STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

MICHAEL F. EASLEY
GOVERNOR

LYNDO TIPPETT
SECRETARY

June 16, 2008

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

ATTENTION: Mr. David Baker
NCDOT Coordinator

Dear Sir:

SUBJECT: **Nationwide Permit 13/23/33 Application** for the replacement of Bridge No. 65 over Rabbit Creek on SR 1513 (Cat Creek Road) in Macon County. Federal Aid Project No. BRZ-1513(2), State Project No. 8.2970801, WBS Element 33526.1.1, Division 14, TIP No. B-4179. $240 Debit work order 8.2970801

Please see the enclosed PCN, Rapanos form, permit drawings and design plans. A Categorical Exclusion (signed 8/13/2007) has been completed and distributed for this project. Additional copies are available upon request. The North Carolina Department of Transportation (NCDOT) proposes to replace the 41-foot, single-span bridge with a 53-foot bottomless con-span culvert over Rabbit Creek. The culvert will be installed north and east of the existing bridge. Traffic will be maintained on the existing bridge for the majority of construction and later will be phased onto an offsite detour for the remainder of construction. There will be no wetland impacts, 135 linear feet of permanent stream impacts and 0.01 acre of temporary stream impacts to Rabbit Creek.

IMPACTS TO WATERS OF THE UNITED STATES

General Description:
Rabbit Creek is located in the Little Tennessee River Basin and is approximately 15-20 feet wide and 1-3 feet deep within the project area. The DWQ Index number for this section of Rabbit Creek is 2-23, and the Hydrological Cataloguing Unit is 06010202. The DWQ classifies Rabbit Creek as "C-Tr" however, since Rabbit Creek is not hatchery supported or wild trout waters, no moratoriums are required. Within the project area, Rabbit Creek is not listed as a 303(d) water. There are no 303(d) waters within a mile downstream of the project area. No High Quality Waters (HQW), Water Supplies (WS-I or WSII), or Outstanding Resource Waters (ORW), occur within one mile of the project study area.

Permanent Impacts:
There will be 135 linear feet of permanent impacts to Rabbit Creek associated with the installation of the con-span culvert (53 feet) and rip-rap bank stabilization (82 feet).

MAILING ADDRESS:
NC DEPARTMENT OF TRANSPORTATION
PROJECT DEVELOPMENT AND ENVIRONMENTAL ANALYSIS
1598 MAIL SERVICE CENTER
RALEIGH NC 27699-1548

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

WEBSITE: WWW.NCDOT.ORG

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

Temporary Impacts:
There will be 0.01 acre of temporary impacts to Rabbit Creek due to the removal of the existing bridge vertical abutment and the placement of conspan and bank-stabilizing rip-rap.

Utility Impacts:
There will be no jurisdictional impacts associated with relocation of utilities for this project.

Bridge Demolition:
Bridge No. 65 was built in 1951 and reconstructed in 1977. The bridge structure consists of a timber deck on steel I-beams supported by masonry abutments. The bridge will be removed without any temporary fill falling into Rabbit Creek during demolition. All guidelines for bridge demolition and removal will be followed in addition to Best Management Practices (BMPs) for the Protection of Surface Waters and BMPs for Bridge Demolition and Removal.

FEDERALLY PROTECTED SPECIES

Plants and animals with federal classifications of Endangered (E), Threatened (T), Proposed Endangered (PE) and Proposed Threatened (PT) are protected under provisions of Section 7 and Section 9 of the Endangered Species Act of 1973, as amended. As of January 31, 2008, the United States Fish and Wildlife Service (USFWS) lists eight federally protected species for Macon County (Table1).

Table 1. Federally Protected Species for Macon County.

Common Name	Scientific Name	Survey Notes	Status	Last Survey	Biological Conclusion
Bog turtle	*Clemmys muhlenbergii*	No Habitat	T(S/A)	-	Not Required
Spotfin chub	*Cyprinella monacha*	No Habitat	T	10/15/04	No Effect
Indiana bat	*Myotis sodalis*	No Habitat	E	1/3/05	No Effect
Appalachian elktoe	*Alasmidonta raveneliana*	No Habitat	E	3/15/04	No Effect
Little-wing pearlymussel	*Pegias fabula*	No Habitat	E	3/15/04	No Effect
Small whorled pogonia	*Isotria medeoloides*	Habitat Present	T	5/22/07	No Effect
Virginia spiraea	*Spiraea virginiana*	Habitat Present	T	5/22/07	No Effect
Rock gnome lichen	*Gymnoderme lineare*	No Habitat	E	-	No Effect

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

- Traffic will be maintained on the current bridge for the majority of the project and then phased to an off-site detour eliminating the need for construction of a temporary on-site detour.
- The skew of the road and driveway tie-in's prevent replacing the bridge with a bridge safely, therefore a bottomless culvert will be used so that the stream will flow on natural substrate and aquatic passage is accommodated.
- Water will not be directly discharged into Rabbit Creek via deck drains.

Mitigation:
NCDOT proposes no mitigation for the 53 linear feet of impacts from the installation of the conspan structure. In addition, NCDOT proposes no mitigation for 82 linear feet of bank stabilization since this does not constitute loss of Waters of the United States.

PROJECT SCEHDULE

The project schedule calls for a December 16, 2008 let date, and a review date of October 28, 2008.

REGULATORY APPROVALS

Section 404 Permit:
It is anticipated that the impacts to Rabbit Creek will be authorized under Section 404 Nationwide Permits 13, 23 and 33. We are, therefore, requesting the issuance of Nationwide Permits 13, 23 and 33.

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

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

Sincerely,

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

cc:
W/ attachment
Mr. Brian Wrenn, NCDWQ, 5 Copies
Ms. Marella Buncick, USFWS
Ms. Marla Chambers, NCWRC
Mr. Harold Draper, TVA

W/o attachment (see website for attachments)
Dr. David Chang, P.E., Hydraulics
Mr. Victor Barbour, P.E., Project Services Unit
Mr. Greg Perfetti, P.E., Structure Design
Mr. Mark Staley, Roadside Environmental
Mr. J. B. Setzer, P.E., Division 14 Engineer
Mr. Mark Davis, Division 14 DEO
Mr. Jay Bennett, P.E., Roadway Design
Mr. Majed Alghandour, P. E., Programming and TIP
Mr. Art McMillan, P.E., Highway Design
Mr. Scott McLendon, USACE, Wilmington
Ms. Pam Williams, PDEA Engineer

Office Use Only: Form Version March 05

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

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

I. Processing

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

2. Nationwide, Regional or General Permit Number(s) Requested: 13, 23, 33

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

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

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

II. Applicant Information

1. Owner/Applicant Information
   Name: Gregory J. Thorpe, Ph.D., Environmental Management Director
   Mailing Address: NC DOT - PDEA
   1598 Mail Service Center, Raleigh, NC 27699-1548
   Telephone Number: (919) 733-3141 Fax Number: (919) 733-9794
   E-mail Address: _____

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

III. Project Information

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

1. Name of project: N/A

2. T.I.P. Project Number or State Project Number (NCDOT Only): **B-4179**

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

4. Location
   County: Macon Nearest Town: Franklin
   Subdivision name (include phase/lot number):
   Directions to site (include road numbers/names, landmarks, etc.):
   Bridge # 65 On SR 1513 over Rabbit 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: Rabbit Creek
   Decimal Degrees (6 digits minimum): 351120 °N 832105 °W

6. Property size (acres): N/A

7. Name of nearest receiving body of water: Little Tennessee River

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

9. Describe the existing conditions on the site and general land use in the vicinity of the project at the time of this application: Bridge No. 65 spans Rabbit Creek along SR 1513 in Macon County near the town of Franklin. The bridge was constructed in 1951 and reconstructed in

1977. The posted speed limit is 35 mph. General land use in the vicinity is rural residential and agricultural land with some commercial and light industrial development.

10. Describe the overall project in detail, including the type of equipment to be used: Bridge removal project involving heavy construction equipment and manual labor to install a con-span culvert.

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

IV. Prior Project History

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

V. Future Project Plans

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

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

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

wetland or stream mitigation, list and describe the impact in Section VIII below. If additional space is needed for listing or description, please attach a separate sheet.

1. Provide a written description of the proposed impacts: There will be 135 linear feet of permanent surface water impacts associated with the installation of the con-span culvert (53 feet) and the installation of bank stabilizing rip-rap (82 feet). Temporary impacts consist of <0.01 acres for the removal of an existing bridge abutment.

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

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

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

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

Stream Impact Designation (indicate on map)	Stream Name	Type of Impact	Perennial or Intermittent?	Average Stream Width Before Impact	Impact Length (linear feet)	Area of Impact (acres)
S	Rabbit Creek	permanent	perennial	17'	135	<0.01
TS	Rabbit Creek	temporary	perennial	17'	-	<0.01
Total Stream Impact (by length and acreage)					135	<0.01

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

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

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

Stream Impact (acres):	0.01
Wetland Impact (acres):	N/A
Open Water Impact (acres):	N/A
Total Impact to Waters of the U.S. (acres) Permanent	0.01
Total Impact to Waters of the U.S. (acres) Temporary	0.01
Total Stream Impact (linear feet) Permanent:	135

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

_____

_____

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

VII. Impact Justification (Avoidance and Minimization)

Specifically describe measures taken to avoid the proposed impacts. It may be useful to provide information related to site constraints such as topography, building ordinances, accessibility, and financial viability of the project. The applicant may attach drawings of alternative, lower-impact site layouts, and explain why these design options were not feasible. Also discuss how impacts

were minimized once the desired site plan was developed. If applicable, discuss construction techniques to be followed during construction to reduce impacts. Replace in place was chosen to maintain traffic on the existing bridge to avoid an off-site detour. The "do-nothing" alternative was not considered due to it eliminating the use of SR 1513 and closing the bridge. Impacts will be minimized by constructing bottomless conspan culvert and surficial bridge runoff will not be directed into Rabbit Creek via deck drains.

VIII. Mitigation

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

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

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

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

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

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

IX. Environmental Documentation (required by DWQ)

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

2. If yes, does the project require preparation of an environmental document pursuant to the requirements of the National or North Carolina Environmental Policy Act (NEPA/SEPA)? Note: If you are not sure whether a NEPA/SEPA document is required, call the SEPA coordinator at (919) 733-5083 to review current thresholds for environmental documentation. Yes x - A Categorical Exclusion dated January 2007 has been submitted. No ☐

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

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

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

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

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

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

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

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

XI. Stormwater (required by DWQ)

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

XII. Sewage Disposal (required by DWQ)

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

XIII. Violations (required by DWQ)

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

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

XIV. Cumulative Impacts (required by DWQ)

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

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

XV. Other Circumstances (Optional):

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

E. L. Lusk 6-17-08

Applicant/Agent's Signature **Date**

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

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

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

SECTION I: BACKGROUND INFORMATION

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

B. DISTRICT OFFICE, FILE NAME, AND NUMBER: B-4179 (Replacement of Bridge 65 on SR 1513 over Rabbit Creek)

C. PROJECT LOCATION AND BACKGROUND INFORMATION:
State:NC County/parish/borough: Macon City: Franklin
Center coordinates of site (lat/long in degree decimal format): Lat. 35'11'20'° N, Long. 83'21'05'° W.
Universal Transverse Mercator:
Name of nearest waterbody: Lake Emory/ Little Tennessee River
Name of nearest Traditional Navigable Water (TNW) into which the aquatic resource flows: Lake Emory/ Little Tennessee
Name of watershed or Hydrologic Unit Code (HUC): 06010202
☒ Check if map/diagram of review area and/or potential jurisdictional areas is/are available upon request.
☐ Check if other sites (e.g., offsite mitigation sites, disposal sites, etc…) are associated with this action and are recorded on a different JD form.

D. REVIEW PERFORMED FOR SITE EVALUATION (CHECK ALL THAT APPLY):
☒ Office (Desk) Determination. Date: 5/14/2008
☐ Field Determination. Date(s):

SECTION II: SUMMARY OF FINDINGS

A. RHA SECTION 10 DETERMINATION OF JURISDICTION.

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

B. CWA SECTION 404 DETERMINATION OF JURISDICTION.

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

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

   b. **Identify (estimate) size of waters of the U.S. in the review area:**
      Non-wetland waters: 140 linear feet: 17 width (ft) and/or acres.
      Wetlands: acres.

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

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

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

SECTION III: CWA ANALYSIS

A. TNWs AND WETLANDS ADJACENT TO TNWs

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

1. TNW
Identify TNW: .

Summarize rationale supporting determination: .

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

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

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

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

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

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

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

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

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

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

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

---

[4] Note that the Instructional Guidebook contains additional information regarding swales, ditches, washes, and erosional features generally and in the arid West.

[5] Flow route can be described by identifying, e.g., tributary a, which flows through the review area, to flow into tributary b, which then flows into TNW.

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

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

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

Primary tributary substrate composition (check all that apply):

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

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

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

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

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

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

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

☐ Discontinuous OHWM.[7] Explain: .

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

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

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

---

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

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

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

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

(i) Physical Characteristics:

(a) General Wetland Characteristics:

Properties:

Wetland size: acres

Wetland type. Explain: .

Wetland quality. Explain: .

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

(b) General Flow Relationship with Non-TNW:

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

Surface flow is: **Discrete and confined**

Characteristics: .

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

- ☐ Dye (or other) test performed: .

(c) Wetland Adjacency Determination with Non-TNW:

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

(d) Proximity (Relationship) to TNW

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

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

Flow is from: **Pick List**.

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

(ii) Chemical Characteristics:

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

Identify specific pollutants, if known: .

