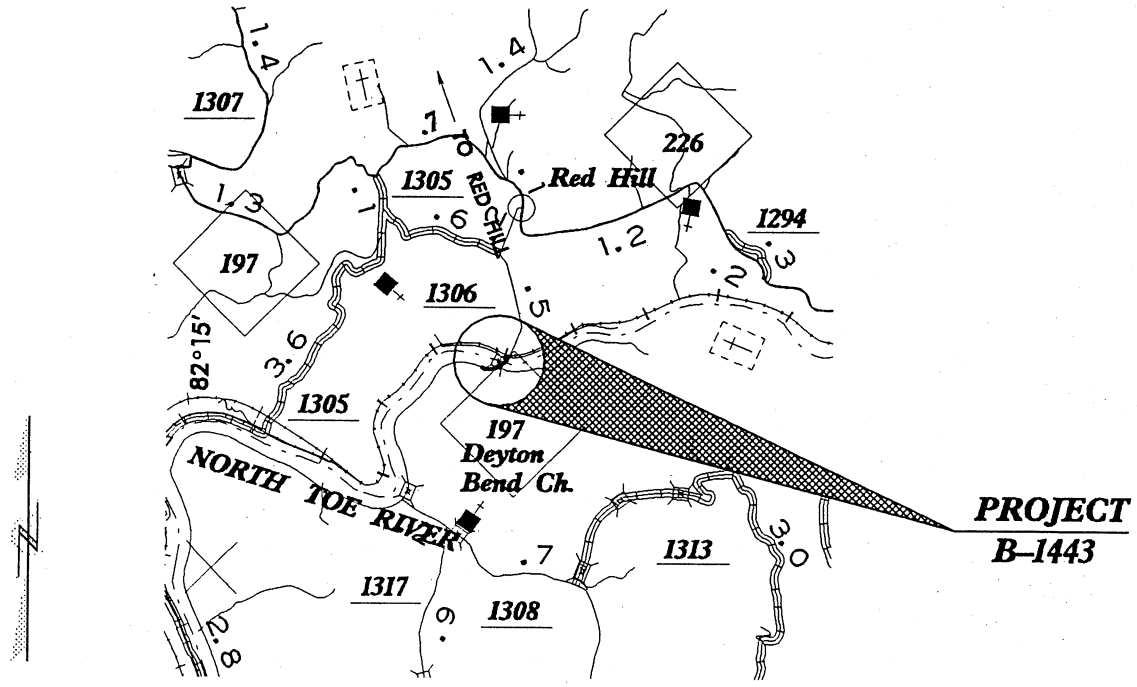
The following best management practices and measures were taken during the design of the project to reduce the stormwater impacts:

1. Drainage from the proposed bridge will not be allowed to discharge directly into the North Toe River. Drainage on the existing bridge presently runs off directly into the river. Deck drains will be utilized at both ends of the bridge.

2. Storm drainage that is collected at the south end of the bridge where guardrail is used will be discharged into a stormwater retention basin whereas currently the stormwater drains directly to the river.

NORTH CAROLINA





VICINITY MAPS

NCDOT

DIVISION OF HIGHWAYS

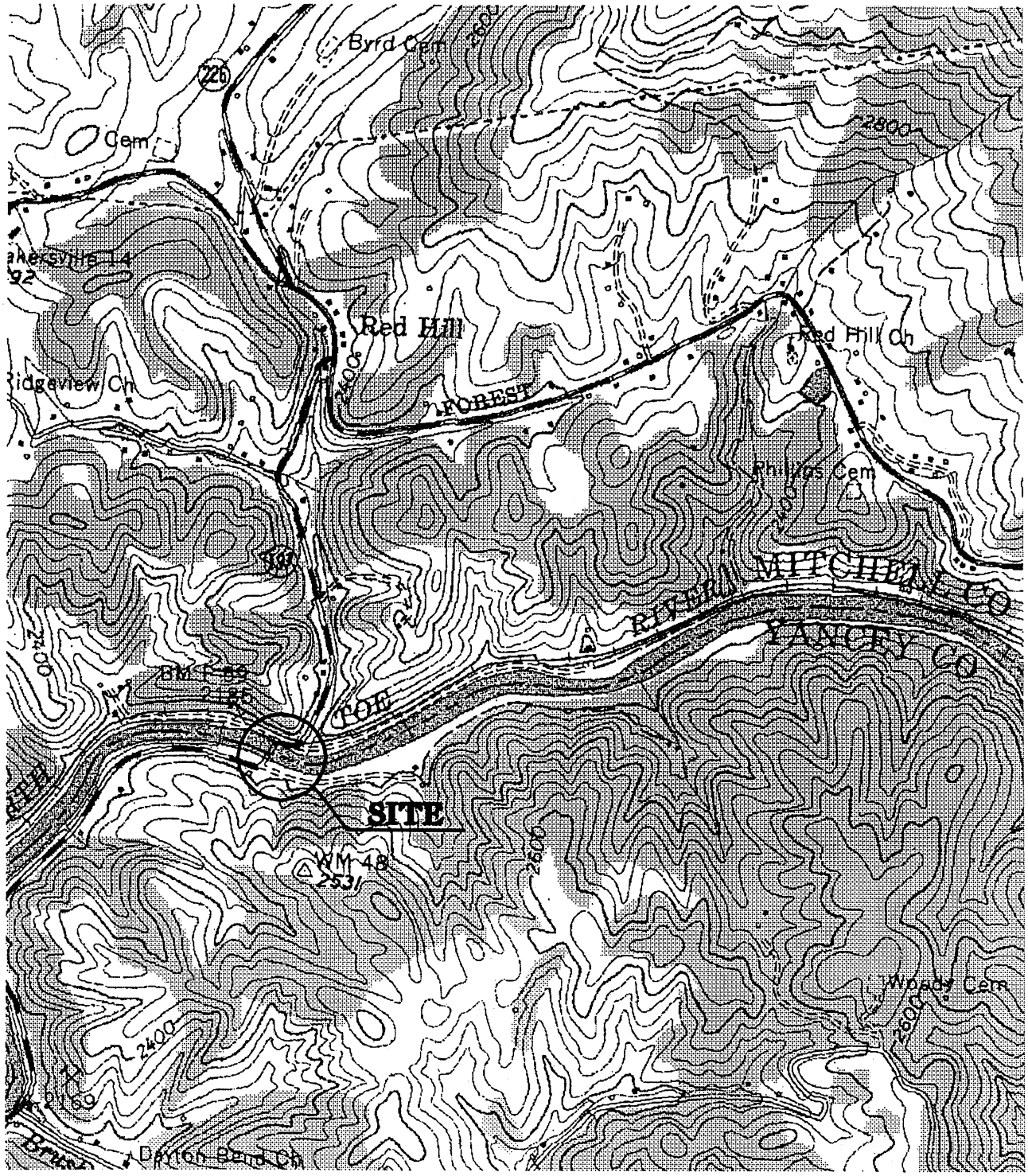
MITCHELL / YANCEY COUNTY

PROJECT: 8.1900401 (B-1443)

