



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

MICHAEL F. EASLEY
GOVERNOR

LYNDO TIPPETT
SECRETARY

October 8, 2007

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

ATTENTION: Mr. David Baker
NCDOT Coordinator

SUBJECT: **Nationwide Permit 23 and 33 Application** for the proposed replacement of Bridge No. 274 over Canoe Creek on SR 1248 in Burke County. Division 13, Federal Aid Project No. BRZ-1248(3), State Project No. 82853501, WBS Element 33408.1.1, **TIP No. B-4042.**

Dear Sir:

Please see the enclosed Pre-Construction Notification (PCN), USACE field meeting minutes, permit drawings, design plans, Project Environmental Consultation Form, and Categorical Exclusion (CE). The North Carolina Department of Transportation (NCDOT) proposes to construct a new bridge approximately 80 feet long with a clear width of 40 feet that will span Canoe Creek. The proposed new structure is to be built at the location of the existing structure with an offsite detour during construction. There is a proposed 0.05 acre of permanent fill in wetlands associated with this project. In addition, there will be 0.01 acre of temporary surface water impacts associated with the installation of riprap. Riprap will be used to stabilize the outlet of a wetland created for on-site mitigation purposes.

IMPACTS TO WATERS OF THE UNITED STATES

General Description:

The water resources impacted for project B-4042 are Canoe Creek and an on-site linear wetland. Canoe Creek is located in the Catawba River Basin (Division of Water Quality (DWQ) subbasin 03-08-30). The DWQ Index number for this section of Canoe Creek is 11-33(-2) and the Hydrological Cataloguing Unit is 03050101.

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

TELEPHONE: 919-733-3141
FAX: 919-715-1501

WEBSITE: WWW.NCDOT.ORG

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

The North Carolina Department of Environmental and Natural Resources classifies Canoe Creek as WS-IV. There are no High Quality Waters (HQW), Water Supplies (WS-I or WSII), or Outstanding Resource Waters (ORW) within one mile of the project study area. Canoe Creek does not appear on the North Carolina DWQ 303(d) List (updated June 2007).

Permanent Impacts:

In a field meeting with David Baker on December 12, 2006, a jurisdictional linear wetland system was identified on the north side of the project area. There will be 0.05 acre of permanent fill to this linear wetland. Mr. Baker determined that the impacts to this system could be mitigated at a 1:1 ratio by creating a system of similar dimensions to the north of the existing feature. The meeting minutes are enclosed.

Temporary Impacts:

There will be 0.01 acre of temporary impacts associated with using equipment in the stream to install riprap on the stream bank. The riprap will be permanent.

Hand Clearing Impacts:

A jurisdictional wetland is also located on the south side of this project. However, impacts are limited to hand clearing only. No mechanized equipment will be used.

Utility Impacts:

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

Schedule:

The project schedule calls for a January 15, 2008 let date with a review date of November 27, 2007.

BRIDGE DEMOLITION

The bridge superstructure consists of timber deck with 2.5 inch asphalt wearing surface on steel beams. The end bents and interior bents consist of timber caps and timber piles. The timber will be removed without dropping components into Waters of the United States.

FEDERALLY PROTECTED SPECIES

Plants and animals with federal classifications of Endangered (E), Threatened (T), Proposed Endangered (PE) and Proposed Threatened (PT) are protected under provisions of Section 7 and Section 9 of the Endangered Species Act of 1973, as amended. As of May 10, 2007, the United States Fish and Wildlife Service (USFWS) lists six federally protected species for Burke County (Table 1). The biological conclusion for the six listed species is No Effect due to absence of habitat. It should be noted that the Bald Eagle was previously listed as "Threatened", however it was delisted August 8, 2007. This may not be reflected on the USFWS website.

Table 1. Federally Protected Species for Burke County.

COMMON NAME	SCIENTIFIC NAME	STATUS	HABITAT	BIOLOGICAL CONCLUSION
Bog turtle	<i>Clemmys muhlenbergii</i>	T(S/A)	No	N/A
Bald eagle	<i>Haliaeetus leucocephalus</i>	Delisted	No	N/A
Spreading avens	<i>Geum radiatum</i>	E	No	No Effect
Dwarf-flowered heartleaf	<i>Hexastylis naniflora</i>	T	No	No Effect
Mountain golden-heather	<i>Hudsonia montana</i>	T	No	No Effect
Small-whorled pagonia	<i>Isotria medeoloides</i>	T	No	No Effect
Heller's blazing star	<i>Liatris helleri</i>	T	No	No Effect

E= Endangered, T= Threatened,
T(S/A)= Threatened due to Similarity of Appearance,

AVOIDANCE, MINIMIZATION AND MITIGATION

Avoidance and Minimization:

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

- The new bridge will span Canoe Creek.
- Traffic will be detoured off-site during construction. This eliminates the need for a temporary on-site detour.
- Water will not be directly discharged into Canoe Creek via deck drains.
- A pre-formed scour hole will be installed at the down-gradient end of a 15” pipe passing under SR 1248 east of the proposed bridge. This is depicted in Detail “A” on sheet 4 of the Permit Drawings (included).

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

Mitigation:

Per December 12, 2006 field meeting with David Baker, the 0.05 acres of permanent wetland impacts will be compensated for onsite. Impacts will be minimal; therefore, no monitoring will be required. The following is an excerpt from the enclosed meeting minutes:

This linear wetland should be replaced approximately 15-20 feet to the north, as shown with the lateral ditch depicted on the hydraulic drawings. This lateral ditch should be adequate as long as the ditch is at least the same length and width as the impacted area. It is anticipated the new system will naturally acquire similar conditions and provide treatment before flowing into Canoe

Creek. The impact area can be calculated by multiplying the length and the average width of the current system (estimated in the field to be a width of 2-3 feet.).

This is depicted in Detail "C" on sheet 4 of the Permit Drawings. The total area of the "new system" will be approximately 2,614 square feet (0.06 acres).

REGULATORY APPROVALS

Section 404 Permit:

It is anticipated that the temporary access needed to install the riprap to stabilize the new linear wetland system entering Canoe Creek will be authorized under Section 404 Nationwide Permit 33 (Temporary Construction Access and Dewatering). We are, therefore, requesting the issuance of a Nationwide Permit 33. 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 3632 and 3634 will apply to this project. All standard conditions will be adhered to; therefore we are not requesting written concurrence. In accordance with 15A NCAC 2H .0501(a) we are providing two copies of this application to the North Carolina Department of Environmental and Natural Resources, Division of Water Quality, for their records.

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

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

Sincerely,



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

cc:

w/ attachments

Mr. John Hennessy, NCDWQ (2 Copies)
Ms. Marla Chambers, NCWRC
Ms. Marella Buncick, USFWS
Dr. David Chang, P.E., Hydraulics
Mr. Victor Barbour, P.E., Project Services Unit
Mr. Mark Staley, Roadside Environmental
Mr. Greg Perfetti, P.E., Structure Design
Mr. Jay Swain, P.E. Division 13 Engineer
Mr. Harold Draper, TVA

w/o attachments

Mr. Jay Bennett, P.E., Roadway Design
Mr. Majed Alghandour, P.E. Programming/TIP
Mr. Art McMillan, P.E., Highway Design
Ms. Natalie Lockhart, PDEA Engineer
Mr. Scott McLendon, USACE, Wilmington
Mr. Roger Bryan, DEO Division 13
Mr. Randy Griffin, NEU
Ms. Leilani Paugh, NEU

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:

- | | |
|---|--|
| <input checked="" type="checkbox"/> Section 404 Permit | <input type="checkbox"/> Riparian or Watershed Buffer Rules |
| <input type="checkbox"/> Section 10 Permit | <input type="checkbox"/> Isolated Wetland Permit from DWQ |
| <input checked="" type="checkbox"/> 401 Water Quality Certification | <input type="checkbox"/> Express 401 Water Quality Certification |

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

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

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

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

II. Applicant Information

1. Owner/Applicant Information

Name: Gregory J. Thorpe, Ph.D., Environmental Management Director
Mailing Address: NC DOT - PDEA
1598 Mail Service Center, Raleigh, NC 27699-1548

Telephone Number: (919) 733-3141 Fax Number: (919) 733-9794
E-mail Address: _____

2. Agent/Consultant Information (A signed and dated copy of the Agent Authorization letter must be attached if the Agent has signatory authority for the owner/applicant.)

Name: _____
Company Affiliation: _____
Mailing Address: _____

Telephone Number: _____ Fax Number: _____
E-mail Address: _____

III. Project Information

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

1. Name of project: N/A
2. T.I.P. Project Number or State Project Number (NCDOT Only): B-4042
3. Property Identification Number (Tax PIN): N/A
4. Location
County: Burke Nearest Town: Morganton
Subdivision name (include phase/lot number): _____
Directions to site (include road numbers/names, landmarks, etc.): _____
Bridge # 274 On SR 1248 (Frank Whisnant Road) over Canoe Creek.
5. Site coordinates (For linear projects, such as a road or utility line, attach a sheet that separately lists the coordinates for each crossing of a distinct waterbody.)
One water body:
Decimal Degrees (6 digits minimum): 1169640.4 °N 755739.6 °W
6. Property size (acres): N/A
7. Name of nearest receiving body of water: Catawba River
8. River Basin: Catawba
(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: SR 1248 is classified as Rural Local. The existing bridge was constructed in 1951 and is a 3 span two-lane structure. Surrounding land use is rural/residential and agricultural.

10. Describe the overall project in detail, including the type of equipment to be used: _____
Bridge replacement project involving heavy construction equipment and manual labor.

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

IV. Prior Project History

If jurisdictional determinations and/or permits have been requested and/or obtained for this project (including all prior phases of the same subdivision) in the past, please explain. Include the USACE Action ID Number, DWQ Project Number, application date, and date permits and certifications were issued or withdrawn. Provide photocopies of previously issued permits, certifications or other useful information. Describe previously approved wetland, stream and buffer impacts, along with associated mitigation (where applicable). If this is a NCDOT project, list and describe permits issued for prior segments of the same T.I.P. project, along with construction schedules. A jurisdictional determination has been received from USACE field personnel, David Baker on December 12, 2006. No prior permits have been issued/ withdrawn for this project.

V. Future Project Plans

Are any future permit requests anticipated for this project? If so, describe the anticipated work, and provide justification for the exclusion of this work from the current application.
No.

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

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

1. Provide a written description of the proposed impacts: There will be 0.05 acres of permanent fill in wetlands associated with the bridge construction. Temporary access to install rip-rap in the stream bank will impact 0.005 acres. Hand clearing will provide an additional 0.06 acres of impact.

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	fill	linear	yes	adjacent	0.05
N/A	excavation	linear	yes	adjacent	<0.01
Total Wetland Impact (acres)					0.05

3. List the total acreage (estimated) of all existing wetlands on the property: 0.14

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)
N/A	Canoe Creek	temporary	perennial	N/A	N/A	0.01
Total Stream Impact (by length and acreage)						0.01

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

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

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

Stream Impact (acres):	0.0051
Wetland Impact (acres):	0.11
Open Water Impact (acres):	N/A
Total Impact to Waters of the U.S. (acres)	0.1151
Total Stream Impact (linear feet):	N/A

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. Alternative 1 was chosen because it is a “replace in place” tactic that does not further impact undisturbed segments of Canoe Creek and results in an off-site detour. Alternative 2 was considered but not chosen due to having an on-site detour that would further disturb Canoe Creek around the site of the bridge.

The “do-nothing” alternative was not considered due to it eliminating the use of SR 1248 from traffic service. Impacts will be minimized by 1) constructing a bridge that spans Canoe Creek; 2) eliminating the need for an on-site detour; and 3) surficial bridge runoff will not be directed into Canoe Creek via deck drains.

VIII. Mitigation

DWQ - In accordance with 15A NCAC 2H .0500, mitigation may be required by the NC Division of Water Quality for projects involving greater than or equal to one acre of impacts to freshwater wetlands or greater than or equal to 150 linear feet of total impacts to perennial streams.

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

If mitigation is required for this project, a copy of the mitigation plan must be attached in order for USACE or DWQ to consider the application complete for processing. Any application lacking a required mitigation plan or NCEEP concurrence shall be placed on hold as incomplete. An applicant may also choose to review the current guidelines for stream restoration in DWQ’s Draft Technical Guide for Stream Work in North Carolina (see DWQ website for most current version.).

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

The project will meet mitigation requirements on-site at a ratio of 1:1. The linear wetland along the north side of Canoe Creek will be moved in a northward direction approximately 15-20 feet as shown on the attached permit drawings. The created linear wetland will be adequate as long as it is at least the same length and width of the existing wetland.

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

Amount of stream mitigation requested (linear feet): _____

Amount of buffer mitigation requested (square feet): _____

Amount of Riparian wetland mitigation requested (acres): _____

Amount of Non-riparian wetland mitigation requested (acres): _____

Amount of Coastal wetland mitigation requested (acres): _____

IX. Environmental Documentation (required by DWQ)

1. Does the project involve an expenditure of public (federal/state/local) funds or the use of public (federal/state) land? Yes x No
2. If yes, does the project require preparation of an environmental document pursuant to the requirements of the National or North Carolina Environmental Policy Act (NEPA/SEPA)?
Note: If you are not sure whether a NEPA/SEPA document is required, call the SEPA coordinator at (919) 733-5083 to review current thresholds for environmental documentation.
Yes x - A Categorical Exclusion has been submitted and is enclosed in this permit application No
3. If yes, has the document review been finalized by the State Clearinghouse? If so, please attach a copy of the NEPA or SEPA final approval letter. Yes x No

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

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

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

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

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

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

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

XI. Stormwater (required by DWQ)

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

XII. Sewage Disposal (required by DWQ)

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

XIII. Violations (required by DWQ)

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

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

XIV. Cumulative Impacts (required by DWQ)

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

If yes, please submit a qualitative or quantitative cumulative impact analysis in accordance with the most recent North Carolina Division of Water Quality policy posted on our website at <http://h2o.enr.state.nc.us/nwetlands>. 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). No moratorium related to fish species applies to this project.

E. L. Luke

10.8.07

Applicant/Agent's Signature

Date

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



NCDOT NATURAL ENVIRONMENT UNIT MEETING MINUTES

Meeting Information

Meeting Description: Jurisdictional Determination for B-4042- linear system on the northeast quadrant of the project.

Date: 12/12/2006 Time: 10:30-11:30

Location: B-4042

Attendees

David Baker, USACE	Michael Turchy, NCDOT-NEU	Geoff Fouad, NCDOT-NEU
Bobby Porter, MA Engineering	Marc Seelinger, MA Engineering	

Meeting Summary

The system in question is parallel to the north side of SR 1248. The Natural Environment Unit was requested to verify the jurisdictionality of this system with the environmental agencies.

Army Corps of Engineers Representative, David Baker, classified this system as a linear wetland.

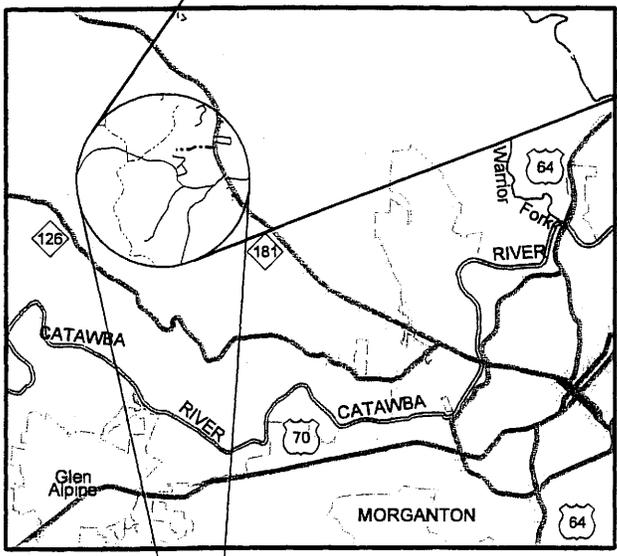
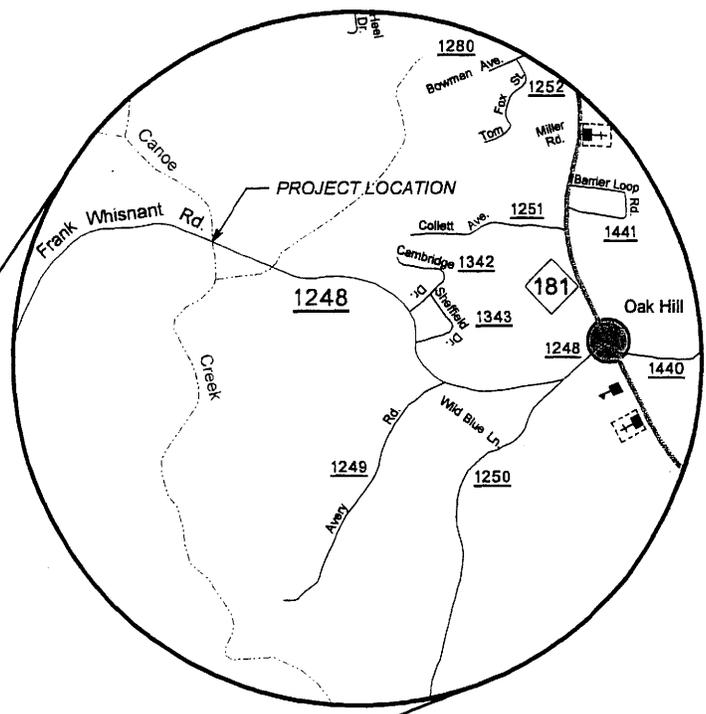
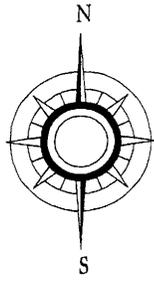
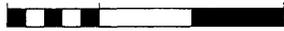
This system does not require mitigation from the Ecosystem Enhancement Program, as it can be mitigated for, on-site, at a 1:1 ratio.

This linear wetland should be replaced approximately 15-20 feet to the north, as shown with the lateral ditch depicted on the hydraulic drawings. This lateral ditch should be adequate as long as the ditch is at least the same length and width as the impacted area. It is anticipated the new system will naturally acquire similar conditions and provide treatment before flowing into Canoe Creek. The impact area can be calculated by multiplying the length and the average width of the current system (estimated in the field to be a width of 2-3 feet.) No wetland forms or GPS'ing will be necessary, however a description of the above activities and citation of the field meeting should be included in the permit application.

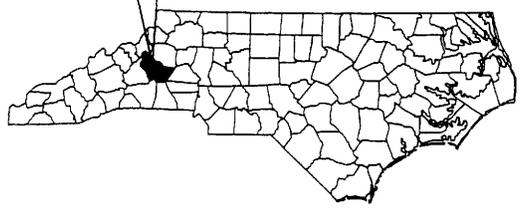
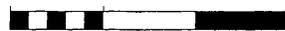
Tasks/Additional Information

<i>Task</i>	<i>Name</i>	<i>Task/Additional Info</i>
1	Hydraulics/ Hydro. Consultant	Please make all attempts to completely avoid the wetland on the southeast quadrant of the project.
2	Hydraulics/ Hydro. Consultant	Please examine the use of a method (i.e. level spreader, dissipater, etc) to avoid rip rap at the end of the new ditch in Canoe Creek.

0.25 0 0.25 0.5 MILES



1 0 1 2 MILES



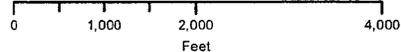
Permit Drawing
Sheet 1 of 6

	NORTH CAROLINA DEPARTMENT OF TRANSPORTATION PROJECT DEVELOPMENT & ENVIRONMENTAL ANALYSIS BRANCH
	BURKE COUNTY TIP NO. B-4042 BRIDGE NO. 274 ON SR 1248 OVER CANOE CREEK VICINITY MAP

FIGURE 1



NCCGIA Basin Pro Data



B-4042

BRIDGE No. 274
OVER CANOE CREEK
BURKE COUNTY

Permit Drawing
Sheet 2 of 2

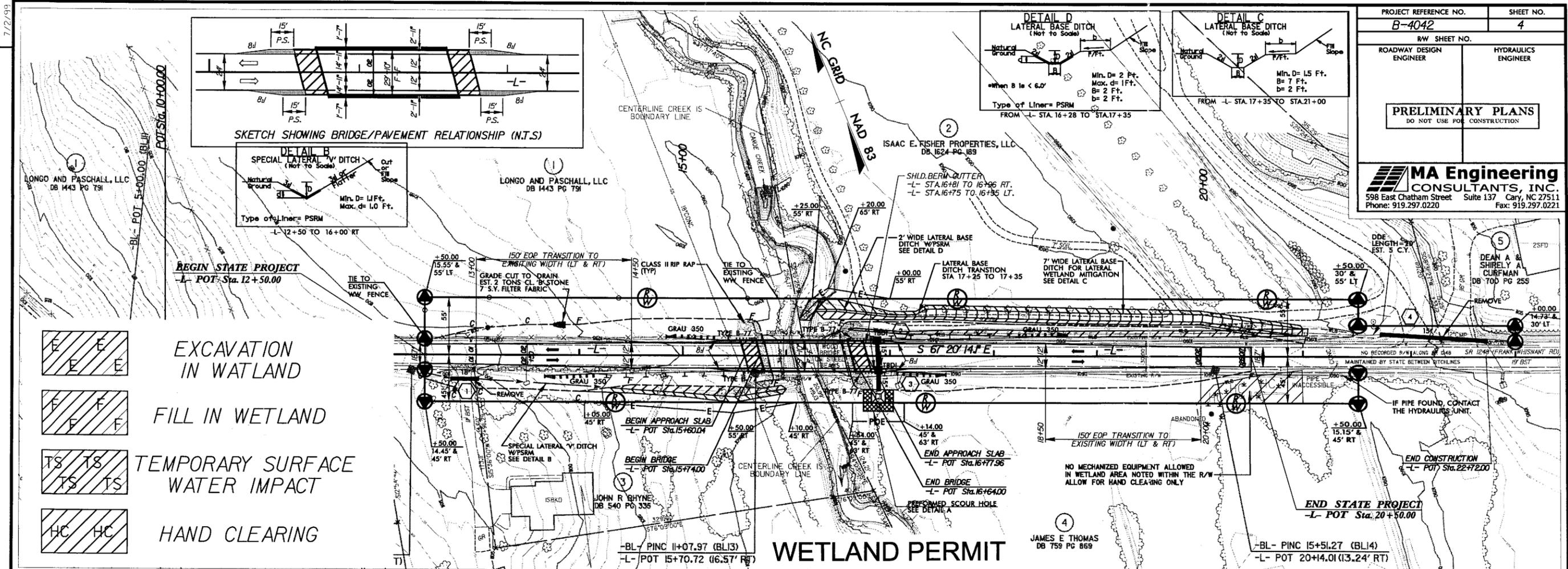
Property Owners

Parcel Number	Names	Addresses
2	Jacky & Stella Rose	P.O. Box 156 Jonas Ridge, NC 28641
4	James E. Thomas	1115 Avery Rd Morganton, NC 28655