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

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

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

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

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

For each wetland, specify the following:

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

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

C. SIGNIFICANT NEXUS DETERMINATION

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

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

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

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

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

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

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

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

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

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

Provide estimates for jurisdictional waters in the review area (check all that apply):
- ☒ Tributary waters: **140** linear feet**17**width (ft).
- ☐ Other non-wetland waters: acres.
  Identify type(s) of waters: .

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

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

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

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

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

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

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

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

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

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

Identify water body and summarize rationale supporting determination: .

---

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

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

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

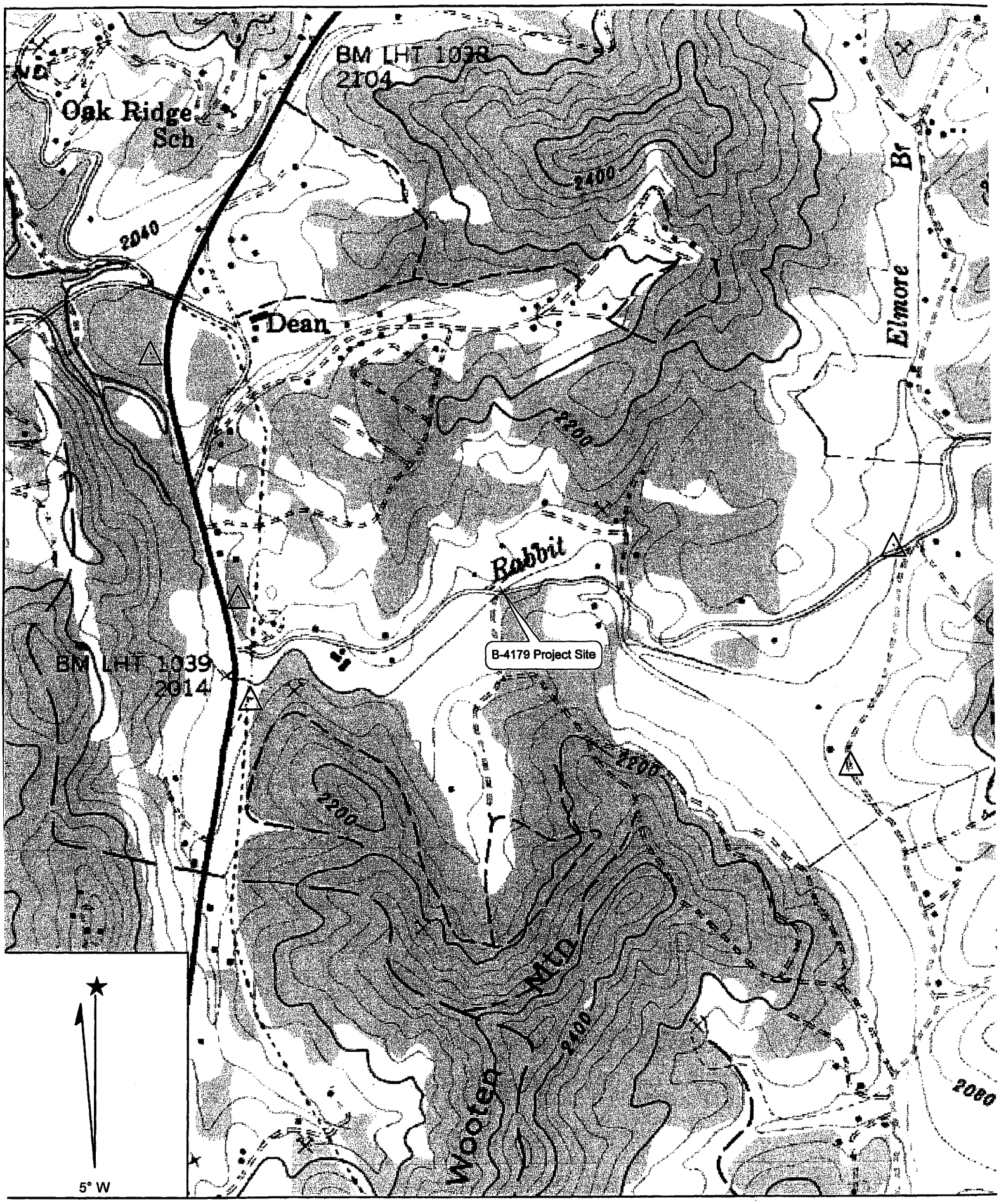
Provide acreage estimates for non-jurisdictional waters in the review area, where the sole potential basis of jurisdiction is the MBR factors (i.e., presence of migratory birds, presence of endangered species, use of water for irrigated agriculture), using best professional judgment (check all that apply):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

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

SECTION IV: DATA SOURCES.

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

B. ADDITIONAL COMMENTS TO SUPPORT JD: .



Name: CORBIN KNOB
Date: 1/29/2008
Scale: 1 inch equals 1000 feet

Location: 035° 12' 28.72" N 083° 21' 8.70" W
Caption: B-4179

Permit Drawing
Sheet 1 of 5

Property Owners

Parcel Number	Names	Addresses
1	Wesley A Barton	416 Rabbit Creek Road - Franklin, NC
3	Gustav C. Wilde	220 Hemlock Hills Drive - Franklin, NC

NC DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

Macon COUNTY
WBS - 33526.1.1 (B-4179)

SHEET 1/29/2008

Permit Drawing
Sheet 2 of 5

WETLAND PERMIT IMPACT SUMMARY

Site No.	Station (From/To)	Structure Size / Type	WETLAND IMPACTS: Permanent Fill In Wetlands (acres)	WETLAND IMPACTS: Temp. Fill In Wetlands (acres)	WETLAND IMPACTS: Excavation in Wetlands (acres)	WETLAND IMPACTS: Mechanized Clearing in Wetlands (acres)	WETLAND IMPACTS: Hand Clearing in Wetlands (acres)	SURFACE WATER IMPACTS: Permanent SW impacts (acres)	SURFACE WATER IMPACTS: Temp. SW impacts (acres)	SURFACE WATER IMPACTS: Existing Channel Impacts Permanent (ft)	SURFACE WATER IMPACTS: Natural Stream Design (ft)
1	-L- 16+25	28' x 10' CONSPAN						< 0.01	< 0.01	53	
2	-L- 15+10 to 15+81	Rip Rap Embankment							< 0.01	82	
3	-L- 15+44 to 15+61	Vertical Abutment Removal							< 0.01		
TOTALS:								0.00	0.01	135	

Permit Drawing
Sheet 3 **of** 5

NC DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

Macon COUNTY
WBS - 33526.1.1 (B-4179)

SHEET 5/19/2008

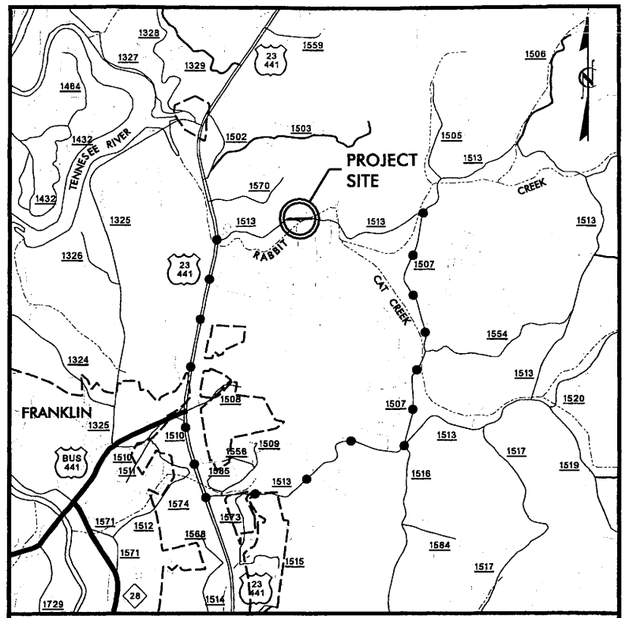
JMD Revised 2/03/05

TIP PROJECT: B-4179

CONTRACT:

Permit Drawing Sheet 4 of 5

See Sheet 1-A For Index of Sheets



STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

MACON COUNTY

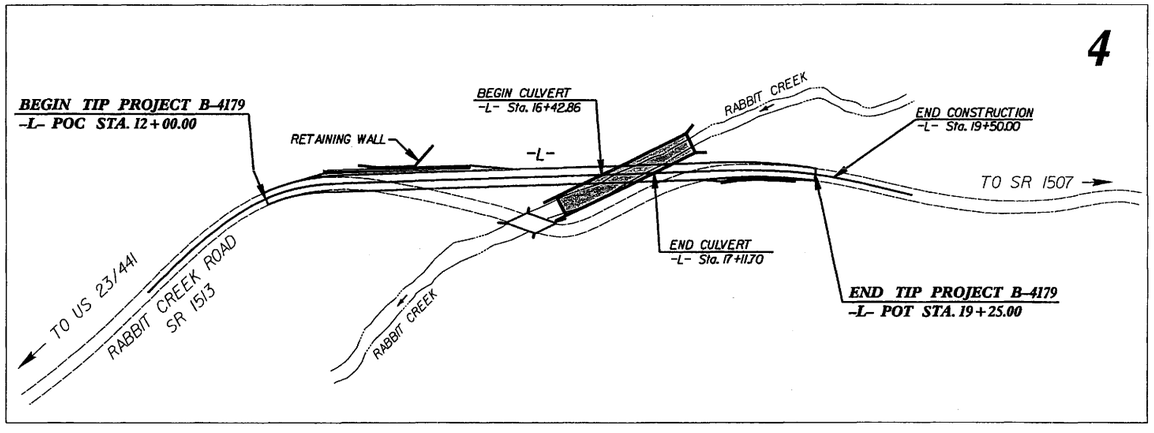
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-4179	1	

WBS NO.	F.A. PROJ. NO.	DESCRIPTION
33526.1.1	BRZ-1513 (2)	PE
33526.2.2	BRZ-1513 (2)	R/W, UTILITIES

LOCATION: BRIDGE #65 OVER RABBIT CREEK ON SR 1513 (RABBIT CREEK ROAD) AND APPROACHES

TYPE OF WORK: GRADING, DRAINAGE, PAVING GUARDRAIL, AND CULVERT

WETLAND PERMIT



NAD 83

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 III.

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

GRAPHIC SCALES

PLANS: 50 25 0 50 100
PROFILE (HORIZONTAL): 50 25 0 50 100
PROFILE (VERTICAL): 10 5 0 10 20

DESIGN DATA

ADT 2008	=	935
ADT 2028	=	1600
DHV	=	10 %
D	=	60 %
T	=	3 % *
V	=	35 MPH

* (TTST 1% + DUAL 2%)

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT B-4179	=	*0.124 mi*
LENGTH STRUCTURE TIP PROJECT B-4179	=	*0.013 mi*
TOTAL LENGTH TIP PROJECT B-4179	=	*0.137 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: DECEMBER 21, 2007

LETTING DATE: DECEMBER 16, 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.

DIVISION OF HIGHWAYS STATE OF NORTH CAROLINA

STATE HIGHWAY DESIGN ENGINEER P.E.

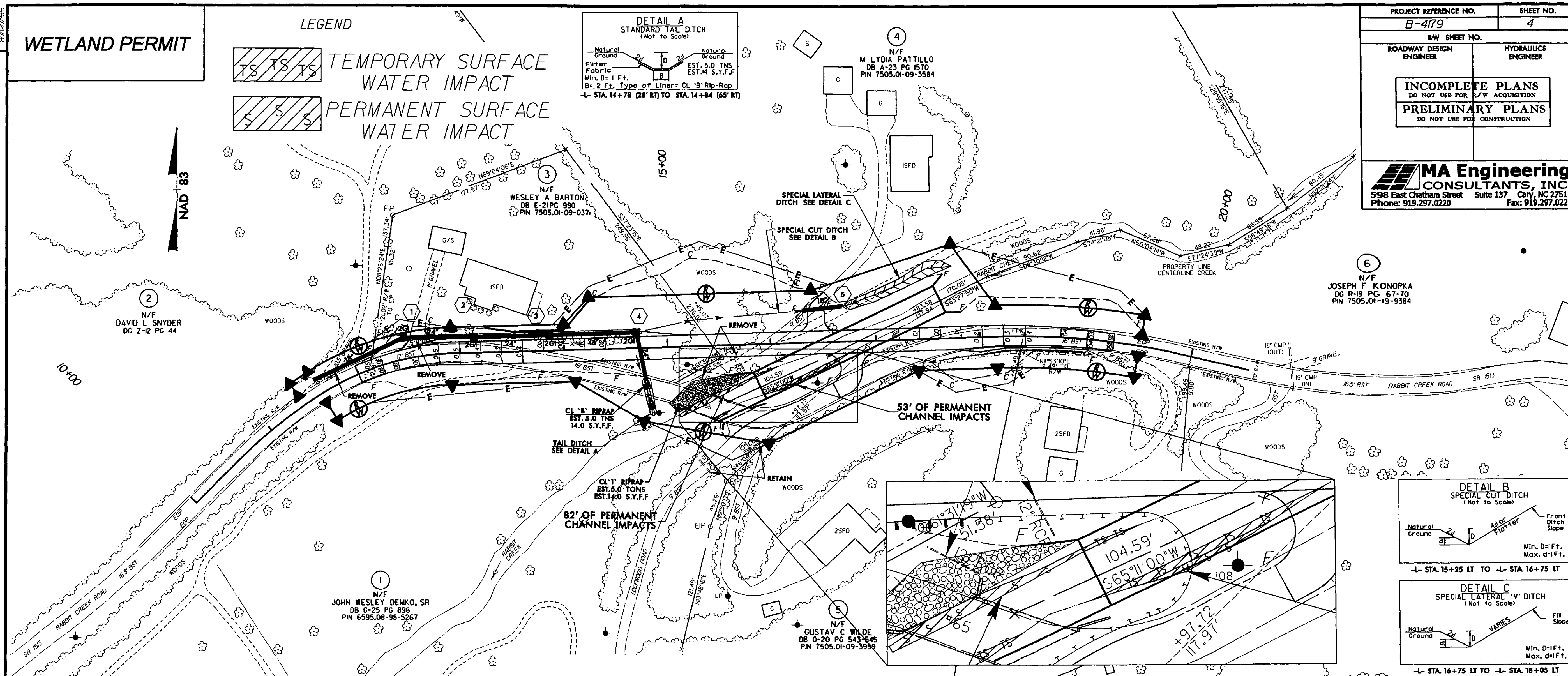
PROJECT REFERENCE NO.	SHEET NO.
B-4179	4
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION

