



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

MICHAEL F. EASLEY
GOVERNOR

DAVID MCCOY
SECRETARY

June 10, 2005

U.S. Army Corp of Engineers
Regulatory Field Office
6508 Falls of the Neuse Road
Suite 120
Raleigh, NC 27615-6814

ATTN: Mr. John T. Thomas
NCDOT Coordinator

Subject: **Nationwide 33 Permit Application** for the Replacement of Bridge No. 449 on SR 3389, over Alamance Creek in Guilford County. State Project No. 8.2496301, Federal Aid Project No. BRZ-3389(1), WBS Element 33299.1.1, Division 7, TIP No. B-3852.

Dear Sir:

Please find enclosed three copies of the Categorical Exclusion (CE) Document, Pre-construction Notification (PCN), design plan sheets, and permit drawings. The North Carolina Department of Transportation (NCDOT) proposes to replace the 106-foot Bridge No. 449 over Alamance Creek with a 195.8-foot bridge on new alignment approximately 40 feet west from the existing structure. The existing roadway approaches will be widened to a 22-foot pavement width to provide two 11-foot lanes. Six-foot grass shoulders will be provided on each side.

There will be no permanent impacts to surface waters, however there will be 0.023 acre of temporary fill in Big Alamance Creek due to two temporary work pads needed for the construction of two interior bents. We anticipate the need for both work pads because of the proximity of the interior bents to the stream banks. No jurisdictional wetlands occur within the project area. Traffic will be maintained on the existing bridge during the majority of the construction period. Traffic will be detoured offsite for a few days near the end of the project to tie in the new alignment with the old alignment. Permanent impacts to surface waters have been avoided by extending the length of the proposed bridge to span the creek. No fill will occur from the demolition of the current bridge.

IMPACTS TO WATERS OF THE UNITED STATES

Water resources located within the project study area lie in the Big and Little Alamance Creeks Watershed (Subbasin 03-06-03) of the Cape Fear River Drainage Basin (N.C. Hydrologic Unit 03030002). The proposed project crosses Big Alamance Creek. In the project study area, the DWQ Stream Index Number (SIN) for Big Alamance Creek is 16-19-(1). It is approximately 12 feet wide, and the depth is approximately 3 to 6 inches at the project site. The substrate is composed of rock, cobble, and sand.

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

TELEPHONE: 919-715-1500
FAX: 919-715-1501

WEBSITE: WWW.NCDOT.ORG.

LOCATION:
2728 CAPITAL BLVD
PLB SUITE 168
RALEIGH, NC 27604

The best usage classification of Big Alamance Creek is **WS-IV NSW**. Class WS-IV waters are used as sources of potable water where a WS-I, II, or III classification is not feasible. These waters are also protected for Class C uses. WS-IV waters are generally in moderately to highly developed watersheds or Protected Areas, and involved no categorical restrictions on discharges. Nutrient Sensitive Waters (NSW) is a supplemental classification intended for waters needing additional nutrient management due to their being subject to excessive growth of microscopic or macroscopic vegetation. No Outstanding Resource Waters (ORW), High Quality Waters (HQW), WS-I, or WS-II Waters occur within 1.0 mile of the project study area.

Big Alamance Creek is not listed on the 2002 List of Impaired Waters [303(d)] for the Cape Fear River Basin, nor is Big Alamance Creek designated as a National Wild and Scenic River or a North Carolina Natural and Scenic River.

Permanent Impacts: No permanent impacts to jurisdictional surface waters are associated with this project. The current bridge spans the creek and the new bridge will span the creek as well, avoiding permanent impacts to surface waters. No fill will occur from the demolition of the current bridge and no bents will be placed in the water.

Temporary Impacts: Big Alamance Creek will be impacted by two temporary work pads (see permit drawings sheets 4,5 of 9). The work pads will be needed for construction of the two interior bents. The work pads both may be in the creek at the same time during construction. Because of the skew of the bridge, the work pads will not be completely opposite each other as in a typical 90-degree crossing, and the pads will not block 50% or more of the normal stream flow. For example, where one pad ends on one side, the other pad begins on the opposite side. Because of this unique situation, preference would be to not restrict the placement of both pads in the creek at the same time. Having that option may also help in placing the cored slab units with a crane from below. The impacts include 0.023 acre of fill from Station 18+20 to Station 18+90.

Utility Impacts: There are no utilities attached to the existing structure, but overhead power and telephone lines cross the branch just east of the bridge, no utility impacts will be associated with these crossings. The City of Greensboro has a 20-inch D.I.P sanitary sewer running just north and parallel to Big Alamance Creek. The sewer line crosses under the bridge and parallels the existing and proposed bents, no conflict is anticipated. The City of Greensboro is fine with the D.I.P sewer line staying in place and not moving it.

Bridge Demolition: The superstructure of Bridge No. 449 consists of an asphalt wearing surface over a timber deck on steel I-beams. All bents utilize timber caps and piles. In addition, the end bents utilize timber bulkheads. This project can be classified as Case 3, where there are no special restrictions beyond those outlined in Best Management Practices for Protection of Surface Waters and Best Management Practices for Bridge Demolition and Removal. The existing bridge spans the creek with no bents in the water. The bents are sufficiently close to the bank to require the temporary pads. There will be no temporary or permanent fill resulting from the demolition of the bridge.

Schedule: The project is scheduled for a letting date on February 21, 2006 with a date of availability on April 4, 2006. It is anticipated that the contractor will begin construction shortly after the date of availability for the project.

Restoration Plan: Following construction of the bridge, all material used in the construction of the work pads will be removed. The existing approach fill will be removed to natural grade and the area will be revegetated according to NCDOT guidelines. Pre-project elevations will be restored.

Removal and Disposal Plan: The contractor will be required to submit a reclamation plan for removal and disposal of all material off-site at an upland location. The contractor will use excavation equipment for removal of any earthen material.

FEDERALLY PROTECTED SPECIES

Plants and animals with federal classifications of Endangered, Threatened, Proposed Endangered, and Proposed Threatened are protected under provisions of Section 7 and Section 9 of the Endangered Species Act of 1973, as amended. As of January 29, 2003 USFWS lists one federally protected species for Guilford County, the bald eagle (*Haliaeetus leucocephalus*). Bald eagles are rare transients found at lakes and other large bodies of water through the inland portions of North Carolina as well as along the coast. There were no lakes or other large bodies of water located in the project study area or nearby vicinity. Therefore, suitable nesting and foraging habitat for bald eagles is not located in the project study area or nearby vicinity. A review of the Natural Heritage Program (NHP) database for rare species and unique habitats revealed no known populations of bald eagles within 1.0 mile of the project study area. Impacts to this species will not occur from project construction; therefore, a biological conclusion of “No Effect” has been given for the bald eagle.

CULTURAL RESOURCES

The North Carolina Department of Cultural Resources (NCDRCR) has reviewed this project and asked that Woody’s Mill (GF1568) be evaluated for historical significance. A review has been completed and the structure has been determined not eligible for the National Register of Historic Places.

NCDRCR reviewed the project during a scoping meeting on November 28, 2000. During that meeting, NCDOT specifically identified the remains of a dam present about 150 feet upstream of the bridge. NCDRCR indicated that the Office of State Archaeology was aware of the presence of the dam and had determined that it is not eligible for the National Register of Historic Places.

AVOIDANCE AND MINIMIZATION

Avoidance examines all appropriate and practicable possibilities of averting impacts to “Waters of the United States”. 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, avoidable jurisdictional stages; minimization measures were incorporated as part of the project design. All permanent impacts were avoided during project design. The current bridge spans the creek, so bridge demolition should be accomplished from the bank using Best Management Practices. The new bridge will span the creek as well, avoiding permanent impacts to surface waters. No fill will occur from the demolition of the current bridge and no bents will be placed in the water. The bents will be sufficiently close to the bank to require the temporary pads, however. Strict adherence of sedimentation and erosion control BMP’s for the protection of surface waters will be enforced. The impacts associated with project construction are temporary, and therefore compensatory mitigation is not required.

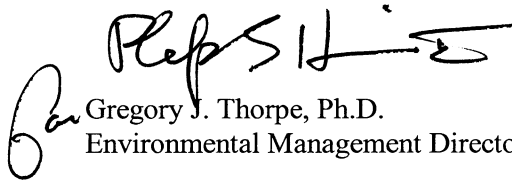
REGULATORY APPROVALS

Section 404 Permit: This project has been processed by the Federal Highway Administration as a "Categorical Exclusion" in accordance with 23 CFR 771.115(b). The NCDOT requests the issuance of a Nationwide Permit 33 for the temporary work pads associated with bridge removal and construction within Big Alamance Creek.

Section 401 Permit: We anticipate 401 General Certification number 3366 will apply to this project. All general conditions of the Water Quality Certifications will be met. Therefore, in accordance with 15A NCAC 2H, Section .0500(a) 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, for their notification.

Thank you for your assistance with this project. A copy of this permit application will be posted on the NCDOT website at: <http://www.ncdot.org/planning/pe/naturalunit/Permit.html>. If you have any questions or need additional information, please contact Ms. Cheryl Knepp, NCDOT – Natural Environment Unit, at (919) 715-1489 or cknepp@dot.state.nc.us.

Sincerely,

A handwritten signature in black ink, appearing to read "Gregory J. Thorpe". The signature is written in a cursive style with a large initial "G".

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

cc:

w/attachment
Mr. John Hennessy, NCDWQ
Mr. Travis Wilson, NCWRC
Mr. Gary Jordan, USFWS
Dr. David Chang, P.E., Hydraulics
Mr. Greg Perfetti, P.E., Structure Design
Mr. Mark Staley, Roadside Environmental
Mr. J. M. Mills, P.E., Division Engineer
Mr. Jerry Parker, DEO

w/o attachment

Mr. Jay Bennett, P.E., Roadway Design
Mr. Omar Sultan, Programming and TIP
Mr. Art McMillan, P.E., Highway Design
Mr. John Williams, P.E., PDEA Project Planning Engineer
Mr. David Franklin, USACE, Wilmington

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 23 and 33

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

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

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

II. Applicant Information

1. Owner/Applicant Information

Name: North Carolina Department of Transportation (NCDOT)
 Mailing Address: Project Development and Environmental Analysis
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: Bridge No. 449 Replacement
2. T.I.P. Project Number or State Project Number (NCDOT Only): B-3852
3. Property Identification Number (Tax PIN): N/A
4. Location
County: Guilford Nearest Town: Greensboro
Subdivision name (include phase/lot number): N/A
Directions to site (include road numbers/names, landmarks, etc.):
Bridge No. 449 on SR 3389 over Big Alamance Creek (please refer to attached maps)
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): Please refer to attached drawings
7. Name of nearest receiving body of water: Big Alamance Creek
8. River Basin: Cape Fear River
(Note – this must be one of North Carolina's seventeen designated major river basins. The River Basin map is available at <http://h2o.enr.state.nc.us/admin/maps/>.)
9. Describe the existing conditions on the site and general land use in the vicinity of the project at the time of this application: The area is rural and largely forested with some residential and agricultural development.

10. Describe the overall project in detail, including the type of equipment to be used: Replace Bridge No. 449 over Big Alamance Creek with a new bridge. The new bridge will be 195 feet long, and be of sufficient width to provide for two 11-foot lanes with 3-foot offsets on each side. The existing roadway approaches will be widened to a 22-foot pavement width to provide two 11-foot lanes. Six-foot grass shoulders will be provided on each side. There will be 0.023 acre of temporary fill in Big Alamance Creek due to a temporary work pad used during construction. Traffic will be maintained on the existing bridge during the majority of the construction period. Traffic will be detoured offsite for a few days near the end of the project to tie in the new alignment with the old alignment. Construction equipment will consist of heavy duty trucks, earth moving equipment, cranes, etc.

11. Explain the purpose of the proposed work: Bridge No. 449 is considered structurally deficient and functionally obsolete. The replacement of this inadequate structure will result in safer and more efficient traffic operations.

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 impact: There are no jurisdictional wetlands located in the project study area.

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

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

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

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)
18+20/18+90	Big Alamance Creek	Fill (Temporary)	Perennial	12 feet		0.023
Total Stream Impact (by length and acreage)						0.023

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):	0.023
Wetland Impact (acres):	0
Open Water Impact (acres):	0
Total Impact to Waters of the U.S. (acres)	0.023
Total Stream Impact (linear feet):	

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: _____ Expected pond surface area: _____

VII. Impact Justification (Avoidance and Minimization)

Specifically describe measures taken to avoid the proposed impacts. It may be useful to provide information related to site constraints such as topography, building ordinances, accessibility, and financial viability of the project. The applicant may attach drawings of alternative, lower-impact site layouts, and explain why these design options were not feasible. Also discuss how impacts were minimized once the desired site plan was developed. If applicable, discuss construction techniques to be followed during construction to reduce impacts. Permanent impacts to wetlands

and surface waters have been avoided by extending the length of the proposed bridge to span the creek. No fill will occur from the demolition of the current bridge.

VIII. Mitigation

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

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

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

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

Stream impacts are classified as temporary. Therefore, mitigation is not required.

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.

3.

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.

4. 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)

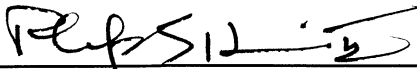
Will this project (based on past and reasonably anticipated future impacts) result in additional development, which could impact nearby downstream water quality? Yes No

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: _____

XV. Other Circumstances (Optional):

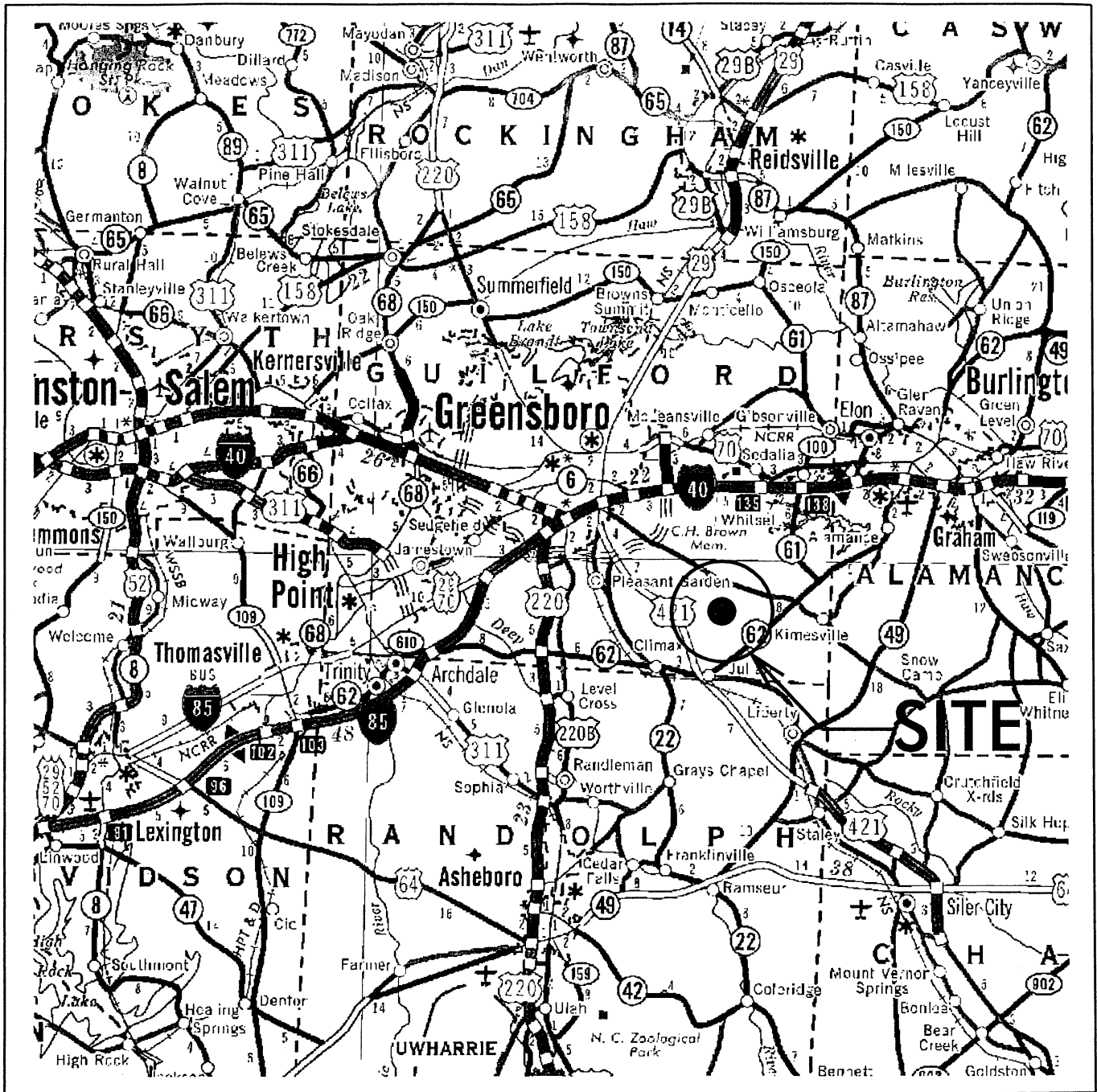
It is the applicant's responsibility to submit the application sufficiently in advance of desired construction dates to allow processing time for these permits. However, an applicant may choose to list constraints associated with construction or sequencing that may impose limits on work schedules (e.g., 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



