



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

MICHAEL F. EASLEY
GOVERNOR

LYNDO TIPPETT
SECRETARY

October 17, 2007

NC Division of Water Quality
Transportation Permitting Unit
2321 Crabtree Boulevard, Suite 250
Raleigh, North Carolina 27604

ATTN: Mr. John Hennessy

Dear Sir,

SUBJECT: Neuse Riparian Buffer Authorization Request for the proposed replacement of Bridge No. 9 on NC 55 over Jericho Run in Lenoir County. Federal Project No. BRSTP-55(21), State Project No. 8.1151401, WBS Element 33519.1.1, T.I.P. No. B-4172.

REFERENCE: Nationwide Permit No. 23 Action ID 200610545

Please find enclosed permit drawings and roadway plans for the above referenced project proposed by the North Carolina Department of Transportation (NCDOT). A Categorical Exclusion (CE) was completed for this project on January 4, 2006, and distributed shortly thereafter. Additional copies are available upon request. The NCDOT plans to replace Bridge No. 9 over Jericho Run on NC 55 in Lenoir County. The existing 22-foot long bridge will be replaced with a 95-foot long structure using top-down construction in the existing location. During construction, traffic will be maintained by an off-site detour. No proposed permanent or temporary jurisdictional impacts to wetlands or surface waters are anticipated. Impacts to riparian buffers total 5,730 square feet.

Impacts to Waters of the United States

General Description: The project study area is located within sub-basin 03-04-05 of the Neuse River Basin. This area is part of USGS Hydrologic Unit 03020202 of the South Atlantic/Gulf Region. The portion of Jericho Run that lies within the project study area has been assigned Stream Index Number 27-81-2 by the North Carolina Division of Water Quality (NC DWQ).

Jericho Run enters the project study area as a well-defined, third-order, perennial stream with moderate flow over sand, silt, and gravel substrate. At bridge No. 9, Jericho Run is approximately 18 feet wide, and water depths are 1 - 4 feet. An unnamed tributary (UT1) to

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

TELEPHONE: 919-733-3141
FAX: 919-733-9794

WEBSITE: WWW.DOH.DOT.STATE.NC.US

LOCATION:
TRANSPORTATION BUILDING
1 SOUTH WILMINGTON STREET
RALEIGH NC

Jericho Run enters the project study area as a somewhat well-defined, first order, perennial stream with low flow over sand and silt substrate, and drains the adjacent agricultural fields. It flows to the toe of the maintained NC 55 right-of-way slope, and loses stream characteristics. It then regains channelized flow and stream characteristics, as it drains westward through several culverts finally to its confluence with Jericho Run.

A best usage classification of C SW NSW has been assigned to this section of Jericho Run and its unnamed tributary. Jericho Run is not designated as a North Carolina Natural or Scenic River, or as a National Wild and Scenic River. Jericho Run is not listed as a 303(d) stream, impaired due to high sediment loads, nor are there 303(d) waters within 1 mile of the study area. In addition, no designated Outstanding Resource Waters (ORW), High Quality Waters (HQW), Water Supply I (WS-I), or Water Supply II (WS-II) waters occur within 1 mile of the project study area.

Jericho Run, UT1, and their adjacent wetlands are subject to jurisdictional consideration under Section 404 of the Clean Water Act as “Waters of the United States” (33 CFR section 328.3). Wetlands within the study site exhibit characteristics of an alluvial forested system with broad-leaved deciduous and needle-leaved evergreen vegetation.

Permanent Impacts: This project will result in no permanent impacts to jurisdictional wetlands or surface waters.

Temporary Impacts: This project will result in no temporary impacts to jurisdictional wetlands or surface waters.

Hand Clearing: Hand clearing (<0.01 acre) in wetlands will be necessary for project construction.

Utility Impacts: No impacts to jurisdictional resources will occur due to relocation of utilities in the project area. Existing utility lines are in conflict with the proposed project; however, all utility work will be conducted outside of jurisdictional areas.

Bridge Demolition: The existing bridge is a single span, 22 feet in length. The superstructure is comprised of a reinforced concrete floor on I-beams. The substructure consists of reinforced concrete abutments. The bed to crown height is 9.9 feet and the normal depth of flow is 2 feet. Best Management Practices (BMP’s) for Bridge Demolition and removal will be followed to prevent any temporary fill from entering “Waters of the United States”.

Neuse Riparian Buffer Rules

This project is located in the Neuse River Basin; therefore, the regulations pertaining to the buffer rules apply. Jericho Run is subject to buffer regulation. There will be a total of 3,923 ft² of impacts to riparian buffers, 2,477 ft² in Zone 1 and 1,446 ft² in Zone 2, due to the construction of the new bridge. Of these impacts, 2,653 ft² are considered allowable due to bridge construction, and 1,270 ft² are considered allowable with mitigation due to roadway construction other than crossings. This Road Crossing activity is allowable because impacts are less than the 150-foot/0.3 acre threshold, for which mitigation is required. Uses designated as allowable may proceed within the riparian buffer provided

that there are no practical alternatives to the requested use pursuant to Item (8) of this rule. Within the project study area, UT1 and its buffers are contained within the existing transportation facility, and are therefore not subject to buffer regulations. All practicable measures to minimize impacts within buffer zones were followed.

Avoidance and Minimization

NCDOT has avoided and minimized impacts to the fullest extent possible:

- Traffic will be maintained using an off-site detour during construction.
- The bridge will be built from the existing roadway, in-place.
- The bridge is being lengthened by 73 feet.
- There will be no deck drains over surface waters.
- Design Standards in Sensitive Watersheds will be implemented.
- The new structure will span the creek, therefore there will be no interior bents in the water
- Measures used to minimize impacts to the buffer zone include using the existing alignment.
- Fill slopes in wetlands will be at a 3:1 ratio

Mitigation

The proposed project will have no permanent impacts to wetlands. Hand clearing in the vicinity of the north abutment (<0.01 ac) is not a jurisdictional impact and therefore does not require mitigation. Because there are no permanent impacts to jurisdictional wetlands, and impacts to riparian buffers have not exceeded the threshold requiring compensatory mitigation, NCDOT is not proposing mitigation.

Federally-Protected Species

Plants and animals with federal classifications of Endangered, Threatened, Proposed Endangered, and Proposed Threatened are protected under Endangered Species Act §§7 and 9. As of May 10, 2007, the US Fish and Wildlife Service (USFWS) lists 3 federally protected species for Lenoir County (Table 1).

Biological conclusions of “No Effect” were reached for red-cockaded woodpecker (*Picoides borealis*) and sensitive joint-vetch (*Aeschynomene virginica*) due to lack of suitable habitat for either species.

Table 1. Federally protected species of Lenoir County.

Scientific Name	Common Name	Federal Status	Habitat	Biological Conclusion
<i>Picoides borealis</i>	Red-cockaded woodpecker	E	No	No Effect
<i>Aeschynomene virginica</i>	Sensitive joint-vetch	T	No	No Effect

Effective August 8, 2007, the bald eagle (*Haliaeetus leucocephalus*) was delisted from the Endangered Species Act. A Biological Conclusion is no longer necessary for this species. The bald eagle is protected under the Bald and Golden Eagle Protection Act. Accordingly, bald eagle occurrences and nesting habitat were surveyed. The most recent survey, on

August 22, 2007, found no individuals or nesting sites within 660 feet of the project limits. This project will therefore have no adverse effects on the bald eagle.

Anadromous Fish

Impacts to jurisdictional waters and wetlands are not expected. However, in the event that impacts are necessary, NCDOT does not propose implementing the Stream Crossing Guidelines for Anadromous Fish Passage as stated in the CE, due to the lack of habitat suitable for anadromous fish passage or spawning.

Project Schedule

This project is scheduled to let May 20, 2008, with a review date of April 1, 2008.

Regulatory Approvals

Neuse Riparian Buffer Authorization: This project requires written authorization from the NCDWQ or the delegated local authority. Therefore, NCDOT requests that the NCDWQ review this application and issue a written approval for a Neuse Riparian Buffer Authorization.


Section 404 / 401 Permit: A Nationwide Permit No. 23 (Action ID 200610545) was issued on April 28, 2006 for this project based on the CE. However, this project will result in no impacts to Waters of the US. Therefore, NCDOT is not requesting that this project be authorized under Section 401 of the Clean Water Act.

Thank you for your assistance with this project. If you have any questions or need additional information, please contact Worth Calfee at wcalfee@dot.state.nc.us or (919) 715-7225.

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

Sincerely,



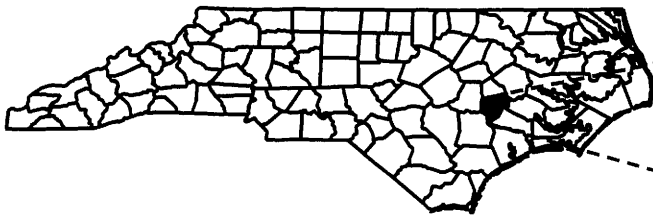
 Gregory J. Thorpe, Ph.D. Environmental Management Director,
Project Development and Environmental Analysis Branch

W/attachment

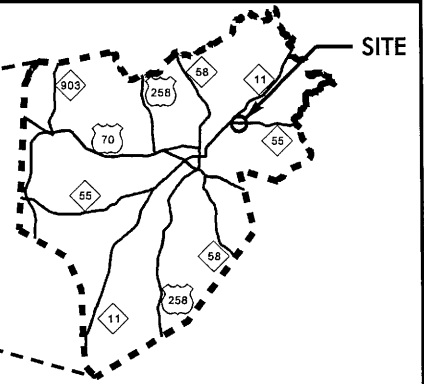
Mr. John Hennessy, NCDWQ **(5 Copies)**
Mr. David Wainwright
Mr. Travis Wilson, NCWRC
Mr. Gary Jordan, USFWS
Mr. Ron Sechler, NMFS
Mr. Michael Street, NCDMF
Dr. David Chang, P.E., Hydraulics
Mr. Greg Perfetti, P.E., Structure Design
Mr. Victor Barbour, P.E., Project Services Unit
Mr. Mark Staley, Roadside Environmental
Mr. C. E. Lassiter, P.E., Div. 2 Engineer
Mr. Jay Johnson, Div. 2 Environmental Officer

W/o attachment

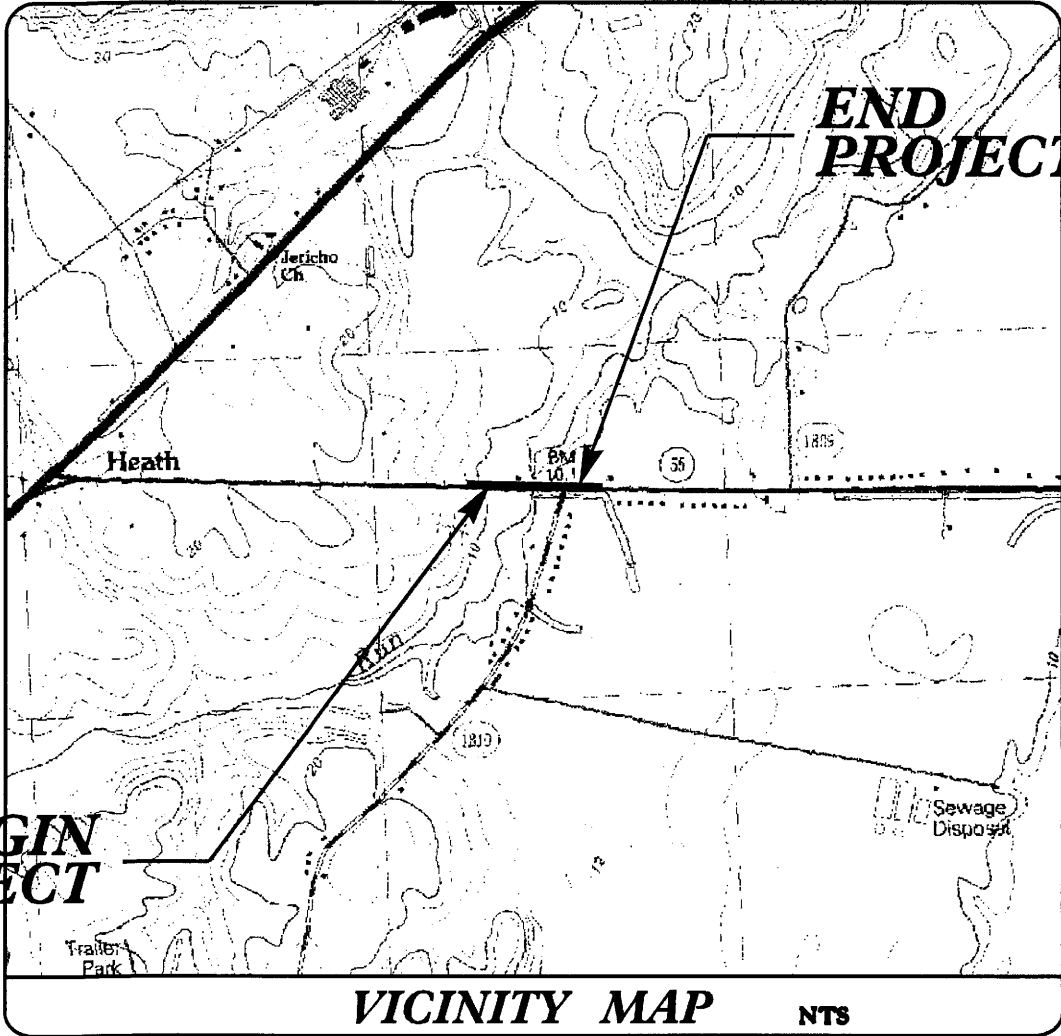
Mr. Scott McLendon, USACE, Wilmington
Mr. Jay Bennett, P.E., Roadway Design
Mr. Majed Alghandour, P. E., Programming and TIP
Mr. Art McMillan, P.E., Highway Design
Mr. Wade Kirby, PDEA Project Planning Engineer



SEE INSET BELOW



LENOIR COUNTY



VICINITY MAP

NTS

***BUFFER
IMPACTS***

Buffer Drawing 5
Sheet 1 of 5

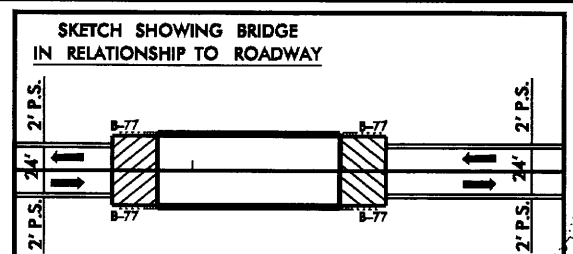
**N.C. DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS**

**LENOIR COUNTY
PROJECT: B-4172
BRIDGE NO. 9 OVER JERICHO RUN
AND APPROACHES ON NC 55**

SHEET ____ OF ____

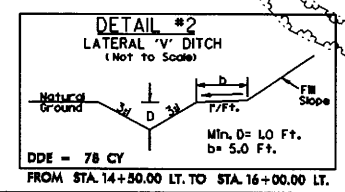
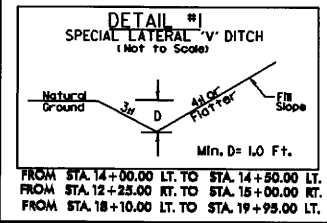
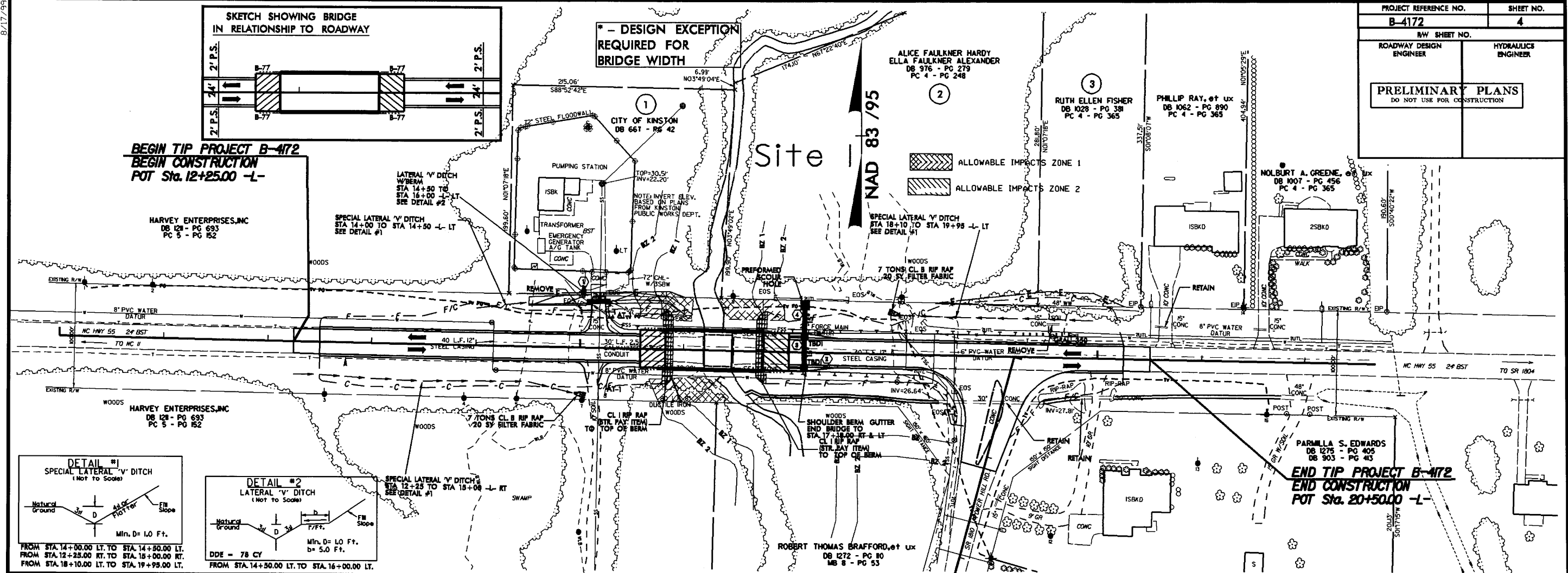
5 / 23 / 07

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DESIGN EXCEPTION REQUIRED FOR BRIDGE WIDTH

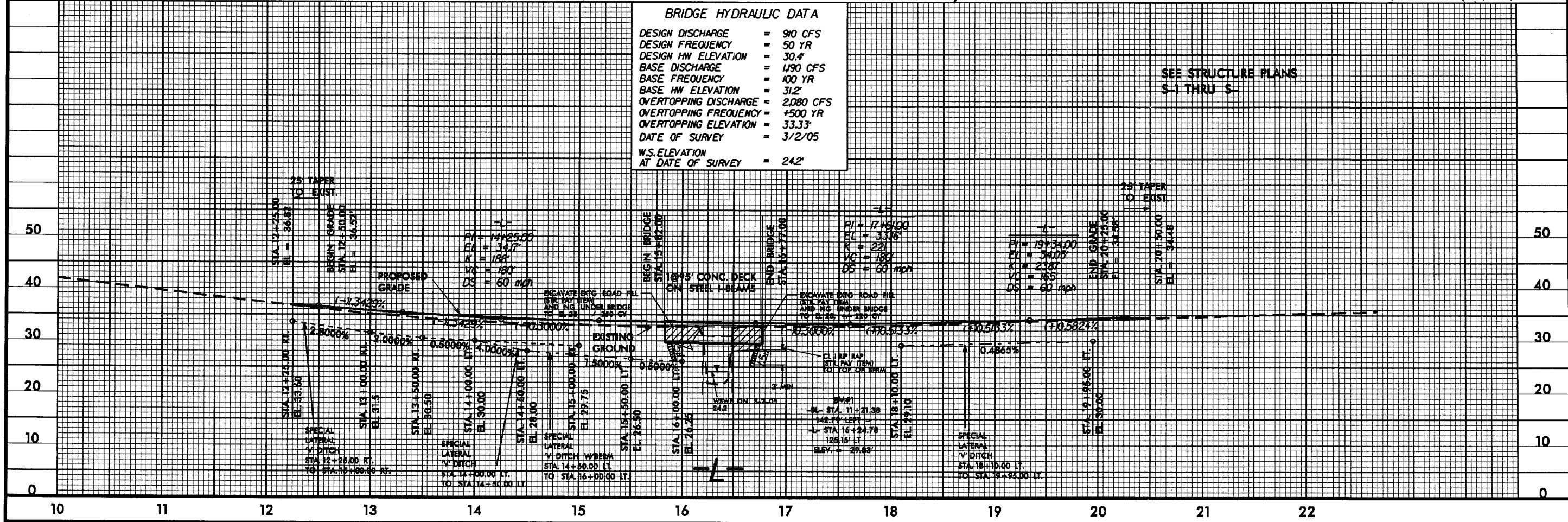
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B-4172	4
MW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	



BRIDGE HYDRAULIC DATA

DESIGN DISCHARGE	= 910 CFS
DESIGN FREQUENCY	= 50 YR
DESIGN HW ELEVATION	= 30.4'
BASE DISCHARGE	= 1,190 CFS
BASE FREQUENCY	= 100 YR
BASE HW ELEVATION	= 31.2'
OVERTOPPING DISCHARGE	= 2,080 CFS
OVERTOPPING FREQUENCY	= +500 YR
OVERTOPPING ELEVATION	= 33.33'
DATE OF SURVEY	= 3/2/05
W.S. ELEVATION AT DATE OF SURVEY	= 24.2'

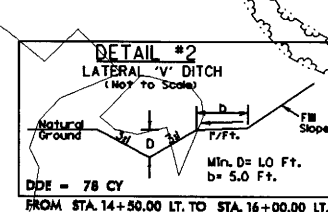
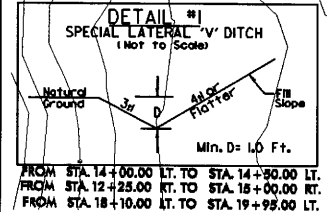
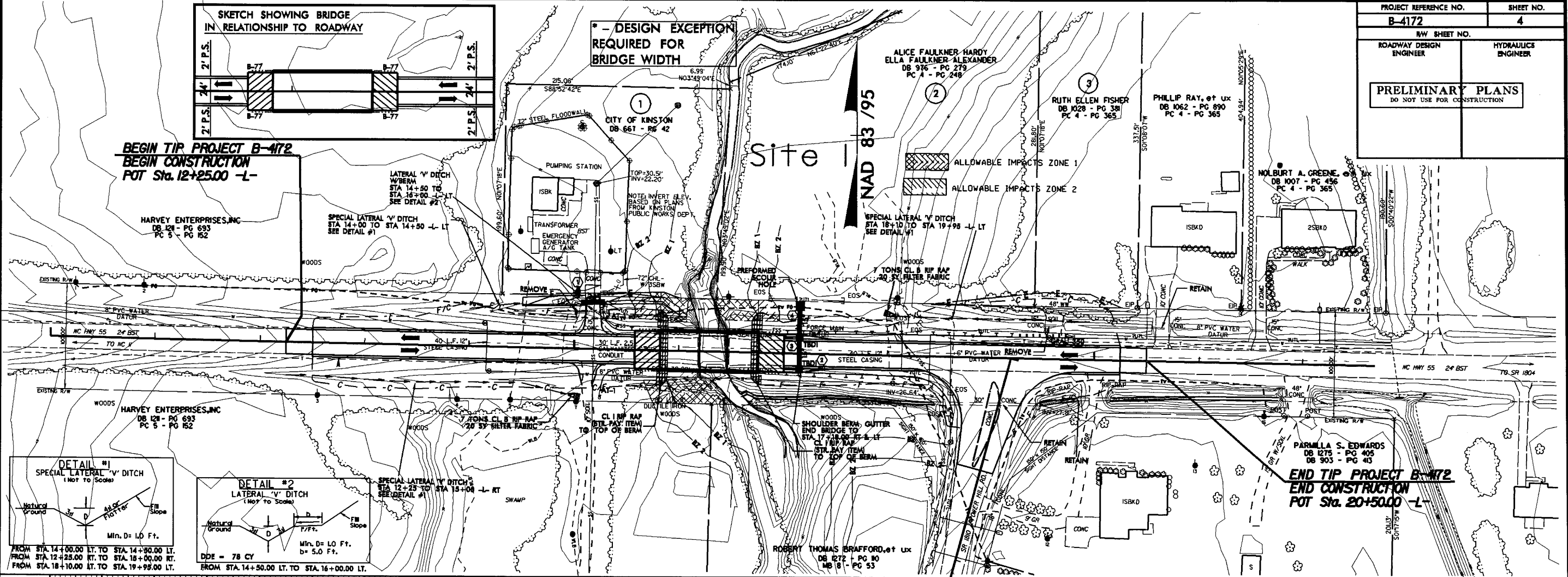
SEE STRUCTURE PLANS S-1 THRU S-5



Buffer Drawing Sheet 4 of 5

8/17/99

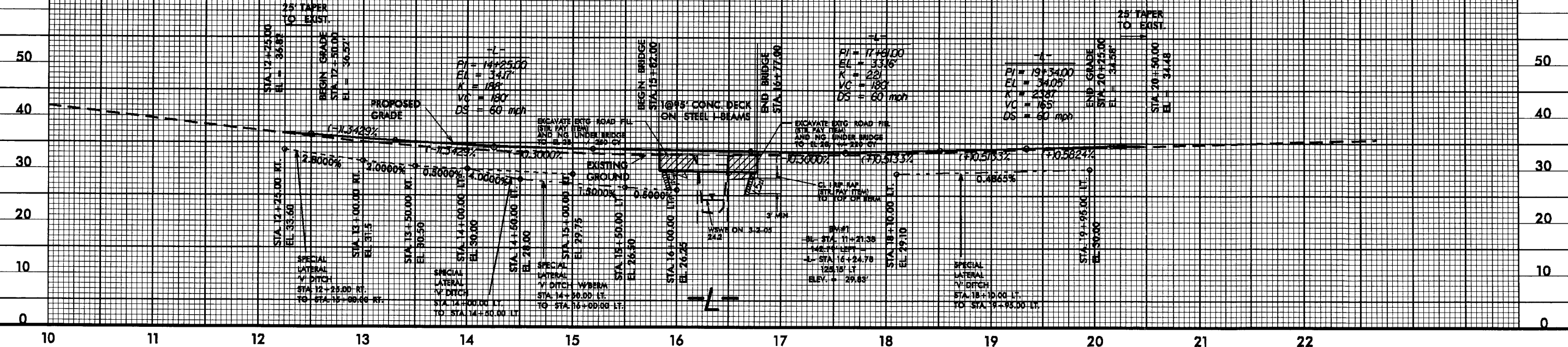
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NW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	



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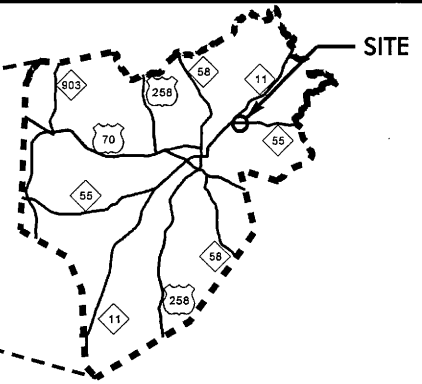
SEE STRUCTURE PLANS S-1 THRU S-5



Buffer Drawing Sheet 5 of 5

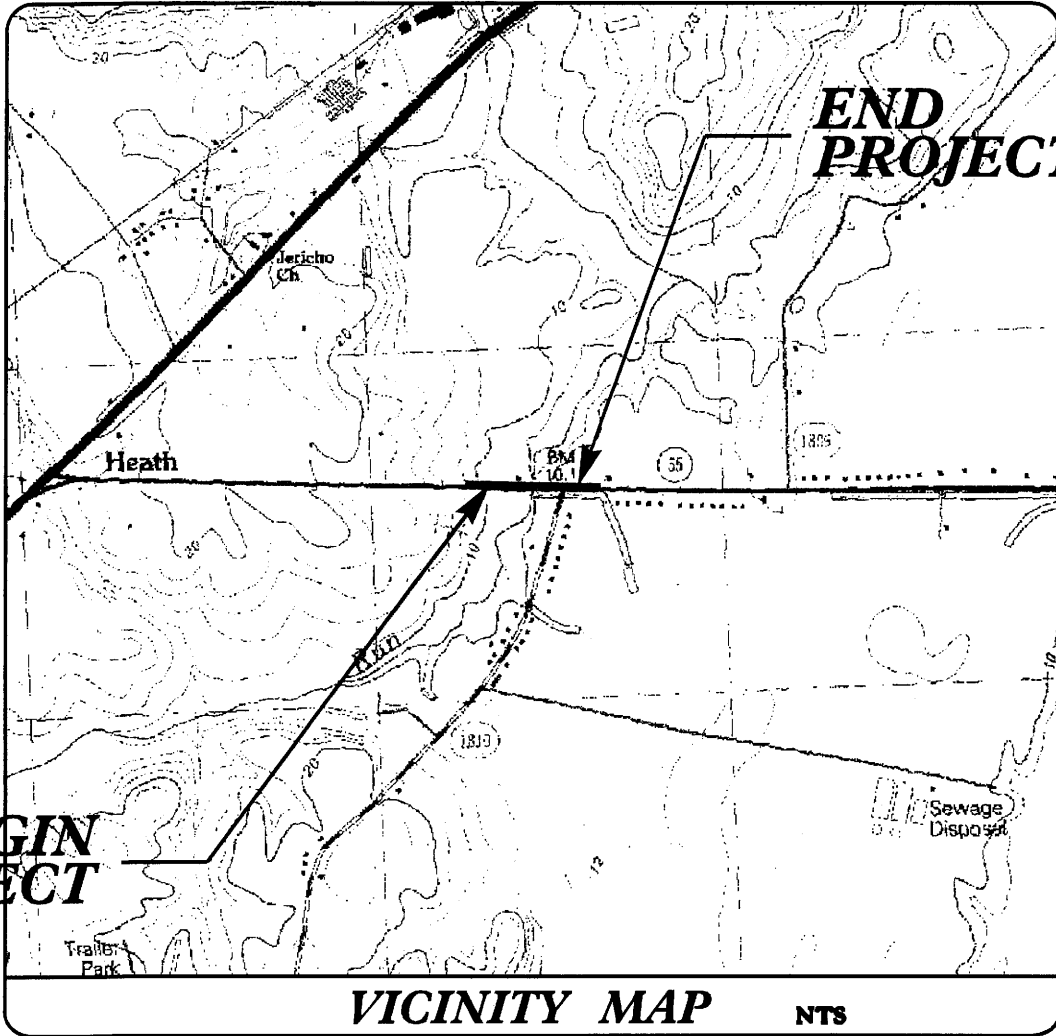


SEE INSET
BELOW



SITE

LENOIR COUNTY



**BEGIN
PROJECT**

**END
PROJECT**

VICINITY MAP

NTS

**WETLAND/STREAM
IMPACTS**

Wetland
Drawing

Sheet 1 of 4

**N.C. DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS**

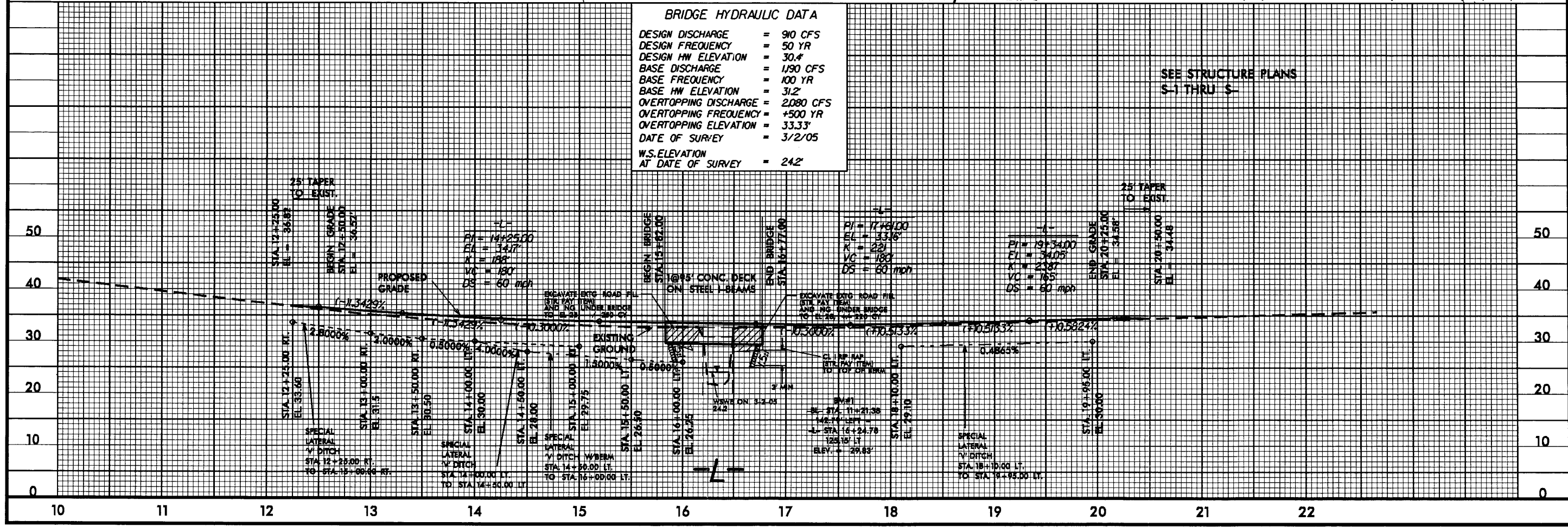
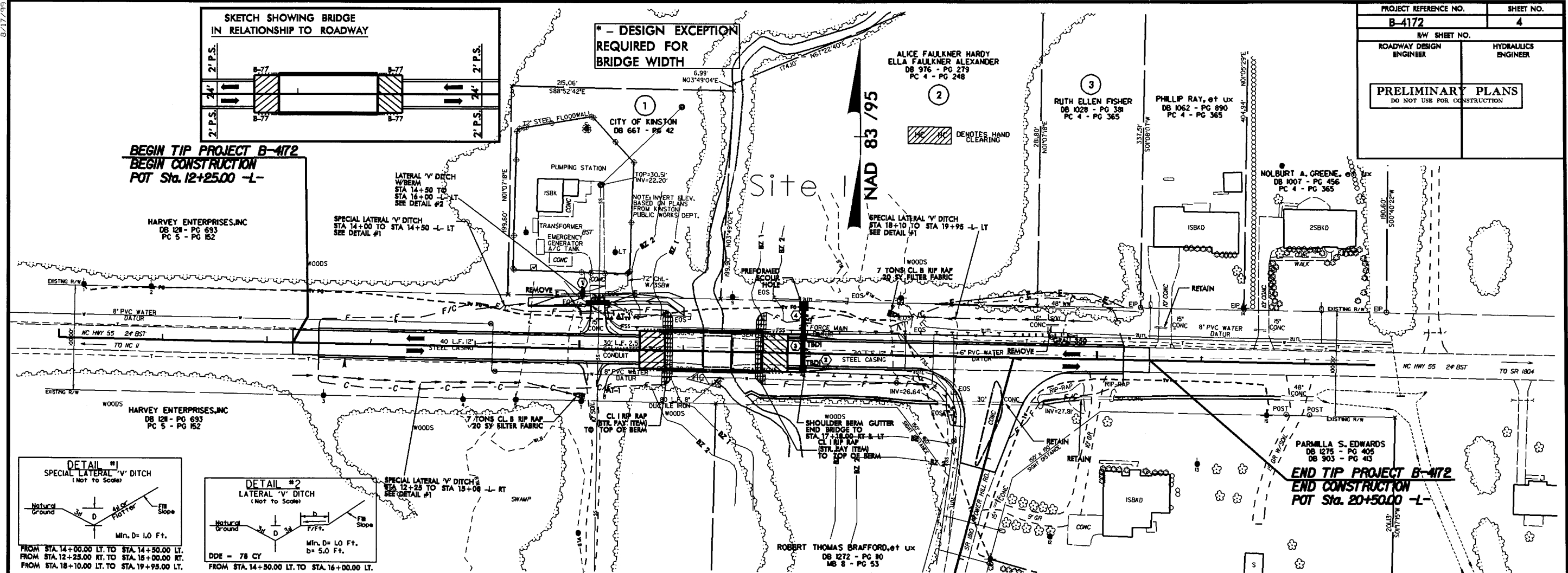
**LENOIR COUNTY
PROJECT: B-4172
BRIDGE NO. 9 OVER JERICHO RUN
AND APPROACHES ON NC 55**