BRIDGE NO. 61 ON NC 197

OVER THE NORTH TOE RIVER

SHEET 1 OF 10 3/10/04



SITE MAP

NCDOT

DIVISION OF HIGHWAYS

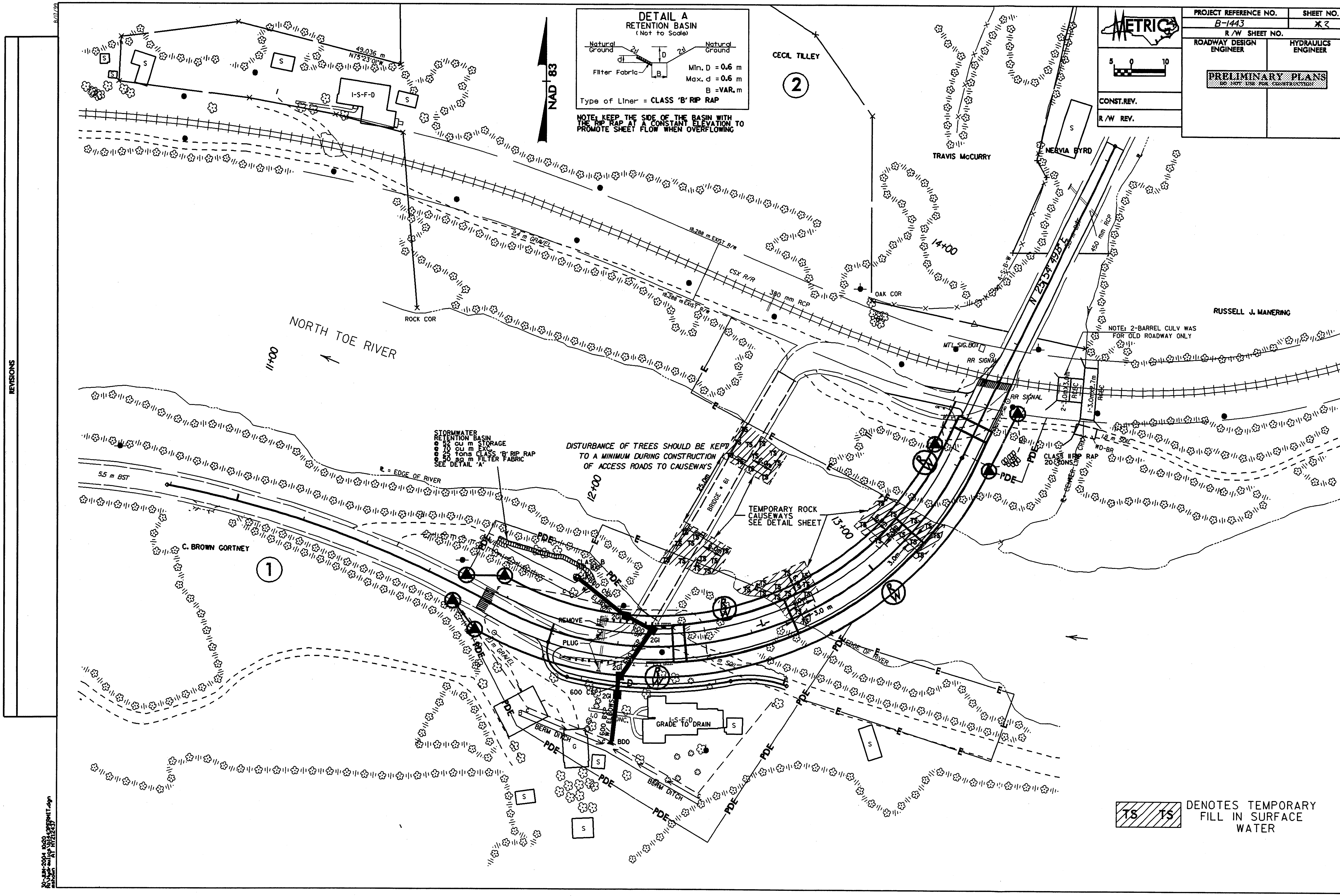
MITCHELL / YANCEY COUNTY

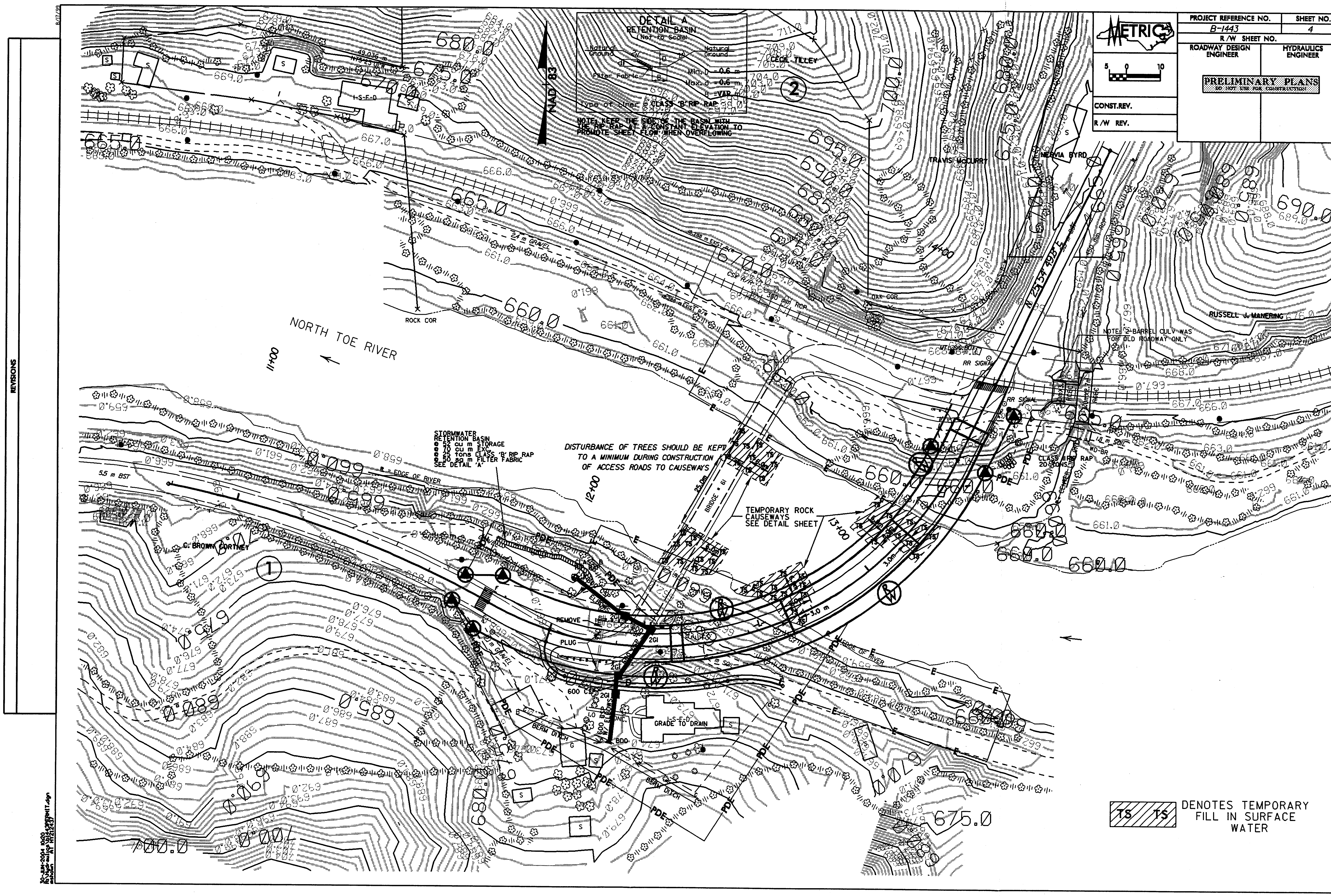
PROJECT: 8.1900401 (B-1443)

BRIDGE NO. 61 ON NC 197

OVER THE NORTH TOE RIVER

SHEET 2 OF 10 3/10/04


PROJECT REFERENCE NO.
SHEET NO.
B-1443
R/W SHEET NO.
ROADWAY DESIGN ENGINEER
HYDRAULICS ENGINEER
METRIC
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION
CONST.REV.
R/W REV.
REVISIONS
DETAIL A
RETENTION BASIN
(Not to Scale)
Natural Ground
Filter Fabric
Min. D = 0.6 m
Max. d = 0.6 m
B = VAR. m
Type of Liner = CLASS 'B' RIP RAP
NOTE: KEEP THE SIDE OF THE BASIN WITH THE RIP RAP AT A CONSTANT ELEVATION TO PROMOTE SHEET FLOW WHEN OVERFLOWING
NAD 83
CECIL TILLEY
TRAVIS McCURRY
NERVIA BYRD
RUSSELL J. MANERING
C. BROWN GORTNEY
NORTH TOE RIVER
ROCK COR
OAK COR
CSX R/R
18.288 m EXIST R/W
24 m GRAVEL
380 mm RCP
450 mm RCP
NOTE: 2-BARREL CULV WAS FOR OLD ROADWAY ONLY
MTL SIG.BOX
RR SIGNAL
STORMWATER RETENTION BASIN
52 cu m STORAGE
70 cu m EXC.
25 tons CLASS 'B' RIP RAP
50 sq m FILTER FABRIC
SEE DETAIL 'A'
DISTURBANCE OF TREES SHOULD BE KEPT TO A MINIMUM DURING CONSTRUCTION OF ACCESS ROADS TO CAUSEWAYS
TEMPORARY ROCK CAUSEWAYS SEE DETAIL SHEET
CLASS II RIP RAP 20 TONS
EDGE OF RIVER
5.5 m BST
REMOVE
PLUG
BERM DITCH
GRADE TO DRAIN
I-S-F-D
PDE
11+00
12+00
13+00
14+00
DENOTES TEMPORARY FILL IN SURFACE WATER


