



STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION

MICHAEL F. EASLEY  
GOVERNOR

LYNDO TIPPETT  
SECRETARY

July 22, 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: **Application for Nationwide Permit 23 and 33** for the replacement of Bridge No. 39 over Swannanoa River on NC 81 (Biltmore Avenue) in Buncombe County. Federal Project No. BRSTP-81(1), WBS Element 32643.1.1, Division 13, T.I.P. No. B-2515.

Please see the enclosed Pre-Construction Notification (PCN), Approved Jurisdictional Determination Form, permit drawings and design plans for the above referenced project. A Categorical Exclusion and Right of Way Consultation were completed for this project in 2005 and 2007, respectively, and distributed shortly thereafter. Additional copies are available upon request. The North Carolina Department of Transportation (NCDOT) proposes to replace the 123-foot, three-span Bridge No. 39 with a new 126-foot, single-span steel girder bridge over the Swannanoa River. The existing bridge will be replaced in place and traffic will be maintained with an on-site detour during construction. There will be 20 linear feet of permanent impacts to the Swannanoa River from pipe outlet protection and 0.05 acre of temporary impacts to the Swannanoa River from a temporary causeway.

**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](http://WWW.NCDOT.ORG)

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

## **IMPACTS TO WATERS OF THE UNITED STATES**

### General Description:

The single water resource impacted for project B-2515 is the Swannanoa River. The Swannanoa River is located in the French Broad River Basin (Division of Water Quality (DWQ) subbasin 04-03-02) and is approximately 70 feet wide and 3 feet deep within the project area. The DWQ Index number for this section of the Swannanoa River is 6-78 and the Hydrological Cataloguing Unit is 06010105. The DWQ classifies the Swannanoa River as "C". There are no High Quality Waters (HQW), Water Supplies (WS-I or WSII), Outstanding Resource Waters (ORW) or 303(d) streams within one mile of the project study area. No wetlands will be impacted by this project.

### Permanent Impacts:

There will be 20 linear feet of permanent impacts to the Swannanoa River as a result of outlet protection for two corrugated steel pipes.

### Temporary Impacts:

There will be 0.05 acre of temporary impacts to the Swannanoa River from a temporary causeway, which will be used to remove the existing bridge and piers.

### Bridge Demolition:

Bridge No. 39 consists of a three-span structure with reinforced concrete deck girders, vertical abutments and piers. The removal of the concrete abutments and piers may create some disturbance in the streambed. Temporary fill resulting from bridge demolition will be minimal due to the construction of a temporary workpad for bridge and pier removal. 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.

### Utility Impacts:

There will be no jurisdictional impacts associated with utilities for this project.

### Schedule:

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

## **FEDERALLY PROTECTED SPECIES**

Plants and animals with federal classifications of Endangered (E), Threatened (T), Proposed Endangered (PE) and Proposed Threatened (PT) are protected under provisions of Section 7 and Section 9 of the Endangered Species Act of 1973, as amended. As of January 31, 2008, the USFWS lists twelve federally protected species for Buncombe County (Table 1). Within the project area, there is habitat present for one species, spotfin chub. The project was last surveyed for spotfin chub on May 10, 2007. No individuals were found within the project area. Therefore, this project will have No Effect on spotfin chub. The biological conclusion for the eleven remaining species is No Effect due to lack of habitat.

**Table 1.** Federally Protected Species for Buncombe County

Common Name	Scientific Name	Status	Survey Notes	Biological Conclusion
Appalachian elktoe	<i>Alasmidonta raveneliana</i>	E	No Habitat	No Effect
Bog turtle	<i>Clemmys muhlenbergii</i>	T (S/A)	No Habitat	No Effect
Bunched arrowhead	<i>Sagittaria fasciculata</i>	E	No Habitat	No Effect
Carolina northern flying squirrel	<i>Glaucomys sabrinus coloratus</i>	E	No Habitat	No Effect
Eastern cougar	<i>Felis concolor cougar</i>	E	No Habitat	No Effect
Gray bat	<i>Myotis grisescens</i>	E	No Habitat	No Effect
Mountain sweet pitcher plant	<i>Sarracenia rubra jonesii</i>	E	No Habitat	No Effect
Rock gnome lichen	<i>Gymnoderma lineare</i>	E	No Habitat	No Effect
Spotfin chub	<i>Cyprinella monacha</i>	T	Habitat Present	No Effect
Spreading avens	<i>Geum radiatum</i>	E	No Habitat	No Effect
Tan riffleshell	<i>Epioblasma florentina walkei</i>	E	No Habitat	No Effect
Virginia spiraea	<i>Spiraea virginiana</i>	T	No Habitat	No Effect

Avoidance and Minimization:

Avoidance examines all appropriate and practicable possibilities of averting impacts to “Waters of the United States.” The NCDOT is committed to incorporating all reasonable and practicable design features to avoid and minimize jurisdictional stages; minimization measures were incorporated as part of the project design.

- The new bridge will be longer than the existing bridge, spanning the Swannanoa River.
- Water will not be directly discharged into the Swannanoa River via deck drains.

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

Compensatory Mitigation:

NCDOT proposes no mitigation for the 20 linear feet of permanent impacts to the Swannanoa River because the permanent impacts total less than 150 linear feet. In addition, the 20 linear feet of permanent impacts from the pipe outlet protection will not have a significant adverse effect in waters of the United States.

**REGULATORY APPROVALS**

Section 404 Permit:

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

Section 401 Permit:

We anticipate 401 General Certification numbers 3688 and 3701 will apply to this project. Therefore, in accordance with 15A NCAC 2H .0501(a) we are providing two copies of this application to the North Carolina Department of Environmental and Natural Resources, Division of Water Quality, for their records. The NCDOT will adhere to all general conditions of the Water Quality Certifications.

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

A copy of this application will be posted on the NCDOT website at <http://www.ncdot.org/doh/preconstruct/pe/neu/permit.html>.

Thank you for your assistance with this project. If you have any questions or need additional information, please contact Erin Cheely at [ekcheely@ncdot.gov](mailto:ekcheely@ncdot.gov) or (919) 715-5529.

Sincerely,

*for* 

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

cc:

W/attachment

Mr. Brian Wrenn, NCDWQ (2 Copies)  
Ms. Marella Buncick, USFWS  
Ms. Marla Chambers, NCWRC  
Mr. Harold Draper, TVA 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.J. Swain, P.E., Division Engineer  
Mr. Roger Bryan, 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  
Mr. Joseph Miller, P.E., PDEA Project Planning 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:

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

2. Nationwide, Regional or General Permit Number(s) Requested:   NW 23 and 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: 1598 Mail Service Center  
\_\_\_\_\_  
\_\_\_\_\_  
Telephone Number: (919) 733-3141 Fax Number: (919) 733-9794  
E-mail Address: ekcheely@ncdot.gov

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

Name: \_\_\_\_\_  
Company Affiliation: \_\_\_\_\_  
Mailing Address: \_\_\_\_\_  
\_\_\_\_\_  
Telephone Number: \_\_\_\_\_ Fax Number: \_\_\_\_\_  
E-mail Address: \_\_\_\_\_

**III. Project Information**

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

1. Name of project: Bridge No. 39 over the Swannanoa River on NC 81
2. T.I.P. Project Number or State Project Number (NCDOT Only): B-2515
3. Property Identification Number (Tax PIN): N/A
4. Location  
County: Buncombe Nearest Town: Asheville  
Subdivision name (include phase/lot number): N/A  
Directions to site (include road numbers/names, landmarks, etc.):
5. Site coordinates (For linear projects, such as a road or utility line, attach a sheet that separately lists the coordinates for each crossing of a distinct waterbody.)  
Decimal Degrees (6 digits minimum): 35°34'07.58" °N -82°32'39.53" °W
6. Property size (acres): N/A
7. Name of nearest receiving body of water: French Broad River
8. River Basin: French Broad River Basin  
(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/.](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: 95% urban/developed, 5% riparian forest

10. Describe the overall project in detail, including the type of equipment to be used: Standard construction equipment will be used (backhoes, bulldozers, cranes and/or other heavy machinery)
11. Explain the purpose of the proposed work: The purpose of the project is to replace a functionally deficient and structurally obsolete structure (sufficiency rating 27.3 out of 100).

#### **IV. Prior Project History**

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

#### **V. Future Project Plans**

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

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

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

1. Provide a written description of the proposed impacts: Permanent: 20 linear feet (<0.01 acre) of impact to the Swannanoa River due to pipe outlet protection. Temporary: 0.05 acre of impact due to temporary causeway in the Swannanoa River.

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)
No Wetlands					
Total Wetland Impact (acres)					

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

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

Stream Impact Number (indicate on map)	Stream Name	Type of Impact	Perennial or Intermittent?	Average Stream Width Before Impact	Impact Length (linear feet)	Area of Impact (acres)
Site 1	Swannanoa River	Temporary	Perennial	70 ft.	65	0.05
Site 2	Swannanoa River	Permanent	Perennial	70 ft.	10	<0.01
Site 3	Swannanoa River	Permanent	Perennial	70 ft.	10	<0.01
Total Permanent Stream Impact (by length and acreage)					20	<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)
No open water impacts				
Total Open Water Impact (acres)				

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

Stream Impact (acres):	0.05 (temp) <0.01 (permanent)
Wetland Impact (acres):	0
Open Water Impact (acres):	0
Total Impact to Waters of the U.S. (acres)	0.05 (temp) <0.01 (permanent)
Total Stream Impact (linear feet):	65 (temp) 20 (permanent)

7. Isolated Waters

Do any isolated waters exist on the property?  Yes  No

Describe all impacts to isolated waters, and include the type of water (wetland or stream) and the size of the proposed impact (acres or linear feet). Please note that this section only applies to waters that have specifically been determined to be isolated by the USACE.

N/A

8. Pond Creation

If construction of a pond is proposed, associated wetland and stream impacts should be included above in the wetland and stream impact sections. Also, the proposed pond should be described here and illustrated on any maps included with this application.

Pond to be created in (check all that apply):  uplands  stream  wetlands

Describe the method of construction (e.g., dam/embankment, excavation, installation of draw-down valve or spillway, etc.): \_\_\_\_\_

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

Current land use in the vicinity of the pond: \_\_\_\_\_

Size of watershed draining to pond: \_\_\_\_\_ Expected pond surface area: \_\_\_\_\_

## VII. Impact Justification (Avoidance and Minimization)

Specifically describe measures taken to avoid the proposed impacts. It may be useful to provide information related to site constraints such as topography, building ordinances, accessibility, and financial viability of the project. The applicant may attach drawings of alternative, lower-impact site layouts, and explain why these design options were not feasible. Also discuss how impacts were minimized once the desired site plan was developed. If applicable, discuss construction techniques to be followed during construction to reduce impacts. The new bridge will be longer than the old bridge and will span the Swannanoa River. No deck drains will be used and NCDOT's Best Management Practices will be followed. A temporary work pad will minimize in-stream activities during construction.

## VIII. Mitigation

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

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

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

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

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

No mitigation is proposed for this project because the 20 linear feet of impacts from the pipe outlet protection will not cause an adverse effect or significant loss of waters of the United States.

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

Amount of stream mitigation requested (linear feet): 0  
Amount of buffer mitigation requested (square feet): 0  
Amount of Riparian wetland mitigation requested (acres): 0  
Amount of Non-riparian wetland mitigation requested (acres): 0  
Amount of Coastal wetland mitigation requested (acres): 0

**IX. Environmental Documentation (required by DWQ)**

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

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

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

1. Will the project impact protected riparian buffers identified within 15A NCAC 2B .0233 (Neuse), 15A NCAC 2B .0259 (Tar-Pamlico), 15A NCAC 02B .0243 (Catawba) 15A NCAC 2B .0250 (Randleman Rules and Water Supply Buffer Requirements), or other (please identify \_\_\_\_\_)? Yes  No
2. If "yes", identify the square feet and acreage of impact to each zone of the riparian buffers. If buffer mitigation is required calculate the required amount of mitigation by applying the buffer multipliers.

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

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

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

**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 surfaces will not significantly increase as a result of this project. There will be no deck drains installed.

**XII. Sewage Disposal (required by DWQ)**

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

**XIII. Violations (required by DWQ)**

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

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

**XIV. Cumulative Impacts (required by DWQ)**

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

**XV. Other Circumstances (Optional):**

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



7.21.08

**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-2515, Replacement of Bridge No. 39 over the Swannanoa River on NC18**

**C. PROJECT LOCATION AND BACKGROUND INFORMATION:**

State: North Carolina County/parish/borough: Buncombe City: Asheville  
Center coordinates of site (lat/long in degree decimal format): Lat. 35 34 07.58° **N**, Long. -82 32 39.53° **W**.  
Universal Transverse Mercator:

Name of nearest waterbody: Swannanoa River

Name of nearest Traditional Navigable Water (TNW) into which the aquatic resource flows:

Name of watershed or Hydrologic Unit Code (HUC):

- 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:  
 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:

**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):<sup>1</sup>**

- TNWs, including territorial seas  
 Wetlands adjacent to TNWs  
 Relatively permanent waters<sup>2</sup> (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: 1000 linear feet: 70 width (ft) and/or acres.  
Wetlands: acres.

**c. Limits (boundaries) of jurisdiction based on: **Established by OHWM.****

Elevation of established OHWM (if known):

**2. Non-regulated waters/wetlands (check if applicable):<sup>3</sup>**

- Potentially jurisdictional waters and/or wetlands were assessed within the review area and determined to be not jurisdictional.  
Explain:

<sup>1</sup> Boxes checked below shall be supported by completing the appropriate sections in Section III below.

<sup>2</sup> 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).

<sup>3</sup> 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<sup>4</sup> 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<sup>5</sup>: \_\_\_\_\_ .

Tributary stream order, if known: \_\_\_\_\_ .

<sup>4</sup> Note that the Instructional Guidebook contains additional information regarding swales, ditches, washes, and erosional features generally and in the arid West.

<sup>5</sup> 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):

- |  |  |                                   |
|--|--|-----------------------------------|
| <input type="checkbox"/> Silts           | <input type="checkbox"/> Sands                     | <input type="checkbox"/> Concrete |
| <input type="checkbox"/> Cobbles         | <input type="checkbox"/> Gravel                    | <input type="checkbox"/> Muck     |
| <input type="checkbox"/> Bedrock         | <input type="checkbox"/> Vegetation. Type/% cover: |                                   |
| <input type="checkbox"/> Other. Explain: |  |                                   |

Tributary condition/stability [e.g., highly eroding, sloughing banks]. Explain:

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):

- |   |   |
|---|---|
| <input type="checkbox"/> Bed and banks  |   |
| <input type="checkbox"/> OHWM <sup>6</sup> (check all indicators that apply): |   |
| <input type="checkbox"/> clear, natural line impressed on the bank            | <input type="checkbox"/> the presence of litter and debris          |
| <input type="checkbox"/> changes in the character of soil                     | <input type="checkbox"/> destruction of terrestrial vegetation      |
| <input type="checkbox"/> shelving   | <input type="checkbox"/> the presence of wrack line                 |
| <input type="checkbox"/> vegetation matted down, bent, or absent              | <input type="checkbox"/> sediment sorting                           |
| <input type="checkbox"/> leaf litter disturbed or washed away                 | <input type="checkbox"/> scour                                      |
| <input type="checkbox"/> sediment deposition                                  | <input type="checkbox"/> multiple observed or predicted flow events |
| <input type="checkbox"/> water staining                                       | <input type="checkbox"/> abrupt change in plant community           |
| <input type="checkbox"/> other (list):  |   |
| <input type="checkbox"/> Discontinuous OHWM. <sup>7</sup> Explain:            |   |

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

- |  |  |
|--|--|
| <input checked="" type="checkbox"/> High Tide Line indicated by:   | <input checked="" type="checkbox"/> Mean High Water Mark indicated by: |
| <input type="checkbox"/> oil or scum line along shore objects      | <input type="checkbox"/> survey to available datum;                    |
| <input type="checkbox"/> fine shell or debris deposits (foreshore) | <input type="checkbox"/> physical markings;                            |
| <input type="checkbox"/> physical markings/characteristics         | <input type="checkbox"/> vegetation lines/changes in vegetation types. |
| <input type="checkbox"/> tidal gauges                              |  |
| <input type="checkbox"/> 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:

<sup>6</sup>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.

<sup>7</sup>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: **Pick List**. Explain:

Surface flow is: **Pick List**

Characteristics:

Subsurface flow: **Pick List**. 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: The NCDWQ stream form score for the Swannanoa River is >30.

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: **1000** linear feet **70** width (ft).  
 Other non-wetland waters:        acres.  
Identify type(s) of waters:        .

**3. Non-RPWs<sup>8</sup> 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 jurisdictional. 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.<sup>9</sup>**

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):<sup>10</sup>**

- 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:**        .

<sup>8</sup>See Footnote # 3.

<sup>9</sup>To complete the analysis refer to the key in Section III.D.6 of the Instructional Guidebook.

<sup>10</sup> 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.

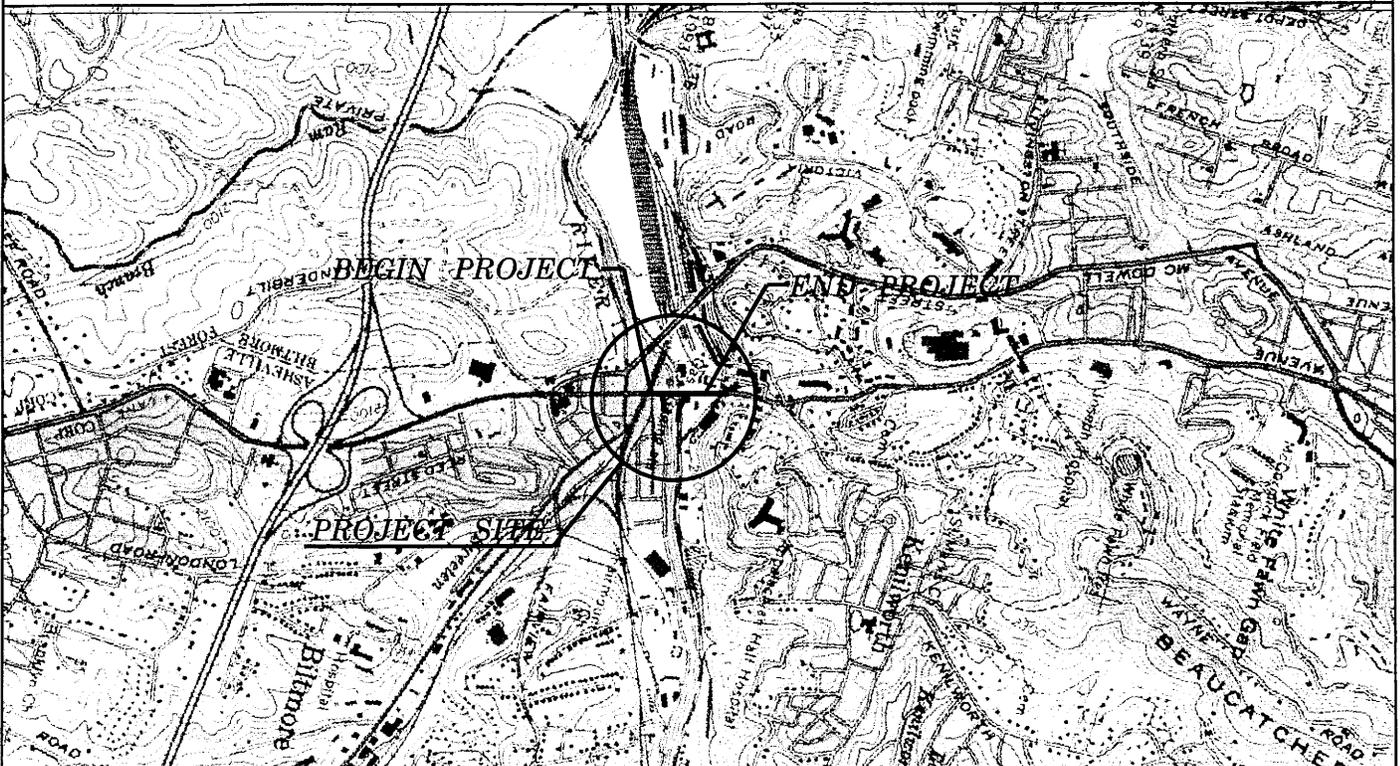
**SECTION IV: DATA SOURCES.**

**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:**

# NORTH CAROLINA



## VICINITY MAPS

Permit Drawing  
Sheet 1 of 10

**NCDOT**  
DIVISION OF HIGHWAYS  
BUNCOMBE COUNTY  
PROJECT: C202024 (B-2515)  
BRIDGE NO.39 OVER  
SWANANOA RIVER ON  
NC 81(BILTMORE AVENUE)

SHEET

OF

3 / 28 / 08

# PROPERTY OWNERS

NAMES AND ADDRESSES

PARCEL NO.	NAMES	ADDRESSES
2	HERSCHEL SUITS	24 HIGHBRIDGE CROSSING APT 1316 ASHEVILLE, NC 28803
3	LONG JOHN SILVERS INC	PO BOX 35370 LOUISVILLE KY 40232
4	BILTMORE AVENUE LLC	PO BOX 15012 ASHEVILLE NC 28813

Permit Drawing  
Sheet 2 of 10

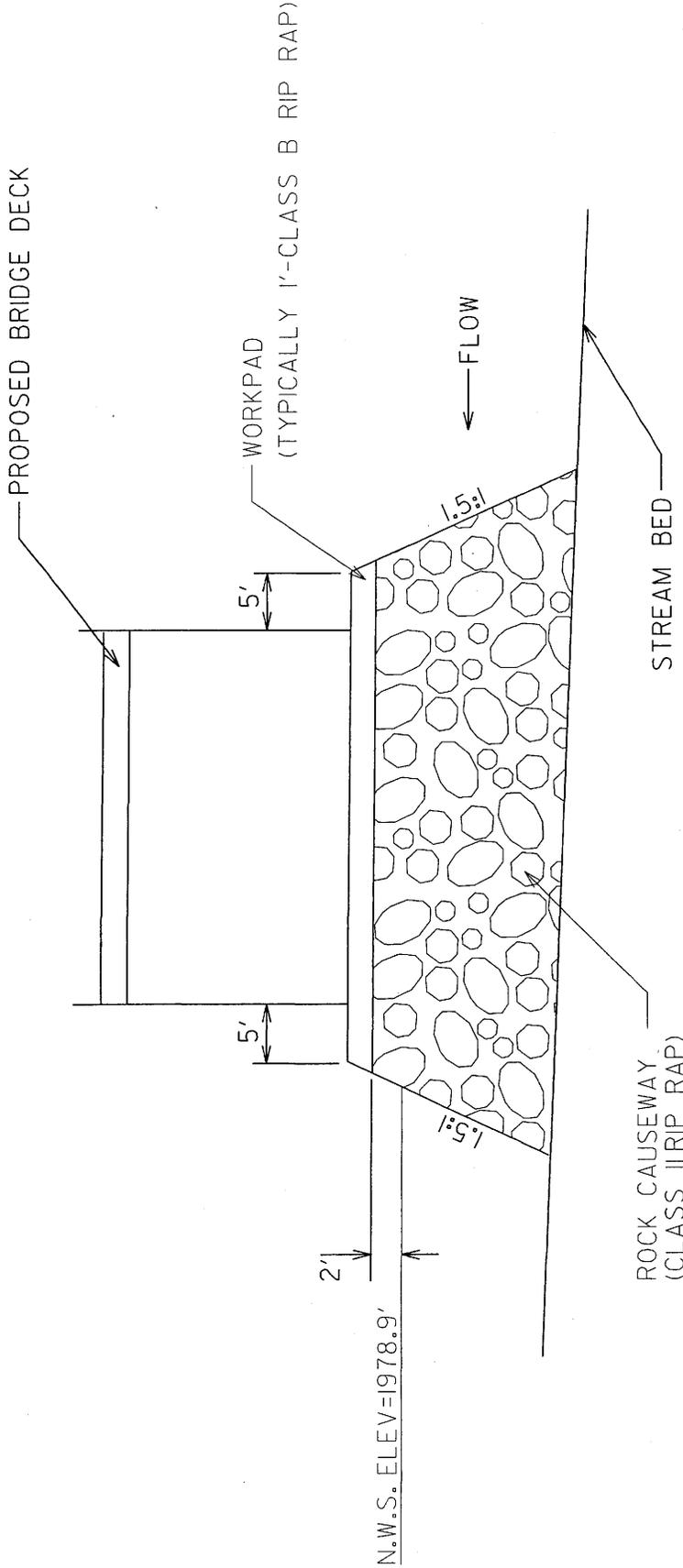
**NCDOT**  
DIVISION OF HIGHWAYS  
BUNCOMBE COUNTY  
PROJECT: C202024 (B-2515)  
BRIDGE NO.39 OVER  
SWANANOA RIVER ON  
NC 81(BILTMORE AVENUE)

SHEET

OF

3 / 28 / 08

**WORKPAD DETAIL  
(NOT TO SCALE)**



**NCDOT**

**DIVISION OF HIGHWAYS  
CABARRUS COUNTY  
PROJECT: 8.2661601 (R-2246C)  
CONCORD-KANNAPOLIS  
WESTSIDE BYP EXT FROM  
SR 1431 TO SR 1555**

QUANTITIES OF ESTIMATES  
VOLUME OF CLASS II RIP RAP= 900 cy  
AREA OF CLASS II RIP RAP= 0.11 ac  
ESTIMATE 1220 TONS CLASS II RIP RAP

**SHEET**

**OF**

**10 / 16 / 01**

**Permit Drawing  
Sheet 3 of 10**



09/28/99

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

STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

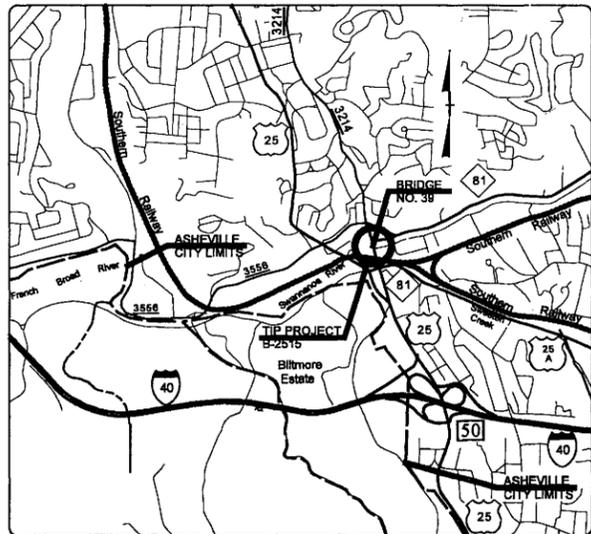
**BUNCOMBE COUNTY**

LOCATION: BRIDGE NO. 39 OVER SWANNANOA RIVER  
ON NC 81 (BILTMORE AVENUE)

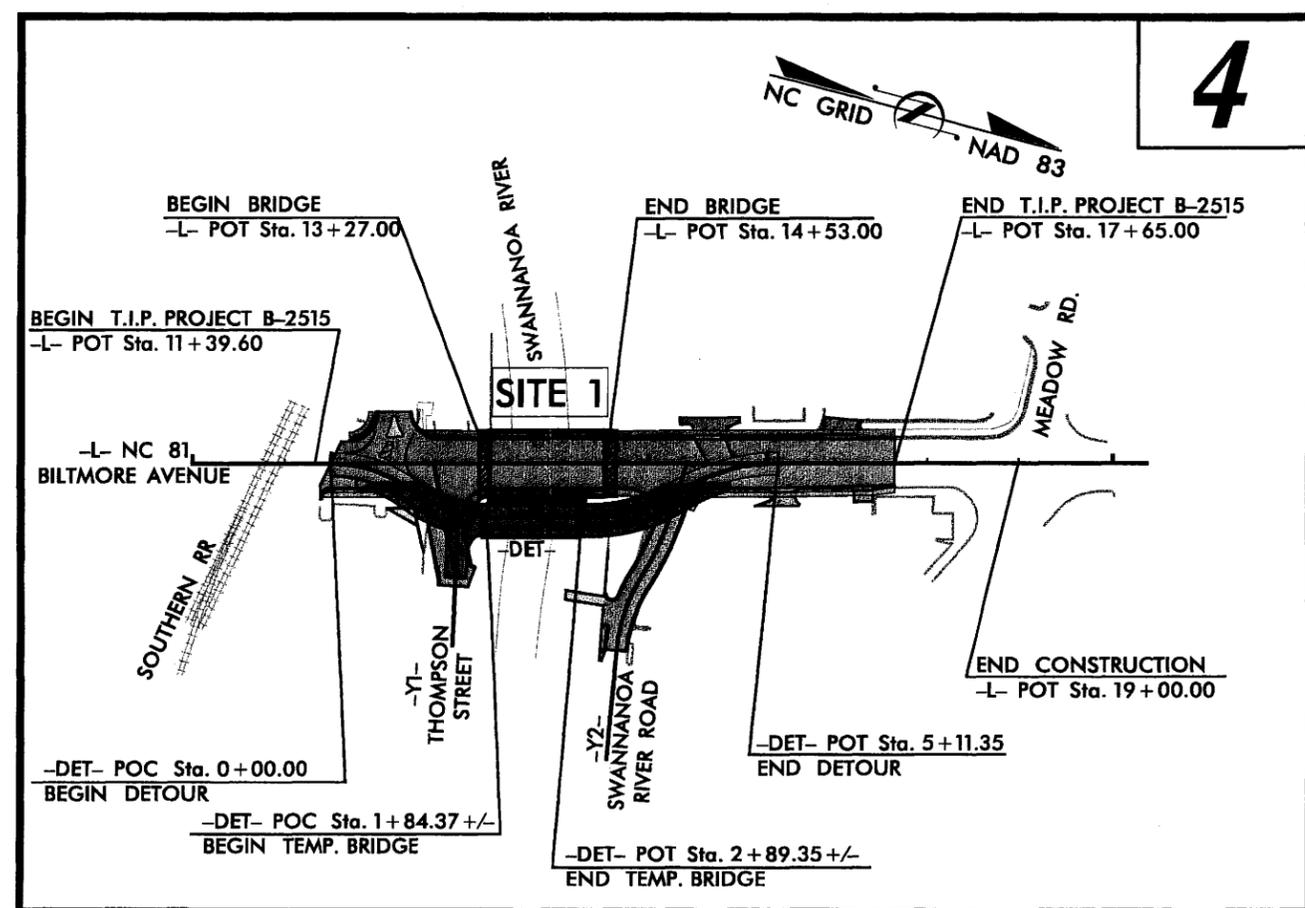
TYPE OF WORK: GRADING, DRAINAGE,  
PAVING, STRUCTURE,  
SIGNALS AND SIGNING

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-2515	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
32643.1.1	BRSTP-0081(1)	P.E.	
32643.2.2	BRSTP-0081(1)	R/W, UTIL	
32643.3.2	BRSTP-0081(1)	CONST.	