SHEET ____ OF ____

5 / 23 / 07

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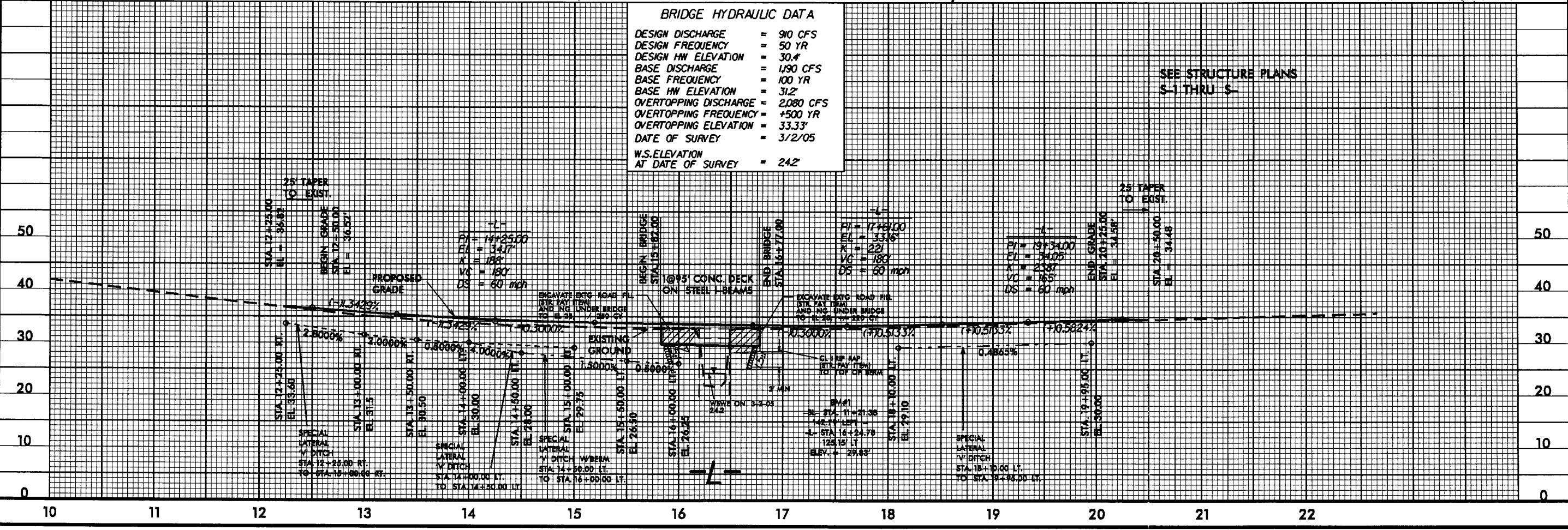
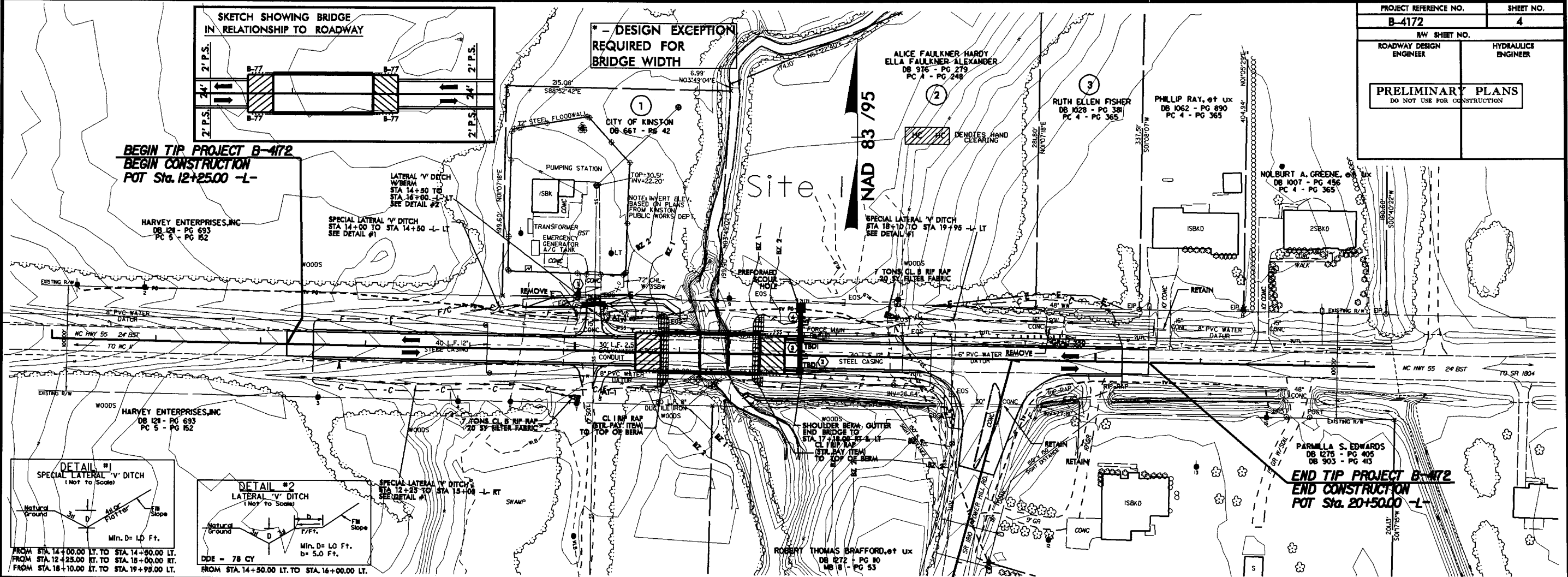
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MW SHEET NO.	
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Wetland Drawing 3 of 4

8/17/95

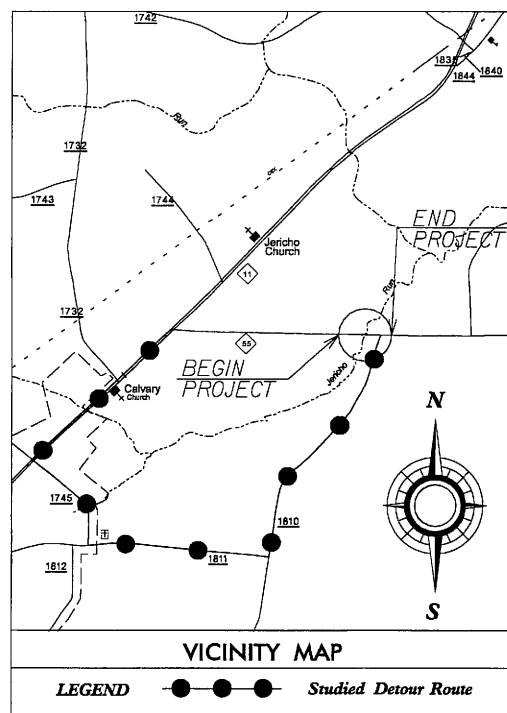
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MW SHEET NO.	
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Wetland Drawing
Sheet 4 of 4

CONTRACT: TIP PROJECT: B-4172

See Sheet 1-A For Index of Sheets



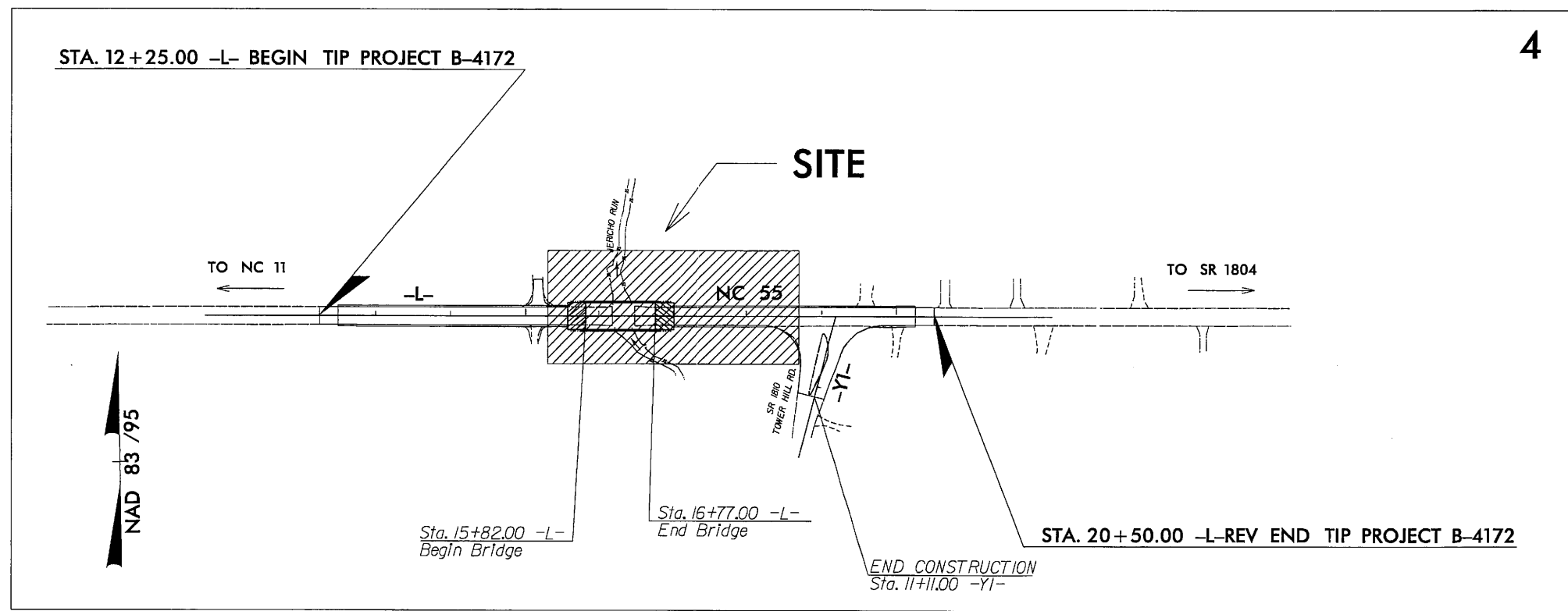
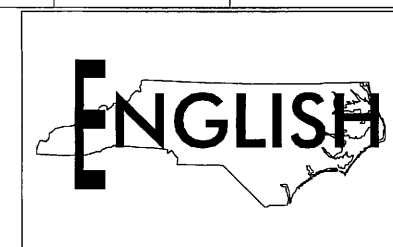
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

LENOIR COUNTY

**LOCATION: BRIDGE NO. 9 OVER JERICO RUN
AND APPROACHES ON NC 55**

TYPE OF WORK: GRADING, DRAINAGE, PAVING AND STRUCTURE

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
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STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
33519.1.1	BRSTP-55(21)	P.E.	

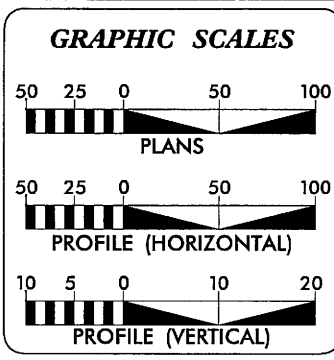


THIS PROJECT IS NOT WITHIN MUNICIPAL BOUNDARIES.

NCDOT CONTACT: CATHY HOUSER, P.E., PROJECT ENGINEER - ROADWAY DESIGN

"CLEARING ON THIS PROJECT SHALL BE ESTABLISHED BY METHOD III."

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION



DESIGN DATA

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ADT 2030 = 5700
DHV = 10 %
D = 60 %
T = 13 % *
V = 60 MPH
FUNC. CLASS = RURAL MAJOR COLLECTOR
* TTST 8 % DUAL 5 %

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT B-4172 = 0.138 mi.
LENGTH STRUCTURE TIP PROJECT B-4172 = 0.018 mi.
TOTAL LENGTH TIP PROJECT B-4172 = 0.156 mi.

Prepared in the Office of:
WANG ENGINEERING COMPANY, INC.
CARY, N.C.
FOR NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

2002 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE: August 18, 2006
LETTING DATE: August 21, 2007

GREG S. PURVIS, P. E.
PROJECT ENGINEER

SCOTT L. KENNEDY
PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

SIGNATURE: _____ P.E.

ROADWAY DESIGN ENGINEER

SIGNATURE: _____ P.E.

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

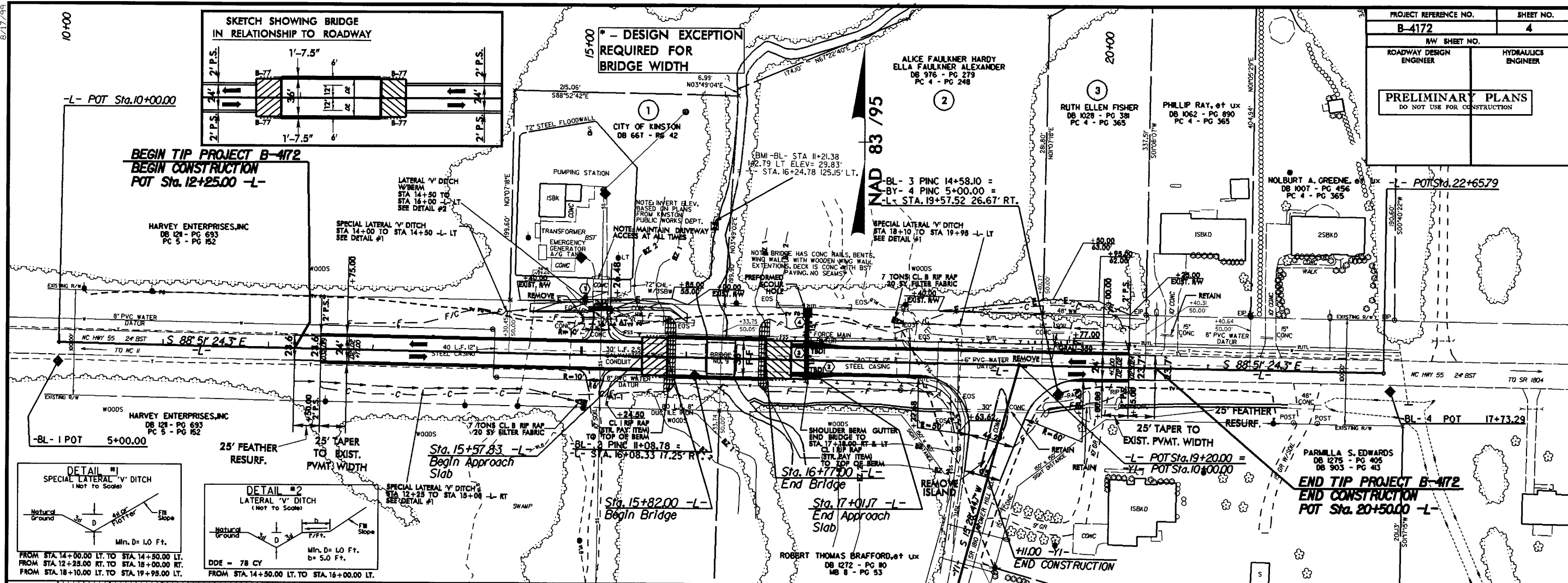
STATE DESIGN ENGINEER

DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

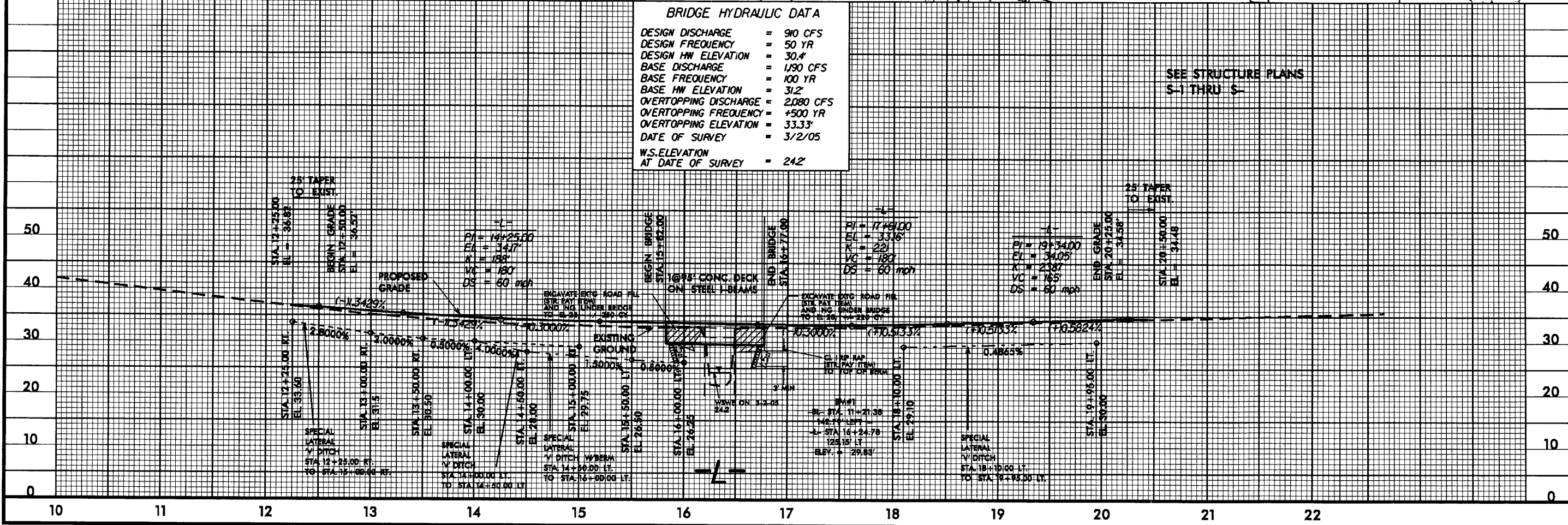
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DATE

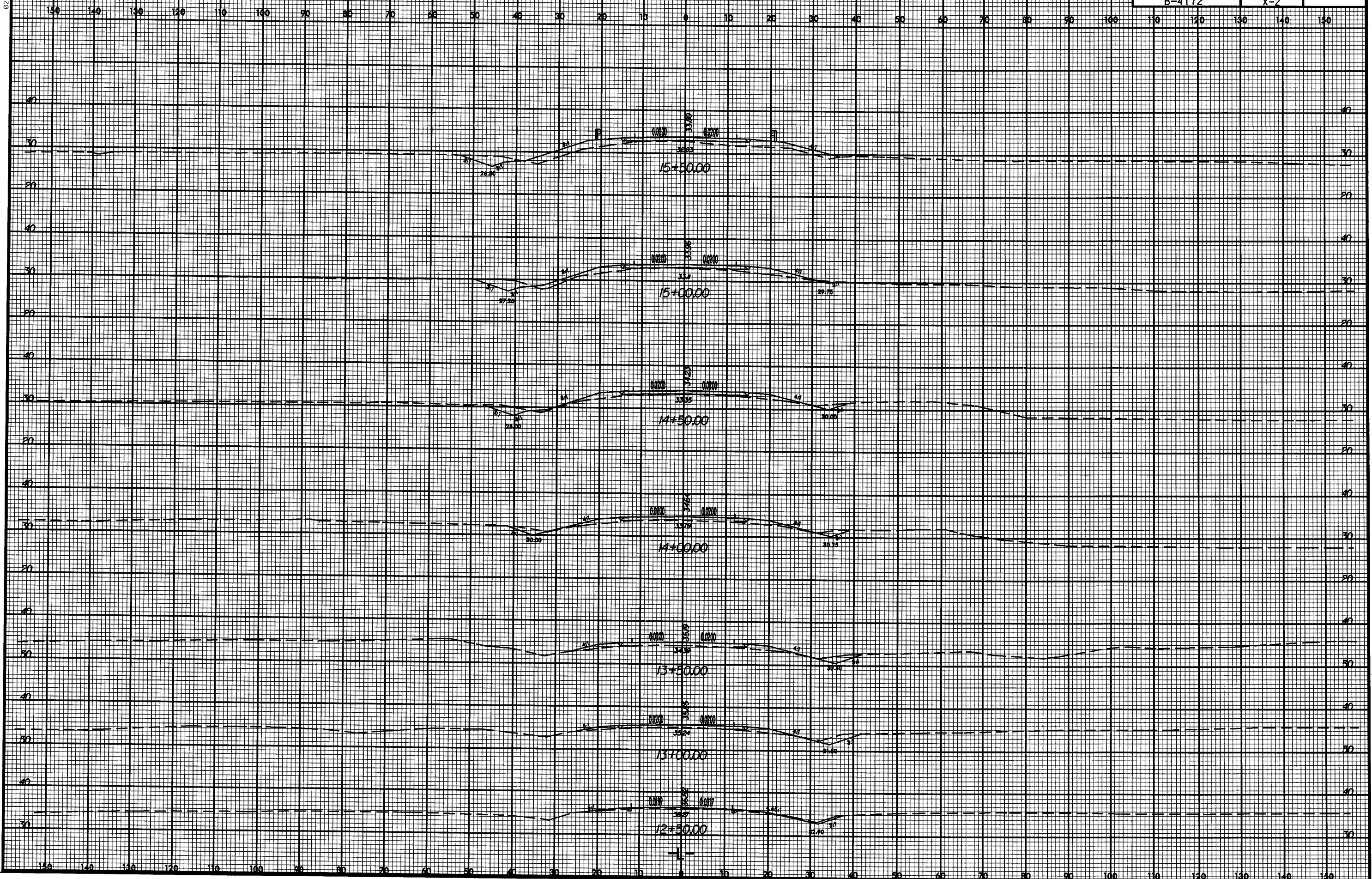
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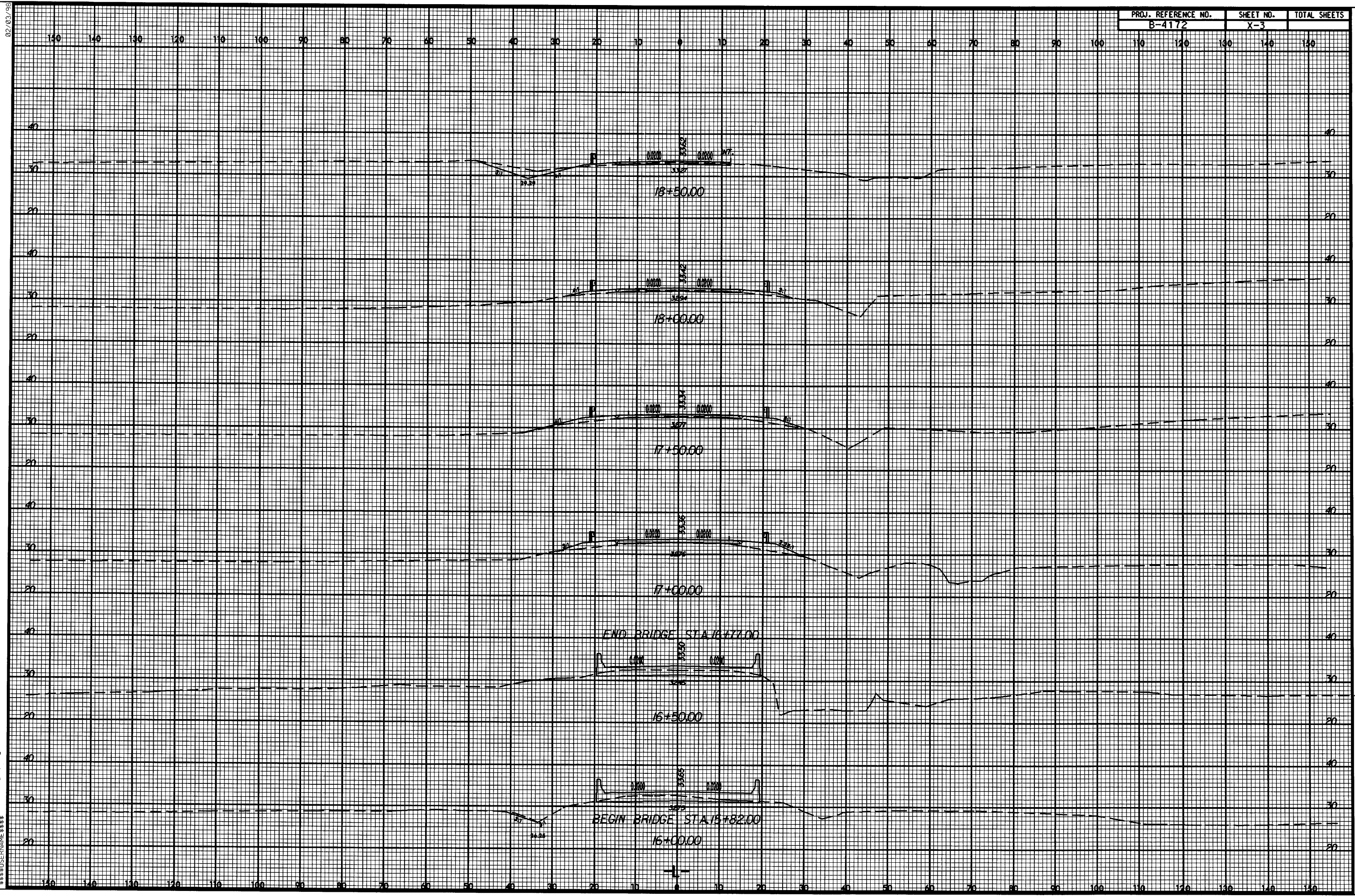
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MW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
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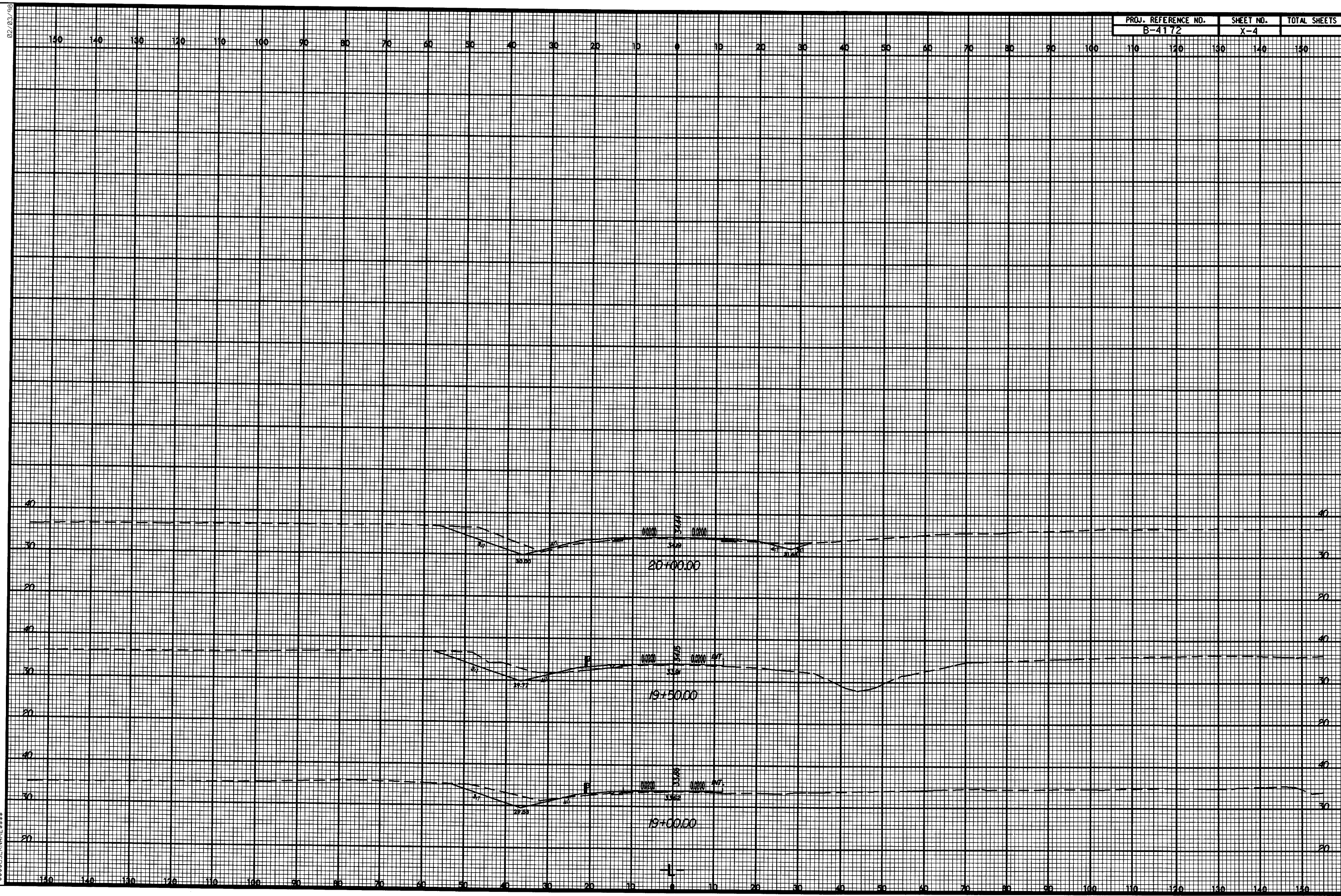
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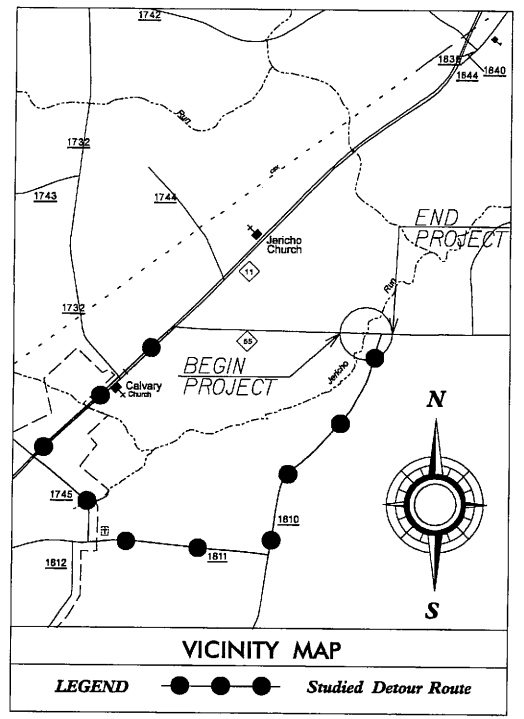
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02/03/98

