STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

MICHAEL F. EASLEY
GOVERNOR

LYNDO TIPPETT
SECRETARY

August 2, 2005

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

ATTN: Mr. Steve Lund
NCDOT Coordinator

Dear Sir:

SUBJECT: **Nationwide 23 and 33 Permit Application.** Replacement of Bridge No. 20 over the Featherstone Creek on SR 1006 (Howard Gap Road), Henderson County. Federal Aid Project No. BRSTP-1006(12), State Project No. 8.2951701, TIP Project No. B-3662.

The NC Department of Transportation (NCDOT) proposes to replace existing Bridge No. 20 over Featherstone Creek on SR 1006 (Howard Gap Road). The existing bridge is a two-span structure with an overall length of 26 feet and a clear roadway width of 19.1 feet. The bridge is considered functionally obsolete and structurally deficient. The approach roadway consists of two lanes with a clear roadway width of 19 feet.

The project involves replacing Bridge No. 20 on a new alignment approximately 50 feet south of the existing bridge. The existing bridge will be replaced with a triple barrel reinforced concrete box culvert measuring 11 feet by 9 feet and 65 feet in length. SR 1006 will be realigned approximately 50 feet south of the existing bridge. The proposed approach will be widened to two 12-foot travel lanes and 8-foot shoulders, including 4-foot paved shoulders. The road realignment will eliminate the existing reverse curves, improving sight distance and allowing traffic to be maintained on the existing roadway and structure during construction. The project has a Let Date of November 15, 2005 with a Review Date of September 27, 2005.

IMPACTS TO WATERS OF THE UNITED STATES

The water resource impacted for project B-3662 is a Featherstone Creek. Featherstone Creek is located in the French Broad River Basin (HUC 06010105). The North Carolina Department of Environment and Natural Resources classifies Dunn Creek (DWQ Index #6-55-12) as "C". Class "C" waters are suitable for secondary recreation, fishing, wildlife, fish and aquatic life propagation and survival, and agriculture.

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

TELEPHONE: 919-733-3141
FAX: 919-733-9794

WEBSITE: WWW.DOH.DOT.STATE.NC.US

LOCATION:
TRANSPORTATION BUILDING
1 SOUTH WILMINGTON STREET
RALEIGH NC

There are no Outstanding Resource Waters (ORW), High Quality Waters (HQW), WS-I, or WS-II within 1 mile upstream or downstream of the project study area.

Featherstone Creek is not designated as a National Wild and Scenic River or a State Natural and Scenic River.

Permanent Impacts: The bridge replacement project is located on Featherstone Creek (NC Division of Water Quality Stream Index No. 6-55-12, Class C). Direct impacts to waters of the United States include fill in the existing channel by a triple barrel reinforced concrete box culvert measuring 11 feet by 9 feet and 65 feet in length. A total of 84 linear feet or 0.017 acre of waters of the United States are expected to be permanently impacted by fill in Featherstone Creek.

Temporary Impacts: Temporary dewatering is necessary for culvert installation. Diking materials and methods will be determined during construction by the contractor, and will adhere to NCDOT Best Management Practices for Construction and Maintenance Activities. A total of 111 feet or 0.025 acre of temporary impacts is expected as a result of the temporary dewatering to Featherstone Creek for the culvert installation.

BRIDGE DEMOLITION

The existing bridge is a two-lane, paved facility approximately 26 feet in length and 19.1 feet in width. The substructure consists of a reinforced concrete floor on I-beam girders. The superstructure consists of timber flooring on timber joists with an asphalt wearing surface. The substructure and end bents are composed completely of timber and steel. Therefore, Bridge No. 20 will be removed without dropping components into Waters of the United States. No temporary fill is expected to result from removal of the existing bridge. This bridge is classified as "Case 3" where there are no special restrictions beyond those outlined in Best Management Practices for Protection of Surface Waters.

CULVERT CONSTRUCTION

Bridge No. 20 will be replaced on a new alignment approximately 50 feet south of the existing bridge with a triple barrel reinforced concrete box culvert measuring 11 feet by 9 feet and 65 feet in length. The roadway approaches will be widened to two 12-foot travel lanes and 8-foot shoulders, including 4-foot paved shoulders. The culvert will be buried one foot below the streambed to allow unimpeded passage for fish and other aquatic organisms.

Guidelines followed for the construction phase of the project are in accordance with the NCDOT Best Management Practices for Protection of Surface Waters.

AVOIDANCE & MINIMIZATION

The replacement of Bridge 20 with a box culvert will impact the same amount of jurisdictional waters (0.015 acre) whether it is replaced in the existing location or 50 feet south as proposed. By relocating the roadway and bridge to the south, a safer road alignment is achieved and traffic can be maintained on-site. The proposed box culvert will have low flow sills and be buried one foot below the streambed to allow unimpeded passage for aquatic life. The contractor will follow contract specifications pertaining to erosion control measures as outlined in 23 CFR 650 Subpart B and Article 107-13 entitled " Control of Erosion, Siltation, and Pollution" (NCDOT, Specifications for Roads and Structures). NCDOT's Best Management Practices for Bridge Demolition and Removal (BMP-BDR) will be applied for the removal of the existing bridge. In

compliance with 15A NCAC 02B.0104(m) the use of BMP's have been incorporated into the design of the project.

Featherstone Creek is not listed as a 303d stream, however Mud Creek, which is only approximately 1,700 feet down stream, is listed. NCDOT will implement Design Standards for Sensitive Watersheds due to the close proximity to a 303d stream.

MITIGATION

The Department has avoided and minimized impacts to jurisdictional resources to the greatest extent possible as described above. The U.S. Army Corps of Engineers' interpretation of Nationwide Permits is that all impacts to perennial streams or intermittent streams that exhibit important aquatic function require mitigation. Therefore, the remaining unavoidable impacts to 84 linear feet of stream will be offset by compensatory mitigation.

The subject TIP project is listed in Exhibit 2 of the Memorandum of Agreement among the North Carolina Department of Environment and Natural Resources, the North Carolina Department of Transportation, and the U.S. Army Corps of Engineers, Wilmington District dated July 22, 2003. The compensatory mitigation for the project will be provided in accordance with Section IX, NC Ecosystem Enhancement Program (EEP) Transition Period, of the Agreement.

Since the subject project is listed in Exhibit 2, the necessary compensatory mitigation to offset unavoidable impacts to waters that are jurisdictional under the federal Clean Water Act will be provided by the EEP. The offsetting mitigation will derive from an inventory of assets already in existence within the same 8-digit cataloguing unit.

FEDERALLY-PROTECTED SPECIES

Plants and animals with federal classifications of Endangered, Threatened, Proposed Endangered, and Proposed Threatened are protected under Endangered Species Act §§7 and 9. As of January 29, 2003, the US Fish and Wildlife Service (USFWS) lists eight federally protected species for Henderson County (Table 1). Searches for the eight species have been conducted within the project area and Biological Conclusions of "No Effect" were reached for all. Due to potential habitat, additional surveys were completed for small-whorled pogonia and white irisette on June 29, 2004. No species were found, therefore, the Biological Conclusions of "No Effect" remain valid.

Table 1. Federally Protected Species for Henderson County

SCIENTIFIC NAME	COMMON NAME	STATUS	BIOLOGICAL CONCLUSION
Clemys muhlenbergii	Bog turtle	T(S/A)	No Effect
Alasmidonta raveneliana	Appalachian elktoe	E	No Effect
Epioblasma capsaeformis	Oyster mussel	E	No Effect
Helonias bullata	Swamp pink	T	No Effect
Isotria medeoloides	Small-whorled pogonia	T	No Effect
Sagittaria fasciculata	Bunched arrowhead	E	No Effect
Sarracenia rubra ssp. *jonesii (S. jonesii)*	Mountain sweet pitcher plant	E	No Effect
Sisyrinchium dichotomum	White irisette	E	No Effect

NOTE:

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

"T" Denotes Threatened (a species that is likely to become endangered species within the foreseeable future throughout all or a significant portion of its range).
"T(S/A)" Denotes Threatened due to similarity of appearance (a species that is threatened due to similarity of appearance with other rare species and is listed for its protection).

REGULATORY APPROVALS

Section 404 Permit: It is anticipated that the construction of the temporary causeways 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 construction of the causeway. All other aspects of this project are being processed by the Federal Highway Administration as a "Categorical Exclusion" in accordance with 23 CFR § 771.115(b). The NCDOT requests that these activities be authorized by a Nationwide Permit 23 (FR number 10, pages 2020-2095; January 15, 2002).

Section 401 Permit: We anticipate 401 General Certification 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 Environment and Natural Resources, Division of Water Quality, for their records.

We anticipate that the Corps of Engineers will request comments from the North Carolina Wildlife Resources Commission (NCWRC) prior to authorization. By copy of this letter and attachment, NCDOT hereby requests NCWRC review. NCDOT requests that NCWRC forward their comments to the Corps of Engineers.

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 Mr. Chris Manley at (919) 715-1487 or cdmanley@dot.state.nc.us.

Sincerely,

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

W/attachment
Mr. John Hennessy, NCDWQ (2 copies)
Ms. Marella Buncick, USFWS
Ms. Marla Chambers, NCWRC
Mr. Harold Draper, TVA
Dr. David Chang, P.E., Hydraulics
Mr. Greg Perfetti, P.E., Structure Design
Mr. Mark Staley, Roadside Environmental
Mr. J. B. Setzer, P.E., Division Engineer
Mr. Mark Davis, 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. David Franklin, USACE, Wilmington
Ms. Beth Harmon, EEP
Mr. Todd Jones, NCDOT External Audit Branch
Ms. Stacy Baldwin, P.E., PDEA

Office Use Only: Form Version March 05

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

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

I. Processing

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

2. Nationwide, Regional or General Permit Number(s) Requested: NW 23, NW 33

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

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

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

II. Applicant Information

1. Owner/Applicant Information
   Name: North Carolina Department of Transportation
   Mailing Address: 1548 Mail Service Center
   Raleigh, NC 27699-1548
   Telephone Number: 919-733-3147 Fax Number: 919-766-9794
   E-mail Address: gthorpe@dot.state.nc.us

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

III. Project Information

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

1. Name of project: Bridge replacement over Featherstone Creek on SR 1006

2. T.I.P. Project Number or State Project Number (NCDOT Only): B-3662

3. Property Identification Number (Tax PIN): _____

4. Location
   County: Henderson Nearest Town: Hendersonville
   Subdivision name (include phase/lot number): _____
   Directions to site (include road numbers/names, landmarks, etc.): from Hendersonville, travel north on N. Main St. for approximately 1.7 miles, travel north on Clear Creek Rd for approximately 2.2 miles, travel northwest for approximately 1.1 miles.

5. Site coordinates (For linear projects, such as a road or utility line, attach a sheet that separately lists the coordinates for each crossing of a distinct waterbody.)
   Decimal Degrees (6 digits minimum): 35° 22.462' °N 82° 28.181' °W

6. Property size (acres): N/A

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

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: A bridge 26 feet in length crossing the stream for vehicular traffic. Land use is suburban, agricultural, residential, industrial, comercial, and undeveloped wooded areas

10. Describe the overall project in detail, including the type of equipment to be used: Replacement of existing bridge on new alignment approximately 50 feet south of the existing bridge with a triple barrel reinforced concrete box culvert. Cranes, earth moving equipment.

11. Explain the purpose of the proposed work: To replace Bridge No. 20

IV. Prior Project History

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

N/A

V. Future Project Plans

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

N/A

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

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

1. Provide a written description of the proposed impacts: Proposed permanent impacts to include 84 feet (0.017 acre) to Waters of the U.S. Proposed temporary impacts include 111 feet (0.025 acre) to Waters of the U.S.

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

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

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

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

Stream Impact Number (indicate on map)	Stream Name	Type of Impact	Perennial or Intermittent?	Average Stream Width Before Impact	Impact Length (linear feet)	Area of Impact (acres)
1	Featherstone Cr.	Perm. fill	Perennial	20	84	0.017
1	Featherstone Cr.	Temp. fill	Perennial		111	0.025
Total Stream Impact (by length and acreage)					84/111	0.017/0.25

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

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

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

Stream Impact (acres):	0.017/ 0.25
Wetland Impact (acres):	
Open Water Impact (acres):	
Total Impact to Waters of the U.S. (acres)	0.017/ 0.25
Total Stream Impact (linear feet):	84/ 111

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

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

VII. Impact Justification (Avoidance and Minimization)

Specifically describe measures taken to avoid the proposed impacts. It may be useful to provide information related to site constraints such as topography, building ordinances, accessibility, and financial viability of the project. The applicant may attach drawings of alternative, lower-impact site layouts, and explain why these design options were not feasible. Also discuss how impacts were minimized once the desired site plan was developed. If applicable, discuss construction techniques to be followed during construction to reduce impacts. The proposed project will create a safer road alignment and allow traffic to be maintained on-site. The proposed box culvert will have low flow sills and be buried one foot below the streambed to allow unimpeded passage for aquatic life. NCDOT's Best Management Practices for Bridge Demolition and Removal and the NCDOT Best Management Practices for Protection of Surface Waters will be adhered to during construction.

VIII. Mitigation

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

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

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

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

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

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

   Amount of stream mitigation requested (linear feet): 84
   Amount of buffer mitigation requested (square feet): N/A
   Amount of Riparian wetland mitigation requested (acres): N/A
   Amount of Non-riparian wetland mitigation requested (acres): N/A
   Amount of Coastal wetland mitigation requested (acres): N/A

IX. Environmental Documentation (required by DWQ)

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

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

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

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

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

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

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

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

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

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

XI. Stormwater (required by DWQ)

Describe impervious acreage (existing and proposed) versus total acreage on the site. Discuss stormwater controls proposed in order to protect surface waters and wetlands downstream from the property. If percent impervious surface exceeds 20%, please provide calculations demonstrating total proposed impervious level. The proposed impervious surface area will remain approximately the same as the existing site conditions. NCDOT will use Best Management Practices for erosion control during construction.

XII. Sewage Disposal (required by DWQ)

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

XIII. Violations (required by DWQ)

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

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

XIV. Cumulative Impacts (required by DWQ)

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

XV. Other Circumstances (Optional):

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

8/2/15

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

Henderson County
SR 1006 (Howard Gap Road)
Bridge No. 20 Over Featherstone Creek
Federal-Aid Project No. BRSTP-1006(12)
State Project No. 8.2951701
WBS 33207.1.1
T.I.P. No. B-3662

CATEGORICAL EXCLUSION

UNITED STATES DEPARTMENT OF TRANSPORTATION

FEDERAL HIGHWAY ADMINISTRATION

AND

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

DIVISION OF HIGHWAYS

APPROVED:

04/02/04
DATE

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

4/6/04
DATE

for John F. Sullivan, III, P.E.
Division Administrator
Federal Highway Administration

Henderson County
SR 1006 (Howard Gap Road)
Bridge No. 20 Over Featherstone Creek
Federal-Aid Project No. BRSTP-1006(12)
State Project No. 8.2951701
WBS 33207.1.1
T.I.P. No. B-3662

CATEGORICAL EXCLUSION

April 2004

Documentation Prepared by:
Mulkey Engineers and Consultants

J. A. Bissett, Jr., P.E.
Raleigh Branch Manager

4-1-04
Date

Pamela R. Williams
Project Manager

4/01/04
Date

For the North Carolina Department of Transportation

John Wadsworth, P.E.
Project Manager
Consultant Engineering Unit

4-2-04
Date

PROJECT COMMITMENTS

Henderson County
SR 1006 (Howard Gap Road)
Bridge No. 20 Over Featherstone Creek
Federal-Aid Project No. BRSTP-1006(12)
State Project No. 8.2951701
WBS 33207.1.1
T.I.P. No. B-3662

In addition to the standard Nationwide Permit No. 23 Conditions, the General Nationwide Permit Conditions, Section 404 Only Conditions, Regional Conditions, State Consistency Conditions, NCDOT's Guidelines for Best Management Practices for Bridge Demolition and Removal, NCDOT's Best Management Practices for the Protection of Surface Waters, General Certification Conditions, and Section 401 Conditions of Certification, the following special commitments have been agreed to by NCDOT:

Project Development and Environmental Analysis Branch:

A copy of the environmental planning document will be submitted to the Tennessee Valley Authority and United States Army Corps of Engineers (COE).

Hydraulics Unit / Structure Design Unit:

This project will be reviewed under Section 26a of the Tennessee Valley Authority (TVA) Act. The final bridge plans, hydraulic analysis of the effects of the replacement structure on the 100-year flood elevation, and notice of compliance with the Historic Preservation Act of 1966 will be forwarded to TVA for approval.

Henderson County
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State Project No. 8.2951701
T.I.P. No. B-3662

INTRODUCTION: Replacement of Bridge No. 20 is included in the 2004-2010 North Carolina Department of Transportation (NCDOT) Transportation Improvement Program (T.I.P.) and in the Federal-Aid Bridge Replacement Program. The bridge location is shown in Figure 1. No substantial environmental impacts are anticipated. The project is classified as a Federal "Categorical Exclusion."

I. PURPOSE AND NEED

Bridge Maintenance Unit records indicate the bridge has a sufficiency rating of 63.7 out of a possible 100 for a new structure. The bridge is considered functionally obsolete and structurally deficient. The replacement of this inadequate structure will result in safer and more efficient traffic operations.

Bridge No. 20 had a sufficiency rating of 48.2 in June 1999. Bridge maintenance was required to increase the load capacity of the bridge and maintain safety. The following maintenance was performed: reinforced beams, supplement or replace piles, re-nail loose floor and repair or replace rails. The maintenance performed increased the sufficiency rating of the bridge to 63.7; however, the maintenance is a temporary solution until this inadequate structure can be replaced.

II. EXISTING CONDITIONS

Bridge No. 20 is located on SR 1006 (Howard Gap Road) in Henderson County. SR 1006 is classified as a Major Collector by the statewide functional classification system. Land use in the project area is suburban, with a mixture of agriculture, residential, industrial, commercial, and undeveloped wooded areas. SR 1006 is parallel to Interstate 26; however, the nearest interchange is approximately 2.5 miles (4.0 kilometers) to the south.

The existing bridge is a two-span structure with an overall length of 26 feet (7.9 meters) and a clear roadway width of 19.1 feet (5.8 meters). It was constructed in 1950. The bridge consists of a timber deck on steel I-beams supported by timber caps and piles. Bridge No. 20 is not presently posted for single vehicle (SV) or truck-tractor semi trailer (TTST).

The approach roadway consists of two lanes with a clear roadway width of 19 feet (5.8 meters). Through the project area SR 1006 consists of three curves. Approximately 250 feet (76.2 meters) north of the existing bridge, SR 1006 is on a curve with a radius of 940 feet (287 meters). Crossing the existing bridge, SR 1006 is on a curve with a radius of 1350 feet (412 meters), and approximately 260 feet (79 meters) south of the bridge SR 1006 is on a curve with a radius of 658 feet (200 meters). The posted speed limit is 35 miles per hour (mph) {55 kilometers per hour (km/h)}.

An overhead power line is located east and west of the bridge. It is anticipated that the utility impacts will be minimal.

This section of SR 1006 in Henderson County is not part of a designated bicycle route nor is it listed in the TIP as needing incidental bicycle accommodations.

The 2004 estimated average daily traffic (ADT) volume is 7,400 vehicles per day (vpd). The projected ADT is 13,200 vpd by the design year 2030. The percentages of truck traffic are 4% DUALS and 2% TTST.

Henderson County Public Schools has ten buses that cross Bridge No. 20 twice per day.

Three accidents were reported in the vicinity of Bridge No. 20 during the period from August 1, 2000 to July 31, 2003. There were no fatalities.

III. ALTERNATIVES

A. Project Description

Based on the preliminary hydraulics report, the proposed replacement structure for Bridge No. 20 will be a three-barrel, 8-foot (2.4-meter) by 9-foot (2.7-meter) reinforced concrete box culvert measuring approximately 65 feet (19.8 meters) in length. The culvert will be buried one foot (0.3 meter) below the streambed to allow unimpeded passage for fish and other organisms. The length and opening size of the proposed structure may increase or decrease as necessary to accommodate peak flows, as determined by a more detailed hydraulic analysis to be performed during the final design phase of the project.

The proposed approach roadway will consist of two 12-foot (3.6-meter) travel lanes and 8-foot (2.4-meter) shoulders, including 4-foot (1.2-meter) paved shoulders (Figure 4). The proposed grade will be approximately the same as the existing roadway.

B. Build Alternatives

Two build alternatives studied for replacing the existing bridge are described below.

Alternative A replaces the bridge in place with a reinforced concrete box culvert and utilizes an off-site detour to maintain traffic during construction (Figure 2). The off-site detour is approximately 2.5 miles (4.0 kilometers) in length along the following routes: SR 1528 (Locust Grove Road) and SR 1559 (Salisbury Road). The estimated road user cost associated with the detour route is approximately $2,135,250 per year. Due to the high road user cost, Alternative A was not selected as the preferred alternative.

Alternative B (Preferred) replaces the bridge on new alignment with a reinforced concrete box culvert (Figure 2a). Traffic will be maintained on the existing roadway and structure during construction. SR 1006 will be realigned approximately 50 feet (15.2 meters) downstream (south) of the existing bridge. The new alignment will be on a continuous curve with a radius of approximately 1350 feet (412 meters). The west and east approaches will extend approximately 600 feet (183 meters).

C. Alternatives Eliminated From Further Study

The "do-nothing' alternative will eventually necessitate removal of the existing structure and closure of SR 1006. This is not desirable due to the service provided by the bridge and SR 1006.

Investigation of the existing structure by the Bridge Maintenance Unit indicates that further rehabilitation is not feasible due to the age and deteriorated condition of the bridge.

D. Preferred Alternative

Alternative B, replacing the existing bridge on new alignment with a reinforced concrete box culvert, is the preferred alternative. Alternative B was selected because it improves the horizontal alignment by eliminating the existing reverse curves and increases sight distance. This alternative also allows traffic to be maintained on-site during construction.

The Division Engineer concurs with Alternative B as the preferred alternative.

IV. Estimated Costs

The estimated costs based on current prices are as follows:

	Alternative A	Alternative B (Preferred)
Structure Removal (existing)	$ 6,300	$ 6,300
Structure (proposed)	150,400	150,400
Roadway Approaches	136,700	327,100
Miscellaneous and Mobilization	73,600	170,200
Engineering and Contingencies	58,000	96,000
ROW/Const. Easements/Utilities:	38,250	63,250
TOTAL	$ 463,250	$ 813,250

The estimated cost of the project as shown in the 2004-2010 Transportation Improvement Program is $405,000, including $50,000 for right-of-way, $80,000 in prior years, and $275,000 for construction.

V. Natural Resources

A. Methodology

Materials and literature supporting this investigation have been derived from a number of sources including U.S. Geological Survey (USGS) topographic mapping (Fruitland, NC and Henderson, NC 7.5 minute quadrangles), U.S. Fish and Wildlife Service (FWS), National Wetlands Inventory mapping (NWI) (Fruitland, NC and Henderson, NC 7.5 minute quadrangles), Natural Resources Conservation Service (NRCS) soils mapping (SCS 1980), and recent aerial photography.

The site was visited on January 22 and June 8, 2001. The study corridor was walked and visually surveyed for substantial features. Special concerns evaluated in the field included:

- Potential protected species habitat.
- Wetlands and water quality protection in Featherstone Creek.

Plant community descriptions are based on a classification system utilized by N.C. Natural Heritage Program (NHP) (Schafale and Weakley 1990). When appropriate, community classifications were modified to better reflect field observations. Vascular plant names follow nomenclature found in Radford *et al.* (1968) with exceptions for updated nomenclature (Kartesz 1998). Jurisdictional areas were evaluated using the three-parameter approach following U.S. Army Corps of Engineers (COE) delineation guidelines (DOA 1987). Jurisdictional areas were characterized according to a classification scheme established by Cowardin *et al.* (1979). Aquatic and terrestrial wildlife habitat requirements and distributions were determined by supportive literature (Martof *et al.* 1980; Potter *et al.* 1980; Webster *et al.* 1985; Menhinick 1991; Hamel 1992; Palmer and Braswell 1995; and Rohde *et al.* 1994). Water quality information for area streams and tributaries was derived from available sources (DWQ 2000a, 2000b). Quantitative sampling was not undertaken to support existing data.

The February 24, 2003 FWS (accessed 2/19/04 via Internet) listing of federally protected species with ranges extending into Henderson County was utilized for this report. In addition, NHP records documenting presence of federally or state listed species were consulted before commencing field investigations.

B. Physiography and Soils

Hendersonville and the surrounding area are underlain by the Chauga Belt geologic formation located immediately east of the Brevard fault zone. Intrusive rocks underlie area soils. These rocks consist of Gneiss and Monzonite, which generally weather to form acidic soils. The Chauga Belt is located in the Blue Ridge Physiographic province of North Carolina. Topography is characterized by moderately to steeply sloping terrain with narrow floodplains along drainageways. The study corridor crosses an alluvial outwash valley contained within relatively steep (5 to 25 percent slope) valley walls. Elevations in the study corridor range from a low of approximately 2100 feet (640 meters) National Geodetic Vertical Datum (NGVD) to a high of approximately 2140 feet (652 meters) NGVD on slopes at the southern study corridor terminus (USGS Fruitland, NC and Hendersonville, NC 7.5 minute quadrangles).

Based on NRCS soils mapping for Henderson County (SCS 1980), the study corridor is underlain by Comus fine sandy loam (*Fluvaquentic Dystrochrepts*), Hayesville loam (*Typic Hapludults*), and Bradson gravelly loam (*Typic Hapludults*). The majority of the study corridor is characterized by the Featherstone Creek floodplain, which is mapped as the Comus Series. Slopes to the south of the floodplain which are relatively steep (15 to 25 percent) are mapped as the Hayesville Series. Slopes to the north of the floodplain which are moderately steep (2 to 7 percent) are mapped as the Bradson series.

The Comus series is characterized by well-drained and moderately permeable soils, which occur in floodplains formed from recent alluvium containing mica. Within this mapping unit, the depth to bedrock is approximately 72 inches (183 centimeters) and the seasonal high water table is approximately 30 inches (76 centimeters) below the ground surface. This soil series is considered non-hydric for Henderson County (NRCS 1997). Limitations in this soil series occur due to a seasonal high water table and flooding.

The Hayesville series is characterized by well-drained and moderately permeable soils, which occur on broad, smooth ridge tops consisting of residuum from granite, gneiss, and schist. Within this mapping unit the depth to bedrock is approximately 60 inches (152 centimeters) and the seasonal high water table is approximately 6 feet (1.8 meters) below the ground surface. This soil series is considered non-hydric for Henderson County (NRCS 1997).

The Bradson series is characterized by well-drained and moderately permeable soils, which occur on broad, smooth, high stream terraces formed in colluvium and alluvium derived from crystalline rocks. Within this mapping unit the depth to bedrock is approximately 60 inches (152 centimeters) and the seasonal high water table is approximately 6 feet (1.8 meters) below the ground surface. This soil series is considered non-hydric for Henderson County (NRCS 1997). No limitations to bridge replacement occur within this soil mapping unit.

C. Water Resources

1. Waters Impacted

The study corridor is located within sub-basin 04-03-02 of the French Broad River Basin (DWQ 2000a). This area is part of USGS Hydrologic Unit 06010105 of the Tennessee Region (Region 06). The structure targeted for replacement spans Featherstone Creek. There is no direct involvement of additional streams or tributaries. This section of Featherstone Creek has been assigned Stream Index Number 6-55-12 by the N.C. Division of Water Quality (DWQ 2000b).