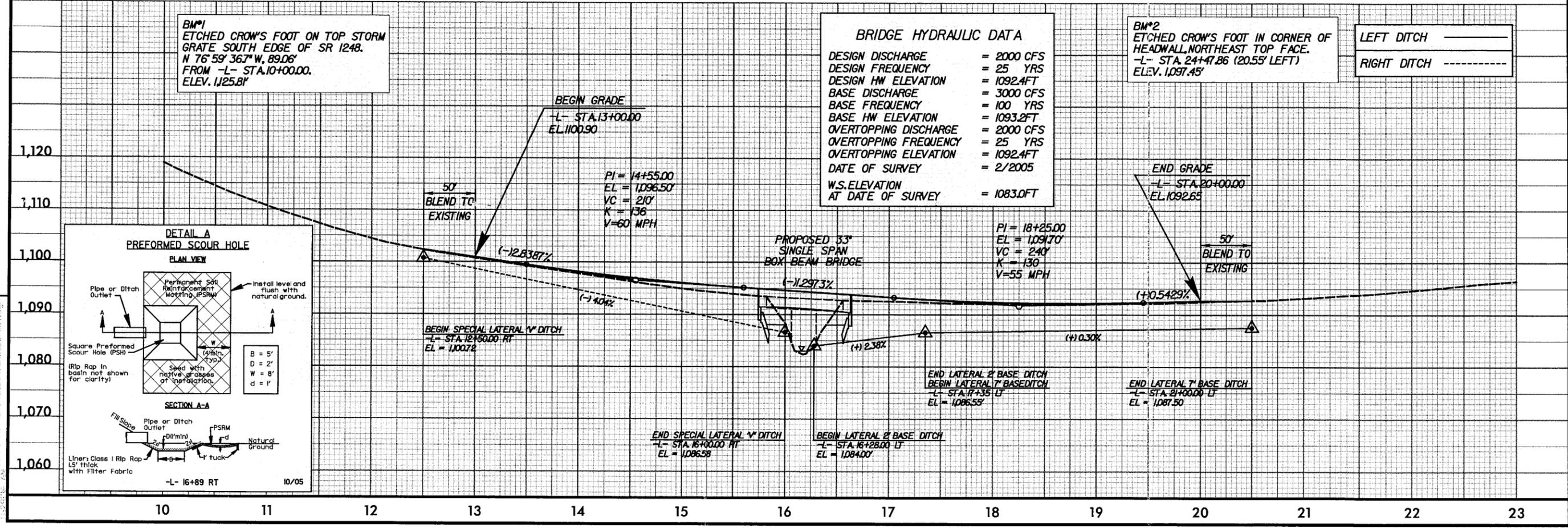
Permit Drawing
Sheet 3 of 6

NC DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

BURKE COUNTY
WBS - 33408.1.1 (B-4042)



- EXCAVATION IN WATLAND
- FILL IN WETLAND
- TEMPORARY SURFACE WATER IMPACT
- HAND CLEARING



Permit Drawing Sheet 5 of 10

7/2/09

See Sheet 1-A For Index of Sheets
See Sheet 1-B For Symbology

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

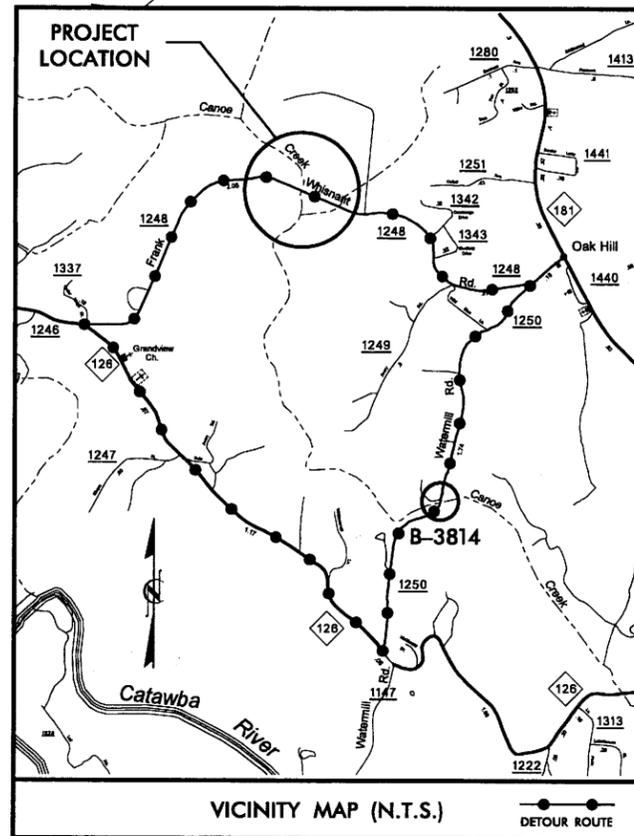
BURKE COUNTY

**LOCATION: BRIDGE #274 AND APPROACHES OVER CANOE CREEK
ON SR 1248 (FRANK WHISNANT ROAD)**

**TYPE OF WORK: GRADING, DRAINAGE, PAVING,
STRUCTURE, AND GUARDRAIL.**

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-4042	1	
STATE PROJ. NO.	P.A. PROJ. NO.	DESCRIPTION	
33408.1.1	BRZ-1248(3)	PE	
33408.2.1	BRZ-1248(3)	RW, UTILITIES	

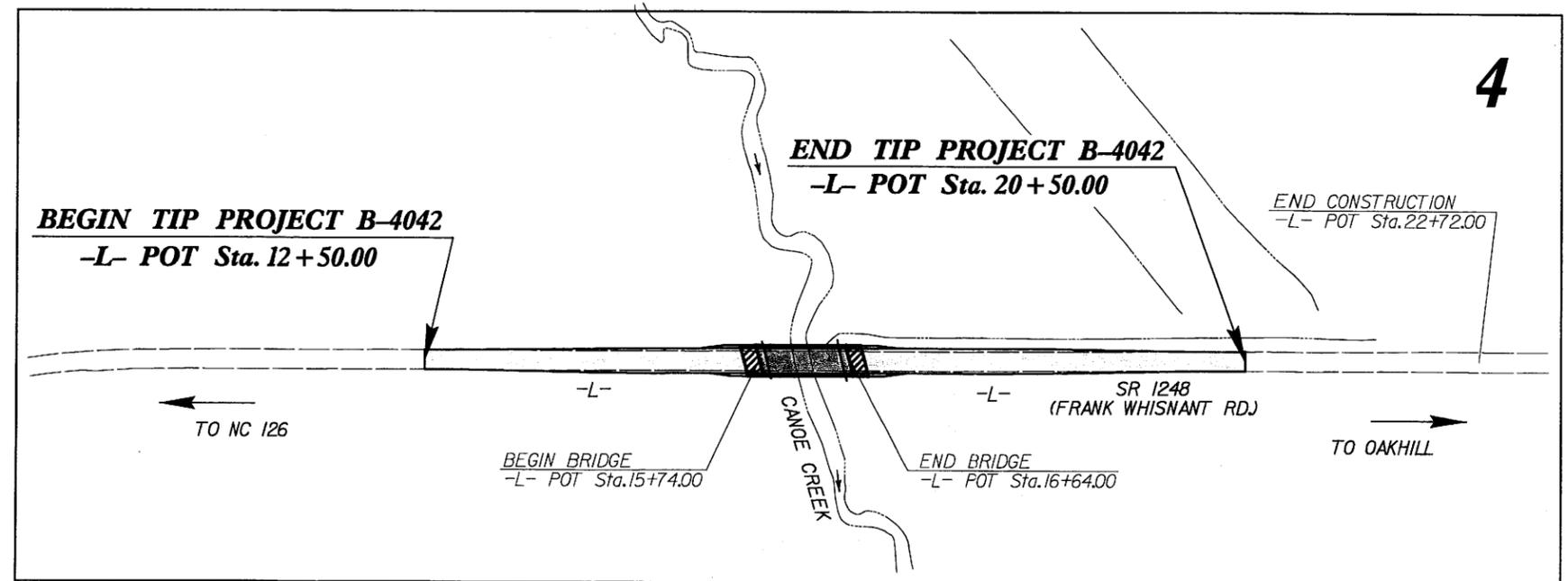
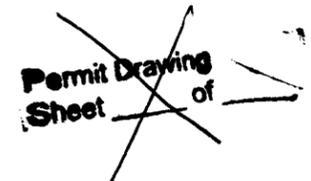
TIP PROJECT: B-4042



RW



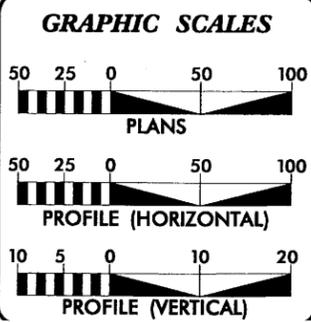
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION



THIS PROJECT IS NOT WITHIN ANY MUNICIPAL BOUNDARIES.
CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD II.

NCDOT CONTACT:
MR. DOUG TAYLOR, PE - ENGINEERING COORDINATION - PROJECT ENGINEER - ROADWAY DESIGN UNIT

CONTRACT:



DESIGN DATA

ADT 2008 =	2,160
ADT 2028 =	3,030
DHV =	10 %
D =	60 %
T =	5 % *
V =	50 MPH

* (TTST 1% + DUAL 4%)
FUNC CLASS = RURAL LOCAL

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT B-4042	=	0.135 mi
LENGTH STRUCTURES TIP PROJECT B-4042	=	0.017 mi
TOTAL LENGTH TIP PROJECT B-4042	=	0.152 mi

Prepared For:
DIVISION OF HIGHWAYS
1000 Birch Ridge Dr., Raleigh NC, 27610
By:
MA ENGINEERING CONSULTANTS, INC.
598 E. CHATHAM STREET, SUITE 137
CARY, NORTH CAROLINA 27511
(919) 297-0220

2006 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
JANUARY 29, 2007

LETTING DATE:
JANUARY 15, 2008

R.W. PORTER JR., PE
PROJECT ENGINEER

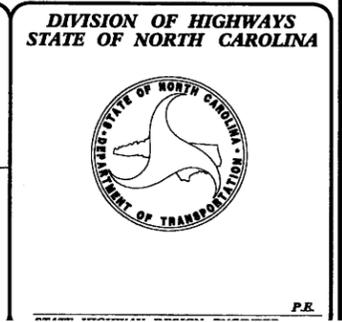
K. S. HUTCHENS
PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

SIGNATURE: _____ P.E.

ROADWAY DESIGN ENGINEER

SIGNATURE: _____ P.E.



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Note: Not to Scale

*S.U.E. = Subsurface Utility Engineering

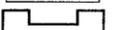
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

CONVENTIONAL PLAN SHEET SYMBOLS

BOUNDARIES AND PROPERTY:

State Line	_____
County Line	_____
Township Line	_____
City Line	_____
Reservation Line	_____
Property Line	_____
Existing Iron Pin	_____ 
Property Corner	_____ 
Property Monument	_____ 
Parcel/Sequence Number	_____ 
Existing Fence Line	_____ 
Proposed Woven Wire Fence	_____ 
Proposed Chain Link Fence	_____ 
Proposed Barbed Wire Fence	_____ 
Existing Wetland Boundary	_____ 
Proposed Wetland Boundary	_____ 
Existing Endangered Animal Boundary	_____ 
Existing Endangered Plant Boundary	_____ 

BUILDINGS AND OTHER CULTURE:

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

HYDROLOGY:

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

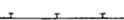
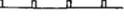
RAILROADS:

Standard Gauge	_____ 
RR Signal Milepost	_____ 
Switch	_____ 
RR Abandoned	_____ 
RR Dismantled	_____ 

RIGHT OF WAY:

Baseline Control Point	_____ 
Existing Right of Way Marker	_____ 
Existing Right of Way Line	_____ 
Proposed Right of Way Line	_____ 
Proposed Right of Way Line with Iron Pin and Cap Marker	_____ 
Proposed Right of Way Line with Concrete or Granite Marker	_____ 
Existing Control of Access	_____ 
Proposed Control of Access	_____ 
Existing Easement Line	_____ 
Proposed Temporary Construction Easement	_____ 
Proposed Temporary Drainage Easement	_____ 
Proposed Permanent Drainage Easement	_____ 
Proposed Permanent Utility Easement	_____ 

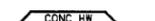
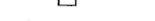
ROADS AND RELATED FEATURES:

Existing Edge of Pavement	_____ 
Existing Curb	_____ 
Proposed Slope Stakes Cut	_____ 
Proposed Slope Stakes Fill	_____ 
Proposed Wheel Chair Ramp	_____ 
Curb Cut for Future Wheel Chair Ramp	_____ 
Existing Metal Guardrail	_____ 
Proposed Guardrail	_____ 
Existing Cable Guiderail	_____ 
Proposed Cable Guiderail	_____ 
Equality Symbol	_____ 
Pavement Removal	_____ 

VEGETATION:

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

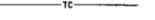
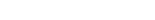
EXISTING STRUCTURES:

MAJOR:	
Bridge, Tunnel or Box Culvert	_____ 
Bridge Wing Wall, Head Wall and End Wall	_____ 
MINOR:	
Head and End Wall	_____ 
Pipe Culvert	_____ 
Footbridge	_____ 
Drainage Box: Catch Basin, DI or JB	_____ 
Paved Ditch Gutter	_____ 
Storm Sewer Manhole	_____ 
Storm Sewer	_____ 

UTILITIES:

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

TELEPHONE:

Existing Telephone Pole	_____ 
Proposed Telephone Pole	_____ 
Telephone Manhole	_____ 
Telephone Booth	_____ 
Telephone Pedestal	_____ 
Telephone Cell Tower	_____ 
U/G Telephone Cable Hand Hole	_____ 
Recorded U/G Telephone Cable	_____ 
Designated U/G Telephone Cable (S.U.E.*)	_____ 
Recorded U/G Telephone Conduit	_____ 
Designated U/G Telephone Conduit (S.U.E.*)	_____ 
Recorded U/G Fiber Optics Cable	_____ 
Designated U/G Fiber Optics Cable (S.U.E.*)	_____ 

WATER:

Water Manhole	_____ 
Water Meter	_____ 
Water Valve	_____ 
Water Hydrant	_____ 
Recorded U/G Water Line	_____ 
Designated U/G Water Line (S.U.E.*)	_____ 
Above Ground Water Line	_____ 

TV:

TV Satellite Dish	_____ 
TV Pedestal	_____ 
TV Tower	_____ 
U/G TV Cable Hand Hole	_____ 
Recorded U/G TV Cable	_____ 
Designated U/G TV Cable (S.U.E.*)	_____ 
Recorded U/G Fiber Optic Cable	_____ 
Designated U/G Fiber Optic Cable (S.U.E.*)	_____ 

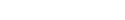
GAS:

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

SANITARY SEWER:

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

MISCELLANEOUS:

Utility Pole	_____ 
Utility Pole with Base	_____ 
Utility Located Object	_____ 
Utility Traffic Signal Box	_____ 
Utility Unknown U/G Line	_____ 
U/G Tank; Water, Gas, Oil	_____ 
AG Tank; Water, Gas, Oil	_____ 
U/G Test Hole (S.U.E.*)	_____ 
Abandoned According to Utility Records	_____ 
End of Information	_____ 

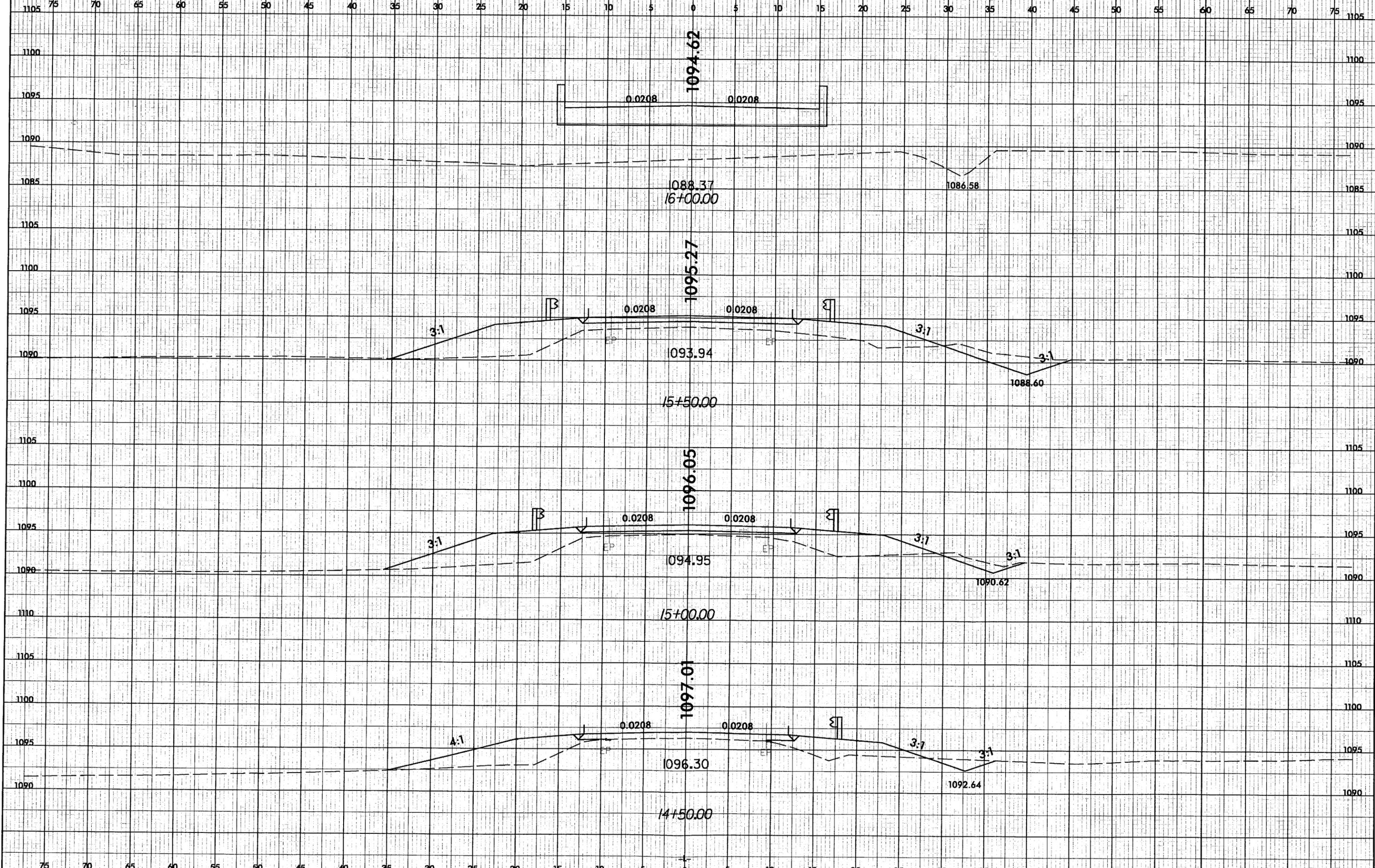
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PROJ. REFERENCE NO.
B-4042

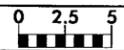
SHEET NO.
X-2



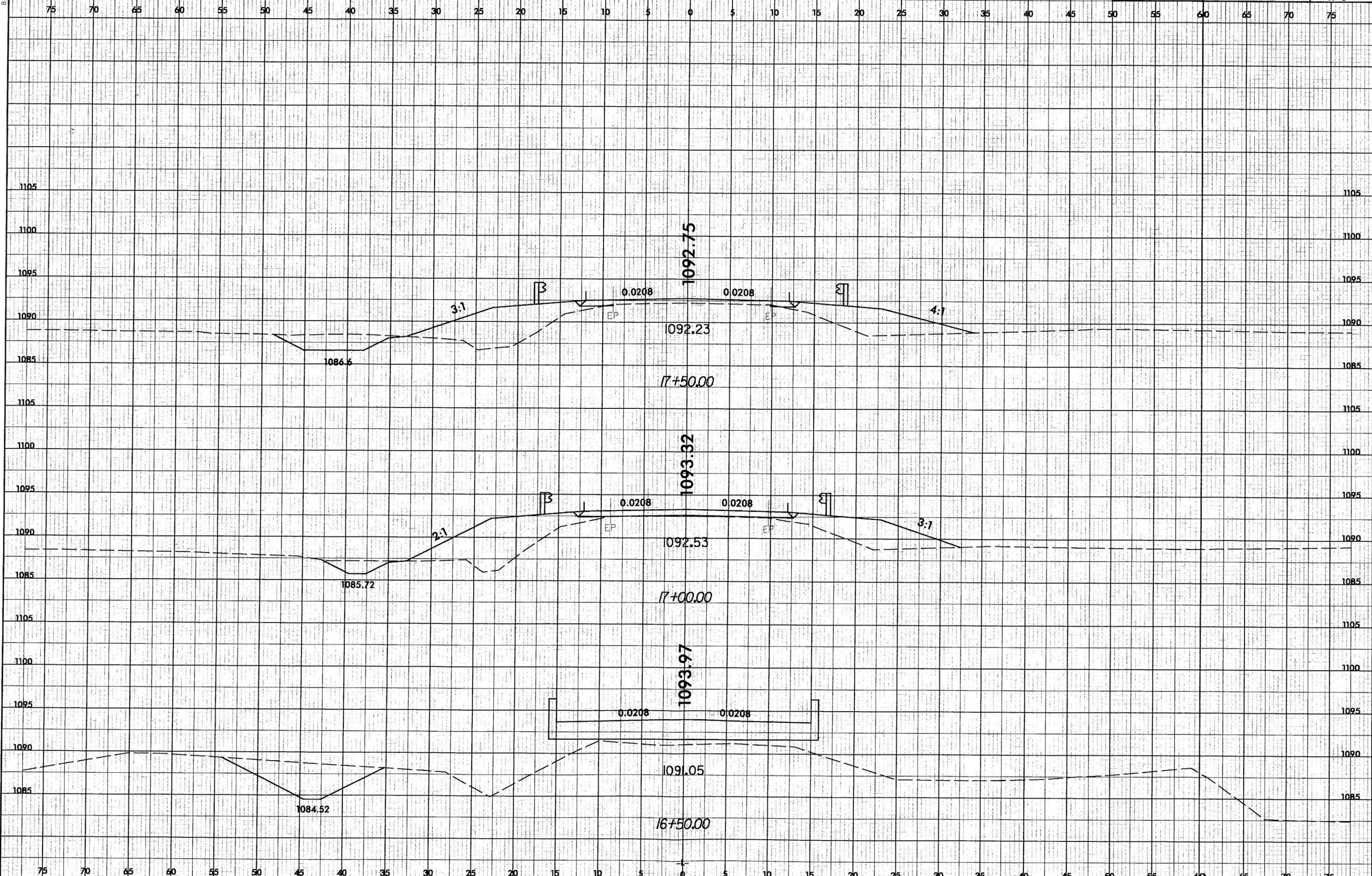
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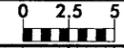
PROJ. REFERENCE NO. B-4042 SHEET NO. X-3