09/08/99

CONTRACT: TIP PROJECT: B-4172

See Sheet 1-A For Index of Sheets



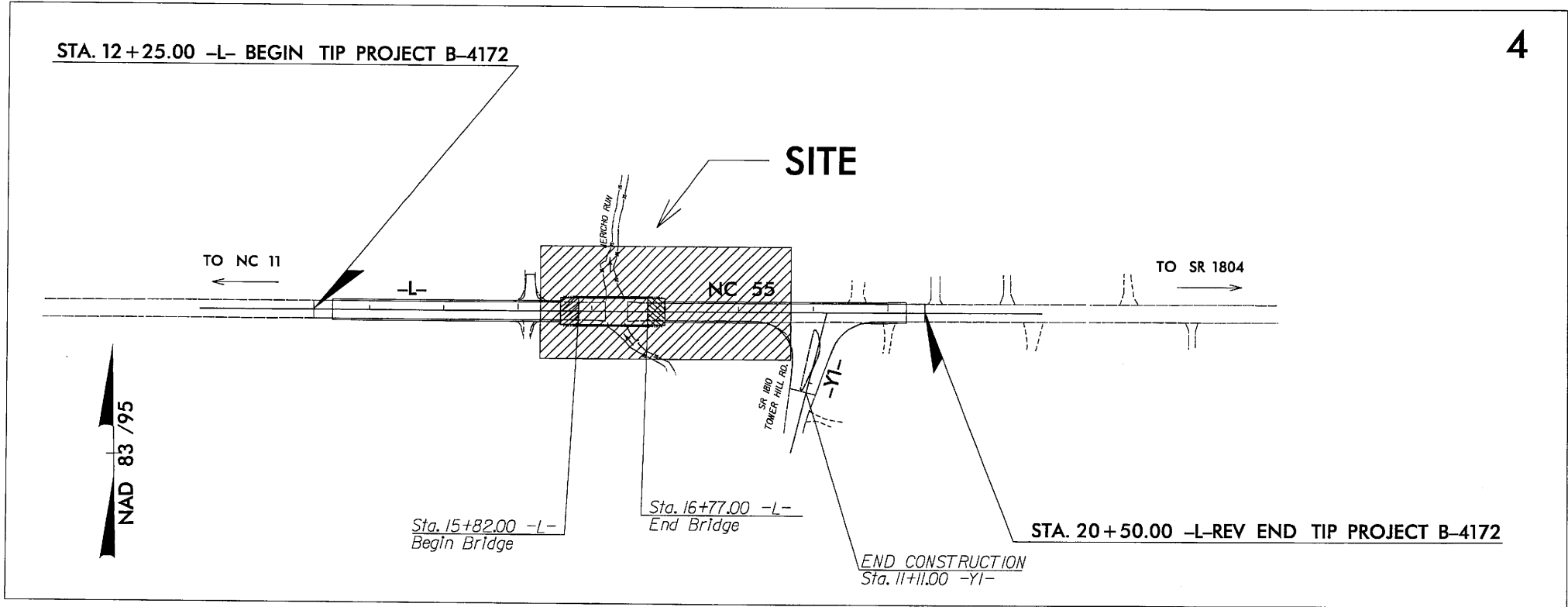
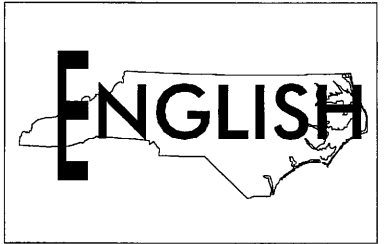
STATE OF NORTH CAROLINA
 DIVISION OF HIGHWAYS

LENOIR COUNTY

**LOCATION: BRIDGE NO. 9 OVER JERICHO RUN
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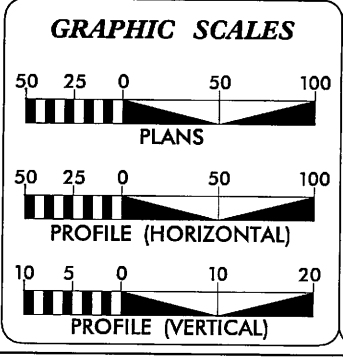
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THIS PROJECT IS NOT WITHIN MUNICIPAL BOUNDARIES.

NCDOT CONTACT: CATHY HOUSER, P.E., PROJECT ENGINEER - ROADWAY DESIGN

"CLEARING ON THIS PROJECT SHALL BE ESTABLISHED BY METHOD III."

INCOMPLETE PLANS
 DO NOT USE FOR R/W ACQUISITION
PRELIMINARY PLANS
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HYDRAULICS ENGINEER

SIGNATURE: _____ P.E.

ROADWAY DESIGN ENGINEER

SIGNATURE: _____ P.E.

DIVISION OF HIGHWAYS
 STATE OF NORTH CAROLINA

STATE DESIGN ENGINEER

DEPARTMENT OF TRANSPORTATION
 FEDERAL HIGHWAY ADMINISTRATION

APPROVED

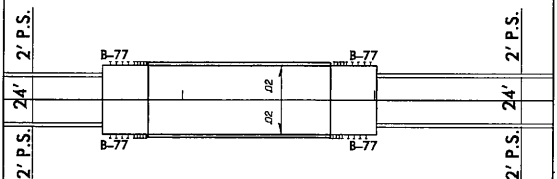
DIVISION ADMINISTRATOR

DATE

8/17/95

10+00

SKETCH SHOWING BRIDGE IN RELATIONSHIP TO ROADWAY

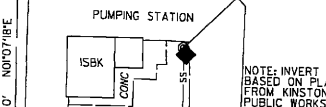


BEGIN TIP PROJECT B-4172
BEGIN CONSTRUCTION
POT Sta. 12+25.00 -L-

HARVEY ENTERPRISES, INC
DB 1211 - PG 693
PC 5 - PG 152

LATERAL 'V' DITCH
W/BERM
STA 14+50 TO
STA 16+00 -L- LT
SEE DETAIL #2

SPECIAL LATERAL 'V' DITCH
STA 14+00 TO STA 14+50 -L- LT
SEE DETAIL #1



NOTE: INVERT ELEV.
BASED ON PLANS
FROM KINGSTON
PUBLIC WORKS DEPT.

CBMI-BL- STA 11+21.38
142.79 LT ELEV = 29.83'
- STA. 16+24.78 125.15' LT.

NAD 83 / 95

SPECIAL LATERAL 'V' DITCH
STA 18+10 TO STA 19+95 -L- LT
SEE DETAIL #1

NOTE: BRIDGE HAS CONC NAILS, BENTS,
WING WALLS WITH WOODEN WING WALL
EXTENSIONS, DECK IS CONC WITH BST
PAVING, NO SEAMS

7 TONS CL B RIP RAP
20 SY FILTER FABRIC

ENGLISH

PROJECT REFERENCE NO.	B-4172	SHEET NO.	4
RAW SHEET NO.		HYDRAULICS ENGINEER	
ROADWAY DESIGN ENGINEER			
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION			
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION			

L- POT Sta. 22+65.79

NOLBURT A. GREENE,
DB 1007 - PG 456
PC 4 - PG 365

PHILLIP RAY, et ux
DB 1062 - PG 890
PC 4 - PG 365

RUTH ELLEN FISHER
DB 1028 - PG 381
PC 4 - PG 365

ISBKD
25BKD
WALK

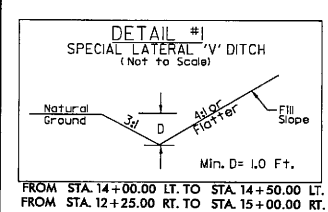
RETAIN
15' CONC
8" PVC WATER DATUR

48" CONC
POST

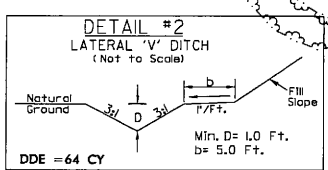
PARMILLA S. EDWARDS
DB 1275 - PG 405
DB 903 - PG 413

END TIP PROJECT B-4172
END CONSTRUCTION
POT Sta. 20+50.00 -L-

HC HC DENOTES HAND CLEARING



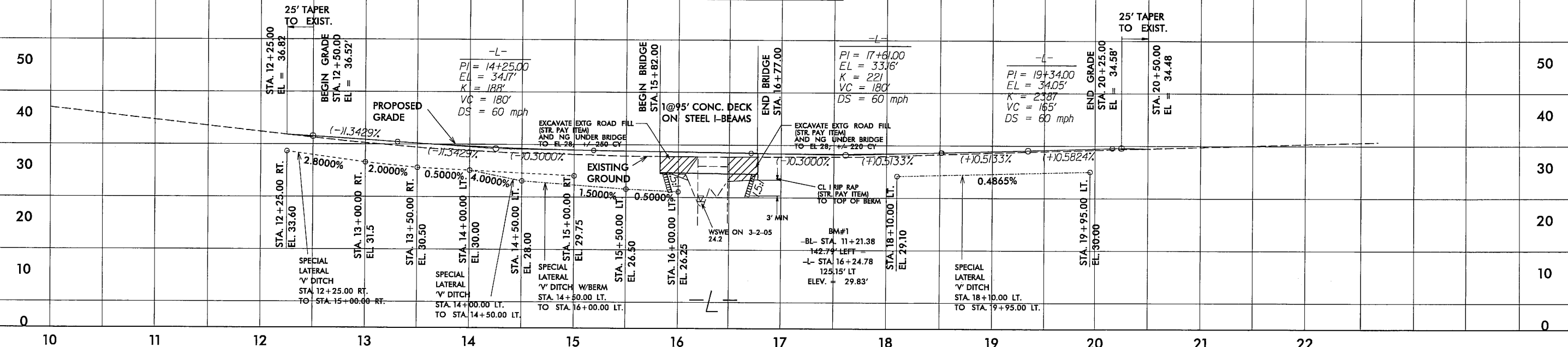
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FROM STA. 12+25.00 RT. TO STA. 15+00.00 RT.
FROM STA. 18+10.00 LT. TO STA. 19+95.00 LT.



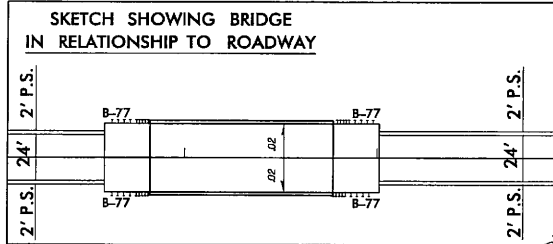
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BRIDGE HYDRAULIC DATA

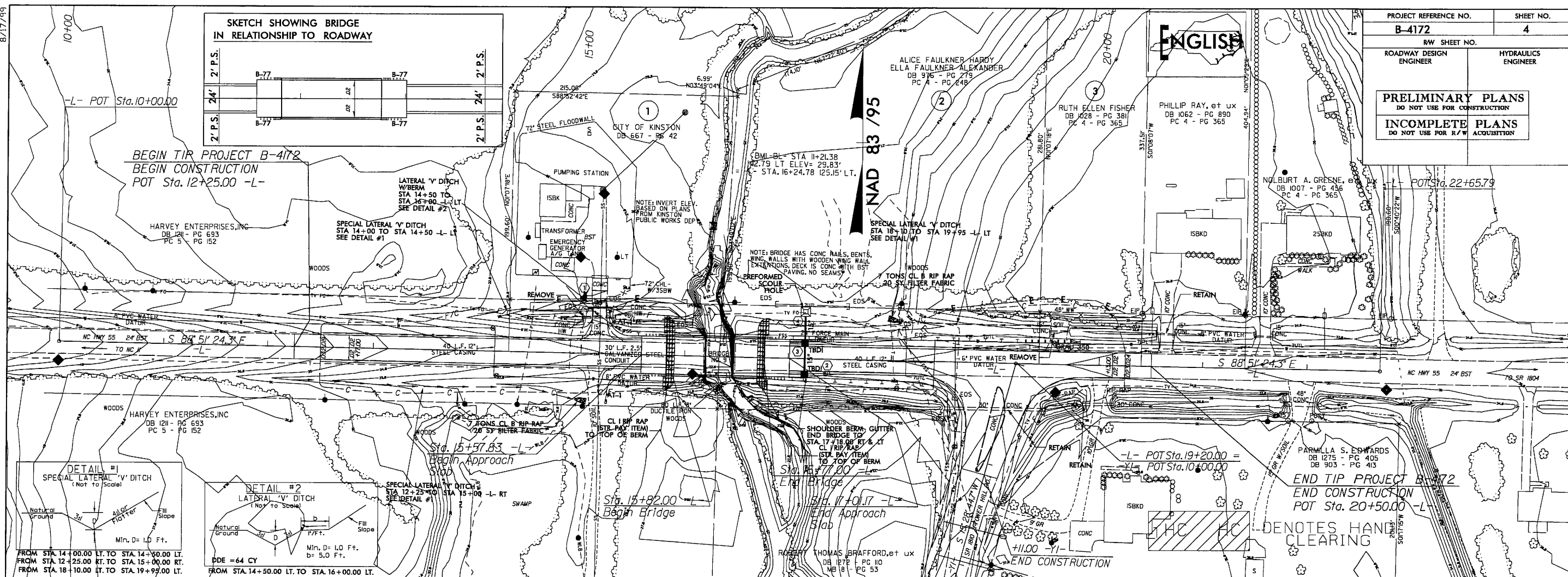
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DESIGN HW ELEVATION	= 30.4'
BASE DISCHARGE	= 1,190 CFS
BASE FREQUENCY	= 100 YR
BASE HW ELEVATION	= 31.2'
OVERTOPPING DISCHARGE	= 2,080 CFS
OVERTOPPING FREQUENCY	= +500 YR
OVERTOPPING ELEVATION	= 33.33'
DATE OF SURVEY	= 3/2/05
W.S. ELEVATION AT DATE OF SURVEY	= 24.2'



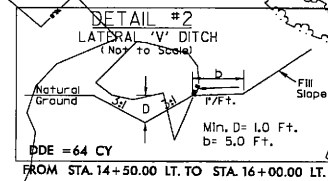
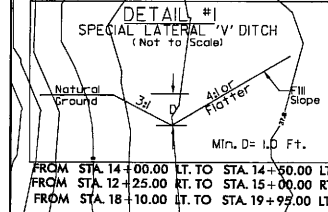
8/17/99



BEGIN TIP PROJECT B-4172
 BEGIN CONSTRUCTION
 POT Sta. 12+25.00 -L-

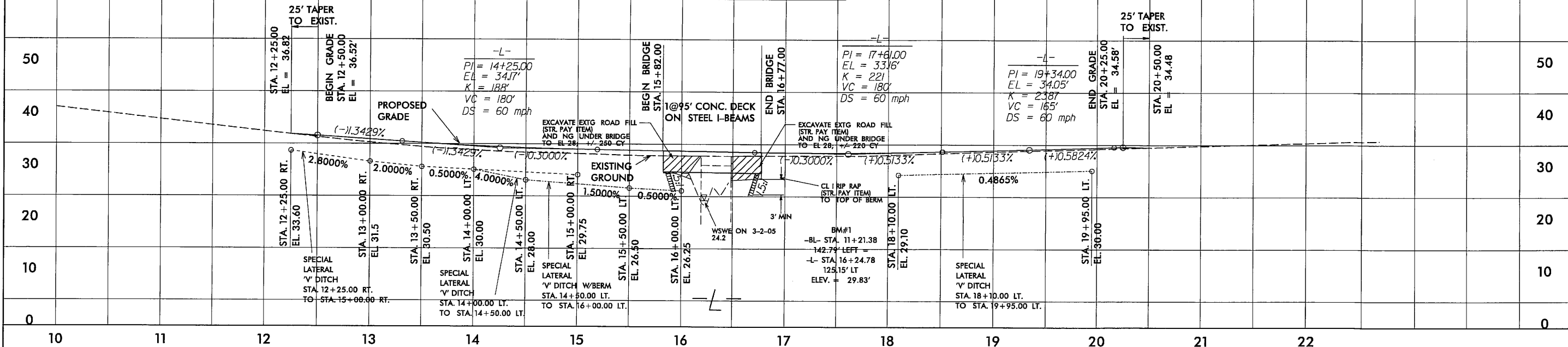


PROJECT REFERENCE NO. B-4172	SHEET NO. 4
R/W SHEET NO.	HYDRAULICS ENGINEER
ROADWAY DESIGN ENGINEER	
PRELIMINARY PLANS	
DO NOT USE FOR CONSTRUCTION	
INCOMPLETE PLANS	
DO NOT USE FOR R/W ACQUISITION	

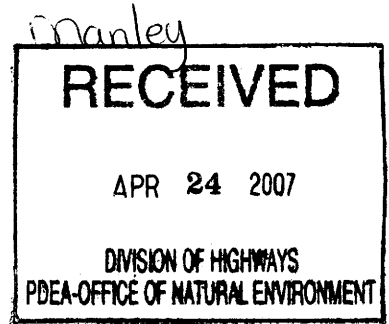


BRIDGE HYDRAULIC DATA

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DESIGN FREQUENCY	=	50 YR
DESIGN HW ELEVATION	=	30.4'
BASE DISCHARGE	=	1,190 CFS
BASE FREQUENCY	=	100 YR
BASE HW ELEVATION	=	31.2'
OVERTOPPING DISCHARGE	=	2,080 CFS
OVERTOPPING FREQUENCY	=	+500 YR
OVERTOPPING ELEVATION	=	33.33'
DATE OF SURVEY	=	3/2/05
W.S. ELEVATION AT DATE OF SURVEY	=	24.2'



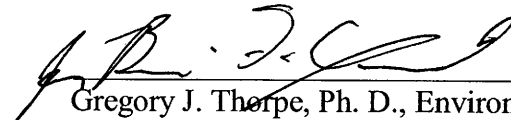
Lenoir County
Bridge No. 9 on NC 55 Over Jericho Run
Federal-Aid Project No. BRSTP-55(21)
State Project No. 33519.1.1
T.I.P. Project No. B-4172



CATEGORICAL EXCLUSION
UNITED STATES DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
AND
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

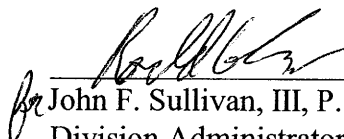
APPROVED:

1-4-06
DATE



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

1-04-06
DATE



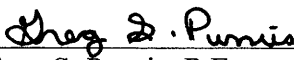
John F. Sullivan, III, P. E.
Division Administrator, FHWA

Lenoir County
Bridge No. 9 on NC 55 Over Jericho Run
Federal-Aid Project No. BRSTP-55(21)
State Project No. 33519.1.1
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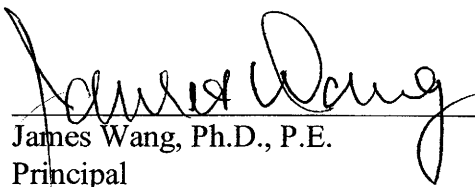
CATEGORICAL EXCLUSION

December 2005

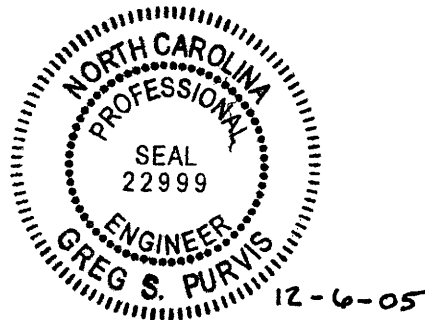
Document Prepared by:
Wang Engineering Company, Inc.



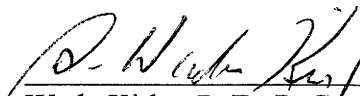
Greg S. Purvis, P.E.
Project Manager



James Wang, Ph.D., P.E.
Principal



For the North Carolina Department of Transportation



Wade Kirby, P. E., P. G.
Project Development Engineer
Project Development and Environmental Analysis Branch

PROJECT COMMITMENTS

Lenoir County
Bridge No. 9 on NC 55 Over Jericho Run
Federal-Aid Project No. BRSTP-55(21)
State Project No. 33519.1.1
T.I.P. Project No. B-4172

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

Division Two

The Stream Crossing Guidelines for Anadromous Fish Passage will be implemented, as applicable.

Road closure will be coordinated with the Lenoir County Schools and Lenoir County Emergency Management Services prior to construction.

Lenoir County
Bridge No. 9 on NC 55 Over Jericho Run
Federal-Aid Project No. BRSTP-55(21)
State Project No. 33519.1.1
T.I.P. Project No. B-4172

INTRODUCTION: The replacement of Bridge No. 9 is included in the 2006-2012 North Carolina Department of Transportation (NCDOT) Transportation Improvement Program (TIP) and the Federal-Aid Bridge Replacement Program. The location is shown in Figure 1. No substantial environmental impacts are anticipated. The project is classified as a Federal "Categorical Exclusion."

I. PURPOSE AND NEED

Bridge Maintenance Unit records indicated the bridge has a sufficiency rating of 44.9 out of a possible 100 for a new structure. The bridge is considered functionally obsolete and structurally deficient. The existing bridge does not meet NCDOT Bridge Policy standards for clear deck width. The replacement of an inadequate structure will result in safer and more efficient traffic operations.

II. EXISTING CONDITIONS

NC 55 is classified as a rural major collector. Land use in the project area is predominantly woodlands and light residential. Undeveloped woodlands are adjacent on the north and south sides of the study area. There is light residential to the east of the existing bridge. There is an existing Kinston County sanitary sewer lift station in the northwest quadrant of the study area.

Bridge No. 9 was constructed in 1938. The existing structure is 22 feet in length, consisting of one span at 22 feet. The clear roadway width is 30 feet, providing two 12-foot travel lanes with three-foot gutters. The superstructure consists of a reinforced concrete floor on I-beams. The substructure consists of reinforced concrete abutments. The bed to crown height is 9.9 feet and the normal depth of flow is 2 feet. The posted weight limit is 32 tons for single vehicles (SV) and 38 tons for truck-tractors semi-trailers (TTST).

The existing bridge and approaches on NC 55 are on tangent. NC 55 consists of two twelve-foot lanes with approximately ten-foot grass shoulders.

The estimated 2004 average daily traffic volume is 3,200 vehicles per day (vpd). The projected traffic volume is expected to increase to 5,700 vpd by the design year 2030. The volumes include eight percent TTST and five percent dual tired vehicles.

The speed limit in the vicinity of the bridge is not posted and therefore a statutory 55 miles per hour (mph) is assumed.

There are aerial power and telephone lines crossing on the north side of the existing bridge. There is an existing Kinston County sanitary sewer lift station in the northwest quadrant of the study area. Utility impacts are anticipated to be low.

There were six accidents reported for the three-year period of May 1, 2001 to April 30, 2004.

Five school buses cross this bridge twice daily.

III. ALTERNATIVES

A. Project Description

The proposed structure will provide a 35 foot 10 inch clear deck width to allow for two 12-foot travel lanes with five feet 11 inches each side from edge of travel lane to face of bridge rail.

The proposed approach roadway will consist of a 24-foot travel way providing for two 12-foot travel lanes with eight-foot shoulders including two foot paved shoulders. The proposed right-of-way width is 100 feet. The design speed will be 60 mph.

Based on a preliminary hydraulic analysis, Bridge No. 9 will be replaced with an approximate 110-foot long bridge. The grade of the roadway will match the elevation of the existing roadway since lowering the grade could cause the road to be flooded by Jericho Run. The minimum deck grade will be 0.3%. The length of the proposed bridge and the recommended roadway elevation may be adjusted (increased or decreased) to accommodate design floods as determined in the final hydrologic study and hydraulic design.

B. Build Alternatives

Two (2) build alternatives studied for replacing the existing bridge are described below.

Alternate A (Preferred) replaces the bridge at the existing location. During construction, traffic will be maintained by an off-site detour route along SR 1810 (Tower Hill Road), SR 1811 (Dunn Family Road), SR 1745 (Cunningham Road), and NC 11/55 approximately 3.3 miles in length. The detour route would require improvements in order to handle the additional traffic and these costs are shown in Table 1. The length of approach work will be approximately 363 feet on the west side of the bridge and approximately 352 feet on the east side of the bridge.

Alternate B replaces the bridge on existing alignment. During construction, traffic will be maintained by an on-site temporary detour structure located south of the existing bridge. The length of approach work will be approximately 363 feet on the west side of the bridge and approximately 352 feet on the east side of the bridge. The temporary detour bridge structure will be 50 feet in length. Alternate B was not chosen because it has comparatively higher natural environmental impacts and construction cost.

C. Alternatives Eliminated From Further Study

The "Do-Nothing" Alternative will eventually necessitate removal of the bridge and closing of the road. This is not desirable due to the traffic service provided by NC 55.

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

D. Preferred Alternative

Alternate A, replacing the existing bridge at the existing location, while maintaining traffic by an off-site detour route is the preferred alternate. Alternate A was selected because of the comparatively lower environmental impacts and lesser construction time associated with it.

The Division Engineer concurs with Alternate A as the preferred alternative.

Alternate A is estimated to cost \$1,461,000. A breakdown of the estimated cost is shown in Item V (Table 1).

IV. DESIGN EXCEPTIONS ANTICIPATED

No design exceptions will be required.

V. ESTIMATED COSTS

The estimated costs, based on current 2005 prices, are as follows:

Table 1. – Estimated Costs

	Alternate A (Preferred)	Alternate B
Structure Removal (existing)	\$ 9,900	\$ 9,900
Structure (proposed)	386,100	386,100
Detour Structure and Approaches	0	152,900
Roadway Approaches	149,000	149,000
Detour Improvements	391,600	
Miscellaneous and Mobilization	302,400	179,100
Engineering and Contingencies	211,000	148,000
ROW/Const. Easements/Utilities:	11,000	37,000
	-----	-----
TOTAL	\$ 1,461,000	\$ 1,062,000

The estimated cost of the project, as shown in the 2006-2012 Transportation Improvement Program, is \$925,000 including \$25,000 for right-of-way, \$800,000 for construction, and \$100,000 for prior years cost.

VI. NATURAL RESOURCES

A. Methodology

Materials and literature supporting this investigation have been derived from a number of sources including U.S. Geological Survey (USGS) topographic mapping (Kinston, NC [1983] 7.5-minute quadrangle), U.S. Fish and Wildlife Service (USFWS) National Wetlands Inventory (NWI) mapping (Kinston, NC [1983] 7.5-minute quadrangle), Natural Resources Conservation Service (NRCS; formerly the Soil Conservation Service) soils mapping (SCS 1977), WRC proposed Significant Aquatic Endangered Species Habitats (WRC 1998), and 1993 aerial photography furnished by the NCDOT.

Plant community descriptions are based on a classification system utilized by the N.C. 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) with adjustments for updated nomenclature (Kartesz 1998). Jurisdictional areas were evaluated using the three-parameter approach following U.S. Army Corps of Engineers (USACE) delineation guidelines (DOA 1987). Jurisdictional areas were characterized according to a classification scheme established by Cowardin *et al.* (1979) and/or the

N.C. Division of Environmental Management (DEM) *Field Guide to North Carolina Wetlands* (1996). Aquatic and terrestrial wildlife habitat requirements and distributions were determined by supportive literature (Martof *et al.* 1980, Potter *et al.* 1980, Webster *et al.* 1985, Menhinick 1991, Palmer and Braswell 1995, and Rohde *et al.* 1994). Water quality information for area streams and tributaries was derived from available sources (DWQ 2001, DWQ 2004a-c). Quantitative sampling was not undertaken to support existing data.

The most current USFWS listing of federally protected species with ranges extending into Lenoir County (February 24, 2003 USFWS list) is considered in this report. In addition, NHP records documenting the presence of federally or state listed species were consulted on June 7, 2004 before commencing field investigations. Significant Aquatic Endangered Species Habitats proposed by the WRC (December 11, 1998 listing) were also consulted to determine the presence of Proposed Critical Habitats for aquatic species.

The project study area was walked and visually surveyed for significant features. For purposes of this evaluation, the project study area has been delineated by Wang Engineering (Figure 6). Potential impacts of construction will be limited to cut-fill boundaries for each alternative. Special concerns evaluated in the field include 1) potential protected species habitat and 2) wetlands and water quality protection of Jericho Run.

B. Physiography and Soils

The project study area is located within the Rolling Coastal Plain ecoregion of the Southeastern Plains physiographic province of North Carolina. This ecoregion is characterized by dissected irregular plains and smooth plains; and broad interstream divides with gentle to steep side slopes dissected by numerous small, low to moderate gradient sandy bottomed streams (Griffith *et al.* 2002). The project study area is located within a lightly sloping floodplain valley. Elevations within the project study area range from a high of approximately 39 feet National Geodetic Vertical Datum (NGVD), at the western end of the project study area, to a low of approximately 26 feet NGVD within the stream channel (Kinston, NC [1983] 7.5-minute quadrangle). Land uses within and adjacent to the project study area consist of woodlands, agricultural fields, residential lots, utility line corridors, a public utilities lift station, and roadside shoulders.