PROJECT REFERENCE NO.
SHEET NO.
B-1443
4
R/W SHEET NO.
ROADWAY DESIGN ENGINEER
HYDRAULICS ENGINEER
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION
METRIC
CONST. REV.
R/W REV.
REVISIONS
NAD 83
DETAIL A
RETENTION BASIN
(Not to Scale)
Natural Ground
Filter Fabric
Min. D = 0.6 m
Max. d = 0.6 m
B = VAR
Type of Liner: CLASS 'B' RIP RAP
NOTE: KEEP THE SIDE OF THE BASIN WITH THE RIP RAP AT A CONSTANT ELEVATION TO PROMOTE SHEET FLOW WHEN OVERFLOWING
CECIL TILLEY
TRAVIS McCURRY
NERVIA BYRD
RUSSELL J. MANERING
NOTE: 2-BARREL CULV WAS FOR OLD ROADWAY ONLY
NORTH TOE RIVER
ROCK COR
OAK COR
RR SIGNAL
C. BROWN CORTNEY
STORMWATER RETENTION BASIN
52 cu m STORAGE
75 cu m EXC
25 tons CLASS 'B' RIP RAP
30 sq m FILTER FABRIC
SEE DETAIL 'A'
DISTURBANCE OF TREES SHOULD BE KEPT TO A MINIMUM DURING CONSTRUCTION OF ACCESS ROADS TO CAUSEWAYS
TEMPORARY ROCK CAUSEWAYS SEE DETAIL SHEET
BRIDGE
CLASS 'B' RIP RAP
EDGE OF RIVER
REMOVE
PLUG
GRADE TO DRAIN
BERM DITCH
5.5 m BST
2.4 m GRAVEL
11+00
12+00
13+00
14+00
TS TS DENOTES TEMPORARY FILL IN SURFACE WATER

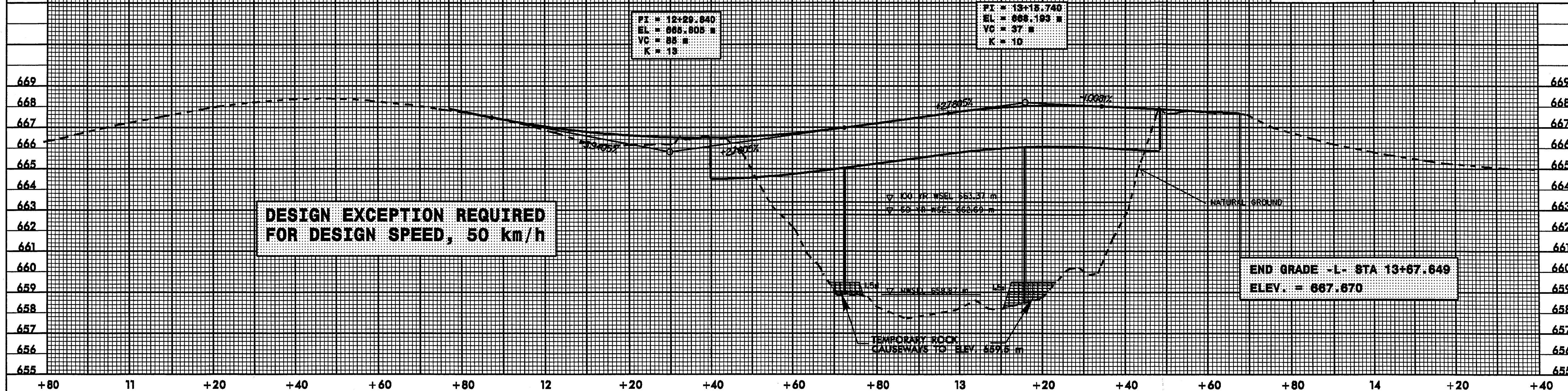
PROJECT REFERENCE NO.	SHEET NO.
B-1443	5
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

METRIC

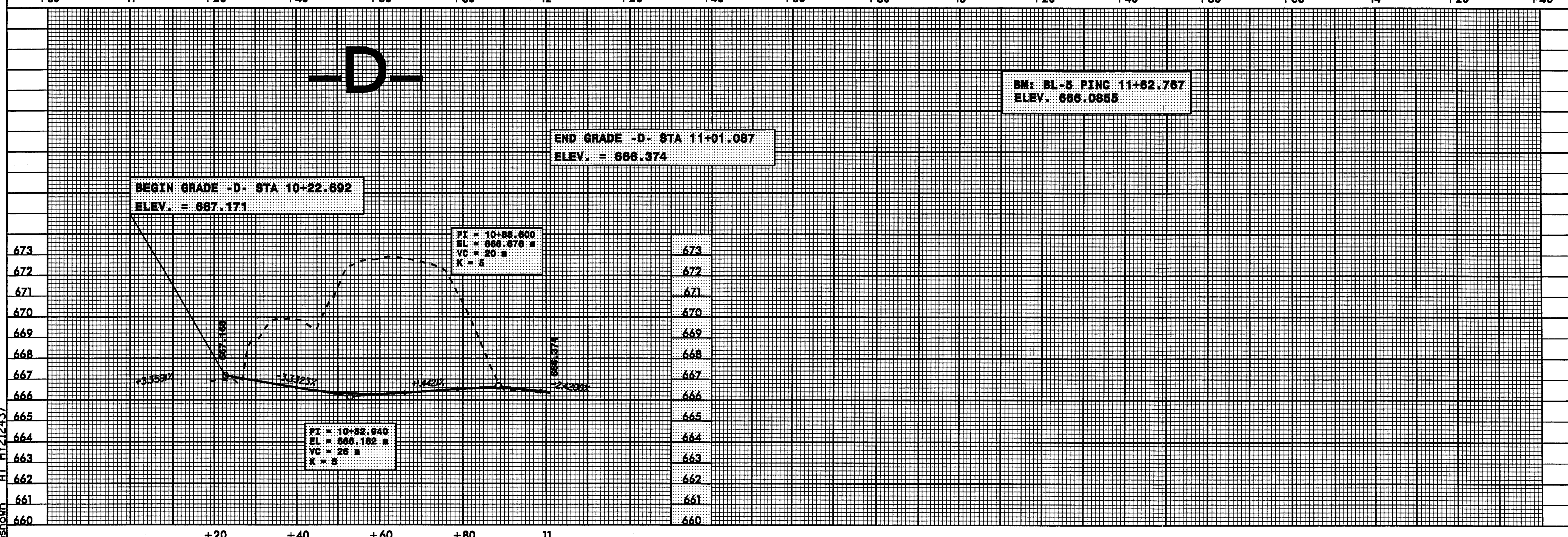
CONST. REV.

R/W REV.

