STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

MICHAEL F. EASLEY
GOVERNOR

LYNDO TIPPETT
SECRETARY

April 25, 2008

U. S. Army Corps of Engineers
Regulatory Field Office
Post Office Box 1890
Wilmington, NC 28402-1890

ATTN: Mr. Richard Spencer
NCDOT Coordinator

Dear Sir:

Subject: **Application for Section 404 Nationwide Permit 23 and Section 401 Water Quality Certification,** for the Replacement of Bridge No. 148 over Pine Log Branch and Pine Log Swamp on SR 1437, Columbus County; State Project No. 8.2430901; WBS 33442.1.1; TIP No. B-4080.

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 May 3, 2006, and distributed shortly thereafter. Additional copies are available upon request.

The North Carolina Department of Transportation proposes to replace existing Bridge No. 148 over Pine Log Branch and Pine Log Swamp on SR 1437 in Columbus County. The project involves replacing the existing two span 37-foot bridge on the existing location, with a three-span cored slab bridge approximately 125 feet long and 36 feet wide using top down construction. Traffic will be maintained with an off-site detour during construction. Proposed permanent impacts to wetlands will be 0.09 acre and temporary impacts will be 0.05 acre.

Impacts to Waters of the United States

General Description: Pine Log Branch and Pine Log Swamp are the only water resources within the study area and are located in the Lumber River Drainage Basin, Subbasin 03-07-58. Pine Log Branch and Pine Log Swamp [SIN 15-4-8-7] have been assigned a Best Usage Classification (BUC) of C and Sw (Hydrologic Unit 03040203). Water resources are not designated as a North Carolina Natural or Scenic River, or as a National Wild and Scenic River. No designated High Quality Waters (HQW), Water Supply I (WS-I), or Water Supply II (WS-II)

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

TELEPHONE: 919-715-1334
FAX: 919-715-1501
WEBSITE: WWW.DOH.DOT.STATE.NC.US

LOCATION:
PARKER LINCOLN BUILDING
2728 CAPITAL BLVD. SUITE 240
RALEIGH NC 27604

waters occur within 1.0 mile of the project study area. Pine Log Branch and Pine Log Swamp are not listed on the Final 2006 303(d) list of impaired waters due to sedimentation for the Lumber River Basin, nor does it drain into any Section 303(d) waters within 1.0 mile of the project study area.

Permanent Impacts: NCDOT anticipates permanent impacts for this project. There will be 0.09 acre of permanent fill in riverine wetlands due to widening the road at the bridge approach. There will be no permanent impacts to surface waters.

Temporary Impacts: There will be 0.05 acre of temporary fill in wetlands in the hand clearing areas for the installation of erosion control measures, including some or all of the following: Temporary Silt Fence, Special Sediment Control Fence, and Temporary Rock Silt Checks.

Hand Clearing: There will be 0.19 acre of hand clearing in riverine wetlands.

Utility Impacts: There will be no utility impacts associated with this project.

Bridge Demolition: The existing structure is approximately 37 feet long and 24 feet wide. The superstructure consists of two spans of reinforced concrete deck on I beam supports. The existing substructure consists of reinforced concrete caps on timber. No bridge components will be dropped into Waters of the United States during demolition.

Avoidance and Minimization

NCDOT has minimized impacts to the fullest extent possible. Minimization efforts include:

- Using top down construction to eliminate the need for a temporary work pad.
- Using hand clearing instead of mechanized clearing to prevent ground disturbance.
- Keeping bents out of the center of the stream channel.
- Using 3:1 fill slopes when practicable.
- In compliance with 15A NCAC 02B.0104(m) we have incorporated the use of BMP's for the Protection of Surface Water in the design of the project.
- No temporary fill will enter Waters of the United States during bridge demolition and removal. Best Management Practices (BMP's) for Bridge Demolition and Removal will be implemented.

Mitigation

No mitigation is proposed for the minimal permanent wetland impacts.

Federally Protected Species

As of January 17, 2008, the U.S. Fish and Wildlife Service (FWS) lists seven protected species for Columbus County (Table 2). No habitat was found for any of the listed species within the project study area, therefore a biological conclusion of "no effect" was listed for all species. A review of the NC Natural Heritage Program database (Updated January 17, 2008) on April 23, 2008 found there to be no occurrence of federally listed or state listed species within the project study area.