Based on soil mapping for Lenoir County (SCS 1977), the project study area is underlain by four soil series: Bibb soils (*Typic Fluvaquents*), Johns sandy loam (*Aquic Hapludults*), Kalmia loamy sand (*Typic Hapludults*), and Norfolk loamy sand (*Typic Paleudults*). Bibb soils occur adjacent to the stream, while the Johns, Kalmia, and Norfolk soils are found on the slopes and uplands. Bibb soils are considered hydric in Lenoir County (NRCS 1997), and underly approximately 1.8 acres, or 13 percent of the project study area. Johns and Kalmia soils are considered to have hydric inclusions in Lenoir County and jointly underly approximately 6.3 acres, or 45 percent of the project study area.

The Bibb series (0 to 1 percent slopes) consists of frequently flooded, poorly-drained soils that formed in alluvium. Permeability is moderate, and available water capacity is moderate. Runoff is slow due to the low slope. Depth to bedrock occurs near 70 inches, and the seasonal high water table occurs at or near the surface

The Johns series (0 to 2 percent slopes) consists of moderately well-drained to poorly-drained sandy loam on low ridges. Permeability is moderate, and available water capacity is medium. Runoff is slow due to gentle slopes. Depth to bedrock occurs near 65 inches, and the seasonal high water table occurs at a depth of 1.5 feet.

The Kalmia series (2 to 6 percent slopes) consists of nearly level to gently sloping, well-drained loamy sand on floodplain terraces. Permeability is moderate and runoff is medium. Depth to bedrock occurs near 65 inches, and the seasonal high water table occurs at a depth of 5 feet.

The Norfolk series (6 to 10 percent slopes) consists of well-drained loamy sand on upland ridges and slopes. Permeability is moderate, and available water capacity is medium. Runoff is rapid and therefore erosion is a severe hazard when the soil surface is bare and unprotected. Depth to bedrock occurs near 85 inches, and the seasonal high water table occurs at a depth of 5 feet.

C. Water Resources

1. Waters Impacted

The project study area is located within sub-basin 03-04-05 of the Neuse River Basin (DWQ 2001). This area is part of USGS Hydrologic Unit 03020202 of the South Atlantic/Gulf Region (Seaber *et al.* 1987). The structure targeted for replacement spans Jericho Run. The portion of Jericho Run that lies within the project study area has been assigned Stream Index Number 27-81-2 by the North Carolina Division of Water Quality (DWQ 2004a).

2. Water Resource Characteristics

The project study area contains two streams: Jericho Run and an unnamed tributary to Jericho Run (UT). Jericho Run generally flows northward through the middle of the project study area. The UT is located in the southeastern quadrant formed by the intersection of NC 55 and Jericho Run. The UT flows southward into the project area until meeting the toe of the maintained NC 55 right-of-way slope. Here it spreads into a large vegetated wet area which then reforms as a stream and drains westward within a roadside ditch to a confluence with Jericho Run.

Jericho Run enters the project study area as a well-defined, third-order, perennial stream with moderate flow over a sand, silt, and gravel substrate. At Bridge No. 9, Jericho Run is approximately 18 feet wide. The banks of Jericho Run are approximately 4 feet high and are steeply sloping. During field investigations, the water level appeared low and ranged to approximately 1 foot deep. Water clarity was good, with visibility to the substrate, and flow-velocity was low. No persistent emergent aquatic vegetation was observed within the stream. Jericho Run may provide good aquatic habitat for mussels and benthic macroinvertebrates due to the observation of little siltation within the stream and the channel substrate composition. Opportunities for habitat within Jericho Run include overhanging trees, undercut banks, fallen logs, and leaf packs.

The entire reach of the UT within the project study area is contained by a man-made channel. The UT enters the project study area as a somewhat well-defined, first order, perennial stream with low flow over a sand and silt substrate, and drains the adjacent agricultural fields. It flows southward near the eastern edge of the project study area until meeting the toe of the maintained NC 55 right-of-way slope. Here it loses stream characteristics as it flows into a wide vegetated wet area, then reforms as a stream which drains westward through several culverts to a confluence with Jericho Run. The bed of the UT begins eroding downward after passing through the culvert nearest Jericho Run, with banks ranging from 6 inches in height at the culvert to approximately 2 feet at the Jericho Run confluence. The banks along the remainder of the UT range from 2 to 8 inches. During field investigations, the water level appeared low and ranged to approximately 6 inches in depth. Water clarity was good, with visibility to the substrate, and

flow-velocity was low. Persistent emergent aquatic vegetation and minnow-sized fish were observed within the stream, whereas no benthic organisms were observed.

The DWQ has assembled a list of impaired waterbodies according to the Clean Water Act Section 303(d) and 40 CFR 130.7, hereafter referred to as the N.C. 2004 Section 303(d) list. The list is a comprehensive public accounting of all impaired waterbodies. An impaired waterbody is one that does not meet water quality standards including designated uses, numeric and narrative criteria, and anti-degradation requirements defined in 40 CFR 131. The standards violation may be due to an individual pollutant, multiple pollutants, pollution, or an unknown cause of impairment. The impairment could be from point sources, nonpoint sources, and/or atmospheric deposition. Some sources of impairment exist across state lines. North Carolina's methodology is strongly based on the aquatic life use support guidelines available in the Section 305(b) guidelines (EPA-841-B-97-002A and -002B). Those streams attaining only Partially Supporting (PS) or Not Supporting (NS) status are listed on the N.C. 2004 Section 303(d) list. Streams are further categorized into one of six parts within the N.C. 2004 Section 303(d) list, according to source of impairment and degree of rehabilitation required for the stream to adequately support aquatic life. Within Parts 1, 4, 5, and 6 of the list, North Carolina has developed a priority ranking scheme (low, medium, high) that reflects the relative value and benefits those waterbodies provide to the State. Jericho Run is not listed on any section of the N.C. 2004 Section 303(d) list (DWQ 2004c).

Classifications are assigned to waters of the State of North Carolina based on the existing or contemplated best usage of various streams or segments of streams in the basin. A Best Usage Classification of **C SW NSW** has been assigned to this reach of Jericho Run and its unnamed tributary. Class **C** waters are suitable for aquatic life propagation and protection, agriculture, and secondary recreation. Secondary recreation includes wading, boating, and other uses not involving human body contact with waters on an organized or frequent basis. Swamp Waters (**SW**) are waters with low velocities and other natural characteristics which are different from adjacent streams. Nutrient Sensitive Waters (**NSW**) are areas with water quality problems associated with excessive plant growth resulting from nutrient enrichment. No designated High Quality Waters (**HQW**), Outstanding Resource Waters (**ORW**), Water Supply I (**WS-I**), Water Supply II (**WS-II**) waters, or watershed Critical Areas (**CA**) occur within 1.0 mile of the project study area (DWQ 2001).

The DWQ has initiated a whole-basin approach to water quality management for the 17 river basins within the state. Water quality for the proposed project study area is summarized in the Neuse River Basinwide Water Quality Plan (DWQ 2001). Jericho Run is currently listed by DWQ as Supporting its designated uses. No benthic macroinvertebrate monitoring stations occur within one mile of the project study area (DWQ 2001).

Sub-basin 03-04-05 of the Neuse River Basin supports nine permitted, point source discharges with a total discharge of 40.6 million gallons per day. Three of the permitted dischargers are classified as major, discharging 36.2 million gallons per day. The six remaining permitted dischargers are minor (DWQ 2004b). None of these dischargers are relevant to Jericho Run. Major non-point sources of pollution within the Neuse River Basin include runoff from construction activities, agriculture, forestry practices, mining, hydrologic modification, and stormwater runoff from roads, parking lots, and roof tops. Sedimentation and nutrient inputs are major problems associated with non-point source discharges (DWQ 2001).

The WRC has developed a Significant Aquatic Endangered Species Habitat database to enhance planning and impact analysis in areas proposed by the WRC as being critical due to the presence of Endangered or Threatened aquatic species. No Significant Aquatic Endangered Species

Habitat occurs within the project study area. The nearest Significant Aquatic Endangered Species Habitat within the Neuse River Basin occurs approximately 43 miles to the northwest in Little River (WRC 1998).

Temporary construction impacts due to erosion and sedimentation will be minimized through implementation of a stringent erosion-control schedule and the use of Best Management Practices (BMPs). The contractor will follow contract specifications pertaining to erosion control measures as outlined in 23 CFR 650 Subpart B and Article 107-13 entitled Control of Erosion, Siltation, and Pollution (NCDOT, Specifications for Roads and Structures). These measures include the use of dikes, berms, silt basins, and other containment measures to control runoff; elimination of construction staging areas in floodplains and adjacent to waterways; re-seeding of herbaceous cover on disturbed sites; management of chemicals (herbicides, pesticides, de-icing compounds) with potential negative impacts on water quality; and avoidance of direct discharges into streams by catch basins and roadside vegetation.

The bridge rails and abutments are to be removed without dropping components into Jericho Run. However, there is potential for components of the deck to be dropped into waters of the United States during construction. Resulting temporary fill associated with the concrete deck is approximately 5 cubic yards. No Outstanding Resource Waters (ORW); Threatened, Endangered, or anadromous species are anticipated to be impacted by this project. Therefore, the replacement of Bridge No. 9 can be classified as Case 3, where there are no special restrictions beyond those outlined in NCDOT's *Best Management Practices for Construction and Maintenance Activities*.

3. Anticipated Impacts to Water Resources

a) Impacts Related to Water Resources

Impacts to water resources in the project study area may result from activities associated with project construction. Activities that would result in impacts are clearing and grubbing on streambanks, riparian canopy removal, in-stream construction, fertilizers and pesticides used in revegetation, and pavement/culvert installation. The following impacts to surface water resources could result from the construction activities mentioned above.

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

The proposed bridge replacement will allow for continuation of pre-project stream flows in Jericho Run, thereby protecting the integrity of this waterway. Long-term impacts resulting

from construction are expected to be negligible. In order to minimize impacts to water resources, NCDOT's *Best Management Practices for Construction and Maintenance Activities* will be strictly enforced during the entire life of the project.

b) Impacts Related to Bridge Demolition and Removal

In order to protect the water quality and aquatic life in the area affected by this project, the NCDOT and all potential contractors will follow appropriate guidelines for bridge demolition and removal. These guidelines are presented in three NCDOT documents entitled "Pre-Construction Guidelines for Bridge Demolition and Removal", "Policy: Bridge Demolition and Removal in Waters of the United States", and "Best Management Practices for Bridge Demolition and Removal" (all documents dated 9/20/99). Guidelines followed for bridge demolition and removal are in addition to those implemented for Best Management Practices for the Protection of Surface Waters.

Dropping any portion of the structure into waters of the United States will be avoided unless there is no other practical method of removal. In the event that no other practical method is feasible, a worst-case scenario is assumed for calculations of fill entering waters of the United States. There is potential for components of the bridge to be dropped into waters of the United States. The resulting temporary fill associated with the concrete deck is expected to be approximately 5 cubic yards. NCDOT's Best Management Practices for Bridge Demolition and Removal (BMP-BDR) will be applied for the removal of this bridge.

Under the guidelines presented in the documents noted in the first paragraph of this section, work done in the water for this project will fall under Case 3, where there are no special restrictions beyond those outlined in NCDOT's *Best Management Practices for Protection of Surface Waters*.

D. Biotic Resources

1. Plant Communities

Four distinct plant communities were identified within the project study area: disturbed/maintained land, disturbed pine/hardwood forest, disturbed pine forest, and alluvial forest. Plant communities were delineated to determine the approximate area and location of each (Figure 6). These communities are described below in order of their dominance within the project study area. Wildlife directly observed in a plant community or determined to be present through evidence (tracks, scat, burrows, etc.) during field investigations are indicated with an asterisk (*). In addition, approximately 1.0 acre (7 percent) of the project study area is covered by the impermeable surfaces of NC 55 and Tower Hill Road.

a) Disturbed/Maintained Land

Approximately 6.4 acres (46 percent) of the project study area is encompassed by disturbed/maintained land. This community includes roadside shoulders, agricultural fields, woodland edges, utility line corridors, a public utilities lift station, and residential lots. Three wetland areas were found within this community.

Along roadside shoulders, agricultural land margins, and on lift station grounds, grasses and herbs dominate the vegetation. Representative species include Carolina cranesbill (*Geranium carolinianum*), clover (*Trifolium* sp.), wild onion (*Allium canadense*), dog fennel

(*Eupatorium capillifolium*), dandelion (*Taraxacum officinale*), aster (*Aster* sp.), and fescue (*Festuca* sp.).

Open areas within the project study area provide a specialized habitat for herbivore, seed-eater, and insectivore foraging, but little cover from predation. Wildlife which may occur within the open portion of the project study area include vegetation and seed eaters such as American goldfinch (*Carduelis tristis*), woodland vole (*Microtus pinetorum*), hispid cotton rat (*Sigmodon hispidus*), and eastern cottontail (*Sylvilagus floridanus*); insectivores such as Carolina wren* (*Thryothorus ludovicianus*), song sparrow (*Melospiza melodia*), killdeer (*Charadrius vociferous*), least shrew (*Cryptotis parva*), eastern mole (*Scalopus aquaticus*), Carolina anole (*Anolis carolinensis*), six-lined racerunner (*Cnemidomorphus sexlineatus*), southeastern five-lined skink (*Eumeces inexpectatus*), and southern cricket frog (*Acris gryllus*); omnivores including blue jay* (*Cyanocitta cristata*), bobwhite* (*Colinus virginianus*), and eastern box turtle (*Terrapene carolina*); predators such as red-tailed hawk (*Buteo jamaicensis*) and black racer (*Coluber constrictor*); and scavengers including American crow* (*Corvus brachyrhynchos*) and turkey vulture (*Cathartes aura*).

Along woodland edges and utility line corridors, the sapling and shrub layers consist of individuals of red maple (*Acer rubrum*), eastern red cedar (*Juniperus virginiana*), sycamore (*Platanus occidentalis*), black willow (*Salix nigra*), tag alder (*Alnus serrulata*), blackberry (*Rubus* sp.), Chinese privet (*ligustrum sinense*), and multiflora rose (*Rosa multiflora*). Vines are limited to Japanese honeysuckle (*Lonicera japonica*) and trumpet creeper (*Campsis radicans*). Representative herbs include Carolina cranesbill, Brazilian vervain (*Verbena brasiliensis*), dog fennel, dandelion, pokeweed (*Phytolacca americana*), and fescue.

These ecotones provide both food and cover for eastern cottontail and white-tailed deer (*Odocoileus virginianus*). Birds commonly found in shrubby areas and along forest/grassland ecotones include the omnivorous northern mockingbird* (*Mimus polyglottos*), brown thrasher* (*Toxostoma rufum*), and brown-headed cowbird (*Molothrus ater*), and the seed-eating indigo bunting (*Passerina cyanea*). Insectivorous species such as eastern fence lizard (*Sceloporus undulatus*) and gray treefrog (*Hyla chrysoscelis*), and predators including black racer utilize this habitat.

A wetland area associated with the UT is located just south of NC 55 approximately 700 feet east of Jericho Run (Figure 6, Wetland 1). This low, moist area supports hydrophytic species such as soft rush (*Juncus effusus*), lizard's tail (*Saururus cernuus*), jewelweed (*Impatiens capensis*), and black willow.

A small, vegetated wetland occurs in the southwest quadrant of the project study area along the toe of the NC 55 maintained right-of-way slope, and drains to Jericho Run (Figure 6, Wetland 2). This low, moist area supports hydrophytic species such as jewelweed.

A low, linear wetland area is located within a roadside ditch in the northwest quadrant formed by Jericho Run and NC 55 (Figure 6, Wetland 3). This area supports hydrophytic species such as soft rush, narrow-leaved cattail (*Typha angustifolia*), and false nettle (*Boehmeria cylindrica*).

b) Disturbed Pine/Hardwood Forest

Approximately 3.4 acres (24 percent) of the project study area is encompassed by disturbed pine/hardwood forest. This community occurs on floodplain slopes and uplands in the

southwest quadrant and the northeast quadrant of the project study area. This community consists of an immature forest characterized by an open canopy with a dense understory. Two wetland areas were found within this community.

This community supports a sparse canopy of tulip poplar (*Liriodendron tulipifera*), and loblolly pine (*Pinus taeda*). Sapling and shrub layers include canopy species as well as willow oak (*Quercus phellos*), chestnut oak (*Quercus prinus*), sycamore, bamboo (*Phyllostachys aurea*), American holly (*Ilex opaca*), and multi-flora rose. Vines within this community are dominated by common greenbrier (*Smilax rotundifolia*), Virginia creeper (*Parthenocissus quinquefolia*), and poison ivy (*Toxicodendron radicans*). The herbaceous layer is sparsely vegetated by representative species such as Christmas fern (*Polystichum acrostichoides*), ebony spleenwort (*Asplenium platyneuron*), and jewelweed.

The complexity and size of this community allow for a diverse assemblage of wildlife including forest interior species. This community should support predators such as grey fox (*Urocyon cinereoargenteus*), southern ringneck snake (*Diadophis punctatus*), copperhead (*Agkistrodon contortrix*), and great horned owl (*Bubo virginianus*); omnivores including blue jay* and eastern box turtle; insectivores such as Carolina chickadee* (*Poecile carolinensis*), wood thrush (*Hylocichla mustelina*), red-eyed vireo (*Vireo olivaceus*), southern short-tailed shrew (*Blarina carolinensis*), evening bat (*Nycticeius humeralis*), red bat (*Lasiurus borealis*), Carolina anole, broadhead skink (*Eumeces laticeps*), gray treefrog, spring peeper (*Pseudacris crucifer*), Fowler's toad (*Bufo woodhousei*), spotted salamander (*Ambystoma maculatum*), and slimy salamander (*Plethodon glutinosus*); and vegetation and seed-eaters such as white-throated sparrow (*Zonotrichia albicollis*), white-tailed deer, gray squirrel (*Sciurus carolinensis*), golden mouse (*Ochrotymous nattali*), and marsh rabbit (*Sylvilagus palustris*).

A large, low, wetland area occurs in the southwestern quadrant of the project study area (Figure 6, Wetland 6). A large portion of this area is seasonally to permanently inundated, with water ranging to 3 feet in depth. Hydrophytic species present include soft rush, lizard's tail, common cattail (*Typha latifolia*), jewelweed, black willow, marsh pennywort (*Hydrocotyle umbellata*), alligator weed (*Alternanthera philoxeroides*), giant duckweed (*Spirodela* sp.), and sedge (*Carex* sp.).

A small, wetland area occurs in this community slightly to the west of the larger wetland area (Figure 6, Wetland 7). This area supports hydrophytic species such as soft rush and jewelweed.

c) Alluvial Forest

Approximately 2.0 acres (14 percent) of the project study area is encompassed by alluvial forest. This community occurs in the floodplain of Jericho Run. Two wetland areas were found within the alluvial forest.

Canopy species include sycamore, red maple, loblolly pine, and river birch (*Betula nigra*). Sapling and shrub layers include canopy species as well as individuals of American elm (*Ulmus Americana*), ironwood (*Carpinus caroliniana*), tag alder, bamboo, Chinese privet, and American holly. Herb species include jewelweed, netted chain-fern (*Woodwardia areolata*), sensitive fern (*Onoclea sensibilis*), and southern lady fern (*Athyrium aplenioides*), while vines present consist of common greenbrier, laurel-leaved greenbrier (*Smilax laurifolia*), poison ivy, muscadine grape (*Vitis rotundifolia*), Virginia creeper, thicket creeper (*Parthenocissus inserta*), and trumpet creeper.

The size and stratification of this community allow for a diverse assemblage of wildlife including forest interior species. This community should support herbivores and seed-eaters such as northern cardinal* (*Cardinalis cardinalis*), white throated sparrow, golden mouse, marsh rabbit, and white-tailed deer; insectivores including blue-gray gnatcatcher (*Poliophtila caerulea*), wood thrush, southeastern shrew (*Sorex longirostris*), eastern pipistrelle (*Pipistrellus subflavus*), red bat, Carolina anole, five-lined skink (*Eumeces fasciatus*), spring peeper, Fowler's toad, and southern cricket frog; omnivores such as raccoon* (*Procyon lotor*) and eastern box turtle; predators including grey fox, barred owl (*Strix varia*), southern ringneck snake, eastern ribbon snake (*Thamnophis sauritus*), and copperhead; and scavengers such as Virginia opossum (*Didelphis virginiana*).

Two low, wet areas are located in the northeast quadrant of the project study area adjacent to Jericho Run (Figure 6, Wetlands 4 and 5). Though vegetation is sparse, these areas support hydrophytic species such as soft rush, jewelweed, tag alder, lizard's tail, river birch, and black willow.

d) Disturbed Pine Forest

Approximately 1.2 acres (9 percent) of the project study area is encompassed by disturbed pine/hardwood forest. This community occurs on floodplain slopes and uplands in the northwest quadrant of the project study area. This community consists of an immature, even-aged forest of loblolly pine with little understory.

This community supports a sparse canopy of loblolly pine, predominantly along forest edges. The sapling layer of this community supports a dense assemblage of even-aged loblolly pine. Shrubs present include devil's-walking-stick (*Aralia spinosa*), blackberry (*Rubus* sp.), and wax myrtle (*Myrica cerifera*). Vines within this community include Virginia creeper, trumpet creeper, and muscadine grape. The herbaceous layer is sparsely vegetated and includes individuals of pokeweed and dog fennel.

This community, though less diverse than other forested portions of the project study area, should support a range of wildlife species. In particular, species are expected which prefer pine forests or brushy areas. Wildlife expected to occur within this community include herbivores and seed-eaters such as white-throated sparrow, white-tailed deer, gray squirrel, golden mouse, and woodland vole; insectivores including yellow-breasted chat* (*Icterea virens*), pine warbler, evening bat, red bat, Carolina anole, broadhead skink, gray treefrog, eastern spadefoot toad (*Scaphiopus holbrooki*), Fowler's toad, and slimy salamander; omnivores such as brown thrasher and eastern box turtle; and predators such as screech owl (*Otus asio*), pine woods snake (*Rhadinea flavilata*), and copperhead.

2. Aquatic Communities

The project study area includes two perennial streams, both bounded primarily by natural vegetation. These streams are characterized by natural and man-made channels providing diverse habitats for fish and wildlife, (riffle-pool complexes, undercut banks, rock and organic debris in the stream beds, and overhanging branches. These waters are expected to support a fishery and benthic population which serves as a food source for aquatic herptiles such as the predatory banded water snake (*Nerodia fasciata*); omnivores such as eastern musk turtle (*Sternotherus odoratus*) and eastern mud turtle (*Kinosternon subrubrum*); and insectivores including southern

leopard frog* (*Rana utricularia*), green frog (*Rana clamitans*), mud salamander (*Pseudotriton montanus*), and three-lined salamander (*Eurycea guttolineata*).

Minnow-sized fish were observed but not identified within Jericho Run and the UT. Fish species that may be present in this reach of Jericho Run or the UT include smaller fish species such as margined madtom (*Noturus insignis*), tadpole madtom (*Noturus gyrinus*), tessellated darter (*Etheostoma olmstedii*), swamp darter (*Etheostoma fusiforme*), and dusky shiner (*Notropis cumminsae*).

3. Anticipated Impacts to Biotic Communities

Plant communities within the project study area were delineated to determine the approximate area and location of each (Figure 6). A summary of plant community areas and the potential impacts to each is presented in Table 2. Several permanent and temporary impacts are anticipated with this project. Both alternatives possess identical permanent impacts, while Alternate B includes temporary impacts. Permanent impacts are considered to be those impacts that occur within the proposed cut-fill limits associated with Alternate A. Temporary impacts are considered to be those impacts which occur within the cut-fill footprint associated with the temporary detour of Alternate B, yet outside of the cut-fill footprint of Alternate A. In addition, approximately 0.02 acre of alluvial forest must be timbered for the installation of the temporary bridge structure.

Table 2. Plant Communities Within Cut/Fill lines of Respective Alternatives

Plant Community	Alternate A (Preferred)	Alternate B		
	Permanent	Permanent	Temporary	Total
Maintained/Disturbed Land	0.51	0.51	0.26	0.77
Disturbed Pine/Hardwood Forest	0	0	0.01	0.01
Alluvial Forest	<0.01	<0.01	0.19	0.19
Disturbed Pine Forest	0	0	0	0
Total	0.51	0.51	0.46	0.97

Areas are given in acres.

Projected permanent impacts to natural plant communities resulting from bridge replacements are generally restricted to narrow strips adjacent to the existing bridge and roadway approach segments. Little area of natural plant community is expected to be permanently impacted by the proposed project. Temporary impacts incur approximately the same amount of impacted area to natural communities as permanent impacts. Although temporary impacts are considered to be short-term, re-growth of this community to pre-project stand age and ecological function will require several decades.

No significant habitat fragmentation is expected as a result of project activities since potential improvements will be restricted to adjoining roadside margins. Construction noise and associated disturbances are anticipated to have short-term impacts on avifauna and migratory wildlife movement patterns.

No Significant Aquatic Endangered Species Habitat exists within or near the project study area. Impacts associated with turbidity and suspended sediments resulting from bridge replacement

will be minimized through stringent erosion control measures. No Outstanding Resource Waters (ORW); Threatened, Endangered, or anadromous species are anticipated to be impacted by this project. Therefore, the replacement of Bridge No. 9 can be classified as Case 3, where there are no special restrictions beyond those outlined in NCDOT's *Best Management Practices for Construction and Maintenance Activities*.

Potential downstream impacts to aquatic habitat are anticipated to be avoided by bridging the stream system to maintain regular flow and stream integrity. Short-term impacts associated with turbidity and suspended sediments may affect benthic populations. Temporary impacts to downstream habitat from increased sediment during construction will be minimized by the implementation of stringent erosion control measures.

E. Special Topics

1. Waters of the United States

Surface waters within the project study area are subject to jurisdictional consideration under Section 404 of the Clean Water Act as waters of the United States (33 CFR Section 328.3). The National Wetlands Inventory (NWI) system for classification of wetlands and deepwater habitats was used to determine the type of each wetland present (Cowardin *et al.* 1979). Section 404 jurisdictional areas are depicted by Figure 6.

Jericho Run exhibits characteristics of a well-defined, third-order, perennial stream with low flow over a sand, silt, and gravel substrate. This stream contains several unvegetated point bars composed of sand and silt. Jericho Run can be classified as riverine, lower perennial with an unconsolidated bottom composed primarily of sand and silt (R2UB2). The UT exhibits characteristics of a somewhat well-defined, first-order, riverine, lower perennial stream with an unconsolidated bottom composed primarily of silt and sand (R2UB3). The entire reach of the UT within the project study area is contained by a man-made ditch.

Vegetated wetlands are defined by the presence of three primary criteria: hydric soils, hydrophytic vegetation, and evidence of hydrology at or near the surface for a portion (a minimum of 12.5 percent) of the growing season (DOA 1987). The project study area contains seven vegetated wetland areas (Figure 6, Wetlands 1 through 7).

A vegetated wetland associated with the UT occurs in the maintained/disturbed portion of the project study area in the southeast quadrant formed by Jericho Run and NC 55 (Figure 6, Wetland 1). This area may be defined as a permanently flooded, palustrine, emergent seep with predominantly non-persistent vegetation (PEM2H). Soils exhibit hydric chromas, while hydrology indicators are inundation, surface flow, and oxidized rhizospheres. This system would be considered a "non-riverine" wetland by the DWQ, based upon its location outside of a stream floodplain.

A small, vegetated wetland occurs in the southwest quadrant of the project study area along the toe of the NC 55 maintained right-of-way slope, and drains to Jericho Run (Figure 6, Wetland 2). This area may be defined as an intermittently exposed, palustrine, emergent seep with predominantly non-persistent vegetation (PEM2G). Soils exhibit hydric chromas, while hydrology indicators are inundation, surface flow, and oxidized rhizospheres. This system would be considered a "riverine" wetland by the DWQ, based upon its location within the Jericho Run floodplain.

A grass and herb dominated wet, linear depression is located in the northwest quadrant of the project study area (Figure 6, Wetland 3). It can be characterized as palustrine, emergent, and semipermanently flooded, with nonpersistent vegetation (PEM2F). Soils exhibit hydric chromas while indicators of hydrology are inundation, surface flow, and oxidized rhizospheres. Based on the location of this wetland as primarily within the Jericho Run floodplain, this area would be considered “riverine” by the DWQ.

Two forested wetlands occur within the alluvial forest in the northeast quadrant of the project study area adjacent to Jericho Run (Figure 6, Wetlands 4 and 5). They may be classified as palustrine, forested, broad-leaved deciduous, and seasonally flooded (PFO1C). Soils exhibit hydric chromas and mottles, while hydrology indicators include inundation, water-stained leaves, water marks, and oxidized rhizospheres. These systems would be considered “riverine” wetlands by the DWQ, based upon their locations within the Jericho Run floodplain.

A large forested wetland occurs within the disturbed pine/hardwood forest in the southwest quadrant of the project study area (Figure 6, Wetland 6). It may be classified as palustrine, forested, broad-leaved deciduous, and permanently flooded (PFO1H). This large, inundated area is ponded due to the deposition of fill material along the utility line corridor located between Jericho Run and this wetland. Unable to drain to Jericho Run, this area now supports hydrophytic vegetation, and exhibits soils with hydric chromas and hydrology indicators of inundation, water marks, and oxidized rhizospheres. Based on the location of this wetland inside the Jericho Run floodplain, this area would be considered “riverine” by the DWQ.

A second, smaller forested wetland is located in the disturbed pine/hardwood forest just west of the larger wetland area (Figure 6, Wetland 7). It may be classified as palustrine, forested, broad-leaved deciduous, and seasonally flooded (PFO1C). Soils exhibit hydric chromas, and hydrology indicators are inundation, water marks, and oxidized rhizospheres. This wetland would be considered “riverine” by the DWQ.

Both alternatives contain an identical replacement in-place component, while Alternative B also contains a temporary on-site detour component. Permanent impacts associated with both alternatives will occur to Wetland 2 (Figure 6, Wetland 2) and Wetland 3 (Figure 6, Wetland 3). The Alternate B temporary detour includes temporary impacts to Wetland 2 (Figure 6, Wetland 2) and approximately 180 linear feet of the UT (Figure 6, UT).

Information pertaining to jurisdictional area impacts within the project study area is summarized in Table 3.

The existing bridge rails and abutments are to be removed without dropping components into Jericho Run. However, there is potential for components of the deck to be dropped into waters of the United States during construction. Resulting temporary fill associated with the concrete deck is approximately 5 cubic yards. No Outstanding Resource Waters (ORW); Threatened, Endangered, or anadromous species are anticipated to be impacted by this project. Therefore, the replacement of Bridge No. 9 can be classified as Case 3; where there are no special restrictions beyond those outlined in NCDOT’s *Best Management Practices for Construction and Maintenance Activities*.

Table 3. Projected Impacts to Jurisdictional Areas

Jurisdictional Area	DEM Rating	Alternate A (Preferred) Permanent	Alternate B		
			Permanent	Temporary	Total
Jericho Run	-	-	-	-	-
UT	-	-	-	180	180
Wetland 1	54	-	-	-	-
Wetland 2	40	<0.01	<0.01	<0.01	0.01
Wetland 3	25	<0.01	<0.01	-	0.01
Wetland 4	33	-	-	-	-
Wetland 5	33	-	-	-	-
Wetland 6	38	-	-	-	-
Wetland 7	40	-	-	-	-
Total	-	0.01 / 0	0.01 / 0	0.01 / 180	0.02 / 180

Wetlands are expressed as area in acres; streams are expressed as linear distance in feet. Site numbers are depicted on Figure 6.