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

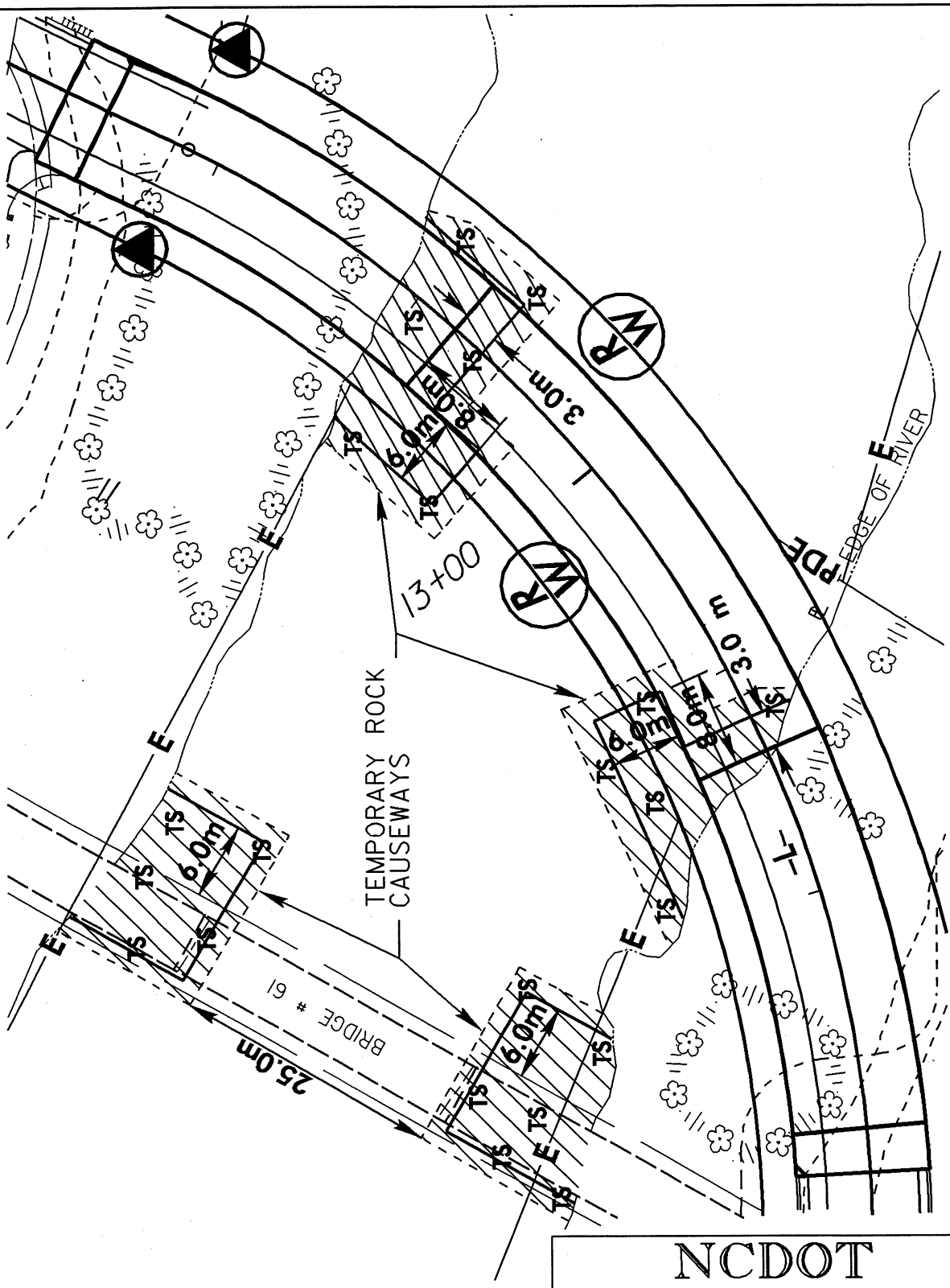


-L-
BEGIN GRADE -L- STA 11+77.000
ELEV. = 667.887
PI = 12+29.840
EL = 665.805 m
VC = 85 m
K = 13
PI = 13+15.740
EL = 668.193 m
VC = 37 m
K = 10
+2.7805%
DESIGN EXCEPTION REQUIRED
FOR DESIGN SPEED, 50 km/h
100 YR WSEL 663.37 m
50 YR WSEL 662.69 m
NATURAL GROUND
NWSEL 658.87 m
1.5:1
TEMPORARY ROCK
CAUSEWAYS TO ELEV. 659.5 m
END GRADE -L- STA 13+67.649
ELEV. = 667.670
669
668
667
666
665
664
663
662
661
660
659
658
657
656
655
+80
11
+20
+40
+60
+80
12
+20
+40
+60
+80
13
+20
+40
+60
+80
14
+20
+40



-D-
BM: BL-5 PINC 11+62.767
ELEV. 666.0855
END GRADE -D- STA 11+01.087
ELEV. = 666.374
BEGIN GRADE -D- STA 10+22.692
ELEV. = 667.171
PI = 10+88.600
EL = 666.676 m
VC = 20 m
K = 5
667.168
+3.359%
-3.3123%
+1.442%
666.374
-2.4208%
PI = 10+52.940
EL = 666.162 m
VC = 26 m
K = 5
673
672
671
670
669
668
667
666
665
664
663
662
661
660
+20
+40
+60
+80
11

30-JUN-2004 10:23
R:\Hydraulics\B1443PERMIT.dgn
mshown AT HY212437

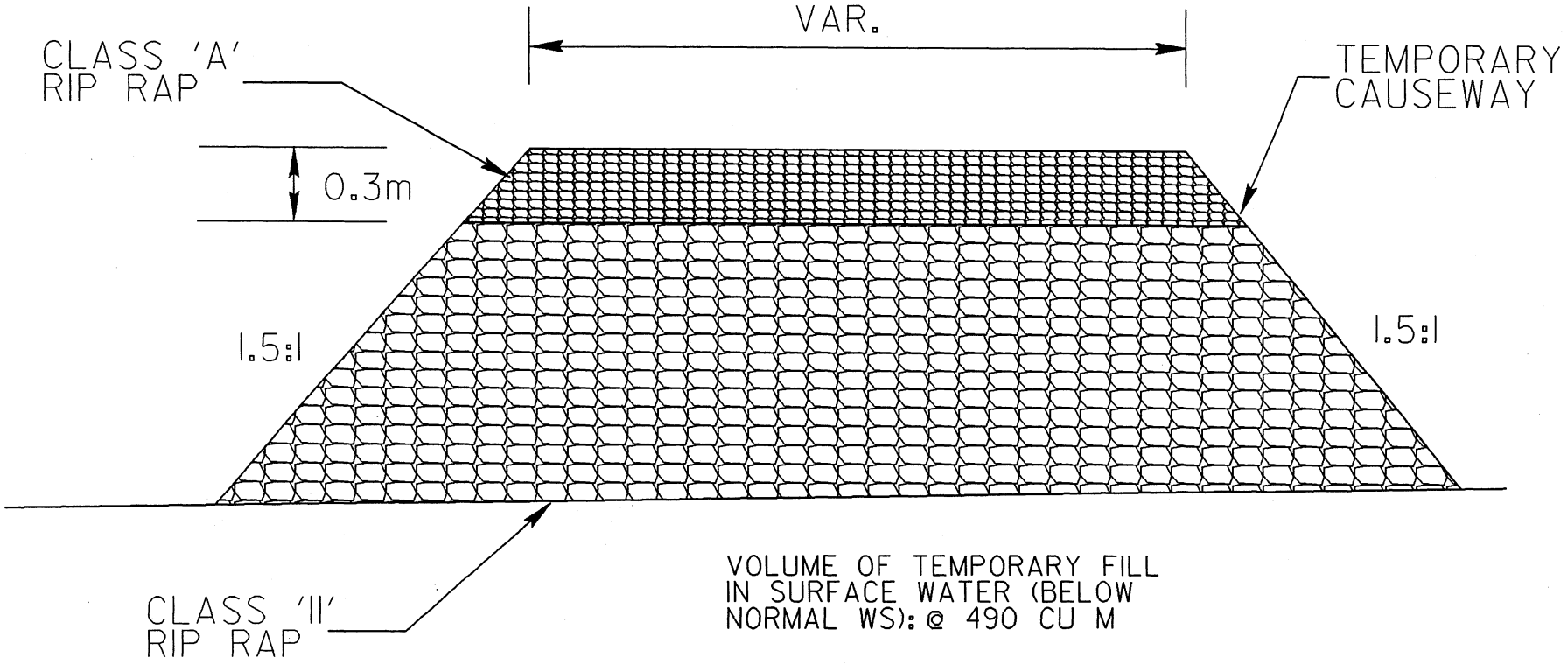


DETAIL

NCDOT

DIVISION OF HIGHWAYS
MITCHELL / YANCEY COUNTY
PROJECT: 8.1900401 (B-1443)
BRIDGE NO. 61 ON NC 197
OVER THE NORTH TOE RIVER