Permit Drawing of Sheet

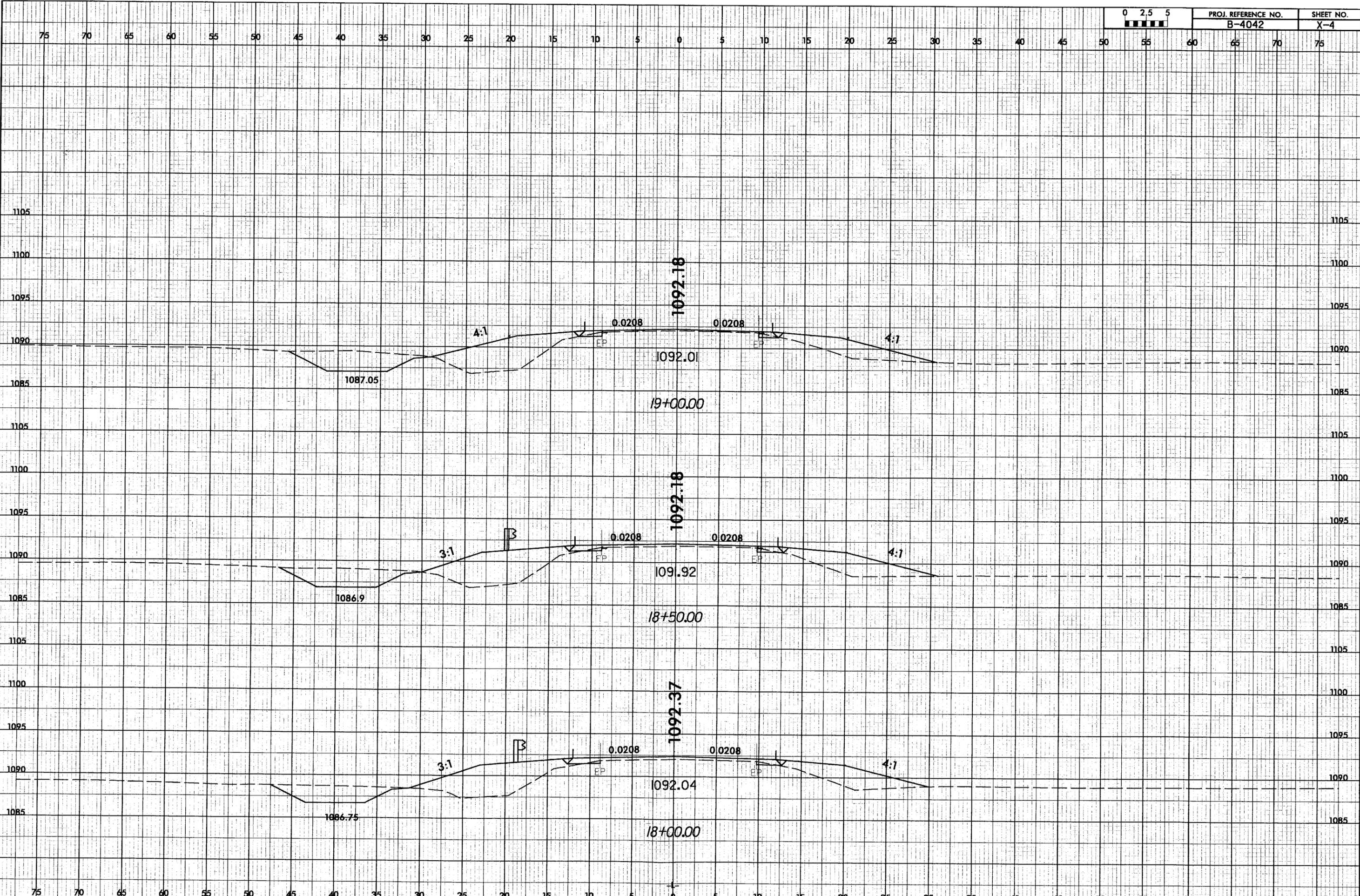
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PROJ. REFERENCE NO.
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SHEET NO.
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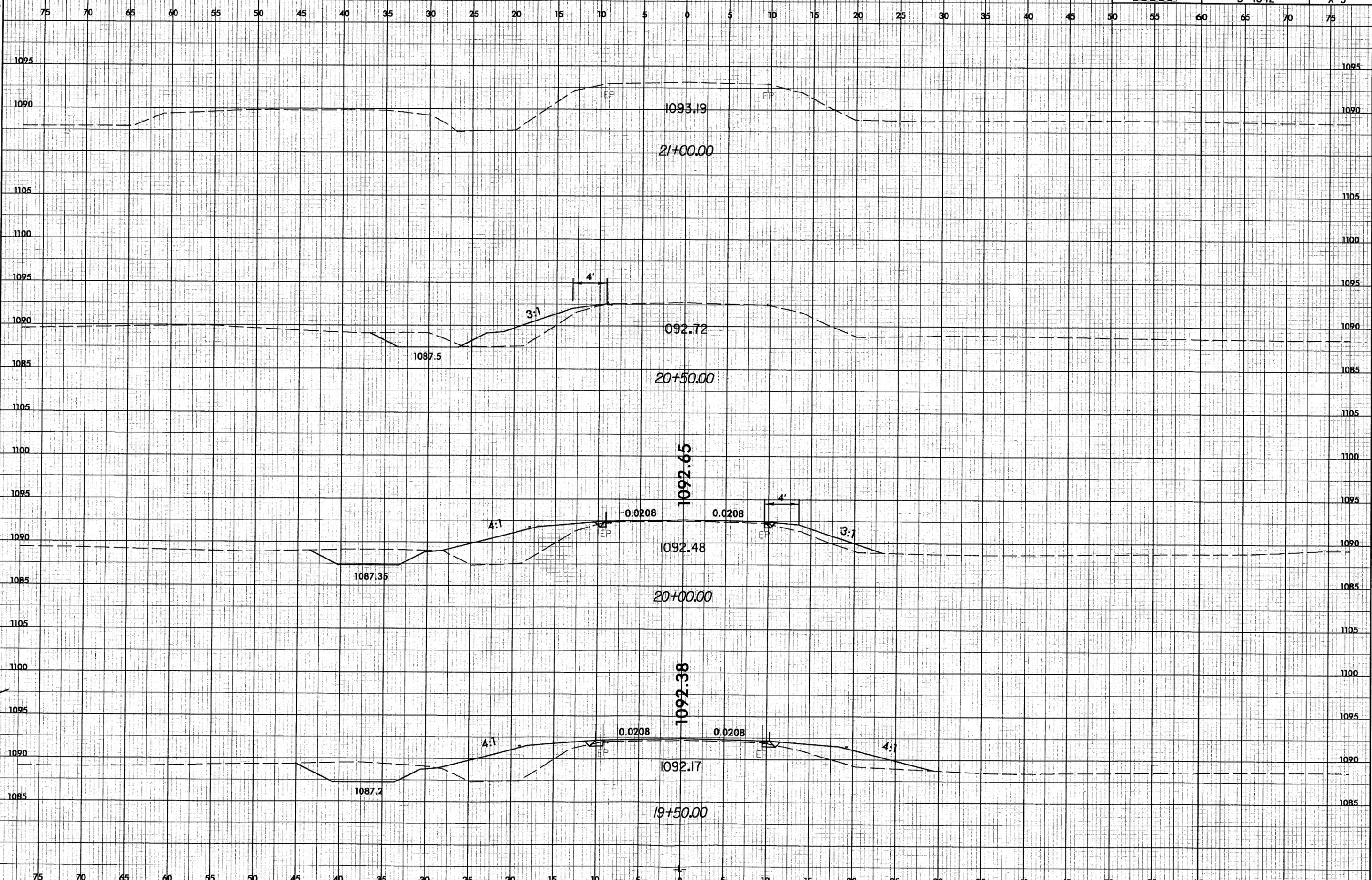
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PROJ. REFERENCE NO.
B-4042

SHEET NO.
X-5



Permit Drawing of Sheet

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**North Carolina Department of Transportation
PROJECT ENVIRONMENTAL CONSULTATION FORM
I.D. No. B-4042**

I. GENERAL INFORMATION

- a. Consultation Phase: Construction
- b. Project Description Burke County, Bridge No. 274 on SR 1248 over Canoe Creek
- c. State Project: 8.2853501
Federal Project: BRZ-1248(3)
WBS Number: 33408.1.1
- d. Document Type: CE December 22, 2004
Date

II. CONCLUSIONS

The above environmental document has been reevaluated as required by 23 CFR 771. It was determined that the current proposed action is essentially the same as the original proposed action. Proposed changes, if any, are noted below in Section III. It has been determined that anticipated social, economic, and environmental impacts were accurately described in the above referenced document(s) unless noted otherwise herein. Therefore, the original Administration Action remains valid.

III. CHANGES IN PROPOSED ACTION AND ENVIRONMENTAL CONSEQUENCES

Water Resources

Water resource classifications have not changed since the CE was completed. Canoe Creek is located in subbasin 03-08-30 of the Catawba River Basin and has been assigned a Stream Index Number of 11-33(-2) by the North Carolina Division of Water Quality (NCDWQ). A best usage classification of WS-IV has been assigned to Canoe Creek denoting freshwaters used as sources of water supply. Canoe Creek is not designated as a North Carolina Natural or Scenic River or as a national Wild and Scenic River. No designated Outstanding Resource Waters (ORW), High Quality Waters (HQW), Water Supply I (WS-I), or Water Supply II (WS-II) waters occur within 1.0 mile of the study corridor.

Protected Species

Plants and animals with federal classifications of Endangered (E), Threatened (T), Proposed Endangered (PE), or Proposed Threatened (PT) are protected under provisions of Section 7 and Section 9 of the Endangered Species Act of 1973, as amended. As of January 29, 2007, the United States Fish and Wildlife Service lists seven federally protected species for Burke County (Table 1). A description of the species and biological conclusions are provided in the referenced CE document.

Table 1. Federally Protected Species for Burke County

<u>Common Name</u>	<u>Scientific Name</u>	<u>Status</u>	<u>Habitat</u>	<u>Biological Conclusion</u>
Bog turtle	<i>Clemmys muhlenbergii</i>	T(S/A)	N/A	Not Subject
Bald eagle	<i>Haliaeetus leucocephalus</i>	T	No	No Effect
Spreading avens	<i>Geum radiatum</i>	E	No	No Effect
Dwarf-flowered heartleaf	<i>Hexastylis naniflora</i>	T	No	No Effect
Mountain golden-heather	<i>Hudsonia montana</i>	T	No	No Effect
Small-whorled pagonia	<i>Isotria medeoloides</i>	T	No	No Effect
Heller's blazing star	<i>Liatris helleri</i>	T	No	No Effect

T(S/A) – denotes threatened due to similarity of appearance

T – denotes threatened

E – denotes endangered

The biological conclusions for the seven federally listed species will remain valid through 2009.

IV. LIST OF ENVIRONMENTAL COMMITMENTS

See attached Greensheet for a list of project commitments.

V. COORDINATION

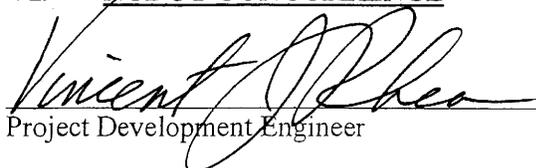
Project Development and Environmental Analysis Branch personnel have discussed current project proposals with others as follows:

Design Engineer: Zak Hamidi 3-29-07
Date

FHWA Engineer: Jake Riggsbee 3-28-07
Date

Permits Section: Jeremy Leamer 3-22-07
Date

VI. NCDOT CONCURRENCE


Project Development Engineer 3-28-07
Date

Burke County
Bridge No. 274 on SR 1248 (Frank Whisnant Road)
over Canoe Creek
Federal-Aid Project No. BRZ-1248 (3)
State Project No. 8.2853501
W.B.S. No. 33408.1.1
T.I.P. Project No. B-4042

PROJECT COMMITMENTS

In addition to the standard Nationwide Permit No. 23 and potentially No. 33 Conditions, the General Nationwide Permit Conditions, Section 404 Only Conditions, Regional Conditions, State Consistency Conditions, NCDOT's Guidelines for Best Management Practices for the Protection of Surface Waters, NCDOT's Guidelines for Best Management Practices for Bridge Demolition and Removal, General Certification Conditions, and Section 401 Conditions of Certification, the following special commitments have been agreed to by NCDOT:

Division 13

- 1) ~~Surveys for *Alasmidonta varicosa* (brook floater) shall be conducted prior to the letting of the project. If any individuals are found, they should be relocated a minimum of 330 feet (100 meters) upstream of the project study area.~~

According to the U.S. Fish and Wildlife Service, the brook floater is not a federally listed threatened or endangered species, but is listed as a "federal species of concern". At this time, the NC DOT Natural Environment Unit does not conduct surveys for species with this listing status.

Burke County
Bridge No. 274 on SR 1248 (Frank Whisnant Road)
over Canoe Creek
Federal-Aid Project No. BRZ-1248 (3)
State Project No. 8.2853501
W.B.S. No. 33408.1.1
T.I.P. Project No. B-4042

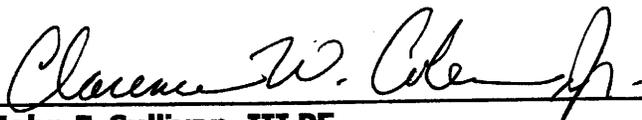
CATEGORICAL EXCLUSION
UNITED STATES DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
AND
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

APPROVED:

12/22/04
DATE


FOR Gregory J. Thorpe, PhD.
Environmental Management Director
Project Development & Environmental Analysis Branch
North Carolina Department of Transportation

12/22/04
DATE


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

Burke County
Bridge No. 274 on SR 1248 (Frank Whisnant Road)
over Canoe Creek
Federal-Aid Project No. BRZ-1248 (3)
State Project No. 8.2853501
W.B.S. No. 33408.1.1
T.I.P. Project No. B-4042

CATEGORICAL EXCLUSION

December 2004

Document Prepared By:
MA Engineering Consultants, Inc.
598 East Chatham Street, Suite 137
Cary, NC 27511



Gail F. Kogut, PE
Project Manager



12-02-04



Chad H. Critcher, PE
Senior Associate

For the North Carolina Department of Transportation:



Vincent J. Rhea, PE
Project Manager
Project Development & Environmental Analysis Branch

Burke County
Bridge No. 274 on SR 1248 (Frank Whisnant Road)
over Canoe Creek
Federal-Aid Project No. BRZ-1248 (3)
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Burke County
Bridge No. 274 on SR 1248 (Frank Whisnant Road)
over Canoe Creek
Federal-Aid Project No. BRZ-1248 (3)
State Project No. 8.2853501
W.B.S. No. 33408.1.1
T.I.P. Project No. B-4042

INTRODUCTION: The replacement of Bridge No. 274 is included in the 2004-2010 North Carolina Department of Transportation (NCDOT) Transportation Improvement Program and in the Federal-Aid Bridge Replacement Program. The location is shown in Figure 1. No substantial environmental impacts are anticipated. The project is classified as a Federal "Categorical Exclusion".

I. PURPOSE AND NEED STATEMENT

The NCDOT Bridge Maintenance Unit records indicated the bridge has a sufficiency rating of 35.1 out of a possible 100 for a new structure. The bridge is considered structurally deficient and functionally obsolete. The replacement of this inadequate structure will result in safer and more efficient traffic operations.

II. EXISTING CONDITIONS

Bridge No. 274 is located on SR 1248 (Frank Whisnant Road) in Burke County over Canoe Creek (Figure 2-1). SR 1248 is classified as Rural Local in the Statewide Functional Classification System.

Bridge No. 274 was constructed in 1951. The existing structure is a two-lane, three-span bridge with an overall length of 74.3 ft. (22.7m) and a clear roadway width of 24.4 ft. (7.4m). The bridge superstructure consists of timber deck with 2½ inch (6.35cm) asphalt wearing surface on steel beams. The end bents and interior bents consist of timber caps and timber piles. Bridge No. 274 currently has posted weight limits of 13 tons (11.8 metric tons) for single vehicle (SV) and 17 tons (15.4 metric tons) for truck-tractor semi-trailer (TTST). The posted speed limit is 45 mph (70 km/hr) in the vicinity of this bridge. The approach roadway for Bridge No. 274 is a two-lane, 18.0-ft. (5.5m) wide road with 5.0-ft. (1.5m) grassed shoulders (Figure 2-1).

The creek bed to roadway crown point height is 11.0 ft. (3.4m) and the normal depth of Canoe Creek is 1.0 ft. (0.3m).

Aerial three-phase power lines run along the northeast side of the bridge. Aerial power service lines cross SR 1248 northwest of the bridge site. Underground telephone line runs along the south side of SR 1248. A sanitary sewer line crosses the road approximately 50 ft. (15.0m) west of the center of the creek.

The 2002 estimated average daily traffic (ADT) volume is 1900 vehicles per day (vpd). The projected ADT is 2900 vpd by the design year 2025. The percentages of truck traffic are 2% dual-tired vehicles and 1% TTST. SR 1248 is a two-lane facility that connects NC 181 and NC 126.

SR 1248 is not a part of a designated bicycle route nor is it listed in the Transportation Improvement Program (TIP) as needing bicycle accommodations. There is no indication that an unusual number of bicyclists use this roadway.

Two accidents were reported in the vicinity of the bridge during a recent three-year period. One accident involved two vehicles and the other involved a single vehicle that lost control and ran off the road.

Three school buses cross Bridge No. 274 twice daily for a total of 6 trips per day.

Land use in the project area is classified as Urban Transition.

There are no survey markers in the project vicinity.

III. ALTERNATIVES

A. Project Description

The proposed structure will provide a 40-foot (12.2-meter) minimum clear roadway width to allow for two 12-foot (3.6-meter) travel lanes and 8-foot (2.4-meter) minimum shoulders on each side. The approach roadway will consist of two 12-foot (3.6-meter) travel lanes with 8-foot (2.4-meter) shoulders. Refer to Figure 3. The design speed will be 50 mph (80 km/hr).

The estimated structure requirements are based on the historic performances of the existing structure and field observations of the site. The existing roadway elevation would be maintained. Two alternatives are considered (See Figure 4A and 4B).

B. Build Alternatives

Alternative 1 (Preferred)

Alternative 1 proposes to construct the bridge at the existing location with an off-site detour. For this alternative, it is anticipated that the proposed bridge length will be approximately 80 ft. (24.3m). The skew angle of the bridge would be approximately 90 degrees. The final bridge length and skew angle will be determined during final design.

The off-site detour route is SR 1248 to SR 1250 to NC 126. The length of this detour route is approximately 4.8 miles (7.8 km). (See Figure 5). This detour is acceptable to local emergency services. No noticeable increase in response time should occur since SR 1250 is the primary emergency route. Assuming a twelve month construction period and a 35 mph (55 km/hr) driving speed, the off-site detour would add no more than ten minutes to the detour user's drive time. Upon further evaluation, this is considered an

acceptable delay since SR 1248 would not be closed during the entire duration of the project and the actual drive distance would be less than the complete off-site detour circuit.

Alternative 2

Alternative 2 proposes to construct the bridge in the existing location with a temporary on-site detour located on the upstream (north) side. For this alternative, it is anticipated that the proposed bridge length would be approximately 80 ft. (24.3m). The skew angle of the bridge would be approximately 90 degrees. The skew angle of the temporary detour structure would be approximately 105 degrees. The final skew angles and final bridge length will be determined during final design.

C. Alternatives Eliminated from Further Study

The "do-nothing" alternative will eventually necessitate closure and/or removal of the bridge effectively removing this section of SR 1248 from traffic service.

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

D. Preferred Alternative

Alternative 1, constructing the bridge at the existing location utilizing an off-site detour during construction is the preferred alternative.

Although, the bridge and project length are equal for both alternatives, the impacts to the environment would be less for Alternative 1. Since the bridge would be replaced in place in both alternatives the additional impacts in Alternative 2 result from the construction and demolition of a temporary bridge. In addition, Alternative 2 would have a higher construction cost. Based on above findings, Alternative 1 should be the preferred alternative.

IV. ESTIMATED COSTS

The estimated costs for each alternative, based on current (2004) prices, are shown in Table 1.

Table 1: Estimated Costs

	Alternative 1 (Preferred)	Alternative 2
Structure Removal (existing)	14,504	14,504
Structure (proposed)	144,000	144,000
Temporary Detour Pipes	0	24,975
Roadway Approaches	76,392	178,755
Miscellaneous and Mobilization	58,104	107,966
Engineering and Contingencies	57,000	79,800
ROW/Const. Easements/Utilities	78,100	78,100
TOTAL	\$ 428,100	\$ 628,100

The total estimated cost of the project, as shown in the 2004-2010 Transportation Improvement Program, is \$755,000 including \$55,000 for right-of-way and \$550,000 for construction.

V. NATURAL RESOURCES

A Natural Resources Technical Report was prepared by M A Engineering Consultants, Inc. and is available at the North Carolina Department of Transportation (NCDOT) office.

Natural resources within the project study area were evaluated to provide: 1) an assessment of existing biotic resources; 2) an evaluation of potential impacts resulting from construction; and 3) a preliminary determination of permit needs.

A. Methodology

A general field survey was conducted within the project study area on June 10 with additional protected species surveys completed on July 23, 2003. Pedestrian surveys were undertaken to determine natural resource conditions and to document natural communities, wildlife, and the potential presence of protected species or their habitats.

Information regarding the project area and region was derived from a number of resources including: U.S. Geological Survey (USGS) Oak Hill 7.5-minute quadrangle map (1993), Soil Survey Sheets of Burke County, North Carolina (Unpublished), United States Fish and Wildlife Service (USFWS) National Wetlands Inventory (NWI) Mapping (1999), USFWS list of protected species (February 25, 2003), North Carolina Department of Environmental and Natural Resources (NCDENR) Basinwide Information Management System, North Carolina Center for Geographical Information and Analysis (NCCGIA)

BasinPro GIS Million-Acre Edition Data (June 2002), North Carolina Natural Heritage Program (NCNHP) list of rare animal species (January 2001), NCNHP list of rare plant species (January 2002); NCNHP County status database (accessed June 2003), NCDOT aerial photography of the project study area (1:100), and North Carolina Division of Water Quality (DWQ) water resource data (2003).

B. Physiography and Soils

The project lies within the Piedmont Physiographic Province. This region consists of gently rolling, well-rounded hills and ridges with a few hundred feet of elevation gain. The project study area lies within the Inner Piedmont geologic belt, the most intensely deformed and metamorphosed segment of the Piedmont (North Carolina Geological Survey, 1991). The metamorphic rocks range in age from 500 million to 700 million years old. They include gneiss and schist that have been intruded by younger granitic rock. The project study area is found within a metamorphic rock area classified as Biotite Gneiss and Schist. This geologic formation is characterized as irregular, locally abundant potassic feldspar and garnet; interlayered and gradational with calc-silicate rock, silliminite mica-schist, mica schist and amphibolite. A small portion of the project study area may also lie within an intrusive rock formation composed of metamorphosed granitic rock. Elevations in the project vicinity range from approximately 1,000 to 1,320 feet (300 to 400 meters) above mean sea level (msl). Elevation in the project study area varies from approximately 1,000 to 1,100 feet (300 to 330 meters) above msl.

According to the general soil sheets for Burke County (USDA, Unpublished), the project study area is composed of the following soil series: Arkaqua loam, 0 to 2 percent slopes, occasionally flooded, Colvard sandy loam, 0 to 3 percent slopes, occasionally flooded, Fairview sandy clay loam, 2 to 8 percent slopes, stony, and Unison fine sandy loam, 2 to 8 percent slopes. There are no soils classified as hydric by the North Carolina Natural Resource Conservation Service within the project study area.

C. Water Resources

C.1. Water Impacted

The proposed project falls within the Catawba River Basin, within the DWQ subbasin designated 03-08-30 and the USGS 8-digit Hydrologic Unit Code (HUC) 03050101. Waters within the project vicinity include Canoe Creek [11-33(-2), 8/3/1992] (NCDENR, 2003). Canoe Creek is depicted on the USGS 7.5-minute quadrangle map and the Burke County Soil Survey sheets therefore; Canoe Creek can be classified as perennial stream.

C.2. Water Resources Characteristics

Within the project study area, the classification for Canoe Creek is "WS-IV". This classification denotes freshwaters used as sources of water supply. There are five WS categories ranging from WS-I, which provides the highest level of protection, to WS-V, which provides no categorical restrictions on watershed development or wastewater discharges. Class "WS-IV" waters are waters protected as water supplies which are generally in moderately to highly developed watersheds. According to the information obtained from the *DWQ Catawba River Basinwide Water Quality Management Plan*

(1999), Canoe Creek has a use support rating of ST, based on the monitored/evaluated method.

Stream width was approximately 20 feet (6.0 meters) upstream of the bridge. Maximum water depth was measured at 0.6 feet (0.2 meters). The substrate consisted of silt, sand, pebbles, cobbles and bedrock. The stream had well-defined, vegetated banks and exhibited well-defined pool-riffle sequences. Water clarity was clear. Based on this preliminary characterization, Canoe Creek can be classified as a Rosgen Stream Classification Type C-channel (Rosgen, 1996).

No waters classified as Water Supplies (WS-I: undeveloped watershed, or WS-II: predominately undeveloped watersheds), High Quality Waters (HQW), Outstanding Resource Waters (ORW), or designated as an impaired water body under Section 303(d) of the Clean Water Act occur within 1.0 mile (1.6 kilometers) of the project study area.

The Basinwide Monitoring Program, managed by the DWQ, is part of an ongoing ambient water quality monitoring program that addresses long-term trends in water quality. The program monitors ambient water quality by sampling at fixed sites for selected benthic macroinvertebrates, which are sensitive to water quality conditions. DWQ has one sampling station on Canoe Creek upstream of the project study area. The station is located at the intersection of SR 1250 and Canoe Creek approximately 2.0 miles (3.2 kilometers) upstream of the project study area. The site was last sampled in 1997 and received a rating of "Good/Fair".

Point sources, such as wastewater discharges, located throughout North Carolina are permitted through the National Pollutant Discharge Elimination System (NPDES) program through the NCDENR. No active NPDES permits are located in or directly upstream from the project study area (NCCGIA 2001).

C.3. Anticipated Impacts to Water Resources

The proposed project is expected to affect both soils and topography. The topography is variable with moderate to abrupt changes in elevation. The proposed construction of a new bridge or associated road improvements will require the removal of soils and the placement of fill material.

The primary sources of water quality degradation in urban areas are stormwater runoff and construction. Construction of a new bridge and approaches may disturb the stream banks and expose the soil surface. This may cause water quality degradation from runoff and sedimentation. In addition, increased impervious areas can introduce other elements of degradation to water resources. These elements may include hydrocarbons, toxic substances, debris, and other pollutants. Anticipated impacts to water resources include: additional substrate destabilization, bank erosion, increased turbidity, altered flow rates, and possible temperature fluctuations within the stream channel caused by the removal of streamside vegetation.