2. Water Resource Characteristics

Featherstone Creek is a well defined, third order, mountain stream with moderate flow over sand and gravel substrate. The upper reaches of Featherstone Creek are characterized by steep valley slopes with narrow floodplains. These headwater streams drain to a relatively wide, flat, alluvial floodplain near the convergence of Featherstone Creek with the larger Mud Creek. Featherstone Creek at Bridge No. 20 is characterized by a drainage basin encompassing approximately 4 square miles (10.4 square kilometers). Within the study corridor, Featherstone Creek is a straight, entrenched channel averaging approximately 20 feet (6.1 meters) in width and 6.0 feet (1.8 meters) in depth. During field investigations, water clarity was good, flow velocity was moderate, and water depth was approximately 0.5 to 1.0 foot (0.2 to 0.3 meter). The stream bed is composed of sand and gravel with some larger stones under the bridge. The stream channel appears to have been dredged and straightened and is currently downcutting and eroding into the adjacent banks. This erosion appears to have resulted in a narrow floodplain (approximately 3 feet [1.0 meters] in width) adjacent to the southern edge of the channel.

Classifications are assigned to waters of the State of North Carolina based on the existing or contemplated best usage of various streams or segments of streams in the basin. A best usage classification of **C** has been assigned to Featherstone Creek. The designation **C** denotes that appropriate uses include aquatic life propagation and survival, fishing, wildlife, secondary recreation, and agriculture. Secondary recreation refers to human body contact with waters on an infrequent or incidental basis. No designated High Quality Waters (**HQW**), Outstanding Resource Waters (**ORW**), Water Supply I (**WS-I**), Water Supply II (**WS-II**) waters or Trout (Tr) waters occur within one mile (1.6 kilometers) of the study corridor (DWQ 2000b). No watershed Critical Areas (CA) are designated within one mile (1.6 kilometers) of the study corridor.

The Division of Water Quality (DWQ) has initiated a whole-basin approach to water quality management for the 17 river basins within the state. Water quality for the proposed study corridor is summarized in the French Broad River basin wide water quality plan (DWQ 2000a). Based on DWQ data, Featherstone Creek currently is rated as **Not Supporting** its designated uses due to turbidity and high levels of fecal coliform bacteria. Featherstone Creek is not rated for ambient water quality; however, Mud Creek, approximately 1.7 miles (2.7 kilometers) upstream of the confluence with Featherstone Creek, has a bioclassification rating of **Poor** based on macroinvertebrate community sampling (DWQ 2000a).

The study corridor sub-basin of the French Broad River (04-03-02) overall supports 83 permitted point source dischargers. Only six of these dischargers are permitted for greater than 0.5 million gallons per day (1.9 million liters per day). The Mud Creek portion of the sub-basin is the most developed watershed in Henderson County. Although there are no point-source discharges directly associated with Featherstone Creek, the Henderson Waste Water Treatment Plant is located on Mud Creek approximately 1.7 miles (2.7 kilometers) upstream of the confluence with Featherstone Creek. Major non-point sources of pollution for the Mud Creek sub-basin include agriculture, urban, construction, forestry, onsite wastewater disposal, and atmospheric deposition. Sedimentation and nutrient inputs are major problems associated with non-point source discharges and often result in fecal coliform, heavy metals, oil from roads and parking lots, and increased nutrient levels in surface waters (DWQ 2000a).

3. Anticipated Impacts to Water Resources

a) General Impacts

Temporary construction impacts due to erosion and sedimentation will be minimized through implementation of NCDOT's Best Management Practices for the Protection of Surface Waters. The contractor will follow contract specifications pertaining to erosion control measures as outlined in 23 CFR 650 Subpart B and Article 107-13 entitled "Control of Erosion, Siltation, and Pollution" (NCDOT, Specifications for Roads and Structures). These measures include the use of dikes, berms, silt basins, and other containment measures to control runoff; elimination of construction staging areas in floodplains and adjacent to waterways; re-seeding of herbaceous cover on disturbed sites; management of chemicals (herbicides, pesticides, de-icing compounds) with potential negative impacts on water quality; and avoidance of direct discharges into streams by catch basins and roadside vegetation.

The proposed bridge replacement will allow for continuation of pre-project stream flows in Featherstone Creek, thereby protecting the integrity of the waterway. Long-term impacts to adjacent reaches resulting from construction are expected to be negligible.

b) Impacts related to Bridge Demolition and Removal

In order to protect the water quality and aquatic life in the area affected by this project, the NCDOT and all potential contractors will follow appropriate guidelines for bridge demolition and removal. These guidelines are presented in three NCDOT documents entitled "Pre-Construction Guidelines for Bridge Demolition and Removal," "Policy: Bridge Demolition and Removal in Waters of the United States," and "Best Management Practices for Bridge Demolition and Removal" (all documents dated 9/20/99). Guidelines followed for bridge demolition and removal are in addition to those implemented for Best Management Practices for the Protection of Surface Waters.

There is little potential that components of the existing bridge may be dropped into waters of the United States during construction. The bridge is composed completely of timber and steel; therefore, no temporary fill is expected to result from bridge removal. **This project can be classified as Case 3, where there are no special restrictions other than those outlined in Best Management Practices for Protection of Surface Waters.** NCDOT will coordinate with the various resource agencies during project planning to ensure that all concerns regarding bridge demolition are resolved.

D. Biotic Resources

1. Plant Communities

Two distinct plant communities were identified within the study corridor: urban/disturbed land and upland pine/mixed deciduous forest. These plant communities are described below.

a) Urban/Disturbed Land

Urban/disturbed land makes up the dominant plant community (95 percent) within the study corridor. The majority of this plant community is characterized by maintained grassy areas subject to regular mowing and maintenance. Grasses appear to include planted fescue (*Festuca* sp.) and rye (*Lolium* sp.) with numerous invasive herbaceous species such as crab grass (*Digitaria* sp.), plantain (*Plantago* sp.), clover (*Trifolium repens*), and other grasses such as panic-grasses (*Panicum* spp.). Residential structures also are characterized by landscaped environs, which include woody ornamental species such as white pine (*Pinus strobus*), mountain laurel (*Kalmia latifolia*), various junipers (*Juniperus* spp.), and azaleas (*Rhododendron* spp.).

Valley slopes within the southern portion of the study corridor support residential housing and out structures interspersed with disturbed forest characterized by an open understory. Canopy species include white pine, shortleaf pine (*Pinus echinata*), rock chestnut oak (*Quercus montana*), white oak (*Q. alba*), northern red oak (*Q. rubra*), scarlet oak (*Q. coccinea*), and pignut hickory (*Cary glabra*). The understory has been disturbed by residential clearing, construction, and landscaping. However, some areas are characterized by flora adapted to disturbed habitats

including Chinese privet (*Ligustrum sinense*), pokeweed (*Phytolacca americana*), and American holly (*Ilex opaca*) entangled with various vines such as common greenbrier (*Smilax rotundifolia*) and poison ivy (*Toxicodendron radicans*).

A narrow margin of riparian fringe occurs adjacent to and within the banks of Featherstone Creek. This community appears to be maintained regularly by bush hogging and vegetative clearing; however, a dense thicket has grown on portions of the channel bank. Spoil piles adjacent to the southwestern stream bank support a more mature community as regular maintenance appears to be hindered by the elevated spoil material. The banks of the creek are characterized by hydrophytic vegetation such as black willow (*Salix nigra*), tag alder (*Alnus serrulata*), Chinese privet, blackberry (*Rubus* sp.), smooth sumac (*Rhus glabra*), and river birch (*Betula nigra*). Interspersed within the woody vegetation, a dense herbaceous community exists characterized by rushes and sedges (*Juncus* spp. and *Carex* spp.), broomsedge (*Andropogon* sp.), woolly mullein (*Verbascum thapsus*), pokeweed, and goldenrod (*Solidago* sp.) entangled in honey suckle (*Lonicera japonica*) and bittersweet (*Celastrus scandens*).

b) Upland Pine/Mixed Deciduous Forest

Upland pine/mixed deciduous forest makes up a small portion (five percent) of the study corridor. This community occurs on upland slopes located in the northern terminus of the corridor, west of Howard Gap Road. Canopy species include tulip tree (*Liriodendron tulipifera*), white pine, shortleaf pine, southern red oak (*Quercus falcata*), and scarlet oak. This community has been disturbed by land clearing associated with Howard Gap Road and numerous driveways. The understory is characterized by dense thickets of American holly, Chinese privet, blackberry, common greenbrier, and black locust (*Robinia pseudo-acacia*). Although the dense nature of the understory appears to have limited herbaceous ground cover, Christmas fern (*Polystichum acrostichoides*) and common ragweed (*Ambrosia artemisifolia*) were identified within this community.

2. Wildlife

Possibly due to the season in which field surveys were conducted, only one mammal species, woodchuck (*Marmota monax*), was observed within the study corridor. Frost heave appears to have obliterated tracks left by species, and cold temperatures during the site visit may have rendered many species inactive. In addition, Howard Gap Road receives an abundance of traffic and only species adapted to anthropogenic disturbances are expected to occur in the study corridor. Mammals expected to occur within the study corridor include Virginia opossum (*Didelphis virginiana*), eastern cottontail (*Sylvilagus floridanus*), gray squirrel (*Sciurus carolinensis*), raccoon (*Procyon lotor*), white-tailed deer (*Odocoileus virginianus*), eastern mole (*Scalopus aquaticus*), eastern pipistrelle (*Pipistrellus subflavus*), red bat (*Lasiurus borealis*), and eastern chipmunk (*Tamias striatus*).

Birds observed within or adjacent to the corridor include American goldfinch (*Carduelis tristis*), northern cardinal (*Cardinalis cardinalis*), northern mockingbird (*Mimus polyglottos*), and red-bellied woodpecker (*Melanerpes carolinus*). Other bird species expected to occur in the study corridor include birds acclimated to road noise and open areas adjacent to dense thickets. These

species are expected to include Carolina wren (*Thryothorus ludovicianus*), Carolina chickadee (*Poecile carolinensis*), song sparrow (*Melospiza melodia*), and tufted titmouse (*Baeolophus bicolor*). Species that hunt over open areas and roadways, such as turkey vulture (*Cathartes aura*) and red-tailed hawk (*Buteo jamaicensis*), would also be expected in the study corridor.

No terrestrial reptile or amphibian species were observed during the site visit. Some terrestrial reptiles which may occur within the study corridor include eastern box turtle (*Terrapene carolina*), rat snake (*Elaphe obsoleta*), American toad (*Bufo americana*), eastern fence lizard (*Sceloporus undulatus*), five-lined skink (*Eumeces fasciatus*), copperhead (*Agkistrodon contortrix*), spring peeper (*Pseudacris crucifer*), and spotted salamander (*Ambystoma maculatum*).

3. Aquatic Communities

Limited surveys resulted in no observations of aquatic species within the study corridor. Aquatic or semi-aquatic species expected to occur within the study corridor include beaver (*Castor canadensis*), northern water snake (*Nerodia sipedon*), queen snake (*Regina septemvittata*), green frog (*Rana clamitans*), and blackbelly salamander (*Desmognathus quadramaculatus*).

No sampling was undertaken in Featherstone Creek to determine fishery potential. Visual surveys of Featherstone Creek did not reveal the presence of fish, molluscan fauna, or other aquatic life; however, fish species which may be present in Featherstone Creek include creek chub (*Semotilus atromaculatus*), river chub (*Nocomis micropogon*), northern hog sucker (*Hypentelium nigricans*), white sucker (*Catostomus commersoni*), and redbreast sunfish (*Lepomis auritus*).

4. Anticipated Impacts to Biotic Communities

a) Terrestrial Communities

Due to the limited extent of infringement on natural communities, the proposed bridge replacement will not result in substantial loss or displacement of known terrestrial animal populations. No substantial habitat fragmentation is expected since most permanent improvements will be restricted to existing roadside margins. Construction noise and associated disturbances will have short-term impacts on avifauna and migratory wildlife movement patterns. Long-term impacts are expected to be inconsequential for replacement of Bridge No. 20 over Featherstone Creek.

Plant community areas are estimated based on the amount of each plant community present within the projected rights-of-way and temporary easements. Permanent impacts are considered to be those impacts that occur within the proposed right-of-way that will permanently alter the existing plant community. Temporary impacts are those impacts that occur outside the right-of way boundary but within the proposed temporary easement or impacts to communities that will be reestablished following construction. A summary of potential plant community impacts is presented in Table 1.

Table 1: Projected plant community impacts within the alternative corridors.

		Plant Community		
Alternative Corridors	**Impact Type**	**Upland Pine/Mixed Deciduous Forest**	**Urban/ Disturbed Land**	**Total**
A	**Temporary**	-- --	0.48 (0.19)	0.48 (0.19)
	Permanent	0.02 (0.008)	-- --	0.02 (0.008)
	Total	0.02 (0.008)	0.48 (0.19)	0.50 (0.20)
B (Preferred)	**Temporary**	-- --	0.65 (0.26)	0.65 (0.26)
	Permanent	0.03 (0.012)	0.28 (0.11)	0.31 (0.12)
	Total	0.03 (0.012)	0.93 (0.37)	0.96 (0.38)

Notes: Permanent impacts are considered to be those impacts that occur within the cut-fill limits. Temporary impacts are those impacts that occur outside of cut-fill limits and inside of the proposed right-of-way. Plant community areas, which are to be impacted but returned to pre-project composition, will be considered as temporarily impacted. Areas are given in acres (hectares).

Very little undisturbed plant communities occur within the study corridor. Approximately 95 percent of the existing vegetation is actively maintained (urban/disturbed land). Total plant community impacts are greatest for Alternative B (Preferred) because of the new alignment of the project and the extended dimensions of the proposed alternative. However, impacts associated with both Alternative A and Alternative B (Preferred) primarily affect urban disturbed land. Proposed impacts to natural plant communities are expected to be negligible.

Permanent impacts to plant communities resulting from bridge replacements are generally restricted to narrow strips adjacent to the existing bridge and roadway approach segments. No area of natural plant community is expected to be substantially impacted by the proposed project. From an ecological perspective, impacts of upgrading existing road facilities are minimal. Fragmentation of natural plant communities will not be created, as the project will result primarily in alteration of community boundaries.

b) Wetland Communities

Field investigations involved the survey for wetlands subject to jurisdictional consideration under Section 401 of the Clean Water Act as "waters of the United States" within the project corridor (33 CFR section 328.3). These areas are defined by the presence of three primary criteria: hydric soils, hydrophytic vegetation, and evidence of hydrology at or near the surface for a portion (12.5 percent) of the growing season (DOA 1987). NWI mapping indicates that floodplains of Featherstone Creek exhibit characteristics of a palustrine, broad-leaved, deciduous forest system that is temporarily flooded (PFO1A) (Cowardin *et al.* 1979). However, no evidence of hydric soils was identified within the floodplain and NRCS mapping indicates that the floodplain is underlain by well drained, non-hydric soils. **Field investigations indicate that no wetlands occur adjacent to or within the floodplain of Featherstone Creek.**

c) Aquatic Communities

Potential impacts to down-stream aquatic habitat may be substantial since both alternatives include replacing the existing bridge with a box culvert. Stream integrity will only be retained through proper installation of the box culvert and proper installation and removal of the temporary corrugated metal designed to result in maintenance of regular stream flow. Short-term impacts associated with turbidity and suspended sediments will affect benthic populations. Temporary impacts to downstream habitats from increased sediment during construction will be minimized by the implementation of stringent erosion control measures.

E. Special Topics

1. "Waters of the United States": Jurisdictional Issues

Surface waters within the embankments of Featherstone Creek are subject to jurisdictional consideration under Section 404 of the Clean Water Act as waters of the United States (33 CFR section 328.3). NWI mapping indicates that Featherstone Creek exhibits characteristics of a palustrine, broad-leaved deciduous, forested, wetland system (PFOIA; Cowardin *et al.* 1979). Field investigations indicate that within the study corridor, Featherstone Creek exhibits characteristics of a bank-to-bank, third-order cold water mountain stream with no adjacent forested wetlands.

Direct impacts associated with the project alternatives will involve fill in the existing channel consisting of a triple barrel 8-foot by 9-foot (2.4-meter by 2.7-meter) reinforced concrete box culvert. For both alternatives, the box culverts are proposed to be 65 feet (19.8 meters) in length. Thus, **both alternatives will result in permanent impacts of 65 linear feet (19.8 linear meters) or 0.02 acre (0.01 hectare) to waters of the United States (Featherstone Creek).** Both alternative plans are designed to allow for normal stream flows, as well as flows associated with major storm water events.

Alternatives A and B involve the same stream impacts. Both alternative construction plans include three barrels to allow normal stream flows and conditions as well as flows associated with major storm water events (floodplain culverts).

2. Permits

This project is being processed as a Categorical Exclusion (CE) under Federal Highway Administration (FHWA) guidelines. The COE has Nationwide Permit (NWP) No. 23 (61 FR 65874, 65916; December 13, 1996) available for CEs due to minimal impacts expected with bridge construction. DWQ has made available a General 401 Water Quality Certification for NWP No. 23. However, authorization for jurisdictional area impacts through use of this permit will require written notice to DWQ. In the event that NWP No. 23 will not suffice, minor impacts attributed to bridging and associated approach improvements are expected to qualify under General Bridge Permit 031 issued by the Wilmington COE District. Notification to the Asheville COE office is required if this general permit is to be utilized.

This project will be reviewed under Section 26a of the Tennessee Valley Authority (TVA) Act. The final bridge plans, hydraulic analysis of the effects of the replacement structure on the 100-year flood elevation, and notice of compliance with the Historic Preservation Act of 1966 will be forwarded to TVA for approval.

3. Mitigation

Compensatory mitigation is not proposed for this project due to the limited nature of project impacts. However, utilization of BMPs is recommended in an effort to minimize impacts. A final determination regarding mitigation requirements rests with the COE and DWQ.

F. Rare and Protected Species

1. Federally Protected Species

Species with the federal classification of Endangered (E), Threatened (T), Threatened due to Similarity of Appearance (T [S/A]), or officially Proposed (P) for such listing are protected under the Endangered Species Act (ESA) of 1973, as amended (16 U.S.C. 1531 *et seq.*). The term "Endangered Species" is defined as "any species which is in danger of extinction throughout all or a substantial portion of its range," and the term "Threatened Species" is defined as "any species, which is likely to become an Endangered species within the foreseeable future throughout all or a substantial portion of its range," (16 U.S.C. 1532). The term "Threatened due to Similarity of Appearance" is defined as a species which is not "Endangered" or "Threatened," but "closely resembles an Endangered or Threatened species" (16 U.S.C. 1532). Federally protected species listed for Henderson County (FWS list dated February 24, 2003, accessed February 19, 2004 via Internet) are presented in Table 2.

Table 2. Federally protected Species in Henderson County (February 24, 2003 FWS list).

Common Name	Scientific Name	Status
Bog turtle	*Clemmys muhlenbergii*	T(S/A)
Appalachian elktoe	*Alasmidonta raveneliana*	E
Oyster mussel	*Epioblasma capsaeformis*	E
Swamp pink	*Helonias bullata*	T
Small-whorled pogonia	*Isotria medeoloides*	T
Bunched arrowhead	*Sagittaria fasciculata*	E
Mountain sweet pitcher plant	*Sarracenia jonesii*	E
White irisette	*Sisyrinchium dichotomum*	E

T (S/A) Indicates a species which is "Threatened due to Similarity of Appearance."

E Indicates a species, which is "Endangered."

T Indicates a species, which is "Threatened."

Bog Turtle - The bog turtle is a small turtle reaching an adult size of approximately 3 to 4 inches (8 to 10 centimeters). This otherwise darkly colored species is readily identifiable by the presence of a bright orange or yellow blotch on the sides of the head and neck (Martof *et. al.* 1980). The bog turtle has declined drastically within the northern portion of its range due to over-collection and habitat alteration. As a result, the FWS officially proposed in the January 29, 1997 Federal Register (62 FR 4229) to list bog turtle as threatened within the northern portion of its range, and within the southern portion of its range, which includes North Carolina, the bog turtle is proposed for listing as threatened due to similarity of appearance to the northern population. The proposed listing would allow incidental take of bog turtles in the southern population resulting from otherwise lawful activity.

The bog turtle is typically found in bogs, marshes, and wet pastures, usually in association with aquatic or semi-aquatic vegetation and small, shallow streams over soft bottoms (Palmer and Braswell 1995). In North Carolina, bog turtles have a discontinuous distribution in the Mountains and western Piedmont.

The bog turtle is listed as **Threatened due to Similarity of Appearance (T S/A)**. T S/A species are not subject to Section 7 consultation and a biological conclusion is not required. However, this project is not expected to affect the bog turtle as no bogs, marshes, or wet pastures occur within the study corridor. In addition, Featherstone Creek is characterized by moderate to fast flow volumes, with a sand and gravel substrate, which is an unsuitable habitat for bog turtles. NHP records indicate that bog turtles have not been documented within one mile (1.6 kilometers) of the study corridor and no bog turtles were observed during field surveys.

Appalachian Elktoe - Appalachian elktoe is a small, subovate- to kidney-shaped freshwater mussel that grows to approximately 3.1 inches (8.0 centimeters) in length, 1.4 inches (3.5 centimeters) in height, and one inch (2.5 centimeters) in width (Clarke 1981). The shell is thin, but not fragile, and exhibits slight inflation along the posterior ridge near the center. Beaks project only slightly above the hinge line. Lateral teeth are absent; however, the hinge plate of both valves is thickened. Small, pyramidal, compressed pseudocardinal teeth are present, and an interdental projection is present in the left valve. Juveniles are yellowish brown, but the periostracum (outer shell surface) is thicker and dark brown in adults. Individuals may be variably marked with prominent to obscure greenish rays. The nacre (shell interior) is shiny, blue to bluish white with salmon, pinkish, or brownish coloring in the central portion of the shell and beak cavity.

Appalachian elktoe is endemic to the upper Tennessee River system in the mountains of western North Carolina and eastern Tennessee. In North Carolina, this species may now be restricted to the Little Tennessee and Nolichucky drainages (LeGrand and Hall 1999). Recent N.C. Wildlife Resources Commission surveys have documented this species in the Little Tennessee River in Macon and Swain Counties, Cane River in Yancey County, and Nolichucky and North Toe Rivers in Yancey and Mitchell Counties. A new population has recently been found in the Little River near the Henderson-Transylvania County line. The Pigeon River once supported a population of this mussel, but now is reported to be severely polluted and no longer likely to support the species (TSCFTM 1990). Suitable habitat for Appalachian elktoe is well-oxygenated

riffle areas with sand and gravel substrate among cobbles and boulders. Current is usually moderate to swift and depth is no more than 3 feet (0.9 meter) (Parmalee and Bogan 1998).

BIOLOGICAL CONCLUSION: NCDOT environmental specialists visited the project site on March 5, 2002. Surveys were conducted at two locations in Mud Creek, which Featherstone Creek drains to. No mussels were found in the creek. An examination of Featherstone Creek revealed that suitable habitat is not present for mussel species. **NO EFFECT**

Oyster Mussel - The oyster mussel is a small freshwater mussel that grows to approximately 2.1 inches (7.0 centimeters) in length. The shell is dull to sub-shiny and yellowish-to green-colored with numerous dark green rays. The nacre is whitish to bluish in color. Shells of females are slightly inflated and thinner toward the posterior margin.

Oyster mussels inhabit small to medium-sized rivers characterized by sand to boulder substrata and moderate to swift currents. This species is sometimes associated with water willow (*Justicia americana*) and is found in gravel pockets between bedrock and swift currents. Four species of fish have been identified as hosts: spotted darter (*Etheostoma maculatum*), redline darter (*E. rufilineatum*), dusky darter (*Percina sciera*), and banded sculpin (*Cottus carollinae*) (FWS 2000)

The oyster mussel is endemic to the Cumberland and Tennessee River drainages in Alabama, Kentucky, Tennessee, Virginia, and North Carolina. Within North Carolina, the species was known to have been abundant in the early 1900s in the upper Tennessee River system of the mountains of western North Carolina and Tennessee. Currently the oyster mussel survives in nine tributaries of the Tennessee and Cumberland River systems in Kentucky, Tennessee, and Virginia. This species is now considered to have been "formerly reported" from the French Broad River (LeGrand and Hall 1999). Much of the historic range of this species has been impounded by the Tennessee Valley Authority and the U.S. Army Corps of Engineers. Other populations have probably been lost due to pollution and siltation. All known populations are small and vulnerable to disturbance.

BIOLOGICAL CONCLUSION: NCDOT environmental specialists visited the project site on March 5, 2002. Surveys were conducted at two locations in Mud Creek, which Featherstone Creek drains to. No mussels were found in the creek. An examination of Featherstone Creek revealed that suitable habitat is not present for mussel species. **NO EFFECT**

Swamp Pink: Swamp pink is a perennial, hydrophytic herb in the lily family with simple leaves in a basal rosette. Small scale-like leaves or bracts are found on a hollow flowering stem, which may be 16 inches (40 centimeters) tall in flower and 24 inches (60 centimeters) tall in fruit. The inflorescence consists of pink to lavender flowers borne on a raceme without bracts. Fruits consist of three-lobed papery capsules. Flowering occurs in April and May, with fruits present from May through July. Vegetative portions of the plant may emerge in April and persist through September (Massey *et al.* 1983).

In North Carolina, swamp pink is found in mountain swamps and bogs. Swamp pink occurs along small watercourses in permanently saturated, acidic, organic soils or black muck, which is mostly sphagnous (Porter and Wieboldt 1991). Swamp pink does not tolerate prolonged inundation, but can survive infrequent and brief flooding. In North Carolina, the current distribution is restricted to Henderson, Jackson, and Transylvania Counties (Amoroso 1999).

BIOLOGICAL CONCLUSION: Swamp pink occurs in permanently saturated, acidic, organic soils or black muck which is mostly sphagnous. Soils within the study corridor are mineral, well drained soils; therefore, no suitable habitat occurs within the study corridor. NHP records indicate that swamp pink has not been documented within 1.0 mile (1.6 kilometers) of the study corridor, and swamp pink was not observed during field surveys. The proposed project is not expected to adversely impact swamp pink due to the lack of potential habitat. **NO EFFECT**

Small-whorled Pogonia: The small-whorled pogonia is a terrestrial orchid growing to about 10 inches (25 centimeters) high. Five or six drooping, pale dusty green, widely rounded leaves with pointed tips are arranged in a whorl at the apex of the greenish or purplish, hollow stem. Typically a single, yellowish green, nearly stalkless flower is produced just above the leaves; a second flower rarely may be present. Flowers consist of three petals, which may reach lengths of 0.7 inch (1.7 centimeters), surrounded by three narrow sepals up to one inch (2.5 centimeters) in length. Flower production, which occurs from May to July, is followed by the formation of an erect ellipsoidal capsule 0.7 to 1.2 inches (1.7 to 3.0 centimeters) in length (Massey *et al.* 1983). This species may remain dormant for up to 10 years between blooming periods (Newcomb 1977).

The small-whorled pogonia is widespread, occurring from southern Maine to northern Georgia, but is very local in distribution. In North Carolina, this species is found in scattered locations in the Mountains, Piedmont and Sandhills (Amoroso 1999). Small-whorled pogonia is found in open, dry deciduous or mixed pine-deciduous forest, or along stream banks. Examples of areas providing suitable conditions (open canopy and shrub layer with a sparse herb layer) where small-whorled pogonia has been found include old fields, pastures, windthrow areas, cutover forests, old orchards, and semi-permanent canopy breaks along roads, streams, lakes, and cliffs (Massey *et al.* 1983). In the Mountains and Piedmont of North Carolina, this species is usually found in association with white pine (*Pinus strobus*) (Weakley 1993).