MA Engineering CONSULTANTS, INC.
598 East Chatham Street Suite 137 Cary, NC 27511
Phone: 919.297.0220 Fax: 919.297.0221

WETLAND PERMIT

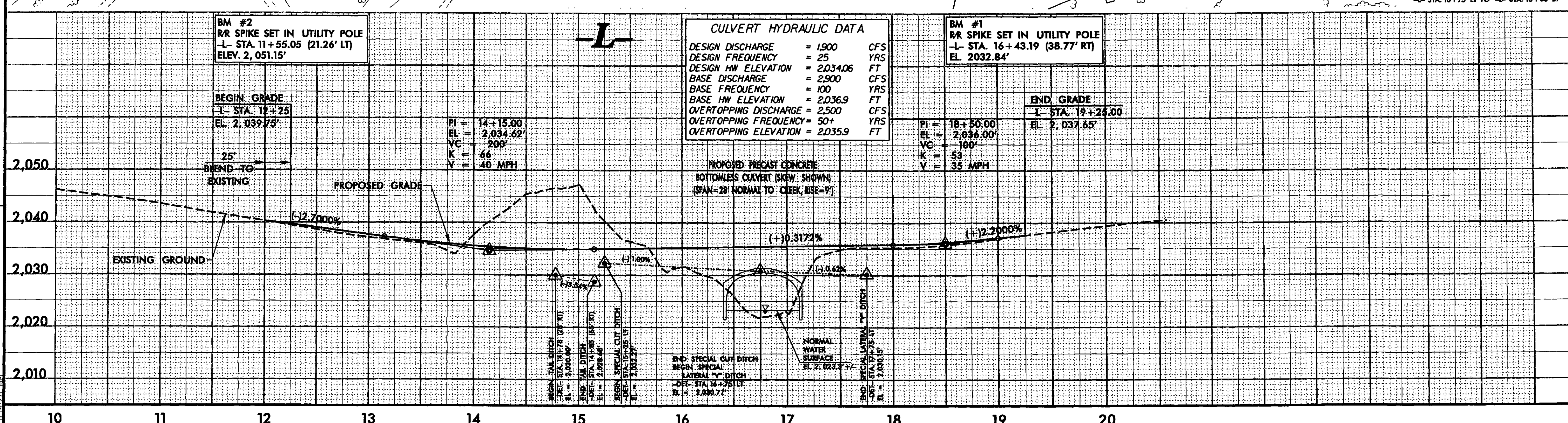


BM #2
R/R SPIKE SET IN UTILITY POLE
-L- STA. 11+55.05 (21.26' LT)
ELEV. 2,051.15'

BM #1
R/R SPIKE SET IN UTILITY POLE
-L- STA. 16+43.19 (38.77' RT)
EL. 2032.84'

CULVERT HYDRAULIC DATA

DESIGN DISCHARGE	= 1,900	CFS
DESIGN FREQUENCY	= 25	YRS
DESIGN HW ELEVATION	= 2,034.06	FT
BASE DISCHARGE	= 2,900	CFS
BASE FREQUENCY	= 100	YRS
BASE HW ELEVATION	= 2,036.9	FT
OVERTOPPING DISCHARGE	= 2,500	CFS
OVERTOPPING FREQUENCY	= 50+	YRS
OVERTOPPING ELEVATION	= 2,035.9	FT



REVISIONS

Permit Drawing
Sheet 5 of 5

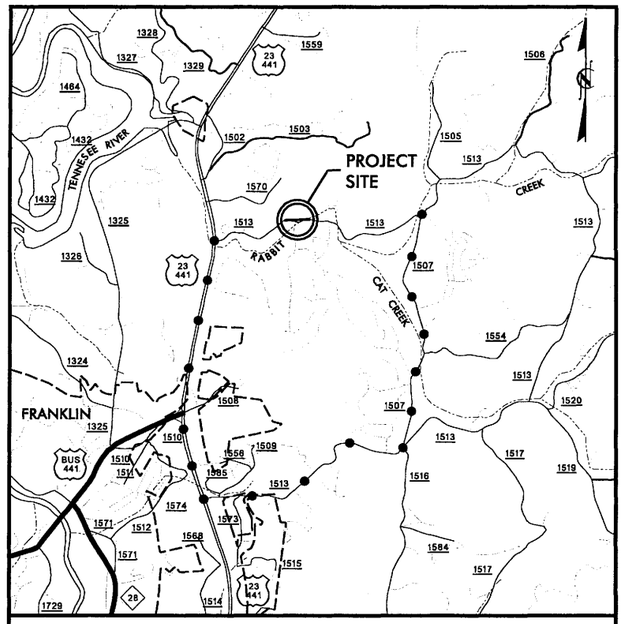
05/20/2008

09/08/99

TIP PROJECT: B-4179

CONTRACT:

See Sheet 1-A For Index of Sheets



VICINITY MAP — DETOUR ROUTE

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

MACON COUNTY

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-4179	1	

WBS NO.	F.A. PROJ. NO.	DESCRIPTION
33526.1.1	BRZ-1513 (2)	PE
33526.2.2	BRZ-1513 (2)	R/W, UTILITIES

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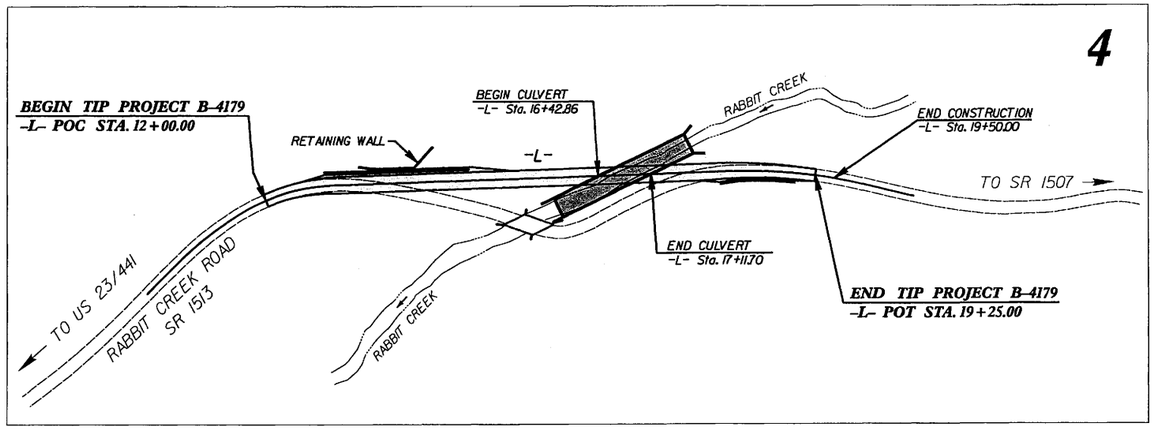

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

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

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

GRAPHIC SCALES

50 25 0 50 100
PLANS

50 25 0 50 100
PROFILE (HORIZONTAL)

10 5 0 10 20
PROFILE (VERTICAL)

DESIGN DATA

ADT 2008 = 935
ADT 2028 = 1600
DHV = 10 %
D = 60 %
T = 3 % *
V = 35 MPH

* (TTST 1% + DUAL 2%)

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT B-4179	=	*0.124 mi*
LENGTH STRUCTURE TIP PROJECT B-4179	=	*0.013 mi*
TOTAL LENGTH TIP PROJECT B-4179	=	*0.137 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: DECEMBER 21, 2007

LETTING DATE: DECEMBER 16, 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.

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

P.E.
STATE HIGHWAY DESIGN ENGINEER

01/30/2008
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tshutchens

3/15/06

PROJECT REFERENCE NO.	SHEET NO.
B-4179	1-B

Note: Not to Scale

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

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

CONVENTIONAL PLAN SHEET SYMBOLS

BOUNDARIES AND PROPERTY:

- State Line
- County Line
- Township Line
- City Line
- Reservation Line
- Property Line
- Existing Iron Pin — IP
- Property Corner
- Property Monument — ECM
- Parcel/Sequence Number — 23
- Existing Fence Line
- Proposed Woven Wire Fence
- Proposed Chain Link Fence
- Proposed Barbed Wire Fence
- Existing Wetland Boundary — WLB
- Proposed Wetland Boundary — WLB
- Existing Endangered Animal Boundary — EAB
- Existing Endangered Plant Boundary — EPB

BUILDINGS AND OTHER CULTURE:

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

HYDROLOGY:

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

RAILROADS:

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

RIGHT OF WAY:

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

ROADS AND RELATED FEATURES:

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

VEGETATION:

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

EXISTING STRUCTURES:

MAJOR:

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

MINOR:

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

UTILITIES:

POWER:

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

TELEPHONE:

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

WATER:

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

TV:

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

GAS:

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

SANITARY SEWER:

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

MISCELLANEOUS:

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

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PROJECT REFERENCE NO.	SHEET NO.
B-4179	1-C
Location and Surveys	

SURVEY CONTROL SHEET B-4179

DATUM DESCRIPTION

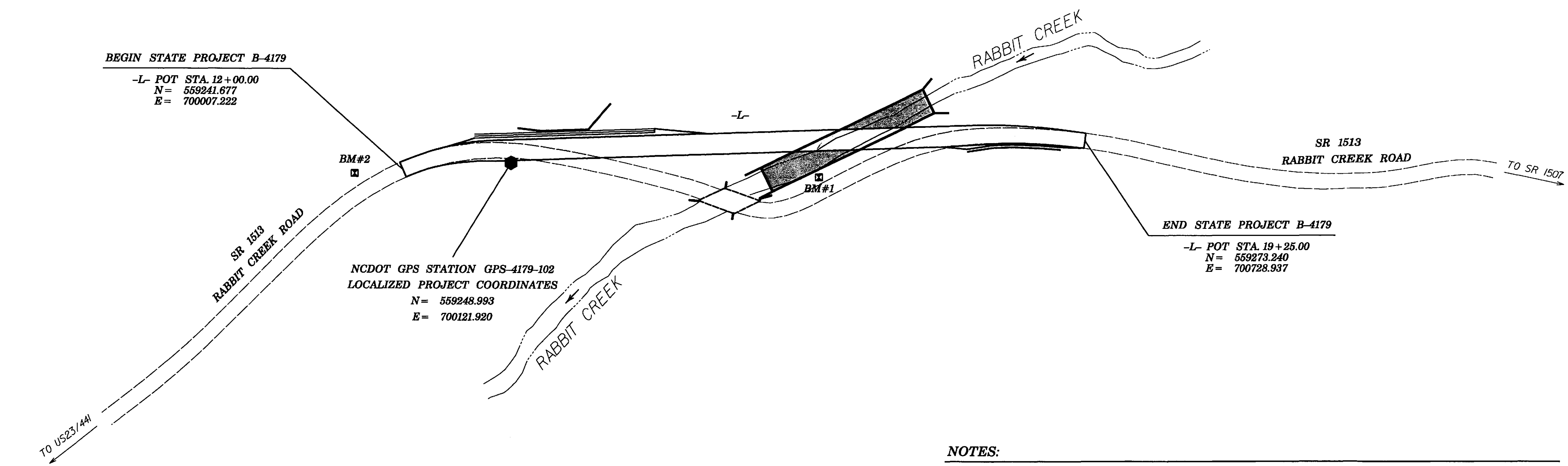
THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCDOT FOR MONUMENT "GPS-B4179-102" WITH NAD 83 STATE PLANE GRID COORDINATES OF NORTHING: 559248.993 (ft) EASTING: 700121.920 (ft) THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: .999775736 THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "GPS-B4179-102" TO -L- STATION 10+00.00 IS S 64° 12' 13.01" W 300.38 (ft) ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES VERTICAL DATUM USED IS NAVD 88

BL POINT	DESC.	NORTH	EAST	ELEVATION	L STATION	OFFSET
1	BL-1	550052.7260	699800.7820	2047.42'	OUTSIDE PROJECT LIMITS	
2	BL-2	559203.4460	699961.8170	2040.55'	11+40.54	10.54' RT
102	GPS-B4179-102	559248.9940	700121.9200	2035.63'	13+17.00	13.40' RT
4	BL-4	559212.1120	700399.8900	2030.36'	15+93.60	59.44' RT
5	BL-5	559290.8090	700608.1700	2034.74'	18+04.36	12.34' LT
6	BL-6	559245.7680	700947.8800	2041.22'	OUTSIDE PROJECT LIMITS	

BM#1 ELEVATION = 2032.84'
N 559234 E 700449
-L- STATION 16+43 39' RIGHT
RAILROAD SPIKE SET IN UTILITY POLE

BM#2 ELEVATION = 2051.15'
N 559238 E 699956
-L- STATION 11+55 21' LEFT
RAILROAD SPIKE SET IN UTILITY POLE

NC GRID
NAD 83



NCDOT GPS STATION GPS-B4179-101
LOCALIZED PROJECT COORDINATES
N= 558890.647
E= 699689.828

NOTE: DRAWING NOT TO SCALE

NOTES:

1. THE CONTROL DATA FOR THIS PROJECT CAN BE FOUND ELECTRONICALLY BY SELECTING PROJECT CONTROL DATA AT:

   HTTP://WWW.NCDOT.ORG/DOH/PRECONSTRUCT/HIGHWAY/LOCATION/PROJECT

   THE FILES TO BE FOUND ARE AS FOLLOWS:
   B4179_LS_CONTROL_071219.TXT

   SITE CALIBRATION INFORMATION HAS NOT BEEN PROVIDED FOR THIS PROJECT. IF FURTHER INFORMATION IS NEEDED, PLEASE CONTACT THE LOCATION AND SURVEYS UNIT.