6/13/05
Date

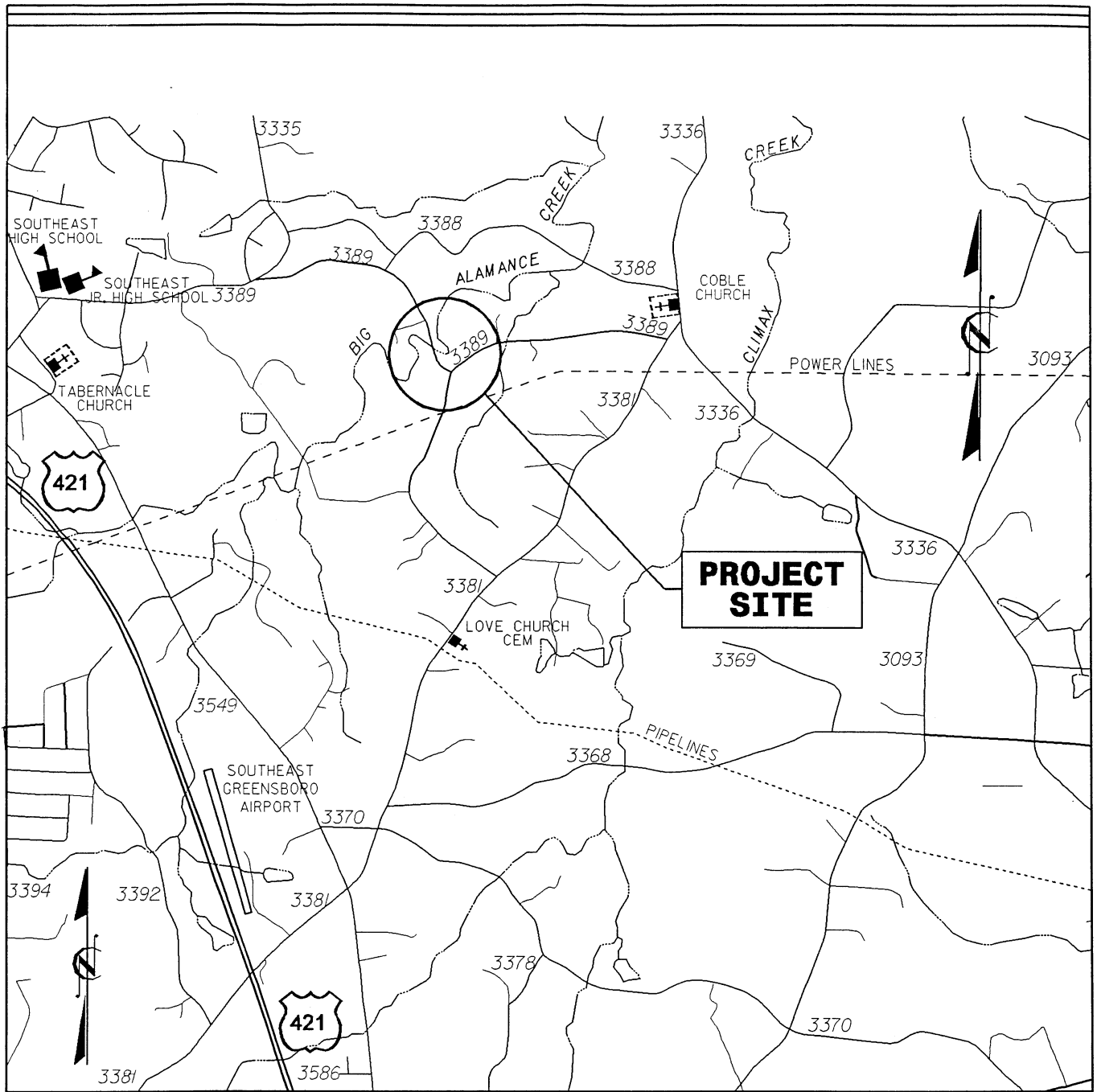
Applicant/Agent's Signature
(Agent's signature is valid only if an authorization letter from the applicant is provided.)



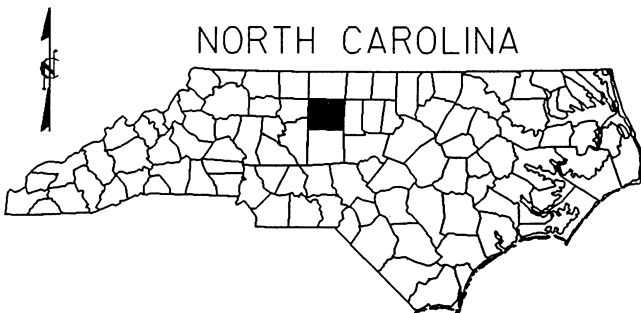
VICINITY MAP



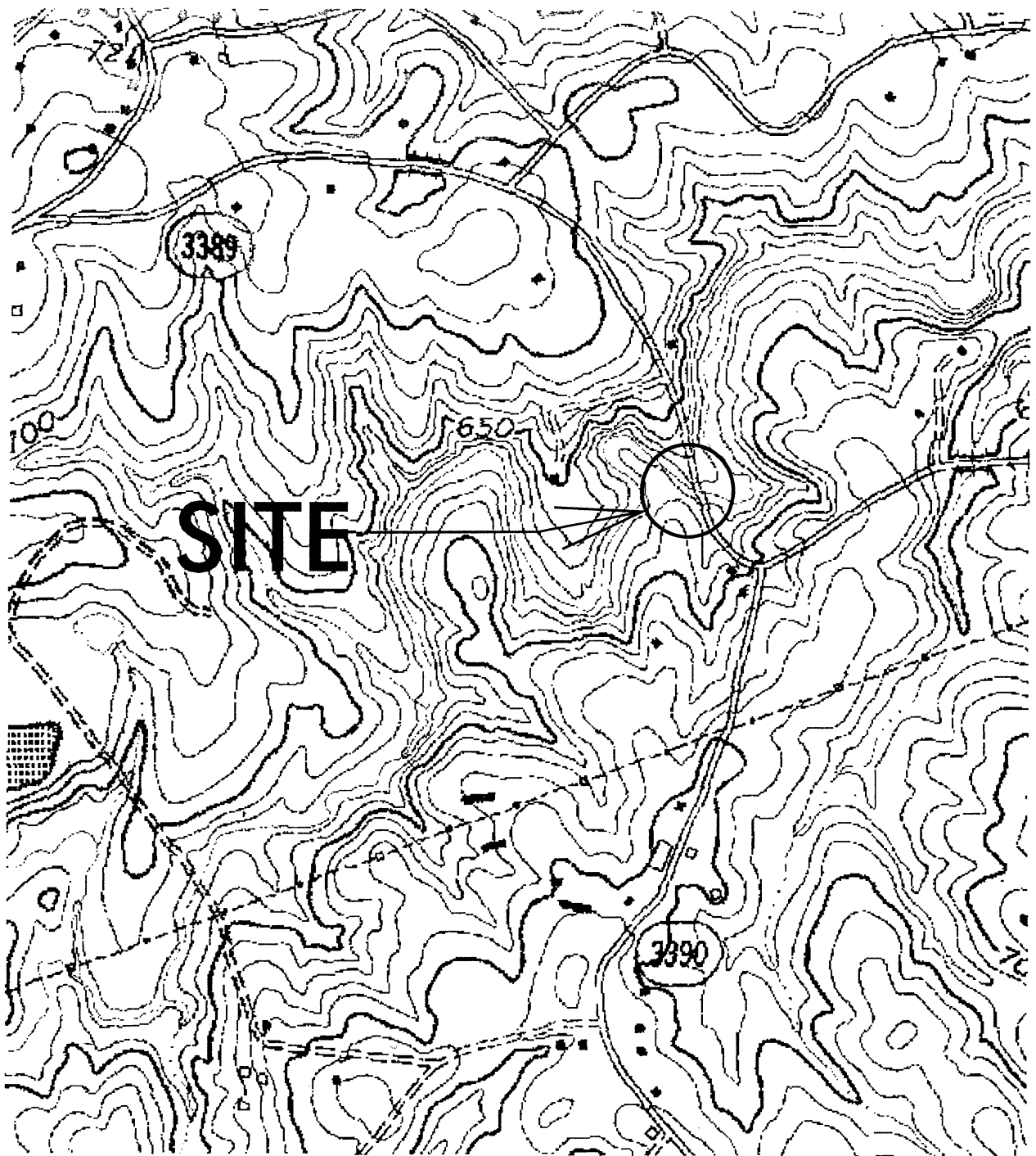
NCDOT
DIVISION OF HIGHWAYS
GUILFORD COUNTY
PROJECT: 33299.1.1 (B-3852)
BRIDGE #449 ON SR3389
OVER ALAMANCE CREEK
SHEET 1 OF 9 4/08/05



VICINITY MAP



NCDOT
 DIVISION OF HIGHWAYS
 GUILFORD COUNTY
 PROJECT: 33299.1.1 (B-3852)
 BRIDGE #449 ON SR3389
 OVER ALAMANCE CREEK



Climax NC
SITE MAP

DATUM DESCRIPTION

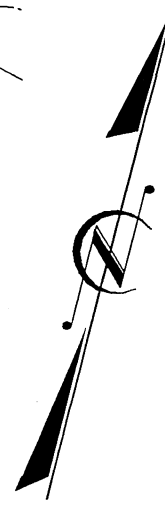
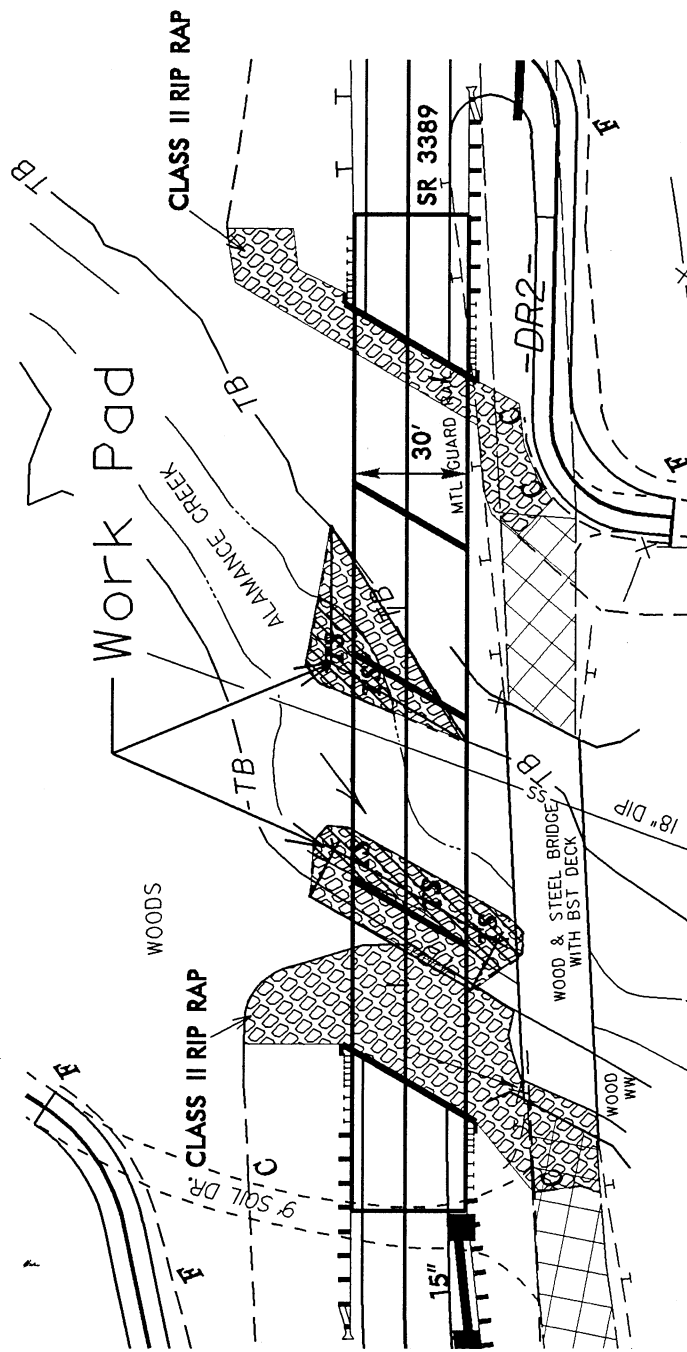
THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT
IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY
NCDOT FOR MONUMENT "B3852-2"
WITH NAD 83 STATE PLANE GRID COORDINATES OF
NORTHING: 807682.42(11) EASTING: 1801533.67(11)

NCDOT

DIVISION OF HIGHWAYS
PROJECT: 8.33299.1.1 (B-3852)
BRIDGE #449 ON SR3389
OVER ALAMANCE CREEK

SHEET 3 OF 9

04/08/05



DETAIL PLAN VIEW

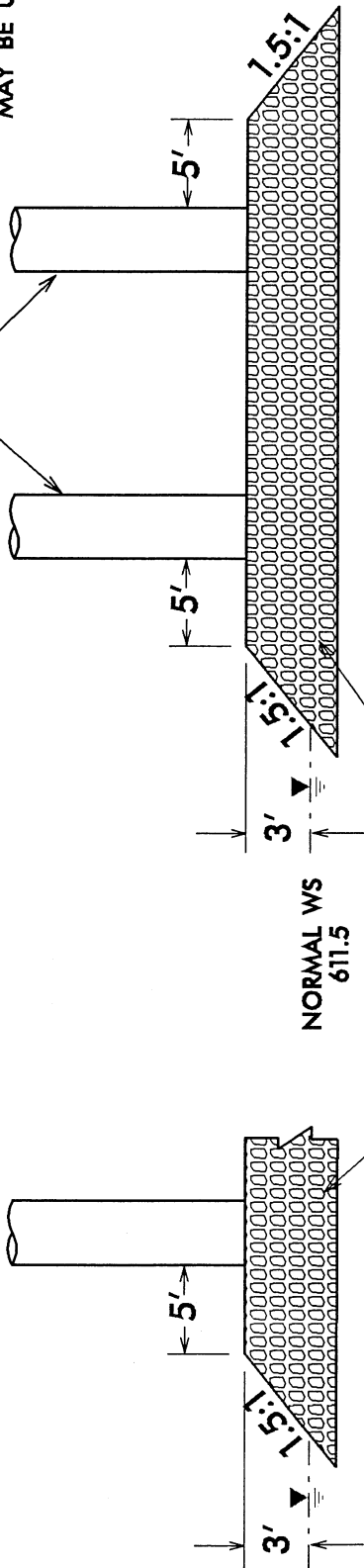


 DENOTES TEMPORARY FILL IN SURFACE WATER

NCDOT
 DIVISION OF HIGHWAYS
 GUILFORD COUNTY
 PROJECT: 33299.11(B-3852)
 BRIDGE # 449 ON SR 3389
 OVER ALAMANCE CREEK

NOTE: MORE THAN
TWO PIERS
MAY BE USED

OUTSIDE PIERS



FRONT VIEW

SIDE VIEW

Class II Rip Rap

NORMAL WS
611.5

NCDOT
DIVISION OF HIGHWAYS
GUILFORD COUNTY
PROJECT: 33299.1(KB-38)(2)
BRIDGE # 449 ON SR 3389
OVER ALAMANCE CREEK

WORK PAD TYPICAL DETAIL

PROPERTY OWNERS

	Name	Address
①	Virgil Willard	1007 Shamrock Rd High Point NC 27265
⑤	Darrell Coble	PO Box 2423 Burlington NC 27216
⑥	William Harding Jr.	PO Box 400 Liberty NC 27298
⑦	John Tilyard	4507 Old Randleman Rd Greensboro NC 27406