TIP PROJECT: B-2515



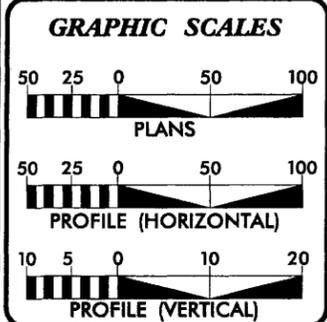
VICINITY MAP OF B-2515



Permit Drawing  
Sheet 5 of 10

NCDOT PROJECT ENGINEER:  
CATHY S. HOUSER, P.E.

CONTRACT: C202024



**DESIGN DATA**

ADT 2008 = 34,000  
ADT 2028 = 51,750  
DHV = 10 %  
D = 60 %  
T = 6 % \*  
V = 40 MPH  
\* TTST 2% DUAL 4%  
FUNC. CLASS. = URBAN MINOR ARTERIAL

**PROJECT LENGTH**

LENGTH ROADWAY T.I.P. PROJECT B-2515 = 0.094 MILES  
LENGTH STRUCTURES T.I.P. PROJECT B-2515 = 0.024 MILES  
TOTAL LENGTH OF T.I.P. PROJECT B-2515 = 0.118 MILES

PREPARED IN THE OFFICE OF:

**EarthTech**  
A Tyco International Ltd. Company  
701 Corporate Center Drive, Suite 475  
Raleigh, NC 27607  
(919) 854-6200 - (919) 854-6259(FAX)

2006 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:  
JULY 20, 2007

LETTING DATE:  
JULY 15, 2008

NEIL J. DEAN, P.E.  
EARTH TECH PROJECT MANAGER

HYDRAULICS ENGINEER

SIGNATURE: \_\_\_\_\_ P.E.

ROADWAY DESIGN ENGINEER

SIGNATURE: \_\_\_\_\_ P.E.

STATE HIGHWAY DESIGN ENGINEER

DIVISION OF HIGHWAYS  
STATE OF NORTH CAROLINA

STATE HIGHWAY DESIGN ENGINEER

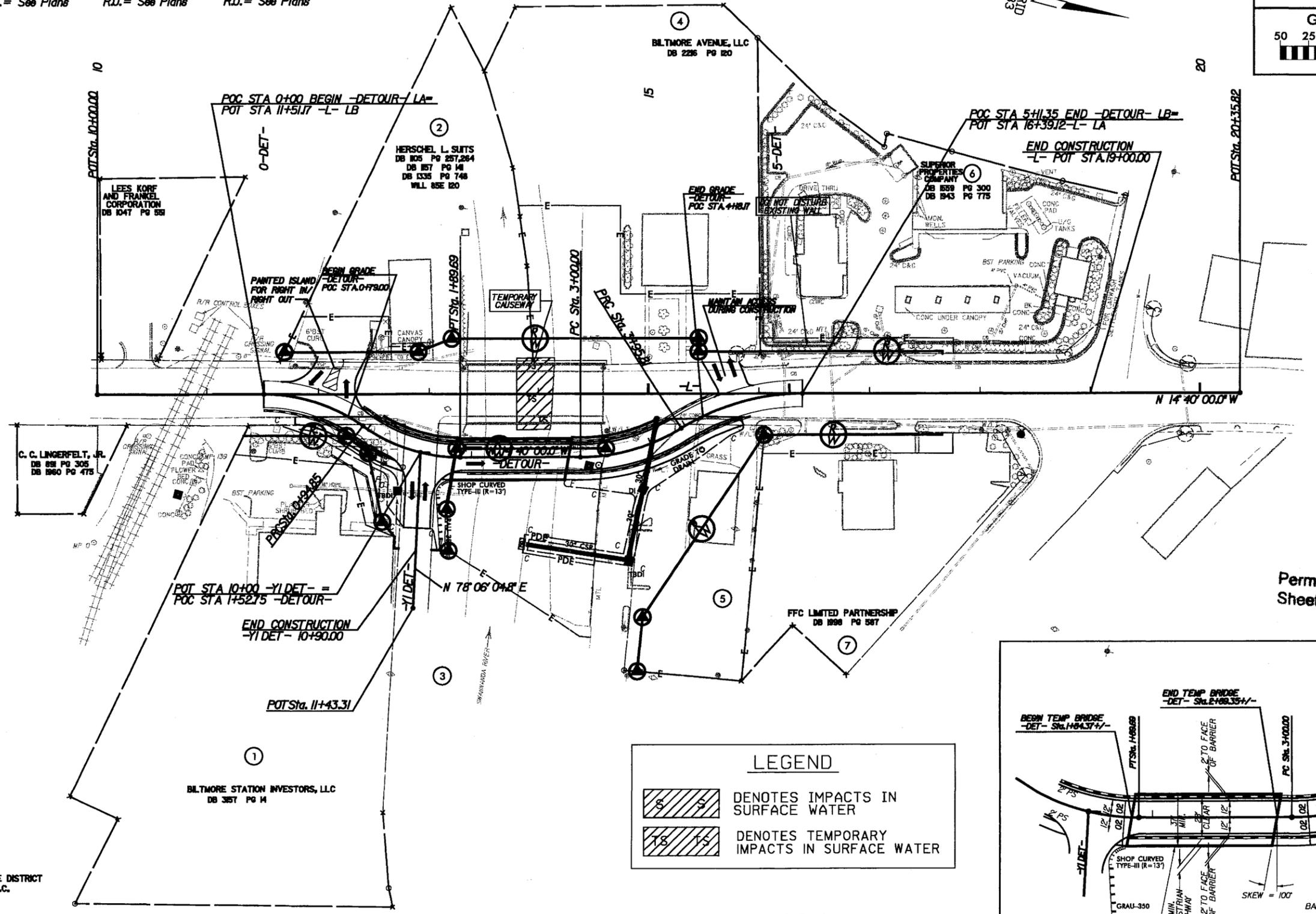
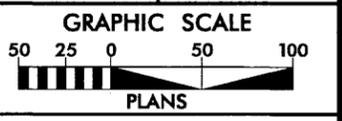
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 10/27/08 10:47:47 AM

PROJECT REFERENCE NO. B-2515	SHEET NO. 2-D
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
GRAPHIC SCALE	
50 25 0 50 100	
PLANS	

# DETAIL SHOWING DETOUR PLAN

-L- DETOUR

PI Sta 0+49.07 Δ = 36°13'42.5" (RT) D = 38'11"49.9" L = 94.85' T = 49.07' R = 150.00' Se = 0.02 ft/ft D.S. = 20 mph R.D. = See Plans	PI Sta 1+43.91 Δ = 36°13'42.5" (LT) D = 38'11"49.9" L = 94.85' T = 49.07' R = 150.00' Se = 0.02 ft/ft D.S. = 20 mph R.D. = See Plans	PI Sta 3+49.22 Δ = 32°17'32.4" (LT) D = 33'42"12.2" L = 95.81' T = 49.22' R = 170.00' Se = 0.02 ft/ft D.S. = 20 mph R.D. = See Plans	PI Sta 4+55.16 Δ = 32°17'32.4" (RT) D = 27'56"57.0" L = 115.54' T = 59.35' R = 205.00' Se = 0.02 ft/ft D.S. = 20 mph R.D. = See Plans
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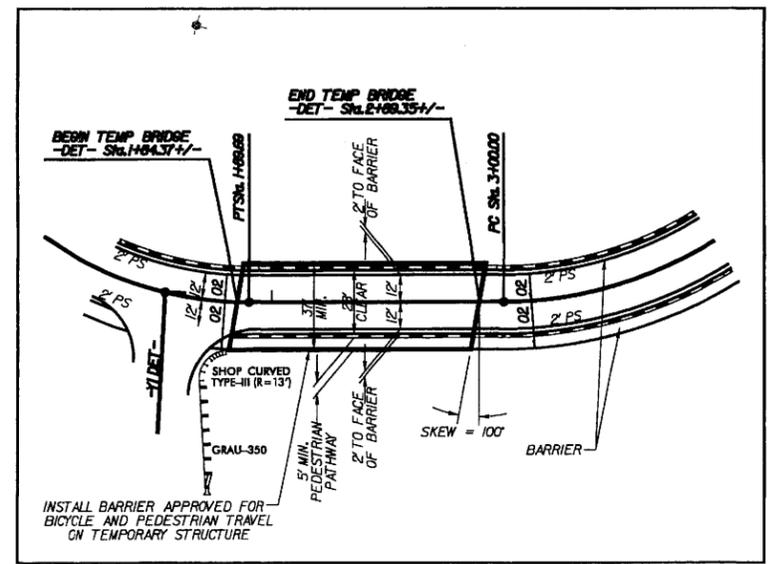


Permit Drawing Sheet 6 of 10

### LEGEND

	DENOTES IMPACTS IN SURFACE WATER
	DENOTES TEMPORARY IMPACTS IN SURFACE WATER

SEE SHEET 4 FOR PLAN  
SEE SHEET 5 FOR -DET- AND -Y1DET- PROFILES  
SEE SHEET 2-E FOR INTERSECTION DETAILS



REVISIONS  
1. 3/25/2008 - PARCEL 2 - REVISED TCE FROM PROPERTY LINE TO CONSTANT OFFSET FROM -L-. ADDED RIGHT IN / RIGHT OUT

- ③ METROPOLITAN SEWERAGE DISTRICT OF BUNCOMBE COUNTY, N.C. DB 982 PG 1
- ⑤ LONG JOHN SILVERS, INC DB 220 PG 190

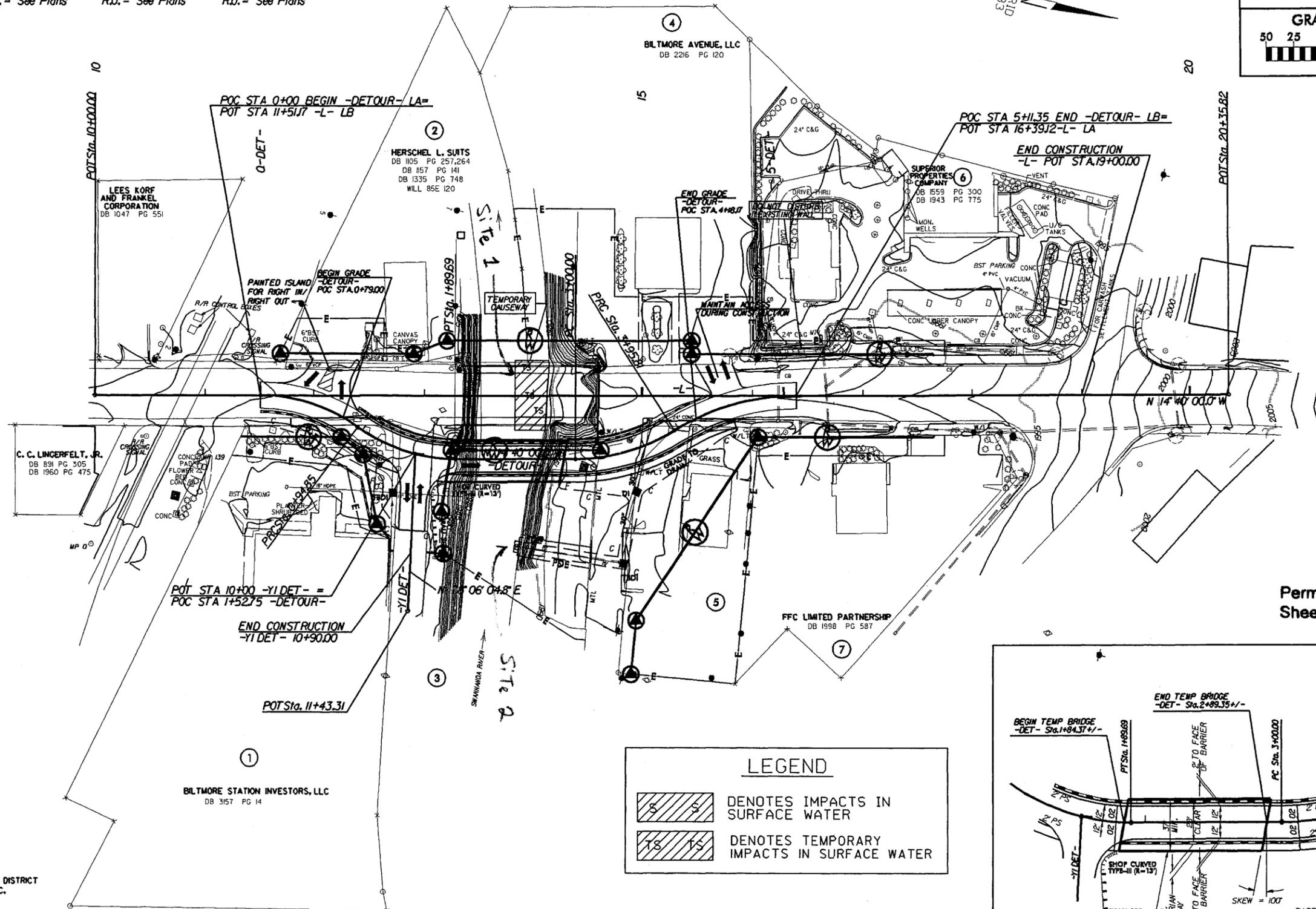
8/17/99

PROJECT REFERENCE NO. B-2515		SHEET NO. 2-D	
RW SHEET NO.			
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
GRAPHIC SCALE			
50 25 0 50 100			
PLANS			

# DETAIL SHOWING DETOUR PLAN

-L- DETOUR

PI Sta 0+49.07 Δ = 36'13" 42.5" (RT) D = 38'11" 49.9" L = 94.85' T = 49.07' R = 150.00' Se = 0.02 ft/ft D.S. = 20 mph R.O. = See Plans	PI Sta 1+43.91 Δ = 36'13" 42.5" (LT) D = 38'11" 49.9" L = 94.85' T = 49.07' R = 150.00' Se = 0.02 ft/ft D.S. = 20 mph R.O. = See Plans	PI Sta 3+49.22 Δ = 32'17" 32.4" (LT) D = 33'42" 12.2" L = 95.81' T = 49.22' R = 170.00' Se = 0.02 ft/ft D.S. = 20 mph R.O. = See Plans	PI Sta 4+55.16 Δ = 32'17" 32.4" (RT) D = 27'56" 57.0" L = 115.54' T = 59.35' R = 205.00' Se = 0.02 ft/ft D.S. = 20 mph R.O. = See Plans
--	--	--	---

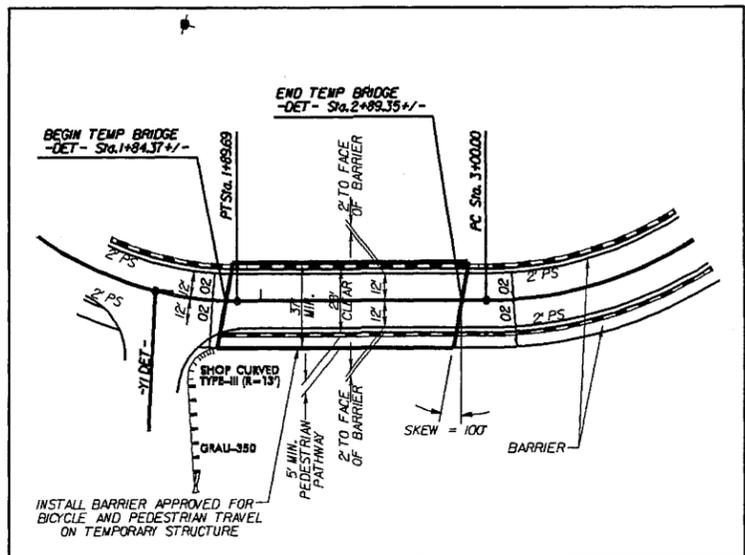


REVISIONS  
1. 3/25/2008 - PARCEL 2 - REVISED TCE FROM PROPERTY LINE TO CONSTANT OFFSET FROM -L-, ADDED RIGHT IN / RIGHT OUT

Permit Drawing Sheet 7 of 10

### LEGEND

	DENOTES IMPACTS IN SURFACE WATER
	DENOTES TEMPORARY IMPACTS IN SURFACE WATER



SEE SHEET 4 FOR PLAN  
SEE SHEET 5 FOR -DET- AND -YI DET- PROFILES  
SEE SHEET 2-E FOR INTERSECTION DETAILS

- ③ METROPOLITAN SEWERAGE DISTRICT OF BUNCOMBE COUNTY, N.C.  
DB 982 PG 1
- ⑤ LONG JOHN SILVERS, INC  
DB 220 PG 190

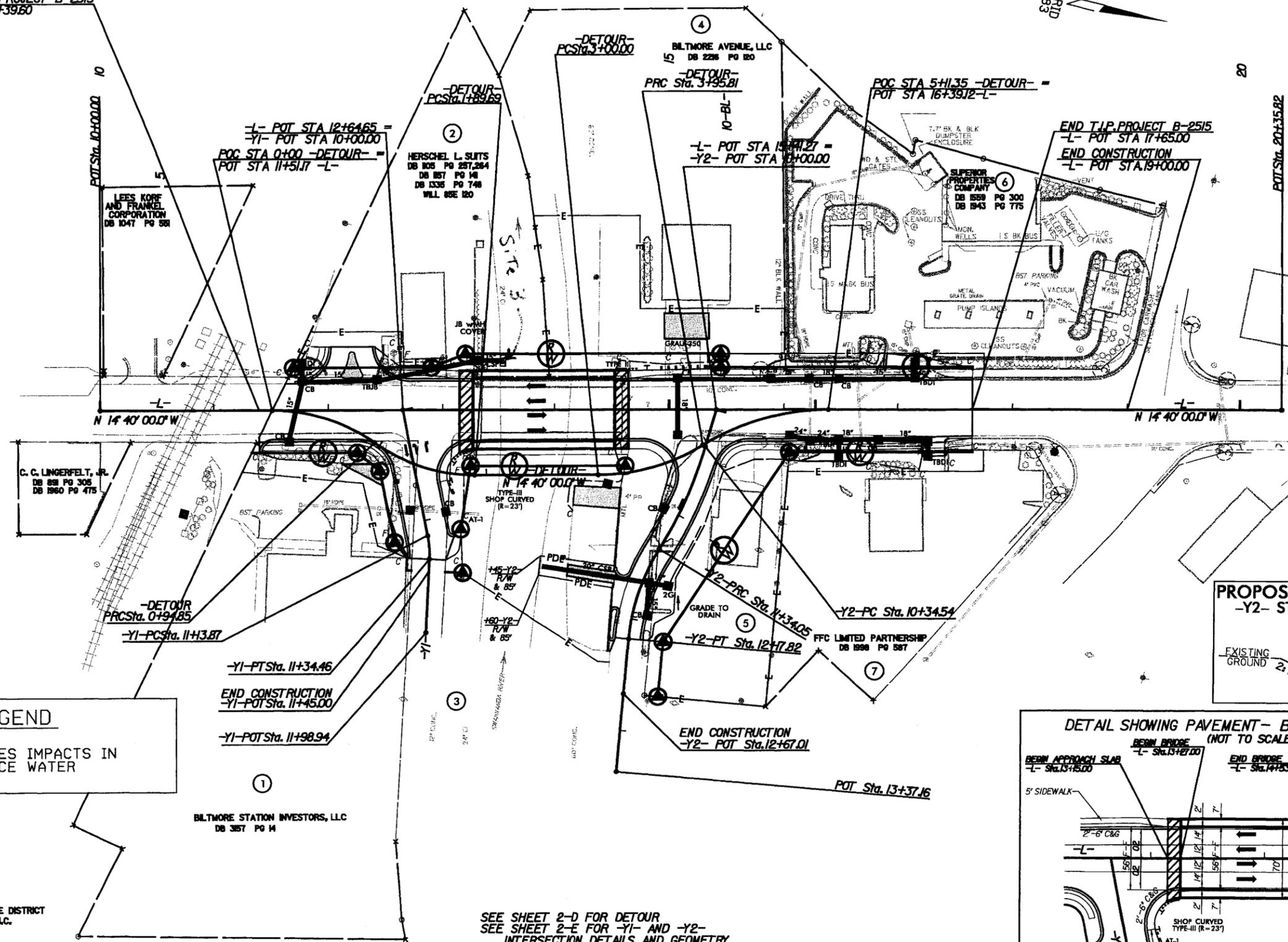
DESIGNER  
DATE  
TIME  
DRAWN

PROJECT REFERENCE NO. B-2515		SHEET NO. 4	
RW SHEET NO.			
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
GRAPHIC SCALE			
50 25 0 50 100			
PLANS			

8/17/99

REVISIONS  
1. 3/25/2008 - PARCEL 2 - REVISED TCE FROM PROPERTY LINE TO CONSTANT OFFSET FROM -L-. ADDED RIGHT IN / RIGHT OUT

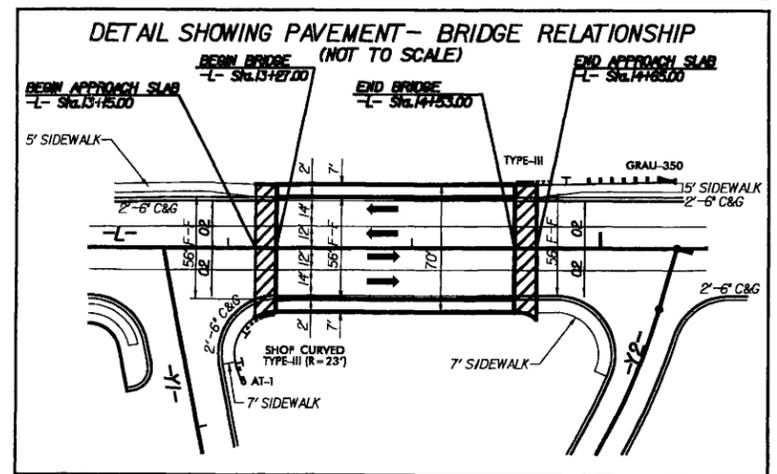
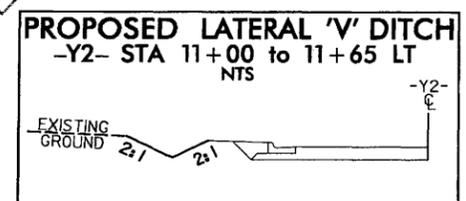
BEGIN T.I.P. PROJECT B-2515  
-L- POT STA 11+39.60



**LEGEND**

DENOTES IMPACTS IN SURFACE WATER

Permit Drawing  
Sheet 8 of 12

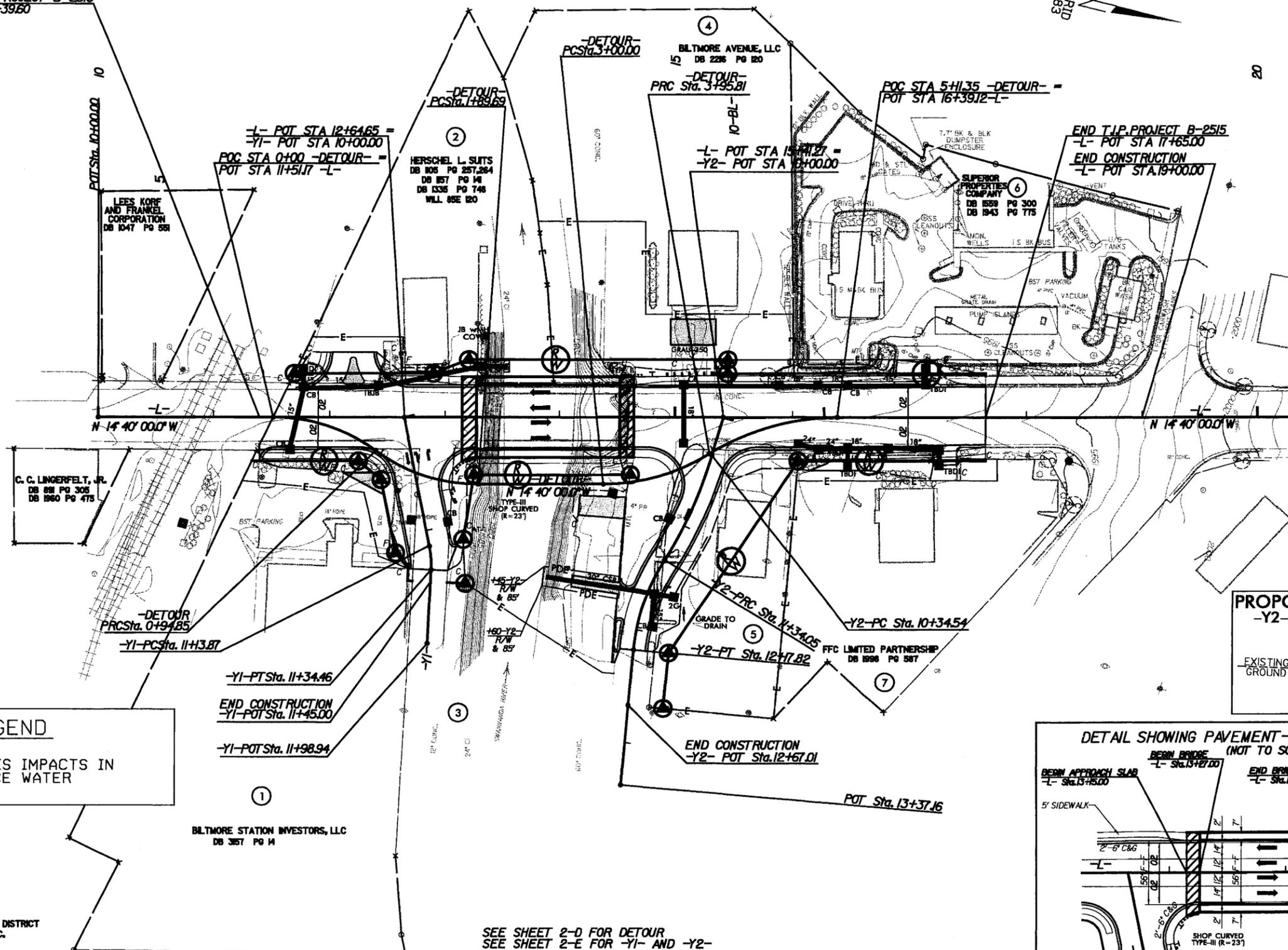


- ③ METROPOLITAN SEWERAGE DISTRICT OF BUNCOMBE COUNTY, N.C. DB 982 PG 1
- ⑤ LONG JOHN SILVERS, INC DB 220 PG 190

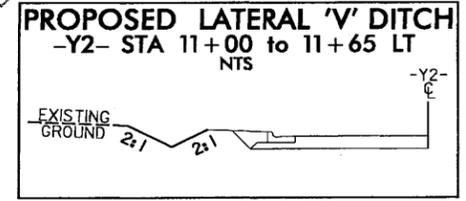
SEE SHEET 2-D FOR DETOUR  
SEE SHEET 2-E FOR -Y1- AND -Y2- INTERSECTION DETAILS AND GEOMETRY  
SEE SHEET 2-F FOR CURB, SIDEWALK, AND DRIVEWAY DETAILS  
SEE SHEET 5 FOR -L- PROFILE  
SEE SHEET 5 FOR -Y1- PROFILE  
SEE SHEET 5 FOR -Y2- PROFILE

PROJECT REFERENCE NO. <b>B-2515</b>		SHEET NO. <b>4</b>	
RW SHEET NO.			
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
<b>GRAPHIC SCALE</b> 50 25 0 50 100 <b>PLANS</b>			

BEGIN T.I.P. PROJECT B-2515  
-L- POT STA 11+39.60



Permit Drawing Sheet 9 of 10

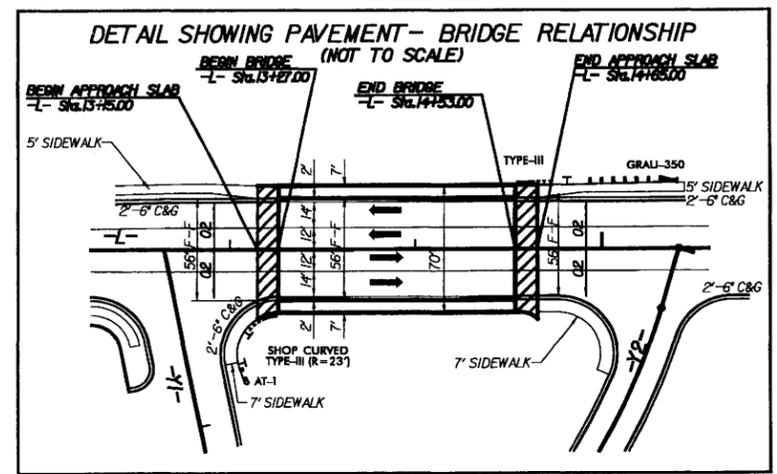


**LEGEND**

DENOTES IMPACTS IN SURFACE WATER

- ③ METROPOLITAN SEWERAGE DISTRICT OF BUNCOMBE COUNTY, N.C. DB 982 PG 1
- ⑤ LONG JOHN SILVERS, INC DB 220 PG 180

SEE SHEET 2-D FOR DETOUR  
SEE SHEET 2-E FOR -Y1- AND -Y2- INTERSECTION DETAILS AND GEOMETRY  
SEE SHEET 2-F FOR CURB, SIDEWALK, AND DRIVEWAY DETAILS  
SEE SHEET 5 FOR -L- PROFILE  
SEE SHEET 5 FOR -Y1- PROFILE  
SEE SHEET 5 FOR -Y2- PROFILE