Habitat within the study corridor is largely characterized by maintained grassy areas. The banks of Featherstone Creek are maintained by regular mowing and become overgrown with dense scrubby vegetation when not maintained. Therefore, systematic surveys for this species were conducted during the flowering period (on June 8, 2001) within all areas of suitable habitat, resulting in no findings of small-whorled pogonia within the proposed alternative corridors. NHP records indicate that small-whorled pogonia has not been documented within 1.0 mile (1.6 kilometers) of the study corridor.

BIOLOGICAL CONCLUSION: The study corridor does contain suitable habitat for this species; however, based on an NHP record search and a systematic survey conducted

for this species during the flowering period, this project will not affect small-whorled pogonia. **NO EFFECT**

Bunched Arrowhead: Bunched arrowhead is a perennial, emergent, aquatic herb growing to 14 inches (35 centimeters) in height with simple, basal leaves. Two leaf forms are produced: phyllodes (blade-less) early in the season, and progressively longer, broader leaves later in the season (Kral 1983). The phyllodes are linear, distinctively flattened, spongy-tissued, and are up to 4 inches (10 centimeters) long and 0.8 inches (2 centimeters) wide. Later leaves may be spoon-shaped or narrowly oblanceolate and strap-like, growing to lengths of 14 inches (35 centimeters) and widths of 1.6 inches (4.0 centimeters). Unisexual flowers are borne on an erect flowering stem in two to four whorls, with each whorl subtended by three bracts fused at the base. Fruits consist of a round aggregate of large, distinctively crested achenes. Flowering has been reported as occurring in May and June (Kral 1983) to as late as July, with fruits present from May through September (Massey *et al.* 1983). Vegetative portions of the plant may emerge in April and persist through September (Massey *et al.* 1983).

Bunched arrowhead is found rooted in shallow water in or along shallow, sluggish streams flowing through mountain swamps or bogs (Kral 1983). Typical substrate is reported to be siliceous and micaceous silty muck, often with high sulfide content (Kral 1983). The current distribution is restricted to Buncombe and Henderson Counties in the mountains of North Carolina (Amoroso 1999) and Greenville County in the upper Piedmont of South Carolina.

BIOLOGICAL CONCLUSION: Bunched arrowhead occurs in shallow water in or along shallow, sluggish streams flowing through mountain swamps or bogs. No wetlands or bogs occur within the study corridor, and Featherstone Creek exhibits moderate to high flow velocities; therefore, no suitable habitat occurs within the study corridor. NHP records indicate that bunched arrowhead has not been documented within one mile (1.6 kilometers) of the study corridor, and bunched arrowhead was not observed during the field visit. The proposed project is not expected to adversely impact bunched arrowhead due to the lack of potential habitat. **NO EFFECT**

Mountain Sweet Pitcher Plant: Mountain sweet pitcher plant is an insectivorous, perennial, hydrophytic herb growing to 30 inches (76 centimeters) in height with hollow, trumpet-shaped leaves. The pitcher chamber is narrow but expands sharply along the upper quarter of the length. An ascending, cordate-shaped hood is held high over the exposed pitcher chamber orifice. Solitary flowers are produced on erect flowering stems. Petals are dark red to maroon on the outside, with the inner surface often yellow-green tinged with red. Flowering has been reported from April to June with fruits formed by August. Vegetative portions of the plant may emerge in April and persist through August (Massey *et al.* 1983). Mountain sweet pitcher plant is treated as a subspecies of the more common sweet pitcher plant (*S. rubra*).

Mountain sweet pitcher plant is found in mountain bogs and along streams. The current distribution is restricted to Buncombe, Henderson, and Transylvania Counties in the mountains of North Carolina (Amoroso 1999) and Greenville and Pickens Counties in western South Carolina.

BIOLOGICAL CONCLUSION: Mountain sweet pitcher plant occurs in mountain bogs and along streams. No wetlands or bogs occur within the study corridor and Featherstone Creek exhibits moderate to high flow velocities; therefore, no suitable habitat occurs within the study corridor. NHP records indicate that mountain sweet pitcher plant has not been documented within one mile (1.6 kilometers) of the study corridor, and mountain sweet pitcher plant was not observed during field surveys. The proposed project is not expected to adversely impact mountain sweet pitcher plant due to the lack of potential habitat. **NO EFFECT**

White Irisette: White irisette is a perennial herb in the iris family that grows to 16 inches (40 centimeters) tall. Stem leaves are at least as wide as the winged stem and may reach 5.5 inches (14.0 centimeters) long and 0.2 inches (0.5 centimeters) wide. Basal leaves reach one-third to one-half the height of the plant and may be up to 7.5 inches (19.0 centimeters) long and 0.14 inches (0.36 centimeters) wide. White irisette differs from other blue-eyed grasses by having three to five nodes with successively shorter internodes between dichotomous branches (FWS 1995). Four to six flowers with white, recurved perianth units are borne per spathe. Flowering occurs from late May through July.

White irisette is found in dry to mesic, open oak-hickory forest on mid-elevation mountain slopes at elevations from 1300 to 3300 feet (400 to 1000 meters) with aspects ranging primarily from southeast to southwest (FWS 1995). White irisette grows in shallow, circumneutral soils, especially over weathered amphibolite. White irisette is reported to grow best on regularly disturbed sites, such as power lines, roadsides, and woodland edges, which mimic suppressed natural disturbances and maintain open habitat (FWS 1995). The current distribution is restricted to Forsyth, Henderson, Polk, and Rutherford Counties in North Carolina (Amoroso 1999) and Greenville County in western South Carolina.

Within the proposed alternatives, areas of sparse, maintained vegetation do provide suitable habitat for white irisette. Therefore, all areas of suitable habitat were systematically searched for this species during the flowering period (on June 8, 2001), resulting in no findings of white irisette within the proposed alternative corridors. According to NHP records, white irisette has not documented to occur within one mile (1.6 kilometers) of the study corridor.

BIOLOGICAL CONCLUSION: The study corridor does contain suitable habitat for this species; however, based on a NHP record search and a systematic search conducted within suitable habitat types of each proposed alternative, this project will not affect white irisette. **NO EFFECT.**

Candidate Species - The FWS list (February 24, 2003) includes a category of species designated as "Candidate Species" (C1). A species with this designation is a taxon under consideration for official listing for which there is sufficient information to support listing. The C1 designation provides no federal protection under the ESA for the species listed. The only C1 species listed for Henderson County is bog asphodel (*Narthecium americanum*). NHP files have no documentation of this species within the study corridor or within one mile (1.6 kilometers) of the study corridor, and no suitable habitat for it within the study corridor.

2. Federal Species of Concern

The FWS list (2/24/03, accessed 2/19/04 via Internet) also includes a category of species designated as "Federal Species of Concern" (FSC). A species with this designation is one that may or may not be listed in the future (formerly C2 candidate species or species under consideration for listing for which there is insufficient information to support listing). The FSC designation provides no federal protection under the ESA for the species listed. FSC species listed for Henderson County are presented in Table 3. NHP files have no documentation of FSC listed species within the study corridor or within 1.0 mile (1.6 kilometers) of the study corridor.

Table 3. Federal Species of Concern in Henderson County (February 24, 2003 FWS list).

Common Name	Scientific Name	Potential Habitat	State Status
Green salamander	*Aneides aeneus*	No	E
Hellbender	*Cryptobranchus alleganiensis*	Yes	SC
Eastern small-footed myotis	*Myotis leibii*	Yes	SC
Southern Appalachian woodrat	*Neotoma floridana haematoreia*	Yes	T
French Broad crayfish**	*Cambarus reburrus*	Yes	W2
Tennessee heelsplitter	*Lasmigona holstonia*	Yes	E
Diana fritillary butterfly**	*Speyeria diana*	No	SR
Schweinitz's sedge	*Carex schweinitzii*	No	E
Mountain heartleaf	*Hexastylis contracta*	No	E
French Broad heartleaf	*Hexastylis rhombiformis*	No	C
Butternut	*Juglans cinerea*	No	W5
Rough rush	*Juncus caesariensis*	No	E
Gray's lily***	*Lilium grayi*	No	T-SC
Fraser's loosestrife	*Lysimachia fraseri*	Yes	E
Large-flowered Barbara's buttons**	*Marshallia grandiflora*	No	C
Sweet pinesap**	*Monotropsis odorata*	Yes	C
Divided-leaf ragwort**	*Senecio millefolium*	No	T
Mountain catchfly	*Silene ovata*	Yes	C
White fringeless orchid	*Plantanthera integrilabia*	No	E

E = Endangered; T = Threatened; SC = Special Concern; SR = Significantly Rare; C = Candidate; W2 = NC Plant Watch List: rare, but taxonomically questionable; W5 = NC Plant Watch List: rare because of severe decline (Amoroso 1999; LeGrand and Hall 1999).

** Historic record – the species was last observed in the county more than 50 years ago.

*** Obscure record – the date and/or location of observation is uncertain.

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 36 CFR Part 800. Section 106 requires that for federally funded, licensed, or permitted projects having an effect on properties listed in or eligible for the National Register of Historic Places, the Advisory Council on Historic Preservation be given the opportunity to comment.

B. Historic Architecture

A field survey of the Area of Potential Effect (APE) was conducted on September 28, 2000. All structures within the APE were photographed, and later reviewed by the State Historic Preservation Office (HPO). In a concurrence form dated December 6, 2000 the State Historic Preservation Officer (SHPO) concurred that there are no historic architectural resources either listed in or eligible for listing in the National Register of Historic Places within the APE. A copy of the concurrence form is included in the Appendix.

C. Archaeology

The SHPO, in a memorandum dated January 29, 2003 stated, "We recommend that a comprehensive survey be conducted by an experienced archaeologist..." An archaeological survey was conducted on September 2 and 3, 2003. Two archaeological sites (31HN183 and 31HN184) were recorded during the survey; however, neither was deemed eligible for the National Register of Historic Places. The survey report concluded that the proposed project will not impact any archaeological sites within the APE that are on or are eligible for inclusion on the National Register of Historic Places. In a memorandum dated March 12, 2004, the SHPO concurred with the recommendation that no further archaeological investigation be conducted in connection with this project. Copies of the SHPO memorandums are included in the Appendix.

VII. 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 is 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 current NCDOT standards and specifications.

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

No adverse impact on families or communities is anticipated. Right-of-way acquisition will be limited. No relocatees are expected with implementation of the proposed alternative.

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

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

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

The Farmland Protection Policy Act requires all federal agencies or their representatives to consider the potential impacts to prime and important farmland soils by all land acquisition and construction projects. Prime and important farmland soils are defined by the Natural Resources Conservation Service (NRCS). A completed form for this project is included in the Appendix.

According to the NRCS, the proposed project will impact 0.68 acres of soils defined as prime and statewide or local important farmland soils. This accounts for very little of the 82,824 acres of prime or important soils found in the county. The impact rating determined through completion of Form AD-1006, Farmland Conversion Impact Rating, indicates that the site's assessment and relative value score is 152 out of a possible 260. A score higher than 160 would indicate that mitigation should be considered.

The project is located in Henderson County, which has been determined to be in compliance with the National Ambient Air Quality Standards. 40 CFR Part 51 is not applicable because the proposed project is located in an attainment area. This project is not anticipated to create any adverse effects on the air quality of this attainment area.

This project is an air quality "neutral" project, so it is not required to be included the regional emission analysis (if applicable) and a project level CO analysis is not required.

The traffic volumes will not increase or decrease because of this project. There are no receptors located in the immediate project area. The project's impact on noise and air quality will not be substantial.

Noise levels could increase during construction but will be temporary. If vegetation is disposed of by burning, all burning shall be done in accordance with applicable local laws and regulations of the North Carolina SIP for air quality in compliance with 15 NCAC 2D.0520. This evaluation completes the assessment requirements for highway traffic noise (23 CFR Part 772) and for air quality (1990 CAAA and NEPA) and no additional reports are required.

An examination of records at the North Carolina Department of Environment and Natural Resources, Division of Water Quality, Groundwater Section and the North Carolina Department

of Human Resources, Solid Waste Management Section revealed no hazardous waste sites in the project area

Henderson County is not currently participating in the National Flood Insurance Program. The project site on Featherstone Creek is not located in a designated flood hazard zone. A copy of the Flood Insurance Rate Map (Figure 5) shows the approximate limits of the 100-year flood plain in the vicinity of the project.

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

VIII. Public Involvement

Efforts were undertaken early in the planning process to contact local officials to involve them in the project development with scoping letters. Scoping letters were sent to various agencies including the Tennessee Valley Authority (TVA) and the US Army Corps of Engineers (COE) on December 6, 2000. A Citizens Informational Workshop was not held on this project.

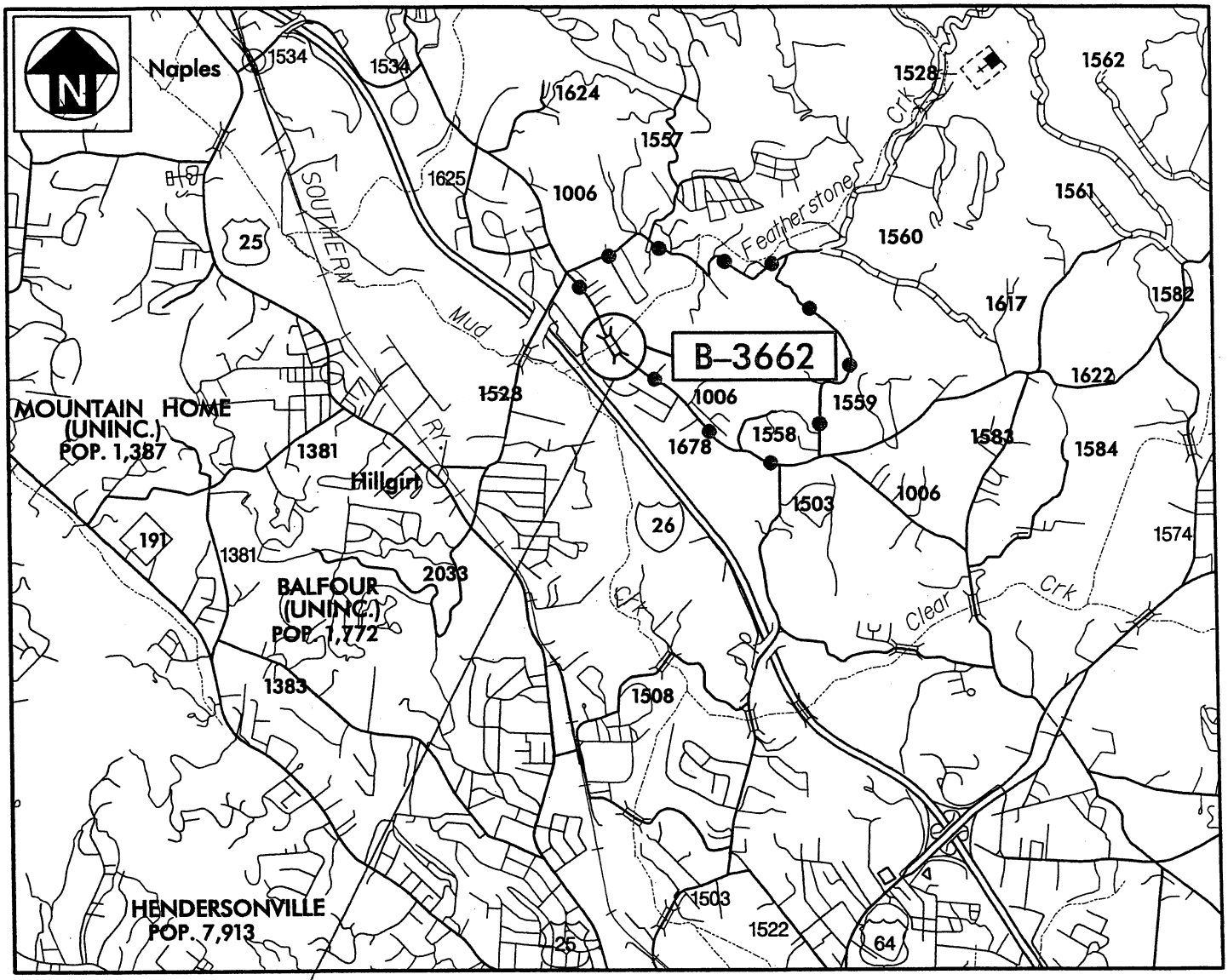
IX. Agency Comments

U. S. Fish and Wildlife Service
Comment: *This project "occurs in the general vicinity of Mud Creek, an area with several occurrences of bunched arrowhead (Sagittaria fasciculata) and mountain sweet pitcher plant (Sarracenia jonesii). ... In the areas affected...we recommend conducting habitat assessments and surveying any suitable habitat for these species."*

Response: A field survey was conducted for bunch arrowhead and mountain sweet pitcher plant. No occurrences of these species were observed. Biological conclusion "NO EFFECT."

NCDENR-Division of Water Quality
Comment: *"...if the new structure is to be a culvert, it should be countersunk to allow unimpeded fish and aquatic organisms passage through the crossing."*

Response: The culvert will be buried one-foot below the surface of the stream bed.



LEGEND

Studied Detour Route

North Carolina Department Of Transportation
Project Development & Environmental Analysis

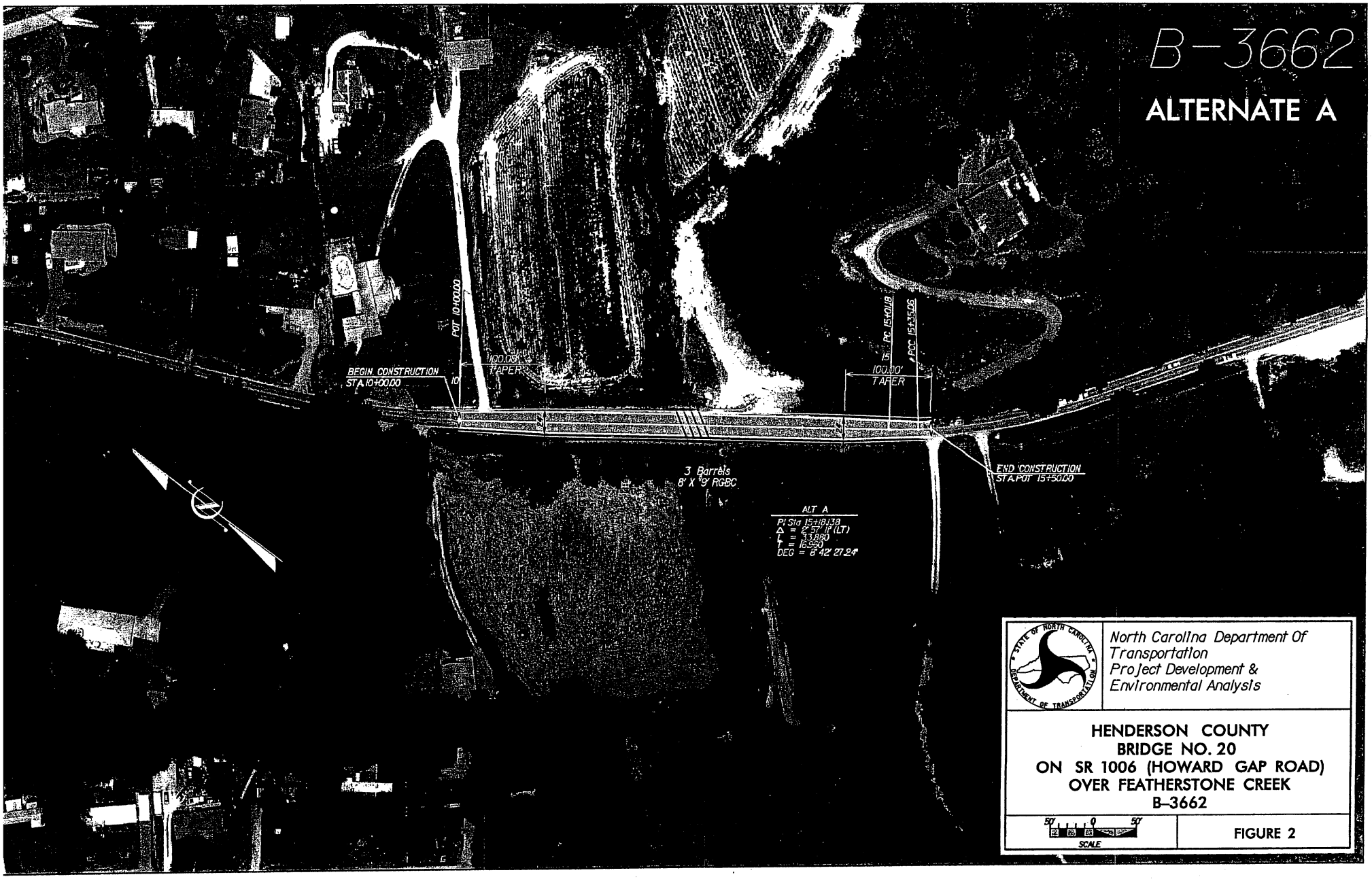
HENDERSON COUNTY

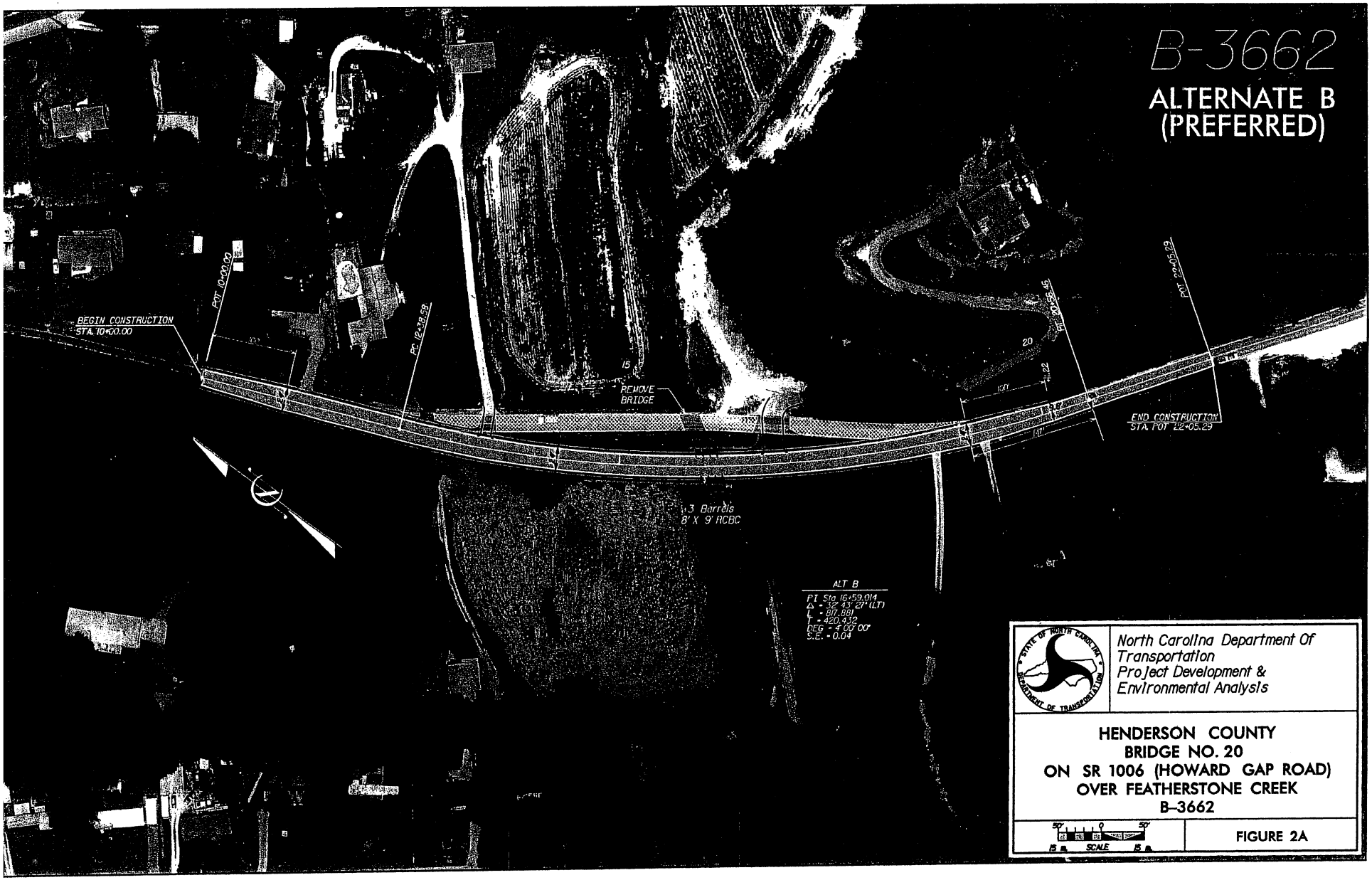
BRIDGE NO. 20 ON SR 1006 OVER FEATHERSTONE CREEK

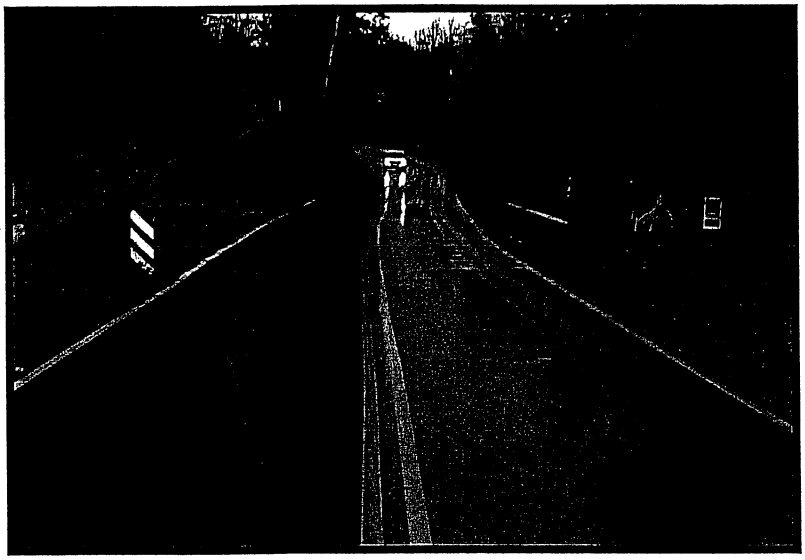
B-3662

0 kilometers 0.4 kilometers 0.8
0 miles 0.25 miles 1.0

FIGURE 1

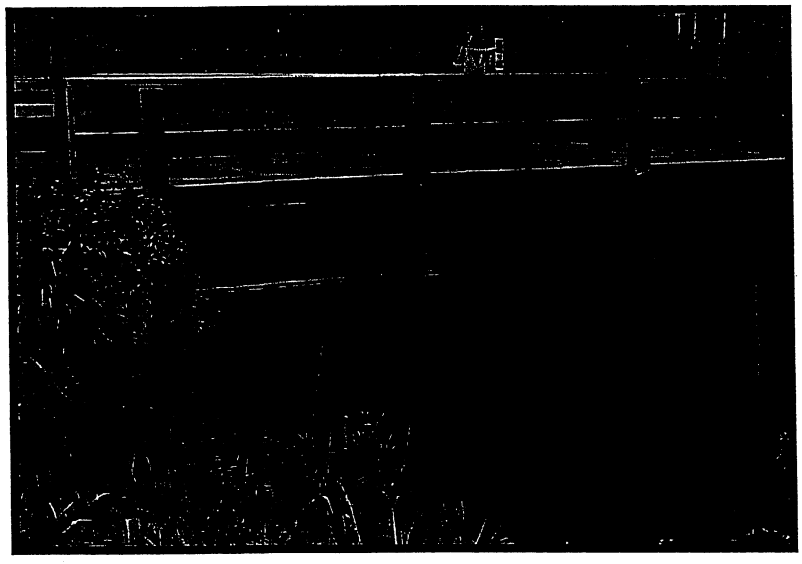

B-3662
ALTERNATE A
POT 10+00.00
BEGIN CONSTRUCTION
STA 10+00.00
10'
100.00'
TAPER
PC 15+01.18
PCC 15+35.06
15'
100.00'
TAPER
END CONSTRUCTION
STA POT 15+50.00
3 Barrels
8' X 9' RGBC
ALT A
PI Sta 15+18.38
Δ = 4°57' 19" (LT)
L = 33.880
R = 16.990
DEG = 8°42' 27.2"
North Carolina Department Of
Transportation
Project Development &
Environmental Analysis
HENDERSON COUNTY
BRIDGE NO. 20
ON SR 1006 (HOWARD GAP ROAD)
OVER FEATHERSTONE CREEK
B-3662
50' 0 50'
SCALE
FIGURE 2