NCDOT will ensure that preventative and control Best Management Practices (BMP's) are employed to prevent or reduce water pollution as described in the NCDOT handbook

Best Management Practices for the Protection of Surface Waters (1999).

There are no trout or anadromous fish moratoriums applicable to Bridge No. 274 (NCWRC 2003). Moratoria on instream construction and stream crossing may be required if natural occurring populations of smallmouth bass or protected species hosts are known to exist. The NCWRC will evaluate each project based on current fisheries data and make recommendations to the USACE.

C.4. Impacts Related to Bridge Demolition and Removal

BMP's for Bridge Demolition and Removal can be categorized as one of three cases: Case 1, Case 2, or Case 3. The replacement of Bridge No. 274 may be classified as a Case 2 or 3. Case 2 categories allow no work at all in the water during moratorium periods. Case 3 categories have no special restrictions beyond those outlined in the *Best Management Practices for the Protection of Surface Waters* handbook. Limiting in-stream activities and revegetating stream banks immediately following the completion of grading can further reduce impacts.

The bridge superstructure consists of timber deck with 2½ inch (6.35cm) asphalt wearing surface on steel beams. The end bents and interior bents consist of timber caps and timber piles. The timber will be removed without dropping components into Waters of the United States.

D. Biotic Resources

This section describes the vegetation and associated wildlife within the project area that was observed during the field survey. The project area is composed of different vegetative communities based on topography, soils, hydrology, and disturbance. These systems are interrelated and in many aspects interdependent. Potential impacts affecting these communities are also discussed. Classification of plant communities is based on a system used by the NCNHP (Schafale and Weakley, 1990). If a community is modified or otherwise disturbed such that it does not fit into an NCNHP classification, it is given a name that best describes its current characteristics. Scientific nomenclature and common name (when applicable) are provided for each plant and animal species listed. Subsequent references to the same organism include only the common name.

D.1. Plant Communities

The predominant terrestrial communities found in the project study area are Piedmont/Low Mountain Alluvial Forest, Tree Farm, and Urban/Disturbed Community. These communities are described in detail below and presented in Figure 5.

Piedmont/Low Mountain Alluvial Forest

This vegetative community occurs as a narrow buffer adjacent to Canoe Creek. The dominant canopy species observed included sycamore (*Platanus occidentalis*), red maple (*Acer rubrum*), river birch (*Betula nigra*), and tag alder (*Alnus serrulata*). Additional woody and herbaceous species present included American holly, pale jewelweed (*Impatiens pallida*), common greenbrier (*Smilax rotundifolia*), poison ivy (*Toxicodendron radicans*), blackberry (*Rubus* sp.) and honeysuckle (*Lonicera* sp.). Elevations within this

community lie below 1080 feet (330 meters) msl. Within the project study area approximately 0.7 acres (0.3 hectares) of this community exist.

Tree Farm

This community occupies the eastern portion of the project study area adjacent to Canoe Creek. The tree farm is producing evergreen and deciduous trees. The portion north of SR 1248 is in active production while the southern portion has become overgrown. Elevations within this community range from approximately 1040 to 1100 feet (320 to 330 meters) msl. Within the project study area approximately 2.6 acres (1.0 hectares) of this community exist.

Urban/Disturbed Community

The Urban/Disturbed Community includes the road shoulders, power line right-of-way, residential and agricultural areas and industrial or commercial areas. Many plant species are adapted to these disturbed and regularly maintained areas. The dominant species within the project study area include fescue (*Festuca* sp.), ryegrass (*Lolium* sp.), clover (*Trifolium* sp.), thistle (*Cirsium* sp.), sunflower (*Helianthus* sp.), pokeweed (*Phytolacca americana*), lespedeza (*Lespedeza* sp.), broom sedge (*Andropogon virginicus*), foxtail (*Setaria* sp.), cinquefoil (*Potentilla* sp.), asters (*Aster* sp.), wild onion (*Allium cernuum*), dandelion (*Taraxacum officinale*), blackberry, and plantain (*Plantago* sp.). Within the project study area, approximately 2.9 acres (1.2 hectares) of this community exist.

D.2. Wildlife

Wildlife associated with these vegetative communities include ubiquitous mammals such as raccoon (*Procyon lotor*), white-tailed deer (*Odocoileus virginianus*), Virginia opossum (*Didelphis virginiana*), and gray squirrel (*Sciurus carolinensis*). Avian species which may utilize this community include American goldfinch (*Carduelis tristis*), cedar waxwings (*Bombycilla cedrorum*), red-eyed vireo (*Vireo olivaceus*), northern cardinal (*Cardinalis cardinalis*), tufted titmouse (*Baeolophus bicolor*), ovenbird (*Seiurus aurocapillus*), eastern phoebe (*Sayornis phoebe*), Carolina chickadee (*Poecile carolinensis*), gray catbird (*Dumetella carolinensis*), downy woodpecker (*Picoides pubescens*), and northern parula (*Parula americana*). Other wildlife which may reside or forage in this community include the two-lined salamander (*Eurycea bislineata*), slimy salamander (*Plethodon glutinosus*), Fowler's toad (*Bufo woodhousei*), spring peeper (*Hyla crucifer*), eastern box turtle (*Terrapene carolina*), five-lined skink (*Eumeces fasciatus*), and the ringneck snake (*Diadophis punctatus*).

D.3. Aquatic Communities

Canoe Creek comprises the only lotic system in the project study area. Canoe Creek appears to be a moderate groundwater-moderate runoff driven medium size perennial stream. In addition, it appears to have a confined valley form with a low gradient. The channel is only slightly entrenched in the project study area. The banks were well vegetated with no sign of erosion. Wildlife observed included mayfly and caddisfly larvae, snail and fish. Stream systems in the upper Piedmont may hold common fish species such as rosyzide dace (*Clinostomus funduloides*), bluehead chub (*Nocomis*

leptocephalus), sandbar shiner (*Notropis scepticus*), marginated madtom (*Noturus insignis*), and fantail darter (*Etheostoma flabellare*).

D.4. Anticipated Biotic Resource Impacts

The project study area consists of approximately 0.7 acres (0.3 hectares) of Piedmont/Low Mountain Alluvial Forest and approximately 2.6 acres (1.0 hectares) of Tree Farm community. The preferred alternative, Alternative 1, has the potential to encroach into these natural vegetative communities. Based on a preliminary analysis, the total acreage that may be affected within each natural vegetative community is shown in Table 2.

Table 2: Anticipated Impacts to Vegetative Communities

	Alternative 1 (Preferred)	Alternative 2
Piedmont/ Low Alluvial Forest	0.03 A (0.01 ha)	0.03 A (0.01 ha)
Tree Farm	0.27 A (0.11 ha)	0.27 A (0.11 ha)
Urban/Disturbed	0.31 A (0.13 ha)	0.31 A (0.13 ha)
Total	0.61 A (0.25 ha)	0.61 A (0.25 ha)

Loss of wildlife is an unavoidable aspect of development. Temporary fluctuations in populations of animal species, which utilize these communities, are anticipated during the course of construction. Slow-moving, burrowing, and/or subterranean organisms will be directly impacted by construction activities, while mobile organisms will be displaced to adjacent communities.

Aquatic organisms are acutely sensitive to changes in their environment. Environmental impacts from construction activities may result in long term or irreversible effects. Impacts usually associated with in-stream construction include increased channelization and scouring of the streambed. In-stream construction alters the substrate and affects adjacent streamside vegetation. Such disturbances within the substrate lead to increased siltation, which can clog the gills and/or feeding mechanisms of benthic organisms, fish, and amphibian species. Siltation may also cover benthic macroinvertebrates with excessive amounts of sediment that inhibit their ability to respire. These organisms are slow to recover and usually do not, once the stream has been severely impacted.

The removal of streamside vegetation and placement of fill material during construction enhances erosion and possible sedimentation. Quick revegetation of these areas helps to reduce the impacts by supporting the underlying soils. Erosion and sedimentation may carry soils, toxic compounds, trash, and other materials into the aquatic communities at the construction site. As a result, sediment bars may form at and downstream of the site. Increased light penetration from the removal of streamside vegetation may increase water temperatures. Warmer water contains less oxygen, thus reducing aquatic life that depends on high oxygen concentrations.

E. Special Topic

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

Section 404 of the Clean Water Act requires regulation of discharges into "Waters of the United States." The U.S. Environmental Protection Agency (USEPA) is the principal administrative agency of the Clean Water Act; however, the U.S. Army Corps of Engineers (USACE) has the responsibility for implementation, permitting, and enforcement of the provisions of the Act. The USACE regulatory program is defined in 33 CFR 320-330.

Water bodies, including lakes, rivers, and streams, are subject to jurisdictional consideration under the Section 404 program. Wetlands are also identified as "Waters of the United States." Wetlands, defined in 33 CFR 328.3, are those areas that are inundated or saturated by surface water or groundwater at a frequency and duration sufficient to support, and under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Any action that proposes to place fill into these areas falls under the jurisdiction of the USACE under Section 404 of the Clean Water Act (33 U.S.C. 1344).

Surface Waters

The NCDWQ defines a perennial stream as a clearly defined channel that contains water for the majority of the year. These channels usually have some or all of the following characteristics: distinctive streambed and bank, aquatic life, and groundwater flow or discharge. Since Canoe Creek appears on both the Oak Hill USGS 7.5-minute quadrangle map and the County Soil Survey sheets it can be classified as perennial streams. Detailed stream characteristics, including specific water-quality designations, are presented in Section C: Water Resources.

Jurisdictional Wetlands

There are no jurisdictional wetlands associated with the project study area.

E.2. Permits

In accordance with Section 404 of the Clean Water Act (33 U.S.C. 1344), a permit is required from the USACE for projects of this type for the discharge of dredged or fill material into "Waters of the United States". The specific permit(s) will be determined once alternatives have been chosen and potential impacts have been calculated. A Nationwide Permit No. 23 (Approved Categorical Exclusion) is likely to be applicable for all impacts to Waters of the United States resulting from the proposed project. A Nationwide Permit No. 33 (Temporary Construction, Access or Dewatering) may be required if an on-site temporary detour or construction platform is needed during construction of Bridge No. 274. A Regional General Permit No. 198200031 may be required if the discharge of dredged or fill material in "Waters of the United States" is unavoidable.

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

3403, GC 3366, and GC 3404 for the matching USACE Nationwide Permit 23, Nationwide Permit 33, and Regional General Permit 198200031.

Impacts to the aquatic community of Canoe Creek may result from the replacement of Bridge No. 274. The removal of the substructure may create some disturbance in the streambed. Conditions in the stream may raise sediment concerns since the substrate contains silt; therefore, a turbidity curtain is recommended.

In order to protect the water quality and aquatic life in the area affected by this project, the NCDOT and all 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*.

Moratoria on in-stream construction and stream crossing may be required if natural occurring populations of smallmouth bass or protected species hosts are known to exist. The NCWRC will evaluate each project based on current fisheries data and make recommendations to the USACE.

E.3. Buffer Rules

At the time of this report, the Yadkin River Basin was not subject to regulated riparian buffer regulations.

E.4. Mitigation

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

Avoidance

Avoidance mitigation examines all appropriate and practicable possibilities of averting impacts to "Waters of the United States." According to a 1990 Memorandum of Agreement (MOA) between the USEPA and the USACE, in determining "appropriate and practicable" measures to offset unavoidable impacts, such measures should be appropriate to the scope and degree of those impacts and practicable in terms of cost, existing technology, and logistics in light of overall project purposes. No jurisdictional wetlands will be impacted; however, some unavoidable impacts to surface waters may result from project construction.

Minimization

Minimization includes the examination of appropriate and practicable steps to reduce the adverse impacts to "Waters of the United States." Implementation of these steps will be required through project modifications and permit conditions. Minimization typically

focuses on decreasing the footprint of the proposed project through the reduction of median widths, right-of-way widths, fill slopes, and/or road shoulder widths. The following methods are suggested to minimize adverse impacts to "Waters of the United States:"

1. Strictly enforce Best Management Practices (BMP's) to control sedimentation during project construction;
2. Clearing and grubbing activity should be minimized;
3. Decrease or eliminate discharges into the North Pacolet River's tributary;
4. Reestablishment of vegetation on exposed areas with judicious pesticide and herbicide management;
5. Minimization of "in-stream" activity; and
6. Use responsible litter control practices.

Compensatory Mitigation

Compensatory mitigation is not normally considered until anticipated impacts to "Waters of the United States" have been avoided and minimized to the maximum extent possible. It is recognized that "no net loss of wetlands" functions and values may not be achieved in each and every permit action. Appropriate and practicable compensatory mitigation is required for unavoidable adverse impacts, which remain after all appropriate, and practicable minimization has been required. Compensatory actions often include restoration, creation and enhancement of Waters of the United States, specifically wetlands. Such action should be undertaken in areas adjacent to or contiguous to the discharge site.

Nationwide Permits usually do not require mitigation according to the MOA between the USEPA and the USACE. However, prior to the use of any nationwide permit within any of the 25 designated counties of North Carolina that contain trout waters, notification must be given to the Wilmington USACE District Engineer along with a written statement of compliance with all of the conditions of the applicable nationwide permit. This notification will include comments and recommendations from NCWRC. A plan to provide compensatory mitigation for all unavoidable adverse impacts to the mountain trout waters must be included in the information sent to the NCWRC.

F. Rare and Protected Species

Some populations of fauna and flora have been, or are, in the process of decline due to either natural forces or impacts from humans. Federal law (under the provisions of Section 7 of the Endangered Species Act of 1973, as amended) requires that any action likely to adversely affect a species classified as federally-protected be subject to review by the USFWS. Other species may receive additional protection under separate laws.

F.1. Federally Protected Species

Plants and animals with a federal designation of Endangered (E), Threatened (T), Proposed Endangered (PE), and Proposed Threatened (PT) are protected under provisions of Section 7 and Section 9 of the Endangered Species Act of 1973, as amended. The USFWS list seven federally-protected species for Burke County as of the

February 5, 2003 listing (Table 3). The NCNHP database, updated January 2004, provides the State status for each of these federally-protected species.

Table 3: Federally-protected species for ^{Burke} Cherokee County, North Carolina.

Scientific Name	Common Name	Federal Status	State Status
Vertebrates			
<i>Clemmys muhlenbergii</i>	Bog turtle ✓	T(S/A)	T
<i>Haliaeetus leucocephalus</i>	Bald eagle ✓	T, PD	T
Vascular Plants			
<i>Geum radiatum</i>	Spreading Avens ✓	E	E-SC
<i>Hexastylis naniflora</i>	Dwarf-flowered Heartleaf ✓	T	T
<i>Hudsonia montana</i>	Mountain Golden-heather ✓	T	E
<i>Isotria medeoloides</i>	Small-whorled pogonia ✓	T	E
<i>Liatis helleri</i>	Heller's Blazing Star ✓	T	T-SC

4 protected!

Notes: E - Endangered; T - Threatened; SR - Significantly Rare; SC - Special Concern; S/A - Similarity of Appearance.

Bald eagle (*Haliaeetus leucocephalus*)

Federal Status: Threatened
 State Status: Endangered
 Date Listed: March 11, 1967

Adult **bald eagles** are identified by their large white head, short white tail, and dark-brown to chocolate-brown body plumage. Eagle nests are generally found in close proximity to water [within 0.5 mi (0.8 km)] where the eagle has a clear flight path to the water. They generally nest in the largest living tree with an open view of the surrounding land. Nesting sites are usually less than one mile from feeding areas and are located adjacent to a clear flight path and open view of the surrounding area. The breeding season for the bald eagle begins in winter for southern populations. Breeding pairs of bald eagles mate for life. Females lay an average of two eggs that are incubated for about 35 days.

BIOLOGICAL CONCLUSION: NO EFFECT

The majority of the project study area has been disturbed by agriculture, or is residentially and commercially developed. This makes it unlikely that eagles would nest in the project study area. No nests were observed within the project study area. A search of the NCNHP database showed no recorded occurrences of this species within the project vicinity. Lake James is approximately 3.0 miles (4.8 kilometers) west of the project study area and a few small farm ponds occur as close as 1.0 mile (1.6 kilometer) from Bridge 274. Since no nesting sites were observed within the project study area, it could be concluded that the construction of the proposed project will not influence the bald eagle.

Bog turtle (*Clemmys muhlenbergii*)

Federal Status: Threatened (S/A)
 State Status: Threatened
 Date Listed: May 1, 1997

The **bog turtle** is North Carolina's smallest turtle, measuring 3 to 4 in (7 to 10 cm) in length. It has a dark brown carapace and a black plastron. The bright orange or yellow blotch on each side of the head and neck is a readily identifiable characteristic. The bog turtle inhabits damp grass fields, bogs, and marshes in the mountains and western Piedmont.

The bog turtle is listed as Threatened due to similarity of appearance [T (S/A)]. This is due to its similarity of appearance to another rare species that is listed for protection. T (S/A) species are not subject to Section 7 consultation and a biological conclusion for this species is not required.

Bog turtles inhabit damp grassy fields, bogs, and marshes. These areas generally have minimal woody material and a soft substrate. Suitable habitat as described did not exist within the project study area.

Dwarf-flowered heartleaf (*Hexastylis naniflora*)

Federal Status: Threatened

State Status: Threatened

Date Listed: March 11, 1967

The **dwarf-flowered heartleaf** is found only in eight western piedmont counties in North Carolina and the adjacent portions of South Carolina. The dwarf-flowered heartleaf has heart-shaped leaves, supported by long thin petioles that grow from a subsurface rhizome. The flowers are found near the base of the petioles. Fruits mature from mid-May to early July. Dwarf-flowered heartleaf populations are found along bluffs and adjacent slopes, in boggy areas next to streams and creeks, and along the slopes of nearby hillsides and ravines. This plant grows in acidic soils in regions with a cool moist climate. Plants are found on acidic sandy soils on bluffs and ravines and are usually associated with mountain laurel (*Kalmia latifolia*) thickets in hardwood forests. The soils preferred by this species include Pacolet, Madison gravelly sandy loam, and Musella fine sandy loam.

BIOLOGICAL CONCLUSION: NO EFFECT

Suitable habitat is not located in the project study area and a search of the NCNHP database showed no recorded occurrences of this species within the project vicinity. The project study area was canvassed during the site investigation and no specimens of dwarf-flowered heartleaf were observed. It can be concluded that the construction of the proposed project will not impact any populations of dwarf-flowered heartleaf.

Heller's blazing star (*Liatris helleri*)

Federal Status: Threatened

State Status: Threatened-Special Concern

Federally Listed: November 19, 1987

Heller's blazing star is endemic to high elevation ledges of rock outcrops of the northern Blue Ridge Mountains in North Carolina. Known populations of this plant occur at elevations of 3,500 to 6,000 feet (1,100 to 1,800 meters). Heller's blazing star is a short, stocky plant that has one or more erect stems that arise from a tuft of narrow,

pale green basal leaves. Heller's blazing star is an early pioneer species growing on grassed rock outcrops where it is exposed to full sunlight. Heller's blazing star prefers shallow acid soils associated with granite rocks.

BIOLOGICAL CONCLUSION: NO EFFECT

Suitable habitat for Heller's blazing star is not present in the project study area due to the lack of high elevation ledges and rock outcrops and the relatively low elevation of the study area. NCNHP has no records of any known populations of the Heller's blazing star within a one-mile radius of the project area. Therefore, this species will not be impacted as a result of project construction.

Mountain golden heather (*Hudsonia montana*)

Federal Status: Threatened

State Status: Endangered

Federally Listed: October 20, 1980

Mountain golden heather is a low, needle-leaved shrub that is yellow-green in color. This shrub usually grows in clumps and retains its leaves from the previous year which appear scale-like on the older branches. Mountain golden heather occurs in weathered rocky soils on mountain tops, with known populations found at elevations of 2,800 to 4,000 ft (850 to 1200 meters). Mountain golden heather can be found on exposed quartzite ledges in an ecotone between bare rock and heath balds which merge into pine forest. Plants do live in partially shaded areas; however, they do not appear to be as healthy as those found in open areas. A critical habitat area for mountain golden heather exists in Burke County.

The designated critical habitat area in Burke County, North Carolina is bounded by the following: on the west by the 2200-foot contour; on the east by the Linville Gorge Wilderness Boundary north from the intersection of the 2200-foot contour and the Shortoff Mountain Trail to where it intersects the 3400-foot contour at "Chimneys"--then follow the 3400-foot contour north until it re-intersects with the Wilderness Boundary--then follow the Wilderness Boundary again northward until it intersects the 3200-foot contour extending west from its intersection with the Wilderness Boundary until it begins to turn south--at this point the Boundary extends due east until it intersects the 2200-foot contour (Federal Register, 1980).

BIOLOGICAL CONCLUSION: NO EFFECT

No habitat is located in the project study area for mountain golden heather; the project study area is located at approximately 1,000 feet (300 meters) above msl, which is well below the elevation for suitable habitat. A search of the NCNHP database showed no recorded occurrences of this species within the project vicinity. It can be concluded that the construction of the proposed project will not impact populations of mountain golden heather.

Small-whorled pogonia (*Isotria medeoloides*)

Federal Status: Threatened

State Status: Endangered

Federally Listed: September 10, 1982

The **small-whorled pogonia** was known historically from Maine to Georgia, with the exception of Delaware along the eastern seaboard and in Michigan, Illinois, and Missouri. In North Carolina the small-whorled pogonia is found in the Nantahala National Forest, Macon County and near Flat Rock, Henderson County. The small-whorled pogonia is a perennial orchid with long pubescent roots and a hollow stem 4 to 10 inches (10 to 25 centimeters) tall. The small-whorled pogonia grows in "second growth deciduous" or deciduous-coniferous forests, with an open canopy, open shrub layer, and sparse herb layer. This species prefers acidic soils. Flowering is inhibited in areas where there is relatively high shrub coverage or high sapling density.

BIOLOGICAL CONCLUSION: NO EFFECT

Habitat for this species is open, dry, deciduous woods with acid soils, a community not found in the project study area. A search of the NCNHP database showed no recorded occurrences of this species within the project vicinity. It can be concluded that the construction of the proposed project will not influence any populations of small-whorled pogonia.

Spreading avens (*Geum radiatum*)

Federal Status: Endangered
State Status: Endangered-Special Concern
Federally Listed: April 5, 1990

Spreading avens is a perennial herb topped with an indefinite cyme of large, bright, yellow flowers. Its leaves are mostly basal with large terminal lobes and small laterals, and they arise from horizontal rhizomes. Spreading avens inhabits high elevation cliffs, outcrops, and steep slopes that are exposed to full sun. It is also found in thin, gravelly soils or grassy balds near summit outcrops. The adjacent spruce/fir forests [generally found above 5,500 feet (1,680 meters) in elevation] are dominated by red spruce and Fraser fir. The substrate at all the population sites is composed of various igneous, metamorphic, and sedimentary rocks.

BIOLOGICAL CONCLUSION: NO EFFECT

No habitat is located in the project study area for this species; the project study area is approximately 1,000 feet (300 meters) above msl, which is well below the elevation for suitable habitat. A search of the NCNHP database showed no recorded occurrences of this species within the project vicinity. It can be concluded that the construction of the proposed project will not impact spreading avens.

F.2. Federal Species of Concern

As of February 5, 2003 there were fifteen Federal Species of Concern listed by the USFWS for Burke County. These species are not protected under the provisions of Section 7 of the Endangered Species Act. Federal species of concern species are defined as species under consideration for listing for which there is insufficient information to support listing as threatened or endangered (formerly C2 candidate species). The status of these species may be upgraded at any time, thus they are included here for consideration. A review of NCNHP data depicting known populations of these federal species of concern found no populations within a one mile (1.6 km) radius of the project

study area. Protections afforded to species listed under state law are not applicable to this project. Table 4 lists the federal species of concern, their state status, and the existence of suitable habitat within the project area.