2. Permits

a). Section 404 of the Clean Water Act

This project may be processed as a Categorical Exclusion (CE) under Federal Highway Administration (FHWA) guidelines. The USACE has made available Nationwide Permit (NWP) 23 (67 FR 2020, 2082; January 15, 2002) for CEs due to minimal impacts to waters of the U.S. expected with bridge construction. Activities under this permit are categorically excluded from environmental documentation because they are included within a category of activities that neither individually nor cumulatively have a significant effect on the human and natural environment. Activities authorized under nationwide permits must satisfy all terms and conditions of the particular permit.

b). Section 401 Water Quality Certification

DWQ has made available a General 401 Water Quality Certification for NWP 23 (GC 3403). If temporary structures are necessary for construction activities, access fills, or dewatering of the site, then a NWP 33 (67 FR 2020, 2087; January 15, 2002) permit and the associated General 401 Water Quality Certification (GC 3366) will be required. Impacts to vegetated wetlands may be authorized under NWP 3 (67 FR 2020, 2078) and the associated General 401 Water Quality Certification (GC 3376). In the event that NWPs 23, 33, and 3 will not suffice, impacts attributed to bridge replacement and associated approach improvements may qualify under General Bridge Permit (GP) 031 issued by the Wilmington USACE District. DWQ has made available a General 401 Water Quality Certification for GP 031 (GC 3404). Notification to the Wilmington USACE District office is required if this general permit is utilized.

c). Bridge Demolition and Removal

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

expected to be 5 cubic yards of temporary fill. Permitting will be coordinated such that any permit needed for bridge construction will also address issues related to bridge demolition.

3. Riparian Buffer Protection Rules for the Tar-Pamlico River Basin

The Nutrient Sensitive Waters Management Strategy for the Protection and Maintenance of Riparian Buffers for the Neuse River Basin (15A NCAC 02B .0259) provides a designation for uses that cause impacts to riparian buffers within the Neuse River Basin. The Neuse River Basin Rule applies to 50-foot wide riparian buffers (measured perpendicular to the stream) directly adjacent to surface waters in the Neuse River Basin. Designated surface waters are indicated on USGS 7.5-minute topographic maps and county soil surveys. Within the project area, Jericho Run and the UT to Jericho Run are the only features subject to the riparian buffer rule (Figure 6).

Changes in land use within the buffer area are considered to be buffer impacts. Land use changes within the riparian buffer are defined as being Exempt, Allowable, Allowable with Mitigation, or Prohibited. The Exempt designation refers to uses allowed within the buffer. The Allowable designation refers to uses that may proceed within the riparian buffer provided there are no practical alternatives, and that written authorization from the DWQ is obtained prior to project development. The Allowable with Mitigation designation refers to uses that are allowed, given there are no practical alternatives, and appropriate mitigation plans have been approved. The Prohibited designation refers to uses that are prohibited without a variance. Exemptions to the riparian buffer rule include the footprint of existing uses that are present and ongoing. Permanent impacts associated with both alternatives impact less than 40 feet of riparian buffer and are therefore Exempt under the Neuse River Basin Rules. The temporary detour associated with Alternate B is Allowable under the Neuse River Basin Rules, provided that restoration activities such as soil stabilization and revegetation are conducted immediately after construction. Changes to stormwater discharges associated with this project will likely need to be discharged as diffuse flow prior to entering the buffers.

The permanent structure and approaches associated with both alternatives propose to undertake uses designated as Exempt under the Neuse River Basin Buffer Rule. Since the temporary structure and easement associated with Alternate B proposes to undertake uses designated as Allowable under the Neuse River Basin Rule, a request for a “no practicable alternatives” determination will be made to DWQ if Alternate B is pursued.

4. Mitigation

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

Avoidance mitigation examines all appropriate and practicable possibilities of averting impacts to waters of the United States. According to a 1990 Memorandum of Agreement (MOA) between the Environmental Protection Agency (EPA) and the USACE, in determining “appropriate and practicable” measures to offset unavoidable impacts, such measures should be appropriate to the

scope and degree of those impacts and practicable in terms of cost, existing technology and logistics in light of overall project purposes.

Minimization includes the examination of appropriate and practicable steps to reduce the adverse impacts to waters of the United States. Implementation of these steps will be required through project modifications and permit conditions. Minimization typically focuses on decreasing the footprint of the proposed project through the reduction of median widths, right-of-way widths, fill slopes, and/or road shoulder widths. All efforts will be made to decrease impacts to surface waters. The bridge is being replaced in the existing location with an offsite detour to maintain traffic. This will minimize impacts to wetlands.

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. In accordance with 15A NCAC 2H .0506(h), DWQ may require compensatory mitigation for projects with greater than or equal to 1.0 acre of impacts to jurisdictional wetlands or greater than or equal to 150 linear feet of total perennial stream impacts. Furthermore, in accordance with 67 FR 2020, 2092; January 15, 2002, the USACE requires compensatory mitigation when necessary to ensure that adverse effects to the aquatic environment are minimal. The size and type of the proposed project impact and the function and value of the impacted aquatic resource are factors considered in determining acceptability of appropriate and practicable compensatory mitigation. Appropriate and practicable compensatory mitigation is required for unavoidable adverse impacts which remain after all appropriate and practicable minimization has been required. Compensatory actions often include restoration, preservation and enhancement, and creation of waters of the United States. Such actions should be undertaken first in areas adjacent to or contiguous to the discharge site.

Mitigation for Section 404 jurisdictional areas may not need to be proposed for this project due to the potentially limited nature of the project impacts. However, utilization of BMPs is recommended in an effort to minimize impacts. Temporary impacts to floodplains associated with construction activities could be mitigated by replanting disturbed areas with native riparian species and removal of temporary fill material upon project completion. A final determination regarding mitigation rests with the USACE and DWQ.

F. Protected Species

1. Federally Protected Species

Species with the federal classification of Endangered (E) Threatened (T), or officially Proposed (P) for such listing are protected under the Endangered Species Act (ESA) of 1973, as amended (16 U.S.C. 1531 *et seq.*). The term “Endangered Species” is defined as “any species which is in danger of extinction throughout all or a significant portion of its range,” and the term “Threatened Species” is defined as “any species which is likely to become an Endangered species within the foreseeable future throughout all or a significant portion of its range” (16 U.S.C. 1532).

Three federally protected species are listed for Lenoir County (February 24, 2003 USFWS list): bald eagle (*Haliaeetus leucocephalus*), red-cockaded woodpecker (*Picoides borealis*), and sensitive jointvetch (*Aeschynomene virginica*). The Bald eagle and sensitive jointvetch are listed as Threatened, and red-cockaded woodpecker is Endangered. A summary of Biological Conclusions for the replacement of Bridge No. 9 is represented in Table 4.

Table 4. Federally Protected Species

Common Name	Scientific Name	Biological Conclusion	Federal Status
Bald Eagle	<i>Haliaeetus leucocephalus</i>	No Effect	T
Red-cockaded woodpecker	<i>Picoides borealis</i>	No Effect	E
Sensitive jointvetch	<i>Aeschynomene virginica</i>	No Effect	T

T- Threatened, E- Endangered, P - Proposed

***Haliaeetus leucocephalus* (Bald eagle)**

Threatened

Family: Accipitridae

Date Listed: March 11, 1967

The bald eagle is a large raptor with a wingspan greater than 6 feet. Adult bald eagles are dark brown with a white head and tail. Immature eagles are brown with whitish mottling on the tail, belly, and wing linings. Bald eagles typically feed on fish but may also take birds and small mammals. In the Carolinas, nesting season extends from December through May (Potter *et al.* 1980). Bald eagles typically nest in tall, living trees in a conspicuous location near open water. Eagles forage over large bodies of water and utilize adjacent trees for perching (Hamel 1992). Disturbance activities within a primary zone extending 750 to 1,500 feet from a nest tree are considered to result in unacceptable conditions for eagles (USFWS 1987). The USFWS recommends avoiding disturbance activities, including construction and tree-cutting within this primary zone. Within a secondary zone, extending from the primary zone boundary out to a distance of 1.0 mile from a nest tree, construction and land-clearing activities should be restricted to the non-nesting period. The USFWS also recommends avoiding alteration of natural shorelines where bald eagles forage, and avoiding significant land-clearing activities within 1,500 feet of known roosting sites.

BIOLOGICAL CONCLUSION:

NO EFFECT

Suitable habitat for bald eagle does not exist within the project study area, and no individuals were observed during field investigations. In addition, NHP files consulted on June 7, 2004 list no documentation of bald eagle within 2.0 miles of the project study area.

***Picoides borealis* (Red-cockaded woodpecker)**

Endangered

Family: Picidae

Date Listed: October 13, 1970

This small woodpecker (7 to 8.5 inches long) has a black head, prominent white cheek patches, and a black-and-white barred back. Males often have red markings (cockades) behind the eye, but the cockades may be absent or difficult to see (Potter *et al.* 1980). Primary habitat consists of mature to over-mature southern pine forests dominated by loblolly, long-leaf (*Pinus palustris*), slash (*P. elliotii*), and pond (*P. serotina*) pines (Thompson and Baker 1971). Nest cavities are constructed in the heartwood of living pines, generally older than 60 years that have been infected with red-heart disease. Nest cavity trees tend to occur in clusters, which are referred to as

clusters. The woodpecker drills holes into the bark around the cavity entrance, resulting in a shiny, resinous buildup around the entrance that allows for easy detection of active nest trees. Primary nest sites for red-cockaded woodpeckers include open pine stands greater than 60 years of age with little or no mid-story development. Foraging habitat is comprised of open pine or pine/mixed hardwood stands 30 years of age or older (Henry 1989). Pine flatwoods or pine-dominated savannas which have been maintained by frequent natural or prescribed fires serve as ideal nesting and foraging sites for this woodpecker. Development of a thick understory may result in abandonment of cavity trees.

BIOLOGICAL CONCLUSION:

NO EFFECT

Suitable habitat for red-cockaded woodpecker does not exist within the project study area. No individuals were observed, and NHP files consulted on June 7, 2004 list no documentation of this species within 2.0 miles of the project study area.

***Aeschynomene virginica* (Sensitive jointvetch)**

Threatened

Animal Family: Fabaceae

Date Listed: May 20, 1992

Sensitive jointvetch is a robust, bushy-branched, annual legume often exceeding 3.3 feet in height. Young stems have bristly hairs with large, swollen bases (Leonard 1985). The alternate, compound leaves are even-pinnate, approximately 1.3 to 2 inches wide, with 30 to 56 toothless, gland-dotted leaflets (Radford *et al.* 1968). Flowers are bright greenish-yellow with red veins, about 0.5 inch long, and are subtended by bractlets with toothed margins (Leonard 1985). Flowers are produced on few-flowered racemes from July to October. The jointed legume (loment) is about 2 inches long, has 6 to 10 segments, and a 0.5 to 1.0 inch long stalk. Sensitive jointvetch occurs in the intertidal zone near the upper limit of tidal fluctuation. Habitat for this species in North Carolina consists of moist to wet roadside ditches, moist fields, riverbanks and swamps, especially in full sun. Sensitive joint-vetch is found in coastal areas from New Jersey to the Savannah River (Leonard 1985).

BIOLOGICAL CONCLUSION:

NO EFFECT

Suitable habitat for sensitive jointvetch does not occur within the project study area, due to a lack of an intertidal zone, and dense vegetative cover of wet areas in bright sunlight. This species was last observed within Lenoir County more than 50 years ago, and NHP files consulted on June 7, 2004 list no documentation of this species within 2.0 miles of the project study area.

2. Federal Species of Concern

The February 24, 2003 USFWS list also includes a category of species designated as "Federal species of concern" (FSC). A species with this designation is one that may or may not be listed in the future (formerly C2 candidate species or species under consideration for listing for which there is insufficient information to support listing). The FSC designation provides no federal protection under the ESA for the species listed. NHP files list no documentation for FSC species within 2.0 miles of the project study area. A summary of FSC species is presented in Table 5.

Table 5: Federal Species of Concern

Scientific Name	Common Name	State Status**	Suitable Habitat
Noturus furiosus	"Neuse" madtom	SC, PT	Yes
Procambarus medialis	Tar River crayfish	***	Yes
Amorpha georgiana var. Georgiana*	Georgia indigo-bush	E	Yes
Dionaea muscipula*	Venus flytrap	SR-L, SC	Yes

* Historic record - Species was last observed in the county more than 50 years ago

**State Status: SC=Special Concern, PT=Proposed Threatened, E=Endangered, SR-L=Significantly Rare, Limited to NC and adjacent states

***State Status not listed

VII. CULTURAL RESOURCES

A. Compliance Guidelines

This project is subject to compliance with Section 106 of the National Historic Preservation Act of 1966, as amended, and implemented by the Advisory Council on Historic Preservation's Regulations for Compliance with Section 106, codified as 36 CFR Part 800. Section 106 requires Federal agencies to take into account the effect of their undertakings (federally funded, licensed, or permitted projects) on properties listed in or eligible for inclusion in the National Register of Historic Places and to afford the Advisory Council on Historic Preservation a reasonable opportunity to comment on such undertakings.

B. Historic Architecture

A field survey of the Area of Potential Effects (APE) was conducted on July 29, 2003. All structures within the APE were photographed, and later an NCDOT staff architectural historian reviewed these photographs. There were 12 structures within the APE over fifty years of age, and all were determined to be ineligible for the National Register of Historic Places by the NCDOT staff architectural historian. The photographs were shown to the State Historic Preservation Office (HPO) in a meeting on September 30, 2003. At that meeting HPO staff concurred that none of the 12 structures were eligible for the National Register and a form was signed that reflects these findings. Therefore there are no National Register listed or National Register eligible properties within the APE for this project. Copies of all correspondence and the concurrence form are included in Appendix A.

C. Archaeology

The State Historic Preservation Office (SHPO) reviewed the subject project. There are no known archaeological sites within the proposed project area, and no archaeological investigation needed to be conducted (see letter dated May 6, 2005 in Appendix A).

VIII. ENVIRONMENTAL EFFECTS

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

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

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

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

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

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

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

The 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 (49 U.S.C. 303).

No North Carolina Geodetic Survey control monuments will be impacted during construction of this project.

The Farmland Protection Policy Act requires all federal agencies or their representatives to consider the potential impacts to prime and important farmland soils by all land acquisition and construction projects. Prime and important farmland soils are defined by the Natural Resources Conservation Service (NRCS). Since there are no prime or important farmlands in the immediate vicinity of the proposed bridge the Farmland Protection Policy does not apply.

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

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

The traffic volumes will not increase or decrease because of this project. Therefore, the project’s impact on noise and air quality will not be substantial.

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

An examination of records at the North Carolina Department of Environment and Natural Resources, Division of Water Quality, Groundwater Section and the North Carolina Department of Human Resources, Solid Waste Management Section revealed no hazardous waste sites, no regulated or unregulated landfills or dumpsites with in the project area. No facility with underground storage tanks (UST) was identified in the project vicinity.

Lenoir County is a participant in the Federal Flood Insurance Program. The bridge is located within a Detailed Study Area. The new structure should be designed to match or lower the existing 100-year storm elevation upstream of the roadway. Since the proposed replacement for Bridge No. 9 would be a structure similar in waterway opening size, it is not anticipated that it will have any significant adverse impact on the existing floodplain and floodway. The proposed replacement will not adversely affect the floodplain. The proposed alternatives will not modify flow characteristics and will have a minimal impact on floodplains due to roadway encroachment. The existing drainage patterns and groundwater will not be affected.

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

IX. PUBLIC INVOLVEMENT

A mailing list was developed based upon property owners located near the bridge. Approximately seventeen names are included on the list. Newsletters were mailed early in the planning process to the nearby property owners and local officials. A copy of the newsletter is attached in Appendix B. No responses in opposition to replacing the bridge were received.

X. UNRESOLVED ISSUES AND AREAS OF CONTROVERSY

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

XI. AGENCY COMMENTS

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

Federal Agencies

- US Fish and Wildlife Service – Raleigh*
- US Army Corps of Engineers – Washington
- US Army Corps of Engineers – Wilmington
- Environmental Protection Agency – Raleigh
- National Marine Fisheries – Beaufort
- US Geological Survey - Raleigh

State Agencies

- NC Wildlife Resources Commission*
- NC Department of Environment and Natural Resources
- NC Division of Water Quality
- NC Department of Cultural Resources*
- NC Division of Marine Fisheries

Regional and Local Agencies

Lenoir County Schools
Lenoir County Schools –Transportation Department*
Lenoir County*
Lenoir County EMS
Down East & Eastern Carolina RPO

The following are comments received during the scoping process:

1. United States Department of the Interior - Fish and Wildlife Service

Comment: “Wetland, forest and designated riparian buffer impacts should be avoided and minimized to the maximum extent practical.”

Response: The preferred alternate, Alternative A replaces the existing bridge in the existing location and minimizes natural environment impacts.

Comment: “Off-site detours should be used rather than construction of temporary, on-site bridges.”

Response: An off-site detour will be utilized for this project.

Comment: “Wherever appropriate, construction in sensitive areas should occur outside fish spawning and migratory bird nesting seasons.The general moratorium period for anadromous fish is February 15- June 30.”

Response: The Stream Crossing Guidelines for Anadromous Fish Passage will be implemented, as applicable.

Comment: “The bridge design should not alter the natural stream and stream-bank morphology or impede fish passage.”

Response: The bridge will be replaced in the existing location and the final bridge length will be determined during final design.

Comment: “Bridges and approaches should be designed to avoid any fill that will result in damming or constriction of the channel or flood plain.”

Response: The bridge will be replaced in the existing location and the final bridge length will be determined during final design.

2. North Carolina Wildlife Resources Commission

Comment: “We recommend replacing this bridge with a bridge.”

Response: The bridge will be replaced with a bridge in the existing location.

3. County of Lenoir

Comment: "...There are churches in the area whose parishioners use NC 55 and the bridge over Jericho Run. Efficient replacement of the bridge will reduce the inconvenience the effort will place on those churches."

Response: The bridge will be replaced in the existing location with a cored slab bridge which will provide a minimum amount of time that the road is closed.

Comment: "Clearly marked Detours will be required to minimize the adverse effects of any closure of the bridge over Jericho Run. It has been suggested that alternatives for West bound traffic both North (at Faulkner Road) and South (at Tower Hill Road and Dunn Road) be offered and clearly marked to reduce confusion for travelers during the replacement process."

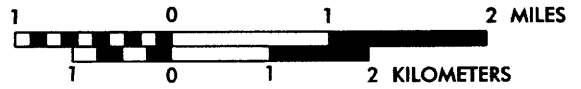
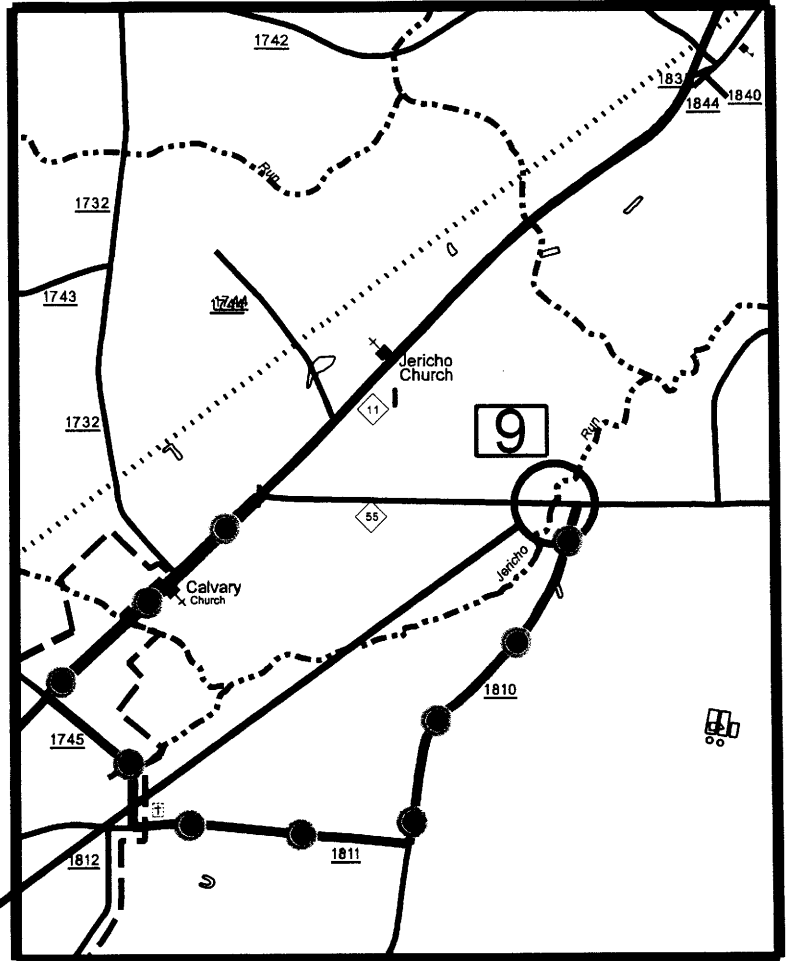
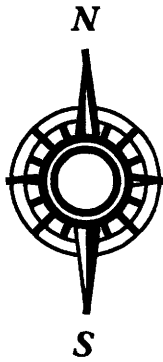
Response: The detour route will be clearly marked with signs.

Comment: "Maintaining clean water and a healthy ecosystem with this project should be insured during the planning, design, and construction of the new bridge and the demolition of the old one."

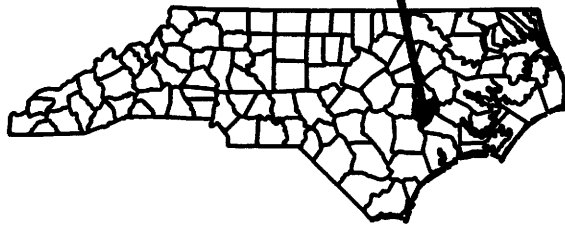
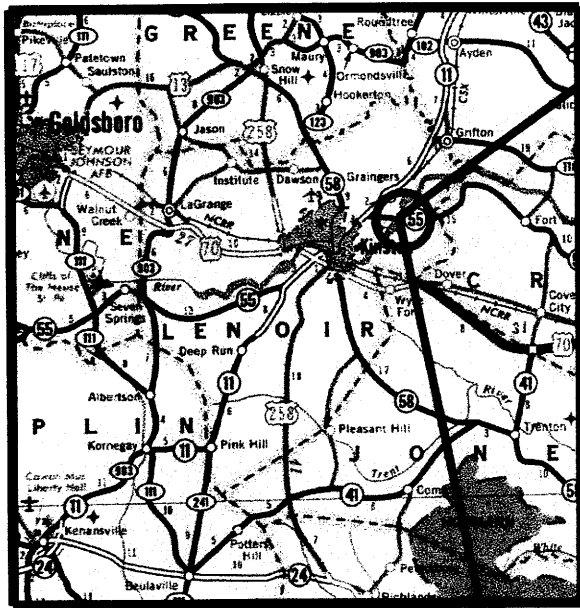
Response: The bridge is being replaced in the existing location which will ensure a minimal amount of impacts to the natural environment.

FIGURES

- Figure 1 - Vicinity Map**
- Figure 2A - Alternate A (Preferred)**
- Figure 2B - Alternate B**
- Figure 3 - Photographs of Bridge No. 9**
- Figure 4 - Typical Roadway Section**
- Figure 5 - FEMA Floodplain Map**
- Figure 6 - Natural Communities Map**



SCALE

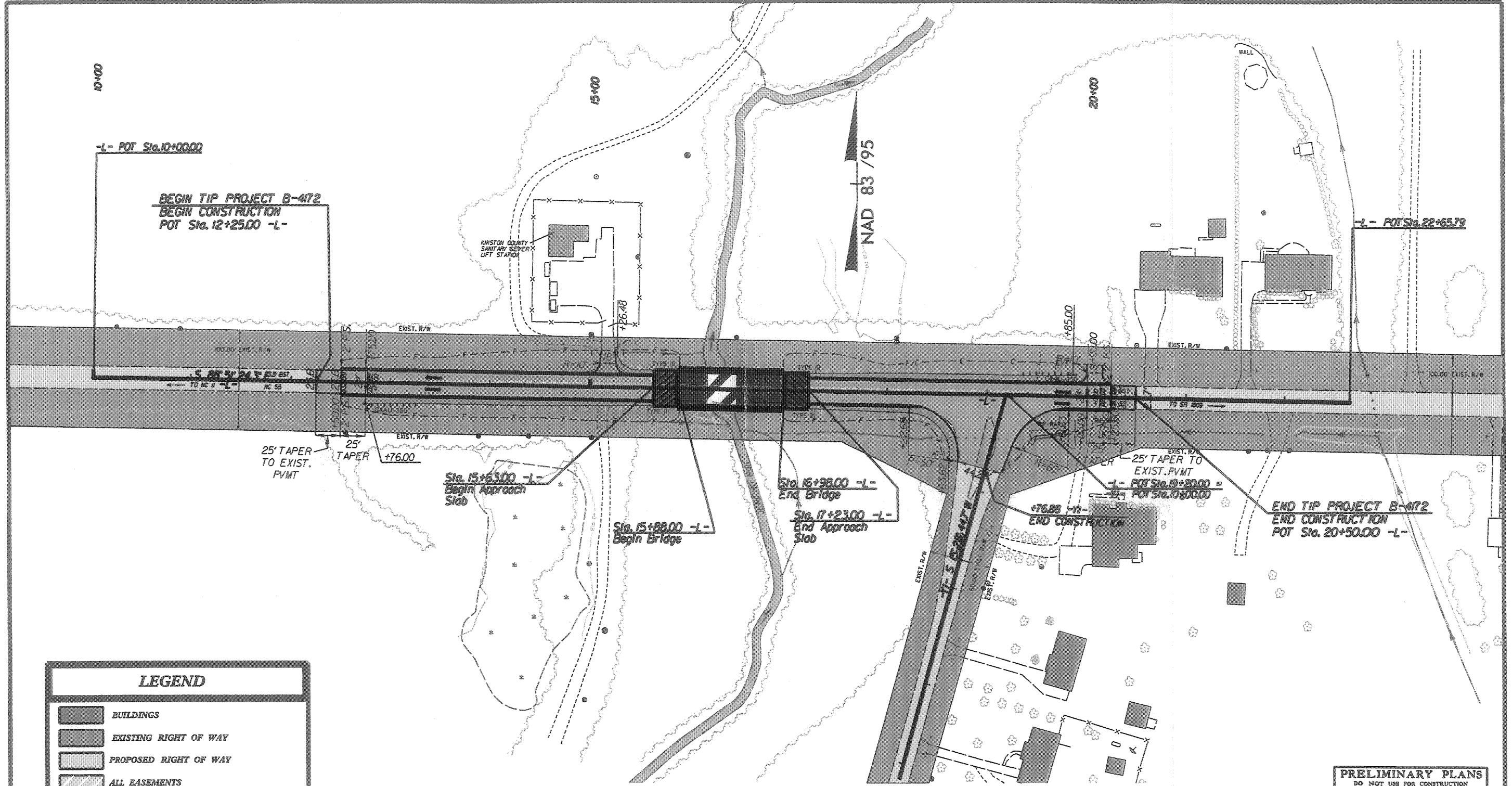


**NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
PROJECT DEVELOPMENT
& ENVIRONMENTAL ANALYSIS**

**LENOIR COUNTY
BRIDGE NO. 9 ON NC 55
OVER JERICO RUN**

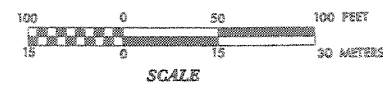
TIP NO. B-4172

**VICINITY MAP
FIGURE 1**



LEGEND

- BUILDINGS
 - EXISTING RIGHT OF WAY
 - PROPOSED RIGHT OF WAY
 - ALL EASEMENTS
 - EXISTING ROADWAY
 - EXISTING ROADWAY TO BE RESURFACED
 - PROPOSED ROADWAY
 - PROPOSED STRUCTURES, ISLAND, CURB AND GUTTER
 - EXISTING STRUCTURES, ISLAND, CURB AND GUTTER TO BE REMOVED
 - LAKES, RIVER, STREAMS, AND PONDS
 - TEMPORARY DETOUR
 - TEMPORARY DETOUR STRUCTURE
- 100 / 200 PRESENT ADT (2001)
FUTURE ADT (2025)



PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION
INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

	NORTH CAROLINA DEPARTMENT OF TRANSPORTATION PROJECT DEVELOPMENT & ENVIRONMENTAL ANALYSIS BRANCH
	LENOIR COUNTY BRIDGE NO. 9 ON NC 55 OVER JERICO RUN TIP NO. B-4172
1" = 50' 1 cm = 6 m	ALTERNATE A (PREFERRED) FIGURE 2A

10+00

-L- POT Sta. 10+00.00

BEGIN TIP PROJECT B-4172
BEGIN CONSTRUCTION
POT Sta. 12+25.00 -L-

Sta. 15+88.00 -L-
Begin Bridge

Sta. 15+63.00 -L-
Begin Approach
Slab

KINSTON COUNTY
SANITARY SEWER
LIFT STATION

NAD 83 / 95

Sta. 15+98.00 -L-
End Bridge

Sta. 17+23.00 -L-
End Approach
Slab

-L- POT Sta. 19+20.00 =
-YI- POT Sta. 10+00.00

-L- POT Sta. 22+65.79

25' TAPER
TO EXIST.
PVMT

25' TAPER

+76.00 -DET-
PI Sta 17+53.33
 $\Delta = 14' 50'' 06.4''$ (RT)
D = 8' 29' 17.7"
L = 174.77'
T = 87.88'
R = 675.00'
DS=50mph

BEGIN DETOUR
POT Sta. 16+65.45

PRCS Sta. 18+40.23 -DET-

PI Sta 19+28.11
 $\Delta = 14' 50'' 06.4''$ (LT)
D = 8' 29' 17.7"
L = 174.77'
T = 87.88'
R = 675.00'
DS=50mph

END BRIDGE
POT Sta. 20+65.00 -DET-

PI Sta 21+52.88
 $\Delta = 14' 50'' 06.4''$ (LT)
D = 8' 29' 17.7"
L = 174.77'
T = 87.88'
R = 675.00'
DS=50mph

PRCS Sta. 22+39.77 -DET-













25' TAPER TO
EXIST. PVMT
END DETOUR
POT Sta. 24+43.54 -DET-

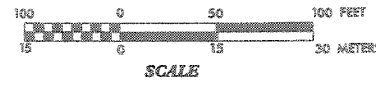
+76.88 -YI-
END CONSTRUCTION

PI Sta 23+27.55
 $\Delta = 14' 50'' 06.4''$ (RT)
D = 8' 29' 17.7"
L = 174.77'
T = 87.88'
R = 675.00'
DS=50mph

END TIP PROJECT B-4172
END CONSTRUCTION
POT Sta. 20+50.00 -L-

LEGEND

-  BUILDINGS
 -  EXISTING RIGHT OF WAY
 -  PROPOSED RIGHT OF WAY
 -  ALL EASEMENTS
 -  EXISTING ROADWAY
 -  EXISTING ROADWAY TO BE RESURFACED
 -  PROPOSED ROADWAY
 -  PROPOSED STRUCTURES, ISLAND, CURB AND GUTTER
 -  EXISTING STRUCTURES, ISLAND, CURB AND GUTTER TO BE REMOVED
 -  LAKES, RIVER, STREAMS, AND PONDS
 -  TEMPORARY DETOUR
 -  TEMPORARY DETOUR STRUCTURE
- 100 PRESENT ADT (2001)
200 FUTURE ADT (2025)



PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

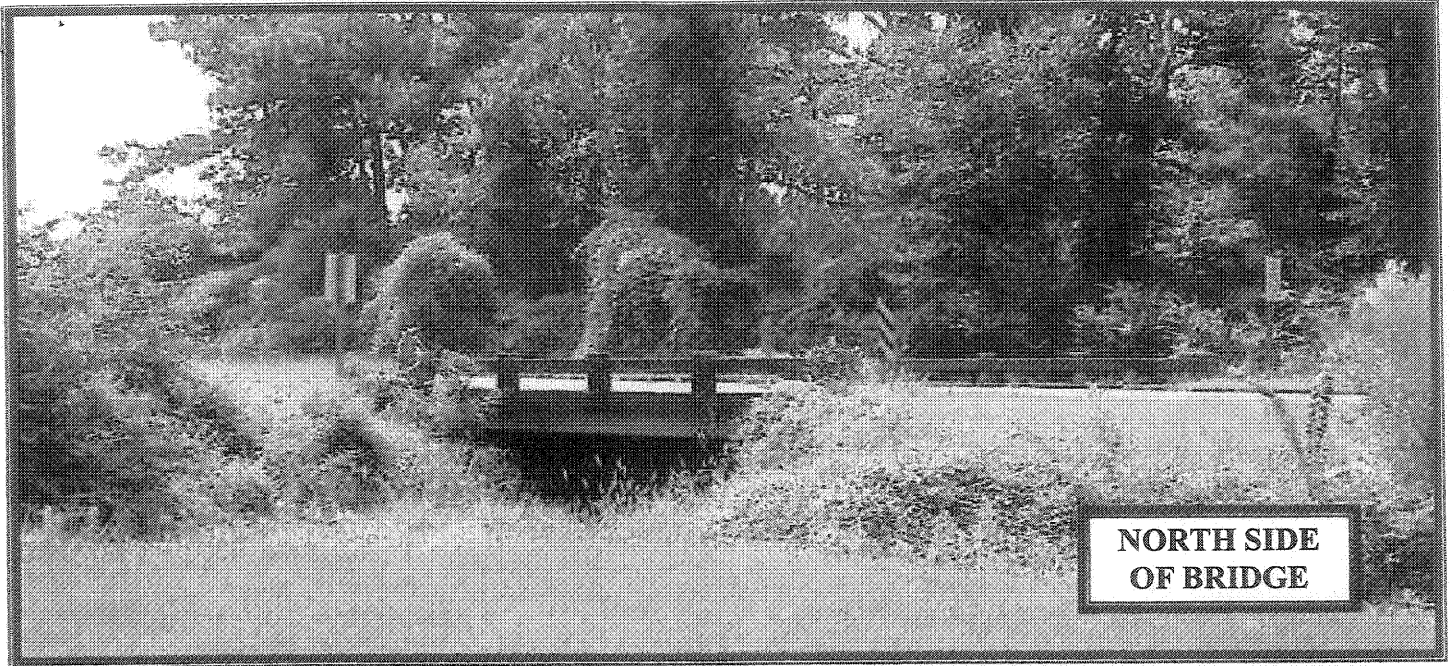


NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
PROJECT DEVELOPMENT &
ENVIRONMENTAL ANALYSIS BRANCH

LENOIR COUNTY
BRIDGE NO. 9 ON NC 55
OVER JERICO RUN
TIP NO. B-4172

1" = 50'
1 cm = 6 m

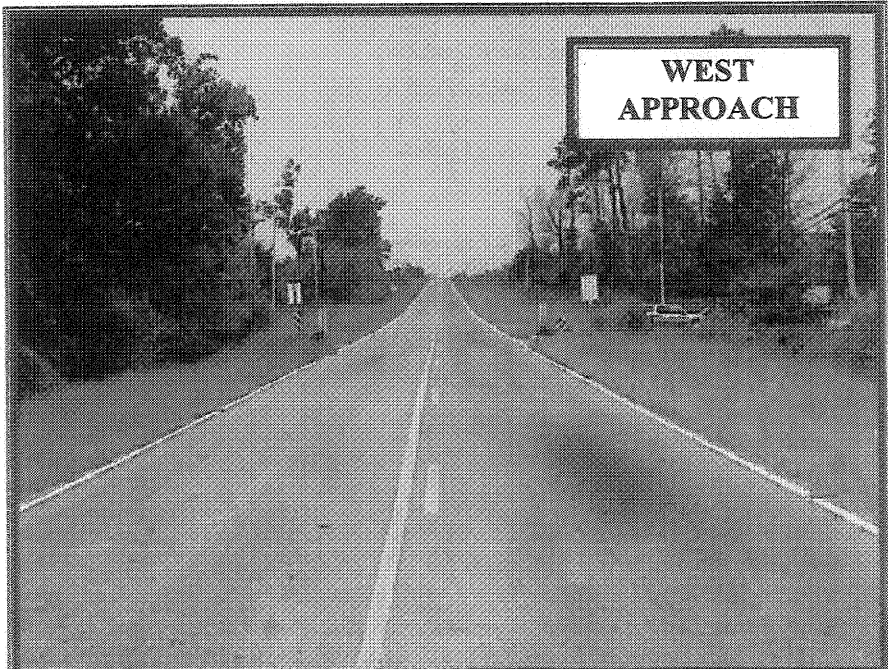
ALTERNATE B
FIGURE 2B



**NORTH SIDE
OF BRIDGE**



**EAST
APPROACH**



**WEST
APPROACH**

**B-4172
Replacement of Bridge
No. 9 on NC 55
Over Jericho Run
Lenoir County**

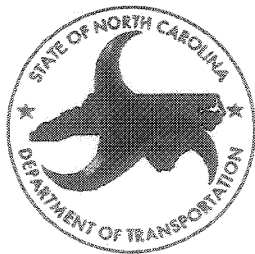
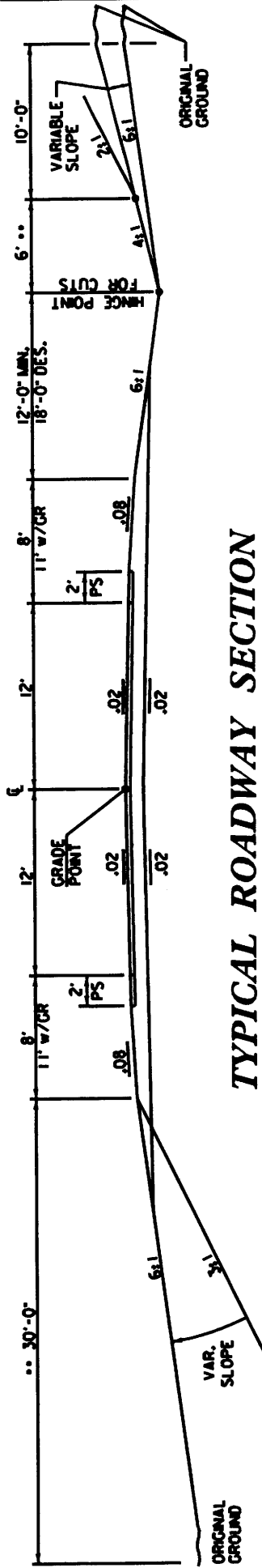


FIGURE 3



TYPICAL ROADWAY SECTION

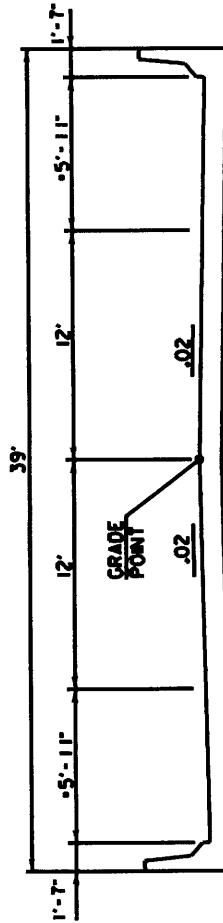
.. WHEN THESE DISTANCES INDICATE SLOPES OUTSIDE THE LIMITS 6:1 TO 3:1, THE DISTANCE BECOMES VARIABLE AND THE MAX. OR MIN. SLOPE MAINTAINED.

TRAFFIC DATA

ADT 2002	3,000	LOS B
ADT 2004	3,200	LOS B
ADT 2030	5,700	LOS C

DUAL 5%
 TTST 8%

**FUNCTIONAL CLASSIFICATION:
 RURAL MAJOR COLLECTOR**



TYPICAL BRIDGE SECTION

EXISTING BRIDGE LENGTH IS 22 FT.

.. ADDITIONAL WIDTH NEEDED DUE TO SPREAD



NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 PROJECT DEVELOPMENT AND
 ENVIRONMENTAL ANALYSIS BRANCH

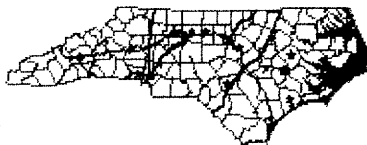
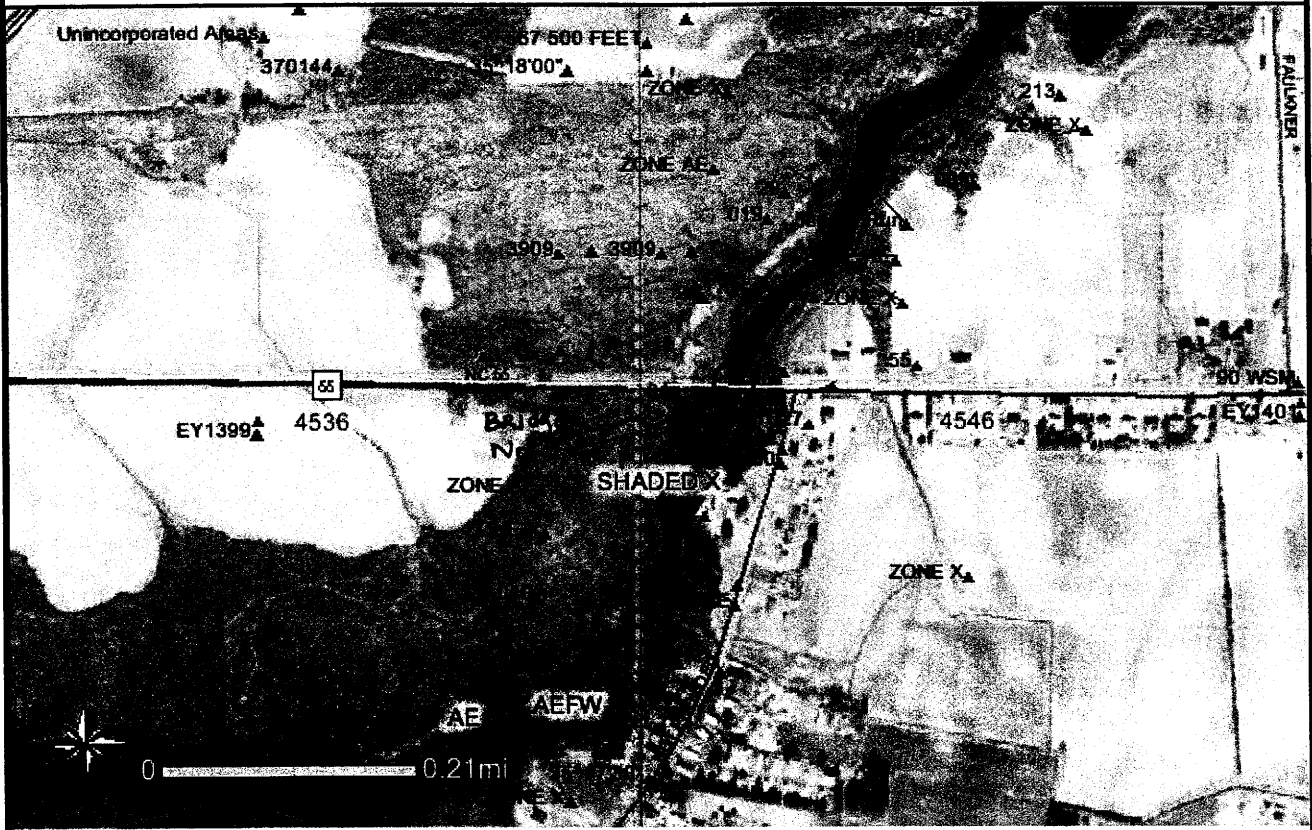
LENOIR COUNTY

BRIDGE NO. 9 ON NC 55
 OVER JERICHO RUN

B-4172

B-4172 LENOIR COUNTY

Mon Jul 19 13:53:30 EDT 2004



- DFIRM GRID
- DFIRM Available
- Elevation Data Grid
- Annotation Points
- DFIRM Label Leader Lines
- NHS NC-Routes
- NHS US-Routes
- NHS Interstates
- Primary Highways
- Interstate Highways
- US Highways
- NC Highways
- NC Secondary Roads
- Railroads

Legend

- Roads
- Rivers and Streams
- Flood Hazard
- 100yr Flooding - No BFE's (A)
- 100yr Flood - Velocity Zone (V or VE)
- 100yr Shallow Flooding (AO or A1)
- 500yr Flooding (X or Shaded X)
- 100yr Flooding - Has BFE's (AE)
- 100yr FloodWay (AEFW)
- Municipal Boundary
- Coastal Sounds
- Water
- County Boundaries
- Aerial Photography



N.C. Floodplain Mapping Information System
 On-Line Mapping Application Provided by the
 North Carolina Floodplain Mapping Program
 Disclaimer: This is not a legally binding (FIRM) Flood
 Insurance Rate Map and should not be used as such.



**NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 PROJECT DEVELOPMENT
 & ENVIRONMENTAL ANALYSIS**

**LENOIR COUNTY
 BRIDGE NO. 9 ON NC 55
 OVER JERICO RUN**

TIP NO. B-4172

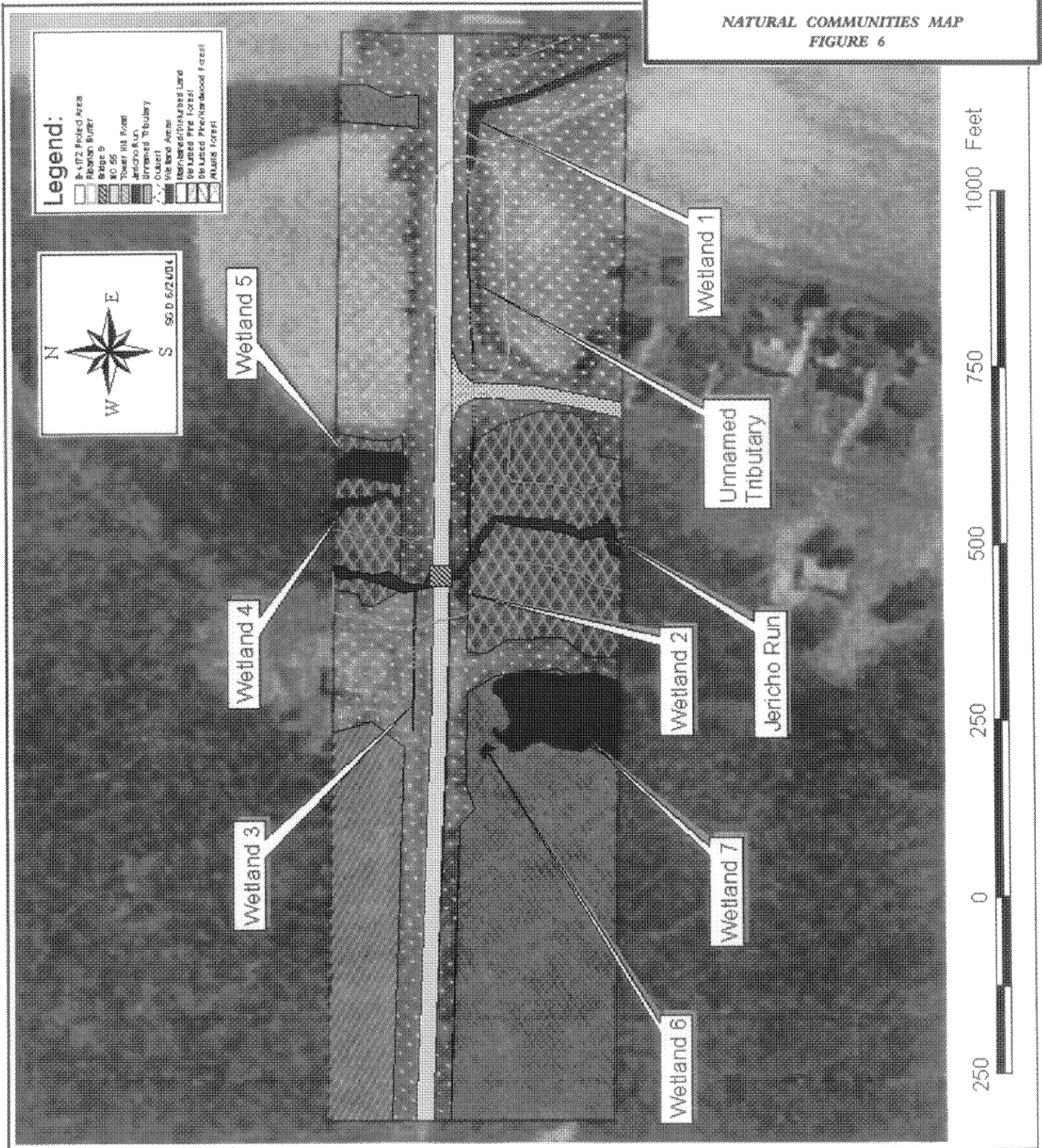
**FEMA FLOODPLAIN MAP
 FIGURE 5**



LENOIR COUNTY
BRIDGE NO. 9 ON NC 55
OVER JERICO RUN

TIP NO. B-4172

NATURAL COMMUNITIES MAP
FIGURE 6



APPENDIX A

Comments received from Federal, State, and Local Agencies

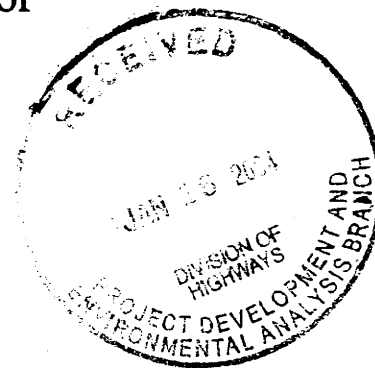


United States Department of the Interior

FISH AND WILDLIFE SERVICE

Raleigh Field Office
Post Office Box 33726
Raleigh, North Carolina 27636-3726

January 13, 2004



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

Dear Dr. Thorpe:

This letter is in response to your request for comments from the U.S. Fish and Wildlife Service (Service) on the potential environmental impacts of the proposed replacement of the following nine bridges:

- B-4018, Beaufort County, Bridge No. 104 on NC 32 over Broad Creek
- B-4019, Beaufort County, Bridge No. 103 on NC 32 over Runyon Creek
- B-4020, Beaufort/Pitt County, Bridge No. 8 on SR 1403 over Tranters Creek
- B-4055, Carteret County, Bridge No. 22 on SR 1124 over Branch of Newport River
- B-4132, Halifax County, Bridge No. 97 on NC 561 over Looking Glass Swamp
- B-4172, Lenoir County, Bridge No. 9 on NC 55 over Jericho Run
- B-4212, Northampton County, Bridge No. 77 on NC 35 over Kirby's Creek
- B-4321, Wayne County, Bridge No. 17 on SR 1918 over Carraway Creek
- B-4326, Wilson County, Bridge No. 79 on SR 1001 over Bloomery Swamp

These comments provide scoping information in accordance with provisions of the Fish and Wildlife Coordination Act (16 U.S.C. 661-667d) and section 7 of the Endangered Species Act (ESA) of 1973, as amended (16 U.S.C. 1531-1543).

For bridge replacement projects, the Service recommends the following general conservation measures to avoid or minimize environmental impacts to fish and wildlife resources:

1. Wetland, forest and designated riparian buffer impacts should be avoided and minimized to the maximum extent practical;
2. If unavoidable wetland impacts are proposed, every effort should be made to identify compensatory mitigation sites in advance. Project planning should include a detailed compensatory mitigation plan for offsetting unavoidable wetland impacts. Opportunities to protect mitigation areas in perpetuity via conservation easements, land trusts or by

other means should be explored at the outset;

3. Off-site detours should be used rather than construction of temporary, on-site bridges. For projects requiring an on-site detour in wetlands or open water, such detours should be aligned along the side of the existing structure which has the least and/or least quality of fish and wildlife habitat. At the completion of construction, the detour area should be entirely removed and the impacted areas be planted with appropriate vegetation, including trees if necessary;
4. Wherever appropriate, construction in sensitive areas should occur outside fish spawning and migratory bird nesting seasons. In waterways that may serve as travel corridors for fish, in-water work should be avoided during moratorium periods associated with migration, spawning and sensitive pre-adult life stages. The general moratorium period for anadromous fish is February 15 - June 30;
5. New bridges should be long enough to allow for sufficient wildlife passage along stream corridors;
6. Best Management Practices (BMP) for Protection of Surface Waters should be implemented;
7. Bridge designs should include provisions for roadbed and deck drainage to flow through a vegetated buffer prior to reaching the affected stream. This buffer should be large enough to alleviate any potential effects from run-off of storm water and pollutants;
8. The bridge designs should not alter the natural stream and stream-bank morphology or impede fish passage. To the extent possible, piers and bents should be placed outside the bank-full width of the stream;
9. Bridges and approaches should be designed to avoid any fill that will result in damming or constriction of the channel or flood plain. If spanning the flood plain is not feasible, culverts should be installed in the flood plain portion of the approach to restore some of the hydrological functions of the flood plain and reduce high velocities of flood waters within the affected area.

A list of federally protected species for each county in North Carolina can be found at <http://nc-es.fws.gov/es/countyfr.html> . Additional information about the habitats in which each species is often found can also be found at <http://endangered.fws.gov> . Please note, the use of the North Carolina Natural Heritage Program data should not be substituted for actual field surveys if suitable habitat occurs near the project site. If suitable habitat exists in the project area, we recommend that biological surveys for the listed species be conducted and submitted to us for review. All survey documentation must include survey methodologies and results.

We do not have any specific comments for the individual projects, with the exception of the following two:

B-4020, Beaufort/Pitt County - There is a past occurrence of the West Indian manatee (*Trichechus manatus*) less than one mile south of the project area. The Service's **Guidelines For Avoiding Impacts To The West Indian Manatee: Precautionary Measures for Construction Activities in North Carolina Waters** should be implemented to minimize impacts to this species. These guidelines can be found at <http://nc-es.fws.gov/es/publications.html> .

B-4055, Carteret County - There are known occurrences of red-cockaded woodpeckers (*Picoides borealis*) and rough-leaved loosestrife (*Lysimachia asperulaefolia*) within two and three miles, respectively, of the project area. If habitat for these or any other listed species occurs at the site, appropriate surveys should be conducted. In addition, this site occurs within the Croatan Game Lands area. Impacts to this protected area should be minimized to the maximum extent practical.

We reserve the right to review any federal permits that may be required for this project, at the public notice stage. Therefore, it is important that resource agency coordination occur early in the planning process in order to resolve any conflicts that may arise and minimize delays in project implementation. In addition to the above guidance, we recommend that the environmental documentation for this project include the following in sufficient detail to facilitate a thorough review of the action:

1. A clearly defined and detailed purpose and need for the proposed project;
2. A description of the proposed action with an analysis of all alternatives being considered, including the "no action" alternative;
3. A description of the fish and wildlife resources, and their habitats, within the project impact area that may be directly or indirectly affected;
4. The extent and acreage of waters of the U.S., including wetlands, that are to be impacted by filling, dredging, clearing, ditching, or draining. Acres of wetland impact should be differentiated by habitat type based on the wetland classification scheme of the National Wetlands Inventory (NWI). Wetland boundaries should be determined by using the 1987 Corps of Engineers Wetlands Delineation Manual and verified by the U.S. Army Corps of Engineers;
5. The anticipated environmental impacts, both temporary and permanent, that would be likely to occur as a direct result of the proposed project. The assessment should also include the extent to which the proposed project would result in secondary impacts to natural resources, and how this and similar projects contribute to cumulative adverse effects;
6. Design features and construction techniques which would be employed to avoid or minimize the fragmentation or direct loss of wildlife habitat and waters of the US;

7. If unavoidable wetland impacts are proposed, project planning should include a detailed compensatory mitigation plan for offsetting the unavoidable impacts.

The Service appreciates the opportunity to comment on this project. Please continue to advise us during the progression of the planning process, including your official determination of the impacts of this project. If you have any questions regarding our response, please contact Mr. Gary Jordan at (919) 856-4520, ext. 32.

Sincerely,



Garland B. Pardue, Ph.D.
Ecological Services Supervisor

cc: Mike Bell, USACE, Washington, NC
Bill Biddlecome, USACE, Washington, NC
John Hennessy, NCDWQ, Raleigh, NC
Travis Wilson, NCWRC, Creedmoor, NC
Chris Militscher, USEPA, Raleigh, NC



☒ North Carolina Wildlife Resources Commission ☒

Charles R. Fullwood, Executive Director

MEMORANDUM

TO: Elmo Vance
Project Development and Environmental Analysis Branch, NCDOT

FROM: Travis Wilson, Highway Project Coordinator *T. Wilson*
Habitat Conservation Program

DATE: February 5, 2004

SUBJECT: NCDOT Bridge Replacements in Beaufort, Carteret, Halifax, Lenoir,
Northampton, Wayne, and Wilson counties. TIP Nos. B-4018, B-4019, B-4020,
B-4055, B-4132, B-4172, B-4212, B-4321, and B-4326.

Biologists with the N. C. Wildlife Resources Commission (NCWRC) have reviewed the information provided and have the following preliminary comments on the subject project. Our comments are provided in accordance with provisions of the National Environmental Policy Act (42 U.S.C. 4332(2)(c)) and the Fish and Wildlife Coordination Act (48 Stat. 401, as amended; 16 U.S.C. 661-667d).

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

1. We generally prefer spanning structures. Spanning structures usually do not require work within the stream and do not require stream channel realignment. The horizontal and vertical clearances provided by bridges allows for human and wildlife passage beneath the structure, does not block fish passage, and does not block navigation by canoeists and boaters.
2. Bridge deck drains should not discharge directly into the stream.
3. Live concrete should not be allowed to contact the water in or entering into the stream.
4. If possible, bridge supports (bents) should not be placed in the stream.

5. If temporary access roads or detours are constructed, they should be removed back to original ground elevations immediately upon the completion of the project. Disturbed areas should be seeded or mulched to stabilize the soil and native tree species should be planted with a spacing of not more than 10'x10'. If possible, when using temporary structures the area should be cleared but not grubbed. Clearing the area with chain saws, mowers, bush-hogs, or other mechanized equipment and leaving the stumps and root mat intact, allows the area to revegetate naturally and minimizes disturbed soil.
6. A clear bank (riprap free) area of at least 10 feet should remain on each side of the stream underneath the bridge.
7. In trout waters, the N.C. Wildlife Resources Commission reviews all U.S. Army Corps of Engineers nationwide and general '404' permits. We have the option of requesting additional measures to protect trout and trout habitat and we can recommend that the project require an individual '404' permit.
8. In streams that contain threatened or endangered species, NCDOT biologist ~~Mr. Hal Bain~~ ^{NO LOWER WANA DOT} should be notified. Special measures to protect these sensitive species may be required. NCDOT should also contact the U.S. Fish and Wildlife Service for information on requirements of the Endangered Species Act as it relates to the project.
9. In streams that are used by anadromous fish, the NCDOT official policy entitled "Stream Crossing Guidelines for Anadromous Fish Passage (May 12, 1997)" should be followed.
10. In areas with significant fisheries for sunfish, seasonal exclusions may also be recommended.
11. Sedimentation and erosion control measures sufficient to protect aquatic resources must be implemented prior to any ground disturbing activities. Structures should be maintained regularly, especially following rainfall events.
12. Temporary or permanent herbaceous vegetation should be planted on all bare soil within 15 days of ground disturbing activities to provide long-term erosion control.
13. All work in or adjacent to stream waters should be conducted in a dry work area. Sandbags, rock berms, cofferdams, or other diversion structures should be used where possible to prevent excavation in flowing water.
14. Heavy equipment should be operated from the bank rather than in stream channels in order to minimize sedimentation and reduce the likelihood of introducing other pollutants into streams.
15. Only clean, sediment-free rock should be used as temporary fill (causeways), and should be removed without excessive disturbance of the natural stream bottom when construction is completed.
16. During subsurface investigations, equipment should be inspected daily and maintained to prevent contamination of surface waters from leaking fuels, lubricants, hydraulic fluids, or other toxic materials.

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

1. The culvert must be designed to allow for aquatic life and fish passage. Generally, the culvert or pipe invert should be buried at least 1 foot below the natural streambed (measured from the natural thalweg depth). If multiple barrels are required, barrels other than the base flow barrel(s) should be placed on or near stream bankfull or floodplain bench elevation (similar to Lyonsfield design). These should be reconnected to floodplain benches as appropriate. This may be accomplished by utilizing sills on the upstream and downstream ends to restrict or divert flow to the base flow barrel(s). Silled barrels should be filled with sediment so as not to cause noxious or mosquito breeding conditions. Sufficient water depth should be provided in the base flow barrel(s) during low flows to accommodate fish movement. If culverts are longer than 40-50 linear feet, alternating or notched baffles should be installed in a manner that mimics existing stream pattern. This should enhance aquatic life passage: 1) by depositing sediments in the barrel, 2) by maintaining channel depth and flow regimes, and 3) by providing resting places for fish and other aquatic organisms. In essence, base flow barrel(s) should provide a continuum of water depth and channel width without substantial modifications of velocity.
2. If multiple pipes or cells are used, at least one pipe or box should be designed to remain dry during normal flows to allow for wildlife passage.
3. Culverts or pipes should be situated along the existing channel alignment whenever possible to avoid channel realignment. Widening the stream channel must be avoided. Stream channel widening at the inlet or outlet end of structures typically decreases water velocity causing sediment deposition that requires increased maintenance and disrupts aquatic life passage.
4. Riprap should not be placed in the active thalweg channel or placed in the streambed in a manner that precludes aquatic life passage. Bioengineering boulders or structures should be professionally designed, sized, and installed.

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

Project specific comments:

1. B-4018, Beaufort County, Bridge No. 104 over Broad Creek on NC 32. We recommend replacing this bridge with a bridge. Adult and juvenile anadromous species are found in this portion of Broad Creek, including striped bass, American shad, river herring, and hickory shad. NCDOT should follow all stream crossing guidelines for anadromous fish passage, including an in-water work moratorium from February 15 to September 30. Standard recommendations apply.

2. B-4019, Beaufort County, Bridge No. 103 over Runyon Creek on NC 32. We recommend replacing this bridge with a bridge. Adult and juvenile anadromous species are found in this portion of Runyon Creek, including striped bass, American shad, river herring, and hickory shad. NCDOT should follow all stream crossing guidelines for anadromous fish passage, including an in-water work moratorium from February 15 to September 30. Standard recommendations apply.
3. B-4020, Beaufort County, Bridge No. 8 over Tranter's Creek on SR 1403. We recommend replacing this bridge with a bridge. Adult and juvenile anadromous species are found in this portion of Tranter's Creek, including striped bass, American shad, river herring, and hickory shad. NCDOT should follow all stream crossing guidelines for anadromous fish passage, including an in-water work moratorium from February 15 to September 30. Standard recommendations apply.
4. B-4055, Carteret County, Bridge No. 22 over Branch of Newport River on SR 1124. We recommend replacing this bridge with a bridge. Adult and juvenile anadromous species are found in this area, including striped bass, American shad, blueback herring, and hickory shad. NCDOT should follow all stream crossing guidelines for anadromous fish passage, including an in-water work moratorium from February 15 to September 30. Standard recommendations apply.
5. B-4132, Halifax County, Bridge No. 97 over Looking Glass Swamp on NC 561. We recommend replacing this bridge with a bridge. Anadromous species are found in this portion of Looking Glass Swamp, including alewife and blueback herring. NCDOT should follow all stream crossing guidelines for anadromous fish passage, including an in-water work moratorium from February 15 to June 15. Standard recommendations apply.
6. B-4172, Lenoir County, Bridge No. 9 over Jericho Run on NC 55. We recommend replacing this bridge with a bridge. Standard recommendations apply.
7. B-4212, Northampton County, Bridge No. 77 over Kirby's Creek on NC 35. We recommend replacing this bridge with a bridge. Anadromous species are found in this portion of Kirby's Creek, including alewife and blueback herring. NCDOT should follow all stream crossing guidelines for anadromous fish passage, including an in-water work moratorium from February 15 to June 15. Standard recommendations apply.
8. B-4321, Wayne County, Bridge No. 17 over Caraway Creek on SR 1918. We recommend replacing this bridge with a bridge. Anadromous species are found in this portion of Caraway Creek, including alewife and blueback herring. NCDOT should follow all stream crossing guidelines for anadromous fish passage, including an in-water work moratorium from February 15 to June 15. Standard recommendations apply.
9. B-4326, Wilson County, Bridge No. 79 over Bloomery Swamp on SR 1001. We recommend replacing this bridge with a bridge. Standard recommendations apply.