SHEET 6 **OF** 10 **3 / 10 / 04**



TYPICAL SECTION
(NOT TO SCALE)

NCDOT
DIVISION OF HIGHWAYS
MITCHELL / YANCEY COUNTY
PROJECT: 8.1900401 (B-1443)
BRIDGE NO. 61 ON NC 197
OVER THE NORTH TOE RIVER

SHEET 7 **OF** 10 **3 / 10 / 04**

PROPERTY OWNERS

NAMES AND ADDRESSES

PARCEL NO.	NAMES	ADDRESSES
1	C. BROWN GORTNEY	RT. 2, BOX 450 BAKERSVILLE, NC 28705
2	CECIL TILLEY	11013 MIDDLE ACRES ROAD CHARLOTTE, NC 28813

NCDOT

DIVISION OF HIGHWAYS

MITCHELL / YANCEY COUNTY

PROJECT: 8.1900401 (B-1443)

BRIDGE NO. 61 ON NC 197

OVER THE NORTH TOE RIVER

WETLAND PERMIT IMPACT SUMMARY

Site No.	Station (From/To)	Structure Size / Type	WETLAND IMPACTS: Fill In Wetlands (ac)	WETLAND IMPACTS: Temp. Fill In Wetlands (ac)	WETLAND IMPACTS: Excavation In Wetlands (ac)	WETLAND IMPACTS: Mechanized Clearing (Method III) (ac)	SURFACE WATER IMPACTS: Fill In SW (Natural) (ac)	SURFACE WATER IMPACTS: Fill In SW (Pond) (ac)	SURFACE WATER IMPACTS: Temp. Fill In SW (ac)	SURFACE WATER IMPACTS: Existing Channel Impacted (ft)	SURFACE WATER IMPACTS: Natural Stream Design (ft)
	NEW BRIDGE	1@107 ft, 1@142 ft							0.12		
		1@107 Ft CURVED									
		STEEL GIRDERS									
	OLD BRIDGE								0.09		
	REMOVAL										
TOTALS:			0	0	0	0	0	0	0.21	0	0

NC DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
MITCHELL/YANCEY COUNTY
PROJECT 8.1900401 (B-1443)
BRIDGE No. 61 ON NC 197
OVER THE NORTH TOE RIVER
SHEET 10 OF 10 3/10/2004

Form Revised 3/22/01

CONTRACT: C201180

B-1443

See Sheet 1-A For Index of Sheets

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

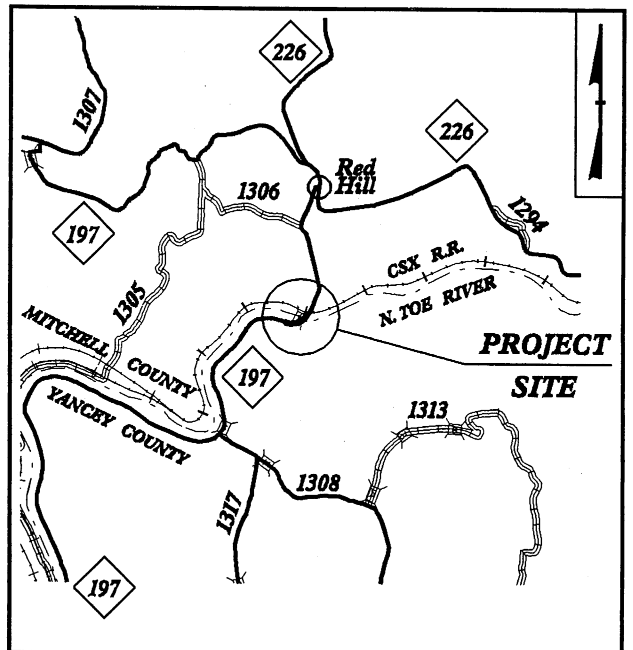
MITCHELL /YANCEY COUNTY

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-1443	1	

STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION
32597.1.1	BRSTP-197(1)	PE
32597.2.1	BRSTP-197(1)	ROW

METRIC

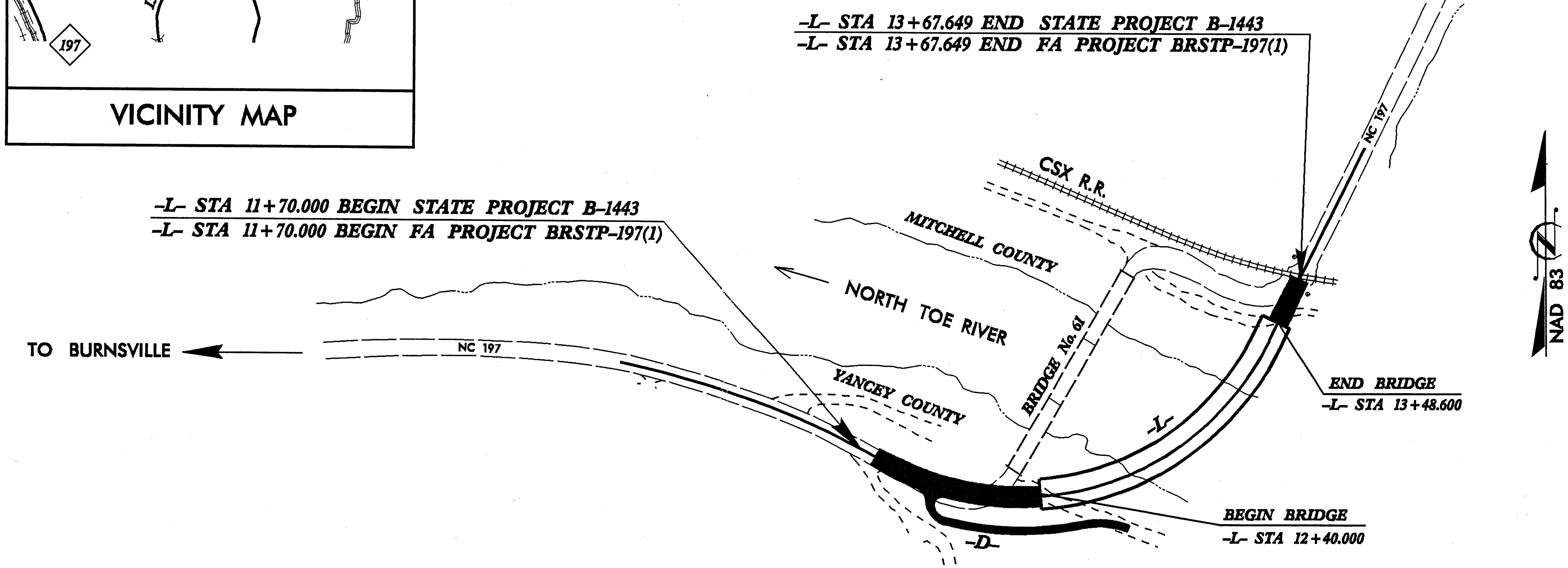
ALL DIMENSIONS IN THESE PLANS ARE IN METERS AND/OR MILLIMETERS UNLESS OTHERWISE SHOWN



VICINITY MAP

LOCATION: BRIDGE No. 61 ON NC 197 OVER THE NORTH TOE RIVER

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



NOTE: THIS PROJECT IS NOT WITHIN ANY MUNICIPAL BOUNDARIES
CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD II
** DESIGN EXCEPTION FOR 'DESIGN SPEED' REQUIRED

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

GRAPHIC SCALES

5 0 10 — PLANS

5 0 10 — PROFILE (HORIZONTAL)

2 0 10 — PROFILE (VERTICAL)

DESIGN DATA

ADT 2005 = 1600
ADT 2025 = 2800
DHV = 9 %
D = 55 %
T = 8 % *
V = 50 km/h
(** REQUIRES DESIGN EXCEPTION)
* TTST 2 % DUAL 6 %

PROJECT LENGTH

LENGTH ROADWAY STATE PROJECT 8.1900401 = 0.082 KM
LENGTH STRUCTURE STATE PROJECT 8.1900401 = 0.109 KM
TOTAL LENGTH STATE PROJECT 8.1900401 = 0.191 KM

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

1995 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE: February 26, 2004

LETTING DATE: March 15, 2005

JIMMY GOODNIGHT, PE
PROJECT ENGINEER

JASON MOORE, PE
PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

SIGNATURE: P.E.