⬢ INDICATES GEODETIC CONTROL MONUMENTS USED OR SET FOR HORIZONTAL PROJECT CONTROL BY THE NCDOT LOCATION AND SURVEYS UNIT.

PROJECT CONTROL ESTABLISHED USING GLOBAL POSITIONING SYSTEM.

NETWORK ESTABLISHED FROM NGS ONLINE POSITIONING USER SERVICE (OPUS).

SEE GPS CALIBRATION SHEET FOR HORIZONTAL AND VERTICAL COORDINATE VALUES.

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PROJECT REFERENCE NO.	SHEET NO.
B-4179	2

R/W SHEET NO.

ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER

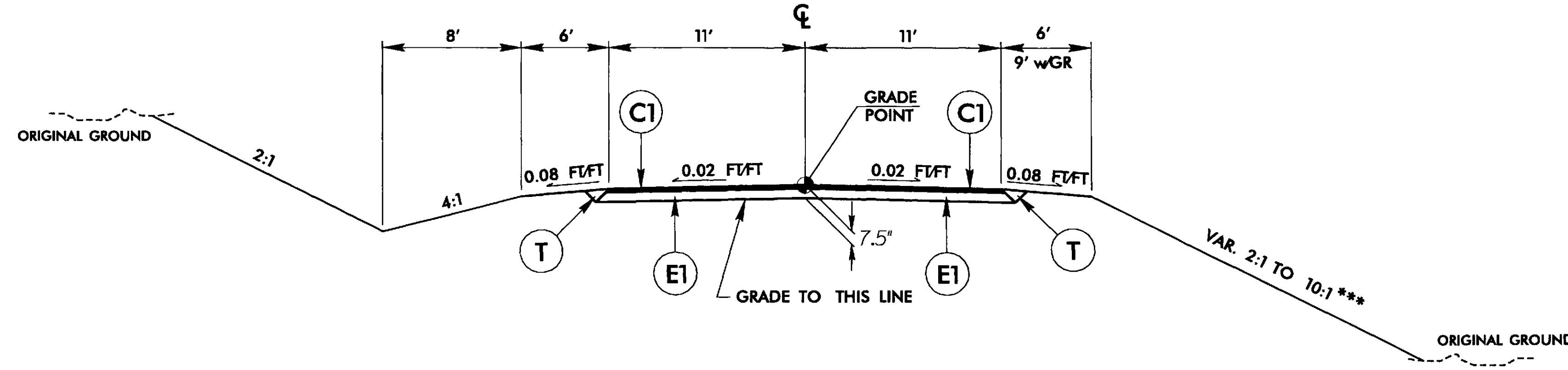
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

MA Engineering CONSULTANTS, INC.
598 East Chatham Street Suite 137 Cary, NC 27511
Phone: 919.297.0220 Fax: 919.297.0221

PAVEMENT SCHEDULE

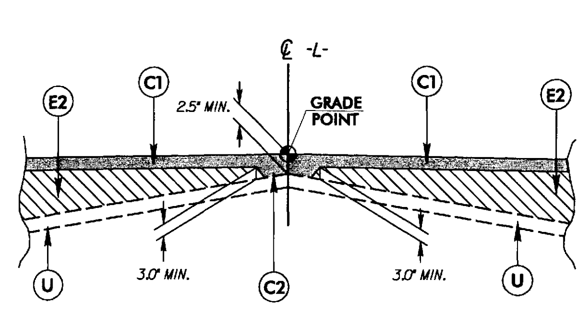
C1	PROP. APPROX. 2.50" ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 140 Lbs PER SQUARE YARD IN EACH OF TWO LAYERS.
C2	PROP. VARIABLE DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 112 Lbs PER SQUARE YARD PER 1" DEPTH, TO BE PLACED IN LAYERS NOT LESS THAN 1.25" OR GREATER THAN 1.5" IN DEPTH.
E1	PROP. APPROX. 5.0" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 570 Lbs PER SQUARE YARD.
E2	PROP. VARIABLE DEPTH ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 114 Lbs PER SQUARE YARD PER 1" DEPTH, TO BE PLACED IN LAYERS NOT LESS THAN 3.0" OR GREATER THAN 5.5" IN DEPTH.
T	EARTH MATERIAL
R1	CONCRETE EXPRESSWAY GUTTER
R2	SINGLE FACE CONCRETE BARRIER
U	EXISTING PAVEMENT
W	VARIABLE DEPTH ASPHALT PAVEMENT (SEE STANDARD WEDGING DETAIL THIS SHEET)

PAVEMENT EDGE SLOPES AND TRENCH SLOPES ARE 1:1 UNLESS SHOWN OTHERWISE.



TYPICAL SECTION NO. 1

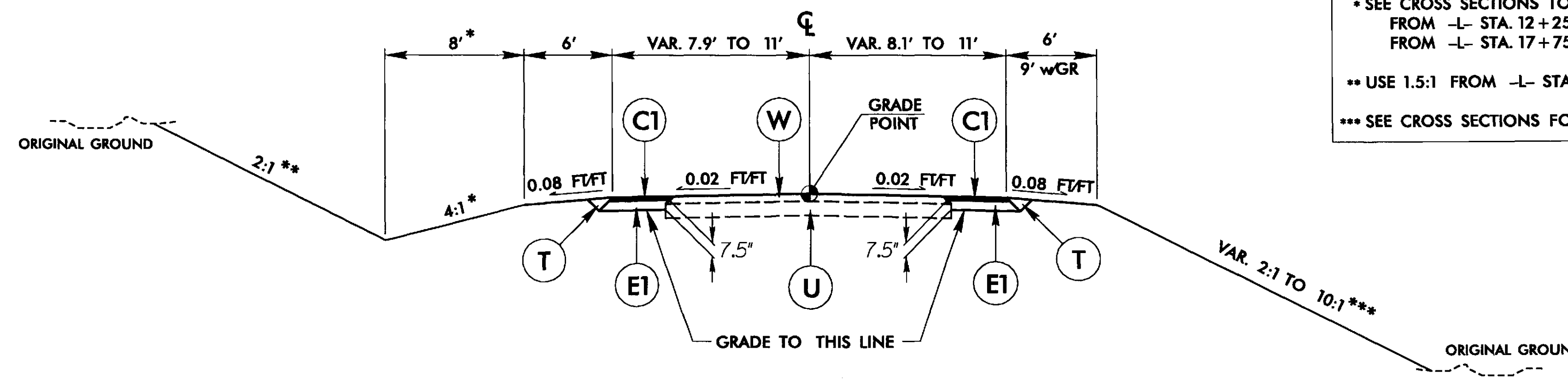
FROM -L- STA. 13+80.00 TO STA. 17+25.00



DETAIL SHOWING METHOD OF WEDGING

NOTES

- * SEE CROSS SECTIONS TO TIE IN SHOULDER AND DITCH FROM -L- STA. 12+25.00 TO 12+80.00 LT. FROM -L- STA. 17+75.00 TO 19+25.00 RT.
- ** USE 1.5:1 FROM -L- STA. 17+60.00 TO 18+35.00 RT.
- *** SEE CROSS SECTIONS FOR SLOPES OVER CULVERT



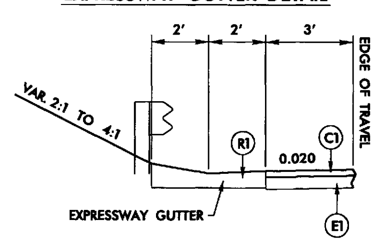
TYPICAL SECTION NO. 2

FROM -L- STA. 12+25.00 TO STA. 13+80.00
FROM -L- STA. 17+25.00 TO STA. 19+25.00

BLEND TO EXISTING:
FROM -L- STA. 12+00.00 TO STA. 12+25.00

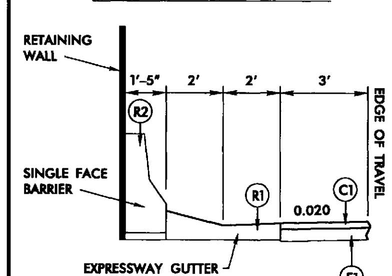
MILL EXISTING PAVEMENT UP TO 2.5" IN DEPTH IN ORDER TO TIE TO EXISTING GRADE AT -L- STA. 19+25.00:
FROM -L- STA. 18+90.00 TO STA. 19+25.00

EXPRESSWAY GUTTER DETAIL



USE EXPRESSWAY GUTTER DETAIL IN CONJUNCTION WITH TYP. SEC. #1 AND #2
FROM -L- STA. 12+80.00 TO STA. 13+50.00 LT.
FROM -L- STA. 14+00.00 TO STA. 14+72.00 LT.

RETAINING WALL DETAIL



USE RETAINING WALL DETAIL IN CONJUNCTION WITH TYP. SEC. #1 AND #2
FROM -L- STA. 13+50.00 TO STA. 14+00.00 LT.

SUMMARY OF EARTHWORK

IN CUBIC YARDS

LOCATION	UNCLASSIFIED EXCAVATION	UNDERCUT	EMBT+15%	BORROW	WASTE
-L- 12+25 TO 19+50	4,646		2,509		2,137
EST. LOSS DUE TO CLEARING AND GRUBBING	-100				2,137
PROJECT TOTAL	4,546		2,509		-100
GRAND TOTAL (CUBIC YARDS)	4,546		2,509		2,037
SAY (CUBIC YARDS)	4,600		2,600		2,100

SELECT GRANULAR MATERIAL (CL II or III) = 500 CY
ESTIMATED UNDERCUT = 500 CY
ESTIMATED GRADE POINTS UNDERCUT = 100 CY
(CONTINGENCY ITEMS PER 'GEOTECHNICAL REPORT - DESIGN RECOMMENDATIONS' LETTER DATED JANUARY, 2006)

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

NOTE: Earthwork quantities are calculated by the Roadway Design Unit. These earthwork quantities are based in part on subsurface data provided by the Geotechnical Engineering Unit.

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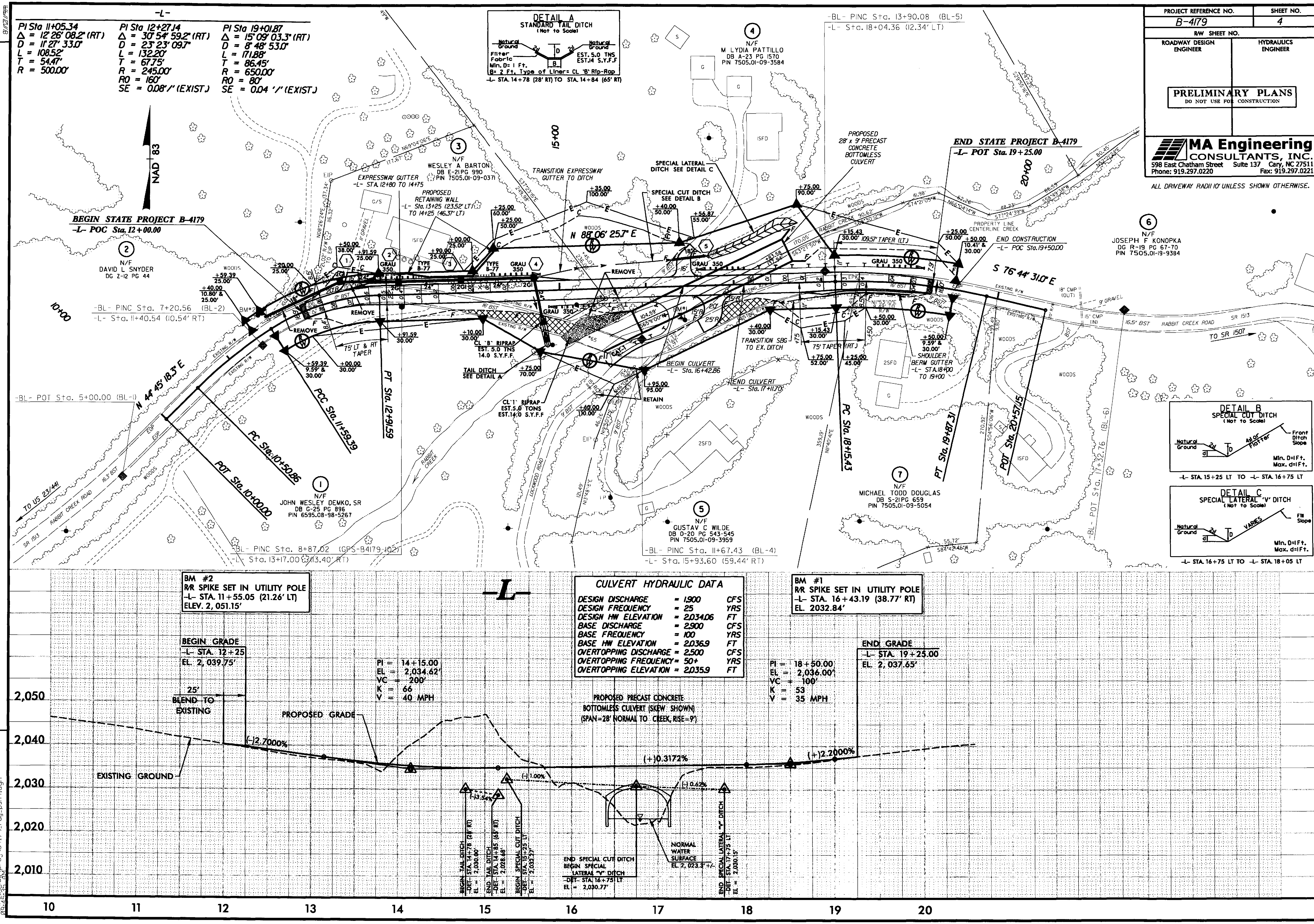