Table 2. Federally Protected Species for Columbus County

Common Name	Scientific Name	Federal Status	Habitat	Biological Conclusion
American alligator	*Alligator mississippiensis*	T (S/A)	No Habitat	Not Applicable
Red-cockaded woodpecker	*Picoides borealis*	E	No Habitat	No Effect
Shortnose sturgeon	*Acipenser brevirostrum*	E	No Habitat	No Effect
Waccamaw silverside	*Menidia extensa*	T	No Habitat	No Effect
Wood stork	*Mycteria americana*	E	No Habitat	No Effect
Cooley's meadowrue	*Thalictrum cooleyi*	E	No Habitat	No Effect
Rough-leaved loosestrife	*Lysimachia asperulaefolia*	E	No Habitat	No Effect

T(S/A) – threatened due to similarity of appearance
E – endangered
T - threatened

Bald Eagle

The bald eagle (*Haliaeetus leucocephalus*) was delisted from the Endangered Species List as of August 8, 2007. However, it is still protected under the Bald and Golden Eagle Protection Act. A survey conducted on August 8, 2007 found no bald eagle habitat within 660 feet of the project area.

Project Schedule

The project schedule calls for November 18, 2008 let with a review date of October 7, 2008.

Regulatory Approvals

Section 404 Permit: All aspects of this project are being processed by the Federal Highway Administration as a "Categorical Exclusion" in accordance with 23 CFR 771.115(b). The NCDOT requests that these activities be authorized by a Nationwide Permit 23 (72 CFR; 11092-11198, March 12, 2007).

Section 401 Water Quality Certification: We anticipate 401 General Certification number 3701 will apply to this project. All general conditions of the Water Quality Certifications will be met. Therefore, we are not asking for written concurrence. In accordance with 15A NCAC 2H, Section .0500(a), we are providing two copies of this application to the NCDWQ for their records.

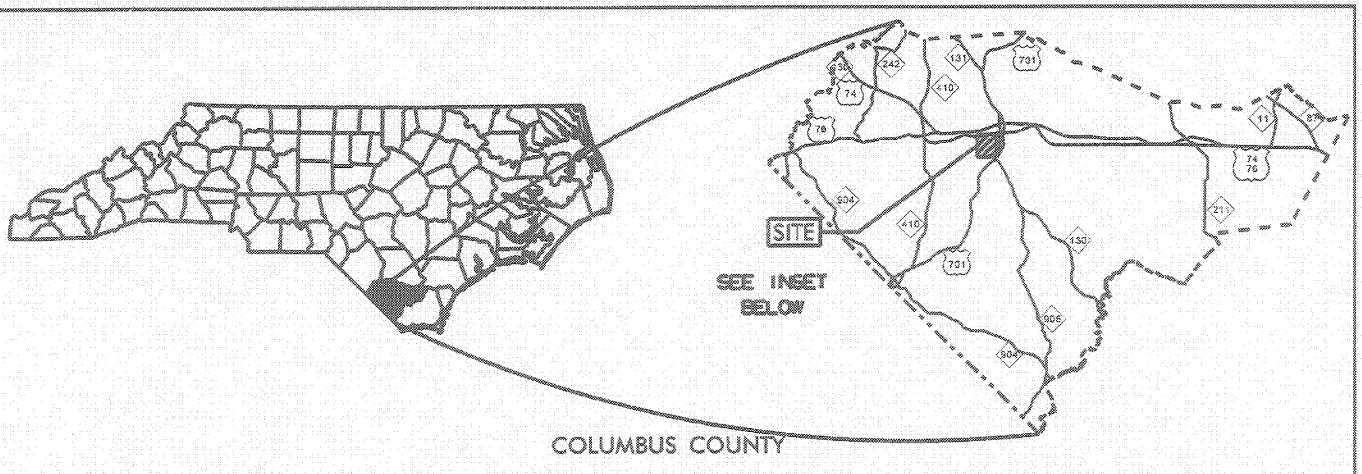
If there are any questions, please contact Ms. Megan Willis of my staff at mswillis@dot.state.nc.us or (919) 715-1341.