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

culverts, is recommended in most cases. Spanning structures allow wildlife passage along streambanks and reduce habitat fragmentation.

If you need further assistance or information on NCWRC concerns regarding bridge replacements, please contact me at (919) 528-9886. Thank you for the opportunity to review and comment on these projects.

Cc: Gary Jordan, U.S. Fish and Wildlife Service, Raleigh

Federal Aid # BRSTP-55(21)

TTP # B-4172

County: Lenoir

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

Project Description: Replace Bridge No. 9 on NC 55 over Jericho Run

On 09/30/2003, representatives of the

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

Reviewed the subject project at

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

All parties present agreed

- There are no properties over fifty years old within the project's area of potential effects.
- There are no properties less than fifty years old which are considered to meet Criteria Consideration G within the project's area of potential effects.
- There are properties over fifty years old within the project's Area of Potential Effects (APE), but based on the historical information available and the photographs of each property, the property identified as Prop 1-11 Bridge #9 is considered not eligible for the National Register and no further evaluation of it is necessary.
- There are no National Register-listed or Study Listed properties within the project's area of potential effects.
- All properties greater than 50 years of age located in the APE have been considered at this consultation, and based upon the above concurrence, all compliance for historic architecture with Section 106 of the National Historic Preservation Act and GS 121-12(a) has been completed for this project.
- There are no historic properties affected by this project. (Attach any notes or documents as needed)

Signed:

Mary Pope Sept. 30, 2003
 Representative, NCDOT Date

K. H. A. 9/30/03
 FHWA, for the Division Administrator, or other Federal Agency Date

David D. [Signature] 9/30/03
 Representative, HPO Date

David Wood 9/30/03
 State Historic Preservation Officer Date

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



CITIZENS PARTICIPATION
RECEIVED
MAY 12 2005

North Carolina Department of Cultural Resources
State Historic Preservation Office

Peter B. Sandbeck, Administrator

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

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

May 6, 2005

MEMORANDUM

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

FROM: Peter Sandbeck *PSS for Peter Sandbeck*

SUBJECT: Federal Categorical Exclusion, Bridge 9 on NC 55 over Jericho Run, TIP B-4172,
Lenoir County, ER 04-0107

Thank you for your letter of March 22, 2005, transmitting the Categorical Exclusion (CE) for the above project. We believe the CE adequately addresses our concerns for historic resources.

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

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

cc: John F. Sullivan
NCDOT, Federal Highway Administration

ADMINISTRATION
RESTORATION
SURVEY & PLANNING

Location
507 N. Blount Street, Raleigh NC
515 N. Blount Street, Raleigh NC
515 N. Blount Street, Raleigh, NC

Mailing Address
4617 Mail Service Center, Raleigh NC 27699-4617
4617 Mail Service Center, Raleigh NC 27699-4617
4617 Mail Service Center, Raleigh NC 27699-4617

Telephone/Fax
(919)733-4763/733-8653
(919)733-6547/715-4801
(919)733-6545/715-4801



North Carolina Department of Cultural Resources
State Historic Preservation Office

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

Division of Historical Resources
David L. S. Brook, Director

February 18, 2004

MEMORANDUM

TO: Stacey Baldwin — *Elmo Vance*
Project Development and Environmental Analysis
NCDOT Division of Highways

FROM: David Brook *David Brook*

SUBJECT: Request for Comments for Group 50 Bridge Replacements:
Bridge No. 104 on NC 32 over Broad Creek, B-4018, Beaufort County, ER04-0102
Bridge No. 103 on NC 32 over Runyon Creek, B-4019, Beaufort County, ER04-0103
Bridge No. 8 on SR 1403 over Tranters Creek, B-4020, Beaufort/Pitt Counties, ER04-0104
Bridge No. 22 on SR 1124 over Branch of Newport River, B-4055, Carteret County, ER04-0105
Bridge No. 97 on NC 561 over Looking Glass Swamp, B-4132, Halifax County, ER04-0106
Bridge No. 9 on NC 55 over Jericho Run, B-4172, Lenoir County, ER04-0107
Bridge No. 77 on NC 35 over Kirby's Creek, B-4212, Northampton County, ER04-0078
Bridge No. 17 on SR 1918 over Creek, B-4321, Wayne County, ER04-0108
Bridge No. 79 on SR 1001 over Bloomery Swamp, B-4326, Wilson County, ER04-0109

Thank you for your letters of January 8, 2004, concerning the above projects.

We are unable to comment on the potential effect of these projects on cultural historic resources until we receive further information.

Please forward a labeled 7.5 minute USGS quadrangle map for each of the above projects clearly indicating the project vicinity, location, and termini. In addition, please include the name of the quadrangle map.

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

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

www.hpa.dcr.state.nc.us

	Location	Mailing Address	Telephone/Fax
ADMINISTRATION	507 N. Blount St, Raleigh, NC	4617 Mail Service Center, Raleigh, NC 27699-4617	(919) 733-4763 • 733-8653
RESTORATION	515 N. Blount St, Raleigh, NC	4617 Mail Service Center, Raleigh, NC 27699-4617	(919) 733-6547 • 715-4801
SURVEY & PLANNING	515 N. Blount St, Raleigh, NC	4617 Mail Service Center, Raleigh, NC 27699-4617	(919) 733-4763 • 715-4801

February 18, 2004

Page 2

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

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

cc: ✓ Mary Pope Furr, NCDOT
Matt Wilkerson, NCDOT

County of Lenoir

Board of Commissioners

Oscar E. Herring, Jr., Chairman
 Chris Humphrey, Vice-Chairman
 Jackie Brown
 George W. Graham, Jr.
 Earl Harper
 Marguerite Whitfield
 Wayne Pittman

Lenoir County Courthouse
 Post Office Box 3289
 130 South Queen Street
 Kinston, NC 28502

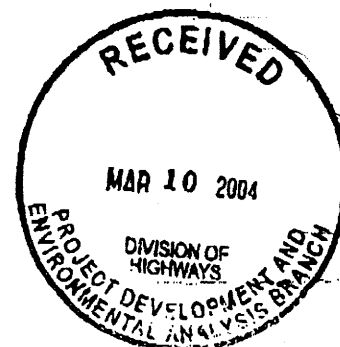
Telephone: (252) 559-6450
 Fax: (252) 559-6454



John Bauer, County Manager/Clerk to the Board
 Reginald H. Lee, Asst. County Manager
 Lashanda Aytch, Administrative Secretary

January 16, 2004

Gregory J. Thorpe, PhD.
 Environmental Management Director
 Project Development and Environmental Analysis Branch
 North Carolina Department of Transportation
 1544 Mail Service Center
 Raleigh, NC 27699-1548



Subject: Request for comments for Group 50 Bridge Replacement Project B-4172

Dear Dr. Thorpe, PhD:

As Chairman of the Lenoir County Transportation Committee I am responding to your letter to Oscar Herring, Chairman of the Lenoir County Board of Commissioners dated January 8, 2004. Your letter request commitments on the Social, Economic, Demographic, Land Use, and Environmental conditions near Bridge No. 9 on NC 55 over Jericho Run.

➤ Social Conditions

The area served by this bridge is found in rural Lenoir County. NC 55 serves business as well as residential traffic. The residential property in the area will experience the greatest benefit from a safe bridge over Jericho Run, yet they also will experience the greatest inconvenience from any closure of the roadway while the bridge is being replaced and improved. There are Churches in the area whose parishioners use NC 55 and the bridge over Jericho Run. Efficient replacement of the bridge will reduce the inconvenience the effort will place on those churches.

➤ Economic Impact

NC 55 and thereby the Bridge over Jericho Run serves as a direct route for individuals traveling into the City of Kinston for employment. Freight and Goods from the Kinston area traveling to the Fort Barnwell area will also be disrupted during this process. Clearly marked Detours will be required to minimize the adverse effects of any closure of the bridge over Jericho Run. It has been suggested that alternatives for West bound traffic both North (at Faulkner Road) and South (at Tower Hill) Road and Dunn Road be offered and clearly marked to reduce confusion for travelers during the replacement process.

➤ Demographic

The population served by this project should mirror the diversity of the rest of Rural Lenoir County.

➤ **Land use**

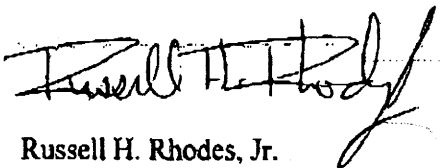
The Lenoir County Future Land Use Plan for the property surrounding this project is "Conservation". The Zoning for that area is "Rural". With knowledge of the potential for flooding in that immediate area the Lenoir County planning department's Director Chris Seaberg offered no objection to this bridge replacement project.

➤ **Environmental**

Jericho Run is a minor tributary to the Neuse River, a vitally important Natural Resource. Maintaining clean water and a healthy ecosystem with this project should be insured during the planning, design and construction of the new bridge as well as the demolition of the old one.

I wish to thank you for considering the local issues in regards to this project. If I can be any additional assistance with this matter please feel free to contact me.

Sincerely:



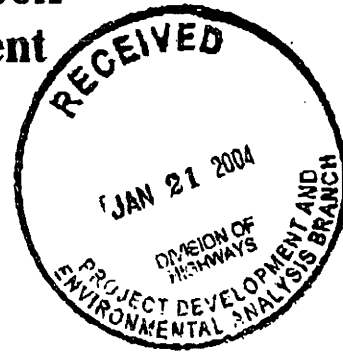
Russell H. Rhodes, Jr.
Lenoir County Transportation Committee - Chairman

Neuse Sport Shop, Inc.
225 E. New Bern Road
Kinston, NC 28504
252-527-5058
252-523-3879 fax
nsports1@earthlink.net

Cc. Oscar Herring, Chairman, Lenoir County Commissioners
Lenoir County Commissioners
Lenoir County Transportation Committee Members
John Bauer, Lenoir County Manager

Lenoir County Public Schools Transportation Department

Anthony Mitchell Director
1624 HWY 11/55
Kinston, NC 28504
(252) 527-7092
Fax (252) 527-1483



March 26, 2003

To: William T. Goodwin, Jr. PB
Project Development & Environmental Analysis Branch

From: Anthony Mitchell *AM*
School Transportation Director
1624 HWY 11/55
Kinston, NC 28504

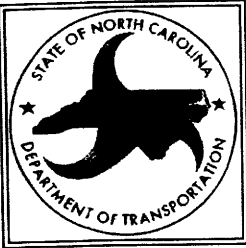
Subject: Replacement of Bridge No. 9 on NC 55 over Jericho Run, Lenoir County,
Federal Aid Project No. BRSTP-55(21). State Project No. 8.1200801, TIP
No. B-4172

At this time there are five school buses routed on the proposed segment of NC 55 over Jericho Run that is to be replaced. All five school buses can be rerouted.

csb

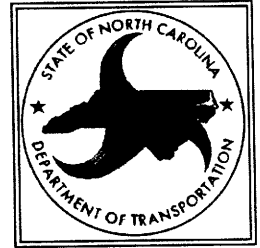
Post-it® Fax Note	7671	Date	# of pages
To	<i>Carey Runk, P.D.</i>	From	<i>Elmo Vance</i>
Co/Dept.		Co.	<i>NCDOT - PDEA</i>
Phone #		Phone #	<i>782-7844</i>
Fax #	<i>687-9244</i>	Fax #	

APPENDIX B
Newsletter



NEWSLETTER


Lenoir County
For Replacement of Bridge No. 9
Over Jericho Run On NC 55
TIP Project No. B-4172

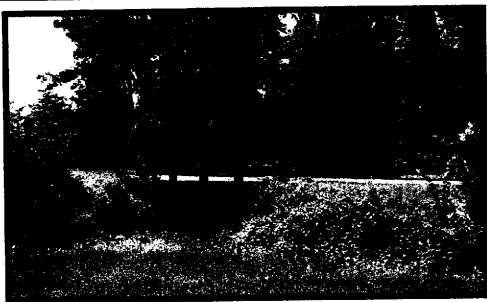


This newsletter is published by the North Carolina Department of Transportation (NCDOT) to inform citizens of the alternates for the proposed replacement and road closure of Bridge No. 9 on NC 55 over Jericho Run (TIP Project No. B-4172). This newsletter gives an overview of the steps in the project development process and presents the bridge replacement alternatives evaluated.



STEPS TO SUCCESS

- 
- Step 1 Project Initiation/Scoping
 - Step 2 Alternatives Development
 - Step 3 Environmental Studies
 - Step 4 Selection of Preferred Alternative
 - Step 5 Public Involvement
 - Step 6 Environmental Document



THE PROJECT DEVELOPMENT PROCESS

During **Step 1** of the project development process, information was collected on the existing human and natural environments. This information was used to identify preliminary alternatives for replacing Bridge No. 9. In **Step 2**, the preliminary alternatives were evaluated and two "build" alternatives were selected for detailed environmental studies. **Steps 3 and 4** involved conducting the detailed environmental studies for the "build" alternatives and selecting a preferred alternative. The build alternatives were:

Alternate A (Preferred), replacing the existing bridge at the existing location, while maintaining traffic by an off-site detour route is the preferred alternate. Alternate A was selected because of the comparatively lower construction cost, lower environmental impacts, and lesser construction time associated with it. The off-site detour is along SR 1810 (Tower Hill Road), SR 1811 (Dunn Family Road), SR 1745 (Cunningham Road), and NC 11/55 approximately 3.3 miles in length.

Alternate B replaces the bridge on existing alignment. During construction, traffic will be maintained by an on-site temporary detour structure located south of the existing bridge. Alternate B was not chosen because it has comparatively higher natural environment impacts and construction cost.

The NCDOT is aware that citizens living in the proposed project area want to know the potential effects of the project on their homes and businesses. However, exact information is not available at this stage in the planning process. Additional design work will be performed before the actual right-of-way limits can be established. This newsletter is to inform the public of the replacement of Bridge No. 9 and solicit your input on the project.

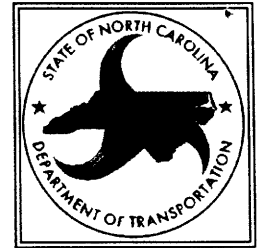
Planning and environmental studies for this project are in progress. The Federal Categorical Exclusion (CE) is scheduled for approval in February 2005. The CE will address the potential impacts of the proposed bridge replacement on the human and natural environments and will include recommended design criteria for the project. Input received from the public will be included in the decision making process.

The right of way date for this project is 2/17/06, and the construction date is 2/20/07.

Project Costs:	Alt. A	Alt. B
Right of way costs -	\$11,000	\$37,000
Construction costs -	\$550,000	\$800,000
Total costs	- \$561,000	\$837,000



NEWSLETTER



Public involvement is an important part of the project planning process. The North Carolina Department of Transportation is committed to ensuring that all issues of public concern are considered. Please send your comments to one of the addresses listed below. **Your comments are important to us!**



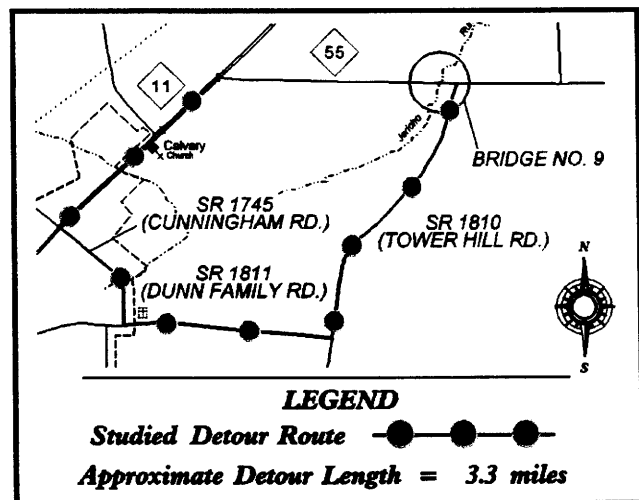
Ms. Karen B. Taylor, P.E.
NCDOT - PD&EA Branch
1548 Mail Service Center
Raleigh, North Carolina 27699-1548
(919) 733-7844, ext. 223
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**If you have transportation questions on other projects,
call the NCDOT Customer Service Office toll-free at 1-877-DOT-4YOU.**

LENOIR COUNTY
Replacement of Bridge No. 9
Over Jericho Run
On NC 55
TIP PROJECT NO. B-4172



North Carolina Department of Transportation
Project Development and Environmental Analysis
1548 Mail Service Center
Raleigh NC 27699-1548



APPENDIX C
Routine Wetland Determination Data Forms

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: <u>B-4172, NC 55 over Jericho Run</u>	Date: <u>6/04/04</u>
Applicant/Owner: <u>NCDOT</u>	County: <u>Lenoir</u>
Investigator: <u>EcoScience Corporation / Scott Davis</u>	State: <u>NC</u>
Do Normal Circumstances exist on the site? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Community ID: <u>Disturbed/Maintained</u>
Is the site significantly disturbed (Atypical Situation)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Transect ID: <u>SA13</u>
Is the area a potential Problem Area? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Plot ID: <u>wetland</u>
(If needed, explain on reverse.)	

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. <u>Juncus effusus</u>	<u>H</u>	<u>FACW+</u>	9. _____	_____	_____
2. <u>Impatiens capensis</u>	<u>H</u>	<u>FACW</u>	10. _____	_____	_____
3. <u>Lemna sp.</u>	<u>H</u>	<u>OBL</u>	11. _____	_____	_____
4. _____	_____	_____	12. _____	_____	_____
5. _____	_____	_____	13. _____	_____	_____
6. _____	_____	_____	14. _____	_____	_____
7. _____	_____	_____	15. _____	_____	_____
8. _____	_____	_____	16. _____	_____	_____

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 100%

Remarks:

HYDROLOGY

<input type="checkbox"/> Recorded Data (Describe in Remarks): <input type="checkbox"/> Stream, Lake, or Tide Gauge <input type="checkbox"/> Aerial Photographs <input type="checkbox"/> Other <input type="checkbox"/> No Recorded Data Available	Wetland Hydrology Indicators: Primary Indicators: <input checked="" type="checkbox"/> Inundated <input checked="" type="checkbox"/> Saturated in Upper 12 Inches <input type="checkbox"/> Water Marks <input type="checkbox"/> Drift Lines <input type="checkbox"/> Sediment Deposits <input checked="" type="checkbox"/> Drainage Patterns in Wetlands Secondary Indicators (2 or more required): <input type="checkbox"/> Oxidized Root Channels in Upper 12 Inches <input type="checkbox"/> Water-Stained Leaves <input type="checkbox"/> Local Soil Survey Data <input type="checkbox"/> FAC-Neutral Test <input type="checkbox"/> Other (Explain in Remarks)
Field Observations: Depth of Surface Water: <u>4</u> (in.) Depth to Free Water in Pit: _____ (in.) Depth to Saturated Soil: _____ (in.)	
Remarks:	

SOILS

Map Unit Name (Series and Phase):		Kalmia loamy sand	Drainage Class:		WD
Taxonomy (Subgroup):		Typic Hapludults	Field Observations		
			Confirm Mapped Type?		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Profile Descriptions:					
Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions, Structure, etc,
0+		10yr 5/1			loamy sand
Hydric Soil Indicators:					
<input type="checkbox"/> Histosol			<input type="checkbox"/> Concretions		
<input type="checkbox"/> Histic Epipedon			<input type="checkbox"/> High Organic Content in Surface Layer in Sandy Soils		
<input checked="" type="checkbox"/> Sulfidic Odor			<input type="checkbox"/> Organic Streaking in Sandy Soils		
<input type="checkbox"/> Aquic Moisture Regime			<input type="checkbox"/> Listed on Local Hydric Soils List		
<input checked="" type="checkbox"/> Reducing Conditions			<input type="checkbox"/> Listed on National Hydric Soils List		
<input checked="" type="checkbox"/> Gleyed or Low-Chroma Colors			<input type="checkbox"/> Other (Explain in Remarks)		
Remarks:					

WETLAND DETERMINATION

Hydrophytic Vegetation Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No (Check)	
Wetland Hydrology Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	(Check)
Hydric Soils Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Is this Sampling Point Within a Wetland? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Remarks	

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: <u>B-4172, NC 55 over Jericho Run</u>	Date: <u>6/04/04</u>
Applicant/Owner: <u>NCDOT</u>	County: <u>Lenoir</u>
Investigator: <u>EcoScience Corporation / Scott Davis</u>	State: <u>NC</u>
Do Normal Circumstances exist on the site? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Community ID: <u>Disturbed/Maintained</u>
Is the site significantly disturbed (Atypical Situation)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Transect ID: <u>SA13</u>
Is the area a potential Problem Area? (If needed, explain on reverse.) <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Plot ID: <u>upland</u>

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. <u>Festuca sp.</u>	<u>H</u>	<u>-</u>	9. _____	_____	_____
2. <u>Taraxacum officinale</u>	<u>H</u>	<u>FACU</u>	10. _____	_____	_____
3. _____	_____	_____	11. _____	_____	_____
4. _____	_____	_____	12. _____	_____	_____
5. _____	_____	_____	13. _____	_____	_____
6. _____	_____	_____	14. _____	_____	_____
7. _____	_____	_____	15. _____	_____	_____
8. _____	_____	_____	16. _____	_____	_____

Percent of Dominant Species that are OBL, FACW or FAC
(excluding FAC-). <50%

Remarks:

HYDROLOGY

<input type="checkbox"/> Recorded Data (Describe in Remarks): <input type="checkbox"/> Stream, Lake, or Tide Gauge <input type="checkbox"/> Aerial Photographs <input type="checkbox"/> Other <input type="checkbox"/> No Recorded Data Available	Wetland Hydrology Indicators: Primary Indicators: <input type="checkbox"/> Inundated <input type="checkbox"/> Saturated in Upper 12 Inches <input type="checkbox"/> Water Marks <input type="checkbox"/> Drift Lines <input type="checkbox"/> Sediment Deposits <input type="checkbox"/> Drainage Patterns in Wetlands Secondary Indicators (2 or more required): <input type="checkbox"/> Oxidized Root Channels in Upper 12 Inches <input type="checkbox"/> Water-Stained Leaves <input type="checkbox"/> Local Soil Survey Data <input type="checkbox"/> FAC-Neutral Test <input type="checkbox"/> Other (Explain in Remarks)
Field Observations: Depth of Surface Water: <u>0</u> (in.) Depth to Free Water in Pit: <u>12+</u> (in.) Depth to Saturated Soil: <u>12+</u> (in.)	
Remarks:	

SOILS

Map Unit Name (Series and Phase):		Kalmia loamy sand	Drainage Class:	WD
Taxonomy (Subgroup):		Typic Hapludults	Field Observations	
			Confirm Mapped Type?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No

Profile Descriptions: Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions, Structure, etc.
0-3		10yr 4/2			loamy sand
3+		10yr 5/6			sandy loam

Hydric Soil Indicators:

<input type="checkbox"/> Histosol	<input type="checkbox"/> Concretions
<input type="checkbox"/> Histic Epipedon	<input type="checkbox"/> High Organic Content in Surface Layer in Sandy Soils
<input type="checkbox"/> Sulfidic Odor	<input type="checkbox"/> Organic Streaking in Sandy Soils
<input type="checkbox"/> Aquic Moisture Regime	<input type="checkbox"/> Listed on Local Hydric Soils List
<input type="checkbox"/> Reducing Conditions	<input type="checkbox"/> Listed on National Hydric Soils List
<input type="checkbox"/> Gleyed or Low-Chroma Colors	<input type="checkbox"/> Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No (Check)	(Check)
Wetland Hydrology Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
Hydric Soils Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Is this Sampling Point Within a Wetland? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Remarks	

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: <u>B-4172, NC 55 over Jericho Run</u>	Date: <u>6/04/04</u>
Applicant/Owner: <u>NCDOT</u>	County: <u>Lenoir</u>
Investigator: <u>EcoScience Corporation / Scott Davis</u>	State: <u>NC</u>
Do Normal Circumstances exist on the site? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Community ID: <u>Disturbed/Maintained</u>
Is the site significantly disturbed (Atypical Situation)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Transect ID: <u>SE04</u>
Is the area a potential Problem Area? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Plot ID: <u>wetland</u>
(If needed, explain on reverse.)	

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. <u>Impatiens capensis</u>	<u>H</u>	<u>FACW</u>	9. _____	_____	_____
2. _____	_____	_____	10. _____	_____	_____
3. _____	_____	_____	11. _____	_____	_____
4. _____	_____	_____	12. _____	_____	_____
5. _____	_____	_____	13. _____	_____	_____
6. _____	_____	_____	14. _____	_____	_____
7. _____	_____	_____	15. _____	_____	_____
8. _____	_____	_____	16. _____	_____	_____

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 100%

Remarks:

HYDROLOGY

<input type="checkbox"/> Recorded Data (Describe in Remarks): <input type="checkbox"/> Stream, Lake, or Tide Gauge <input type="checkbox"/> Aerial Photographs <input type="checkbox"/> Other <input type="checkbox"/> No Recorded Data Available	Wetland Hydrology Indicators: Primary Indicators: <input checked="" type="checkbox"/> Inundated <input type="checkbox"/> Saturated in Upper 12 Inches <input type="checkbox"/> Water Marks <input type="checkbox"/> Drift Lines <input type="checkbox"/> Sediment Deposits <input checked="" type="checkbox"/> Drainage Patterns in Wetlands Secondary Indicators (2 or more required): <input checked="" type="checkbox"/> Oxidized Root Channels in Upper 12 Inches <input type="checkbox"/> Water-Stained Leaves <input type="checkbox"/> Local Soil Survey Data <input type="checkbox"/> FAC-Neutral Test <input type="checkbox"/> Other (Explain in Remarks)
Field Observations: Depth of Surface Water: <u>2</u> (in.) Depth to Free Water in Pit: _____ (in.) Depth to Saturated Soil: _____ (in.)	
Remarks:	

SOILS

Map Unit Name (Series and Phase):		Johns sandy loam		Drainage Class:	SPD
Taxonomy (Subgroup):		Aquic Hapludults		Field Observations	
				Confirm Mapped Type?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No

Profile Descriptions:					
Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions, Structure, etc,
0-4		10yr 3/3			loamy sand
4+		10yr 4/1	10yr 4/6	25%	loamy sand

Hydric Soil Indicators:

<input type="checkbox"/> Histosol	<input type="checkbox"/> Concretions
<input type="checkbox"/> Histic Epipedon	<input type="checkbox"/> High Organic Content in Surface Layer in Sandy Soils
<input type="checkbox"/> Sulfidic Odor	<input type="checkbox"/> Organic Streaking in Sandy Soils
<input type="checkbox"/> Aquic Moisture Regime	<input type="checkbox"/> Listed on Local Hydric Soils List
<input checked="" type="checkbox"/> Reducing Conditions	<input type="checkbox"/> Listed on National Hydric Soils List
<input checked="" type="checkbox"/> Gleyed or Low-Chroma Colors	<input type="checkbox"/> Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No (Check)	(Check)
Wetland Hydrology Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
Hydric Soils Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Is this Sampling Point Within a Wetland? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Remarks	

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: <u>B-4172, NC 55 over Jericho Run</u>	Date: <u>6/04/04</u>
Applicant/Owner: <u>NCDOT</u>	County: <u>Lenoir</u>
Investigator: <u>EcoScience Corporation / Scott Davis</u>	State: <u>NC</u>
Do Normal Circumstances exist on the site? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Community ID: <u>Disturbed/Maintained</u>
Is the site significantly disturbed (Atypical Situation)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Transect ID: <u>SE04</u>
Is the area a potential Problem Area? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Plot ID: <u>upland</u>
(If needed, explain on reverse.)	

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. <u>Geranium carolinianum</u>	<u>H</u>	<u>-</u>	9. _____	_____	_____
2. <u>Festuca sp.</u>	<u>H</u>	<u>-</u>	10. _____	_____	_____
3. <u>Rosa multiflora</u>	<u>S</u>	<u>UPL</u>	11. _____	_____	_____
4. _____	_____	_____	12. _____	_____	_____
5. _____	_____	_____	13. _____	_____	_____
6. _____	_____	_____	14. _____	_____	_____
7. _____	_____	_____	15. _____	_____	_____
8. _____	_____	_____	16. _____	_____	_____

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). <66%

Remarks:

HYDROLOGY

<input type="checkbox"/> Recorded Data (Describe in Remarks): <input type="checkbox"/> Stream, Lake, or Tide Gauge <input type="checkbox"/> Aerial Photographs <input type="checkbox"/> Other <input type="checkbox"/> No Recorded Data Available	Wetland Hydrology Indicators: Primary Indicators: <input type="checkbox"/> Inundated <input type="checkbox"/> Saturated in Upper 12 Inches <input type="checkbox"/> Water Marks <input type="checkbox"/> Drift Lines <input type="checkbox"/> Sediment Deposits <input type="checkbox"/> Drainage Patterns in Wetlands Secondary Indicators (2 or more required): <input type="checkbox"/> Oxidized Root Channels in Upper 12 Inches <input type="checkbox"/> Water-Stained Leaves <input type="checkbox"/> Local Soil Survey Data <input type="checkbox"/> FAC-Neutral Test <input type="checkbox"/> Other (Explain in Remarks)
Field Observations: Depth of Surface Water: <u>0</u> (in.) Depth to Free Water in Pit: <u>12+</u> (in.) Depth to Saturated Soil: <u>12+</u> (in.)	
Remarks:	

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: <u>B-4172, NC 55 over Jericho Run</u>	Date: <u>6/04/04</u>
Applicant/Owner: <u>NCDOT</u>	County: <u>Lenoir</u>
Investigator: <u>EcoScience Corporation / Scott Davis</u>	State: <u>NC</u>
Do Normal Circumstances exist on the site? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Community ID: <u>Disturbed/Maintained</u>
Is the site significantly disturbed (Atypical Situation)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Transect ID: <u>CD02</u>
Is the area a potential Problem Area? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Plot ID: <u>wetland</u>
(If needed, explain on reverse.)	

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. <u>Juncus effusus</u>	<u>H</u>	<u>FACW+</u>	9. _____	_____	_____
2. <u>Typha angustifolia</u>	<u>H</u>	<u>OBL</u>	10. _____	_____	_____
3. <u>Boehmeria cylindrica</u>	<u>H</u>	<u>FACW+</u>	11. _____	_____	_____
4. <u>Platanus occidentalis</u>	<u>S</u>	<u>FACW</u>	12. _____	_____	_____
5. _____	_____	_____	13. _____	_____	_____
6. _____	_____	_____	14. _____	_____	_____
7. _____	_____	_____	15. _____	_____	_____
8. _____	_____	_____	16. _____	_____	_____

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 100%

Remarks:

HYDROLOGY

<input type="checkbox"/> Recorded Data (Describe in Remarks): <input type="checkbox"/> Stream, Lake, or Tide Gauge <input type="checkbox"/> Aerial Photographs <input type="checkbox"/> Other <input type="checkbox"/> No Recorded Data Available	Wetland Hydrology Indicators: Primary Indicators: <input type="checkbox"/> Inundated <input checked="" type="checkbox"/> Saturated in Upper 12 Inches <input type="checkbox"/> Water Marks <input type="checkbox"/> Drift Lines <input type="checkbox"/> Sediment Deposits <input checked="" type="checkbox"/> Drainage Patterns in Wetlands Secondary Indicators (2 or more required): <input checked="" type="checkbox"/> Oxidized Root Channels in Upper 12 Inches <input type="checkbox"/> Water-Stained Leaves <input type="checkbox"/> Local Soil Survey Data <input checked="" type="checkbox"/> FAC-Neutral Test <input type="checkbox"/> Other (Explain in Remarks)
Field Observations: Depth of Surface Water: <u>0</u> (in.) Depth to Free Water in Pit: <u>10</u> (in.) Depth to Saturated Soil: <u>0</u> (in.)	
Remarks:	

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: <u>B-4172, NC 55 over Jericho Run</u>	Date: <u>6/04/04</u>
Applicant/Owner: <u>NCDOT</u>	County: <u>Lenoir</u>
Investigator: <u>EcoScience Corporation / Scott Davis</u>	State: <u>NC</u>
Do Normal Circumstances exist on the site? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Community ID: <u>Disturbed/Maintained</u>
Is the site significantly disturbed (Atypical Situation)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Transect ID: <u>CD02</u>
Is the area a potential Problem Area? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Plot ID: <u>upland</u>
(If needed, explain on reverse.)	