PROJECT REFERENCE NO. B-4179
SHEET NO. 4
R/W SHEET NO.
ROADWAY DESIGN ENGINEER
HYDRAULICS ENGINEER
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION
MA Engineering CONSULTANTS, INC.
598 East Chatham Street Suite 137 Cary, NC 27511
Phone: 919.297.0220 Fax: 919.297.0221
ALL DRIVEWAY RADII 10' UNLESS SHOWN OTHERWISE.
-L-
PI Sta 11+05.34
Δ = 12° 26' 08.2" (RT)
D = 11° 27' 33.0"
L = 108.52'
T = 54.47'
R = 500.00'
PI Sta 12+27.14
Δ = 30° 54' 59.2" (RT)
D = 23° 23' 09.7"
L = 132.20'
T = 67.75'
R = 245.00'
RO = 160'
SE = 0.08'/' (EXIST.)
PI Sta 19+01.87
Δ = 15° 09' 03.3" (RT)
D = 8° 48' 53.0"
L = 171.88'
T = 86.45'
R = 650.00'
RO = 80'
SE = 0.04 '/' (EXIST.)
DETAIL A
STANDARD TAIL DITCH
(Not to Scale)
-L- STA. 14+78 (28' RT) TO STA. 14+84 (65' RT)
NAD 83
BEGIN STATE PROJECT B-4179
-L- POC Sta. 12+00.00
END STATE PROJECT B-4179
-L- POT Sta. 19+25.00
END CONSTRUCTION
-L- POC Sta. 19+50.00
N 88° 06' 25.7" E
S 76° 44' 31.0" E
N 44° 45' 18.3" E
PC Sta. 10+50.86
POT Sta. 10+00.00
PCC Sta. 11+59.39
PT Sta. 12+91.59
PC Sta. 18+15.43
PT Sta. 19+87.31
POT Sta. 20+57.15
PROPOSED 28' x 9' PRECAST CONCRETE BOTTOMLESS CULVERT
BEGIN CULVERT -L- Sta. 16+42.86
END CULVERT -L- Sta. 17+11.70
N/F WESLEY A BARTON DB E-21 PG 990 PIN 7505.01-09-0371
N/F DAVID L SNYDER DG Z-12 PG 44
N/F JOHN WESLEY DEMKO, SR DB G-25 PG 896 PIN 6595.08-98-5267
N/F M LYDIA PATTILLO DB A-23 PG 1570 PIN 7505.01-09-3584
N/F GUSTAV C WILDE DB 0-20 PG 543-545 PIN 7505.01-09-3959
N/F JOSEPH F KONOPKA DG R-19 PG 67-70 PIN 7505.01-19-9384
N/F MICHAEL TODD DOUGLAS DB S-21 PG 659 PIN 7505.01-09-5054
RABBIT CREEK ROAD SR 1513
TO US 23/441
TO SR 1507
DETAIL B
SPECIAL CUT DITCH
(Not to Scale)
-L- STA. 15+25 LT TO -L- STA. 16+75 LT
DETAIL C
SPECIAL LATERAL 'V' DITCH
(Not to Scale)
-L- STA. 16+75 LT TO -L- STA. 18+05 LT
BM #2
R/R SPIKE SET IN UTILITY POLE
-L- STA. 11+55.05 (21.26' LT)
ELEV. 2,051.15'
BM #1
R/R SPIKE SET IN UTILITY POLE
-L- STA. 16+43.19 (38.77' RT)
EL. 2032.84'
CULVERT HYDRAULIC DATA
DESIGN DISCHARGE = 1,900 CFS
DESIGN FREQUENCY = 25 YRS
DESIGN HW ELEVATION = 2,034.06 FT
BASE DISCHARGE = 2,900 CFS
BASE FREQUENCY = 100 YRS
BASE HW ELEVATION = 2,036.9 FT
OVERTOPPING DISCHARGE = 2,500 CFS
OVERTOPPING FREQUENCY = 50+ YRS
OVERTOPPING ELEVATION = 2,035.9 FT
BEGIN GRADE
-L- STA. 12+25
EL. 2,039.75'
END GRADE
-L- STA. 19+25.00
EL. 2,037.65'
PI = 14+15.00
EL = 2,034.62'
VC = 200'
K = 66
V = 40 MPH
PI = 18+50.00
EL = 2,036.00'
VC = 100'
K = 53
V = 35 MPH
PROPOSED PRECAST CONCRETE BOTTOMLESS CULVERT (SKEW SHOWN)
(SPAN=28' NORMAL TO CREEK, RISE=9')
PROPOSED GRADE
EXISTING GROUND
25' BLEND TO EXISTING
(-)2.7000%
(+)0.3172%
(+)2.2000%
NORMAL WATER SURFACE EL. 2,023.3' +/-
2,050
2,040
2,030
2,020
2,010
10 11 12 13 14 15 16 17 18 19 20

Macon County

Bridge No. 65 on SR 1513 (Rabbit Creek Road)

over Rabbit Creek

Federal-Aid Project No. BRZ-1513 (2)

W.B.S. No. 33526.1.1

State Project No. 8.2970801

T.I.P. Project No. B-4179

CATEGORICAL EXCLUSION

UNITED STATES DEPARTMENT OF TRANSPORTATION

FEDERAL HIGHWAY ADMINISTRATION

AND

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

DIVISION OF HIGHWAYS

APPROVED:

8/13/07
DATE

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

8/13/07
DATE

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

Macon County
Bridge No. 65 on SR 1513 (Rabbit Creek Road)
over Rabbit Creek
Federal-Aid Project No. BRZ-1513 (2)
W.B.S. No. 33526.1.1
State Project No. 8.2970801
T.I.P. Project No. B-4179

CATEGORICAL EXCLUSION

August 2007

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

Gail F. Kogut, PE
Project Manager

NORTH CAROLINA PROFESSIONAL SEAL 23563 ENGINEER GAIL F. KOGUT
08-10-2007

For the North Carolina Department of Transportation:

Pamela R. Williams
Bridge Project Planning Engineer

John L. Williams, PE
Bridge Project Engineer
Project Development & Environmental Analysis Branch

Macon County

Bridge No. 65 on SR 1513 (Rabbit Creek Road)

over Rabbit Creek

Federal-Aid Project No. BRZ-1513 (2)

W.B.S. No. 33526.1.1

State Project No. 8.2970801

T.I.P. Project No. B-4179

PROJECT COMMITMENTS

Offsite Detour

Division 14

The Macon County Emergency Medical Service and the Macon County Schools shall be notified of the road closure prior to the start of construction.

Tennessee Valley Authority

Project Development and Environmental Analysis (PDEA)

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

Hydraulics Unit/ Structure Design Unit/ Roadway Design

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

Archaeology

Roadway Design Unit/ PDEA - HEU/ Division Resident Engineer

An archaeological survey is in progress as of July 2007. The survey and report will be completed for the project's Area of Potential Effects prior to construction. If any significant archaeological sites that are eligible for the National Register of Historic Places are located, NCDOT will avoid these resources, if possible, or minimize impacts to the site(s). If the site(s) cannot be avoided, data recovery will be conducted before construction commences. Any data recovery investigations would be facilitated by the drafting of a data recovery plan and MOA in consultation with the North Carolina Historic Preservation Office (NC HPO). If data recovery is necessary, a minimum of six months following the right-of-way acquisition of the pertinent tract(s) shall be granted for the completion of data recovery field investigations.

Macon County
Bridge No. 65 on SR 1513 (Rabbit Creek Road)
over Rabbit Creek
Federal-Aid Project No. BRZ-1513 (2)
W.B.S. No. 33526.1.1
State Project No. 8.2970801
T.I.P. Project No. B-4179

INTRODUCTION: The replacement of Bridge No. 65 is included in the 2007-2013 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 42.3 out of a possible 100 for a new structure. The bridge is considered structurally deficient due to the structural evaluation rating of 2 out of 9 according to Federal Highway Administration standards. The posted weight limit on the bridge is down to 15 tons for single vehicles (SV) and 19 tons for truck-tractor semi-trailers (TTST). Components of the masonry substructure have experienced an increasing degree of deterioration that can no longer be addressed by maintenance activities. The bridge deck is timber which typically has a life expectancy between 40 to 50 years due to the natural deterioration rate of wood. The bridge is approaching the end of its useful life.

The bridge is also considered functionally obsolete due to the deck geometry rating of 3 out of 9. Bridge No. 65 carries 900 vehicles per day for 2007 with 1,700 vehicles per day projected for 2030. The substandard deck width is becoming increasingly unacceptable and replacement of the bridge will result in safer traffic operations.

II. EXISTING CONDITIONS

Bridge No. 65 is located on SR 1513 (Rabbit Creek Road) in Macon County over Rabbit Creek (Figure 1). SR 1513 is classified as Rural Minor Collector. Land use is primarily residential and agricultural with some commercial and light industrial development.

Bridge No. 65 was constructed in 1951 and reconstructed in 1977. The existing structure is a two-lane, single span bridge with an overall length of 41 ft. and a clear roadway width of 21'-4". The bridge consists of a timber deck on I-beams supported on masonry abutments. Bridge No. 65 currently has posted weight limits of 15 tons for SV and 19 tons for TTST.

The creek bed to roadway crown point height is 12 ft. and the normal depth of Rabbit Creek flow is 2 feet.

Macon County is a Mountain Trout Water county as per the North Carolina Wildlife Resource Commission (NCWRC). Rabbit Creek is listed as "C, Tr" by the North Carolina Department of Environment and Natural Resources, Division of Water Quality (NC DENR - DWQ) but it is not designated as hatchery supported or wild trout waters by the NCWRC.

The approach roadway for Bridge No. 65 is a two-lane paved 16-foot wide road. The bridge is located between two reverse curves, with a driveway immediately to the west and Lockwood Drive immediately to the east. No guardrail is attached to the bridge and the southwest approach embankment has experienced some erosive collapse in the past requiring maintenance. The posted speed limit is 35 mph.

This portion of SR 1513 is designated as Macon County Bicycle Route No. 37, Holly Spring.

Aerial phone lines cross the bridge diagonally.

The 2007 estimated average daily traffic (ADT) volume is 900 vehicles per day (vpd). The projected ADT is expected to increase to 1700 vpd by the design year 2030. The percentages of truck traffic are 2% dual-tired vehicles and 1% TTST.

Two accidents were reported in the vicinity of the bridge during a recent three-year period.

Two school buses cross Bridge No. 65 twice daily.

III. ALTERNATIVES

A. Project Description

The roadway typical section will consist of two 11-foot travel lanes with 5-foot shoulders. Since this portion of SR 1513 is a bicycle route, bicycle accommodations will be provided. The design speed will be 35 mph to match existing conditions.

The estimated structure requirements are based on the historic performances of the existing structure and field observations of the site. Based on field reconnaissance of the site and a preliminary hydraulic analysis, the existing structure can be replaced with a reinforced concrete box culvert or bottomless culvert. Due to the presence of shallow rock, a bottomless culvert is more appropriate than a box culvert.

B. Build Alternatives

Three alternatives were considered as shown in Figures 2A, 2B, and 2C.

Alternative 1a
Alternative 1a proposes to construct a bottomless culvert at the existing location utilizing an off-site detour for maintenance of traffic during construction. The culvert length is approximately 108 ft. with a skew of 145 degrees. A portion of the foundation for this culvert will require piles to support the culvert footing due to an area of deep rock in the western quadrant.

Alternative 1a would require design exceptions for minimum horizontal radius and for horizontal sight distance. The substandard curve at the eastern approach allows for an operating speed of 15 mph design speed for Alternative 1a.

NCDOT Guidelines for Evaluation of Offsite Detours for Bridge Replacement Projects considers multiple project variables beginning with the additional time traveled by the average road user resulting from the offsite detour. The offsite detour for this project would include Ferguson Road (SR 1507), Cat Creek Road (SR 1513), and US 23/441. The majority of traffic on the road is through-traffic. The detour for the average road user would result in 4 minutes additional travel time (2.6 miles additional travel). Up to a 12-month duration of construction is expected on this project.

Based on the Guidelines, the criteria above indicate that on the basis of delay alone, the detour is acceptable. Macon County Emergency Services along with Macon County Schools Transportation have also indicated that the detour is acceptable. NCDOT Division 14 has indicated the condition of all roads, bridges and intersections on the offsite detour are acceptable without improvement and concurred with the use of the detour.