ROADWAY DESIGN ENGINEER

SIGNATURE: P.E.

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

STATE DESIGN ENGINEER P.E.

DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

APPROVED
DIVISION ADMINISTRATOR DATE

9/09/99

25-JUN-2004 15:35

PROJECT REFERENCE NO.	SHEET NO.
B-1443	2
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER

METRIC

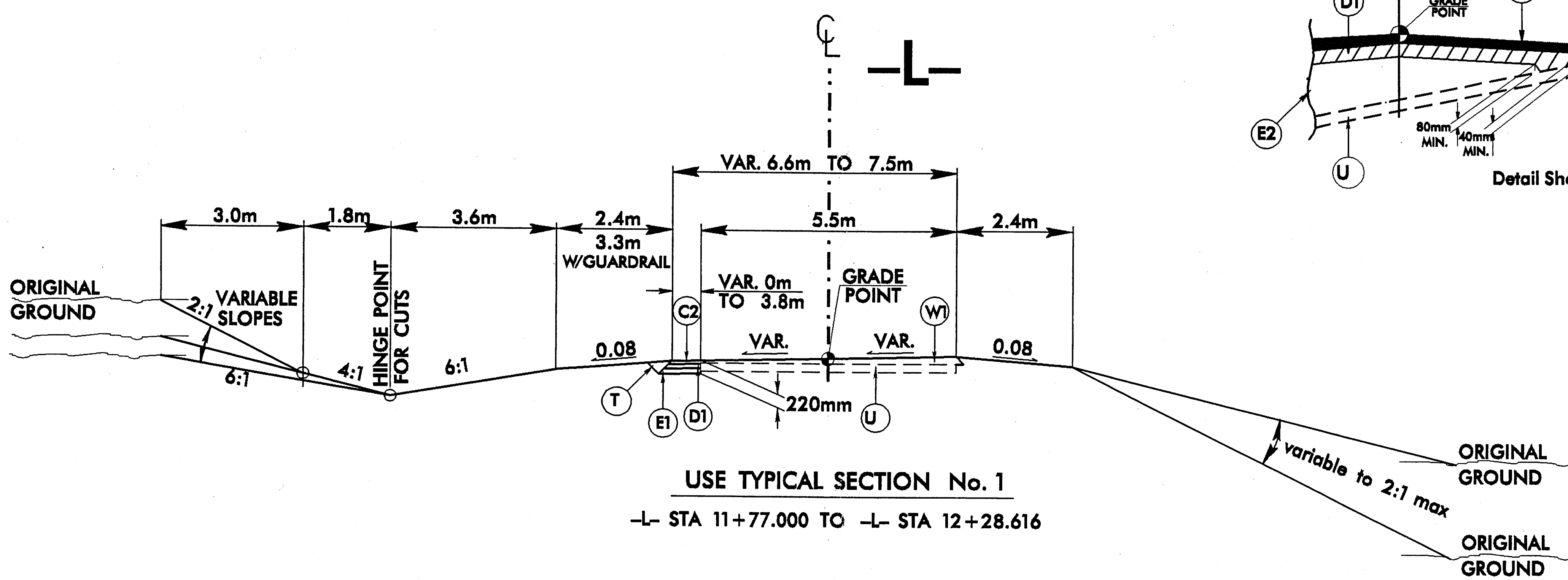
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

PAVEMENT SCHEDULE

C1	PROP. APPROX. 25 mm ASPHALT CONC. SURFACE COURSE, TYPE S9.5A, AT AN AVERAGE RATE OF 60 kg PER SQ. METER.	E1	PROP. APPROX. 110 mm ASPHALT CONC. BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 269.5 kg PER SQ. METER.
C2	PROP. APPROX. 50 mm ASPHALT CONC. SURFACE COURSE, TYPE S9.5A, AT AN AVERAGE RATE OF 60 kg PER SQ. METER IN EACH OF TWO LAYERS.	E2	PROP. VAR. DEPTH ASPHALT CONC. BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 2.45 kg PER SQ. METER PER 1 mm DEPTH, TO BE PLACED IN LAYERS NOT LESS THAN 75 mm IN DEPTH OR GREATER THAN 140 mm IN DEPTH.
C3	PROP. VAR. DEPTH ASPHALT CONC. SURFACE COURSE, TYPE S9.5A, AT AN AVERAGE RATE OF 2.4 kg PER SQ. METER PER 1 mm DEPTH, TO BE PLACED IN LAYERS NOT TO EXCEED 40 mm IN DEPTH.	T	EARTH MATERIAL.
D1	PROP. APPROX. 60 mm ASPHALT CONC. BINDER COURSE, TYPE I19.0B, AT AN AVERAGE RATE OF 147 kg PER SQ. METER.	U	EXISTING PAVEMENT.
D2	PROP. VAR. DEPTH ASPHALT CONC. BINDER COURSE, TYPE I19.0B, AT AN AVERAGE RATE OF 2.45 kg PER SQ. METER PER 1 mm DEPTH, TO BE PLACED IN LAYERS NOT LESS THAN 55 mm IN DEPTH OR GREATER THAN 110 mm IN DEPTH.	W1	VARIABLE DEPTH ASPHALT PAVEMENT. (SEE STANDARD WEDGING DETAIL SHEET No. 2)

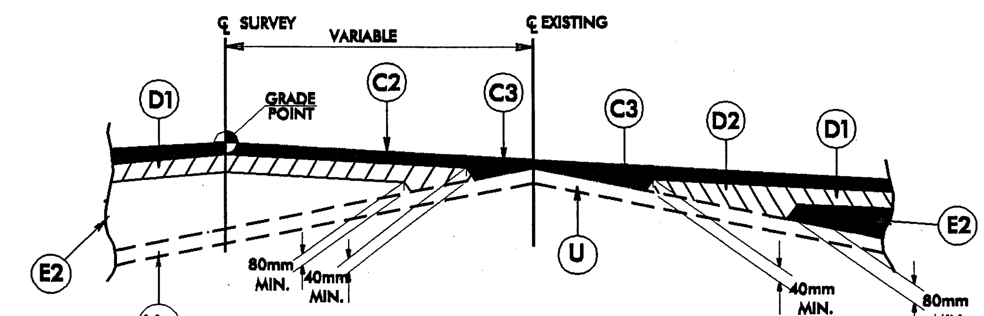
NOTE: PAVEMENT EDGE SLOPES ARE 1:1 UNLESS SHOWN OTHERWISE.

