STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

MICHAEL F. EASLEY
GOVERNOR

LYNDO TIPPETT
SECRETARY

October 29, 2007

U. S. Army Corps of Engineers
Regulatory Field Office
6508 Falls of the Neuse Road
Raleigh, NC 27615

ATTN: Mr. Monte Matthews
NCDOT Coordinator

SUBJECT: **Nationwide 23 and 33 Permit Application** for the proposed replacement of Bridge No. 7 over Yadkin River on NC 268. Caldwell County, Federal Aid Project No. BRSTP-0268(9), WBS Element 33418.1.1, Division 11, T.I.P. No. B-4052.

Dear Mr. Matthews

Please find enclosed the Pre-construction Notification (PCN), permit drawings, and half-size design plans for the above-mentioned project. A Categorical Exclusion (CE) was completed for this project in August 2005 and distributed shortly thereafter. Additional copies of the CE are available upon request. The North Carolina Department of Transportation (NCDOT) plans to replace the existing 106-long bridge, No. 7 with a new 152-foot long, 51-foot wide structure on the existing alignment. Traffic will use an onsite detour during construction, as no reasonable offsite detour exists. There will be 19 linear feet of permanent fill and <0.01 acre of temporary fill in an Unnamed Tributary (UT) to the Yadkin River and 0.07 acre of temporary fill in the Yadkin River.

IMPACTS TO WATERS OF THE UNITED STATES

General Description: The project is located in the Yadkin River Basin (HUC 03040101) and will impact the Yadkin River and an UT to the Yadkin River. The Yadkin River (Index # 12-(1)) and the UT are assigned a best usage classification of "**C Tr**", by the N.C. Division of Water Quality (DWQ). Yadkin River is not designated as a North Carolina Natural or Scenic River, or as a National Wild and Scenic River. The Yadkin River is listed on the 2006 Final 303(d) list for "Standard violation: turbidity." No designated Outstanding Resource Waters (ORW), Water Supply I (WS-I), or Water Supply II (WS-II) waters occur within 1.0 mile of the project. No wetlands occur on the project.

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

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

WEBSITE: WWW.NCDOT.ORG

LOCATION:
2728 CAPITAL BLVD
SUITE 240
RALEIGH, NC 27604

Permanent Impacts: Permanent stream impacts will occur, and total 19 feet. Impacts occur from the replacement of an existing deteriorated 30" pipe in the UT to the Yadkin River with a 54" reinforced concrete pipe.

Temporary Impacts: Temporary impacts of 0.07 acre of fill will occur in the Yadkin River from the construction of two causeways that will be used to remove the old bridge and construct the new bridge. After construction is complete, the causeways will be completely removed and the project elevation will be restored to the original contours. Only one causeway will be constructed at a time. The first causeway will be removed before the second causeway is constructed. Included in the 0.07 acre are temporary impacts of <0.01 acres that will occur in the UT to the Yadkin River from construction access due to the replacement of the existing pipe.

Utility Impacts: No impacts will occur due to utility relocations. There is an existing water line within the limits of this project and no sewer line. The water line is not in conflict with the construction of the project and will remain in place.

There are two power poles in conflict with the construction of the project located to the north and south of the bridge at the intersection of NC 268 and SR 1560. The northern pole will be removed and the southern pole will be relocated within uplands.

There is one telephone pole in conflict with the construction of the project located to the north of the bridge. This pole will be removed and placed to the south of the bridge within uplands.

Bridge Demolition: Bridge No. 7 consists of a steel plank floor on I-beams. The substructure consists of concrete abutments and piers. Removal of the substructure will result in up to 39 square feet of temporary impacts. Best Management Practices for Bridge Demolition and Removal will be implemented.

CULTURAL RESOURCES

Historic Architecture: The Woods Barber-Shop is an historic property eligible for the National Register of Historic Places under Criterion A for Social History. The proposed project will require use of the historic property and removal of the structure from the property. The NCDOT, Federal Highway Administration (FHWA) and State Historic Preservation Office (SHPO), jointly determined that the project would have an adverse effect on the Woods Barber-Shop.

In accordance with Section 106 of the National Historic Preservation Act, a Memorandum of Agreement (MOA) between SHPO, FHWA, and NCDOT has been developed, which details measures to mitigate the Adverse Effect upon the Woods Barber-Shop. The measures are listed below:

- Prior to removal and relocation of the Woods Barber Shop, NCDOT shall record the existing condition of the property and its surroundings in accordance with the

attached Historic Structures and Landscape Recordation Plan. *The NCDOT-Human Environment Unit has recorded the existing conditions of the property.*

- NCDOT will provide funding to the Happy Valley Ruritan Club for the purpose of stabilizing the Barber Shop and relocating the building on the new site, which is located approximately 1,500 feet from the existing site. *Funds were transferred from the NCDOT to the Happy Valley Ruritan Club on September 14, 2007 for the purpose of stabilizing and moving the building.*
- NCDOT will erect an historic marker near the existing site indicating that the Woods Barber Shop has been relocated from its original site to a new site. *The NCDOT will erect an historic marker following project completion.*

Archaeology: The SHPO recommended that a comprehensive archeological survey be conducted prior to construction. An archeological survey was conducted which identified archeological site 31CW353**. The NCDOT determined that the site was not eligible for the National Register of Historic Properties and recommended no further archeological surveys be conducted. The SHPO concurred with this recommendation in letters dated September 13, 2005 and January 18, 2006. Copies of these letters are available upon request.

FEDERALLY-PROTECTED SPECIES

Plants and animals with federal classifications of Endangered, Threatened, Proposed Endangered, and Proposed Threatened are protected under provisions of Section 7 and Section 9 of the Endangered Species Act of 1973, as amended. As of May 10, 2007 the US Fish and Wildlife Service (FWS) lists five federally protected species for Caldwell County (Table 1). The Virginia big-eared bat has been added to the list of federally protected species that occur in Caldwell County since the completion of the CE. A habitat analysis assessment was conducted for the Virginia big-eared bat on April 19, 2006. The project does not contain the preferred habitat for the Virginia big-eared bat. Therefore, the biological conclusion for the Virginia big-eared bat is "No Effect." The bog turtle is listed as threatened due to similarity of appearance and does not require a biological conclusion. The biological conclusions of No Effect reached for the other three federally protected species in the CE remains valid.

Table 1. Federally-Protected Species for Caldwell County

Common Name	Scientific Name	Federal Status	Habitat Present	Biological Conclusion
Virginia big-eared bat	*Corynorhinus townsendii virginianus*	E	No	No Effect
Bog Turtle	*Clemmys muhlenbergii*	T(S/A)	No	NA
Spruce-fir moss spider	*Microhexura montivaga*	T	No	No Effect
Dwarf-flowered heartleaf	*Hexastylis naniflora*	T	No	No Effect
Heller's blazing star	*Liatris helleri*	T	No	No Effect

AVOIDANCE AND MINIMIZATION

The NCDOT is committed to incorporating all reasonable and practicable design features to avoid and minimize jurisdictional impacts, and to provide full compensatory mitigation of all remaining, unavoidable jurisdictional impacts. Avoidance measures were taken during the planning and NEPA compliance stages; minimization measures were incorporated as part of the project design and include:

- The new bridge and temporary detour will completely span the channel.
- The new bridge will be longer than the existing bridge.
- Best Management Practices for Bridge Demolition and Removal will be followed.
- No deck drains will be placed over the water.
- The Project will adhere to Design Standards in Sensitive Watersheds.
- Two Preformed Scour Holes will be constructed.

COMPENSATORY MITIGATION

No mitigation will be conducted because permanent impacts are minimal and less than 150 feet.

MORATORIUM

In a letter dated August 27, 2003, the NC Wildlife Resources Commission (WRC) requested a moratorium for small mouth bass. However, this species is not afforded federal or state protection in Waters of the US in NC. Additionally, the in water construction phase of the proposed project will not significantly affect the small mouth bass. In fact, imposing a moratorium for this species could result in increased construction costs and a longer overall construction period, resulting in a longer sustained effect on the environment. Therefore, the NCDOT does not believe this moratorium is warranted and does not propose to adhere to it. The WRC stated in an email dated June 10, 2004 that a moratorium for Trout would not be required.

PROJECT SCHEDULE

The project is scheduled to let May 20, 2008 and has a review date of April 1, 2008.

REGULATORY APPROVALS

Section 404 Permit: This project has been processed by the Federal Highway Administration as a "Categorical Exclusion." NCDOT is hereby applying for a Clean Water Act Section 404 Nationwide Permit. It is anticipated that the construction will be authorized under Section 404 Nationwide Permits 23 and 33.

Section 401 Permit: We anticipate 401 General Certification number 3632 and 3634 will apply to this project. All general conditions of the Water Quality Certifications will be met. Therefore, in accordance with 15A NCAC 2H, Section .0500(a), we are providing two copies of this application to the DWQ for their records.

This project is located in a trout county, therefore comments from the WRC will be required prior to authorization by the Corps of Engineers. By copy of this letter and

attachment, NCDOT hereby requests WRC Review. NCDOT requests that WRC forward their comments to the Corps of Engineers and the NCDOT within 30 calendar days of receipt of this application.

Thank you for your assistance with this project. If you have any questions or need additional information, please contact Brett Feulner at bmfeulner@dot.state.nc.us or (919) 715-1488.

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

Sincerely,

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

cc: w/attachment

Mr. John Hennessy, NCDWQ (2 Copies)
Ms. Marla Chambers, NCWRC
Ms. Marella Buncick, USFWS
Mr. Victor Barbour, P.E. Project Services
Mr. Michael Pettyjohn, P.E. Division 11 Engineer
Dr. David Chang, P.E., Hydraulics
Mr. Mark Staley, Roadside Environmental
Mr. Greg Perfetti, P.E., Structure Design
Mr. Heath Slaughter, Div 11 DEO

w/o attachment

Mr. Art McMillan, P.E., Highway Design
Mr. Majed Alghandour, P.E., Prog. and TIP
Mr. Shannon Lassiter, NCDOT-PDEA
Mr. Jay Bennett, P.E., Roadway Design
Mr. Scott McLendon, USACE, Wilmington

Office Use Only: Form Version March 05

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

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

I. Processing

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

2. Nationwide, Regional or General Permit Number(s) Requested: NW 23 & 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
   Raleigh, NC 27699
   Telephone Number: (919) 733-3141 Fax Number: (919) 733-9794
   E-mail Address: gthorpe@dot.state.nc.us

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

III. Project Information

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

1. Name of project: Replacement of Bridge No. 7 over Yadkin River

2. T.I.P. Project Number or State Project Number (NCDOT Only): B-4052

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

4. Location
   County: Caldwell Nearest Town: Happy Valley
   Subdivision name (include phase/lot number): N/A
   Directions to site (include road numbers/names, landmarks, etc.): The site is located at the crossing of NC 268 over the Yadkin River

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° 59.46'N, 81° 33.54'W

6. Property size (acres): N/A

7. Name of nearest receiving body of water: Yadkin River

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

9. Describe the existing conditions on the site and general land use in the vicinity of the project at the time of this application: Forestland

10. Describe the overall project in detail, including the type of equipment to be used: Standard DOT construction equipment.

11. Explain the purpose of the proposed work: The purpose is to replace the old bridge that is functionally obsolete and structurally deficient.

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. NA

V. Future Project Plans

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

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

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

1. Provide a written description of the proposed impacts: The project impacts are as follows, 19 feet of permanent stream impacts, 0.071 acre of temporary stream impacts

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

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

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

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

Stream Impact 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	UT Yadkin River	Permanent	Perennial	3	19	
Site 1	UT Yadkin River	Temporary	Perennial	3		0.001
Site 1	Yadkin River	Temporary	Perennial	80		0.07
Total Stream Impact (by length and acreage)					19	0.071

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)
Total Open Water Impact (acres)				

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

Stream Impact (acres):	0.071
Wetland Impact (acres):	0
Open Water Impact (acres):	0
Total Impact to Waters of the U.S. (acres)	0.071

Total Stream Impact (linear feet):	19

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

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

VII. Impact Justification (Avoidance and Minimization)

Specifically describe measures taken to avoid the proposed impacts. It may be useful to provide information related to site constraints such as topography, building ordinances, accessibility, and financial viability of the project. The applicant may attach drawings of alternative, lower-impact site layouts, and explain why these design options were not feasible. Also discuss how impacts were minimized once the desired site plan was developed. If applicable, discuss construction techniques to be followed during construction to reduce impacts. Best Management Practices for the Protection of Surface Waters and BMP's for Bridge Demolition and Removal, new bridge will be longer than the existing bridge and span the river, and Design Standards in Sensitive Watersheds

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 proposed

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

IX. Environmental Documentation (required by DWQ)

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

2. If yes, does the project require preparation of an environmental document pursuant to the requirements of the National or North Carolina Environmental Policy Act (NEPA/SEPA)?

Note: If you are not sure whether a NEPA/SEPA document is required, call the SEPA coordinator at (919) 733-5083 to review current thresholds for environmental documentation. Yes ☒ No ☐

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

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

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

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

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

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

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

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

XI. Stormwater (required by DWQ)

Describe impervious acreage (existing and proposed) versus total acreage on the site. Discuss stormwater controls proposed in order to protect surface waters and wetlands downstream from the property. If percent impervious surface exceeds 20%, please provide calculations demonstrating total proposed impervious level. Approximately the same as current conditions, no water will directly discharge into the Yadkin River.

XII. Sewage Disposal (required by DWQ)

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

XIII. Violations (required by DWQ)

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

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

XIV. Cumulative Impacts (required by DWQ)

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

XV. Other Circumstances (Optional):

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

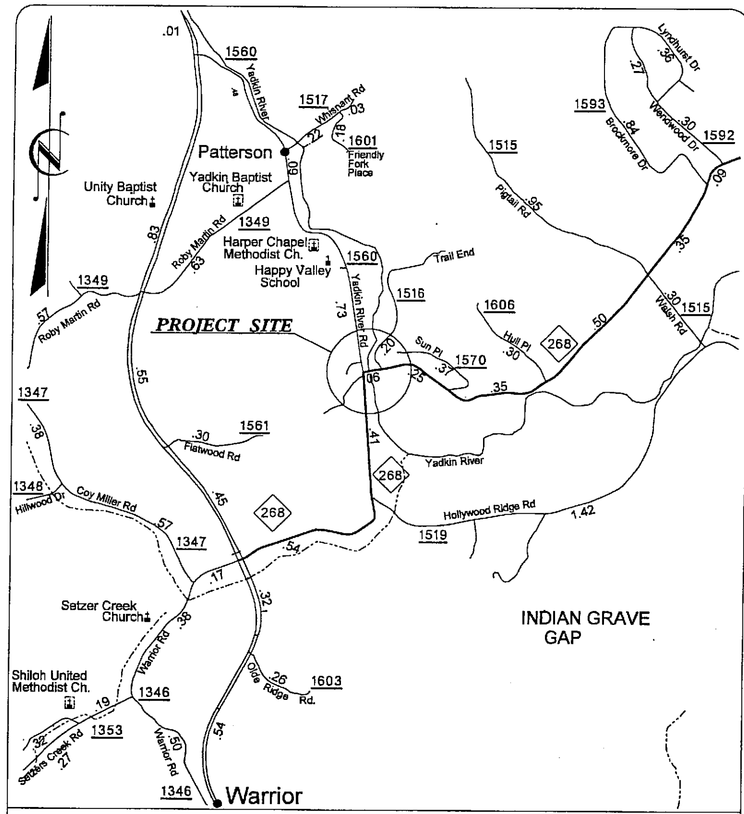
E. L. Lee 10.29.07

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

09/08/99

TIP PROJECT: B-4052

See Sheet 1-A For Index of Sheets



VICINITY MAP

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

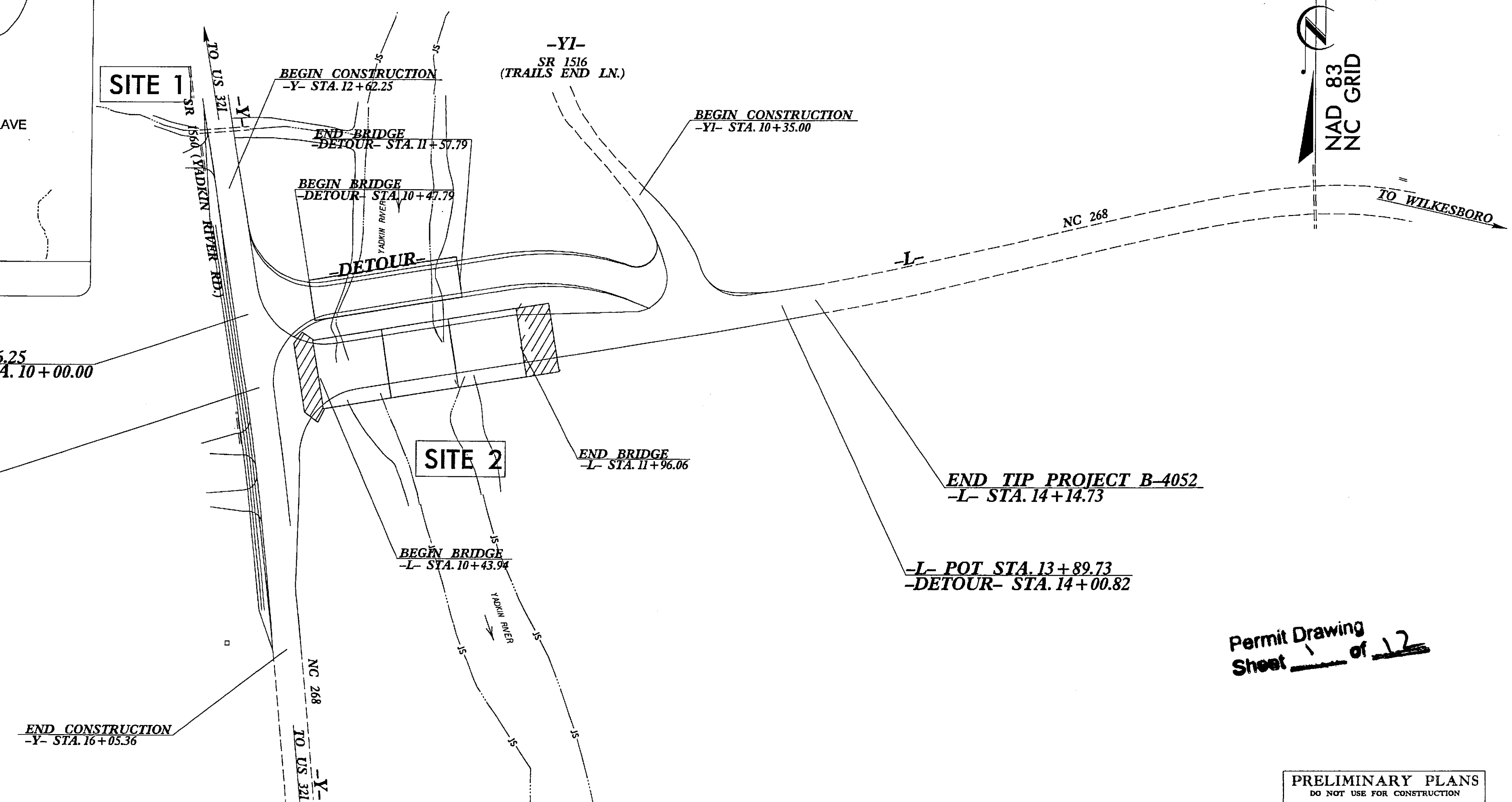
CALDWELL COUNTY

LOCATION: BRIDGE NO. 7 OVER YADKIN RIVER ON NC 268

TYPE OF WORK: GRADING, DRAINAGE, PAVING & STRUCTURES

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-4052	1	

STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION
33418.1.1	BRSTP-0268(9)	PE
33418.2.1	BRSTP-0268(9)	UTIL. & R/W



Permit Drawing Sheet 1 of 12

NOTE: A DESIGN EXCEPTION IS REQUIRED FOR THE PROPOSED LANE & SHOULDER WIDTH FOR -Y-.

THIS PROJECT IS NOT WITHIN ANY ANY MUNICIPAL BOUNDARIES.

CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD III.

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

CONTRACT:

GRAPHIC SCALES

50 25 0 50 100
PLANS

50 25 0 50 100
PROFILE (HORIZONTAL)

10 5 0 10 20
PROFILE (VERTICAL)

DESIGN DATA

ADT 2007 = 6,445
ADT 2027 = 10,620
DHV = 10%
D = 65%
T = 4% *
V = 40 MPH
* TTST 1% DUAL 3%
CLASSIFICATION = MAJOR RURAL COLLECTOR

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT B-4052	=	0.050 MILES
LENGTH STRCUTURE TIP PROJECT B-4052	=	0.029 MILES
TOTAL LENGTH TIP PROJECT B-4052	=	0.079 MILES

WETHERILL ENGINEERING

Prepared for the North Carolina Department of Transportation in the Office of:

559 JONES FRANKLIN ROAD
SUITE 164
Raleigh, N.C. 27606
Bus: 919 851 8077
Fax: 919 851 8107

2006 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
APRIL 21, 2006

LETTING DATE:
AUGUST 21, 2007

EDWARD G. WETHERILL, PE
PROJECT ENGINEER

BOB A. MAY, PE
PROJECT DESIGN ENGINEER

NCDOT CONTACT: B. DOUG TAYLOR, PE
ROADWAY DESIGN: ENGINEERING COORDINATION SECTION ENGINEER

HYDRAULICS ENGINEER

P.E.
SIGNATURE:

ROADWAY DESIGN ENGINEER

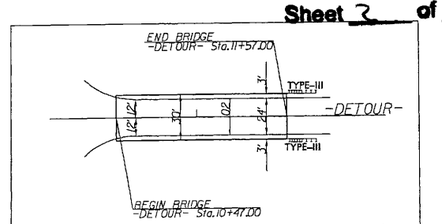
P.E.
SIGNATURE:

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

P.E.
STATE HIGHWAY DESIGN ENGINEER

$$$$$$SYSTIME$$$$$
$$$$$$$$$$$$$$DGN$$$$$$$$$$$$$$$$$$
$$$$USERNAME$$$$



8/17/99

PROJECT REFERENCE NO.	SHEET NO.
B-4052	2-A
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

-Y-

PI Sta 14+52.96	PI Sta 16+21.84
△ = 3° 11′ 58.7″ (RT)	△ = 1° 16′ 45.7″ (RT)
D = 3° 43′ 13.8″	D = 0° 30′ 29.4″
L = 86.00′	L = 251.76′
T = 43.01′	T = 125.89′
R = 1,540.00′	R = 11,275.00′
SE = .04	SE = .04
RO = 126	RO = 126

-DETOUR-

PI Sta 12+44.79	PI Sta 13+49.78
△ = 32° 30′ 56.9″ (RT)	△ = 32° 30′ 56.9″ (LT)
D = 30° 58′ 14.5″	D = 30° 58′ 14.5″
L = 104.99′	L = 104.99′
T = 53.95′	T = 53.95′
R = 185.00′	R = 185.00′
SE = .02	SE = .02
RO = 72′	RO = 72′

-Y1-

PI Sta 10+72.80
△ = 25° 34′ 52.5″ (RT)
D = 35° 48′ 35.5″
L = 71.44′
T = 36.32′
R = 160.00′

SKETCH SHOWING BRIDGE/PAVEMENT RELATIONSHIP

NOTE:
ONLY ONE CAUSEWAY WILL BE CONSTRUCTED AT A TIME. FIRST CAUSEWAY WILL BE REMOVED BEFORE SECOND CAUSEWAY IS CONSTRUCTED. SUCH THAT NO MORE THAN 50% OF THE CHANNEL IS BLOCKED.

-L-

PI Sta 14+50.57	PI Sta 17+01.40	PI Sta 18+48.23
△ = 3° 48′ 23.2″ (LT)	△ = 4° 07′ 36.8″ (RT)	△ = 34° 41′ 05.7″ (RT)
D = 3° 07′ 45.4″	D = 5° 07′ 58.7″	D = 19° 48′ 34.2″
L = 121.64′	L = 80.40′	L = 175.09′
T = 60.84′	T = 40.22′	T = 90.32′
R = 1,830.95′	R = 1,116.23′	R = 289.23′

Permit Drawing
Sheet 3 **of** 12

Legend	
▨ TS TS	DENOTES TEMPORARY IMPACTS IN SURFACE WATER
▨ S S	DENOTES IMPACTS IN SURFACE WATER

SEE SHEET 4 FOR -L-
SEE SHEET 6 FOR DETOUR GRADE

$$$$$$SYSTIME$$$$$
$$$$$$$$$$$$$$$$DGN$$$$$$$$$$$$$$$$$$$$$$
$$$$$USERNAME$$$$$

PROJECT REFERENCE NO.	SHEET NO.
B-4052	2-A
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

8/17/99

-Y-

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RO = 72′	RO = 72′

-Y1-

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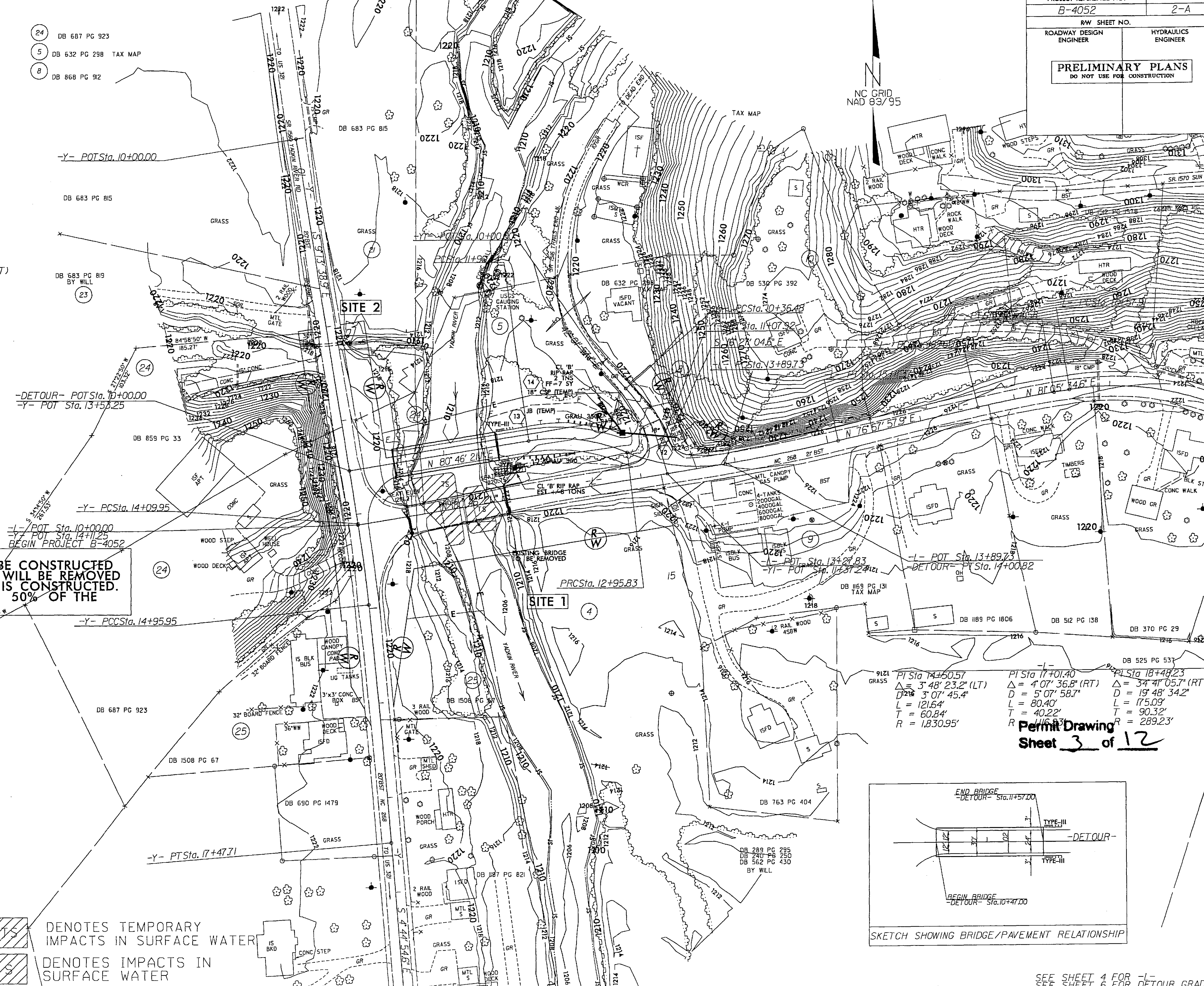

-L-

PI Sta 14+50.57	PI Sta 17+01.40	PI Sta 18+48.23
Δ = 3° 48′ 23.2″ (LT)	Δ = 4° 07′ 36.8″ (RT)	Δ = 34° 41′ 05.7″ (RT)
D = 3° 07′ 45.4″	D = 5° 07′ 58.7″	D = 19° 48′ 34.2″
L = 121.64′	L = 80.40′	L = 175.09′
T = 60.84′	T = 40.22′	T = 90.32′
R = 1,830.95′	R = 1116.93′	R = 289.23′

Permit Drawing
Sheet 3 **of** 12

SKETCH SHOWING BRIDGE/PAVEMENT RELATIONSHIP

TS DENOTES TEMPORARY IMPACTS IN SURFACE WATER

S DENOTES IMPACTS IN SURFACE WATER

SEE SHEET 4 FOR -L-
SEE SHEET 6 FOR DETOUR GRADE

PROJECT REFERENCE NO.	SHEET NO.
B-4052	4
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

ENGLISH

8/17/99

ADT COUNTS IN 100S

SR 1560 — NC 268 — 2007 / 2027

-Y-

PI Sta 14+52.96
Δ = 3° 11′ 58.7″ (RT)
D = 3° 43′ 13.8″
L = 86.00′
T = 43.01′
R = 1,540.00′
SE = .04
RO = 126

PI Sta 16+21.84
Δ = 1° 16′ 45.7″ (RT)
D = 0° 30′ 29.4″
L = 251.76′
T = 125.89′
R = 11,275.00′
SE = .04
RO = 126

-Y1-

PI Sta 10+72.80
Δ = 25° 34′ 52.5″ (RT)
D = 35° 48′ 35.5″
L = 71.44′
T = 36.32′
R = 160.00′

NOTE: A DESIGN EXCEPTION IS REQUIRED FOR THE PROPOSED LANE AND SHOULDER WIDTH FOR -Y-.

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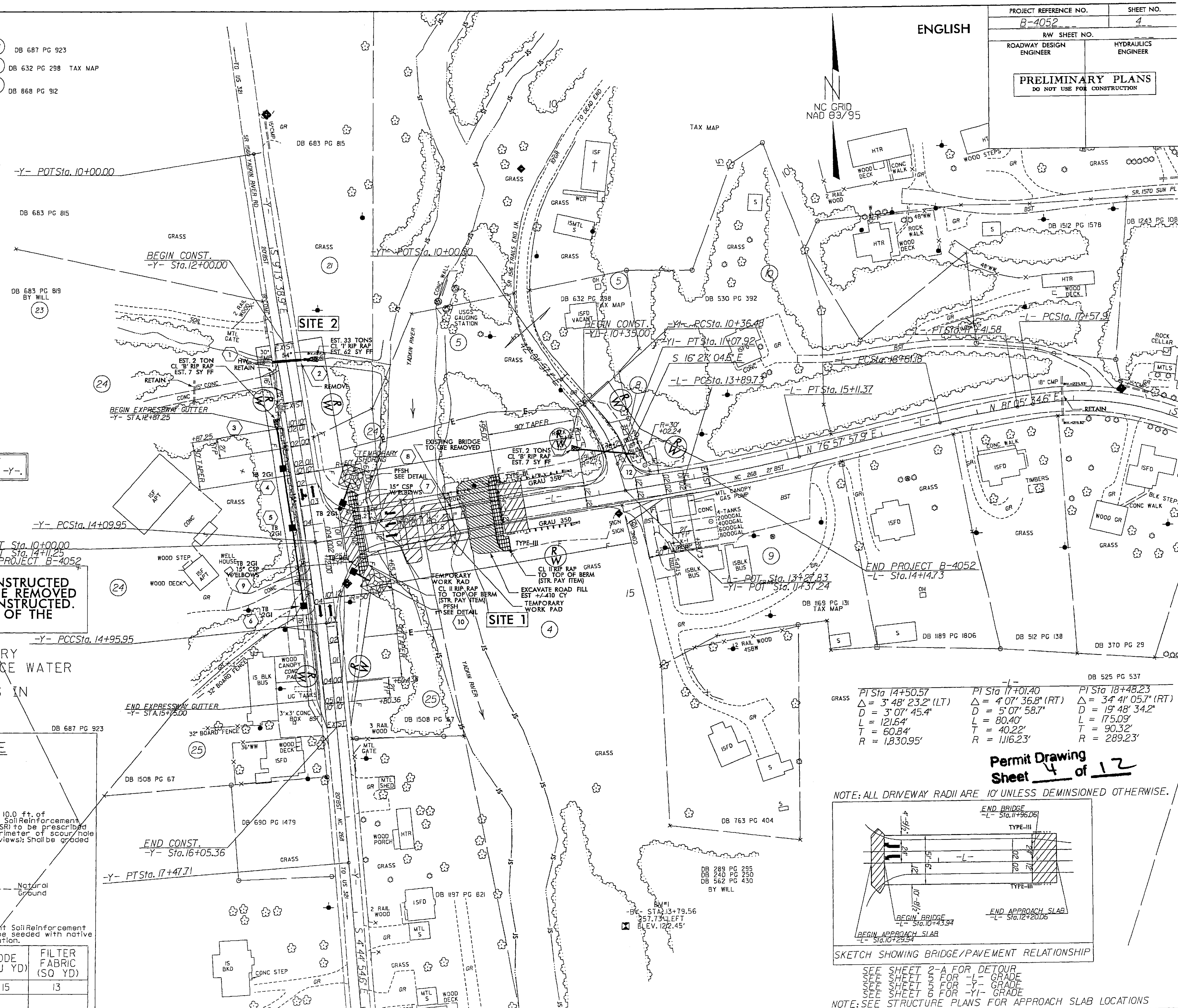
ONLY ONE CAUSEWAY WILL BE CONSTRUCTED AT A TIME. FIRST CAUSEWAY WILL BE REMOVED BEFORE SECOND CAUSEWAY IS CONSTRUCTED. SUCH THAT NO MORE THAN 50% OF THE CHANNEL IS BLOCKED.