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. <u>Eupatorium capillifolium</u>	<u>H</u>	<u>FACU</u>	9. _____	_____	_____
2. <u>Festuca sp.</u>	<u>H</u>	<u>-</u>	10. _____	_____	_____
3. <u>Taraxacum officinale</u>	<u>H</u>	<u>FACU</u>	11. _____	_____	_____
4. <u>Aster sp.</u>	<u>H</u>	<u>-</u>	12. _____	_____	_____
5. _____	_____	_____	13. _____	_____	_____
6. _____	_____	_____	14. _____	_____	_____
7. _____	_____	_____	15. _____	_____	_____
8. _____	_____	_____	16. _____	_____	_____

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). <50%

Remarks:

HYDROLOGY

<input type="checkbox"/> Recorded Data (Describe in Remarks): <input type="checkbox"/> Stream, Lake, or Tide Gauge <input type="checkbox"/> Aerial Photographs <input type="checkbox"/> Other <input type="checkbox"/> No Recorded Data Available	Wetland Hydrology Indicators: Primary Indicators: <input type="checkbox"/> Inundated <input type="checkbox"/> Saturated in Upper 12 Inches <input type="checkbox"/> Water Marks <input type="checkbox"/> Drift Lines <input type="checkbox"/> Sediment Deposits <input type="checkbox"/> Drainage Patterns in Wetlands Secondary Indicators (2 or more required): <input type="checkbox"/> Oxidized Root Channels in Upper 12 Inches <input type="checkbox"/> Water-Stained Leaves <input type="checkbox"/> Local Soil Survey Data <input type="checkbox"/> FAC-Neutral Test <input type="checkbox"/> Other (Explain in Remarks)
Field Observations: Depth of Surface Water: <u>0</u> (in.) Depth to Free Water in Pit: <u>12+</u> (in.) Depth to Saturated Soil: <u>12+</u> (in.)	
Remarks:	

SOILS

Map Unit Name (Series and Phase):		Johns sandy loam		Drainage Class:	SPD
Taxonomy (Subgroup):		Aquic Hapludults		Field Observations Confirm Mapped Type?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions, Structure, etc.
0+		2.5y 3/3			sandy loam

Hydric Soil Indicators:

<input type="checkbox"/> Histosol	<input type="checkbox"/> Concretions
<input type="checkbox"/> Histic Epipedon	<input type="checkbox"/> High Organic Content in Surface Layer in Sandy Soils
<input type="checkbox"/> Sulfidic Odor	<input type="checkbox"/> Organic Streaking in Sandy Soils
<input type="checkbox"/> Aquic Moisture Regime	<input type="checkbox"/> Listed on Local Hydric Soils List
<input type="checkbox"/> Reducing Conditions	<input type="checkbox"/> Listed on National Hydric Soils List
<input type="checkbox"/> Gleyed or Low-Chroma Colors	<input type="checkbox"/> Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No (Check) Wetland Hydrology Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Hydric Soils Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	(Check) Is this Sampling Point Within a Wetland? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Remarks	

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: <u>B-4172, NC 55 over Jericho Run</u>	Date: <u>6/04/04</u>
Applicant/Owner: <u>NCDOT</u>	County: <u>Lenoir</u>
Investigator: <u>EcoScience Corporation / Scott Davis</u>	State: <u>NC</u>
Do Normal Circumstances exist on the site? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Community ID: <u>Alluvial Forest</u>
Is the site significantly disturbed (Atypical Situation)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Transect ID: <u>SD08</u>
Is the area a potential Problem Area? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No (If needed, explain on reverse.)	Plot ID: <u>wetland</u>

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. <u>Juncus effusus</u>	<u>H</u>	<u>FACW+</u>	9. _____	_____	_____
2. <u>Saururus cernuus</u>	<u>H</u>	<u>OBL</u>	10. _____	_____	_____
3. <u>Alnus serrulata</u>	<u>S</u>	<u>FACW+</u>	11. _____	_____	_____
4. _____	_____	_____	12. _____	_____	_____
5. _____	_____	_____	13. _____	_____	_____
6. _____	_____	_____	14. _____	_____	_____
7. _____	_____	_____	15. _____	_____	_____
8. _____	_____	_____	16. _____	_____	_____

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 100%

Remarks:

HYDROLOGY

<input type="checkbox"/> Recorded Data (Describe in Remarks): <input type="checkbox"/> Stream, Lake, or Tide Gauge <input type="checkbox"/> Aerial Photographs <input type="checkbox"/> Other <input type="checkbox"/> No Recorded Data Available	Wetland Hydrology Indicators: Primary Indicators: <input type="checkbox"/> Inundated <input checked="" type="checkbox"/> Saturated in Upper 12 Inches <input checked="" type="checkbox"/> Water Marks <input type="checkbox"/> Drift Lines <input type="checkbox"/> Sediment Deposits <input checked="" type="checkbox"/> Drainage Patterns in Wetlands Secondary Indicators (2 or more required): <input checked="" type="checkbox"/> Oxidized Root Channels in Upper 12 Inches <input type="checkbox"/> Water-Stained Leaves <input type="checkbox"/> Local Soil Survey Data <input checked="" type="checkbox"/> FAC-Neutral Test <input type="checkbox"/> Other (Explain in Remarks)
Field Observations: Depth of Surface Water: <u>0</u> (in.) Depth to Free Water in Pit: <u>12+</u> (in.) Depth to Saturated Soil: <u>8</u> (in.)	
Remarks:	

SOILS

Map Unit Name (Series and Phase):		<u>Bibb soils (frequently flooded)</u>		Drainage Class:	<u>PD</u>
Taxonomy (Subgroup):		<u>Typic Fluvaquents</u>		Field Observations	
				Confirm Mapped Type?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions, Structure, etc.
<u>0-8</u>		<u>10yr 2/1</u>			<u>sandy loam</u>
<u>8+</u>		<u>10yr 4/1</u>	<u>10yr 4/2</u>	<u>40%</u>	<u>loamy sand</u>

Hydric Soil Indicators:

<input type="checkbox"/> Histosol	<input type="checkbox"/> Concretions
<input type="checkbox"/> Histic Epipedon	<input type="checkbox"/> High Organic Content in Surface Layer in Sandy Soils
<input type="checkbox"/> Sulfidic Odor	<input type="checkbox"/> Organic Streaking in Sandy Soils
<input type="checkbox"/> Aquic Moisture Regime	<input type="checkbox"/> Listed on Local Hydric Soils List
<input type="checkbox"/> Reducing Conditions	<input type="checkbox"/> Listed on National Hydric Soils List
<input checked="" type="checkbox"/> Gleyed or Low-Chroma Colors	<input type="checkbox"/> Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No (Check)	(Check)
Wetland Hydrology Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
Hydric Soils Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Is this Sampling Point Within a Wetland? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Remarks	

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: <u>B-4172, NC 55 over Jericho Run</u>	Date: <u>6/04/04</u>
Applicant/Owner: <u>NCDOT</u>	County: <u>Lenoir</u>
Investigator: <u>EcoScience Corporation / Scott Davis</u>	State: <u>NC</u>
Do Normal Circumstances exist on the site? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Community ID: <u>Disturbed/Maintained</u>
Is the site significantly disturbed (Atypical Situation)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Transect ID: <u>SD08</u>
Is the area a potential Problem Area? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No (If needed, explain on reverse.)	Plot ID: <u>upland</u>

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. <u>Acer rubrum</u>	<u>S</u>	<u>FAC</u>	9. _____	_____	_____
2. <u>Rubus sp.</u>	<u>S</u>	<u>-</u>	10. _____	_____	_____
3. <u>Ligustrum sinense</u>	<u>S</u>	<u>FAC</u>	11. _____	_____	_____
4. <u>Eupatorium capillifolium</u>	<u>H</u>	<u>FACU</u>	12. _____	_____	_____
5. <u>Vitis rotundifolia</u>	<u>V</u>	<u>FAC</u>	13. _____	_____	_____
6. _____	_____	_____	14. _____	_____	_____
7. _____	_____	_____	15. _____	_____	_____
8. _____	_____	_____	16. _____	_____	_____

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). <80%

Remarks:

HYDROLOGY

<input type="checkbox"/> Recorded Data (Describe in Remarks): <input type="checkbox"/> Stream, Lake, or Tide Gauge <input type="checkbox"/> Aerial Photographs <input type="checkbox"/> Other <input type="checkbox"/> No Recorded Data Available	Wetland Hydrology Indicators: Primary Indicators: <input type="checkbox"/> Inundated <input type="checkbox"/> Saturated in Upper 12 Inches <input type="checkbox"/> Water Marks <input type="checkbox"/> Drift Lines <input type="checkbox"/> Sediment Deposits <input type="checkbox"/> Drainage Patterns in Wetlands Secondary Indicators (2 or more required): <input type="checkbox"/> Oxidized Root Channels in Upper 12 Inches <input type="checkbox"/> Water-Stained Leaves <input type="checkbox"/> Local Soil Survey Data <input type="checkbox"/> FAC-Neutral Test <input type="checkbox"/> Other (Explain in Remarks)
Field Observations: Depth of Surface Water: <u>0</u> (in.) Depth to Free Water in Pit: <u>12+</u> (in.) Depth to Saturated Soil: <u>12+</u> (in.)	
Remarks:	

SOILS

Map Unit Name (Series and Phase):		<u>Bibb soils (frequently flooded)</u>		Drainage Class:	<u>PD</u>
Taxonomy (Subgroup):		<u>Typic Fluvaquents</u>		Field Observations Confirm Mapped Type?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No

Profile Descriptions: Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions, Structure, etc.
0-6		10yr 2/2			sandy loam
6+		10yr 4/3			loamy sand

Hydric Soil Indicators:

<input type="checkbox"/> Histosol	<input type="checkbox"/> Concretions
<input type="checkbox"/> Histic Epipedon	<input type="checkbox"/> High Organic Content in Surface Layer in Sandy Soils
<input type="checkbox"/> Sulfidic Odor	<input type="checkbox"/> Organic Streaking in Sandy Soils
<input type="checkbox"/> Aquic Moisture Regime	<input type="checkbox"/> Listed on Local Hydric Soils List
<input type="checkbox"/> Reducing Conditions	<input type="checkbox"/> Listed on National Hydric Soils List
<input type="checkbox"/> Gleyed or Low-Chroma Colors	<input type="checkbox"/> Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No (Check)	(Check)
Wetland Hydrology Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
Hydric Soils Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Is this Sampling Point Within a Wetland? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No

Remarks

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: <u>B-4172, NC 55 over Jericho Run</u>	Date: <u>6/04/04</u>
Applicant/Owner: <u>NCDOT</u>	County: <u>Lenoir</u>
Investigator: <u>EcoScience Corporation / Scott Davis</u>	State: <u>NC</u>
Do Normal Circumstances exist on the site? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Community ID: <u>Alluvial Forest</u>
Is the site significantly disturbed (Atypical Situation)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Transect ID: <u>SG08</u>
Is the area a potential Problem Area? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No (If needed, explain on reverse.)	Plot ID: <u>wetland</u>

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. <u>Juncus effusus</u>	<u>H</u>	<u>FACW+</u>	9. _____	_____	_____
2. <u>Saururus cernuus</u>	<u>H</u>	<u>OBL</u>	10. _____	_____	_____
3. _____	_____	_____	11. _____	_____	_____
4. _____	_____	_____	12. _____	_____	_____
5. _____	_____	_____	13. _____	_____	_____
6. _____	_____	_____	14. _____	_____	_____
7. _____	_____	_____	15. _____	_____	_____
8. _____	_____	_____	16. _____	_____	_____

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 100%

Remarks:

HYDROLOGY

<input type="checkbox"/> Recorded Data (Describe in Remarks): <input type="checkbox"/> Stream, Lake, or Tide Gauge <input type="checkbox"/> Aerial Photographs <input type="checkbox"/> Other <input type="checkbox"/> No Recorded Data Available	Wetland Hydrology Indicators: Primary Indicators: <input type="checkbox"/> Inundated <input checked="" type="checkbox"/> Saturated in Upper 12 Inches <input checked="" type="checkbox"/> Water Marks <input type="checkbox"/> Drift Lines <input type="checkbox"/> Sediment Deposits <input checked="" type="checkbox"/> Drainage Patterns in Wetlands Secondary Indicators (2 or more required): <input checked="" type="checkbox"/> Oxidized Root Channels in Upper 12 Inches <input type="checkbox"/> Water-Stained Leaves <input type="checkbox"/> Local Soil Survey Data <input checked="" type="checkbox"/> FAC-Neutral Test <input type="checkbox"/> Other (Explain in Remarks)
Field Observations: Depth of Surface Water: <u>0</u> (in.) Depth to Free Water in Pit: <u>12+</u> (in.) Depth to Saturated Soil: <u>8</u> (in.)	
Remarks:	

SOILS

Map Unit Name (Series and Phase):		<u>Norfolk loamy sand (6-10% slopes)</u>		Drainage Class:	<u>WD</u>
Taxonomy (Subgroup):		<u>Typic Paleudults</u>		Field Observations	
				Confirm Mapped Type?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No

Profile Descriptions:	Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions, Structure, etc.
	<u>0-8</u>		<u>10yr 2/1</u>			<u>sandy loam</u>
	<u>8+</u>		<u>10yr 4/1</u>	<u>10yr 4/2</u>	<u>40%</u>	<u>loamy sand</u>

Hydric Soil Indicators:

<input type="checkbox"/> Histosol	<input type="checkbox"/> Concretions
<input type="checkbox"/> Histic Epipedon	<input type="checkbox"/> High Organic Content in Surface Layer in Sandy Soils
<input type="checkbox"/> Sulfidic Odor	<input type="checkbox"/> Organic Streaking in Sandy Soils
<input type="checkbox"/> Aquic Moisture Regime	<input type="checkbox"/> Listed on Local Hydric Soils List
<input type="checkbox"/> Reducing Conditions	<input type="checkbox"/> Listed on National Hydric Soils List
<input checked="" type="checkbox"/> Gleyed or Low-Chroma Colors	<input type="checkbox"/> Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No (Check)	(Check)
Wetland Hydrology Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
Hydric Soils Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Is this Sampling Point Within a Wetland? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No

Remarks

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: <u>B-4172, NC 55 over Jericho Run</u>	Date: <u>6/04/04</u>
Applicant/Owner: <u>NCDOT</u>	County: <u>Lenoir</u>
Investigator: <u>EcoScience Corporation / Scott Davis</u>	State: <u>NC</u>
Do Normal Circumstances exist on the site? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Community ID: <u>Disturbed/Maintained</u>
Is the site significantly disturbed (Atypical Situation)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Transect ID: <u>SG08</u>
Is the area a potential Problem Area? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No (If needed, explain on reverse.)	Plot ID: <u>upland</u>

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. <u>Acer rubrum</u>	<u>S</u>	<u>FAC</u>	9. _____	_____	_____
2. <u>Eupatorium capillifolium</u>	<u>H</u>	<u>FACU</u>	10. _____	_____	_____
3. <u>Ligustrum sinense</u>	<u>S</u>	<u>FAC</u>	11. _____	_____	_____
4. <u>Vitis rotundifolia</u>	<u>V</u>	<u>FAC</u>	12. _____	_____	_____
5. _____	_____	_____	13. _____	_____	_____
6. _____	_____	_____	14. _____	_____	_____
7. _____	_____	_____	15. _____	_____	_____
8. _____	_____	_____	16. _____	_____	_____

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). <75%

Remarks:

HYDROLOGY

<input type="checkbox"/> Recorded Data (Describe in Remarks): <input type="checkbox"/> Stream, Lake, or Tide Gauge <input type="checkbox"/> Aerial Photographs <input type="checkbox"/> Other <input type="checkbox"/> No Recorded Data Available	Wetland Hydrology Indicators: Primary Indicators: <input type="checkbox"/> Inundated <input type="checkbox"/> Saturated in Upper 12 Inches <input type="checkbox"/> Water Marks <input type="checkbox"/> Drift Lines <input type="checkbox"/> Sediment Deposits <input type="checkbox"/> Drainage Patterns in Wetlands Secondary Indicators (2 or more required): <input type="checkbox"/> Oxidized Root Channels in Upper 12 Inches <input type="checkbox"/> Water-Stained Leaves <input type="checkbox"/> Local Soil Survey Data <input type="checkbox"/> FAC-Neutral Test <input type="checkbox"/> Other (Explain in Remarks)
Field Observations: Depth of Surface Water: <u>0</u> (in.) Depth to Free Water in Pit: <u>12+</u> (in.) Depth to Saturated Soil: <u>12+</u> (in.)	
Remarks:	

SOILS

Map Unit Name (Series and Phase):		<u>Norfolk loamy sand (6-10% slopes)</u>		Drainage Class:	<u>WD</u>
Taxonomy (Subgroup):		<u>Typic Paleudults</u>		Field Observations	
				Confirm Mapped Type?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No

Profile Descriptions:					
Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions, Structure, etc.
0-6		10yr 2/2			sandy loam
6+		10yr 4/3			loamy sand

Hydric Soil Indicators:

<input type="checkbox"/> Histosol	<input type="checkbox"/> Concretions
<input type="checkbox"/> Histic Epipedon	<input type="checkbox"/> High Organic Content in Surface Layer in Sandy Soils
<input type="checkbox"/> Sulfidic Odor	<input type="checkbox"/> Organic Streaking in Sandy Soils
<input type="checkbox"/> Aquic Moisture Regime	<input type="checkbox"/> Listed on Local Hydric Soils List
<input type="checkbox"/> Reducing Conditions	<input type="checkbox"/> Listed on National Hydric Soils List
<input type="checkbox"/> Gleyed or Low-Chroma Colors	<input type="checkbox"/> Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No (Check)	(Check)
Wetland Hydrology Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
Hydric Soils Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Is this Sampling Point Within a Wetland? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No

Remarks

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: <u>B-4172, NC 55 over Jericho Run</u>	Date: <u>6/04/04</u>
Applicant/Owner: <u>NCDOT</u>	County: <u>Lenoir</u>
Investigator: <u>EcoScience Corporation / Scott Davis</u>	State: <u>NC</u>
Do Normal Circumstances exist on the site? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Community ID: <u>DisturbedPine/Hardwood Forest</u>
Is the site significantly disturbed (Atypical Situation)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
Is the area a potential Problem Area? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
(If needed, explain on reverse.)	Transect ID: <u>CF01</u>
	Plot ID: <u>wetland</u>

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. <u>Impatiens capensis</u>	<u>H</u>	<u>FACW</u>	9. _____	_____	_____
2. <u>Juncus effusus</u>	<u>H</u>	<u>FACW+</u>	10. _____	_____	_____
3. _____	_____	_____	11. _____	_____	_____
4. _____	_____	_____	12. _____	_____	_____
5. _____	_____	_____	13. _____	_____	_____
6. _____	_____	_____	14. _____	_____	_____
7. _____	_____	_____	15. _____	_____	_____
8. _____	_____	_____	16. _____	_____	_____

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 100%

Remarks:

HYDROLOGY

<input type="checkbox"/> Recorded Data (Describe in Remarks): <input type="checkbox"/> Stream, Lake, or Tide Gauge <input type="checkbox"/> Aerial Photographs <input type="checkbox"/> Other <input type="checkbox"/> No Recorded Data Available	Wetland Hydrology Indicators: Primary Indicators: <input type="checkbox"/> Inundated <input checked="" type="checkbox"/> Saturated in Upper 12 Inches <input checked="" type="checkbox"/> Water Marks <input type="checkbox"/> Drift Lines <input type="checkbox"/> Sediment Deposits <input type="checkbox"/> Drainage Patterns in Wetlands Secondary Indicators (2 or more required): <input checked="" type="checkbox"/> Oxidized Root Channels in Upper 12 Inches <input checked="" type="checkbox"/> Water-Stained Leaves <input type="checkbox"/> Local Soil Survey Data <input checked="" type="checkbox"/> FAC-Neutral Test <input type="checkbox"/> Other (Explain in Remarks)
Field Observations: Depth of Surface Water: <u>0</u> (in.) Depth to Free Water in Pit: <u>12+</u> (in.) Depth to Saturated Soil: <u>8</u> (in.)	
Remarks:	

SOILS

Map Unit Name (Series and Phase):		Johns sandy loam	Drainage Class:	SPD
Taxonomy (Subgroup):		Aquic Hapludults	Field Observations	
			Confirm Mapped Type?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No

Profile Descriptions: Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions, Structure, etc.
0-12		10yr 2/1			loamy sand

Hydric Soil Indicators:

<input type="checkbox"/> Histosol	<input type="checkbox"/> Concretions
<input type="checkbox"/> Histic Epipedon	<input type="checkbox"/> High Organic Content in Surface Layer in Sandy Soils
<input type="checkbox"/> Sulfidic Odor	<input type="checkbox"/> Organic Streaking in Sandy Soils
<input type="checkbox"/> Aquic Moisture Regime	<input type="checkbox"/> Listed on Local Hydric Soils List
<input type="checkbox"/> Reducing Conditions	<input type="checkbox"/> Listed on National Hydric Soils List
<input checked="" type="checkbox"/> Gleyed or Low-Chroma Colors	<input type="checkbox"/> Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No (Check)	(Check)
Wetland Hydrology Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
Hydric Soils Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Is this Sampling Point Within a Wetland? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Remarks	

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: <u>B-4172, NC 55 over Jericho Run</u>	Date: <u>6/04/04</u>
Applicant/Owner: <u>NCDOT</u>	County: <u>Lenoir</u>
Investigator: <u>EcoScience Corporation / Scott Davis</u>	State: <u>NC</u>
Do Normal Circumstances exist on the site? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Community ID: <u>Disturbed Pine/Hardwood Forest</u>
Is the site significantly disturbed (Atypical Situation)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
Is the area a potential Problem Area? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
(If needed, explain on reverse.)	Transect ID: <u>CF01</u>
	Plot ID: <u>upland</u>

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. <u>Liriodendron tulipifera</u>	<u>C</u>	<u>FAC</u>	9. _____	_____	_____
2. <u>Pinus taeda</u>	<u>C</u>	<u>FAC</u>	10. _____	_____	_____
3. <u>Phyllostachys aurea</u>	<u>S</u>	<u>-</u>	11. _____	_____	_____
4. <u>Parthenocissus quinquefolia</u>	<u>V</u>	<u>FAC</u>	12. _____	_____	_____
5. _____	_____	_____	13. _____	_____	_____
6. _____	_____	_____	14. _____	_____	_____
7. _____	_____	_____	15. _____	_____	_____
8. _____	_____	_____	16. _____	_____	_____

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). <100%

Remarks:

HYDROLOGY

<input type="checkbox"/> Recorded Data (Describe in Remarks): <input type="checkbox"/> Stream, Lake, or Tide Gauge <input type="checkbox"/> Aerial Photographs <input type="checkbox"/> Other <input type="checkbox"/> No Recorded Data Available	Wetland Hydrology Indicators: Primary Indicators: <input type="checkbox"/> Inundated <input type="checkbox"/> Saturated in Upper 12 Inches <input type="checkbox"/> Water Marks <input type="checkbox"/> Drift Lines <input type="checkbox"/> Sediment Deposits <input type="checkbox"/> Drainage Patterns in Wetlands Secondary Indicators (2 or more required): <input type="checkbox"/> Oxidized Root Channels in Upper 12 Inches <input type="checkbox"/> Water-Stained Leaves <input type="checkbox"/> Local Soil Survey Data <input type="checkbox"/> FAC-Neutral Test <input type="checkbox"/> Other (Explain in Remarks)
Field Observations: Depth of Surface Water: <u>0</u> (in.) Depth to Free Water in Pit: <u>12+</u> (in.) Depth to Saturated Soil: <u>12+</u> (in.)	
Remarks:	

SOILS

Map Unit Name (Series and Phase):		Johns sandy loam	Drainage Class:	SPD
Taxonomy (Subgroup):		Aquic Hapludults	Field Observations Confirm Mapped Type?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No

Profile Descriptions:	Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions, Structure, etc,
	0-6		2.5y 2/2			sandy loam
	6+		10yr 5/3			loamy sand

Hydric Soil Indicators:

<input type="checkbox"/> Histosol	<input type="checkbox"/> Concretions
<input type="checkbox"/> Histic Epipedon	<input type="checkbox"/> High Organic Content in Surface Layer in Sandy Soils
<input type="checkbox"/> Sulfidic Odor	<input type="checkbox"/> Organic Streaking in Sandy Soils
<input type="checkbox"/> Aquic Moisture Regime	<input type="checkbox"/> Listed on Local Hydric Soils List
<input type="checkbox"/> Reducing Conditions	<input type="checkbox"/> Listed on National Hydric Soils List
<input type="checkbox"/> Gleyed or Low-Chroma Colors	<input type="checkbox"/> Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No (Check) Wetland Hydrology Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Hydric Soils Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	(Check) Is this Sampling Point Within a Wetland? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Remarks	

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: <u>B-4172, NC 55 over Jericho Run</u>	Date: <u>6/04/04</u>
Applicant/Owner: <u>NCDOT</u>	County: <u>Lenoir</u>
Investigator: <u>EcoScience Corporation / Scott Davis</u>	State: <u>NC</u>
Do Normal Circumstances exist on the site? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Community ID: <u>DisturbedPine/Hardwood Forest</u>
Is the site significantly disturbed (Atypical Situation)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
Is the area a potential Problem Area? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
(If needed, explain on reverse.)	Transect ID: <u>CE04</u>
	Plot ID: <u>wetland</u>

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. <u>Impatiens capensis</u>	<u>H</u>	<u>FACW</u>	9. _____	_____	_____
2. <u>Juncus effusus</u>	<u>H</u>	<u>FACW+</u>	10. _____	_____	_____
3. <u>Typha latifolia</u>	<u>H</u>	<u>OBL</u>	11. _____	_____	_____
4. <u>Saururus cernuus</u>	<u>H</u>	<u>OBL</u>	12. _____	_____	_____
5. <u>Salix nigra</u>	<u>S</u>	<u>OBL</u>	13. _____	_____	_____
6. <u>Alternanthera philoxeroides</u>	<u>H</u>	<u>OBL</u>	14. _____	_____	_____
7. <u>Hydrocotyle umbellata</u>	<u>H</u>	<u>OBL</u>	15. _____	_____	_____
8. _____	_____	_____	16. _____	_____	_____

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 100%

Remarks:

HYDROLOGY

<input type="checkbox"/> Recorded Data (Describe in Remarks): <input type="checkbox"/> Stream, Lake, or Tide Gauge <input type="checkbox"/> Aerial Photographs <input type="checkbox"/> Other <input type="checkbox"/> No Recorded Data Available	Wetland Hydrology Indicators: Primary Indicators: <input checked="" type="checkbox"/> Inundated <input type="checkbox"/> Saturated in Upper 12 Inches <input checked="" type="checkbox"/> Water Marks <input type="checkbox"/> Drift Lines <input type="checkbox"/> Sediment Deposits <input checked="" type="checkbox"/> Drainage Patterns in Wetlands Secondary Indicators (2 or more required): <input type="checkbox"/> Oxidized Root Channels in Upper 12 Inches <input checked="" type="checkbox"/> Water-Stained Leaves <input type="checkbox"/> Local Soil Survey Data <input checked="" type="checkbox"/> FAC-Neutral Test <input type="checkbox"/> Other (Explain in Remarks)
Field Observations: Depth of Surface Water: <u>4-18</u> (in.) Depth to Free Water in Pit: <u>0</u> (in.) Depth to Saturated Soil: <u>0</u> (in.)	
Remarks:	

SOILS

Map Unit Name (Series and Phase):		Johns sandy loam		Drainage Class:	SPD
Taxonomy (Subgroup):		Aquic Hapludults		Field Observations	
				Confirm Mapped Type?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No

Profile Descriptions:	Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions, Structure, etc,
	0-12		10yr 2/1			loamy sand

Hydric Soil Indicators:

<input type="checkbox"/> Histosol	<input type="checkbox"/> Concretions
<input type="checkbox"/> Histic Epipedon	<input type="checkbox"/> High Organic Content in Surface Layer in Sandy Soils
<input checked="" type="checkbox"/> Sulfidic Odor	<input type="checkbox"/> Organic Streaking in Sandy Soils
<input type="checkbox"/> Aquic Moisture Regime	<input type="checkbox"/> Listed on Local Hydric Soils List
<input checked="" type="checkbox"/> Reducing Conditions	<input type="checkbox"/> Listed on National Hydric Soils List
<input checked="" type="checkbox"/> Gleyed or Low-Chroma Colors	<input type="checkbox"/> Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No (Check)	(Check)
Wetland Hydrology Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
Hydric Soils Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Is this Sampling Point Within a Wetland? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Remarks	

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: <u>B-4172, NC 55 over Jericho Run</u>	Date: <u>6/04/04</u>
Applicant/Owner: <u>NCDOT</u>	County: <u>Lenoir</u>
Investigator: <u>EcoScience Corporation / Scott Davis</u>	State: <u>NC</u>
Do Normal Circumstances exist on the site? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Community ID: <u>Disturbed Pine/Hardwood Forest</u>
Is the site significantly disturbed (Atypical Situation)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Transect ID: <u>CE04</u>
Is the area a potential Problem Area? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No (If needed, explain on reverse.)	Plot ID: <u>upland</u>

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. <u>Geranium carolinum</u>	<u>H</u>	<u>-</u>	9. _____	_____	_____
2. <u>Toxicodendron radicans</u>	<u>H</u>	<u>FAC</u>	10. _____	_____	_____
3. <u>Phyllostachys aurea</u>	<u>S</u>	<u>-</u>	11. _____	_____	_____
4. <u>Parthenocissus quinquefolia</u>	<u>V</u>	<u>FAC</u>	12. _____	_____	_____
5. <u>Festuca sp.</u>	<u>H</u>	<u>-</u>	13. _____	_____	_____
6. _____	_____	_____	14. _____	_____	_____
7. _____	_____	_____	15. _____	_____	_____
8. _____	_____	_____	16. _____	_____	_____

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). <100%

Remarks:

HYDROLOGY

<input type="checkbox"/> Recorded Data (Describe in Remarks): <input type="checkbox"/> Stream, Lake, or Tide Gauge <input type="checkbox"/> Aerial Photographs <input type="checkbox"/> Other <input type="checkbox"/> No Recorded Data Available	Wetland Hydrology Indicators: Primary Indicators: <input type="checkbox"/> Inundated <input type="checkbox"/> Saturated in Upper 12 Inches <input type="checkbox"/> Water Marks <input type="checkbox"/> Drift Lines <input type="checkbox"/> Sediment Deposits <input type="checkbox"/> Drainage Patterns in Wetlands Secondary Indicators (2 or more required): <input type="checkbox"/> Oxidized Root Channels in Upper 12 Inches <input type="checkbox"/> Water-Stained Leaves <input type="checkbox"/> Local Soil Survey Data <input type="checkbox"/> FAC-Neutral Test <input type="checkbox"/> Other (Explain in Remarks)
Field Observations: Depth of Surface Water: <u>0</u> (in.) Depth to Free Water in Pit: <u>12+</u> (in.) Depth to Saturated Soil: <u>12+</u> (in.)	
Remarks:	