B-3662
ALTERNATE B
(PREFERRED)
BEGIN CONSTRUCTION
STA. 10+00.00
PVT 10+00.00
PI 12+38.59
REMOVE
BRIDGE
3 Barrels
8' X 9' RCBC
PI 20+05.95
PVT 20+05.29
END CONSTRUCTION
STA. PVT 22+05.29
ALT B
PI Sta 16+59.014
Δ = 32° 33' 27" (LT)
L = 817.881
T = 420.432
DEG = 4° 00' 00"
S.E. = 0.04
North Carolina Department Of
Transportation
Project Development &
Environmental Analysis
HENDERSON COUNTY
BRIDGE NO. 20
ON SR 1006 (HOWARD GAP ROAD)
OVER FEATHERSTONE CREEK
B-3662
50' 0 50'
SCALE
FIGURE 2A



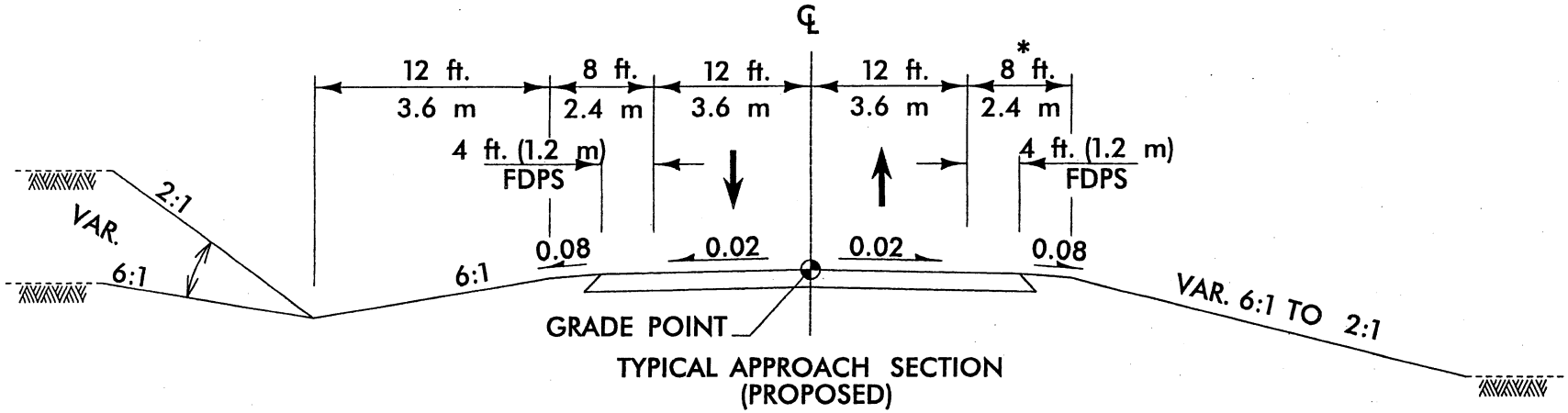
Looking south along SR 1006 across Bridge No. 20.

Looking north along SR 1006 across Bridge No. 20.



Side view of Bridge No. 20.

Figure 3



TYPICAL APPROACH SECTION
(PROPOSED)

* WHEN GUARDRAIL IS WARRANTED, THE MINIMUM SHOULDER WIDTH IS INCREASED BY 3'–0" (1.0 m)

REPLACE BRIDGE N0. 20 WITH A REINFORCED CONCRETE BOX CULVERT WITH 3 BARRELS @ 8' X 9' (2.4 m X 2.7 m)

DESIGN DATA

(EXISTING) 2004 ADT = 7,400 LOS D
(DESIGN YR.) 2030 ADT = 13,200 LOS E
DUAL 4%
TTST 2%

FUNCTIONAL CLASSIFICATION : RURAL MAJOR COLLECTOR

North Carolina Department
Of Transportation
Project Development &
Environmental Analysis

HENDERSON COUNTY
BRIDGE NO. 20 ON SR 1006
HOWARD GAP ROAD
OVER FEATHERSTONE CREEK
TIP NO: B–3662

FIGURE 4

FEMA Flood Map
Henderson County

B-3662

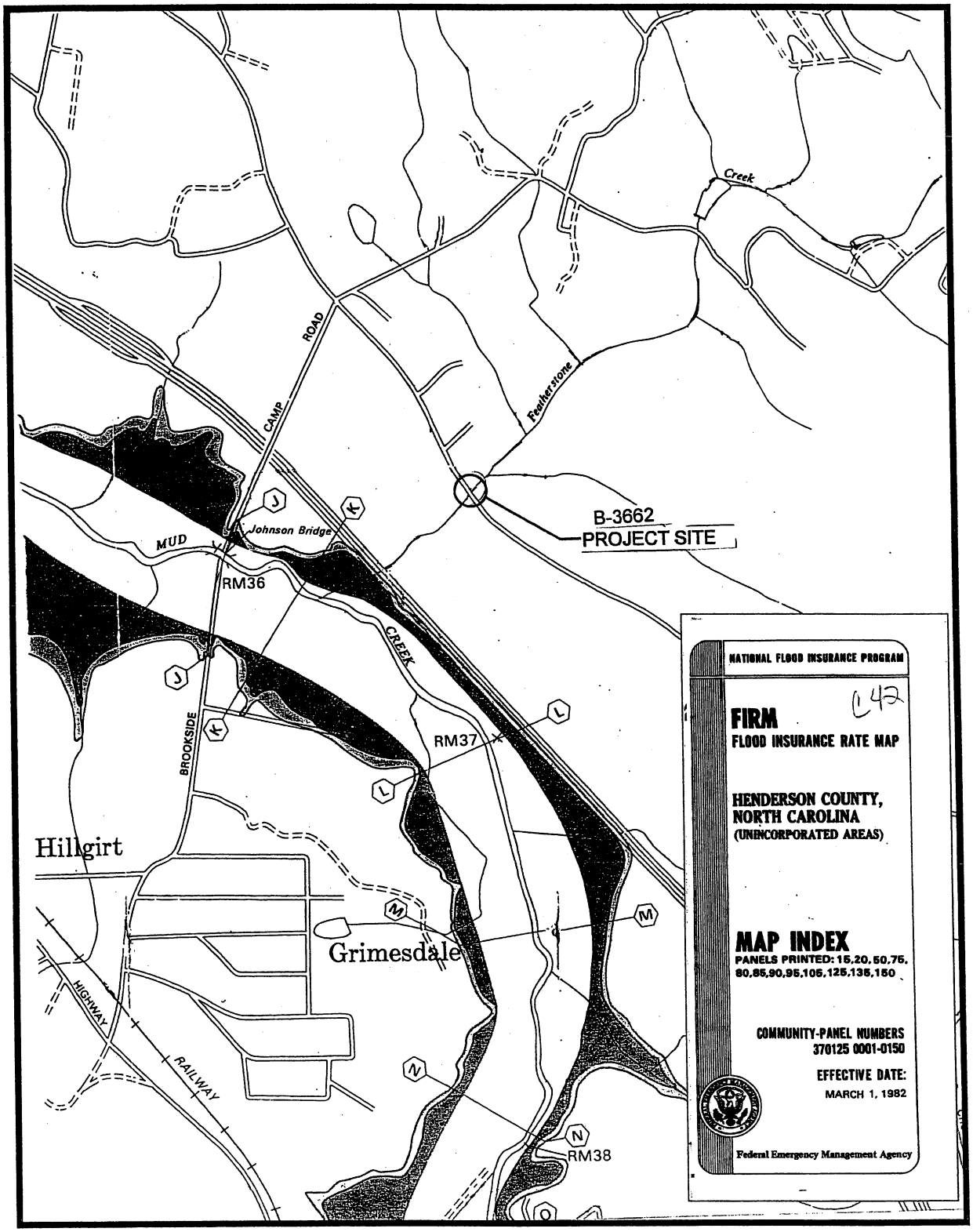


Figure 5

APPENDIX

U.S. ARMY CORPS OF ENGINEERS
WILMINGTON DISTRICT

Action ID: 200230314 County: Henderson

Waters of the U.S. Survey/Delineation Verification

Property owner/Authorized Agent: North Carolina Department of Transportation

Address: Attn: William D. Gilmore, Manager, Project Development and Environmental Analysis Branch, Post Office Box 25201, Raleigh, North Carolina 27611-5201

Telephone Number: (919) 733-7844

Size and Location of Property/Project (waterbody, highway name/number, town, etc.):

Bridge #20 (B-3662), SR 1006, Featherstone Creek, Henderson County, North Carolina.

Indicate which of the following apply:

_____ There are waters of the U.S. on the above described property which have been accurately delineated. We recommend that the delineated lines be surveyed. The surveyed lines must be verified by our staff before the Corps will make a final jurisdictional determination on your property.

__X__ The submitted GPS survey dated **January 2001** for the above referenced project accurately reflects the limits of waters of the U.S. on the property. Unless there is a change in the law or our published regulations, this determination may be relied upon for a period not to exceed 5 years from the date of this survey.

Placement of dredged or fill material in waters of the U.S. on this property without a Department of the Army permit is in most cases a violation of Section 301 of the Clean Water Act (33 USC 1311). A permit is not required for work on the property restricted entirely to existing high ground. If you have any questions regarding the Corps of Engineers regulatory program, please contact: John W. Hendrix at (828) 271-7980, Ext. 7.

Project Manager Signature John W. Hendrix Date: **February 26, 2002**

CF: **Mr. Alexander P. Smith, Ecoscience Corporation, 1101 Haynes Street, Suite 101, Raleigh, North Carolina 27604**

United States Department of the Interior

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

February 7, 2001

Mr. William D. Gilmore, P.E., Manager
Project Development and Environmental Analysis Branch
North Carolina Department of Transportation
1548 Mail Service Center
Raleigh, North Carolina 27699-1548

Dear Mr. Gilmore:

Subject: Bridge Replacements - Avery County (B-3808); Henderson County (B-3475, B-3662, B-3663, B-3664, B-3665, B-3666, and B-3857); McDowell County (B-3673); and Watauga County (B-3709 and B-3710)

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

The information we received for these 11 projects does not include descriptions of the structures that will replace the existing bridges, and it does not include any environmental information regarding the streams or whether habitat assessments or surveys for rare species have been conducted for any of the projects. Therefore, our comments are limited primarily to the known locations of listed species and species of Federal concern. When the categorical exclusions are prepared and more information is available regarding environmental effects, we can then offer more substantive comments.

Enclosed is a list of species from the four counties involved. This list provides the names of species that are on the Federal List of Endangered and Threatened Wildlife and Plants, as well as species of Federal concern. Federal species of concern are not legally protected under the Act and are not subject to any of its provisions, including Section 7, unless they are formally proposed or listed as endangered or threatened. We are including these species in our response to give you advance notification and to request your assistance in protecting them if any are found in the vicinity of these projects. Our records indicate the following:

Henderson County

Project B-3475. Known locations of the federally endangered bunched arrowhead (*Sagittaria fasciculata*) and the federally threatened small-whorled pogonia (*Isotria medeoloides*) occur near this project. We recommend surveying the project area for these species prior to any further planning or on-the-ground activities. If these species occur in the project area, further consultation will be required.

Project B-3665. Known locations of the federally endangered bunched arrowhead (*Sagittaria fasciculata*) and mountain sweet pitcher plant (*Sarracenia jonesii*) occur in the vicinity of this project. We recommend surveying the project area for these species prior to any further planning or on-the-ground activities. If these species occur in the project area, further consultation will be required.

Projects B-3662 and B-3664. These projects occur in the general vicinity of Mud Creek, an area with several occurrences of bunched arrowhead (*Sagittaria fasciculata*) and mountain sweet pitcher plant (*Sarracenia jonesii*). Currently there are no known locations of these species in the immediate project area. However, a lack of any systematic surveys throughout the Mud Creek drainage may account for the apparent absence of these species. In the areas affected by these projects, we recommend conducting habitat assessments and surveying any suitable habitat for these species.

Projects B-3666, B-3663, and B-3857. Our records for Henderson County indicate no known locations of listed species in the project areas. However, we recommend conducting habitat assessments and surveying any suitable habitat in the project areas for these species prior to any further planning or on-the-ground activities to ensure that no adverse impacts occur.

McDowell County

Project B-3673. Our records indicate known locations for the bog turtle (*Clemmys muhlenbergii*) near this project. Habitat assessments and surveys of suitable habitat should be conducted in the project area for this species. If the bog turtle occurs in the project area, it should be protected from impacts.

Watauga and Avery Counties

Projects B-3709, B-3710, and B-3808. Although our records for Watauga and Avery Counties indicate no known locations of listed species in the project areas, we recommend conducting habitat assessments in the affected area of each project. Any suitable habitat should be surveyed for these species prior to any further planning or on-the-ground activities to ensure that no adverse impacts occur.

We are interested in the types of structures that will replace these existing bridges and would recommend spanning structures, preferably bridges, in all cases. We look forward to reviewing the completed categorical exclusion documents.

If you have questions about these comments, please contact Ms. Marella Buncick of our staff at 828/258-3939, Ext. 237. In any future correspondence concerning this project, please reference our Log Number 4-2-01-278.

Sincerely,

for Brian P. Cole
State Supervisor

Enclosure

cc:
Ms. Stacy Harris, Project Development and Environmental Analysis Branch, North Carolina Department of Transportation, 1548 Mail Service Center, Raleigh, NC 27699-1548
Mr. Owen Anderson, Mountain Region Coordinator, North Carolina Wildlife Resources Commission, 20830 Great Smoky Mtn. Expressway, Waynesville, NC 28786
Ms. Cynthia Van Der Wiele, North Carolina Department of Environment and Natural Resources, Division of Water Quality, Wetlands Section, 1621 Mail Service Center, Raleigh, NC 27699-1621

DEPARTMENT OF AGRICULTURE
SOIL CONVERSION SERVICE

SCS-CPA-106

FARMLAND CONVERSION IMPACT RATING FOR CORRIDOR TYPE PROJECTS

rt I *(To be Completed by Federal Agency)*	3. Date of Land Evaluation Request 12/17/01	4. Sheet 1 of 1
Names of Project B-3662	5. Federal Agency Involved NCDOT, FHWA	
Type of Project BRIDGE REPLACEMENT	6. County and State Henderson, NC	
RT II *(To be completed by SCS)*	1. Date Request Received by SCS. 2/14/02	2. Person Completing Form Coy McKenzie
Does the corridor contain prime unique statewide or local important farmland? Yes X (If no the FPPA does not apply – Do not complete additional parts of this form No ____	4. Acres Irrigated 0	Average Farm Size 91
Major Crop(s) Grass	6. Farmable Land in Government Jurisdiction: 21780	7. Amount of Farmland As Defined in FPPA 82824
Name of Land Evaluation System Used LESA	9. Name of Local Site Assessment System	10. Date Land Evaluation Returned by SCS 4/11/02

RT III *(To be completed by Federal Agency)*		Alternative Corridor for Segment			
		Corridor A	Corridor B	Corridor C	Corridor D
Total Acres to be Converted Directly		0.22	0.68		
Total Acres to be Converted Indirectly or to Receive Services					
Total Acres in Corridor		0.22	0.68		
RT IV *(To be completed by SCS)* Land Evaluation Information					
Total Acres Prime and Unique Farmland		.22	.68		
Total Acres Statewide and Local Important Farmland		0	0		
Percentage of Farmland in County or Local Govt. Unit to be Converted		.000101	.000312		
Percentage of Farmland in Govt. Jurisdiction with Same or Higher Relative Value		25	25		
RT V *(To be completed by SCS)* Land Evaluation Criterion Relative Value of rmland to be Serviced or Converted (Scale of 0-100 Points)		75	75		
RT VI *(To be completed by Federal Agency)* Corridor sessment Criteria (These criteria are explained in 7 CFR 658.5(c))	Maximum Points				
Area in Nonurban Use	15	0	0		
Perimeter in Nonurban Use	10	0	1		
Percent of Corridor Being Farmed	20	0	1		
Protection Provided by State and Local Government	20	20	20		
Size of Present Farm Unit Compared to Average	10	0	0		
Creation of Nonfarmable Farmland	25	25	25		
Availability of Farm Support Services	5	2	2		
On-Farm Investments	20	12	20		
Effects of Conversion On Farm Support Services	25	25	25		
Compatibility with Existing Agricultural Use	10	1	1		
TAL CORRIDOR ASSESSMENT POINTS	160	75	77		
RT VII *(To be completed by Federal Agency)*		—	—		
lative Value of Farmland (From Part V)	100	75	75		
tal Corridor Assessment (Form Part VI above or a local site sessment)	160	75	77		
TAL POINTS (Total of above 2 lines)	260	150	152		

Corridor Selected:	2. Total Acres of Farmlands to be Converted by Project:	3. Date of Selection:	4. Was a Local Site Assessment Used? Yes ____ No ____

Reason for Selection:

gnature of Person Completing this Part:	Date

TE: Complete a form for each segment with more than one Alternative Corridor

North Carolina Department of Cultural Resources
State Historic Preservation Office

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

Division of Historical Resources
David L. S. Brook, Director

March 12, 2004

MEMORANDUM

TO: Matt Wilkerson, Archaeology Supervisor
Office of Human Environment
NCDOT Division of Highways

FROM: David Brook DLB for David Brook

SUBJECT: Bridge 20 on SR 1006 over Featherstone Creek, Howard Gap Road, Henderson County, ER01-8265

Thank you for your letter of December 18, 2003, transmitting the archaeological survey report by Megan O'Connell for the above project.

During the course of the survey, two sites were located within the project area. Ms. O'Connell has recommended that no further archaeological investigation be conducted in connection with this project. We concur with this recommendation since the project will not involve significant archaeological resources.

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. In all future communication concerning this project, please cite the above-referenced tracking number.

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

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

Division of Historical Resources
David J. Olson, Director

January 29, 2003

MEMORANDUM

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

FROM: David Brook Dgtly David Brook

SUBJECT: Replacement of Bridge No. 20 on SR 1006 (Howard Gap Road) over Featherstone Creek, B-3662, Henderson County, ER01-8265

Thank you for your letter of December 19, 2002, concerning the above project.

We recommend that a comprehensive survey be conducted by an experienced archaeologist to identify and evaluate the significance of archaeological remains that may be damaged or destroyed by the proposed project. Potential effects on unknown resources must be assessed prior to the initiation of construction activities.

Two copies of the resulting archaeological survey report, as well as one copy of the appropriate site forms, should be forwarded to us for review and comment as soon as they are available and well in advance of any construction activities.

A list of archaeological consultants who have conducted or expressed an interest in contract work in North Carolina is available at www.arch.dcr.state.nc.us/consults. The archaeologists listed, or any other experienced archaeologist, may be contacted to conduct the recommended survey.

We have determined that the project as proposed will not affect any historic structures.

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

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

cc: Mary Pope Furr
Matt Wilkerson

North Carolina Department of Cultural Resources

State Historic Preservation Office

David L. S. Brook, Administrator

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

Division of Historical Resources
David J. Olson, Director

December 19, 2002

Mr. John Wadsworth, P.E.
NC DOT Project Development and Environmental Analysis
1548 Mail Service Center
Raleigh, NC 27699-1548

Re: Bridge Replacement Project B-3662, Replace Bridge No. 20 on SR 1006 (Howard Gap Rd.) over Featherstone Creek, Henderson County, ER01-8265

Dear Mr. Wadsworth:

We have received notification of a nationwide permit application for the above project and would like to comment.

There are no recorded archaeological sites within the proposed project area. If the replacement is to be located along the existing alignment, it is unlikely that significant archaeological resources will be affected and no investigations recommended. If, however, the replacement is to be in a new location, please forward a map to this office indicating the location of the new alignment so we may evaluate the potential effects of the replacement upon archaeological resources.

In addition, there are no known historic structures in the project area that might be affected by the replacement.

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

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

Sincerely,

Renee Gledhill-Earley

David Brook

DB:doc
cc: Gilmore, NCDOT

Federal Aid #BRSTP-1006(12) *TIP* #B-3662 *County*: Henderson

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

Project Description: Replace Bridge No.20 on SR 1006 over creek

On December 8, 2000, representatives of the

- [x] North Carolina Department of Transportation (NCDOT)
- [ ] Federal Highway Administration (FHWA)
- [x] North Carolina State Historic Preservation Office (SHPO)

Reviewed the subject project at

- [ ] a scoping meeting
- [x] photograph review session/consultation
- [ ] other

All parties present agreed

- [ ] there are no properties over fifty years old within the project's area of potential effect.
- [x] there are no properties less than fifty years old which are considered to meet Criterion Consideration G within the project's area of potential effect.
- [x] there are properties over fifty years old (list attached) within the project's area of potential effect, but based on the historical information available and the photographs of each property, properties identified as Props #1-5 are considered not eligible for the National Register and no further evaluation of them is necessary.
- [x] there are no National Register-listed properties located within the project's area of potential effect.

Signed:

Mary Pope Furr — 12/6/00
Representative, NCDOT — Date

Matthew C Barron — 12/19/00
FHWA, for the Division Administrator, or other Federal Agency — Date

Mary Pope Furr — 12/8/00
Representative, SHPO — Date

David Brook (per) — 12/20/00
State Historic Preservation Officer — Date

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

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

James B. Hunt, Jr., Governor
Bill Holman, Secretary
Kerr T. Stevens, Director

NCDENR

December 11, 2000

MEMORANDUM

To: William D. Gilmore, P.E., Manager
NCDOT, Project Development & Environmental Analysis

Through: John Dorney, NC Division of Water Quality

From: Cynthia F. Van Der Wiele

Subject: Scoping comments on the proposed replacement of Bridge No. 20 on SR 1006 over Featherstone Creek in Henderson County, T.I.P. Project B-3662.

This memo is in reference to your correspondence dated December 6, 2000, in which you requested scoping comments for the above project. The DWQ index number for the stream is 6-55-12 and is classified as C waters. The Division of Water Quality requests that NCDOT consider the following environmental issues for the proposed project:

A. DWQ prefers replacement of bridges with bridges. However, if the new structure is to be a culvert, it should be countersunk to allow unimpeded fish and other aquatic organisms passage through the crossing. Please be aware that floodplain culverts are required under Nationwide 14.

B. The document should provide a detailed and itemized presentation of the proposed impacts to wetlands and streams with corresponding mapping.

C. There should be a discussion on mitigation plans for unavoidable impacts. If mitigation is required, it is preferable to present a conceptual (if not finalized) mitigation plan with the environmental documentation. While the NCDWQ realizes that this may not always be practical, it should be noted that for projects requiring mitigation, appropriate mitigation plans will be required prior to issuance of a 401 Water Quality Certification.

D. When practical, the DWQ requests that bridges be replaced on the existing location with road closure. If a detour proves necessary, remediation measures in accordance with the NCDWQ requirements for General 401 Certification 2726/Nationwide Permit No. 33 (Temporary Construction, Access and Dewatering) must be followed.

E. If applicable, DOT should not install the bridge bents in the creek, to the maximum extent practicable.

F. Wetland and stream impacts should be avoided (including sediment and erosion control structures/measures) to the maximum extent practical. If this is not possible, alternatives

that minimize wetland impacts should be chosen. Mitigation for unavoidable impacts will be required by DWQ for impacts to wetlands in excess of one acre and/or to streams in excess of 150 linear feet.

G. Borrow/waste areas should not be located in wetlands. It is likely that compensatory mitigation will be required if wetlands are impacted by waste or borrow.

H. If foundation test borings are necessary; it should be noted in the document. Geotechnical work is approved under General 401 Certification Number 3027/Nationwide Permit No. 6 for Survey Activities.

I. In accordance with the NCDWQ Wetlands Rules {15A NCAC 2H.0506(b)(6)}, mitigation will be required for impacts of greater than 150 linear feet to any single perennial stream. In the event that mitigation becomes required, the mitigation plan should be designed to replace appropriate lost functions and values. In accordance with the NCDWQ Wetlands Rules {15A NCAC 2H.0506 (h)(3)}, the Wetland Restoration Program may be available for use as stream mitigation.

J. Sediment and erosion control measures should not be placed in wetlands.

K. The 401 Water Quality Certification application will need to specifically address the proposed methods for stormwater management. More specifically, stormwater should not be permitted to discharge directly into the creek. Instead, stormwater should be designed to drain to a properly designed stormwater detention facility/apparatus.

L. While the use of National Wetland Inventory (NWI) maps and soil surveys is a useful office tool, their inherent inaccuracies require that qualified personnel perform onsite wetland delineations prior to permit approval.

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

Pc: Steve Lund, USACE Asheville Field Office
Marella Buncick, USFWS
David Cox, NCWRC
File Copy
Central Files

North Carolina Wildlife Resources Commission

Charles R. Fullwood, Executive Director

MEMORANDUM

TO: William D. Gilmore, P.E., Manager
Project Development and Environmental Analysis Branch, NCDOT

FROM: Owen F. Anderson, Mountain Region Coordinator
Habitat Conservation Program

DATE: January 10, 2001

SUBJECT: Scoping for Bridge Replacements B3475, B3662, B-3663, B-3664, B-3665, B-3666, B-3673, and B-3857, Henderson and McDowell Counties

This memorandum responds to your request for our concerns regarding impacts on fish and wildlife resources resulting from the subject projects. The North Carolina Wildlife Resources Commission (NCWRC) has reviewed the proposed projects, and our comments are provided in accordance with provisions of the National Environmental Policy Act (42 U.S.C. 4332(2)(c)) and the Fish and Wildlife Coordination Act (48 Stat. 401, as amended; 16 U.S.C. 661-667d).

The proposed work involves nine bridge replacement projects in western North Carolina. Construction impacts on wildlife and fisheries resources will depend on the extent of disturbance in the streambed and surrounding riparian areas. We prefer bridge designs that do not alter the natural stream morphology or impede fish passage and provide for wildlife passage under the bridge. We prefer that existing bridges be replaced with another spanning structure. Bridge designs should also include provisions for the deck drainage to flow through a vegetated upland buffer prior to reaching the subject surface waters. In some cases, we are specifically concerned about impacts to trout waters. Environmental documentation for these projects should include description of any streams or wetlands on the project site and surveys for any threatened or endangered species that may be affected by construction.