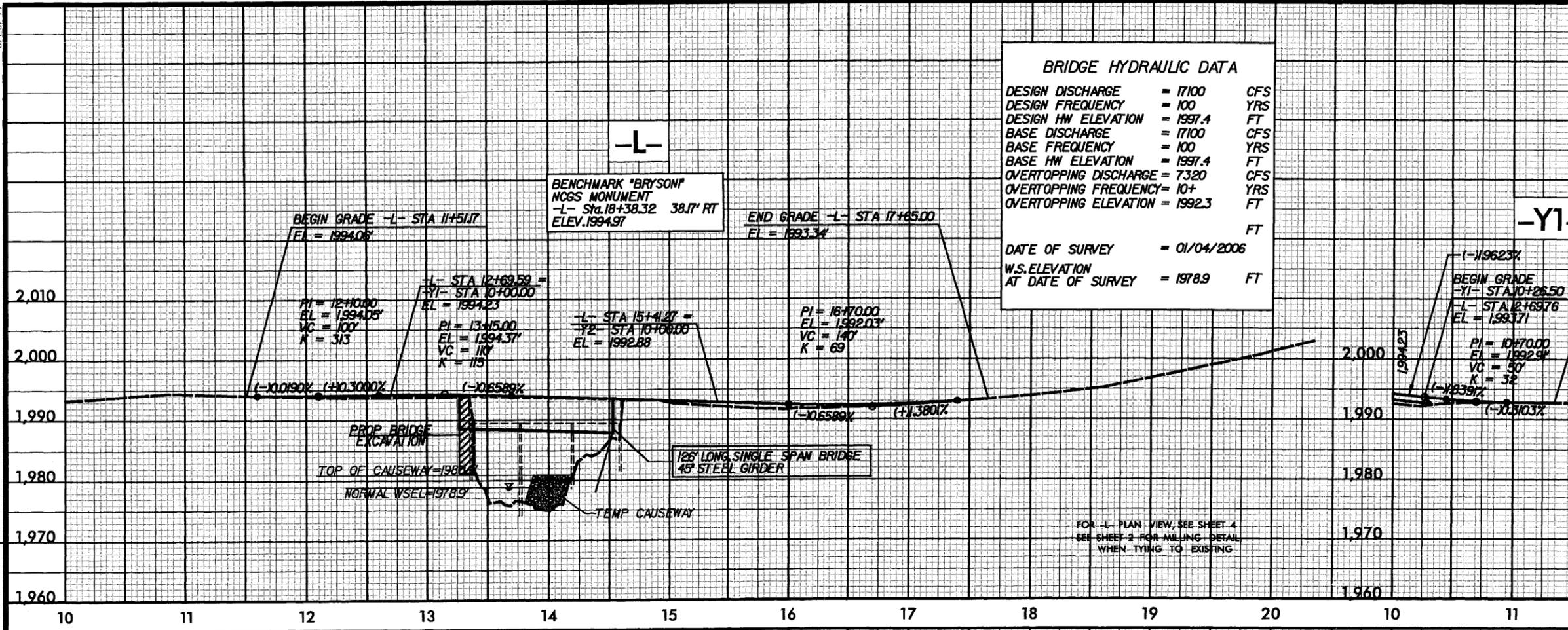
1. 325/2008 - PARCEL 2 - REVISED TCE FROM PROPERTY LINE TO CONSTANT OFFSET FROM -L-. ADDED RIGHT IN / RIGHT OUT

REVISIONS

8/17/09

1:im:page 7/2/2008 08:24 PM C:\projects\B-2515\Permit\B-2515\_Permit.dwg

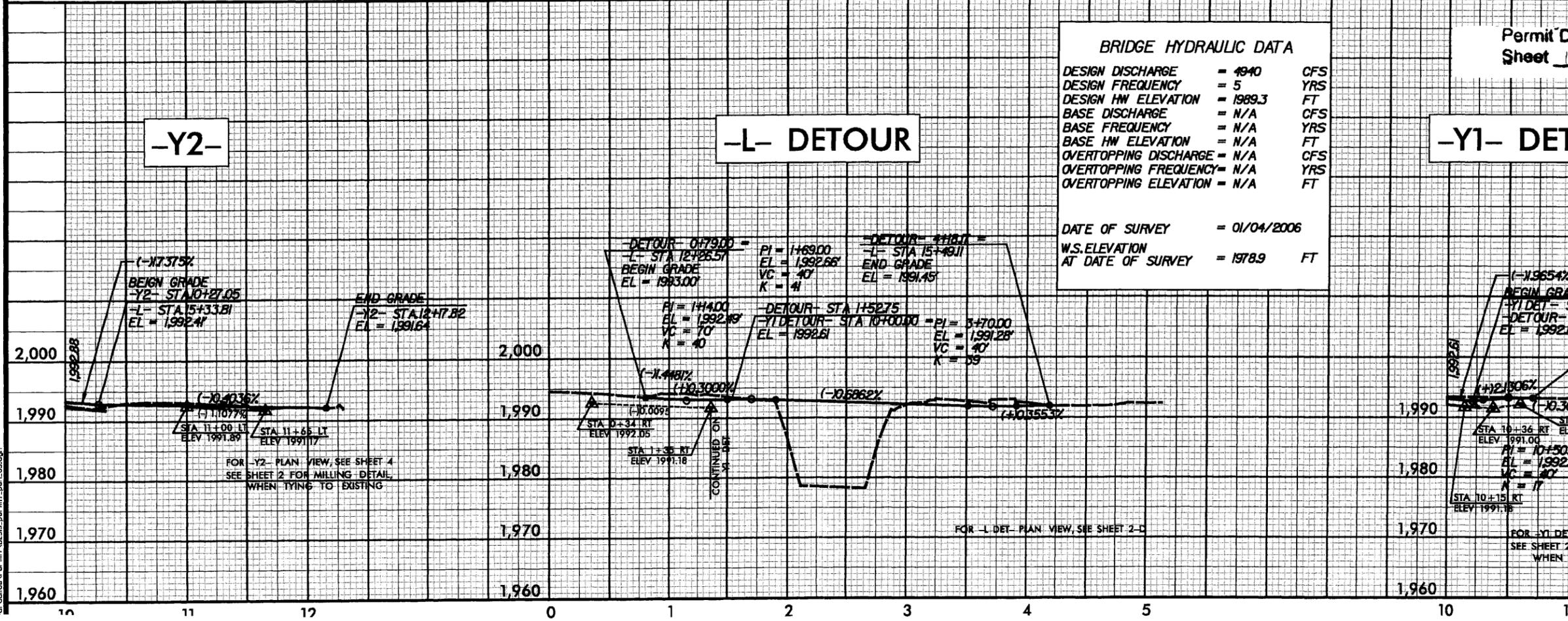
BRIDGE HYDRAULIC DATA		
DESIGN DISCHARGE	= 17100	CFS
DESIGN FREQUENCY	= 100	YRS
DESIGN HW ELEVATION	= 1997.4	FT
BASE DISCHARGE	= 17100	CFS
BASE FREQUENCY	= 100	YRS
BASE HW ELEVATION	= 1997.4	FT
OVERTOPPING DISCHARGE	= 7320	CFS
OVERTOPPING FREQUENCY	= 10+	YRS
OVERTOPPING ELEVATION	= 1992.3	FT
DATE OF SURVEY	= 01/04/2006	
W.S. ELEVATION AT DATE OF SURVEY	= 1978.9	FT



FOR -L- PLAN VIEW, SEE SHEET 4  
SEE SHEET 2 FOR MILLING DETAIL  
WHEN TYING TO EXISTING

Permit Drawing  
Sheet 10 of 10

BRIDGE HYDRAULIC DATA		
DESIGN DISCHARGE	= 4940	CFS
DESIGN FREQUENCY	= 5	YRS
DESIGN HW ELEVATION	= 1989.3	FT
BASE DISCHARGE	= N/A	CFS
BASE FREQUENCY	= N/A	YRS
BASE HW ELEVATION	= N/A	FT
OVERTOPPING DISCHARGE	= N/A	CFS
OVERTOPPING FREQUENCY	= N/A	YRS
OVERTOPPING ELEVATION	= N/A	FT
DATE OF SURVEY	= 01/04/2006	
W.S. ELEVATION AT DATE OF SURVEY	= 1978.9	FT



FOR -Y2- PLAN VIEW, SEE SHEET 4  
SEE SHEET 2 FOR MILLING DETAIL  
WHEN TYING TO EXISTING

FOR -L- DETOUR PLAN VIEW, SEE SHEET 2-D

FOR -Y1- DETOUR PLAN VIEW, SEE SHEET 2-D  
SEE SHEET 2 FOR MILLING DETAIL  
WHEN TYING TO EXISTING

5/28/09  
Jacee 2008 47 PM  
C:\Users\Permit\B2515\Permit.dwg

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

STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

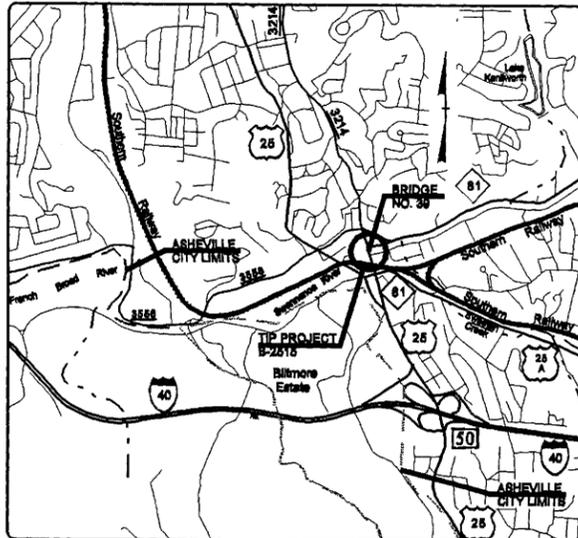
**BUNCOMBE COUNTY**

LOCATION: BRIDGE NO. 39 OVER SWANNANOA RIVER  
ON NC 81 (BILTMORE AVENUE)

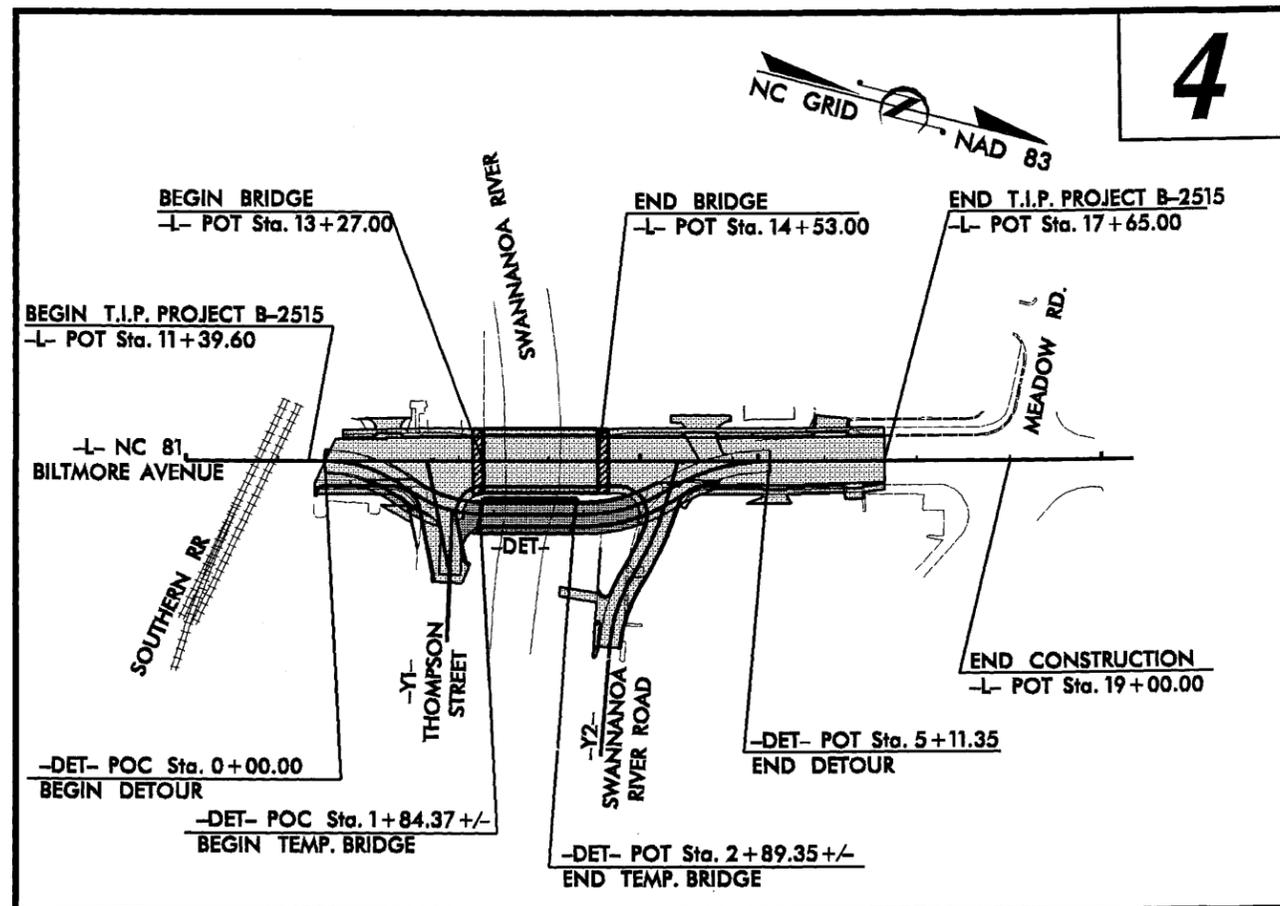
TYPE OF WORK: GRADING, DRAINAGE,  
PAVING, STRUCTURE,  
SIGNALS AND SIGNING

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-2515	1	
STATE PROJ. NO.	P.A. PROJ. NO.	DESCRIPTION	
32643.1.1	BRSTP-0081(1)	P.E.	
32643.2.2	BRSTP-0081(1)	R/W, UTIL.	

TIP PROJECT: B-2515



VICINITY MAP OF B-2515



TO  
DOWNTOWN  
ASHEVILLE

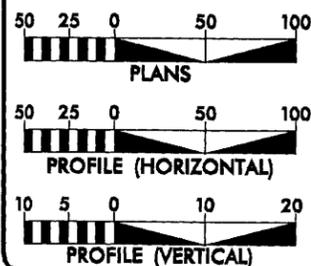
PRELIMINARY PLANS  
DO NOT USE FOR CONSTRUCTION

NCDOT PROJECT ENGINEER:  
CATHY S. HOUSER, P.E.

THIS PROJECT IS WITHIN THE MUNICIPAL BOUNDARIES OF ASHEVILLE.  
CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD II.

CONTRACT:

GRAPHIC SCALES



DESIGN DATA

ADT 2008 = 34,000  
ADT 2028 = 51,750  
DHV = 10 %  
D = 60 %  
T = 6 % \*  
V = 40 MPH  
\* TTST 2% DUAL 4%  
FUNC. CLASS. = URBAN  
MINOR ARTERIAL

PROJECT LENGTH

LENGTH ROADWAY T.I.P. PROJECT B-2515 = 0.094 MILES  
LENGTH STRUCTURES T.I.P. PROJECT B-2515 = 0.024 MILES  
TOTAL LENGTH OF T.I.P. PROJECT B-2515 = 0.118 MILES

EarthTech  
A Tyco International Ltd. Company

701 Corporate Center Drive, Suite 475  
Raleigh, NC 27607  
(919) 854-6200 - (919) 854-6259(FAX)

2006 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:

JULY 20, 2007

LETTING DATE:

JULY 15, 2008

NEIL J. DEAN, P.E.  
EARTH TECH PROJECT MANAGER

HYDRAULICS ENGINEER

SIGNATURE: \_\_\_\_\_ P.E.

ROADWAY DESIGN  
ENGINEER

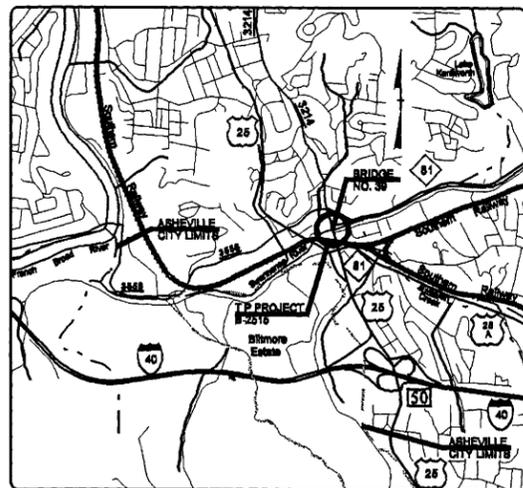
SIGNATURE: \_\_\_\_\_ P.E.

DIVISION OF HIGHWAYS  
STATE OF NORTH CAROLINA



STATE HIGHWAY DESIGN ENGINEER

# SURVEY CONTROL SHEET B-2515

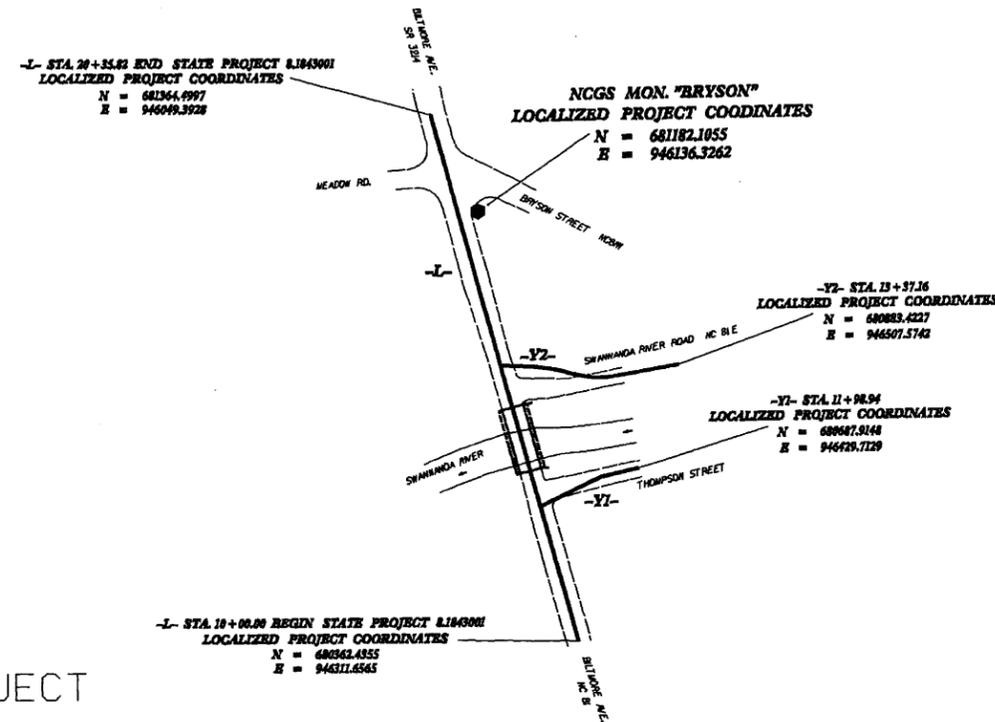


VICINITY MAP OF B-2515

BL	POINT	DESC.	NORTH	EAST	ELEVATION	L STATION	OFFSET
	3	B-2515-3	680456.6263	946382.0846	1993.46	10+73.29	91.98 RT
	4	B-2515-4	680811.4484	946262.4926	1992.17	14+46.83	66.13 RT
	BRYSON1	NCGS MON BRYSON	681182.1055	946136.3262	1994.97	18+38.32	38.17 RT

### DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCGS FOR MONUMENT "BRYSON" WITH NAD 83 STATE PLANE GRID COORDINATES OF NORTHING: 681182.1055(++) EASTING: 946136.3262(++) THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.9997498 THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "BRYSON" TO -L- STATION 10+00.00 IS S 12°04'26" E 838.21' ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES VERTICAL DATUM USED IS NGVD 29



NOTE: NO SUPPLEMENTAL BENCHMARKS WERE SET FOR THIS PROJECT

### NOTES:

1. THE CONTROL DATA FOR THIS PROJECT CAN BE FOUND ELECTRONICALLY BY SELECTING PROJECT CONTROL DATA AT:  
[HTTP://WWW.DOH.DOT.STATE.NC.US/PRECONSTRUCT/HIGHWAY/LOCATION/PROJECT/](http://www.doh.dot.state.nc.us/preconstruct/highway/location/project/)

THE FILES TO BE FOUND ARE AS FOLLOWS:  
B2515\_LS\_CONTROL\_060322.TXT

GLOBAL POSITIONING WAS NOT USED ON THIS PROJECT. EXISTING NCGS MONUMENTS WERE USED. 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.

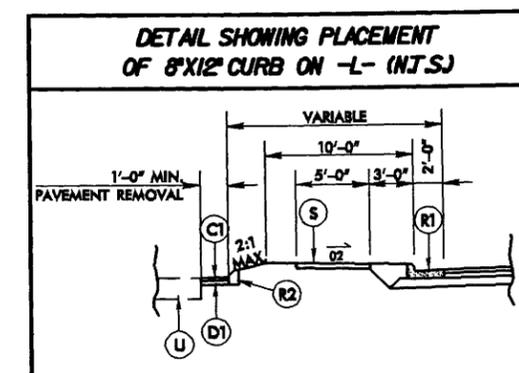
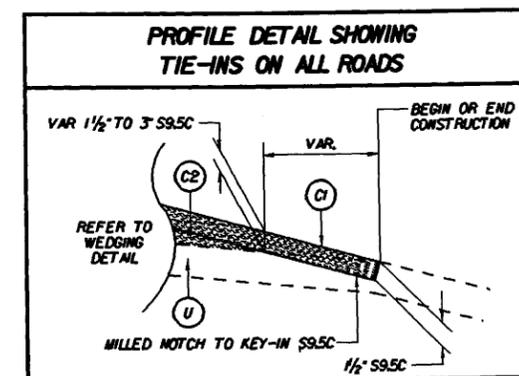
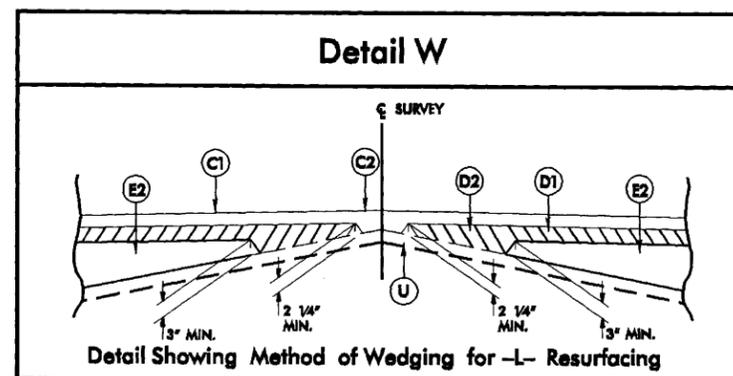
NCGS MON. "CECIL"  
LOCALIZED PROJECT COORDINATES  
N = 678770.1648  
E = 946704.0416

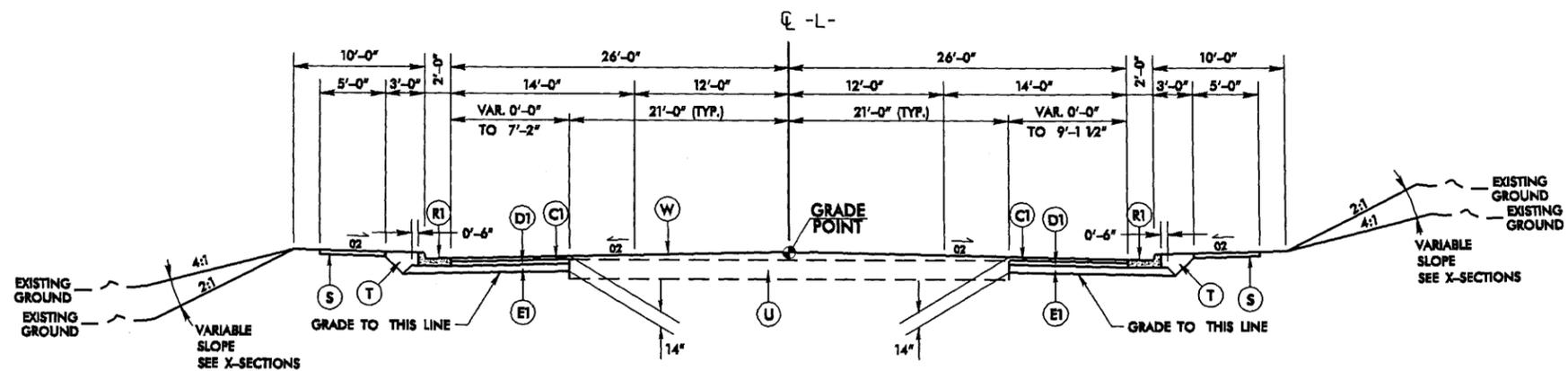
NOTE: DRAWING NOT TO SCALE

6/2  
05-MAY-2008 07:23:25 B2515\_rdy\_psh\_1c.dgn

PAVEMENT SCHEDULE			
C1	PROP. APPROX. 3" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD. IN EACH OF TWO LAYERS	R1	2'-6" CONCRETE CURB AND GUTTER.
C2	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 112 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT TO EXCEED 1 1/2" IN DEPTH.	R2	8" x 12" CONCRETE CURB
D1	PROP. APPROX. 4" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.	S	4" CONCRETE SIDEWALK.
D2	PROP. VAR. DEPTH ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1" DEPTH, TO BE PLACED IN LAYERS NOT LESS THAN 2 1/4" IN DEPTH OR GREATER THAN 4" IN DEPTH.	T	EARTH MATERIAL
E1	PROP. APPROX. 7" ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 798 LBS. PER SQ. YD.	U	EXISTING PAVEMENT
E2	PROP. VAR. DEPTH ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT LESS THAN 3" IN DEPTH OR GREATER THAN 5 1/2" IN DEPTH.	W1	VARIABLE DEPTH ASPHALT PAVEMENT (SEE DETAIL W1, THIS SHEET)

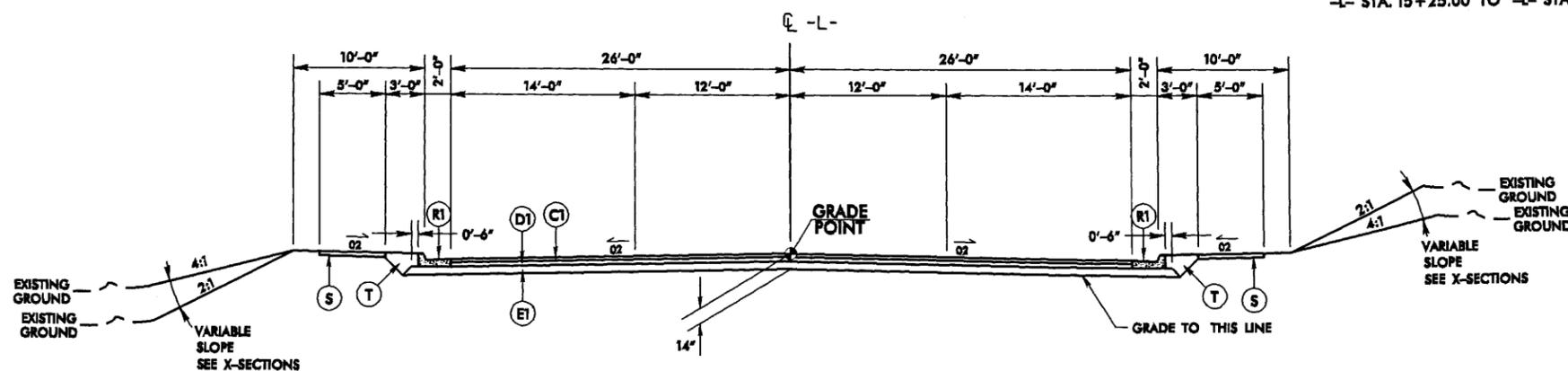
NOTE: PAVEMENT EDGE SLOPES ARE 1:1 UNLESS SHOWN OTHERWISE.