Table 4: Federal species of concern for Burke County

Common Name	Scientific Name	Federal Status	State Status	Habitat Requirements	Available Habitat
Vertebrates					
Alleghany woodrat	<i>Neotoma magister</i>	FSC*	SC	Rocky cliffs, caves, bottomland hardwoods between 800 to 2500 feet elevation	Yes
Rafinesque's big-eared bat	<i>Corynorhinus rafinesquii</i>	FSC*	T	Roosts in old buildings, hollow trees and under bridges near water.	Yes
Southern Appalachian woodrat	<i>Neotoma floridana haematoreia</i>	FSC	SC	Rocky places in deciduous or mixed forests.	No
Invertebrates					
Brook floater	<i>Alasmidonta varicosa</i>	FSC	E	Piedmont systems and along the Blue Ridge escarpment of the Catawba River	Yes
Diana fritillary butterfly	<i>Speyeria diana</i>	FSC	SR	Rich woods and adjacent edges and openings	No
Edmund's snaketail dragonfly	<i>Ophiogomphus edmundo</i>	FSC*	SR	Blue Ridge escarpment streams	Yes
Pygmy snaketail dragonfly	<i>Ophiogomphus howei</i>	FSC	SR	Rivers	Yes
Vascular Plants					
Butternut	<i>Juglans cinerea</i>	FSC	na	Cove forests, rich woods	No
Carolina saxifrage	<i>Saxifraga caroliniana</i>	FSC	SR-T	High to middle elevation moist cliffs and rocky outcrops	No
Cuthbert's turtlehead	<i>Chelone cuthbertii</i>	FSC	SR-L	Bogs	No
Sweet pinesap	<i>Monotropsis odorata</i>	FSC	SR-T	Dry forests and bluffs	No
A liverwort	<i>Cephaloziella obtusilobula</i>	FSC*	--	Not known	N/A
A liverwort	<i>Plagiochila sullivantii spinigera</i>	FSC	SR-L	Moist rocks in spray zone of waterfalls	No
A liverwort	<i>Plagiochila sullivantii sullivantii</i>	FSC	SR-T	Moist rocks in spray zone of waterfalls	No
A liverwort	<i>Porella wataugensis</i>	FSC	SR-L	On rocks in humid gorges	No

(See next page for notes)

NOTES:

FSC: Federal Species of Concern - A taxon which may or may not be listed in the future (formerly Federal C2 candidate species).

SC: Special Concern - Any species of plant or animal in North Carolina which requires monitoring.

SR: State determined rare species.

E: Endangered: any species or higher taxon of plant whose continued existence as a viable component of the State's flora/fauna is determined to be in jeopardy.

T: Threatened - any resident species of plant which is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range.

L: The range of the species is **limited** to North Carolina and adjacent states. These are species which may have 20-50 populations in North Carolina, but fewer than 50 populations range wide.

-T: These species are rare **throughout** their ranges (fewer than 100 populations total).

na - not available.

* : Denotes a Historic record; the species was last observed in the county more than 50 years ago.

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 study of the area of potential effect (APE) was conducted on June 11, 2003. The APE is defined as the geographic area or areas within which an undertaking or project may directly or indirectly cause alterations in the character or use of historic properties. All structures within the APE were photographed and later reviewed by the State Historic Preservation Office (HPO). In a memorandum dated October 22, 2003, the State Historic Preservation Officer (SHPO) stated that they were no structures of historical or architectural importance located within the planning area based on historical information available. Upon the review of the photographs, it was further determined that there were properties over fifty years old within the APE but they are not considered eligible for the National Register. This is documented in a concurrence form dated September 30, 2003. Therefore, no further compliance with Section 106 is required. A copy of the SHPO concurrence form is included in the Appendix.

C. Archaeology

The State Historic Preservation Officer (SHPO) reviewed the project location and had no comment on the proposed undertaking. Based on that letter and an independent review of the project study area, the NCDOT recommended that no archaeological investigation be conducted in connection with this project. A copy of the NCDOT memorandum is 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 significant 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.

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

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.

This Categorical Exclusion has proceeded in accordance with the Executive Order 12898 requirement that each federal agency, to the greatest extent allowed by law, administers and implements its programs, policies, and activities that affect human health or the environment so as to identify and avoid "disproportionately high and adverse" effects on minority and low-income populations. The proposed project will not directly impact minority or low-income residences, segment existing minority communities, or separate residential areas from nearby services such as schools.

The proposed project will not require right-of-way acquisition or easement from any land protected under Section 4(f) of the Department of Transportation Act of 1966.

No geodetic monuments will be impacted during construction of this 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). Alternative 1 and 2 will each impact 0.6 acres (0.2 hectares) of statewide important farmlands. The same acreage will be affected for each alternative, thereby minimizing impacts to important farmlands.

No adverse effects to air quality are expected to result from this project. The project is in an air quality "neutral" project, so it is not required to be included in the regional emissions analysis (if applicable), and a project level CO analysis is not required. Since the proposed project is located in an attainment area, 40 CFR Part 51 and 93 are not applicable. If vegetation or wood debris is disposed of by open burning, it shall be done in accordance with applicable local laws and regulations of the North Carolina State Implementation Plan (SIP) for air quality in compliance with 15 NCAC 2D.0520 and the 1990 Clean Air Act and the National Environmental Policy Act. This evaluation completes the assessment requirements for air quality and no additional reports are required.

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

An examination of North Carolina Department of Environment and Natural Resources (DENR), Division of Water Quality (DWQ), Groundwater Section and the North Carolina Department of Human Resources, Solid Waste Management Section records by the NCDOT Geotechnical Engineering Unit revealed no hazardous waste sites in the project area.

A field investigation and an examination of records of DENR's Division of Waste Management, Underground Storage Tank Section, revealed that no regulated underground storage tanks exist in the project study area.

Burke County is a participant in the National Flood Insurance Program. This site on Canoe Creek is not included in a detailed FEMA flood study. Attached is a copy of the Flood Insurance Rate Map, on which are shown the approximate limits of the 100-year flood plain in the vicinity of the project (Figure 7).

On the basis of the above discussion, it is concluded that no significant 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. A Citizens Informational Workshop was held at the City of Morganton City Hall on July 20, 2004 from 4:00 p.m. to 7:00 p.m. At this workshop, preliminary alternatives were reviewed and discussed with concerned citizens and local officials.

Four (4) local citizens attended the Citizens Informational Workshop. All of the citizens agreed with the preferred alternative (Alternative #1).

IX. AGENCY COMMENTS

Agency comments are summarized below. Letters from the commenting agencies are included in the Appendix.

1. United States Department of the Interior Fish & Wildlife Service (USFWS)

Comment: *"Our records indicate known locations of the brook floater mussel (Alasmidonta varicosa) (a federal species of concern) near the project area. Habitat assessments and surveys of suitable habitat should be conducted in the project area. If they occur in the project area they should be protected from impacts."*

Response: Surveys for *Alasmidonta varicosa* should be conducted prior to the letting of the project. If any individuals are found, they should be relocated a minimum of 330 feet (100 meters) upstream of the project study area.

2. North Carolina Department of Environment & Natural Resources - Division of Water Quality (NCDENR - DWQ)

Comment: *"There are 30-foot vegetated buffer requirements in WS waters in addition to the requirements to minimize storm water runoff and maximum use of BMP's."*

Response: Construction will be restricted as noted in the Project Commitments.

X. REFERENCES

- [AOU] American Ornithologist's Union. 1998. AOU Checklist of North American Birds, Seventh Edition. AOU, Washington, DC.
- Amoroso, J.L. 2001. Natural Heritage Program List of Rare Plant Species of North Carolina. North Carolina Natural Heritage Program, Raleigh, NC.
- Burt, William H. and R. P. Gossenheider. 1976. A Field Guide to the Mammals. Houghton Mifflin Company, Boston, MA.
- Conant, R. 1958. A Field Guide to Reptiles and Amphibians of Eastern and Central North America. Houghton Mifflin Publishing, Boston, MA.
- Cowardin, L.M., V. Carter, F.C. Golet and E.T. LaRoe. 1979. Classification of Wetlands and Deepwater Habitats of the United States. Prepared for the U.S. Fish and Wildlife Service, United States Department of the Interior, Washington DC.
- Duncan, Wilbur H. and M. B. Duncan. 1999. Wildflowers of the Eastern United States. University of Georgia Press, Athens, GA.
- 1988. Trees of the Southeastern United States. University of Georgia Press, Athens, GA.
- Environmental Laboratory. 1987. United States Army Corps of Engineers. Wetlands Delineation Manual, Technical Report Y-87-1. United States Army Engineer Waterways Experiment Station, Vicksburg, MS.
- Farrand, J., Jr. 1993. Audubon Society Guide to Animal Tracks of North America. Chanticleer Press, New York, New York.
- Federal Register. 1980. Volume 45, Number 204. 50 CFR Part 17. Rule 45 FR 69360 – 69363. Department of the Interior. U. S. Fish and Wildlife Service, Washington, DC.

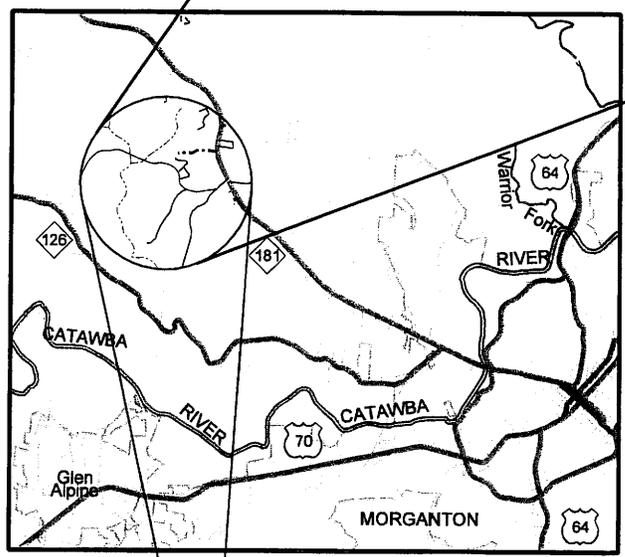
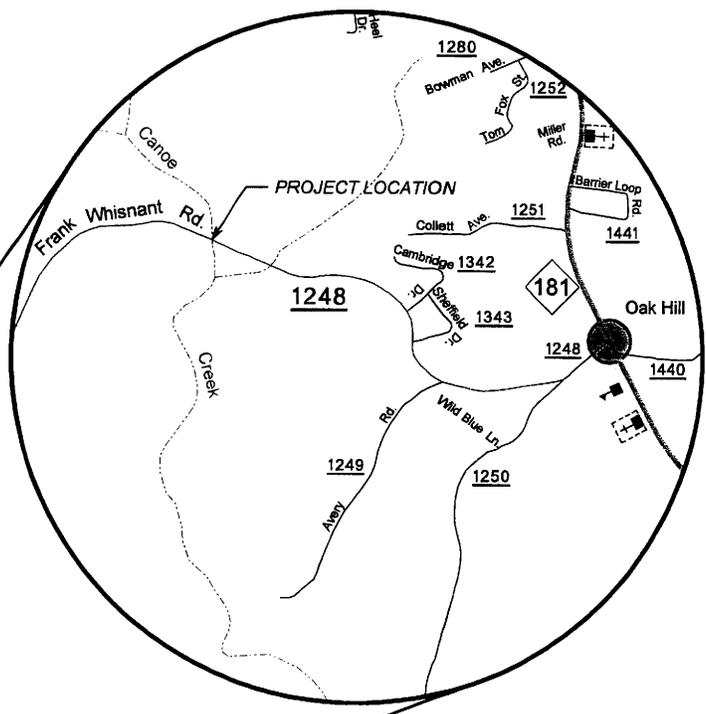
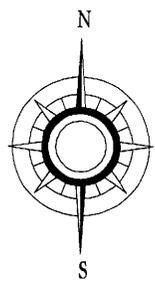
- Griffith, G.E., J.M. Omernik, J.A. Comstock, M.P. Schafale, W.H. McNab, D.R. Lenat, T.F. MacPherson, J.B. Glover, and V.B. Shelburne, 2002. Ecoregions of North Carolina and South Carolina. U.S. Environmental Protection Agency, Reston, VA.
- Hemmerly, Thomas E. 2000. Appalachian Wildflowers. University of Georgia Press, Athens, Ga.
- Justice, W. S. and C.R. Bell. 1968. Wild Flowers of North Carolina. University of North Carolina Press, Chapel Hill, NC.
- Lammert, M., J. Higgens, D. Grossman and M. Bryer. 1997. A Classification Framework for Freshwater Communities: Proceedings of the Nature Conservancy's Aquatic Community Classification Workshop. New Haven, MO.
- LeGrand, Jr., H.E. and S.P. Hall. 2001. Natural Heritage Program List of Rare Animal Species of North Carolina. North Carolina Natural Heritage Program, Raleigh, NC.
- Martof, B.S., W.M. Palmer, J.R. Bailey, and J.R. Harrison III. 1980. Amphibians and Reptiles of the Carolinas and Virginias. University of Chapel Hill Press, Chapel Hill, NC.
- [NCCGIA] North Carolina Center for Geographic Information and Analysis. 2001. BasinPro Million-Acre Edition. NCCGIA, Raleigh, NC.
- [NCDENR] North Carolina Department of Environment and Natural Resources, Division of Water Quality. 2003. Basinwide Information Management System, Release 5.3, Build 21, NCDENR, Raleigh, NC. <<http://h2o.enr.state.nc.us/bims/Reports/reports.html>>.
- 2001. Internal Technical Guide for Stream Work in North Carolina. NCDENR, Raleigh, NC.
- 1999. Catawba River Basinwide Water Quality Plan. NCDENR, Raleigh, NC.
- [NCDOT] North Carolina Department of Transportation. 1999. Best Management Practices for Bridge Demolition and Removal. NCDOT, Raleigh, NC.
- North Carolina Geological Survey, 1991. Geologic Map of North Carolina. Printed 1991 reprinted 1996. North Carolina Geologic Survey, Raleigh, NC.
- [NHP] North Carolina Natural Heritage Program, 2001. Element Occurrence List for Burke County, North Carolina. North Carolina Division of Parks and Recreation, Raleigh, NC. 2 June 2003. < <http://www.ncsparks.net/nhp/county.html>>.
- [NCWRC] North Carolina Wildlife Resource Commission, 2003. Fishing Regulations and Information. NCWRC, Raleigh, NC.
- Palmer, W.M. and A.L. Braswell. 1995. Reptiles of North Carolina. University of North Carolina Press, Chapel Hill, NC.
- Peterson, Roger Tory. 2002. A Field Guide to the Birds of Eastern and Central North America. 5th Edition. Houghton Mifflin. New York City, NY.
- Radford, A.E., H.E. Ahles and C.R. Bell. 1968. Manual of the Vascular Flora of the Carolinas. The University of North Carolina Press, Chapel Hill, NC.
- Robbins, C.S., B. Bruun and H.S. Zim. 1966. A Guide to Field Identification of Birds of North America. Western Publishing, Racine, WI.
- Rohde, F. C., R. G. Arndt, D. G. Lindquist, and J. P. Parnell, 1994. Freshwater Fishes of the Carolinas, Virginia, Maryland, and Delaware. The University of North Carolina Press, Chapel Hill, NC.
- Rosgen, Dave. 1996. Applied River Morphology. Wildlands Hydrology, Pagosa Springs, CO.
- Schafale, M.P. and A.S. Weakley. 1990. Classification of the Natural Communities of North Carolina Third Approximation. North Carolina Natural Heritage Program, Raleigh, NC.
- Smith, Richard M. 1998. Wildflowers of the Southern Mountains. The University of Tennessee Press, Knoxville, TN.
- [USDA] United States Department of Agriculture, Natural Resources Conservation Service. Unpublished. Soil Survey of Burke County, NC.
- [USFWS] United States Fish and Wildlife Service, 2003. Burke County Endangered Species, Threatened Species and Federal Species of Concern. United States Department of Interior, Washington, DC. 2 June 2003, < <http://nc-es.fws.gov/>>.
- 1999. Endangered and Threatened Wildlife and Plants 50 CFR 17.11 and 17.12. United States Fish and Wildlife Service, Washington, DC.

- 1992 (updated 1996). Endangered and Threatened Species of the Southeastern United States (The Red Book). United States Fish and Wildlife Service Southeastern Region, Atlanta, GA.
- Weakley, Alan S. 2002. Flora of the Carolinas and Virginia. UNC Herbarium, North Carolina Botanical Garden, University of North Carolina. Chapel Hill, NC. <http://www.herbarium.unc.edu/weakley_flora/default.htm>.
- Webster, W.D., J.F. Parnell, and W.C. Biggs, Jr. 1985. Mammals of the Carolinas, Virginia, and Maryland. University of North Carolina Press, Chapel Hill NC.
- Wherry, E.T. 1995. The Fern Guide to Northeastern and Midland United States and adjacent Canada. Dover Publications. New York City, NY.

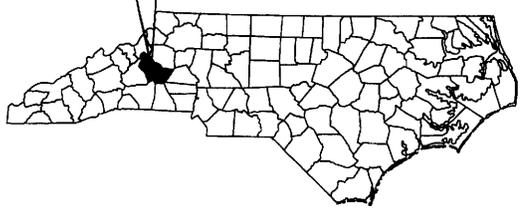
FIGURES

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<i>Figure 2-2</i>	<i>Photographs</i>
<i>Figure 3</i>	<i>Typical Section</i>
<i>Figure 4A</i>	<i>Plan View Alternative 1</i>
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<i>Figure 5</i>	<i>Off-site Detour</i>
<i>Figure 6</i>	<i>Natural Communities and Surface Waters</i>
<i>Figure 7</i>	<i>FEMA 100-year Flood Map</i>

0.25 0 0.25 0.5 MILES



1 0 1 2 MILES



**NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
PROJECT DEVELOPMENT &
ENVIRONMENTAL ANALYSIS BRANCH**

BURKE COUNTY TIP NO. B-4042

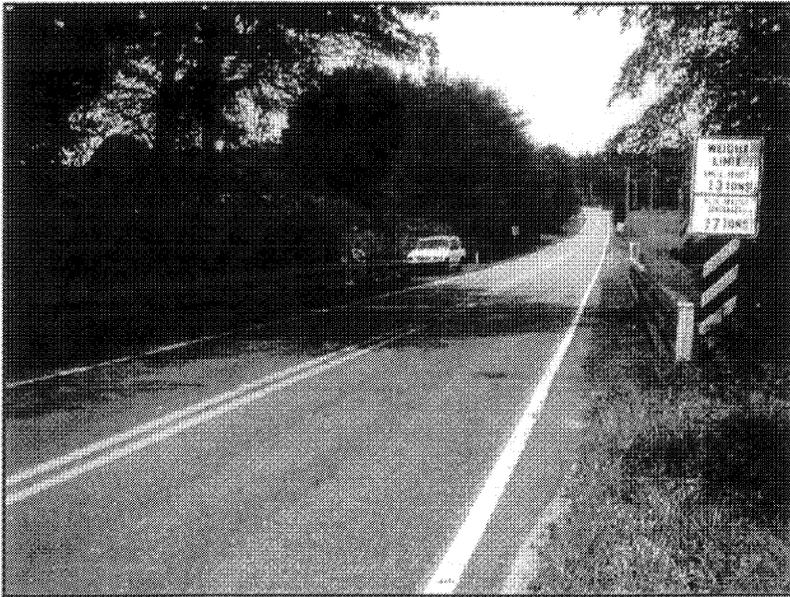
**BRIDGE NO. 274 ON SR 1248
OVER CANOE CREEK**

VICINITY MAP

FIGURE 1



VIEW OF NORTH
WESTERN APPROACH



VIEW OF SOUTHEAST-
ERN APPROACH



NORTH CAROLINA
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**BRIDGE NO. 274 ON SR 1248
OVER CANOE CREEK**

PHOTOGRAPHS

Figure 2-1



VIEW DOWNSTREAM
(LOOKING SOUTH-
WEST)



VIEW UPSTREAM
(LOOKING NORTH-
EAST)



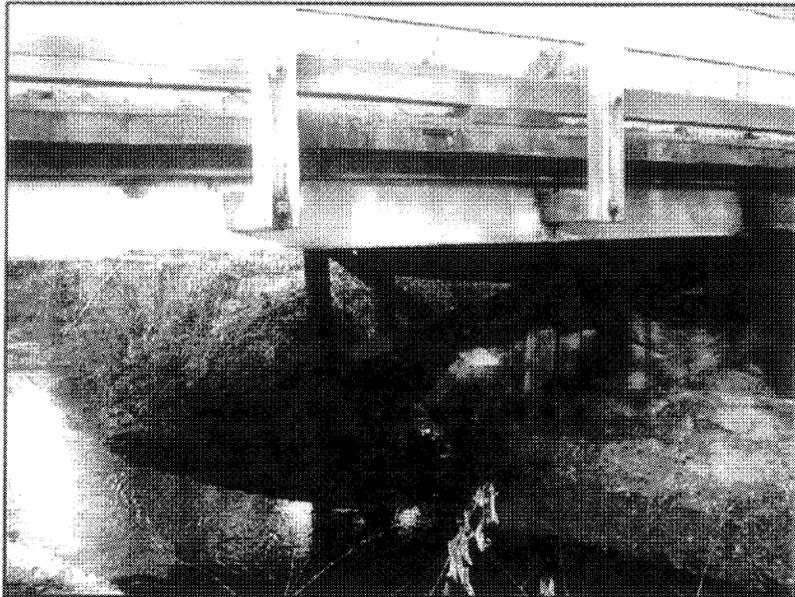
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BRIDGE NO. 274 ON SR 1248
OVER CANOE CREEK

PHOTOGRAPHS

Figure 2-2



VIEW OF DOWN-
STREAM FACE



VIEW OF UPSTREAM
FACE



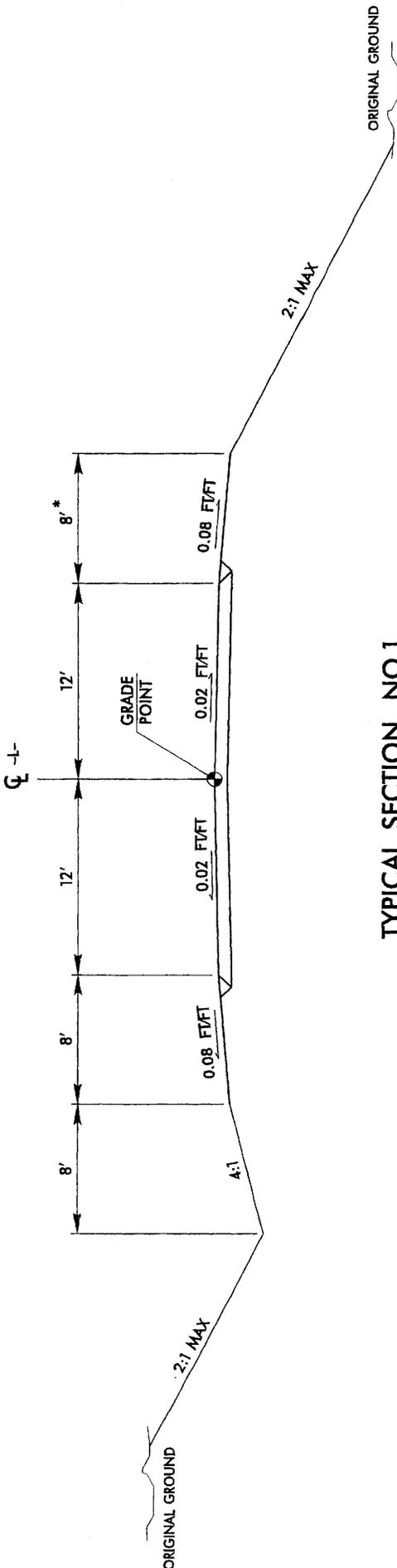
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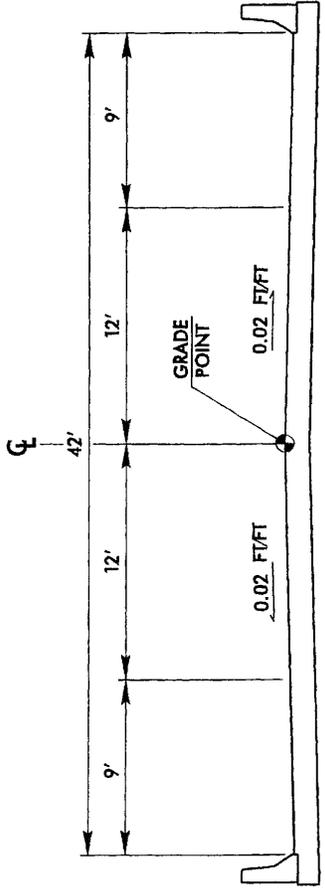
PHOTOGRAPHS

