



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

MICHAEL F. EASLEY
GOVERNOR

LYNDO TIPPETT
SECRETARY

September 14, 2007

U. S. Army Corps of Engineers
Regulatory Field Office
6508 Falls of the Neuse Rd. Suite 120
Raleigh, NC 27615

ATTENTION: Mr. John Thomas
NCDOT Coordinator, Division 9

Dear Sir:

SUBJECT: **Application for Section 404 Nationwide Permit 33.** Replacement of Bridge No. 54 on NC 66 over Pinch Gut Creek, Stokes County, North Carolina. Federal Aid Project No. BRSTP-0066(1), State Project No. 8.1641101, WBS Element 33622.1.1, TIP No. B-4282.

The North Carolina Department of Transportation (NCDOT) proposes to replace Bridge No. 54 on NC 66 over Pinch Gut Creek, between SR 1467 and SR 1212 in Stokes County. The existing 97-foot 3-span bridge was constructed in 1923 and received a sufficiency rating of 46.6 out of a possible 100 for a new structure. Based on this rating, the bridge is considered structurally deficient. The project proposes to demolish the existing bridge and replace with a three span, pre-stressed concrete girder structure spanning Pinch Gut Creek. The new bridge will be approximately 165 feet long with 33 feet of roadway width. During construction, traffic will be detoured off-site. The proposed detour route is approximately 5.2 miles in length. Please see the enclosed Pre-Construction Notification (PCN), permit drawings, and design plans for the subject project. A Categorical Exclusion was completed for this project in April of 2005 and distributed shortly thereafter. Additional copies are available upon request.

IMPACTS TO WATERS OF THE UNITED STATES

General Description: The project is located in sub basin 03-02-01 of the Roanoke River Basin in Stokes County. This area is part of Hydrologic Cataloging Unit 03010103. The project area is located within the Central Piedmont ecoregion of North Carolina.

Pinch Gut Creek is the only stream located within the project study area and has been assigned Stream Index Number 22-9-1 by the North Carolina Division of Water Quality (DWQ). The

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

TELEPHONE: 919-715-1334 or
919-715-1335
FAX: 919-715-5501

LOCATION:
2728 CAPITAL BLVD. SUITE 240
RALEIGH NC 27604

WEBSITE: WWW.NCDOT.ORG

stream enters the study area as a well-defined perennial stream. Pinch Gut Creek is described as having a substrate consisting primarily of sand, gravel, and cobble, and flowing northeastward towards Big Creek and eventually into the Dan River. Within the project study area, Pinch Gut Creek is approximately 30 feet wide and 1 foot deep. The stretch of stream in the project study area has been assigned a Best Usage Classification of **C Tr**. There are no wetlands associated with this bridge replacement project.

Through written correspondence with Marla Chambers of the North Carolina Wildlife Resource Commission (NCWRC), it has been decided that there will be no in stream trout moratorium for this project.

The North Carolina Wildlife Resource Commission has requested a moratorium for Pinch Gut Creek from May 1 to July 15 due to the smallmouth bass fishery within the project area. However, due to the lack of statutory regulations requiring this moratorium, NCDOT does not believe this moratorium is warranted and will not adhere to the request.

No portion of Pinch Gut Creek, its tributaries, or other surface waters within 1.0 mile of the project are listed on the North Carolina Division of Water Quality's (NCDWQ) 2006 Final 303(d) List of Impaired Waters.

No waters classified as High Quality Water (HQW), Water Supplies (WS-I or WS-II), nor Outstanding Resource Waters (ORW) occur within 1.0 miles of the project study area.

Permanent Impacts: There are no anticipated permanent impacts to surface waters associated with this project. The new bridge will span the creek avoiding permanent impacts to the stream.

Temporary Impacts: There will be 0.04 acres of jurisdictional impacts associated with the construction of a temporary causeway. The causeway will be constructed of Class II rip rap and located on the northwestern bank of Pinch Gut Creek. No temporary wetland impacts are associated with this project.

Bridge Demolition: The existing structure has a reinforced concrete deck and railings. The substructure is composed of reinforced concrete abutments and reinforced concrete round nose post and web. The existing bridge will be removed without dropping components into Pinch Gut Creek. There is currently one bent within the channel of Pinch Gut Creek. All guidelines for Bridge Demolition and Removal will be followed in addition to Best Management Practices for the Protection of Surface Waters.

Utility Impacts: There are no anticipated utility impacts associated with this project.

FEDERALLY PROTECTED SPECIES

Plants and animals with federal classifications of Endangered (E), Threatened (T), Proposed Endangered (PE), and Proposed Threatened (PT) are protected under provisions of Section 7 and Section 9 of the Endangered Species Act of 1973, as amended. The United States Fish and Wildlife Service (USFWS) lists three Federally Protected species, as of May 10, 2007, for Stokes County. Table 1 lists the species and their federal status.

Table 1. Federally Protected Species in Stokes County, NC

Common Name	Scientific Name	Federal Status	Biological Conclusion	Habitat Present
James spiny mussel	<i>Pleurobema collina</i>	E	No Effect	Yes
Small-anthered bittercress	<i>Cardamine micranthera</i>	E	No Effect	Yes
Schweinitz's sunflower	<i>Helianthus schweinitzii</i>	E	No Effect	Yes

A James spiny mussel survey was conducted for this project on August 1, 2002 by NCDOT biologists Neil Medlin, Jeff Burleson, and Jared Gray. An additional screening was performed by NCDOT biologists Dennis Herman, Mike Sanderson, Neil Medlin, and Jared Gray from the confluence of Big Creek and Pinch Gut up to the existing bridge on April 6, 2005. Surveys were conducted by wading using a batiscope 100 meters upstream from the project crossing and down to the confluence of Pinch Gut and Big Creeks. No freshwater mussels were found in 6.5 man-hours of survey time. NC Natural Heritage Program records show the nearest population of James spiny mussel to be at the confluence of Big Creek and the Dan River, 7.5 miles downstream of the project area. Given the results of the survey, distance of the project location from the nearest known population, it can be concluded that this project will not effect the James spiny mussel.

An initial survey for small-anthered bittercress was conducted on April 30, 2002. The survey resulted in a biological conclusion of “No Effect”, as no specimens were identified. As small-anthered bittercress is considered to be a plant that can migrate, an additional survey was performed. On May 2, 2005, NCDOT biologists Karen Lynch, Rachelle Beauregard, Brett Feulner, and Bill Barrett surveyed the project area for small-anthered bittercress. The potential habitat consisted of Pinch Gut Creek and an unnamed tributary. During the survey, no individuals of small-anthered bittercress were observed, thus warranting a biological conclusion of “No Effect”. A search of the Natural Heritage Program database (updated March 1, 2007) showed no populations of small-anthered bittercress within one mile of the project area, nor are there any occurrences of the species upstream of the proposed project. USFWS informally concurred on July 9, 2007, that due to the lack of occurrences upstream of the project, as well as two separate surveys yielding no individuals, this project should have no effect on small-anthered bittercress.

A survey for Schweinitz's sunflower was conducted in September 2001 where no individuals were observed. USFWS issued a concurrence letter with the biological conclusion of no effect for Schweinitz's sunflower on July 11, 2003. An additional survey was performed on September 23, 2005 by NCDOT biologists, Bill Barrett, Susan Thebert, and Erica McLamb. Although potential habitat is present within the project study area in the form of regularly maintained roadside shoulder, fields, and utility easements, no individuals of Schweinitz's sunflower were observed. A search of the Natural Heritage Program database, updated on March 1, 2007, revealed no occurrences of the species within one mile of the project area. Therefore, a biological conclusion for Schweinitz's sunflower of “No Effect” is warranted.

AVOIDANCE, MINIMIZATION and MITIGATION

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.

According to the Clean Water Act (CWA) §404(b)(1) guidelines, NCDOT must avoid, minimize, and mitigate, in sequential order, impacts to waters of the US. The following is a list of the project's avoidance/minimization activities proposed or completed by NCDOT:

Avoidance/ Minimization: Avoidance examines all appropriate and practicable possibilities of averting impacts to "Waters of the US". The NCDOT is committed to incorporating all reasonable and practicable design features to avoid and minimize jurisdictional impacts and to minimize impacts as part of the project design.

- Temporary construction impacts due to erosion and sedimentation will be minimized through implementation of stringent erosion control methods and use of Best Management Practices (BMPs) highlighted in NCDOT's "Best Management Practices for Construction and Maintenance Activities".
- Best Management Practices for Protection of Surface Waters and Bridge Demolition and Removal will be implemented during the entirety of this project.
- During construction, traffic will utilize an off-site detour.
- No bents are to be placed in Pinch Gut Creek.
- Stormwater will be carried across the bridge (no deck drain over the stream) and diverted through grass-lined ditches, vegetated buffers or directed to a storm water collection system.
- Preformed scour holes will be constructed for this project.

Compensatory Mitigation: No mitigation is proposed for this bridge replacement because of the minimal temporary impacts associated with the project.

SCHEDULE

The project calls for a let date of February 19, 2008 and a review date of January 1, 2008. This project has a date of availability of April 2, 2008. It is expected that the contractor will begin construction shortly after that date.

REGULATORY APPROVALS

Section 404 Permit: It is anticipated that the impacts from the construction of a temporary causeway will be authorized under a Section 404 Nationwide Permit 33. We are therefore requesting the issuance of a Nationwide Permit 33 for the temporary impacts sustained during the construction.

Section 401 Permit: We anticipate Section 401 General Water Quality Certification (WQC) 3634 will be applicable to this project. All general conditions of this WQC will be met. Therefore, written concurrence from the NCDWQ is not required. In accordance with 15A NCAC 2H .0500 and 15A NCAC 2B .0200 we are providing two copies of this application to the North Carolina Department of Environment and Natural Resources, Division of Water Quality, as notification.

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

A copy of this permit application will be posted on the NCDOT website at: <http://www.ncdot.org/doh/preconstruct/pe/neu/permit.html>. If you have any questions or need additional information, please contact Ashley Cox at 919-715-5534 or acox@dot.state.nc.us.

Sincerely,

Gregory J. Thorpe, Ph.D.
Environmental Management Director, PDEA

Cc:

w/attachment

- Mr. John Hennessy, NCDWQ (2 copies)
- Ms. Marla Chambers, NCWRC
- Ms. Marella Buncick, USFWS
- Dr. David Chang, P.E., Hydraulics
- Mr. Mark Staley, Roadside Environmental
- Mr. Victor Barbour, P.E., Project Services Unit
- Mr. Greg Perfetti, P.E., Structure Design
- Mr. S. P. Ivey, P.E., Division Engineer
- Mr. Kent Boyer, DEO

w/o attachment

- Mr. Jay Bennett, P.E., Roadway Design
- Mr. Majed Alghandour, P. E., Programming and TIP
- Mr. Art McMillan, P.E., Highway Design
- Mr. Scott McLendon, USACE, Wilmington
- Mr. John Conforti, PDEA Project Planning Engineer

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: Nationwide Permit 33

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

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

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

II. Applicant Information

1. Owner/Applicant Information

Name: Gregory J. Thorpe, Ph.D., Environmental Management Director
Mailing Address: NC Department of Transportation
Natural Environment Unit
1598 Mail Service Center
Raleigh, NC 27699-1598
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. 54 on NC 66 over Pinch Gut Creek.
2. T.I.P. Project Number or State Project Number (NCDOT Only): B-4282
3. Property Identification Number (Tax PIN): N/A
4. Location
County: Stokes Nearest Town: Francisco
Subdivision name (include phase/lot number): N/A
Directions to site (include road numbers/names, landmarks, etc.): Located on NC 66, 2 miles southeast of the NC 66/NC 89 intersection, between SR 1467 and SR 1212.
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): _____ °N _____ °W
6. Property size (acres): N/A
7. Name of nearest receiving body of water: Pinch Gut Creek
8. River Basin: Roanoke
(Note – this must be one of North Carolina's seventeen designated major river basins. The River Basin map is available at [http://h2o.enr.state.nc.us/admin/maps/.](http://h2o.enr.state.nc.us/admin/maps/))

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

Primary land use in the vicinity of the project is predominantly rural, consisting of single-family residential dwellings and agricultural tracts. Pinch Gut Creek has a wide floodplain with general topography varying greatly on the northern and southern sides of the creek. The

landscape south of Pinch Gut Creek is steeply sloping, while being much more gentle to the north of the project.

9. Describe the overall project in detail, including the type of equipment to be used: NCDOT Proposes to replace Bridge No. 54 over Pinch Gut Creek in Stokes County. Heavy duty excavation equipment will be used such as trucks, dozers, cranes and other various equipment necessary for roadway construction.

10. Explain the purpose of the proposed work: The bridge is considered structurally defficient. The replacement of the structure will provide safer and more efficient travel.

IV. Prior Project History

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

V. Future Project Plans

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

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

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

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

1. Provide a written description of the proposed impacts: There will be approximately 0.04 acres of cool perennial stream temporarily impacted due to the construction of a temporary causeway associated with the project.

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	Pinch Gut Creek	Temporary	Perennial	30	35	0.04
Total Stream Impact (by length and acreage)					35	0.04

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

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

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

Stream Impact (acres):	0.04
Wetland Impact (acres):	
Open Water Impact (acres):	
Total Impact to Waters of the U.S. (acres)	0.04
Total Stream Impact (linear feet):	35

7. Isolated Waters

Do any isolated waters exist on the property? Yes No

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

N/A

8. Pond Creation

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

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

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

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

Current land use in the vicinity of the pond: N/A

Size of watershed draining to pond: N/A Expected pond surface area: N/A

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. NCDOT will minimize impacts to the stream through the use of Best Management Practices. Guidelines for Construction of Highway Improvements Adjacent to or Crossing Trout Waters in North Carolina will be adhered to throughout the duration of the project.

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/newetlands/strmgide.html>.

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

No mitigation is proposed for this project because of the minimal temporary impacts associated with this project.

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

IX. Environmental Documentation (required by DWQ)

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

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

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

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

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

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

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

XI. Stormwater (required by DWQ)

Describe impervious acreage (existing and proposed) versus total acreage on the site. Discuss stormwater controls proposed in order to protect surface waters and wetlands downstream from the property. If percent impervious surface exceeds 20%, please provide calculations demonstrating total proposed impervious level. N/A

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: Replacement of Bridge No. 54 over Pinch Gut Creek

XV. Other Circumstances (Optional):

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

N/A

E.L. Lusk

9.14.07

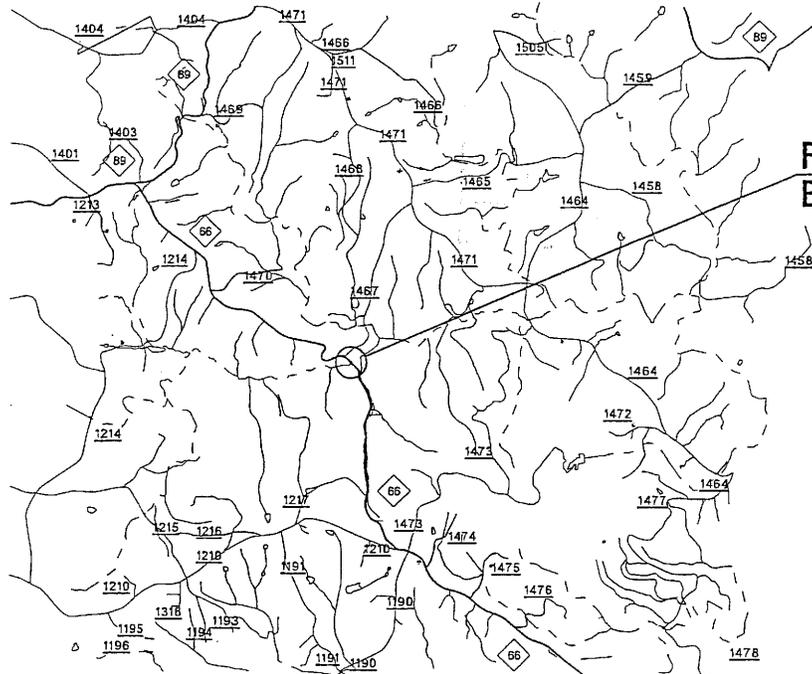
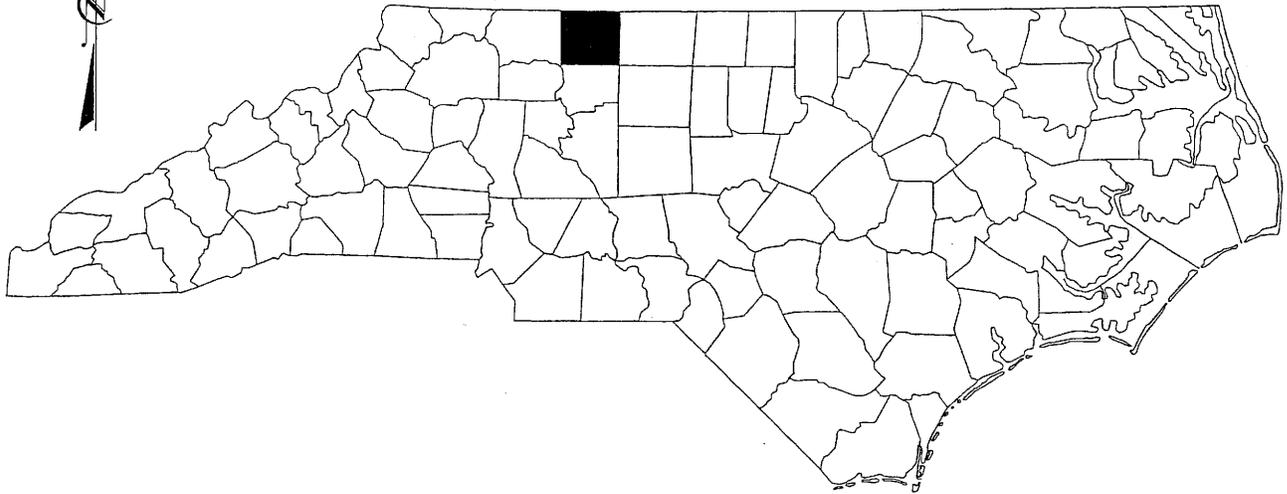
Applicant/Agent's Signature

Date

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

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NORTH CAROLINA



**PROJECT
B-4282**

(NOT TO SCALE)

VICINITY MAPS

NCDOT

DIVISION OF HIGHWAYS

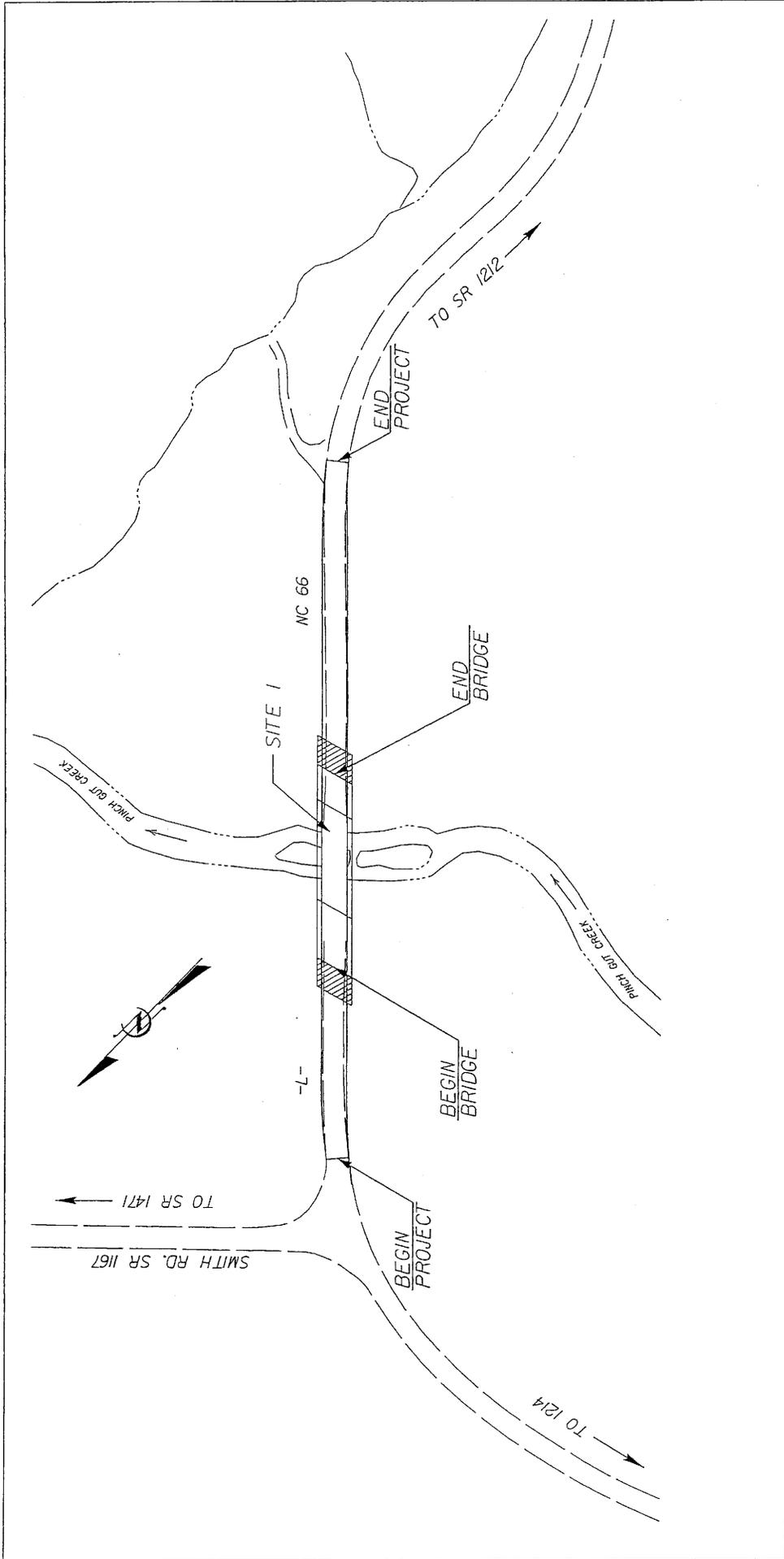
STOKES COUNTY

PROJECT: 33622.1.1 (B-4282)

BRIDGE NO. 54 OVER

PINCH GUT CREEK

AND APPROACHES ON NC 66



NCDOT
 DIVISION OF HIGHWAYS
 STOKES COUNTY
 PROJECT: 33622.1.1 (B-4282)
 BRIDGE NO. 54 OVER
 PINCH GUT CREEK
 AND APPROACHES ON NC 66

SITE MAP
NOT TO SCALE



TOPO MAP

SCALE: 1" : 2000'

NCDOT

DIVISION OF HIGHWAYS
STOKES COUNTY

PROJECT: 33622.1.1 (B-4282)

BRIDGE NO. 54 OVER
PINCH GUT CREEK

AND APPROACHES ON NC 66

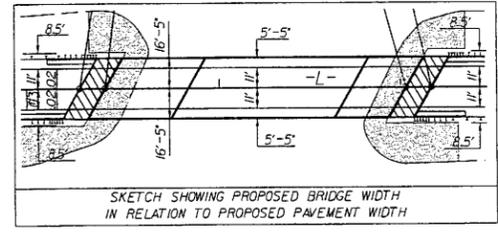
PROPERTY OWNERS

NAMES AND ADDRESSES

REFERENCE NO.	NAMES	ADDRESSES
1	William S. & Lucille S. Husztek	5425 Aston Street Annandale, VA 22003-1408
2	Debra R. Pompeo	4338 Four Farms Road Greensboro, NC 27410-9402
3	Terry L. & Danielle K. B. Comer	

NCDOT
DIVISION OF HIGHWAYS
STOKES COUNTY
PROJECT: 33622.1.1 (B-4282)
BRIDGE NO. 54 OVER
PINCH GUT CREEK
AND APPROACHES ON NC 66

STOKES COUNTY, NC
BRIDGE 54 ON NC 66
OVER PINCH GUT CREEK
3/26/07
ENGLISH
Permit Drawing
Sheet 6 of 7