TYPICAL SECTION No. 1



USE TYPICAL SECTION No. 1

-L- STA 11+77.000 TO -L- STA 12+28.616



Detail Showing Method of Wedging

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DKEsson AT

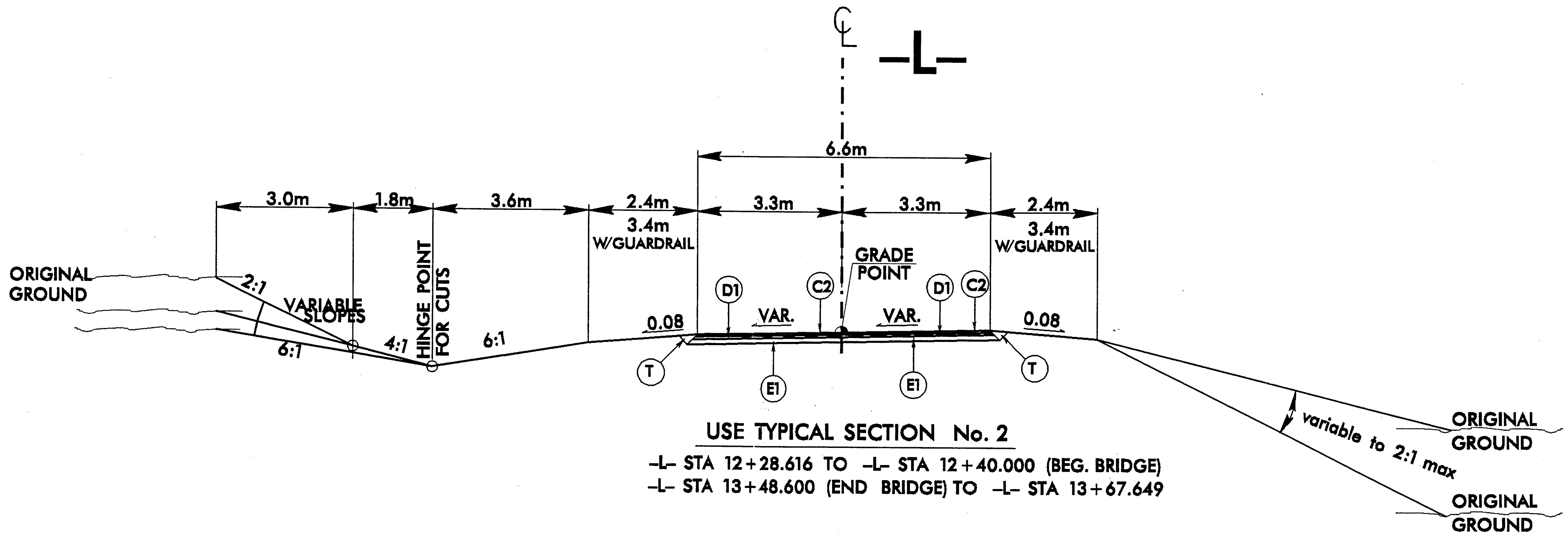
METRIC

PROJECT REFERENCE NO.	SHEET NO.
B-1443	2-A
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

C1	25mm I-1
C2	50mm I-1
C3	VAR. DEPTH I-1
D1	60mm H
D2	VAR. DEPTH H
E1	25mm I-1
E2	VAR. DEPTH HB
T	EARTH MAT'L
U	EXIST. PAV'T
W1	WEDGING

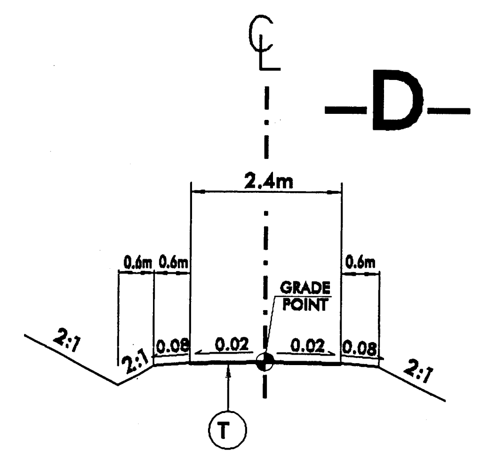
TYPICAL SECTION No. 2



USE TYPICAL SECTION No. 2

-L- STA 12+28.616 TO -L- STA 12+40.000 (BEG. BRIDGE)
-L- STA 13+48.600 (END BRIDGE) TO -L- STA 13+67.649

TYPICAL SECTION No. 3



TYPICAL SECTION No. 3

STA 10+00.000 (-D-) TO STA 11+01.087 (-D-)

PROJECT REFERENCE NO.	SHEET NO.
B-1443	4
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

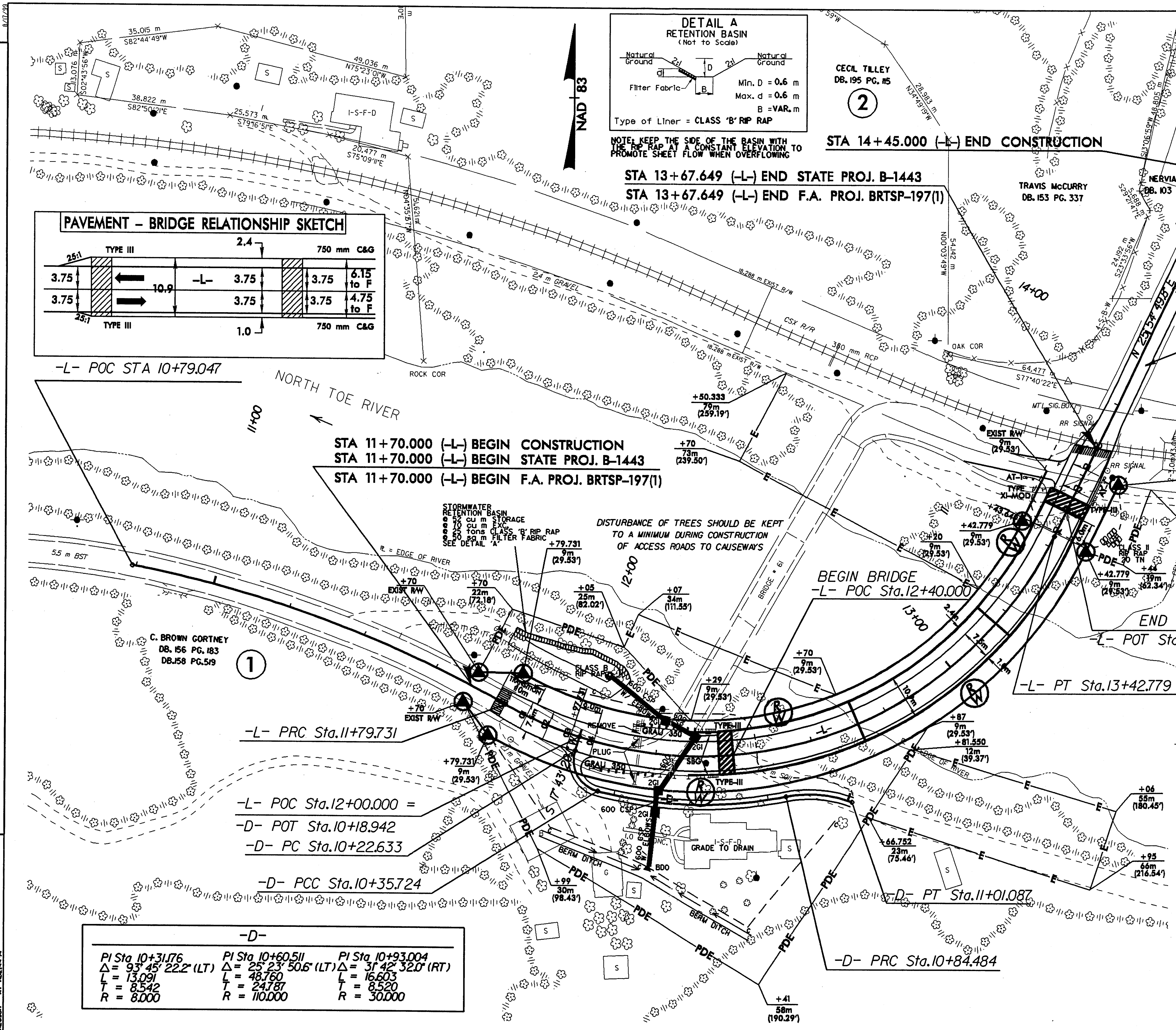
METRIC

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

CONST.REV.

R/W REV.