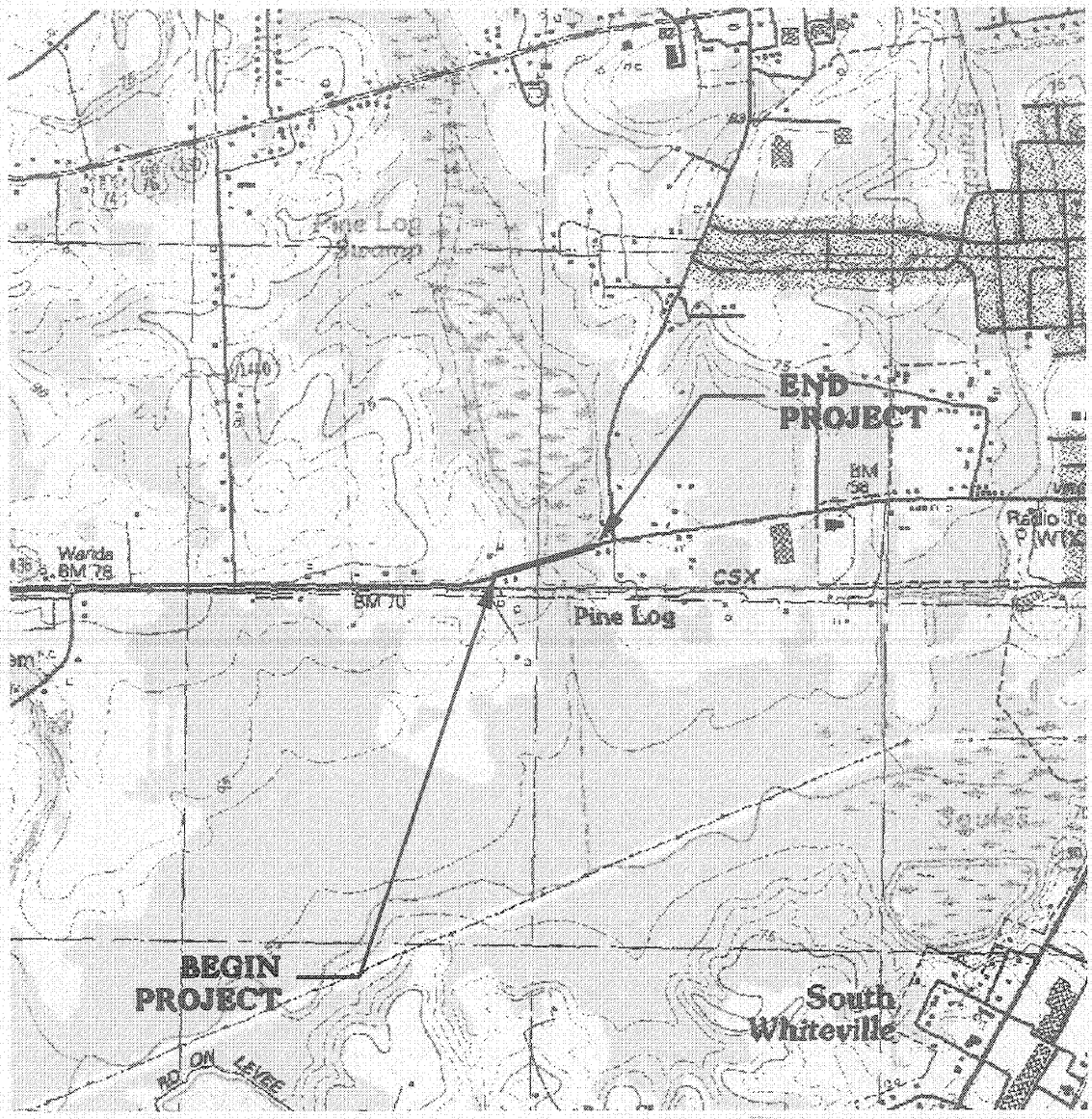
A copy of this permit application will be posted on the DOT website at: http://www.ncdot.org/doh/preconstruct/pe/neu/permit.html.

Sincerely,

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

Cc:
w/attachment
Mr. Brian Wrenn, NCDWQ (2 copies)
Mr. Travis Wilson, NCWRC
Mr. Gary Jordan, USFWS
Ms. Jeanne Hardy, NCDMF
Mr. Ron Sechler, NMFS
w/o attachment (see website for attachments)
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. Terry Gibson, P.E, Division 6 Engineer
Mr. Jim Rerko, Division 6 Environmental Officer
Mr. Jay Bennett, P.E., Roadway Design
Mr. Majed Alghandour, P. E., Programming and TIP
Mr. Art McMillan, P.E., Highway Design
Mr. Scott McLendon, USACE, Wilmington
Mr. Vince Rhea, P.E., PDEA