NCDOT

DIVISION OF HIGHWAYS

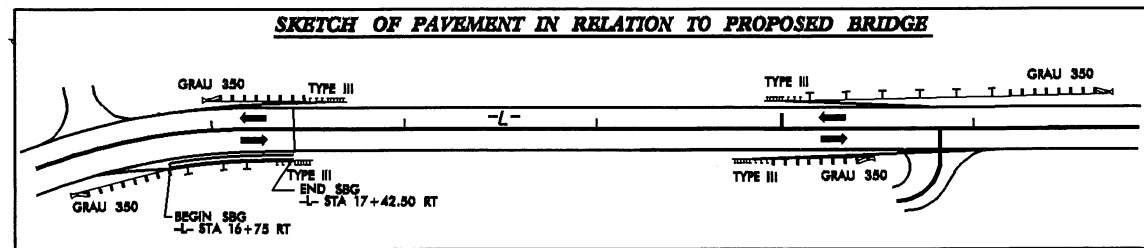
GUILFORD COUNTY

PROJECT: 33299.1.1 (B-3852)

BRIDGE #449 ON SR3389

OVER ALAMANCE CREEK

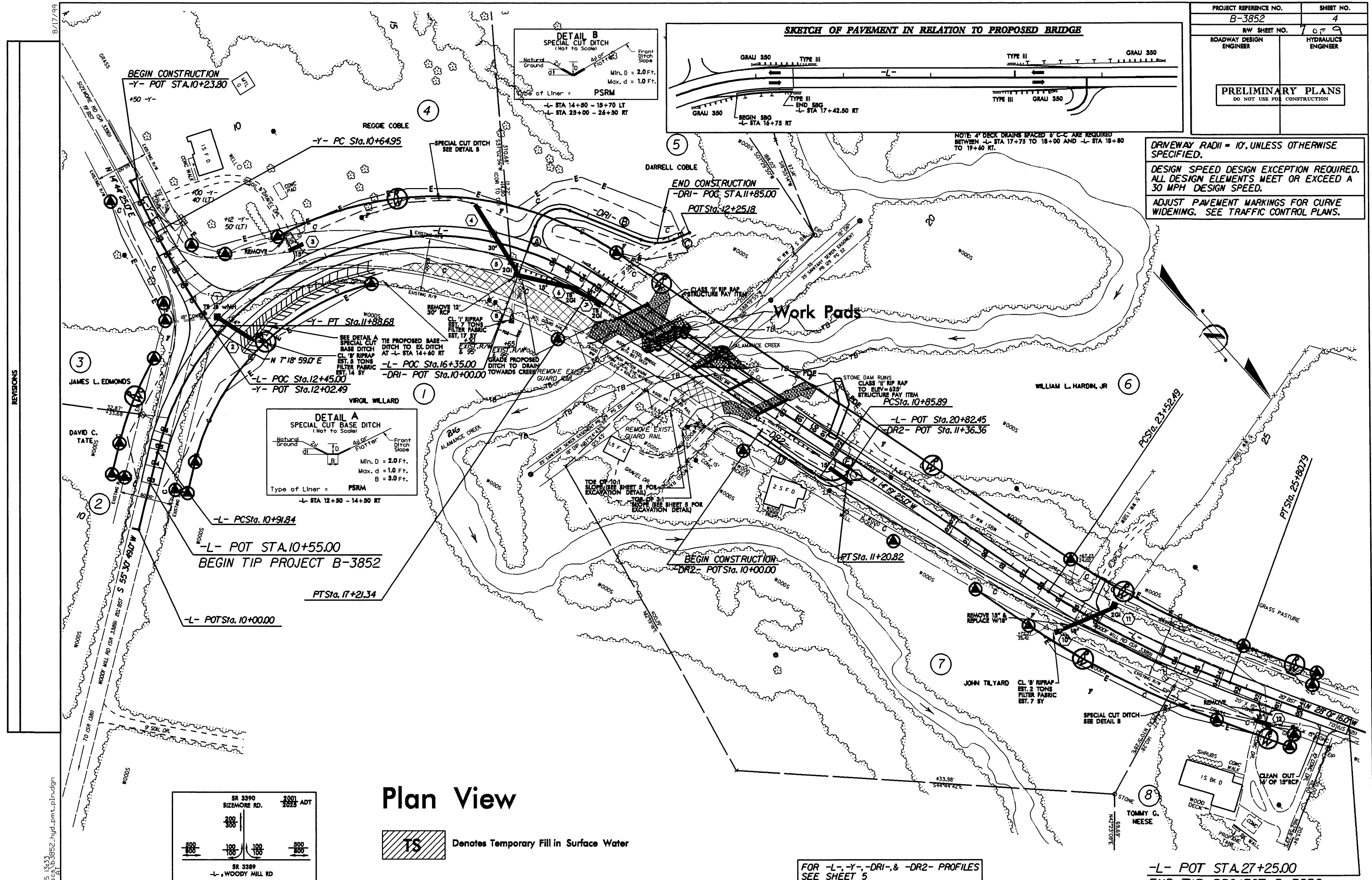
PROJECT REFERENCE NO. B-3852	SHEET NO. 4
R/W SHEET NO. OF 9	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	



DRIVEWAY RADII = 10', UNLESS OTHERWISE SPECIFIED.

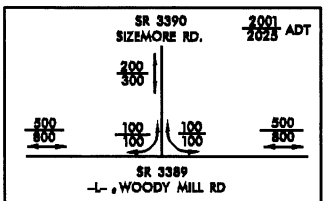
DESIGN SPEED DESIGN EXCEPTION REQUIRED. ALL DESIGN ELEMENTS MEET OR EXCEED A 30 MPH DESIGN SPEED.

ADJUST PAVEMENT MARKINGS FOR CURVE WIDENING. SEE TRAFFIC CONTROL PLANS.



Plan View

TS Denotes Temporary Fill in Surface Water



FOR -L-, -Y-, -DRI-, & -DR2- PROFILES SEE SHEET 5

FOR STRUCTURE PLANS SEE SHEETS S-1 THRU S-?

-L- POT STA. 27+25.00
END TIP PROJECT B-3852

REVISIONS

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amarcan

5/28/99

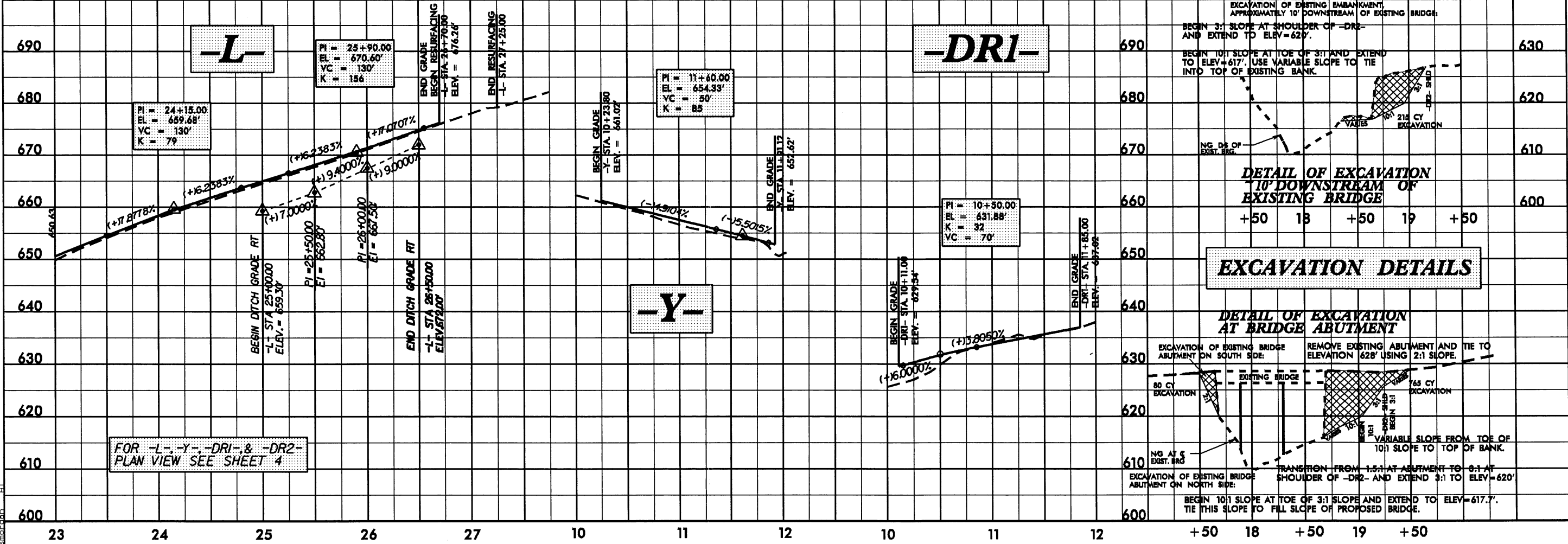
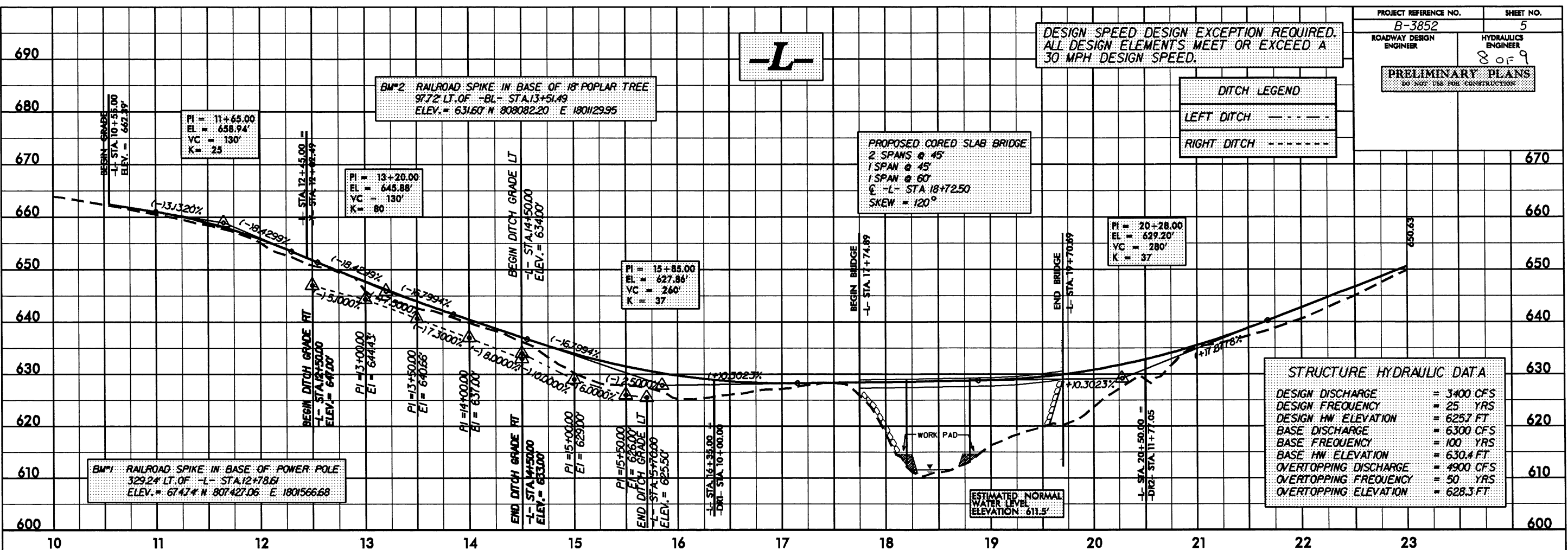
DESIGN SPEED DESIGN EXCEPTION REQUIRED.
ALL DESIGN ELEMENTS MEET OR EXCEED A
30 MPH DESIGN SPEED.

DITCH LEGEND
LEFT DITCH - - - - -
RIGHT DITCH - - - - -

PROPOSED CORED SLAB BRIDGE
2 SPANS @ 45'
1 SPAN @ 45'
1 SPAN @ 60'
C -L- STA 18+72.50
SKEW = 120°

STRUCTURE HYDRAULIC DATA

DESIGN DISCHARGE	= 3400 CFS
DESIGN FREQUENCY	= 25 YRS
DESIGN HW ELEVATION	= 625.7 FT
BASE DISCHARGE	= 6300 CFS
BASE FREQUENCY	= 100 YRS
BASE HW ELEVATION	= 630.4 FT
OVERTOPPING DISCHARGE	= 4900 CFS
OVERTOPPING FREQUENCY	= 50 YRS
OVERTOPPING ELEVATION	= 628.3 FT



FOR -L-, -Y-, -DRI-, & -DR2-
PLAN VIEW SEE SHEET 4

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WETLAND PERMIT IMPACT SUMMARY

Site No.	Station (From/To)	Structure Size / Type	WETLAND IMPACTS						SURFACE WATER IMPACTS						
			Permanent Fill in Wetlands (ac)	Temp. Fill in Wetlands (ac)	Excavation in Wetlands (ac)	Mechanized Clearing in Wetlands (ac)	Hand Clearing in Wetlands (ac)	Permanent SW impacts (ac)	Temp. SW impacts (ac)	Existing Channel Impacts Permanent (ft)	Existing Channel Impacts Temp. (ft)	Natural Stream Design (ft)			
1	18+20/18+90	work pad									0.023				
TOTALS:											0.023				

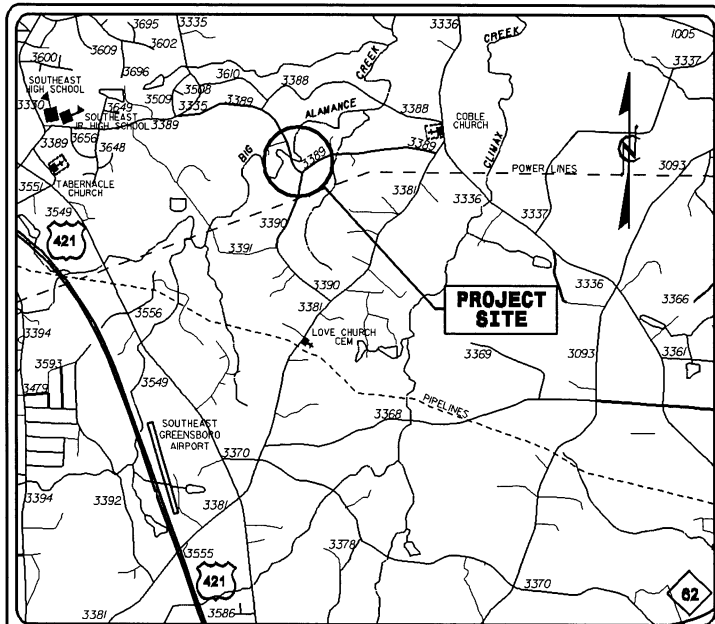
NC DEPARTMENT OF TRANSPORTATION
 DIVISION OF HIGHWAYS
 GUILFORD COUNTY
 PROJECT: 33299.1.1(B-3852)