TS — DENOTES TEMPORARY IMPACTS IN SURFACE WATER

S — DENOTES IMPACTS IN SURFACE WATER

REVISIONS

R/W REVISION — REVISED PROPOSED CONSTRUCTION EASEMENT ALONG PARCEL NO.3 TO PROVIDE ADDITIONAL CONSTRUCTION ROOM.BAM
R/W REVISION — REVISED PROPERTY LINES & PARCEL NUMBERS FOR PARCELS NO.2,23,24 & 25.BAM
R/W REVISION — REVISED PROPOSED RIGHT OF WAY AND CONST. EASEMENT ALONG -Y-.BAM
R/W REVISION — REVISED PROPOSED RIGHT OF WAY ALONG -Y- LEFT ON PARCEL NO.25.BAM
R/W REVISION — REVISED PROPOSED RIGHT OF WAY ALONG -L- RIGHT ON PARCEL NO.9.BAM



-L-

PI Sta 14+50.57
Δ = 3° 48′ 23.2″ (LT)
D = 3° 07′ 45.4″
L = 121.64′
T = 60.84′
R = 1,830.95′

PI Sta 17+01.40
Δ = 4° 07′ 36.8″ (RT)
D = 5° 07′ 58.7″
L = 80.40′
T = 40.22′
R = 1,116.23′

PI Sta 18+48.23
Δ = 34° 41′ 05.7″ (RT)
D = 19° 48′ 34.2″
L = 175.09′
T = 90.32′
R = 289.23′

Permit Drawing Sheet 4 of 12

NOTE: ALL DRIVEWAY RADII ARE 10′ UNLESS DEMINSIONED OTHERWISE.

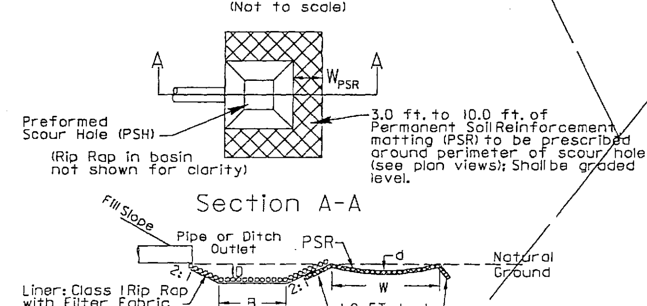
SKETCH SHOWING BRIDGE/PAVEMENT RELATIONSHIP

SEE SHEET 2-A FOR DETOUR
SEE SHEET 5 FOR -L- GRADE
SEE SHEET 5 FOR -Y- GRADE
SEE SHEET 6 FOR -Y1- GRADE

NOTE: SEE STRUCTURE PLANS FOR APPROACH SLAB LOCATIONS

PREFORMED SCOUR HOLE

(Not to scale)



NOTE: 'B' denotes size of basin; For example: 5.0ft.x 5.0ft. PSH, B=5.0

NOTE: The Permanent Soil Reinforcement matting (PSR) shall be seeded with native grasses at installation.

STATION	B FT.	D FT.	W_{PSR} FT.	d FT.	CLASS I RIP RAP TONS	DDE (CU YD)	FILTER FABRIC (SQ YD)
At 15" Pipes	4	1.5	5	0.5	9	15	13

PROJECT REFERENCE NO.	SHEET NO.
B-4052	4
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

ENGLISH

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

8/17/99

REVISIONS

- R/W REVISION -- REVISED PROPOSED CONSTRUCTION EASEMENT ALONG PARCEL NO.3 TO PROVIDE ADDITIONAL CONSTRUCTION ROOM.BAM
- R/W REVISION -- REVISED PROPERTY LINES & PARCEL NUMBERS FOR PARCELS NO.5,23,24 & 25.BAM
- R/W REVISION -- REVISED PROPOSED LANE WIDTH,SHOULDER WIDTH AND RIGHT OF WAY ALONG -Y-.BAM
- R/W REVISION -- REVISED PROPOSED RIGHT OF WAY AND CONST.EASEMENT ALONG -Y- LEFT ON PARCEL NO.25.BAM
- R/W REVISION -- REVISED PROPOSED RIGHT OF WAY ALONG -L- RIGHT ON PARCEL NO.9.BAM

$$$$$$SYSTIME$$$$$
$$$$$$$DGN$$$$$$$$$$$$$$$$
$$$$$USERNAME$$$$

-Y-

PI Sta 14+52.96
△ = 3° 11′ 58.7″ (RT)
D = 3° 43′ 13.8″
L = 86.00′
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R = 1,540.00′
SE = .04
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PI Sta 16+21.84
△ = 1° 16′ 45.7″ (RT)
D = 0° 30′ 29.4″
L = 251.76′
T = 125.89′
R = 11,275.00′
SE = .04
RO = 126

-Y1-

PI Sta 10+72.80
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L = 71.44′
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R = 160.00′

NOTE: A DESIGN EXCEPTION IS REQUIRED FOR THE PROPOSED LANE AND SHOULDER WIDTH FOR -Y-.

NOTE:
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▨ TS TS	DENOTES TEMPORARY IMPACTS IN SURFACE WATER
▨ S S	DENOTES IMPACTS IN SURFACE WATER

PREFORMED SCOUR HOLE

(Not to scale)

NOTE: 'B' denotes size of basin; For example: 5.0ft.x 5.0ft. PSH, B=5.0

NOTE: The Permanent Soil Reinforcement matting (PSR) shall be seeded with native grasses at installation.

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At 15" Pipes	4	1.5	5	0.5	9	15	13

-L-

PI Sta 14+50.57
△ = 3° 48′ 23.2″ (LT)
D = 3° 07′ 45.4″
L = 121.64′
T = 60.84′
R = 1,830.95′

PI Sta 17+01.40
△ = 4° 07′ 36.8″ (RT)
D = 5° 07′ 58.7″
L = 80.40′
T = 40.22′
R = 1,116.23′

PI Sta 18+48.23
△ = 34° 41′ 05.7″ (RT)
D = 19° 48′ 34.2″
L = 175.09′
T = 90.32′
R = 289.23′

Permit Drawing
Sheet 5 of 12

NOTE: ALL DRIVEWAY RADII ARE 10′ UNLESS DEMINSIONED OTHERWISE.

SKETCH SHOWING BRIDGE/PAVEMENT RELATIONSHIP

SEE SHEET 2-A FOR DETOUR
SEE SHEET 5 FOR -L- GRADE
SEE SHEET 5 FOR -Y- GRADE
SEE SHEET 6 FOR -Y1- GRADE
NOTE: SEE STRUCTURE PLANS FOR APPROACH SLAB LOCATIONS

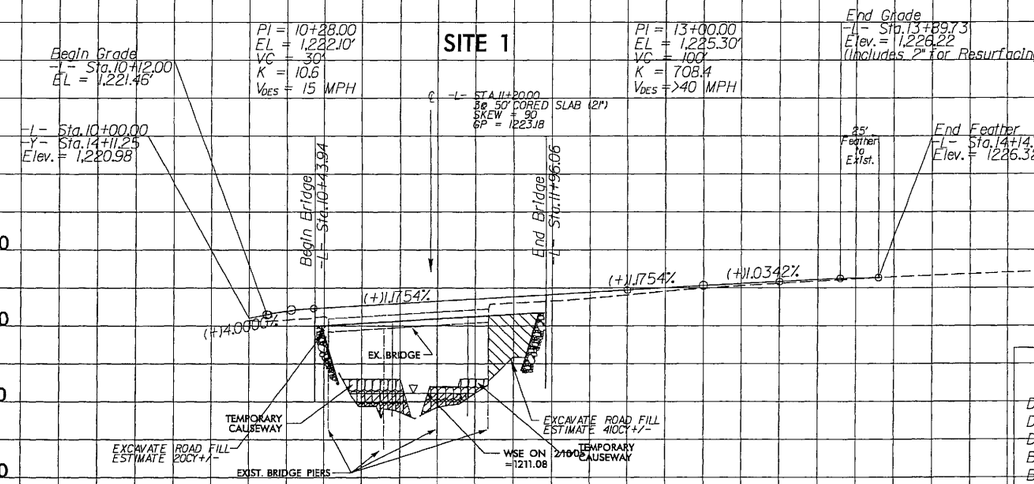
5/28/99

PROJECT REFERENCE NO.	SHEET NO.
B-4052	5
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

-L-

SITE 1



NOTE:
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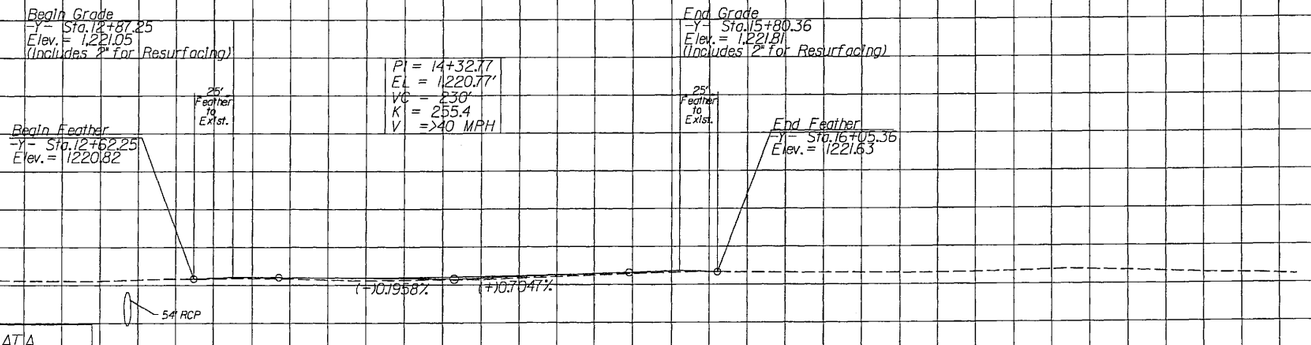
STRUCTURE HYDRAULIC DATA

DESIGN DISCHARGE	=	7860 CFS
DESIGN FREQUENCY	=	50 YRS
DESIGN HW ELEVATION	=	1222.9FT
BASE DISCHARGE	=	10760 CFS
BASE FREQUENCY	=	100 YRS
BASE HW ELEVATION	=	1223.8FT
OVERTOPPING DISCHARGE	=	7860 CFS
OVERTOPPING FREQUENCY	=	50 YRS
OVERTOPPING ELEVATION	=	1220.4FT

SEE SHEET 4 FOR -L- ALIGNMENT

BM #1
R/R SPIKE IN BASE OF A 10" POPLAR,
-BY- STA. 13+80, 258' LEFT, ELEV. =1212.45'
-Y- STA. 18+38.82, 280.13' LT.

-Y-



PIPE HYDRAULIC DATA
DRAINAGE STRUCTURE

DRAINAGE AREA	=	1.70 AC
DESIGN FREQUENCY	=	25 YRS
DESIGN DISCHARGE	=	130 CFS
DESIGN HW ELEVATION	=	1219.7 FT
100 YEAR DISCHARGE	=	205 CFS
100 YEAR HW ELEVATION	=	1222.6 FT
OVERTOPPING FREQUENCY	=	50 YRS
OVERTOPPING DISCHARGE	=	170 CFS
OVERTOPPING ELEVATION	=	1220.4FT

SEE SHEET 4 FOR -Y- ALIGNMENT

Permit Drawing Sheet 6 of 12

$$$$$$$SYSTIME$$$$$$$
$$$$$$$USERNAME$$$$$$$

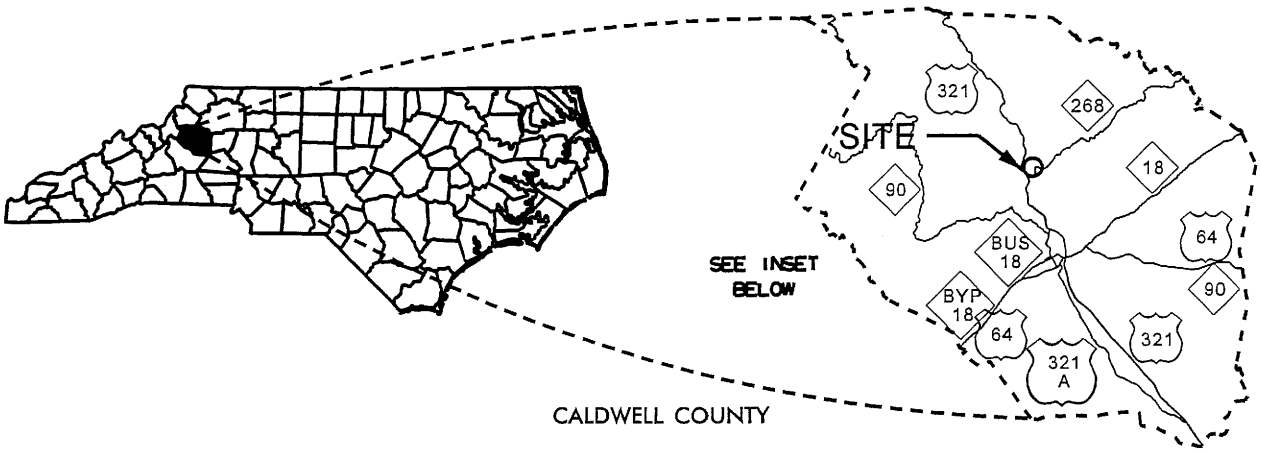
PROJ. REFERENCE NO.	SHEET NO.
B-4052	2

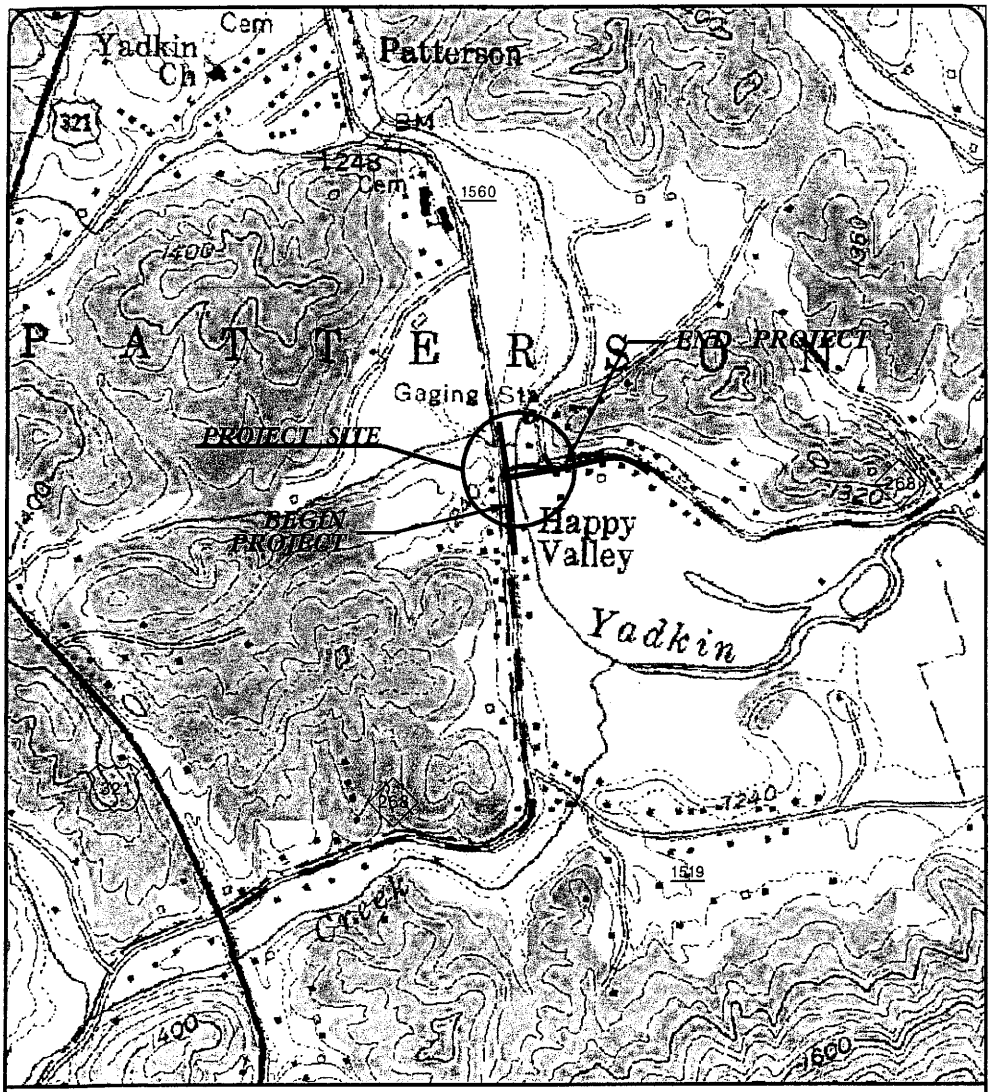
Permit Drawing
Sheet 7 **of** 12

PROJ. REFERENCE NO. B-4052

SHEET NO. 1

Permit Drawing
Sheet 8 of 12





VICINITY MAP NTS

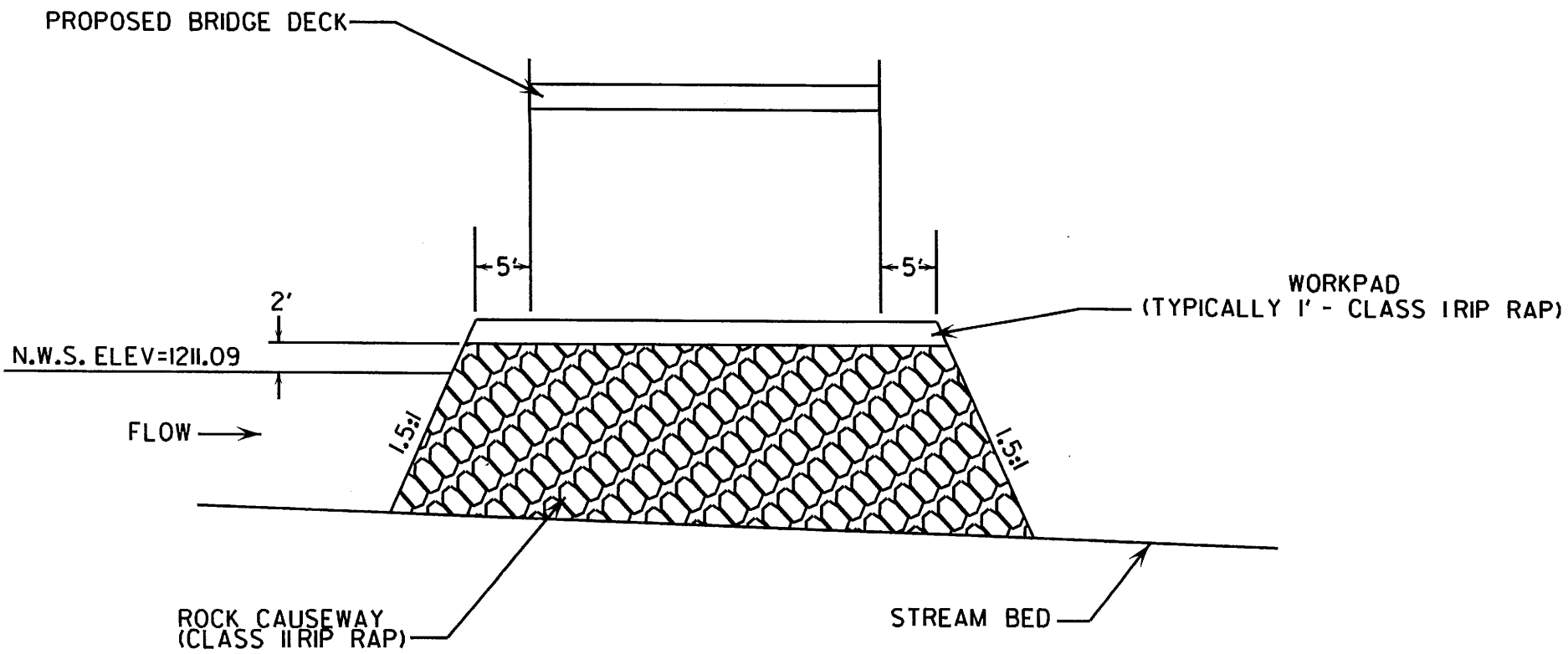
N.C. DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS

CALDWELL COUNTY

PROJECT: 33418.1.1 (B-4052)
BRIDGE NO. 7
ON NC 268
OVER YADKIN RIVER

SHEET 9 OF 12 **7/17/07**

WORKPAD DETAIL
(NOT TO SCALE)



QUANTITIES OF ESTIMATES

VOLUME OF CLASS II RIP RAP= 2175 yds^3

AREA OF CLASS II RIP RAP= 0.398 ac

Estimate 2480 Tons Class II Rip Rap

N.C. DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS

BURKE COUNTY
PROJECT: 33418.1.1 (B-4052)
NC 268 BRIDGE NO. 7
OVER YADKIN RIVER

SHEET 10 **OF** 12

7/17/07

PROPERTY OWNERS

NAMES AND ADDRESSES

PARCEL NO.	NAMES	ADDRESSES
1	MELVIN GREENE	2012 WINDSWEPT PLACE LENOIR, NC 28645
2	UNKNOWN OWNER	LENOIR, NC 28645
3	TOBY T. BURRIS	1240 NC HWY 268 LENOIR, NC 28645
4	LUCILLE SUDDRETH	1415 NC HWY 268 LENOIR, NC 28645
5	ELEANOR M. CURTIS	P.O. BOX 52 PATTERSON, NC 28661
23	SHIRLYN M. GREENE	1919 VALWAY RD. LENOIR, NC 28645
21	MARY MOORE	P.O. BOX 81 PATTERSON, NC 28661

NCDOT

DIVISION OF HIGHWAYS

CALDWELL COUNTY

PROJECT: 33418.1.1 (B-4052)

BRIDGE NO. 7

ON NC 268

OVER YADKIN RIVER

SHEET 11 OF 12 **7/17/07**

WETLAND PERMIT IMPACT SUMMARY

			WETLAND IMPACTS					SURFACE WATER IMPACTS				
Site No.	Station (From/To)	Structure Size / Type	Permanent Fill In Wetlands (ac)	Temp. Fill In Wetlands (ac)	Excavation in Wetlands (ac)	Mechanized Clearing in Wetlands (ac)	Hand Clearing in Wetlands (ac)	Permanent SW impacts (ac)	Temp. SW impacts (ac)	Existing Channel Impacts Permanent (ft)	Existing Channel Impacts Temp. (ft)	Natural Stream Design (ft)
1	10+50-12+00 -L-	Work Pad							0.070		78	
2	12+18 -Y-	54" RCP						0.010	0.001	19	16	
TOTALS:			0.00	0.00	0.00	0.00	0.00	0.01	0.07	19	94	0

NOTE: IMPACTS FOR PIER REMOVAL = 39 SQ. FT.

NC DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

Caldwell County
PROJECT 33418.1.1 B-4052

SHEET 12 of 12 7/17/2007

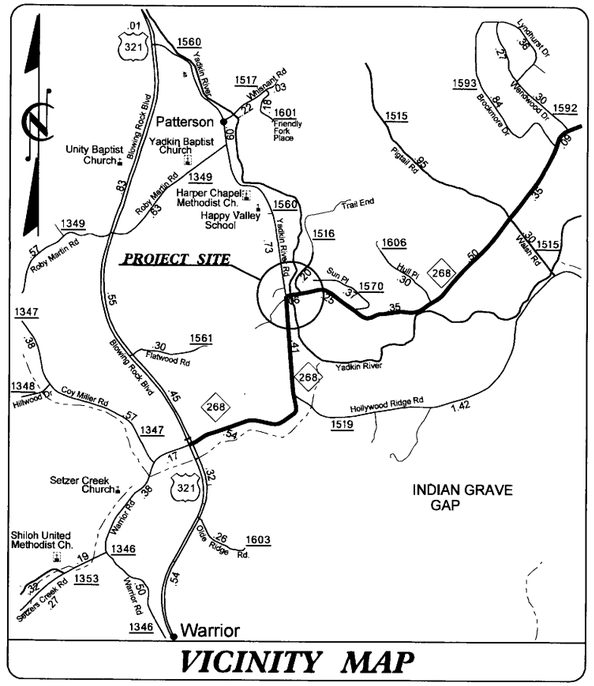
ATN Revised 3/31/05

09/08/99

TIP PROJECT: B-4052

CONTRACT:

See Sheet 1-A For Index of Sheets



VICINITY MAP

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

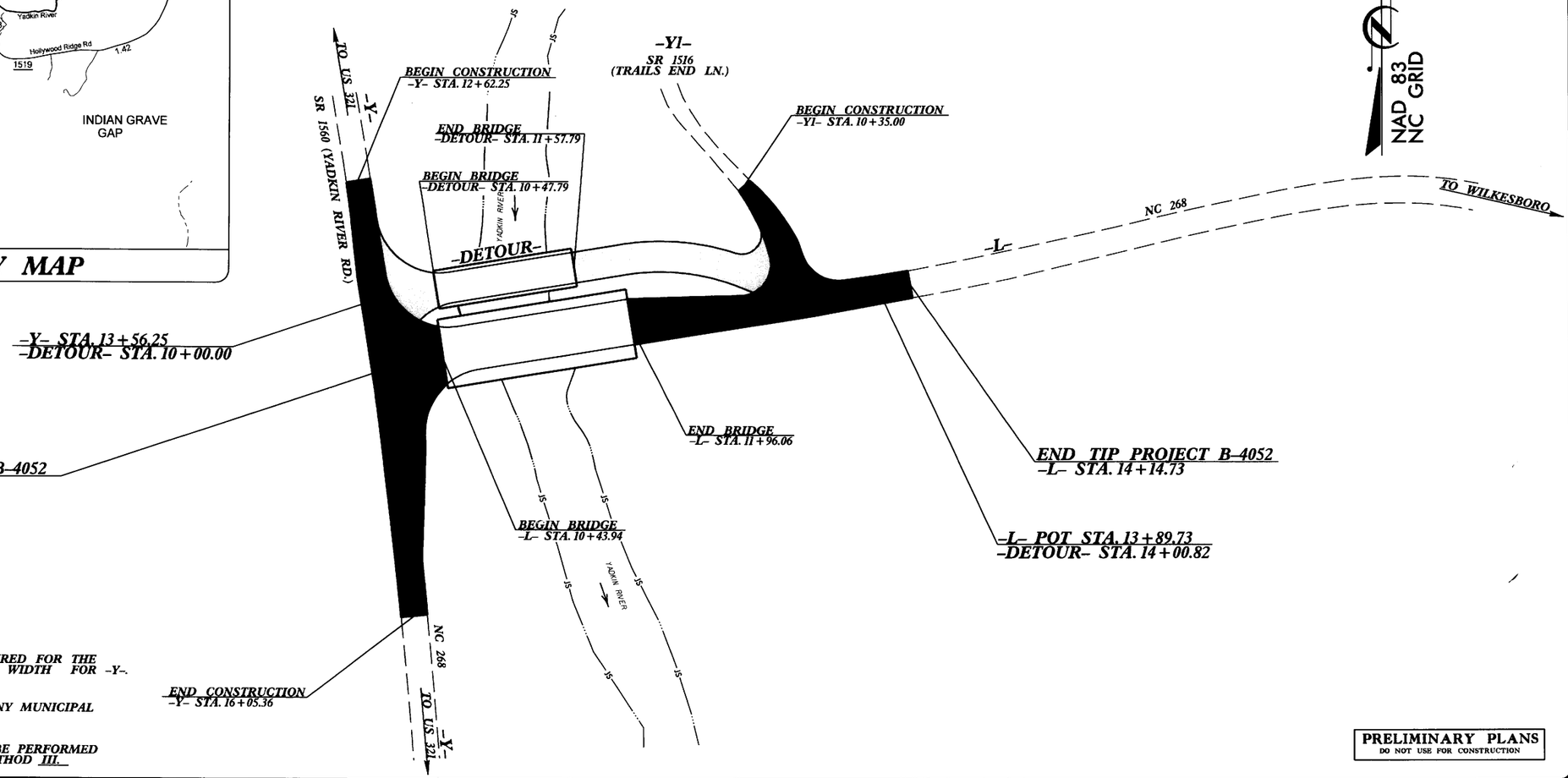
CALDWELL COUNTY

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-4052	1	

STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION
33418.1.1	BRSTP-0268(9)	PE
33418.2.1	BRSTP-0268(9)	UTIL. & RW

LOCATION: BRIDGE NO. 7 OVER YADKIN RIVER ON NC 268

TYPE OF WORK: GRADING, DRAINAGE, PAVING & STRUCTURES



NOTE: A DESIGN EXCEPTION IS REQUIRED FOR THE PROPOSED LANE & SHOULDER WIDTH FOR -Y-.

THIS PROJECT IS NOT WITHIN ANY ANY MUNICIPAL BOUNDARIES.

CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD III.

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

GRAPHIC SCALES

50 25 0 50 100
PLANS

50 25 0 50 100
PROFILE (HORIZONTAL)

10 5 0 10 20
PROFILE (VERTICAL)

DESIGN DATA

ADT 2007	=	6,445
ADT 2027	=	10,620
DHV	=	10%
D	=	65%
T	=	4% *
V	=	40 MPH
* TTST 1%		DUAL 3%
CLASSIFICATION	=	MAJOR RURAL COLLECTOR

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT B-4052	=	*0.050 MILES*
LENGTH STRCUTURE TIP PROJECT B-4052	=	*0.029 MILES*
TOTAL LENGTH TIP PROJECT B-4052	=	*0.079 MILES*

Prepared for the North Carolina Department of Transportation in the Office of:

WETHERILL ENGINEERING
559 JONES FRANKLIN ROAD
SUITE 164
Raleigh, N.C. 27606
Bus: 919 851 8077
Fax: 919 851 8107

2006 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE: APRIL 21, 2006

LETTING DATE: AUGUST 21, 2007

EDWARD G, WETHERILL, PE
PROJECT ENGINEER

BOB A. MAY, PE
PROJECT DESIGN ENGINEER

NCDOT CONTACT: B. DOUG TAYLOR, PE
ROADWAY DESIGN: ENGINEERING COORDINATION SECTION ENGINEER

HYDRAULICS ENGINEER

SIGNATURE: *P.E.*

ROADWAY DESIGN ENGINEER

SIGNATURE: *P.E.*

DIVISION OF HIGHWAYS STATE OF NORTH CAROLINA

P.E.
STATE HIGHWAY DESIGN ENGINEER

6:37:22 AM
P:\B-4052\Roadway\Proj\B4052_rdy_tsh.dgn
7/17/2007

PROJECT REFERENCE NO.	SHEET NO.
B-4052	1-B

Note: Not to Scale

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

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

CONVENTIONAL PLAN SHEET SYMBOLS

BOUNDARIES AND PROPERTY:

- State Line
- County Line
- Township Line
- City Line
- Reservation Line
- Property Line
- Existing Iron Pin — EIP
- Property Corner
- Property Monument — ECM
- Parcel/Sequence Number — 123
- Existing Fence Line
- Proposed Woven Wire Fence
- Proposed Chain Link Fence
- Proposed Barbed Wire Fence
- Existing Wetland Boundary — WLB
- Proposed Wetland Boundary — WLB
- Existing High Quality Wetland Boundary — HQ WLB
- Existing Endangered Animal Boundary — EAB
- Existing Endangered Plant Boundary — EPB

BUILDINGS AND OTHER CULTURE:

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

HYDROLOGY:

- Stream or Body of Water
- Hydro, Pool or Reservoir
- River Basin Buffer — RBB
- Flow Arrow
- Disappearing Stream
- Spring
- Swamp Marsh
- Proposed Lateral, Tail, Head Ditch — FLOW
- False Sump

RAILROADS:

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

RIGHT OF WAY:

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

ROADS AND RELATED FEATURES:

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

VEGETATION:

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

EXISTING STRUCTURES:

MAJOR:

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

MINOR:

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

UTILITIES:

POWER:

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

TELEPHONE:

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

WATER:

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

TV:

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

GAS:

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

SANITARY SEWER:

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

MISCELLANEOUS:

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

6/2/99

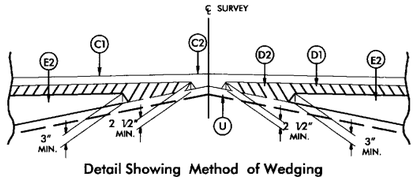
PROJECT REFERENCE NO.	SHEET NO.
B-4052	2
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

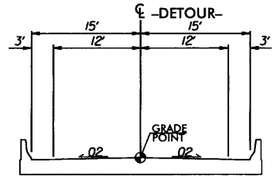
PAVEMENT SCHEDULE

A	CONCRETE WEARING SURFACE (STRUCTURE PAY ITEM)
C1	PROP. APPROX. 3" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD. IN EACH OF TWO LAYERS
C2	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 112 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT TO EXCEED 2" IN DEPTH.
D1	PROP. APPROX. 2½" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0B, AT AN AVERAGE RATE OF 285 LBS. PER SQ. YD.
D2	PROP. VAR. DEPTH ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0B, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1" DEPTH, TO BE PLACED IN LAYERS NOT LESS THAN 2½" IN DEPTH OR GREATER THAN 4" IN DEPTH.
E1	PROP. APPROX. 4" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.
E2	PROP. VAR. DEPTH ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT LESS THAN 3" IN DEPTH OR GREATER THAN 5½" IN DEPTH.
R	CONCRETE EXPRESSWAY GUTTER
T	EARTH MATERIAL.
U	EXISTING PAVEMENT.
W	VARIABLE DEPTH ASPHALT PAVEMENT

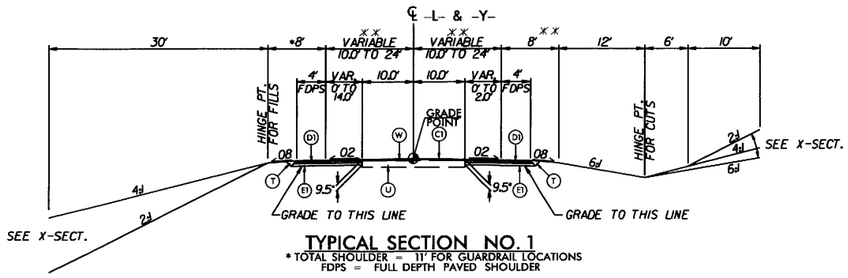
NOTE: PAVEMENT EDGE SLOPES ARE 1:1 UNLESS SHOWN OTHERWISE.