CAUSEWAY QUANTITIES
VOLUME OF CLASS II RIP RAP BELOW ORDINARY HIGH WATER = 85 YD³

WILLIAM S. HUSZTEK AND WIFE
LUCILLE S. HUSZTEK
DB 197 PG 574

DENOTES TEMPORARY FILL IN SURFACE WATERS

CAUSEWAY QUANTITIES
VOLUME OF CLASS II RIP RAP BELOW ORDINARY HIGH WATER = 85 YD³

WILLIAM S. HUSZTEK AND WIFE
LUCILLE S. HUSZTEK
DB 197 PG 574

WILLIAM S. HUSZTEK AND WIFE
LUCILLE S. HUSZTEK
DB 197 PG 574

CAROLE A. LEMPER AND
DEBRA R. POMPEO
DB 367 PG 1148

PROP. LATERAL 'V' DITCH
-L- Sta. 16+50 LT. TO 17+50 LT.
SEE DETAIL 'A'
SEE PROFILE

CLASS 'B' RIP RAP
EST. 2 TONS
F.F. = 7.5 SY

15" CSP W/2 ELBOWS
USING ROD AND LUG
CONNECTORS W/GASKETS
TBDI W/NARROW
SLOT FLAT GRATE

PREFORMED SCOUR HOLE
-L- Sta. 19+45 RT.
SEE DETAIL 'C'

CLASS 'B' RIP RAP
EST. 2 TONS
F.F. = 7.5 SY

15" CSP W/2 ELBOWS
USING ROD AND LUG
CONNECTORS W/GASKETS
2CI W/NARROW
SLOT SAG GRATE

PROP. LATERAL 'V' DITCH
-L- Sta. 16+00 RT. TO 17+50 RT.
SEE DETAIL 'A'
SEE PROFILE

CLASS 'B' RIP RAP
EST. 2 TONS
F.F. = 7.5 SY

15" CSP W/2 ELBOWS
USING ROD AND LUG
CONNECTORS W/GASKETS
TBDI W/NARROW
SLOT FLAT GRATE

CLASS 'B' RIP RAP
EST. 2 TONS
F.F. = 10 SY

PROP. SPEC. CUT DITCH
-L- Sta. 20+80 RT. TO 22+00 RT.
SEE DETAIL 'B'
SEE PROFILE

36" OAK TREE
TERRY L. COMER
AND WIFE
DANIELLE K. B. COMER
DB 501 PG 882

WILLIAM S. HUSZTEK
AND WIFE
LUCILLE S. HUSZTEK
DB 197 PG 574

PROP. LATERAL 'V' DITCH
-L- Sta. 16+00 RT. TO 17+50 RT.
SEE DETAIL 'A'
SEE PROFILE

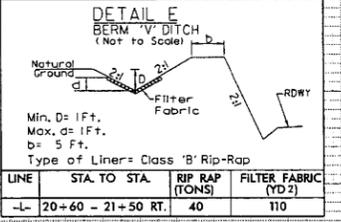
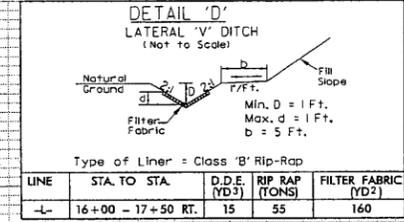
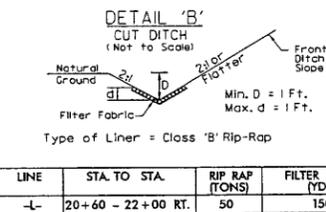
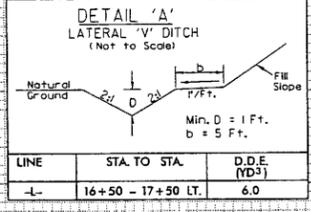
CLASS 'B' RIP RAP
EST. 2 TONS
F.F. = 7.5 SY

15" CSP W/2 ELBOWS
USING ROD AND LUG
CONNECTORS W/GASKETS
TBDI W/NARROW
SLOT FLAT GRATE

CLASS 'B' RIP RAP
EST. 2 TONS
F.F. = 10 SY

PROP. SPEC. CUT DITCH
-L- Sta. 20+80 RT. TO 22+00 RT.
SEE DETAIL 'B'
SEE PROFILE

36" OAK TREE
TERRY L. COMER
AND WIFE
DANIELLE K. B. COMER
DB 501 PG 882

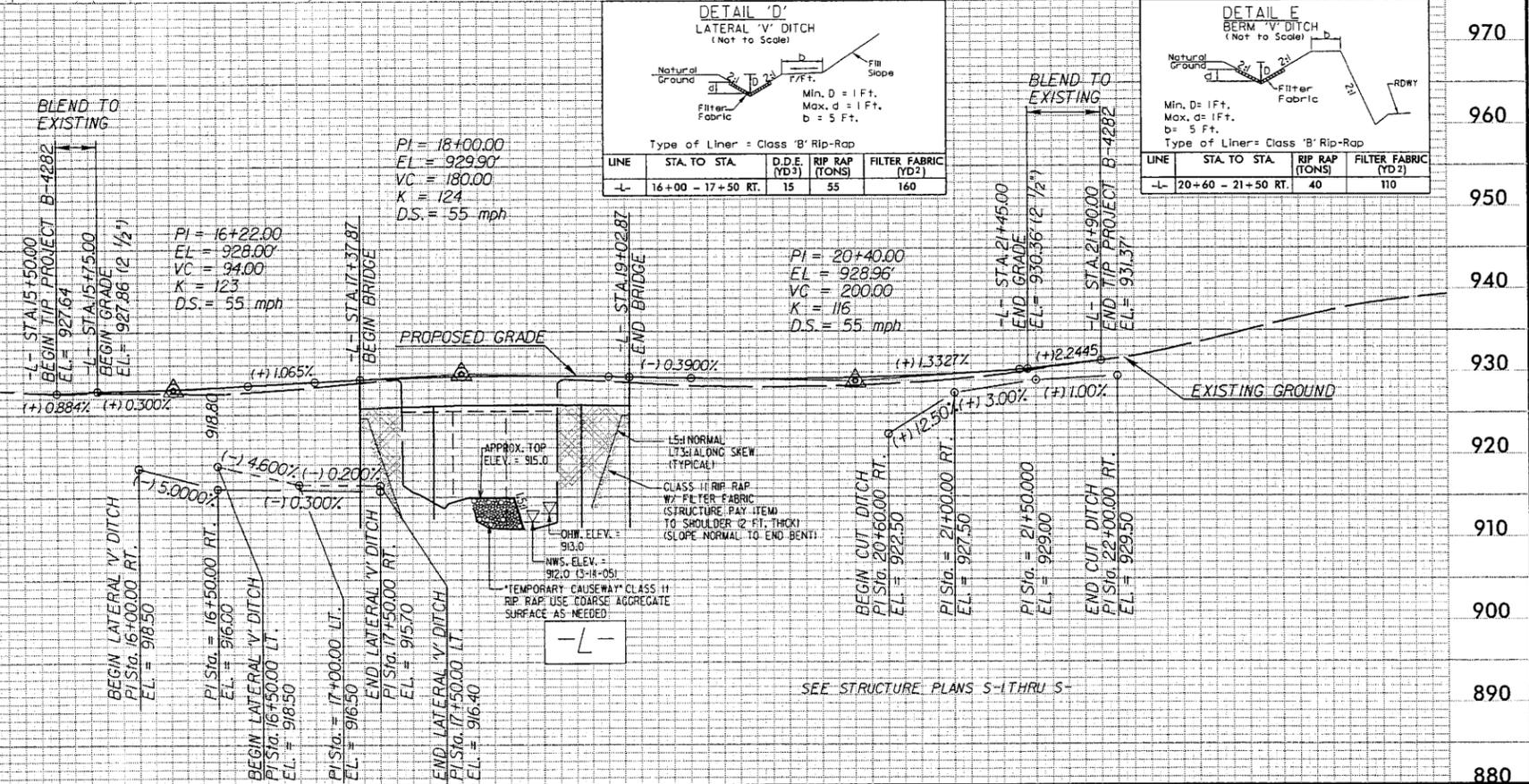
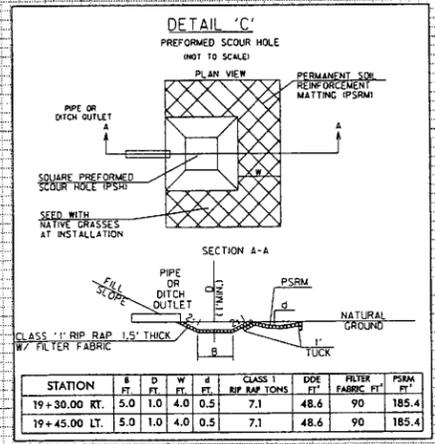


BM #1: -BL- STA. 11+46 163' LT
RAILROAD SPIKE SET IN NORTHERN ROOT
OF A 15.2" DIA SYCAMORE, LEFT OF -L- IN
THE SE QUADRANT OF BRIDGE.
ELEV. = 916.62'

BRIDGE HYDRAULIC DATA

DESIGN DISCHARGE	= 2800 CFS
DESIGN FREQUENCY	= 50 YRS
DESIGN HW ELEVATION	= 926.8 FT
BASE DISCHARGE	= 3400 CFS
BASE FREQUENCY	= 100 YRS
BASE HW ELEVATION	= 928.1 FT
OVERTOPPING DISCHARGE	= 3205 CFS
OVERTOPPING FREQUENCY	= 100-YRS
OVERTOPPING ELEVATION	= 927.6 FT

DATE OF SURVEY = 3/14/05
W.S. ELEVATION AT DATE OF SURVEY = 912.0 FT

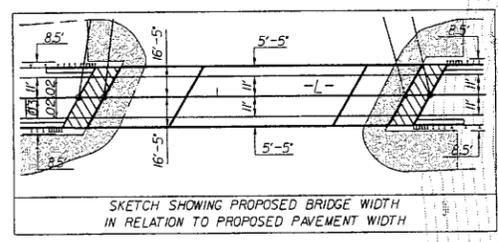


REVISIONS
ROW Revision - Date:
- Parcel 1 - Added Drives - Parcel 3 - Revised Parcel Name & Dead Book Reference

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1/12/2007

STOKES COUNTY, NC
BRIDGE 54 ON NC 66
OVER PINCH GUT CREEK
3/26/07
ENGLISH
Permit Drawing
Sheet 7 of 7



DENOTES TEMPORARY FILL IN SURFACE WATERS

CAUSEWAY QUANTITIES
VOLUME OF CLASS II RIP RAP BELOW ORDINARY HIGH WATER = 85 YD³

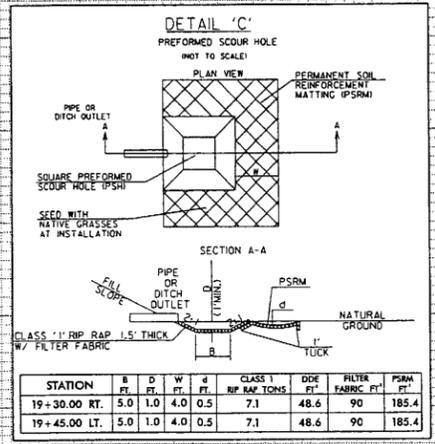
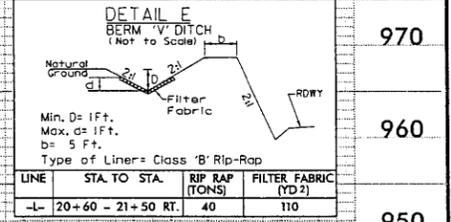
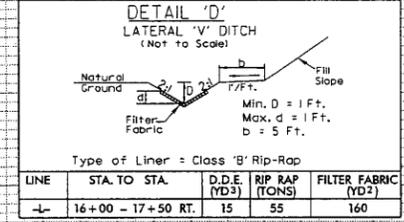
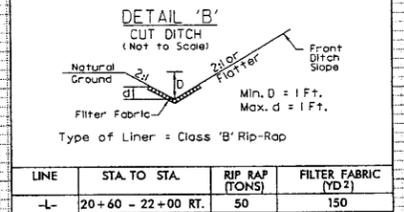
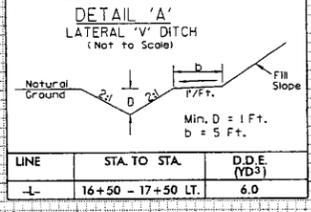
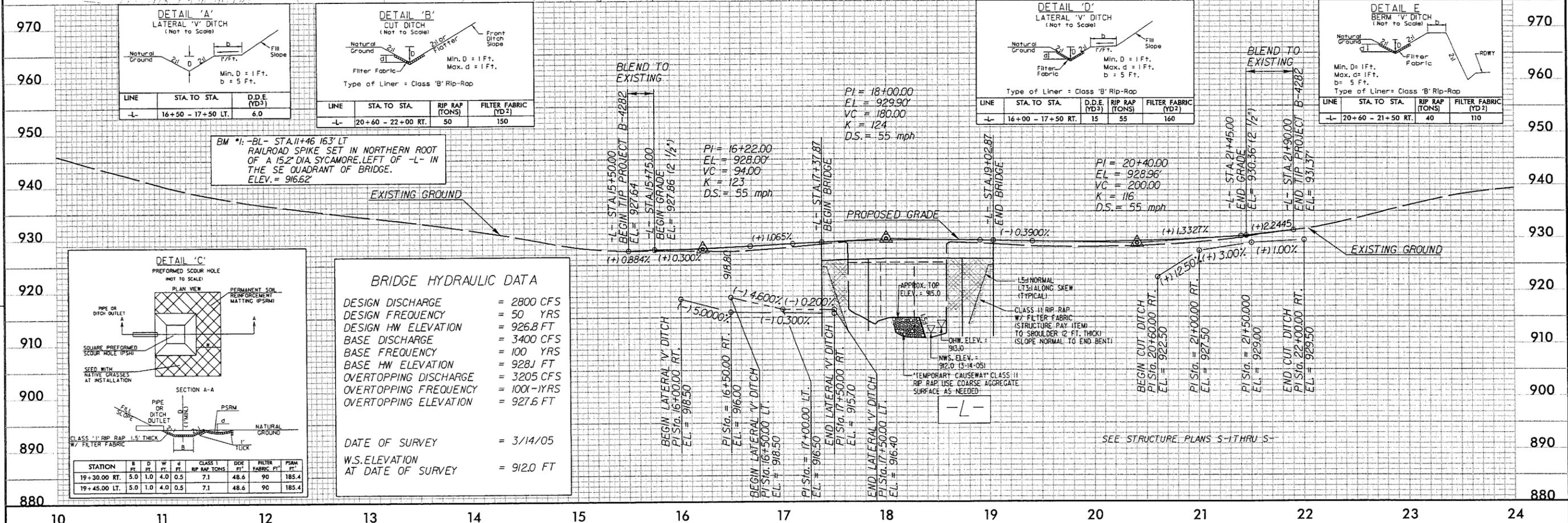
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LUCILLE S. HUSZTEK
DB 197 PG 574

WILLIAM S. HUSZTEK AND WIFE
LUCILLE S. HUSZTEK
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CAROLE A. LEMPER AND DEBRA R. POMPEO
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TERRY L. COMER AND WIFE
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DB 501 PG 882

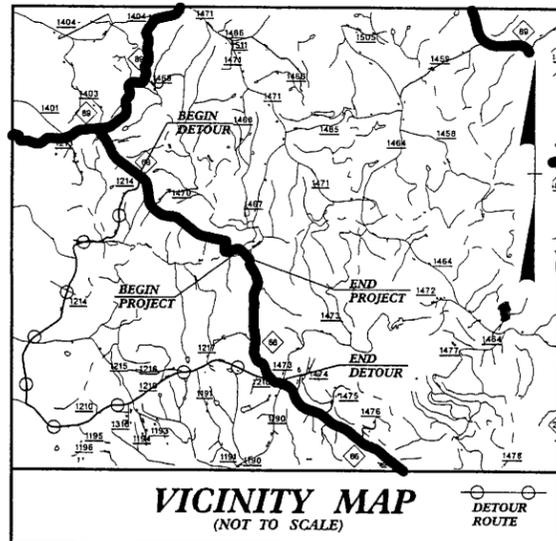
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 ROW Revision - Date:
 - Parcel 1 - Added Drives - Parcel 3 - Revised Parcel Name & Dead Book Reference
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TIP: B-4282

CONTRACT:

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



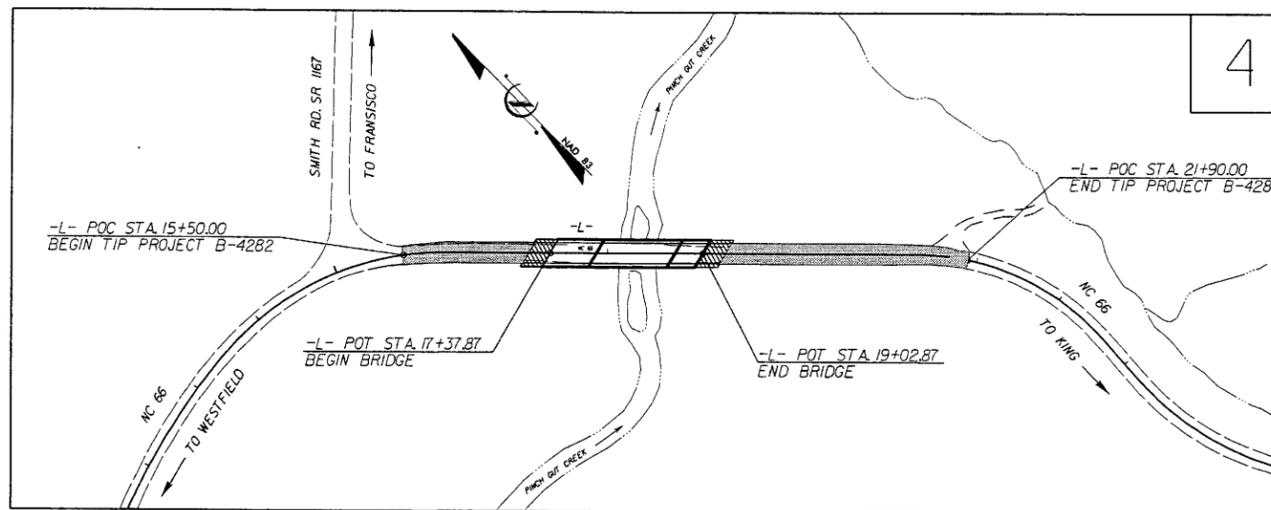
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

STOKES COUNTY

**LOCATION: BRIDGE NO. 54 OVER PINCH GUT CREEK
AND APPROACHES ON NC 66**

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

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-4282	1	
WBS NO.	F.A. PROJ. NO.	DESCRIPTION	
33622.1.1	BRSTP-0066(1)	P.E.	
33622.2.2	BRSTP-0066(1)	RW, UTIL	
33622.3.2	BRSTP-0066(2)	CONST.	



MULKEY
ENGINEERS & CONSULTANTS

PO Box 33127
RALEIGH, N.C. 27636
(919) 851-1912
(919) 851-1918 (FAX)
WWW.MULKEYINC.COM

NCDOT CONTACT : CATHY HOUSER, PE
PROJECT ENGINEER - ROADWAY DESIGN

<p>GRAPHIC SCALES</p> <p>50 25 0 50 100 PLANS</p> <p>50 25 0 50 100 PROFILE (HORIZONTAL)</p> <p>10 5 0 10 20 PROFILE (VERTICAL)</p>	<p>DESIGN DATA</p> <p>ADT 2007 = 346 ADT 2027 = 523 DHV = 12 % D = 60 % T = 3 % * V = 60 MPH</p> <p>FUNCTION. = RURAL CLASS. = COLLECTOR</p> <p>* (TTST 1% + DUALS 2%)</p>	<p>PROJECT LENGTH</p> <p>LENGTH ROADWAY TIP PROJECT B-4282 = 0.090 MI LENGTH STRUCTURE TIP PROJECT B-4282 = 0.031 MI TOTAL LENGTH TIP PROJECT B-4282 = 0.121 MI</p>	<p>Prepared in the Office of:</p> <p>MULKEY ENGINEERS & CONSULTANTS FOR THE NORTH CAROLINA DEPT. OF TRANSPORTATION</p> <p>2006 STANDARD SPECIFICATIONS</p>	<p>HYDRAULICS ENGINEER</p> <p>_____ SIGNATURE: P.E.</p>	<p>DIVISION OF HIGHWAYS STATE OF NORTH CAROLINA</p> <p>_____ SIGNATURE: P.E.</p>
			<p>RIGHT OF WAY DATE: SEPTEMBER 15, 2006</p> <p>LETTING DATE: FEBRUARY, 2008</p>	<p>TIM S. HAYES, PE PROJECT ENGINEER</p> <p>JOHNNY R. BANKS PROJECT MANAGER</p>	<p>ROADWAY DESIGN ENGINEER</p> <p>_____ SIGNATURE: P.E.</p>

Note: Not to Scale

*S.U.E. = Subsurface Utility Engineering



STATE OF NORTH CAROLINA DIVISION OF HIGHWAYS

CONVENTIONAL SYMBOLS

BOUNDARIES AND PROPERTY:

Table listing symbols for boundaries and property: State Line, County Line, Township Line, City Line, Reservation Line, Property Line, Existing Iron Pin, Property Corner, Property Monument, Parcel/Sequence Number, Existing Fence Line, Proposed Woven Wire Fence, Proposed Chain Link Fence, Proposed Barbed Wire Fence, Existing Wetland Boundary, Proposed Wetland Boundary, Existing Endangered Animal Boundary, Existing Endangered Plant Boundary.

BUILDINGS AND OTHER CULTURE:

Table listing symbols for buildings and other culture: Gas Pump Vent or U/G Tank Cap, Sign, Well, Small Mine, Foundation, Area Outline, Cemetery, Building, School, Church, Dam.

HYDROLOGY:

Table listing symbols for hydrology: Stream or Body of Water, Hydro, Pool or Reservoir, Jurisdictional Stream, Buffer Zone 1, Buffer Zone 2, Flow Arrow, Disappearing Stream, Spring, Swamp Marsh, Proposed Lateral, Tail, Head Ditch, False Sump.

RAILROADS:

Table listing symbols for railroads: Standard Gauge, RR Signal Milepost, Switch, RR Abandoned, RR Dismantled.

RIGHT OF WAY:

Table listing symbols for right of way: Baseline Control Point, Existing Right of Way Marker, Existing Right of Way Line, Proposed Right of Way Line, Proposed Right of Way Line with Iron Pin and Cap Marker, Proposed Right of Way Line with Concrete or Granite Marker, Existing Control of Access, Proposed Control of Access, Existing Easement Line, Proposed Temporary Construction Easement, Proposed Temporary Drainage Easement, Proposed Permanent Drainage Easement, Proposed Permanent Utility Easement.

ROADS AND RELATED FEATURES:

Table listing symbols for roads and related features: Existing Edge of Pavement, Existing Curb, Proposed Slope Stakes Cut, Proposed Slope Stakes Fill, Proposed Wheel Chair Ramp, Curb Cut for Future Wheel Chair Ramp, Existing Metal Guardrail, Proposed Guardrail, Existing Cable Guiderail, Proposed Cable Guiderail, Equality Symbol, Pavement Removal.

VEGETATION:

Table listing symbols for vegetation: Single Tree, Single Shrub, Hedge, Woods Line, Orchard, Vineyard.

EXISTING STRUCTURES:

Table listing symbols for existing structures: MAJOR: Bridge, Tunnel or Box Culvert, Bridge Wing Wall, Head Wall and End Wall; MINOR: Head and End Wall, Pipe Culvert, Footbridge, Drainage Box: Catch Basin, DI or JB, Paved Ditch Gutter, Storm Sewer Manhole, Storm Sewer.

UTILITIES:

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

TELEPHONE:

Table listing symbols for telephone: Existing Telephone Pole, Proposed Telephone Pole, Telephone Manhole, Telephone Booth, Telephone Pedestal, Telephone Cell Tower, U/G Telephone Cable Hand Hole, Recorded U/G Telephone Cable, Designated U/G Telephone Cable (S.U.E.*), Recorded U/G Telephone Conduit, Designated U/G Telephone Conduit (S.U.E.*), Recorded U/G Fiber Optics Cable, Designated U/G Fiber Optics Cable (S.U.E.*).