Figure 2-3



TYPICAL SECTION NO.1

*ADD 3' FOR GUARDRAIL



TYPICAL SECTION ON PROPOSED SLAB BRIDGE

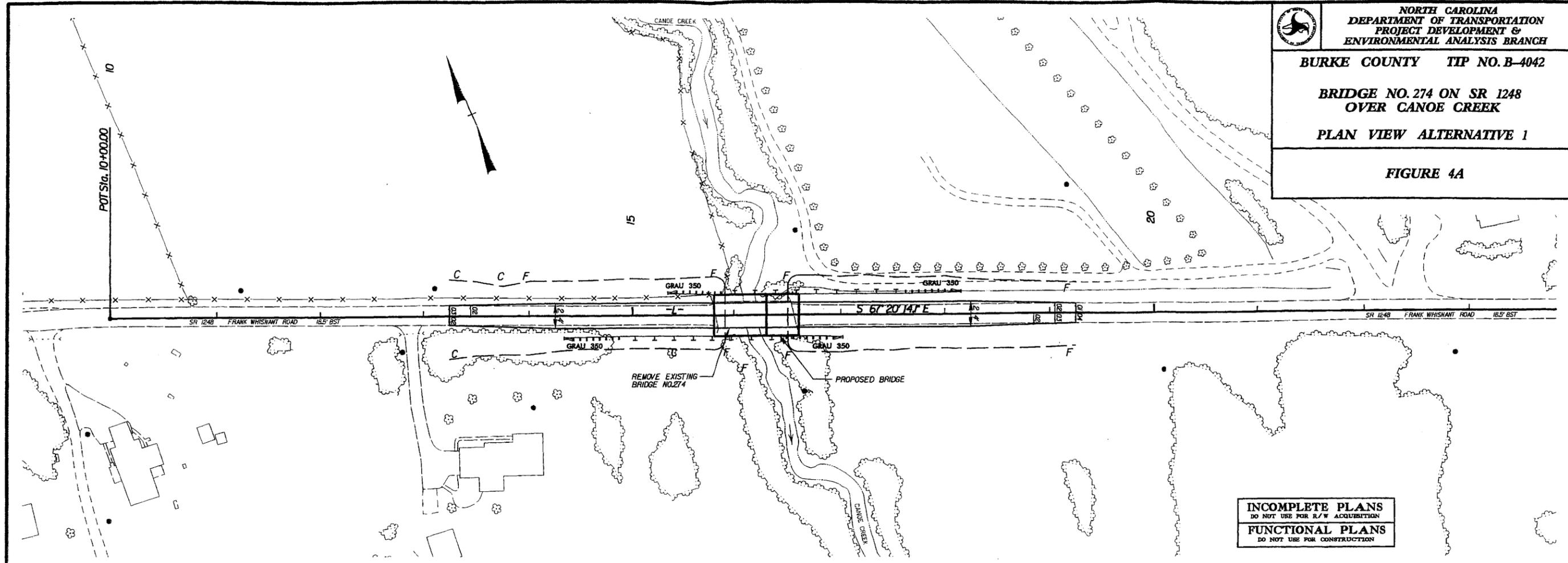
TRAFFIC DATA

ADT 2002 = 1900
 ADT 2025 = 2900
 DUAL 4%
 TTST 1%
 FUNCTIONAL CLASSIFICATION: RURAL LOCAL
 LOS = A

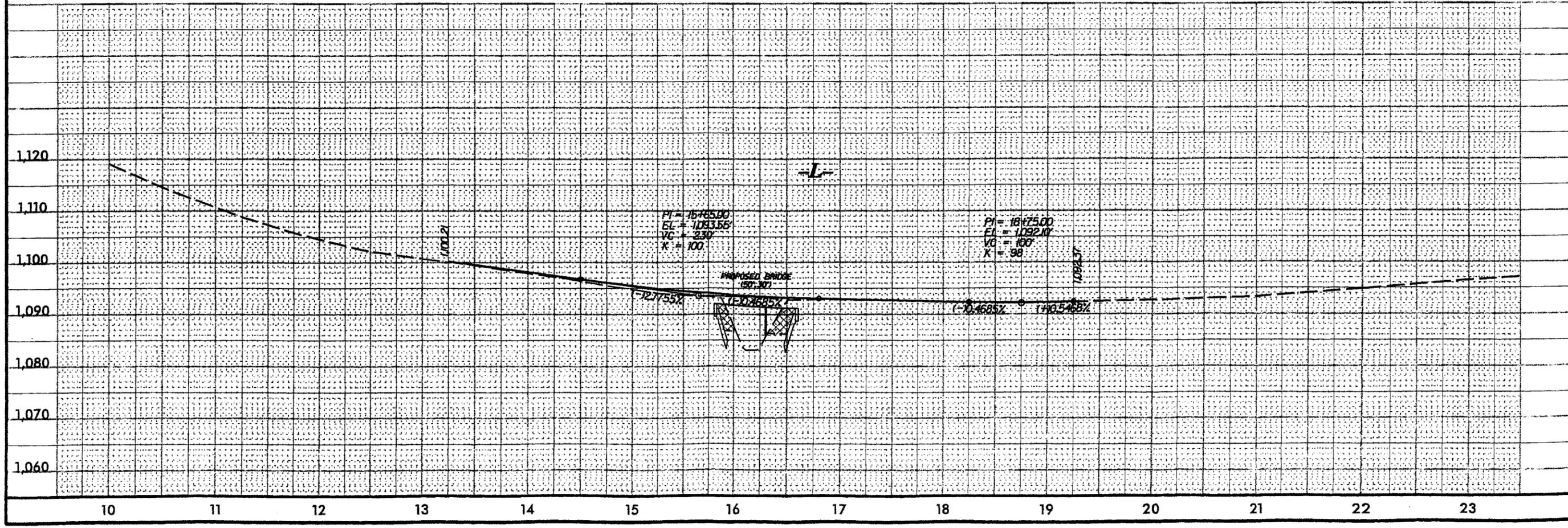
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	BURKE COUNTY TIP NO. B-4042
	BRIDGE NO. 274 ON SR 1248 OVER CANOE CREEK TYPICAL SECTION
FIGURE 3	



FIGURE 4A



INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION
FUNCTIONAL PLANS
DO NOT USE FOR CONSTRUCTION





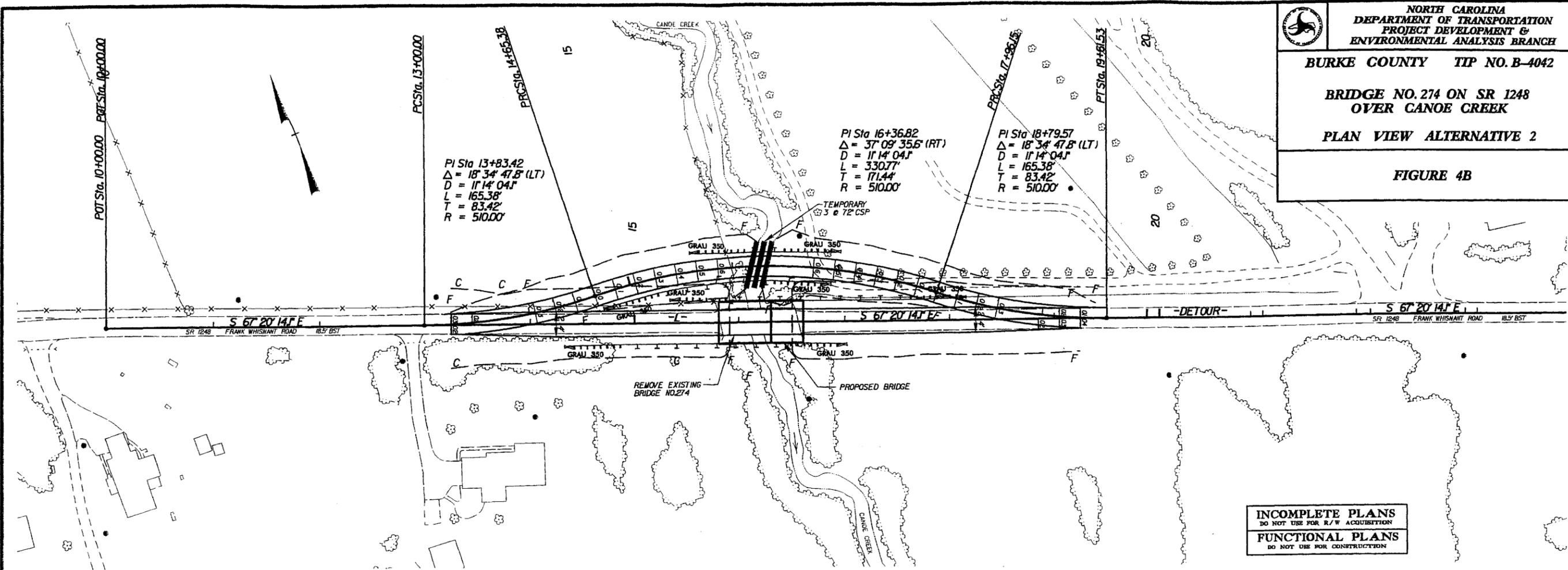
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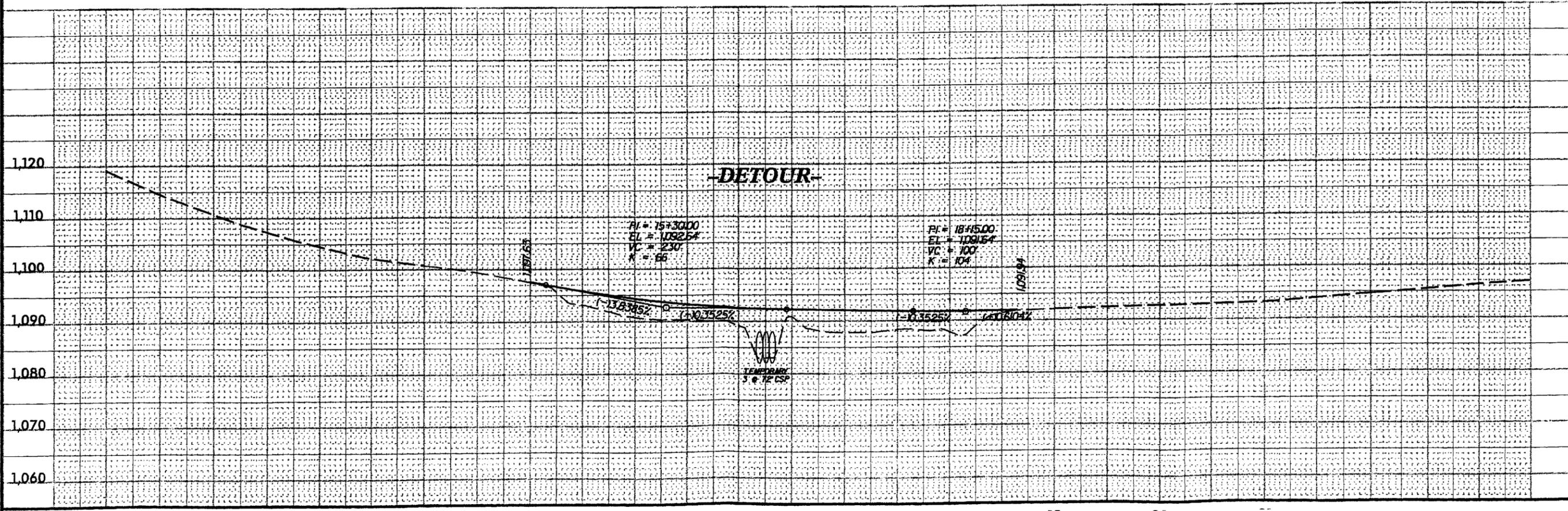
BRIDGE NO. 274 ON SR 1248
OVER CANOE CREEK

PLAN VIEW ALTERNATIVE 2

FIGURE 4B



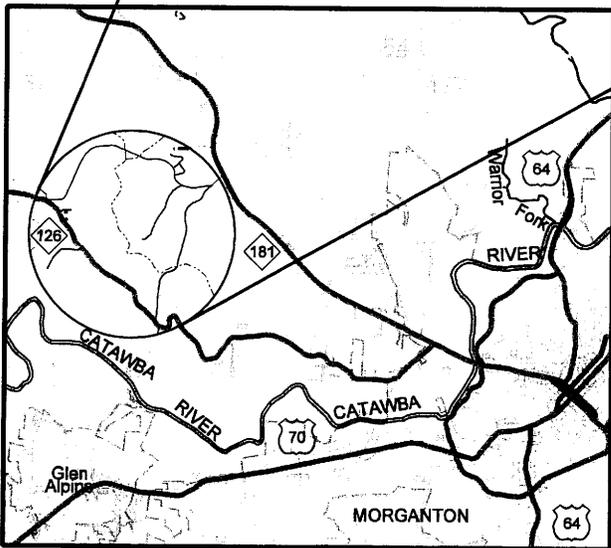
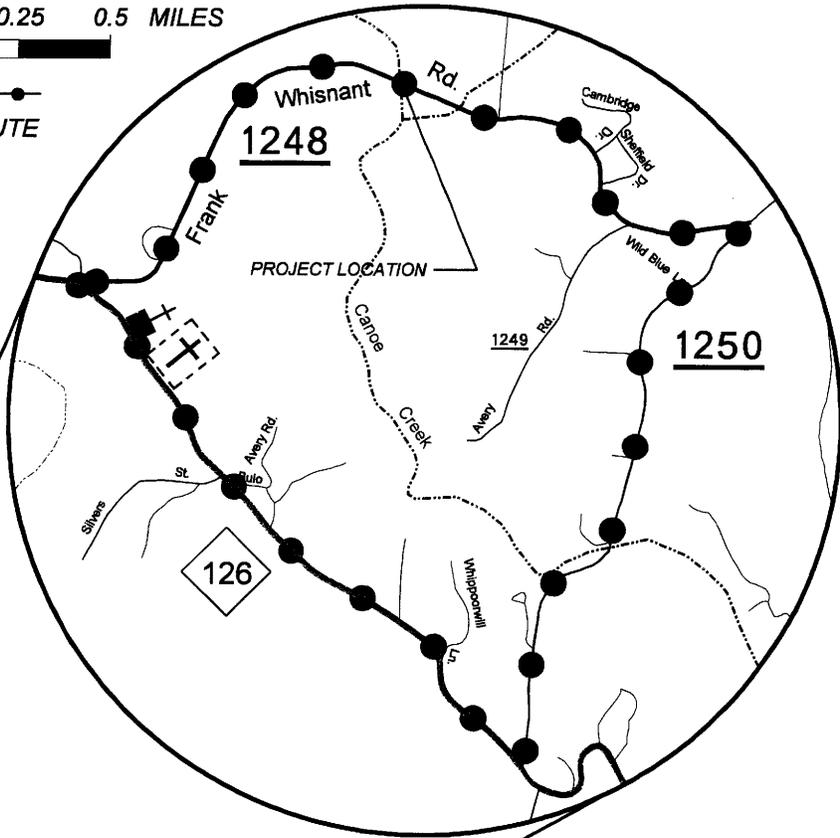
INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION
FUNCTIONAL PLANS
DO NOT USE FOR CONSTRUCTION



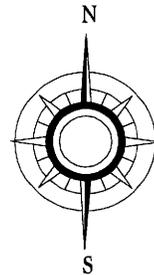
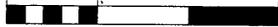
0.25 0 0.25 0.5 MILES



●●●●●
DETOUR ROUTE



1 0 1 2 MILES



**NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
PROJECT DEVELOPMENT &
ENVIRONMENTAL ANALYSIS BRANCH**

BURKE COUNTY TIP NO. B-4042

**BRIDGE NO. 274 ON SR 1248
OVER CANOE CREEK**

OFF-SITE DETOUR

FIGURE 5



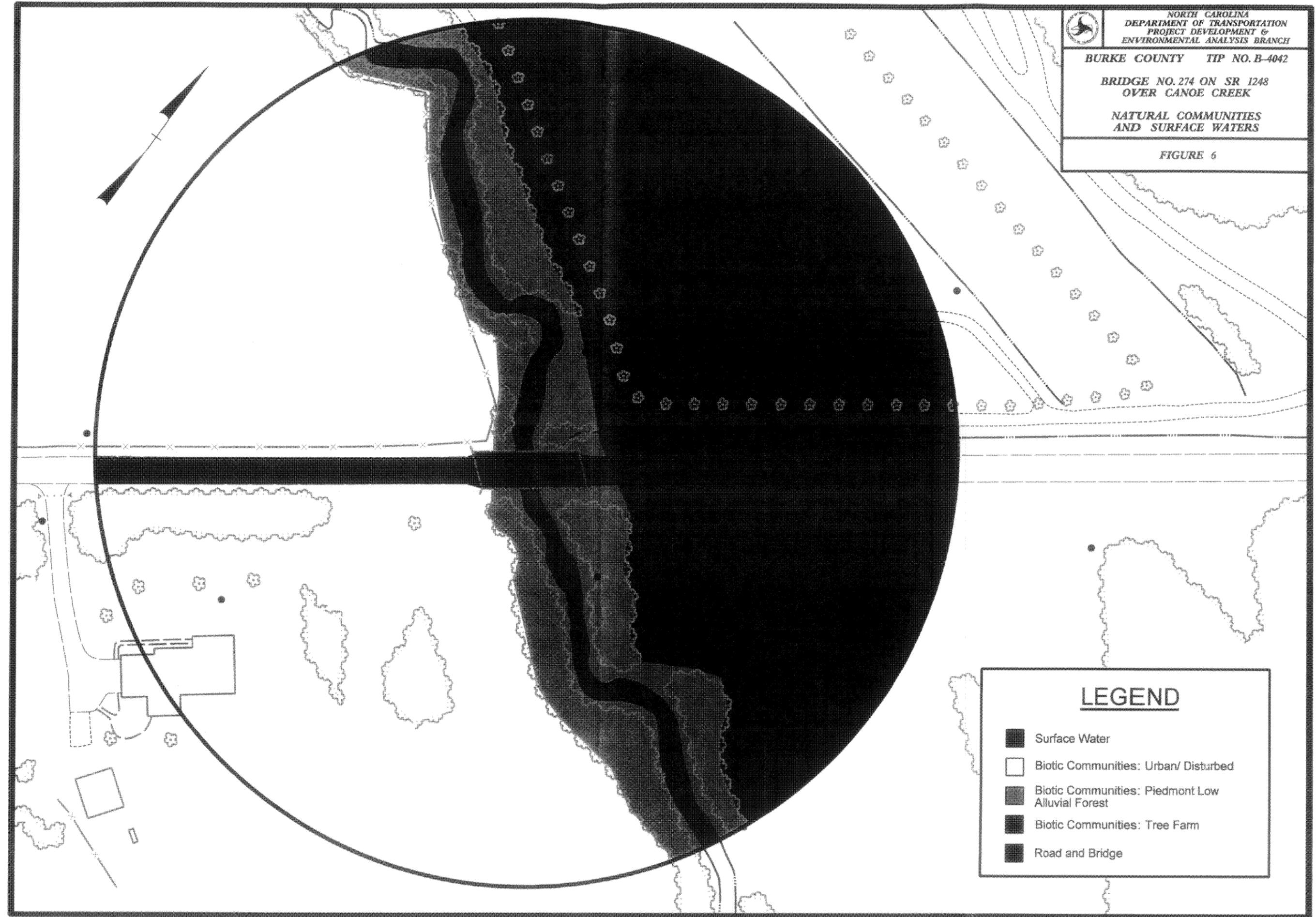
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BRIDGE NO. 274 ON SR 1248
OVER CANOE CREEK

NATURAL COMMUNITIES
AND SURFACE WATERS

FIGURE 6



LEGEND

-  Surface Water
-  Biotic Communities: Urban/ Disturbed
-  Biotic Communities: Piedmont Low Alluvial Forest
-  Biotic Communities: Tree Farm
-  Road and Bridge



NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
PROJECT DEVELOPMENT &
ENVIRONMENTAL ANALYSIS

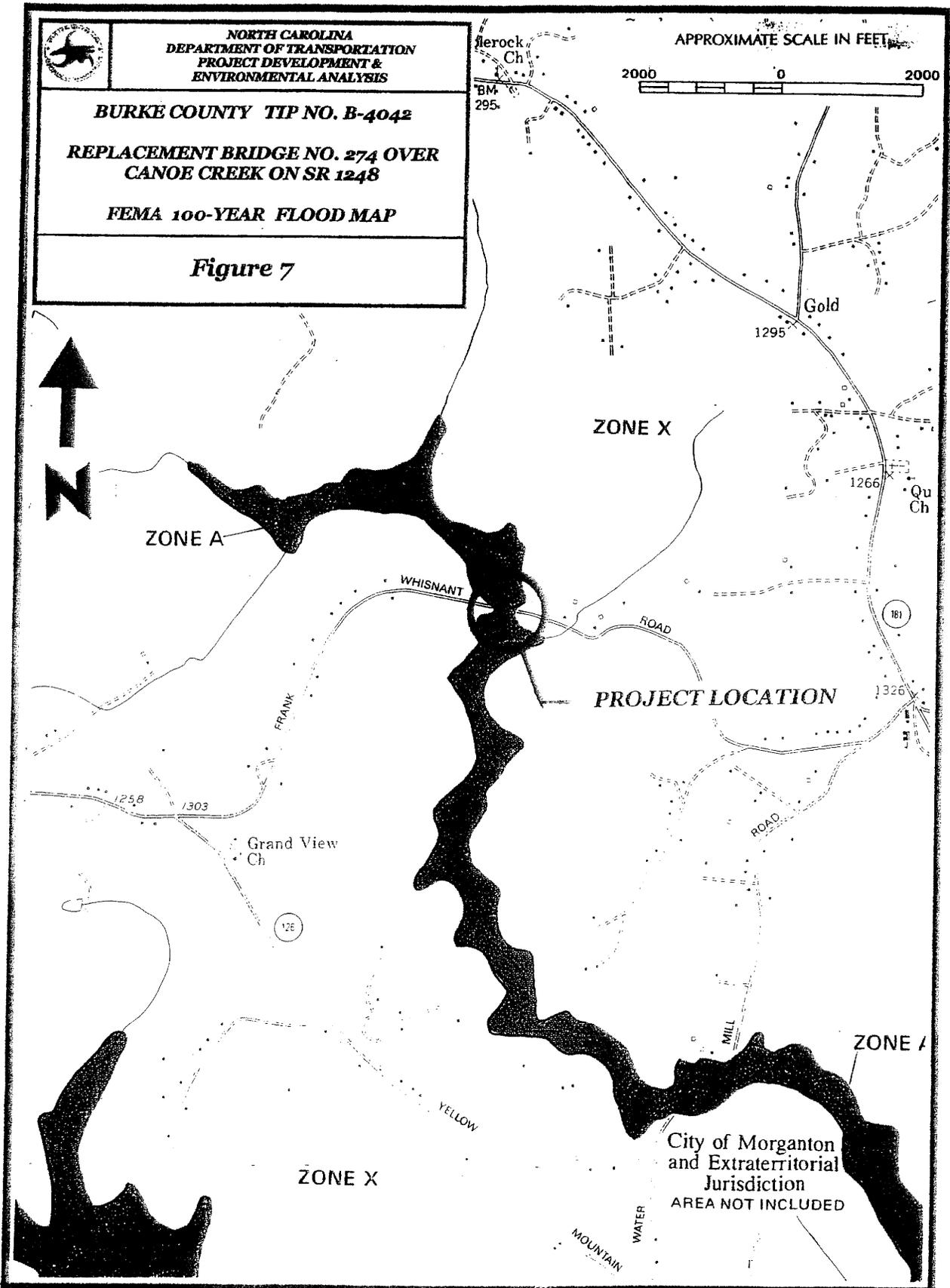
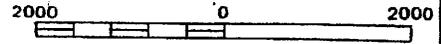
BURKE COUNTY TIP NO. B-4042

**REPLACEMENT BRIDGE NO. 274 OVER
CANOE CREEK ON SR 1248**

FEMA 100-YEAR FLOOD MAP

Figure 7

APPROXIMATE SCALE IN FEET



APPENDIX

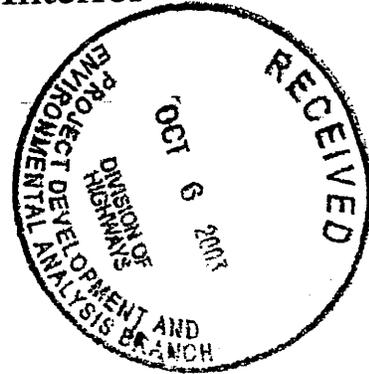


United States Department of the Interior

FISH AND WILDLIFE SERVICE

Asheville Field Office
160 Zillicoa Street
Asheville, North Carolina 28801

October 3, 2003



Gregory J. Thorpe, Ph.D.
Environmental Management Director, PDEA
North Carolina Department of Transportation
1548 Mail Service Center
Raleigh, North Carolina 27699-1548

Dear Dr. Thorpe:

Subject: Proposed Bridge Replacement Projects in Alexander, Alleghany, Avery, Burke, Caldwell, McDowell, Watauga, and Wilkes Counties, North Carolina

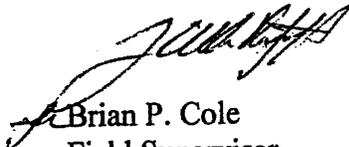
We have reviewed the subject projects and are providing the following comments in accordance with the Fish and Wildlife Coordination Act, as amended (16 U.S.C. 661-667e), and section 7 of the Endangered Species Act of 1973, as amended (16 U.S.C. 1531-1543) (Act).