Detail Showing Method of Wedging



TYPICAL SECTION NO. 6
USE TYPICAL SECTION NO.6 AS FOLLOWS:
-DETOUR- STA.10+47.00 (BEGIN BRIDGE) TO -DETOUR- STA.11+57.00 (END BRIDGE)



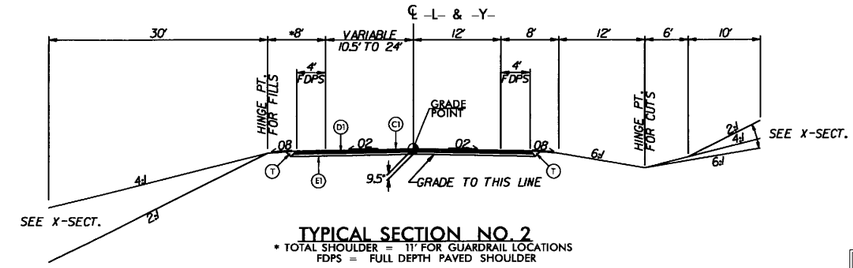
TYPICAL SECTION NO. 1
* TOTAL SHOULDER = 11' FOR GUARDRAIL LOCATIONS
FDPS = FULL DEPTH PAVED SHOULDER

USE TYPICAL SECTION NO.1 AS FOLLOWS:
-L- STA.10+12.00 TO -L- STA.10+25.00
-L- STA.12+25.00 TO -L- STA.13+89.73
-Y- STA.12+87.25 TO -Y- STA.15+80.36

TRANSITION FROM EXISTING TO TYPICAL SECTION NO.1
-Y- STA.12+62.25 TO -Y- STA.12+87.25

TRANSITION FROM TYPICAL SECTION NO.1 TO EXISTING
-L- STA.13+89.73 TO -L- STA.14+14.73
-Y- STA.15+80.36 TO -Y- STA.16+05.36

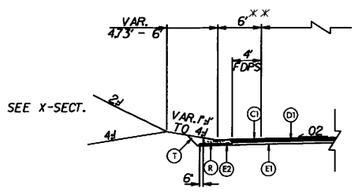
NOTE: FEATHER PROPOSED 4" PAVED SHOULDER TO EXISTING BST IN PARKING AREA.
-L- STA.13+13.00 TO -L- STA.14+14.73 RT.



TYPICAL SECTION NO. 2
* TOTAL SHOULDER = 11' FOR GUARDRAIL LOCATIONS
FDPS = FULL DEPTH PAVED SHOULDER

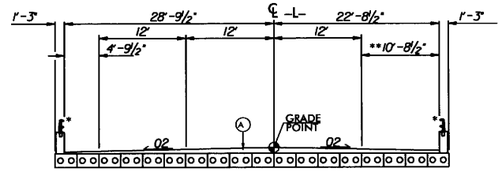
USE TYPICAL SECTION NO.2 AS FOLLOWS:
-L- STA.10+25.00 TO -L- STA.10+43.94 (BEGIN BRIDGE)
-L- STA.11+96.06 (END BRIDGE) TO -L- STA.12+25.00

** NOTE: A DESIGN EXCEPTION IS REQUIRED FOR THE PROPOSED LANE & SHOULDER WIDTH FOR -Y-.



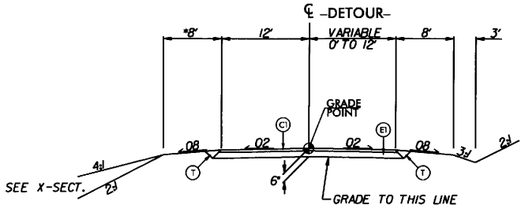
PARTIAL TYPICAL SECTION NO. 1
USE IN CONJUNCTION WITH TYPICAL SECTION NO. 1
FDPS = FULL DEPTH PAVED SHOULDER

USE PARTIAL TYPICAL SECTION NO.1 AS FOLLOWS:
-Y- STA.12+87.25 TO -Y- STA.15+75.00



TYPICAL SECTION NO. 3
* BICYCLE SAFE RAIL
** TURNING MOVEMENT ACCOMMODATING WB-50

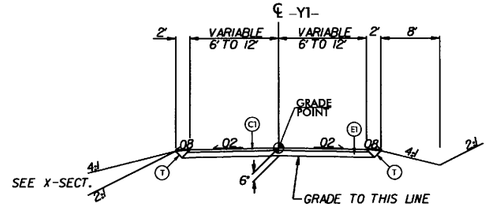
USE TYPICAL SECTION NO.3 AS FOLLOWS:
-L- STA.10+43.94 (BEGIN BRIDGE) TO -L- STA.11+96.06 (END BRIDGE)



TYPICAL SECTION NO. 5
NOTE: TOTAL SHOULDER = 10' FOR GUARDRAIL LOCATIONS

USE TYPICAL SECTION NO.5 AS FOLLOWS:
-DETOUR- STA.10+10.00 TO -DETOUR- STA.10+47.00 (BEGIN BRIDGE)
-DETOUR- STA.11+57.00 (END BRIDGE) TO -DETOUR- STA.13+32.19

TRANSITION FROM TYPICAL SECTION NO.5 TO EXISTING
-DETOUR- STA.13+32.19 TO -DETOUR- STA.13+99.95



TYPICAL SECTION NO. 4
NOTE: TOTAL SHOULDER = 7' FOR GUARDRAIL LOCATIONS

USE TYPICAL SECTION NO.4 AS FOLLOWS:
-Y1- STA.10+35.00 TO -Y1- STA.11+25.14

6:38:20 AM
6/15/2007
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6/17/2007

8/17/99

PROJECT REFERENCE NO.	SHEET NO.
B-4052	2-A
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

NC GRID
NAD 83/95

24	MELVIN W. GREENE DB 687 PG 923
5	ELEANOR M. CURTIS DB 632 PG 298 TAX MAP
8	HAPPY VALLEY RURITAN CLUB DB 868 PG 592

-DETOUR-

PI Sta 12+44.79	PI Sta 13+49.78
Δ = 32° 30' 56.9" (RT)	Δ = 32° 30' 56.9" (LT)
D = 30° 58' 14.5"	D = 30° 58' 14.5"
L = 104.99'	L = 104.99'
T = 53.95'	T = 53.95'
R = 185.00'	R = 185.00'
SE = .02	SE = .02
RO = 72°	RO = 72°

-DETOUR- POT Sta. 10+00.00
-Y- POT Sta. 13+53.25

PCSta. 11+99.84

PRCSta. 12+95.83

-L- POT Sta. 13+89.73
-DETOUR- PT Sta. 14+00.82

EXISTING BRIDGE TO BE REMOVED

MARY MOORE MAST, ET AL DB 683 PG 815

SHIRLYN M. GREENE DB 683 PG 819 BY WILL

MELVIN W. GREENE DB 859 PG 33

MELVIN W. GREENE DB 687 PG 923

TOBY T. BURRIS DB 1508 PG 67

JOHN W. DILLARD DB 1342 PG 1449

SYLVESTER HAMBY DB 690 PG 1479

TOBY T. BURRIS DB 1508 PG 67

V.I. GREENE DB 1197 PG 821

ELEANOR M. CURTIS DB 632 PG 298 TAX MAP

FOY D. KIRBY DB 530 PG 392

HAPPY VALLEY CHURCH TAX MAP

UNKNOWN OWNER TAX OFFICE

LEVAN RUDY HUCHEL II DB 1512 PG 1578

WILLIAM M. DICKSON JR. DB 1243 PG 1084

EUGENE H. WOODS DB 1189 PG 131 TAX MAP

WILLIAM D. PRICE DB 1189 PG 1806

HOWARD J. SUTTON DB 512 PG 138

HOWARD E. SUTTON DB 370 PG 29

MAUDE STORIE DB 525 PG 537

BRENDA H. YATES DB 763 PG 404

LUCILLE SUDDRETH DB 289 PG 295 DB 240 PG 250 DB 562 PG 430 BY WILL

END BRIDGE -DETOUR- Sta. 11+57.00
BEGIN BRIDGE -DETOUR- Sta. 10+47.00

SKETCH SHOWING BRIDGE/PAVEMENT RELATIONSHIP

SEE SHEET 4 FOR -L-
SEE SHEET 6 FOR DETOUR GRADE

7:40:45 AM
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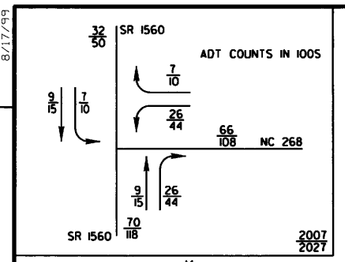
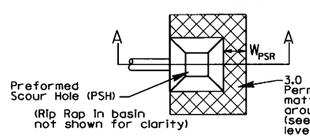
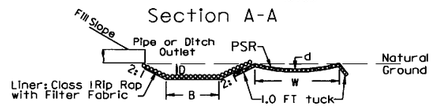
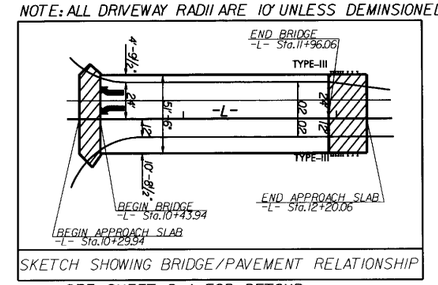
8/17/2007









PROJECT REFERENCE NO.	SHEET NO.
B-4052	4

R/W SHEET NO.

ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

8/17/99

REVISIONS

R/W REVISION - REVISED PROPOSED CONSTRUCTION EASEMENT ALONG PARCEL NO.3 TO PROVIDE ADDITIONAL CONSTRUCTION ROOM.BAM
R/W REVISION - REVISED PROPERTY LINES & PARCEL NUMBERS FOR PARCELS NO.5,23,24 & 25.BAM
R/W REVISION - REVISED PROPOSED LANE WIDTH,SHOULDER WIDTH AND RIGHT OF WAY ALONG -Y-.BAM
R/W REVISION - REVISED PROPOSED RIGHT OF WAY AND CONST.EASEMENT ALONG -Y- LEFT ON PARCEL NO.25.BAM
R/W REVISION - REVISED PROPOSED RIGHT OF WAY ALONG -L- RIGHT ON PARCEL NO.9.BAM

(24)	MELVIN W. GREENE DB 687 PG 923
(5)	ELEANOR M. CURTIS DB 632 PG 298 TAX MAP
(8)	HAPPY VALLEY RURITAN CLUB DB 868 PG 912

-Y-

PI Sta 14+52.96
Δ = 3° 11' 58.7" (RT)
D = 3° 43' 13.8"
L = 86.00'
T = 43.01'
R = 1,540.00'
SE = .04
RO = 126

PI Sta 16+21.84
Δ = 1° 16' 45.7" (RT)
D = 0° 30' 29.4"
L = 251.76'
T = 125.89'
R = 11,275.00'
SE = .04
RO = 126

-YI-

PI Sta 10+72.80
Δ = 25° 34' 52.5" (RT)
D = 35° 48' 35.5"
L = 71.44'
T = 36.32'
R = 160.00'

NOTE: A DESIGN EXCEPTION IS REQUIRED FOR THE PROPOSED LANE AND SHOULDER WIDTH FOR -Y-.

-L-

PI Sta 14+50.57
Δ = 3° 48' 23.2" (LT)
D = 3° 07' 45.4"
L = 121.64'
T = 60.84'
R = 1,830.95'

PI Sta 17+01.40
Δ = 4° 07' 36.8" (RT)
D = 5° 07' 58.7"
L = 80.40'
T = 40.22'
R = 1,116.23'

PI Sta 18+48.23
Δ = 34° 41' 05.7" (RT)
D = 19° 48' 34.2"
L = 175.09'
T = 90.32'
R = 289.23'

NOTE: ALL DRIVEWAY RADII ARE 10' UNLESS DEMINSIONED OTHERWISE.

SKETCH SHOWING BRIDGE/PAVEMENT RELATIONSHIP

SEE SHEET 2-A FOR DETOUR
SEE SHEET 5 FOR -L- GRADE
SEE SHEET 5 FOR -Y- GRADE
SEE SHEET 6 FOR -YI- GRADE
NOTE: SEE STRUCTURE PLANS FOR APPROACH SLAB LOCATIONS

PREFORMED SCOUR HOLE

(Not to scale)

NOTE: "B" denotes size of basin; For example: 5.0ft.x 5.0ft. PSH, B=5.0

NOTE: The Permanent Soil Reinforcement matting (PSR) shall be seeded with native grasses at installation.

STATION	B FT.	D FT.	W_{PSR} FT.	d FT.	CLASS I RIP RAP TONS	DDE (CU YD)	FILTER FABRIC (SQ YD)
At 15" Pipes	4	1.5	5	0.5	9	15	13

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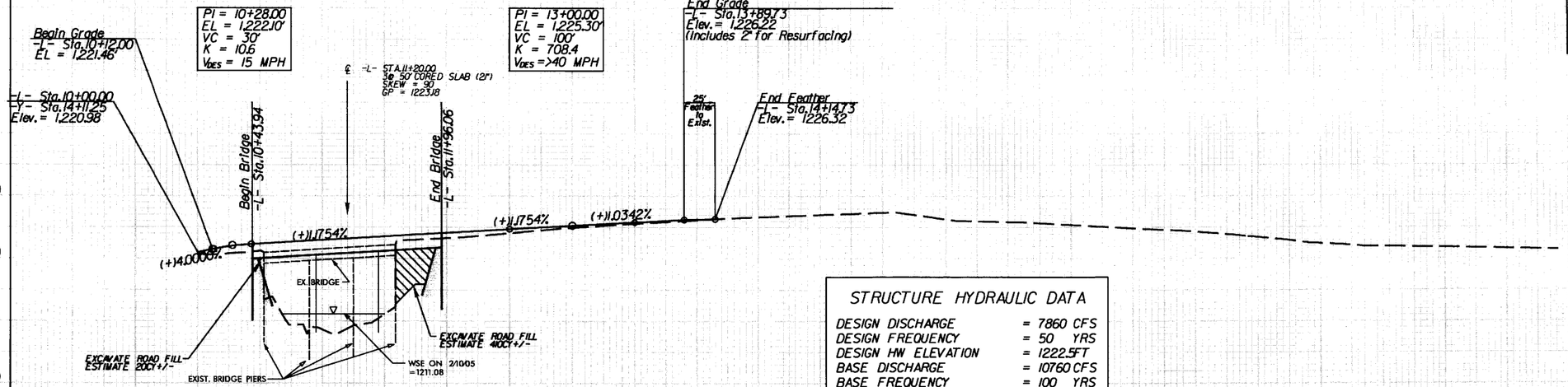
7/17/2007

5/28/99

PROJECT REFERENCE NO.	SHEET NO.
B-4052	5
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

-L-



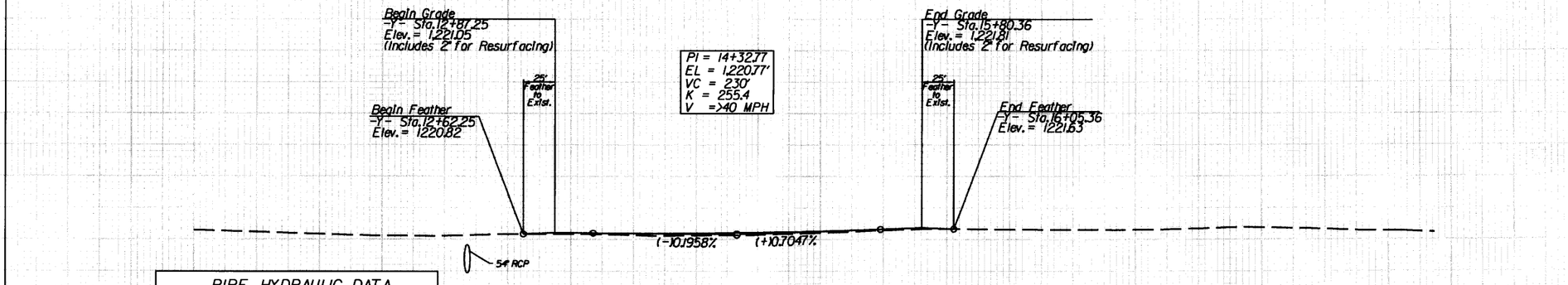
STRUCTURE HYDRAULIC DATA

DESIGN DISCHARGE	= 7860 CFS
DESIGN FREQUENCY	= 50 YRS
DESIGN HW ELEVATION	= 1222.5FT
BASE DISCHARGE	= 10760 CFS
BASE FREQUENCY	= 100 YRS
BASE HW ELEVATION	= 1223.8FT
OVERTOPPING DISCHARGE	= 7860 CFS
OVERTOPPING FREQUENCY	= 50 YRS
OVERTOPPING ELEVATION	= 1220.4FT

SEE SHEET 4 FOR -L- ALIGNMENT

BM #1
R/R SPIKE IN BASE OF A 10" POPLAR,
-BY- STA. 13+80, 258' LEFT, ELEV. = 1212.45'
-Y- STA. 18+38.82, 280.13' LT.

-Y-



PIPE HYDRAULIC DATA

DRAINAGE STRUCTURE

DRAINAGE AREA	= 1.70 AC
DESIGN FREQUENCY	= 25 YRS
DESIGN DISCHARGE	= 130 CFS
DESIGN HW ELEVATION	= 1219.7 FT
100 YEAR DISCHARGE	= 205 CFS
100 YEAR HW ELEVATION	= 1222.6 FT
OVERTOPPING FREQUENCY	= -50 YRS
OVERTOPPING DISCHARGE	= -170 CFS
OVERTOPPING ELEVATION	= +1220.4FT

SEE SHEET 4 FOR -Y- ALIGNMENT

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5/19/2005
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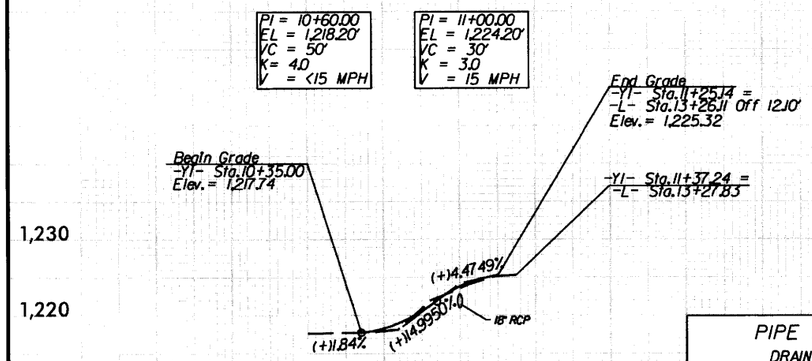
5/28/99

PROJECT REFERENCE NO.	SHEET NO.
B-4052	6
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

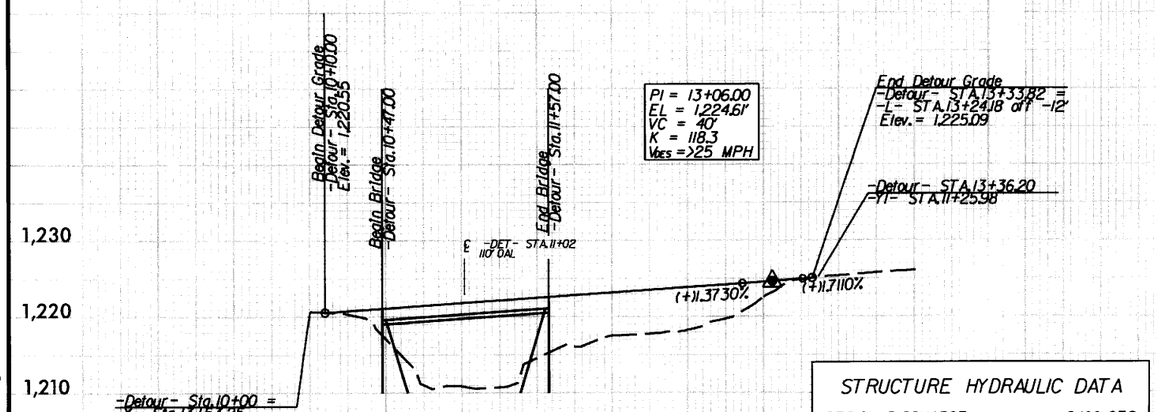
–Y1–



PIPE HYDRAULIC DATA		
DRAINAGE STRUCTURE		
DRAINAGE AREA	= 0.2	AC
DESIGN FREQUENCY	= 2.5	YRS
DESIGN DISCHARGE	= 2.9	CFS
DESIGN HW ELEVATION	= 1222.4	FT
100 YEAR DISCHARGE	= 3.5	CFS
100 YEAR HW ELEVATION	= 1222.5	FT
OVERTOPPING FREQUENCY	= +500	YRS
OVERTOPPING DISCHARGE	= +5.2	CFS
OVERTOPPING ELEVATION	= 1223.8	FT

SEE SHEET 4 FOR -Y1- ALIGNMENT

–DETOUR–



STRUCTURE HYDRAULIC DATA		
DESIGN DISCHARGE	= 2400	CFS
DESIGN FREQUENCY	= 5	YRS
DESIGN HW ELEVATION	= 1216.7	FT
BASE DISCHARGE	=	CFS
BASE FREQUENCY	= 100	YRS
BASE HW ELEVATION	=	FT
OVERTOPPING DISCHARGE	=	CFS
OVERTOPPING FREQUENCY	=	YRS
OVERTOPPING ELEVATION	=	FT

SEE SHEET 2-A FOR -DETOUR- ALIGNMENT

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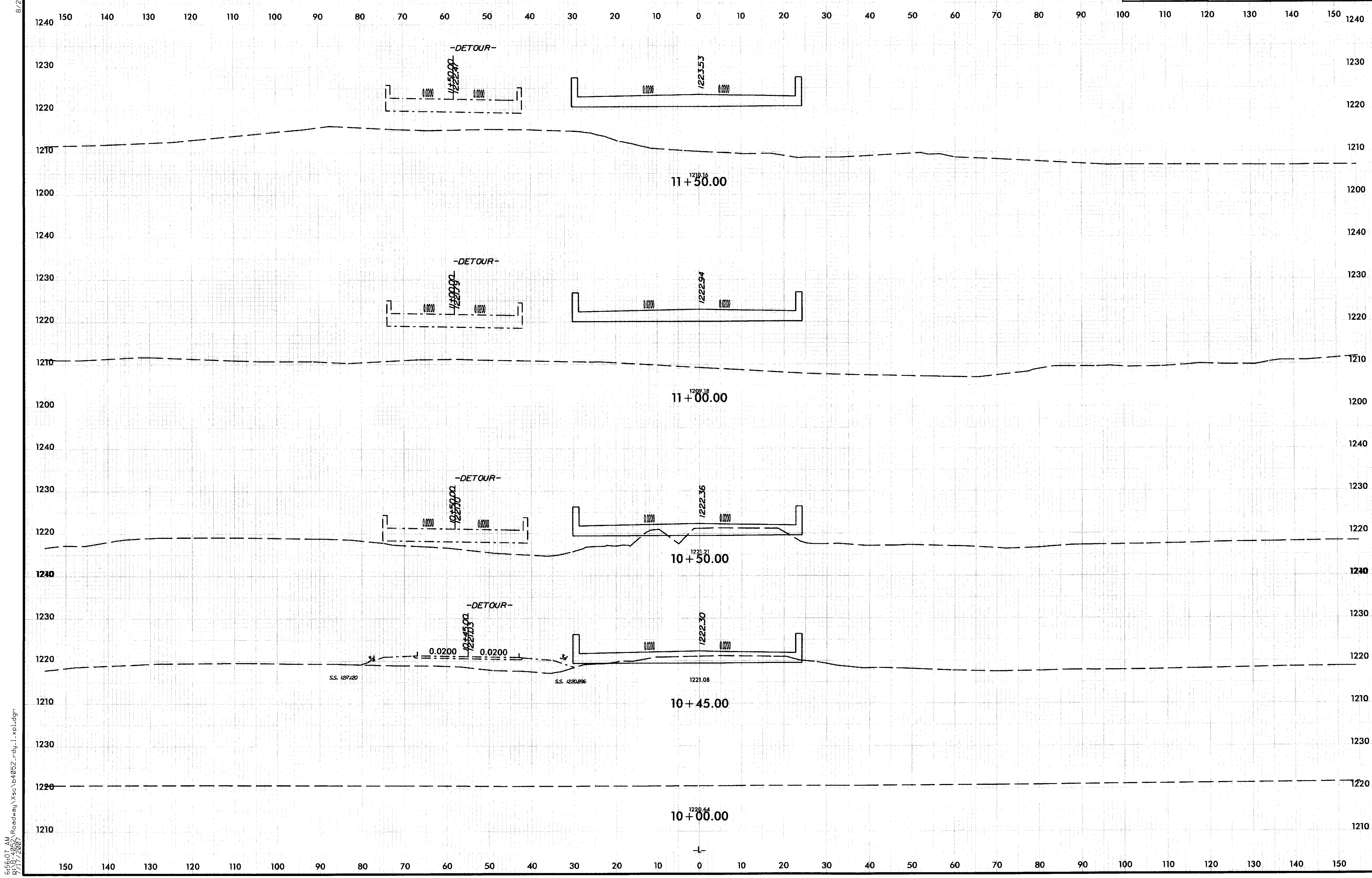
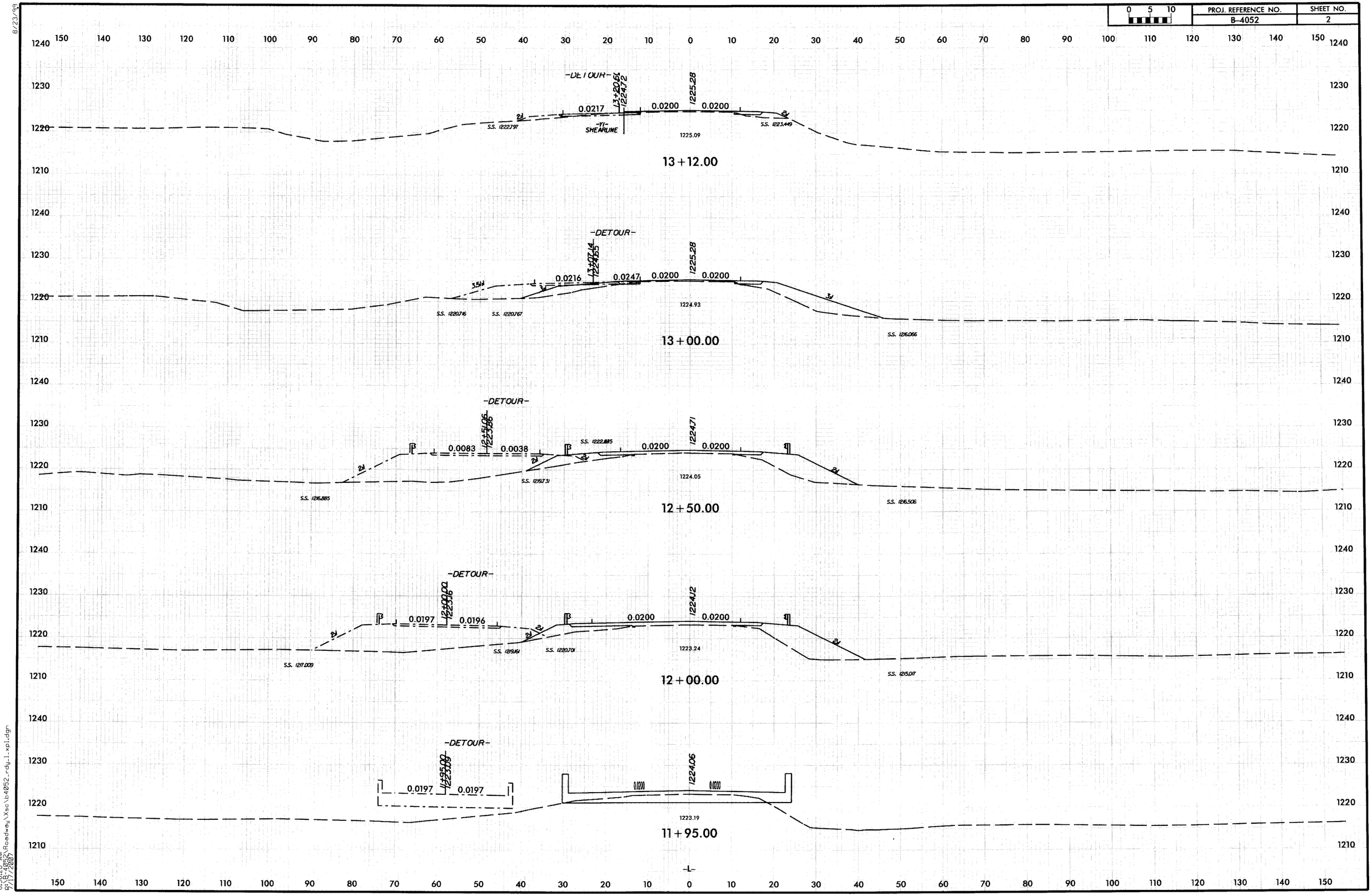
4/17/2007

PROJ. REFERENCE NO.	SHEET NO.
B-4052	1



8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	B-4052	2



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8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	B-4052	3

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

1260 1250 1240 1230 1220

1226.22

0.0100 0.0200

1226.04

13+89.73

1240 1230 1220 1210

1225.28

3:1 S.S. 1224.64

0.0200 0.0200

FEATHER PROPOSED PAVEMENT TO EXISTING BST PARKING AREA.

1225.64

13+55.00

1240 1230 1220 1210

-DETOUR-

13+65.88

1225.81

3.5:1 S.S. 1224.91

6:1 S.S. 1224.346

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FEATHER PROPOSED PAVEMENT TO EXISTING BST PARKING AREA.

1225.58

13+50.00

1240 1230 1220 1210

-DETOUR-

-Y1- SHEARLINE

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FEATHER PROPOSED PAVEMENT TO EXISTING BST PARKING AREA.

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SHEAR LINE -L-

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S.S. 1220.450

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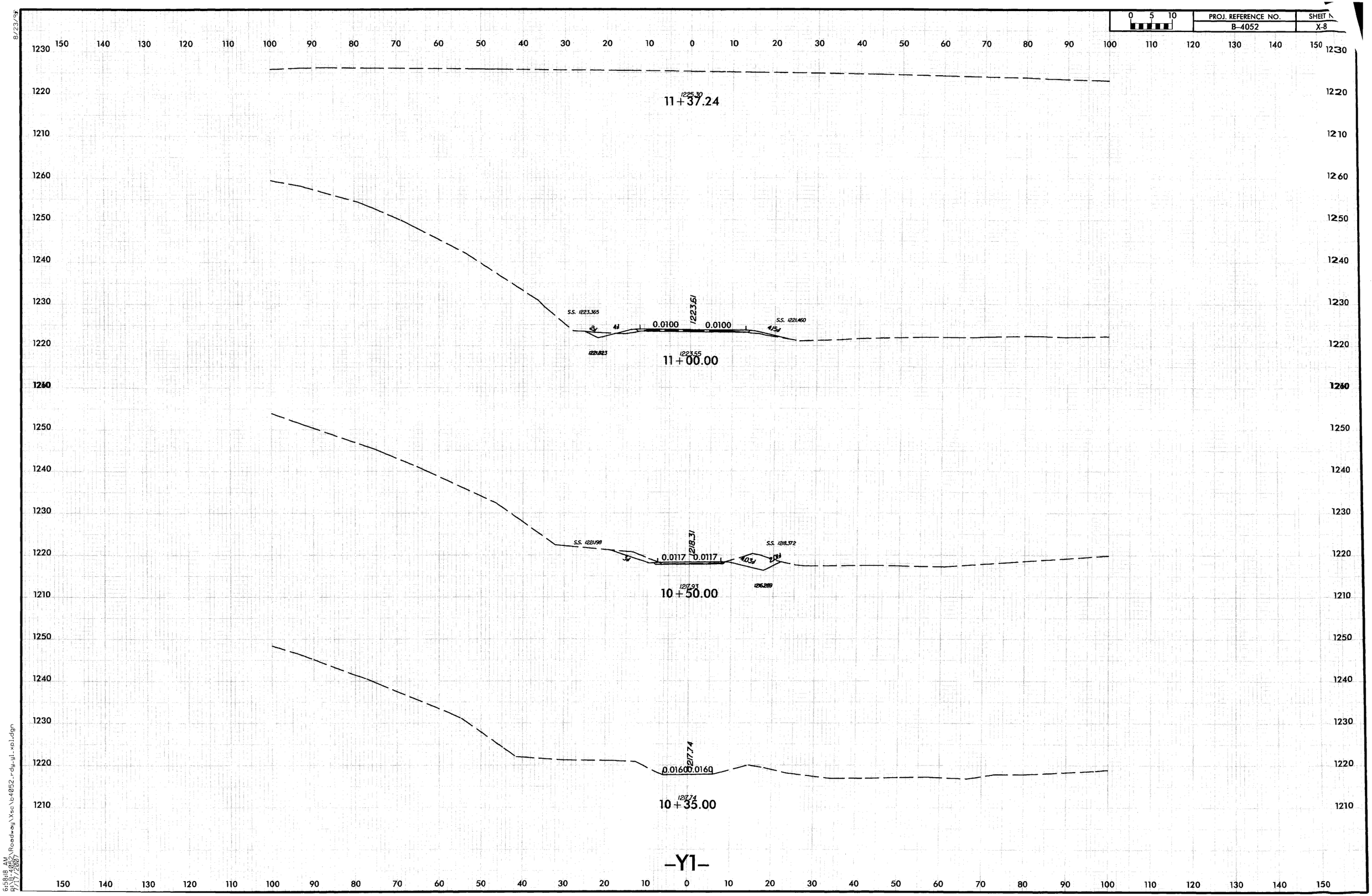

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NC 268, Caldwell County
Bridge No. 7 Over Yadkin River
Federal-Aid Project BRSTP-0268 (9)
State Project 8.1731801
WBS 33418.1.1
TIP No. B-4052

Categorical Exclusion
And
Final Section 4 (f) Evaluation

US Department of Transportation
Federal Highway Administration
And
NC Department of Transportation

Approved:

8/24/05
Date:

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

8/24/05
Date

for John F. Sullivan, III, PE
Division Administrator, FHWA

NC 268, Caldwell County
Bridge No. 7 Over Yadkin River
Federal-Aid Project BRSTP-0268 (9)
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Categorical Exclusion
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US Department of Transportation
Federal Highway Administration
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NC Department of Transportation

May 2005

Document Prepared
by

Wetherill Engineering, Inc.

Nathan B. Benson, P.E.

25, 2005

In Coordination with
North Carolina Department of Transportation

Mary Alice Dickens, P.E., Project Manager
Project Development and Environmental Analysis Branch

NC 268, Caldwell County
Bridge No. 7 Over Yadkin River
Federal-Aid Project BRSTP-0268 (9)
State Project 8.1731801
WBS 33418.1.1
TIP No. B-4052

SUMMARY OF ENVIRONMENTAL COMMITMENTS

Roadside Environmental and Division 11:

Sedimentation and Erosion Control for Sensitive Watersheds (15A NCAC 4B.0124) will be incorporated into the design and followed during the construction of this project.