WATER:

Table listing symbols for water: Water Manhole, Water Meter, Water Valve, Water Hydrant, Recorded U/G Water Line, Designated U/G Water Line (S.U.E.*), Above Ground Water Line.

TV:

Table listing symbols for TV: TV Satellite Dish, TV Pedestal, TV Tower, U/G TV Cable Hand Hole, Recorded U/G TV Cable, Designated U/G TV Cable (S.U.E.*), Recorded U/G Fiber Optic Cable, Designated U/G Fiber Optic Cable (S.U.E.*).

GAS:

Table listing symbols for gas: Gas Valve, Gas Meter, Recorded U/G Gas Line, Designated U/G Gas Line (S.U.E.*), Above Ground Gas Line.

SANITARY SEWER:

Table listing symbols for sanitary sewer: Sanitary Sewer Manhole, Sanitary Sewer Cleanout, U/G Sanitary Sewer Line, Above Ground Sanitary Sewer, Recorded SS Forced Main Line, Designated SS Forced Main Line (S.U.E.*).

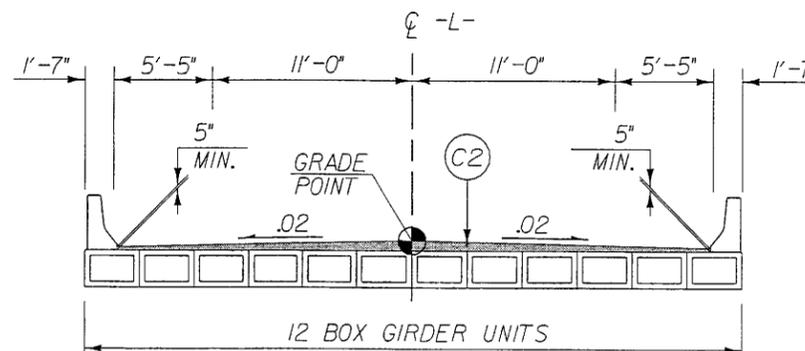
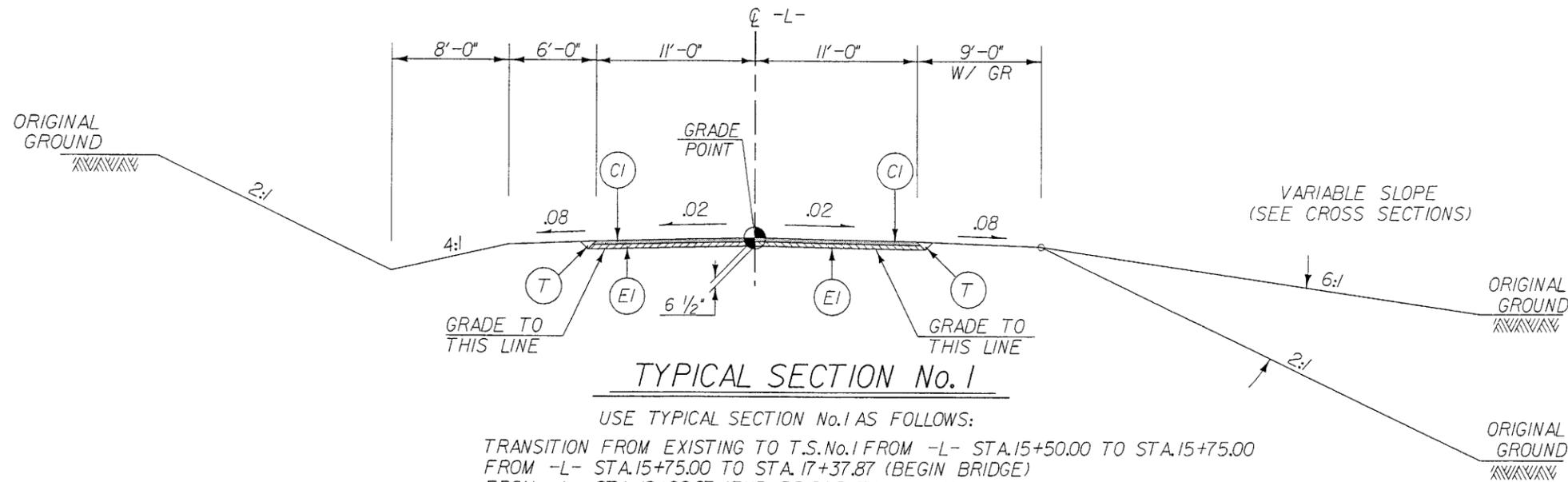
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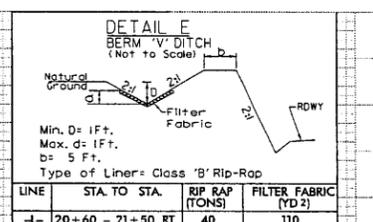
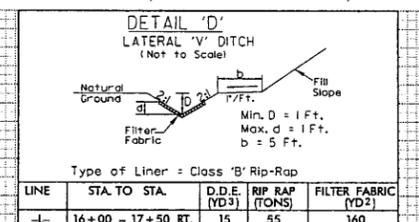
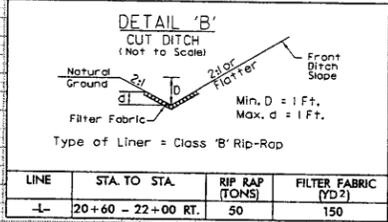
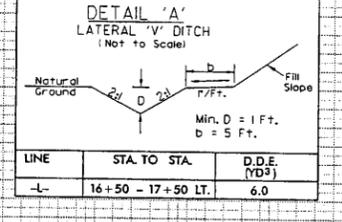
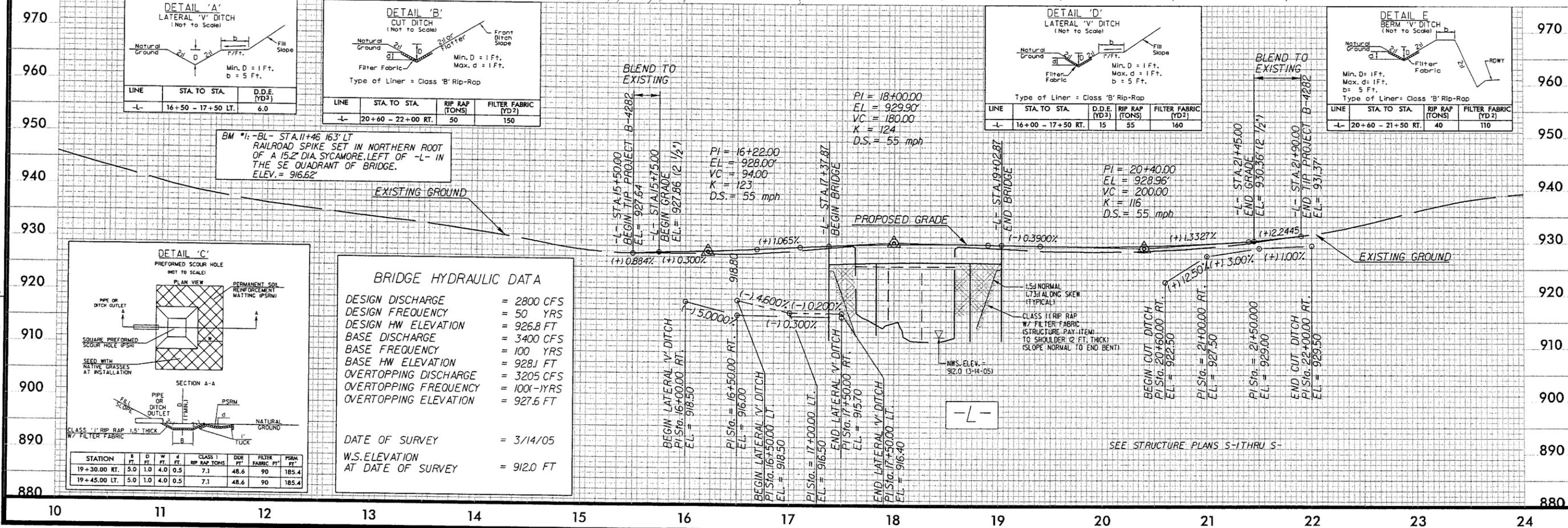
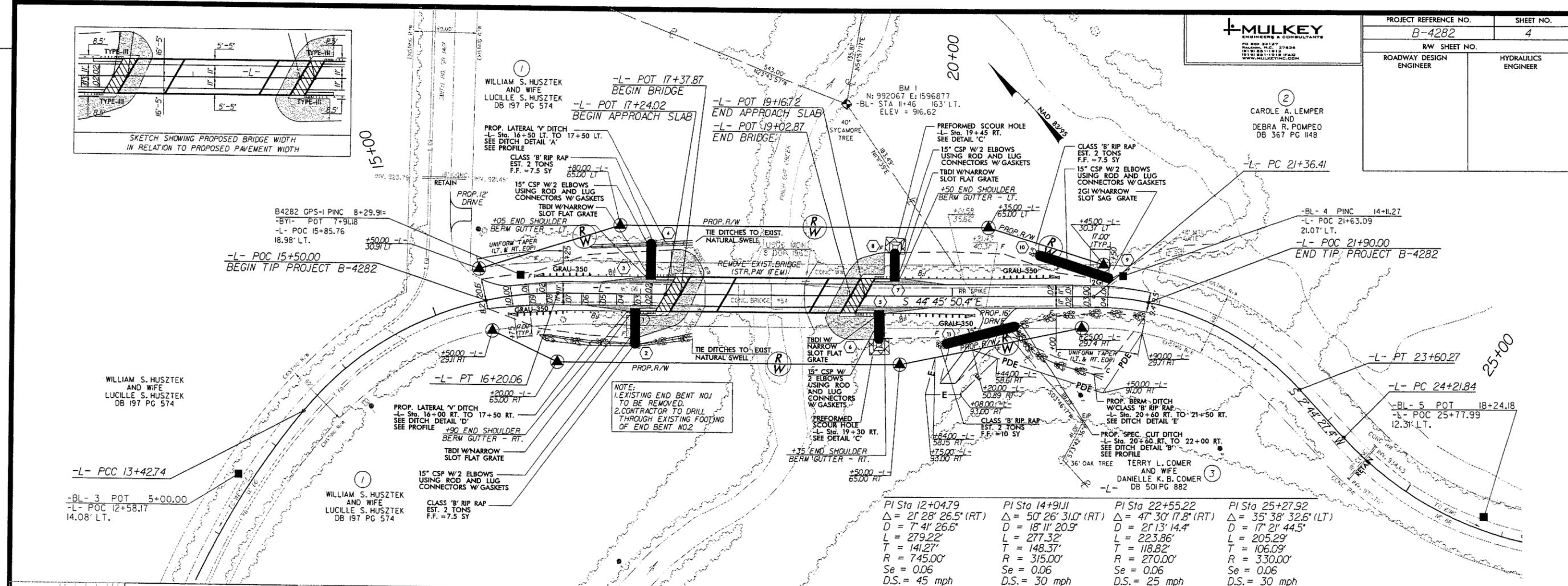
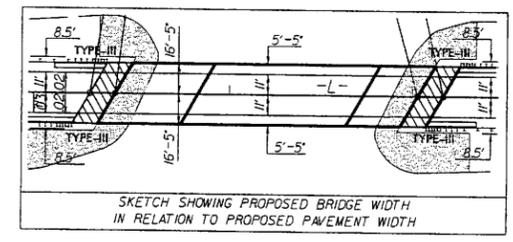
Table listing symbols for miscellaneous: Utility Pole, Utility Pole with Base, Utility Located Object, Utility Traffic Signal Box, Utility Unknown U/G Line, U/G Tank; Water, Gas, Oil, A/G Tank; Water, Gas, Oil, U/G Test Hole (S.U.E.*), Abandoned According to Utility Records, End of Information.

PAVEMENT SCHEDULE

C1	PROPOSED APPROX. 2 1/2" ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A AT AN AVERAGE RATE OF 137.5 LBS. PER SQ. YARD IN EACH OF TWO LAYERS.
C2	PROPOSED VARIABLE DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 110 LBS. PER SQ. YARD, PER 1" DEPTH, TO BE PLACED IN LAYERS NOT LESS THAN 1 1/4" OR GREATER THAN 1 1/2" IN DEPTH.
E1	PROPOSED APPROXIMATE 4" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B AT AN AVERAGE RATE OF 456 LBS. PER SQ. YARD.
T	EARTH MATERIAL

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

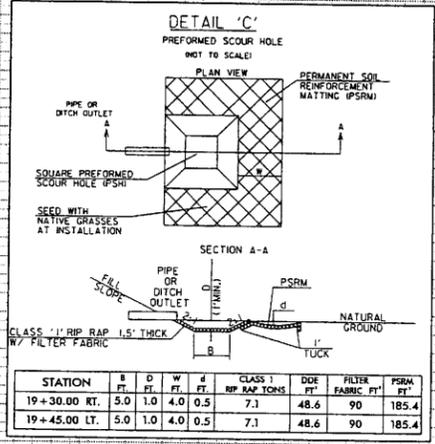




BRIDGE HYDRAULIC DATA

DESIGN DISCHARGE = 2800 CFS
 DESIGN FREQUENCY = 50 YRS
 DESIGN HW ELEVATION = 926.8 FT
 BASE DISCHARGE = 3400 CFS
 BASE FREQUENCY = 100 YRS
 BASE HW ELEVATION = 928.1 FT
 OVERTOPPING DISCHARGE = 3205 CFS
 OVERTOPPING FREQUENCY = 100-YRS
 OVERTOPPING ELEVATION = 927.6 FT

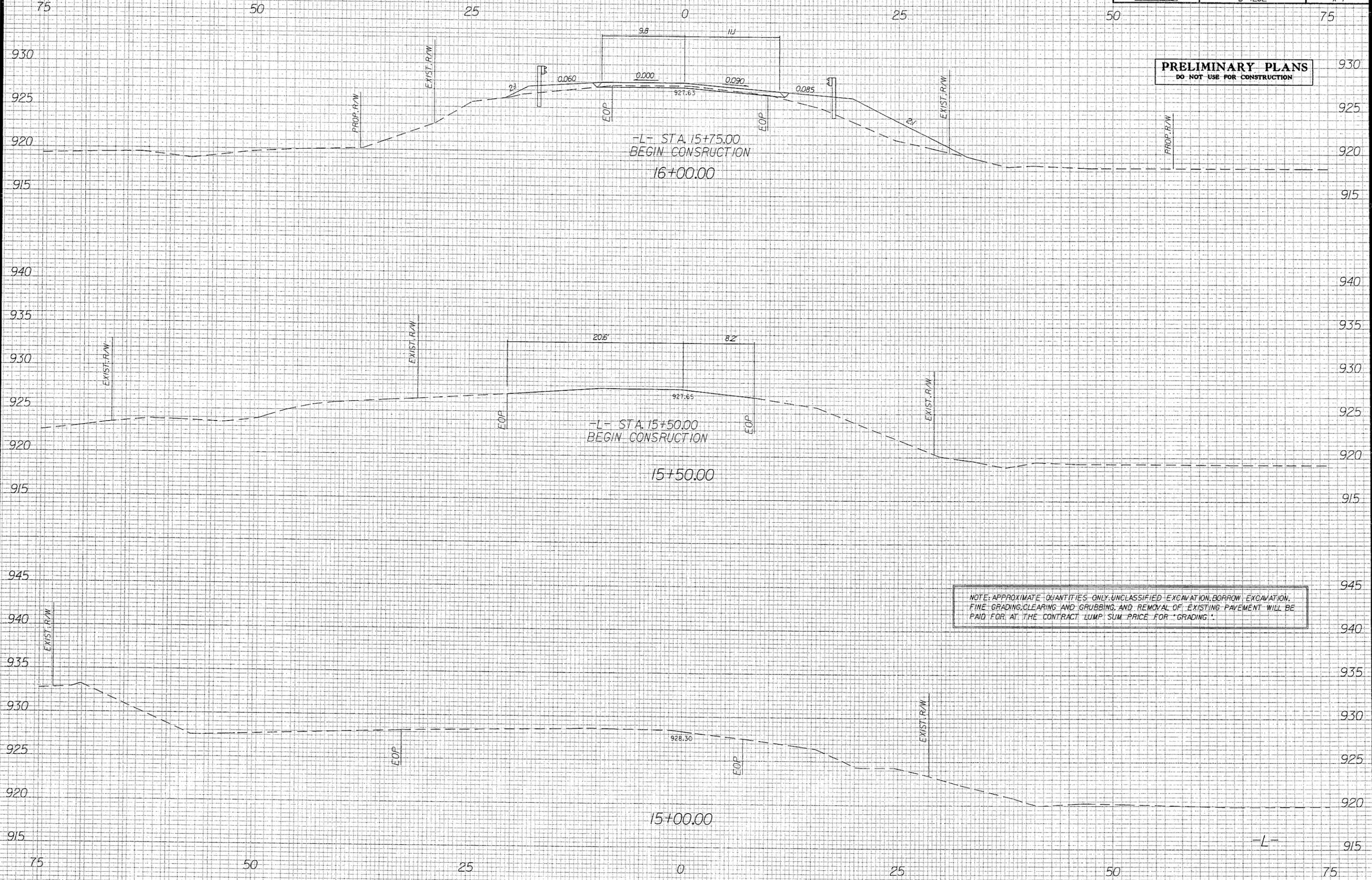
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 W.S. ELEVATION AT DATE OF SURVEY = 912.0 FT



REVISIONS
 ROW Revision - Date:
 - Parcel 1 - Added Drives; Parcel 3 - Revised Parcel Name & Deed Book Reference

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B-237-95



PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

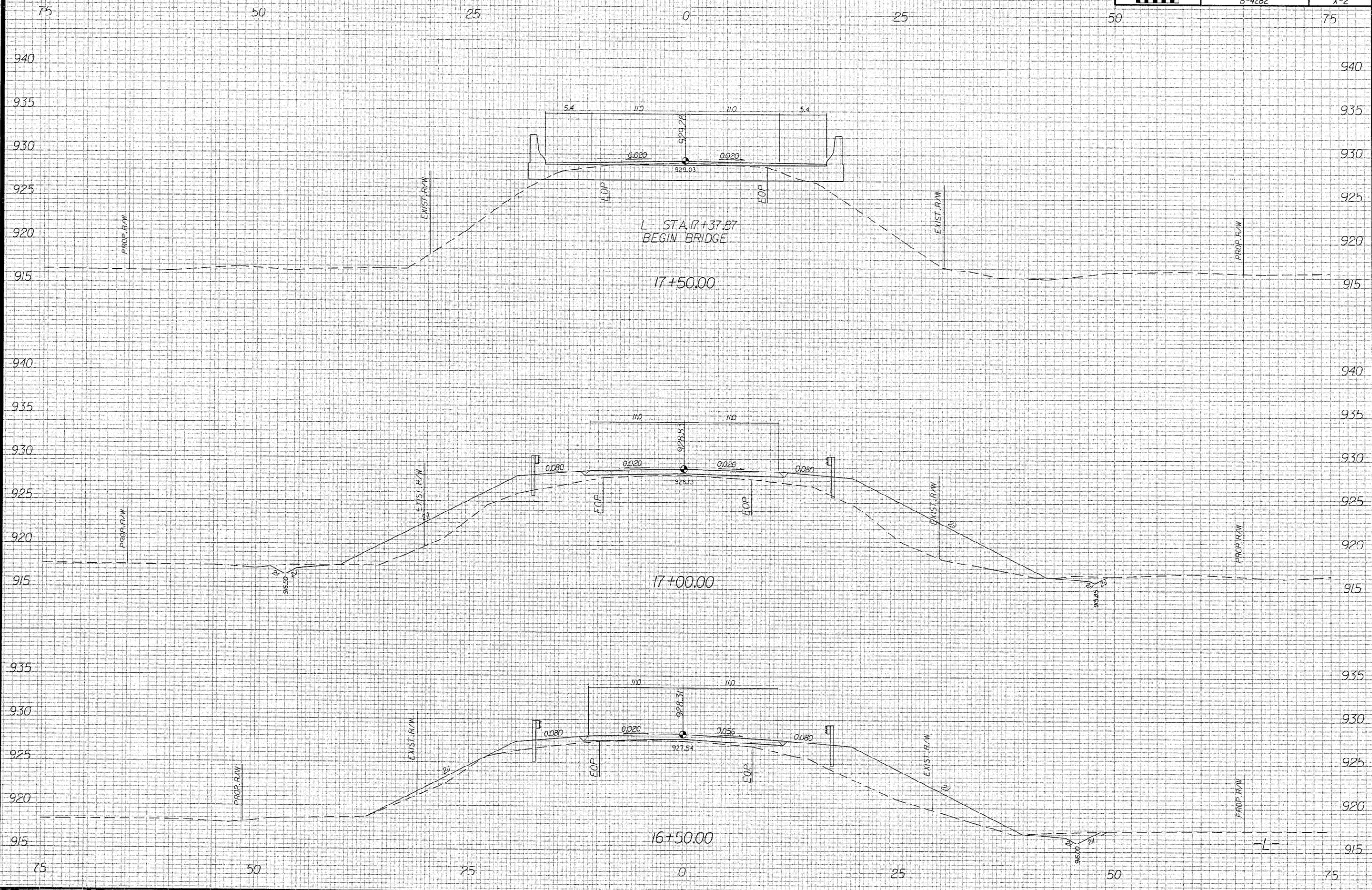
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4/11/2007
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8/23/99



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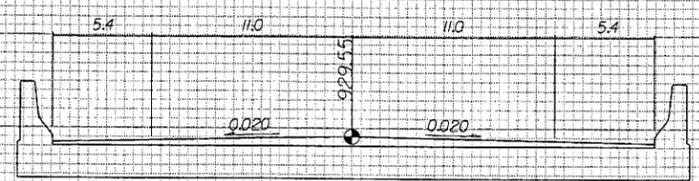
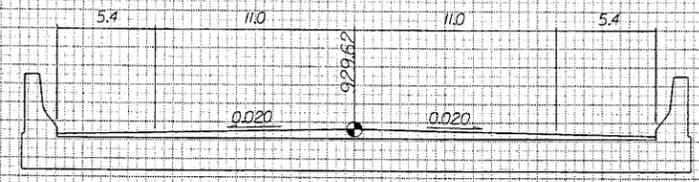
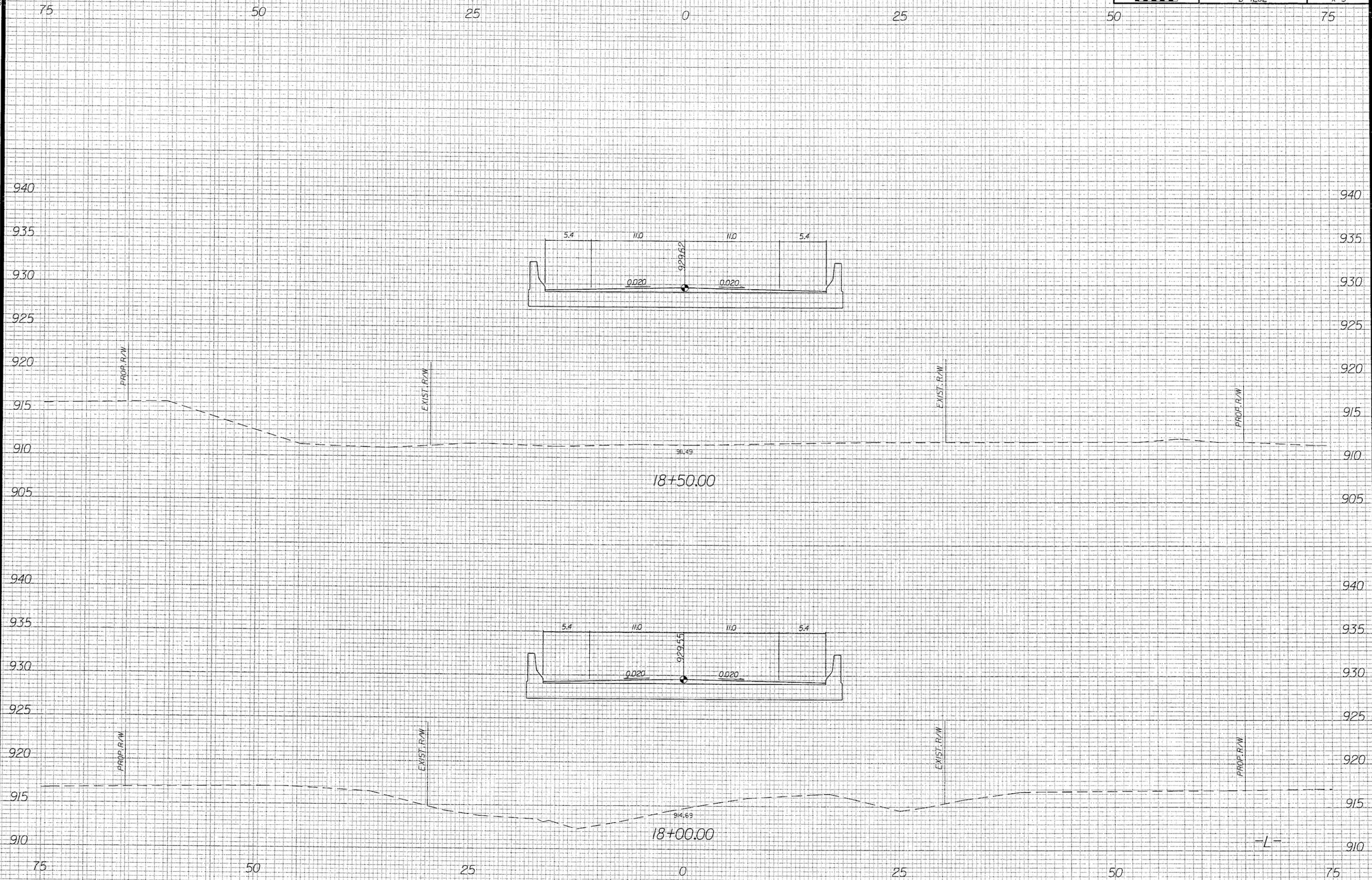