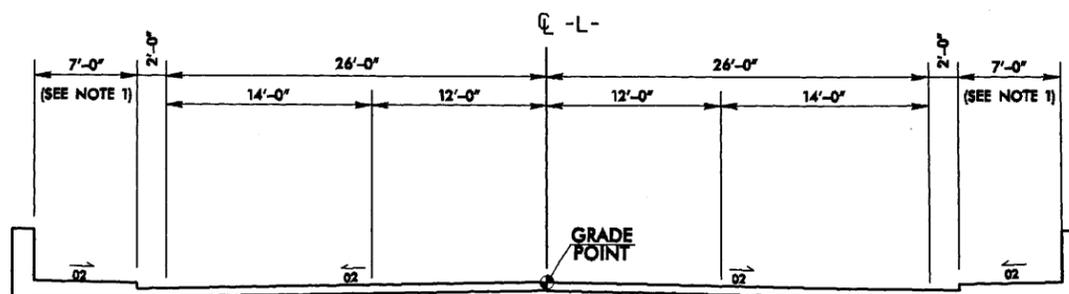
**TYPICAL SECTION NO. 1**

USE TYPICAL SECTION NO. 1  
 -L- STA. 11+39.60 TO -L- STA. 12+85.00  
 -L- STA. 15+25.00 TO -L- STA. 17+65.00



**TYPICAL SECTION NO. 2**

USE TYPICAL SECTION NO. 2  
 -L- STA. 12+85.00 TO -L- STA. 13+27.00 (BEGIN BRIDGE)  
 -L- STA. 14+53.00 (END BRIDGE) TO -L- STA. 15+25.00



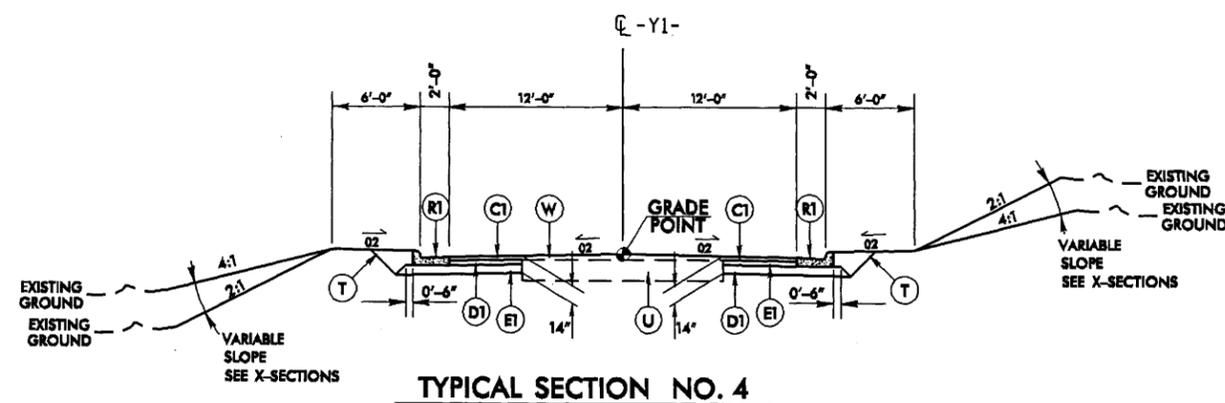
**TYPICAL SECTION NO. 3**

NOTE 1: 7'-0" SIDEWALKS INCLUDED AS REQUESTED BY CITY OF ASHEVILLE

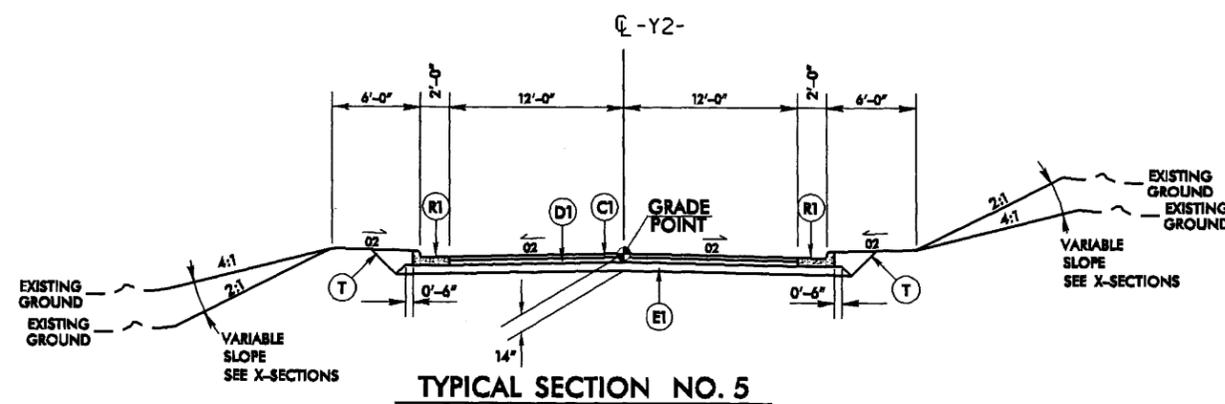
USE TYPICAL SECTION NO. 3  
 -L- STA. 13+27.00 (BEGIN BRIDGE) TO  
 -L- STA. 14+53.00 (END BRIDGE)

PAVEMENT SCHEDULE	
C1	3" S9.5C
C2	VAR S9.5C
D1	4" I19.0C
D2	VAR. I19.0C
E1	7" B25.0C
E2	VAR. B25.0C
R1	2'-8" C&G
S	SIDEWALK
T	EARTH
U	EXIST. PAVEMENT
W	WEDGING

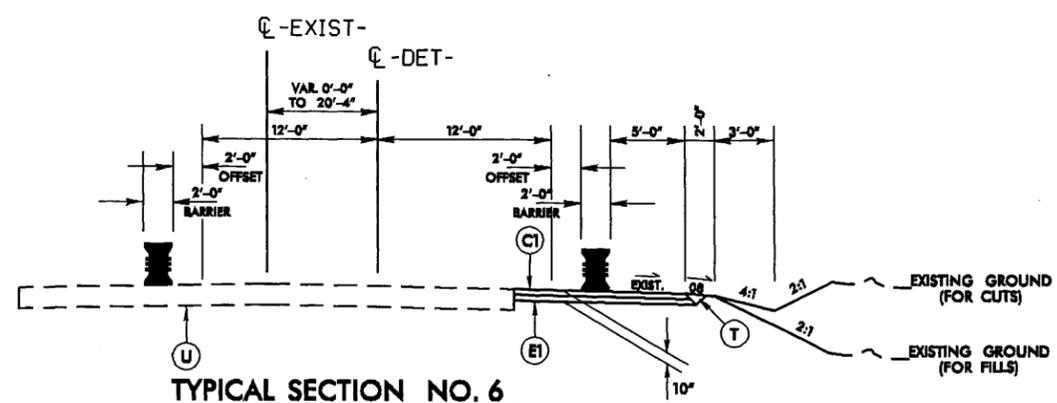
PROJECT REFERENCE NO. B-2515	SHEET NO. 2-8
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER
<b>PRELIMINARY PLANS</b> DO NOT USE FOR CONSTRUCTION	



USE TYPICAL SECTION NO. 4  
 -Y1- STA. 10+26.50 TO -Y1- STA. 11+34.46  
 -Y2- STA. 10+27.50 TO -Y2- STA. 10+74.57

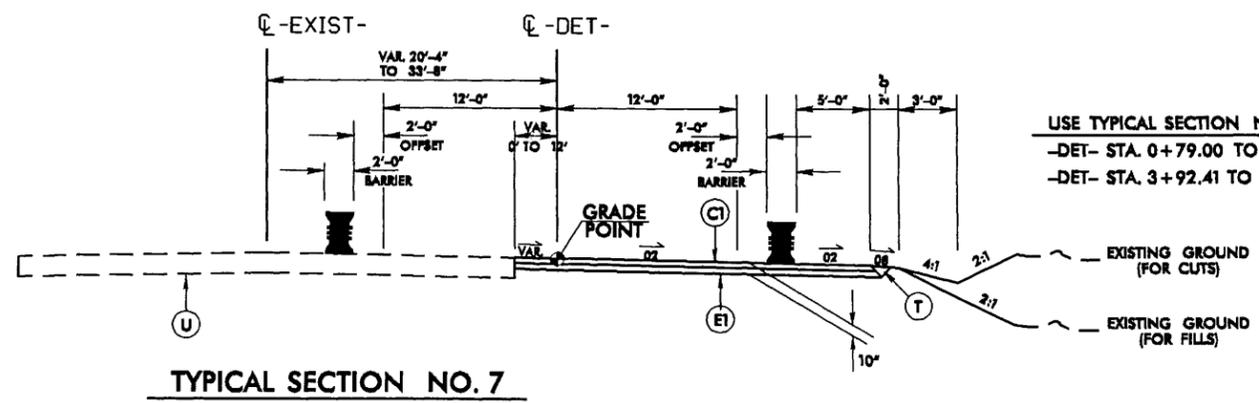


USE TYPICAL SECTION NO. 5  
 -Y2- STA. 10+74.57 TO -Y2- STA. 12+17.82



USE TYPICAL SECTION NO. 6  
 -DET- STA. 0+33.77 TO -DET- STA. 0+79.00  
 -DET- STA. 4+18.17 TO -DET- STA. 4+51.04

NOTE:  
 WATER FILLED BARRIER SHOWN FOR  
 ILLUSTRATIVE PURPOSES ONLY. REFER TO  
 TRAFFIC CONTROL PLANS FOR BARRIER  
 REQUIREMENTS.

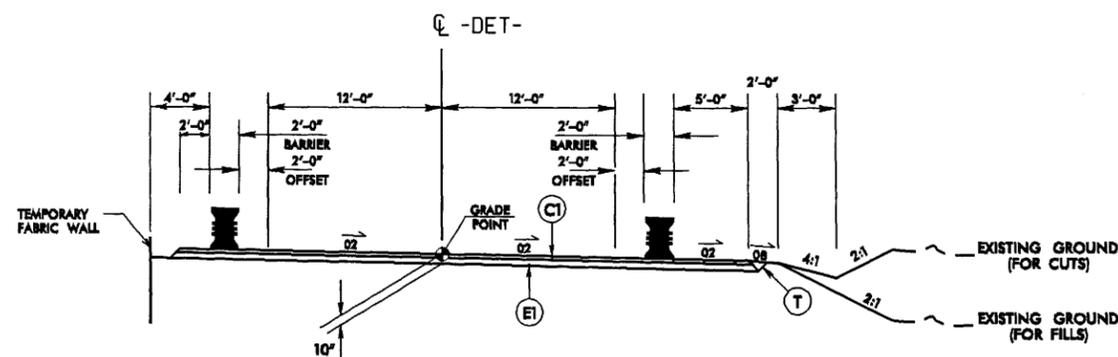


USE TYPICAL SECTION NO. 7  
 -DET- STA. 0+79.00 TO -DET- STA. 0+96.82  
 -DET- STA. 3+92.41 TO -DET- STA. 4+18.17

PAVEMENT SCHEDULE	
C1	3" S9.5C
C2	VAR S9.5C
D1	4" I19.0C
D2	VAR. I19.0C
E1	7" B25.0C
E2	VAR. B25.0C
R1	2'-6" C&G
S	SIDEWALK
T	EARTH
U	EXIST. PAVEMENT
W	WEDGING

\*\*\*USER\*\*  
 \*\*\*DATE\*\*  
 \*\*\*MORNING\*\*

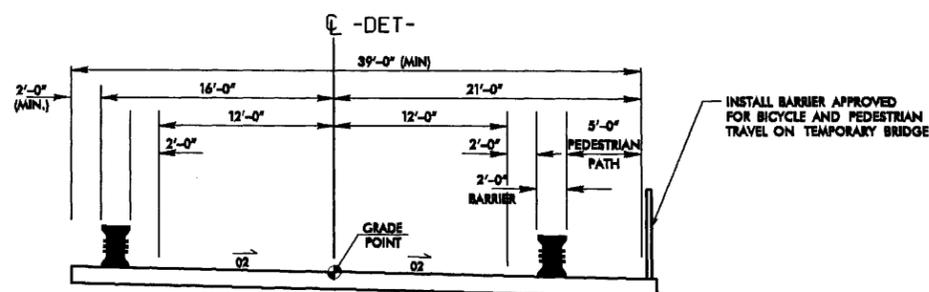
PROJECT REFERENCE NO. B-2515	SHEET NO. 2-C
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER
<b>PRELIMINARY PLANS</b> DO NOT USE FOR CONSTRUCTION	



**TYPICAL SECTION NO. 8**

USE TYPICAL SECTION NO. 8

-DET- STA. 0+96.82 TO -DET- STA. 1+84.37 +/- (BEG. TEMP. BRIDGE)  
-DET- STA. 2+89.35 +/- (END TEMP. BRIDGE) TO -DET- STA. 3+92.41

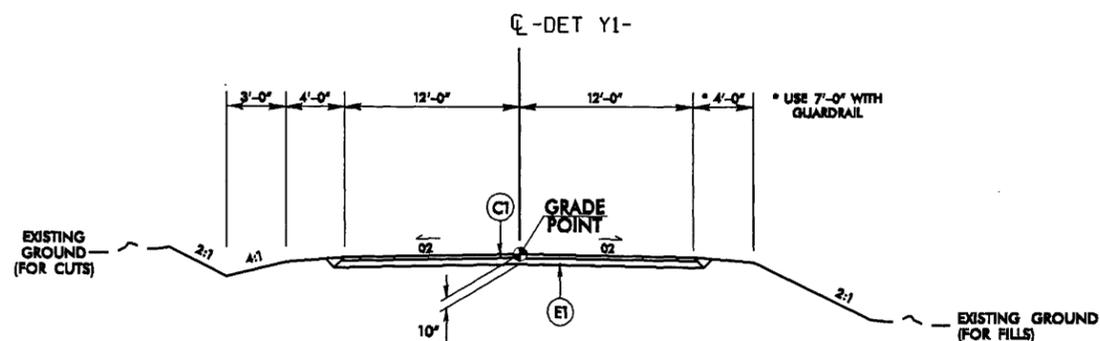


**TYPICAL SECTION NO. 9**

DETOUR BRIDGE TYPICAL

USE TYPICAL SECTION NO. 9

-DET- STA. 1+84.37 +/- (BEGIN TEMPORARY STRUCTURE)  
TO -DET STA. 2+89.35 +/- (END TEMPORARY STRUCTURE)



**TYPICAL SECTION NO. 10**

USE TYPICAL SECTION NO. 10

-Y1 DET- STA. 10+21.37 TO -Y1 DET- STA. 10+70.00

NOTE:  
WATER FILLED BARRIER SHOWN FOR ILLUSTRATIVE PURPOSES ONLY. REFER TO TRAFFIC CONTROL PLANS FOR BARRIER REQUIREMENTS.

PAVEMENT SCHEDULE	
C1	3" S9.5C
C2	VAR S9.5C
D1	4" I19.0C
D2	VAR. I19.0C
E1	7" B25.0C
E2	VAR. B25.0C
R1	2'-6" C&G
S	SIDEWALK
T	EARTH
U	EXIST. PAVEMENT
W	WEDGING

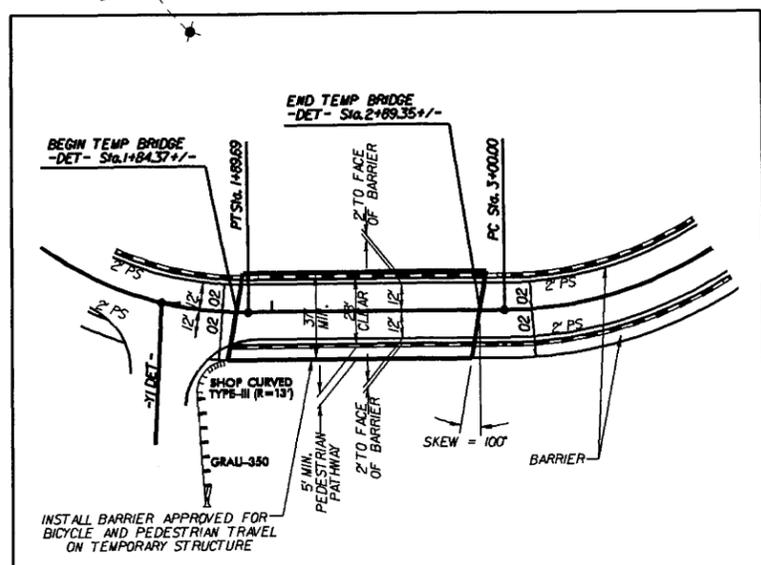
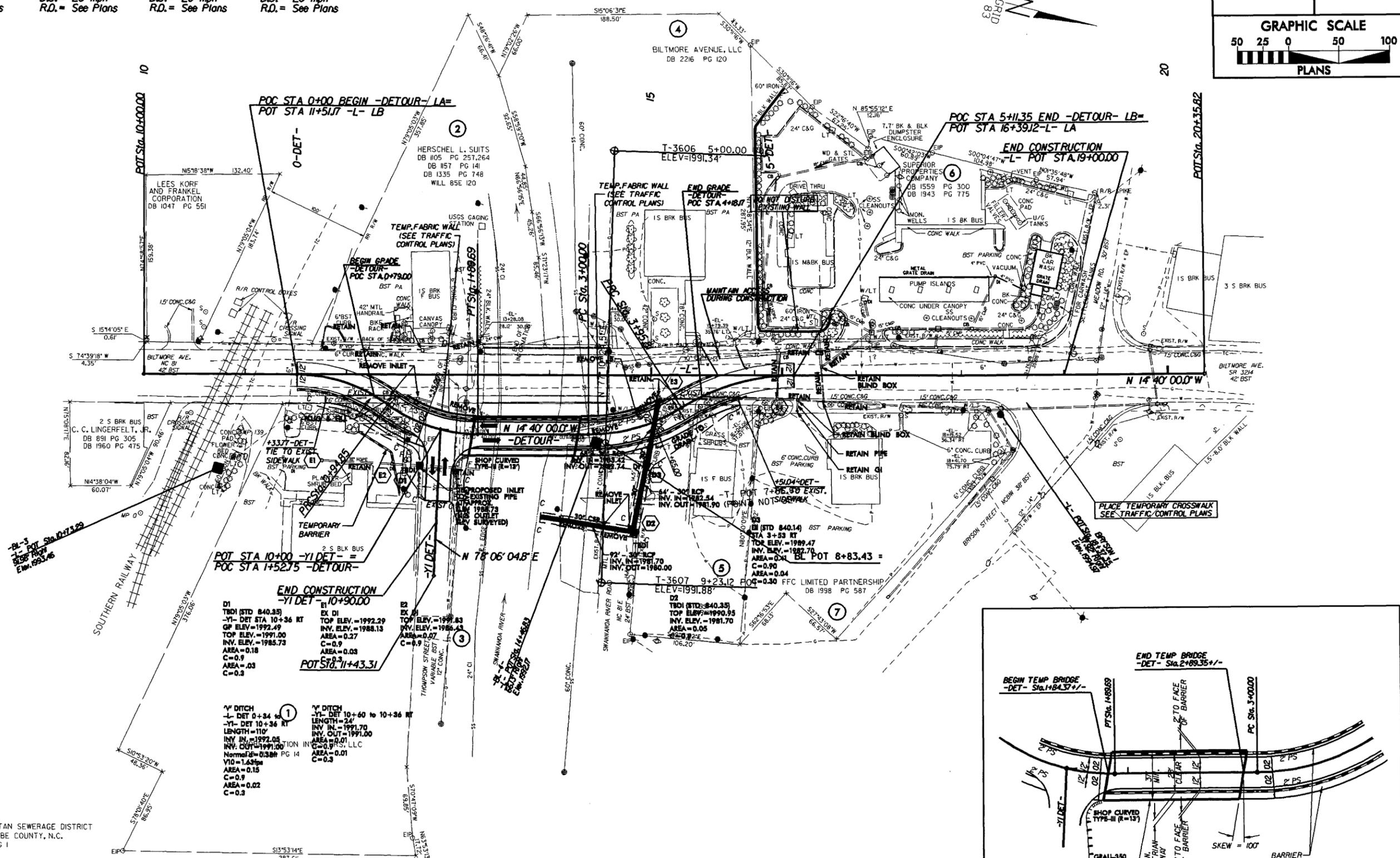
\*\*\*USER\*\*\*  
\*\*\*DATE\*\*\*  
\*\*\*TIME\*\*\*  
\*\*\*PAGE\*\*\*

PROJECT REFERENCE NO. B-2515	SHEET NO. 2-D
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	
GRAPHIC SCALE 50 25 0 50 100 PLANS	

# DETAIL SHOWING DETOUR PLAN

-L- DETOUR

PI Sta 0+49.07 Δ = 36'13" 42.5" (RT) D = 38'11" 49.9" L = 94.85' T = 49.07' R = 150.00' Se = 0.02 ft/ft D.S. = 20 mph R.D. = See Plans	PI Sta 1+43.91 Δ = 36'13" 42.5" (LT) D = 38'11" 49.9" L = 94.85' T = 49.07' R = 150.00' Se = 0.02 ft/ft D.S. = 20 mph R.D. = See Plans	PI Sta 3+49.22 Δ = 32'11" 32.4" (LT) D = 33'42" 12.2" L = 95.81' T = 49.22' R = 170.00' Se = 0.02 ft/ft D.S. = 20 mph R.D. = See Plans	PI Sta 4+55.16 Δ = 32'11" 32.4" (RT) D = 27'56" 57.0" L = 115.54' T = 59.35' R = 205.00' Se = 0.02 ft/ft D.S. = 20 mph R.D. = See Plans
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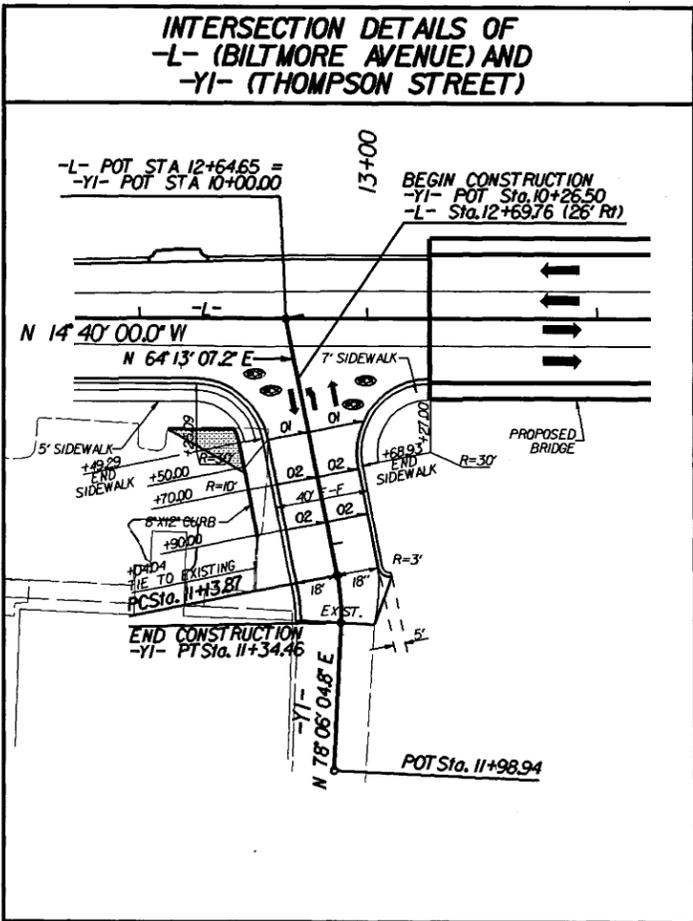
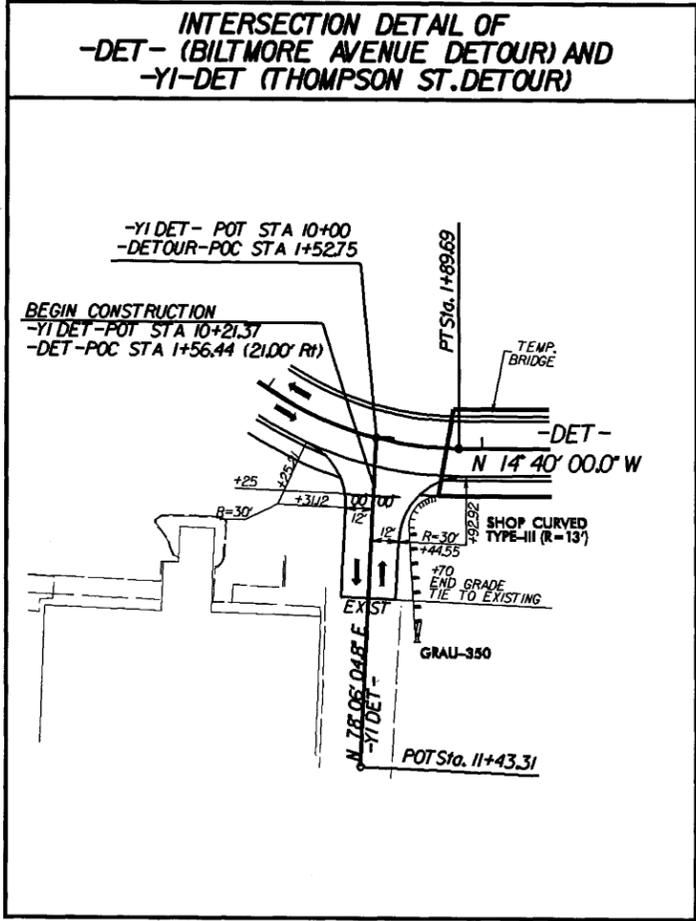


SEE SHEET 4 FOR PLAN  
SEE SHEET 5 FOR -DET- AND -YIDET- PROFILES  
SEE SHEET 2-E FOR INTERSECTION DETAILS

- ③ METROPOLITAN SEWERAGE DISTRICT OF BUNCOMBE COUNTY, N.C. DB 982 PG 1
- ⑤ LONG JOHN SILVERS, INC DB 220 PG 190

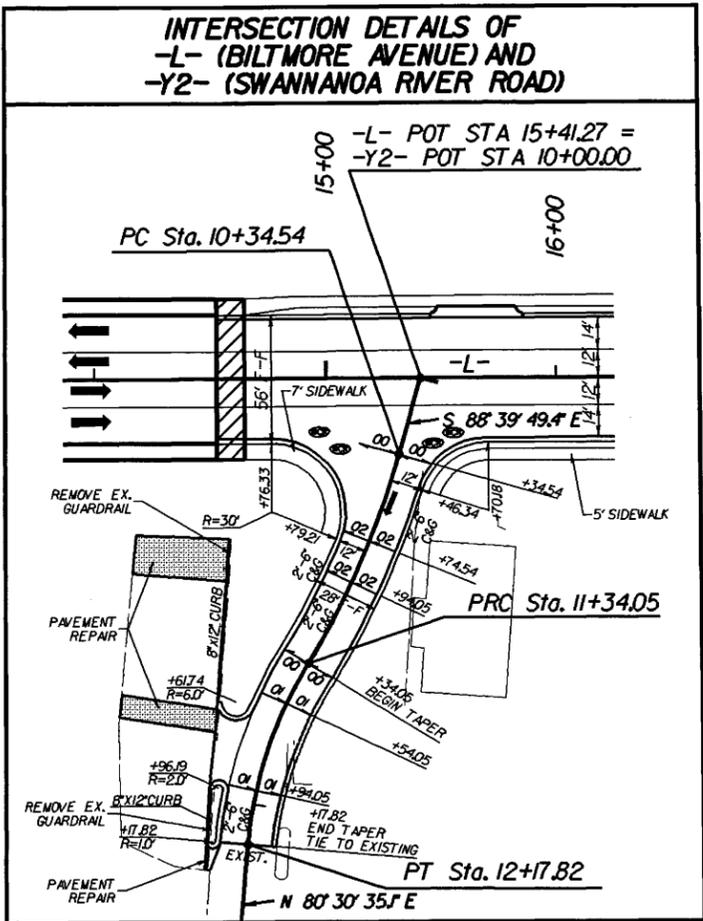
8/17/99  
REVISIONS

# INTERSECTION DETAILS



-YI-

PI Sta 11+24.22  
 $\Delta = 13^\circ 52' 57.7''$  (RT)  
 $D = 67^\circ 24' 24.5''$   
 $L = 20.60'$   
 $T = 10.35'$   
 $R = 85.00'$   
 $Se = RC$   
 $R.O. = \text{See Plans}$



-Y2-

PI Sta 10+84.62      PI Sta 11+76.71  
 $\Delta = 15^\circ 50' 15.4''$  (RT)       $\Delta = 26^\circ 39' 50.9''$  (LT)  
 $D = 15^\circ 54' 55.8''$        $D = 31^\circ 49' 51.6''$   
 $L = 99.51'$        $L = 83.77'$   
 $T = 50.07'$        $T = 42.66'$   
 $R = 360.00'$        $R = 180.00'$   
 $Se = RC$        $Se = RC$   
 $R.O. = \text{See Plans}$        $R.O. = \text{See Plans}$

REVISIONS

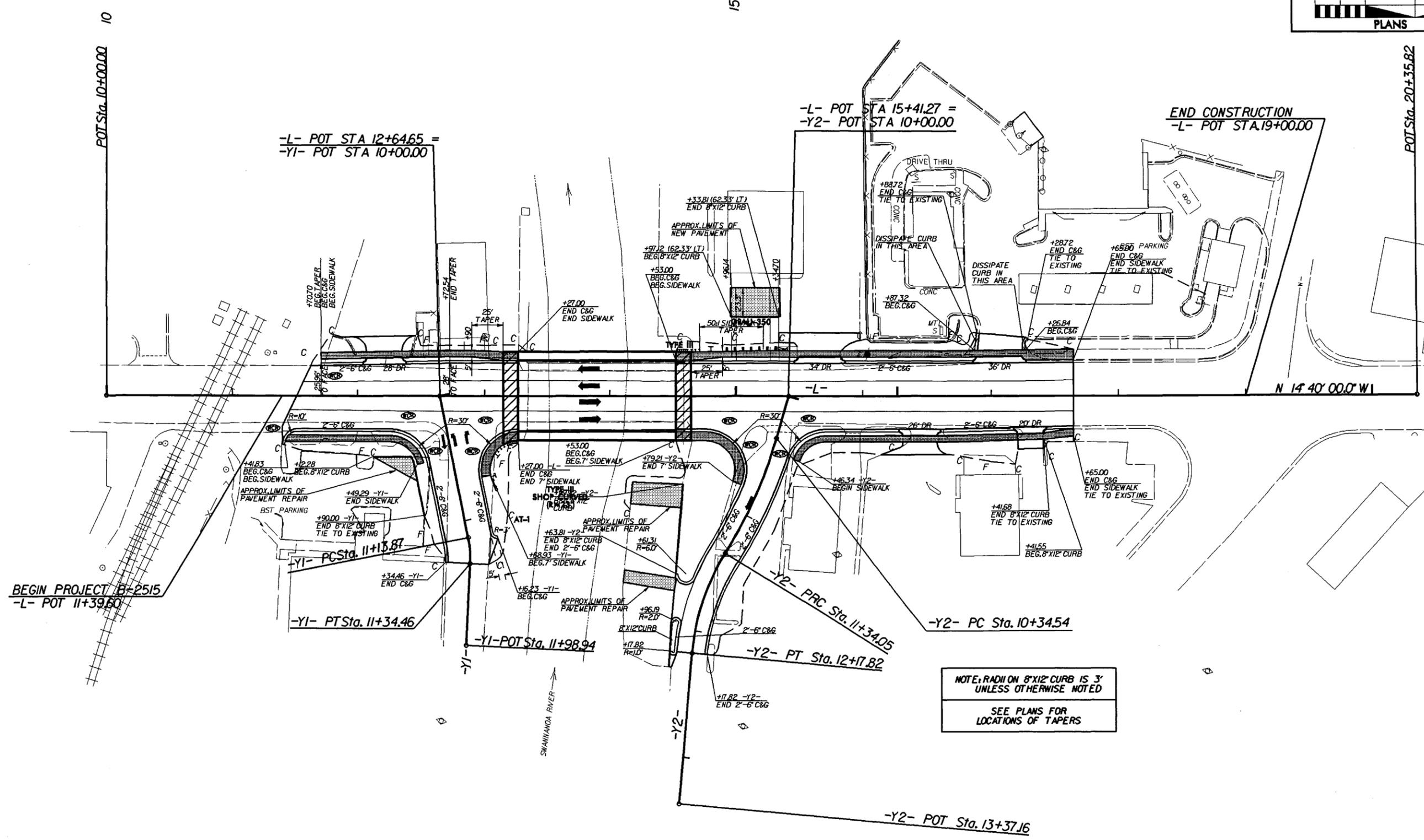
8/17/99

# DETAIL SHOWING LOCATION OF 8"X12" CURB, CURB AND GUTTER, DRIVEWAYS, AND SIDEWALK



PROJECT REFERENCE NO. B-2515		SHEET NO. 2-F	
M/W SHEET NO.			
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
<b>PRELIMINARY PLANS</b> DO NOT USE FOR CONSTRUCTION			
<b>GRAPHIC SCALE</b>			
40 20 0 40 80 PLANS			