Structure Design and Traffic Engineering:

The bridge will be designed and constructed to include accommodations across the bridge for pedestrian/bicycle use. This will consist of providing an 8-foot offset to the rail on both sides of the bridge and bicycle safe rail. These accommodations would serve the proposed greenway, which will follow the Yadkin River. A pedestrian actuated signal will be considered at a future date to provide for the proposed greenway crossing of NC 268 at the west end of the bridge.

Division 11 and Project Services:

The Yadkin River is classified C Tr but supports smallmouth bass and redbreast sunfish in the project area. A moratorium will be adhered to prohibiting in-stream work from May 1 to July 15 to protect the egg and fry stages of smallmouth bass. No trout moratorium will be observed.

Project Development and Environmental Analysis:

In accordance with a request from the North Carolina State Historic Preservation Office, a comprehensive archaeological survey will be conducted at the project site prior to project construction.

Project Development and Environmental Analysis, Project Services, and Division 11:

Prior to the removal and relocation of the Woods Barber Shop, NCDOT shall record the existing condition of the property and its surroundings in accordance with the Historic Structures and Landscape Recordation Plan included in the Section 106 Memorandum of Agreement.

NCDOT will provide funding to the Happy Valley Ruritan Club for the purpose of stabilizing the Barber Shop and relocating the building to a new site. The Ruritan Club proposes to rehabilitate the building on the new site, which is located approximately 1500 feet from the existing site.

NCDOT will erect a historical marker near the existing site indicating that the Woods Barber Shop has been relocated from its original site to a new site.

NC 268, Caldwell County
Bridge No. 7 Over Yadkin River
Federal-Aid Project BRSTP-0268 (9)
State Project 8.1731801
WBS 33418.1.1
TIP No. B-4052

INTRODUCTION: The replacement of Bridge No. 7 is included in the Draft 2006-2012 North Carolina Department of Transportation (NCDOT) Transportation Improvement Program (TIP) as a Federal-Aid Bridge Replacement. The location is shown in Figure 1. No substantial environmental impacts are anticipated. The project is classified as a Federal "Categorical Exclusion"(CE).

I. PURPOSE AND NEED STATEMENT

The existing bridge, built in 1957, is functionally obsolete. The bridge has steel plank flooring, which is a type of flooring that must be replaced when it begins to deteriorate. According to the Bridge Maintenance Unit at NCDOT, at the time the bridge was last inspected on January 10, 2002, the bridge sufficiency rating was 46.8 out of a possible 100 for a new structure. The bridge is posted with a weigh limit of 14 tons for single vehicles and 29 tons for truck tractor- semi-trailers (TTST). The replacement of this inadequate structure will eliminate continuous maintenance problems and result in safer, more efficient traffic operations. The replacement structure will allow for the removal of the restrictive posted load limits for trucks.

II. EXISTING CONDITIONS

NC 268 is a two-lane highway. The functional classification is Rural Major Collector. During construction of the proposed bridge, traffic will be maintained on site. The speed limit along NC 268 is posted at 35 mph. NC 268 has a 90° turn immediately west of the bridge at its intersection with SR 1560. This intersection is currently stop sign controlled. The project vicinity is rural residential and commercial. Happy Valley Elementary School is located on SR 1560, just north of the bridge. The horizontal alignment of NC 268 is tangent for a distance of about 500 feet beyond the east end of the bridge. There is no approach west of the bridge since the road tees into NC 268/SR 1560. The paved portion of the approach roadway is 24 feet wide. The width of the grass shoulders is approximately 4 feet. NCDOT maintains a right of way width of 40 feet, symmetrical about the centerline of the existing roadway.

The existing bridge was completed in 1957. The superstructure consists of a steel plank floor on I-beams. The substructure consists of concrete abutments and piers. It is 106 feet long and has a clear roadway width of 28 feet. This provides for two 12-foot travel lanes and 2-foot offsets to the curb. The bridge crosses the Yadkin River at an approximate 90° angle. Photographs of the existing bridge are included in Figures 2A, 2B, 2C and 2D.

The Average Annual Daily Traffic (AADT) volume for the year 2002 is estimated to be 5400 vehicles per day (VPD) and is projected to increase to 10,200 VPD in the year 2025. The percentages of tractor truck-semi-trailer (TTST) and dual tired trucks (DTT) are estimated to be 3 percent and 1 percent, respectively.

Five accidents have been recorded in the vicinity of the bridge over a recent three-year period. Four of these accidents occurred at the intersection of NC 268 and SR 1560 (Yadkin River Road) located at the west end of Bridge No. 7 and a fifth accident occurred on NC 268 approximately 1500 feet east of the bridge involving a rear end collision. The four accidents at the end of the bridge are described as follows: An accident occurred when a vehicle traveling south on SR 1560 failed to

make the turn to NC 268 and hit the bridge rail. An accident occurred, when a westbound vehicle on NC 268 failed to stop at the stop sign and collided with a vehicle making a left turn from SR 1560 to NC 268 eastbound. An accident occurred when a vehicle making a left turn from SR 1560 to NC 268 collided head on with a vehicle on NC 268 going straight to SR 1560. An accident occurred when, after two vehicles traveling westbound on NC 268 had stopped at the stop sign, the first vehicle backed up and hit the other vehicle.

The Caldwell County School Transportation Director has been contacted in regard to the proposed bridge replacement. Two school buses (four crossings) are routed on the bridge. The Director advised that considerable public opposition would occur if the bridge were closed to traffic and an on-site detour is not provided (see Appendix A). Caldwell County Emergency Management stated that emergency services could be maintained should an off-site detour be provided (see Appendix A).

According to Caldwell County, NC 268 is the most bicycle-used highway in Caldwell County. The river crossing is to be the trail-head of a proposed multi-purpose path, and this is expected to increase bicycle and pedestrian activity at this location. This site is also the route of the Over Mountain Victory Trail and a scenic byway. The trail is also proposed to accommodate equestrian users. The Caldwell County Commissioners requested consideration of a pedestrian crossing/bicycle lane for the subject project (see letter in Appendix A).

The land use in the project vicinity is residential and commercial.

There are no utilities attached to the bridge. There are both underground utilities and above ground utilities located in proximity of the bridge and may be affected by the proposed project. A water line is located on NC 268 and SR 1560 on the west edge of the shoulder.

Research of public records and an on-site inspection did not indicate any evidence of the presence of hazardous/toxic material in the immediate project area. An active gas station is located on the south side of NC 268 just east of the existing bridge. The Department of Environmental and Natural

Resources, Division of Waste Management lists four registered underground storage tanks (USTs) at this facility.

III. ALTERNATIVES

A. Project Description

Bridge No. 7 will be replaced with a new bridge at or near the existing bridge. The proposed design speed is 40 mph. The grade on the proposed structure will be approximately the same as the existing bridge. The new structure will be approximately 145 feet long and have a 52-foot clear roadway width. The 52-foot width includes three 12-foot travel lanes and 8-foot offsets to the bridge rail. No sidewalks are proposed, but the 8-foot lateral offsets will accommodate pedestrian, bicycle and equestrian traffic. The bridge typical section is shown on Figure 3. The proposed bridge will have two-bar bicycle safe rail.

The south approach to the bridge and the intersection of SR 1560 and NC 268 will include the addition of a 12-foot wide right-turn lane. The typical sections for the roadway portion of the project are shown in Figure 3.

Traffic will be maintained on a temporary detour at the existing site during the construction period, which is expected to be approximately one year.

B. Build Alternatives

Three build alternatives were studied as described below. A comparison of impacts is included below and cost comparisons for the three alternatives are included in Table 1, Section V.

Alternative 1 would provide for traffic during construction by a temporary bridge located on the downstream (south side) of the existing bridge. Alternative 1 is shown on Figure 4A. Alternative 1 would involve property from the Woods Barber Shop, a Section 4(f) resource. Alternative 1 could be designed to avoid the removal of Woods Barber Shop, but only with severe design exceptions that are not recommended. Also, Alternative 1 would require the relocation of the nearby convenience store's underground fuel storage tanks and canopy. Alternative 1 was not selected because of its impacts to the underground storage tanks.

Alternative 2 (Preferred) will provide for traffic during construction by a temporary bridge located on the upstream (north side) of the existing bridge. Alternative 2 is shown on Figure 4B. Alternative 2 will avoid the relocation of the convenience store's underground fuel storage tanks and canopy, but would require the removal of Woods Barber Shop.

Alternative 3 would involve phased stage-construction of the bridge. Alternative 3 is shown on Figure 4C. The existing bridge would provide for traffic during construction, while a staged, two-lane portion of the permanent bridge would be constructed on the downstream (south side) of the existing bridge. Upon completion of the staged, two-lane portion of the permanent bridge, traffic would be re-routed to it and the existing bridge removed. The remaining portion of the three-lane permanent bridge would then be completed. This alternative is the most expensive alternative and would require the relocation of the convenient store's underground fuel storage tanks and canopy and the removal of Woods Barber Shop.

Table 1-A Comparison of Impacts

Alternative	Temporary Detour (Location)	Impacts to Under-Ground Tanks	Impacts to historic Woods Barber Shop
Alternative 1	South side	Yes	Yes
Alternative 2 (Preferred)	North side	No	Yes *
Alternative 3	Staged Construction	Yes	Yes

*Severe design exceptions would be required to avoid taking the structure. Property would be required even with severe design exceptions.

C. Alternatives Eliminated from Further Study

The following alternatives were eliminated from further study.

A major relocation alternative was investigated, which would relocate NC 268 south of the existing bridge. It would result in a new crossing of the Yadkin River and floodplain approximately 1000 feet south of the existing bridge. Because the existing crossing of the Yadkin River is located at the most narrow crossing of the floodplain and the floodplain widens significantly south, a bridge length of approximately 750 feet would be required. This alternative would cause greater impact on the floodplain and require a floodway modification. It would require additional roadway and bridge lengths totaling approximately 2000 feet, which is beyond the scope of the proposed bridge replacement project. Because the existing bridge would be removed upon completion of the major relocation of NC 268, the relocated portion of existing NC 268 east of the existing bridge would convert to a dead end road. The underground fuel storage tanks would not be impacted but the convenience store would likely be economically impacted. This avoidance alternative is not a feasible and prudent alternative.

An alternative was considered which would close the bridge to traffic, use an available off-site detour and replace the new bridge at the existing site. The available detour was investigated and was found to be unfeasible. The available detour would be composed of SR 1519 and SR 1515. SR 1515 is unpaved and has a narrow posted bridge. SR 1519 is paved but has unsuitable alignment and a narrow posted bridge with poor sight distance approaching the bridge. The detour route would be unacceptable for over 5,000 vehicles per day and for two schools in the area. This alternative would also impact Woods Barber Shop due to its proximity to the end of the existing bridge.

Rehabilitation of the existing, deteriorating bridge is neither practical nor economically feasible. It would require significant repairs to the superstructure because of the type of floor decking. Also, the substantial investment in replacing the superstructure over the bridge's substructure built in 1957 would not address the need for a wider, safer bridge.

The "do-nothing" alternate is not feasible. This would require the closing of the road as the existing bridge deteriorates to a point where it is unsafe at any posted weight limits.

D. Preferred Alternative

Alternative 2, replacing the permanent bridge at the existing location is the preferred alternative (see Figure 4B). During construction, traffic will be maintained by an on-site detour. The on-site detour is to be located upstream (north side) of the existing bridge. Alternative 2 was selected because it will cost effectively meets the project's objective and avoid impacts to the underground storage tanks. As mitigation for impacts to the historic Woods Barber Shop, NCDOT will stabilize and relocate the structure to another site nearby. For more information, see Sections VII and IX.

The project is estimated to cost $1,501,500. A breakdown of the estimated cost is shown in Item V, Table 1 Estimated Costs.

The new structure will be approximately 145 feet long and 52 feet wide. This width is measured between the inside of the bridge rail. The 52-foot width includes three 12-foot travel lanes and 8-foot offsets to the bridge rail. The bridge typical section is shown on Figure 3. Roadway approach work will extend approximately 200 feet (NC 268 only) from the ends of the bridge. The approach roadways consist of a 24-foot pavement and an 8-foot shoulder section (including 4-foot wide full depth paved). An additional 12-foot wide turn lane will be provided on the south approach. The roadway typical section is shown on Figure 3.

The proposed design speed is 40 miles per hour. The posted speed limit is 35 mph.

The NCDOT Division 11 Engineer has reviewed the proposed project and concurs with the recommended replacement.

The local officials have been made aware of the project and concur with the recommended replacement.

IV. DESIGN EXCEPTIONS ANTICIPATED

A design exception will not be required.

V. ESTIMATED COST

Table 1

Item	Alternative 1	Alternative 2 (Preferred)	Alternative 3
3-lane permanent bridge Temporary structure	$565,525 $157,500	$565,525 $157,500	$667,750 NA
Mobilization and clearing and grubbing	$196,274	$199,053	$244,212
Removal of existing bridge	$26,712	$26,712	$26,712
Roadway and misc. costs (including pavement removal, detour traffic control, constr. surveys)	$161,733	$131,115	$260,060
Engineering & contingencies	$224,256	$196,095	$203,266
Right of way	$226,700	$225,500	$295,400
Total Cost	$1,558,700	$1,501,500	$1,697,400

The Draft 2006 – 2012 North Carolina Transportation Improvement Program has $225,000 programmed for right of way costs and $1,625,000 programmed for construction.

VI. NATURAL RESOURCES

A. General

A study was performed to inventory and describe the various natural resources likely to be impacted by the proposed action. Assessments of the nature and severity of probable impacts to these natural resources are provided, along with recommendations for measures that will minimize resource impacts.

1. Methodology

Prior to the field investigation published resource information pertaining to the project study area was gathered and reviewed. The information sources used to prepare this report include:

- U.S. Geological Survey (USGS) quadrangle map (Lenoir);
- Soil Survey of Caldwell County, North Carolina (1989);
- United States Fish and Wildlife Service (USFWS) National Wetlands Inventory Map;
- USFWS list of protected species (February 25, 2003);
- North Carolina Natural Heritage Program (NCNHP) database of rare species and unique habitats (May 2003);
- North Carolina Department of Transportation (NCDOT) aerial photography of the project study area (1 inch=100 feet); and
- North Carolina Division of Water Quality (DWQ) water resource data.

A general field survey was conducted within the project study area on July 13, 2001. Water resources were identified and their physical characteristics were recorded. Terrestrial community classifications generally follow Schafale and Weakley (1990) where possible, and plant taxonomy follows Radford, *et al.* (1968). Vegetative communities were mapped

utilizing aerial photography of the project site. Wildlife was identified using a variety of observation techniques including active searching, visual observations with binoculars, and identifying characteristic signs of wildlife (sounds, tracks, scat, and burrows). Cursory surveys for aquatic organisms, including tactile searches for benthic macroinvertebrates, were performed as well.

Investigation into wetland occurrence in the project study area was conducted using methods outlined in the 1987 Corps of Engineers Wetlands Delineation Manual (Environmental Laboratory, 1987).

The project study area is identified as an area approximately 140 feet (43 meters) wide and approximately 700 feet in length along NC 268 north of the bridge.

B. Physical Resources

1. Physiography and Soils

The project lies within the western Piedmont Physiographic Province. The topography of the project vicinity is characterized as rolling hills with moderate to steeply sloping banks along the major streams. Elevations in the project vicinity range from approximately 1,200 to 1,400 feet above mean sea level (msl). The elevation in the project study area varies from approximately 1,200 to 1,240 feet above msl.

According to the general soil map for Caldwell County (USDA, 1989), the project study area is found within the Chewacla-Masada-Congree soil association. The soils are described as nearly level to strongly sloping, somewhat poorly drained to well-drained soils that have loamy or clayey subsoil. Soil series found within the project study area are described below.

Chewacla loam, occasionally flooded, is located along the Yadkin River. This soil is a nearly

level, somewhat poorly drained soil found on floodplains along streams. Surface runoff is slow to ponded and permeability is moderate. This soil is subject to occasional, brief flooding. Chewacla loam has hydric inclusions of Wehadkee soils in depressions.

Rion sandy loam, 25 to 40 percent slopes, is located in a small area to the east of Chewacla loam. Rion sandy loam is a well-drained soil found on side slopes of uplands. Surface runoff is very rapid and the hazard of erosion is severe in unvegetated, exposed areas. Permeability is moderate. This mapping unit is not listed on the hydric soils list.

Cecil sandy loam, eight to 15 percent slopes, eroded, is mapped in the eastern end of the project study area. This soil is a well-drained soil found on broad, smooth ridges on uplands. Surface runoff is medium, and the hazard of erosion is severe in unvegetated areas. Permeability is moderate. This mapping unit is not listed on the hydric soils list.

Pacolet fine sandy loam, 25 to 40 percent slopes, is also located in the eastern end of the project study area. This soil is a well-drained soil found on side slopes of uplands. Surface runoff is very rapid, and the hazard of erosion is severe in unvegetated areas. Permeability is moderate. This mapping unit is not listed on the hydric soils list.

2. Water Resources

The proposed project falls within the Yadkin-Pee Dee River Basin, with a subbasin designation of 03-07-01. Waters within the project study area include the Yadkin River.

a. Water Resource Characteristics

The Yadkin River flows south through the proposed project study area with a width of approximately 60 feet. The flow was moderate on the day of the field investigation. The substrate consisted of sand and silt with some gravel and cobbles; bedrock outcroppings

were located under the bridge and in several areas upstream of the bridge. The water was clear and shallow. The depth of the water ranged from a few inches in the riffles to over one foot in the pools.

Streams have been assigned a best usage classification by the North Carolina Division of Water Quality (DWQ) [formerly the Division of Environmental Management (DEM)], which reflects water quality conditions and potential resource usage. Within the project study area, the classification for Yadkin River is "C Tr". Class "C" waters are suitable for secondary recreation, fishing, wildlife, fish and aquatic life propagation and survival, and agriculture. "Tr" denotes trout waters and is a supplemental classification to protect freshwaters for natural trout propagation and survival of stocked trout. The classification date and index number for this portion of the river is 4/15/63, 12-(1).

No waters classified as High Quality Waters (HQW), Water Supplies (WS-I: undeveloped watershed, or WS-II: predominately undeveloped watersheds), or Outstanding Resource Waters (ORW) occur within one mile of the project study area.

Point sources, such as wastewater discharges, located throughout North Carolina are permitted through the National Pollutant Discharge Elimination System (NPDES) program. One NPDES permitted facility is located within one mile of the project study area. Caldwell County School – Happy Valley (NC0041181) is located approximately one mile upstream of the project study area. The facility is permitted to discharge domestic effluent.

Non-point source refers to runoff that enters surface waters through stormwater flow or no defined point of discharge. Stormwater runoff from the surrounding residential and commercial properties as well as NC 268 may reach the Yadkin River and cause water quality degradation through the addition of oil or gas residuals, particulate rubber, or other sources of contamination.

The Basinwide Monitoring Program, managed by the DWQ, is part of an ongoing ambient water quality monitoring program that addresses long-term trends in water quality. The program monitors ambient water quality by sampling at fixed sites for selected benthic macroinvertebrates, which are sensitive to water quality conditions. Samples are evaluated on the number of taxa present of intolerant groups [Ephemeroptera, Plecoptera, Trichoptera (EPT)] and a taxa richness value (EPT S) is calculated. A biotic index value is also calculated for the sample that summarizes tolerance data for all species in each collection. The two rankings are given equal weight in final site classification. The biotic index and taxa richness values primarily reflect the effects of chemical pollution and are a poor measure of the effects of such physical pollutants as sediment. Stream and river reaches are assigned a final bioclassification of Excellent, Good, Good/Fair, Fair, or Poor.

According to the information obtained from the Yadkin-Pee Dee River Basinwide Water Quality Management Plan (NCDENR, 1998), the DWQ does have a sampling station on Yadkin River at the project site. The station was last sampled in July 1996 and received a rating of Good.

b. Anticipated Impacts to Water Resources

Impacts to water resources in the project study area are likely to result from activities associated with project construction, such as clearing and grubbing on streambanks, riparian canopy removal, instream construction, fertilizers and pesticides used in revegetation, and pavement construction. The following impacts to surface water resources are likely to result from the above-mentioned construction activities:

- Increased sedimentation and siltation downstream of the crossing and increased erosion in the project study 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 ground water flow from construction;
- Changes in and destabilization of water temperature due to vegetation removal;
- Changes in dissolved oxygen (DO) levels;
- Increased nutrient loading during construction via runoff from exposed areas;
- Increased concentrations of toxic compounds in roadway runoff;
- Increased potential for release of toxic compounds such as fuel and oil from construction equipment and other vehicles; and
- Alteration of stream discharge due to silt loading and changes in surface and groundwater drainage patterns.

In order to minimize potential impacts to water resources in the project study area, NCDOT's Best Management Practices (BMPs) for the Protection of Surface Waters will be strictly enforced during the construction phase of the project. Limiting instream activities and revegetating stream banks immediately following the completion of grading can further reduce impacts.

B. Biotic Resources

Living systems described in the following sections include communities of associated plants and animals. These descriptions refer to the dominant flora and fauna in each community and the relationship of these biotic components. Classification of plant communities is based on a system used by the NCNHP (Schafale and Weakley, 1990). If a community is modified or otherwise disturbed such that it does not fit into an NCNHP classification, it is given a name that best describes current characteristics. Scientific nomenclature and common names (when applicable) are used for the plant and animal

species described. Subsequent references to the same species include the common name only.

1. Terrestrial Communities

The predominant terrestrial communities found in the project study area are maintained/disturbed, riparian forest, and dry oak-hickory forest. Dominant faunal components associated with these terrestrial areas are discussed in each community description. Many species are adapted to the entire range of habitats found within the project study area but may not be mentioned separately in each community description.

a. Maintained/Disturbed Community

The maintained/disturbed community includes the road shoulders and power line right-of-way. Many plant species are adapted to these disturbed and regularly maintained areas. The dominant species within the project study area include fescue (*Festuca* sp.), ryegrass (*Lolium* sp.), white clover (*Trifolium repens*), thistle (*Cirsium* sp.), grape vine (*Vitis* sp.), foxtail (*Setaria* sp.), cinquefoil (*Potentilla* sp.), aster (*Aster* sp.), wild onion (*Allium cernuum*), dandelion (*Taraxacum officinale*), blackberry (*Rubus* sp.), and plantain (*Plantago* sp.).

The animal species present in these disturbed habitats are opportunistic and capable of surviving on a variety of resources, ranging from vegetation (flowers, leaves, fruits, and seeds) to both living and dead faunal components. An Eastern mole (*Scalopus aquaticus*), Eastern Phoebe (*Sayornis phoebe*), and Mourning Dove (*Zenaida macroura*) were observed during the site visit in these areas. Other species such as striped skunk (*Mephitis mephitis*), House Sparrow (*Passer domesticus*), Eastern Bluebird (*Sialia sialis*), Brown Thrasher (*Toxostoma rufum*), and five-lined skink (*Eumeces fasciatus*) are often attracted to these disturbed habitats.

b. Riparian Forest Community

This community is found in a small area on the east side of the Yadkin River, between the power line easement and NC 268. The vegetation in this area includes black walnut (*Juglans nigra*), black cherry (*Prunus serotina*), black locust (*Robinia pseudoacacia*), mulberry (*Morus rubra*), multiflora rose (*Rosa multiflora*), greenbrier (*Smilax* sp.), and grape vine.

Deer (*Odocoileus virginianus*) tracks and raccoon (*Procyon lotor*) tracks were observed in this community on the day of the site visit.

c. Dry Oak-Hickory Forest Community

This community is found in the eastern end of the project study area along the hillside. The canopy layer includes white oak (*Quercus alba*), Eastern white pine (*Pinus strobus*), tulip poplar (*Liriodendron tulipifera*), red maple (*Acer rubrum*), pignut hickory (*Carya glabra*), black cherry, and black walnut. The understory consists of dogwood (*Cornus florida*) and sourwood (*Oxydendrum arboreum*). The herbaceous layer is sparse and includes common greenbrier (*Smilax rotundifolia*), poison ivy (*Toxicodendron radicans*), and honeysuckle (*Lonicera* sp.).

On the day of the site visit, a Northern Cardinal (*Cardinalis cardinalis*) was observed in this community. Other species which may reside or forage in these areas include Song Sparrow (*Melospiza melodia*), Tufted Titmouse (*Baeolophus bicolor*), White-breasted Nuthatch (*Sitta carolinensis*), Blue Jay (*Cyanocitta cristata*), gray squirrel (*Sciurus carolinensis*), Eastern box turtle *(Terrapene carolina carolina)*, and Eastern cottontail (*Sylvilagus floridanus*).

2. Aquatic Communities

The aquatic community in the project study area includes the Yadkin River. Vegetation along the riverbanks included sycamore (*Platanus occidentalis*), ironwood (*Carpinus caroliniana*), yellow birch (*Betula lutea*), sugar maple (*Acer saccharum*), black locust, red maple, day lily (*Hemerocallis fulva*), wild hydrangea (*Hydrangea arborescens*), blackberry, and greenbrier. Species such as the bullfrog (*Rana catesbeiana*) and dusky salamander (*Desmognathus fuscus)* may reside or forage within this aquatic community or along the water's edge. Stoneflies (Plecoptera), mayflies (Ephemeroptera), and caddisflies (Trichoptera) were found under stones and woody debris in the river.

According to Mr. Doug Besler, District 8 Biologist for the North Carolina Wildlife Resource Commission (NCWRC), fish species that are likely to be found in this area of the Yadkin River include bluehead chub (*Nocomis leptocephalus*), rosyside dace (*Clinostomus funduloides*), mottled sculpin (*Cottus bairdi*), and blacknose dace (*Rhinichthys atratulus*). According to the NCWRC, in correspondence dated August 27, 2003 (attached in Appendix A), the Yadkin River is classified C Tr but supports small bass and redbreast sunfish in the project area. A moratorium prohibiting in-stream work is recommended from May 1 to July 15 to protect the egg and fry stages of smallmouth bass. Sediment and erosion control measures will adhere to the design standards for sensitive watersheds.

3. Summary of Anticipated Impacts to Biotic Communities

Biotic community impacts resulting from project construction are addressed separately as terrestrial impacts and aquatic impacts. Impacts to terrestrial communities, particularly in locations exhibiting slopes, can result in the aquatic community receiving heavy

sediment loads as a consequence of erosion. Construction impacts may not be restricted to the communities in which the construction activity occurs.

a. Terrestrial Communities

The dry oak-hickory forest, riparian forest, and maintained/disturbed communities serve as nesting, foraging, and shelter habitat for fauna. Removal of plants and other construction related activities would result in the displacement and mortality of faunal species in residence. Individual mortalities are likely to occur to terrestrial animals from construction machinery used during clearing activities.

Project construction will result in clearing and degradation of portions of these communities. Often, project construction does not require the use of the entire right-of-way; therefore, actual impacts may be considerably less.

b. Aquatic Communities

Impacts to the aquatic community of Yadkin River will result from the replacement of Bridge No. 7. Impacts are likely to result from the physical disturbance of the aquatic habitat. Activities such as the removal of trees, as well as the construction of the bridge and approach work will likely result in an increase in sediment loads and water temperatures and a decrease in dissolved oxygen. Construction activities can also increase the possibility of toxins, such as engine fluids and particulate rubber, entering the waterways. The combination of these factors can potentially cause the displacement and mortality of fish and local populations of invertebrates, which inhabit these areas. Impacts to aquatic communities will be minimized by strict adherence to BMPs.

C. Special Topics

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 Clean Water Act (33 U.S.C. 1344). Waters of the United States are regulated by the United States Army Corps of Engineers (USACE).

Investigation into wetland occurrence in the project impact area was conducted using methods outlined in the 1987 Corps of Engineers Wetlands Delineation Manual (Environmental Laboratory, 1987). No jurisdictional wetlands were found within the project study area.

Project construction cannot be accomplished without infringing on jurisdictional surface waters. Anticipated surface water impacts fall under the jurisdiction of the USACE.

2. Permits

In accordance with Section 404 of the Clean Water Act (33 U.S.C. 1344), a permit is required from the USACE for projects of this type for the discharge of dredged or fill material into "Waters of the United States".

A Nationwide Permit 23 is likely to be applicable for all impacts to Waters of the United States resulting from the proposed project. This permit authorizes activities undertaken, assisted, authorized, regulated, funded or financed, in whole or part, by another federal agency or department where that agency or department has determined, pursuant to the Council on Environmental Quality (CEQ) Regulation for the Implementing the Procedural Provisions of the National Environmental Policy Act:

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

(2) the office of the Chief of Engineers has been furnished notice of the agency's or department's application for the categorical exclusion and concurs with that determination.

A Nationwide Permit 33 will be required since an on-site temporary detour is needed during construction of Bridge No. 7. This permit authorizes temporary structures, work and discharges, including cofferdams, necessary for construction activities or access fills or dewatering of construction sites; provided the associated primary activity is authorized by the USACE or the U.S. Coast Guard, or for other construction activities not subject to the USACE or U.S. Coast Guard regulations.

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

a. Bridge Demolition

NCDOT's BMP for Bridge Demolition (Case 2) will be implemented. The removal of concrete abutments and piers may create some disturbance in the streambed. The substructure consists of concrete piers and abutments and an estimated 137 cubic yards of concrete will need to be removed.

b. Mitigation

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

Avoidance - Avoidance examines all appropriate and practicable possibilities of averting impacts to waters of the United States. According to a 1990 Memorandum of Agreement (MOA) between the Environmental Protection Agency (EPA) and the USACE, in determining "appropriate and practicable" measures to offset unavoidable impacts, such measures should be appropriate to the scope and degree of those impacts and practicable in terms of cost, existing technology, and logistics in light of overall project purposes.

Minimization - Minimization includes examination of appropriate and practicable steps to reduce adverse impacts to waters of the United States. Implementation of these steps will be required through project modifications and permit conditions. Minimization typically focuses on decreasing the footprint of the proposed project through reduction of median widths, right-of-way widths, fill slopes and/or road shoulder widths.

Compensatory Mitigation - Compensatory mitigation is not normally considered until anticipated impacts to waters of the United States have been avoided and minimized to the maximum extent possible. It is recognized that "no net loss of wetlands" functions and values may not be achieved in each and every permit action. Appropriate and practicable

compensatory mitigation is required for unavoidable adverse impacts, which remain after all appropriate and practicable minimization has been required. Compensatory actions often include restoration, creation and enhancement of Waters of the United States. Such actions should be undertaken in areas adjacent to or contiguous with the discharge site.

Compensatory mitigation is required for those projects authorized under Section 404 Nationwide Permits that result in the fill or alteration of more than 0.5 acre of wetlands and/or 300 linear feet of streams.

3. Rare and Protected Species

Some populations of plants and animals have been or are in the process of decline due to factors such as natural forces, competition from introduced species, or human related impacts such as destruction of habitat. Rare and protected species listed for Caldwell County and any likely impacts to these species as a result of the proposed project construction are discussed in the following sections.

a. Federally Protected Species

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

The United States Fish and Wildlife Service (USFWS) list three federally protected species for Caldwell County as of the February 25, 2003 listing (Table 2).

The NCNHP database of rare species and unique habitats shows no recorded occurrences of federally protected species within the project study area.

TABLE 2

FEDERALLY-PROTECTED SPECIES FOR CALDWELL COUNTY

Scientific Name (Common Name)	Status
Microhexura montivaga (Spruce-fir moss spider)	E
Hexastylis naniflora (Dwarf-flowered heartleaf)	T
Liatris helleri (Heller's blazing star)	T

NOTES:

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

T Denotes Threatened (a species that is likely to become endangered within the foreseeable future throughout all or a significant portion of its range).

Microhexura montivaga	(Spruce-fir moss spider)	E
Family:	Dipluridae	
Date Listed:	February 6, 1995	

The **spruce-fir moss spider** is a small (0.10 to 0.15 inches) spider, which ranges in color from light brown to yellow-brown to darker reddish brown. It has no markings on its abdomen. It is identified by its chelicerae, which project forward beyond the anterior edge of the carapace. It also has very long spinnerets and a second pair of book lungs.

The spruce-fir moss spider inhabits only mature Fraser fir and red spruce forest communities of the highest elevations (greater than 5,000 feet). The typical habitat is well drained, damp moss mats growing on rocks and boulders. It prefers well-shaded

places in these forests where it constructs tube shaped webs in the interface between the moss mat and rock surface.

No habitat is present for the spruce-fir moss spider within the project study area. The project study area is located at approximately 1,200 feet, which is well below the elevation for suitable habitat. A search of the NCNHP showed no recorded occurrences of this species within the project vicinity. It can be concluded that the construction of the proposed project will not impact the spruce-fir moss spider.

BIOLOGICAL CONCLUSION: NO EFFECT

Hexastylis naniflora	(Dwarf-flowered heartleaf)	T
Family:	Aristolochiaceae	
Date Listed:	April 14, 1989	

Dwarf-flowered heartleaf has the smallest flowers of any North American plant in the genus *Hexastylis*. The flowers are less than 0.4 inch long, and their sepal tubes are never more than 0.4 inch wide. Flower color ranges from beige to dark brown; sometimes it is greenish or purplish. The flowers are jug-shaped and the dark-green leaves are heart-shaped, evergreen, and leathery. Plant stalks are long and thin, originating from an underground root. Flowering occurs from mid-March to early June.

Dwarf-flowered heartleaf grows in acidic, sandy loam soils along bluffs and nearby slopes, in boggy areas adjacent to creekheads and streams, and along the slopes of hillsides and ravines. Soil type is the most important habitat requirement. The species needs Pacolet, Madison gravelly sandy loam, or Musella fine sandy loam to grow and survive. Provided the soil type is right, the plant can survive in either dry or moderately

moist habitat. For maximum flowering, the plant needs sunlight in early spring. Creekheads where shrubs are rare and bluffs with light gaps are the habitat types most conducive to flowering and high seed production. Seed output is lowest in bluff populations with a lot of shade.

NCDOT biologists conducted plant surveys on May 3, 2004 during the flowering dates for this species. The survey identified habitat present within the proposed project limits. The only habitat for this species was located in the northeast quadrant of the bridge. The habitat was poor because of heavy ground cover due to numerous invasive plants.

Surveys for *Hexastaylis* did not reveal any species of *Hexastylis* within the project vicinity. The Natural Heritage Program's database of rare plants did not have any occurrences of this species within one mile of the project's vicinity. It is concluded that replacing Bridge No. 7 will have "No Effect" on dwarf-flowered heartleaf.