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8/23/95



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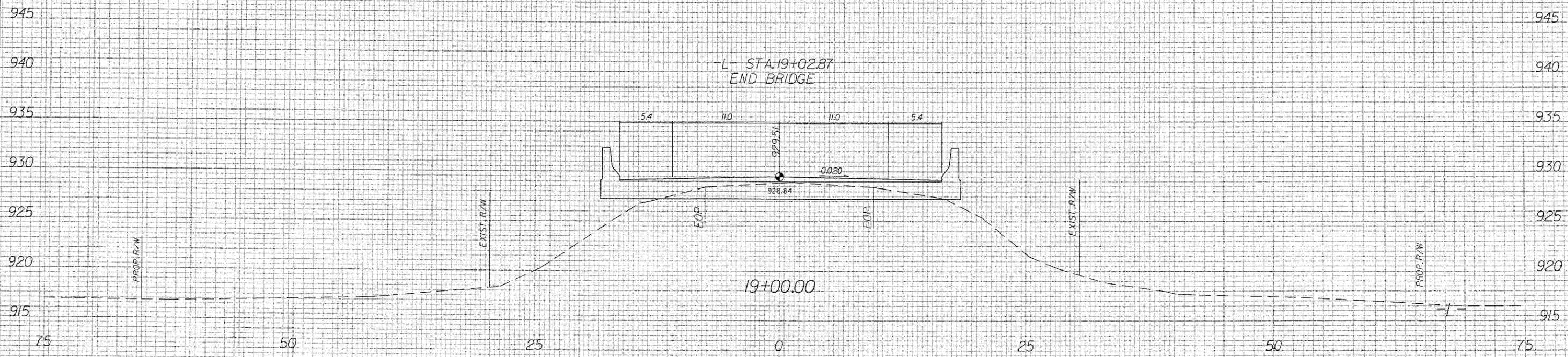
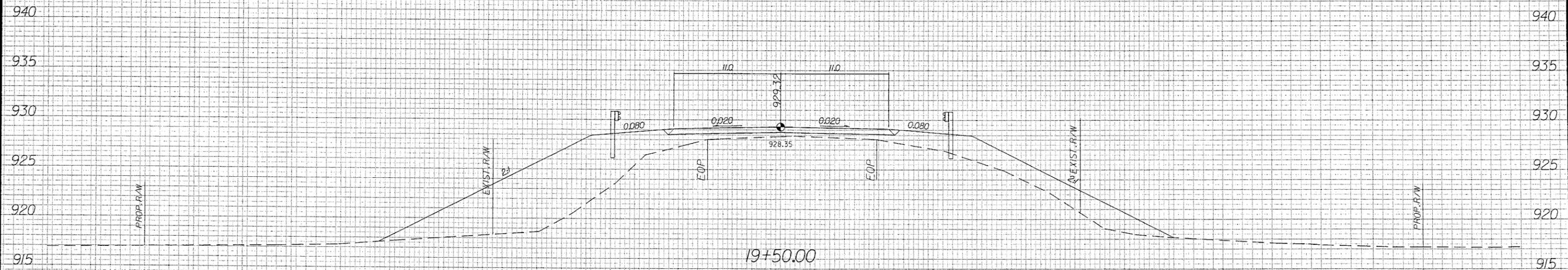
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8/23/99



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B-4282	X-4

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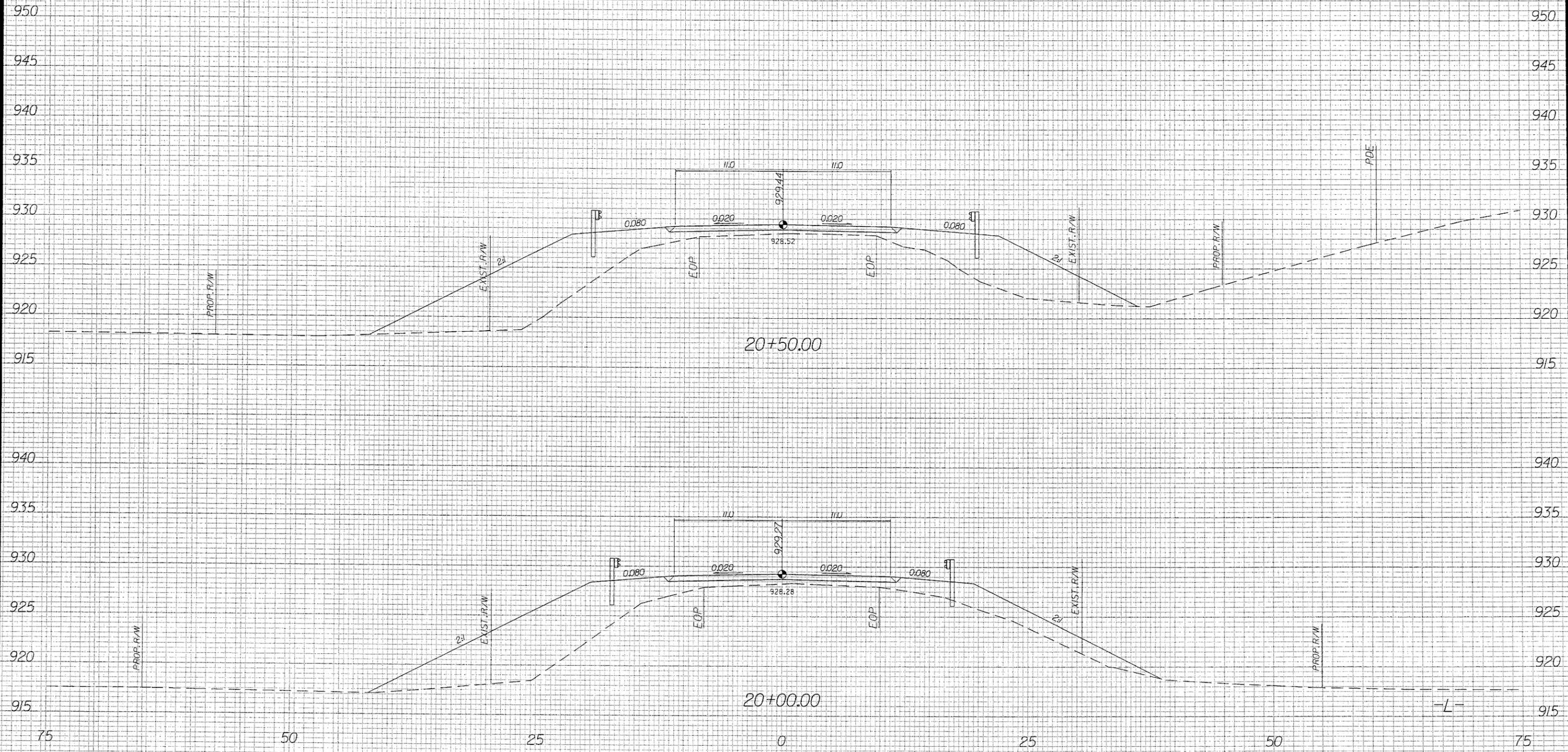
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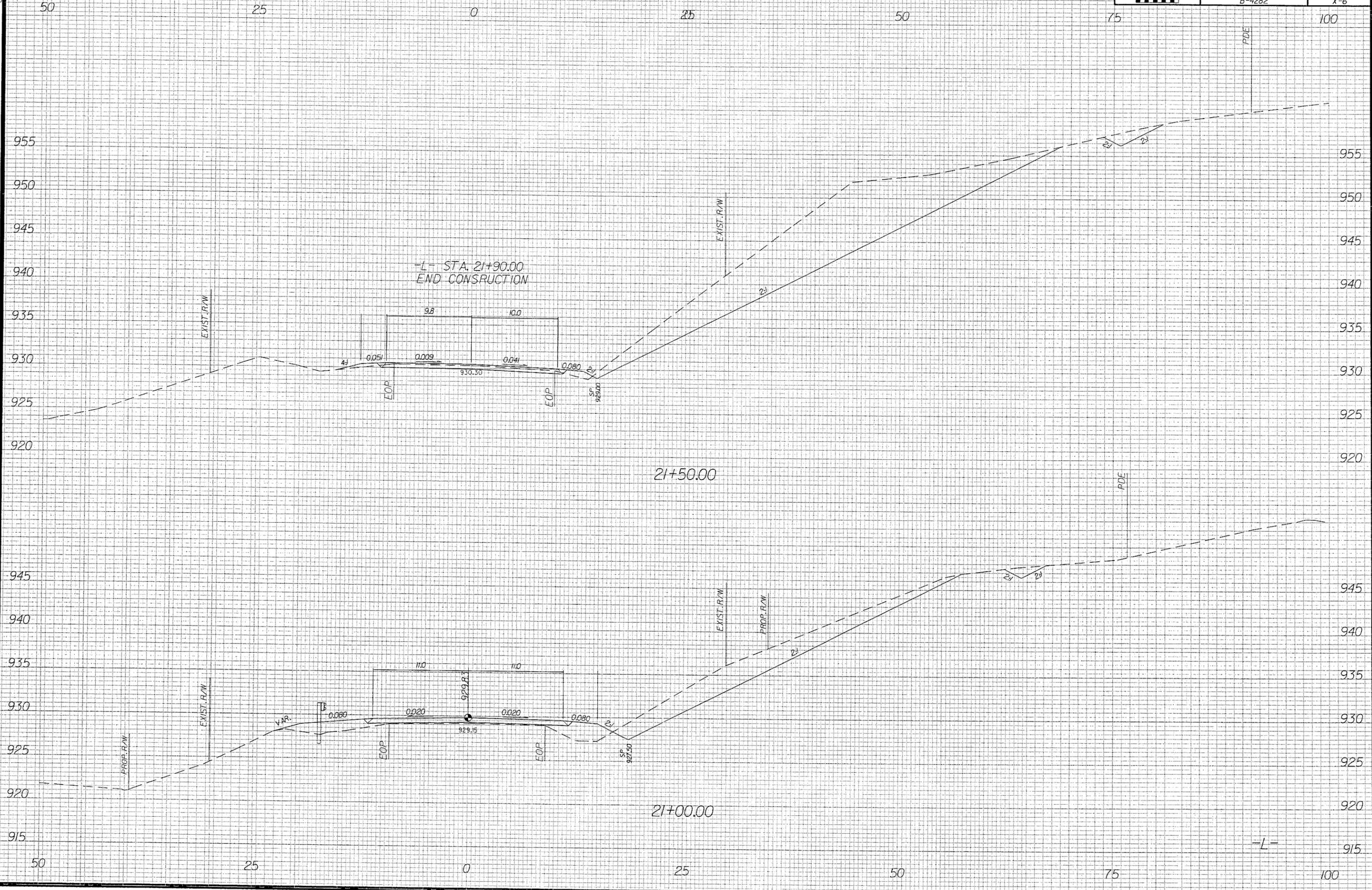


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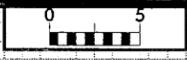


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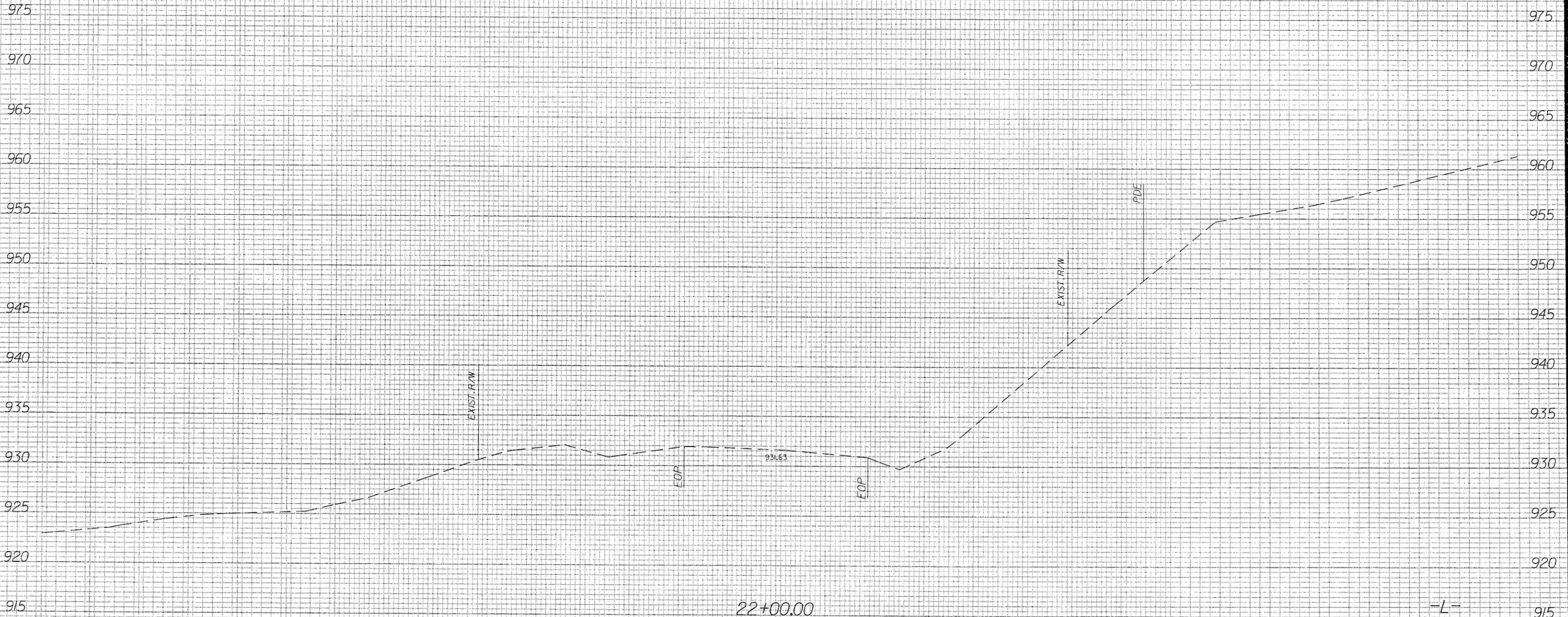
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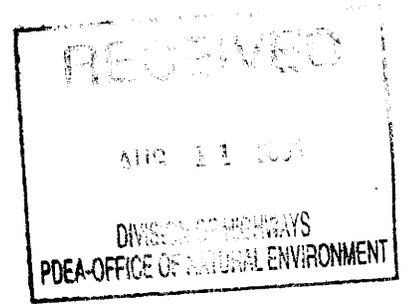


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4/11/2007
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Bridge No. 54 over Pinch Gut Creek
Federal-Aid Project No. BRSTP-0066(1)
State Project No. 8.1641101
WBS No. 33622.1.1
T.I.P. No. B-4282



CATEGORICAL EXCLUSION

UNITED STATES DEPARTMENT OF TRANSPORTATION

FEDERAL HIGHWAY ADMINISTRATION

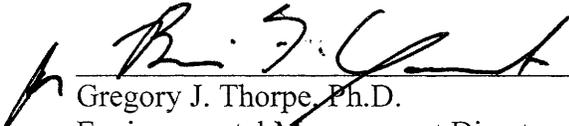
AND

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

DIVISION OF HIGHWAYS

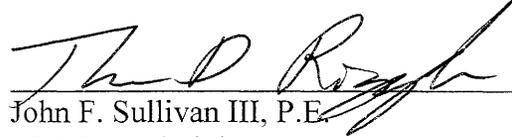
APPROVED:

4.4.05
DATE



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4/4/05
DATE



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

NC 66
Stokes County
Bridge No. 54 over Pinch Gut Creek
Federal-Aid Project No. BRSTP-0066(1)
State Project No. 8.1641101
WBS No. 33622.1.1
T.I.P. No. B-4282

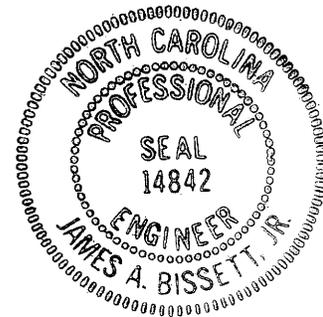
CATEGORICAL EXCLUSION

April 2005

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PROJECT COMMITMENTS

NC 66
Stokes County
Bridge No. 54 over Pinch Gut Creek
Federal-Aid Project No. BRSTP-0066(1)
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In addition to the standard Nationwide Permit No. 23 Conditions, the General Nationwide Permit Conditions, Section 404 Only Conditions, Regional Conditions, State Consistency Conditions, NCDOT's Guidelines for Best Management Practices for the Protection of Surface Waters, Erosion and Sediment Control Guidelines for Contract Construction, General Certification Conditions, and Section 401 Conditions of Certification, the following special commitments have been agreed to by NCDOT:

Project Development and Environmental Analysis

- A re-survey for the James spinymussel will be performed during the 2006 survey window from the end of the previous survey downstream to Big Creek prior to project construction.
- A re-survey for the small-anthered bittercress will be performed during the 2006 survey window prior to project construction.

Division Engineer

- A moratorium for in-stream construction activities will be in place from May 1 to July 15 due to the smallmouth bass fishery in the project area.
- "Guidelines for Construction of Highway Improvements Adjacent to or Crossing Trout Waters in North Carolina" (October 27, 1992) will be adhered to throughout the life of this project.

Hydraulics Unit / Structures

- No piers will be placed in Pinch Gut Creek.
- Stormwater will be designed to be carried across the bridge (no deck drain over the stream) and diverted through grass-lined ditches, vegetated buffers or directed to a storm water collection system.

NC 66
Stokes County
Bridge No. 54 over Pinch Gut Creek
Federal-Aid Project No. BRSTP-0066(1)
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INTRODUCTION: The replacement of Bridge No. 54 is included in the North Carolina Department of Transportation (NCDOT) 2004-2010 Transportation Improvement Program (T.I.P.) and in the Federal-Aid Bridge Replacement Program. The location of the bridge is shown in Figure 1. No substantial environmental impacts are anticipated. The project is classified as a Federal “Categorical Exclusion.”

I. PURPOSE AND NEED

The NCDOT Bridge Maintenance Unit records indicate that Bridge No. 54 has a sufficiency rating of 46.6 out of a possible 100 and is considered structurally deficient. Replacement of this inadequate structure will result in safer and more efficient traffic operations.

II. EXISTING CONDITIONS

Bridge No. 54 over Pinch Gut Creek is located on NC 66 in Stokes County, approximately 12 miles (19 kilometers) northwest of Danbury. NC 66 is classified as a rural major collector by the statewide functional classification system. It connects NC 89 east of Westfield southward to NC 65 in Rural Hall.

Land use in the project area is rural in nature, primarily consisting of single-family residential and agricultural properties. There is no immediate development anticipated within the surrounding area.

The 2005 estimated average daily traffic (ADT) volume is 330 vehicles per day (vpd). The projected ADT is 550 vpd by the design year 2030. The percentages of truck traffic are 2% dual tired vehicles (DUALS) and 1% truck-tractor semi trailer (TTST). The speed limit on NC 66 is not posted in the vicinity of Bridge No. 54; therefore, a statutory speed limit of 55 miles per hour (mph) {90 kilometers per hour (km/h)} applies.

Bridge No. 54 was built in 1923. It is a two-lane facility with an approximate roadway width of 20 feet (6 meters). The bridge has three spans and totals 97 feet (29 meters) in length. The deck and railings of the superstructure are composed of reinforced concrete. The substructure is composed of reinforced concrete abutments and reinforced concrete round nose post and web. The bridge deck is approximately 18 feet (5.4 meters) from crown to streambed. Bridge No. 54 is not presently posted for single vehicle or TTST. Bridge No. 54 provides for farm equipment passage underneath the structure.

The approach roadway is a two-lane facility with two 8.5-foot (2.6-meter) travel lanes and 4-foot (1.2-meter) grass shoulders. Approximately 160 feet (49 meters) west of Bridge No. 54 the approach roadway is on curve with a radius of approximately 310 feet (95 meters) and a safe speed of 30 mph (50 km/h). Approximately 280 feet (85 meters) east of Bridge No. 54 the approach roadway is on curve with a radius of approximately 250 feet (85 meters) and a safe speed of 30 mph (50 km/h).

There is no evidence of overhead or buried utilities in the vicinity of the existing bridge.

Approximately six school buses cross Bridge No. 54 daily.

No accidents were reported in the project area during the period from January 2000 to December 2002.

This section of NC 66 in Stokes County is not part of a designated bicycle route and is not listed in the T.I.P. as needing incidental bicycle accommodations.

III. ALTERNATIVES

A. Project Description

The recommended replacement structure is a bridge approximately 135 feet (40.5 meters) in length. The existing vertical clearance will be maintained and provide for farm equipment passage underneath the structure. A minimum 0.3 percent grade is recommended to facilitate bridge deck drainage. The new bridge will provide two 11-foot (3.3-meter) lanes, with 4-foot (1.2-meter) shoulders (Figure 3). The shoulders may be widened to accommodate drainage. The length of the new structure may increase or decrease as necessary to accommodate peak flows as determined by a detailed hydrologic analysis during the final design phase.

The approach roadway will provide two 11-foot (3.3-meter) lanes with 6-foot (1.8-meter) grass shoulders (Figure 3).

B. Build Alternatives

Three build alternatives were studied for this project. They are described below.

Alternative A (Preferred) replaces Bridge No. 54 at the existing location (Figure 2). During construction, traffic will be detoured off-site along the following route: SR 1210 (Brown Mountain Road), SR 1215 (Pell Road), and SR 1214 (Jackson Road). The proposed detour route is approximately 5.2 miles (8.4 kilometers) in length.

Alternative B replaces Bridge No. 54 at the existing location (Figure 2A). During construction, traffic will be maintained by a single lane temporary onsite detour located just downstream of the existing bridge. The detour structure will be approximately 110 feet (33 meters) in length.

The proposed temporary detour structure will provide one 9-foot (2.7-meter) lane with 3-foot (1.0-meter) shoulders. The detour approach roadway will provide one 9-foot (2.7-meter) lane with 3-foot (1.0-meter) grass shoulders. Alternative B is approximately 0.20 mile (0.30 kilometer) in length. Alternative B was not selected as the preferred alternative because it requires a temporary structure. Use of a temporary structure will increase construction time and environmental impacts.