REVISIONS



NOTE: RADIUS ON 8"X12" CURB IS 3' UNLESS OTHERWISE NOTED

SEE PLANS FOR LOCATIONS OF TAPERS

USER\*\*  
DATE\*\*  
TIME\*\*  
DDMM\*\*

DIVISION OF HIGHWAYS  
 STATE OF NORTH CAROLINA

**SUMMARY OF EARTHWORK**

IN CUBIC YARDS

LOCATION	UNCLASSIFIED EXCAVATION	UNDERCUT	EMBT + %	BORROW	WASTE
-DET- STA 0+16.72 TO -DET- STA. 1+84.37 +/- (BEGIN BRIDGE)	191				191
-YIDET- STA 10+26.50 TO -YIDET- STA. 10+70.00	57				57
<b>SUBTOTAL</b>	<b>248</b>				<b>248</b>
-DET- STA 2+89.35 +/- (END BRIDGE) TO -DET- STA. 4+51.04	250		6		244
-L- (LEFT SIDE) STA 11+49.53 TO -L- (LEFT SIDE) STA. 12+85.00	22		5		17
-L- STA 12+85.00 TO -L- STA. 13+27.00 (BEG. BRIDGE)	55		9		46
-L- STA 14+53.00 (END BRIDGE) TO -L- STA. 15+25.00	124		70		54
-L-(LEFT SIDE) STA 15+25.00 TO -L-(LEFT SIDE) STA. 17+65.00	47		3		44
<b>SUBTOTAL</b>	<b>248</b>		<b>87</b>		<b>161</b>
-L- (RIGHT SIDE) STA 11+39.60 TO -L- (RIGHT SIDE) STA. 12+85.00	21		2		19
-Y1- STA 10+26.50 TO -Y1- STA. 11+34.46	42		30		12
-Y2- STA 10+27.50 TO -Y2- STA. 12+17.82	21		2		19
-L- (RIGHT SIDE) STA 15+25.00 TO -L- (RIGHT SIDE) STA. 17+65.00	393		32		361
<b>SUBTOTAL</b>	<b>477</b>		<b>66</b>		<b>411</b>
<b>PROJECT TOTAL</b>	<b>1,223</b>		<b>159</b>		<b>1,064</b>
<b>SAY</b>	<b>1,300</b>		<b>200</b>		<b>1,100</b>

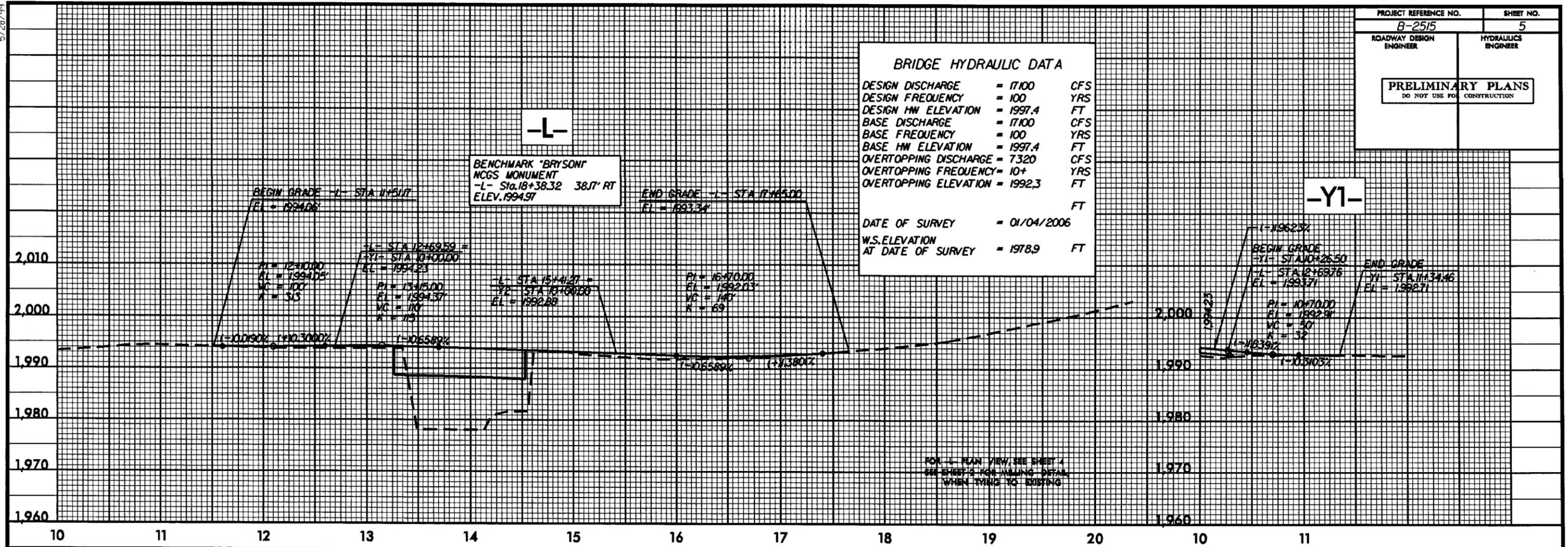


5/28/99

PROJECT REFERENCE NO. B-2515	SHEET NO. 5
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

**BRIDGE HYDRAULIC DATA**

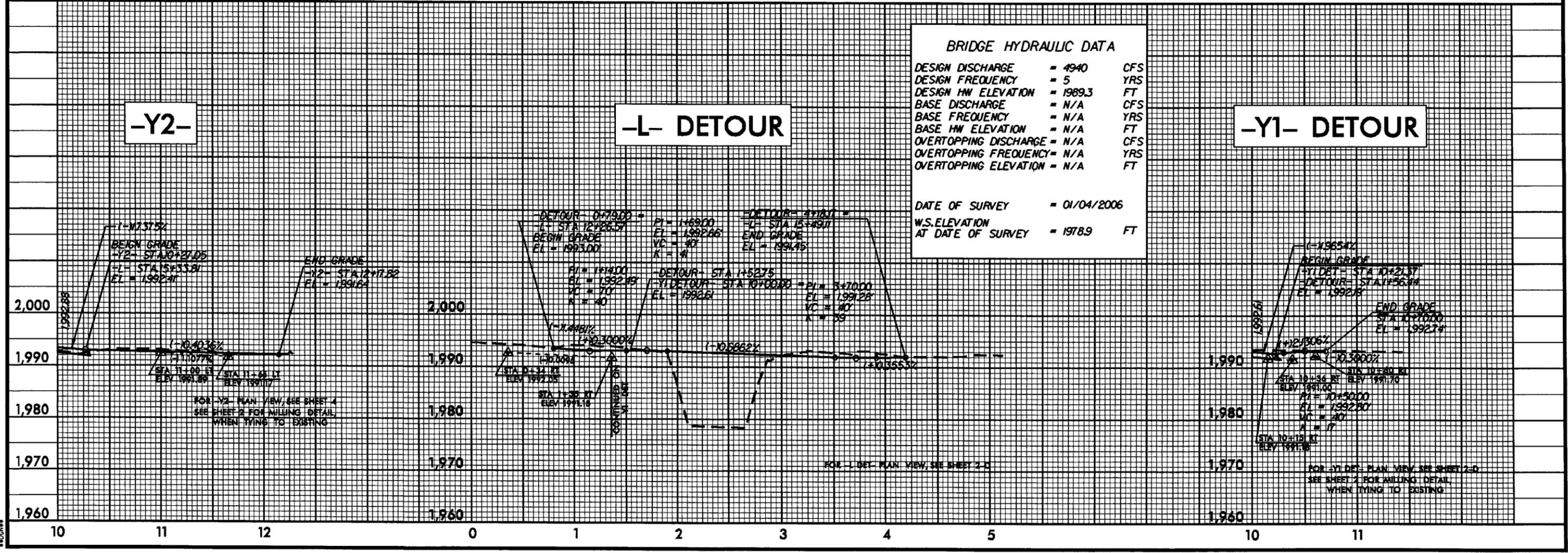
DESIGN DISCHARGE	= 17100	CFS
DESIGN FREQUENCY	= 100	YRS
DESIGN HW ELEVATION	= 1997.4	FT
BASE DISCHARGE	= 17100	CFS
BASE FREQUENCY	= 100	YRS
BASE HW ELEVATION	= 1997.4	FT
OVERTOPPING DISCHARGE	= 7320	CFS
OVERTOPPING FREQUENCY	= 10+	YRS
OVERTOPPING ELEVATION	= 1992.3	FT
DATE OF SURVEY	= 01/04/2006	
W.S. ELEVATION AT DATE OF SURVEY	= 1978.9	FT



FOR L-1 MAIN VIEW, SEE SHEET 4  
SEE SHEET 2 FOR MILLING DETAIL  
WHEN TRYING TO EXISTING

**BRIDGE HYDRAULIC DATA**

DESIGN DISCHARGE	= 4940	CFS
DESIGN FREQUENCY	= 5	YRS
DESIGN HW ELEVATION	= 1989.3	FT
BASE DISCHARGE	= N/A	CFS
BASE FREQUENCY	= N/A	YRS
BASE HW ELEVATION	= N/A	FT
OVERTOPPING DISCHARGE	= N/A	CFS
OVERTOPPING FREQUENCY	= N/A	YRS
OVERTOPPING ELEVATION	= N/A	FT
DATE OF SURVEY	= 01/04/2006	
W.S. ELEVATION AT DATE OF SURVEY	= 1978.9	FT



FOR Y2 DETOUR MAIN VIEW, SEE SHEET 4  
SEE SHEET 2 FOR MILLING DETAIL  
WHEN TRYING TO EXISTING

FOR L-1 DETOUR MAIN VIEW, SEE SHEET 2-D

FOR Y1 DETOUR MAIN VIEW, SEE SHEET 2-D  
SEE SHEET 2 FOR MILLING DETAIL  
WHEN TRYING TO EXISTING

44456888  
88047888  
88728888  
88000888

NC 81  
Buncombe County  
Bridge No. 39 Over Swannanoa River  
Federal Aid Project No. BRSTP-81(1)  
State Project 8.1843001  
WBS # 32643.1.1  
TIP Project No. B-2515

CATEGORICAL EXCLUSION

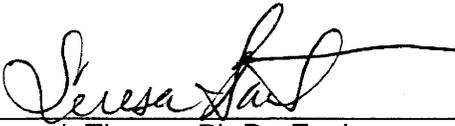
US DEPARTMENT OF TRANSPORTATION

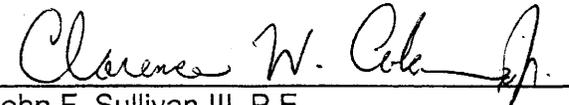
FEDERAL HIGHWAY ADMINISTRATION

AND

NC DEPARTMENT OF TRANSPORTATION  
DIVISION OF HIGHWAYS

APPROVED:

*June 10, 2005*   
Date *for* Gregory J. Thorpe, Ph.D., Environmental Management Director  
Project Development and Environmental Analysis Branch, NCDOT

*6/13/05*   
Date *for* John F. Sullivan III, P.E.  
Division Administrator, FHWA

NC 81  
Buncombe County  
Bridge No. 39 Over Swannanoa River  
Federal Aid Project No. BRSTP-81(1)  
State Project 8.1843001  
WBS # 32643.1.1  
TIP Project No. B-2515

CATEGORICAL EXCLUSION

June 2005

Document Prepared by



  
John Schrohenloher, P.E., Project Engineer  
Earth Tech



For the North Carolina Department of Transportation

  
Stacy Baldwin, P.E., CPM, Unit Head  
Consultant Engineering Unit  
Project Development and Environmental Analysis Branch

**NC 81  
Buncombe County  
Bridge No. 39 Over Swannanoa River  
Federal Aid Project No. BRSTP-81(1)  
State Project 8.1843001  
WBS # 32643.1.1  
TIP Project No. B-2515**

**ENVIRONMENTAL COMMITMENTS**

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

**Highway Design Branch**

The pattern on the bridge rails will mimic that of the McDowell Street Bridge. Lamps and quatrefoil designs will be incorporated into the bridge design. NCDOT will consult with the State Historic Preservation Office, Biltmore Village Historic Museum, and Biltmore Village Historic District on the design details.

**Project Development and Environmental Analysis Branch**

Approval under Section 26a of the Tennessee Valley Authority (TVA) Act is required. A copy of the environmental document will be provided to the TVA.

**Roadway Design Unit**

The temporary detour structure will have a pedestrian walkway.

The new structure will carry two travel lanes, one 12-foot and one 14-foot, in each direction. The 14-foot outside lanes will accommodate bicyclists. Sidewalks, 7 feet wide, will be included on each side of the structure.

**NC 81  
Buncombe County  
Bridge No. 39 Over Swannanoa River  
Federal Aid Project No. BRSTP-81(1)  
State Project 8.1843001  
WBS # 32643.1.1  
TIP Project No. B-2515**

**INTRODUCTION:** The replacement of Bridge No. 39 is included in the 2004-2010 North Carolina Department of Transportation (NCDOT) Transportation Improvement Program and in the Federal-Aid Bridge Replacement Program. The location is shown in **Figure 1**. No substantial environmental impacts are anticipated. The project is classified as a Federal “Categorical Exclusion”.

**I. PURPOSE AND NEED STATEMENT**

Bridge Maintenance Unit records indicate the bridge has a sufficiency rating of 27.3 out of a possible 100 for a new structure. The bridge is considered functionally obsolete and structurally deficient. The replacement of this inadequate structure will result in safer and more efficient traffic operations.

**II. EXISTING CONDITIONS**

NCDOT classifies NC 81 (Biltmore Avenue) as an “urban minor arterial” in the Statewide Functional Classification System.

Through the project area, NC 81 is a four-lane paved facility with a 40-foot clear roadway width and 6-foot wide sidewalks on each side. This section of NC 81 is on a 60-foot wide right of way. The horizontal and vertical alignments are flat. The posted speed limit is 35 miles per hour.

The existing bridge was constructed in 1935. It has reinforced concrete deck girders, vertical abutments, and piers. The bridge is 123 feet long with three spans of 41 feet each. The roadway width is 40 feet and carries four 10-foot lanes of traffic. The crown of the roadway is 19 feet over the bed of Swannanoa River. There are no posted load limits. The bridge is located in a tangent section of NC 81 and crosses Swannanoa River at approximately 90 degrees. Photographs of the approaches to the existing bridge are shown in **Figures 4a and 4b**.

Bridge No. 39 lies in a heavily urbanized area. Land use along NC 81 in the vicinity of Bridge No. 39 is primarily fueling stations, fast-food and other restaurants, and small shops. Approximately 250 feet to the south of Bridge No. 39 are railroad tracks. To the south of the rail road tracks is the Biltmore Village Historic District.

The average daily traffic volume on NC 81 at Bridge No. 39 is estimated at 30,800 vehicles per day in 2005. By the design year, 2025, the average daily traffic

volume is expected to increase to 49,100 vehicles per day. The projected traffic volume includes four percent dual-tired vehicles and two percent truck-tractor semi-trailers.

No school buses cross this bridge as part of a regular route.

In the period between December 1, 2001 and November 30, 2004, there were 15 crashes reported within 500 feet on either side of the Bridge No. 39. Six of the crashes were in the vicinity of the Thompson Road intersection, and five crashes were either at or north of the Swannanoa River Road intersection. Four crashes were at Bridge No. 39.

### III. ALTERNATIVES

#### A. Project Description

The proposed structure is a bridge with a clear roadway width accommodating four lanes of traffic. The bridge will be approximately 119 feet long and use a single span. The facility will carry two travel lanes, one 12-foot and one 14-foot, in each direction. The 14-foot outside lanes will accommodate bicyclists in a “share the road” situation. Sidewalks, 7 feet wide, will be included on each side of the bridge. The typical section for the proposed approaches and bridge are shown in **Figure 3**.

#### B. Build Alternatives

**Alternative 1 (Preferred)** will use a two-lane, two-way on-site detour to the east of the existing bridge. The temporary structure will have a pedestrian walkway. See **Figure 2** for **Alternative 1**.

**Alternative 2** will close the existing facility during construction, redirecting traffic to an off-site detour using McDowell Street (see **Figure 1** for off-site detour route). The detour would follow McDowell Street to Short McDowell Street, to Meadow Road, and back to Biltmore Avenue approximately 500 feet north of Bridge No. 39. An on-site detour structure for pedestrians would be provided. See **Figure 2** for **Alternative 2**. **Alternative 2** was not selected as the preferred alternative because the off-site detour will not be able to accommodate the total traffic volumes. In addition, there are local concerns that tourists will have a difficult time navigating an off-site detour.

#### C. Alternatives Eliminated from Further Study

**Phased construction** was considered but eliminated from further study. Phase one of this alternative would require the partial construction of the replacement structure: transfer two lanes of traffic to the replacement structure, and removal of half of the existing structure. The Bridge Maintenance Unit evaluated the existing structure and determined it to be unsuitable for phased removal, thereby eliminating this alternative from further study.

**An on-site detour to the west** was considered but eliminated from further study. The project area is dense with commercial development and intersecting roads and railroads, which would create additional conflict with a detour to the west. An on-site detour to the west would encroach on the railroad right-of-way to the south, and the connections of Thompson Street and Swannanoa River Road with NC 81 would have to be eliminated to

avoid conflicts between turning vehicles on and off of these side streets and construction activities at the existing bridge location. In addition, any construction encroaching on the railroad tracks would also encroach on the Biltmore Village Historic District, bordered to the north by the railroad.

**Rehabilitation of the existing** structure and the “No Build” alternative was considered early in the project study but eliminated from further study. Because of the poor bridge condition, rehabilitating the existing structure is not feasible. The “no build” alternative would eventually necessitate closure of the bridge and would thereby eliminate the traffic service provided by NC 81 in the project area.

#### D. Preferred Alternative

**Alternative 1**, replacing Bridge No. 39 on the existing roadway alignment while maintaining traffic on a temporary detour structure to the east of the existing bridge is the preferred alternative. **Alternative 1** was selected because an off-site detour (as Alternative 2 proposes) will not be able to accommodate the total traffic volumes. In addition, there are local concerns that tourists will have a difficult time navigating an off-site detour.

Because of the heavy volume of traffic using NC 81 and Bridge No. 39, the two-lane two-way on-site detour, by itself, will not be able to accommodate travel demand. An off-site detour, as proposed in Alternative 2, will be signed as an “alternative detour route” to provide additional detour capacity.

### IV. ESTIMATED COSTS

Construction and right of way cost estimates for the alternatives studied are presented below in **Table 1**.

**Table 1. Estimated Construction Costs**

	<b>Alt. 1 (Preferred)</b>	<b>Alt. 2</b>
Structure Removal	\$ 67,500	\$ 67,500
Structure	\$ 667,590	\$ 628,320
Detour	\$ 228,400	N/A
Roadway and Approaches	\$ 439,400	\$ 264,800
Miscellaneous and Mobility	\$ 351,510	\$ 237,780
Engineering and Contingencies	\$ 283,000	\$ 205,000
Right of way/Utilities	\$1,294,469	\$1,296,728
Relocations	0	0
<b>Total Cost of Alternative</b>	<b>\$ 3,331,869</b>	<b>\$ 2,700,128</b>

The estimated cost of right of way and construction of the project, as shown in the 2004-2010 TIP, is \$2,190,000 including \$540,000 for right of way and \$1,400,000 for construction. Right of way acquisition is scheduled for Federal Fiscal Year 2005, with construction to follow in Federal fiscal Year 2006.

## V. NATURAL RESOURCES

An evaluation of natural resources in the immediate area of potential project impact was performed. The evaluation describes the various natural resources likely to be impacted by the proposed project. This section identifies and estimates the likely consequences of the anticipated impacts to these resources. The information in this section is based on the Natural Resources Technical Report dated November 2004.

### A. Methodology

Published information and resources were collected prior to the field investigation. Information sources used to prepare this report include the following:

- United States Geological Survey (USGS) 7.5-Minute Topographic Maps, Asheville (1984), NC Quadrangle
- United States Fish and Wildlife Service (USFWS) National Wetlands Inventory (NWI) Maps, Asheville (1993), NC Quadrangle
- United States Department of Agriculture (USDA) Natural Resource Conservation Service (NRCS) Soil Survey for Buncombe County, Unpublished
- North Carolina Department of Environment and Natural Resources (NCDENR) basinwide assessment information for the French Broad River Basin (NCDENR, 2003)
- USFWS list of protected and candidate species (January 2004)
- North Carolina Natural Heritage Program (NHP) files of rare species and unique habitats, 2004

Water resource information was obtained from publications posted on the World Wide Web by NCDENR, Division of Water Quality (DWQ). Information concerning the occurrence of federally protected species in the project area was obtained from the USFWS list of protected and candidate species (January 2004). Information about species under state protection was obtained from the North Carolina NHP database of rare species and unique habitats. NHP files were reviewed for documented occurrences of species on state or federal lists and locations of significant natural areas.

Biologists performed a field survey on February 12, 2004, to inventory natural resources. Plant communities were identified by observing and recording dominant species. A combination of classification schemes was used to describe the communities. Terrestrial community classifications generally follow the NHP's Classification of the Natural Communities of North Carolina, Third Approximation (Schafale and Weakley, 1990). Plant names follow the usage in Radford *et al.* (1968). Vertebrate taxonomy follows Potter *et al.* (1980), Martof *et al.* (1980), Webster *et al.* (1985), and Menhinnick (1991). Predictions regarding wildlife community composition involved general qualitative habitat assessment based on existing vegetative communities. Water resources were identified and their physical characteristics were recorded. The presence or absence of wetlands was determined by reviewing the NWI maps of the project area. No wetlands were listed on the NWI maps or observed during the field survey within the project area.

The following terms are used to describe the limits of the natural resource investigations. “Project study area” or “project area” refer to the areas along the full length of the project alignment (400 feet long and 80 feet wide). The “project vicinity” is an area extending 0.5 miles on all sides of the project study area. The “project region” is an area equivalent in size to the area represented by a 7.5-minute USGS quadrangle map (61.8 square miles) with the project study area occupying the center of the project region.

## **B. Physiography and Soils**

### **1. Regional Characteristics**

The project area is located in the southwestern part of the Mountain physiographic province. The project area lies within the Blue Ridge Level III ecoregion, and more specifically, the Broad Basins IV ecoregion (Griffith *et al.*, 2002). The topography of the project area is flat (typical of river floodplains). Steep riverbanks are also located on both the north and south banks of the Swannanoa River. Project area elevation is approximately 2,000 feet above sea level.

### **2. Soils**

The process of soil development depends upon both biotic and abiotic influences. These influences include past geologic activities, nature of parent material, environmental and human influences, plant and animal activity, time, climate, and topographical position. The project area includes one main soil type: Udorthents-Urban land complex, 0-5 percent slopes, occasionally flooded. The Udorthents component is composed of loamy and stony soils typically found in gravel pits, mines, and cut-and-fill areas where the soil and underlying material has been removed and placed on the adjacent site (USDA, 2004). No hydric soils were found in the project study area.

## **C. Water Resources**

### **1. Waters Impacted**

The proposed project is located within the Upper French Broad River Basin, DWQ subbasin 04-03-02 (USGS 8-digit Hydrologic Unit 06010105). The drainage area is approximately 130 square miles. The Swannanoa River flows east to west through the proposed project area before entering the French Broad River approximately 1.7 miles downstream of the project area.

### **2. Water Resource Characteristics**

The Swannanoa River is approximately 70 feet wide with depth averages of 2-3 feet in the project area. The bottom substrate of the Swannanoa River in the project area is composed of silt overlaying rock, gravel, and sand.

Surface waters in North Carolina are assigned a best usage classification by the DWQ, which is designated to maintain, protect, and enhance water quality within the state. The Swannanoa River within the project study area is assigned a DWQ stream index number of 6-78. The best usage classification for the Swannanoa River is Class C. Class C water resources are used for aquatic life propagation and survival, fishing, wildlife, secondary recreation, and agriculture. There are no restrictions on watershed development activities.

No waters classified as Outstanding Resource Waters (ORW), High Quality Waters (HQW), Critical Area (CA), or Water Supply (WS-II or WS-I) occur within 1.0 mile of the project area.

The DWQ has initiated a basin-wide approach to water quality management for each of the 17 river basins in the state. DWQ collects biological and physical data for use within the basin-wide assessment and planning. River basins are re-assessed every five years.

The Swannanoa River within the project area, last sampled in 2002, received a Good-Fair rating. It has been rated Good-Fair since 1992 (NCDENR, 2003). Swannanoa River is not listed on the DWQ Clean Water Act (CWA) Section 303(d) list of impaired streams. There are no streams listed on the Section 303(d) located within one mile of the project study area.

Point source discharges in North Carolina are permitted through the National Pollutant Discharge Elimination System (NPDES) program administered by the DWQ. All dischargers are required to obtain a permit to discharge. There were no discharges observed within the project study area during field investigations. No permitted dischargers are located within one mile of the project area.

### **3. *Anticipated Impacts to Water Resources***

Impacts to water resources in the project area are likely to result from activities associated with project construction, such as clearing and grubbing on stream banks, riparian canopy removal, in-stream bent removal, bridge construction, fertilizers, and pesticides application during re-vegetation, and pavement construction. The following impacts to surface water resources are likely to result from the above-mentioned construction activities:

- Increased sediment loading and siltation downstream of the crossing and increased erosion in the project area.
- Changes in light incidence and water clarity due to increased sedimentation and vegetation removal.
- Alteration of water levels and flows due to interruptions and/or additions to surface and groundwater flow from construction.
- Changes in and destabilization of water temperature due to vegetation removal.
- Increased nutrient loading during construction via runoff from exposed areas.
- Increased concentration of toxic compounds from roadway runoff.
- Increased potential for release of toxic compounds such as fuel and oil from construction equipment and other vehicles.
- Alteration of stream discharge due to silt loading and changes in surface and groundwater drainage patterns.
- Alteration of water levels and flows as a result of interruptions and/or additions to surface and groundwater flow from construction.

NCDOT's *Best Management Practices for the Protection of Surface Waters* will be implemented during the construction phase of the project to minimize potential impacts to water resources in the project area.

#### **4. Impacts Related to Bridge Demolition and Removal**

The existing superstructure consists reinforced concrete deck girders with reinforced concrete deck having sidewalk and concrete rails. The substructure consists of two reinforced concreted abutments and two piers in the water. The maximum potential fill from bridge demolition is 800 cubic yards.

The streambed in the project area contains a substantial amount of silt and sand. This condition is conducive to high turbidity when disturbed; therefore, turbidity curtains are recommended.

### **D. Biotic Resources**

Terrestrial and aquatic communities are included in the description of biotic resources. Living systems described in the following sections include communities of associated plants and animals. These descriptions refer to the dominant flora and fauna in each community and the relationships of these biotic components. Descriptions of the terrestrial systems are presented in the context of plant community classifications. These classifications follow Schafale and Weakley (1990). Scientific nomenclature and common names (when applicable) are used for the plant and animal species described. Subsequent references to the same species are by the common name only.

#### **1. Terrestrial Communities**

Maintained/Disturbed and Riparian Forest are the two terrestrial communities found in the project area. Dominant faunal components associated with these terrestrial areas will be discussed in each community description; however, many species are adapted to the entire range of habitats found in the project area and may not be mentioned in each community description.

##### **a) Maintained/Disturbed Community**

The Maintained/Disturbed community is the dominant community within the project area. It encompasses habitats that have recently been or are currently impacted by human disturbance, such as maintained roadside right-of-ways and commercial land use property. Because of mowing and periodic clearing, this community is kept in a constant state of early succession. The intensely maintained (mowed) areas are dominated by fescue (*Festuca* sp.), plantain (*Plantago* sp.), and dandelion (*Taraxacum* sp.), as well as a variety of landscape ornamentals.

Many animals present in these disturbed habitats are opportunistic and capable of surviving on a variety of forage resources, ranging from vegetation (flowers, leaves, seeds, and fruits) to animal matter (living and dead). Virginia opossum (*Didelphis virginiana*), northern cardinal (*Cardinalis cardinalis*), Northern mockingbird (*Mimus polyglottos*), American crow (*Corvus brachyrhynchos*), Carolina chickadee (*Poecile carolinensis*), tufted titmouse (*Baeolophus bicolor*), and mourning dove (*Zenaidura macroura*) are examples of species attracted to lawns and roadside habitats. The Carolina wren (*Thryothorus ludovicianus*), eastern towhee (*Pipilo erythrophthalmus*), and several

species of mice (*Peromyscus* spp.) inhabit the less maintained margins or ecotones of road shoulders. Mortality among animals that migrate across roadways provides forage for opportunistic species such as the turkey vulture (*Cathartes aura*).