BIOLOGICAL CONCLUSION: NO EFFECT

Liatris helleri	(Heller's blazing star)	T
Family:	Asteraceae	
Date Listed:	November 19, 1987	

Heller's blazing star is a perennial herb with one or more erect or arching stems, which arise from a tuft of narrow pale green basal leaves. Its stems reach up to 16 inches in height and are topped by a showy spike of lavender flowers (three to eight inches long), which are present from July through September. Fruits are present from September through October.

Heller's blazing star is endemic to the northern Blue Ridge Mountains where it occurs on high elevation rocky summits. It grows in shallow, acidic soils, which are exposed to full sunlight.

No habitat is located in the project study area for Heller's blazing star; the project study area is located at approximately 2,640 feet above msl, is well below the summit, and contains no rocky outcrops. A search of the NCNHP database showed no recorded occurrences of this species within the project vicinity. It can be concluded that the construction of the proposed project will not impact Heller's blazing star.

BIOLOGICAL CONCLUSION: NO EFFECT

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b. 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 of Endangered. FSC are defined as species that are under consideration for listing for which there is insufficient information to support listing.

Some of these species are listed as Endangered, Threatened, or Special Concern by the NCNHP list of Rare Plant and Animal Species and are afforded state protection under the State Endangered Species Act and the North Carolina Plant Protection and Conservation Act of 1979. Table 3 includes listed FSC species for Caldwell County and their state classifications (May 2003).

A review of the NCNHP database of rare species and unique habitats shows no recorded occurrences of FSC within the project study area.

TABLE 3

FEDERAL SPECIES OF CONCERN FOR CALDWELL COUNTY

Scientific Name (Common Name)	North Carolina Status	Habitat Present
Aegolius acadicus (Southern Appalachian Saw-whet Owl)	SC/PT	No
Loxia curvirostra (Southern Appalachian Red Crossbill)	SR/PSC	No
Neotoma magister * (Alleghany woodrat)	SC	Yes
Poecile atricapillus practicus (Southern Appalachian Black-capped Chickadee)	SC	No
Sphyrapicus varius appalaciensis (Southern Appalachian Yellow-bellied Sapsucker)	SR/PSC	No
Macromia margarita * (Margarita River skimmer)	SR	Yes
Ophiogomphus edmundo (Edmund's snaketail dragonfly)	SR	Yes
Speyeria diana (Diana fritillary butterfly)	SR	No
Abies fraseri (Fraser fir)	C	No
Cardamine clematitis (Mountain bittercress)	C	Yes
Geum geniculatum (Bent avens)	T	No
Juglans cinerea (Butternut)	W5	No

Scientific Name (Common Name)	North Carolina Status	Habitat Present
Lilium grayi (Gray's lily)	T/SC	No
Monotropsis odorata * (Sweet pinesap)	C	No
Verbena riparia * (Riparian vervain)	C	Yes
Plagiochila sullivantii var. sullivantii (A liverwort)	C	No

NOTES:

- C Candidate (species for which population monitoring and conservation action is recommended).
- T Threatened (species which are afforded protection by state laws).
- SC Special Concern (species which are afforded protection by state laws).
- SR Significantly Rare (species for which population monitoring and conservation action are recommended).
- P Proposed (species that have been formally proposed for listing, but have not yet completed the legally mandated listing process).
- W Watch list (any other species believed to be rare and of conservation concern in the state but not warranting active monitoring at this time)
- * Historic record - the species was last observed in the county more than 50 years ago (USFWS)

c. Summary of Anticipated Impacts

Habitat is present in the project study area for dwarf-flowered heartleaf. Surveys for this plant were conducted during the flowering season to determine the presence or absence of this species in the project study area. The survey revealed no presence of this species. According to the NCNHP, there have been no recorded occurrences of any rare or protected species within the project vicinity. No potential impacts to federal or state listed species are anticipated.

VII. 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 as 36 CFR Part 800. Section 106 requires Federal agencies to take into account the effect of their undertakings (federally funded, licensed, or permitted) on properties included in or eligible for inclusion in the National Register of Historic Places and to afford the Advisory Council a reasonable opportunity to comment on such undertakings.

B. Historic Architecture

A field survey of the Area of Potential Effects (APE) was conducted on September 23, 2002. All structures within the APE were photographed, and later an NCDOT staff architectural historian reviewed these photos. Properties 1 through 10 were determined not eligible for the National Register of Historic Places and were shown to the State Historic Preservation Office (HPO) in a meeting on November 5, 2002. At that meeting HPO staff concurred that Properties 1 through 10 were not eligible and a form was signed to this effect. In a subsequent memo from the State Historic Preservation Office (HPO) on November 12, 2002, they stated there were no historic structures affected by the project. However, at a Citizens Informational Workshop on March 20, 2003, a member of the public informed representatives of NCDOT there was a historic property in the area that warranted further examination. A NCDOT architectural historian evaluated the Woods Barber Shop and in a report to HPO in September 2003 they determined that the property was eligible for the National Register under Criterion A for Social History. By their

memorandum of October 30, 2003, the HPO concurred with the eligibility of the property and its historic boundary, as shown in Figure 8. Both the Woods Barber Shop and its adjoining privy are adjacent to NCDOT's Right of Way. Since the proposed project will require the use of land and removal of the structure from this historic property, NCDOT, FHWA and HPO jointly determined that the project would have an adverse effect on Woods Barber Shop. This finding of adverse effect is documented in a form included in Appendix A. In addition, a small group meeting was held on March 30, 2004 with the Happy Valley Ruritan Club (owners of the historic property) and staff from NCDOT, FHWA and Wetherill Engineering.

In accordance with Section 106 of the National Historic Preservation Act, a Memorandum of Agreement (MOA) between HPO, FHWA, and NCDOT has been developed, which details measures to mitigate the Adverse Effect upon the Woods Barber Shop.

The measures are as follows:

- Prior to the removal and relocation of the Woods Barber Shop, NCDOT shall record the existing condition of the property and its surroundings in accordance with the attached Historic Structures and Landscape Recordation Plan.
- NCDOT will provide funding to the Happy Valley Ruritan Club for the purpose of stabilizing the Barber Shop and relocating the building to a new site. The Ruritan Club proposes to rehabilitate the building on the new site, which is located approximately 1500 feet from the existing site.
- NCDOT will erect a historical marker near the existing site indicating that the Woods Barber Shop has been relocated from its original site to a new site.

Copies of all correspondence and forms are included in Appendix A.

C. Archaeology

The State Historic Preservation Officer (SHPO), in a memorandum dated November 12, 2002, recommended that a comprehensive archaeological survey be conducted if Alternative 2 or Alternative 1 is selected. A copy of the SHPO memorandum is included in Appendix A.

Since Alternative 2 is selected as the preferred alternative, a comprehensive archaeological survey will be conducted prior to project construction.

VIII. SECTION 4 (f) RESOURCES

Section 4(f) of the Department of Transportation Act of 1966, as amended, states in part "The Secretary may approve a transportation project or program requiring the use of publicly owned land of a public park, recreation area, or wildlife and waterfowl refuge, or land of a historic site of national, state, or local significance (as determined by the Federal, State or local officials having jurisdiction over the park, recreation area, refuge, or site) only if–

(1) there is no prudent and feasible alternative to using that land; and

(2) the program or project includes all possible planning to minimize harm to the park, recreation area, wildlife and waterfowl refuge, or historic site resulting from such use."

The proposed project will require the use of property from a National Register-eligible historic resource (Woods Barber Shop). A Draft Section 4(f) Evaluation has been prepared and is included in Section IX.

IX. DRAFT SECTION 4(f) EVALUATION

A. Proposed Action

Bridge No. 7 will be replaced with a new structure at or near the existing bridge (for general location see Figure 1). The proposed design speed is 40 mph. The grade on the proposed structure will be approximately the same as the existing bridge. The new structure will be approximately 145 feet long and 52 feet wide. This width is measured between the inside of the bridge rail. The 52-foot width includes three 12-foot travel lanes and 8-foot offsets to the bridge rail. The bridge typical section is shown on Figure 3.

The typical sections for the roadway portion of the project are shown in Figure 3. In addition, the northbound and westbound approaches to the bridge (along NC 268) will include an added 12-foot wide right turn lane.

Alternative 2, replacing the permanent bridge at the existing location is the preferred alternative (see Figure 4B). During construction, traffic will be maintained by an on-site detour. The on-site detour is to be located upstream (north side) of the existing bridge. Alternative 2 was selected because it will cost effectively meet the project's objective and cause less impact to the project area by avoiding the underground fuel storage tanks of the convenience store.

The construction period is expected to be approximately one year.

The existing bridge was constructed in 1957. Bridge No. 7 has maintenance problems and needs to be replaced. The inclusion of the bridge on the Federal-Aid Bridge Replacement Program is based upon a sufficiency rating of 46.8. The bridge is posted with a weight limit of 24 tons for a single vehicle and 29 tons for truck tractor semi-trailers (TTST).

The preferred alternative described above (Alternative 2) will involve a historic property, Woods Barber Shop, which is eligible for listing in the National Register of Historic Places. Because of the proximity of the historic structure to the existing road (approximately 15 feet between the structure and the edge of pavement), the preferred alternative will require the removal of Woods Barber Shop. The site is shown in Figure 6. Photographs of Woods Barber Shop are shown in Figure 7.

As the proposed improvements are federally funded and propose the use of land from a significant historic site, compliance with Section 4(f) of the Department of Transportation Act of 1966 (80 Stat., PL 89-670) is required. Section 4(f) is designed to insure that special efforts are made "to preserve the natural beauty of the countryside and public park and recreational lands, wildlife and waterfowl refuges, and historic sites."

B. Description of the Section 4(f) Resource

Name: Woods Barber Shop, Caldwell County

Location: Northeast corner, Junction of NC 268 and SR 1516 (Winkler Road) Patterson (vicinity)
Caldwell County, NC (see Figure 1)

Date of Construction: April 1940

Statement of Significance:

Floyd Pinkney Woods built the barbershop in April 1940, according to a North Carolina Historic Preservation Office (HPO) Study List application prepared by the Happy Valley Ruritan Club. On business days, Mr. Woods drove from his house on Kirby Mountain Road in rural Caldwell

County to work in his one-man barbershop. Mr. Woods suffered a stroke in 1970 and was unable to continue operating his business. Thereafter, another barber used the shop for a period of a few months. For many years the Woods Barber Shop has remained vacant, only to be used for storage by the Happy Valley Ruritan Club.

Longtime residents of Happy Valley recognize Woods Barber Shop has historical value, and a National Register nomination of the site may be pursued under a National Register "Multiple Properties Listing." Happy Valley is a rural area located south and east of the village of Patterson. Though not as densely settled as Patterson, Happy Valley's proximity to a major highway (NC 268) and the Yadkin River attracted a variety of businesses that served the rural community. Caldwell County residents visiting this commercial center were drawn from places like Richland Gap, Warrior Cove, Blackberry, and rural areas south of Blowing Rock.

In the late nineteenth and early twentieth centuries, a gristmill operated in this vicinity, just west of the present-day barbershop. Many came to the area for this service, which processed cornmeal, wheat, or barley. While the milling was being done, people would often stop by Wood's Barber Shop to have their hair cut.

According to community residents, people were drawn to the area as much for the company as they did for the milling service. In rural parts of North Carolina, it is not unusual to find a variety of businesses clustered around mill operations. For many rural people this venue provided an outlet for socializing and hearing news and information. Across the road from Woods Barber Shop stood a local store (no longer extant), which was operated by Raby Woods. A nearby church and cemetery (outside of the NCDOT project area) is said to be one of the oldest in the Valley, though the church building has experienced many alterations. The Woods Barber Shop building is one of the few lasting structures that have remained at this location. It is therefore worthy of special recognition for its role in the social history of the community.

Criteria Assessment:

Woods Barber Shop is considered eligible for the National Register of Historic Places under Criterion A (event) for social history.

Woods Barber Shop, Caldwell County, NC, is eligible for the National Register under Criterion A (event). To be eligible under Criterion A, the property must retain integrity and must be associated with a specific event, marking an important moment in American pre-history or history or a pattern of events or historic trend that made a significant contribution to the development of a community, a state, or a nation. Furthermore, the property must have existed at the time and be documented to be associated with the events. Finally, the property's specific association must be important as well. Woods Barber Shop is associated with a small center of mixed-use development along NC 268 and the Yadkin River that served as a center for commerce and social gathering for the surrounding rural community of Happy Valley. Woods Barber Shop, dating to 1940 (according to HPO records), served as an important location where rural residents gathered for social interaction. Rural people gathered in this location to conduct business, utilize services available, and learn of news and information. Woods Barber Shop survives as an architectural expression of how a traditional rural community functioned prior to the inception of large-scale transportation and communication networks that, for better or worse, extended broader options to the community.

Woods Barber Shop is not eligible for the National Register under Criterion B (person), Criterion C (Design/Construction) or Criterion D (Potential to Yield Information).

National Register Boundary:

The boundary of the Woods Barber Shop is shown in Figure 8.

C. Impacts on the Section 4(f) Property

Alternative 2, the preferred alternative, will require the relocation of Woods Barber Shop (see Figure 4B). According to information provided by the Division 11 Right of Way agent, the DOT maintains approximately 16 feet of right of way measured from the centerline of the existing road in front of Woods Barber Shop. The structure is located approximately 15 feet from the existing pavement. As indicated in Figure 8, the National Register Boundary is the existing edge of pavement. The existing right of way is not sufficient to contain the proposed improvements. To avoid the Section 4(f) use, the improvements would have to be done on the opposite side (south side) of the existing road, which would impact the underground fuel storage tanks at the convenient store.

D. Avoidance Alternatives

Major Relocation Alternative

A major relocation alternative was investigated, which would relocate NC 268 south of the existing bridge. It would result in a new crossing of the Yadkin River and floodplain approximately 1000 feet south of the existing bridge. Because the existing crossing of the Yadkin River is located at the most narrow crossing of the floodplain and the floodplain widens significantly south, a bridge length of approximately 750 feet would be required. This alternative would cause greater impact on the floodplain and require a floodway modification. It would require additional roadway and bridge lengths totaling approximately 2000 feet, which is beyond the scope of the proposed bridge replacement project. Woods Barber Shop would not be relocated but would remain in close proximity to the existing road (The Barber Shop is located approximately 15 feet from the existing edge of pavement). Because the existing bridge would be removed upon completion of the major relocation of NC 268, the relocated portion of existing NC 268 east of the existing bridge would convert to a dead end road. The underground fuel

storage tanks would not be impacted but the convenient store would likely be economically impacted. This avoidance alternative is not a feasible and prudent alternative.

Rehabilitation and Do Nothing Alternatives

Rehabilitation of the existing deteriorating bridge is neither practical nor economically feasible. It would require significant repairs to the superstructure because of the type of floor decking. The substantial investment in replacing the superstructure over the bridge's substructure built in 1957 would not addresses the functional deficiency of the bridge and the need for a wider, safer bridge.

The "do-nothing" alternative is not feasible. This will require the closing of the road as the existing bridge deteriorates to a point where it is unsafe at any posted weight limits.

Alternative Located on South Side of NC 268

An avoidance alternative was investigated which would shift the improvement to the opposite side (south side) of the road and away from Woods Barber Shop. The south boundary of the historic property for Woods Barber Shop is the existing edge of pavement. Shifting the proposed widening all to the opposite side would impact the convenience store and require the relocation of the underground fuel storage tanks. Woods Barber Shop would remain in close proximity to the existing road (Woods Barber Shop is located approximately 15 feet from the existing edge of pavement). This avoidance alternative is not a feasible and prudent alternative.

Section 4 (f) Avoidance Alternatives

For Woods Barber Shop

Table 4

Avoidance Alternatives (for Woods Barber Shop)	Impacts/Reasons Avoidance Alternative is not reasonable and prudent Alternative
1. Major Relocation of NC 268	Beyond the scope of a bridge replacement project Extensive floodplain crossing/floodway modification Requires dead end for relocated portion of NC 268 east of the existing bridge, resulting in adverse economic impact to business
2. Shift improvements to opposite side of NC 268 at Woods Barber Shop	Requires the relocation of the convenience store and the USTs
3. Do Nothing/Rehabilitation	Would not meet the project's need for a wider, safer bridge

E. Measures to Minimize Harm

Mitigation will include moving the historic structure to a place where its integrity can be better maintained. The historic structure, which is in poor structural condition, will be improved structurally to the extent that it can be moved. The property and structure is owned by the Happy Valley Ruritan Club and would be moved to a nearby site owned by the Ruritan Club. A meeting

has been held with representatives of the Ruritan Club and they are in agreement with moving Woods Barber Shop to their other property.

The following measures will be implemented as part of Alternative 2, which is the preferred alternative in order to minimize harm to Woods Barber Shop. These measures were developed in coordination with the HPO and designated representatives of Happy Valley Ruritan Club (owners of the historic structure and property).

- Prior to the removal and relocation of the Woods Barber Shop, NCDOT shall record the existing condition of the property and its surroundings in accordance with the attached Historic Structures and Landscape Recordation Plan included in the MOA.
- In order to minimize harm of the transportation improvement project, NCDOT will provide funding to the Happy Valley Ruritan Club for the purpose of stabilizing the Barber Shop and relocating the building to a new site. The Ruritan Club proposes to rehabilitate the building on the new site, which is located approximately 1500 feet from the existing site.
- NCDOT will erect a historical marker near the existing site indicating that the Woods Barber Shop has been relocated from its original site to a new site.

F. Coordination

The proposed project has been coordinated with the North Carolina State Historic Preservation Office (HPO) and the Happy Valley Ruritan Club, the owners of Woods Barber Shop. NCDOT and FHWA met with representatives of the Happy Valley Ruritan Club on March 30, 2004 at the project site. NCDOT and FHWA met with HPO about the project's effect on Woods Barber Shop on February 3, 2004.

Local officials and local citizens have been made aware of the project by the circulation of a newsletter and a Citizens Informational Workshop.

The HPO was contacted early in the planning process. The HPO, after reviewing available resource data, recommended should Alternative 2 be selected, comprehensive archaeological surveys be conducted for this project. It has also been determined by NCDOT and HPO that the proposed improvement will have an Adverse Effect on Woods Barber Shop. Woods Barber Shop has been determined to be eligible for the National Register of Historic Places. A letter of concurrence from the HPO concurring in this finding is included in Appendix A.

A draft version of the Section 4(f) document was circulated to the US Department of Interior, State Historic Preservation Office and the Happy Valley Ruritan Club on March 2, 2005 for comment. Comments were received from the Department of Interior. The Department of Interior concurred there were no feasible and prudent alternatives to the proposed action and recommended that a signed copy of the Section 106 Memorandum of Agreement be included in the final document. The Department of Interior 's letter and Section 106 Memorandum of Agreement are found in Appendix C.

X. ENVIRONMENTAL EFFECTS

The project will have the following benefits: The proposed improvements will cost effectively replace the functionally obsolete and high cost maintenance bridge with a structurally sound three-lane bridge. The load restriction will be removed from the bridge for truck traffic. The new bridge will provide improved safety due to the improved design features. Based on preliminary studies, utilizing pre-cast bridge components are anticipated which would require minimal time for construction and less inconvenience to vehicular traffic. The design of the new bridge will not

change the visual character of the area and should be aesthetically acceptable to the residences in proximity to the bridge. The proposed improvement is anticipated to be constructed with limited additional right of way required. No impacts are anticipated to residential or business development with the preferred alternative. An acceptable off-site detour route is not available and traffic will be maintained by an on-site detour during construction. In summary, the project is expected to have an overall positive impact. Replacement of the inadequate bridge and construction of safety improvements will result in safer and overall more efficient traffic operations.

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

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

The proposed bridge width will include bicycle accommodations. A greenway is proposed to follow along the banks of the Yadkin River. The greenway is proposed to cross over from the east side of the Yadkin River to the west side of the river by utilizing the subject bridge. The greenway is proposed to include provisions for a horse trail. Proponents of the greenway requested new structure's height be sufficient for the greenway to pass beneath the bridge on the east side of the river and then circle back across the bridge on the north side. This would eliminate the greenway users from having to cross NC 268. It is not feasible to raise the bridge enough for greenway users to pass under the new structure as requested. However, the bridge width will be made wide enough for the greenway users to use the south side of the bridge and then cross NC 268 at the west end of the proposed bridge. The proposed bridge will include bicycle safe rail. A pedestrian actuated signal will be considered at a future date to provide for the proposed greenway crossing of NC 268 at the west end of the bridge.

There are no publicly owned parks, recreational facilities, or wildlife and waterfowl refuges of national, state of local significance in the immediate vicinity of the project. The proposed project will involve lands (Woods Barber Shop) protected by Section 4(f) of the U.S. Department of Transportation Act of 1966. A Draft Section 4(f) Evaluation has been prepared for this historic resource (see Section IX). It is proposed that the Woods Barber Shop be moved to a property owned by the Happy Valley Ruritan Club located approximately 1500 feet north of the existing bridge. The proposed greenway discussed above would access the Ruritan property and the relocated historic structure. It should also enhance the greenway experience by having the Woods Barber Shop readily accessible to the greenway and the Ruritan property.

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

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

The proposed project will not adversely affect threatened or endangered species.

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

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

No adverse impact on families or communities is anticipated. No relocatees are expected with the implementation of the proposed project.

No geodetic survey markers will be impacted.

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. Since the bridge will be replaced essentially at the existing location, the Farmland Protection Policy Act does not apply.

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

Caldwell County is a participant in the National Flood Insurance Program. The bridge is within a Detailed Study Area. The new structure will be designed to match or lower the existing 100-year storm elevation upstream of the roadway. Since the proposed replacement for the bridge will be a structure similar in waterway opening size, it is not anticipated to have any significant adverse impact on the existing floodplain and floodway. Additional hydraulic information is included in the technical memorandum prepared by Sungate Design Group, P.A.

Borrow and solid waste sites will be the responsibility of the Contractor. Solid waste will be disposed of in strict adherence to the NC Division of Highways "Standard Specifications for Roads and Structures." The Contractor will observe and comply with all laws, ordinances, regulations, orders, and decrees regarding the disposal of solid waste. Solid waste will not be placed into any existing land disposal site that is in violation of state or local rules and regulations. Waste and debris will be disposed of in areas, which are outside the right of way and provided by the Contractor.

On the basis of the above discussion, it is concluded that no significant adverse environmental effects will result from the implementation of this project. The project is a Federal "Categorical Exclusion" due to its limited scope and lack of significant environmental consequences.

XI. PUBLIC INVOLVEMENT

A mailing list was developed for residences and property owners located near the bridge. The mailing list included approximately 134 citizens and the local news media. A newsletter, mailed in March 2003 stated three alternatives were under study for replacement of the bridge at the existing location. A copy of the newsletter is attached in Appendix B. The newsletter announced a Citizens Informational Workshop to be held on March 20, 2003. An opportunity for local officials to review the alternatives was held on March 20, 2003 at 10:00 AM in Lenoir at the Caldwell County-City Chamber, 905 West Avenue, N.W. No local officials attended. The Citizens Informational Workshop was held at the Happy Valley School Gymnasium at 1350 Yadkin River Road (SR 1560) from 4 to 7 pm. The meeting consisted of an open house format. Three alternatives were presented along with a handout (attached in Appendix B). Large displays, which basically were enlargements of the figures included in the handout, were shown. Additional copies of the newsletter, previously sent to those on the mailing list, were also made available to those attending. Approximately eight citizens attended the workshop.

A summary of the comments received at the workshop follows:

- A representative of the service station and convenience store near the end of the existing bridge made the following comments.
    - A historic structure is located opposite the store (later identified as Woods Barber Shop).
    - A residence located east along NC 268 (beyond the current project limits) had been provided a water line because of leakage from an underground fuel oil tank (on the property) had contaminated the well.
    - A water line that served the store and the above residence is located south and parallel to the existing bridge. The water line serving the house crosses under NC 268 just east of the bridge.
    - The bridge and surrounding area was flooded in the past and the flooding resulted from the consequences of a trailer that was washed downstream and lodged beneath the bridge.
    - The underground tanks for the convenience store are located just east of the canopy.
    - Noted an accident problem at the intersection of NC 268 and SR 1560 (A total of five accidents are recorded near the bridge with four accidents occurring at this intersection.)

- The Patterson School Headmaster voiced concern about maintenance of traffic on NC 268 during construction. The private boarding school has approximately 100 students. The school is located approximately 4 miles east of the bridge. (There is no practical off-site detour and an on-site detour will be provided during construction.)

- A citizen advised the Yadkin River in the vicinity is degraded. The river has been eroded down to bedrock and may be a candidate for stream mitigation. His comment was referred to

DOT's Office of Natural Environment. The citizen also mentioned a future greenway along the Yadkin River and the need to accommodate the future greenway. It was noted there is not sufficient height beneath the bridge for the future greenway.

- A citizen stated in writing preference of Alternative 2.

A meeting was held on March 30, 2004 with members of the Happy Valley Ruritan Club and staff of NCDOT, FHWA and Wetherill Engineering. Four members of the Ruritan Club attended the meeting. The meeting was held at Woods Barber Shop at the project site.

The purpose of the meeting was to consider options for relocating the Barber Shop, owned by the Happy Valley Ruritan Club, which has been identified as eligible for the National Register of Historic Places. The building is subject to Section 4(f) of the USDOT Act and Section 106 of the National Historic Preservation Act. The project, by relocating the structure, will have a Section 106 Adverse Effect on, and a Section 4 (f) use of, the property.

A summary of the comments follows:

- The designated spokesperson for the Ruritan Club showed a survey plot of their property. It showed insufficient property to allow Woods Barber Shop to be moved back away from the road.

- The first solution discussed was to try to have the Woods Barber Shop remain near the existing site and to obtain additional property behind the building to move it. However, the affected property owner stated that he would allow the building to be moved on his property but that he would not give an encroachment, sell or lease any of his property or make any written commitments tying up his land. Essentially the building would be on his property and its future disposition would hinge on his discretion and the future property owners'

wishes. Such a precarious situation is not in the best interest of the long-term preservation of the building, so this solution is not recommended.

- An option was discussed for relocating the building to another nearby site. This site is a property owned by the Ruritan Club located on the east side of SR 1560 (Yadkin

- River Road) near Happy Valley Elementary School. This would be approximately 1500 feet away from the existing site and is the site of a future clubhouse currently under construction. The Ruritan Club would maintain the integrity of Woods Barber Shop. It was discussed that a historic marker could be placed at the existing site noting the original site and that the building had been moved to the site under discussion. This option appeared to be acceptable to the Ruritan Club Members.

- There was also discussion concerning the best place to situate the Woods Barber Shop on their property near the school. It was discussed that Woods Barber Shop could be placed in the back of their property near the Yadkin River or in front of their clubhouse near Yadkin River Road. No decision was reached but each location would have merits. Since the meeting the Ruritan spokesman advised by telephone that the location in front of the clubhouse would have problems with electric power lines.

- There was discussion concerning the condition of the building and repairs would have to be made to make the Barber Shop structurally safe enough to move. The sills are rotted and may have termites. One interior section of the wood floor is separated from the wall, and the wall rests on the ground. The roof is leaking and is causing decay within the building. The Ruritan spokesman advised that a local contractor had been previously contacted to estimate the repair cost. The contractor indicated he did not think the Club would be willing to pay the cost necessary to repair the building. NCDOT staff requested that the Ruritan Club obtain a couple of estimates for repairing the structural condition of

the building. NCDOT would not pay for the full restoration of the Barber Shop but would fund the stabilization (sufficient to enable it to be moved) and the move itself. It was discussed there may be other sources of funding (e.g., enhancement money) available for restoration which should be pursued.

XII. AREAS OF CONTROVERSY

No unresolved issues or areas of controversy have been identified during the planning process and none are anticipated.

XIII. AGENCY COMMENTS

Scoping letters were sent to the following agencies. Agencies that responded are marked with an asterisk. Comment letters are included in Appendix A.

Federal Agencies

US Fish and Wildlife Service-Asheville*
US Army Corps of Engineers-Asheville
US Army Corps of Engineers-Wilmington
Environmental Protection Agency-Raleigh

State Agencies

NC Wildlife Resources Commission*

NC Department of Environment and Natural Resources*

NC Division of Water Quality/Wetlands

NC Division of Archives and History*

The Eastern Band of Cherokee Indians, Tribal Historic Preservation Office

State Clearinghouse

NC Department of Public Instruction

Regional and Local Agencies

Region E Council of Government

Caldwell County Commissioner, chairperson*

Caldwell County Board of Education*

Caldwell County /Emergency Management Coordinator*

A copy of the Draft Section 4(f) document was submitted to the following agencies and organizations. An asterisk marks those submitting comments. Comments received are included in Appendix C.

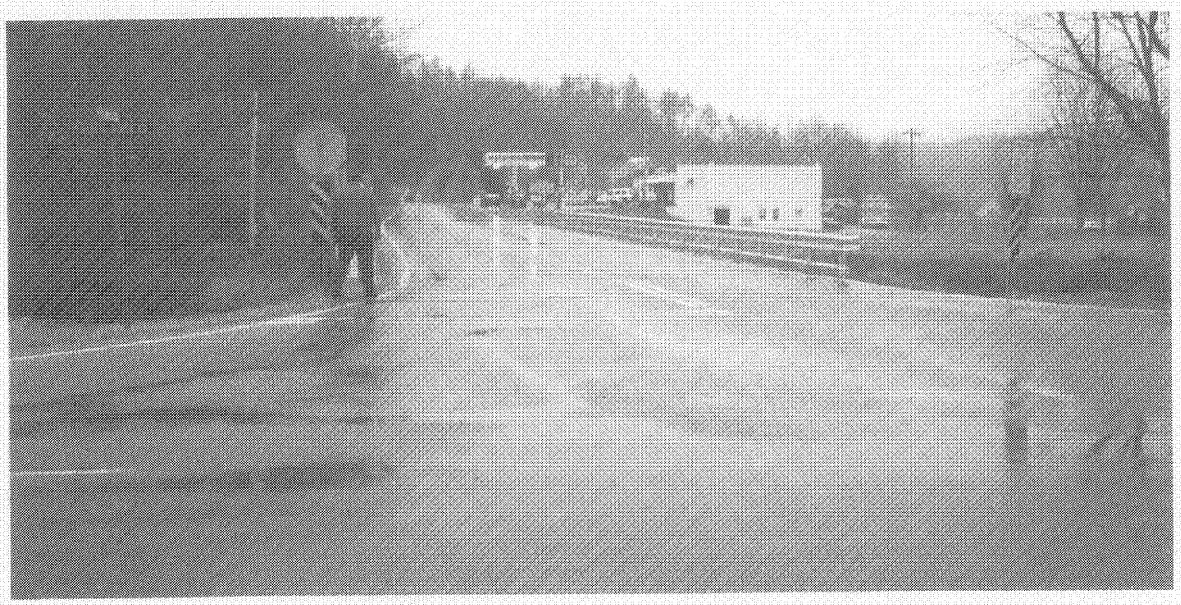
State Historic Preservation Office

U. S Department of the Interior*

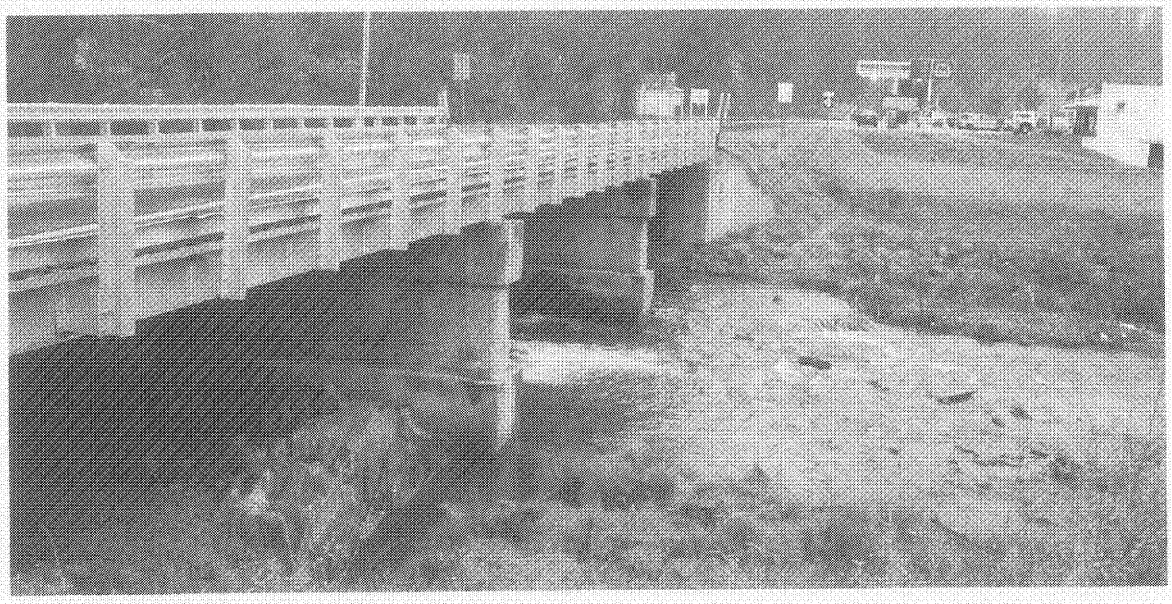
Happy Valley Ruritan Club

FIGURES

APPENDICES



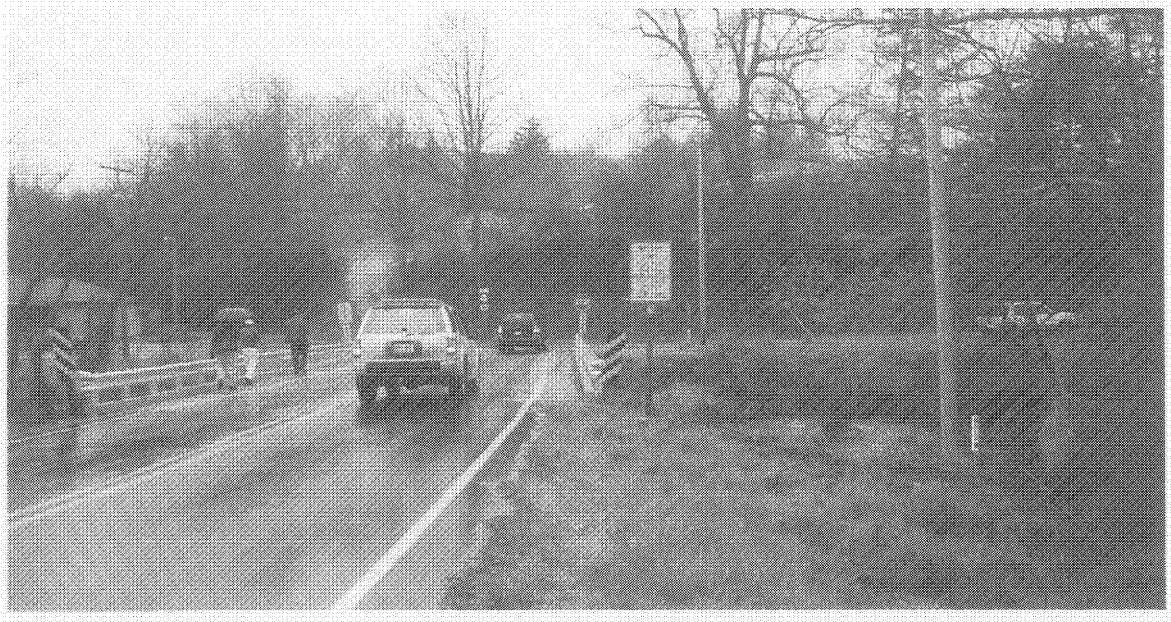
B-4052-VIEW OF BRIDGE NO. 7 LOOKING EAST