SHEET 9 OF 9 4/8/2005

ATN Revised 3/5/05

09/08/99

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

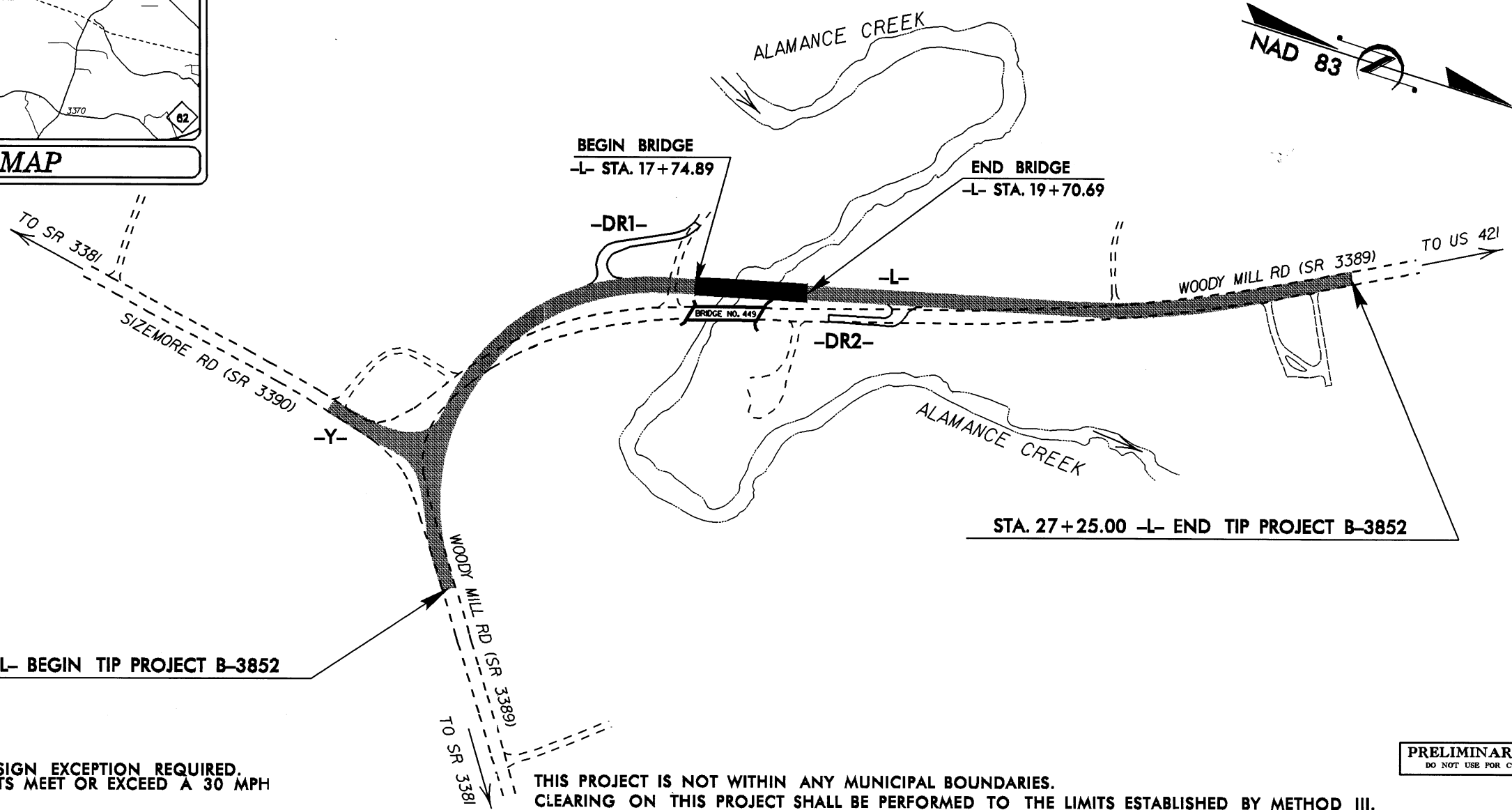


VICINITY MAP

STATE OF NORTH CAROLINA DIVISION OF HIGHWAYS GUILFORD COUNTY

**LOCATION: BRIDGE NO. 449 OVER ALAMANCE CREEK AND
APPROACHES ON SR 3389 (WOODY MILL ROAD)**
TYPE OF WORK: GRADING, PAVING, DRAINAGE, AND STRUCTURE

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-3852	1	
STATE PROJ. NO.	P.A. PROJ. NO.	DESCRIPTION	
33299.1.1	BRZ-3389(1)	P.E. & UTIL.	
33299.2.2	BRZ-3389(1)	RW & UTIL.	

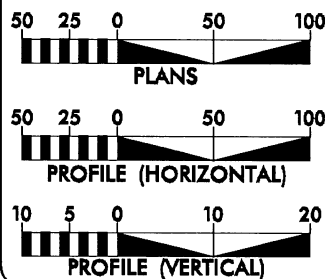


**DESIGN SPEED DESIGN EXCEPTION REQUIRED.
ALL DESIGN ELEMENTS MEET OR EXCEED A 30 MPH
DESIGN SPEED.

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

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

GRAPHIC SCALES



DESIGN DATA

ADT 2004 = 1075
ADT 2025 = 1600
DHV = 11 %
D = 63 %
* T = 3 %
** V = 60 MPH
* (TTST 1% + DUAL 2%)
FUNC. CLASS = RURAL LOCAL

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT B-3852 = .279 MI
LENGTH STRUCTURE TIP PROJECT B-3852 = .037 MI
TOTAL LENGTH TIP PROJECT B-3852 = 0.316 MI

Prepared in the Office of:
DIVISION OF HIGHWAYS
1000 Birch Ridge Dr., Raleigh NC, 27610

2002 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
FEBRUARY 28, 2005

LETTING DATE:
FEBRUARY 21, 2006

GLENN W. MUMFORD, PE
PROJECT ENGINEER

LISA W. SHAPIRO, PE
PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

ROADWAY DESIGN ENGINEER

DIVISION OF HIGHWAYS STATE OF NORTH CAROLINA

DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

APPROVED
DIVISION ADMINISTRATOR

12-MAY-2005 08:01
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CONTRACT: C201398 B-3852

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

CONVENTIONAL SYMBOLS

*S.U.E = SUBSURFACE UTILITY ENGINEER

ROADS & RELATED ITEMS

Edge of Pavement	-----
Curb	-----
Prop. Slope Stakes Cut	---C---
Prop. Slope Stakes Fill	---F---
Prop. Woven Wire Fence	○-----○
Prop. Chain Link Fence	□-----□
Prop. Barbed Wire Fence	◇-----◇
Prop. Wheelchair Ramp	○-----○ WCR
Curb Cut for Future Wheelchair Ramp	○-----○ CCFR
Exist. Guardrail	-----
Prop. Guardrail	-----
Equality Symbol	⊕
Pavement Removal	XXXXXX

RIGHT OF WAY

Baseline Control Point	◆
Existing Right of Way Marker	△
Exist. Right of Way Line w/Marker	△-----
Prop. Right of Way Line with Proposed	-----
R/W Marker (Iron Pin & Cap)	▲
Prop. Right of Way Line with Proposed	-----
(Concrete or Granite) R/W Marker	⊙
Exist. Control of Access Line	⊙
Prop. Control of Access Line	⊙
Exist. Easement Line	-----E-----
Prop. Temp. Construction Easement Line	-----E-----
Prop. Temp. Drainage Easement Line	-----TDE-----
Prop. Perm. Drainage Easement Line	-----PDE-----

HYDROLOGY

Stream or Body of Water	-----
River Basin Buffer	-----BZ-----
Flow Arrow	----->-----
Disappearing Stream	-----
Spring	-----
Swamp Marsh	-----
Shoreline	-----
Falls, Rapids	-----
Prop Lateral, Tail, Head Ditches	-----

STRUCTURES

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

MINOR	
Head & End Wall	-----CONC HW-----
Pipe Culvert	=====
Footbridge	----->-----
Drainage Boxes	-----
Paved Ditch Gutter	-----CB-----

UTILITIES

Exist. Pole	•
Exist. Power Pole	•
Prop. Power Pole	•
Exist. Telephone Pole	•
Prop. Telephone Pole	•
Exist. Joint Use Pole	•
Prop. Joint Use Pole	•
Telephone Pedestal	□
U/G Telephone Cable Hand Hold	□
Cable TV Pedestal	□
U/G TV Cable Hand Hold	□
U/G Power Cable Hand Hold	□
Hydrant	⊕
Satellite Dish	⊕
Exist. Water Valve	⊕
Sewer Clean Out	⊕
Power Manhole	⊕
Telephone Booth	⊕
Cellular Telephone Tower	⊕
Water Manhole	⊕
Light Pole	⊕
H-Frame Pole	⊕
Power Line Tower	⊕
Pole with Base	⊕
Gas Valve	⊕
Gas Meter	⊕
Telephone Manhole	⊕
Power Transformer	⊕
Sanitary Sewer Manhole	⊕
Storm Sewer Manhole	⊕
Tank; Water, Gas, Oil	⊕
Water Tank With Legs	⊕
Traffic Signal Junction Box	⊕
Fiber Optic Splice Box	⊕
Television or Radio Tower	⊕
Utility Power Line Connects to Traffic Signal Lines Cut Into the Pavement	-----TS-----

Recorded Water Line	-----W-----
Designated Water Line (S.U.E.*)	-----W-----
Sanitary Sewer	-----SS-----
Recorded Sanitary Sewer Force Main	-----FSS-----
Designated Sanitary Sewer Force Main(S.U.E.*)	-----FSS-----
Recorded Gas Line	-----G-----
Designated Gas Line (S.U.E.*)	-----G-----
Storm Sewer	-----S-----
Recorded Power Line	-----P-----
Designated Power Line (S.U.E.*)	-----P-----
Recorded Telephone Cable	-----T-----
Designated Telephone Cable (S.U.E.*)	-----T-----
Recorded U/G Telephone Conduit	-----TC-----
Designated U/G Telephone Conduit (S.U.E.*)	-----TC-----
Unknown Utility (S.U.E.*)	-----UTL-----
Recorded Television Cable	-----TV-----
Designated Television Cable (S.U.E.*)	-----TV-----
Recorded Fiber Optics Cable	-----FO-----
Designated Fiber Optics Cable (S.U.E.*)	-----FO-----
Exist. Water Meter	⊕
U/G Test Hole (S.U.E.*)	⊕
Abandoned According to U/G Record	ATTUR
End of Information	E.O.I.

BOUNDARIES & PROPERTIES

State Line	-----
County Line	-----
Township Line	-----
City Line	-----
Reservation Line	-----
Property Line	-----
Property Line Symbol	⊕
Exist. Iron Pin	⊕
Property Corner	⊕
Property Monument	⊕
Property Number	⊕
Parcel Number	⊕
Fence Line	-----X-----
Existing Wetland Boundaries	-----WW & ISBW-----
High Quality Wetland Boundary	-----HLB-----
Medium Quality Wetland Boundaries	-----MO WLB-----
Low Quality Wetland Boundaries	-----LO WLB-----
Proposed Wetland Boundaries	-----WLB-----
Existing Endangered Animal Boundaries	-----EAB-----
Existing Endangered Plant Boundaries	-----EPB-----

BUILDINGS & OTHER CULTURE

Buildings	-----
Foundations	-----
Area Outline	-----
Gate	-----
Gas Pump Vent or U/G Tank Cap	-----
Church	-----
School	-----
Park	-----
Cemetery	-----
Dam	-----
Sign	-----
Well	-----
Small Mine	-----
Swimming Pool	-----

TOPOGRAPHY

Loose Surface	-----
Hard Surface	-----
Change in Road Surface	-----
Curb	-----
Right of Way Symbol	R/W
Guard Post	⊕ GP
Paved Walk	-----
Bridge	-----
Box Culvert or Tunnel	-----
Ferry	-----
Culvert	-----
Footbridge	-----
Trail, Footpath	-----
Light House	-----

VEGETATION

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

RAILROADS

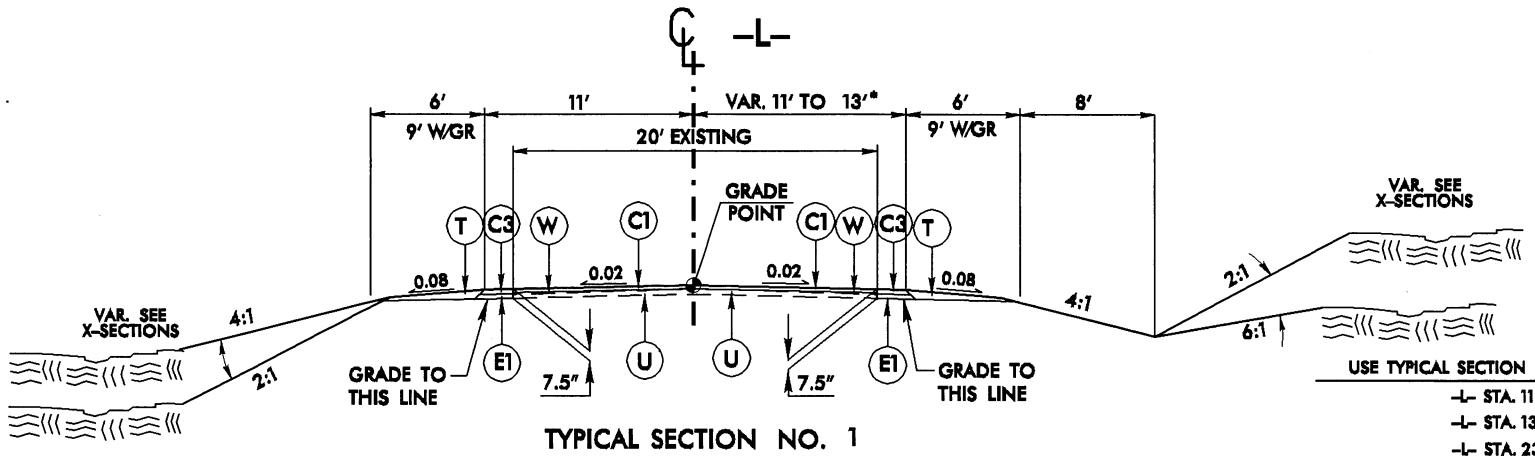
Standard Gauge	-----
RR Signal Milepost	-----
Switch	-----

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PROJECT REFERENCE NO. B-3852	SHEET NO. 2
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER
PRELIMINARY PLANS <small>DO NOT USE FOR CONSTRUCTION</small>	

PAVEMENT SCHEDULE	
C1	PROP. APPROX. 1.5" ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 165 LBS. PER SQ. YD.
C2	PROP. APPROX. 2" ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 220 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.
C3	PROP. APPROX. 3" ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 165 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.
C4	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 110 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT TO EXCEED 2" IN DEPTH.
E1	PROP. APPROX. 4.5" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 513 LBS. PER SQ. YD.
E2	PROP. VAR. DEPTH ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT LESS THAN 3" IN DEPTH OR GREATER THAN 6 1/2" IN DEPTH.
J	PROP. 8" AGGREGATE BASE COURSE.
T	EARTH MATERIAL.
U	EXISTING PAVEMENT.
W	VARIABLE DEPTH ASPHALT PAVEMENT (SEE WEDGING DETAIL).

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

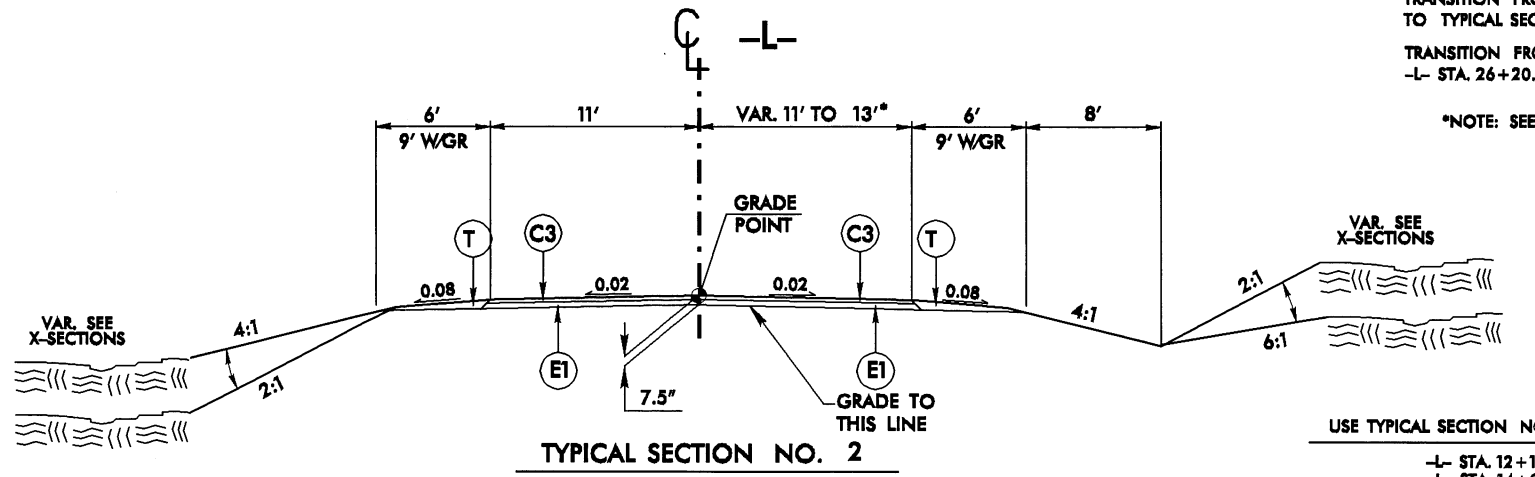


TYPICAL SECTION NO. 1

USE TYPICAL SECTION NO. 1 AT THE FOLLOWING LOCATIONS:
 -L- STA. 11+75.00 TO STA. 12+15.00
 -L- STA. 13+66.00 TO STA. 14+32.00
 -L- STA. 23+32.00 TO STA. 26+20.00

TRANSITION FROM EXISTING @ -L- STA. 10+55.00 TO TYPICAL SECTION NO. 1 @ STA. 11+75.00
 TRANSITION FROM TYPICAL SECTION NO. 1 @ -L- STA. 26+20.00 TO EXISTING @ STA. 27+25.00