#### **b) Riparian Forest Community**

The Riparian Forest community forms a narrow buffer less than 20 feet wide along the banks of the Swannanoa River. The open canopy is composed of sycamore (*Platanus occidentalis*) and box elder (*Acer negundo*). Subcanopy growth is spotty and is dominated by black willow (*Salix nigra*) and saplings of previously mentioned canopy species. Dense shrub and ground cover consisting of privet (*Ligustrum sinense*), elderberry (*Sambucus canadensis*), blackberry (*Rubus* sp.), grape (*Vitis rotundifolia*), and Japanese honeysuckle (*Lonicera japonica*) blanket the riverbanks. The Riparian Forest community appears to be a remnant of the Montane Alluvial Forest natural community as described by Schafale and Weakley (1990), which most likely preexisted floodplain development along the Swannanoa River.

Animals previously mentioned may be found in this community as well as two-lined salamander (*Eurycea bislineata*) and slimy salamander (*Plethodon glutinosus*), which may reside under vegetative litter. Raccoon (*Procyon lotor*), eastern box turtle (*Terrapene carolina*), and rough green snake (*Opheodrys aestivus*) are also likely residents in the project area.

### **2. Aquatic Communities**

The aquatic community in the project area exists within the Swannanoa River. This water body has undergone substantial sedimentation as a result of urban development. Only an extremely narrow forested buffer zone exists on site to filter stormwater runoff. The Swannanoa River also receives direct discharges from stormwater outfall pipes.

Riverbanks, which are steep and heavily eroded, exhibit vegetation previously mentioned in the Riparian Forest Community descriptions. Animals such as bullfrog (*Rana catesbiana*) may reside along the water's edge along with mountain dusky salamander (*Desmognathus ochrophaeus*), crayfish, mayflies, stoneflies, caddisflies, dragonflies, damselflies, and segmented worms (*oligochaetes*), which exist under stones and other substrate on the river bed. Fish species in this section of the Swannanoa River include golden shiner (*Notemigonus crysoleucas*), river chub (*Nocomis micropogon*), flat bullhead (*Ictalurus platycephalus*), Northern hog sucker (*Hypentelium nigricans*), warpaint shiner (*Luxilus coccogenis*), Swannanoa darter (*Etheostoma swannanoa*), redbreast sunfish (*Lepomis auritus*), bluegill (*Lepomis macrochirus*), mirror shiner (*Notropis spectrunculus*), whitetail shiner (*Cyprinella galactura*), rock bass (*Ambloplites rupestris*), and one individual of blotched chub (*Erimystax insignis*), which is listed as a USFWS Federal Species of Concern.

### **3. Anticipated Impacts to Biotic Communities**

Project construction will have various impacts to the previously described terrestrial and aquatic communities. Any construction activities in or near these resources have the potential to impact biological functions. This section quantifies and qualifies potential impacts to the natural communities within the project area in terms of the area impacted

and the plants and animals affected. Temporary and permanent impacts are considered here along with recommendations to minimize or eliminate impacts.

**a) Terrestrial Communities**

Terrestrial communities in the project area will be impacted permanently by project construction from clearing and paving. Estimated impacts are based on the length of the permanent structure and the entire study corridor width. Alternative 1 (Preferred) will have an on-site detour east of the existing bridge that will have temporary impacts. **Table 2** describes the potential impacts to terrestrial communities by habitat type. Because impacts are based on the entire study corridor width, the actual loss of habitat will be less than the estimate.

**Table 2. Estimated Area of Impact to Terrestrial Communities**

Community Type	Area of Impact in Acres			
	Alternative 1 (Preferred)		Alternative 2	
	Temporary	Permanent	Temporary	Permanent
Maintained	0.52	0.00	0.33	0.00
Riparian Buffer	0.04	0.04	0.04	0.04
Total Impact	0.56	0.04	0.37	0.04

Destruction of natural communities along the project alignment will result in the loss of foraging and breeding habitats for the various animal species that utilize the area. Animal species will be displaced into surrounding communities. Adult birds, mammals, and some reptiles are mobile enough to avoid mortality during construction. Young animals and less mobile species, such as many amphibians, may suffer direct loss during construction. The plants and animals that are found in the upland communities are generally common throughout western North Carolina.

**b) Wetland Communities**

The Asheville, North Carolina NWI map shows no wetlands in the project vicinity. No jurisdictional wetlands were observed within the project area.

**c) Aquatic Communities**

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

Temporary and permanent impacts to aquatic organisms may result from increased sedimentation. Sediments have the potential to affect fish and other aquatic life in several ways, including the clogging and abrading of gills and other respiratory surfaces, affecting the habitat by scouring and filling of pools and riffles, altering water chemistry, and smothering different life stages. Increased sedimentation may cause decreased light penetration through an increase in turbidity. Dissolved oxygen rates may be lower as well due to the influx of organic materials and increase in water temperature. Impacts to

aquatic communities will be minimized by adherence to Best Management Practices for the Protection of Surface Waters.

## E. Special Topics

This section provides inventories and impact analyses for two federal and state regulatory issues: “Waters of the United States” and rare and protected species.

### 1. “Waters of the United States”: Jurisdictional Issues

Wetlands and surface waters fall under the broad category of “Waters of the United States” as defined in 33 CFR § 328.3 and in accordance with provisions of Section 404 of the CWA (33 U.S.C. 1344). These waters are regulated by the US Army Corps of Engineers (USACE). Any action that proposes to dredge or place fill material into surface waters or wetlands is subject to these provisions.

Swannanoa River is the only surface water to be affected by the proposed project. No wetlands will be directly impacted by the proposed project. **Table 3** lists the surface water impacts.

**Table 3. Estimated Area of Impact to Surface Waters**

Surface Waters	Length of Impact in Linear Feet			
	<i>Alternative 1 (Preferred)</i>		<i>Alternative 2</i>	
	<i>Temporary</i>	<i>Permanent</i>	<i>Temporary</i>	<i>Permanent</i>
Swannanoa River	50	13	0	13

### 2. Permits

#### a) Section 404 of the Clean Water Act

Construction is anticipated to be authorized by provisions of the General Nationwide 33 Permit. Buncombe County is one of the 25 counties designated by the WRC as having trout waters. Projects in these counties must be reviewed and approved by the WRC prior to issuance of the USACE Permit.

#### b) Section 401 Water Quality Certification

Section 401 of the CWA requires that the state issue or deny water quality certifications for any federally permitted or licensed activity that may result in a discharge to the waters of the United States prior to issuance of USACE permits.

#### c) Bridge Demolition and Removal

Demolition and removal of a highway bridge over Waters of the United States must be addressed when applying to the USACE for a permit. A worst-case scenario of dropping components of the bridge in the water is assumed. Effective September 20, 1999, this issue is included in the permit application for bridge reconstruction. The permit application henceforth will require disclosure of demolition methods and potential impacts to the body of water in the planning document for the bridge reconstruction.

The existing superstructure consists of reinforced concrete deck girders with reinforced concrete deck having sidewalk and concrete rails. The substructure consists of two

reinforced concreted abutments and two piers in the water. The maximum potential fill from bridge demolition is 800 cubic yards.

The Swannanoa River is a tributary to the French Broad River in the French Broad watershed and has a water quality classification of "C". No instream moratorium on this stream has been requested by the WRC.

**d) Tennessee Valley Authority (TVA)**

The project lies in TVA's jurisdiction. TVA approval must be obtained before any construction activities (Section 26a of the TVA Act). A copy of this document will be sent to TVA.

**3. Mitigation**

The USACE has adopted, through the Council on Environmental Quality (CEQ), a wetland mitigation policy that embraces the concepts of "no net loss of wetlands" and sequencing. The purpose of this policy is to restore and maintain the physical, chemical, and biological integrity of "Waters of the United States", including wetlands. Mitigation of stream and wetland impacts has been defined by the CEQ to include: avoiding impacts, minimizing impacts, rectifying impacts, reducing impacts over time, and compensating for impacts (40 CFR 1508.20). Each of the three aspects (avoidance, minimization, and compensatory mitigation) must be considered in sequential order. Mitigation efforts should not be required since this project is anticipated to be authorized under a Nationwide 33 Permit.

**F. Rare and Protected Species**

Some populations of plants and animals are declining as a result of either natural forces or their difficulty competing with humans for resources. Rare and protected species listed for Buncombe County, and any likely impacts to these species as a result of the proposed project construction, are discussed in the following sections.

**1. Federally Protected Species**

Plants and animals with a federal classification of Endangered (E), Threatened (T), Proposed Endangered (PE), and Proposed Threatened (PT) are protected under provisions of Section 7 and Section 9 of the Endangered Species Act of 1973. The USFWS lists twelve species (as of January 2004) under federal protection for Buncombe County. These species are listed in **Table 4**.

**Table 4. Species Under Federal Protection in Buncombe County**

Common Name	Scientific Name	Federal Status
Vertebrates		
Bog turtle	<i>Clemmys muhlenbergii</i>	T(S/A) <sup>1</sup>
Carolina northern flying squirrel	<i>Glaucomys sabrinus coloratus</i>	E
Eastern cougar	<i>Puma concolor cougar</i>	E
Gray bat	<i>Myotis grisescens</i>	E**
Spotfin chub	<i>Hybopsis monacha</i>	T*
Invertebrates		
Appalachian elktoe	<i>Alasmidonta raveneliana</i>	E
Oyster mussel	<i>Epioblasma capsaeformis</i>	E***
Vascular Plants		
Bunched arrowhead	<i>Sagittaria fasciculata</i>	E*
Mountain sweet pitcher plant	<i>Sarracenia jonesii</i>	E*
Spreading avens	<i>Geum radiatum</i>	E
Virginia spiraea	<i>Spiraea virginiana</i>	T
Nonvascular Plants		
Rock Gnome Lichen	<i>Gymnoderma lineare</i>	E
Notes:		
E	Endangered - A species that is threatened with extinction throughout all or a significant portion of its range.	
T	Threatened - A species that is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range.	
T(S/A)	Similarity of Appearance - A species that is listed as threatened due to similarity of appearance with other rare species.	
*	Historic record - the species was last observed in the county more than 50 years ago.	
**	Incidental/migrant record - the species was observed outside of its normal range or habitat.	
***	Historic record - obscure and incidental record.	
<sup>1</sup> In the November 4, 1997, Federal Register (55822-55825), the northern population of the bog turtle (from New York south to Maryland) was listed as T (threatened), and the southern population (from Virginia south to Georgia) was listed as T(S/A) (threatened due to similarity of appearance). The T(S/A) designation bans the collection and interstate and international commercial trade of bog turtles from the southern population. The T(S/A) designation has no effect on land-management activities by private landowners in North Carolina, part of the southern population of the species.		

A brief description of the characteristics and habitat requirements of each species follows, along with a conclusion regarding potential project impact. Surveys for federally protected species are valid for two years from the survey date. If the project is not constructed within those two years then the area may need to be resurveyed prior to the let date.

**Bog turtle (*Clemmys muhlenbergii*)      Threatened due to Similarity of Appearance**

**Vertebrate Family: Emydidae**

**Federally Listed: 1997**

The bog turtle is a small freshwater turtle reaching a maximum carapace length of 4.5 inches. These turtles have a domed carapace that is weakly keeled and is light brown to ebony in color. The scutes have a lighter-colored starburst pattern. The plastron is

brownish-black with contrasting yellow or cream areas along the midline. This species is distinguished by a conspicuous orange, yellow, or red blotch on each side of the head.

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

The southern population of the bog turtle ranges from southern Virginia to northern Georgia, and is listed as Threatened due to Similarity of Appearance to the northern population. Therefore, the southern population is not afforded protection under Section 7 of the Endangered Species Act.

**Biological Conclusion:**

**No Effect**

No habitat exists within the project area for the bog turtle. There are no freshwater wetlands, or marshes with slow moving streams, ditches, or boggy areas near the bridge. A search of the NHP database revealed no occurrences of the bog turtle within 2 miles. It can be concluded that the project will not impact this species.

**Carolina northern flying squirrel (*Glaucomysabrinus coloratus*)**

**Endangered**

**Vertebrate Family: *Sciuridae***

**Federally Listed: 1985**

The Carolina northern flying squirrel is a small mammal weighing about 3 to 5 ounces. The adult squirrel is gray with a reddish or brownish wash on the back and a grayish-white to white underside. It has a large flap of skin along either side of its body from wrist to ankle. The skin flaps and its broad flattened tail allow the northern flying squirrel to glide from tree to tree. It is a strictly nocturnal animal with large dark eyes.

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

**Biological Conclusion:**

**No Effect**

No habitat exists in the project area for the Carolina northern flying squirrel. The elevation of the project area is approximately 1976 feet and lacks forest habitat. A search of the NHP database found no occurrences of Carolina northern flying squirrel in the project vicinity. It can be concluded that the project will not impact this endangered species.

**Eastern cougar (*Felis concolor cougar*)**

**Endangered**

**Family:** *Felidae*

**Federally Listed:** 1973

The Eastern cougar or panther (also referred to as a mountain lion), is a very large, long-tailed cat, attaining total lengths of 6 to 7.5 feet and weights of 100 to 150 pounds. In adults the fur is short brownish on the back and sides, with whitish under parts. The muzzle and tip of the tail are dark. Tracks of the adults are large (3.5 inches), and the retractable claws do not show.

The cougar's diet consists mainly of deer, but includes small mammals, fish, wild turkeys, and occasionally domestic livestock. The Eastern cougar typically stalks its prey and leaps upon it from the ground rather than from ambush in trees or rocks. It will often hide uneaten portions of its kill for future meals, but it will not eat spoiled meat.

It does seem to need a large undisturbed wilderness area with adequate food supply. The Eastern cougar prefers large tracts of wilderness area and is found in remote, rugged habitats such as mountains, gorges, and swamps. The home range of the cougar averages 9.6 to 19.3 square miles. Males are solitary most of the year, but a female may be accompanied by her young for up to two years after their birth. The Eastern cougar's endangered status is largely a result of habitat loss through deforestation, as well as hunting and trapping.

**Biological Conclusion:**

**No Effect**

No habitat exists in the project area for the Eastern cougar. The bridge is within the City of Asheville and is not close to large tracts of wilderness area. A search of the NHP database revealed no occurrences of the Eastern cougar within 2 miles. It can be concluded that the project will not impact this endangered species.

**Gray bat (*Myotis grisescens*)**

**Endangered**

**Family:** *Vespertilionidae*

**Federally Listed:** 1976

The gray bat is easily distinguished from other bats by its large size and uniform fur color. It weighs 0.2 to 0.5 ounces and the forearm measures 1.5 to 1.8 inches in length. The dorsal fur is uniformly gray or russet, as opposed to bi- or tri-colored as in other bats. In all other species of *Myotis*, the wing membrane connects to the base of the first toe, whereas in the gray bat it connects at the ankle.

The gray bat is found mainly in the cave regions of Arkansas, Missouri, Kentucky, Tennessee, and Alabama, although colonies and individuals are occasionally found in neighboring states. Gray bats live in caves all year, but move between summer and winter caves. In winter, they hibernate primarily in deep vertical caves with large rooms acting as cold air traps. During summer, females form maternity colonies of a few hundred to many thousands of individuals, often in large caves containing streams. These colonies

prefer caves that, because of their configuration, trap warm air or provide restricted rooms or domed ceilings capable of trapping body heat from clustered individuals. These summer caves are usually less than 1.0 mile from rivers or lakes.

Gray bats forage primarily over water along rivers or lakeshores. Most foraging occurs within 15 feet of the surface. Mayflies are apparently a major item in the diet, but they may feed on other insects as well.

**Biological Conclusion**

**No Effect**

No caves were discovered within the project areas. The Swannanoa River may serve as suitable foraging habitat for this species. However, no individuals of this species or indications of their presence were observed. A search of the NHP database found no occurrence of this animal within the project vicinity. Furthermore, the record of this species in Buncombe County is an incidental/migratory record, implying that the species was observed outside its normal range or habitat. It can be concluded that the project will not impact this endangered species.

**Spotfin chub (*Cyprinella monacha*)**

**Threatened**

**Vertebrate Family: *Cyprinidae***

**Federally Listed: 1977**

This small, elongate fish is recognized by the large black spot in the caudal region. The spotfin chub grows to a length of 3.6 inches. The mouth is inferior, with a tiny pair of terminal labial barbels. Breeding males are brilliant turquoise on the back and sides and have white-tipped fins. Juveniles and adult females have olive-colored backs, silvery sides, and white undersides. The spotfin chub is believed to spawn in June. It feeds by sight and taste, and its diet consists mainly of tiny insect larvae that occur on the stream bottom.

The habitat of the spotfin chub is moderate to large streams with alternating riffles and pools and clear, cool to warm, fast-flowing water. They rarely, if ever, occupy heavily silted streams. It is restricted to the Tennessee River drainage area. In North Carolina, it is known only from the Little Tennessee River in Macon and Swain counties, and has never been found in streams with significantly silted substrates.

**Biological Conclusion**

**No Effect**

The Swannanoa River is within the Tennessee River drainage. Stream habitat within the project area, although cobbles and boulders are present, has a significantly silted substrate. The Swannanoa River is heavily impacted by urban development, polluted by domestic and industrial wastes, negatively affecting stream habitat. Furthermore, the record of this species in Buncombe County is a historic record, indicating that the species was observed more than 50 years ago. A search of the NHP database found no occurrence of this animal within the project vicinity. No individuals of this species were observed. It can be concluded that the project will not impact this threatened species.

**Appalachian elktoe (*Alasmidonta raveneliana*)**

**Endangered**

**Invertebrate Family: Unionidae**

**Federally Listed: 1994**

The Appalachian elktoe is a kidney-shaped freshwater mussel endemic to the upper Tennessee River system in western North Carolina and eastern Tennessee. The adult shell reaches to 3.5 inches in length and is usually dark brown with prominent to obscure greenish rays. This mussel inhabits relatively shallow medium-sized creeks and rivers with moderate to fast flowing water. It is generally found in gravelly substrates mixed with cobbles and boulders or occasionally in silt-free, coarse sandy substrates. Reproduction is similar to that of other freshwater mussels and the banded sculpin (*Cottus carolinae*) has been identified as a host species for developing glochidia. Historically, this mussel was found in the French Broad River system, including French Broad mainstem and the Little River in Transylvania County. Surveys conducted in the French Broad River system from 1986 through the spring of 1992 failed to locate any specimens of the Appalachian elktoe (USFWS, 2002).

**Biological Conclusion**

**May Affect - Not Likely to Adversely Affect**

A search of the NHP database of rare species and unique habitats, conducted on February 3, 2004, shows one historical occurrence of this species approximately 0.75 miles downstream of the project area. However, no recent records within the last 20 years have been reported. No individuals of this species were observed field visit on May 6, 2005. It is believed that the Appalachian elktoe has been extirpated from the project area, based upon excessive silt levels caused by development within the project area. Therefore, no impacts to the Appalachian elktoe are anticipated during project construction.

Water quality data collected by the NCDENR – Division of Water Quality at the project site indicates that the river is impaired by many factors associated with development, however since the 1980's the site has improved from a rating of Poor to Fair and then to Good-Fair in the 1990's. The middle section of the river, upstream of the project site, still has a rating of Fair, indicating that the river is impaired. Efforts are under way to identify and repair sources of degradation and it is likely that the water quality of the area will continue to improve with time. Mills River and the Little River are part of the headwaters of the French Broad, upstream of its confluence with the Swannanoa, and could possibly serve as a source population for natural re-colonization of the Asheville area in the future. This projects close proximity to the mouth of the river and patches of suitable habitat make it a plausible candidate for future recruitment of Appalachian elktoe. These factors as well as the cryptic nature of mussels make it impossible to rule out the possibility that mussels do still exist in close proximity to the project area.

**Oyster mussel (*Epioblasma capsaeformis*)**

**Endangered**

**Invertebrate Family: Unionidae**

**Federally Listed: 1997**

The shell of the oyster mussel is a dull to sub-shiny, yellowish to green color with numerous narrow dark green rays. It may attain lengths of 2.0 to 2.7 inches. The inside of

the shell is white to bluish-white. Shells of females are slightly inflated and very thin toward the posterior margin of the shell. When the larvae are released into the water, they attach and encyst on the gills and/or fins of a host fish.

The oyster mussel historically occurred throughout much of the Cumberland region of the Tennessee and Cumberland River drainages in Alabama, Kentucky, Tennessee, and Virginia. It is now considered endangered in Kentucky and Virginia, and is known to survive in small populations in only a few locations in Kentucky, Tennessee, and Virginia. Recent research uncovered a record of a collection of this species in Madison County in 1918 and from the French Broad River at Asheville.

The oyster mussel inhabits medium-size streams to large rivers on shoals and riffles in coarse sand/gravel/cobble substrate and moderate to swift currents. It is not associated with small stream habitats and does not extend far upstream in tributaries. It prefers water depths of less than three feet and is sometimes found associated with water-willow (*Justicia americana*) beds. Fish that have been identified as host include the spotted darter (*Etheostoma maculatum*), redline darter (*Etheostoma rufilineatum*), dusky darter (*Percina sciera*), and banded sculpin (*Cottus carollinae*) (Yager and Saylor 1995). The loss of riverine habitat because of impoundments adversely affects aquatic habitat and changes the fish fauna essential to a mussel's reproductive cycle.

#### **Biological Conclusion**

#### **May Affect - Not Likely to Adversely Affect**

Habitat for the oyster mussel does not exist within the project area. As previously mentioned, no record has been found in Buncombe County in the last 20 years. No individuals of this species were observed during the field visit on May 6, 2005. It can be concluded that the proposed project will not impact the oyster mussel.

As with the Appalachian elktoe, this projects close proximity to the mouth of the river and patches of suitable habitat make it a plausible candidate for future recruitment of the oyster mussel. These factors as well as the cryptic nature of mussels make it impossible to rule out the possibility that mussels do still exist in close proximity to the project area.

#### **Bunched arrowhead (*Sagittaria fasciculata*)**

**Endangered**

**Family:** *Alismataceae*

**Federally Listed:** 1979

The emergent aquatic perennial bunched arrowhead has spatulate leaves that reach 12 inches in length and 0.75 inches in width. The long-petiolate leaves are basal about an erect scape. The scape bears three-petaled white flowers in whorls of three, with male flowers above and female flowers below. Fruits ascend from the stalks of the lowest whorl of flowers. The fruit is a head of achenes. Flowering and fruiting occurs from May to July.

Bunched arrowhead is known in North Carolina from only one location in Henderson County. There is a questionable historic record from Buncombe County. The plant is found in non-stagnant seepage areas that have very low or no net flow and sandy loam soils with a thick muck layer.

**Biological Conclusion:****No Effect**

No suitable habitat for this species exists within the project area. Areas having a very low or no net flow, and soils with a muck layer are absent within the project area. A search of the NHP database found no occurrence of this plant within the project vicinity. It can be concluded that the project will not impact this endangered species.

**Mountain sweet pitcher plant (*Sarracenia jonesii*)****Endangered****Family: *Sarraceniaceae*****Federally Listed: 1989**

The mountain sweet pitcher plant is a perennial herb with numerous tubular leaves growing in clusters. The leaves grow from 8 to 29 inches tall and have a heart-shaped hood. The waxy dull green of the leaves is criss-crossed with maroon-purple veins. The erect scape bears one maroon flower with five recurved petals.

Populations of mountain sweet pitcher plant are known from ten locations in North and South Carolina. The four North Carolina populations occur in Henderson and Transylvania counties in the French Broad River drainage basin. The plant is restricted to bogs and streamsides and is usually found in level depressions on floodplains, but has also been found on granite rock faces beside waterfalls. Soils supporting the plant are deep, poorly drained acidic soils with a high organic matter content.

**Biological Conclusion:****No Effect**

No suitable habitat for this species exists within the project area. No bogs or wet depressions exist within the floodplain of the project area. A search of the NHP database found no occurrence of this plant within the project vicinity. It can be concluded that the project will not impact this endangered species.

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

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

Spreading avens is found only in the North Carolina and Tennessee section of the Southern Appalachian Mountains. Spreading avens occurs on scarps, bluffs, cliffs, and escarpments on mountains, hills, and ridges. Known populations of this plant have been found to occur at elevations from 5,060 to 5,800 feet. Other habitat requirements for this species include full sunlight and shallow acidic soils. These soils are composed of sand, pebbles, humus, sandy loam, and clay loam. Most populations are pioneers on rocky outcrops.

**Biological Conclusion:****No Effect**

No suitable habitat for this species exists within the project area. This species only occurs at high elevations. A search of the NHP database found no occurrence of this plant within the project vicinity. It can be concluded that the project will not impact this endangered species.

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

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

Virginia spiraea is typically found in disturbed sites along rivers and streams. It forms dense clumps around boulders and in rock crevices, and apparently depends on flood scour to eliminate woody competitors and create suitable early successional habitats. Typical habitat includes scoured banks of high gradient streams, or on meander scrolls, point bars, natural levees, and braided features of lower stream reaches. In North Carolina, existing populations are known from Ashe, Macon, Mitchell, and Yancey counties. In Buncombe County, there is an historic record of an extirpated population.

**Biological Conclusion:****No Effect**

No suitable habitat for this species exists within the project area. No exposed boulders are present and the Swannanoa River is not considered a high gradient stream. Scouring along the stream banks was minimal. In Buncombe County, the only record there is an historic record of an extirpated population. A search of the NHP database found no occurrence of this plant within the project vicinity. It can be concluded that the project will not impact this threatened species.

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

The rock gnome lichen is a strap like or squamulose lichen in the reindeer moss family. It grows in dense colonies of narrow (0.04 inch) straps that are blue-grey on the upper surface and generally shiny-white on the lower surface. The lichen can be identified by its fruiting bodies, which are borne singly or in clusters, are black in color, and are found

at the tips of the squamules. The fruiting season of the rock gnome lichen occurs from July through September.

The rock gnome lichen is a narrow endemic, restricted to areas of high humidity. These high-humidity environments occur on high-elevation (4,000 feet) mountaintops and cliff faces that are frequently bathed in fog, or in lower elevation (2,500 feet) deep gorges in the southern Appalachians. The rock gnome lichen primarily occurs on vertical rock faces where seepage water from forest soils above flows only at very wet times. The rock gnome lichen is almost always found growing with the moss *Adreaea* in these vertical intermittent seeps. The major threat of extinction to the rock gnome lichen relates directly to habitat alteration/loss of high elevation coniferous forests. These coniferous forests usually lie adjacent to the habitat occupied by the rock gnome lichen. The high elevation habitat occurs in Ashe, Avery, Buncombe, Mitchell, Swain, and Yancey counties. The lower elevation habitat of the rock gnome lichen can be found in Jackson, Rutherford, and Transylvania counties.

**Biological Conclusion:**

**No Effect**

No habitat exists in the project area for the rock gnome lichen. The elevation of the project area is approximately 1,976 feet. In Buncombe County, this species occurs on high-elevation mountaintops and cliff faces above 4,000 feet. A search of the NHP database found no occurrences of rock gnome lichen in the project vicinity. It can be concluded that the project will not impact this endangered species.

**2. Federal Species of Concern**

Federal Species of Concern (FSC) are not legally protected under the Endangered Species Act and are not subject to any of its provisions, including Section 7, until they are formally proposed or listed as Threatened or Endangered. **Table 5** includes FSC species listed for Buncombe County and their state classifications. Organisms that are listed as Endangered (E), Threatened (T), or Special Concern (SC) on the North Carolina Natural Heritage Program list of Rare Plant and Animal Species are afforded state protection under the State Endangered Species Act and the North Carolina Plant Protection and Conservation Act of 1979. However, the level of protection given to state-listed species does not apply to NCDOT activities.

**Table 5. Federal Species of Concern in Buncombe County**

Common Name	Scientific Name	State Status	Habitat Present
Vertebrates			
Alleghany woodrat	<i>Neotoma magister</i>	E	N
Blotched chub	<i>Erimystax insignis</i>	SR	Y
Cerulean warbler	<i>Dendroica cerulea</i>	SR	N
Eastern small-footed myotis	<i>Myotis leibii</i>	SR	N
Hellbender	<i>Cryptobranchus alleganiensis</i>	SC	Y
Southern Appalachian black-capped chickadee	<i>Poecile atricapillus praticus</i>	SC	N
Southern Appalachian red crossbill	<i>Loxia curvirostra</i>	T	N
Southern Appalachian saw-whet owl	<i>Aegolius acadicus</i>	SC	N
Southern Appalachian woodrat	<i>Neotoma floridana haematorea</i>	SC	N
Southern Appalachian yellow-bellied sapsucker	<i>Sphyrapicus varius appalaciensis</i>	SC	N
Southern water shrew	<i>Sorex palustris punctulatus</i>	E	N
Appalachian Bewick's wren	<i>Thryomanes bewickii altus</i>	SC *	N
Bachman's sparrow	<i>Aimophila aestivalis</i>	SC *	N
Longhead darter	<i>Percina macrocephala</i>	E *	N
Paddlefish	<i>Polyodon spathula</i>	T *	Y
Rafinesque's big-eared bat	<i>Corynorhinus (=Plecotus) rafinesquii</i>		N
Invertebrates			
French Broad crayfish	<i>Cambarus reburus</i>		Y
Diana fritillary butterfly	<i>Speyeria diana</i>	SR *	N
Tawny crescent butterfly	<i>Phycoides batesii batesii</i>	SR *	N
Vascular Plants			
Butternut	<i>Juglans cinerea</i>	W5	N
Cain's reedgrass	<i>Calamagrostis cainii</i>	E	N
Carolina saxifrage	<i>Saxifraga caroliniana</i>	SR-T	N
Divided-leaf ragwort	<i>Senecio millefolium</i>	T	N
Fraser fir	<i>Abies fraseri</i>		N
French Broad heartleaf	<i>Hexastylis rhombiformis</i>	SR-L	N
Glade spurge	<i>Euphorbia purpurea</i>	SR-T	N
Gray's lily	<i>Lilium grayi</i>	T-SC	N
Mountain catchfly	<i>Silene ovata</i>	SR-T	N
Mountain heartleaf	<i>Hexastylis contracta</i>	E	N
Pinnate-lobed black-eyed Susan	<i>Rudbeckia triloba var. pinnatoloba</i>	SR-T	N
Piratebush	<i>Buckleya distichophylla</i>	E	N
Sweet pinesap	<i>Monotropis odorata</i>	SR-T	N
Fraser's loosestrife	<i>Lysimachia fraseri</i>	E *	N
T = Threatened E = Endangered SC = Special Concern SR = Significantly Rare -T = Fewer than 100 populations throughout the species' range -L = Fewer than 50 populations throughout the species' range * = Historic record; the species was observed over 20 years ago			
Sources: Amoroso, ed., 2002; LeGrand, Hall, and Finnegan, 2001			

### **3. Summary of Anticipated Impacts**

No Federally Protected species or FSC species were observed during the site visit, and none are recorded at NHP as occurring within 2 miles of the project area. However, records from the DWQ fish monitoring database indicate that one individual of blotched chub was collected in the project area on June 28, 1993.