B-3475 – Bridge No. 356 on SR1127 (Caswell Street) over Wash Creek, Henderson County

No specific concerns other than minimization of impacts to water quality and aquatic and riparian habitat.

B-3662 – Bridge No. 20 on SR 1006 (Howard Gap Road) over Featherstone Creek in Henderson County.

No specific concerns other than minimization of impacts to water quality and aquatic and riparian habitat.

B-3663 – Bridge No 320 on SR 1212 (Old Homestead Road) over Shaws Creek in Henderson County

No specific concerns other than minimization of impacts to water quality and aquatic and riparian habitat.

B-3664 –Bridge No. 21 on SR 1528 (Brookside Camp Road) over Mud Creek in Henderson County

No specific concerns other than minimization of impacts to water quality and aquatic and riparian habitat.

B-3665 - Bridge No. 265 on SR 1791 (Ballenger Road) over North Branch Bat Fork Creek in Henderson County

No specific concerns other than minimization of impacts to water quality and aquatic and riparian habitat.

B-3666 - Bridge No. 53 on SR 1799 (Deep Gap Road) over Hungry River in Henderson County.

This bridge appears to be located at the edge of the Pisgah Game Lands. This reach is classified as trout water by the Division of Water Quality and is designated by the NCWRC as Hatchery Supported Waters. The new bridge should span the adjacent floodplain and provide sufficient space for wildlife to move under the bridge. An inwater work moratorium from October 15-April 15 is requested for this project.

B-3673 – Bridge No. 17 on US 221 over Second Broad River in McDowell County

This stream is Classified WS-IV. No specific fish and wildlife concerns other than minimization of impacts to water quality and aquatic and riparian habitat. The new bridge should span the adjacent floodplain and/or provide a wildlife movement corridor under the bridge.

Because the Corps of Engineers (COE) recognizes all of the above counties as "trout water counties", the NCWRC will review any nationwide or general 404 permits for the proposed projects. The following conditions are likely to be placed on the subject 404 permits:

1. Adequate sedimentation and erosion control measures must be implemented and maintained on the project site to avoid impacts to downstream aquatic resources. Structures should be inspected and maintained regularly, especially following rainfall events.

2. 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.

3. All work in or adjacent to stream waters should be conducted in a dry work area. Sandbags, cofferdams, or other diversion structures should be used to minimize impacts to downstream aquatic resources. Spoil materials and wastewater captured in the cofferdam should be pumped out and disposed of on upland sites.

4. If concrete is used during construction, a dry work area must be maintained to prevent direct contact between curing concrete and stream water. Uncured concrete affects water quality and is highly toxic to fish and other aquatic organisms.

5. Grading and backfilling should be minimized, and tree and shrub growth should be retained if possible to ensure long term availability of shoreline cover for gamefish and wildlife.

6. **In trout waters, instream construction is prohibited during the trout-spawning period of October 15 to April 15 to avoid impacts on trout reproduction.**

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

8. If multi-celled reinforced concrete box culverts are utilized, they should be designed so that all water flows through a single cell (or two if necessary) during low flow conditions. This could be accomplished by constructing a low sill on the upstream end of the other cells that will divert water to a single cell during below bankfull events. This will facilitate fish passage at low flows.

9. Notched baffles should be placed in reinforced concrete box culverts at 15-foot intervals to allow for the collection of sediments in the culvert, reduce flow velocities, and to provide resting areas for fish moving through the structure.

10. Only clean, sediment-free rock should be used as temporary fill (causeways), and should be removed without excessive disturbance of the natural river bottom when construction is completed. Temporary causeways should not block more than 30% of the stream width to prevent an impediment to fish movement.

11. Equipment operated near surface waters should be inspected daily and maintained to prevent contamination of waters from leaking fuels, lubricants, hydraulic fluids, or other toxic materials.

12. Stormwater should be directed to upland buffer areas or retention basins and should not be discharged directly into streams.

Thank you for the opportunity to review and comment during the early stages of these projects. If you have any questions regarding these comments, please contact me at (828) 452-2546.

cc: Mr. Steven Lund, NCDOT Coordinator, COE, Asheville
Ms. Stacy Harris, P.E., PD & EA Branch, NCDOT, Raleigh
Ms. Marella Buncick, Biologist, USFWS Asheville

HENDERSON COUNTY
OFFICE OF THE COUNTY MANAGER

100 NORTH KING STREET
HENDERSONVILLE, N.C. 28792-5097
PHONE (828) 697-4809 FAX (828) 698-6014
www.henderson.lib.nc.us/county

David E. Nicholson
County Manager

Avalina Merrill
Administrative Assistant

January 10, 2001

William D. Gilmore, P.E., Manager
NC Department of Transportation
Project Development and Environmental Analysis
1548 Mail Service Center
Raleigh NC 27699-1548

Dear Mr. Gilmore,

I am writing in response to your December 6, 2000 letter concerning the bridge replacement projects for Henderson County that are contained within the NCDOT's 2002-2008 Draft Transportation Improvement Program. Attached is a report that contains our comments on these projects.

Should you have any additional questions, please contact me.

Sincerely,

David E. Nicholson
County Manager

DEN/abm

Attachment

Cc: Board of Commissioners
Transportation Advisory Committee Members

Henderson County Government Report on

NCDOT BRIDGE REPLACEMENT PROJECTS
B-3475, B-3662, B-3663, B-3665, B-3666 and B-3857

January 10, 2001

Henderson County appreciates the opportunity to study and comment on the proposed bridge replacement projects identified by NCDOT as B-3475, B-3662, B-3663, B-3665, B-3666 and B-3857. The following report contains the County's comments regarding the projects.

B-3475 - Bridge No. 356 on SR 1127 (Caswell Street) over Wash Creek

Bridge No. 356 is located in the City of Hendersonville on Caswell Street, between Washington Street and Lily Pond Road, in an area known as "Busy Bend." According to the Flood Insurance Rate map for that area, the area around and including the bridge is in the flood zone for Wash Creek.

The area around the bridge is commercial in character. Dal-Kawa Cycle Center is located adjacent to the bridge on the south and an automobile detailing business is located next to the bridge to the north. There are a number of other small businesses and a couple of churches in the area as well as the Whitmire Activity Building/Tom's Park owned by the City of Hendersonville. There is a considerable amount of traffic that enters/exits Hendersonville via Kanuga Road. Residents and businesses around the bridge area as well as those that use Kanuga Road to access Hendersonville will be impacted. The detour that is shown on the NCDOT map (using Lily Pond Drive, West Allen Street and Washington Street), is approximately 0.5 mile in length.

Erica Thompson, Program Coordinator for the *Start with Your Heart* program with the Henderson County Partnership for Health, Inc., has been working on a Bicycle/Pedestrian Assessment Project in the Henderson County. At her request, Henderson County has agreed to ask NCDOT to consider widening the sidewalk on Bridge No. 356 when the bridge itself is widened. According to Ms. Thompson, the current sidewalk is too narrow.

Henderson County understands that the City of Hendersonville is submitting its own comments regarding the subject bridge project as well.

B-3662 - Bridge No. 20 on SR 1006 (Howard Gap Road) over Featherstone Creek

The subject bridge is located on Howard Gap Road in an area that is mainly residential in character but which also contains several churches, small businesses and an industry. The intersection of Howard Gap Road and Brookside Camp Road is located to the northwest. Vulcan Materials (including the APAC asphalt plant) is located at the intersection of Howard Gap Road and Clear Creek Road, to the southeast. The Mountain Home Volunteer Fire and Rescue department has a substation located to the southeast of the intersection of Salisbury Road and Howard Gap Road. The bridge is located in the Mountain Home Fire District.

The "studied detour route" shown on the map provided by NCDOT requires that one travel approximately 2.5 miles using Brookside Camp Road and Salisbury Road, both of which are paved. The route passes through a residential area once it leaves Howard Gap Road and it is somewhat hilly and curvy. Heavy truck traffic and others that make regular use of Howard Gap

Road as north-south route may find US 25 to be a better alternative. Access to/from US 25 may be made via the new road to Park Ridge Hospital, Brookside Camp Road, Clear Creek Road, and, possibly, Balfour Road.

Residents and business owners in the area of the proposed bridge project will probably be impacted the most. However, there may be impacts on alternative routes due to the need to detour trucks, including those from Vulcan, around the bridge construction project.

While it is probably unlikely that NCDOT would undertake the subject project and project B-3664 on Brookside Camp Road simultaneously, the County would like to specifically request that the projects be scheduled at different times. If they were to occur together, the impacts on the area would be intensified, particularly because the bridge to be replaced on Howard Gap Road is on the detour route for the Brookside Camp Road bridge project (described below).

B-3663 - Bridge No. 320 on SR 1212 (Old Homestead Road) over Shaws Creek

Old Homestead Road, located off of US 64 West, has a paved surface. The subject bridge crosses Shaws Creek, adjacent to a Southern Railway track. One must cross the bridge, then the track. There is no railroad crossing signal on the road.

There are a number of residences that are served by Old Homestead Road once it crosses Shaws Creek. The area is zoned R-30 by the County and is within a WS-IV Water Supply Watershed. The land immediately adjacent to the bridge is undeveloped. According to the Flood Insurance Rate Map of the area, Shaws Creek is shown to have a narrow area of flood zone which includes the area around the bridge.

As one approaches the bridge from US 64, there is a gravel area adjacent to, but at a lower elevation than, the left side of the bridge. Rocky Hyder, Henderson County Fire Marshal/Emergency Management Director, identified this as a fire department draft point. The draft point would allow water to be drawn from Shaws Creek if needed to fight a fire in the vicinity.

Because there is no outlet from Old Homestead Road, the NCDOT map does not show a detour route. Homes on the southwestern end of Old Homestead Road as well as those on Summer Rain Drive, Kilpatrick Road and Abbey Lane will be impacted during replacement of the bridge. Henderson County expects that NCDOT will maintain some sort of bridge so residents may continue to use Old Homestead Road while the bridge is upgraded. Also, the fire department draft point should be taken into consideration during the project.

B-3664 - Bridge No. 21 on SR 1528 (Brookside Camp Road) over Mud Creek

Bridge No. 21 on Brookside Camp Road is located south of the I-26 overpass. Double Tee Golf Center is located to the northwest and Wolverine Paintball is located to the northeast. Vacant fields are located immediately adjacent to the bridge, along Mud Creek. The bridge is in a low area that has been subject to flooding in the past. The area is within a flood zone, according to the Flood Insurance Rate Map. It is also in the Mountain Home Fire District.

Brookside Camp Road provides access from US 25 to Grimesdale, Hickory Hills and several smaller subdivisions. It also serves to connect US 25 to Howard Gap Road and the residences and businesses in that area.

The detour shown on the map provided by NCDOT is comprised of a loop, approximately 6.7 miles in length, which uses Brookside Camp Road, US 25, Berkeley Road, Balfour Road, Clear Creek Road and Howard Gap Road. The detour passes over another bridge proposed for replacement, bridge No. 20 over Featherstone Creek (see B-3663, above). It is possible that to avoid some of the curves on Balfour Road, some detoured truck traffic may take US 25 to either the new road over I-26 (to Park Ridge Hospital) or to Clear Creek Road to get to Howard Gap Road.

The replacement of the bridge may cause some inconvenience to area residents and to business owners. According to Rocky Hyder, Henderson County Fire Marshal/Emergency Management Director, emergency services personnel and local property owners are probably accustomed to using alternate routes because of the flooding history of the road.

B-3665 - Bridge No. 265 on SR 1791 (Ballenger Road) over North Branch, Bat Fort Creek

Ballenger Road is located to the east of I-26, between Tracy Grove Road and Upward Road. Land Uses in the area around the bridge include Lakewood RV Park and some single-family dwellings. The Flood Insurance Rate Map for the area shows the land in the vicinity of the bridge as being in a flood zone.

The detour shown on the NCDOT map makes use of Tracy Grove Road and McMurray Road, both of which are paved. Much of the northern end of Mc Murray Road consists of orchards and some single-family dwellings. As one approaches Upward Road, there are some commercial uses, including an antique shop, a quilt shop, a produce stand, an RV supply store and the Dish Barn. A commercial project is currently underway near the intersection of Upward Road and McMurray Road. Since Ballenger Road is not a major thoroughfare, the bridge project is more likely to affect local traffic. The detour will probably increase the number of vehicles entering/exiting Upward Road near the I-26 ramps.

B-3666 - Bridge No. 53 on SR 1799 (Deep Gap Road) over North Branch, Hungry River

The subject bridge on Deep Gap Road is the third bridge as one travels east along the road. While the majority of Deep Gap Road is paved, the road has a gravel surface beginning at a point just before the subject bridge.

The eastern end of Deep Gap Road has a few single family dwellings, however much of the land, particularly that near the bridge, is undeveloped. Deep Gap Road has a number of curves as one descends into the river valley. Because there is only "one way in," the NCDOT map does not show a detour route.

Since Deep Gap road is not a "through" road, people would need to have a reason to travel its full length. That property (or properties) accessed by Deep Gap Road beyond Bridge No. 53 will be impacted primarily. Hungry River LLC is listed as the owner of approximately 2073 acres at and beyond the subject bridge.

B-3857 - Bridge No. 8 on SR 1314 (Ladson Road) over Boylston Creek

The subject bridge is located on Ladson Road approximately 0.2 mile from its intersection with NC 191. Land use in the area surrounding the bridge is agricultural, except that there is one dwelling just to the southwest of the bridge. Other residences are located further along Ladson Road. The bridge is located in a flood zone, according to the Flood Insurance Rate Map for the

area. The area around the bridge is in the County's R-30 zoning district and it is also within the WS-IV Water Supply Watershed.

The detour route shown on the map provided by NCDOT requires one to travel along Banner Farm Road and Schoolhouse Road, which will add several miles to the trip for those who normally use Ladson Road. The detour route also passes by Mills River Elementary School.

There is a change in fire districts as one travels along Ladson Road. Mills River Fire and Rescue services the portion of Ladson Road near the subject bridge while the area further south of the bridge is serviced by Etowah-Horse Shoe Fire and Rescue. According to Rocky Hyder, Henderson County Fire Marshal/Emergency Management Director, both departments typically respond to all calls in the area. However, for the Mills River department to respond to the area in its district that is south of the bridge, it will have to use the proposed detour along Schoolhouse Road, which will probably increase its response time slightly.

Other General Comments

County staff did not have a chance to fully investigate the environmental conditions in the areas around the bridges other than to note areas that may be subject to flooding. However, as with any projects undertaken near waterways, the County expects that NCDOT will use erosion and sedimentation controls and other measures to minimize negative impacts on water quality.

Also, because of ongoing projects in the County to establish safe pedestrian walkways and bike routes adjacent to roadways, the County suggests that, when reasonable and feasible, NCDOT consider ways to improve the bridges for these purposes as well as for vehicle travel.

Finally, if it is not already a customary practice, Henderson County suggests that some time prior to initiation of each bridge replacement project, it would be helpful if NCDOT forwarded information regarding the actual detours to the Superintendent of Henderson County Public Schools in order for County bus routes to be adjusted accordingly. In addition, such detour information would be helpful to other County departments and agencies. Therefore, NCDOT should also consider sending such information to the County Manager's office for distribution.

Note: Henderson County does not participate in the federal flood insurance program. Flood Insurance Rate Maps referenced in comments for projects in the County's jurisdiction (B-3662, B-3663, B-3665, B-3666 and B-3857) are dated March 1, 1982. The City of Hendersonville does participate in the federal flood insurance program. The Federal Insurance Rate Map referenced in the comments for the project in the City's jurisdiction (B-3475) is dated January 20, 1982.

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

MICHAEL F. EASLEY
GOVERNOR

LYNDO TIPPETT
SECRETARY

August 29, 2002

Memorandum To: John Wadsworth, P.E., Project Manager
Consultant Unit

Attention: Rachelle Beauregard, Permit Specialist

From: Sharon Snider, Section 7 Strike Team

Subject: Freshwater mussel survey report of unnamed creek for proposed replacement of bridge # 20 on SR 1006, Henderson County; TIP # B-3662.

The proposed action calls for the replacement of bridge No. #20 over an unnamed creek in Henderson County. Two federally Endangered freshwater mussel species, the Appalachian elktoe (*Alasmidonta raveniliana*) and the oyster mussel (*Epioblasma capsaeformis*) are listed by the US Fish and Wildlife Service as occurring in Henderson County.

NCDOT Environmental Specialists Tim Savidge, Jeff Burleson and Sharon Snider visited the project site on March 05, 2002. The creek, a tributary to Mud Creek, exists in a residential setting. Mud Creek was surveyed at two sites near this project (B-3662) and no mussels were observed. The project creek habitat was examined and deemed to be unsuitable to support mussel life.

Biological Conclusion: **No Effect**

Given the unsuitable habitat of unnamed creek at SR 1006 and the Mud Creek mussel survey results, it is apparent that the Appalachian elktoe and the oyster mussel do not occur in the project stream. Additionally, there are no known extant populations of these two species in the French Broad River downstream of the project stream. It can be concluded that project construction will not impact these two species.

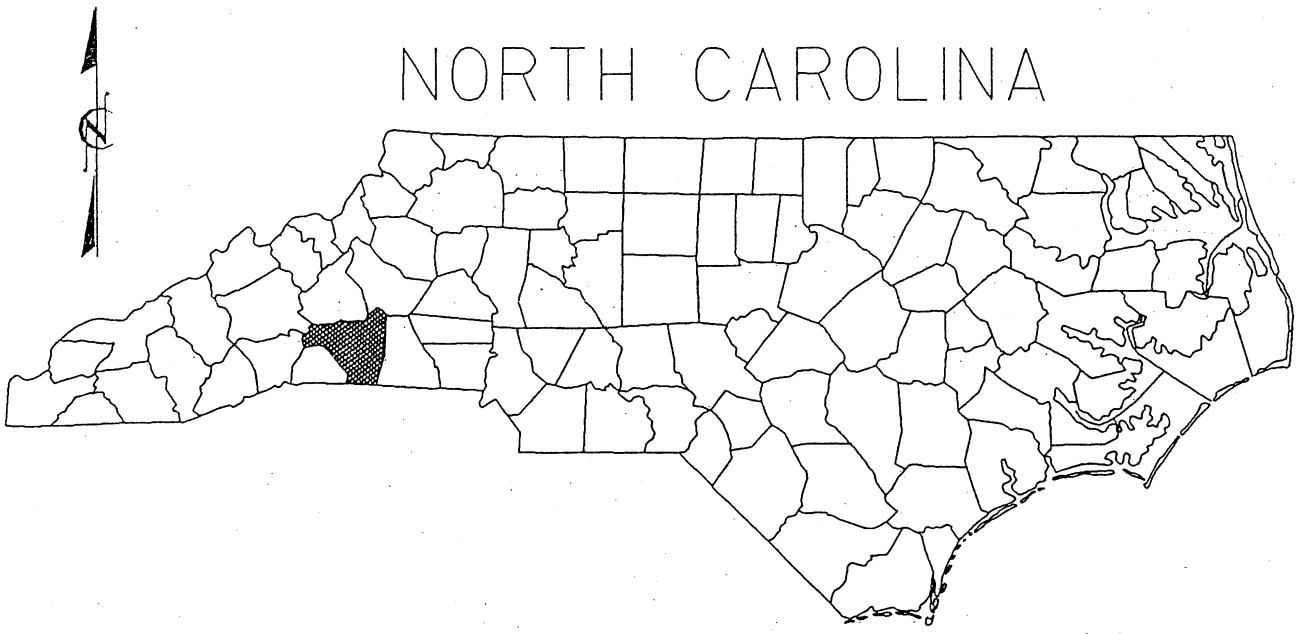
cc: Stacy Harris P.E., Consultant Engineering Unit Head
V. Charles Bruton, Ph.D., Assistant Branch Manager

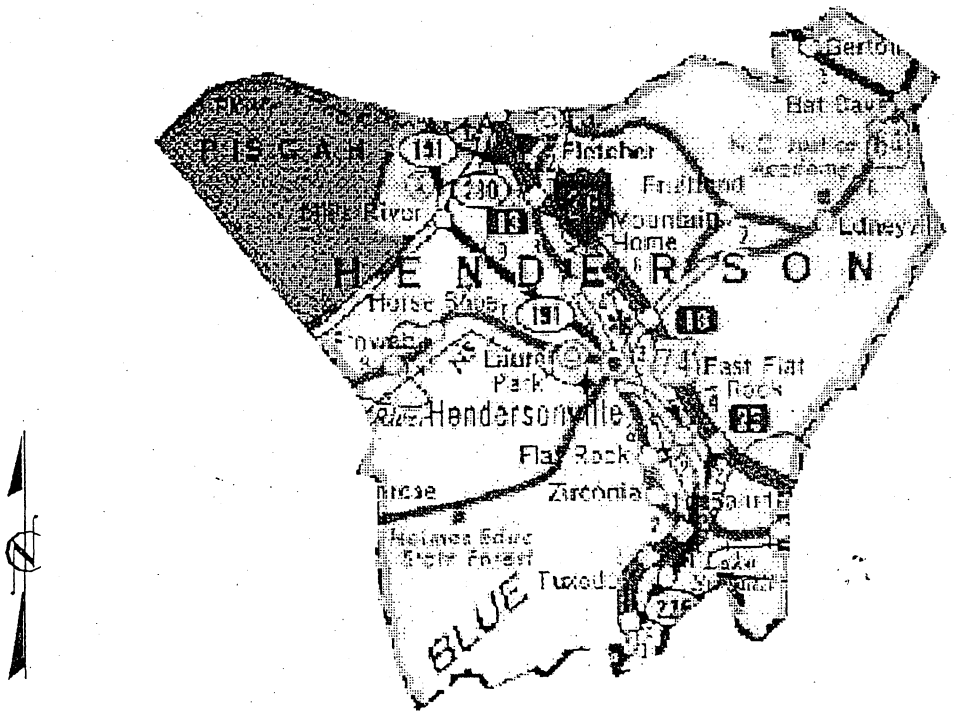
MAILING ADDRESS:
NC DEPARTMENT OF TRANSPORTATION
PROJECT DEVELOPMENT AND ENVIRONMENTAL ANALYSIS
1548 MAIL SERVICE CENTER
RALEIGH NC 27699-1548

TELEPHONE: 919-733-3141
FAX: 919-733-9794

WEBSITE: WWW.DOH.DOT.STATE.NC.US

LOCATION:
TRANSPORTATION BUILDING
1 SOUTH WILMINGTON STREET
RALEIGH NC





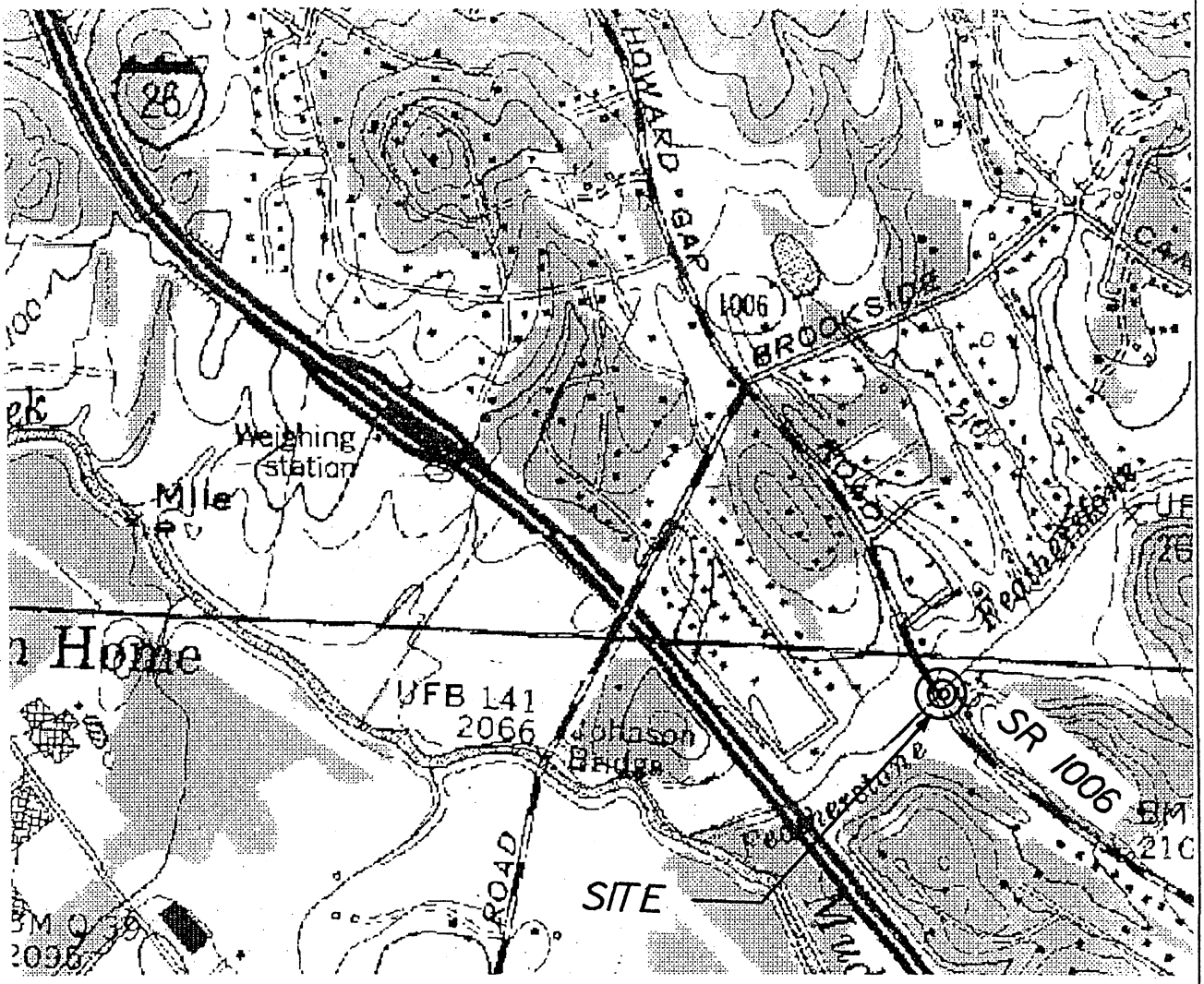
VICINITY MAPS

NCDOT

DIVISION OF HIGHWAYS
HENDERSON COUNTY
PROJECT: 8.2951701 (B-3662)

BRIDGE NO. 20 ON SR 1006
OVER FEATHERSTONE CREEK

SHEET 1 OF 9 5/16/2003



SITE MAP

NCDOT

DIVISION OF HIGHWAYS
HENDERSON COUNTY
PROJECT: 8.2951701 (B-3662)

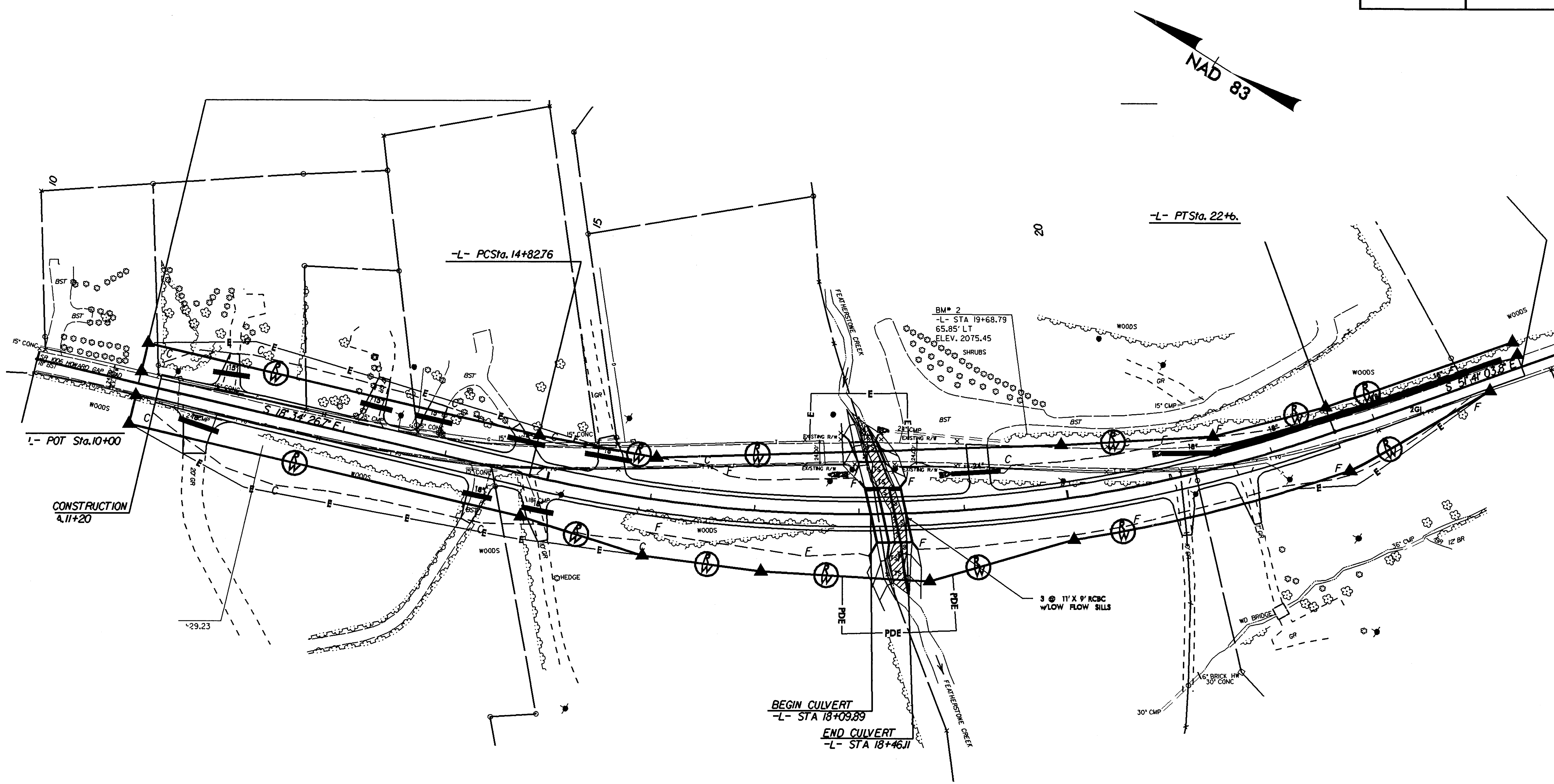
BRIDGE NO. 20 ON SR 1006
OVER FEATHERSTONE CREEK

SHEET 2 OF 9 5/16/2003

8/17/99

PROJECT REFERENCE NO.	SHEET NO.
B-3662	3 of 9
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

ENGLISH



TS TS	DENOTES EXISTING CHANNEL IMPACTS TEMPORARY
S S	DENOTES EXISTING CHANNEL IMPACTS PERMANENT

8/17/95

ENGLISH

PROJECT REFERENCE NO.	SHEET NO.
B-3662	4 of 9
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

NAD 83

-L- PCSta. 14+82.76

-L- PTSta. 22+6.