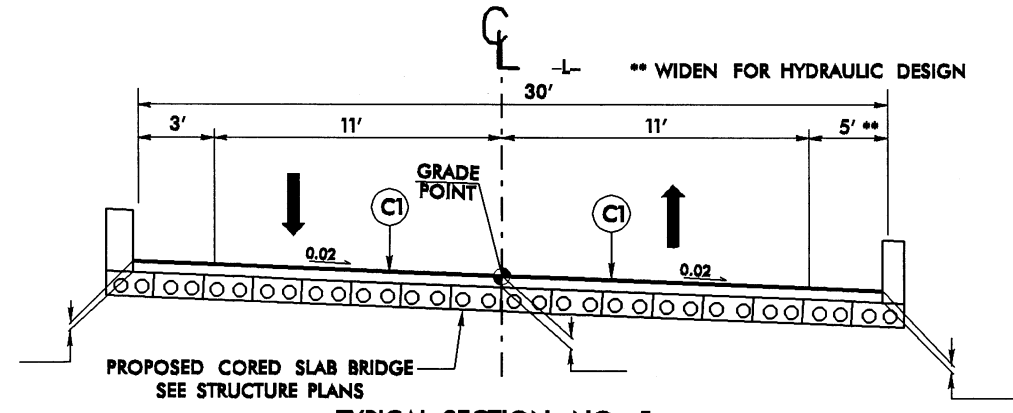
*NOTE: SEE PLANS FOR CURVE WIDENING



TYPICAL SECTION NO. 2

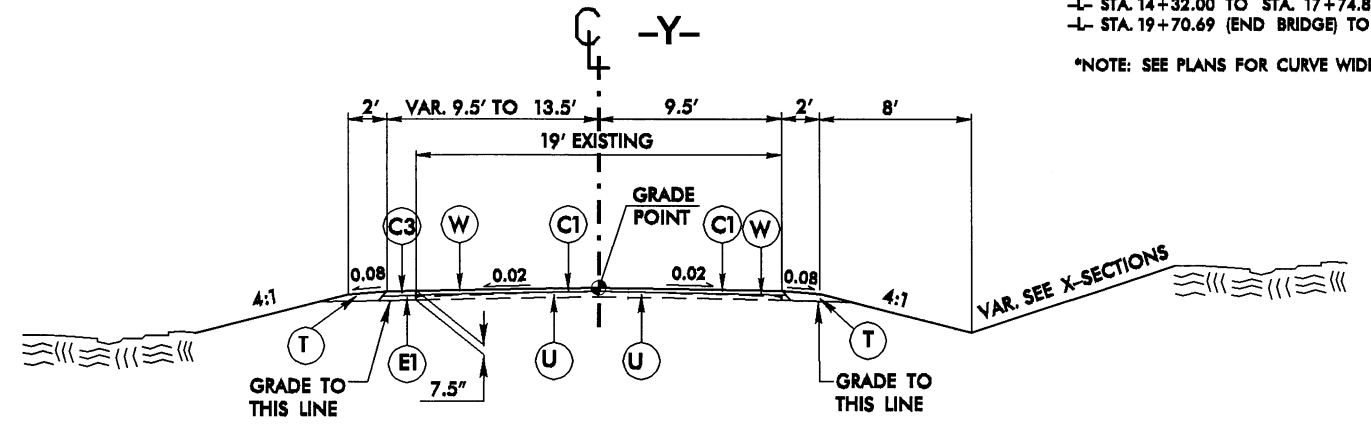
USE TYPICAL SECTION NO. 2 AT THE FOLLOWING LOCATIONS:
 -L- STA. 12+15.00 TO STA. 13+66.00
 -L- STA. 14+32.00 TO STA. 17+74.89 (BEGIN BRIDGE)
 -L- STA. 19+70.69 (END BRIDGE) TO STA. 23+32.00

*NOTE: SEE PLANS FOR CURVE WIDENING



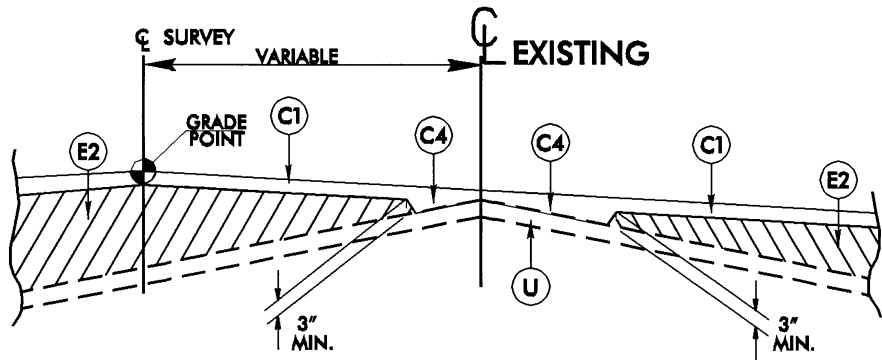
TYPICAL SECTION NO. 5

USE TYPICAL SECTION NO. 5 AT THE FOLLOWING LOCATION:
 -L- STA. 17+74.89 (BEGIN BRIDGE) TO STA. 19+70.69 (END BRIDGE)



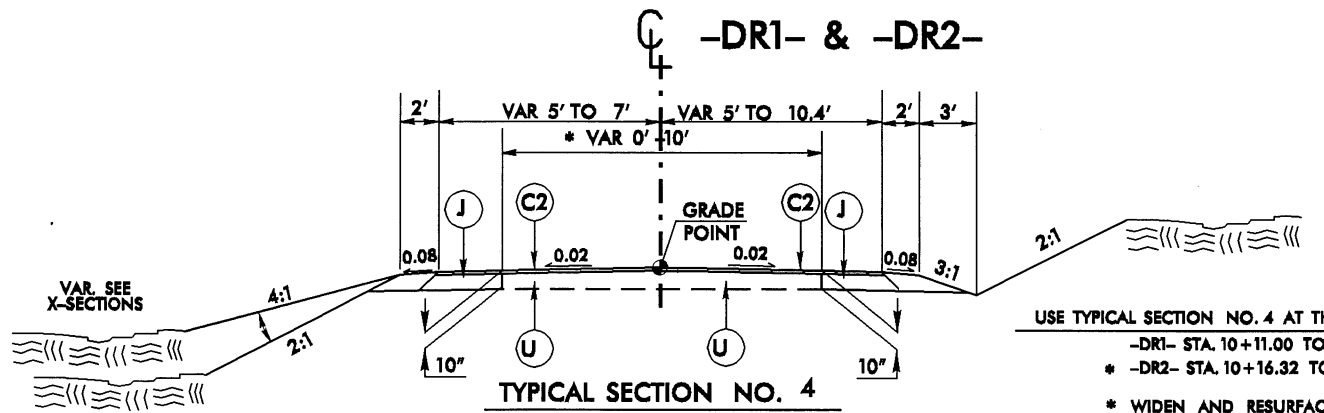
TYPICAL SECTION NO. 3

USE TYPICAL SECTION NO. 3 AT THE FOLLOWING LOCATION:
 -Y- STA. 10+23.80 TO STA. 11+91.12



DETAIL SHOWING METHOD OF WEDGING

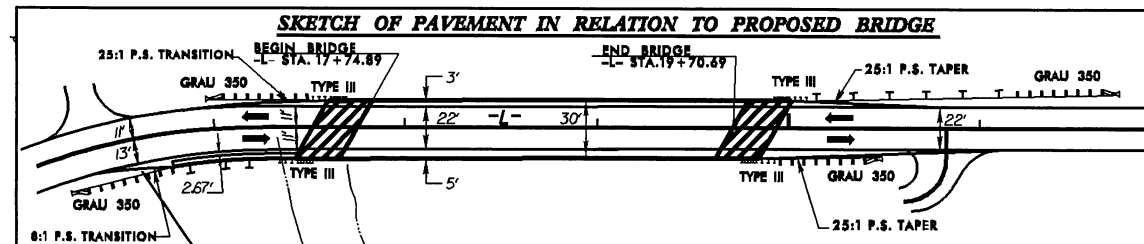
USE IN CONJUNCTION WITH TYPICAL SECTIONS NO. 1 & 3



TYPICAL SECTION NO. 4

USE TYPICAL SECTION NO. 4 AT THE FOLLOWING LOCATIONS:
 -DR1- STA. 10+11.00 TO STA. 11+85.00
 * -DR2- STA. 10+16.32 TO STA. 11+25.36

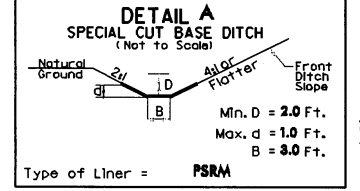
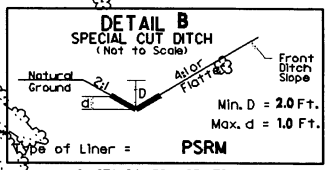
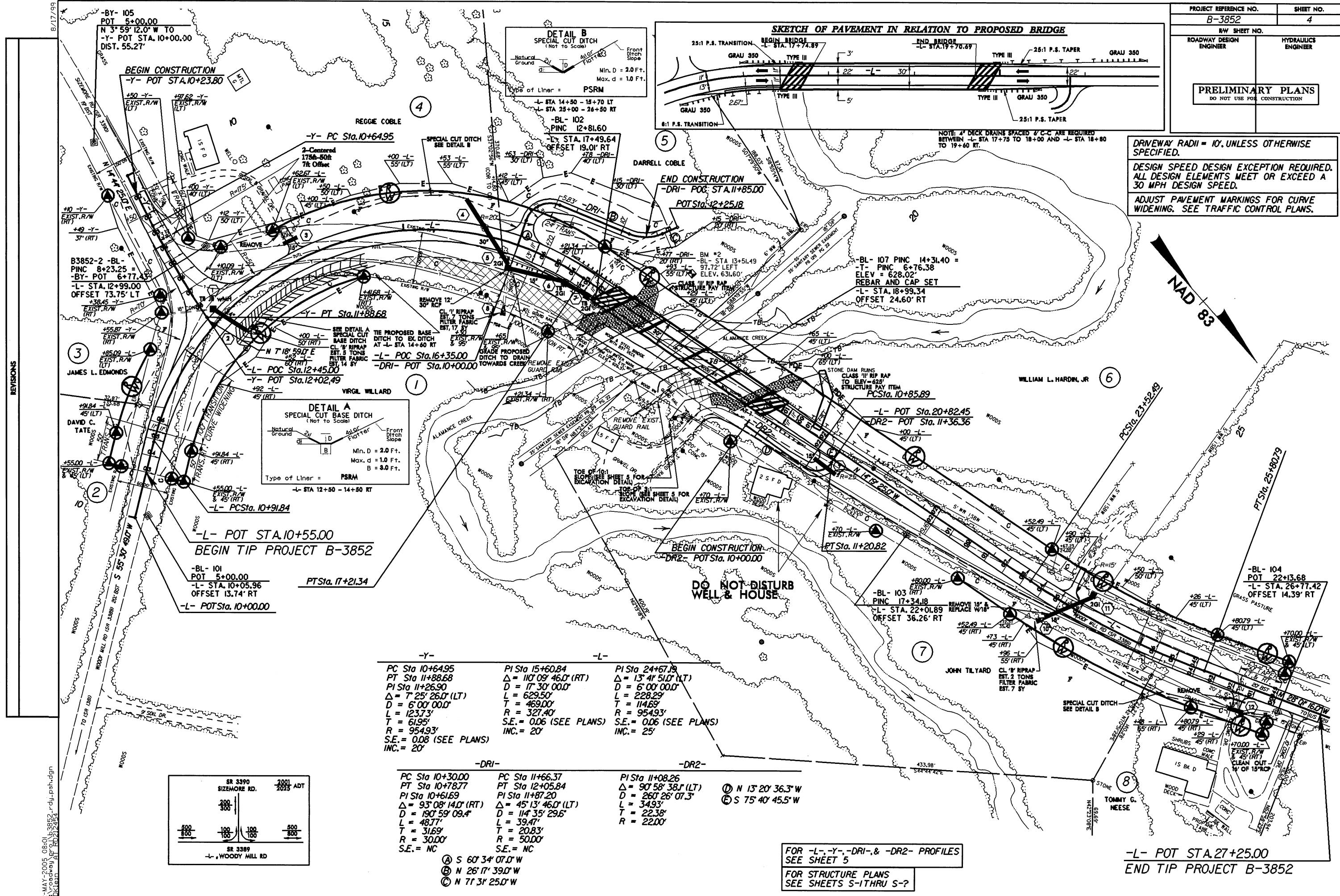
* WIDEN AND RESURFACE EXIST. PAVEMENT



DRIVEWAY RADII = 10', UNLESS OTHERWISE SPECIFIED.

DESIGN SPEED DESIGN EXCEPTION REQUIRED. ALL DESIGN ELEMENTS MEET OR EXCEED A 30 MPH DESIGN SPEED.

ADJUST PAVEMENT MARKINGS FOR CURVE WIDENING. SEE TRAFFIC CONTROL PLANS.



PC Sta 10+64.95	PI Sta 15+60.84	PI Sta 24+67.19
PT Sta 11+88.68	$\Delta = 110^{\circ} 09' 46.0''$ (RT)	$\Delta = 13^{\circ} 41' 51.0''$ (LT)
PI Sta 11+26.90	$D = 17^{\circ} 30' 00.0''$	$D = 6^{\circ} 00' 00.0''$
$\Delta = 7^{\circ} 25' 26.0''$ (LT)	$L = 629.50'$	$L = 228.29'$
$D = 6^{\circ} 00' 00.0''$	$T = 469.00'$	$T = 114.69'$
$L = 123.73'$	$R = 327.40'$	$R = 954.93'$
$T = 61.95'$	S.E. = 0.06 (SEE PLANS)	S.E. = 0.06 (SEE PLANS)
$R = 954.93'$	INC. = 20'	INC. = 25'
S.E. = 0.08 (SEE PLANS)		
INC. = 20'		

PC Sta 10+30.00	PC Sta 11+66.37	PI Sta 11+08.26
PT Sta 10+78.77	PT Sta 12+05.84	$\Delta = 90^{\circ} 58' 38.1''$ (LT)
PI Sta 10+61.69	PI Sta 11+87.20	$D = 260^{\circ} 26' 07.3''$
$\Delta = 93^{\circ} 08' 14.0''$ (RT)	$\Delta = 45^{\circ} 13' 46.0''$ (LT)	$L = 34.93'$
$D = 190^{\circ} 59' 09.4''$	$D = 114^{\circ} 35' 29.6''$	$T = 22.38'$
$L = 48.77'$	$L = 39.47'$	$R = 22.00'$
$T = 31.69'$	$T = 20.83'$	
$R = 30.00'$	$R = 50.00'$	
S.E. = NC	S.E. = NC	

(A) S 60° 34' 07.0" W
 (B) N 26° 17' 39.0" W
 (C) N 71° 31' 25.0" W

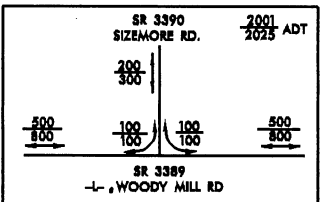
FOR -L-, -Y-, -DRI-, & -DR2- PROFILES SEE SHEET 5