## **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, and 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 effect of Federally funded, licensed, or permitted undertakings on properties listed on or eligible for the National Register of Historic Places and afford the Advisory Council of Historic Preservation a reasonable opportunity to comment on such undertakings.

### **B. Historic Architecture**

A field survey of the Area of Potential Effects (APE) was conducted on November 8, 2001. All structures within the APE were photographed, and later reviewed by the State Historic Preservation Office (HPO). Two resources were identified in the APE; the Biltmore Village Historic District, listed in the National Register of Historic Places (NRHP), and Bridge No. 39, on the State Study list. While the Biltmore Village is listed on the NRHP, it will not be directly impacted by the replacement of Bridge No. 39. Bridge No. 39 was determined not eligible for the NRHP, as concurred upon by the State Historic Preservation Officer (SHPO) in a letter dated September 9, 2002. A copy of the concurrence memorandum is included in the Appendix.

It was determined that there will be no effect on the Biltmore Village Historic District. NCDOT will work with the HPO and property owners in the Biltmore Village Historic District on the aesthetics of the new bridge railings and lights. A copy of the concurrence form (dated February 22, 2005) is included in the Appendix.

The Asheville Area Metropolitan Planning Organization requested that NCDOT work with Biltmore Village representatives due to the bridge's close proximity to the historic district. A copy of the request is included in the Appendix. The pattern on the bridge rails will mimic that of the McDowell Street Bridge. Lamps and quatrefoil designs will be incorporated into the bridge design. NCDOT will consult with the State Historic Preservation Office, Biltmore Village Historic Museum, and Biltmore Village Historic District on the design details.

### **C. Archaeology**

The SHPO, in a memorandum dated May 10, 2002, stated that it is "unlikely that any archaeological resources that may be eligible for [inclusion] in the National Register of Historic Places will be affected by the project" and recommended "no archaeological

investigation be conducted in connection with this project.” These statements fulfill the requirements of 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. A copy of the SHPO memorandum is included in the Appendix.

## **VII. ENVIRONMENTAL EFFECTS**

Anticipated impacts to the resources in the project area are described in this section. The project is considered to be a Federal “Categorical Exclusion” because of its limited scope and insignificant environmental consequences. The project is expected to have an overall positive impact. Replacement of an inadequate bridge will result in safer traffic operations.

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 effect on public facilities or services is anticipated. The project is not expected to adversely affect social, economic, or religious opportunities in the area.

No adverse effect on families or communities is anticipated. Right-of-way acquisition will be limited.

Maintaining driveway access to adjacent businesses will be a concern during construction. Maintaining driveway access to adjacent properties will be investigated during design.

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

The Farmland Protection Policy Act requires all Federal agencies or their representatives to consider the potential impacts to prime and important farmland soils by all land acquisition and construction projects. Prime and important farmland soils are defined by the U.S. Natural Resources Conservation Service. No prime or important farmlands will be impacted by the proposed project.

This project is an air quality “neutral” project, so it is not required to be included a regional emission analysis and a project level CO analysis is not required. The project is located in Buncombe County, which has been determined to be in compliance with the National Ambient Air Quality Standards. The proposed project is located in an attainment area, therefore 40 CFR part 51 is not applicable. This project is not anticipated to create any adverse effects on the air quality of this attainment area.

Traffic volumes will not increase or decrease because of this project. The project’s impact on noise and air quality will not be significant.

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

An examination of records was conducted to identify areas known to contain hazardous materials. In addition, a field reconnaissance survey along the project corridor was conducted. Five sites presently or formally containing petroleum underground storage tanks were identified within the project limits—one active gas station and four former gas stations. No hazardous waste sites, regulated or unregulated landfills, or dump sites were found in the project area. Low to moderate monetary and scheduling impacts resulting from these sites are anticipated.

Buncombe County is a participant in the National Flood Insurance Program (NFIP). Flood Insurance Study maps for Buncombe County show Bridge No. 39 is located in a FEMA 100-year floodplain (see **Figure 5**). There are no practical alternatives to the crossing. Replacement of this bridge is not expected to affect the 100-year floodplain.

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

## **VIII. PUBLIC INVOLVEMENT**

A newsletter was circulated to inform residents in the area of the proposed project. A Citizens Informational Workshop was held May 27, 2004 from 4:30 p.m. to 6:30 p.m. in the Asheville High School Theater. This meeting gave residents and local officials an opportunity to become familiar with the proposed project and to give their comments. Twenty-one area residents attended the meeting, along with representatives from the City of Asheville. Comments were submitted during and following the meeting in person as well as by postal and electronic mail.

Comments from citizens included concerns over retail access and livelihood during construction. In addition, citizens verified the need to maintain pedestrian and bicycle traffic during construction.

## **IX. AGENCY COMMENTS**

### **United States Department of the Interior: Fish and Wildlife Service**

The recorded occurrence of Appalachian elktoe (*Alasmidonta raveniliana*) led USFWS to recommend surveys of fish and mussels to identify any existing species in the vicinity of the bridge.

*Response: A search of the NHP database of rare species and unique habitats, conducted on February 3, 2004, shows one historical occurrence of this species approximately 0.75 miles downstream of the project area. However, no recent records within the last 20 years have been reported. No individuals of this species were observed field visit on May 6, 2005. It is believed that the Appalachian elktoe has been extirpated from the project area, based upon excessive silt levels caused by development within the project area. Therefore, no impacts to the Appalachian elktoe are anticipated during project construction.*

### **North Carolina Wildlife Resources Commission**

The Swannanoa River is not considered a trout water and the proposed project will not result in adverse impacts to trout. The WRC does recommend surveys of fish and mussels in the vicinity of Bridge No. 39 to identify any potentially impacted mussel species, specifically the Appalachian elktoe (*Alasmidonta raveneliana*).

*Response: See response to United States Department of the Interior.*

In addition, standard recommendations include designing deck drainage flow through a vegetated buffer before entering the river and designing a bridge to improve and/or avoid altering the natural stream morphology.

*Response: Due to the limited amount of existing vegetative buffer (less than 20 feet wide) adjacent to the bridge, providing for deck drainage flow through a vegetated buffer may not be possible. While vegetative buffers are not required within this basin, water quality will be taken into account while designing the deck drainage system.*

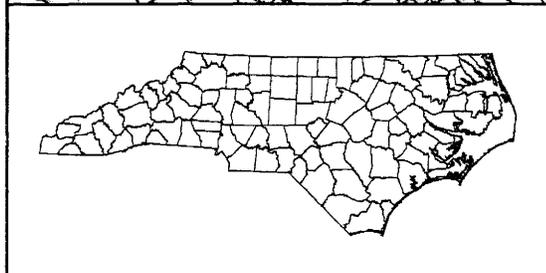
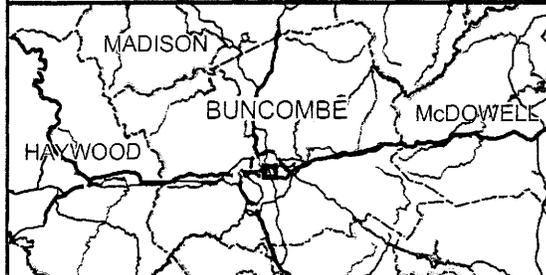
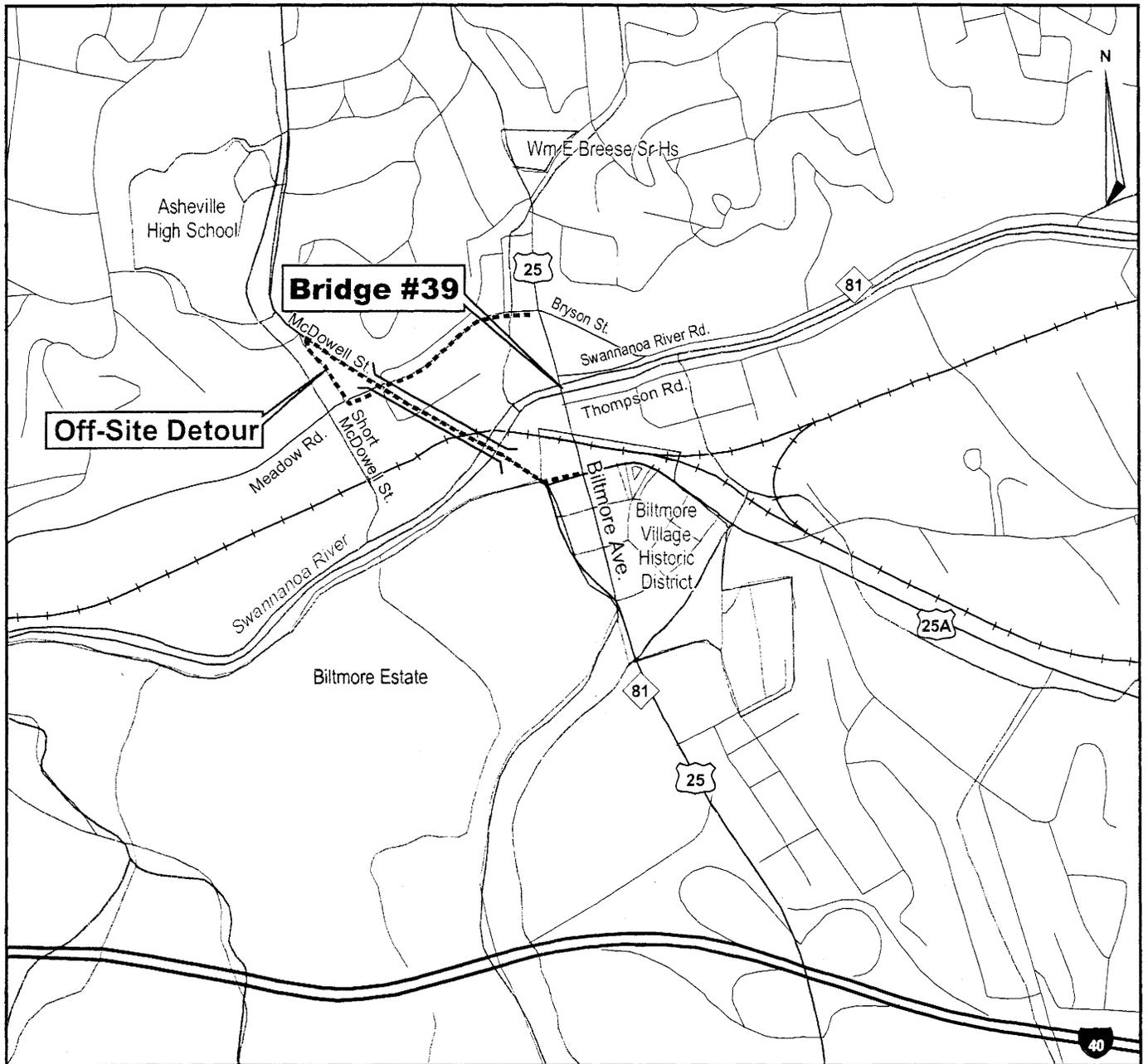
### **Asheville Area Metropolitan Planning Organization (MPO)**

The MPO requests that the project designers work closely with Biltmore Village to find a bridge design that is consistent with the historic architecture of the village and incorporates historic elements into the design. The MPO requests that minimum 6-foot wide sidewalks, preferably wider, be provided on both sides of the bridge. The MPO requests that the outside lanes be 14-feet wide to accommodate bicyclists.

*Response: NCDOT will coordinate with the Biltmore Historic Village to properly incorporate period lamps and quatrefoil designs into the bridge design. In addition, the pattern on the bridge rails will mimic that of the McDowell Street Bridge.*

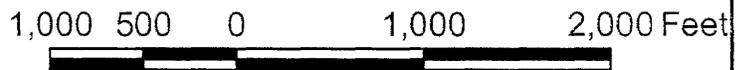
*The bridge will have 7-foot wide sidewalks on both sides of the bridge. The outside lanes will be 14 feet wide.*

# Figures



North Carolina - Department of Transportation  
 Project Development and Environmental Analysis Branch

**FIGURE 1**  
**VICINITY MAP**  
 Replacement of Bridge Number 39  
 on NC 81 (Biltmore Avenue)  
 over Swannanoa River  
 Asheville, Buncombe County  
 TIP No. B-2515



**Legend**

 Riparian Community

*Alt 1 - Temporary Detour*

 Construction Limits

 Centerline

 Edge of Pavement

 Barrier

 Structure

 Sidewalk

*Alt 1 & 2 - Permanent Alignment*

 Construction Limits

 Centerline

 Edge of Pavement

 Structure

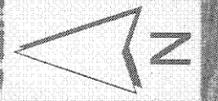
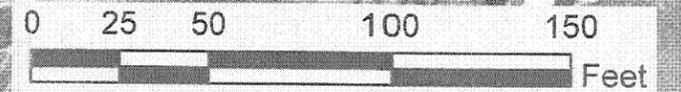
Swannanoa River Road  
will be closed during  
construction.

Long  
John  
Silver's

Detour Bridge

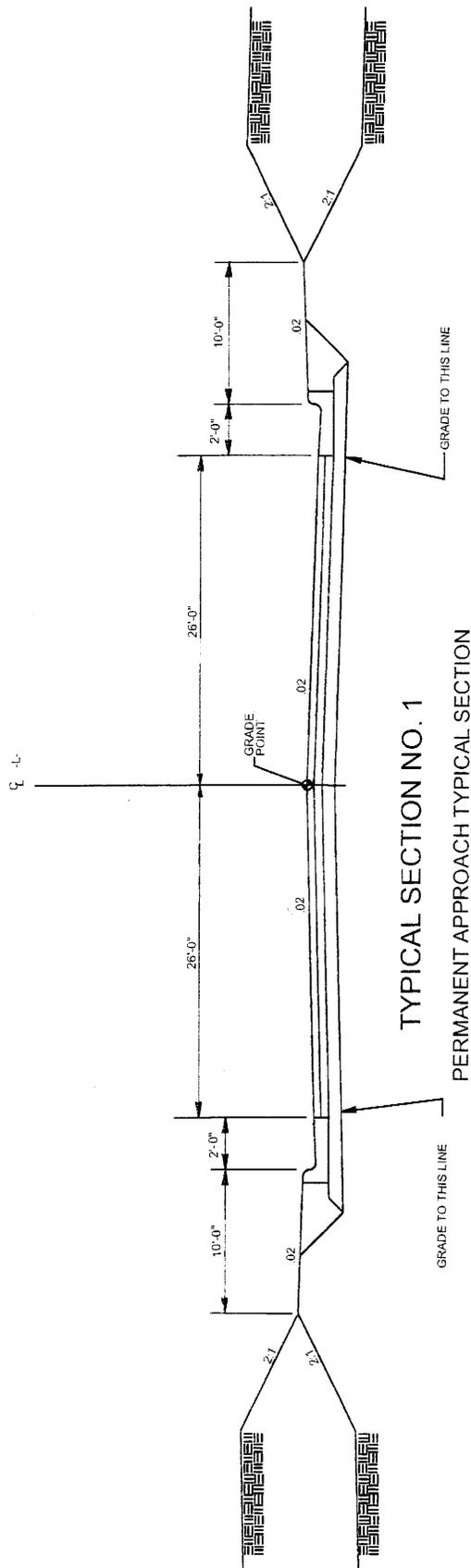
Access during construction will be  
investigated during final design.

Bridge #39

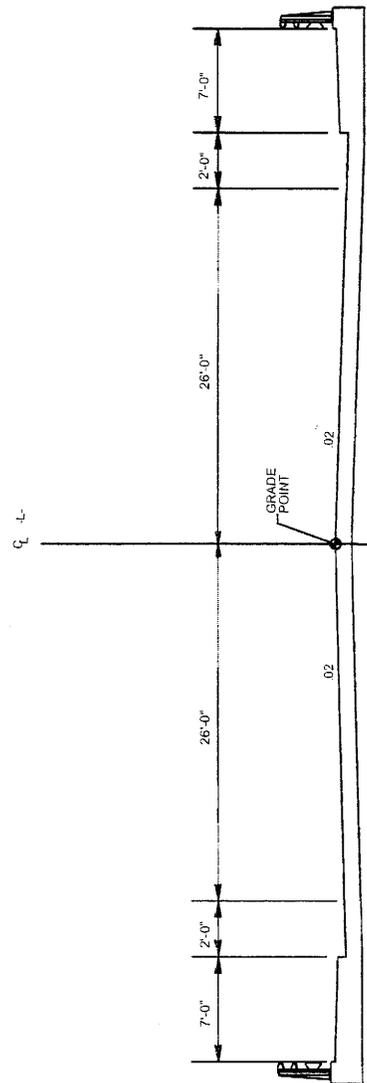


North Carolina - Department of Transportation  
Project Development and Environmental Analysis Branch

**FIGURE 2**  
**ALTERNATIVES**  
**Replacement of Bridge Number 39**  
**on NC 81 (Biltmore Avenue)**  
**over Swannanoa River**  
Asheville, Buncombe County  
TIP No. B-2515



**TYPICAL SECTION NO. 1**  
PERMANENT APPROACH TYPICAL SECTION

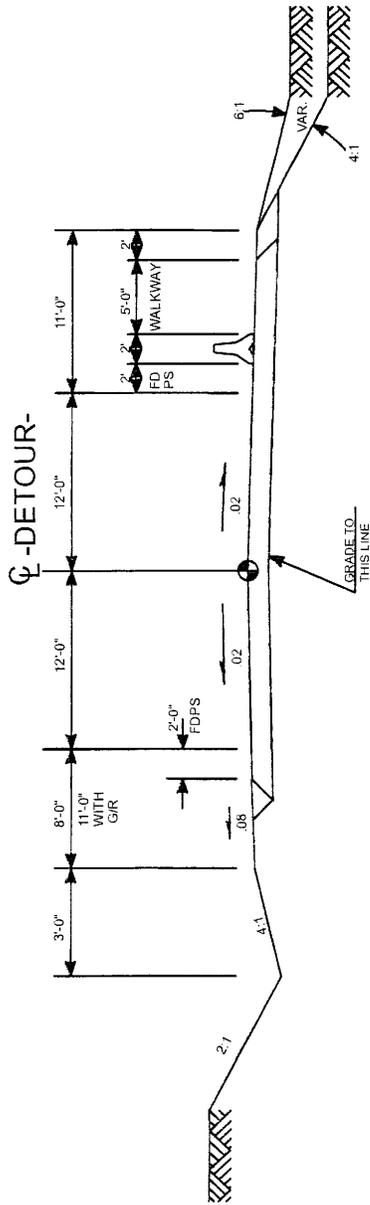


**TYPICAL SECTION NO. 2**  
PERMANENT STRUCTURE TYPICAL SECTION

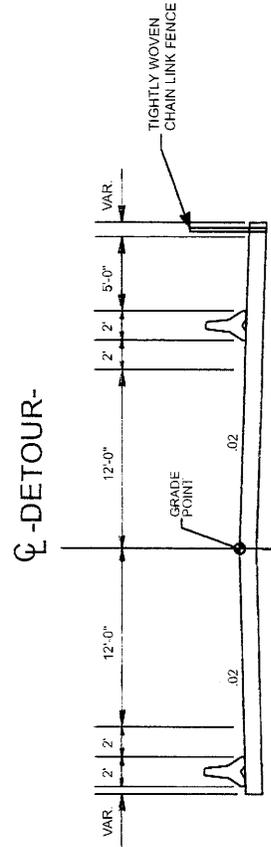


North Carolina - Department of Transportation  
Project Development and Environmental Analysis Branch

**FIGURE 3a**  
**TYPICAL SECTIONS**  
Replacement of Bridge Number 39  
on NC 81 (Biltmore Avenue)  
over Swannanoa River  
Asheville, Buncombe County  
TIP No. B-2515



TYPICAL SECTION NO. 3  
 DETOUR APPROACH TYPICAL SECTION

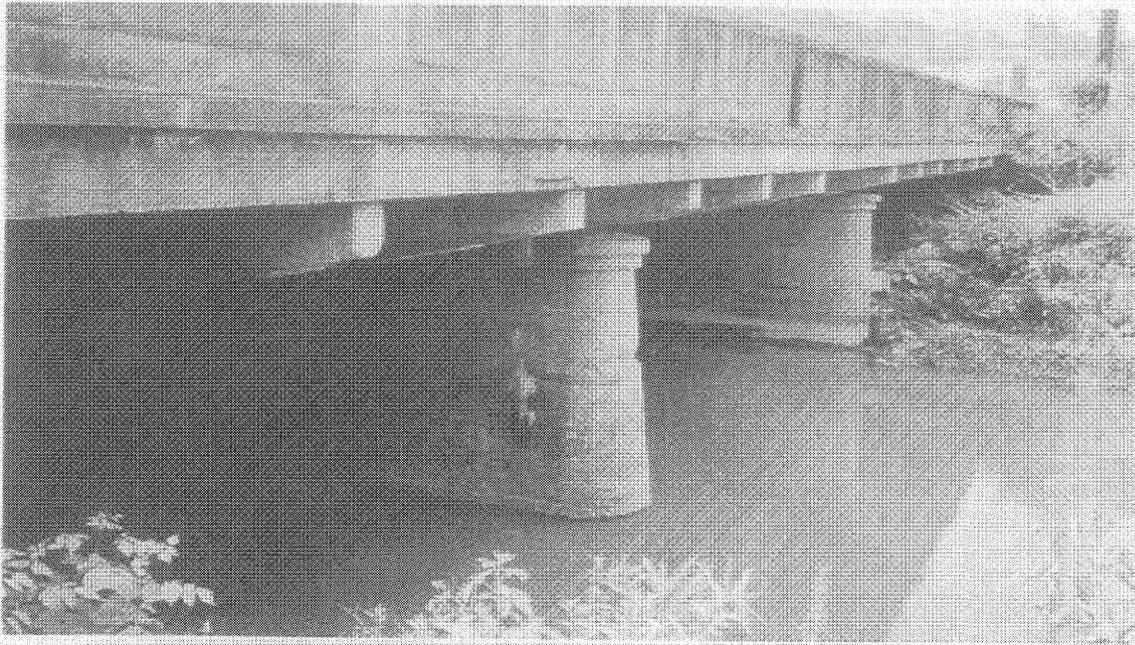


TYPICAL SECTION NO. 4  
 DETOUR STRUCTURE TYPICAL SECTION



North Carolina - Department of Transportation  
 Project Development and Environmental Analysis Branch

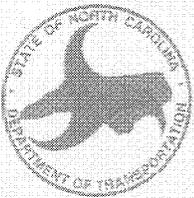
**FIGURE 3b**  
**TYPICAL SECTIONS**  
 Replacement of Bridge Number 39  
 on NC 81 (Biltmore Avenue)  
 over Swannanoa River  
 Asheville, Buncombe County  
 TIP No. B-2515



Bridge # 39 Substructure



Downstream from Bridge # 39



North Carolina – Department of  
Transportation

Division of Highways

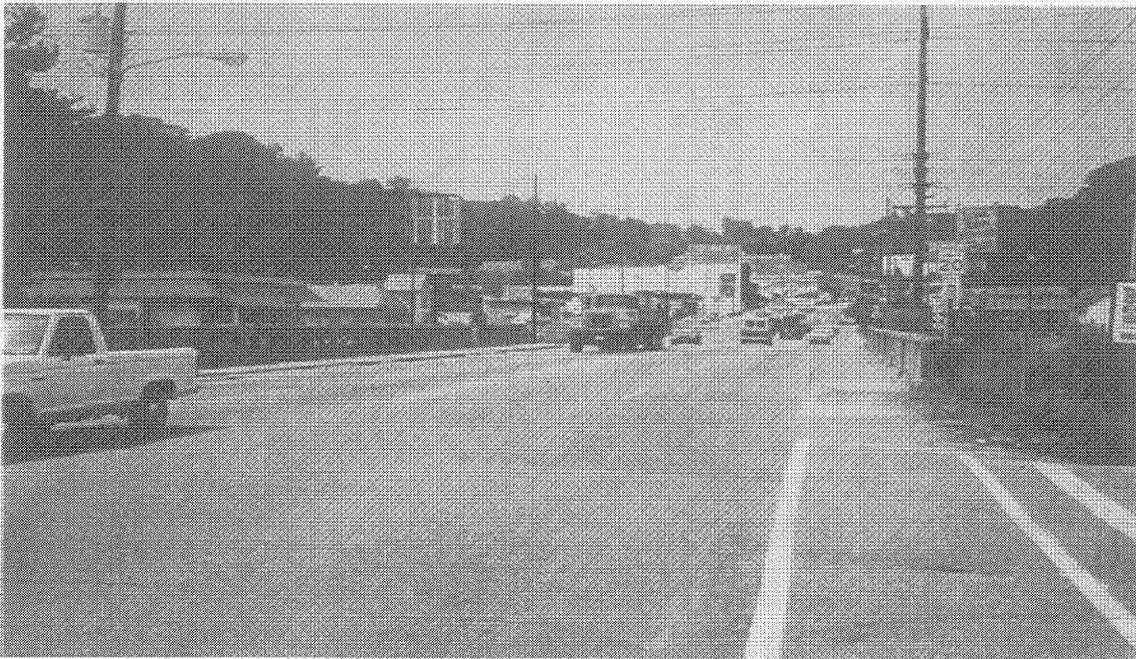
Project Development and  
Environmental Analysis Branch

FIGURE 4a

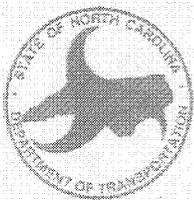
REPLACEMENT OF BRIDGE NUMBER 39  
ON NC 81 OVER SWANNANOVA RIVER  
BUNCOMBE COUNTY  
TIP NO. B-2515



Looking south on Biltmore Ave.



Looking north on Biltmore Ave.



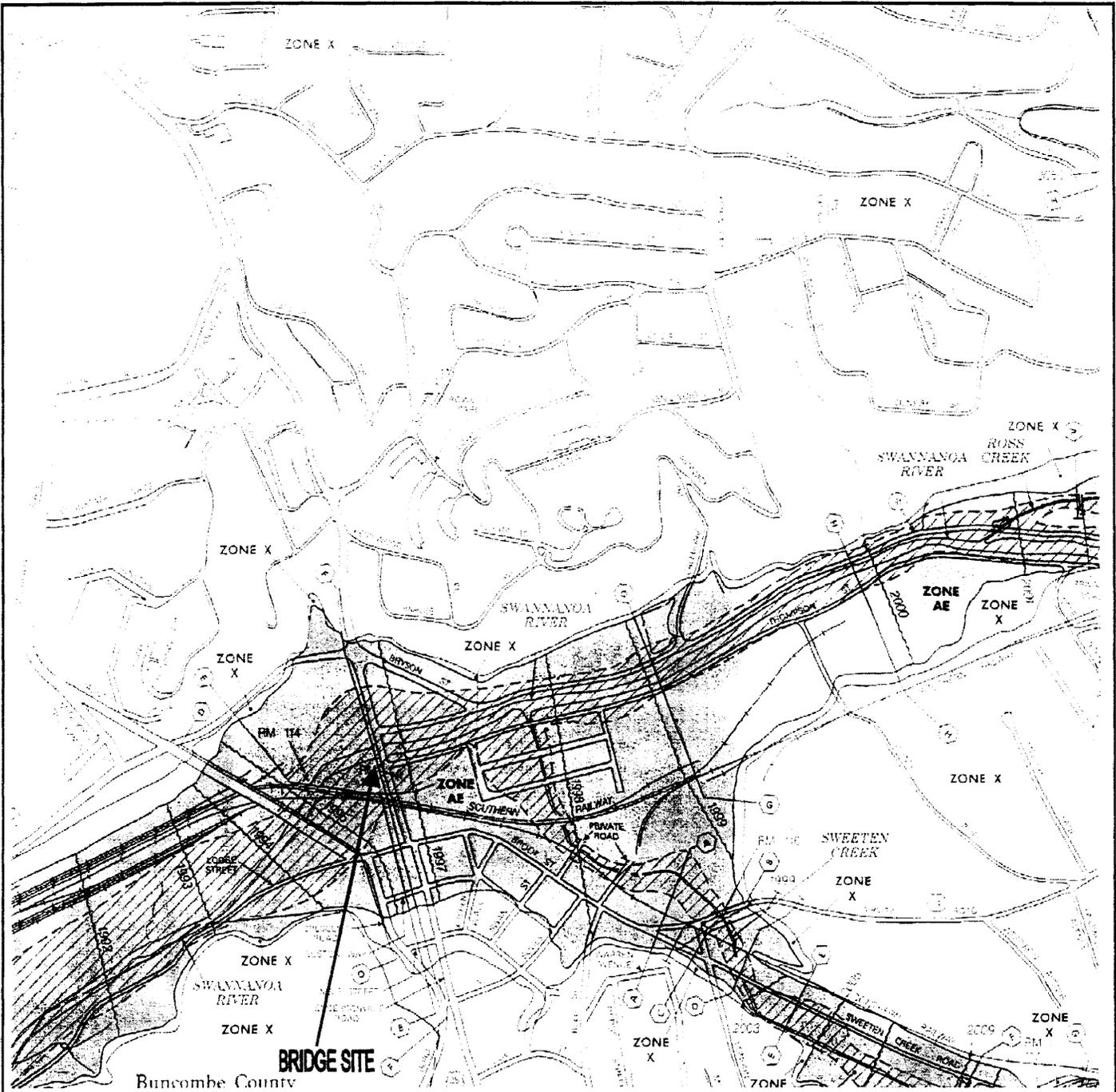
North Carolina – Department of  
Transportation

Division of Highways

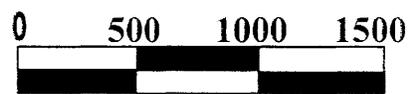
Project Development and  
Environmental Analysis Branch

FIGURE 4b

REPLACEMENT OF BRIDGE NUMBER 39  
ON NC 81 OVER SWANNANOA RIVER  
BUNCOMBE COUNTY  
TIP NO. B-2515



FLOOD INSURANCE RATE MAP: BUNCOMBE COUNTY, NC  
 MAP #37021C0308C; PANEL: 308 OF 550; MAY6, 1996



North Carolina – Department of  
 Transportation  
 Division of Highways  
 Project Development and  
 Environmental Analysis Branch

FIGURE 5  
 REPLACEMENT OF BRIDGE NUMBER 39  
 ON NC 81 OVER SWANNANOVA RIVER  
 BUNCOMBE COUNTY  
 TIP NO. B-2515

# Appendix

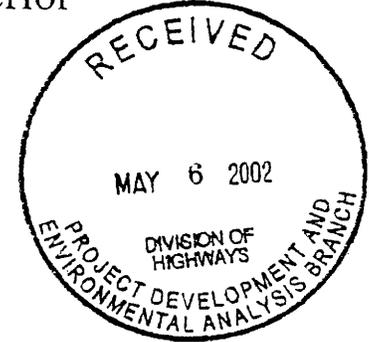


## United States Department of the Interior

### FISH AND WILDLIFE SERVICE

Asheville Field Office  
160 Zillicoa Street  
Asheville, North Carolina 28801

May 2, 2002



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

Dear Mr. Gilmore:

Subject: Replacement of Bridge No. 39 on NC 81 over the Swannanoa River, Buncombe County, TIP Project No. B-2515

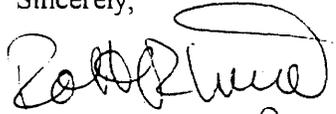
This letter responds to a request for our review and comments regarding the subject project. Our comments are provided in accordance with the Fish and Wildlife Coordination Act, as amended (16 U.S.C. 661-667e), and Section 7 of the Endangered Species Act of 1973, as amended (16 U.S.C. 1531-1543) (Act).