Alternative 1b
Alternative 1b has a similar roadway alignment to Alternative 1a and will utilize an off-site detour. In Alternative 1b, the horizontal alignment has been improved slightly. The culvert length and skew are approximately 137 ft. and 140 degrees respectively. This alignment also attempts to eliminate the foundation problem detailed in Alternative 1a.

Alternative 1b would require design exceptions for minimum horizontal radius and for horizontal sight distance. The substandard curve at the eastern approach results in an operating speed of 25mph for Alternative 1b.

Alternative 2a (Preferred)
Alternative 2a proposes to construct the proposed culvert at a new alignment upstream of the existing bridge. Traffic can be maintained on the existing bridge for the majority of the project construction time. The culvert length is approximately 183 ft. with a skew of 155 degrees.

Alternative 2a has a longer construction limits than either of the other two feasible alternatives since the alignment of Alternative 2a contains a tangent connecting two curves thereby eliminating the reverse curve. Elimination of the reverse curve results in an improved alignment that allows a 35 mph operating speed.

C. Alternatives Eliminated from Further Study

Alternative 2b (Bridge Option)
Replacing Bridge No. 65 with a bridge using the same alignment proposed in Alternative 2a was eliminated as a reasonable and feasible alternative. Although the proposed culvert in Alternative 2a is long, any cost savings realized by using a bridge would be offset by either extensive retaining walls required to maintain driveway access or by the approximately ten property takes along Lockwood Drive if the road could not be reconnected.

The "do-nothing" alternative will eventually necessitate removal of the bridge effectively removing this section of SR 1513 from traffic service.

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

D. Preferred Alternative

Alternative 2a, construct the proposed culvert at a new alignment upstream of the existing bridge, is the preferred alternative since the horizontal alignment would be greatly improved and no design exceptions would be required. Although this alternative is the most expensive, this alignment is safer.

Alternatives 1A and 1B would have little if any improvement over the existing poor conditions and an operating speed lower than the existing posted speed of 35mph. Alternative 2a will meet a design speed of 40mph and eliminate the sharp curve on the eastern approach.

Division 14 concurs with Alternative 2a as the preferred alternative.

E. Design Exceptions

The preferred alternative, Alternative 2a, will not require any design exceptions. Alternative 2a will meet a design speed of 40mph based on the current posting of 35mph.

IV. ESTIMATED COSTS

The estimated costs, based on current prices, are shown in Table 1.

Table 1: Estimated Costs

	Alternative 1A	Alternative 1B	Alternative 2a **(Preferred)**
Structure Removal (existing)	13,000	13,000	13,000
Structure (proposed)	498,000	686,000	885,000
Retaining Walls	185,000	205,000	40,000
Roadway Approaches	197,000	209,000	254,000
Miscellaneous and Mobilization	193,000	229,000	255,000
Engineering and Contingencies	164,000	208,000	203,000
ROW/Const. Easements/Utilities	81,000	81,000	* 229,000
TOTAL	$ 1,331,000	$ 1,631,000	$ 1,879,000

* The right-of-way cost for Alternative 2a will be significantly lower since the design has been revised to eliminate the take of a residence. This difference will be $15,000 for relocation plus acquisition, land, and damages.

V. NATURAL RESOURCES

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

Field investigations along the project study area were conducted by qualified biologists during the months of August 2001 and May 2002. Pedestrian surveys were undertaken to determine natural resource conditions and to document natural communities, wildlife, and the presence of protected species or their habitats. Information concerning the occurrence of federal protected species was updated by the USFWS on April 27, 2006. Supplemental field investigations consisting of pedestrian surveys were conducted in May 2003, October 2004, and May 2007.

A. Water Resources

A.1. Water Impacted

The project study area is situated in NCDWQ Subbasin 04-04-01. Rabbit Creek is the only surface water in the project area and is identified by the NCDWQ Stream Index #2-23.

A.2. Water Resources Characteristics

Rabbit Creek is approximately 15 to 20 ft. wide and 1 to 3 ft. deep in the project area. The stream appears to have been channelized and straightened. The banks are approximately 10 ft. high and appear to be eroded. The stream bed consists of cobble, gravel, sand, and silt. The water was cloudy with a heavy sediment load and a moderate flow. NCDWQ classifies surface waters of the state based on their intended best uses. Rabbit Creek is classified as "C-Tr" waters. Class C denotes waters suitable for all

general uses including aquatic life propagation and survival, fishing, wildlife, secondary recreation, and agriculture. "Tr" denotes trout waters which are suitable for natural trout propagation and the maintenance of stocked trout.

No High Quality Waters (HQW), Water Supplies (WS-I or WS-II), or Outstanding Resource Waters (ORW) occur within the project vicinity.

The Ambient Monitoring System (AMS) is a network of stream, lake, and estuarine water quality monitoring stations strategically located for the collection of physical and chemical water quality data. The type of water quality data or parameters collected is determined by the water bodies' classification and corresponding water quality standards. The AMS determines the "use support" status of water bodies, meaning how well a water body supports its designated uses. The waters in the project area are currently rated as *Supporting-Threatened* (ST). Waters designated "ST" fully support their intended uses but may not in the future unless pollution prevention measures are incorporated.

There were no benthic macroinvertebrate sampling areas near the project area or within the Rabbit Creek watershed. A lake monitoring investigation was conducted in 1994 at Lake Emory, an impoundment of the Little Tennessee River. Rabbit Creek empties into Lake Emory about one mile downstream of the project area. The study revealed decreases in levels of suspended solids, nutrients and chlorophyll *a* from an earlier study conducted in 1988. However, it also was observed that the lake appeared to be filling in and becoming a wetland. This was attributed to poor upstream erosion control and correlated with high measured levels of suspended and floating solids (NCDWQ, 1997).

Point source dischargers located throughout North Carolina are regulated through the National Pollutant Discharge Elimination System (NPDES) program. Dischargers are required by law to register for a permit. According to NCDWQ (1997), there are 44 permitted NPDES dischargers in Subbasin 04-04-01. The Holly Springs Golf Village (<0.5 Million Gallons per Day), located on Cat Creek within one mile upstream of the project location, is the only NPDES discharger near the project area.

A.3. Anticipated Impacts to Water Resources

The proposed project is expected to impact both soils and topography. The local topography is relatively flat with little change 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 along the creek.

The primary sources of water quality degradation in rural areas are agriculture and construction. Proposed replacement of the bridge will disturb the soil and may remove some of the forested lands. This may cause water quality degradation from runoff and sedimentation. Also, impervious areas such as a bridge can introduce other elements of degradation to water resources. These elements 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.

Precautions should be taken to minimize impacts to water resources in the project vicinity. Aquatic organisms are very sensitive to discharges and inputs resulting from construction. Appropriate measures must be taken to avoid spillage and control runoff. Potential impacts associated with construction of the proposed project include the following: increased sedimentation, soil compaction, and loss of shading due to vegetation removal. Measures to minimize these potential impacts include the formulation of an erosion and sedimentation control plan provision for waste material and storage, stormwater management measures, and appropriate road-maintenance measures. NCDOT's *Best Management Practices for Protection of Surface Waters* (BMPs –PSW) and Sedimentation Control guidelines should be strictly enforced during the construction stages of the project.

A.4. Impacts Related to Bridge Demolition and Removal

In order to protect the water quality and aquatic life in the area affected by this project, the NCDOT and all contractors will follow appropriate guidelines for bridge demolition and removal.

The existing structure consists of a timber deck on I-beams supported on yount masonry abutments. The bridge will be removed without dropping components into Waters of the United States.

Rabbit Creek is designated as "C-Tr" waters by DWQ. As per the NCWRC, Macon County is a Mountain Water County. However, since Rabbit Creek is not hatchery supported or wild trout waters, no moratoriums are required. In order to minimize potential impacts to water resources in the project study area, NCDOT's BMP-PSW will be strictly enforced during the construction phase of the project. Limiting in-stream activities and revegetating stream banks immediately following the completion of grading can further reduce impacts.

B. Special Topic

B.1. Waters of the United States

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.

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 stream bed and bank, aquatic life, and groundwater flow or discharge. Rabbit Creek is the only perennial stream identified in the project area.

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

B.2. Impacts to Waters of the United States

Temporary and permanent impacts to surface waters are estimated based on the amount of jurisdictional surface water contained within the project study area. Estimated surface water impacts are approximately 0.04 acres along 100 linear feet of stream channel. Some temporary impacts to Rabbit Creek may be anticipated for channel stabilization. There are no special restrictions on bridge demolition activities associated with this project beyond those outlined in BMPs-PSW. As per the BMPs, all methods of demolition shall be considered and implemented where practical, other than dropping the bridge in the water.

There are no jurisdictional wetlands in the project area; thus, there are no impacts to jurisdictional wetlands associated with this bridge replacement.

B.3. Permits

Impacts to "Waters of the United States" come under the jurisdiction of the USACE. Permits will be required for highway encroachment into wetland communities. The Nationwide Permit No. 23 (Approved Categorical Exclusions) should cover the secondary impacts to jurisdictional streams in the project area. Nationwide Permit No. 33 (Temporary Construction, Access, and Dewatering) may be needed for temporary construction access. Final permitting decisions are left to the discretionary authority of the USACE.

A Section 401 General Water Quality Certification is also required for any activity which may result in a discharge into "Waters of the United States" or for which an issuance of a federal permit or license is issued. Certifications are administered through the NCDWQ.

Final determination of permit applicability lies with the USACE. NCDOT will coordinate with the USACE after the completion of final design to obtain the necessary permits.

Macon County is listed by the North Carolina Wildlife Resources Commission (NCWRC) as a county with Mountain Trout Waters (MTWs). No discharge activities will be authorized by Nationwide Permits within MTW counties without a letter of approval from the NCWRC and written concurrence from the USACE Wilmington District Engineer.

C. 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 Macon County as of the May 10, 2007 listing. The NCNHP database, updated May 2006, provides the State status for each of these federally-protected species.

Bog Turtle (*Clemmys muhlenbergii*)
Federal Status: THREATENED (SIMILAR APPEARANCE)
State Status: THREATENED

Biological Conclusion: Not required
Suitable habitat for the bog turtle, consisting of wet muddy areas, is not present in the project study area. Review of NCNHP maps indicated no known populations of this species within one mile of the project area. This species will not be impacted as a result of project construction.

Spotfin chub (*Cyprinella monacha*)
Federal Status: THREATENED
State Status: THREATENED

Biological Conclusion: No Effect
NCDOT staff biologists visited the project site and conducted a habitat and site evaluation on October 15, 2004. No preferred spotfin chub habitat was observed in the project vicinity. NCNHP records indicate existing populations of spotfin chub at six different locations within a 5-mile radius of the bridge; however, these locations are all downstream of (below) Lake Emory which is located on the Little Tennessee River.

Indiana bat (*Myotis sodalis*)
Federal Status: ENDANGERED
State Status: ENDANGERED

Biological Conclusion: No Effect
Wooded riparian and bottomland hardwood areas are present within the study area; therefore, suitable habitat is available within the study area for the Indiana bat. NCNHP has no records of any known populations of the Indiana bat within a 1-mile radius of the project area. A field visit was conducted to the project area in late spring/summer 2002 and it was determined that no suitable roosting area for Indiana bats is present. (NCDOT internal memorandum, 07/02/2002)

Appalachian elktoe (*Alasmidonta raveneliana)*
Federal Status: ENDANGERED
State Status: ENDANGERED

Biological Conclusion: No Effect
An aquatic survey by qualified biologists from NCDOT determined that there is inappropriate habitat for mussels due to the small stream size and high stream gradient at the project site (NCDOT internal memorandum, 03/15/2004). NCNHP has no records of any known populations of the Appalachian elktoe within a 1-mile radius of the project area.

Little-wing pearlymussel (*Pegias fabula*)
Federal Status: ENDANGERED
State Status: ENDANGERED

Biological Conclusion: No Effect
An aquatic survey by qualified biologists from NCDOT determined that there is inappropriate habitat for mussels due to the small stream size and high stream gradient at the project site (NCDOT internal memorandum, 03/15/2004). NCNHP has no records of any known populations of the little-wing pearlymussel within a 1-mile radius of the project area.

Small whorled pogonia (*Isotria medeoloides*)
Federal Status: THREATENED
State Status: ENDANGERED

Biological Conclusion: No Effect
Habitat for this species is open, dry, deciduous woods with acid soils, which is available in the southern portion of the project area. Review of NCNHP maps indicated no known populations of this species within a one-mile radius of the project area. Plant-by-plant surveys were conducted in May of 2002, 2003, and 2007; no specimens were observed.

Virginia spiraea (*Spiraea virginiana*)
Federal Status: THREATENED
State Status: ENDANGERED

Biological Conclusion: No Effect
Habitat needed to support the Virginia spiraea is present within the project area along Rabbit Creek. Plant-by-plant surveys for Virginia spiraea around the existing bridge location were conducted in August 2001, May 2003, and May 2007; no individuals were observed. NCNHP does not list any known occurrences of the species within a 2-mile radius of the project area. No impacts are expected to any population of Virginia spiraea from the proposed project

Rock gnome lichen (*Gymnoderme lineare*)
Federal Status: ENDANGERED
State Status: THREATENED

Biological Conclusion: No Effect
Suitable habitat in the form of bare rock faces either at high elevations where it is frequently exposed to fog, or (less frequently) deep river gorges does not exist in the project area. Subsequently, the average elevation of the project is approximately 2,035. Most populations are found at elevations above 5,000 feet.

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 federal agencies to take into account the effects of their undertakings (federally funded, licensed, or permitted projects) on properties listed in or eligible for inclusion in the National Register of Historic Places and to afford the Advisory Council on Historic Preservation a reasonable opportunity to comment on such undertakings.