Alternative C replaces Bridge No. 54 on new alignment just downstream of the existing bridge (Figure 2B). During construction, traffic will be maintained on the existing roadway and structure. Alternative C is approximately 0.22 mile (0.35 kilometer) in length and provides a design speed of 40 mph (60 km/h) on the approach curves to the bridge. The proposed approach curve from the south will tie to an existing curve with a 30 mph (50 km/h) design speed. Alternative C was not selected as the preferred alternative because the new alignment has more environmental impacts and is less economical than Alternative A.

C. Alternatives Eliminated From Further Study

The “do-nothing” alternative will eventually necessitate closure of the bridge. This is not desirable because of the traffic service and community connectivity provided by NC 66 and Bridge No. 54.

Investigation of the existing structure by the Bridge Maintenance Unit indicates that “rehabilitation” of this bridge is not feasible because of its age and deteriorated condition.

D. Preferred Alternative

Alternative A is the preferred alternative. This alternative replaces the bridge at the existing location, which eliminates the need for horizontal curves on the bridge and provides better sight distance across the bridge. It also minimizes environmental impacts and construction time, and is more economical than other alternatives. The bridge will be widened to accommodate drainage. A cored slab bridge is anticipated and no piers will be placed in the water. An off-site detour will be provided along SR 1210 (Brown Mountain Road), SR 1215 (Pell Road), and SR 1214 (Jackson Road). This alternative can be constructed in one season if it is let for construction in November.

The Division Engineer concurs with Alternative A as the preferred.

E. Anticipated Design Exception

A design exception for the existing horizontal curves will be required. A statutory speed limit of 55 mph (90 km/h) applies in the project area. The existing approach curves have a design speed of approximately 30 mph (50 km/h). Due to the existing terrain restriction, additional environmental impacts, excessive construction costs, and no accidents in the project area, changes to the horizontal alignment are not justified to increase the design speed of the approach curves to 55 mph (90 km/h).

IV. ESTIMATED COST

The estimated costs, based on 2004 prices are as follows:

	Alternative A (Preferred)	Alternative B	Alternative C
Structure Removal (Existing)	\$ 17,480	\$ 17,480	\$ 17,480
Proposed Structure	283,500	283,500	283,500
Roadway Approaches	150,320	150,320	247,420
Temporary Detour Bridge	0	66,000	0
Detour Approaches	0	75,380	0
Miscellaneous and Mobilization	113,700	142,320	156,600
Engineering Contingencies	85,000	115,000	120,000
ROW/Const. Easements/Utilities	33,700	54,100	56,300
TOTAL	\$683,700	\$904,100	\$881,300

The estimated cost of the project as shown in the 2004-2010 Transportation Improvement Program is \$770,000, including \$70,000 for right-of-way (ROW) and \$700,000 for construction.

V. NATURAL RESOURCES

A. Methodology

Research was conducted prior to field investigation. Published resource information pertaining to the project area was gathered and reviewed. Resources utilized in this preliminary investigation of the project area include:

- Geological Survey (USGS) quadrangle maps (Hanging Rock, Pilot Mountain)
- United States Fish and Wildlife Service (USFWS) National Wetlands Inventory (NWI) quadrangle map (Hanging Rock, Pilot Mountain)
- Aerial photograph of project area (1 in = 100 ft)
- Natural Resource Conservation Service, Soil Survey of Stokes County, North Carolina (1995)

Water resource information was obtained from publications posted on the World Wide Web by North Carolina Department of Environment and Natural Resources, Division of Water Quality (DWQ). Information concerning the occurrence of federally protected species in the study area was obtained from the USFWS list of protected and candidate species (on-line list checked 3/28/05, last updated 2/25/03), and from the NC Natural Heritage Program (NCNHP) database of rare species and unique habitats. NCNHP files were reviewed for documented occurrences of state or federally listed species and locations of significant natural areas.

General natural resource surveys and federally protected species surveys were conducted along the proposed alignment on August 2, 2001 and September 12, 2001, respectively. Water resources were identified and their physical characteristics were recorded. Plant communities and their associated wildlife were also identified and described. Terrestrial community classifications generally follow Schafale and Weakley (1990) where possible, and plant taxonomy follows Radford *et al.* (1968). Vertebrate taxonomy follows Martof *et al.* (1980), Potter *et al.* (1980), and Webster *et al.* (1985). Predictions regarding wildlife community composition involved general qualitative habitat assessment based on existing vegetative communities. Wildlife identification involved using a variety of observation techniques. Techniques included qualitative habitat assessment based on vegetative communities, active searching, and identification of characteristic wildlife signs (sounds, scat, tracks, and burrows). Cursory surveys of aquatic organisms were also conducted. Organisms captured during these searches were identified and then released.

For the purposes of this document, the following terms are used concerning the limits of natural resources investigations. **“Project area”** denotes the area bounded by the proposed right-of-way limits along the full length of the project alignment. **“Project vicinity”** is defined as an area extending 0.5 mi (0.8 km) on all sides of the project area, and **“Project region”** denotes an area equivalent in size to the area represented by a 7.5 minute USGS quadrangle map. **“Study area”** denotes the area that was covered during the natural resource surveys.

B. Physiography and Soils

Stokes County lies primarily in the Piedmont physiographic region. A small range of mountains, the Sauratown Mountain Range, is in the central part of the county. Elevations in the county range from 2,579 ft (786 m) at Moore’s Knob, to 590 ft (180 m) along the eastern border where the Dan River leaves the county. The project area lies in the Dan River drainage in the northwestern part of the county. Project area elevations average 940 ft (287 m).

There are three soil types located in the project area. A brief description of each soil type is provided.

- Masada sandy clay loam, 8 to 15 percent slopes, eroded (MaC2) is a well drained soil found on high stream terraces across the Piedmont. Permeability is moderate and depth to the seasonal high water table is greater than 72 inches (183 centimeters). The surface is a yellowish brown sandy clay loam about 10 inches (25.4 centimeters) thick and the shrink-swell potential in the subsoil is moderate. The greatest limitation is severe erosion that has removed a large amount of topsoil combined with the moderate slope. The Capability Unit is IVe. Masada soils are not hydric.
- Pacolet sandy clay loam, 15 to 25 percent slopes, eroded (PcD2) is a very deep and well drained soil found on side slopes and very narrow ridges throughout the Piedmont. It has a surface layer of 8-inch (20-centimeter) yellowish red sandy clay loam. The depth to bedrock is more than 60 inches (152 centimeters). This soil has moderate permeability and low shrink-swell potential. The Capability Unit is VIe. Pacolet soils are not hydric.
- Riverview and Toccoa soils, 0 to 4 percent slopes, occasional flooding (RtA) map unit consists of very deep and well drained soils found on floodplains throughout the

Piedmont with the Toccoa series positioned closer to the stream. Permeability is moderate in the Riverview series and moderately rapid in the Toccoa series and depth to the seasonal high water table is between 36 to 60 inches (91 to 152 centimeters) below the surface. The surface layers for both soils are 8-inch (20-centimeter) thick dark brown loam variations and the subsoil has a low shrink-swell potential. The main limitations for this map unit are wetness and flooding and the Capability Unit is IIw. Although present on the floodplain, these soils are not present on the North Carolina Hydric Soils List (NRCS 1995).

C. Water Resources

1. Waters Impacted

Water resources within the study area are located in the Roanoke River Basin. There is one water resource in the project study area. NC 66 crosses Pinch Gut Creek, a tributary to Dan River. Pinch Gut Creek is not on the 303d list.

2. Water Resource Characteristics

Pinch Gut Creek at NC 66 is approximately 30 ft (9 m) wide and is approximately 1 ft (0.3 m) deep. The creek has substrate composed primarily of sand, gravel, and cobble. The drainage area of Pinch Gut Creek at the proposed crossing is 11.2 square miles (29.1 square kilometers).

Streams have been assigned a best usage classification by the DWQ, which reflects water quality conditions and potential resource usage. The classification for Pinch Gut Creek (DWQ Index No. 22-9-1, 9/1/57) is **C Tr**. Class **C** refers to waters suitable for aquatic life propagation and survival, fishing, wildlife, secondary recreation, and agriculture. The **Tr** (trout waters) subclassification is a supplemental classification intended to protect freshwaters for natural trout propagation and survival of stocked trout. No waters classified as High Quality Water (**HQW**), Water Supplies (**WS-I** or **WS-II**) or Outstanding Resource Waters (**ORW**) occur within 1.0 mile (1.6 kilometers) of the project study area.

The Basinwide Monitoring Program, managed by 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 macroinvertebrate organisms, 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 (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. There are no benthic monitoring stations on Pinch Gut Creek in or above the project area.

Point source discharge is defined as “a discharge that enters surface waters through a pipe, ditch or any other well-defined point of discharge. The term applies to wastewater and stormwater

discharges from a variety of sources” (DWQ, 2001). Point source dischargers located throughout North Carolina are permitted through the National Pollutant Discharge Elimination System (NPDES) program. Any discharger is required to register for a permit. No registered point source dischargers are located in or directly upstream from the project study area.

Non-point source discharge refers to runoff that enters surface waters through stormwater, snowmelt, or atmospheric deposition (DWQ, 1998). Many types of land-use activities serve as sources of non-point source pollution, including land development, construction, crop production, animal feeding lots, failing septic systems, landfills, roads, and parking lots. Sediment and nutrients are major pollution-causing substances associated with non-point source pollution. Other sources of pollution include fecal coliform bacteria, heavy metals, oil and grease, and any other substance that may be washed off the ground or removed from the atmosphere and carried into surface waters. The major non-point sources in the project study area appear to be from crop production and road runoff.

3. Anticipated Impacts to Water Resources

a. General Impacts

Impacts to water resources in the project 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 in revegetation, and pavement installation.

In order to minimize potential impacts to water resources in the project area, NCDOT’s *Best Management Practices for the Protection of Surface Waters* will be strictly enforced during the construction phase of the project. Impacts can be further reduced by limiting instream activities and revegetating stream banks immediately following the completion of grading.

b. Impacts Related to Bridge Demolition and Removal

Dropping any portion of the structure into waters of the United States will be avoided unless there is no other practical method of removal. In the event that no other practical method is feasible, a worst-case scenario is assumed for calculations of fill entering waters of the United States. The maximum potential temporary fill associated with demolition procedures is estimated to be 203 cubic yards (155 cubic meters). Because of concerns regarding potential sedimentation resulting from demolition of the bridge, a turbidity curtain will be used when applicable to contain and minimize sedimentation in the water. The resident engineer will coordinate with appropriate agencies prior to demolition and removal of the existing bridge.

D. Biotic Resources

1. Plant Communities

Biotic resources include terrestrial and aquatic communities. This section describes the biotic communities encountered in the project area, as well as the relationships between fauna and flora within these communities. The composition and distribution of biotic communities throughout

the project area are reflective of topography, soils, hydrology, and past and present land uses. Descriptions of the terrestrial systems are presented in the context of plant community classifications. These classifications follow Schafale and Weakley (1990) where possible. Representative animal species that are likely to occur in these habitats (based on published range distributions) are also cited.

Scientific nomenclature and common names (when applicable) are provided for each animal and plant species described. Subsequent references to the same organism refer to the common name only.

a. Disturbed/Maintained Community

This community is located on both sides of NC 66 and SR 1467 (Smith Road), in abandoned fields (south side of SR 1467), and along power line clearings and maintained road access areas located in the project area. It encompasses habitats that have recently been or are currently impacted by human disturbance. Because of mowing and periodic clearing, this community is kept in a constant state of early succession.

The Disturbed/Maintained Community is made up of a diverse community of grasses, herbs, and vines including fescue (*Festuca* spp.), panic grasses (*Panicum* spp.), foxtail grass (*Setaria* spp.), goldenrod (*Solidago* spp.), knotweed (*Polygonum* spp.), pokeweed (*Phytolacca americana*), ragweed (*Ambrosia artemisiifolia*), heal-all (*Prunella* spp.), sunflowers (*Helianthus* spp.), coreopsis (*Coreopsis* spp.), beggar ticks (*Bidens* spp.), tick-trefoils (*Desmodium* spp.), partridge pea (*Cassia fasciculata*), white snakeroot (*Eupatorium rugosum*), evening primrose (*Oenothera biennis*), Queen Anne's Lace (*Daucus carota*), Japanese honeysuckle (*Lonicera japonica*), poison ivy (*Toxicodendron radicans*), Virginia creeper (*Parthenocissus quinquefolia*), wild grape (*Vitis* spp.), asters (*Aster* spp.), Joe-pye-weed (*Eupatorium fistulosum*), ironweed (*Vernonia noveboracensis*), morning glory (*Ipomoea* spp.), trumpet creeper (*Campsis radicans*), and cross-vine (*Bignonia capreolata*). Staghorn sumac (*Rhus typhina*), blackberry (*Rubus* spp.), and saplings of sweet gum (*Liquidambar styraciflua*), river birch (*Betula nigra*), sycamore (*Platanus occidentalis*), and tulip poplar (*Liriodendron tulipifera*) were also present. Transitions of this community with other communities (upland forest and floodplain forest) also exist.

b. Floodplain Forest

A floodplain forest community consisting predominantly of river birch, spicebush (*Lindera benzoin*), microstegium, and trumpet creeper exists east of NC 66 and south of Pinch Gut Creek. This community lies in the floodplain of Pinch Gut Creek and its confluence with a major tributary that is located just east of the project area. The floodplain forest community most closely resembles a Piedmont/Low Mountain Alluvial Forest as described in Schafale and Weakley (1990).

Dominant woody vegetation in the floodplain forest community includes river birch, sycamore, tulip poplar, black walnut (*Juglans nigra*), silky dogwood (*Cornus amomum*), tag alder (*Alnus serrulata*), hornbeam (*Carpinus caroliniana*), spicebush, flowering dogwood (*Cornus florida*), black cherry (*Prunus serotina*), and yellowroot (*Xanthorhiza simplicissima*). Vine species

consist of poison ivy, trumpet creeper, Virginia creeper, greenbrier (*Smilax* spp.), and wild grape. The herb community is composed of microstegium (*Microstegium vimineum*), jewelweed (*Impatiens capensis*), panic grasses, false nettle (*Boehmeria cylindrica*), Christmas fern (*Polystichum acrostichoides*), knotweed, marsh dayflower (*Murdannia keisak*), dayflower (*Commelina communis*), and water-horehound (*Lycopus virginicus*).

c. Upland Forest

The upland forest community is located along steep slopes and ridges on the west side of NC 66, south of Pinch Gut Creek. This community most closely resembles a Chestnut Oak Forest as described in Schafale and Weakley (1990). This community is typically found in the Blue Ridge region and is very rare in the Piedmont. However, Stokes County contains most of the few examples of this community type in the North Carolina Piedmont (NCNHP, 1998).

The dominant canopy includes a mixture of rock chestnut oak (*Quercus montana*), northern red oak (*Quercus rubra*), white oak (*Quercus alba*), hickories (*Carya* spp.), tulip poplar, red maple (*Acer rubrum*), and black gum (*Nyssa sylvatica*). A few white (*Pinus strobus*) and Virginia (*Pinus virginiana*) pines were scattered in the open canopy areas. The subcanopy and shrub species include chestnut oak saplings, flowering dogwood, American chestnut (*Castanea dentata*) saplings, sourwood (*Oxydendrum arboreum*), hornbeam, basswood (*Tilia americana*), hop-hornbeam (*Ostrya virginiana*), beaked hazelnut (*Corylus cornuta*), cucumber tree (*Magnolia acuminata*), sassafras (*Sassafras albidum*), American holly (*Ilex opaca*), maple-leaf viburnum (*Viburnum acerifolium*), mountain laurel (*Kalmia latifolia*), smooth hydrangea (*Hydrangea arborescens*), and blueberry (*Vaccinium* spp.).

The herbaceous and vine components include tick-trefoils, maidenhair fern (*Adiantum pedatum*), spleenwort (*Asplenium* spp.), Christmas fern, clubmoss (*Lycopodium* spp.), violets (*Viola* spp.), poison ivy, green-brier, Virginia creeper, and wild grape.

d. Agriculture

Croplands (tobacco) exist along both sides of NC 66 at the intersection of SR 1467 (Smith Road).

2. Wildlife

Maintained/disturbed communities adjacent to forested tracts provide rich ecotones for foraging, while the forests provide forage and cover. Common mammals associated with ecotones and upland forests are least shrew (*Cryptotis parva*), northern short-tailed shrew (*Blarina brevicauda*), hispid cottonrat (*Sigmodon hispidus*), eastern cottontail rabbit (*Sylvilagus floridanus*), raccoon (*Procyon lotor*), gray squirrel (*Sciurus carolinensis*), white-tailed deer (*Odocoileus virginianus*), and Virginia opossum (*Didelphis virginiana*).

Common bird species may include northern mockingbird (*Mimus polyglottos*), northern cardinal (*Cardinalis cardinalis*), Carolina chickadee (*Poecile carolinensis*), tufted titmouse (*Baeolophus bicolor*), European starling (*Sturnus vulgaris*), and common grackle (*Quiscalus quiscula*).

The agriculture community also provides good habitat for mourning dove (*Zenaida macroura*) and northern bobwhite (*Colinus virginianus*).

3. Aquatic Communities

This community consists of Pinch Gut Creek. Aquatic insects found in this community from the cursory survey included mayflies (family Heptageniidae), stoneflies (families Perlidae and Capniidae), caddisflies (family Hydropsychidae), craneflies (*Tipula* spp.), dragonflies (*Boyeria* spp.) and hellgrammites (*Corydalus cornutus*). Crayfish (order Decapoda) were also found in this community.

4. Anticipated Impacts to Biotic Communities

a. Terrestrial Communities

Impacts to terrestrial communities will result from project construction due to the clearing and paving of portions of the project area, and thus the loss of community area. Table 1 summarizes potential losses to these communities resulting from project construction. Calculated impacts to terrestrial communities reflect the relative abundance of each community present in the study area. Estimated impacts are derived based on the project lengths where they intersect with the natural communities, and the entire proposed right-of-way width of 100 feet (30 meters) for the bridge replacement. However, project construction often does not require the entire right-of-way; therefore, actual impacts may be considerably less.

Table 1. Estimated Areas of Impact to Terrestrial Communities

Community	Area of Impact acres (hectares)
Disturbed/Maintained	1.66 (0.672)
Floodplain Forest	0.14 (0.057)
Upland Forest	0.28 (0.113)
Agriculture	0.08 (0.032)
Total Impact	2.16 (0.874)

b. Aquatic Communities

Impacts to the aquatic community of Pinch Gut Creek will result from the replacement of Bridge No. 54. Impacts are likely to result from the physical disturbance of aquatic habitats (i.e. substrate and water quality). Disturbance of aquatic habitats has a detrimental effect on aquatic community composition by reducing species diversity and the overall quality of aquatic habitats. Physical alterations to aquatic habitats will be minimized by strict adherence to Best Management Practices (BMPs).

The North Carolina Wildlife Resources Commission (NCWRC) requests that a moratorium for in-stream activities be in place from May 1 to July 15 due to the smallmouth bass fishery in the project area. The NCWRC also requests that listed species (James River Spiny mussel, hog sucker, and riverweed darter, etc.) be thoroughly reviewed. Bridge No. 54 is approximately 1400 feet (426 meters) west of the confluence of Pinch Gut Creek and Big Creek and approximately 6.2 miles (9.9 kilometers) west of the confluence of Big Creek and the Dan River. Dan River is a NCWRC Priority Aquatic Conservation Area.

E. Special Topics

1. Waters of the United States

Surface waters and wetlands fall under the broad category of “waters of the United States,” as defined in Section 33 of the Code of Federal Register (CFR) Part 328.3. Any action that proposes to dredge or place fill material into surface waters or wetlands falls under the jurisdiction of the U.S. Army Corps of Engineers (COE) under Section 404 of the Clean Water Act (33 U.S.C. 1344). Surface waters include all standing or flowing waters which have commercial or recreational value to the public.

Jurisdictional wetlands are evaluated based on criteria established in the *U.S. Army Corps of Engineers Wetlands Delineation Manual* (Environmental Laboratory, 1987) and *Guidance for Rating the Values of Wetlands in North Carolina* (Division of Environmental Management, 1995), and are classified based on the classification scheme of Cowardin *et al.* (1979). There are no wetlands in the project area.

Impacts to jurisdictional surface waters are calculated based on the linear feet of the stream located within the proposed right-of-way. Approximately 30 linear feet (9 linear meters) of Pinch Gut Creek may be temporarily impacted by the proposed bridge replacement.

2. Permits

Impacts to jurisdictional surface waters are anticipated from the proposed project. As a result, construction activities will require permits and certifications from various regulatory agencies in charge of protecting the water quality of public water resources.

A Nationwide Permit 23 [CFR 330.5(a)(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 that pursuant to the council on environmental quality regulation for 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 human environment.

- (2) That 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.

This project will also require 401 Water Quality General Certification No. 3403 from the DWQ prior to the issuance of the Nationwide Permit. Section 401 of the Clean Water Act requires that the state issue or deny water quality certification for any federally permitted or licensed activity that may result in a discharge to waters of the United States. Section 401 Certification allows surface waters to be temporarily impacted for the duration of the construction or other land manipulation. The issuance of a 401 permit from the DWQ is a prerequisite to issuance of a Section 404 permit.

If no practical alternative exists to remove the current bridge other than to drop it into the water, prior to removal of debris off-site, fill related to demolition procedures will need to be considered during the permitting process. A worst-case scenario will be assumed with the understanding that if there is any other practical method available, the bridge will not be dropped into the water. Permitting will be coordinated such that any permit needed for bridge construction will also address issues related to bridge demolition.

3. Mitigation

The COE has adopted through the Council of 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 (to wetlands), 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 mitigation examines all appropriate and practicable possibilities of averting impacts to waters of the United States. According to a 1990 Memorandum of Agreement (MOA) between the Environmental Protection Agency (EPA) and the COE, in determining "appropriate and practicable" measures to offset unavoidable impacts, such measures will 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 includes the examination of appropriate and practicable steps to reduce the adverse impacts to waters of the United States. Implementation of these steps will be required through project modifications and permit conditions. Minimization typically focuses on decreasing the footprint of the proposed project through the reduction to median widths, right-of-way widths, fill slopes and/or road shoulder widths.

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 that remain after all appropriate and practicable minimization has been required. Compensatory actions often include restoration, creation, and enhancement of waters of the United States, specifically wetlands. Such actions should be undertaken in areas adjacent to or contiguous to the discharge site.

Compensatory mitigation is required for those projects authorized under Nationwide Permits that result in the fill or alteration of:

- More than 0.10 ac (0.04 ha) of wetlands
- More than 150 ft (45.7 m) of streams

The impacts from this project do not meet the minimum mitigation thresholds. Therefore, no mitigation requirement is anticipated; however, final permit/mitigation decisions rest with the COE.

F. Rare and Protected Species

1. Federally Protected Species

Some populations of fauna and flora are in the process of decline either due to natural forces or their inability to coexist with human development. Federal law (under the provisions of the Endangered Species Act of 1973, as amended) requires that any action, likely to adversely affect a species classified as federally protected, be subject to review by the United States Fish and Wildlife Service (USFWS). Other species may receive additional protection under separate state laws.

Plants and animals with a federal classification of Endangered (E), Threatened (T), Proposed Endangered (PE), and Proposed Threatened (PT) are protected under provisions of Section 7 and Section 9 of the Endangered Species Act of 1973, as amended. The USFWS lists three federally protected species (Table 2) for Stokes County (on-line list checked 3/28/05, last updated 2/25/03).

Table 2. Federally Protected Species for Stokes County

Common Name	Scientific Name	Status
James spinymussel	<i>Pleurobema collina</i>	Endangered
Schweinitz's sunflower	<i>Helianthus schweinitzii</i>	Endangered
Small-anthered bittercress	<i>Cardamine micranthera</i>	Endangered

Note:

- "Endangered" denotes a species in danger of extinction throughout all or a significant portion of its range.