The information we received for these projects includes brief descriptions of the proposed alternatives, but not the structures that will replace the existing bridges, nor does it include any environmental information regarding the streams or whether habitat assessments or surveys for rare species have been conducted for any of these projects. Therefore, our comments are limited primarily to the known locations of listed species and federal species of concern. When the categorical exclusions are prepared and more information is available regarding environmental effects, we can offer more substantive comments.

Enclosed are species lists from the eight counties included in this package. These lists provide the names of species on the *Federal List of Endangered and Threatened Wildlife and Plants* and federal species of concern. Federal species of concern are not legally protected under the Act and are not subject to any of its provisions, including section 7, unless they are formally proposed or listed as endangered or threatened. 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 your projects. Our records indicate the following:

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 these projects, please reference our log numbers assigned above to each project with our comments.

Sincerely,



Brian P. Cole
Field Supervisor

Enclosure

cc:

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

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

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

**ENDANGERED, THREATENED, AND CANDIDATE SPECIES AND
FEDERAL SPECIES OF CONCERN, ALEXANDER, ALLEGHANY,
AVERY, BURKE, CALDWELL, McDOWELL, WATAUGA,
AND WILKES COUNTIES, NORTH CAROLINA**

This list was adapted from the North Carolina Natural Heritage Program's County Species List. It is a listing, for Alexander, Alleghany, Avery, Burke, Caldwell, McDowell, Watauga, and Wilkes Counties, of North Carolina's federally listed and proposed endangered, threatened, and candidate species and Federal species of concern (for a complete list of rare species in the state, please contact the North Carolina Natural Heritage Program). The information in this list is compiled from a variety of sources, including field surveys, museums and herbaria, literature, and personal communications. The North Carolina Natural Heritage Program's database is dynamic, with new records being added and old records being revised as new information is received. Please note that this list cannot be considered a definitive record of listed species and Federal species of concern, and it should not be considered a substitute for field surveys.

Critical habitat: Critical habitat is noted, with a description, for the counties where it is designated or proposed.

Aquatic species: Fishes and aquatic invertebrates are noted for counties where they are known to occur. However, projects may have effects on downstream aquatic systems in adjacent counties.

COMMON NAME	SCIENTIFIC NAME	STATUS
ALEXANDER COUNTY		
Vertebrates		
Bog turtle	<i>Clemmys muhlenbergii</i>	T(S/A) ¹
Rafinesque's big-eared bat	<i>Corynorhinus rafinesquii</i>	FSC*
Vascular Plants		
Torrey's mountain-mint	<i>Pycnanthemum torrei</i>	FSC*
Nonvascular Plants		
Keever's bristle-moss	<i>Orthotrichum keeverae</i>	FSC
ALLEGHANY COUNTY		
Vertebrates		
Bog turtle	<i>Clemmys muhlenbergii</i>	T(S/A) ¹
Hellbender	<i>Cryptobranchus alleganiensis</i>	FSC
Eastern small-footed myotis	<i>Myotis (=subulatus) leibii</i>	FSC
Kanawha minnow	<i>Phenacobius teretulus</i>	FSC
Invertebrates		
Grayson crayfish ostracod	<i>Ascetocythere cosmata</i>	FSC
Pygmy snaketail	<i>Ophiogomphus howei</i>	FSC
Diana fritillary butterfly	<i>Speyeria diana</i>	FSC
Regal fritillary butterfly	<i>Speyeria idalia</i>	FSC

COMMON NAME	SCIENTIFIC NAME	STATUS
Vascular Plants		
"Fen" sedge	<i>Carex</i> sp. 2	FSC
Cuthbert's turtlehead	<i>Chelone cuthbertii</i>	FSC
Tall larkspur	<i>Delphinium exaltatum</i>	FSC*
Gray's lily	<i>Lilium grayi</i>	FSC
Sweet pinesap	<i>Monotropsis odorata</i>	FSC*
Carolina saxifrage	<i>Saxifraga caroliniana</i>	FSC
Nonvascular Plants		
Keever's bristle-moss	<i>Orthotrichum keeverae</i>	FSC

AVERY COUNTY

Critical Habitat Designation: Spruce-fir moss spider, *Microhexura montivaga* -
 Critical habitat designated (see the July 6, 2001, *Federal Register*, 66:35547-35566).

Vertebrates		
Southern Appalachian saw-whet owl	<i>Aegolius acadicus</i>	FSC
Bog turtle	<i>Clemmys muhlenbergii</i>	T(S/A) ¹
Virginia big-eared bat	<i>Corynorhinus townsendii</i> <i>virginianus</i>	Endangered
Hellbender	<i>Cryptobranchus alleganiensis</i>	FSC
Blotched chub	<i>Erimystax insignis</i>	FSC
Carolina northern flying squirrel	<i>Glaucomys sabrinus coloratus</i>	Endangered
Southern Appalachian red crossbill	<i>Loxia curvirostra</i>	FSC
Southern rock vole	<i>Microtus chrotorrhinus carolinensis</i>	FSC
Eastern small-footed bat	<i>Myotis leibii</i>	FSC
Alleghany woodrat	<i>Neotoma magister</i>	FSC
Southern Appalachian black-capped chickadee	<i>Poecile atricapillus praticus</i>	FSC
Southern water shrew	<i>Sorex palustris punctulatus</i>	FSC
Southern Appalachian yellow-bellied sapsucker	<i>Sphyrapicus varius appalaciensis</i>	FSC
Appalachian cottontail	<i>Sylvilagus obscurus</i>	FSC
Appalachian Bewick's wren	<i>Thryomanes bewickii altus</i>	FSC
Invertebrates		
Grayson crayfish ostracod	<i>Ascetocythere cosmeta</i>	FSC
Spruce-fir moss spider	<i>Microhexura montivaga</i>	Endangered
Diana fritillary butterfly	<i>Speyeria diana</i>	FSC
Regal fritillary butterfly	<i>Speyeria idalia</i>	FSC
Vascular Plants		
Fraser fir	<i>Abies fraseri</i>	FSC
Mountain bittercress	<i>Cardamine clematitis</i>	FSC
Cuthbert's turtlehead	<i>Chelone cuthbertii</i>	FSC
Tall larkspur	<i>Delphinium exaltatum</i>	FSC*
Bent avens	<i>Geum geniculatum</i>	FSC
Spreading avens	<i>Geum radiatum</i>	Endangered

COMMON NAME	SCIENTIFIC NAME	STATUS
Roan Mountain bluet	<i>Houstonia montana</i>	Endangered
Butternut	<i>Juglans cinerea</i>	FSC
Heller's blazing star	<i>Liatris helleri</i>	Threatened
Gray's lily	<i>Lilium grayi</i>	FSC
Bog bluegrass	<i>Poa paludigena</i>	FSC
Carolina saxifrage	<i>Saxifraga caroliniana</i>	FSC
Blue Ridge goldenrod	<i>Solidago spithamea</i>	Threatened

Nonvascular Plants

Rock gnome lichen	<i>Gymnoderma lineare</i>	Endangered
A liverwort	<i>Plagiochila sullivantii</i> var. <i>sullivantii</i>	FSC
A liverwort	<i>Plagiochila virginica</i> var. <i>caroliniana</i>	FSC
A liverwort	<i>Sphenolobopsis pearsonii</i>	FSC

BURKE COUNTY

Critical Habitat Designation: Mountain golden heather, *Hudsonia montana* - The area bounded by the following: on the west by the 2200' contour; on the east by the Linville Gorge Wilderness Boundary north from the intersection of the 2200' contour and the Shortoff Mountain Trail to where it intersects the 3400' contour at "The Chimneys"--then follow the 3400' contour north until it reintersects the Wilderness Boundary--then follow the Wilderness Boundary again northward until it intersects the 3200' contour extending west from its intersection with the Wilderness Boundary until it begins to turn south--at this point the Boundary extends due east until it intersects the 2200' contour.

Vertebrates

Bog turtle	<i>Clemmys muhlenbergii</i>	T(S/A) ¹
Rafinesque's big-eared bat	<i>Corynorhinus rafinesquii</i>	FSC
Bald eagle	<i>Haliaeetus leucocephalus</i>	Threatened (proposed for delisting)
Southern Appalachian woodrat	<i>Neotoma floridana haematoreia</i>	FSC
Alleghany woodrat	<i>Neotoma magister</i>	FSC

Invertebrates

Brook floater	<i>Alasmidonta varicosa</i>	FSC
Edmund's snaketail dragonfly	<i>Ophiogomphus edmundo</i>	FSC*
Pygmy snaketail dragonfly	<i>Ophiogomphus howei</i>	FSC
Diana fritillary butterfly	<i>Speyeria diana</i>	FSC

Vascular Plants

Cuthbert's turtlehead	<i>Chelone cuthbertii</i>	FSC
Spreading avens	<i>Geum radiatum</i>	Endangered
Dwarf-flowered heartleaf	<i>Hexastylis naniflora</i>	Threatened
Mountain golden heather	<i>Hudsonia montana</i>	Threatened
Small whorled pogonia	<i>Isotria medeoloides</i>	Threatened
Butternut	<i>Juglans cinerea</i>	FSC
Heller's blazing star	<i>Liatris helleri</i>	Threatened
Sweet pinesap	<i>Monotropsis odorata</i>	FSC
Carolina saxifrage	<i>Saxifraga caroliniana</i>	FSC

COMMON NAME	SCIENTIFIC NAME	STATUS
Nonvascular Plants		
A liverwort	<i>Cephaloziella obtusilobula</i>	FSC*
A liverwort	<i>Plagiochila sullivanii</i> var. <i>spinigera</i>	FSC
A liverwort	<i>Plagiochila sullivanii</i> var. <i>sullivanii</i>	FSC
A liverwort	<i>Porella wataugensis</i>	FSC*

McDOWELL COUNTY

Vertebrates

Bog turtle	<i>Clemmys muhlenbergii</i>	T(S/A) ¹
Olive-sided flycatcher	<i>Contopus borealis</i>	FSC
Cerulean warbler	<i>Dendroica cerulea</i>	FSC
Bald eagle	<i>Haliaeetus leucocephalus</i>	Threatened (proposed for delisting)
Southern Appalachian woodrat	<i>Neotoma floridana haematorea</i>	FSC*
Alleghany woodrat	<i>Neotoma magister</i>	FSC

Invertebrates

Bennett's Mill Cave water slater	<i>Caecidotea carolinensis</i>	FSC
Diana fritillary butterfly	<i>Speyeria diana</i>	FSC

Vascular Plants

Roan sedge	<i>Carex roanensis</i>	FSC
Cuthbert's turtlehead	<i>Chelone cuthbertii</i>	FSC
Tall larkspur	<i>Delphinium exaltatum</i>	FSC**
Mountain golden heather	<i>Hudsonia montana</i>	Threatened
Rocky shoal spider lily	<i>Hymenocallis coronaria</i>	FSC
Small whorled pogonia	<i>Isotria medeoloides</i>	Threatened
Butternut	<i>Juglans cinerea</i>	FSC
Gray's lily	<i>Lilium grayi</i>	FSC
Sweet pinesap	<i>Monotropsis odorata</i>	FSC
Northern oconee-bells	<i>Shortia galacifolia</i> var. <i>brevistyla</i>	FSC

WATAUGA COUNTY

Critical Habitat Designation: Spruce-fir moss spider, *Microhexura montivaga* -
 Critical habitat designated (see the July 6, 2001, *Federal Register*, 66:35547-35566).

Vertebrates

Southern Appalachian saw-whet owl	<i>Aegolius acadicus</i>	FSC
Bog turtle	<i>Clemmys muhlenbergii</i>	T(S/A) ¹
Hellbender	<i>Cryptobranchus alleganiensis</i>	FSC
Cerulean warbler	<i>Dendroica cerulea</i>	FSC
Carolina northern flying squirrel	<i>Glaucomys sabrinus coloratus</i>	Endangered
Southern Appalachian red crossbill	<i>Loxia curvirostra</i>	FSC
Alleghany woodrat	<i>Neotoma magister</i>	FSC*
Southern Appalachian black-capped chickadee	<i>Poecile atricapillus praticus</i>	FSC
Kanawha minnow	<i>Phenacobius teretulus</i>	FSC
Southern water shrew	<i>Sorex palustris punctulatus</i>	FSC*

COMMON NAME	SCIENTIFIC NAME	STATUS
Southern Appalachian yellow-bellied sapsucker	<i>Sphyrapicus varius appalaciensis</i>	FSC
Appalachian cottontail	<i>Sylvilagus obscurus</i>	FSC*
Invertebrates		
Green floater	<i>Lasmigona subviridis</i>	FSC
Spruce-fir moss spider	<i>Microhexura montivaga</i>	Endangered
Diana fritillary butterfly	<i>Speyeria diana</i>	FSC
Vascular Plants		
Fraser fir	<i>Abies fraseri</i>	FSC
Mountain bittercress	<i>Cardamine clematitis</i>	FSC
Tall larkspur	<i>Delphinium exaltatum</i>	FSC
Glade spurge	<i>Euphorbia purpurea</i>	FSC**
Bent avens	<i>Geum geniculatum</i>	FSC
Spreading avens	<i>Geum radiatum</i>	Endangered
Roan Mountain bluet	<i>Houstonia montana</i>	Endangered
Butternut	<i>Juglans cinerea</i>	FSC
Heller's blazing star	<i>Liatris helleri</i>	Threatened
Gray's lily	<i>Lilium grayi</i>	FSC
Bog bluegrass	<i>Poa paludigena</i>	FSC*
Nonvascular Plants		
A liverwort	<i>Porella wataugensis</i>	FSC*
WILKES COUNTY		
Vertebrates		
Bog turtle	<i>Clemmys muhlenbergii</i>	T(S/A) ¹
Cerulean warbler	<i>Dendroica cerulea</i>	FSC
Invertebrates		
Diana fritillary butterfly	<i>Speyeria diana</i>	FSC
Regal fritillary butterfly	<i>Speyeria idalia</i>	FSC
Vascular Plants		
Butternut	<i>Juglans cinerea</i>	FSC
Torrey's mountain-mint	<i>Pycnanthemum torrei</i>	FSC*
Nonvascular Plants		
Keever's bristle-moss	<i>Orthotrichum keeverae</i>	FSC

KEY:

Status	Definition
Endangered	A taxon "in danger of extinction throughout all or a significant portion of its range."
Threatened	A taxon "likely to become endangered within the foreseeable future throughout all or a significant portion of its range."

FSC A Federal species of concern—a species 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).

T(S/A) Threatened due to similarity of appearance (e.g., American alligator)—a species that is threatened due to similarity of appearance with other rare species and is listed for its protection. These species are not biologically endangered or threatened and are not subject to Section 7 consultation.

Species with 1, 2, 3, or 4 asterisks behind them indicate historic, obscure, or incidental records.

*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.

***Incidental/migrant record - the species was observed outside of its normal range or habitat.

****Historic record - obscure and incidental record.

¹In the November 4, 1997, *Federal Register* (55822-55825), the northern population of the bog turtle (from New York south to Maryland) was listed as T (threatened), and the southern population (from Virginia south to Georgia) was listed as T(S/A) (threatened due to similarity of appearance). The T(S/A) designation bans the collection and interstate and international commercial trade of bog turtles from the southern population. The T(S/A) designation has no effect on land-management activities by private landowners in North Carolina, part of the southern population of the species. In addition to its official status as T(S/A), the U.S. Fish and Wildlife Service considers the southern population of the bog turtle as a Federal species of concern due to habitat loss.

FARMLAND CONVERSION IMPACT RATING

PART I (To be completed by Federal Agency)

Date Of Land Evaluation Request: 9/25/03

Name Of Project: Replacement of Bridge No. 274 on SR 1248

Federal Agency Involved: FHWA-MCDOT

Proposed Land Use: Roadway

County And State: Burke County, NC

Date Request Received By SCS: 10-07-2003

PART II (To be completed by SCS)

Does the site contain prime, unique, statewide or local important farmland? (If no, the FPPA does not apply - do not complete additional parts of this form). Yes No

Acres Irrigated: N/A Average Farm Size: 83

Major Crops: ORNAMENTALS, GRASS

Farmable Land In Govt. Jurisdiction: Acres: 100,032 % 33

Amount Of Farmland As Defined in FPPA: Acres: 100,032 % 33

Name Of Land Evaluation System Used: LAND EVALUATION FOR BURKE COUNTY, NC.

Name Of Local Site Assessment System: N/A

Date Land Evaluation Returned By SCS: 10-3-2003

PART III (To be completed by Federal Agency)

	Site A	Site B	Site C	Site D
A. Total Acres To Be Converted Directly				
B. Total Acres To Be Converted Indirectly				
C. Total Acres In Site				

PART IV (To be completed by SCS) Land Evaluation Information

A. Total Acres Prime And Unique Farmland	<u>36181</u>
B. Total Acres Statewide And Local Important Farmland	<u>73851</u>
C. Percentage Of Farmland In County Or Local Govt. Unit To Be Converted	<u>8.6</u>
D. Percentage Of Farmland In Govt. Jurisdiction With Same Or Higher Relative Value	

PART V (To be completed by SCS) Land Evaluation Criterion

Relative Value Of Farmland To Be Converted (Scale of 0 to 100 Points): 100

PART VI (To be completed by Federal Agency)

Site Assessment Criteria (These criteria are explained in 7 CFR 658.5(b))	Maximum Points
1. Area In Nonurban Use	
2. Perimeter In Nonurban Use	
3. Percent Of Site Being Farmed	
4. Protection Provided By State And Local Government	
5. Distance From Urban Builtup Area	
6. Distance To Urban Support Services	
7. Size Of Present Farm Unit Compared To Average	
8. Creation Of Nonfarmable Farmland	
9. Availability Of Farm Support Services	
10. On-Farm Investments	
11. Effects Of Conversion On Farm Support Services	
12. Compatibility With Existing Agricultural Use	
TOTAL SITE ASSESSMENT POINTS	160

PART VII (To be completed by Federal Agency)

Relative Value Of Farmland (From Part V)	100
Total Site Assessment (From Part VI above or a local site assessment)	160
TOTAL POINTS (Total of above 2 lines)	260

Site Selected: _____ Date Of Selection: _____

Was A Local Site Assessment Used? Yes No

Reason For Selection: _____



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

September 12, 2003



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

Dear Dr. Thorpe:

REQUEST FOR COMMENTS ON BRIDGE REPLACEMENT PROJECTS B-4042, B-4054, B-4189, B-4190, AND B-4191, YADKIN AND CATAWBA RIVER WATERSHEDS, BURKE, CALDWELL, AND MCDOWELL COUNTIES, NORTH CAROLINA

TVA has reviewed the project descriptions provided in your letters of August 18, 2003, on the proposed bridge replacements in Burke, Caldwell, and McDowell Counties. It appears that there is no TVA permit or other TVA involvement associated with these projects:

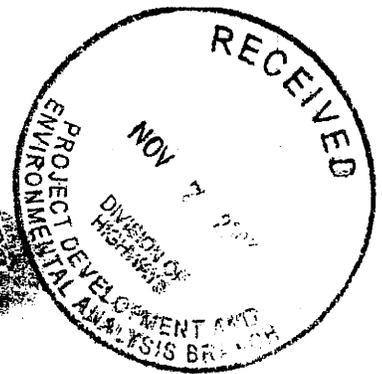
- B-4042, Bridge #274 on SR 1248 over Canoe Creek, Burke County
- B-4054, Bridge #334 on SR 1517 over Yadkin River, Caldwell County
- B-4189, Bridge #49 on NC 226 over South Muddy Creek, McDowell County
- B-4190, Bridge #37 on NC 226 over Hopper Creek, McDowell County
- B-4191, Bridge #82 on NC 226 over Jacktown Creek, McDowell County

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

Sincerely,

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

cc: Mr. John Sullivan, Division Administrator
Federal Highway Administration
310 New Bern Avenue, Suite 410
Raleigh, North Carolina 27601



☒ North Carolina Wildlife Resources Commission ☒

Charles R. Fullwood, Executive Director

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

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

DATE: November 5, 2003

SUBJECT: Scoping review of NCDOT's proposed bridge replacement projects B-4008, B-3608, B-4054, B-4315, B-4325, B-4189, B-4190, B-4191, B-4042, and B-4005 in Alexander, Alleghany, Avery, Caldwell, Burke, McDowell, Watauga, and Wilkes Counties.

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

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

1. We generally prefer spanning structures. Spanning structures usually do not require work within the stream and do not require stream channel realignment. The horizontal and vertical clearances provided by bridges allows for human and wildlife passage beneath the structure, does not block fish passage, and does not block navigation by canoeists and boaters.
2. Bridge deck drains should not discharge directly into the stream.
3. Live concrete should not be allowed to contact the water in or entering into the stream.
4. If possible, bridge supports (bents) should not be placed in the stream.

5. If temporary access roads or detours are constructed, they should be removed back to original ground elevations immediately upon the completion of the project. Disturbed areas should be seeded or mulched to stabilize the soil and native tree species should be planted with a spacing of not more than 10'x10'. If possible, when using temporary structures the area should be cleared but not grubbed. Clearing the area with chain saws, mowers, bush-hogs, or other mechanized equipment and leaving the stumps and root mat intact, allows the area to revegetate naturally and minimizes disturbed soil.
6. A clear bank (riprap free) area of at least 10 feet should remain on each side of the stream underneath the bridge.
7. In trout waters, the N.C. Wildlife Resources Commission reviews all U.S. Army Corps of Engineers nationwide and general '404' permits. We have the option of requesting additional measures to protect trout and trout habitat and we can recommend that the project require an individual '404' permit.
8. In streams that contain threatened or endangered species, Mr. Hal Bain with the NCDOT - ONE should be notified. Special measures to protect these sensitive species may be required. NCDOT should also contact the U.S. Fish and Wildlife Service for information on requirements of the Endangered Species Act as it relates to the project.
9. In streams that are used by anadromous fish, the NCDOT official policy entitled "Stream Crossing Guidelines for Anadromous Fish Passage (May 12, 1997)" should be followed.
10. In areas with significant fisheries for sunfish, seasonal exclusions may also be recommended.
11. Sedimentation and erosion control measures sufficient to protect aquatic resources must be implemented prior to any ground disturbing activities. Structures should be maintained regularly, especially following rainfall events.
12. Temporary or permanent herbaceous vegetation should be planted on all bare soil within 15 days of ground disturbing activities to provide long-term erosion control.
13. All work in or adjacent to stream waters should be conducted in a dry work area. Sandbags, rock berms, cofferdams, or other diversion structures should be used where possible to prevent excavation in flowing water.
14. Heavy equipment should be operated from the bank rather than in stream channels in order to minimize sedimentation and reduce the likelihood of introducing other pollutants into streams.
15. Only clean, sediment-free rock should be used as temporary fill (causeways), and should be removed without excessive disturbance of the natural stream bottom when construction is completed.