WETLAND IMPACTS
VICINITY MAP

Permit Drawing
Sheet 1 of 8

N.C. DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS

COLUMBUS COUNTY

PROJECT:33442.1.1 (B-4080)
BRIDGE NO.148 OVER
PINE LOG SWAMP ON
SR 1457

SHEET ____ OF ____ **12/28/07**

PROPERTY OWNERS

NAMES AND ADDRESSES

PARCEL NO.	NAMES	ADDRESSES
1	MARGARET WARD (HERMAN N. WARD JR)	4615 ENO CEMETARY CEDAR GROVE, NC 27231

Permit Drawing
Sheet 2 of 8

NCDOT
DIVISION OF HIGHWAYS

COLUMBUS COUNTY

PROJECT: 33442.1.1 (B-4080)
BRIDGE NO. 148 OVER PINE LOG SWAMP ON SR 1437

SHEET OF 12/28/07

WETLAND PERMIT IMPACT SUMMARY

			WETLAND IMPACTS					SURFACE WATER IMPACTS				
Site No.	Station (From/To)	Structure Size / Type	Permanent Fill In Wetlands (ac)	Temp. Fill In Wetlands (ac)	Excavation in Wetlands (ac)	Mechanized Clearing in Wetlands (ac)	Hand Clearing in Wetlands (ac)	Permanent SW impacts (ac)	Temp. SW impacts (ac)	Existing Channel Impacts Permanent (ft)	Existing Channel Impacts Temp. (ft)	Natural Stream Design (ft)
1	15+51 -L-	BRIDGE	0.09				0.19					
TOTALS:			0.09	0.00	0.00	0.00	0.19	0.00	0.00	0	0	0

Notes:

0.05 ac of temporary fill in hand clearing areas due to erosion control measures
234 sq. ft. or 0.005 ac of impacts at proposed pier

Permit Drawing
Sheet 3 of 8

NC DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

COLUMBUS COUNTY
PROJECT: 33442.1.1 (B-4080)

SHEET 1/25/2008

ATN Revised 3/31/05

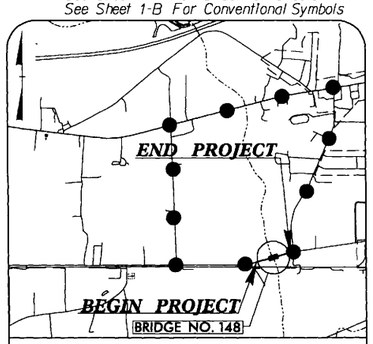
05/08/08

TIP PROJECT: B-4080

CONTRACT:

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

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



VICINITY MAP

(THIS PROJECT IS NOT INCLUDED WITHIN ANY MUNICIPAL BOUNDARIES)

OFFSITE DETOUR

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

COLUMBUS COUNTY

LOCATION: BRIDGE NO. 148 OVER PINE LOG SWAMP ON SR 1437

TYPE OF WORK: GRADING, DRAINAGE, PAVING AND STRUCTURE

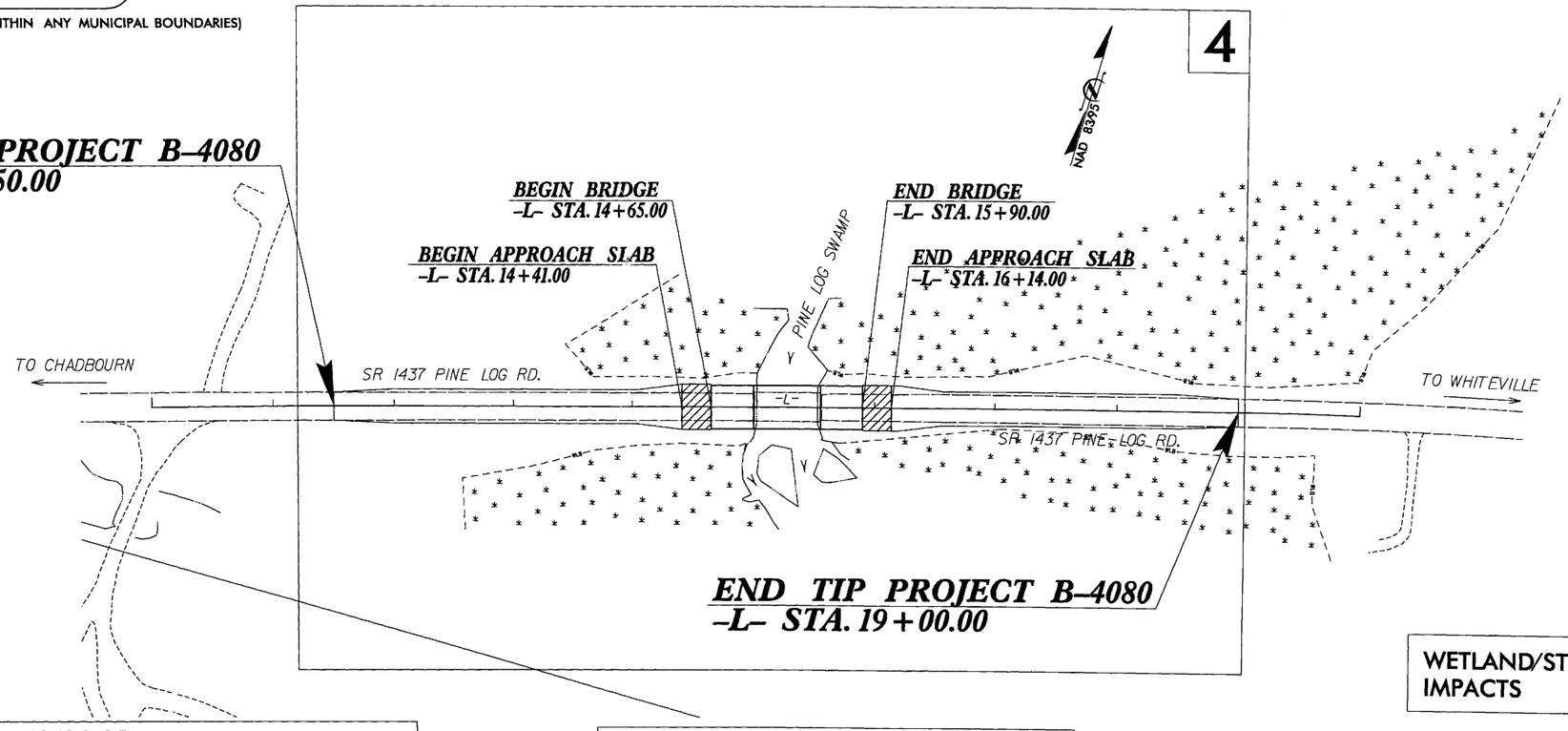
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-4080	1	
STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION	
33442.1.1	BRSTP-1437 (2)	PE	
33442.2.1	BRSTP-1437 (2)	R/W-UTIL.	