Federally protected species descriptions and biological conclusions are provided below. A review of the NCNHP database (list checked 3/28/05, last updated January 2004) of rare species and unique habitats shows no occurrence of federally protected species within 1.0 mile (1.6 km) of the project study area.

Pleurobema collina (James spiny mussel)

Animal Family: Unionidae

Federally Listed: July 22, 1988

The James spiny mussel is an oblong-shaped freshwater mussel believed to be endemic to the upper James River system in Virginia and West Virginia. The adult shell reaches to 2 inches (5 centimeters) in length and has 0-6 short spines on each valve. This mussel inhabits stream sites that vary in width from 10 to 75 feet (3 to 22.5 meters) and depth of 0.5 to 3 feet (.15 to 0.9 meters). It requires a slow to moderate water current with clean sand and cobble bottom sediments. Reproduction is similar to that of other freshwater mussels, with known hosts to be cyprinids such as bluehead chub (*Nocomis leptcephalus*), rosyside dace (*Clinostomus funduloides*), blacknose dace (*Rhinichthys atratulus*), mountain redbelly dace (*Phoxinus oreas*), rosefin shiner (*Lythrurus ardens*), satinfin shiner (*Cyprinella analostana*), and stoneroller (*Campostoma anomalum*).

BIOLOGICAL CONCLUSION: NO EFFECT

Mussel surveys were conducted on August 1, 2002 by NCDOT biologists. The Pinch Gut Creek crossing at NC 66 contains a natural levee and the substrate above and below the bridge on NC 66 consists of mostly silt and sand, with some cobble, pebble and gravel with slow to moderate current. Surveys were conducted by wading using a batiscope from approximately 500 feet (152 meters) downstream to 250 feet (76 meters) upstream of the project crossing. No freshwater mussels were found. Given the survey results, it is apparent that James spiny mussel does not occur in the project footprint. The North Carolina Natural Heritage Program (NCNHP) does not list a known population up or downstream for James spiny mussel. The USFWS requests that an additional survey be conducted from the previous survey stopping point downstream to Big Creek prior to project construction.

Helianthus schweinitzii (Schweinitz's sunflower)

Plant Family: Asteraceae

Federally Listed: May 7, 1991

Schweinitz's sunflower, usually 3 to 6 feet (0.9 to 1.8 meters) tall, is a perennial herb with one to several fuzzy purple stems growing from a cluster of carrot-like tuberous roots. Leaves are 2 to 7 inches (5 to 18 centimeters) long, 0.4 to 0.8 inch (1 to 2 centimeter) wide, lance-shaped, and usually opposite, with upper leaves alternate. Leaves feel like felt on the underside and rough, like sandpaper, on the upper surface. The edges of the leaves tend to curl under. Flowers are yellow composites, and generally smaller than other sunflowers in North America. Flowering and fruiting occur mid-September to frost. This plant grows in clearings and along the edges of upland woods, thickets and pastures. It is also found along roadsides, power line clearings, old pastures, and woodland openings. It prefers full sunlight or partial shade, but is intolerant of full shade.

BIOLOGICAL CONCLUSION: NO EFFECT

Potential habitat for Schweinitz's sunflower occurs along roadsides, power line right-of-ways, and field edges throughout the project area. The project study area was evaluated for potential Schweinitz's sunflower habitat and extensive field surveys were performed in September 2001. No populations were found within the area of potential impact. The NCNHP's database of rare species and unique habitats was checked on July 25, 2001. No populations of this species have been reported in the project area. Therefore, the proposed project is not anticipated to result in an adverse impact to this species.

Cardamine micranthera (Small-anthered bittercress)

Plant Family: Brassicaceae

Federally Listed: September 21, 1989

Small-anthered bittercress is a slender, erect, perennial herb of the mustard family, usually with one, but occasionally with multiple, stems, either simple or branched, 8 to 16 inches (20 to 41 centimeters) tall. Leaf edges have shallow, rounded teeth. Bottom leaves are lobed, 0.4 to 0.8 inch (1 to 2 centimeters) long, and 0.2 to 0.24 inch (0.5 to .06 centimeter) wide. Upper leaves are alternate and usually unlobed, 0.4 to 0.6 inch (1 to 1.5 centimeters) long, and wedge-shaped, with the narrow point at the stem. Reduced leaves (bracts) occur at the base of the flowers, which have four small white petals and six stamens with small round anthers. Flowering and fruiting occur in April and May. This plant grows primarily in seeps and wet rock crevices of streambanks adjoining sandbars, floodplain depressions, and moist woods near small streams fully to partially shaded by trees and shrubs.

Small-anthered bittercress is endemic to the Dan River drainage in Stokes County. Historically, it was also known from Forsyth County.

BIOLOGICAL CONCLUSION: NOT LIKELY TO ADVERSELY AFFECT

Potential habitat for small-anthered bittercress occurs throughout the project area. NCDOT biologists conducted a field survey for this species on April 30, 2002. No specimens of this plant were found. The USFWS recommends an additional survey at the appropriate time of year prior to construction to ensure that this species have not relocated to the project area since the previous survey.

2. Federal Species of Concern

Federal species of concern (FSC) are not afforded federal protection under the Endangered Species Act and are not subject to any of its provisions, including Section 7, until they are formally proposed or listed as Threatened or Endangered. However, the status of these species is subject to change, and so will be included for consideration. Federal Species of Concern are defined as species that are under consideration for listing for which there is insufficient information to support listing. The NCNHP on-line database was researched (list checked 3/25/05, last updated January 2004) for the listings provided in Table 3.

Table 3. Federal Species of Concern for Stokes County

Common Name	Scientific Name	NC Status	Habitat Present
Orangefin Madtom	<i>Noturus gilberti</i>	E	Yes
Diana Fritillary Butterfly	<i>Speyeria diana</i>	SR	Yes
Butternut	<i>Juglans cinerea</i>	W5A	No
Sweet Pinesap	<i>Monotropsis odorata</i>	SR-T	Yes
Green Floater	<i>Lasmigona subviridis</i>	E	Yes
Rustyside sucker	<i>Thoburnia hamiltoni</i>	E	No

Note:

- E An Endangered species is one whose continued existence as a viable component of the state’s flora or fauna is determined to be in jeopardy.
- SR A Significantly Rare species is not listed as “E”, “T”, or “SC”, but exists in the state in small numbers and has been determined to need monitoring.
- T Throughout – The species is rare throughout its range.
- Species with NC status of E, T, or SC receive limited protection under appropriate state laws, SR and W do not.
- W5A Watchlist

A review of the NCNHP database of rare species and unique habitats shows no occurrence of FSC species within 1.0 mi (1.6 km) the project study area.

3. Summary of Anticipated Impacts

No federal threatened or endangered species have been found in the project area, and none are expected to be impacted. An additional survey for the small-anthered bittercress will be performed prior to project construction. A survey for the James spinymussel will be performed from the end of the previous survey downstream to Big Creek prior to project construction.

VI. CULTURAL RESOURCES

A. Compliance Guidelines

This project is subject to compliance with Section 106 of the National Historic Preservation Act of 1966, as amended, and implemented by the Advisory Council on Historic Preservation’s Regulations for Compliance Section 106, codified at 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 on Historic Preservation a reasonable opportunity to comment on such undertakings.

B. Historic Architecture

A field survey of the Area of Potential Effects (APE) was conducted on May 17, 2002. All structures over 50 years of age within the APE were photographed, and later reviewed by the North Carolina State Historic Preservation Office (HPO). In a concurrence form dated October 1, 2002 the State Historic Preservation Officer (SHPO) concurred that there are no historic

architectural resources either listed on or eligible for listing in the National Register of Historic Places within the APE. A copy of the concurrence form is included in the Appendix.

C. Archaeology

The SHPO, in a memorandum dated March 20, 2002 stated that there are prehistoric archaeological sites (31SK110 and 31SK111) located within one-half mile north of the project area in similar topographic settings. The project site was surveyed and one previously unrecorded archaeological site, and one isolated find were identified, sites 31SK219/219* and 31SK220 were recommended as not eligible. An archaeological survey report was prepared and submitted to the HPO. SHPO in a memorandum dated October 21, 2004, concurred that 31SK220 is not eligible for listing under criterion D. SHPO, also, concurred that Site 31SK219 and 219** is located out of the APE and no further archaeological investigation be conducted in connection with this project. Copies of the SHPO memorandums are included in the Appendix.

VII. ENVIRONMENTAL EFFECTS

The project is expected to have an overall positive impact. Replacement of an inadequate bridge will result in safer traffic operations.

The project is a Federal "Categorical Exclusion" due to its limited scope and lack of substantial environmental consequences.

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

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

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

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

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

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

The Farmland Protection Policy Act requires all federal agencies or their representatives to consider the potential impacts to prime and important farmland soils by all land acquisition and construction projects. Prime and important farmland soils are defined by the Natural Resources Conservation Service (NRCS). Since the proposed bridge will be replaced at the existing location the Farmland Protection Policy does not apply.

The project is located in Stokes County, which has been determined to be in compliance with the National Ambient Air Quality Standards. 40 CFR Parts 51 and 93 are not applicable, because the proposed project is located in an attainment area. This project is not anticipated to create any adverse effects on the air quality of this attainment area.

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

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

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

An examination of records at the North Carolina Department of Environment and Natural Resources, Division of Water Quality, Groundwater Section and the North Carolina Division of Solid Waste Management revealed no hazardous waste sites in the project area. A field reconnaissance survey was performed and no underground storage tank (UST) sites were found within the project area. If any unregulated USTs or any potential source of contamination is discovered during right-of-way initial contacts with impacted property owners, then an assessment will be conducted to determine the extent of any contamination at that time.

The drainage area of Pinch Gut Creek at the proposed crossing is 11.2 square miles (29.1 square kilometers). Stokes County is currently participating in the National Flood Insurance Regular Program. The project site on Pinch Gut Creek is located in an approximate flood hazard zone. However, it is not anticipated that a floodway modification will be required since the bridge will be an “in kind” replacement. Since the proposed bridge will be a structure similar in length and waterway opening size, it is not anticipated that this project will have any substantial impact on the existing floodplain or floodway. The Flood Hazard Boundary Map (Figure 5) shows the approximate limits of the 100-year flood plain in the vicinity of the project.

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

VIII. PUBLIC INVOLVEMENT

Efforts were undertaken early in the planning process to contact local officials and involve them in the project development. Scoping letters requesting comments on the proposed project were sent to local officials as well as various agencies. Responses to the scoping letters are included in the Appendix.

A citizen's informational meeting was held on October 28, 2003 at the Danbury Library to review the preferred alternative and answer questions. Four citizens attended the workshop and one comment sheet was received at the workshop. There was no opposition to Alternative A.

IX. COMMENTS FROM SCOPING LETTERS

Stokes County Emergency Medical Service/Emergency Management

Comments: Two EMS stations serve the project area. Station #2 would have an increased distance of 0.6 mile for calls on the east side of the bridge. Station #3 would have an increase of 1.4 miles for calls on the west side of the bridge.

Response: So noted.

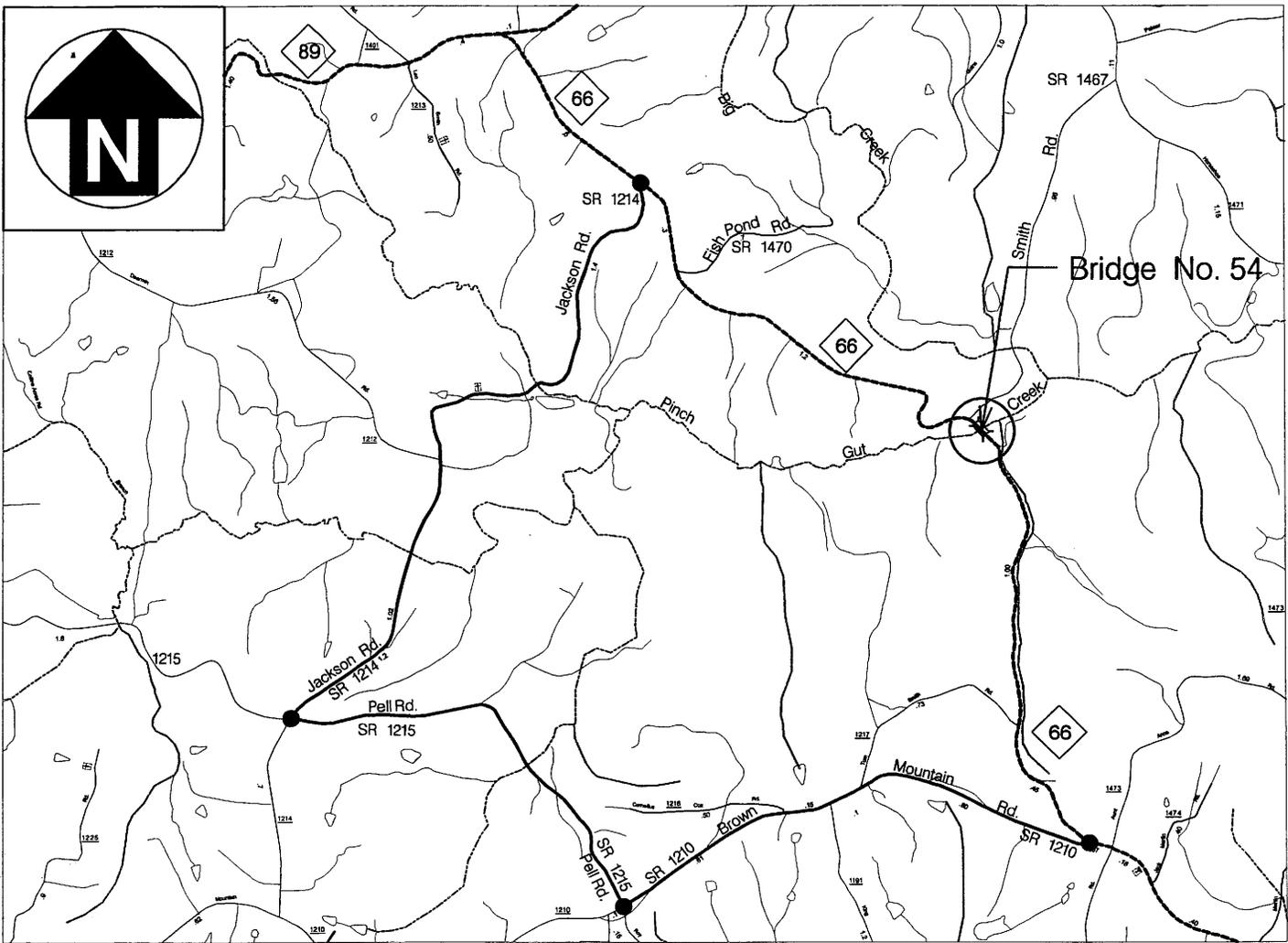
Comment: Francisco Fire/Rescue and Double Creek Fire/Rescue handle fire department and rescue squad services in the project area. Double Creek's primary response from the east side of the bridge would be approximately 5.3 miles. Calls west of the bridge would increase mileage by 3.5 miles. Francisco's primary response from the west side of the bridge would be approximately 5.4 miles. Calls east of the bridge would increase the response mileage by 7.6 miles.

Response: So noted.

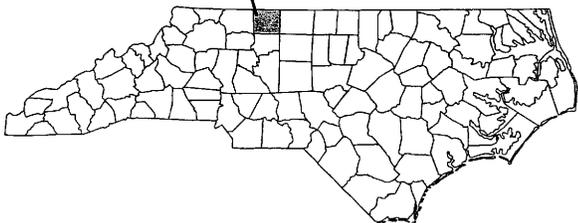
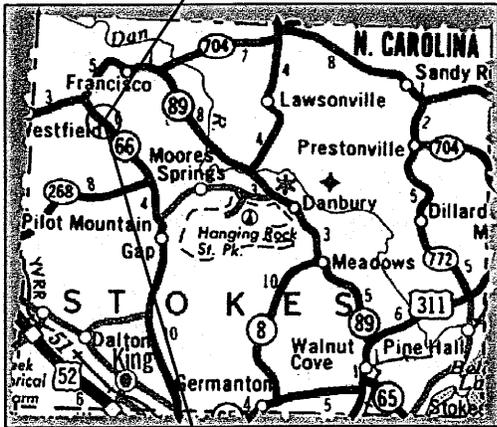
Comment: The EMS situation does not appear to be unworkable. The additional response burden placed upon the fire departments, both primary, and assisting, is of concern.

Response: So noted.

All comments from other agencies, state and local officials are addressed elsewhere in this document.



PROPOSED DETOUR ROUTE



North Carolina Department of Transportation
Project Development & Environmental Analysis

STOKES COUNTY
BRIDGE NO. 54 ON NC 66
OVER
PINCH GUT CREEK
B-4282

FIGURE 1

North Carolina Department
Of Transportation
Project Development &
Environmental Analysis



**ALTERNATIVE A
(PREFERRED)**

PINCH GUT
CREEK

B-4282
STOKES COUNTY
NC 66 BRIDGE NO. 54
OVER PINCH GUT CREEK

SMITH RD

BRIDGE NO. 54

135.00'

BEGIN
PROJECT

66

TO SR 1214 (JACKSON RD.)

END PROJECT

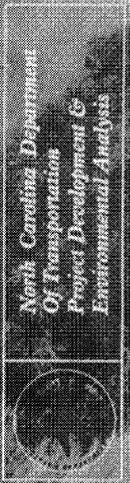
66

TO SR 1210
(MOUNTAIN RD)



B-4282

FIGURE 2



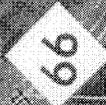
ALTERNATIVE B (ONSITE ONE LANE DETOUR)

PINCH GUT
CREEK

TEMP. ONSITE DETOUR

BRIDGE NO. 54
135.00'

TO SR 1210
(MOUNTAIN RD)



END PROJECT

B-4282
STOKES COUNTY
NC 66 BRIDGE NO 54
OVER PINCH GUT CREEK

SMITH RD

BEGIN
PROJECT



TO SR 1214 (JACKSON RD)

B-4282



FIGURE 2A

North Carolina Department
Of Transportation
Project Development &
Environmental Analysis



ALTERNATIVE C (NEW ALIGNMENT)

PINCH GUT
CREEK

B-4282
STOKES COUNTY
NC 66 BRIDGE NO. 54
OVER PINCH GUT CREEK

135.00'

REMOVE
BRIDGE NO. 54

PINCH GUT CREEK

66

TO SR 1214 (JACKSON RD.)

BEGIN
PROJECT

END PROJECT

66

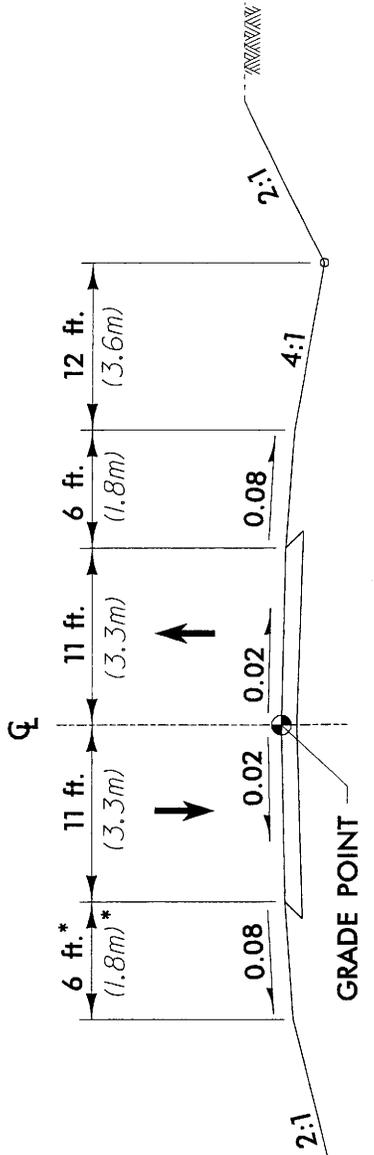
TO SR 1210
(MOUNTAIN RD.)

B-4282



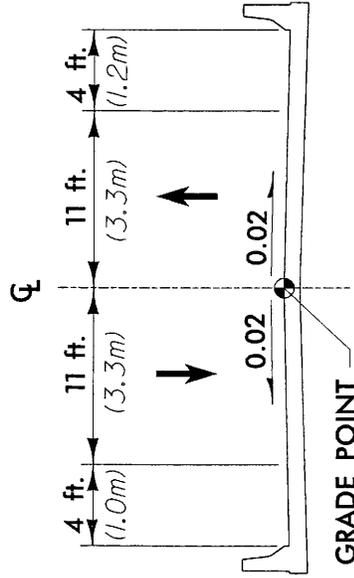
FIGURE 2B





TYPICAL APPROACH SECTION
(PROPOSED)

* 9 ft. (1.0m) WITH GUARDRAIL IS WARRANTED



TYPICAL BRIDGE SECTION
(PROPOSED)

TRAFFIC DATA

(EXISTING YR.)	2004 ADT =	330
(CONST. YR.)	2006 ADT =	340
(DESIGN YR.)	2030 ADT =	550
DUAL	2%	
TTST	1%	

FUNCTIONAL CLASSIFICATION :
MAJOR COLLECTOR - RURAL



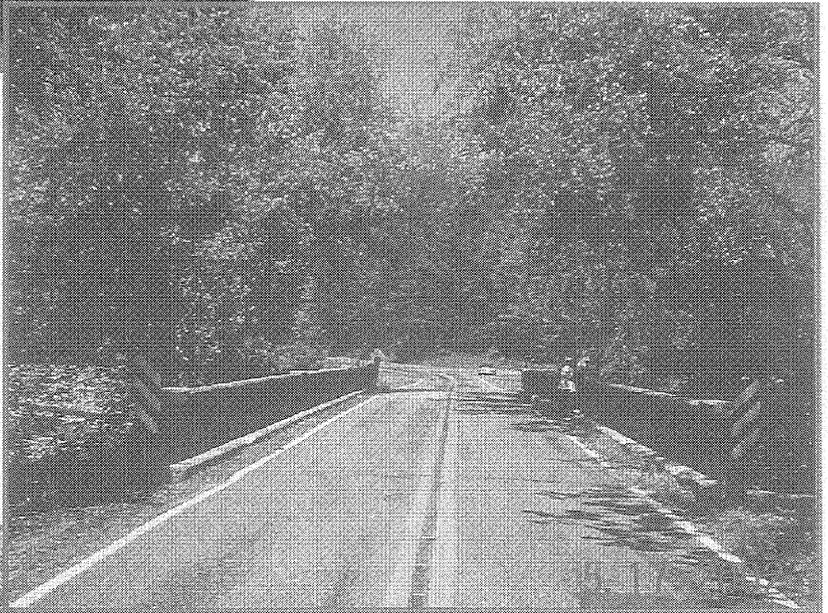
North Carolina Department
Of Transportation
Project Development &
Environmental Analysis

STOKES COUNTY
BRIDGE NO. 54 ON NC 66
OVER PINCH GUT CREEK
TIP NO: B-4282

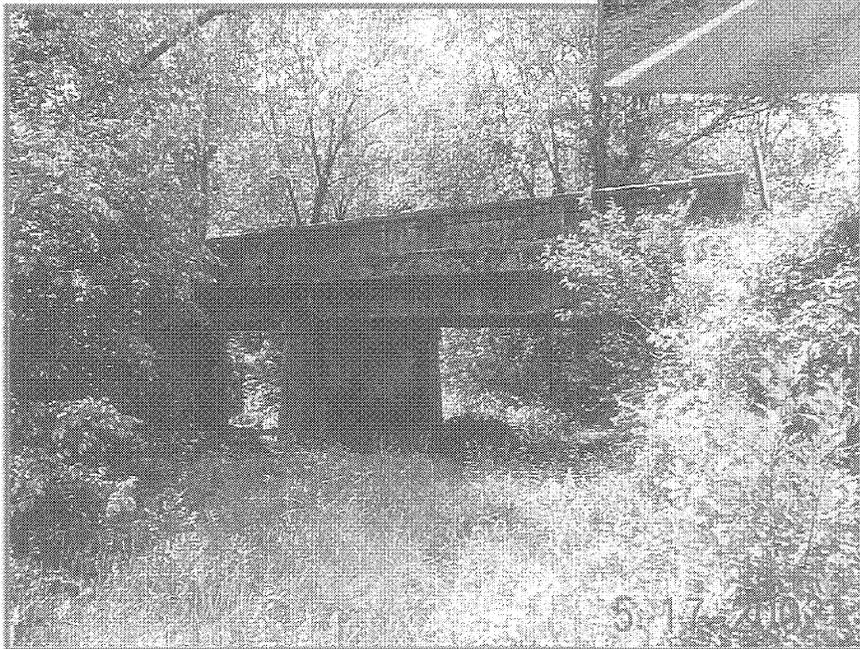
FIGURE 3



Looking east across bridge.