FOR STRUCTURE PLANS SEE SHEETS S-1 THRU S-7

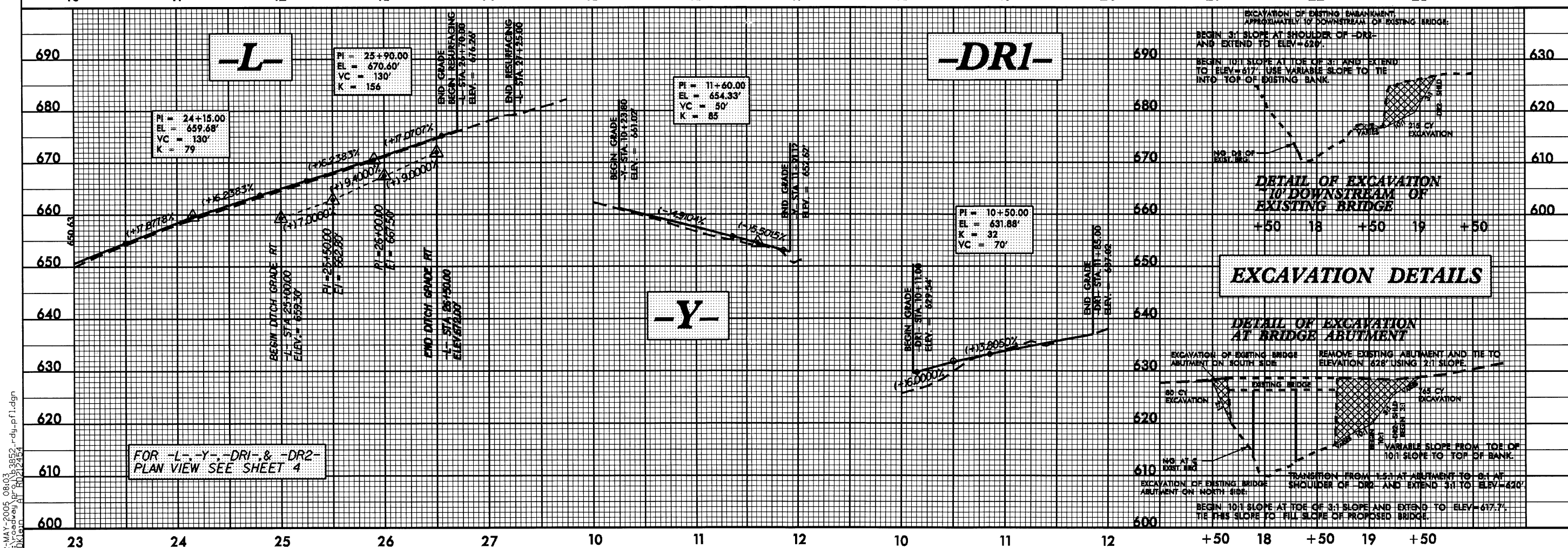
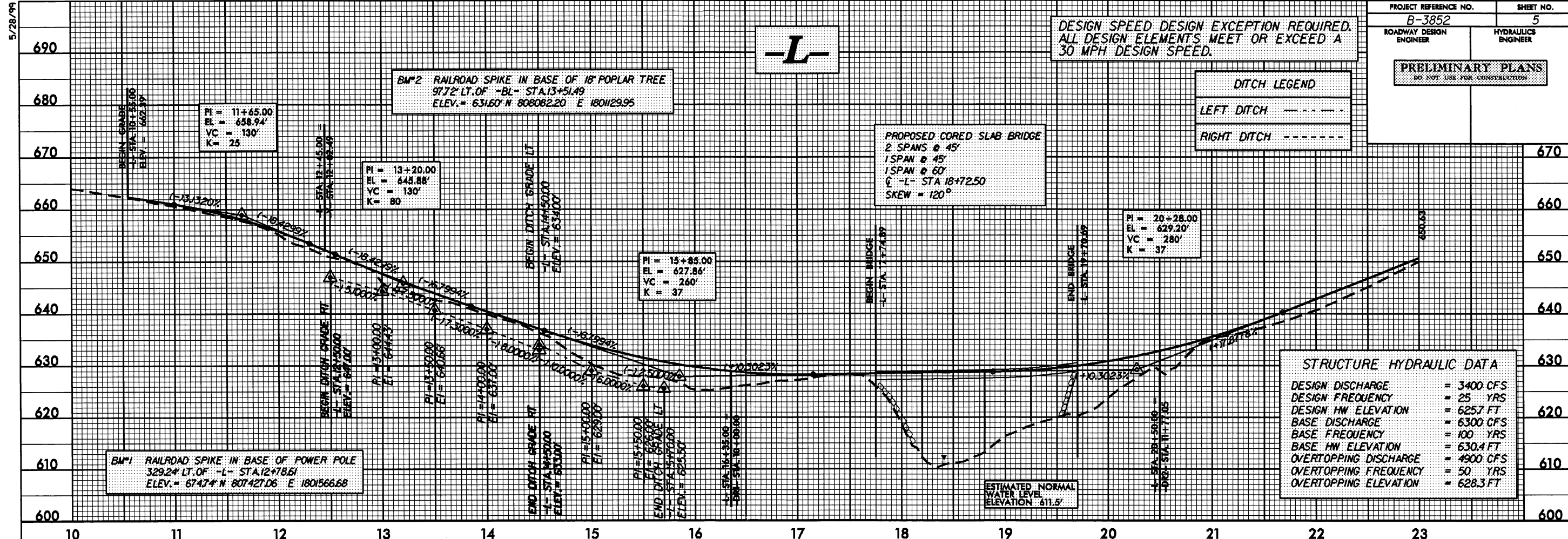
-L- POT STA. 27+25.00
END TIP PROJECT B-3852

REVISIONS

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R2121214



5/28/99



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PROJECT REFERENCE NO.	B-3852	SHEET NO.	5
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
PRELIMINARY PLANS			
DO NOT USE FOR CONSTRUCTION			

**Guilford County
Bridge No. 449 on SR 3389
Over Alamance Creek
Federal Aid Project No. BRZ-3389(1)
State Project No. 8.2496301
T.I.P. No. B-3852**

CATEGORICAL EXCLUSION

UNITED STATES DEPARTMENT OF TRANSPORTATION

FEDERAL HIGHWAY ADMINISTRATION

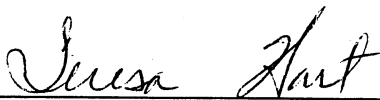
AND

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION


DIVISION OF HIGHWAYS

APPROVED:

10/23/03
DATE

for 
Gregory J. Thorpe, PhD,
Environmental Management Director, PDEA

10/24/03
DATE

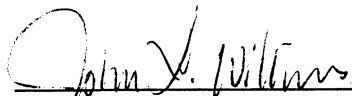
for 
John F. Sullivan, III
Division Administrator, FHWA

**Guilford County
Bridge No. 449 on SR 3389
Over Alamance Creek
Federal Aid Project No. BRZ-3389(1)
State Project No. 8.2496301
T.I.P. No. B-3852**

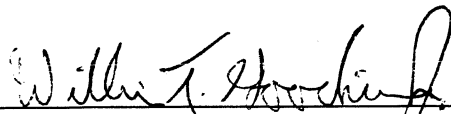
CATEGORICAL EXCLUSION

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Documentation Prepared in
Project Development and Environmental Analysis Branch By:



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PROJECT COMMITMENTS:

**Guilford County
Bridge No. 449 on SR 3389
over Alamance Creek
Federal Aid Project No. BRZ-3389(1)
State Project No. 8.2496301
T.I.P. No. B-3852**

Office of Natural Environment

The entire bridge is constructed of timber and steel. Therefore, there will be no temporary or permanent fill resulting from the demolition of the bridge.

There are no special project commitments associated with this project.

Guilford County
Bridge No. 449 on SR 3389
over Alamance Creek
Federal Aid Project No. BRZ-3389(1)
State Project No. 8.2496301
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INTRODUCTION: Bridge No. 449 is included in the latest approved North Carolina Department of Transportation (NCDOT) Transportation Improvement Program and is eligible for the Federal-Aid Bridge Replacement and Rehabilitation Program. The location is shown in Figure 1. No substantial environmental impacts are anticipated. The project is classified as a Federal "Categorical Exclusion".

I. PURPOSE AND NEED STATEMENT

Bridge Maintenance Unit records indicate the bridge has a sufficiency rating of 44.3 out of a possible 100 for a new structure. The bridge is considered to be structurally deficient and functionally obsolete (See Section III Part C). The replacement of this inadequate structure will result in safer traffic operations.

II. EXISTING CONDITIONS

The project is located in the southeast corner of Guilford County (see Figure One). The area is rural and largely forested with some residential and agricultural development.

SR 3389 is classified as a rural local route in the Statewide Functional Classification System and it is not a National Highway System Route. This route is not a designated bicycle route and there is no indication that an unusual number of bicyclists use this roadway.

In the vicinity of the bridge, SR 3389 has a 19-foot (5.8-meter) pavement width with 4-foot (1.2-meter) grass shoulders. The roadway grade is in a sag vertical curve through the project area. The existing bridge is on a straight alignment with curves beginning a short distance from the bridge on both approaches. The roadway is situated approximately 19.0 feet (5.8 meters) above the creek bed.

Bridge No. 449 is a three-span structure. The superstructure consists of an asphalt wearing surface over a timber deck on steel I-beams. All bents utilize timber caps and piles. In addition, the end bents utilize timber bulkheads. The existing bridge (see Figure 3) was constructed in 1957. The overall length of the structure is 106 feet (32 meters). The clear roadway width is 18.5 feet (5.6 meters). The posted weight limit on this bridge is 14 tons for single vehicles and 17 tons for TTST's.

There are no utilities attached to the existing structure, but overhead power and telephone lines cross the branch just east of the bridge. The City of Greensboro has a 20-inch (508-millimeter)

sanitary sewer running just north and parallel to Alamance Creek crossing under the bridge. Utility impacts are anticipated to be moderate.

The current traffic volume of 1000 vehicles per day (VPD) is expected to increase to 1600 VPD by the year 2025. The projected volume includes one percent truck-tractor semi-trailer (TTST) and two percent dual-tired vehicles (DT). There is no posted speed limit and is therefore 55 miles per hour (90 kilometers) by statute in the project area. Forty school buses cross the bridge daily on their morning and afternoon routes. The Transportation Administrator for Guilford County Schools has indicated that despite the high volume of school buses, an offsite detour would not pose a problem should one be necessary (see attached letter).

There were two accidents reported in the vicinity of Bridge No. 449 during a recent three-year period. Both accidents occurred on a tight curve approximately 500 feet (152 meters) south of the subject bridge.

III. ALTERNATIVES

A. Project Description

The replacement structure will consist of a 170-foot (51.8-meter) long bridge. The bridge will be of sufficient width to provide for two 11-foot (3.3-meter) lanes with 3-foot (1.0-meter) offsets on each side.

The roadway grade of the new structure will be slightly higher than the existing grade at this location.

The existing roadway approaches will be widened to a 22-foot (6.6-meter) pavement width to provide two 11-foot (3.3-meter) lanes. Six-foot (1.8-meter) grass shoulders will be provided on each side. This roadway will be designed as a rural local route with a 50 mile per hour (80-kilometer per hour) design speed.

A design exception will be required for both vertical and horizontal alignment. The design has been improved significantly with regard to safety and it is not practical to improve the alignment any more than proposed.

B. Reasonable and Feasible Alternatives

The one alternative for replacing Bridge No. 449 that was studied is described below.

Bridge No. 449 will be replaced on new alignment with the new bridge approximately 40 feet (12 meters) west from the existing structure (See Figure 2). Improvements to the approach roadways will be required for a distance of approximately 730 feet (223 meters) to the north and 690 feet (210 meters) to the south of the structure. Traffic will be maintained on the existing bridge during the majority of the construction period. Traffic will be detoured offsite for a few days near the end of the project to tie in the new alignment with the old alignment.

C. Alternatives Eliminated From Further Consideration

The “do-nothing” alternative will eventually necessitate closure of the bridge. This is not acceptable due to the traffic service provided by SR 3389.

Timber structures typically do not last beyond 30 to 40 years of age due to the natural deterioration rates of wood. Rehabilitation of a timber structure is generally practical only when a few members are damaged or prematurely deteriorated. However, past a certain degree of deterioration, timber structures become impractical to maintain and are programmed for replacement.

Replacing the bridge on the existing location was originally considered but presented design, safety and cost concerns. There are three disadvantages to placing the bridge back on the original location. First, there is a sharp curve (south of Bridge No. 449) that presents sight distance and design speed concerns illustrated by the two accidents mentioned at the end of Section II above. Secondly, replacing on the existing location would require taking the house on the northeast quadrant of the existing bridge resulting in a relocatee and higher right of way cost. Finally, replacing on the existing location would require detouring traffic offsite resulting in a 7-minute delay for road users for a one-year period. While this delay is not unacceptable, it does enter into a range where a preference is placed on maintaining traffic onsite unless there is a weighty environmental or public interest in detouring offsite. The studied detour routes are illustrated in Figure 1. Both involve a 7-minute delay. A shorter route (not illustrated) along SR 3388 exists but the geometry and alignment of that road are unacceptable for handling the volume of traffic.

D. Preferred Alternative

Bridge No. 449 will be replaced on new alignment as shown by in Figure Two. This alignment is recommended because it improves a safety concern on the approach curve to the south while avoiding a relocatee and maintaining traffic onsite. Impacts to the natural and human environments are minimal. There are archaeological remains of a dam to the west but these have been determined not eligible for the National Register of Historic Places. This project will not impact the stone remains of the dam.

Upon completion of the new alignment Bridge No. 449 will be removed along with the approach causeways.

The NCDOT Division 7 Engineer concurs with this recommendation as the preferred alternative.

IV. ESTIMATED COSTS

The estimated costs for the alternative is as follows:

Structure	\$ 581,000
Roadway Approaches	444,000
Structure Removal	17,000
Misc. & Mob.	473,000
Eng. & Contingencies	235,000
Total Construction Cost	\$ 1,750,000
Right-of-way Costs	\$ 102,000
Total Project Cost	\$ 1,852,100

V. NATURAL RESOURCES

PHYSICAL CHARACTERISTICS

Soil and water resources, which occur in the project study area, are discussed below. Soil types and availability of water directly influence composition and distribution of flora and fauna in any biotic community.

Guilford County lies in the Piedmont Physiographic Province. Land in the project study area is characterized as gently sloping. The project is located in a rural area of Guilford County surrounded by woodland and residential houses. The project study area is located approximately 650 feet (198 meters) above mean sea level.

Soils

Three mapped soil units are located in the project study area and includes: Wilkes sandy loam, 15-45% slopes; Chewacla sandy loam; and Madison sandy loam, 15-35% slopes.

Wilkes sandy loam, 15-45% slopes, is a well drained soil on side slopes adjacent to major drainageways. Permeability is moderately slow, available water capacity is very low, and the shrink-swell potential is moderate. The seasonal high water table is at a depth of more than 6 feet (1.8 meters). Wilkes sandy loam, 15-45% slopes, is a non-hydric soil.

Chewacla sandy loam is a nearly level, somewhat poorly drained soil on long, flat areas parallel to major streams on flood plains. Permeability is moderate, available water capacity is medium, and the shrink-swell potential is low. Depth to the seasonal high water table is about 0.5 to 1.5 feet (0.2 to 0.5 meters) late in winter and early in spring. This soil is commonly flooded for brief periods. Chewacla sandy loam has inclusions of hydric soils.

Madison sandy loam, 15-35% slopes, is a well drained soil on long, narrow side slopes adjacent to streams. Permeability is moderate, available water capacity is low, and the shrink-swell

potential is low. The seasonal high water table is at a depth of more than 6 feet (1.8 meters). Madison sandy loam, 15-35% slopes, is a non-hydric soil.

Water Resources

This section contains information concerning those water resources likely to be impacted by the project. Water resource information encompasses the resources' relationship to major water systems, its physical aspects, Best Usage Classification, and water quality of the resources. Probable impacts to these water bodies are also discussed, as are means to minimize impacts.

Subbasin Characteristics

Water resources located within the project study area lie in the Big and Little Alamance Creeks Watershed (Subbasin 03-06-03) of the Cape Fear River Drainage Basin (N.C. Hydrologic Unit 03030002). The Cape Fear River Basin is the largest river basin in the state, covering 9,149 square miles (NCDEHNR, 1995).

Stream Characteristics

The proposed project crosses Big Alamance Creek. Big Alamance Creek at the project site is approximately 12 feet (3.6 meters) wide. The depth of Big Alamance Creek at the project site is approximately 3-6 inches (7.6-15.2 centimeters). The substrate is composed of rock, cobble, and sand.

Best Usage Classification

Streams have been assigned a best usage classification by the NCDENR (2001). The best usage classification of Big Alamance Creek (Index No. 16-19-(1)) is **WS-IV NSW**. **Class WS-IV** waters are used as sources of potable water where a WS-I, II or III classification is not feasible. These waters are also protected for Class C uses. WS-IV waters are generally in moderately to highly developed watersheds or Protected Areas, and involve no categorical restrictions on discharges. Nutrient Sensitive Waters (**NSW**) is a supplemental classification intended for waters needing additional nutrient management due to their being subject to excessive growth of microscopic or macroscopic vegetation. In general, management strategies for point and nonpoint source pollution control require control of nutrients (nitrogen and/or phosphorus usually) such that excessive growths of vegetation are reduced or prevented and there is no increase in nutrients over target levels. Management strategies are site-specific. No water resources classified as High Quality Waters (HQW's), Water Supplies (WS-I or WS-II), or Outstanding Resource Waters (ORW's) are located within 1.0 miles (1.6 kilometers) of the project study area.

Water Quality

The DWQ has initiated a whole basin approach to water quality management for the 17 river basins within the state. To accomplish this goal the DWQ collects biological, chemical, and physical data that can be used in basinwide assessment and planning. High levels of fecal coliform bacteria have been detected in Big Alamance Creek, and the creek has shown instream habitat degradation. Implementation of agricultural BMPs would reduce potential adverse impacts to this stream (NCDENR, 2000).