R/W PLANS

Permit Drawing
Sheet 4 of 8

BEGIN TIP PROJECT B-4080
-L- STA. 11+50.00

4



WETLAND/STREAM IMPACTS

NCDOT CONTACT : CATHY HOUSER, P.E.
ROADWAY DESIGN-ENGINEERING COORDINATION

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

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

GRAPHIC SCALES

PLANS 50 25 0 50 100

PROFILE (HORIZONTAL) 50 25 0 50 100

PROFILE (VERTICAL) 10 5 0 10 20

DESIGN DATA

ADT 2008 = 4,135
ADT 2028 = 6,917
DHV = 10 %
D = 60 %
T = 7 % *
V = 60 MPH

* TTST 4% DUAL 3%
FUNC. CLASS = URBAN COLLECTOR

PROJECT LENGTH

Length Roadway TIP Project B-4080 = 0.118 Miles

Length Structure TIP Project B-4080 = 0.024 Miles

Total Length TIP Project B-4080 = 0.142 Miles

Prepared In the Office of:
THE LPA GROUP TRANSPORTATION CONSULTANTS
THE LPA GROUP of North Carolina, p.a.
5000 Falls of Neuse Rd., Suite 304
Raleigh, North Carolina 27609

2006 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE: NOV 16, 2007

LETTING DATE: NOV 18, 2008

Jeanne K. Richter P.E.
PROJECT ENGINEER

Jody L. Cole
PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

SIGNATURE: *P.E.*

ROADWAY DESIGN ENGINEER

SIGNATURE: *P.E.*

DIVISION OF HIGHWAYS STATE OF NORTH CAROLINA

STATE HIGHWAY DESIGN ENGINEER *P.E.*

PROJECT REFERENCE NO.	SHEET NO.
B-4080	4
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