B-4052-VIEW OF BRIDGE NO. 7 LOOKING EAST

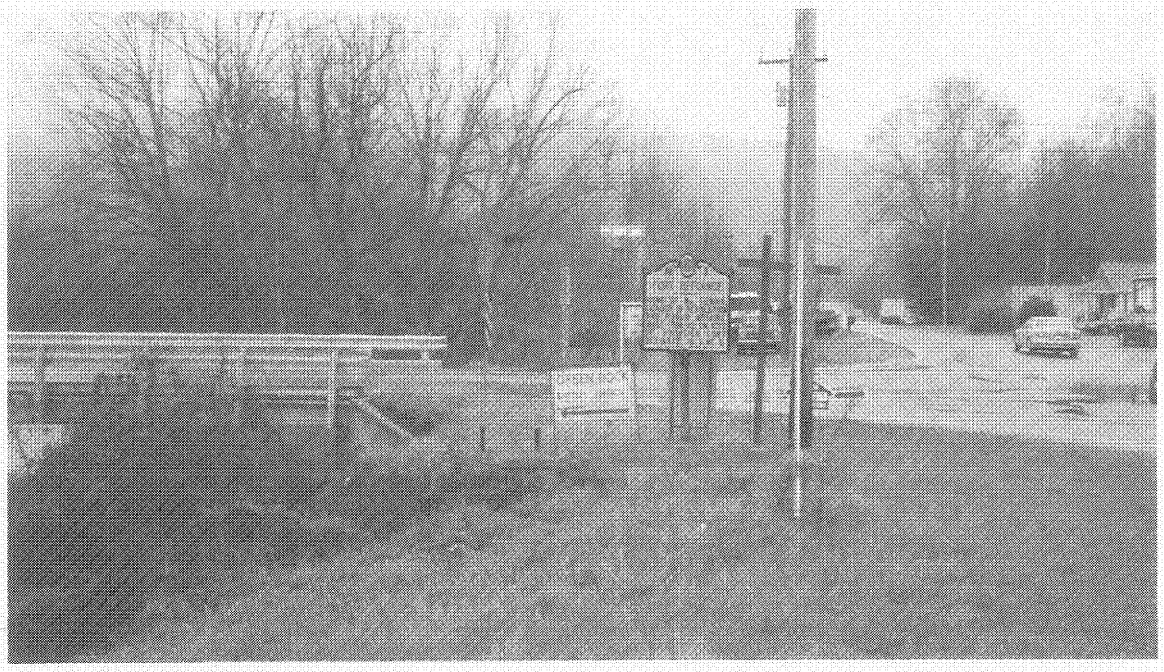
FIGURE 2 A

B-4052-VIEW FROM THE END OF THE BRIDGE NO. 7 LOOKING NORTH ALONG SR 1560(YADKIN RIVER ROAD)



B-4052-VIEW OF BRIDGE NO. 7 LOOKING WEST

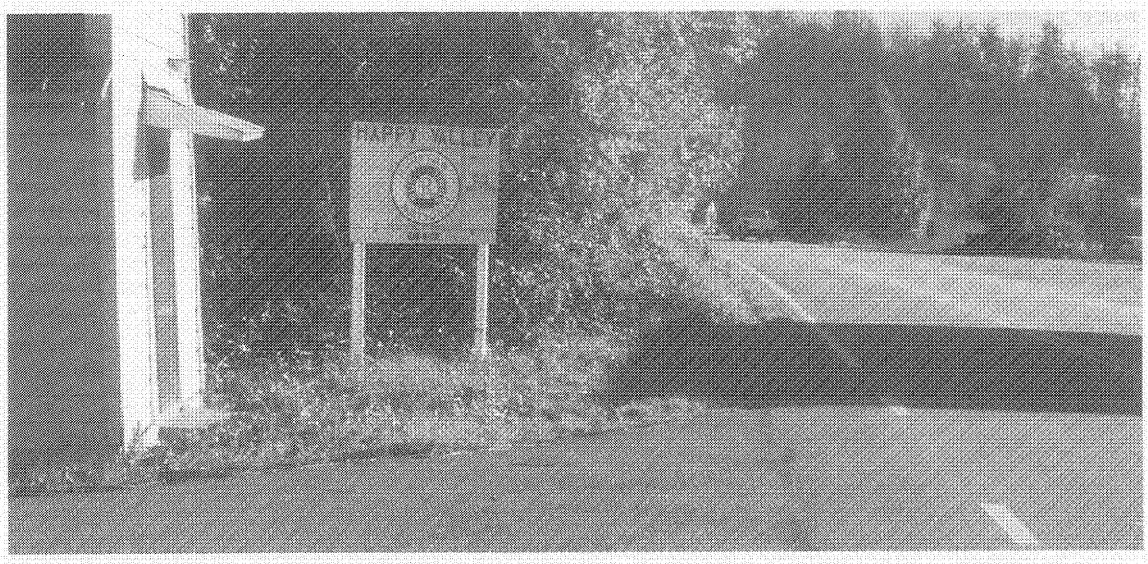
FIGURE 2 B



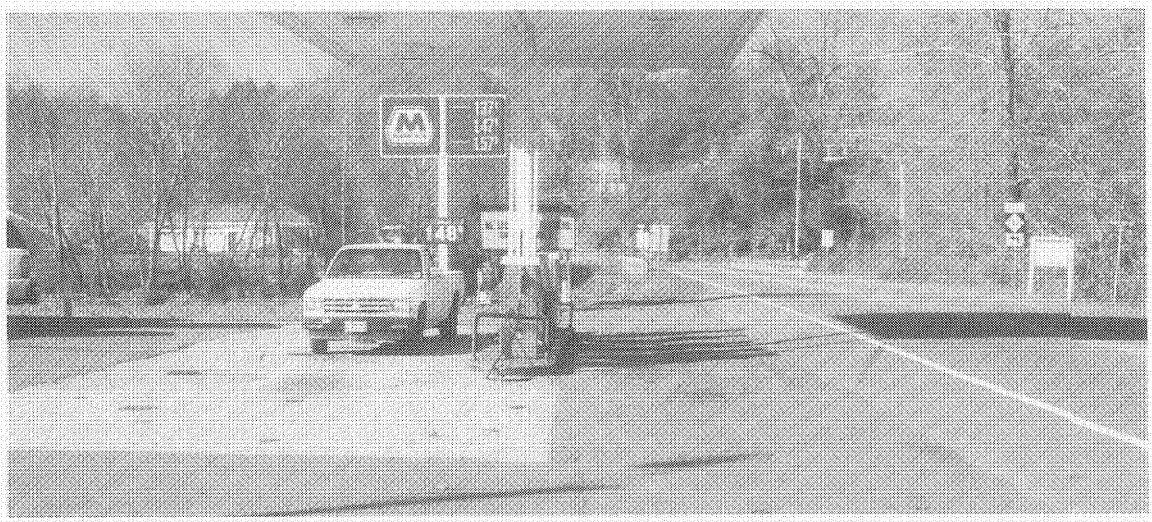
B-4052-VIEW OF NC 268 FROM END OF BRIDGE NO. 7 LOOKING SOUTH

B-4052-VIEW OF THE YADKIN RIVER LOOKING NORTH (UPSTREAM) FROM BRIDGE NO. 7

FIGURE 2 C

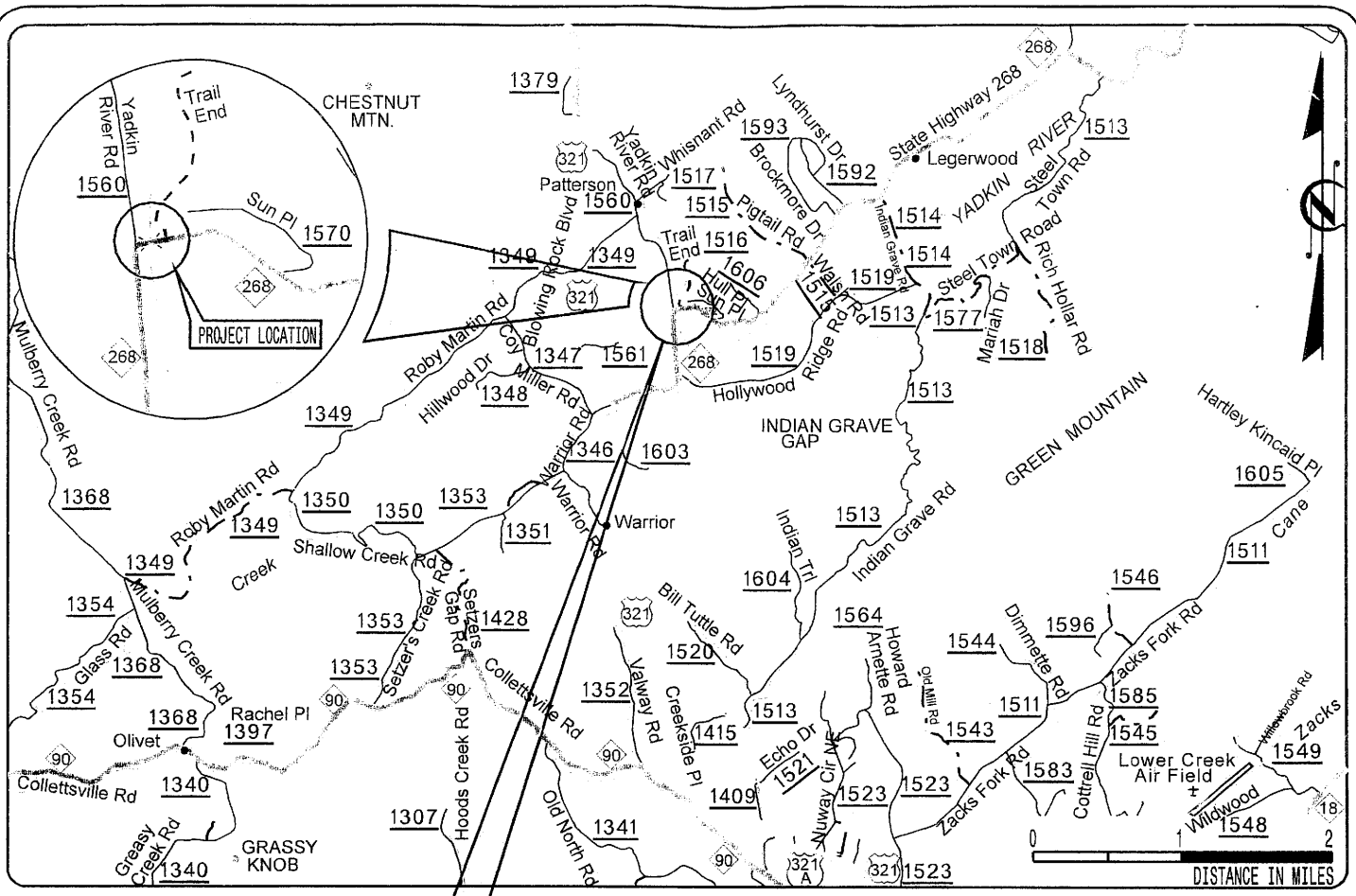


B-4052- VIEW OF WOODS BARBER SHOP ALONG NC 268 LOOKING EAST

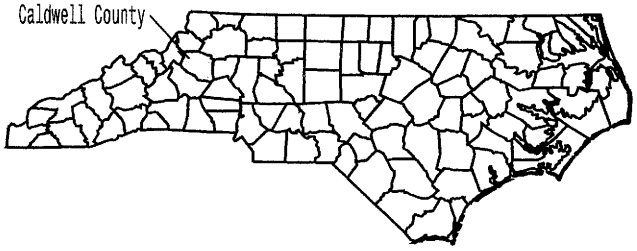


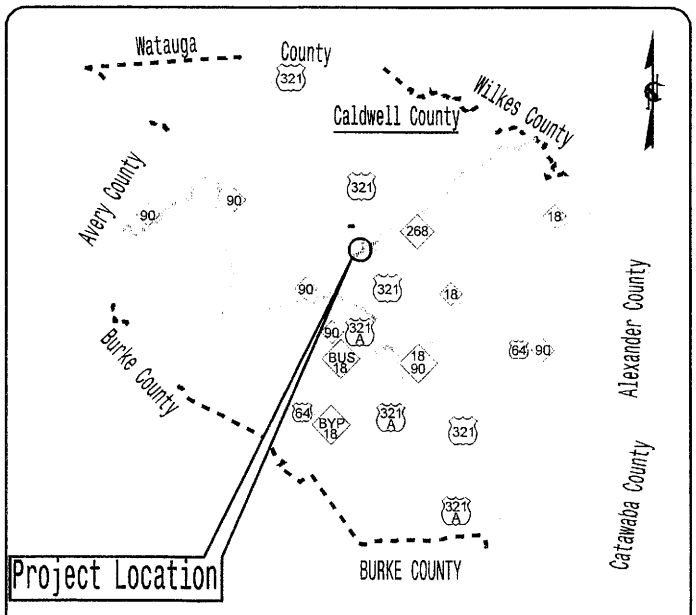
B-4052- VIEW OF VALLEY STORE CANOPY AND GAS PUMPS ALONG NC 268 LOOKING WEST

FIGURE 2D



PROJECT LOCATION





NC 268

REPLACE BRIDGE NO. 7 over Yadkin River

B-4052

Caldwell County, North Carolina

PROJECT VICINITY

Figure 1

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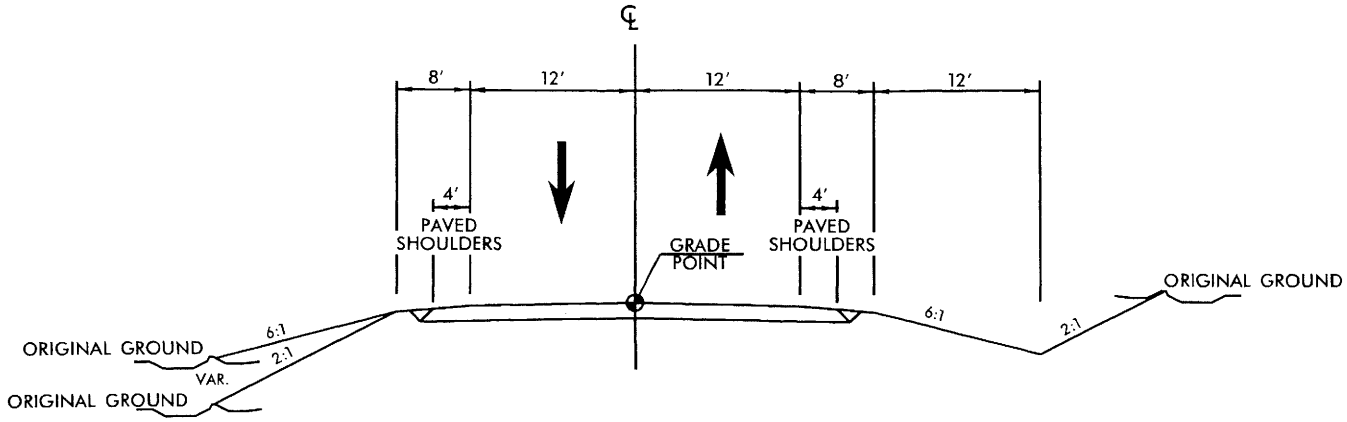
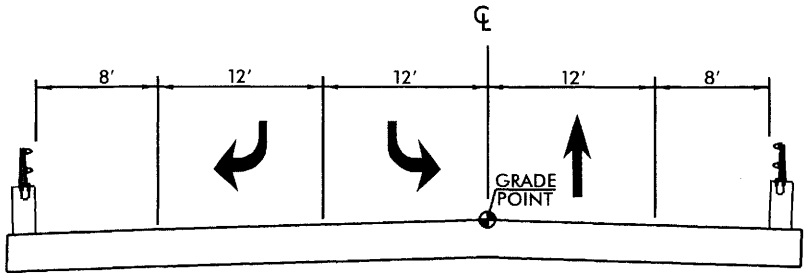
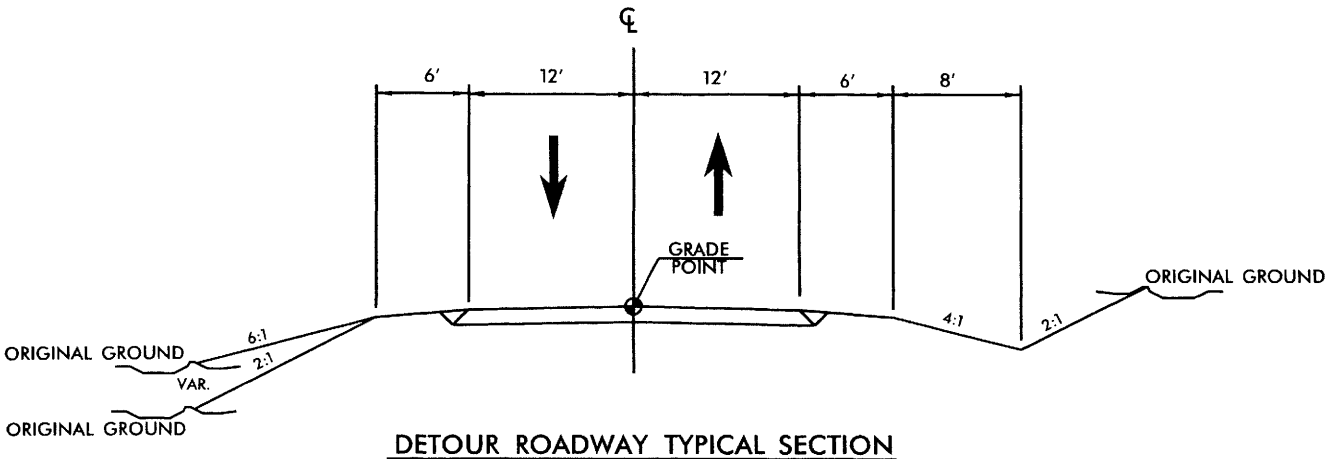


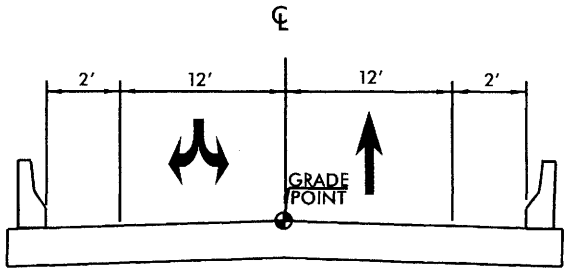
ROADWAY TYPICAL SECTION



BRIDGE TYPICAL SECTION



DETOUR ROADWAY TYPICAL SECTION



DETOUR BRIDGE TYPICAL SECTION

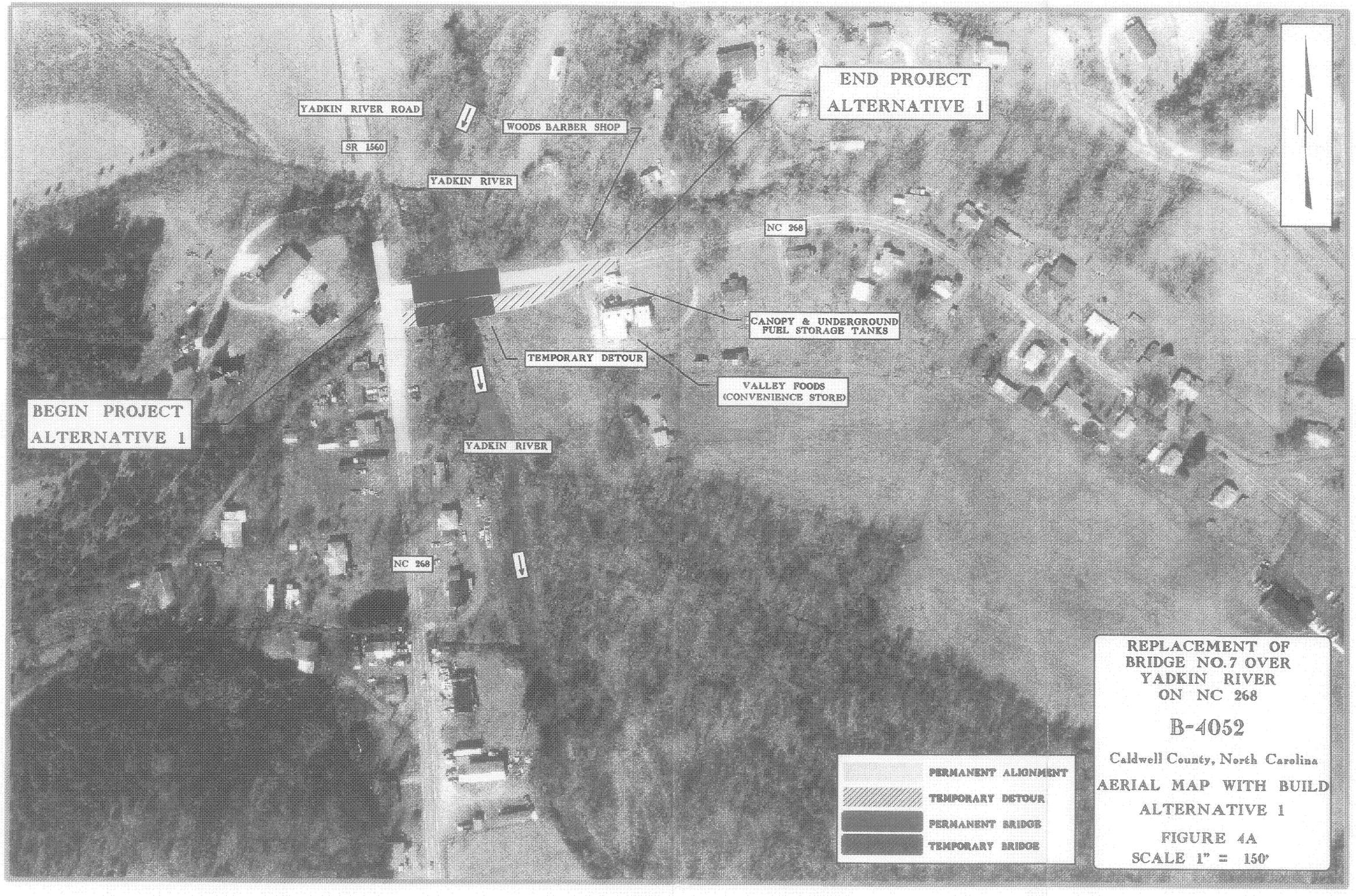
REPLACEMENT OF BRIDGE NO. 7 OVER YADKIN RIVER ON NC 268

B-4052

Caldwell County, North Carolina

TYPICAL SECTIONS FOR ALTERNATIVES 1, 2 & 3

FIGURE 3



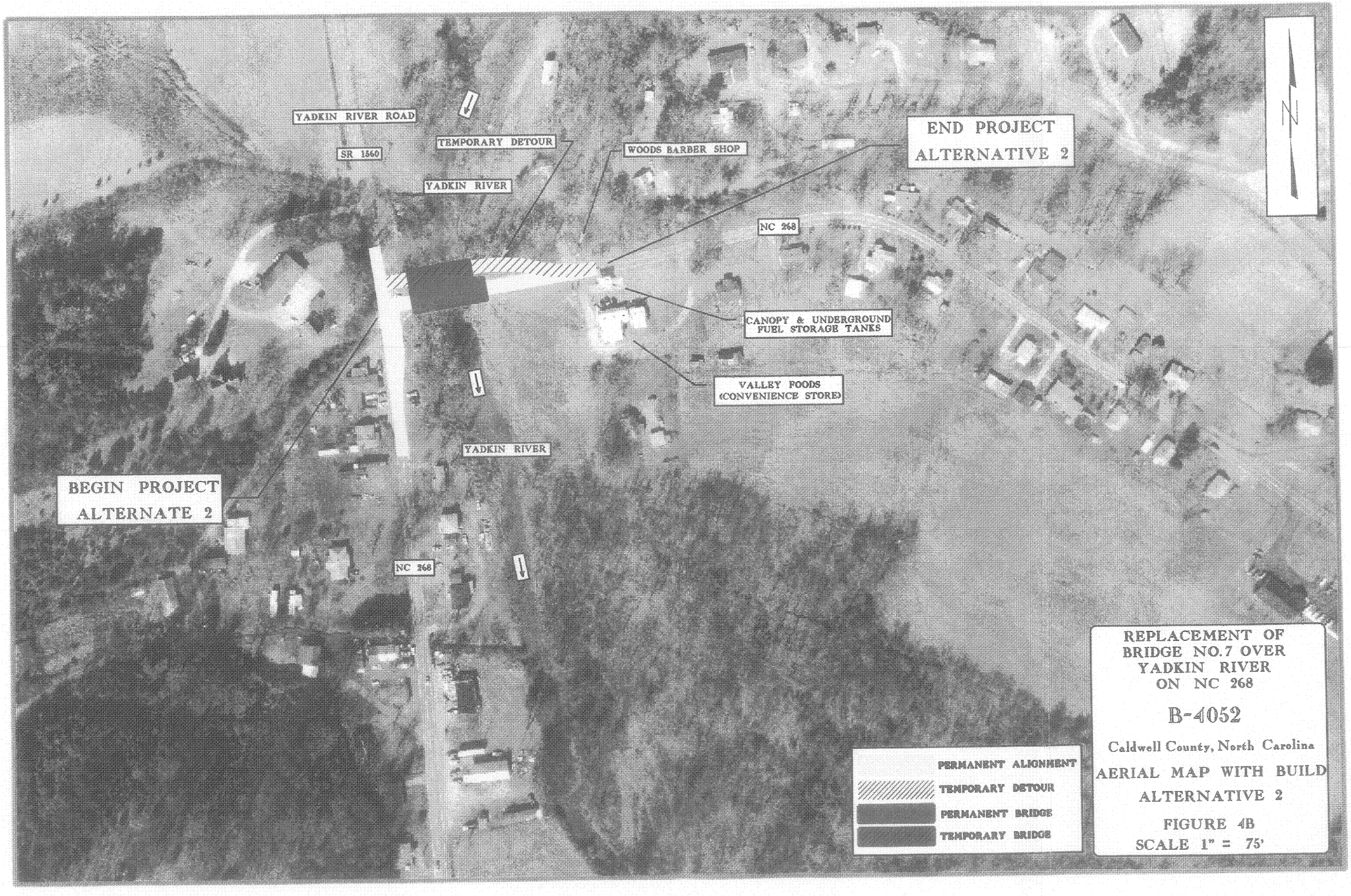
REPLACEMENT OF
BRIDGE NO. 7 OVER
YADKIN RIVER
ON NC 268

B-4052

Caldwell County, North Carolina

AERIAL MAP WITH BUILD
ALTERNATIVE 1

FIGURE 4A
SCALE 1" = 150'



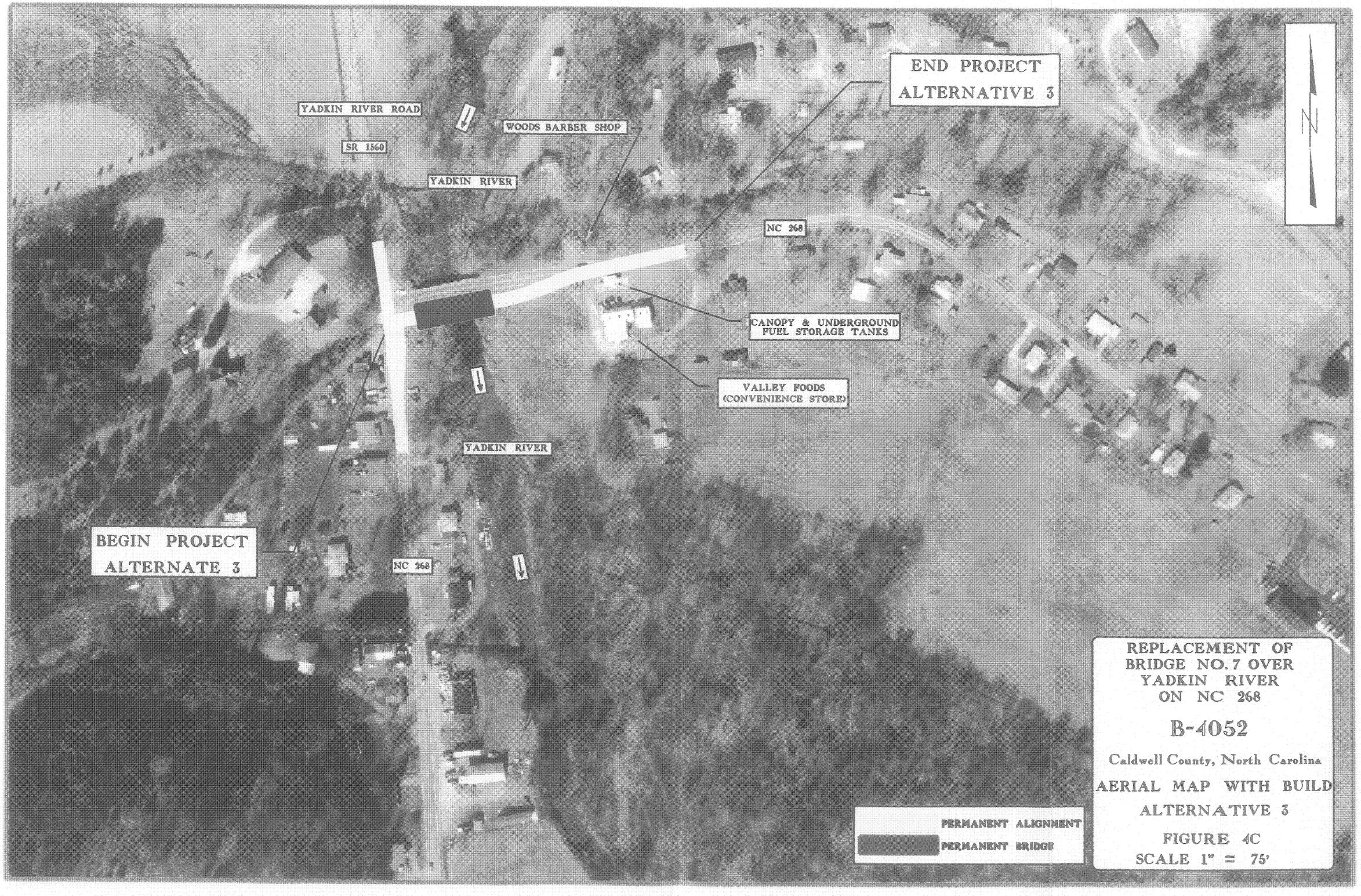
REPLACEMENT OF
BRIDGE NO.7 OVER
YADKIN RIVER
ON NC 268

B-4052

Caldwell County, North Carolina

AERIAL MAP WITH BUILD
ALTERNATIVE 2

FIGURE 4B
SCALE 1" = 75'



REPLACEMENT OF
BRIDGE NO. 7 OVER
YADKIN RIVER
ON NC 268

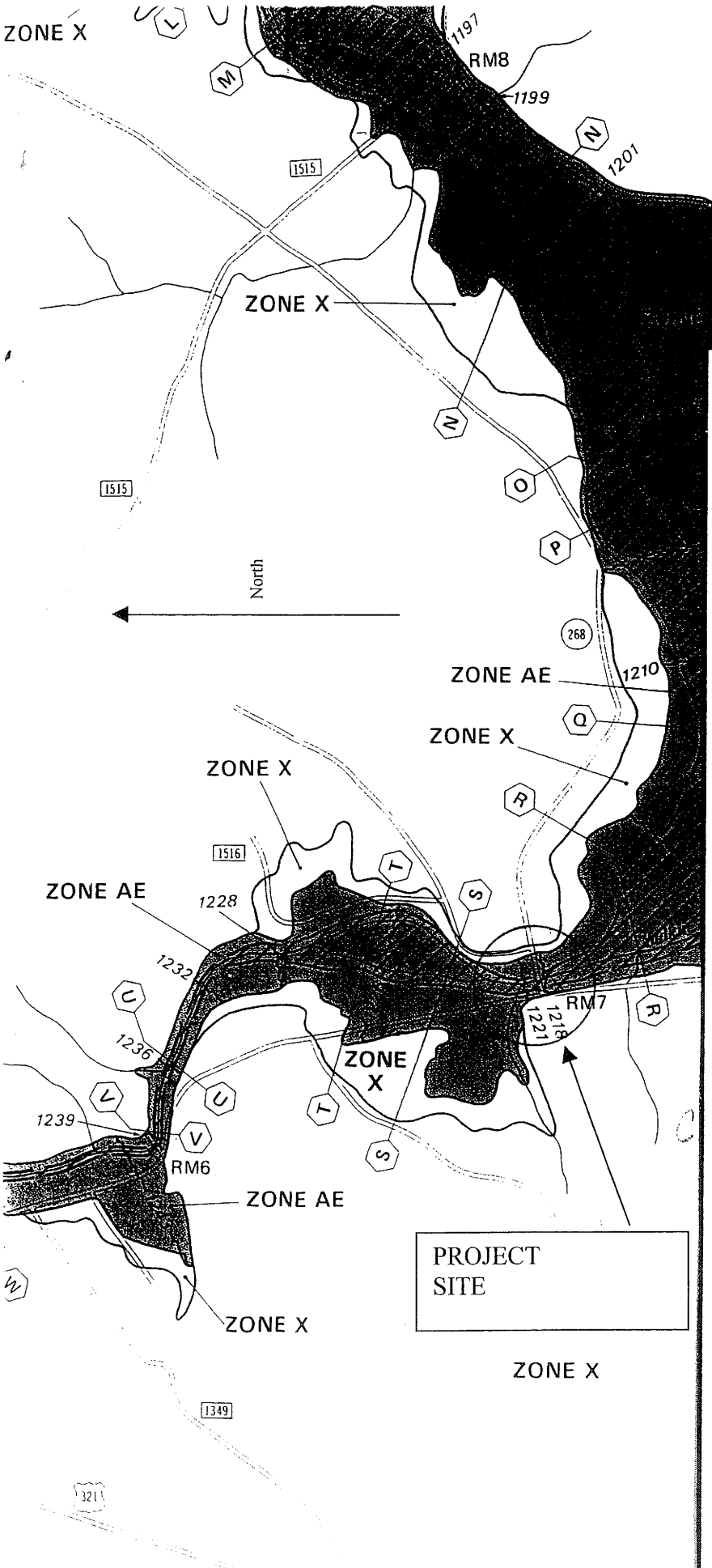
B-4052

Caldwell County, North Carolina

AERIAL MAP WITH BUILD
ALTERNATIVE 3

FIGURE 4C
SCALE 1" = 75'

NC 268, CALDWELL COUNTY, REPLACE BRIDGE NO. 7 OVER YADKIN RIVER, TIP NO. B-4052 FLOODPLAIN MAP FIGURE 5



LEGEND

SPECIAL FLOOD HAZARD AREAS INUNDATED BY 100-YEAR FLOOD

- **ZONE A** — No base flood elevations determined.
- **ZONE AE** — Base flood elevations determined.
- **ZONE AH** — Flood depths of 1 to 3 feet (usually areas of ponding); base flood elevations determined.
- **ZONE AO** — Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined. For areas of alluvial fan flooding, velocities also determined.
- **ZONE A99** — To be protected from 100-year flood by Federal flood protection system under construction; no base elevations determined.
- **ZONE V** — Coastal flood with velocity hazard (wave action); no base flood elevations determined.
- **ZONE VE** — Coastal flood with velocity hazard (wave action); base flood elevations determined.