REVISIONS



DETAIL A
RETENTION BASIN
(Not to Scale)
Natural Ground
Filter Fabric
Min. D = 0.6 m
Max. d = 0.6 m
B = VAR. m
Type of Liner = CLASS 'B' RIP RAP
NOTE: KEEP THE SIDE OF THE BASIN WITH THE RIP RAP AT A CONSTANT ELEVATION TO PROMOTE SHEET FLOW WHEN OVERFLOWING
NAD 83
PAVEMENT - BRIDGE RELATIONSHIP SKETCH
TYPE III
750 mm C&G
-L-
STA 14+45.000 (-L-) END CONSTRUCTION
STA 13+67.649 (-L-) END STATE PROJ. B-1443
STA 13+67.649 (-L-) END F.A. PROJ. BRTSP-197(1)
CECIL TILLEY
DB. 195 PG. 115
TRAVIS McCURRY
DB. 153 PG. 337
NERVIA BYRD
DB. 103 PG. 222
RUSSELL J. MANERING
DB. 139 PG. 534
C. BROWN GORTNEY
DB. 156 PG. 183
DB.158 PG.519
-L- POC STA 10+79.047
NORTH TOE RIVER
STA 11+70.000 (-L-) BEGIN CONSTRUCTION
STA 11+70.000 (-L-) BEGIN STATE PROJ. B-1443
STA 11+70.000 (-L-) BEGIN F.A. PROJ. BRTSP-197(1)
RESURFACE AS DIRECTED BY THE ENGINEER
NOTE: 2-BARREL CULV WAS FOR OLD ROADWAY ONLY
DISTURBANCE OF TREES SHOULD BE KEPT TO A MINIMUM DURING CONSTRUCTION OF ACCESS ROADS TO CAUSEWAYS
BEGIN BRIDGE
-L- POC Sta.12+40.000
END BRIDGE
-L- POT Sta.13+48.600
-L- PT Sta.13+42.779
-L- PRC Sta.11+79.731
-L- POC Sta.12+00.000 =
-D- POT Sta.10+18.942
-D- PC Sta.10+22.633
-D- PCC Sta.10+35.724
-D- PT Sta.11+01.087
-D- PRC Sta.10+84.484
DESIGN EXCEPTION REQUIRED FOR DESIGN SPEED, 50km/h

-D-		
PI Sta 10+31.176	PI Sta 10+60.511	PI Sta 10+93.004
Δ = 93° 45' 22.2" (LT)	Δ = 25° 23' 50.6" (LT)	Δ = 31° 42' 32.0" (RT)
L = 13.091	L = 48.760	L = 16.603
T = 8.542	T = 24.787	T = 8.520
R = 8.000	R = 110.000	R = 30.000

-L-	
PI Sta 11+29.822	PI Sta 12+85.885
Δ = 18° 18' 48.9" (RT)	Δ = 93° 25' 10.7" (LT)
L = 100.684	L = 163.048
T = 50.775	T = 106.154
R = 315.000	R = 100.000

DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCDOT FOR MONUMENT "B1443-01"
WITH NAD 83 STATE PLANE GRID COORDINATES OF
NORTHING: 255785.5918 (m) EASTING: 318,182.5459 (m)
THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.999863815
THE N.C. LAMBERT GRID BEARING
LOCALIZED HORIZONTAL GROUND DISTANCE FROM "B1443-01" TO -L- STATION 11+77.000 IS
S 87°12'50.50" E 297.470 (m)
ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES
VERTICAL DATUM USED IS NGVD 29

PROJECT REFERENCE NO.	SHEET NO.
B-1443	5

METRIC

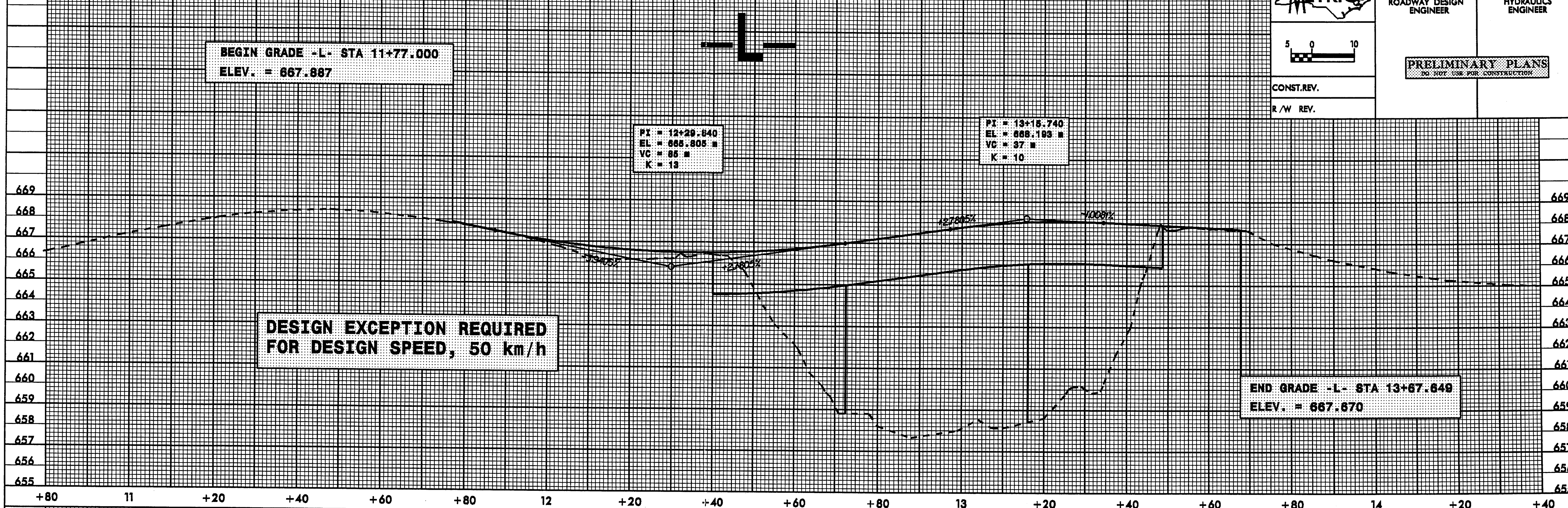
ROADWAY DESIGN ENGINEER

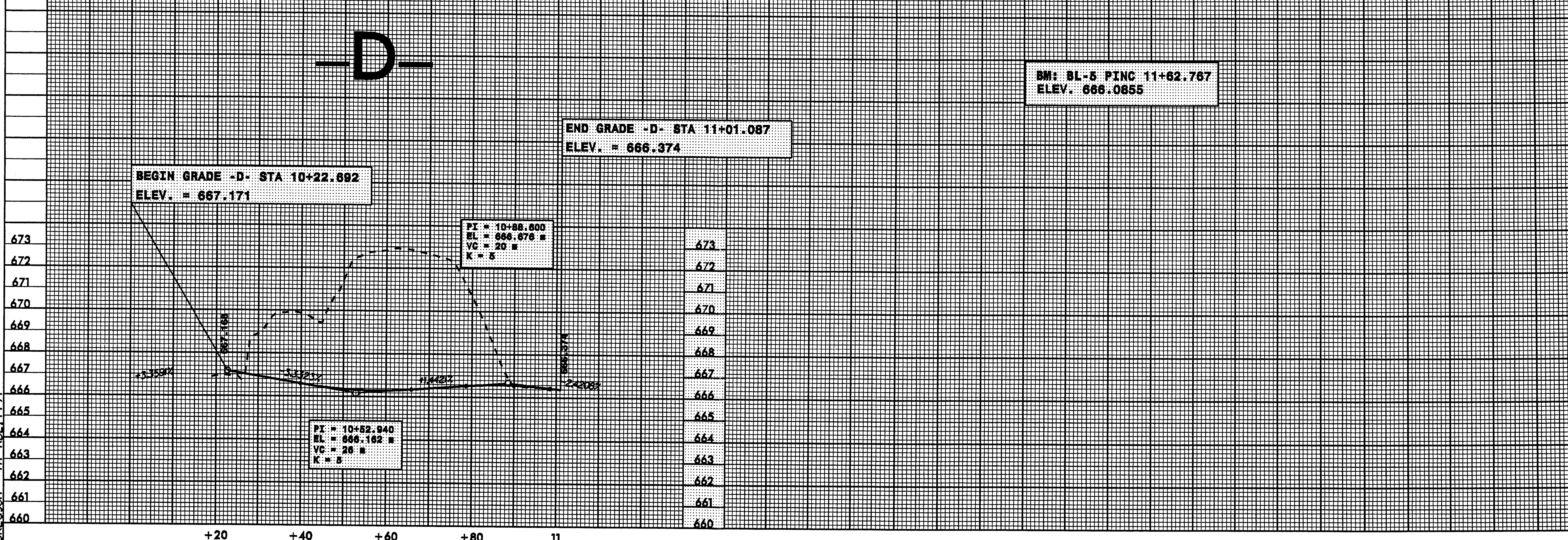
HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

CONST.REV.

R /W REV.





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