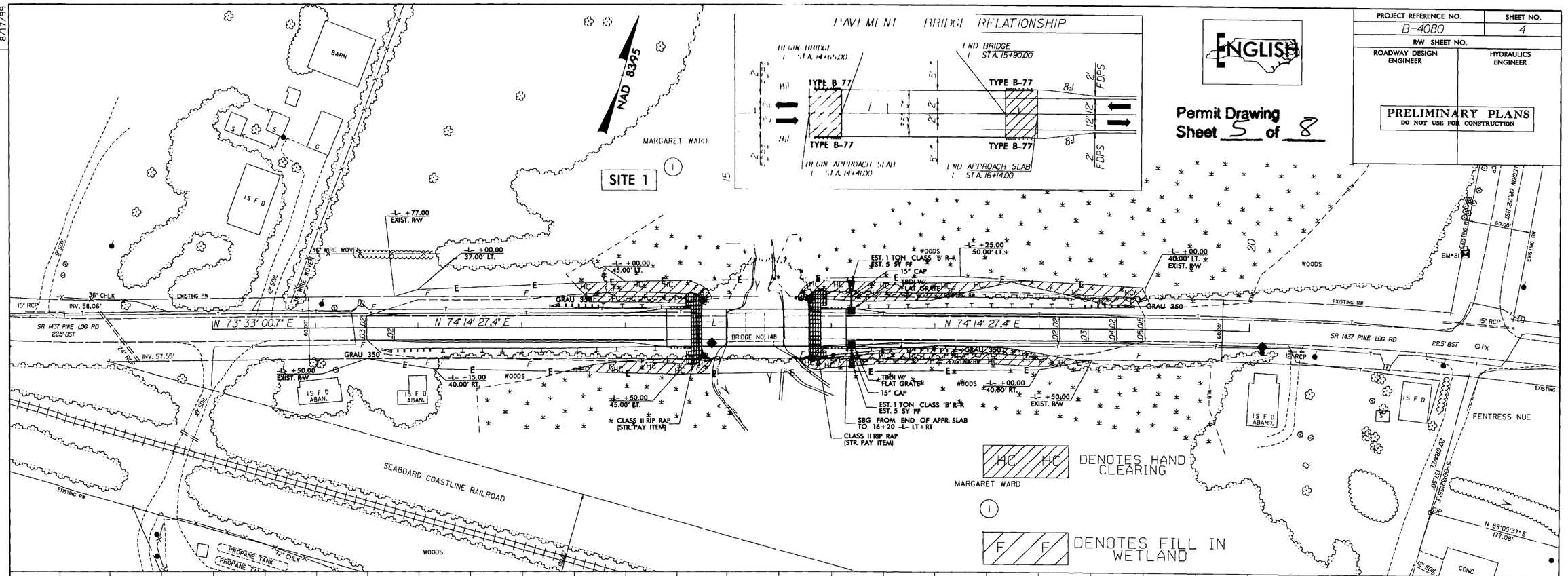
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

ENGLISH

Permit Drawing
Sheet 5 of 8

REVISIONS
8/17/99

PAVEMENT BRIDGE RELATIONSHIP



BM80 ELEV. 68.12
N 208410.6470 E 2080965.1100
BL STA. 6+18.50 62.01' RIGHT

NOTE: BENCH MARK 80 & 81 ARE LOCATED OUTSIDE OF PROJECT LIMITS.

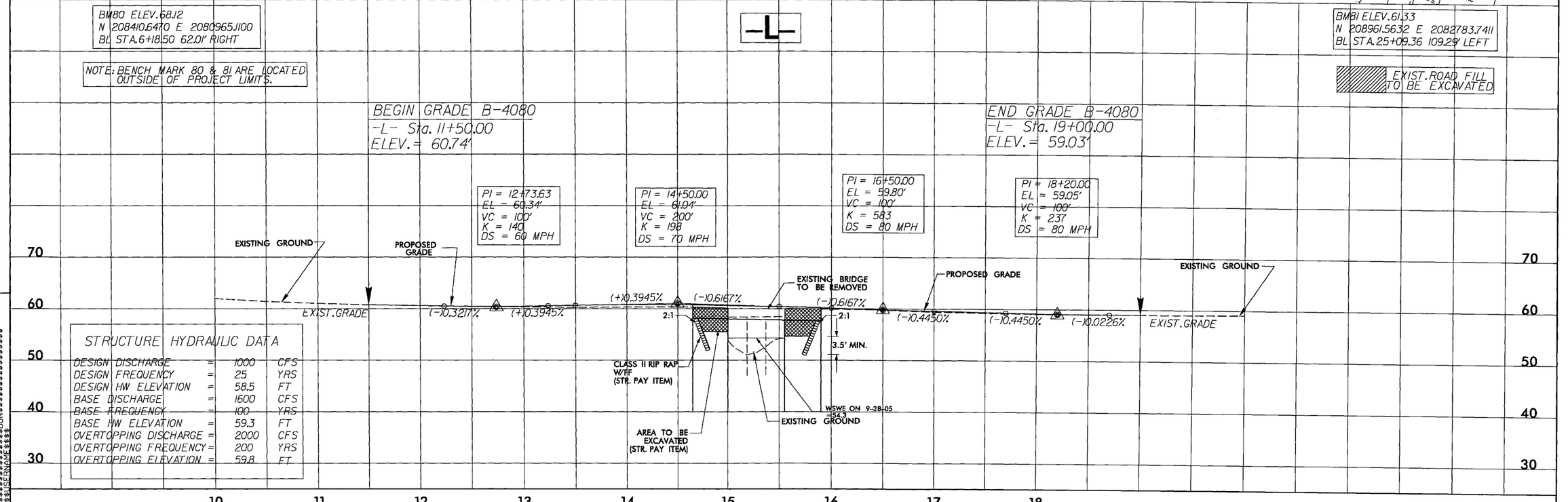
BM81 ELEV. 61.33
N 208961.5632 E 2082783.7411
BL STA. 25+09.36 109.29' LEFT