Looking west across bridge.



Side view of bridge.



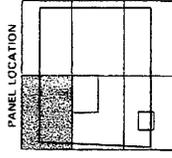
APPROXIMATE SCALE IN FEET
0 2000

NATIONAL FLOOD INSURANCE PROGRAM

FIRM FLOOD INSURANCE RATE MAP

STOKES COUNTY,
NORTH CAROLINA
(UNINCORPORATED AREAS)

PANEL 25 OF 150



COMMUNITY-PANEL NUMBER
370362 0025 B
EFFECTIVE DATE:
SEPTEMBER 30, 1988



Federal Emergency Management Agency

This is an official copy of a portion of the above referenced flood map. It was extracted using F-MIT On-Line. This map does not reflect changes or amendments which may have been made subsequent to the date on the title block. For the latest product information about National Flood Insurance Program flood maps check the FEMA Flood Map Store at www.msc.fema.gov

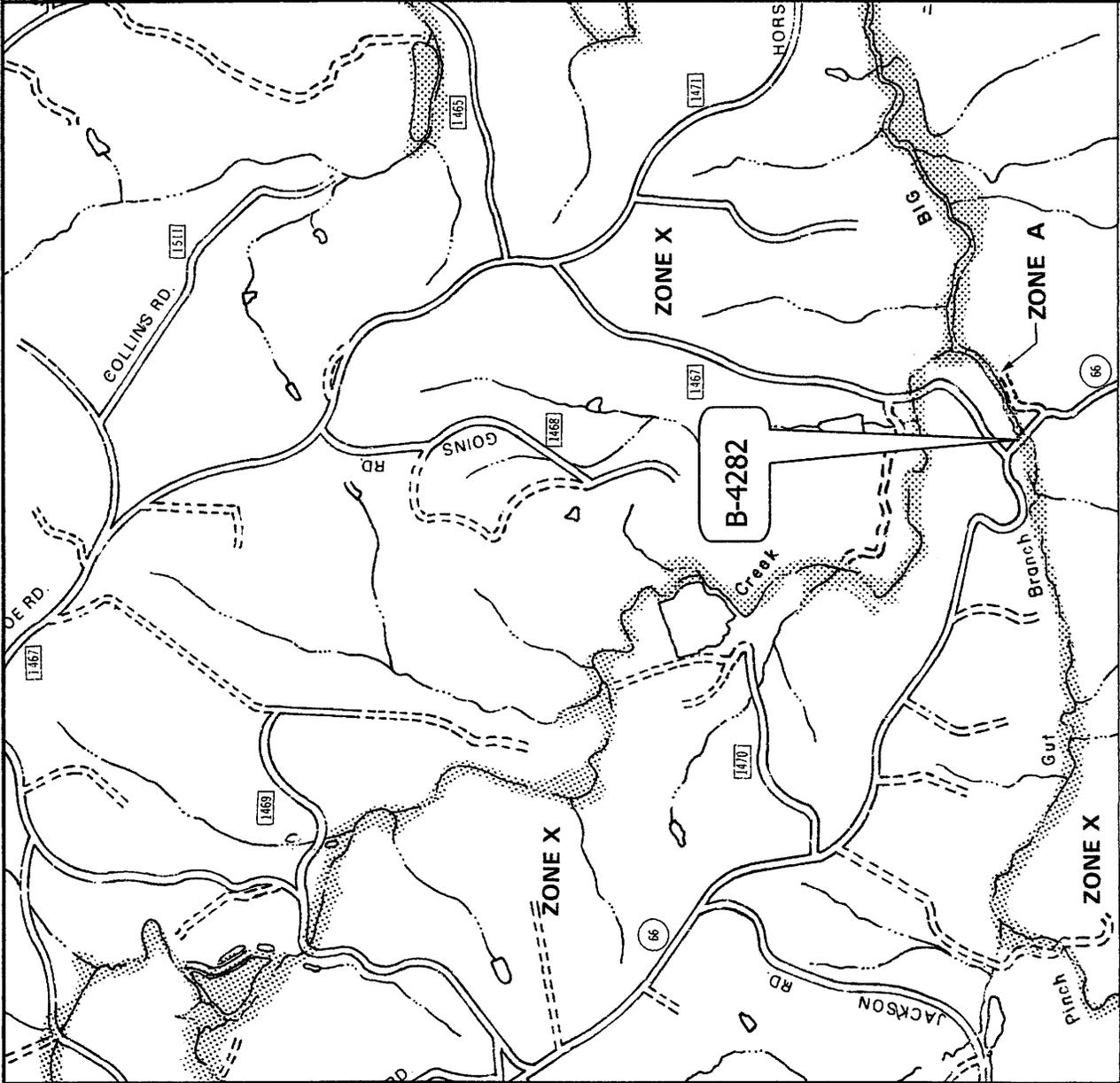


FIGURE 5

APPENDIX

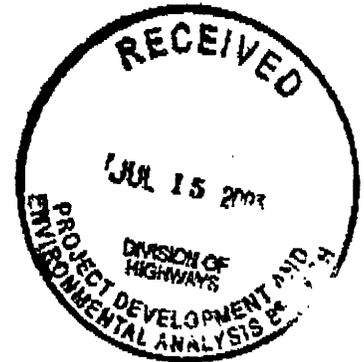


United States Department of the Interior

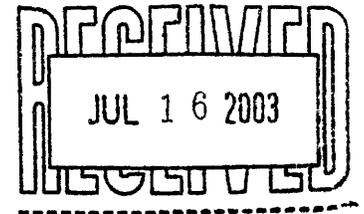
FISH AND WILDLIFE SERVICE

Asheville Field Office
160 Zillicoa Street
Asheville, North Carolina 28801

July 11, 2003



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



Dear Mr. Thorpe:

Subject: Endangered Species Concurrence for Three Bridge Replacements in North Carolina--B-4103, Bridge No. 416 on SR 2550 over Beaver Dam Creek, Davidson County; B-4255, Bridge No. 28 on NC 801 over Withrow Creek, Rowan County; and B-4282, Bridge No. 54 on NC 66 over Pinch Gut Creek, Stokes County

As requested by Mulkey Inc., engineers and consultants for the North Carolina Department of Transportation, we have reviewed the natural resources information and biological conclusions for federally protected species for the subject projects. We provide the following comments in accordance with the provisions of section 7 of the Endangered Species Act of 1973, as amended (16 U.S.C. 1531-1543) (Act), and the Fish and Wildlife Coordination Act, as amended (16 U.S.C. 661-667e).

B-4103 (Log Number 4-2-03-332)

According to the information provided, three federally listed species in Davidson County were considered. These include the endangered Schweinitz's sunflower (*Helianthus schweinitzii*), the threatened bald eagle (*Haliaeetus leucocephalus*), and the threatened (due to similarity of appearance) bog turtle (*Clemmys muhlenbergii*). The report considered these species and concluded that there would be "no effect" on the bald eagle, Schweinitz's sunflower, or bog turtle. Given the results of the field survey, we concur with the conclusion of "no effect" for the Schweinitz's sunflower and bog turtle. In view of this, we believe the requirements under section 7(c) of the Act are fulfilled regarding this species. 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) this

action is 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.

Regarding impacts to the bald eagle, this project is located very near Badin Lake, which provides suitable habitat for eagles. Surveys for bald eagles in the vicinity of this project were last conducted in 2001. Because it has been two years since these surveys and because there has been an increase in eagle activity in this part of the Yadkin River basin, we believe it would be prudent to resurvey for eagles prior to beginning work on this project. Therefore, at this time we cannot concur with a conclusion of "no effect" for this species. We recommend resurveying for the bald eagle, coordinating with the North Carolina Wildlife Resources Commission and Alcoa Power Company with regard to the latest monitoring data they have collected for eagle nests and foraging areas.

B-4255 (Log Number 4-2-03-333)

According to the information provided, two federally listed species in Davidson County were considered. These include the endangered Schweinitz's sunflower (*Helianthus schweinitzii*) and the threatened bald eagle (*Haliaeetus leucocephalus*). The report considered these species and concluded that implementation of the subject project would be "not likely to adversely affect" the bald eagle or Schweinitz's sunflower. Given the results of the field survey and the habitat conditions in the action area, we concur with the conclusion of "not likely to adversely affect" for the Schweinitz's sunflower and bald eagle. In view of this, we believe the requirements under section 7(c) of the Act are fulfilled regarding this species. 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) this action is 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.

B-4282 (Log Number 4-2-03-334)

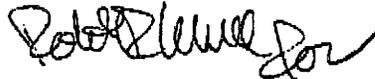
According to the information provided, three federally listed species in Stokes County were considered. These include the endangered Schweinitz's sunflower (*Helianthus schweinitzii*), James spinymussel (*Pleurobema collina*), and small-anthered bittercress (*Cardamine micranthera*). The report considered these species and concluded that this project would have "no effect" on them. Given the results of field surveys, we concur with the conclusion of "no effect" for the Schweinitz's sunflower. In view of this, we believe the requirements under section 7(c) of the Act are fulfilled regarding this species. 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) this action is 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.

According to information provided, mussel surveys were conducted in Pinch Gut Creek from 250 feet above to 500 feet below the project location. Pinch Gut Creek flows into Big Creek approximately one-quarter of a mile downstream of the project area. Although the James

spiny mussel has been found only in the main stem of the Dan River, other native freshwater mussels have been found in Big Creek. Given the difficulty of surveying for the James spiny mussel and the relative lack of surveys in Big Creek, we strongly recommend an additional mussel survey from the end of the previous survey downstream to Big Creek prior to project construction. Similarly, the small-anthered bittercress, while not located in surveys conducted in 2002, could have relocated to the project site from an upstream location during recent high flows. We also strongly recommend that a preconstruction survey (at the appropriate time of year) be conducted for this species. At this time we cannot concur with a conclusion of "no effect" for the James spiny mussel or small-anthered bittercress and recommend further surveys as described above.

If you have questions about these comments, please contact Ms. Marella Buncick of our staff at 828/258-3939, Ext. 237. In any future correspondence concerning these projects, please reference the log numbers assigned with our comments about each of the three projects.

Sincerely,



Brian P. Cole
State Supervisor

cc:

Mr. Eric Alsmeyer, U.S. Army Corps of Engineers, Raleigh Regulatory Field Office, 6508 Falls of the Neuse Road, Suite 120, Raleigh, NC 27615
Ms. Marla J. Chambers, Highway Projects Coordinator, North Carolina Wildlife Resources Commission, 12275 Swift Road, Oakboro, NC 28129
Ms. Cynthia Van Der Wiele, North Carolina Department of Environment and Natural Resources Division of Water Quality, Wetlands Section, 1621 Mail Service Center, Raleigh, NC 27699-1621

U.S. Department
of Transportation

United States
Coast Guard



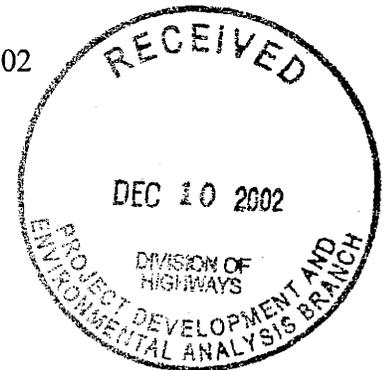
Commander
United States Coast Guard
Atlantic Area

431 Crawford Street
Portsmouth, Va. 23704-5004
Staff Symbol: (Aowb)
Phone: (757)398-6587

DILL GOODWIN

B-4282

16590
03 DEC 02



Mr. Gregory J. Thorpe, Ph. D.
North Carolina Department of Transportation
1548 Mail Service Center
Raleigh, North Carolina 27699-1548

Dear Mr. Thorpe:

This is in response to your letter dated October 24, 2002 requesting the Coast Guard to review the proposed projects to replace the following nine bridges: Black River Over Flow, Black River, Jenny's Branch, Beaver Dam Creek, New River, Stone Creek, N.E. Cape Fear River, Withrow Creek and Pinch Gut Creek all located throughout North Carolina.

The Coast Guard Authorization Act of 1982 exempts bridge projects from Coast Guard bridge permits when the bridge project crosses nontidal waters which are not used, susceptible to use in their natural condition, or susceptible to use by reasonable improvement as a means to transport interstate commerce. Such conditions for some of these waterways were confirmed in a telephone conversation on November 27, 2002. Due to this, the bridge projects on Beaver Dam, Withrow, and Pinch Gut Creeks and Black River Over Flow are exempt, and will not require Coast Guard Bridge Permits.

Black River, Jenny's Branch, and Stone Creek are subject to tidal influence and thus considered legally navigable for Bridge Administration purposes. But these waterways also meet the criteria for advance approval waterways outlined in Title 33, Code of Federal Regulations, Section 115.70. Advance approval waterways are those that are navigable in law, but not actually navigated by other than small boats. The Commandant of the Coast Guard has given his advance approval to the construction of bridges across such waterways; therefore, an individual permit will not be required for these projects either.

Further information is required to assess the bridge replacement projects over the New River and the North East Cape Fear River. Such information as, is the waterway affected by lunar tides? Is there any commercial navigation? What types and sizes of boats operate on the waterway? Bridge Permits may be required based on the answers to these questions. If a permit is required, a higher level of environmental review will also be required.

The fact that Coast Guard permits are not required for some of these projects does not relieve you of the responsibility for compliance with the requirements of any other Federal, State, or

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local agency who may have jurisdiction over any aspect of the project. If you have any questions, please contact Terrance Knowles at the phone number or address show above.

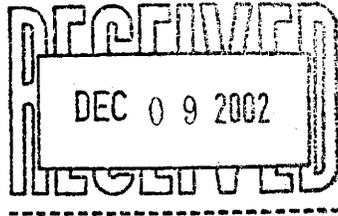
Sincerely,



ANN B. DEATON
Chief, Bridge Administration Section
By direction of the Commander
Fifth Coast Guard District



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Habitat Conservation Division
101 Pivers Island Road
Beaufort, North Carolina 28516-9722



December 6, 2002

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

Attention: John Wadsworth, P.E.

Dear Dr. Thorpe:

The National Marine Fisheries Service (NOAA Fisheries) has reviewed your October 24, 2002, letter requesting comments on eight bridge replacement projects included in the North Carolina Department of Transportation 2002-2008 Transportation Improvement Plan. We understand that the NCDOT is preparing the planning and environmental studies necessary to process these projects as Categorical Exclusions and offers the following comments for your consideration:

The environmental documents for these projects should address measures designed to avoid and minimize loss of open water and wetlands that support fishery resources. In addition, we support findings contained in the May 9, 2002, letter from the Wilmington District, U.S. Army Corps of Engineers, which identified the following issues and concerns as being relevant to the proposed bridge replacement projects:

- Replacing bridges with culverts
- Permanent and temporary wetland losses
- Offsite versus onsite detours
- Time of year restrictions on instream work
- Treatment of wetland restoration areas
- Existing bridge demolition and removal
- Lengthening existing bridges as a wetland restoration measure

Group I - The following projects will have no impact on resources for which NOAA Fisheries has stewardship responsibility; therefore, we have no comments:



Bridge Number	Project Number	County
No. 416	B - 4103	Davidson County
No. 28	B - 4255	Rowan County
No. 54	B - 4282	Stokes County

Group II - These projects have the potential to affect fishery resources and their associated habitat for which NOAA Fisheries has stewardship responsibility:

Bridge Number	Project Number	County
No. 12	B - 1382	Sampson County
No. 26	B - 1382	Sampson County
No. 72	B - 4031	Brunswick County
No. 24	B - 4214	Onslow County
No. 21	B - 4223	Pender County

Bridges 12, 26, 21 and 24 are located in the Cape Fear and New River basins and in areas which provide habitat for anadromous fishery resources including American shad and river herring. Bridges 72 and 24 are located in areas with brackish to saline waters that also support estuarine dependent fishery resources such as spot, Atlantic croaker, and blue crab. In addition, these projects may affect **Essential Fish Habitat** for Federally managed species such as red drum and shrimp which are managed by the South Atlantic Fishery Management Council, and summer flounder which is managed by the Mid-Atlantic Fishery Management Council. Accordingly, we recommend that an Essential Fish Habitat Assessment be included in any environmental document for these projects.

Spawning and nursery habitat for anadromous and estuarine fishes may be adversely impacted by these projects unless measures to avoid and minimize impacts to waters and wetlands are included in the project plans. Therefore, NOAA Fisheries may recommend against Department of the Army authorization of these projects under Nationwide Permit 23 unless the following recommendations are incorporated:

1. Following impact avoidance and minimization, unavoidable wetland losses shall be offset through implementation of a compensatory mitigation plan that has been approved by the Corps of Engineers and in consultation with NOAA Fisheries.
2. All construction activities in waters and associated wetlands shall utilize techniques that avoid and minimize adverse impacts to those systems and their associated flora and fauna

Although the stated purpose of the project is to improve timber production, no information is provided regarding any ongoing silviculture operation. Furthermore, there is no indication of existence of a forest management plan for the site which might indicate that the existing excavation and filling of wetlands is in compliance with the Clean Water Act (CWA), Section 404 (f)(1)(A) exemptions for silviculture.

NOAA Fisheries concludes that the loss of wetlands at this site is highly detrimental to commercially, recreationally, and ecologically important fishery resources that utilize the Newport River. Therefore, we recommend that Department of the Army authorization not be granted in this case. We further recommend that if authorization is denied, the applicant should be required to restore pre-project elevations and contours and restore, through planting and other measures, all impacted wetlands.

Thank you for the opportunity to provide these comments. Related questions or comments should be directed to the attention of Mr. Ronald S. Sechler at our Beaufort Office, 101 Pivers Island Road, Beaufort, North Carolina, or at (252) 728-5090.

Sincerely,



AS Andreas Mager, Jr.
Assistant Regional Administrator
Habitat Conservation Division



Ditman

**CITIZENS PARTICIPATION
RECEIVED**

OCT 25 2004

**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

October 21, 2004

MEMORANDUM

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

FROM: Peter Sandbeck *Peter Sandbeck*

SUBJECT: Archaeological Survey for the Replacement of Bridge No. 54 on NC 66
Over Pinch Gut Creek, TIP Project B-4282, State Project No. 8.1641101,
Federal Project No. BRZ-0066(1), Stokes County, ER 02-8573

Thank you for your letter of August 23, 2004, transmitting the archaeological survey report by Bruce Idol of TRC Garrow Associates, Inc. for the above project. We apologize for the delay in our response.

For purposes of compliance with Section 106 of the National Historic Preservation Act, we concur that the following property is not eligible for listing in the National Register of Historic Places under criterion D:

31SK220

This prehistoric lithic isolated find consists of one quartz flake and will not yield information important to prehistory.

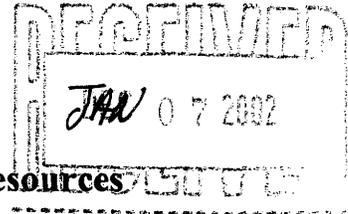
The other archaeological site recorded during the survey, 31SK219 and 219** is located outside of the Area of Potential Effect (APE) and was not fully evaluated. Given the scarcity of cultural material, Mr. Idol has recommended that no further archaeological investigation be conducted in connection with this project. We concur with this recommendation since the project will not involve significant archaeological resources. The report meets our office's guidelines and those of the Secretary of the Interior.

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.

	Location	Mailing Address	Telephone/Fax
ADMINISTRATION	507 N. Blount Street, Raleigh NC	4617 Mail Service Center, Raleigh NC 27699-4617	(919) 733-4763/733-8653
RESTORATION	515 N. Blount Street, Raleigh NC	4617 Mail Service Center, Raleigh NC 27699-4617	(919) 733-6547/715-4901
SURVEY & PLANNING	515 N. Blount Street, Raleigh, NC	4617 Mail Service Center, Raleigh NC 27699-4617	(919) 733-6545/715-4901

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

cc: Bruce Idol



North Carolina Department of Cultural Resources

State Historic Preservation Office

David L. S. Brook, Administrator

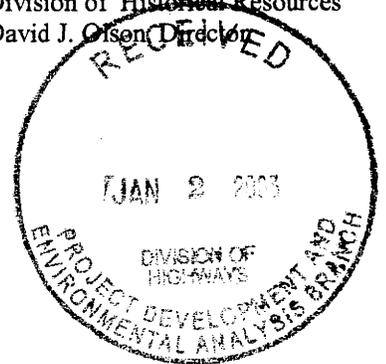
Michael F. Easley, Governor
Lisbeth C. Evans, Secretary
Jeffrey J. Crow, Deputy Secretary

Division of Historical Resources
David J. Olson, Director

December 20, 2002

MEMORANDUM

TO: Greg Thorpe, Manager
Project Development and Environmental Analysis Branch
NCDOT Division of Highways
FROM: David Brook
SUBJECT: Replacement of Bridge No. 54 over Pinch Gut Creek on NC 66,
B-4282, Stokes County, ER02-8573



Thank you for your letter of October 24, 2002, concerning the above project.

Please see the attached March 20, 2002, memorandum outlining our recommendations for surveys.

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.

DB:doc

Attachment

cc: Mary Pope Furr
Matt Wilkerson

Table with 4 columns: Administration, Restoration, Location, Mailing Address, Telephone/Fax. Contains contact information for various departments.



Handwritten signature

North Carolina Department of Cultural Resources
State Historic Preservation Office

David L. S. Brook, Administrator

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

Division of Historical Resources
David J. Olson, Director

March 20, 2002

MEMORANDUM

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

FROM: David Brook *for David Brook*

SUBJECT: Replace Bridge No. 54 on NC 66 over Pinch Gut Creek, B-4282,
Stokes County, ER 02-8573

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

Prehistoric archaeological sites 31SK110 and 31SK111 are located within one-half mile north of the project area in similar topographic settings. It is likely that the proposed bridge replacement will affect as yet unrecorded archaeological resources.

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

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

Bridge # 54 the Pinch Gut Creek Bridge (SK 553) was identified during the Stokes County survey. Its eligibility for listing in the National Register of Historic Places needs to be evaluated.

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

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

cc: Mary Pope Furr, NCDOT
Matt Wilkerson, NCDOT

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

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

Project Description: Replace Bridge No. 54 on NC 66 over Pinch Gut Creek

On 10/01/2002, representatives of the

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

Reviewed the subject project at

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

All parties present agreed

- There are no properties over fifty years old within the project's area of potential effects.
- There are no properties less than fifty years old which are considered to meet Criteria Consideration G within the project's area of potential effects.
- There are properties over fifty years old within the project's Area of Potential Effects (APE), but based on the historical information available and the photographs of each property, the property identified as Bridge # 54 is considered not eligible for the National Register and no further evaluation of it is necessary.
- There are no National Register-listed or Study Listed properties within the project's area of potential effects.
- All properties greater than 50 years of age located in the APE have been considered at this consultation, and based upon the above concurrence, all compliance for historic architecture with Section 106 of the National Historic Preservation Act and GS 121-12(a) has been completed for this project.
- There are no historic properties affected by this project. (Attach any notes or documents as needed)

Signed: _____

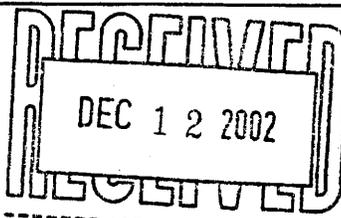
Mary Pope 10-01-2002
 Representative, NCDOT Date

[Signature] 10/1/02
 FHWA, for the Division Administrator, or other Federal Agency Date

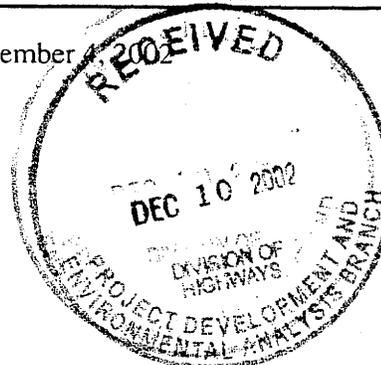
[Signature] 10-01-2002
 Representative, HPO Date

David Hood 10/1/02
 State Historic Preservation Officer Date

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



December 12, 2002



MEMORANDUM

TO: Gregory J. Thorpe, Ph.D.
NCDOT, Project Development & Environmental Analysis

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

SUBJECT: Scoping Comments for Bridge Replacement Projects: B-4103 Davidson Co., B-4255 Rowan Co., and B-4282 Stokes Co.