FLOODWAY AREAS IN ZONE AE

OTHER FLOOD AREAS

- **ZONE X** — Areas of 500-year flood; areas of 100-year flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 100-year flood.

OTHER AREAS

- **ZONE X** — Areas determined to be outside 500-year flood plain.
- **ZONE D** — Areas in which flood hazards are undetermined.

Flood Boundary

Floodway Boundary

Zone D Boundary

Boundary Dividing Special Flood Hazard Zones, and Boundary Dividing Areas of Different Coastal Base Flood Elevations Within Special Flood Hazard Zones.

513 — Base Flood Elevation Line; Elevation in Feet*

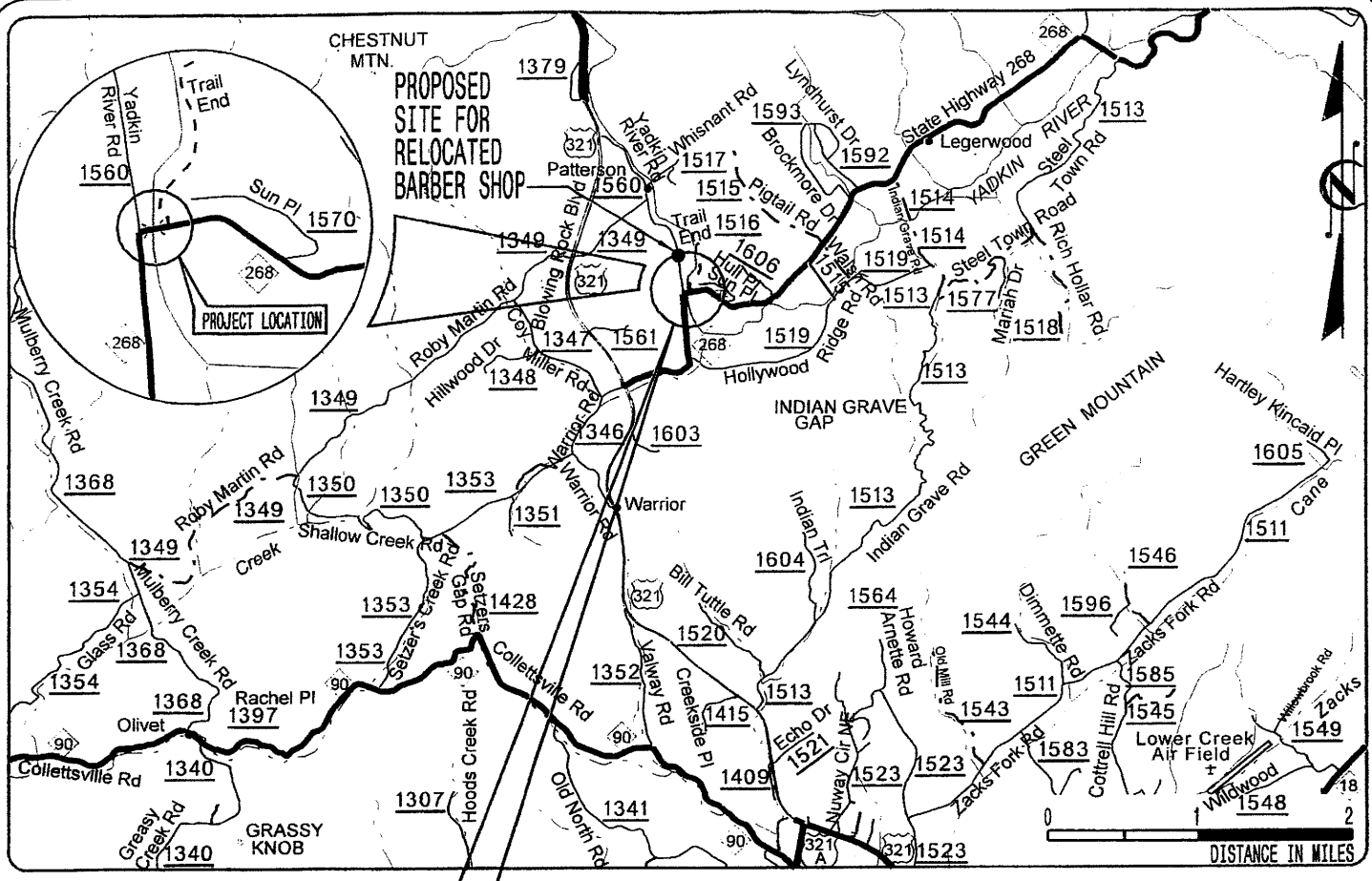
D — D — Cross Section Line

(EL 987) — Base Flood Elevation in Feet Where Uniform Within Zone*

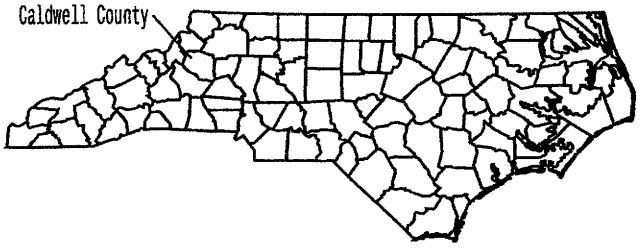
$RM7_X$ — Elevation Reference Mark

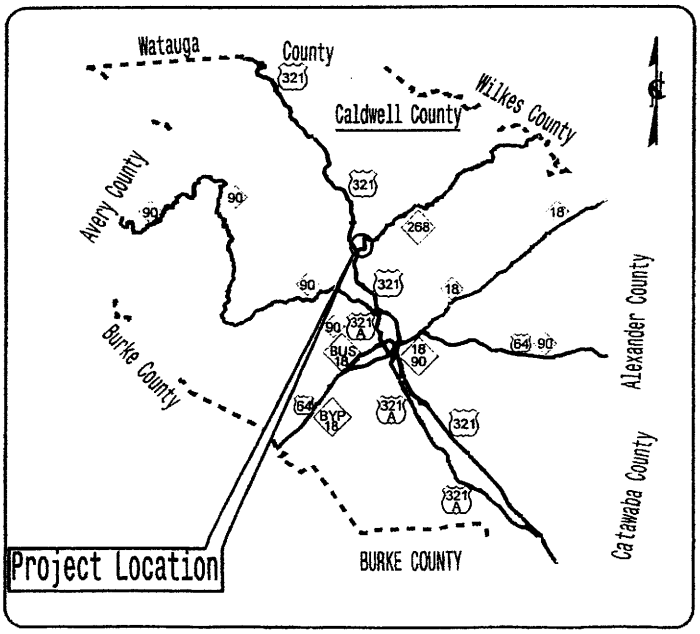
•MI.5 — River Mile

*Referenced to the National Geodetic Vertical Datum of 1929



PROJECT LOCATION





NC 268

REPLACE BRIDGE NO. 7 over Yadkin River

B-4052

Caldwell County, North Carolina

PROPOSED SITE FOR RELOCATED WOODS BARBER SHOP

Figure 6

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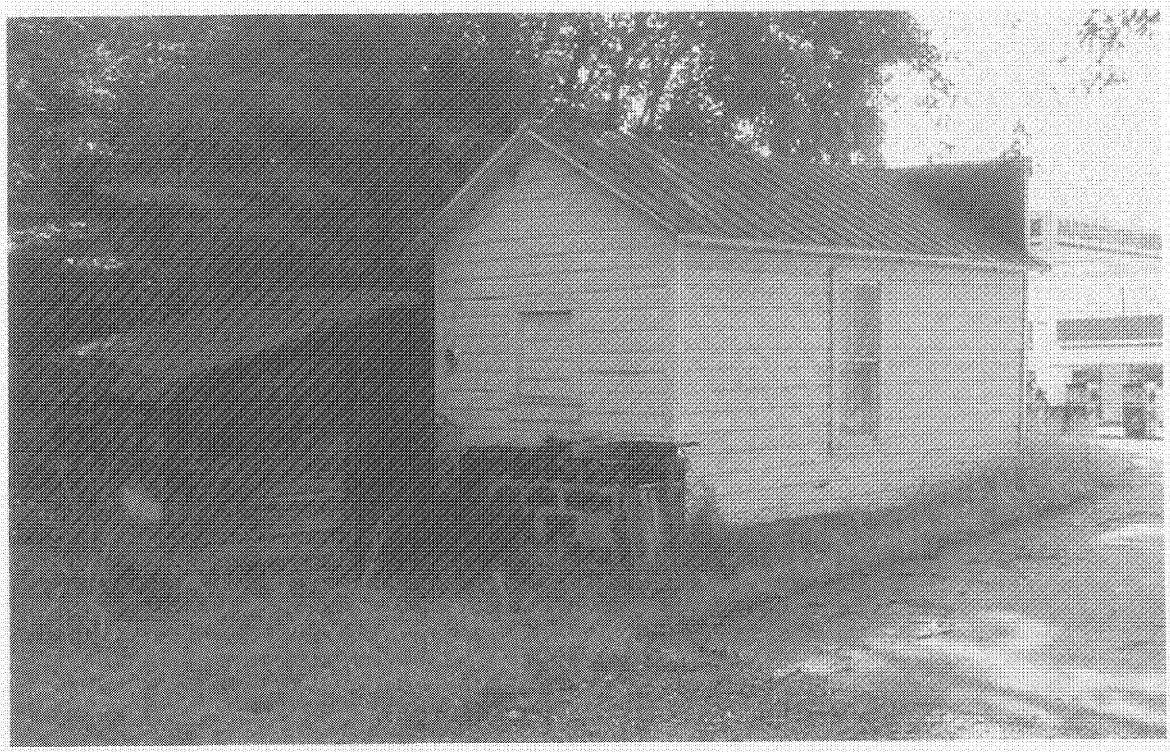
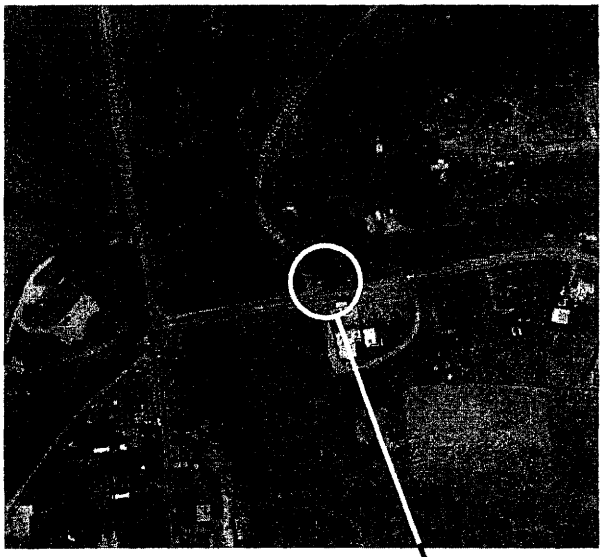
Woods Barber Shop (Front View)



Woods Barber Shop (Rear View)
FIGURE 7

B-4052
Sept. 2003

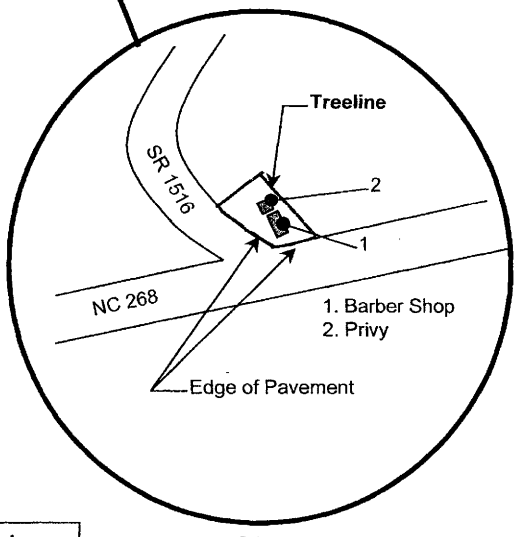


Aerial/Tax Map

Note:

Woods Barber Shop is NOT located within the NCDOT right-of-way.

This property still subject to Section 106 review and compliance.



N

———	Proposed NR Boundary

Diagram showing NR Boundary
-Not to Scale-

NCDOT Historic Architecture
1583 Mail Service Center
Raleigh, NC 27699-1583

T 919-715-1333
F 919-715-1501
www.ncdot.org

Project
Replace Bridge No. 7
over the Yadkin River
Caldwell County

Sheet Title
NATIONAL REGISTER BOUNDARY:
Woods Barber Shop

Drawn By: Silverman

Issue Date: 09-12-03

File Name: NR 1.ppt

TIP No. B-4052

Scale NTS

Sheet No. NR-1

FIGURE 8

APPENDIX A

AGENCY LETTERS OF COMMENT

US Fish and Wildlife Service

160 Zillicoa Street
Asheville, NC 28801
Phone 828-258-3939 Ext 237, Fax 828-258-5330

MEMO FOR: William T. Goodwin, P.E. **DATE:** June 27, 2002

FROM: Marella Buncick

SUBJECT: Review of NCDOT 2005 Bridge Program

I have completed initial review of the approximately 70 proposed bridge replacements for NCDOT Divisions 9-14 for the year 2005. I would like to commend NCDOT for obtaining the natural resource information up front and allowing the agencies to review the proposals and provide comments so early in the process. It was a large volume of work for everyone involved but I feel that the input will be much more meaningful at this early planning stage.

Attached is a spreadsheet with specific comments for each project reviewed. All of the projects have been assigned a Green, Yellow, or Red ranking depending on the resources affected and the need for future consultation. As you will note, the majority of the projects received a Yellow ranking. This is due in large part to the fact that there are unresolved issues related to listed species. Many of these projects likely will become Green projects after further field review. However, obligations under Section 7 of the Act must be reconsidered if: (1) new information reveals impacts of this identified action that may affect listed species or critical habitat in a manner not previously considered, (2) actions are subsequently modified in a manner that was not considered in this review, or (3) a new species is listed or critical habitat is determined that may be affected by the identified action.

I also have general comments regarding the process and reports. My general comments follow.

Report Content and Organization

1. The reports would be more easily handled if they were not spiral or otherwise bound.
2. Maps need to be much better. Without a significant landmark-- highway, larger town, other feature – it sometimes took a long time to figure out the location of the project within a county.
3. The reports were organized somewhat similarly, but more consistency would aid in the review process. Perhaps a table that has the significant features ---stream width, depth, DWQ class, etc.--also would help.

4. For listed species, it often was difficult to tell whether field surveys had been conducted or whether the information was limited to a database search.
5. In the future, I would appreciate having the Rosgen stream classification included as part of the information.

Listed Species Surveys

Projects currently ranked as Yellow will need to be reviewed in the future after the stated issues are resolved. For those reports with unresolved issues related to listed species, I would recommend that NCDOT wait until closer to implementation time to conduct final surveys. In general, after three to five years we need updated information regarding the project and listed species. Additionally, when aquatic species are involved (particularly mussels) several surveys may be required to adequately determine presence or absence.

The three projects receiving a Red ranking will need to be followed very closely to determine future consultation requirements. These include B-4287 (actually 2 bridge replacements), B-4286, and B-4282. These projects were ranked as Red because of the significance of the number of listed resources potentially affected and the river (either main stem or tributary) involved.

I would encourage NCDOT to require consultants to at least assess habitat for the bog turtle. While the bog turtle technically does not require Section 7 consultation, it is a species of concern and NCDOT is actively managing mitigation sites or parts of sites for this species. Additionally, the Wildlife Resources Commission considers this animal rare in NC and participates actively in surveys and conservation efforts on its behalf.

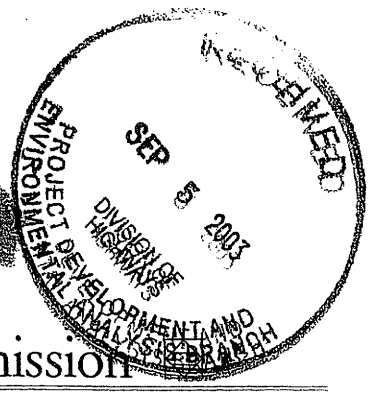
Bridge Design and Construction Practices

I am assuming that FWS comments/recommendations in the past regarding bridge design, demolition, and construction practices will be folded into each of these projects. Since NCDOT is also working on a BMP manual that covers these practices, I think it would be redundant to state them again. However, if any questions arise, please let me know. I would like to emphasize that we prefer off-site detours wherever possible, to minimize effects to resources.

Each of these projects has been assigned a log number. Please refer to these numbers in future requests regarding the subject projects. Thank you again for the opportunity to provide these comments. If you have questions, please let me know.

PDE	TIP	County	Rank	Reason for Rank	FWS Log Number
SH	B-2988	Haywood	Y	unresolved for listed species, FWS requests review of bridge design	4-2-02-39
MD	B-4011	Ashe	Y	FWS requests resurvey for spiraea, assessment for bog turtle and green floater, review bridge plans	4-2-02-40
MD	B-4012	Ashe	Y	FWS requests resurvey for spiraea and habitat assessment for bog turtle	4-2-02-40
MD	B-4013	Ashe	Y	FWS requests resurvey for spiraea and habitat assessment for bog turtle, review bridge design	4-2-02-40
MD	B-4015	Ashe	Y	FWS requests resurvey for spiraea and habitat assessment for bog turtle, review bridge design	4-2-02-40
MD	B-4016	Ashe	Y	FWS requests resurvey for spiraea and habitat assessment for bog turtle, review bridge design	4-2-02-40
SH	B-4032	Buncombe	G	FWS requests review of bridge design	4-2-02-38
SH	B-4036	Buncombe	Y	unresolved for mussels, FWS requests review of bridge design	4-2-02-39
SH	B-4037	Buncombe	Y	unresolved for mussels, FWS requests review of bridge design	4-2-02-39
DW	B-4038	Burke	Y	unresolved for listed species, be careful of downstream effects	4-2-02-37
DW	B-4039	Burke	Y	unresolved for heartleaf	4-2-02-38
RY	B-4040	Burke	Y	FWS requests resurvey for heartleaf	4-2-02-38
DW	B-4041	Burke	Y	FWS requests resurvey for heartleaf	4-2-02-38
RY	B-4043	Burke	Y	FWS requests mussel survey, requests bridge to bridge and review of bridge design	4-2-02-38
RY	B-4044	Burke	Y	FWS requests resurvey for heartleaf and pogonia, bridge to bridge	4-2-02-38
RY	B-4045	Burke	Y	FWS requests resurvey for heartleaf, new occurrence w/in 1 mile	4-2-02-38
RY	B-4046	Burke	Y	unresolved for pogonia, FWS requests resurvey for heartleaf, request bridge for high quality stream	4-2-02-40
RY	B-4047	Burke	Y	unresolved for heartleaf	4-2-02-38
MD	B-4052	Caldwell	Y	unresolved for heartleaf, be careful of the USGS gaging station at this location	4-2-02-40
JJ	B-4059	Cawtaba	Y	Need survey for heartleaf--habitat assessment inadequate	4-2-02-40
DW	B-4060	Cawtaba	Y	Need survey for heartleaf--habitat assessment inadequate	4-2-02-41
RY	B-4067	Cherokee	Y	unresolved for listed species, close coordination w/USFS, high quality stream	4-2-02-39
DW	B-4070	Cherokee	Y	all listed species unresolved, FWS requests special consideration here for sicklefin redhorse	4-2-02-37
JJ	B-4076	Cleveland	Y	Need survey for heartleaf--habitat assessment inadequate	4-2-02-41
SH	B-4103	Davidson	Y	FWS requests mussel survey, requests bridge to bridge because of stream quality	4-2-02-37
JJ	B-4116	Gaston	Y	Need resurvey for heartleaf	4-2-02-41
DW	B-4123	Graham	Y	unresolved for listed species, Indiana Bat, close coordination w/USFS, high quality stream	4-2-02-39
SH	B-4144	Haywood	Y	unresolved for listed species, FWS requests review of bridge design	4-2-02-39
DP	B-4155	Iredell	G	FWS requests survey for bog turtle	4-2-02-41
DP	B-4158	Iredell	G	FWS requests survey for bog turtle, contractor suggested survey for heartleaf, FWS requests bridge	4-2-02-41
DW	B-4161	Jackson	Y	unresolved for listed species, FWS requests review of bridge design	4-2-02-38
JJ	B-4177	Lincoln	Y	Need resurvey for heartleaf	4-2-02-41
DW	B-4178	Lincoln	Y	Need resurvey for heartleaf	4-2-02-41
DW	B-4179	Macon	Y	unresolved for listed species, FWS requests review of bridge design	4-2-02-38
RY	B-4180	Macon	Y	unresolved for listed species, FWS requests bridge to bridge, consideration for green salamander	4-2-02-39
RY	B-4183	Madison	**These 2 bridge replacements are part of R-2518 and 2519 merger process, review by merger team**		

PDE	TIP	County	Rank	Reason for Rank	FWS Log Number
DW	B-4192	McDowell	Y	Need to assess pogonia	4-2-02-41
JJ	B-4194	McDowell	Y	Need to assess pogonia	4-2-02-41
JJ	B-4195	McDowell	Y	Need to assess pogonia	4-2-02-42
JJ	B-4196	McDowell	Y	Need to assess pogonia	4-2-02-42
DW	B-4197	McDowell	Y	Need to assess pogonia, FWS requests mussel surveys, bridge to bridge for high quality stream	4-2-02-42
JJ	B-4198	McDowell	Y	Need to assess pogonia	4-2-02-42
DW	B-4199	McDowell	Y	Need to assess pogonia	4-2-02-42
DW	B-4202	Mitchell	Y	Unresolved for Elktoe, FWS requests bridge to bridge, **NO SURVEY NEEDED FOR INDIANA BAT**	4-2-02-41
DW	B-4239	Polk	Y	unresolved for small-whorled pogonia and heartleaf	4-2-02-36
DW	B-4240	Polk	Y	unresolved for small-whorled pogonia and heartleaf	4-2-02-36
SH	B-4255	Rowan	G	may need resurvey for Schweinitz's sunflower	4-2-02-37
SH	B-4258	Rutherford	Y	unresolved for small-whorled pogonia	4-2-02-36
RY	B-4259	Rutherford	Y	unresolved for small-whorled pogonia, FWS requests another heartleaf survey	4-2-02-36
RY	B-4260	Rutherford	Y	unresolved for small-whorled pogonia	4-2-02-36
SH	B-4261	Rutherford	Y	unresolved for small-whorled pogonia and heartleaf	4-2-02-36
RY	B-4264	Rutherford	Y	unresolved for small-whorled pogonia, FWS requests another survey for heartleaf	4-2-02-36
RY	B-4265	Rutherford	Y	unresolved for small-whorled pogonia, FWS requests another survey for heartleaf and irisette	4-2-02-36
RY	B-4266	Rutherford	Y	unresolved for small-whorled pogonia, FWS requests another survey for heartleaf	4-2-02-36
	note for Rutherford Co projects--No survey is required for Indiana bat because the record is a winter record.				
SH	B-4282	Stokes	R	unresolved for cardamine and James spiny mussel, FWS concerned about bridge design	4-2-02-3
DP	B-4284	Surry	Y	unresolved for pogonia, FWS requests assessment for bog turtle and brook floater, bridge to bridge	4-2-02-4
DP	B-4285	Surry	Y	unresolved for pogonia, FWS requests assessment for bog turtle and brook floater	4-2-02-4
RY	B-4286	Swain	R	unresolved for listed species, esp. Indiana bat, FWS concerned with bridge design	4-2-02-3
DW	B-4287	Swain	R	unresolved for listed species, esp. Indiana bat, FWS concerned with bridge design	4-2-02-3
RY	B-4288	Transylvania	Y	unresolved for listed species, FWS requests survey for bunched arrowhead	4-2-02-3
SH	B-4290	Transylvania	Y	unresolved for listed species	4-2-02-3
SH	B-4291	Transylvania	Y	need mussel surveys	4-2-02-3
MD	B-4316	Watauga	Y	FWS requests bridge to bridge for high quality stream, FWS requests survey for green floater	4-2-02-3
JJ	B-4317	Watauga	G	FWS requests bridge to bridge for high quality stream	4-2-02-3
MD	B-4318	Watauga	G	FWS requests bridge to bridge for high quality stream, FWS requests survey for green floater	4-2-02-4
MD	B-4322	Wilkes	G	FWS requests bridge to bridge for high quality stream, assessment for bog turtle	4-2-02-4
DW	B-4330	Yancey	Y	unresolved for elktoe, FWS requests resurvey for Spiraea, be careful of downstream effects	4-2-02-3



North Carolina Wildlife Resources Commission

Charles R. Fullwood, Executive Director

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

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

DATE: August 27, 2003

SUBJECT: Scoping review of NCDOT's proposed replacement of Bridge No. 7 over the Yadkin River on NC 268, Caldwell County. TIP No. B-4052.

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

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

1. We generally prefer spanning structures. Spanning structures usually do not require work within the stream and do not require stream channel realignment. The horizontal and vertical clearances provided by bridges allows for human and wildlife passage beneath the structure, does not block fish passage, and does not block navigation by canoeists and boaters.

2. Bridge deck drains should not discharge directly into the stream.

3. Live concrete should not be allowed to contact the water in or entering into the stream.

4. If possible, bridge supports (bents) should not be placed in the stream.

5. If temporary access roads or detours are constructed, they should be removed back to original ground elevations immediately upon the completion of the project. Disturbed

Mailing Address: Division of Inland Fisheries • 1721 Mail Service Center • Raleigh, NC 27699-1721
Telephone: (919) 733-3633 ext. 281 • Fax: (919) 715-7643

areas should be seeded or mulched to stabilize the soil and native tree species should be planted with a spacing of not more than 10'x10'. If possible, when using temporary structures the area should be cleared but not grubbed. Clearing the area with chain saws, mowers, bush-hogs, or other mechanized equipment and leaving the stumps and root mat intact, allows the area to revegetate naturally and minimizes disturbed soil.

6. A clear bank (riprap free) area of at least 10 feet should remain on each side of the steam underneath the bridge.

7. In trout waters, the N.C. Wildlife Resources Commission reviews all U.S. Army Corps of Engineers nationwide and general '404' permits. We have the option of requesting additional measures to protect trout and trout habitat and we can recommend that the project require an individual '404' permit.

8. In streams that contain threatened or endangered species, Mr. Hal Bain with the NCDOT - ONE should be notified. Special measures to protect these sensitive species may be required. NCDOT should also contact the U.S. Fish and Wildlife Service for information on requirements of the Endangered Species Act as it relates to the project.

9. In streams that are used by anadromous fish, the NCDOT official policy entitled "Stream Crossing Guidelines for Anadromous Fish Passage (May 12, 1997)" should be followed.

10. In areas with significant fisheries for sunfish, seasonal exclusions may also be recommended.

11. Sedimentation and erosion control measures sufficient to protect aquatic resources must be implemented prior to any ground disturbing activities. Structures should be maintained regularly, especially following rainfall events.

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

13. All work in or adjacent to stream waters should be conducted in a dry work area. Sandbags, rock berms, cofferdams, or other diversion structures should be used where possible to prevent excavation in flowing water.

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

15. Only clean, sediment-free rock should be used as temporary fill (causeways), and should be removed without excessive disturbance of the natural stream bottom when construction is completed.

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

17. If culvert installation is being considered, conduct subsurface investigations prior to structure design to determine design options and constraints and to ensure that wildlife passage issues are addressed.

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

1. The culvert must be designed to allow for aquatic life and fish passage. Generally, the culvert or pipe invert should be buried at least 1 foot below the natural streambed (measured from the natural thalweg depth). If multiple barrels are required, barrels other than the base flow barrel(s) should be placed on or near stream bankfull or floodplain bench elevation (similar to Lyonsfield design). These should be reconnected to floodplain benches as appropriate. This may be accomplished by utilizing sills on the upstream end to restrict or divert flow to the base flow barrel(s). Silled barrels should be filled with sediment so as not to cause noxious or mosquito breeding conditions. Sufficient water depth should be provided in the base flow barrel during low flows to accommodate fish movement. If culverts are longer than 40-50 linear feet, alternating or notched baffles should be installed in a manner that mimics existing stream pattern. This should enhance aquatic life passage: 1) by depositing sediments in the barrel, 2) by maintaining channel depth and flow regimes, and 3) by providing resting places for fish and other aquatic organisms. In essence, the base flow barrel(s) should provide a continuum of water depth and channel width without substantial modifications of velocity.

2. If multiple pipes or cells are used, at least one pipe or box should be designed to remain dry during normal flows to allow for wildlife passage.

3. Culverts or pipes should be situated along the existing channel alignment whenever possible to avoid channel realignment. Widening the stream channel must be avoided. Stream channel widening at the inlet or outlet end of structures typically decreases water velocity causing sediment deposition that requires increased maintenance and disrupts aquatic life passage.

4. Riprap should not be placed in the active thalweg channel or placed in the streambed in a manner that precludes aquatic life passage. Bioengineering boulders or structures should be professionally designed, sized, and installed.

In most cases, we prefer the replacement of the existing structure at the same location with road closure. If road closure is not feasible, a temporary detour should be designed and located to avoid wetland impacts, minimize the need for clearing and to avoid destabilizing stream banks. If the structure will be on a new alignment, the old structure should be removed and the approach fills removed from the 100-year floodplain. Approach fills should be removed

down to the natural ground elevation. The area should be stabilized with grass and planted with native tree species. Tall fescue should not be used in riparian areas. If the area that is reclaimed was previously wetlands, NCDOT should restore the area to wetlands. If successful, the site may be used as wetland mitigation for the subject project or other projects in the watershed.

Project specific comments:

1. B-4052, Caldwell Co., Bridge No. 7 over the Yadkin River on NC 268. The Yadkin River is classified as C Tr, however it supports smallmouth bass and redbreast sunfish in the project area. A recent mussel survey of the upper Yadkin River by NCWRC staff found no listed species in this area. A moratorium prohibiting in-stream work is recommended from May 1 to July 15 to protect the egg and fry stages of smallmouth bass. Sediment and erosion control measures should adhere to the design standards for sensitive watersheds.

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

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

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

May 1, June, July 15
October 15 thru April

North Carolina Wildlife Resources Commission

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

TO: William T. Goodwin, Jr., PE, Unit Head
Bridge Replacement & Environmental Analysis Branch

FROM: Ron Linville, Habitat Conservation Coordinator
Habitat Conservation Program

DATE: May 20, 2002

SUBJECT: NCDOT Bridge Replacements:
Catawba County – Bridge No. 79, SR1156, Anthony Creek, B-4059
Catawba County – Bridge No. 17, SR1486, Wlyle Creek, B-4060
Caldwell County – Bridge No. 7, NC268, Yadkin River, B-4052
Lincoln County – Bridge No. 33, SR1357, Dellinger Creek, B-4178
Lincoln County – Bridge No. 142, SR1193, Howards Creek, B-4177
Gaston County – Bridge No. 148, SR1618, Beaver Dam Creek, B-4116
Cleveland County – Bridge No. 156, SR1804, Buffalo Creek, B-4076
Surry County – Bridge No. 221, SR1625, Pauls Creek, B-4285
Surry County – Bridge No. 29, SR1322, Mill Creek, B-4284
Iredell County – Bridge No. 116, SR1521, Third Creek, B-4155
Watauga County – Bridge No. 320, SR1153, Beech Creek, B-4316
Watauga County – Bridge No. 16, SR1541, MF SF New River, B-4317
Watauga County – Bridge No. 321, SR1598, Watauga River, B-4318
Wilkes County – Bridge No. 71, SR1167, Stony Fork Creek, 4322
Ashe County – Bridge No. 85, SR1106, Mill Creek, B-4011
Ashe County – Bridge No. 117, SR1118, NF New River, B-4012
Ashe County – Bridge No. 338, SR1320, Roaring River, B-4013
Ashe County – Bridge No. 165, SR1362, Big Horse Creek, B-4015
Ashe County – Bridge No. 273, SR1347, Big Horse Creek, B-4016
Iredell County – Bridge No. 228, SR1854, Rocky Creek, B-4158

Biologists with the N. C. Wildlife Resources Commission (NCWRC) have reviewed the information provided and have the following preliminary comments on the subject project. Our comments are provided in accordance with provisions of the National Environmental Policy Act

(42 U.S.C. 4332(2)(c)) and the Fish and Wildlife Coordination Act (48 Stat. 401, as amended; 16 U.S.C. 661-667d).

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

1. We generally prefer spanning structures. Spanning structures usually do not require work within the stream and do not require stream channel realignment. The horizontal and vertical clearances provided by bridges allows for human and wildlife passage beneath the structure, does not block fish passage, and does not block navigation by canoeists and boaters.