-L- POT Sta. 10+00

CONSTRUCTION 4.11+20

BEGIN CULVERT -L- STA 18+09.89

END CULVERT -L- STA 18+46.11

3 @ 11' X 9' RCBC W/LOW FLOW SILLS

S 15° 34' 26" E

S 51° 41' 03" E

BM# 2 -L- STA 19+68.79 65.95' LT ELEV. 2075.45

FEATHERSTONE CREEK

DENOTES EXISTING CHANNEL IMPACTS TEMPORARY

DENOTES EXISTING CHANNEL IMPACTS PERMANENT

8/17/99

REVISIONS

PROJECT REFERENCE NO.	SHEET NO.
B-3662	5 of 9
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 25873 ENGINEER GARY L. LOVERING

NAD 83

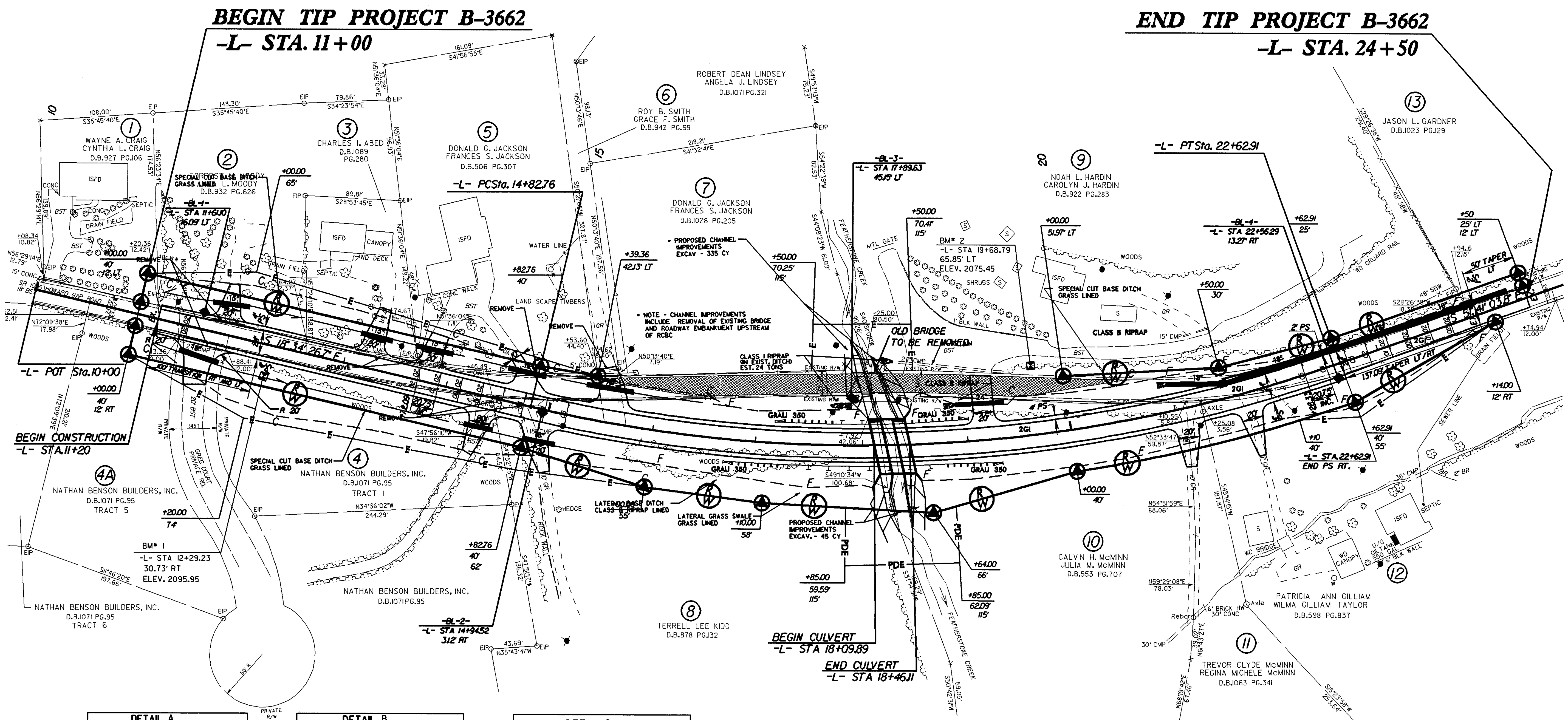
-L-

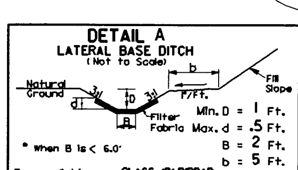
PI Sta 18+84.07
Δ = 33°06' 37.1" (LT)
D = 4°14' 38.9"
L = 780.14'
T = 401.30'
R = 1,350.00'
SE = SEE PLAN

OBUTERATE EXISTING PAVEMENT

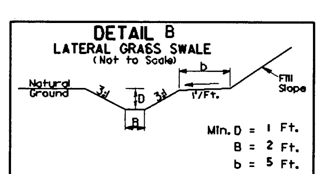
BEGIN TIP PROJECT B-3662
-L- STA. 11+00

END TIP PROJECT B-3662
-L- STA. 24+50

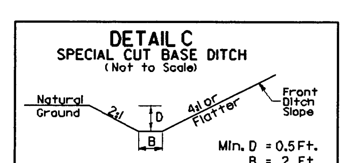




-L- STA 16+00 TO 17+00 RT 25 DDE
EST. 45 TONS OF CL. B RIP RAP



-L- STA 17+00 TO 18+10 RT 45 DDE



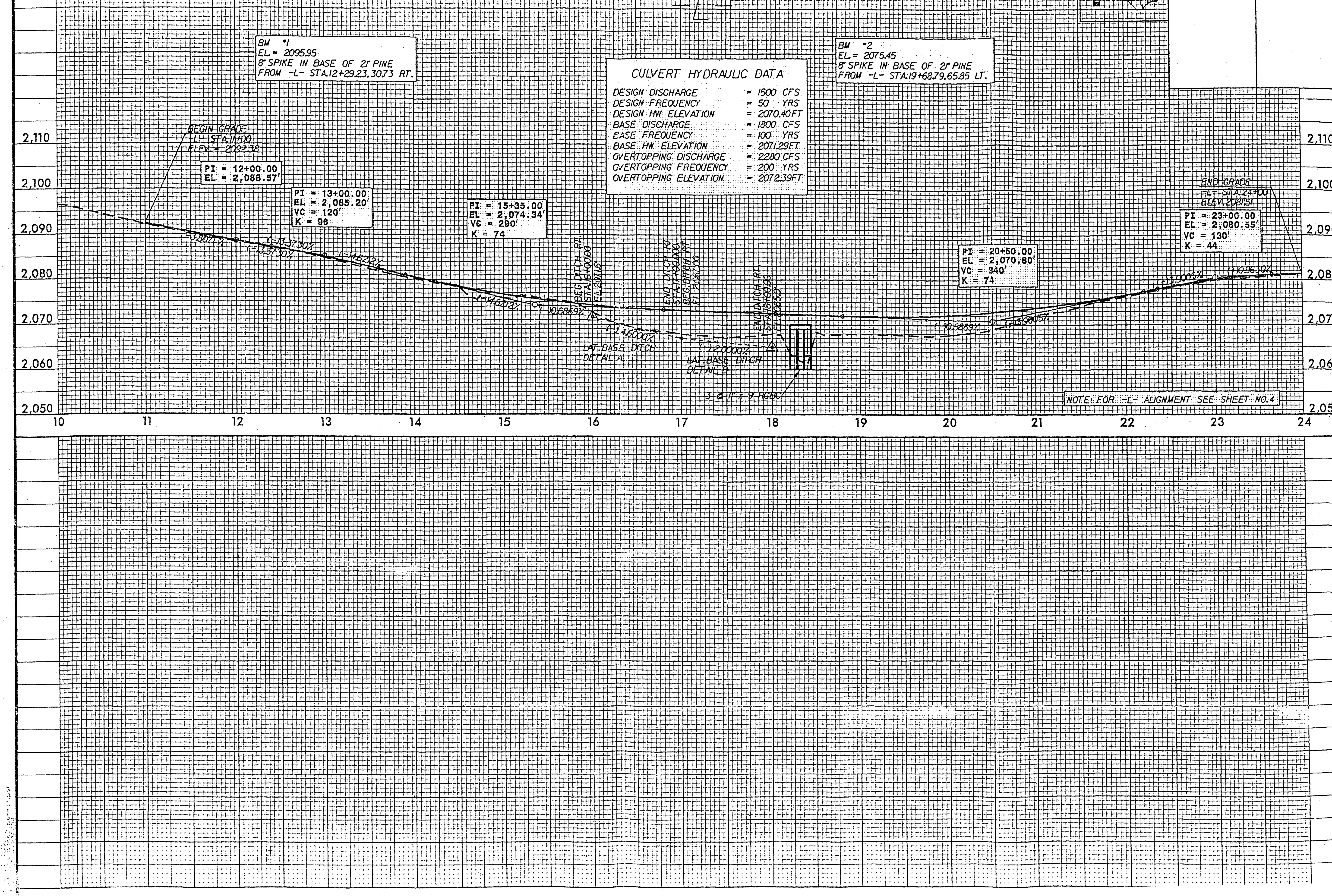
-L- STA 11+20 TO 16+70 LT
-L- STA 11+20 TO 16+00 RT
-L- STA 18+50 TO 21+00 LT
USE -L- GRADE FOR DETAIL "C"

* NOTE - CHANNEL IMPROVEMENTS INCLUDE REMOVAL OF EXISTING BRIDGE AND ROADWAY EMBANKMENT UPSTREAM OF RCBC

NOTES: PAVE ALL DRIVES TO PROPOSED R/W LINE.
ALL DRIVES HAVE 10' RADII UNLESS SHOWN OTHERWISE.
FOR PROFILE OF -L- SEE SHEET NO.5
FOR CULVERT DESIGN SEE SHEETS C-1 TO C-

01-AUG-2005 10:34
r:\roadway\proj\b3662s04.psh
jmdavis AT HY206434

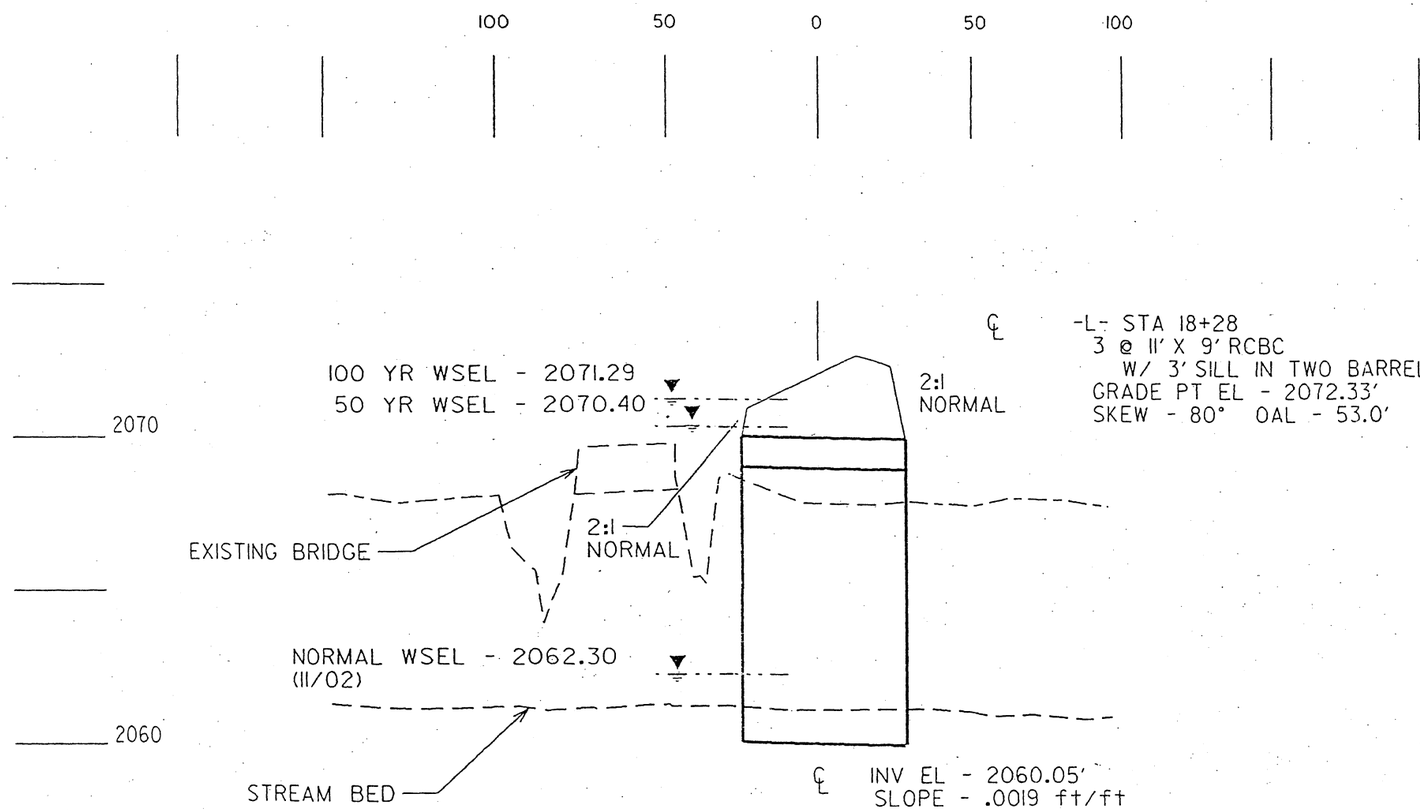
PROJECT REFERENCE NO.	SHEET NO.
B-3662	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



CULVERT HYDRAULIC DATA

DESIGN DISCHARGE	= 1500 CFS
DESIGN FREQUENCY	= 50 YRS
DESIGN HW ELEVATION	= 2070.40FT
BASE DISCHARGE	= 1800 CFS
BASE FREQUENCY	= 100 YRS
BASE HW ELEVATION	= 2071.29FT
OVERTOPPING DISCHARGE	= 2280 CFS
OVERTOPPING FREQUENCY	= 200 YRS
OVERTOPPING ELEVATION	= 2072.39FT

PROJECT REFERENCE NO.	SHEET NO.
B-3662	7 of 9
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



WETLAND PERMIT IMPACT SUMMARY

			WETLAND IMPACTS					SURFACE WATER IMPACTS				
Site No.	Station (From/To)	Structure Size / Type	Permanent Fill In Wetlands (ac)	Temp. Fill In Wetlands (ac)	Excavation in Wetlands (ac)	Mechanized Clearing in Wetlands (ac)	Hand Clearing in Wetlands (ac)	Permanent SW impacts (ac)	Temp. SW impacts (ac)	Existing Channel Impacts Permanent (ft)	Existing Channel Impacts Temp. (ft)	Natural Stream Design (ft)
1	-L- STA 18+28	3@ 11' X 9' RCBC						0.017	0.025	84	111	
TOTALS:								0.017	0.025	84	111	

NC DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

HENDERSON COUNTY
WBS - 33207.1.1 (B-3662)
BRIDGE NO. 20 OVER FEATHERSTONE CREEK
SHEET 8 of 9 7/29/2005

ATN Revised 3/31/05

PROPERTY OWNERS

NAMES AND ADDRESSES

PARCEL NO.	NAMES	ADDRESSES
1	DONALD G. JACKSON FRANCES S. JACKSON	703 HOWARD GAP ROAD HENDERSONVILLE, NC 28792
2	NOAH L. HARDIN CAROLYN J. HARDIN	707 HOWARD GAP ROAD HENDERSONVILLE, NC 28792
3	TERRELL LEE KIDD	700 HOWARD GAP ROAD HENDERSONVILLE, NC 28792
4	NOAH L. HARDIN CAROLYN J. HARDIN	707 HOWARD GAP ROAD HENDERSONVILLE, NC 28792

NCDOT

DIVISION OF HIGHWAYS

HENDERSON COUNTY

PROJECT: 8.2951701 (B-3662)

BRIDGE NO. 20 ON SR 1006
OVER FEATHERSTONE CREEK

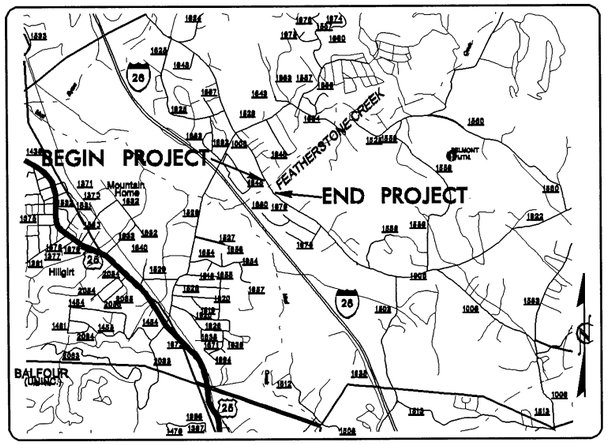
SHEET 9 OF 9 5/16/2003

09/08/99

TIP PROJECT: B-3662

CONTRACT: C201253

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



VICINITY MAP

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

HENDERSON COUNTY

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-3662	1	

STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION
33207.1.1	BRSTP-1006(12)	PE
33207.2.2	BRSTP-1006(12)	RW & UTILITY
33207.3.1	BRSTP-1006(12)	CONST.

LOCATION: BRIDGE NO. 20 OVER FEATHERSTONE CREEK ON SR 1006

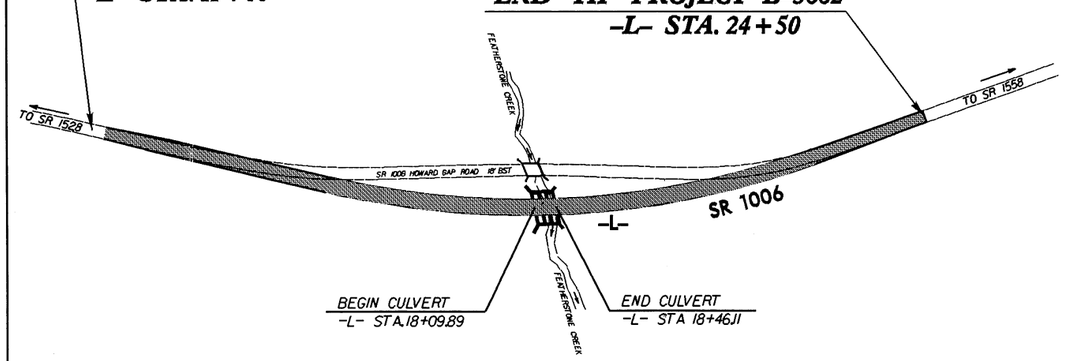
TYPE OF WORK: GRADING, DRAINAGE, CULVERT, PAVING

NAD 83

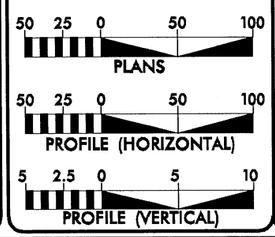
4

BEGIN TIP PROJECT B-3662
-L- STA. 11+00

END TIP PROJECT B-3662
-L- STA. 24+50



GRAPHIC SCALES



DESIGN DATA

ADT 2005 = 7640
ADT 2025 = 12100
DHV = 12 %
D = 60 %
T = 6 % *
V = 40 MPH
FUNCTIONAL CLASS: MAJOR COLLECTOR
* TTST 2 % + DUAL 4 %

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT B-3662 = 0.249 MILES
LENGTH STRUCTURE TIP PROJECT B-3662 = 0.007 MILES
TOTAL LENGTH OF TIP PROJECT B-3662 = 0.256 MILES

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

2002 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
JULY 15, 2004

LETTING DATE:
JULY 19, 2005

GARY LOVERING, PE
PROJECT ENGINEER

ANTHONY C. WEST
PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

SIGNATURE: *P.E.*

ROADWAY DESIGN ENGINEER

SEAL 25873 ENGINEER GARY T. LOVERING PROFESSIONAL

SIGNATURE:

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

STATE DESIGN ENGINEER *P.E.*

DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

APPROVED
DIVISION ADMINISTRATOR *DATE*

06-APR-2005 15:31
P:\roadway\proj\b3662.tsh
mdwol at R0214496

5/28/99

B-3662	1-B

*S.U.E = SUBSURFACE UTILITY ENGINEER

CONVENTIONAL SYMBOLS

ROADS & RELATED ITEMS

- Edge of Pavement
- Curb
- Prop. Slope Stakes Cut
- Prop. Slope Stakes Fill
- Prop. Woven Wire Fence
- Prop. Chain Link Fence
- Prop. Barbed Wire Fence
- Prop. Wheelchair Ramp
- Curb Cut for Future Wheelchair Ramp
- Exist. Guardrail
- Prop. Guardrail
- Equality Symbol
- Pavement Removal

RIGHT OF WAY

- Baseline Control Point
- Existing Right of Way Marker
- Exist. Right of Way Line w/Marker
- Prop. Right of Way Line with Proposed R/W Marker (Iron Pin & Cap)
- Prop. Right of Way Line with Proposed (Concrete or Granite) R/W Marker
- Exist. Control of Access Line
- Prop. Control of Access Line
- Exist. Easement Line
- Prop. Temp. Construction Easement Line
- Prop. Temp. Drainage Easement Line
- Prop. Perm. Drainage Easement Line

HYDROLOGY

- Stream or Body of Water
- River Basin Buffer
- Flow Arrow
- Disappearing Stream
- Spring
- Swamp Marsh
- Shoreline
- Falls, Rapids
- Prop Lateral, Tail, Head Ditches

STRUCTURES

MAJOR

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

MINOR

- Head & End Wall
- Pipe Culvert
- Footbridge
- Drainage Boxes
- Paved Ditch Gutter

UTILITIES

- Exist. Pole
- Exist. Power Pole
- Prop. Power Pole
- Exist. Telephone Pole
- Prop. Telephone Pole
- Exist. Joint Use Pole
- Prop. Joint Use Pole
- Telephone Pedestal
- U/G Telephone Cable Hand Hold
- Cable TV Pedestal
- U/G TV Cable Hand Hold
- U/G Power Cable Hand Hold
- Hydrant
- Satellite Dish
- Exist. Water Valve
- Sewer Clean Out
- Power Manhole
- Telephone Booth
- Cellular Telephone Tower
- Water Manhole
- Light Pole
- H-Frame Pole
- Power Line Tower
- Pole with Base
- Gas Valve
- Gas Meter
- Telephone Manhole
- Power Transformer
- Sanitary Sewer Manhole
- Storm Sewer Manhole
- Tank; Water, Gas, Oil
- Water Tank With Legs
- Traffic Signal Junction Box
- Fiber Optic Splice Box
- Television or Radio Tower
- Utility Power Line Connects to Traffic Signal Lines Cut Into the Pavement

- Recorded Water Line
- Designated Water Line (S.U.E.*)
- Sanitary Sewer
- Recorded Sanitary Sewer Force Main
- Designated Sanitary Sewer Force Main(S.U.E.*)
- Recorded Gas Line
- Designated Gas Line (S.U.E.*)
- Storm Sewer
- Recorded Power Line
- Designated Power Line (S.U.E.*)
- Recorded Telephone Cable
- Designated Telephone Cable (S.U.E.*)
- Recorded U/G Telephone Conduit
- Designated U/G Telephone Conduit (S.U.E.*)
- Unknown Utility (S.U.E.*)
- Recorded Television Cable
- Designated Television Cable (S.U.E.*)
- Recorded Fiber Optics Cable
- Designated Fiber Optics Cable (S.U.E.*)
- Exist. Water Meter
- U/G Test Hole (S.U.E.*)
- Abandoned According to U/G Record
- End of Information