The North Carolina Department of Transportation proposes to replace Bridge No. 39 over the Swannanoa River. Given the very early stage of planning, our comments are limited primarily to concerns for listed species. We would like to provide comments on impacts to aquatic resources and terrestrial wildlife habitat when more detailed information is available, including bridge design, plans for treating storm water, and any other connected street improvements.

Enclosed is a list of species from Buncombe County that are on the *Federal List of Endangered and Threatened Wildlife and Plants*, as well as Federal species of concern. Our records indicate that the federally endangered Appalachian elktoe (*Alasmidonta raveniliana*) may occur in the area impacted by the proposal. In addition, there are several Federal species of concern that occur nearby. We recommend surveying for these species prior to any further planning or on-the-ground activities to ensure that no adverse impacts occur. If federally listed species are located, further consultation is required. Federal species of concern are not legally protected under the Act and are not subject to any of its provisions, including Section 7, unless they are formally proposed or listed as endangered or threatened. We are including these species in our response to give you advance notification and to request your assistance in protecting them if any are found in the vicinity of your project.

If you have questions about these comments, please contact Ms. Marella Buncick of our staff at 828/258-3939, Ext. 237. In any future correspondence concerning this project, please reference our Log Number 4-2-02-281.

Sincerely,

A handwritten signature in black ink, appearing to read "Brian P. Cole". The signature is written in a cursive style with a large, sweeping initial "B".

Brian P. Cole  
State Supervisor

for

Enclosure

## ENDANGERED, THREATENED, AND CANDIDATE SPECIES AND FEDERAL SPECIES OF CONCERN, BUNCOMBE COUNTY, NORTH CAROLINA

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

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

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

COMMON NAME	SCIENTIFIC NAME	STATUS
<b>BUNCOMBE COUNTY</b>		
<b>Vertebrates</b>		
Southern Appalachian saw-whet owl	<i>Aegolius acadicus</i>	FSC
Bachman's sparrow	<i>Aimophila aestivalis</i>	FSC*
Bog turtle	<i>Clemmys muhlenbergii</i>	T(S/A) <sup>1</sup>
Rafinesque's big-eared bat	<i>Corynorhinus (=Plecotus) rafinesquii</i>	FSC*
Hellbender	<i>Cryptobranchus alleganiensis</i>	FSC
Cerulean warbler	<i>Dendroica cerulea</i>	FSC
Blotched chub	<i>Erimystax insignis</i>	FSC
Eastern cougar	<i>Felis concolor cougar</i>	Endangered*
Carolina northern flying squirrel	<i>Glaucomys sabrinus coloratus</i>	Endangered
Spotfin chub	<i>Hybopsis monacha</i>	Threatened*
Southern Appalachian red crossbill	<i>Loxia curvirostra</i>	FSC
Gray bat	<i>Myotis grisescens</i>	Endangered***
Eastern small-footed myotis	<i>Myotis leibii</i>	FSC
Southern Appalachian woodrat	<i>Neotoma floridana haematoreia</i>	FSC
Alleghany woodrat	<i>Neotoma magister</i>	FSC
Southern Appalachian black-capped chickadee	<i>Parus atricapillus praticus</i>	FSC
Longhead darter	<i>Percina macrocephala</i>	FSC*
Paddlefish	<i>Polyodon spathula</i>	FSC*
Southern water shrew	<i>Sorex palustris punctulatus</i>	FSC
Southern Appalachian yellow-bellied sapsucker	<i>Sphyrapicus varius appalaciensis</i>	FSC
Appalachian Bewick's wren	<i>Thryomanes bewickii altus</i>	FSC*

COMMON NAME	SCIENTIFIC NAME	STATUS
<b>Invertebrates</b>		
Appalachian elktoe	<i>Alasmidonta raveneliana</i>	Endangered
French Broad crayfish	<i>Cambarus reburus</i>	FSC
Oyster mussel	<i>Epioblasma capsaeformis</i>	Endangered
Tawny crescent butterfly	<i>Phycoides batesii</i>	FSC*
Diana fritillary butterfly	<i>Speyeria diana</i>	FSC*
<b>Vascular Plants</b>		
Fraser fir	<i>Abies fraseri</i>	FSC
Piratebush	<i>Buckleya distichophylla</i>	FSC
Cain's reedgrass	<i>Calamagrostis cainii</i>	FSC
Glade spurge	<i>Euphorbia purpurea</i>	FSC
Spreading avens	<i>Geum radiatum</i>	Endangered
Mountain heartleaf	<i>Hexastylis contracta</i>	FSC
French Broad heartleaf	<i>Hexastylis rhombiformis</i>	FSC
Butternut	<i>Juglans cinerea</i>	FSC
Gray's lily	<i>Lilium grayi</i>	FSC
Fraser's loosestrife	<i>Lysimachia fraseri</i>	FSC*
Sweet pinesap	<i>Monotropsis odorata</i>	FSC
Pinnate-lobed black-eyed susan	<i>Rudbeckia triloba</i> var. <i>pinnatoloba</i>	FSC
Bunched arrowhead	<i>Sagittaria fasciculata</i>	Endangered*
Mountain sweet pitcher plant	<i>Sarracenia jonesii</i>	Endangered*
Carolina saxifrage	<i>Saxifraga caroliniana</i>	FSC
Divided-leaf ragwort	<i>Senecio millefolium</i>	FSC
Mountain catchfly	<i>Silene ovata</i>	FSC
Virginia spiraea	<i>Spiraea virginiana</i>	Threatened
<b>Nonvascular Plants</b>		
Rock gnome lichen	<i>Gymnoderma lineare</i>	Endangered

**KEY:**

Status	Definition
Endangered	A taxon "in danger of extinction throughout all or a significant portion of its range."
Threatened	A taxon "likely to become endangered within the foreseeable future throughout all or a significant portion of its range."
FSC	A Federal species of concern--a species that may or may not be listed in the future (formerly C2 candidate species or species under consideration for listing for which there is insufficient information to support listing).
T(S/A)	Threatened due to similarity of appearance (e.g., American alligator)--a species that is threatened due to similarity of appearance with other rare species and is listed for its protection. These species are not biologically endangered or threatened and are not subject to Section 7 consultation.

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

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

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

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

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

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

*S. Harris*



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

July 8, 2002



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

Dear Mr. Gilmore:

PROPOSED BRIDGE REPLACEMENT, TRANSPORTATION IMPROVEMENT  
PROGRAM (TIP) PROJECT NUMBER B-2515, NC 81 OVER SWANNANOA RIVER,  
BUNCOMBE COUNTY, NORTH CAROLINA

TVA has reviewed information provided in your letter of April 10, 2002, on the proposed replacement of Bridge No. 39 on NC 81 over the Swannanoa River in Asheville. TVA is not aware of any unique environmental issues related to this proposal. However, the Federal Categorical Exclusion prepared for this project should note that an approval under Section 26a of the TVA Act may be needed for structure construction.

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

Sincerely,

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

cc: Mr. Nicholas L. Graf  
Federal Highway Administration  
310 New Bern Avenue, Suite 410  
Raleigh, North Carolina 27601-1441

CONCURRENCE FORM FOR ASSESSMENT OF EFFECTS

Project Description: Replace Bridge No. 39 on NC 81 (Biltmore Avenue) over Swannanoa River

On 2/22/2005, representatives of the

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

Reviewed the subject project and agreed

- There are no effects on the National Register-listed property/properties located within the project's area of potential effect and listed on the reverse.
- There are no effects on the National Register-eligible property/properties located within the project's area of potential effect and listed on the reverse.
- There is an effect on the National Register-listed property/properties located within the project's area of potential effect. The property/properties and the effect(s) are listed on the reverse.
- There is an effect on the National Register-eligible property/properties located within the project's area of potential effect. The property/properties and effect(s) are listed on the reverse.

Signed:

Mary Pope  
Representative, NCDOT

2/22/2005  
Date

Clarence W. Coble  
FHWA, for the Division Administrator, or other Federal Agency

2/22/05  
Date

Reverie Mudd Kill-Early  
Representative, HPO

2/22/05  
Date

Patricia Sudder  
State Historic Preservation Officer

2/22/05  
Date

Federal Aid # BRSTP-81(1)

TIP # B-2515

County: Buncombe

Properties within the area of potential effect for which there is no effect. Indicate if property is National Register-listed (NR) or determined eligible (DE).

Biltmore Village Historic District (NR)  
no effect with environmental commitments  
(NCDOT will work with HPO & the property  
owners in the district on the aesthetics  
of the new bridge railings & lights).  
Southern Freight Railway Depot (DE)

Properties within the area of potential effect for which there is an effect. Indicate property status (NR or DE) and describe the effect.

Reason(s) why the effect is not adverse (if applicable).

Initialed:

NCDOT MPA

FHWA Cuc

HPO Rye



STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION

MICHAEL F. EASLEY  
GOVERNOR

LYNDO TIPPETT  
SECRETARY

February 23, 2004

Mr. Robert S. Griffin  
Biltmore Village Historic Museum  
7 Angle Street  
Asheville, NC 28803

RE: Effects Form for the Replacement of Bridge No. 39 on NC 81 (Biltmore Avenue)  
over the Swannanoa River, Buncombe County, TIP B-2515

Dear Mr. Griffin:

At a meeting on February 22, 2005 representatives of the Department of Transportation, the Federal Highway Administration, and the State Historic Preservation Office gathered to discuss the potential effects of the proposed bridge replacement on the Biltmore Village Historic District. The attached form documents the findings of the meeting, more specifically, that the replacement of Bridge No. 39 would have no effect on the historic district so long as the Department of Transportation coordinates with the property owners in the district on the design of the new bridge. I know that your organization has already proposed a design for the railing and the lights and I look forward to finalizing these plans once the structural engineers have worked out the technological constraints on the new structure.

I will be in touch, but if you have any questions concerning the accompanying information, please contact me at 919-715-1620.

Sincerely,

A handwritten signature in cursive script that reads "Mary Pope Furr".

Mary Pope Furr  
Historic Architecture Section  
Office of Human Environment

Attachment

Cc: Renee Gledhill-Earley, State Historic Preservation Office  
Khaled Al-Akhdar, NCDOT, PDEA  
Stacy A. Merten, Asheville-Buncombe County Historic Resources Commission

MAILING ADDRESS:  
NC DEPARTMENT OF TRANSPORTATION  
OFFICE OF HUMAN ENVIRONMENT  
1583 MAIL SERVICE CENTER  
RALEIGH NC 27699-1583

TELEPHONE: 919-715-1500  
FAX: 919-715-1522  
WEBSITE: [WWW.NCDOT.ORG](http://WWW.NCDOT.ORG)

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



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

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

Division of Historical Resources  
David J. Olson, Director

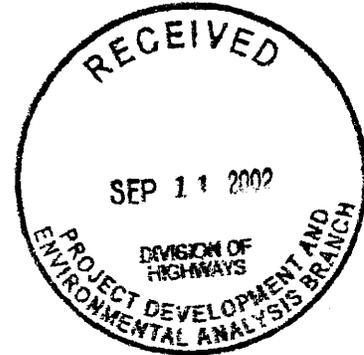
September 9, 2002

MEMORANDUM

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

FROM: David Brook *David Brook*

SUBJECT: Historic Architectural Survey Report, Replace Bridge No. 39 on NC 81 (Biltmore Avenue) over the Swannanoa River, Asheville, B-2515, Buncombe County, ER 02-9547



Thank you for your letter of August 26, 2002, transmitting the survey report by Mary Pope Furr, NCDOT concerning the above project.

The following property is determined not eligible for listing in the National Register of Historic Places:

Bridge No. 39 located on NC 81 (Biltmore Avenue) over the Swannanoa River

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

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

cc: Mary Pope Furr, NCDOT  
Asheville/Buncombe County HRC

	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
Survey & Planning	515 N. Blount St, Raleigh, NC	4618 Mail Service Center, Raleigh 27699-4618	(919) 733-4763 • 715-4801

D-2013



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 I. Olson, Director

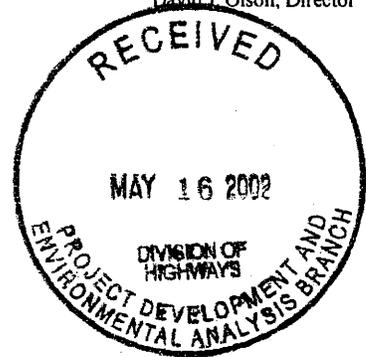
May 10, 2002

MEMORANDUM

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

FROM: David Brook *David Brook*

SUBJECT: Scoping comments on replacement of Bridge No. 39 on NC 81 over the Swannanoa River, Asheville, Buncombe County, ER 02-9547



Thank you for your letter of April 10, 2002, concerning the above project.

We have conducted a search of our maps and files and have located the following structures of historical or architectural importance within the general area of the project:

- Biltmore Village Historic District (BN 149), a district listed in the National Register of Historic Places
- Bridge (NCDOT #39) (BN 1403), a resource listed on the State Study List

The replacement of this bridge would potentially constitute an adverse effect on both the bridge and the adjacent district. Please forward plans and specifications for the new bridge design and construction for our review when available.

There are no known archaeological sites within the project area. Based on our knowledge of the area, it is unlikely that any archaeological resources that may be eligible for conclusion in the National Register of Historic Places will be affected by the project. We, therefore, recommend that no archaeological investigation be conducted in connection with this project.

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

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

cc: Mary Pope Furr, NCDOT

Administration	Location	Mailing Address	Telephone/Fax
Restoration	507 N. Blount St, Raleigh, NC	4617 Mail Service Center, Raleigh 27699-4617	(919) 733-4763 •733-8653
Survey & Planning	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



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

Gregory J. Thorpe, Ph.D.  
Acting Director  
Division of Water Quality

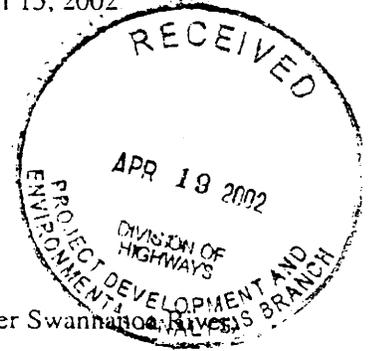
April 15, 2002

**MEMORANDUM**

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

FROM: Cynthia F. Van Der Wiele, NCDOT Coordinator *cdw*

SUBJECT: Review of Scoping Sheets for Replacement of Bridge No. 39 over Swannanoa River, Asheville, Buncombe County, TIP Project B-2515.



This letter is in reply to your correspondence dated April 10, 2002 in which you requested comments for the referenced project. The Division of Water Quality offers these comments on impacts to Swannanoa River (stream index 6-78, HU 040302, stream class C):

1. NCDWQ requests that NCDOT explain how the bridge will be removed. It is NCDWQ's understanding that all permit applications for bridge replacement projects based upon environmental documents completed on or after April 30, 1999 shall include the potential impacts of bridge demolition and debris removal in addition to the impacts of constructing the replacement bridge (NCDOT policy, 9/20/99).
2. While vegetated buffers are not a requirement within this basin, NCDOT is encouraged to retain vegetation as much as possible. Do not remove vegetation from the stream bank unless it is absolutely necessary. Especially avoid removing large trees and undercut banks. If large, undercut trees must be removed, then cut the trunks and leave the stumps and root systems in place to minimize damage to stream banks.
3. Any environmental documents pertaining to this project should provide a detailed and itemized presentation of the proposed impacts to wetlands and streams with corresponding mapping. There should be a discussion on mitigation plans for unavoidable impacts. If mitigation is required, it is preferable to present a conceptual (if not finalized) mitigation plan with the environmental documentation. For projects requiring mitigation, appropriate mitigation plans will be required prior to issuance of a 401 Water Quality Certification.

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

pc: Steve Lund, USACE Asheville Field Office  
Marcella Buncick, USFWS  
MaryEllen Haggard, NCWRC  
Central Files  
File Copy

B-2515



## North Carolina Wildlife Resources Commission

Charles R. Fullwood, Executive Director

May 29, 2002

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



SUBJECT: Scoping Comments, Replacement of Bridge No. 39 on NC 81 - Swannanoa River  
Asheville, Buncombe County, North Carolina

Dear Mr. Gilmore:

Mr. William D. Gilmore, P.E., Manager of the Project Development and Environmental Analysis Branch of the North Carolina Department of Transportation is requesting input concerning the potential impacts of a bridge replacement project in Asheville, North Carolina. I have reviewed information provided by the applicant, and I am familiar with habitat values of the project area. These comments are provided in accordance with provisions of the Clean Water Act of 1977 (33 U.S.C. 466 et seq.) and the Fish and Wildlife Coordination Act (48 Stat. 401, as amended; 16 U.S.C. 661-667d).

The NCDOT proposes to replace Bridge No. 39 on NC 81. Construction impacts on fish and wildlife resources will depend on the extent of disturbance in the streambed and surrounding floodplain areas. The Division of Water Quality classifies the Swannanoa River C. The stream is not designated as trout water by the NCWRC. It is the opinion of biologists with the NCWRC that this project will not result in adverse impacts to trout. However, A State and Federally Endangered mussel, the Appalachian Elktoe (*Alasmidonta raveneliana*), was collected at an unknown time within one mile downstream of the construction site. Thus, we recommend surveys of fish and mussels in the upstream and downstream vicinity of the site. The findings of these surveys will need to be considered in the design and construction alternatives of the project.

We prefer bridge designs that do not alter the natural stream morphology or impede fish passage. Efforts should be made during design to place bridge supports outside of the bankfull channel. Bridge designs should also include provisions for the deck drainage to flow through a vegetated upland buffer prior to reaching the subject surface waters. Correction of altered stream morphology at the road crossing should be considered during design.

Streams and riparian zones provide connectivity of the landscape; and thus, are natural movement corridors for terrestrial wildlife species. Bridge designs should consider leaving sufficient corridors under the bridge to encourage movement of wildlife under the bridge rather than across the highway. The movement of animals, especially larger animals (e.g., deer and bear), under the bridge may reduce automobile crashes involving wildlife. Where feasible, increasing the riparian corridor width under the bridge is recommended.

In most cases, we prefer the replacement of the existing structure at the same location with road closure. If road closure is not feasible, a temporary detour should be designed and located to avoid wetland impacts,

May 29, 2002

Fish and Wildlife Service for information on requirements of the Endangered Species Act as it relates to the project

Thank you for the opportunity to review and comment during the early stages of this project. If you have any questions regarding these comments, please contact me at 828.452.0422.

Sincerely,



Powell Wheeler  
Asst. Fisheries Biologist

cc: Mr. William D. Gilmore, P.E., Manager Project Development and Environmental Analysis Branch  
Mr. John Hendrix, Highway Coordinator, Corps of Engineers  
Ms. Marella Buncick, Biologist, USFWS Asheville  
Ms. Cynthia Van Der Wiele, Highway Coordinator, Division of Water Quality

**Memorandum**

May 9, 2002

**TO:** Blake Norwood, P.E., Manager  
Statewide Planning Branch

**FROM:** Dan Baechtold, MPO Coordinator  
Asheville Area MPO

**SUBJECT:** Request for Comments for NC 81, Asheville, Bridge No. 39  
Over the Swannanoa River, Buncombe County, Federal Aid  
Project BRSTP-81(1) State Project 8.1843001, TIP No. B-2515



Metropolitan  
Planning  
Organization



landscaping



buses



bicycles



roadways



signs

sidewalks and  
pedestrians

Thank you for the opportunity to comment on the subject project, and to provide written comments in lieu of a formal scoping meeting. This is an important project for the Asheville area because of the high visibility and prominence of Biltmore Avenue. This street serves as the primary corridor between Interstate 40, the hospitals and downtown Asheville. Also, as indicated on the map attached to the request for comments, this bridge is located directly adjacent to the entrance to the Biltmore Estate and to the Biltmore Village Historic District.

The Asheville MPO requests that the project designers work closely with representatives of Biltmore Village to find a bridge design that is consistent with the historic architecture of the village and incorporates historic elements into the design. Attached to this memo are two letters and a sketch design related to this project from Robert Griffin, Chairman of the Biltmore Village Historic Museum and local architect. The museum has generously donated four of the historic Biltmore Village streetlights to the City of Asheville for the purpose of incorporating them into the historic Biltmore Avenue Bridge. The MPO requests that these streetlights be incorporated into the design, along with handrails and/or pedestals that include the historic elements identified by Mr. Griffin (see sketch).

It should also be noted that the Biltmore Village area has a lot of pedestrian activity, and the zone of pedestrian activity is rapidly expanding. Therefore, we request that pedestrian accommodations on the bridge include a minimum of 6 foot wide sidewalks on both sides of the bridge. Larger sidewalks would be beneficial, as would some type of physical separation of the pedestrians from the travel lane. This corridor is also an important route for bicyclists. To serve this need, the bridge should be wide enough to accommodate wide outside lanes (14 foot lane width).

Finally, the MPO would greatly appreciate the exploration any opportunities to address excessive overhead utility wires. If these wires can be consolidated or placed below ground as a part of this project, those considerations are greatly appreciated. Thank you again for the opportunity to comment.

# Biltmore Village Historic Museum

7 Angle Street Asheville, NC 28803 828-274-9707

COMMISSION  
DIRECTORS

September 13, 2001

Robert S. Griffin,  
Chairman  
Warrene Williams  
Secretary  
Mary Ann Rice  
Treasurer  
Stafford Anders  
Nancy O. Cecil  
Martha W. Fullington  
J. Ronald Holland  
Bruce F. Tompkins  
Beverly Newell  
Hal Mahan  
Phillip Broughton  
Peggy Byrd  
Millicent Maats  
Ben Maats  
Hal Keiner

Cathy Ball  
City of Asheville  
City Engineer  
PO Box 7148  
Asheville, NC 28802

Dear Cathy,

Enclosed is a copy of my letter, dated and mailed November 14, 2000, to the North Carolina Department of Transportation with copies to those shown on the letter. As of today, I have received no acknowledgement of the Museum's gift from the North Carolina DOT. I am concerned that the mitigation process for enhancing the new Biltmore Avenue Bridge is not currently being pursued. Please review the drawings, photos and documents which were attached to my original letter and let me know the disposition of this project.

As always, I appreciate your help in Biltmore Village and look forward to speaking with you soon. Please call if you need assistance or any further information.

Sincerely,



Robert S. Griffin

cc Ed Hay  
Stacey Harris  
Tony Houser  
Clay Griffith

# Biltmore Village Historic Museum

7 Biltmore Plaza Asheville, NC 28803 828-274-9707

## COMMISSION DIRECTORS

Robert S. Griffin,  
Chairman  
Warrene Williams  
Secretary  
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Nancy O. Cecil  
Martha W. Fullington  
J. Ronald Holland  
Bruce F. Tompkins  
Beverly Newell  
Hal Mahan  
Phillip Broughton  
Peggy Byrd  
Millicent Moats  
Ben Moats  
Hal Keiner

November 14, 2000

Mr. Max Phillips  
PO Box 3279  
Asheville NC 28802

Dear Max,

Thank you for speaking with me in September about the Biltmore Avenue Bridge and the McDowell Street Viaduct. We are all very pleased with the handrails and streetlights on the Viaduct and have received many complements for our part in assisting to facilitate their design and placement.

We also want you to know how much we appreciate yours and Gordon Myers' efforts, along with your entire staff, for helping create such a beautiful addition to our Village.

As a thank you, the Biltmore Village Historic Museum has donated four of the historic Biltmore Village Streetlights to the City of Asheville, with the understanding that they will be used to help mitigate the removal of the Historic Biltmore Avenue Bridge.

I am enclosing scaled drawings of how the pedestals at each end might support the fixtures and provide "frames" to display remnants of the original bridge's handrails. These drawings also show the pedestals at each end of handrails similar to the McDowell Street viaduct.

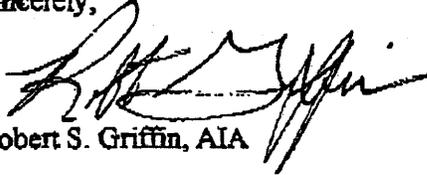
Should you need my assistance locating artisans who could remove the historic quadrafoil panels with a concrete saw prior to your demolition of the original handrails, I would be happy to help you locate them. I would, of course need appropriate notice.

We recognize that this will be an expensive project. Would it be possible to save and re-use the existing pedestals supporting the original bridge? They appear sound.

Page Two

If I can provide your office with any other preliminary information to assist you with the mitigation of the removal of the Bridge, I would be happy to do so on a pro-bono basis.

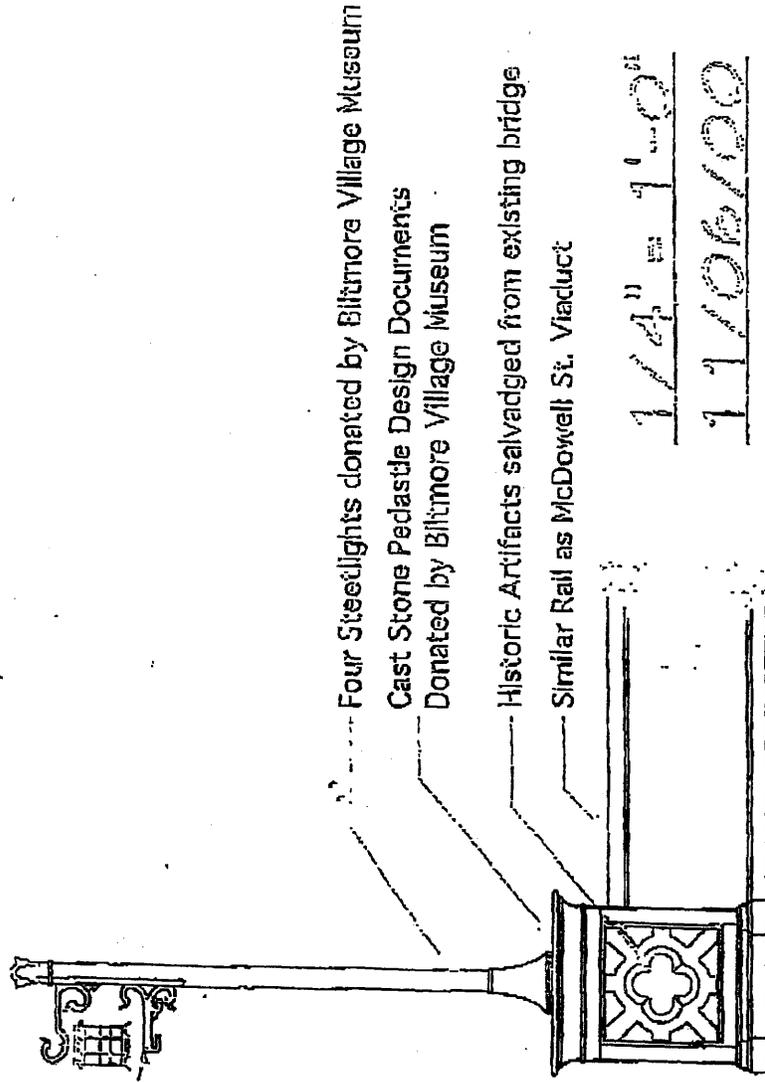
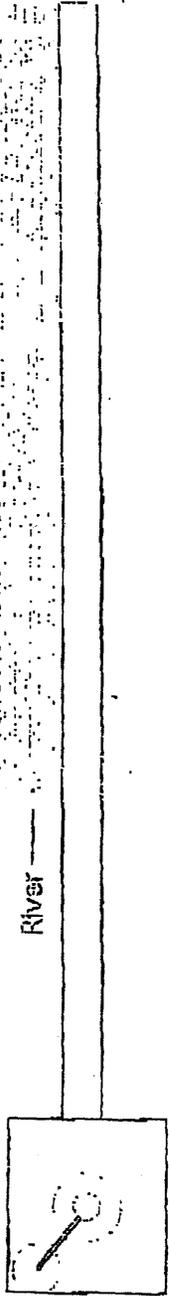
Sincerely,



Robert S. Griffin, AIA

Enc

cc:	Gordon Meyers	Betty McCain
	Ron Bradley	Stacy B. Harris
	Scott Shuford	Tony Houser
	Mark Coombs	Clay Griffith
	Tom Frederick	Richard Davis
	Laura Ingle	Ben Slosman
	Mac Williams	



# Baltimore Avenue Bridge Pedastles

A Proposed Public/Private Civic Improvement