EXIST. ROAD FILL TO BE EXCAVATED

-L-

BEGIN GRADE B-4080
-L- Sta. 11+50.00
ELEV. = 60.74'

END GRADE B-4080
-L- Sta. 19+00.00
ELEV. = 59.03'



STRUCTURE HYDRAULIC DATA

DESIGN DISCHARGE	=	1000	CFS
DESIGN FREQUENCY	=	25	YRS
DESIGN HW ELEVATION	=	58.5	FT
BASE DISCHARGE	=	1600	CFS
BASE FREQUENCY	=	100	YRS
BASE HW ELEVATION	=	59.3	FT
OVERTOPPING DISCHARGE	=	2000	CFS
OVERTOPPING FREQUENCY	=	200	YRS
OVERTOPPING ELEVATION	=	59.8	FT

SYSTEM TIME
SYSTEM DATE
USER ID
DESIGN ENGINEER
DRAWING NAME

8/17/99

REVISIONS

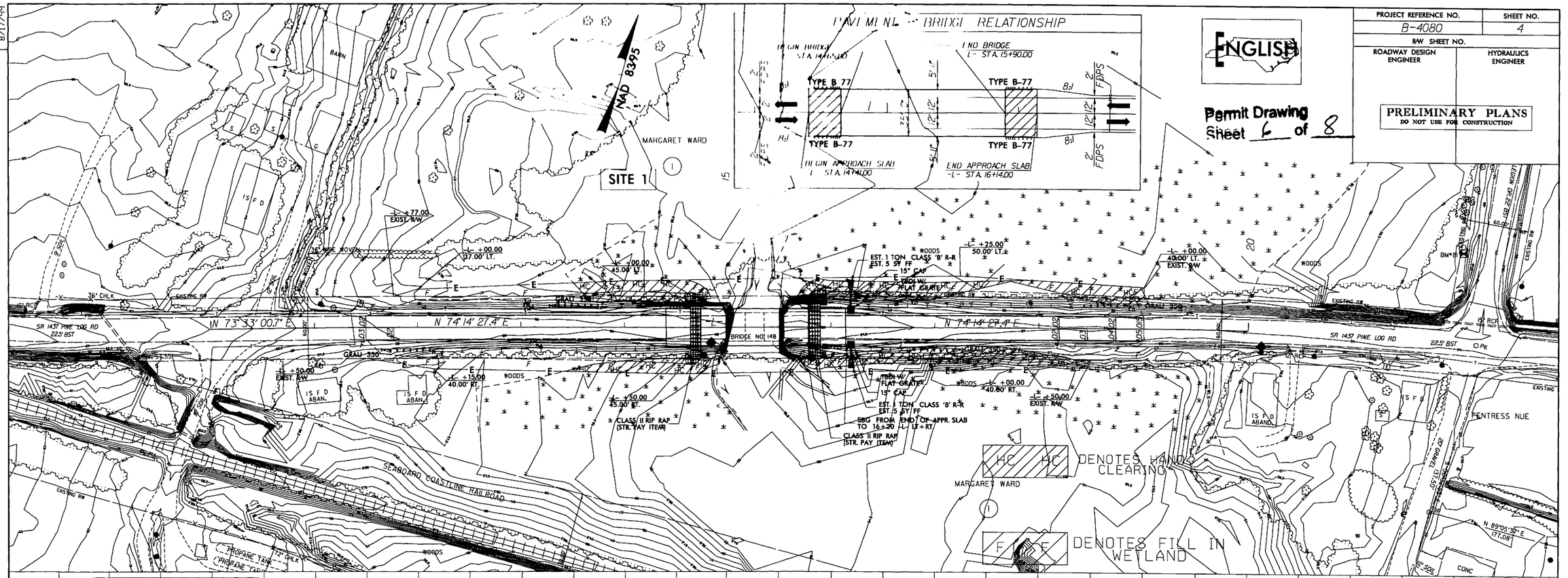
PROJECT REFERENCE NO.	SHEET NO.
B-4080	4
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