BOUNDARIES & PROPERTIES

- State Line
- County Line
- Township Line
- City Line
- Reservation Line
- Property Line
- Property Line Symbol
- Exist. Iron Pin
- Property Corner
- Property Monument
- Property Number
- Parcel Number
- Fence Line
- Existing Wetland Boundaries
- Proposed Wetland Boundaries
- Existing Endangered Animal Boundaries
- Existing Endangered Plant Boundaries

BUILDINGS & OTHER CULTURE

- Buildings
- Foundations
- Area Outline
- Gate
- Gas Pump Vent or U/G Tank Cap
- Church
- School
- Park
- Cemetery
- Dam
- Sign
- Well
- Small Mine
- Swimming Pool

TOPOGRAPHY

- Loose Surface
- Hard Surface
- Change in Road Surface
- Curb
- Right of Way Symbol
- Guard Post
- Paved Walk
- Bridge
- Box Culvert or Tunnel
- Ferry
- Culvert
- Footbridge
- Trail, Footpath
- Light House

VEGETATION

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

RAILROADS

- Standard Gauge
- RR Signal Milepost
- Switch

SYSTIME
DGN
USERNAME

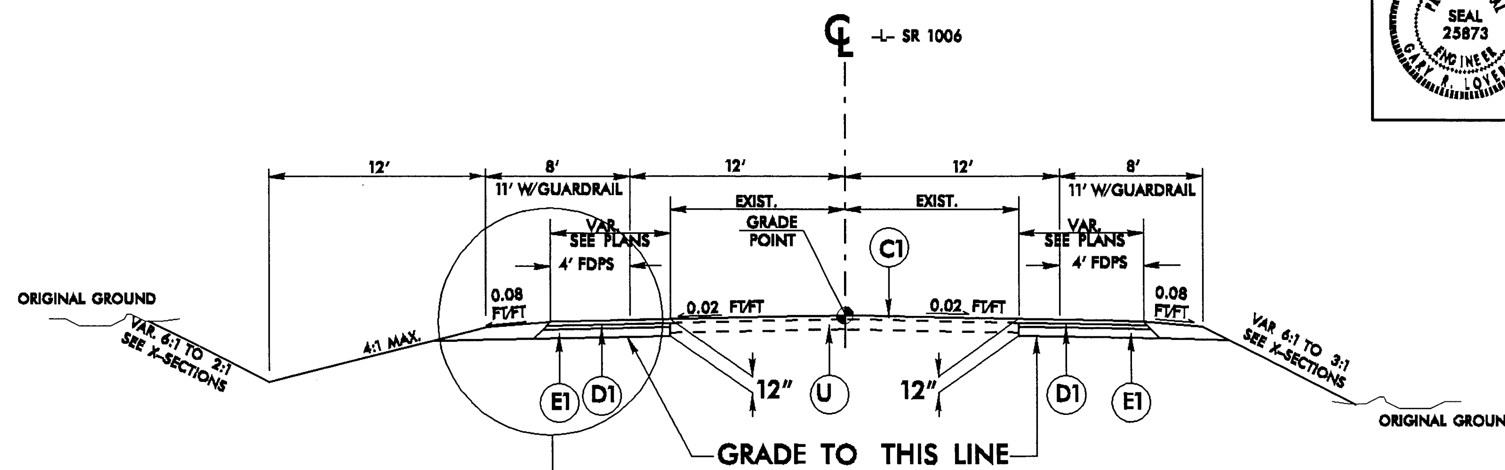
revised 02/02/00

PROJECT REFERENCE NO.	SHEET NO.
B-3662	2
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER

FINAL PAVEMENT SCHEDULE

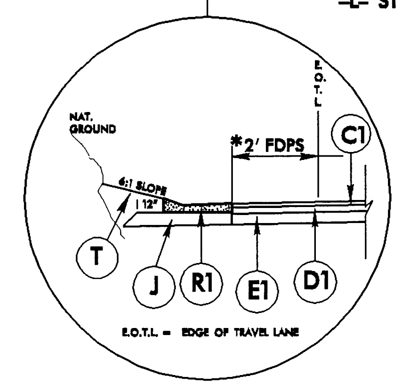
C1	PROP APPROX. 3.0" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B AT AN AVERAGE RATE OF 168 LBS PER SQ. YD. IN EACH OF TWO LAYERS
C2	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, AT AN AVERAGE RATE OF 112 LBS. PER SQ. YD. PER 1" DEPTH, TYPE S9.5B, TO BE PLACED IN LAYERS NOT LESS THAN 1" IN DEPTH OR GREATER THAN 1.5" IN DEPTH
D1	PROP. APPROX. 3.5" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0B, AT AN AVERAGE RATE OF 399 LBS. PER SQ. YD.
D2	PROP. VAR. DEPTH ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0B, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1 INCH DEPTH, TO BE PLACED IN LAYERS NOT TO EXCEED 4" IN DEPTH OR LESS THAN 2.25" IN DEPTH
E1	PROP. APPROX. 5.5" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 627 LBS. PER SQ. YD.
E2	PROP. VAR. DEPTH ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1" DEPTH, TO BE PLACED IN LAYERS NOT LESS THAN 3" IN DEPTH OR GREATER THAN 5 1/2" IN DEPTH.
J	PROP. 7" ABC
R1	PROP. SHOULDER BERM GUTTER
U	EXISTING PAVEMENT
T	EARTH

NOTE: ALL PAVEMENT EDGE SLOPES ARE 1:1 UNLESS NOTED OTHERWISE



TYPICAL SECTION NO. 1

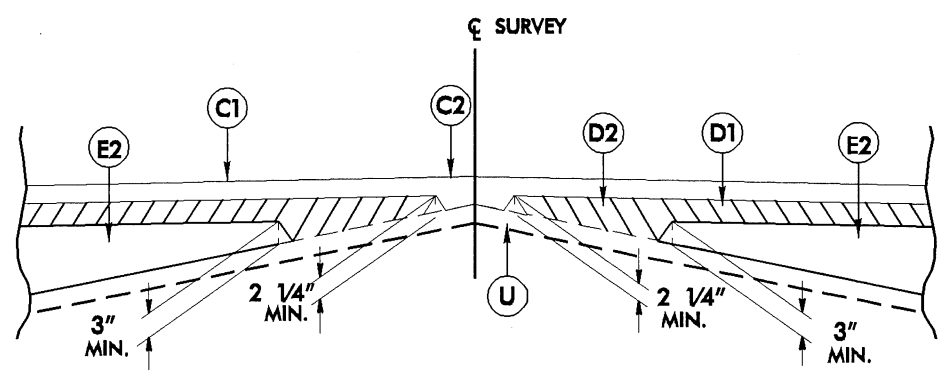
-L- STA. 11+20 TO -L- STA. 15+18
-L- STA. 20+73 TO -L- STA. 24+50



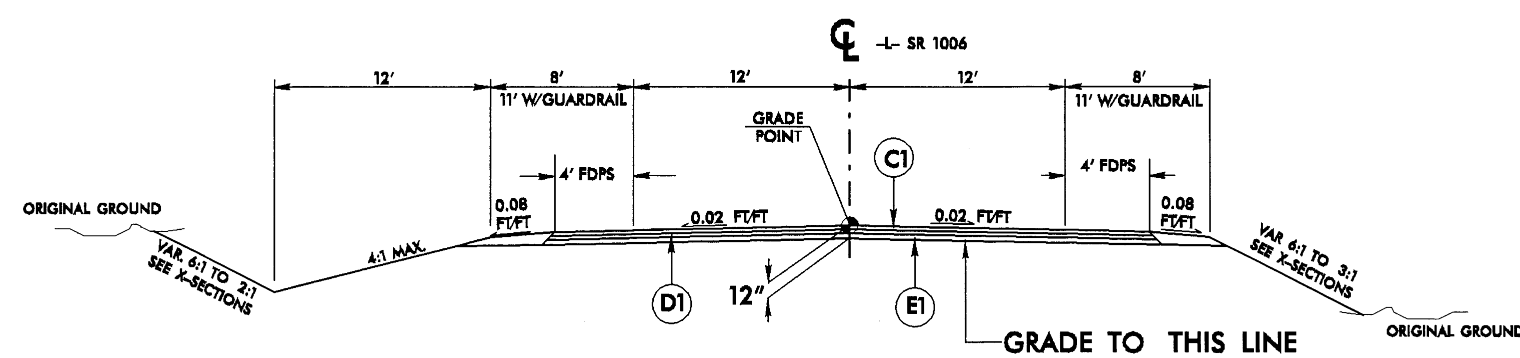
INSET A

-L- STA. 21+50 LT. TO STA. 24+00 LT.

*NOTE: TAPER PAVED SHOULDER ADJACENT TO SBG FROM 4' @ STA 21+50 LT TO 2' @ STA 22+50 LT.



Detail Showing Method of Wedging



TYPICAL SECTION NO. 2

-L- STA. 15+18 TO -L- STA. 20+73

06-APR-2005 15:31
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PROJECT REFERENCE NO.	SHEET NO.
B-3662	4
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 25873 ENGINEER GARY B. LOVERING

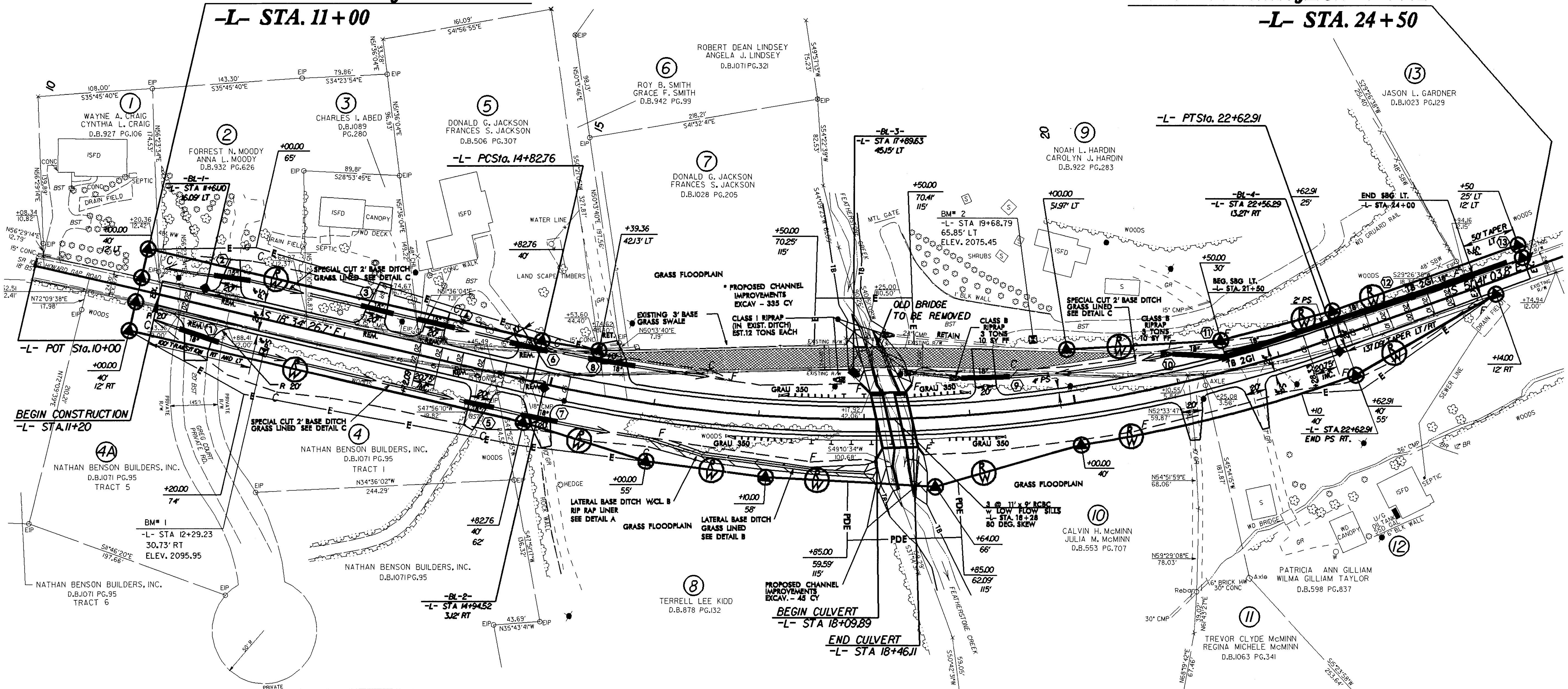
NAD 83

-L-
PI Sta 18+84.07
Δ = 33° 06' 37.5" (LT)
D = 4° 14' 38.9"
L = 780.14'
T = 401.30'
R = 1,350.00'
SE = SEE PLAN

OBLITERATE EXISTING PAVEMENT

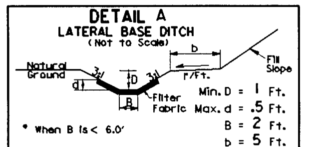
BEGIN TIP PROJECT B-3662
-L- STA. 11+00

END TIP PROJECT B-3662
-L- STA. 24+50



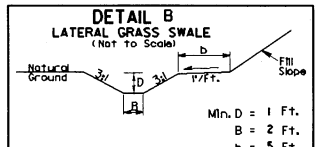
-L- POT Sta. 10+00
BEGIN CONSTRUCTION
-L- STA. 11+20
-L- PCSta. 14+82.76
-L- PTSta. 22+62.91
WAYNE A. CRAIG
CYNTHIA L. CRAIG
D.B.927 PG.106
FORREST N. MOODY
ANNA L. MOODY
D.B.932 PG.626
CHARLES I. ABED
D.B.1089
PG.280
DONALD G. JACKSON
FRANCES S. JACKSON
D.B.506 PG.307
ROY B. SMITH
GRACE F. SMITH
D.B.942 PG.99
ROBERT DEAN LINDSEY
ANGELA J. LINDSEY
D.B.1071 PG.321
DONALD G. JACKSON
FRANCES S. JACKSON
D.B.1028 PG.205
NOAH L. HARDIN
CAROLYN J. HARDIN
D.B.922 PG.283
JASON L. GARDNER
D.B.1023 PG.129
NATHAN BENSON BUILDERS, INC.
D.B.1071 PG.95
TRACT 5
NATHAN BENSON BUILDERS, INC.
D.B.1071 PG.95
TRACT 1
NATHAN BENSON BUILDERS, INC.
D.B.1071 PG.95
TRACT 6
TERRELL LEE KIDD
D.B.878 PG.132
CALVIN H. McMINN
JULIA M. McMINN
D.B.553 PG.707
PATRICIA ANN GILLIAM
WILMA GILLIAM TAYLOR
D.B.598 PG.837
TREVOR CLYDE McMINN
REGINA MICHELE McMINN
D.B.1063 PG.341
BM# 1
-L- STA 12+29.23
30.73' RT
ELEV. 2095.95
BM# 2
-L- STA 19+68.79
65.85' LT
ELEV. 2075.45
OLD BRIDGE
TO BE REMOVED
GRASS FLOODPLAIN
* PROPOSED CHANNEL IMPROVEMENTS EXCAV - 335 CY
CLASS I RIPRAP (IN EXIST. DITCH) EST.12 TONS EACH
EXISTING 3' BASE GRASS SWALE
SPECIAL CUT 2' BASE DITCH GRASS LINED SEE DETAIL C
LATERAL BASE DITCH W/CL B RIP RAP LINER SEE DETAIL A
LATERAL BASE DITCH GRASS LINED SEE DETAIL B
PROPOSED CHANNEL IMPROVEMENTS EXCAV. - 45 CY
3 @ 11' x 9' RCBC
W LOW FLOW SILLS
-L- STA. 18+28
80 DEG. SKEW
BEGIN CULVERT
-L- STA 18+09.89
END CULVERT
-L- STA 18+46.11
-BL-1-
-L- STA 11+60.0
16.09' LT
-BL-2-
-L- STA 14+94.52
3.12' RT
-BL-3-
-L- STA 17+89.63
45.15' LT
-BL-4-
-L- STA 22+56.29
13.27' RT
END PS RT.
FEATHERSTONE CREEK

DETAIL A
LATERAL BASE DITCH
(Not to Scale)



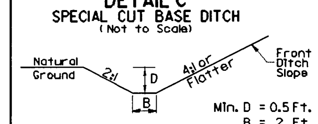
-L- STA 16+00 TO 17+00 RT 25 DDE
EST. 45 TONS OF CL. B RIP RAP

DETAIL B
LATERAL GRASS SWALE
(Not to Scale)



-L- STA 17+00 TO 18+10 RT 45 DDE

DETAIL C
SPECIAL CUT BASE DITCH
(Not to Scale)



-L- STA 11+20 TO 16+70 LT
-L- STA 11+20 TO 16+00 RT
-L- STA 18+50 TO 21+00 LT
USE -L- GRADE FOR DETAIL "C"

* NOTE - CHANNEL IMPROVEMENTS INCLUDE REMOVAL OF EXISTING BRIDGE AND ROADWAY EMBANKMENT UPSTREAM OF RCBC

NOTES: PAVE ALL DRIVES TO PROPOSED R/W LINE.
ALL DRIVES HAVE 10' RADII UNLESS SHOWN OTHERWISE.
FOR PROFILE OF -L- SEE SHEET NO.5
FOR CULVERT DESIGN SEE SHEETS C-1 TO C-

REVISIONS

8/17/99

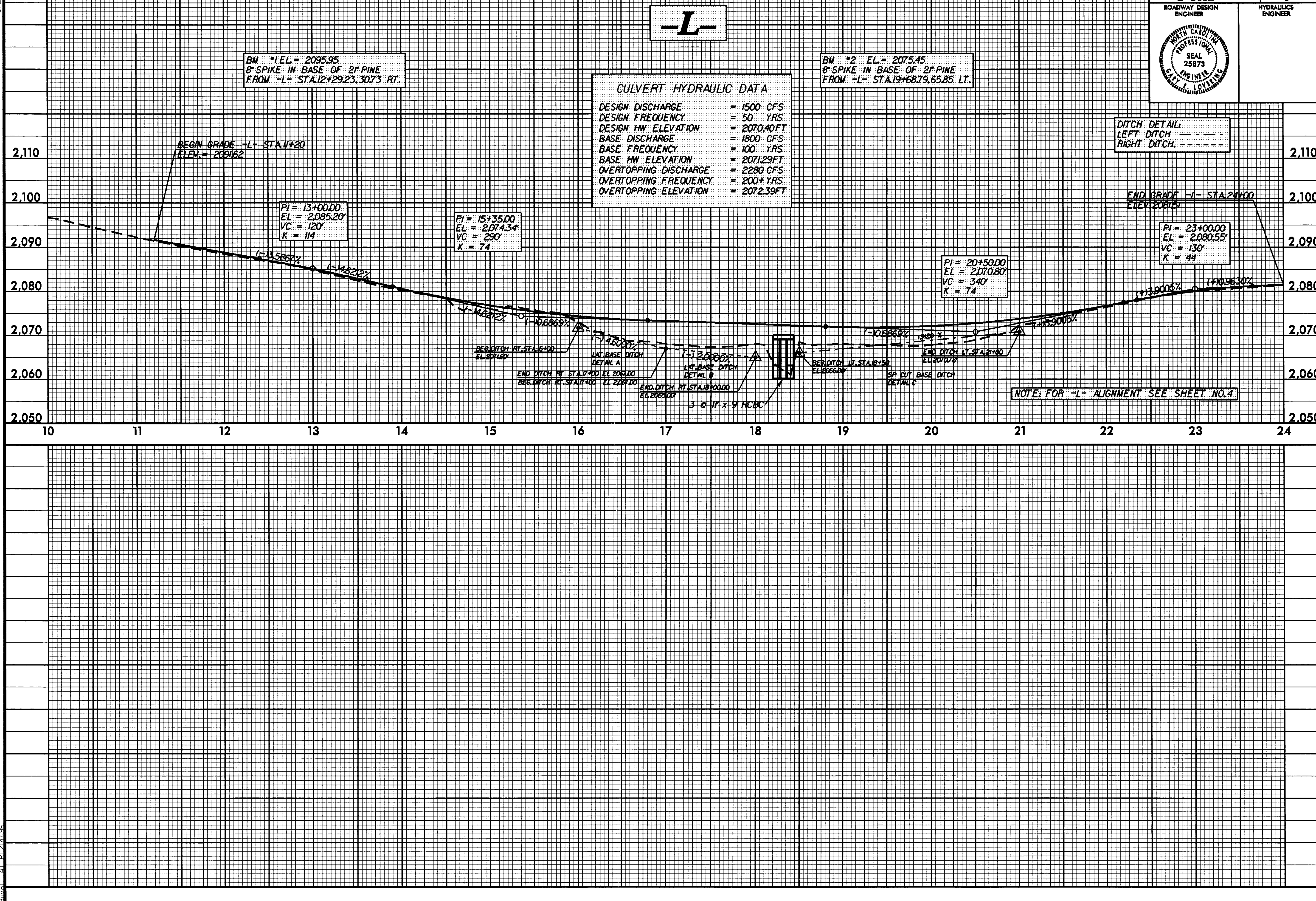
06-APR-2005 15:32

PROJECT REFERENCE NO.	SHEET NO.
B-3662	5

ROADWAY DESIGN ENGINEER — HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 25873 ENGINEER GARY R. LOVERING

-L-



5/28/99

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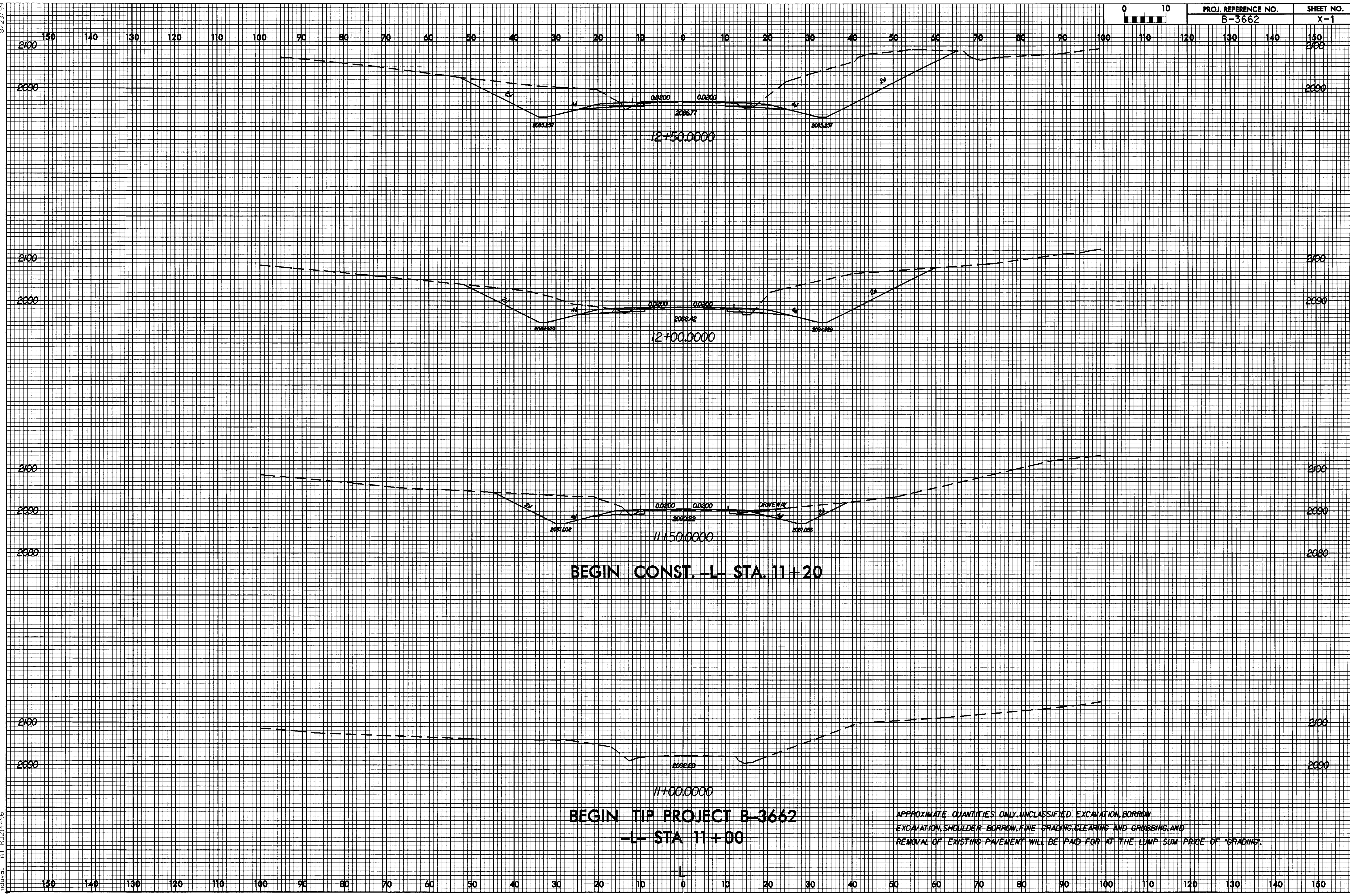
mdurant AT R0214496