Benthic macroinvertebrates have been collected at over 350 freshwater sites in the Cape Fear River basin since 1983; 131 of these sites were sampled during 1998 basinwide surveys or special studies and could be assigned a rating. Many benthic macroinvertebrates have stages in their life cycle that can last from six months to a year, therefore, the adverse effects of a toxic spill will not be overcome until the next generation. Different taxa of macroinvertebrates have different tolerances to pollution, thereby, long term changes in water quality conditions can be identified by population shifts from pollution sensitive to pollution tolerant organisms (and vice versa). Overall, the species present, the population diversity and the biomass are reflections of long term water quality conditions. There are no biological assessment sites for benthic macroinvertebrates in the project vicinity. There is a biological assessment site for fish in the project vicinity. The site located at Big Alamance Creek and SR 3088 received a bioclassification of good (NCDENR, 2000).

Point sources refer to discharges that enter surface water through a pipe, ditch, or other defined points of discharge. The term most commonly refers to discharges associated with wastewater treatment plants. 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. There are no NPDES sites located within 1.0 miles (1.6 kilometers) of the project study area.

Non-point source refers to runoff that enters surface waters through stormwater flow or no defined point of discharge. There are many types of land use activities that can 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. Others 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. Excluding road runoff, there were no identifiable non-point sources that could be observed during the site visit.

Anticipated Impacts to Water Resources

Potential impacts to water resources in the project study area are dependent upon final construction limits. Roadway construction in Big Alamance Creek will result in water quality impacts. The proposed project will bridge Big Alamance Creek and result in both temporary and permanent impacts. Clearing and grubbing activities near the creek may result in soil erosion

leading to increased sedimentation and turbidity. These effects may extend downstream for considerable distance with decreasing intensity.

Removal of streamside vegetation will have a negative effect on water quality. The vegetation typically shades the water's surface from sunlight, thus moderating water temperature. The removal of streamside canopy during construction will result in fluctuating water temperatures. An increase in water temperature results in a decrease in dissolved oxygen because warmer water holds less oxygen. Streambank vegetation also stabilizes streambanks and reduces sedimentation by trapping soil particles.

Construction activities adjacent to water resources increase the potential for toxic compounds (gas, oil, and highway spills) to be carried into nearby water resources via precipitation, sheet flow, and subsurface drainage. Increased amounts of toxic materials can adversely alter the water quality of any water resource, thus impacting its biological and chemical functions. Indirect impacts to surface waters may extend both upstream and downstream of the project study area. Indirect impacts may include isolated changes in flooding regime, discharge, erosion, and sedimentation patterns.

In order to minimize impacts to water resources in the entire impact area, NCDOT's Best Management Practices (BMP's) for the Protection of Surface Waters must be strictly enforced during the entire life of the project. The NCDOT, in cooperation with the DWQ, has developed a sedimentation control program for highway projects which adopts formal BMP's for the protection of surface waters. The project study area is located within the piedmont and crosses a perennial stream.

BIOTIC RESOURCES

Biotic resources include aquatic and terrestrial ecosystems. This section describes those ecosystems encountered in the study area, as well as the relationships between fauna and flora within these ecosystems. Composition and distribution of biotic communities throughout the project area are reflective of topography, hydrologic influences, and past and present land uses. Descriptions of the terrestrial systems are presented in the context of plant community classifications.

Dominant flora and fauna likely to occur in each community are described and discussed. Fauna observed during field investigations are denoted with an asterisk (*). Scientific nomenclature and common names (when applicable) are provided for each animal and plant species described. Subsequent references to the same organism will include the common name only.

Plant community descriptions are based on a classification system utilized by the North Carolina Natural Heritage Program (NHP) (Schafale and Weakley 1990). When appropriate, community classifications were modified to better reflect field observations. Vascular plant names follow nomenclature found in Radford *et al.* (1968). Habitats used by terrestrial wildlife and aquatic organisms, as well as expected population distributions, were determined through field observations, evaluation of available habitat, and supportive documentation (Fish, 1960; Martof *et al.*, 1980; Webster *et al.*, 1985; Rohde *et al.*, 1994; Potter *et al.*, 1980).

Terrestrial Communities

Two terrestrial communities are identifiable in the project study area: maintained/disturbed community and pine/hardwood forest.

Maintained/Disturbed Community

This community encompasses four types of habitats that have recently been or are currently impacted by human disturbance: roadside shoulder, maintained yard, fallow field, and early successional community.

Roadside shoulder is a regularly maintained habitat that is kept in a low-growing early successional state. Species located here include fescue (*Festuca* sp.), bead grass (*Paspalum* sp.), dandelion (*Taraxacum* sp.), and goldenrod (*Solidago* sp.).

Maintained yard is also a regularly maintained habitat. Herbaceous species observed here include fescue. Trees present in this habitat include black walnut (*Juglans nigra*), juniper (*Juniperus* sp.), loblolly pine (*Pinus taeda*), tulip poplar (*Liriodendron tulipifera*), and willow oak (*Quercus phellos*).

Fallow field is located in the southwest quadrant of the project adjacent to the roadside shoulder. Herbs, grasses, and vines present in this habitat include ragweed (*Ambrosia* sp.), broom sedge (*Andropogon virginicus*), red clover (*Trifolium pratense*), goldenrod, plantain (*Plantago* sp.), Queen Anne's lace (*Daucus carota*), and foxtail grass (*Alopecurus* sp.). Shrubs present in this habitat include bush clover (*Lespedeza bicolor*), multiflora rose (*Rosa multiflora*), and blackberry (*Rubus* sp.).

Early successional community is located in the northwest quadrant of the project area. Herbaceous species observed here include kudzu (*Pueraria lobata*), jewel-weed (*Impatiens capensis*), wingstem (*Actinomeris alternifolia*), and ragweed. Seedlings and saplings observed here include tree of heaven (*Ailanthus altissima*) and red maple (*Acer rubrum*).

Pine/Hardwood Forest

This upland community is located in the southwest, southeast, and northwest quadrants of the project study area. The herbaceous layer is comprised of Christmas fern (*Polystichum acrostichoides*), heart leaf (*Hexastylis arifolia*), Virginia creeper (*Parthenocissus quinquefolia*), muscadine grape (*Vitis rotundifolia*), and poison ivy (*Toxicodendron radicans*). The canopy and subcanopy layers consist of river birch (*Betula nigra*), flowering dogwood (*Cornus florida*), ironwood (*Carpinus caroliniana*), green ash (*Fraxinus pennsylvanica*), tulip poplar, loblolly pine, multiflora rose, privet (*Ligustrum sinense*), red cedar (*Juniperus virginiana*), hackberry (*Celtis laevigata*), red maple, basswood (*Tilia heterophylla*), black walnut, post oak (*Quercus stellata*), box elder (*Acer negundo*), American elm (*Ulmus americana*), red bud (*Cercis canadensis*), northern red oak (*Quercus rubra* var. *borealis*), white oak (*Quercus alba*), and beech (*Fagus grandifolia*).

Faunal Component

Much of the wildlife in the project area likely use various communities for forage, cover, and nesting habitat. Many species are highly adaptive and may utilize the edges of forests and clearings. In addition, many species utilize both aquatic and terrestrial habitats, such that both are required for survival and reproduction.

The raccoon (*Procyon lotor*) is a carnivore often observed along wetland habitats to moist forests as well as urban areas. White-tailed deer (*Odocoileus virginianus*) are occasionally observed along broken areas of mixed young forests, old fields, and crop lands. These two ubiquitous species are often observed as roadkill on adjacent roadways.

The least shrew (*Cryptotis parva*), eastern harvest mouse (*Reithrodontomys humulis*), and hispid cotton rat (*Sigmodon hispidus*) frequent disturbed or open areas dominated by herbaceous vegetation which provide foraging and nesting habitat. Eastern cottontails (*Sylvilagus floridanus*) prefer brushy edges where they primarily feed on woody perennials.

Mammals commonly occurring in forested habitats include northern short-tailed shrew (*Blarina brevicauda*), gray squirrel (*Sciurus carolinensis*), and white-footed mouse (*Peromyscus leucopus*). Shrews and smaller mice prefer forests with a thick layer of leaf litter.

Eastern fence lizard (*Sceloporus undulatus*) and five-lined skink (*Eumeces fasciatus*) inhabit open habitats with plenty of sunlight. The slimy salamander (*Plethodon glutinosus*) inhabits woodlands where they are known to forage at night and spend the day in burrows under logs, stones, and leaf litter. The spring peeper (*Hyla crucifer*) inhabits woodlands where it may be observed under forest litter or brushy undergrowth. Eastern box turtles (*Terrapene carolina*) are commonly observed throughout forested habitats where they feed on plants and small animals. Rat snakes (*Elaphe obsoleta*) inhabit upland hardwood forests, pocosins, river swamps and lowlands, fields, and barns and other buildings.

The common crow* (*Corvus brachyrhynchos*) is seen in a wide variety of fields and open country habitats. Cardinals (*Cardinalis cardinalis*) favor woodland margins and residential shrubbery. The mourning dove (*Zenaidura macroura*) occurs in open country habitats such as fields, woodland margins, and suburban neighborhoods. Carolina wrens (*Thryothorus ludovicianus*) are found in remote swamps, woodlands, farmyards, and residential sections of cities. The mockingbird (*Mimus polyglottos*) is common in woodlands and residential areas. The blue jay (*Cyanocitta cristata*) occurs in any kind of woodland, but they prefer fairly open pine-oak woods.

Aquatic Communities

One aquatic community type, piedmont perennial stream, is located in the project study area. Physical characteristics of the surface waters and condition of the water influence the faunal composition of the aquatic communities. Perennial streams support an assemblage of

fauna that require a constant source of flowing water, as compared to intermittent or standing water.

Amphibians and reptiles commonly observed in and adjacent to moderately sized perennial streams in rural areas may include northern dusky salamander (*Desmognathus fuscus*), three lined salamander (*Eurycea guttolineata*), green frog (*Rana clamitans*), pickerel frog (*R. palustris*), and northern water snake (*Nerodia sipedon*).

Big Alamance Creek provides habitat for redbreast sunfish (*Lepomis auritus*), rosyside dace (*Clinostomus funduloides*), shiners (*Cyprinella* sp.), bluehead chub (*Nocomis leptcephalus*), creek chub (*Semotilus atromaculatus*), other sunfish (*Lepomis* sp.), brown bullhead (*Ameiurus nebulosus*), and margined madtom (*Noturus insignis*).

Anticipated Impacts to Biotic Resources

Construction of the subject project will have various impacts on the biotic resources described. Any construction related activities in or near these resources have the potential to impact biological functions. This section quantifies and qualifies impacts to the natural resources in terms of the ecosystems affected. Temporary and permanent impacts are considered here as well.

Calculated impacts to terrestrial communities reflect the relative abundance of each community. Project construction will result in the clearing and degradation of portions of these communities. Estimated impacts are derived using the entire ROW width and length. Usually, project construction does not require the entire ROW width; therefore, actual impacts may be considerably less.

Anticipated Impacts to Biotic Communities.

Community	(acres / hectares)
Maintained/Disturbed	1.01 / 0.41
Pine/Hardwood Forest	0.61 / 0.25
Total (see note)	1.62 / 0.66

Notes:

- Total impacts may not equal the sum impacts associated with each specific community due to rounding of significant digits.
- The values above indicate permanent impacts associated with the new alignment of SR 3389 and replacement bridge and the removal of Bridge No. 449 and adjacent roadway approaches.

The biotic communities found within the project area will be altered as a result of project construction. Terrestrial communities serve as nesting, foraging, and shelter habitat for fauna. A majority of the project study area is located in maintained/disturbed habitat. This area is currently in a highly altered state and plants and animals here are well adapted to disturbed conditions. Flora and fauna occurring in the disturbed community are common throughout North Carolina because of their ability to persist in disturbed habitats. Moreover, similar additional disturbed habitats will be re-established after project construction.

Construction activities will impact the water resources located in the project area as well as those downstream. Increased sedimentation and siltation is often directly attributable to construction activities. The suspended particles will clog the feeding mechanisms of benthic organisms, fish, and amphibians. These impacts eventually are magnified throughout the food chain and ultimately affect organisms located in higher trophic levels. Strict erosion and sedimentation controls must be maintained during the entire life of the project.

Construction activities often affect water level and flow due to interruption and/or additions to surface and groundwater flow. The change in water level may severely impact spawning activities of mobile and sessile organisms. Construction runoff and highway spills may result in mortality to aquatic species inhabiting the water resources located in the project area.

JURISDICTIONAL ISSUES

This section provides descriptions, inventories, and impact analysis pertinent to two important issues--waters of the United States and Protected and Rare Species.

Waters of the United States

Surface waters and jurisdictional wetlands fall under the broad category of "Waters of the United States," under 33 CFR §328.3(a). Wetlands, defined in 33 CFR §328.3(b), are those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and under normal circumstances do support, a prevalence of vegetation typically adapted to life in saturated conditions. Surface waters are waters used in interstate or foreign commerce, waters subject to the ebb and flow of tides, all interstate waters including interstate wetlands, and all other waters such as intrastate lakes, rivers, and streams. Any action that proposes to place fill material into these areas falls under the jurisdiction of the U.S. Army Corps of Engineers (USACE) under Section 404 of the Clean Water Act (CWA) (33 U.S.C. 1344).

Characteristics of Wetlands and Surface Waters

Big Alamance Creek is considered a jurisdictional surface water under Section 404 of the Clean Water Act. This stream is thoroughly described in Section 2.2.2. Potential jurisdictional wetland communities were examined pursuant to the *1987 U.S. Army Corps of Engineers Wetland Delineation Manual*. The manual is a technical guideline for wetlands. According to the manual, an area is considered a wetland if three parameters, hydric soils, hydrophytic vegetation, and hydrologic characteristics concurrently exist. **Based upon the results of the field investigation, the project area contains no jurisdictional wetlands.**

Summary of Anticipated Impacts

The proposed project will cross-jurisdictional surface waters. Big Alamance Creek is proposed to be bridged. Approximately 24 meters (80 feet) of Big Alamance Creek is located in the ROW of the new alignment. The amount of surface water impacts may be modified by any changes in roadway design.

This project can be classified as Case 3 of *Best Management Practices for Bridge Demolition & Removal*, where there are no special restrictions beyond those outlined in *Best Management Practices for Protection of Surface Waters* and *Best Management Practices for Bridge Demolition and Removal*.

Permits

Impacts to surface waters are anticipated from project construction. In accordance with provisions of Section 404 of the Clean Water Act, a permit will be required from the COE for discharge of dredge or fill material into "Waters of the United States." Due to surface water impacts expected at the project study area, a Nationwide 23 Permit will likely be necessary for this project. Final decision concerning applicable permits rests with the COE.

This project will require a 401 Water Quality Certification from the DWQ. Section 401 of the CWA requires that the state issue or deny water certification for any federally permitted or licensed activity that may result in a discharge to waters of the United States. The issuance of a 401 permit from the DWQ is a prerequisite to issuance of a Section 404 permit.

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 maintain and restore 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

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 and the COE, in determining "appropriate and practicable" measures to offset unavoidable impacts, such measures should be appropriate to the scope and degree of those impacts and practicable in terms of cost, existing technology, and logistics in light of overall project purposes.

Minimization

Minimization includes 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. Impacts to surface waters can be minimized by: (1) decreasing the footprint of the proposed project through the reduction of ROW widths, fill slopes, and/or road shoulder widths; (2) installation of temporary silt fences, earth

berms, and temporary ground cover during construction; (3) strict enforcement of sedimentation and erosion control BMP's for the protection of surface waters; and (4) reduction of clearing and grubbing activity in and adjacent to water bodies.

Compensatory Mitigation

Compensatory mitigation is not normally considered until anticipated impacts to waters of the United States have been avoided **and** minimized to the maximum extent possible. It is recognized that "no net loss of wetlands" functions and values may not be achieved in each and every permit action. Appropriate and practicable compensatory mitigation is required for unavoidable, adverse impacts 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. Such actions should be undertaken in areas to or contiguous to the discharge site.

DWQ regulations state that fill or alteration of more than 0.45 ha (1.0 ac) of wetland will require compensatory mitigation in accordance with 15A NCAC 211 .0506(a) and (h) and fill or alteration of more than 150 linear feet (450 linear meters) of streams may require compensatory mitigation in accordance with 15A NCAC 211 .0506(a) and (h). If these acreage and linear thresholds are exceeded from project construction, NCDOT will follow these regulations.