2. Bridge deck drains should not discharge directly into the stream.

3. Live concrete should not be allowed to contact the water in or entering into the stream.

4. If possible, bridge supports (bents) should not be placed in the stream.

5. If temporary access roads or detours are constructed, they should be removed back to original ground elevations immediately upon the completion of the project. Disturbed areas should be seeded or mulched to stabilize the soil and native tree species should be planted with a spacing of not more than 10'x10'. If possible, when using temporary structures the area should be cleared but not grubbed. Clearing the area with chain saws, mowers, bush-hogs, or other mechanized equipment and leaving the stumps and root mat intact, allows the area to revegetate naturally and minimizes disturbed soil.

6. A clear bank (riprap free) area of at least 10 feet should remain on each side of the steam underneath the bridge.

7. In trout waters, the N.C. Wildlife Resources Commission reviews all U.S. Army Corps of Engineers nationwide and general '404' permits. We have the option of requesting additional measures to protect trout and trout habitat and we can recommend that the project require an individual '404' permit.

8. In streams that contain threatened or endangered species, NCDOT biologist Mr. Tim Savidge should be notified. Special measures to protect these sensitive species may be required. NCDOT should also contact the U.S. Fish and Wildlife Service for information on requirements of the Endangered Species Act as it relates to the project.

9. In streams that are used by anadromous fish, the NCDOT official policy entitled "Stream Crossing Guidelines for Anadromous Fish Passage (May 12, 1997)" should be followed.

10. In areas with significant fisheries for sunfish, seasonal exclusions may also be recommended.

11. Sedimentation and erosion control measures sufficient to protect aquatic resources must be implemented prior to any ground disturbing activities. Structures should be maintained regularly, especially following rainfall events.

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

13. All work in or adjacent to stream waters should be conducted in a dry work area. Sandbags, rock berms, cofferdams, or other diversion structures should be used where possible to prevent excavation in flowing water.

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

15. Only clean, sediment-free rock should be used as temporary fill (causeways), and should be removed without excessive disturbance of the natural stream bottom when construction is completed.

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

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

1. The culvert must be designed to allow for aquatic life and fish passage. Generally, the culvert or pipe invert should be buried at least 1 foot below the natural streambed (measured from the natural thalweg depth). If multiple barrels are required, barrels other than the base flow barrel(s) should be placed on or near stream bankfull or floodplain bench elevation (similar to Lyonsfield design). These should be reconnected to floodplain benches as appropriate. This may be accomplished by utilizing sills on the upstream and downstream ends to restrict or divert flow to the base flow barrel(s). Silled barrels should be filled with sediment so as not to cause noxious or mosquito breeding conditions. Sufficient water depth should be provided in the base flow barrel(s) during low flows to accommodate fish movement. If culverts are longer than 40-50 linear feet, alternating or notched baffles should be installed in a manner that mimics existing stream pattern. This should enhance aquatic life passage: 1) by depositing sediments in the barrel, 2) by maintaining channel depth and flow regimes, and 3) by providing resting places for fish and other aquatic organisms. In essence, base flow barrel(s) should provide a continuum of water depth and channel width without substantial modifications of velocity.

2. If multiple pipes or cells are used, at least one pipe or box should be designed to remain dry during normal flows to allow for wildlife passage.

3. Culverts or pipes should be situated along the existing channel alignment whenever possible to avoid channel realignment. Widening the stream channel must be avoided. Stream channel widening at the inlet or outlet end of structures typically decreases water velocity causing sediment deposition that requires increased maintenance and disrupts aquatic life passage.

4. Riprap should not be placed in the active thalweg channel or placed in the streambed in a manner that precludes aquatic life passage. Bioengineering boulders or structures should be professionally designed, sized, and installed.

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

Project specific comments:

1. Catawba County – Bridge No. 79, SR1156, Anthony Creek, B-4059, GREEN LIGHT
No special concerns indicated. Standard requirements should apply.

2. Catawba County – Bridge No. 17, SR1486, Wlyle Creek, B-4060, GREEN LIGHT
No special concerns indicated. Standard requirements should apply.

3. Caldwell County – Bridge No. 7, NC268, Yadkin River, B-4052, YELLOW LIGHT
Warmwater species including small mouth bass. Brown trout moratorium (October 15 through April 15). NEW spanning bridge preferred.

4. Lincoln County – Bridge No. 33, SR1357, Dellinger Creek, B-4178, GREEN LIGHT
No special concerns indicated. Standard requirements should apply.

5. Lincoln County – Bridge No. 142, SR1193, Howards Creek, B-4177, GREEN LIGHT
No special concerns indicated. Standard requirements should apply.

6. Gaston County – Bridge No. 148, SR1618, Beaver Dam Creek, B-4116, GREEN LIGHT
Moratorium (May 1 – July 15). Standard requirements should apply.

7. Cleveland County – Bridge No. 156, SR1804, Buffalo Creek, B-4076, GREEN LIGHT
Warmwater fishery. No special concerns indicated. Standard requirements should apply.

8. Surry County – Bridge No. 221, SR1625, Pauls Creek, B-4285, YELLOW/RED LIGHT
Hatchery Supported Waters. Trout stocking location. Work should be accomplished between June 15 – March 15. New spanning bridge structure requested.

9. Surry County – Bridge No. 29, SR1322, Mill Creek, B-4284, RED LIGHT
Small mouth bass moratorium (May 1 – June 30). Survey for brook floater (*Alasmidonta varicose*) due to proximity to Mitchell River. Sensitive water erosion controls. New spanning bridge structure requested.

10. Iredell County – Bridge No. 116, SR1521, Third Creek, B-4155, GREEN LIGHT
No special concerns indicated. Standard requirements should apply.

11. Watauga County – Bridge No. 320, SR1153, Beech Creek, B-4316, YELLOW/RED LIGHT
Rainbow trout moratorium. NEW spanning bridge preferred.

12. Watauga County – Bridge No. 16, SR1541, MF SF New River, B-4317, RED LIGHT
Rainbow and brown trout moratorium (October 15 through April 15). Hatchery Supported Waters. Many listed fish and mussels in SF New River. Surveys recommended. Sensitive water erosion control methods. NEW spanning bridge requested.

13. Watauga County – Bridge No. 321, SR1598, Watauga River, B-4318, YELLOW LIGHT Rainbow and Brown trout. NEW spanning bridge preferred.

14. Wilkes County – Bridge No. 71, SR1167, Stony Fork Creek, 4322, YELLOW LIGHT Rainbow and Brown trout. NEW spanning bridge preferred.

15. Ashe County – Bridge No. 85, SR1106, Mill Creek, B-4011, YELLOW LIGHT Brown trout moratorium. NEW spanning bridge preferred.

16. Ashe County – Bridge No. 117, SR1118, NF New River, B-4012, YELLOW LIGHT Rainbow and Brown trout moratorium. NEW spanning bridge preferred.

17. Ashe County – Bridge No. 338, SR1320, Roaring River, B-4013, GREEN LIGHT Rainbow and Brown trout. NEW spanning bridge preferred.

18. Ashe County – Bridge No. 165, SR1362, Big Horse Creek, B-4015, GREEN LIGHT Rainbow trout moratorium. NEW spanning bridge preferred.

19. Ashe County – Bridge No. 273, SR1347, Big Horse Creek, B-4016, YELLOWLIGHT Small mouth bass moratorium. NEW spanning bridge?

20. Iredell County – Bridge No. 228, SR1854, Rocky Creek, B-4158, YELLOW LIGHT Small mouth bass moratorium. Standard requirements should apply.

NCDOT should routinely minimize adverse impacts to fish and wildlife resources in the vicinity of bridge replacements. Restoring previously disturbed floodplain benches should narrow and deepen streams previously widened and shallowed during initial bridge installation. NCDOT should install and maintain sedimentation control measures throughout the life of the project and prevent wet concrete from contacting water in or entering into these streams. Replacement of bridges with spanning structures of some type, as opposed to pipe or box culverts, is recommended in most cases. Spanning structures allow wildlife passage along streambanks and reduce habitat fragmentation.

Please be advised that this is a cursory review and that other issues may arise during additional site reviews and visits. If you need further assistance or information on NCWRC concerns regarding bridge replacements, please contact me at (336) 769-9453. Thank you for the opportunity to review and comment on these projects.

Cc: David Cox, WRC

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

Michael Easley, Governor
Bill Ross, Secretary
Alan Klimek, Director

NCDENR
NORTH CAROLINA DEPARTMENT OF
ENVIRONMENT AND NATURAL RESOURCES

June 18, 2002

Memorandum To: William T. Goodwin, Jr., PE, Unit Head
Bridge Replacement Planning Unit
Project Development and Environmental Analysis Branch

Through: John Dorney
NC Division of Water Quality, 401 Unit

From: Robert Ridings
NC Division of Water Quality, 401 Unit

Subject: Review of Natural Systems Technical Reports for bridge replacement projects scheduled for construction in CFY 2005: "Yellow Light" Projects: B-4037, B-4076, B-4116, B-4016, B-4052, B-4015, B-4013, B-4012, B-4011, B-4202, B-4199, B-4196, B-4195, B-4322, B-4317, B-4316, B-4285, & B-4028.

On all projects, use of proper sediment and erosion control will be needed. Sediment and erosion control measures should not be placed in wetlands. Sediment should be removed from any water pumped from behind a cofferdam before the water is returned to the stream. Sedimentation and Erosion Control Guidelines for Sensitive Watersheds (15A NCAC 4B .0024) must be implemented prior to any ground-disturbing activities to minimize impacts to downstream aquatic resources. Temporary or permanent herbaceous vegetation must be planted on all bare soil *within 10 days* of ground-disturbing activities to provide long term erosion control.

This office would prefer bridges to be replaced with new bridges. However if the bridge must be replaced by a culvert and 150 linear feet or more of stream is impacted, a stream mitigation plan will be needed prior to the issuance of a 401 Water Quality Certification. While the NCDWQ realizes that this may not always be practical, it should be noted that for projects requiring mitigation, appropriate mitigation plans will be required prior to issuance of a 401 Water Quality Certification.

Any proposed culverts shall be installed in such a manner that the original stream profile is not altered (i.e. the depth of the channel must not be reduced by a widening of the streambed). Existing stream dimensions are to be maintained above and below locations of culvert extensions.

For permitting, any project that falls under the Corps of Engineers' Nationwide Permits 23 or 33 do not require written concurrence by the NC Division of Water Quality. Notification and courtesy copies of materials sent to the Corps, including mitigation plans, are required. For projects that fall under the Corps of Engineers Nationwide Permit 14 or Regional General Bridge Permit 31, the formal 401 application process will be required including appropriate fees and mitigation plans.

Do not use any machinery in the stream channels unless absolutely necessary. Additionally, vegetation should not be removed from the stream bank unless it is absolutely necessary. NCDOT should especially avoid removing large trees and undercut banks. If large, undercut trees must be removed, then the trunks should be cut and the stumps and root systems left in place to minimize damage to stream banks.

Use of rip-rap for bank stabilization must be minimized; rather, native vegetation should be planted when practical. If necessary, rip-rap must be limited to the stream bank below the high water mark, and vegetation must be used for stabilization above high water.

Rules regarding stormwater as described in (15A NCAC 2b.0216 (3) (G)) shall be followed for these projects. These activities shall minimize built-upon surface area, divert runoff away from surface waters and maximize utilization of BMPs. Existing vegetated buffers shall not be mowed in order to allow it to be most effectively utilized for storm water sheet flow.

Special Note on projects B-4037 and B-4076: these waters are classified as 303(d) waters. Special measures for sediment control will be needed.

Also note that projects B-4037, B-4052, B-4015,B-4013, B-4012, B-4011, B-4202, B-4196, B-4322, B-4317, and B-4316 occur in Trout waters. Any trout-specific conditions that would be determined by the North Carolina Wildlife Resources Commission, to protect the egg and fry stages of trout from sedimentation during construction, would be required on any 401 certifications.

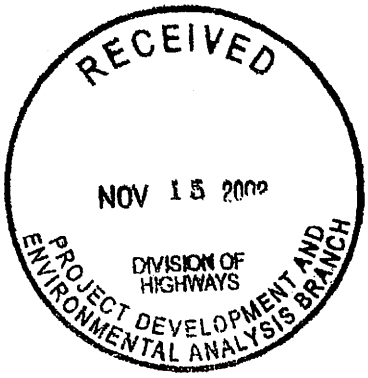
Streams classified as "+" signify a stream draining into another stream that is ORW or HQW. Projects that occur in "+" streams are: B-4016, B-4012, B-4011, and B-4317.

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.

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

F. Easley, Governor
. Evans, Secretary
Crow, Deputy Secretary

Division of Historical Resources
David J. Olson, Director



November 12, 2002

MEMORANDUM

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

FROM: David Brook By for David Brook

SUBJECT: Bridge No. 7 on NC 268, B-4052, Caldwell County, ER 02-8508

Thank you for your memorandum of October 14, 2002, regarding the above project alternates.

For Alternates 1 and 2, involving construction of temporary bridges, we recommend that a comprehensive archaeological survey be conducted at these locations. No archaeological survey is recommended if Alternate 3 is selected.

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

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

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

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

Division of Historical Resources

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

October 30, 2003

MEMORANDUM

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

FROM: David Brook DB for David Brook

SUBJECT: Evaluation for the National Register Eligibility of the Woods Barber Shop, Bridge Replacement No. 7 over the Yadkin River, B-4052, Caldwell County, ER02-8508

Thank you for your letter of September 19, 2003, transmitting the survey report by Richard Silverman of the Historic Architecture Section of your agency for the above project.

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

The Woods Barber Shop, northeast corner, junction of NC 268 and SR 1516 (Winkler Road), Patterson Vicinity.

The Woods Barber Shop is eligible for the National Register under Criterion A, in the area of social history as an architectural expression of how a traditional rural community functioned prior to the inception of large-scale communication and transportation networks.

We concur with the proposed National Register boundaries as described and delineated in the National Register edibility evaluation.

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

Federal Aid # BRSTP-0268(9) *TIP #* B-4052 *County:* Caldwell

CONCURRENCE FORM FOR ASSESSMENT OF EFFECTS

Project Description: Replace Bridge No. 7 on NC 268 over Yadkin River

On Feb. 3, 2004 representatives of

- ☒ 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:

[signature] 3 Feb 2004
Representative, NCDOT Date

[signature] 2/4/04
FHWA, for the Division Administrator, or other Federal Agency Date

[signature] 2/3/04
Representative, HPO Date

[signature] 2/3/04
State Historic Preservation Officer Date

Federal Aid # BRSTP-0268(9) *TIP #* B-4052 *County:* Caldwell

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).

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

- Woods Barber Shop (DE)

  Adverse Effect

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

Initialed: NCDOT RS FHWA RWA HPO SDM

North Carolina Department of Cultural Resources

State Historic Preservation Office

Peter B. Sandbeck, Administrator

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

Office of Archives and History
Division of Historical Resources
David Brook, Director

August 26, 2004

MEMORANDUM

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

FROM: Peter B. Sandbeck PBS for Peter Sandbeck

SUBJECT: Finding of Adverse Effect Documentation for Bridge 70 on NC 268 over Yadkin River, Caldwell County, TIP B-4052, ER 02-8508

Thank you for your transmission of the Finding of Adverse Effect Documentation for the above project.

We concur with the finding of Adverse Effect upon the Woods Barber Shop located at the northeast corner junction of NC 268 and SR 1516 (Winkler Road), Patterson vicinity, for all alternatives proposed. We look forward to developing a Memorandum of Agreement with you to mitigate the adverse effect on this property.

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.

PBS:w

cc: Mary Pope Furr

County Manager
Bobby White
bwhite@co.caldwell.nc.us
Clerk to the Board
Kathy T. Myers, CMC
kmyers@co.caldwell.nc.us

COUNTY OF CALDWELL

Post Office Box 2200
Lenoir, North Carolina 28645-2200
Phone (828) 757-1300 Fax (828) 757-1295

April 20, 2004

Mr. Sam Erby
NC Department of Transportation
Post Office Drawer 230
Granite Falls, North Carolina 28630

Re: Request for Inclusion of Pedestrian Crossing/Bicycle Lane in Bridge Project #B-4052

Dear Sam:

The Caldwell County Board of Commissioners, during their meeting on April 19, 2004, unanimously endorsed the recommendation from Caldwell County Pathways members to request a pedestrian crossing/bicycle lane be considered for inclusion in Bridge Project #B-4052.

The project scheduled for 2005 is to build a new bridge to connect Highway 268 and Yadkin River Road. This intersection and bridge will be the trailhead of a multi-purpose pathway that will result in a significant amount of pedestrian and bicycle traffic crossing the bridge. Most notable is the fact that Highway 268 is a **scenic highway**, the route of the **Over Mountain Victory Trail**, and is the **most used bicycle roadway** in Caldwell County. A pedestrian crossing/bicycle lane will help ensure that pedestrians and bicyclists can safely cross the bridge without interfering with vehicular traffic.

On behalf of the Board of Commissioners, this letter is our formal request for the NC Department of Transportation's consideration of a pedestrian crossing/bicycle lane be included in Bridge Project #B-4052.

Please let us know if we can provide further information regarding this request of if we can assist in any way.

Sincerely,

Herbert H. Greene
Chairman

ktm

cc: Mr. Mike Pettyjohn, NCDOT Division Maintenance Engineer
Mr. Merlin Perry, Chairman, Pathways Committee

B-7059

PF

Subject: Bridge Replacement
Date: Thu, 8 Nov 2001 07:24:03 -0500
From: pclark@caa.k12.nc.us
To: <dmoore@dot.state.nc.us>
CC: "Philip Clark" <pclark@caa.k12.nc.us>

Mr. Moore we have 2 buses that travel that road twice a day. There is no way to travel around this area without a lot of back tracking. This would make the ride time long for some students. This would create a unworkable situation. Parents would be up in arms. So I think if possible a temporary bridge would be needed. Thanks for your concern in this matter.

Philip Clark
Caldwell County Schools
Transportation Director

CALDWELL COUNTY

905 West Avenue, N.W. / P.O. Box 2200
Lenoir, North Carolina 28645-2200
Telephone (828) 757-1277

Fire Marshal

Emergency Management

June 22, 2001

Mr. Davis Moore
1548 Mail Service Center
Raleigh, N.C. 27699-1548

Dear Mr. Moore

In reference to the bridge replacement over Yadkin River on Highway 268 in Caldwell County, it will cause miminial delay to our emergency services. The alternate route will be Hollywood Ridge Road to Walsh Road and then back onto Highway 268.

Please let us know when you finalized the plan.

Best regards,

Dale Coffey

Dale Coffey
Emergency Management Director

CC: File

APPENDIX B

PUBLIC INVOLVEMENT

NC 268 Bridge over Yadkin River - Newsletter

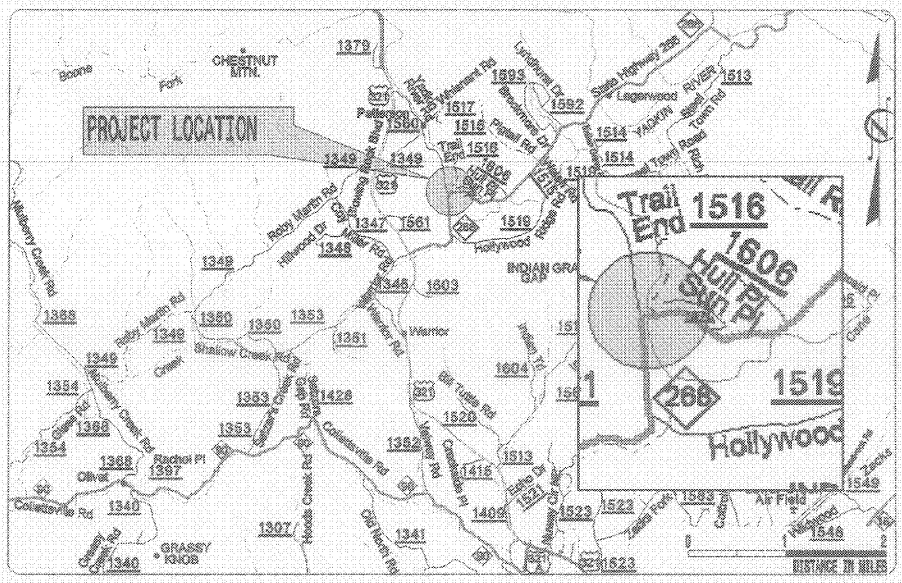
Transportation Improvement Program Project B-4052

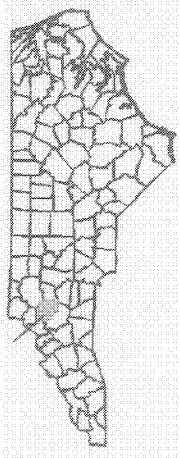
March 2003

North Carolina Department of Transportation

NCDOT has begun the project planning studies to replace Bridge #7 on NC 268 over Yadkin River, Caldwell County (Transportation Improvement Program Project B-4052)

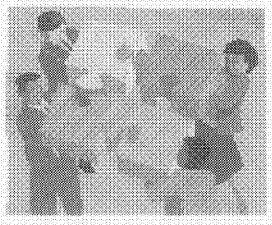
You are invited to a WORKSHOP to be held at Happy Valley School Gymnasium on March 20, 2003. Drop-in anytime between 4-7 pm.





Bridge to Be Replaced

Bridge No. 7 on NC 268 over the Yadkin River (located at the intersection of NC 268 and SR 1560) was built in 1957. The bridge is narrow and requires constant maintenance and does not meet current design standard. Three options are being studied, all of which would replace the old and narrow bridge with a new, wider bridge at the same location. Traffic on NC 268 would be maintained at the site during construction. Construction of the new bridge should take about one year. No relocation of homes or businesses are anticipated. The need for additional right of way will be limited to properties near the bridge.



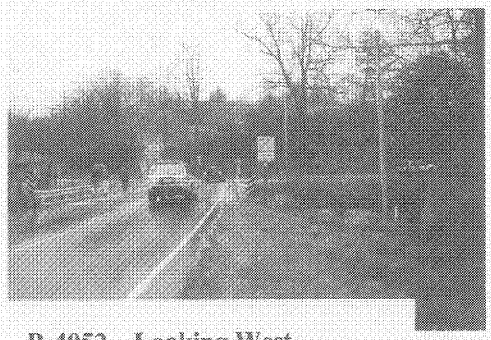
Citizens Informational Workshop

NCDOT will host a Citizens Informational Workshop on March 20, 2003 from 4 pm to 7 pm at the Happy Valley School Gymnasium at 1350 Yadkin River Road (SR 1560). This will be an open house format – drop by anytime between 4 pm and 7 pm to see the alternatives being studied and to provide comments and suggestions. NCDOT appreciates and encourages input and comments from local citizens. If you have comments or concerns or know of any issues that may help us in our planning, please attend the workshop or contact us (see back page).

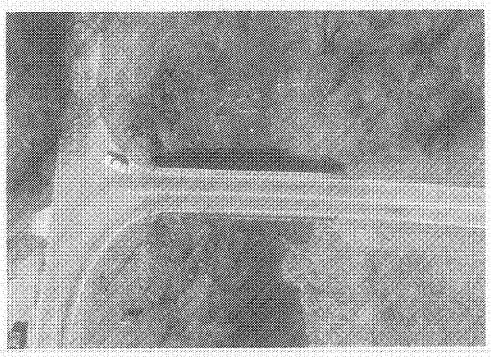
PROJECT PLANNING AND THE ENVIRONMENT

The NCDOT project planning studies include the development of an environmental document - a federal categorical exclusion (CE). The CE will document the project proposal and the environmental effects of the proposed bridge replacement.

Citizen comments will be considered in developing the best over-all plans for replacing the bridge and documented in the environmental document. The document will be available to the public.



B-4052 – Looking West



B-4052 - Aerial Photo

The replacement of Bridge #7 is included on the 2002-2008 Transportation Improvement Program (TIP). Designated in the TIP as Project No. B-4052, the bridge project is scheduled for right-of-way acquisition to begin in 2004 and construction to begin in 2005.

CONTACT US:

Please send your comments, concerns, information, or questions to:

Nate Benson, PE, Project Manager - - Wetherill Engineering, Inc. • 559 Jones Franklin Road, Suite 164 • Raleigh • North Carolina 27606 • 919- 851-8077 • nbenson@wetherilleng.com;

or

Missy Dickens, PE, Project Manager - - North Carolina Department of Transportation• Project Development and Environmental Analysis Branch • 1548 Mail Service Center • Raleigh • North Carolina 27699-1548 • 919-733-7844 ext. 218 • mdickens@dot.state.nc.us

Ms. Missy Dickens, PE
North Carolina Department of Transportation
Project Development and Environmental Analysis Branch
1548 Mail Service Center
Raleigh, North Carolina 27699-1548

NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

CALDWELL COUNTY
NC 268
BRIDGE NO. 7
OVER YADKIN RIVER

Federal-Aid Project BRSTP-0268 (9)
State Project 8.1731801

TIP PROJECT B-4052
MARCH 20, 2003

Citizens Informational Workshop

HAPPY VALLEY SCHOOL GYMNASIUM
1350 YADKIN RIVER ROAD
PATTERSON

Citizens Informational Workshop

Caldwell County
NC 268
Bridge No. 7
Over Yadkin River
Federal Aid Project No. BRSTP-0268 (9)
State Project No. 8.1731801
TIP No. B-4052

PURPOSE

This Citizens Informational Workshop is being held in order to involve the public in the project planning process. We welcome all suggestions and comments. **Attached to the handout is a comment sheet for you to write down your opinions or concerns for our consideration.**

Even if you have no comments, you may provide us with your name and address so that we can include you on the project mailing list.

If you wish to comment further on this project, please contact:

Nate Benson, PE, Wetherill Engineering, Inc., 559 Jones Franklin Road, Suite 164, Raleigh, North Carolina, 27606, 919-851-8077, nbenson@wetherilleng.com

OR

Missy Dickens, PE, North Carolina Department of Transportation, Project Development and Environmental Analysis Branch, 1548 Mail Service Center, Raleigh, North Carolina, 27699-1548, Phone (919) 733-7844 ext.218, mdickens@dot.state.nc.us

DESCRIPTION OF ALTERNATIVES

- Three alternates for replacing the bridge are shown on Figures 4A, 4B and 4C.
  (It is anticipated that one of these alternates will be selected as the preferred alternate for replacement.)
- The proposed alternates will begin approximately 150 feet south of the bridge. The alternates then turn 90-degrees towards the east and end approximately 500 feet east of the bridge.
- Additional right of way will be required to contain the improvements.
- The intersection of SR 1560 and NC 268 near the end of the bridge will be improved with an additional right turn lane for northbound NC 268 traffic.
- A change in the elevation of the roadway is not anticipated.
- The proposed roadway and bridge cross sections are shown in Figure 3.
- Traffic will be maintained on-site (that is, the road will remain open during construction).
- The construction period is anticipated to be one year.
- Traffic on the bridge is estimated to be 5400 vehicles per day in the year 2002 and is projected to increase to 10,400 vehicles per day in the year 2025. Approximately 4 percent of this traffic is trucks.

SUMMARY OF BENEFITS

- The proposed improvements will replace the functionally obsolete bridge with a wider bridge.
- The constant maintenance problem involved with the deterioration and the need for replacing the deck will be eliminated.
- The load restriction will be removed for truck traffic.
- Traffic operation will be improved at the intersection of NC 268 and SR 1560 located only 50 feet from the end of the bridge.

WHAT HAPPENS NEXT

An environmental document–federal categorical exclusion–is being developed. Preparation of this document includes an analysis of impacts to the human and natural environment. Information gathered during this analysis, as well as cost estimates and public comment, will be used to select the preferred alternate. This document will be made available to the public later this year. Right of way acquisition is scheduled to begin in 2004 and construction in 2005.

Citizens Informational Workshop

COMMENT SHEET

CALDWELL COUNTY
NC 268,
BRIDGE NO. 7 OVER YADKIN RIVER

TIP PROJECT B-4052

MARCH 20, 2003

NAME

ADDRESS:

COMMENTS, CONCERNS AND/OR QUESTIONS REGARDING PROJECT B-4052:

PLEASE FORWARD THESE COMMENTS TO:

Nate Benson, PE, Wetherill Engineering, Inc., 559 Jones Franklin Road, Suite 164, Raleigh, North Carolina, 27606

OR

Missy Dickens, PE, North Carolina Department of Transportation, Project Development and Environmental Analysis Branch, 1548 Mail Service Center, Raleigh, North Carolina, 27699-1548

APPENDIX C

WOODS BARBER SHOP COORDINATION

United States Department of the Interior
OFFICE OF THE SECRETARY
Washington, DC 20240

TAKE PRIDE IN AMERICA

MAY 19 2005

ER 05/209

Mr. Gregory J. Thorpe
Environmental Manager Project Development
Environmental Analysis Branch
North Carolina Department of Transportation
310 New Bern Avenue, Suite 410
Raleigh, North Carolina 27601-1418

Dear Mr. Thorpe:

This is in response to a request for the Department of the Interior's (Department) review and comment on the Draft Individual Section 4(f) Evaluation and Categorical Exclusion for the **Replacement of Bridge No. 7 over Yadkin River**, Caldwell County, North Carolina, Federal-Aid Project BRSTP-0268 (9), State Project 8.1731801, WBS 33418.1 1, TIP NO. B-4052. We offer the following comments for your consideration.

Section 4(f) Evaluation Comments

The Department concurs that there is no prudent and feasible alternative to the above listed project, which consists of replacing Bridge No. 7 over the Yadkin River, B-4052, in its existing location. This project will have an adverse effect on the Woods Barber Shop, which is eligible for the National Register of Historic Places. The Woods Barber Shop is located on the northeast corner, junction of NC 268 and SR 1516 on Winkler Road in the vicinity of Patterson, Caldwell County, North Carolina. The measures to minimize harm must be consistent with the Memorandum of Agreement (MOA) developed in consultation with the North Carolina State Historic Preservation Officer and concurred in by the Advisory Council on Historic Preservation. We recommend that a signed copy of the MOA be included in the final documentation of compliance for the project to reflect procedures for protecting cultural resources.

We appreciate the opportunity to provide these comments.

Sincerely,

Willie R. Taylor
Director, Office of Environmental
Policy and Compliance

MEMORANDUM OF AGREEMENT
AMONG
THE FEDERAL HIGHWAY ADMINISTRATION
AND
NORTH CAROLINA STATE HISTORIC PRESERVATION OFFICER
FOR
TIP No. B-4052
REPLACE BRIDGE NO. 7 OVER THE YADKIN RIVER
CALDWELL COUNTY, NC

WHEREAS, the Federal Highway Administration (FHWA) has determined that the replacement of Bridge No. 7 on NC 268 over the Yadkin River in Caldwell County, North Carolina (the undertaking) will have an effect upon the Woods Barber Shop, a property determined eligible for listing in the National Register of Historic Places, and has consulted with the North Carolina State Historic Preservation Officer (SHPO) pursuant to 36 CFR Part 800, regulations implementing Section 106 of the National Historic Preservation Act (16 U.S.C. 470f); and

WHEREAS, the North Carolina Department of Transportation (NCDOT) and the Happy Valley Ruritan Club participated in the consultation and have been invited to concur in this Memorandum of Agreement;

NOW, THEREFORE, FHWA and the North Carolina SHPO agree that the undertaking shall be implemented in accordance with the following stipulations in order to take into account the effect of the undertaking on the historic property.

STIPULATIONS

FHWA will ensure that the following measures are carried out:

I. Woods Barber Shop

A. Recordation: Prior to the removal and relocation of the Woods Barber Shop, NCDOT shall record the existing condition of the property and its surroundings in accordance with the attached Historic Structures and Landscape Recordation Plan [Appendix A].

B. Relocation: The Woods Barber Shop is currently located on property owned by the Happy Valley Ruritan Club. In order to mitigate the adverse effect of the transportation improvement project, NCDOT will provide funding to the Happy Valley Ruritan Club for the purpose of stabilizing the barber shop and relocating the building to a new site. The Ruritan Club proposes to rehabilitate the building on the new site which is located approximately 1500 feet from the existing site.

C. Historical Marker NCDOT will request the erection of a historical marker near the existing site indicating that the Woods Barber Shop has been relocated from its original site to a new site.

II. Dispute Resolution: Should the North Carolina SHPO object within (30) days to any plans or documentation provided for review pursuant to this agreement, FWHA shall consult with the North Carolina SHPO to resolve the objection. If FHWA or the North Carolina SHPO determines that the objection cannot be resolved, FHWA shall forward all documentation relevant to the dispute to the Advisory Council on Historic Preservation (Council). Within thirty (30) days after receipt of all pertinent documentation, the Council will either:

A. Provide FHWA with recommendations which FHWA will take into account in reaching a final decision regarding the dispute, or

B. Notify FHWA that it will comment pursuant to 36 CFR Section 800.7(c) and proceed to comment. Any Council comment provided in response to such a request will be taken into account by FHWA in accordance with 36 CFR Section 800.7 (c) (4) with reference to the subject of the dispute.

Any recommendation or comment provided by the Council will be understood to pertain only to the subject of the dispute; FHWA's responsibility to carry out all the actions under this agreement that are not the subject of the dispute will remain unchanged.

Execution of this Memorandum of Agreement by FHWA and the North Carolina SHPO, its subsequent filing with the Advisory Council on Historic Preservation, and implementation of its terms evidence that FHWA has afforded the Council an opportunity to comment on the Replacement of Bridge No. 7 on NC 268 over the Yadkin River, Caldwell County, North Carolina and its effects on the Woods Barber Shop, and that FHWA has taken into account the effects of the undertaking on the historic building.

AGREE:

Thomas D. Riggsbee P.E. 11/16/04

FEDERAL HIGHWAY ADMINISTRATION — DATE

10/29/04

NORTH CAROLINA STATE HISTORIC PRESERVATION OFFICER — DATE

CONCUR:

9/13/04

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION — DATE

10/15/04

HAPPY VALLEY RURITAN CLUB — DATE

FILED BY:

ADVISORY COUNCIL ON HISTORIC PRESERVATION — DATE

APPENDIX A

Historic Structures and Landscape Recordation Plan
For Bridge No. 7 on NC 268 over the Yadkin River
Caldwell County, North Carolina
TIP No. B-4052, WBS# 33418.1.1
State Project No. 8.1731801
Federal Aid No. BRSTP-0268(9)

Photographic Requirements

- Overall views of the project area, showing the relationship of the barber shop to setting
- Overall views of the barber shop (elevations and oblique views)
- Selected photographic views of the barber shop, including details of the doors, windows, and other openings, and foundation and piers
- Views and details of the interior (if access is granted)
- Views of the privy

Photographic Format

- Color slides (all views)
- 35 mm or larger black and white negatives (all views)
- Two (2) sets of black and white contact sheets (all views)
- All processing to be done to archival standards
- All photographs and negatives to be labeled according to Division of Archives and History standards

Copies and Curation

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