PROJ. REFERENCE NO.	SHEET NO.
B-3662	X-1

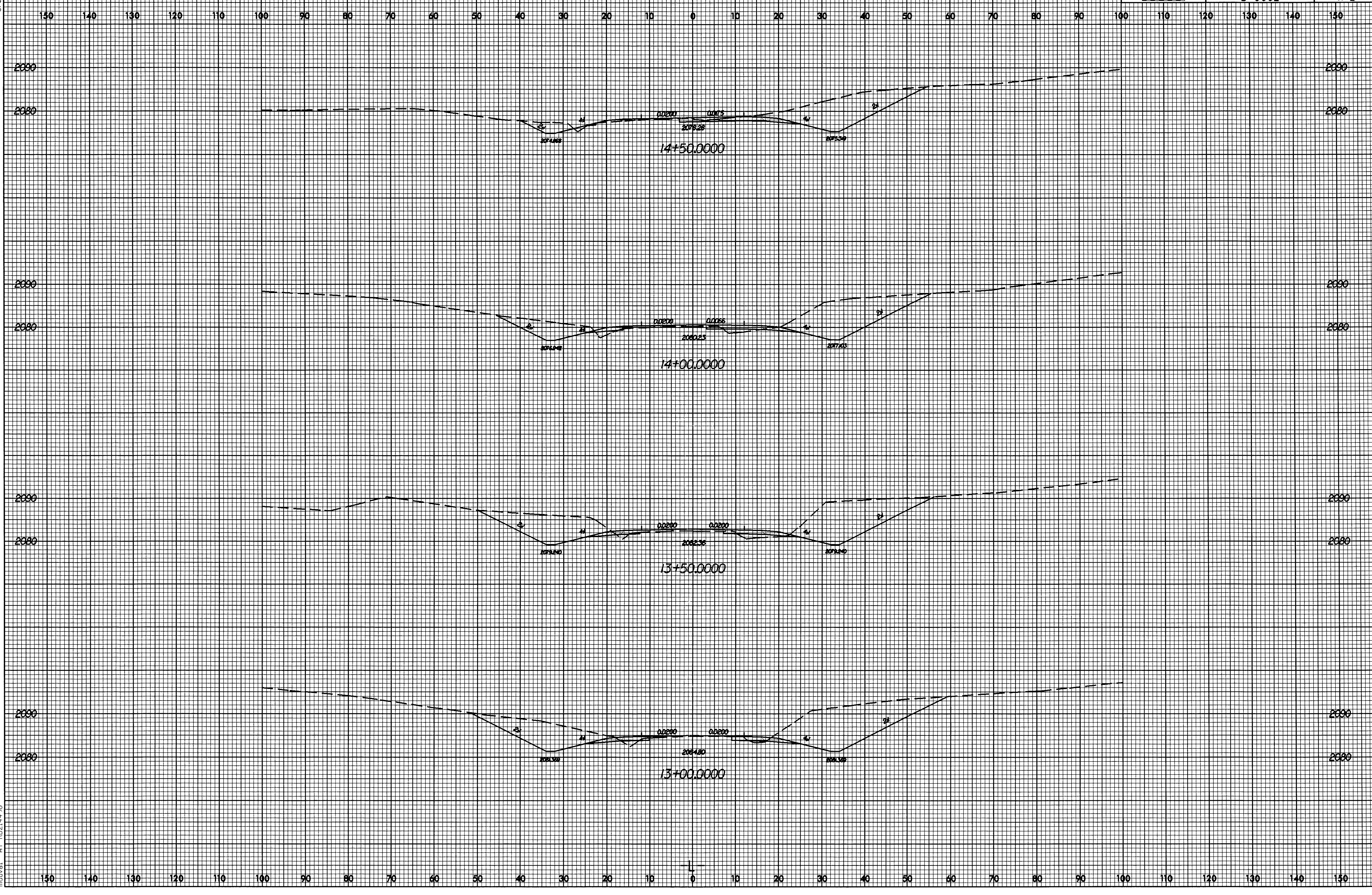


BEGIN CONST. -L- STA. 11+20

BEGIN TIP PROJECT B-3662
-L- STA 11+00

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

0 10 (scale)	PROJ. REFERENCE NO.	SHEET NO.
	B-3662	X-2



8/23/99

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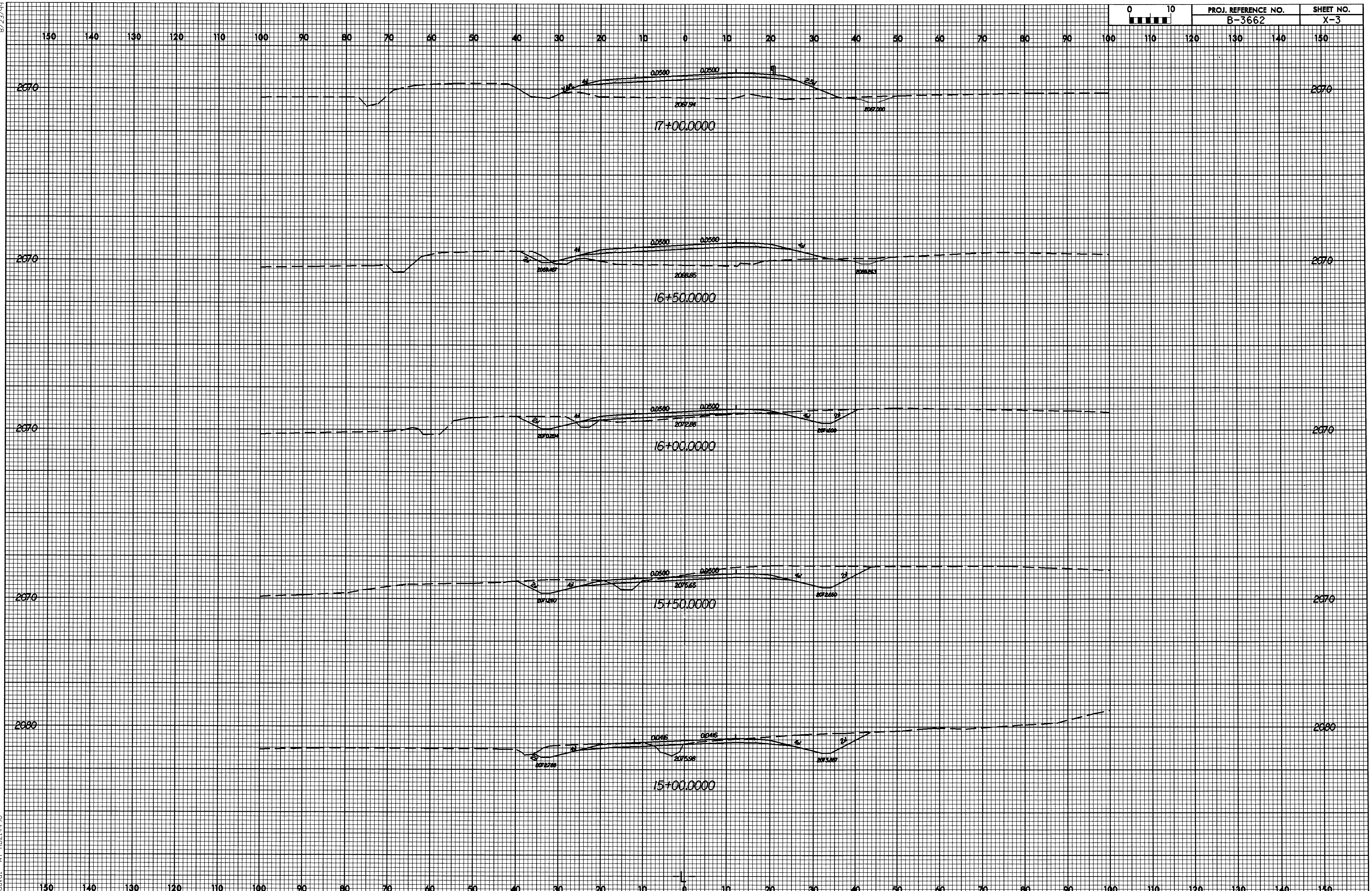
mduval AT RD214496

8/23/99



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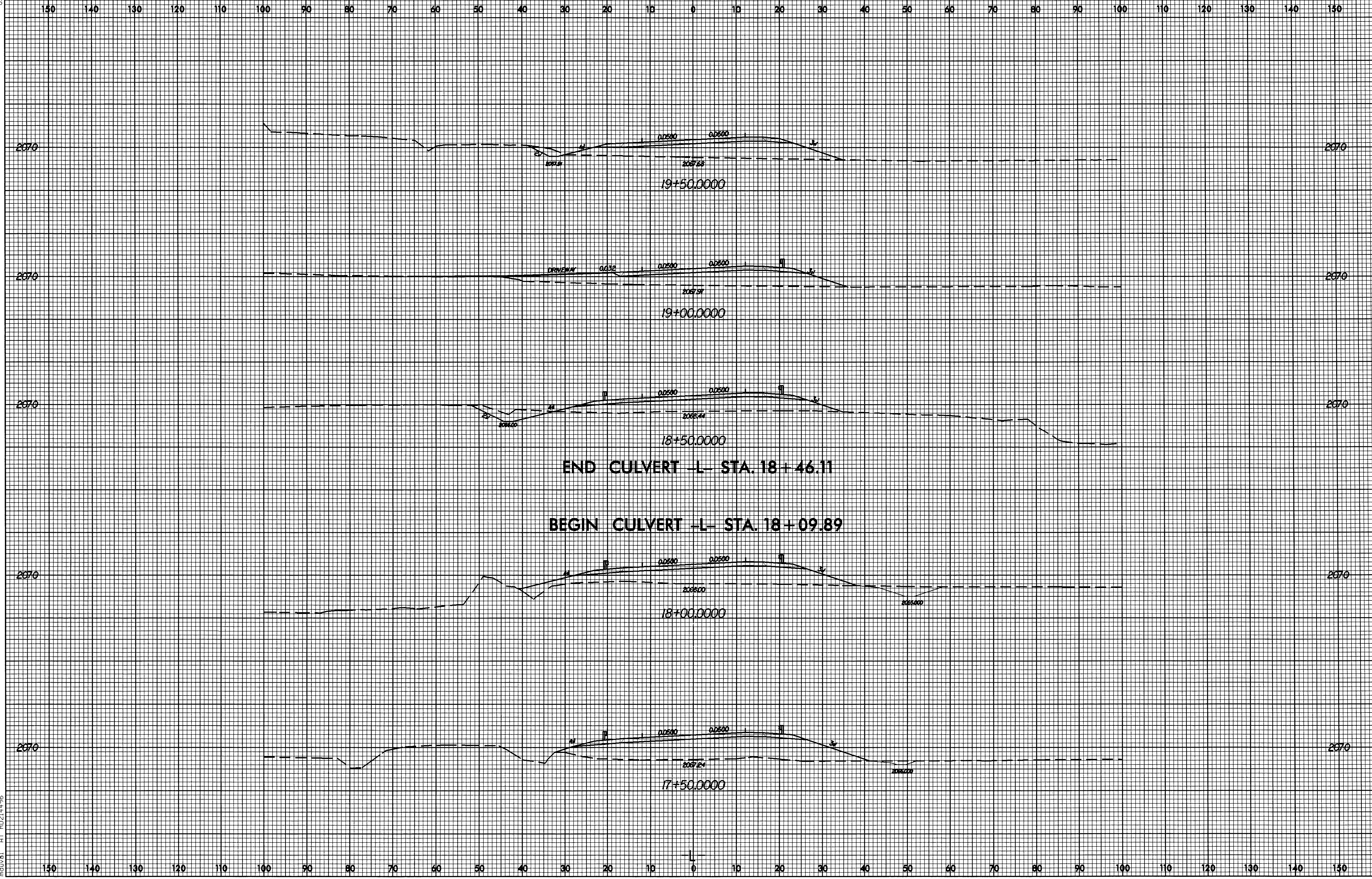
mduval AT RD214496

PROJ. REFERENCE NO.	SHEET NO.
B-3662	X-4

8/23/99



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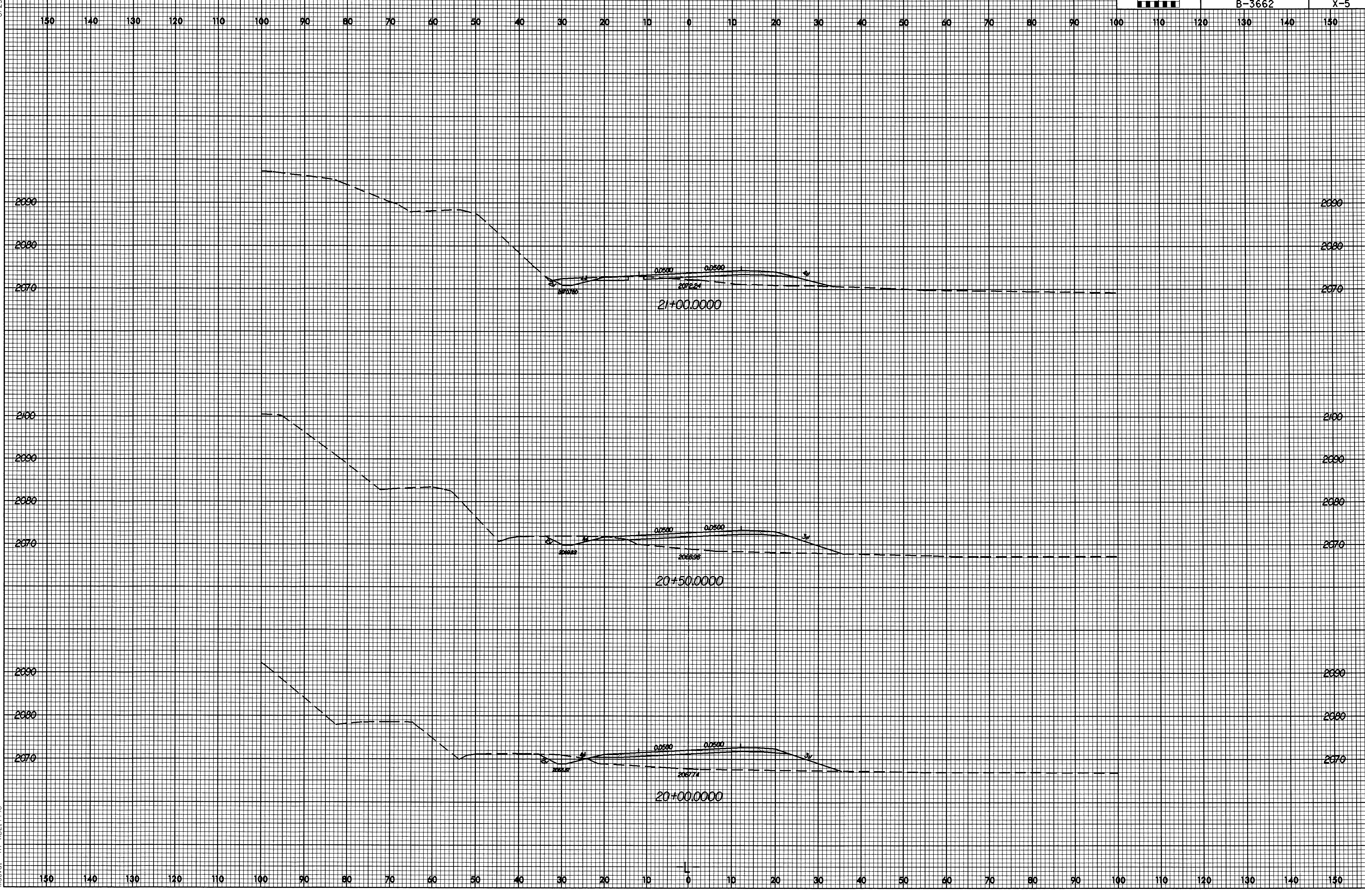
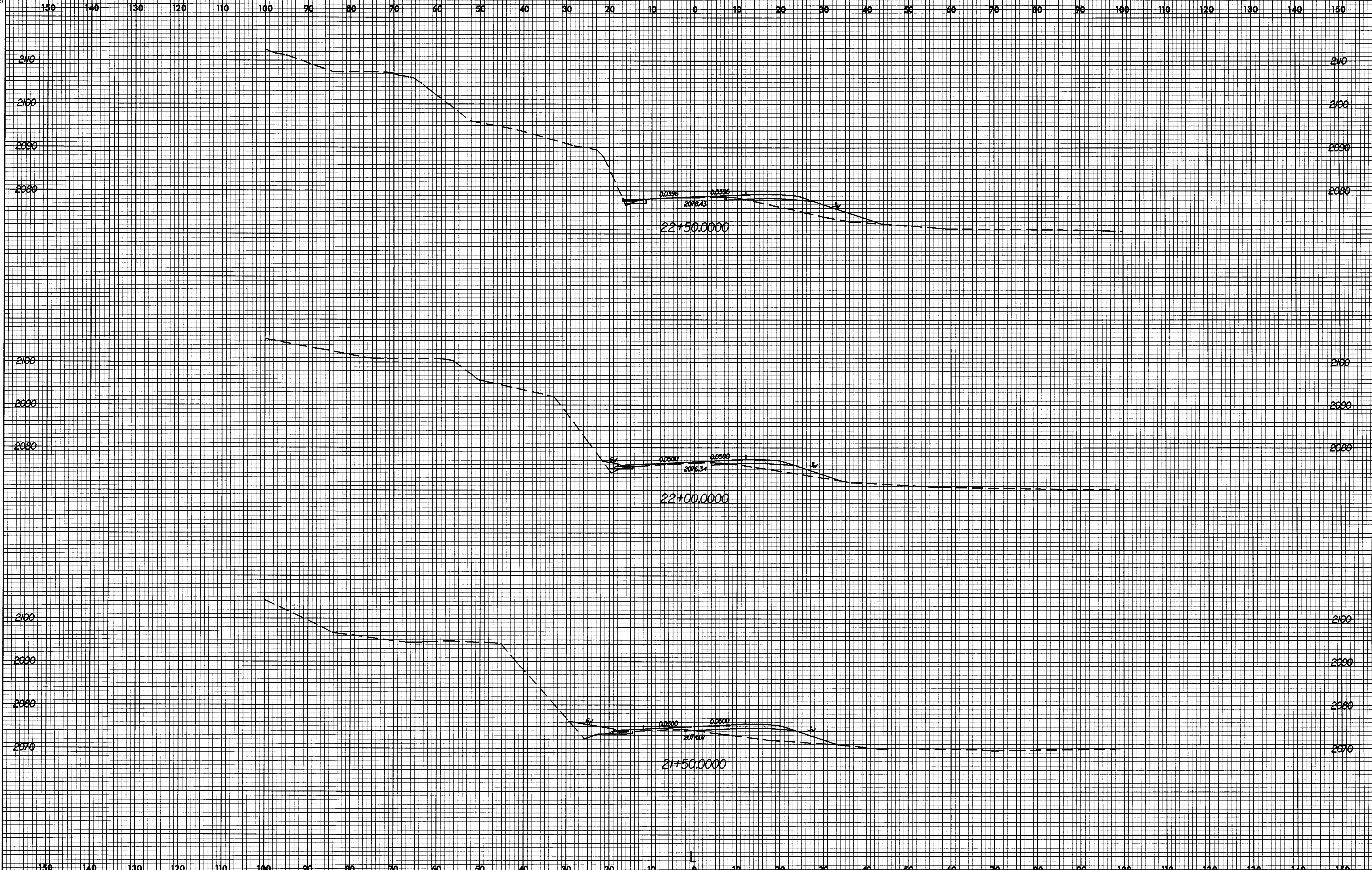
PROJ. REFERENCE NO.	SHEET NO.
B-3662	X-5



8/23/99

06-APR-2005 15:35

0 10	PROJ. REFERENCE NO.	SHEET NO.
	B-3662	X-6



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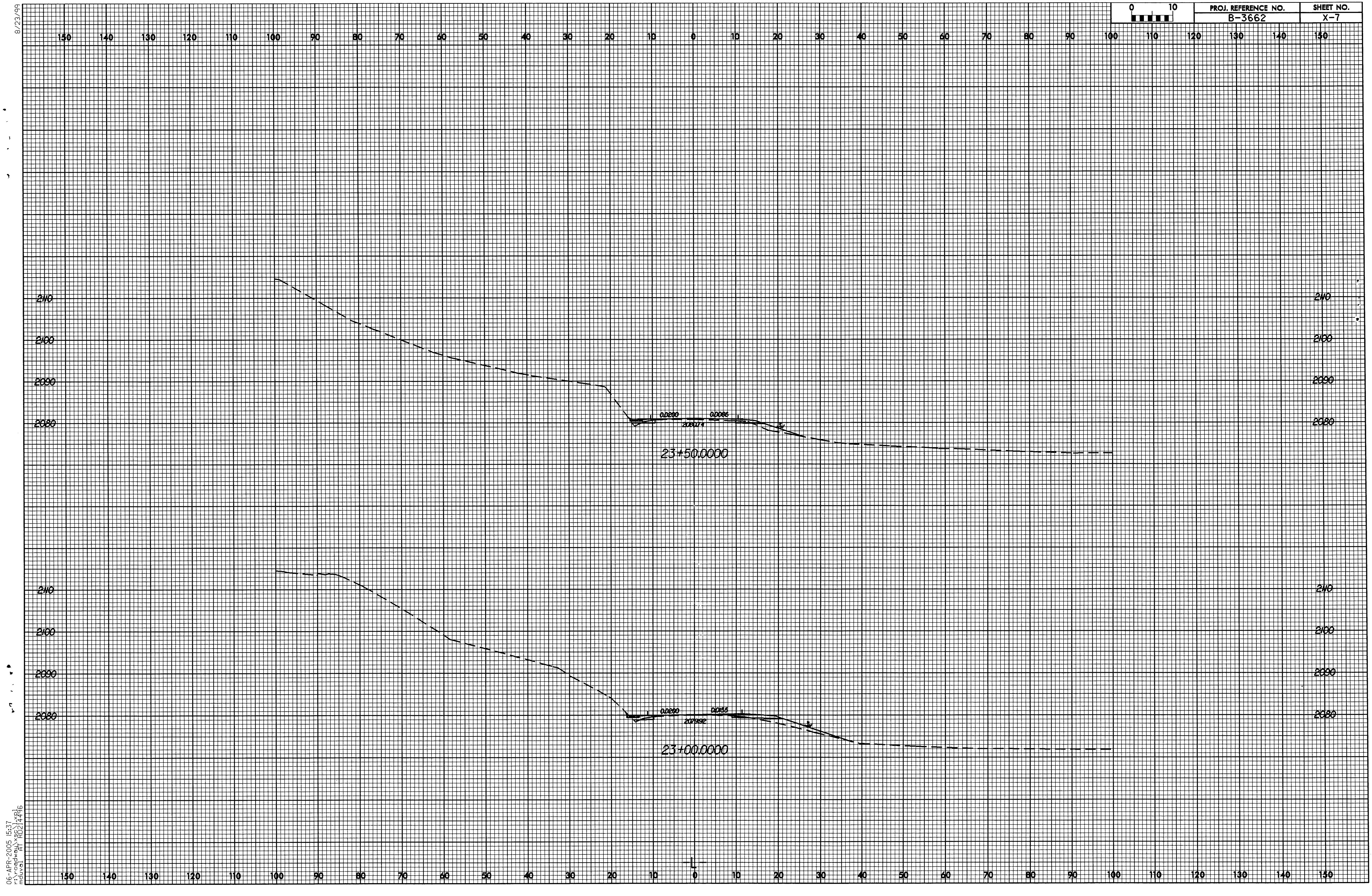
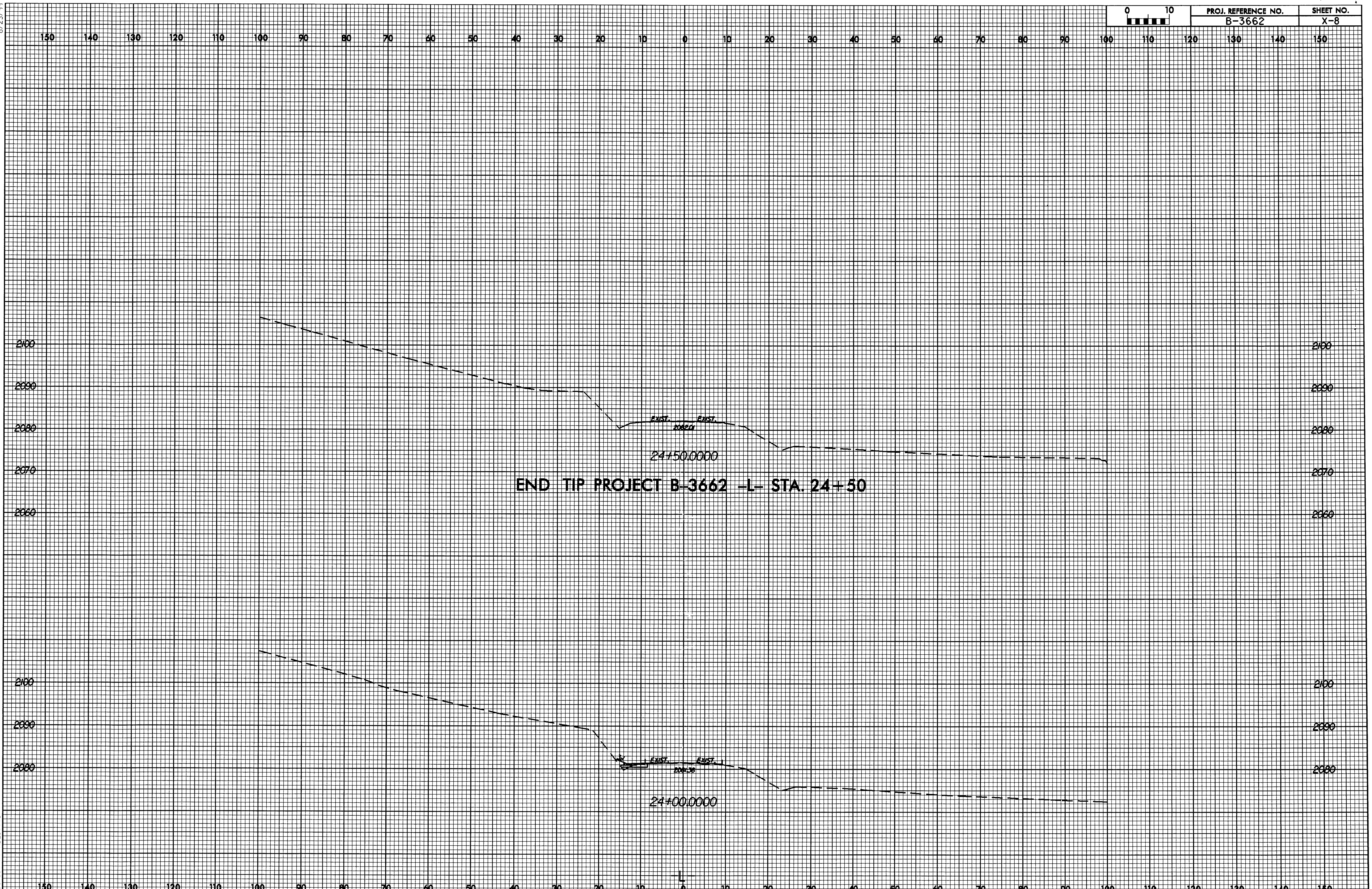
mduval AT RD214496

PROJ. REFERENCE NO.	SHEET NO.
B-3662	X-7



PROJ. REFERENCE NO.	SHEET NO.
B-3662	X-8



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mduval AT RD214496

Ecosystem Enhancement PROGRAM

July 19, 2005

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

Dear Dr. Thorpe:

Subject: EEP Mitigation Acceptance Letter:

B-3662, Bridge 20 over Featherstone Creek on SR 1006 (Howard Gap Road), Burke County

The purpose of this letter is to notify you that the Ecosystem Enhancement Program (EEP) will provide stream mitigation for the subject project. Based on the information supplied by you in a letter dated June 21, 2005, the impacts are located in CU 06010105 of the French Broad River Basin in the Northern Mountains (NM) Eco-Region, and are as follows:

Stream Impacts: 84 feet

As stated in your letter, the subject project is listed in Exhibit 2 of the Memorandum of Agreement among the North Carolina Department of Environment and Natural Resources, the North Carolina Department of Transportation, and the U. S. Army Corps of Engineers, Wilmington District dated July 22, 2003. The mitigation for the subject project will be provided in accordance with this agreement.

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

Sincerely,

James B. Stanfill for

William D. Gilmore, P.E.
EEP Director

cc: Ms. Angie Pennock, USACE-Asheville
Mr. John Hennessy, Division of Water Quality, Wetlands/401 Unit
File: B-3662

Ecosystem Enhancement PROGRAM

July 19, 2005

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

Dear Ms. Pennock:

Subject: EEP Mitigation Acceptance Letter

B-3662, Replace Bridge 20 over Featherstone Creek on SR 1006 (Howard Cap Road); French Broad River Basin (Cataloging Unit 06010105); Southern Mountains (SM) Eco-Region

The purpose of this letter is to notify you that the Ecosystem Enhancement Program (EEP) proposes to provide high quality preservation to compensate for the unavoidable 84 feet of stream impacts associated with the subject project in the following manner:

Stream Preservation (10:1) in Same Eco-Region

Needmore Site, Swain County 840 feet

The subject TIP project is listed in Exhibit 2 of the Memorandum of Agreement among the North Carolina Department of Environment and Natural Resources, the North Carolina Department of Transportation, and the U. S. Army Corps of Engineers, Wilmington District dated July 22, 2003. The compensatory mitigation for the project will be provided in accordance with Section IX, EEP Transition Period, of the Agreement.

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

Sincerely,

James B. Stanfill Jr

William D. Gilmore, P.E.
EEP Director

cc: Mr. Phil Harris, Office of Natural Environment, NCDOT
Mr. John Hennessey, Division of Water Quality, Wetlands/401 Unit
File: B-3662