B. Historic Architecture

In a memorandum dated January 24, 2002 the State Historic Preservation Officer (SHPO) conducted a search of their files and stated that they were aware of no structures of historical or architectural importance located within the planning area. Therefore, no further compliance with Section 106 is required. A copy of the SHPO memorandum is included in the Appendix.

C. Archaeology

The State Historic Preservation Officer (SHPO), in a memorandum dated January 24, 2002, stated that "There are no recorded archaeological sites within the project area. If the replacement is to be located along the existing alignment, it is unlikely that significant archaeological resources will be affected and no investigations recommended." The bridge will be replaced just upstream of the existing location. An archaeological survey is in progress as of July 2007. A copy of the SHPO memorandum is attached.

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.

This portion of SR 1513 is designated as Macon County Bicycle Route No. 37, Holly Spring; therefore it will include bicycle accommodations.

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, administer and implement 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 markers will be impacted during construction of this project.

There are no gaging stations on Rabbit Creek.

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). Prime farmland soil is found in the project limits, but since it is not protected from flooding, it is not considered prime farmland.

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

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

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

A field investigation and examination of records reveal that no underground storage tanks exist in the project study area.

Macon County is a participant in the National Flood Insurance Regular Program. This site on Rabbit Creek is not included in a detailed FEMA flood study.

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 newsletter was sent to property owners in the project vicinity to inform them of the project.

A Citizens Informational Workshop was held at the Macon County Courthouse Annex on May 20, 2003 where preliminary alternatives were reviewed and discussed with concerned citizens and local officials. Twenty-two (22) local citizens attended the Citizens Informational Workshop. Four citizens sent in comment sheets.

A second newsletter discussing the preferred alternative was sent to property owners in the project vicinity. Four responses were received. Two respondents were in favor of improving the alignment and two commenters felt that the current alignment was a deterrent to speeders. It was explained that a poor alignment is unsafe and would not be used for this purpose.

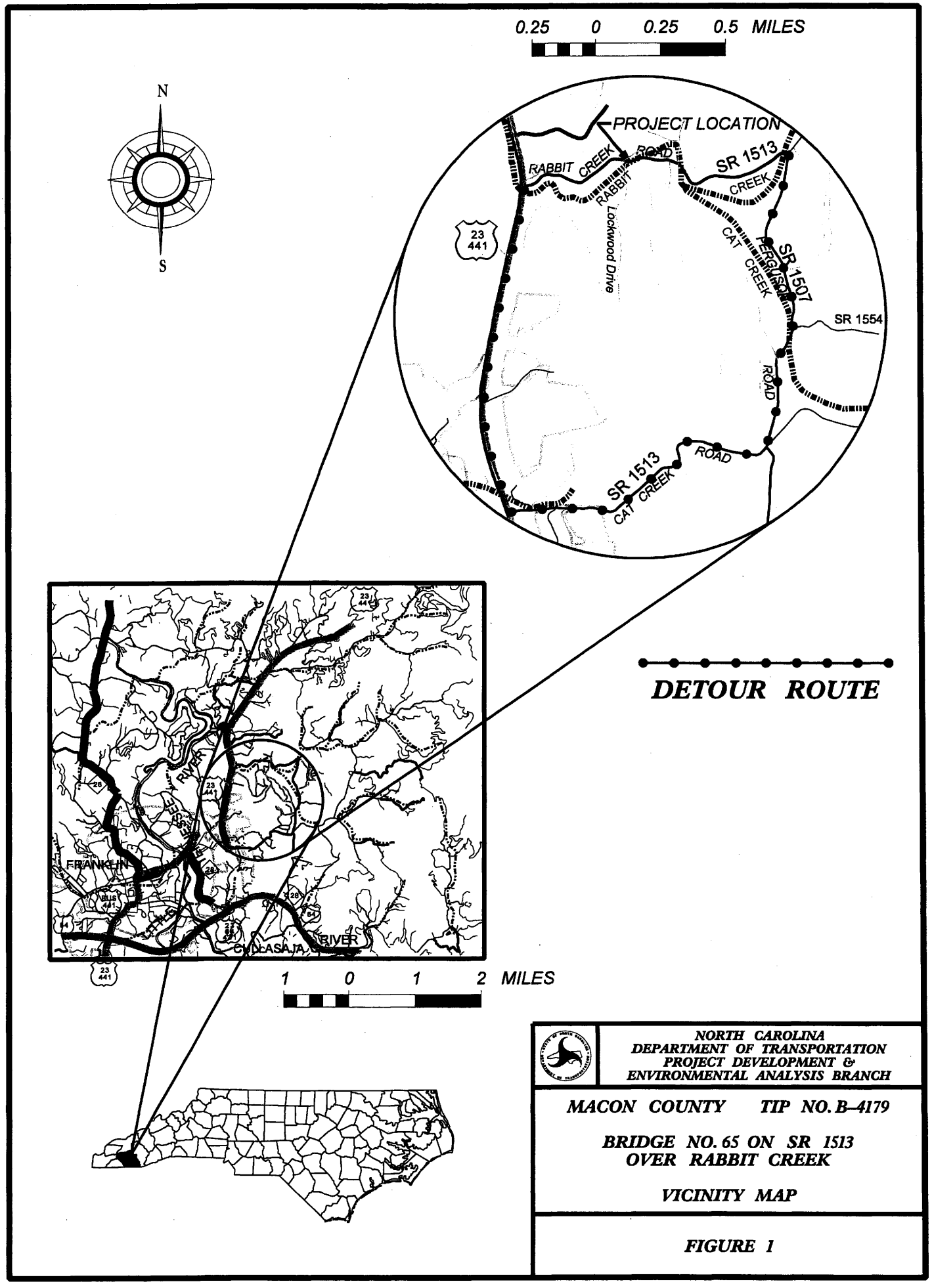
IX. AGENCY COMMENTS

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

1. United States Fish and Wildlife Service (USFWS)
Comment: *"Unresolved for listed species, FWS requests review of bridge design."*
Response: Species surveys have been completed. The USFWS will have the opportunity to review bridge plans. See Project Commitments.

2. Macon County Transportation Director
Comment: *"We can re-route buses to aid in the construction of the new bridge."*
Response: Culvert to be constructed downstream of existing bridge. Use of detour during construction will be limited.

3. Macon County Emergency Medical Service
Comment: *"Road closure will not hinder service."*
Response: Culvert to be constructed downstream of existing bridge. Use of detour during construction will be limited.



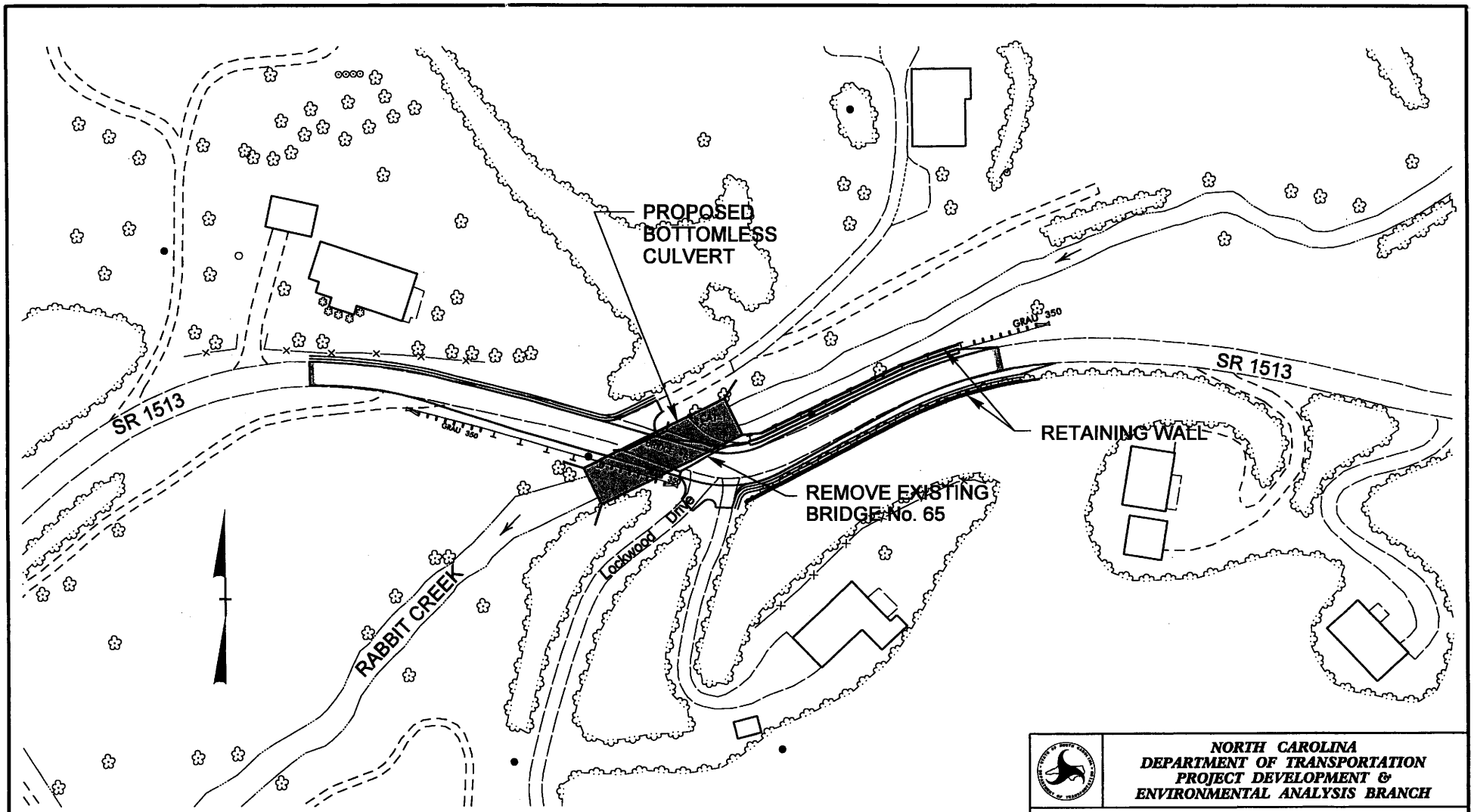
NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
PROJECT DEVELOPMENT &
ENVIRONMENTAL ANALYSIS BRANCH

MACON COUNTY TIP NO. B-4179

BRIDGE NO. 65 ON SR 1513
OVER RABBIT CREEK

VICINITY MAP

FIGURE 1



SCALE: 1"=100'

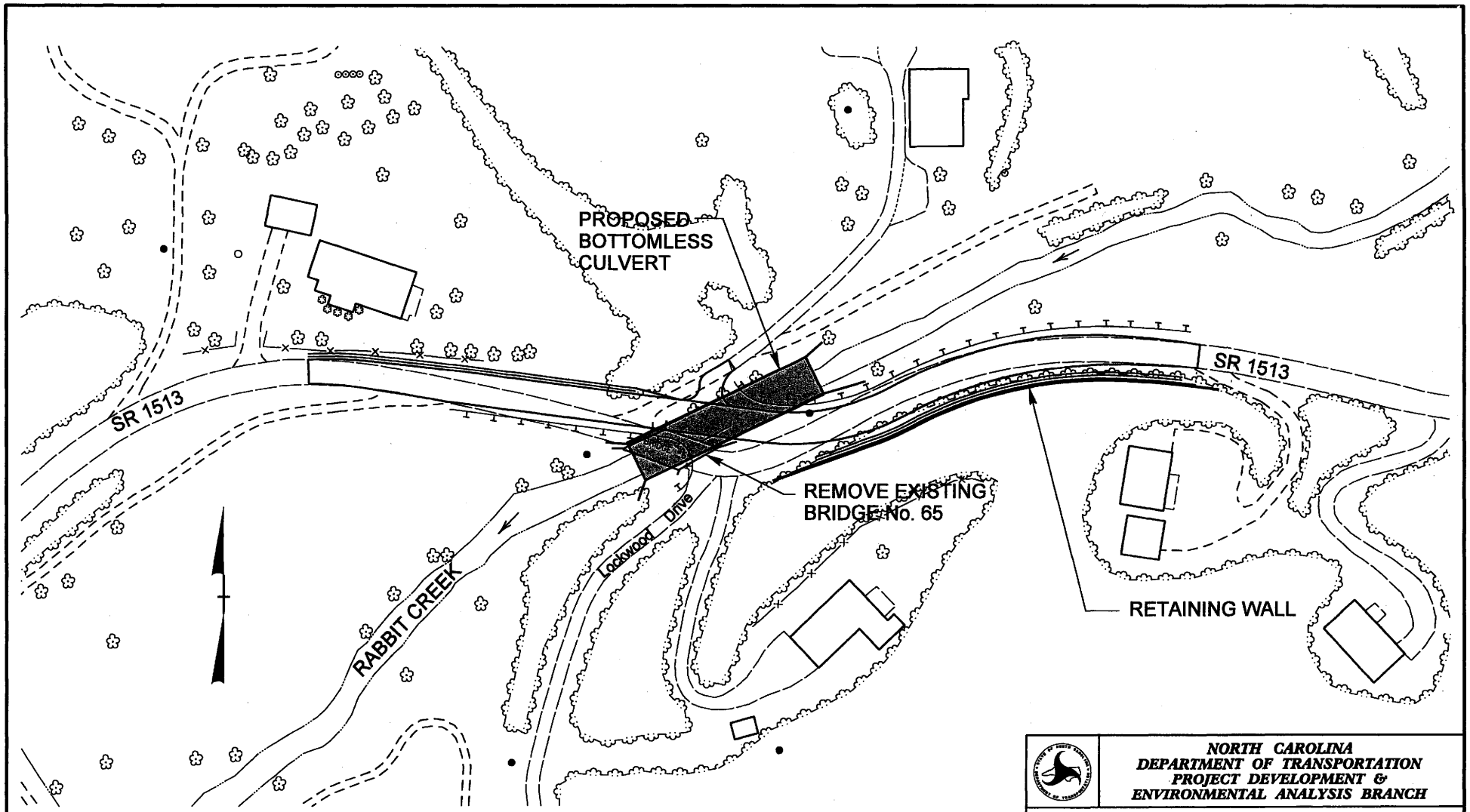
NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
PROJECT DEVELOPMENT &
ENVIRONMENTAL ANALYSIS BRANCH