This letter is in response to your request for comments on the above-referenced projects.

The NC Division of Water Quality staff has the following recommendations:

1. B-4103 Bridge No. 416 over Beaver Dam Creek on SR 2550 in Davidson County
 - The bridge should be replaced with a bridge structure and designed as a single span with *no piers* in the stream.
 - Storm water management should be designed as a closed system. Storm water shall be designed to be carried across the bridge (no deck drains over the stream) and diverted through grass-lined ditches, vegetated buffers or directed to a storm water collection device prior to entering North Fork New River.
 - Use *Sedimentation and Erosion Control Guidelines for Sensitive Watersheds* [15A NCAC 4B .0124; see http://ncrules.state.nc.us/ncadministrativ_/title15aenviron_/chapter04sedime_/default.htm] prior to any ground-disturbing activities to minimize impacts to downstream aquatic resources.
 - NCDOT must comply with water supply watershed buffer requirements.
 - Use BMPs for bridge demolition and removal, Case 1 (9-20-99 NCDOT policy; see <http://www.ncdot.org/planning/pe/bmp.pdf>).
2. B-4255 Bridge No. 28 over Withrow Creek on NC 801 in Rowan County
 - DWQ prefers that the bridge be replaced with a bridge, particularly if a Categorical Exclusion document is being used (otherwise it should be processed as a FONSI under NEPA requirements).
 - Storm water should be directed to grass-lined ditches, vegetated buffers or other pre-treatment method before entering the stream.
3. B-4282 Bridge No. 54 over Pinch Gut Creek on NC 66 in Stokes County
 - The bridge should be replaced with a bridge structure and designed as a single span with *no piers* in the stream.
 - Storm water management should be designed as a closed system. Storm water shall be designed to be carried across the bridge (no deck drains over the stream) and diverted through grass-lined ditches, vegetated buffers or directed to a storm water collection device prior to entering North Fork New River.
 - Use BMPs for bridge demolition and removal, Case 1 (9-20-99 NCDOT policy; see <http://www.ncdot.org/planning/pe/bmp.pdf>).



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

pc: Chris Militscher, USEPA
Marla Chambers, NCWRC
File Copy

1082
State of North Carolina
Department of Environment
and Natural Resources
Division of Water Quality



Michael Easley, Governor
Bill Ross, Secretary
Gregory Thorpe, Director

February 20, 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

A handwritten signature in black ink, appearing to read 'John Dorney', is written over the typed name and title in the 'Through:' field.

From: Robert Ridings
NC Division of Water Quality

Subject: Review of Natural Systems Technical Reports for bridge
replacement projects scheduled for construction in CFY 2005:
"Green Light" Projects: B-4259, B-4261, B-4258, B-4260, B-4255,
~~B-4282~~, B-4290, B-4291, B-4070, B-4239, B-4240, B-4242,
and B-4245.

In future reports, an Executive Summary Paragraph would be helpful. This should include a brief description of the work intended (i.e., replace bridge with another bridge or with a culvert), the amount of impact to wetlands and streams, and types of possible permits needed.

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.

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

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.

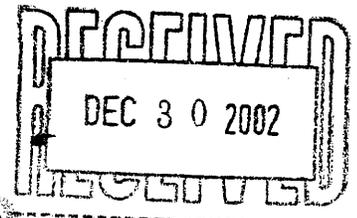
Special Note on project B-4261: these waters are classified as 303(d) waters. Special measures for sediment control will be needed.

Also note that projects B-4239, B-4290, B-4258, and B-4282 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.

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.

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.

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 Wildlife Resources Commission ☒

Charles R. Fullwood, Executive Director

MEMORANDUM

TO: John Wadsworth, P.E., Project Planning Engineer
Project Development and Environmental Analysis Branch, NCDOT

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

DATE: December 17, 2002

SUBJECT: North Carolina Department of Transportation (NCDOT) request for comments on Bridge Replacement Projects B-4103 (Davidson County), B-4255 (Rowan County) and B-4282 (Stokes County).

North Carolina Department of Transportation (NCDOT) is requesting comments from the North Carolina Wildlife Resources Commission (NCWRC) on three bridge replacement projects. Staff biologists have reviewed the information provided and have the following preliminary comments. Our comments are provided in accordance with certain 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).

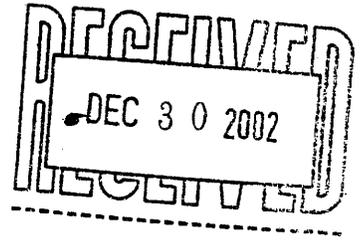
NCWRC has previously submitted scoping comments on these three bridge replacement projects. The comments, dated May 8, 2002, are attached and remain appropriate; however, we offer the following additional comments on the B-4103 project.

Bridge No. 416 on SR 2550 (Badin Lake Road) in Davidson County crosses over Beaverdam Creek, at the headwaters of an arm of Badin Lake which is managed by Yadkin, Inc. under a Federal Energy Regulatory Commission (FERC) permit. NCDOT should coordinate with Yadkin, Inc. to ensure compliance with their Shoreline Management Plan and Bald Eagle Management Plan. Bald eagles (*Haliaeetus leucocephalus*) (Federal and State Threatened), are found along Badin Lake and other lakes on the Yadkin/Pee Dee River system, both upstream and downstream of the project area. The Beaverdam Creek/Grassy Fork Creek Significant Natural Heritage Area is upstream of the project area, where a number of heartleaf plantain observations

have been made. Several other listed plant species, including the Schweinitz's sunflower (*Helianthus schweinitzii*) (Federal and State Endangered) have been found in the area. Surveys should be conducted for all federal and state listed species. Also, the bridge clearance above the water should be sufficient to allow small boat or canoe passage underneath.

Thank you for the opportunity to review and comment on this project. If you have any questions regarding these comments, please contact me at (704) 485-2384.

cc: Cynthia Van Der Wiele, DWQ
Marella Buncick, USFWS



☒ 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 8, 2002

SUBJECT: NCDOT Bridge Replacements:
Davidson County – Bridge No. 416, SR2550, Beaverdam Creek, B-4103
Rowan County – Bridge No. 28, NC801, Withrow Creek, B-4255
Stokes County – Bridge No. 54, NC66, Pinchgut Creek, B-4282

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 stream underneath the bridge.
7. In trout waters, the N.C. Wildlife Resources Commission reviews all U.S. Army Corps of Engineers nationwide and general '404' permits. We have the option of requesting additional measures to protect trout and trout habitat and we can recommend that the project require an individual '404' permit.
8. In streams that contain threatened or endangered species, 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. Davidson County – Bridge No. 416, SR2550, Beaverdam Creek, B-4103 YELLOW/RED LIGHT. Biologists indicate that a bridge is preferred. Potential for wetland and stream impacts at this location due to width of stream.

2. Rowan County – Bridge No. 28, NC801, Withrow Creek, B-4255
GREEN LIGHT. No concerns indicated by biologists. Standard conditions should be appropriate.

3. Stokes County – Bridge No. 54, NC66, Pinchgut Creek, B-4282
RED LIGHT. Class C-trout stream. Small mouth bass fishery will require moratorium from May 1 – July 15 for instream activities. Listed species will need thorough review (James River Spiny mussel, Hog Sucker, and Riverweed Darter, etc.). Dan River is a WRC Priority Aquatic Conservation Area.

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.

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



Stokes County

EMERGENCY MEDICAL SERVICE
EMERGENCY MANAGEMENT

15 February 2002

N.C. Department of Transportation
Project Development and Environmental Analysis Branch
1548 Mail Service Center
Raleigh, NC 27699-1548
Attn: Mr. Davis Moore

RE: Replacement of Bridge No. 54 on NC 66 over Pinch Gut Creek

Dear Mr. Moore:

First, let me apologize for the tardiness of this report. I asked the GIS Department for assistance regarding this matter and that information has just been forwarded to me.

Stokes County EMS Station #2 (Lawsonville) and Station #3 (Pinnacle) serves this area. The district line is at Highway 66 and Smith Road, which is west of the Pinch Gut Creek Bridge. For Station #2, the shortest route would be 13.8 miles. For calls on the east side of the bridge, there would be an increase of 0.6 miles. For Station #3, the shortest route would be 14.0 miles. For calls on the west side of the bridge, there would be an increase of 1.4 miles.

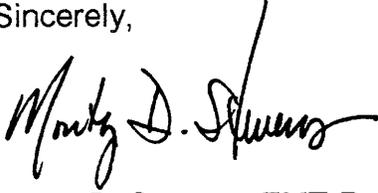
Fire Department and Rescue Squad response in this area is handled by Francisco Fire/Rescue and Double Creek Fire/Rescue. Double Creek's primary response would be from the east side of the bridge and would be approximately 5.3 miles. Calls west of the bridge would increase the response mileage by 3.5 miles. Francisco's primary response would be from the west side of the bridge and would be approximately 5.4 miles. Calls east of the bridge would increase the response mileage by 7.6 miles.

I do think, with the above information, it can be determined, that this would not create an unworkable situation, particularly for the EMS. I do question, however, the additional response burden placed on the Fire Departments, both primary and assisting.



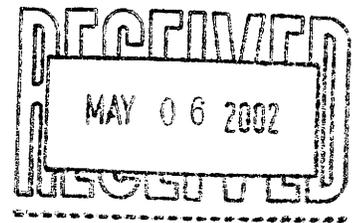
If I can be of further assistance, please contact me at (336) 593-2427.

Sincerely,

A handwritten signature in black ink, appearing to read "Monty D. Stevens". The signature is written in a cursive style with a large, prominent initial "M".

Monty D. Stevens, EMT-P
Interim Director

cc: File



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

Michael Easley
GOVERNOR

P.O. BOX 25201, RALEIGH, N.C. 27611-5201

Lyndo Tippett
SECRETARY

March 7, 2003

MEMORANDUM TO: Stacy Harris, P.E., Unit Head
Consultant Engineering Unit

FROM: Jared Gray, Environmental Biologist
Office of the Natural Environment

SUBJECT: Protected species survey report for the James spiny mussel (*Pleurobema collina*) for the proposed bridge replacement of Bridge 54 over Pinch Gut Creek on NC 66; Stokes County: Federal Aid Project No. BRSTP-0066 (1); State Project No. 8.1641101; TIP Project No. B-4282.

ATTENTION: Elmo Vance, Project Planning Engineer
Project Planning Engineering Unit

The following memorandum addresses the James spiny mussel (*Pleurobema collina*) federally protected species listed by the US Fish and Wildlife Service for Stokes County. Habitat currently and historically supporting the James spiny mussel is given in Clarke and Neves (1984) and Boss and Clench (1967). The habitat is generally described as runs with moderate current, with sand, gravel and cobble substrata. Individuals from the Dan River population have been found in a variety of substrates from silt/sand, to sand, gravel, cobble, bedrock crevices and sand surrounded by boulders, with a variety of flow patterns from slack pools, to runs with moderate to swift currents. The hardness of the water is believed to be a significant requirement for this species, with a minimum hardness value of (>50 ppm CaCo₃) (Clarke and Neves 1984). Typical habitat for the James spiny mussel as referenced above by Clarke and Neves and Boss and Clench was not identified in Pinch Gut Creek. A general survey for freshwater mussel was done with no freshwater mussels being found.

Surveys, Habitat and Methods

Mussel surveys were conducted on August 1, 2002 by NCDOT biologists, Jared Gray, Neil Medlin, and Jeff Burlison. The Pinch Gut Creek crossing at NC 66 contains a natural levee and the substrate above and below the bridge on NC 66 consists of mostly silt and sand, with some cobble, pebble and gravel with slow to moderate current. Surveys were conducted by wading using a batiscope from approximately 500 feet downstream to 250 feet upstream of the project crossing. No freshwater mussels were found in 1.5 man-hours of survey time.

Qualifications of Investigators

Investigator: Jared Gray
Education: B.S. Environmental Science, Morehead State University
Experience: Environmental Biologist, Enviro-Pro, October 1994 – May 1997
Environmental Technician, Appian Consulting Engineers, P.A., October 1997 – May 1998
Environmental Specialist, NCDOT, October 1998-present
Expertise: Endangered species (terrestrial/aquatic) surveys; benthic macroinvertebrate collection, wetland delineation; soils, water quality analysis, and 404/401 permitting.

Investigator: Neil Medlin, Environmental Specialist
Education: M.A. Biology, Appalachian State University
B.S. Biology, Appalachian State University
Experience: Environmental Specialist, NCDOT, January 2002 - present
Environmental Biologist, NC Division of Water Quality
June 1990 - January 2002
Environmental Biologist, FL Department of Environmental Protection (formerly Department of Environmental Regulation), August 1986 – June 1990
Expertise: Freshwater fish and benthic macroinvertebrate collection and identification; aquatic habitat evaluations and function; biocriteria and biotic indices evaluations; Section 7 field investigations

Investigator: Jeff Burleson, Environmental Biologist
Education: B.S. Fisheries and Wildlife Science, NC State University
Experience: Procurement Forester, Canal Industries, July 1997 – June 1999
Environmental Biologist, NCDOT, June 1999 – December 2002
Expertise: Endangered species (terrestrial/aquatic) surveys; wetland delineation; wetland/stream mitigation; 404/401 permitting; forest management

BIOLOGICAL CONCLUSION: **no effect**

Given the survey results, it is apparent that James spiny mussel does not occur in the project footprint. The North Carolina Natural Heritage Program (NCNHP) does not list a known population up or downstream for James spiny mussel.

cc: Matt Haney, Environmental Specialist
 File: B-4282

Invitation

***Citizens
Informational
Workshop***

Issue No. 1 – October 2003



***North Carolina
Department of
Transportation***

***Bridge Replacement
on NC 66 Over
Pinch Gut Creek***

***Stokes County
T.I.P. B-4282***

Invitation

***You are invited to attend a
CITIZENS INFORMATIONAL
WORKSHOP***

***Date:
October 28, 2003***

***Time:
4:30 to 6:30 p.m.***

***Location:
Danbury Library
1007 North Main Street
Danbury, North Carolina***

Contact Information

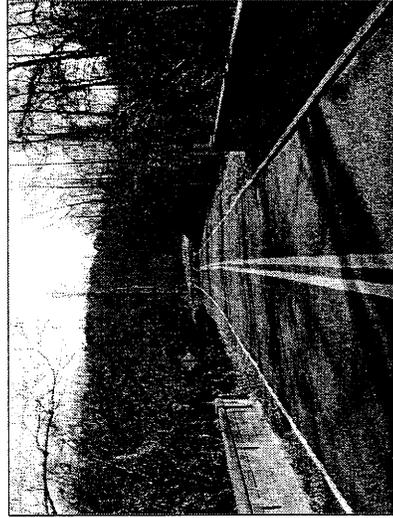
***Elmo Vance
NCDOT-PDEA
1548 Mail Service Center
Raleigh, NC 27699-1548
919-733-7844 ext. 267
eevance@dot.state.nc.us***

***Pamela R. Williams
MULKEY Engineers & Consultants
PO Box 33127
Raleigh, NC 27636-3127
919-858-1908
pwilliams@mulkeyinc.com***

Elmo Vance
North Carolina Department of Transportation
Project Development and Environmental Analysis Branch
1548 Mail Service Center
Raleigh, North Carolina 27699-1548

Project Introduction

The North Carolina Department of Transportation (NCDOT) is conducting engineering and environmental studies for replacing a bridge on NC 66 over Pinch Gut Creek in Stokes County. Studies include developing project alternatives, conducting wetland and protected species surveys, and preparation of an environmental document. The bridge is being replaced to provide safer, more efficient traffic operations.



Project Description

The project is located on NC 66 over Pinch Gut Creek about twelve miles northwest of Danbury, NC. The existing bridge will be replaced with a new bridge approximately 135 feet in length. The new structure will provide two 11-foot travel lanes with 3-foot shoulders. The roadway approaching the bridge will consist of two 11-foot travel lanes with 5-foot grass shoulders.

During construction, traffic will be detoured approximately 5.2 miles along the following route: SR 1210 (Brown Mountain Road), SR 1215 (Pell Road), and SR 1214 (Jackson Road). Use of an off-site detour is cost effective and will expedite construction of the new bridge.

Citizens Informational Workshop

The NCDOT is aware that citizens and business owners in the vicinity of the bridge want to know about the potential effects that this project may have on their homes and businesses. This workshop will be an open house format. Drop by any time between 4:30 pm and 6:30 pm for an opportunity to gather more information, voice your concerns, and ask questions.

About Our Organization

Public involvement is an important part of the planning process. The NCDOT encourages citizen involvement on transportation projects, and will consider your suggestions and address your concerns. If you have transportation questions on other projects, call our Customer Service Center toll-free 1-877-DOT-4YOU, or visit the NCDOT website at www.ncdot.org.

Auxiliary aids and services will be provided for disabled persons who wish to attend this workshop. Contact Mr. Vance as soon as possible so that he can make arrangements.



Project Development Process

Step 1

Data Collection

Step 2

Alternative Development

Step 3

Environmental Analysis

Step 4

Selection of Preferred Alternative

Step 5

↓ We are here.
Citizens Informational Workshop

Step 6

Complete Environmental Document

Estimated

Construction & Right-of-Way Cost

\$ 650,000.00

Schedule

Right-of-Way in 2005

Construction in 2006



We're on the Web!

www.ncdot.org



North Carolina Department of Transportation

Citizens Informational Workshop

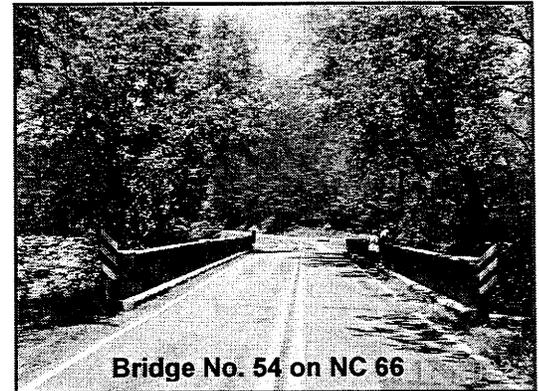
Bridge Replacement on NC 66 over Pinch Gut Creek in Stokes County, T.I.P. No. B-4282

Planning Process

- **Step 1**
Data Collection
- **Step 2**
Alternative Development
- **Step 3**
Environmental Studies
- **Step 4**
Selection of Preferred Alternative
- **Step 5** ←
Citizens Informational Workshop
- **Step 6**
Environmental Document

Citizens Informational Workshop

The North Carolina Department of Transportation (NCDOT) has conducted engineering and environmental studies for replacing Bridge No. 54 on NC 66 over Pinch Gut Creek. Bridge No. 54 is located just north of Mountain Gap in Stokes County. The NCDOT collected data on the existing human and natural environments and analyzed the impacts associated with replacing the existing bridge. The analysis consisted of alternative evaluations, preliminary engineering, and environmental impact studies.



Bridge No. 54 on NC 66

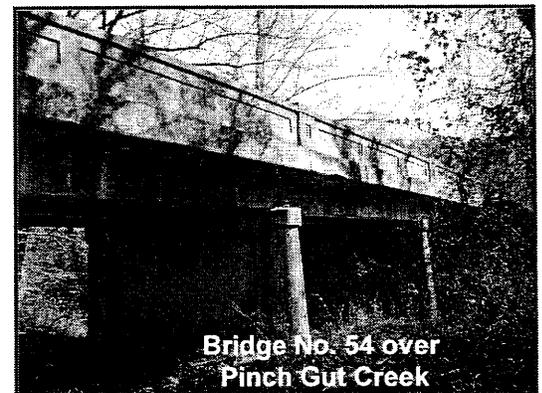
The purpose of the Citizens Informational Workshop is to review the preferred alternative with concerned citizens and to receive comments concerning the proposed project. Representatives of the NCDOT are available to answer your questions and discuss the project with you. If you have comments or suggestions about the proposed improvements described in this handout, please inform a representative of the North Carolina Department of Transportation and complete the attached comment sheet.

YOUR THOUGHTS AND CONCERNS ARE IMPORTANT TO US!

Project Description

Bridge No. 54 on NC 66 over Pinch Gut Creek will be replaced with a new bridge approximately 135 feet in length. The new bridge will provide two 11-foot travel lanes with 4-foot shoulders.

The roadway approaching the bridge will consist of two 11-foot travel lanes with 5-foot shoulders.



Bridge No. 54 over Pinch Gut Creek

During construction, traffic will be detoured approximately 5.2 miles along the following route: SR 1210 (Brown Mountain Road), SR 1215 (Pell Road), and SR 1214 (Jackson Road). Use of an off-site detour will expedite construction of the new bridge.

Date:

Tuesday, October 28, 2003
Time: 4:30pm – 6:30pm

Location:

Danbury Library
1007 North Main Street
Danbury, North Carolina

Contacts:

Elmo Vance
Project Manager
NCDOT-PDEA
1548 Mail Service Center
Raleigh, NC 27699-1548
919-733-7844 ext. 267
eevance@dot.state.nc.us

Pamela R. Williams
Project Manager
Mulkey Engineers &
Consultants
PO Box 33127
Raleigh, NC 27636-3127
919-858-1908
pwilliams@mulkeyinc.com

We're on the Web
See us at:
WWW.NCDOT.ORG

Proposed Schedule

Right-of-Way	2005
Construction	2006

Preliminary Cost Estimate

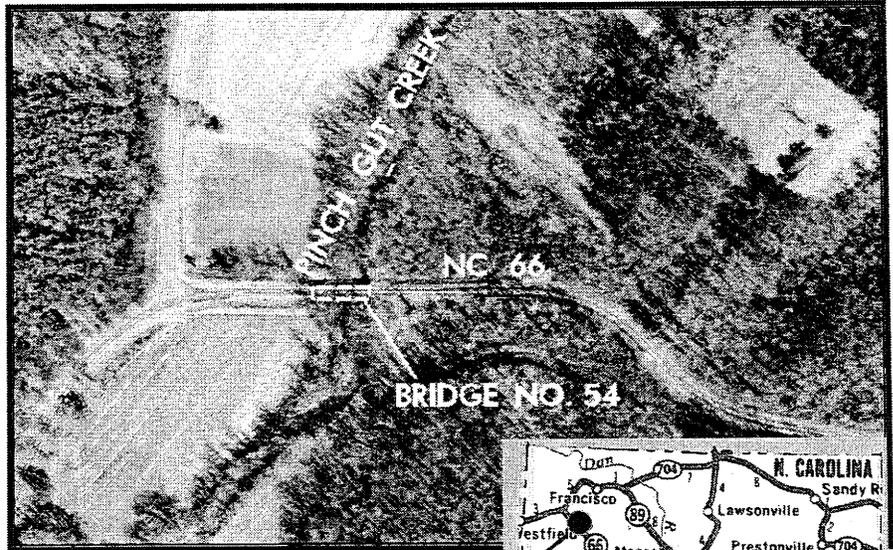
T.I.P NO. B-4282	Preferred Alternative
Construction Cost	\$ 650,000
Right-of-Way Cost	\$ 33,700
Total Cost	\$ 683,700



About Our Organization

Public involvement is an important part of the planning process. The NCDOT encourages citizen involvement on transportation projects and will consider your suggestions and address all concerns. Please send your comments to one of the addresses listed on the left. Your opinions are important to us!

If you have transportation questions on other projects, call our Customer Service Center toll-free at 1-877-DOT-4YOU, or visit the NCDOT website at www.ncdot.org.



Bridge No. 54