Protected and Rare Species

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

Federally-protected Species

Plants and animals with federal classifications of Endangered, Threatened, Proposed Endangered, and Proposed Threatened are protected under provisions of Section 7 and Section 9 of the ESA. Currently there is one federally-protected species for Guilford County. The bald eagle (*Haliaeetus leucocephalus*) has a status of threatened (proposed for delisting). Threatened species are a taxon likely to become endangered within the foreseeable future throughout all or a significant portion of its range.

Haliaeetus leucocephalus (bald eagle)

Animal Family: Accipitridae

Date Listed: March 11, 1967

Adult bald eagles can be identified by their large white head and short white tail. The body plumage is dark-brown to chocolate-brown in color. In flight bald eagles can be identified by their flat wing soar. Eagle nests are found in close proximity to water (within a half mile) with a clear flight path to the water, in the largest living tree in an area, and having an open view

of the surrounding land. Human disturbance can cause an eagle to abandon otherwise suitable habitat. The breeding season for the bald eagle begins in December or January. Fish are the major food source for bald eagles. Other sources include coots, herons, and wounded ducks. Food may be live or carrion.

BIOLOGICAL CONCLUSION: NO EFFECT

Bald eagles are rare transients found at lakes and other large bodies of water throughout the inland portions of North Carolina as well as along the coast. There were no lakes or other large bodies of water located in the project study area or nearby vicinity. Therefore, suitable nesting and foraging habitat for bald eagles is not located in the project study area or nearby vicinity. A review of the NHP database for rare species and unique habitats revealed no known populations of bald eagles within 1.0 miles (1.6 kilometers) of the project study area. Impacts to this species will not occur from project construction.

Federal Species of Concern

Federal Species of Concern (FSC) are those plant and animal species which may or may not be listed in the future. One FSC is listed for Guilford County. The Carolina darter (*Etheostoma collis lepidinon*) has a status of Special Concern (SC). Habitat is present at the project site.

Special Concern (SC) species require monitoring but may be collected and sold under regulations adopted under provisions of Article 25 of Chapter 113 of the General Statutes; 1987.

FSC species are not afforded federal protection under the ESA and are not subject to any of its provisions, including Section 7, until they are formally proposed or listed as Threatened or Endangered. Organisms which are listed as Endangered (E), Threatened (T), or Special Concern (SC) by the NHP list of Rare Plant and Animal species are afforded state protection under the State ESA and the North Carolina Plant Protection and Conservation Act of 1979; however, the level of protection given to state listed species does not apply to NCDOT activities.

A review of the NHP database of rare species and unique habitats conducted on September 4, 2002 revealed no records of animal or plant species within 1.0 miles (1.6 kilometers) of the project study area. Surveys for the above-mentioned species were not conducted during the site visit, nor were these species observed during the site visit.

VI. CULTURAL RESOURCES

A. Compliance Guidelines

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

B. Historic Architecture

The North Carolina Department of Cultural Resources has reviewed this project and asked that Woody's Mill (GF1568) be evaluated for historical significance. A review has been completed and the structure has been determined not eligible for the National Register of Historic Places. The concurrence for is attached to this document.

C. Archaeology

The North Carolina Department of Cultural Resources (NCDCCR) reviewed the project during a scoping meeting on November 28, 2000. During that meeting, NCDOT specifically identified the remains of a dam present about **150 feet upstream** of the bridge. NCDCCR indicated that the Office of State Archaeology was aware of the presence of the dam and had determined that it is not eligible for the National Register of Historic Places. The letter dated January 8, 2001 (see attached letter) reflects these comments in that there is no request for an archaeological survey.

VII. GENERAL 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 considered to be 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 the current North Carolina Department of Transportation standards and specifications.

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

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

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

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

The Farmland Protection Policy Act requires all federal agencies or their representatives to consider the potential impact to prime farmland of all land acquisition and construction projects. There are no soils classified as prime, unique, or having state or local importance in the vicinity

of the project. Therefore, the project will not involve the direct conversion of farmland acreage within these classifications.

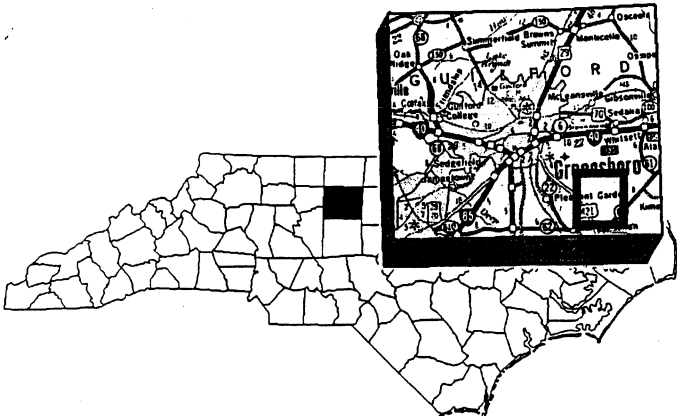
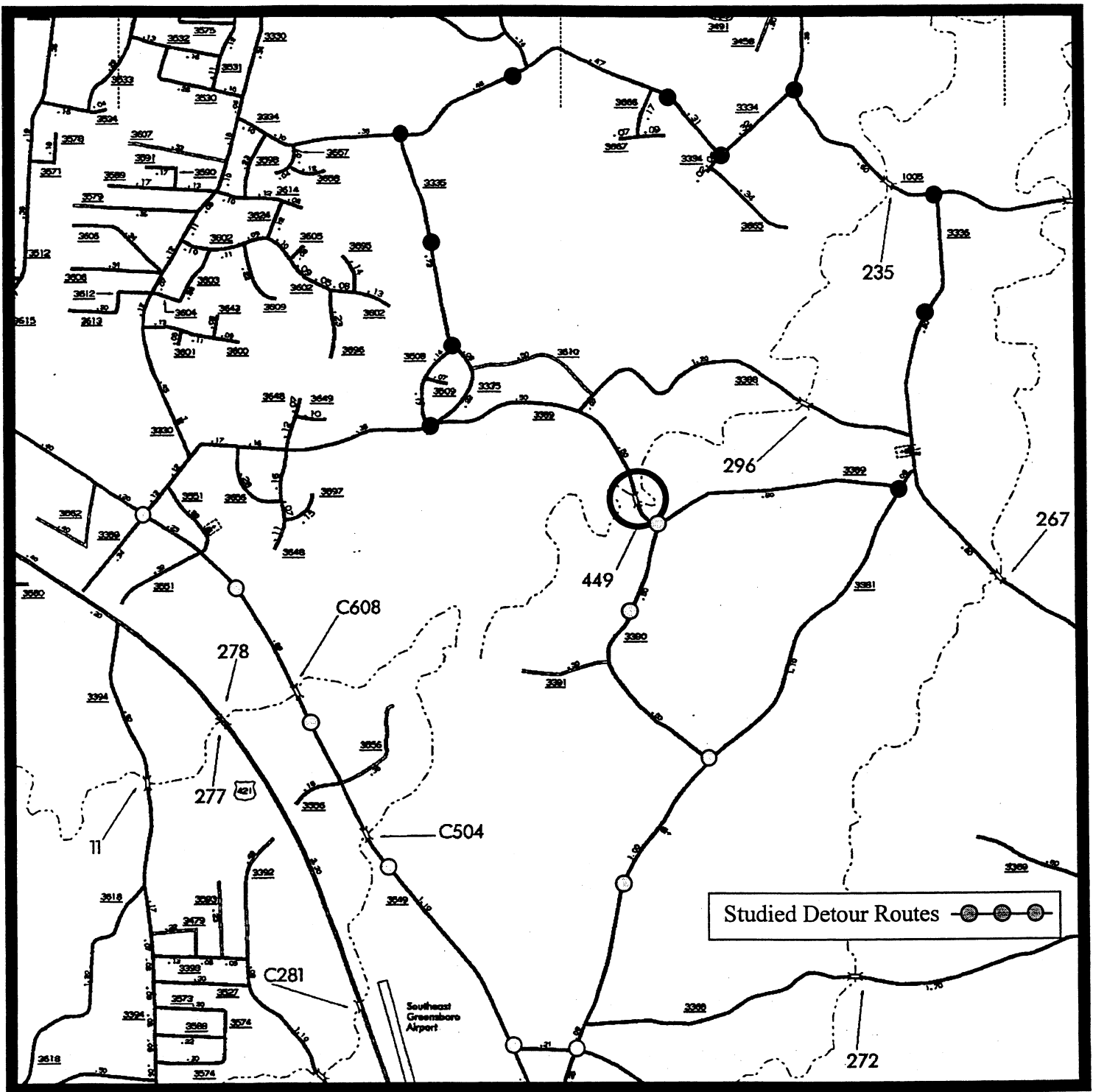
This project is an air quality "neutral" project, so it is not required to be included in the regional emissions analysis and a project level CO analysis is not required. If vegetation is disposed of by burning, all burning shall be done in accordance with applicable local laws and regulations of the North Carolina State Implementation Plan (SIP) for air quality in compliance with 15 NCAC 2D.0520.

Noise levels could increase during construction but will be temporary. This evaluation completes the assessment requirements for highway traffic noise of Title 23, Code of Federal Regulation (CFR), Part 772 and for air quality (1990 Clean Air Act Amendments and the National Environmental Policy Act) and no additional reports are required.

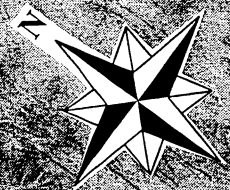
An examination of records at the North Carolina Department of Environment and Natural Resources, Division of Environmental Management, Groundwater Section and the North Carolina Department of Human Resources, Solid Waste Management Section revealed no underground storage tanks or hazardous waste sites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

Alamance County is a participant in the National Flood Insurance Program. There are no practical alternatives to crossing the floodplain area. Any shift in alignment will result in an impact area of about the same magnitude. The proposed project is not anticipated to increase the level or extent of upstream flood potential.

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



	<p>NORTH CAROLINA DEPARTMENT OF TRANSPORTATION PROJECT DEVELOPMENT & ENVIRONMENTAL ANALYSIS BRANCH</p>
<p>GUILFORD COUNTY REPLACE BRIDGE 449 ON SR 3389 OVER ALAMANCE CREEK B-3852</p>	
<p>Figure One</p>	




New Alignment

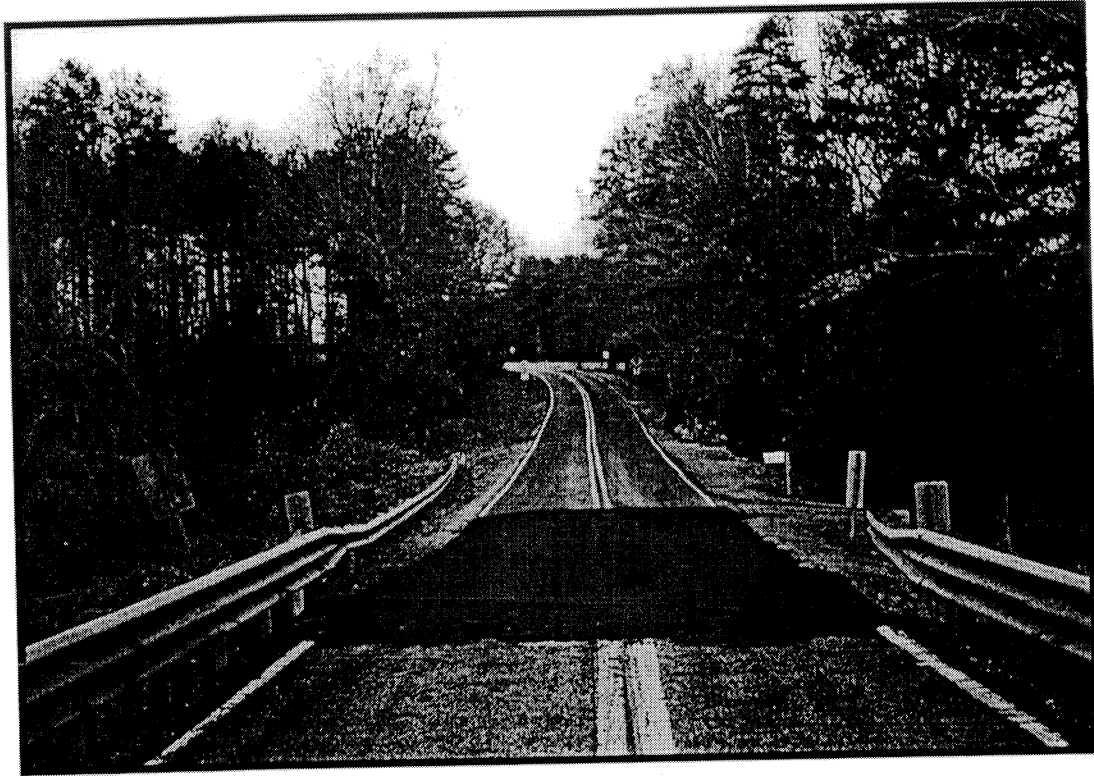
Remove Existing Bridge No. 449

SR 3389

SR 3389

SR 3390

	NORTH CAROLINA DEPARTMENT OF TRANSPORTATION PROJECT DEVELOPMENT & ENVIRONMENTAL ANALYSIS BRANCH
	GUILFORD COUNTY REPLACE BRIDGE 449 ON SR 3389 OVER ALAMANCE CREEK B-3852
Scale 1:1200	Figure Two



Center of Bridge Facing North



Center of Bridge Facing South

FIGURE 3

Williams



North Carolina Department of Cultural Resources

James B. Hunt, Jr., Governor
Betty Ray McCain, Secretary

Division of Archives and History
William S. Price, Jr., Director

January 8, 2001

MEMORANDUM

To: William D. Gilmore, P.E., Manager
Project Development and Environmental Analysis Branch

From: David Brook [Signature]
Deputy State Historic Preservation Officer

Re: Replacement of Bridge No. 449 on SR 3389, TIP No. B-3852, Guilford County, ER 01-7939

On November 30, 2000, April Montgomery of our staff met with North Carolina Department of Transportation (NCDOT) staff for a meeting of the minds concerning the above project. She reported our available information on historic architectural and archaeological surveys and resources along with our recommendations. NCDOT provided project area photographs and aerial photographs at the meeting.

Based upon our review of the photographs and the information discussed at the meeting, we offer our preliminary comments regarding this project.

In terms of historic architectural resources we are aware of one historic structure located within the area of potential effect:

Woody's Mill (GF 1568), located on the east side of SR 3389

We recommend that an architectural historian on your staff evaluate the above property to determine its eligibility for listing in the National Register of Historic Places. In addition, we recommend that a historic architectural survey be conducted for this project.

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

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

Thank you for your cooperation and consideration. If you have any questions concerning the above comment, contact Renee Gledhill-Earley, Environmental Review Coordinator, at 919/733-4763.

cc: Mary Pope Furr

TIP # B-3852 Federal Aid # BR2-3389(1) County Gulfard

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

Brief Project Description
Replace Bridge No. 449 on SR 3389 over Mamance Creek

On 1/4/2001, representatives of the

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

reviewed the subject project at

- A 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 effect.
- there are no properties less than fifty years old which are considered to meet Criterion Consideration G within the project's area of potential effect.
- there are properties over fifty years old (list attached) within the project's area of potential effect, but based on the historical information available and the photographs of each property, properties identified as Property #1 (Woody Mill) are considered not eligible for the National Register and no further evaluation of them is necessary.
- there are no National Register-listed properties within the project's area of potential effect.

Signed:

[Signature] 1/4/2001
Representative, NCDOT Date

[Signature] 1/4/2001
FHWA, for the Division Administrator, or other Federal Agency Date

[Signature] 1/4/01
Representative, SHPO Date

[Signature] 1/10/01
State Historic Preservation Officer Date

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

April Country



GUILFORD COUNTY SCHOOLS

November 3, 2000

Dear John Williams:

**SUBJECT: EFFECTS ON SCHOOL BUSES IN RELATION TO REPLACING
BRIDGE NO. 449, GUILFORD COUNTY**

The purpose of this letter is to provide information regarding the replacement of Bridge No. 449 on Highway SR 3389, over Alamance Creek in Guilford County.

Current data indicates that school buses serving Guilford County Schools cross the above named bridge approximately 40 times per day. Closing this bridge would result in detouring these routes using Woody Lane and Sizemore Rd. This would not cause a dramatic effect on these routes. Data also indicates that we currently are not making any bus stops between Woody Ln or Sizemore Rd and the bridge, therefore a turn around or stop relocation would not be necessary.

Sincerely,



Jeff Harris

TIMS Program Administrator II

B U I L D I N G F U T U R E S

131 Franklin Boulevard Greensboro, NC 27401
Phone (336) 370-8920 Fax (336) 370-8930