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

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

1. The culvert must be designed to allow for aquatic life and fish passage. Generally, the culvert or pipe invert should be buried at least 1 foot below the natural streambed (measured from the natural thalweg depth). If multiple barrels are required, barrels other than the base flow barrel(s) should be placed on or near stream bankfull or floodplain bench elevation (similar to Lyonsfield design). These should be reconnected to floodplain benches as appropriate. This may be accomplished by utilizing sills on the upstream end to restrict or divert flow to the base flow barrel(s). Silled barrels should be filled with sediment so as not to cause noxious or mosquito breeding conditions. Sufficient water depth should be provided in the base flow barrel during low flows to accommodate fish movement. If culverts are longer than 40-50 linear feet, alternating or notched baffles should be installed in a manner that mimics existing stream pattern. This should enhance aquatic life passage: 1) by depositing sediments in the barrel, 2) by maintaining channel depth and flow regimes, and 3) by providing resting places for fish and other aquatic organisms. In essence, the base flow barrel(s) should provide a continuum of water depth and channel width without substantial modifications of velocity.
2. If multiple pipes or cells are used, at least one pipe or box should be designed to remain dry during normal flows to allow for wildlife passage.
3. Culverts or pipes should be situated along the existing channel alignment whenever possible to avoid channel realignment. Widening the stream channel must be avoided. Stream channel widening at the inlet or outlet end of structures typically decreases water velocity causing sediment deposition that requires increased maintenance and disrupts aquatic life passage.
4. Riprap should not be placed in the active thalweg channel or placed in the streambed in a manner that precludes aquatic life passage. Bioengineering boulders or structures should be professionally designed, sized, and installed.

In most cases, we prefer the replacement of the existing structure at the same location with road closure. If road closure is not feasible, a temporary detour should be designed and located to avoid wetland impacts, minimize the need for clearing and to avoid destabilizing stream banks. If the structure will be on a new alignment, the old structure should be removed and the approach fills removed from the 100-year floodplain. Approach fills should be removed down to the natural ground elevation. The area should be stabilized with grass and planted with native tree species. Tall fescue should not be used in riparian areas. If the area that is reclaimed

was previously wetlands, NCDOT should restore the area to wetlands. If successful, the site may be used as wetland mitigation for the subject project or other projects in the watershed.

Project specific comments:

1. B-4005, Alexander Co., Bridge No.70 over Grassy Creek on SR 1331. Grassy Creek is Class C waters. Santee chub (*Cyprinella zanema*), state Significantly Rare (SR), and brook floater (*Alasmidonta varicosa*), Federal Species of Concern (FSC) and state Threatened (T), may be present downstream in the Lower Little River. No special concerns indicated at this time in the project vicinity. Standard requirements should apply.
2. B-4008, Alleghany Co., Bridge No. 39 over Little River on SR 1193. Little River is classified as C Trout and is Hatchery Supported (HS) Designated Public Mountain Trout Waters (DPMTW). The Kanawha minnow (*Phenacobius teretulus*), FSC and state Special Concern (SC); Kanawha darter (*Etheostoma kanawhae*), state SR; tonguetied minnow (*Exoglossum laurae*), state SR; and bog turtle (*Glyptemys muhlenbergii*), state T and federal Threatened due to Similarity of Appearance, may occur in the project area or downstream. A moratorium prohibiting in-stream work and land disturbance within the 25-foot trout buffer is recommended from October 15 to April 15 to protect the egg and fry stages of trout. Sediment and erosion control measures should adhere to the design standards for sensitive watersheds. The bridge should be replaced with another spanning structure.
3. B-3608, Avery Co., Bridge No. 44 over North Toe River on US 19E. The North Toe River is classified as WS-III Trout and is HS DPMTW with excellent rainbow and brown trout habitat. The blotched chub (*Erimystax insignis*), FSC and state SR, occurs in the project area. Appalachian elktoe (*Alasmidonta raveneliana*), federal and state Endangered (E), and wavy-rayed lampmussel (*Lampsilis fasciola*), state SC, occur in the North Toe River downstream of Spruce Pine, NC. A moratorium prohibiting in-stream work and land disturbance within the 25-foot trout buffer is recommended from October 15 to April 15 to protect the egg and fry stages of trout. Sediment and erosion control measures should adhere to the design standards for sensitive watersheds. The bridge should be replaced with another spanning structure.
4. B-4042, Burke Co., Bridge No. 274 over Canoe Creek on SR 1248. Canoe Creek is Class C water. No special concerns indicated. Standard requirements should apply.
5. B-4054, Caldwell Co., Bridge No. 334 over the Yadkin River on SR 1517 (Whisnant Road). The Yadkin River, although classified as C Trout, supports smallmouth bass in the project area. A moratorium prohibiting in-stream work is recommended from May 1 to July 15 to protect the egg & fry stages of smallmouth bass.
6. B-4189, McDowell Co., Bridge No. 49 over South Muddy Creek on NC 226. South Muddy Creek is Class C waters and is within the Muddy Creek drainage. Sediment and erosion control is a major concern, as a watershed restoration project is under way to reduce negative impacts to downstream resources, particularly in the Catawba River. Downstream of the project area, South Muddy Creek, Muddy Creek and the Catawba River have the WS-IV

classification. Catawba River resources of concern include brown and rainbow trout tailwater fisheries and state listed mussels, the notched rainbow (*Villosa constricta*), state SC, and the creeper (*Strophitus undulatus*), state T, which are present near the mouth of Muddy Creek. Sediment and erosion control measures should adhere to the design standards for sensitive watersheds.

7. B-4190, McDowell Co., Bridge No. 37 over Hoppers Creek on NC 226. Hoppers Creek is Class C waters and is within the Muddy Creek drainage. Sediment and erosion control is a major concern, as a watershed restoration project is under way to reduce negative impacts to downstream resources, particularly in the Catawba River. Downstream of the project area, Hoppers Creek, South Muddy Creek, Muddy Creek and the Catawba River have the WS-IV classification. Catawba River resources of concern include brown and rainbow trout tailwater fisheries and state listed mussels, the notched rainbow (*Villosa constricta*), state SC, and the creeper (*Strophitus undulatus*), state T, which are present near the mouth of Muddy Creek. Sediment and erosion control measures should adhere to the design standards for sensitive watersheds.
8. B-4191, McDowell Co., Bridge No. 82 over Jacktown Creek on NC 226. Jacktown Creek is Class C waters and is within the Muddy Creek drainage. Sediment and erosion control is a major concern, as a watershed restoration project is under way to reduce negative impacts to downstream resources, particularly in the Catawba River. Downstream of the project area, North Muddy Creek, Muddy Creek and the Catawba River have the WS-IV classification. Catawba River resources of concern include brown and rainbow trout tailwater fisheries and state listed mussels, the notched rainbow (*Villosa constricta*), state SC, and the creeper (*Strophitus undulatus*), state T, which are present near the mouth of Muddy Creek. Sediment and erosion control measures should adhere to the design standards for sensitive watersheds.
9. B-4315, Watauga Co., Bridge No. 62 over Bairds Creek on NC 194. Bairds Creek is Class C waters and flows into the Watauga River, classified as B Trout HQW, not far from the project site. Trout may occur in the project area. The green floater (*Lasmigona subviridis*), FSC and state E, is present in the Watauga River downstream of the project. Sediment and erosion control measures should adhere to the design standards for sensitive watersheds.
10. B-4325, Wilkes Co., Bridge No. 718 over Middle Fork Reddies River on SR 1580. Middle Fork Reddies River is classified WS-II Trout and is HS DPMTW from the project site upstream. Both trout and smallmouth bass are present. At this time, a moratorium prohibiting in-stream work and land disturbance within the 25-foot trout buffer is anticipated from October 15 to April 15 to protect the egg and fry stages of trout. Sediment and erosion control measures should adhere to the design standards for sensitive watersheds. The bridge should be replaced with another spanning structure.

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

Bridge Scopings: Alexander, Alleghany, Avery, 6
Burke, Caldwell, McDowell, Watauga, Wilkes Co.'s

November 5, 2003

Spanning structures allow wildlife passage along streambanks, reducing habitat fragmentation and vehicle related mortality at highway crossings.

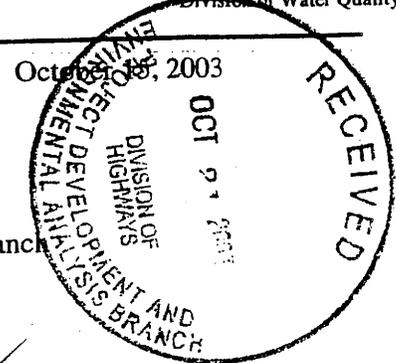
If you need further assistance or information on NCWRC concerns regarding bridge replacements, please contact me at (704) 485-2384. Thank you for the opportunity to review and comment on these projects.

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



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

Alan W. Klimek, P.E., Director
Division of Water Quality
Coleen H. Sullins, Deputy Director
Division of Water Quality



MEMORANDUM

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

FROM: Robert Ridings, Env. Tech., DWQ 401 Unit *Robert Ridings*

THROUGH: John R. Dorney, Supervisor, DWQ 401 Unit *John R. Dorney*

SUBJECT: Scoping Review of NCDOT's proposed bridge replacement projects: B-4008, B-3608, B-4054, B-4315, B-4325, B-4190, B-4189, B-4191, B-4042, and B-4005.

In reply to your correspondence dated August 18, 2003 (received August 28, 2003) to Cynthia Van der Wiele, in which you requested comments for the referenced projects, the NC Division of Water Quality has the following comments:

1. General Comments Regarding Bridge Replacement Projects

1. If corrugated metal pipe arches, reinforced concrete pipes, or concrete box culverts are used to replace the bridge, then DWQ recommends the use of Nationwide Permit No. 14 rather than Nationwide Permit 23.
2. Bridge demolition should be performed using Best Management Practices developed by NCDOT.
3. DWQ prefers spanning structures. Spanning structures usually do not require work within the stream and do not require stream channel realignment. The horizontal and vertical clearances provided by bridges allows for human and wildlife passage beneath the structure, does not block fish passage, and does not block navigation by canoeists and boaters.
4. Bridge deck drains should not discharge directly into the stream; stormwater should be directed across the bridge and pre-treated through site-appropriate means (grassed swales, pre-formed scour holes, vegetated buffers, etc.) before entering the stream. Please refer to NCDOT Best Management Practices for the Protection of Surface Waters
5. Live concrete should not be allowed to contact the water in or entering into the stream. Concrete is mostly made up of lime (calcium carbonate) and when in a dry or wet state (not hardened) calcium carbonate is very soluble in water and has a pH of approximately 12. In an unhardened state concrete or cement will change the pH of fresh water to very basic and will cause fish and other macroinvertebrate kills.
6. If possible, bridge supports (bents) should not be placed in the stream.
7. If temporary access roads or detours are constructed, they should be removed back to original ground elevations immediately upon the completion of the project. Disturbed areas should be seeded or mulched to stabilize the soil and native tree species should be planted with a spacing of not more than 10'x10'. If possible, when using temporary structures the area should be cleared but not grubbed. Clearing the area with chain saws, mowers, bush-hogs, or other mechanized equipment and leaving the stumps and root mat intact, allows the area to re-vegetate naturally and minimizes disturbed soil.



8. A clear bank (rip rap-free) area of at least 10 feet should remain on each side of the stream underneath the bridge.
9. Sedimentation and erosion control measures sufficient to protect water resources must be implemented prior to any ground disturbing activities. Structures should be *maintained regularly*, especially following rainfall events.
10. Bare soil should be stabilized through vegetation or other means as quickly as feasible to prevent sedimentation of water resources.
11. All work in or adjacent to stream waters should be conducted in a dry work area. Sandbags, rock berms, cofferdams, or other diversion structures should be used where possible to prevent excavation in flowing water.
12. Heavy equipment should be operated from the bank rather than in stream channels in order to minimize sedimentation and reduce the likelihood of introducing other pollutants into streams. This equipment should be inspected daily and maintained to prevent contamination of surface waters from leaking fuels, lubricants, hydraulic fluids, or other toxic materials.

II. General Comments if Replacing the Bridge with a Culvert

1. The culvert must be designed to allow for aquatic life and fish passage. Generally, the culvert or pipe invert should be buried at least 1 foot below the natural streambed (measured from the natural thalweg depth). If multiple barrels are required, barrels other than the base flow barrel(s) should be placed on or near stream bankfull or floodplain bench elevation (similar to Lyonsfield design). These should be reconnected to floodplain benches as appropriate. This may be accomplished by utilizing sills on the upstream end to restrict or divert flow to the base flow barrel(s). Silled barrels should be filled with sediment so as not to cause noxious or mosquito breeding conditions. Sufficient water depth should be provided in the base flow barrel during low flows to accommodate fish movement. If culverts are longer than 40-50 linear feet, alternating or notched baffles should be installed in a manner that mimics existing stream pattern. This should enhance aquatic life passage: 1) by depositing sediments in the barrel, 2) by maintaining channel depth and flow regimes, and 3) by providing resting places for fish and other aquatic organisms. In essence, the base flow barrel(s) should provide a continuum of water depth and channel width without substantial modifications of velocity.
2. If multiple pipes or cells are used, at least one pipe or box should be designed to remain dry during normal flows to allow for wildlife passage.
3. Culverts or pipes should be situated along the existing channel alignment whenever possible to avoid channel realignment. Widening the stream channel must be avoided. Stream channel widening at the inlet or outlet end of structures typically decreases water velocity causing sediment deposition that requires increased maintenance and disrupts aquatic life passage.
4. Riprap should not be placed in the active thalweg channel or placed in the streambed in a manner that precludes aquatic life passage. Bioengineering boulders or structures should be professionally designed, sized, and installed.

In most cases, we prefer the replacement of the existing structure at the same location with road closure. If road closure is not feasible, a temporary detour should be designed and located to avoid wetland impacts, minimize the need for clearing and to avoid destabilizing stream banks. If the structure will be on a new alignment, the old structure should be removed and the approach fills removed from the 100-year floodplain. Approach fills should be removed down to the natural ground elevation. The area should be stabilized with grass and planted with native tree species. Tall fescue should not be used in riparian areas. If the area that is reclaimed was previously wetlands, NCDOT should restore the area to wetlands. If successful, the site may be used as wetland mitigation for the subject project or other projects in the watershed.

III. Project-Specific Comments

B-4008, Bridge 39, Little River, Alleghany County

The Little River is classified as C Trout. A moratorium prohibiting in-stream work and land disturbance within the 25-foot trout buffer is recommended from October 15 to April 15 to protect the egg and fry stages of trout. DWQ would prefer this bridge to be replaced with a bridge and the use of BMPs (particularly for sediment and erosion control) to be maximized.

B-3608, Bridge 44, North Toe River, Avery County

The North Toe River is classified as WS-IV Trout. A moratorium prohibiting in-stream work and land disturbance within the 25-foot trout buffer is recommended from October 15 to April 15 to protect the egg and fry stages of trout. DWQ would prefer this bridge to be replaced with a bridge and the use of BMPs (particularly for sediment and erosion control) to be maximized. There are 30-foot vegetated buffer requirements in WS waters in addition to the requirements to minimize storm water runoff and maximize use of BMPs. Refer to 15A NCAC 2B .0216(3)(b)(i)(F) and (G).

B-4054, Bridge 334, Yadkin River, Caldwell County

This part of the Yadkin River is classified as WS-IV Trout. A moratorium prohibiting in-stream work and land disturbance within the 25-foot trout buffer is recommended from October 15 to April 15 to protect the egg and fry stages of trout. DWQ would prefer this bridge to be replaced with a bridge and the use of BMPs (particularly for sediment and erosion control) to be maximized. There are 30-foot vegetated buffer requirements in WS waters in addition to the requirements to minimize storm water runoff and maximize use of BMPs. Refer to 15A NCAC 2B .0216(3)(b)(i)(F) and (G).

B-4315, Bridge 62, Bairds Creek, Watauga County

Bairds Creek is classified as C. DWQ does not have any special concerns. Please refer to general recommendations listed above.

B-4325, Bridge 718, Middle Fork Reddies River, Wilkes County

The Middle Fork of Reddies River is classified as WS-II, HQW, Trout. As this is a High Quality Water classification. DWQ would hope that a spanning structure is planned for this crossing. In addition, we would stress that NCDOT should use the highest possible BMPs for protecting this resource. There are 30-foot vegetated buffer requirements in WS waters in addition to the requirements to minimize storm water runoff and maximize use of BMPs. Refer to 15A NCAC 2B .0216(3)(b)(i)(F) and (G). A moratorium prohibiting in-stream work and land disturbance within the 25-foot trout buffer is recommended from October 15 to April 15 to protect the egg and fry stages of trout. DWQ would prefer this bridge to be replaced with a bridge and the use of BMPs (particularly for sediment and erosion control) to be maximized.

B-4190, Bridge 37, Hopper Creek, McDowell County

Hopper Creek is classified as C. DWQ does not have any special concerns. Please refer to general recommendations listed above.

B-4189, Bridge 49, South Muddy Creek, McDowell County

South Muddy Creek is classified as C. DWQ does not have any special concerns. Please refer to general recommendations listed above.

B-4191, Bridge 82, Jacktown Creek, McDowell County

Jacktown Creek is classified as C. DWQ does not have any special concerns. Please refer to general recommendations listed above.

B-4042, Bridge 274, Canoe Creek, Burke County

Canoe Creek is classified as WS-IV. There are 30-foot vegetated buffer requirements in WS waters in addition to the requirements to minimize storm water runoff and maximize use of BMPs. Refer to 15A NCAC 2B .0216(3)(b)(i)(F) and (G).

B-4005, Bridge 70, Grassy Creek, Alexander County

Grassy Creek is classified as C. DWQ does not have any special concerns. Please refer to general recommendations listed above.

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 Robert Ridings at (919) 733-9817 or Cynthia Van Der Wiele at (919) 733.5715.

pc: John Hendrix, USACE Asheville Field Office
File Copy

McDowell County - Projects B-4190 (Log No. 4-2-03-449), B-4191 (Log No. 4-2-03-451), and B-4189 (Log No. 4-2-03-452); **Alexander County** - Project B-4005 (Log No. 4-2-03-453); and **Caldwell County** - Project B-4054 (Log No. 4-2-03-454). Our records for these counties and project areas 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 to them.

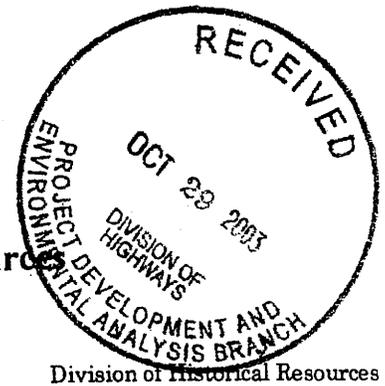
Avery County - Project B-3608 (Log No. 4-2-03-455) and **Wilkes County** - Project B-4325 (Log No. 4-2-03-456). Our records indicate known locations for the threatened (due to similarity of appearance) bog turtle (*Clemmys muhlenbergii*) near these projects. Habitat assessments and surveys of suitable habitat should be conducted in the project areas for this species. If the bog turtle occurs in the project areas, it should be protected from impacts.

Alleghany County - Project B-4008 (Log No. 4-2-03-457). Our records indicate known locations of the threatened (due to similarity of appearance) bog turtle (*Clemmys muhlenbergii*) and a federal species of concern--gray's lily (*Lillium grayi*)--near this project. Habitat assessments and surveys of suitable habitat should be conducted in the project area for these species. If they occur in the project area, they should be protected from impacts.

Watauga County - Project B-4315 (Log No. 4-2-03-458). Our records indicate known locations for the green floater mussel (*Lasmigona subviridis*) and Diana fritillary butterfly (*Speyeria diana*) (both of which are federal species of concern) near the project area. Habitat assessments and surveys of suitable habitat should be conducted in the project area for these species. If they occur in the project area, they should be protected from impacts.

Burke County - Project B-4042 (Log. No. 4-2-03-459). Our records indicate known locations of the brook floater mussel (*Alasmidonta varicosa*) (a federal species of concern) near the project area. Habitat assessments and surveys of suitable habitat should be conducted in the project area for this species and other native freshwater mussels. If native freshwater mussels are found to occur in the project area, they should be protected from impacts.

We are interested in the types of structures that will replace these existing bridges and would recommend spanning structures, preferably bridges, in all cases. In addition, off-site detours are preferable to temporary on-site crossings to reduce stream-bank disturbance. We look forward to reviewing the completed categorical exclusion documents.



**North Carolina Department of Cultural Resources
State Historic Preservation Office**

David L. S. Brook, Administrator

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

October 22, 2003

MEMORANDUM

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

FROM: David Brook *for David Brook*

SUBJECT: Replace Bridge No. 274 on SR 1248 over Canoe Creek, B-4042, Burke County,
ER03-2340

Thank you for your memorandum of August 18, 2003, concerning the above project.

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

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

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

cc: Mary Pope Furr, NCDOT

www.hpo.dcr.state.nc.us

**ADMINISTRATION
RESTORATION
SURVEY & PLANNING**

Location
507 N. Blount St., Raleigh NC
515 N. Blount St., Raleigh NC
515 N. Blount St., Raleigh NC

Mailing Address
4617 Mail Service Center, Raleigh NC 27699-4617
4617 Mail Service Center, Raleigh NC 27699-4617
4617 Mail Service Center, Raleigh NC 27699-4617

Telephone/Fax
(919) 733-4763 • 733-8653
(919) 733-6547 • 715-4801
(919) 733-6545 • 715-4801

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

Project Description: Replace Bridge No. 274 on SR 1248 over Canoe Creek

On 09/30/2003, representatives of the

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

Reviewed the subject project at

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

All parties present agreed

- There are no properties over fifty years old within the project's area of potential effects.
- There are no properties less than fifty years old which are considered to meet Criteria Consideration G within the project's area of potential effects.
- There are properties over fifty years old within the project's Area of Potential Effects (APE), but based on the historical information available and the photographs of each property, the property identified as Bridge 274 3 Prop #1 is considered not eligible for the National Register and no further evaluation of it is necessary.
- There are no National Register-listed or Study Listed properties within the project's area of potential effects.
- All properties greater than 50 years of age located in the APE have been considered at this consultation, and based upon the above concurrence, all compliance for historic architecture with Section 106 of the National Historic Preservation Act and GS 121-12(a) has been completed for this project.
- There are no historic properties affected by this project. (Attach any notes or documents as needed)

Signed:

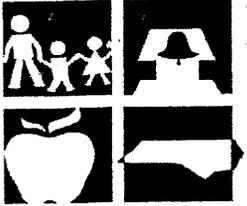
Mary Pope Sept. 30, 2003
 Representative, NCDOT Date

[Signature] 9/30/03
 FHWA, for the Division Administrator, or other Federal Agency Date

[Signature] 9/30/03
 Representative, HPO Date

David Wood 9/30/03
 State Historic Preservation Officer Date

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



Public Schools of North Carolina



NC Department of Public Instruction
School Planning, Division of School Support
6322 Mail Service Center
Raleigh, NC 27699-6322

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

September 15, 2003

MEMORANDUM

TO: Gregory J. Thorpe, P.E.
Department of Transportation

FROM: David Edwards, Section Chief, School Planning *de*

SUBJECT: Burke County, Bridge #274 on SR 1248 over Canoe Creek, Federal Aid Project No. BRZ-1248(3), State Project No. 8.2853501, TIP Project No. B-4042

Enclosed is a response from Burke County Schools in regard to the Bridge Replacement Inquiry.

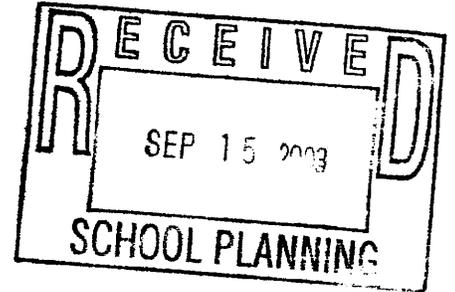
/ed
Enclosure



Burke County Public Schools

Teaching Tomorrow's Leaders Today

Office of the Superintendent



September 9, 2003

J. David Edwards, Ed. D.
Section Chief
School Planning
6322 Mail Service Center
Raleigh, NC 27699-6322

Dear Dr. Edwards,

In response to your letter dated August 28, 2003, concerning the bridge replacement on Frank Whisnant Rd, we have three school buses that make six trips per day across this bridge. The buses that use this bridge are one high school, one elementary, and one special needs bus.

Please let me know if you need any more information concerning this bridge replacement.

Sincerely,

David Burleson
Superintendent

DB/as