MACON COUNTY TIP NO. B-4179

BRIDGE NO. 65 ON SR 1513
(RABBIT CREEK ROAD)
OVER RABBIT CREEK

ALTERNATIVE 1a

FIGURE 2A



SCALE: 1"=100'

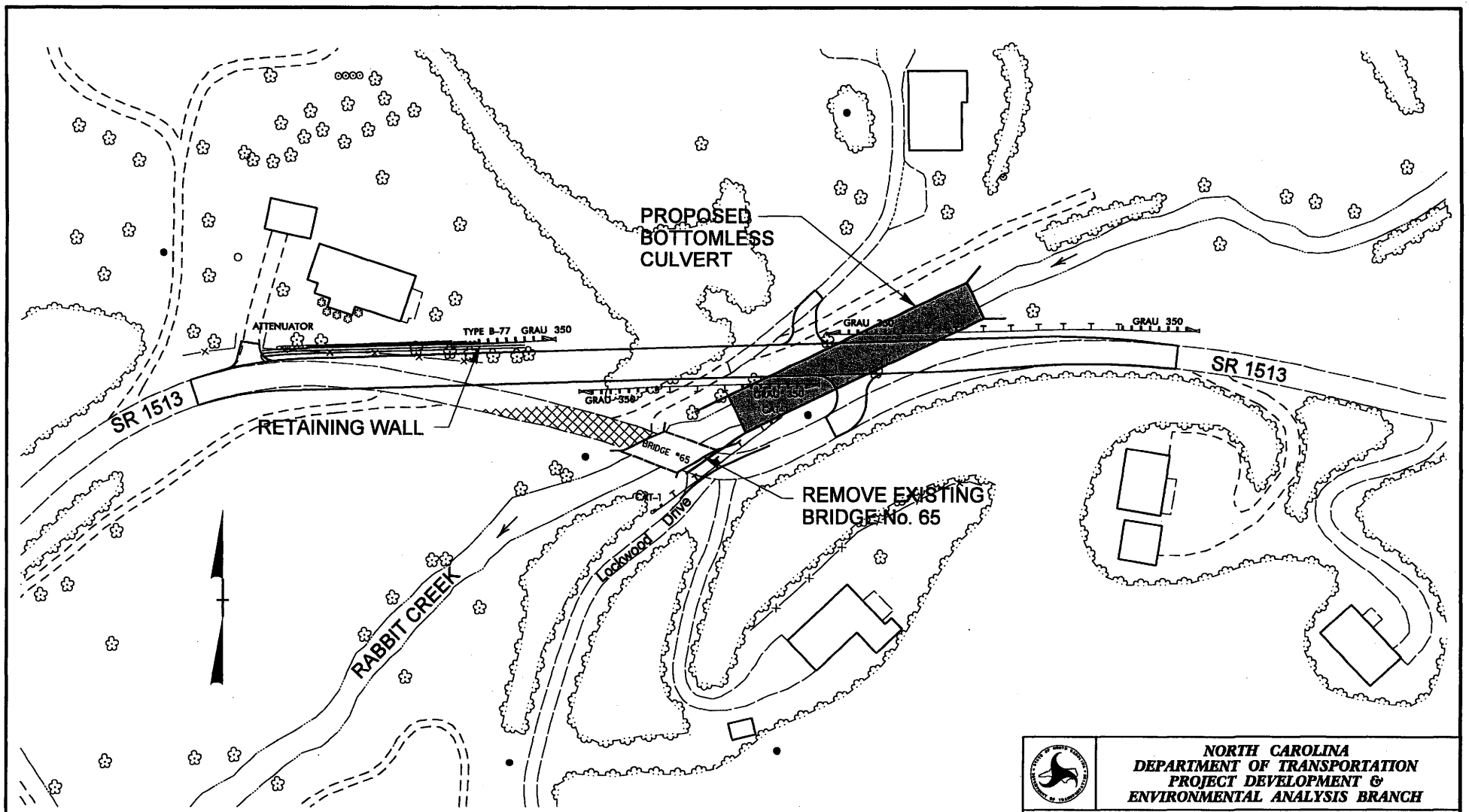
NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
PROJECT DEVELOPMENT &
ENVIRONMENTAL ANALYSIS BRANCH

MACON COUNTY TIP NO. B-4179

BRIDGE NO. 65 ON SR 1513
(RABBIT CREEK ROAD)
OVER RABBIT CREEK

ALTERNATIVE 1b

FIGURE 2B



SCALE: 1"=100'

NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
PROJECT DEVELOPMENT &
ENVIRONMENTAL ANALYSIS BRANCH

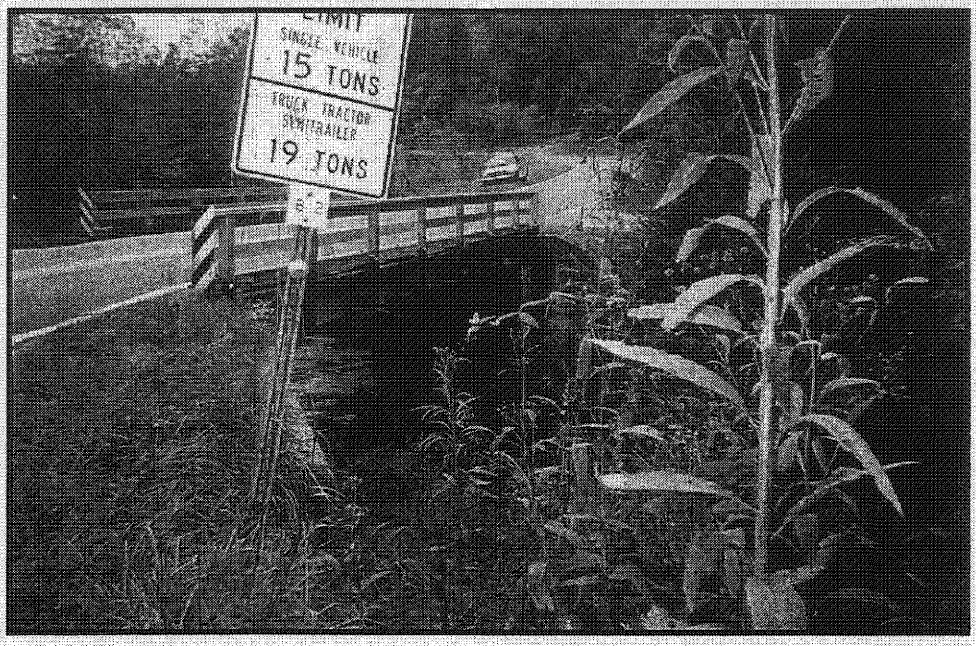
MACON COUNTY TIP NO. B-4179

BRIDGE NO. 65 ON SR 1513 (RABBIT CREEK ROAD) OVER RABBIT CREEK

ALTERNATIVE 2a (Preferred)

FIGURE 2C

DOWNSTREAM VIEW FROM BRIDGE



VIEW OF UP-STREAM SIDE OF BRIDGE

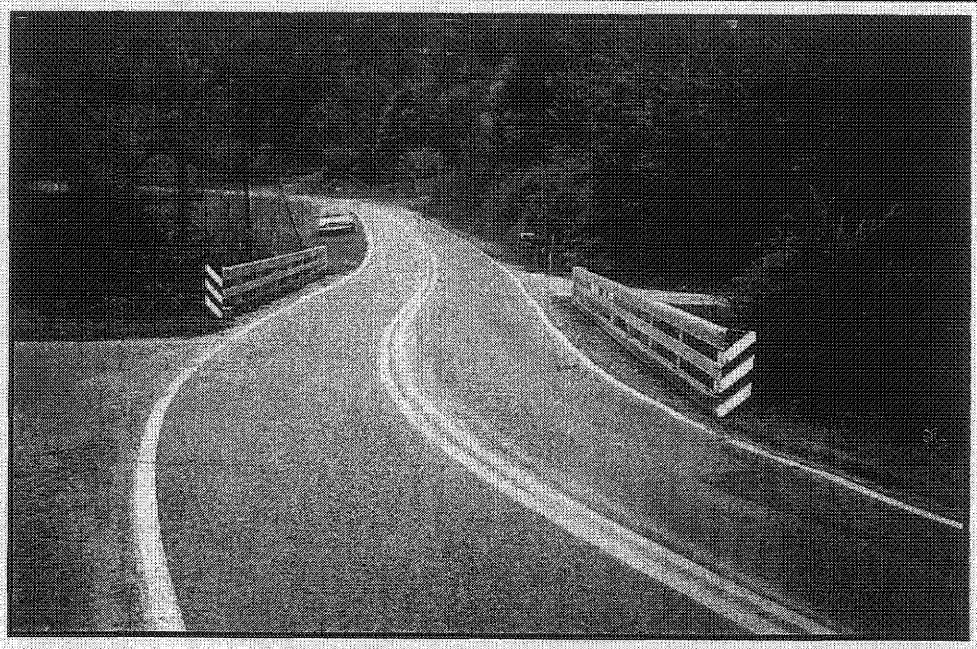
NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
PROJECT DEVELOPMENT &
ENVIRONMENTAL ANALYSIS

MACON COUNTY TIP NO. B-4179

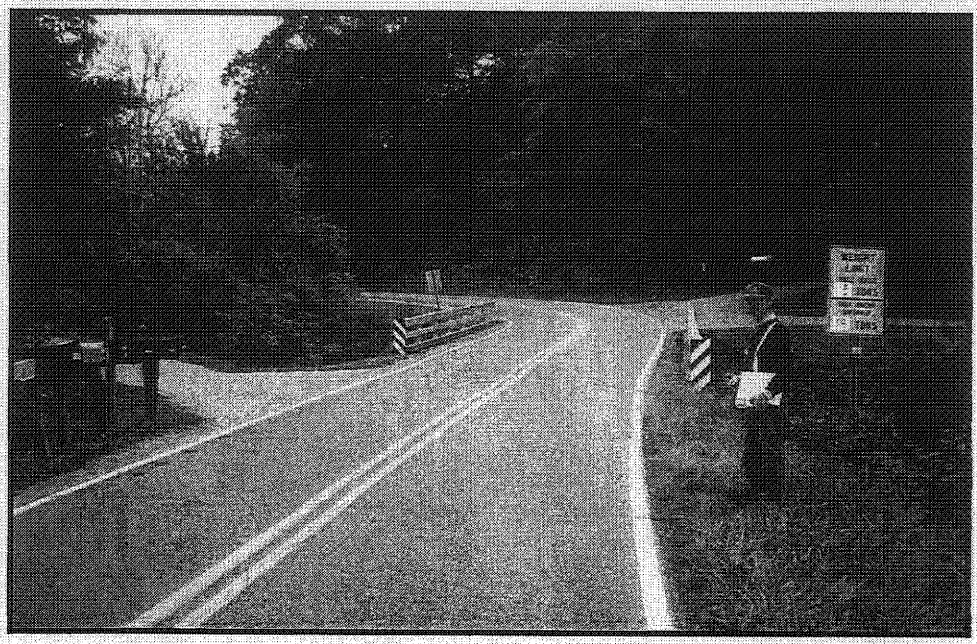
REPLACEMENT BRIDGE NO. 65 OVER RABBIT CREEK ON SR 1513

PHOTOGRAPHS

Figure 3A



VIEW OF WESTERN APPROACH



VIEW OF EASTERN APPROACH

NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
PROJECT DEVELOPMENT &
ENVIRONMENTAL ANALYSIS

MACON COUNTY TIP NO. B-4179

REPLACEMENT BRIDGE NO. 65 OVER RABBIT CREEK ON SR 1513

PHOTOGRAPHS

Figure 3B

North Carolina Department of Cultural Resources

State Historic Preservation Office

David L. S. Brook, Administrator

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

Division of Historical Resources
David J. Olson, Director

January 24, 2002

MEMORANDUM

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

FROM: David Brook for David Brook 5500605

SUBJECT: Bridge 65 on SR 1513 Replacement, B-4179, Macon County, ER 02-8515

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

There are no recorded archaeological sites within the project area. If the replacement is to be located along the existing alignment, it is unlikely that significant archaeological resources will be affected and no investigations recommended. If, however, the replacement is to be in a new location, please forward a map to this office indicating the location of the new alignment so we may evaluate the potential effects of the replacement upon archaeological resources. We have conducted a search of our files and are aware of no structures of historical or architectural importance located within the planning area.

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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.

	Location	Mailing Address	Telephone/Fax
Administration	507 N. Blount St. Raleigh, NC	4617 Mail Service Center. Raleigh 27699-4617	(919) 733-4763 •733-8653
Restoration	515 N. Blount St. Raleigh , NC	4613 Mail Service Center. Raleigh 27699-4613	(919) 733-6547 •715-4801
		4618 Mail Service Center. Raleigh 27699-4618	(919) 733-4763 •715-4801