ENGLISH

Permit Drawing
Sheet 6 of 8

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

PAVEMENT - BRIDGE RELATIONSHIP



STRUCTURE HYDRAULIC DATA

DESIGN DISCHARGE	=	1000	CFS
DESIGN FREQUENCY	=	25	YRS
DESIGN HW ELEVATION	=	58.5	FT
BASE DISCHARGE	=	1600	CFS
BASE FREQUENCY	=	100	YRS
BASE HW ELEVATION	=	59.3	FT
OVERTOPPING DISCHARGE	=	2000	CFS
OVERTOPPING FREQUENCY	=	200	YRS
OVERTOPPING ELEVATION	=	59.8	FT

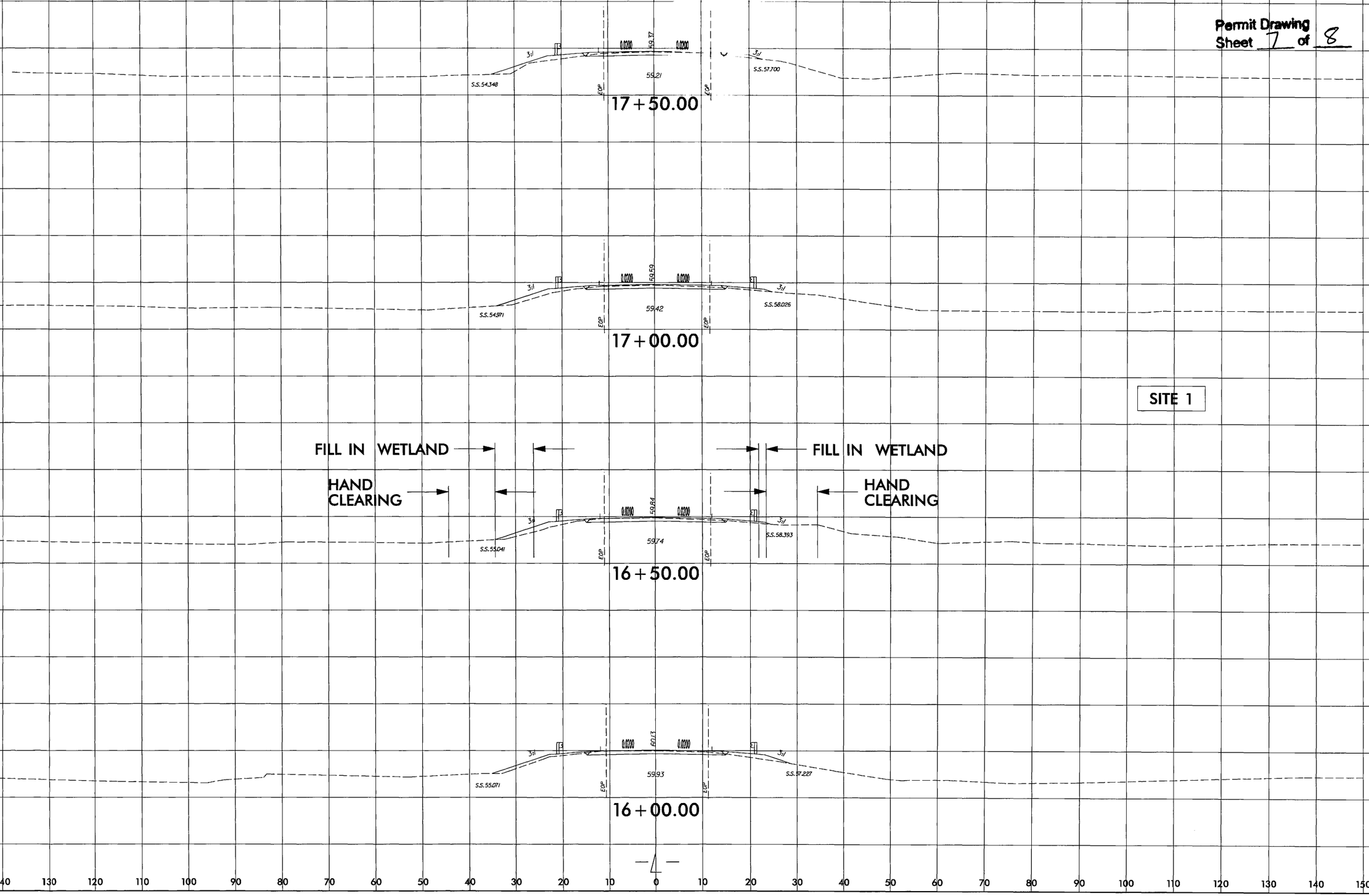
SYSTEM: ENGLISH

8/23/99

PROJ. REFERENCE NO.	SHEET NO.
B-4080	X-5

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

Permit Drawing
Sheet 7 of 8



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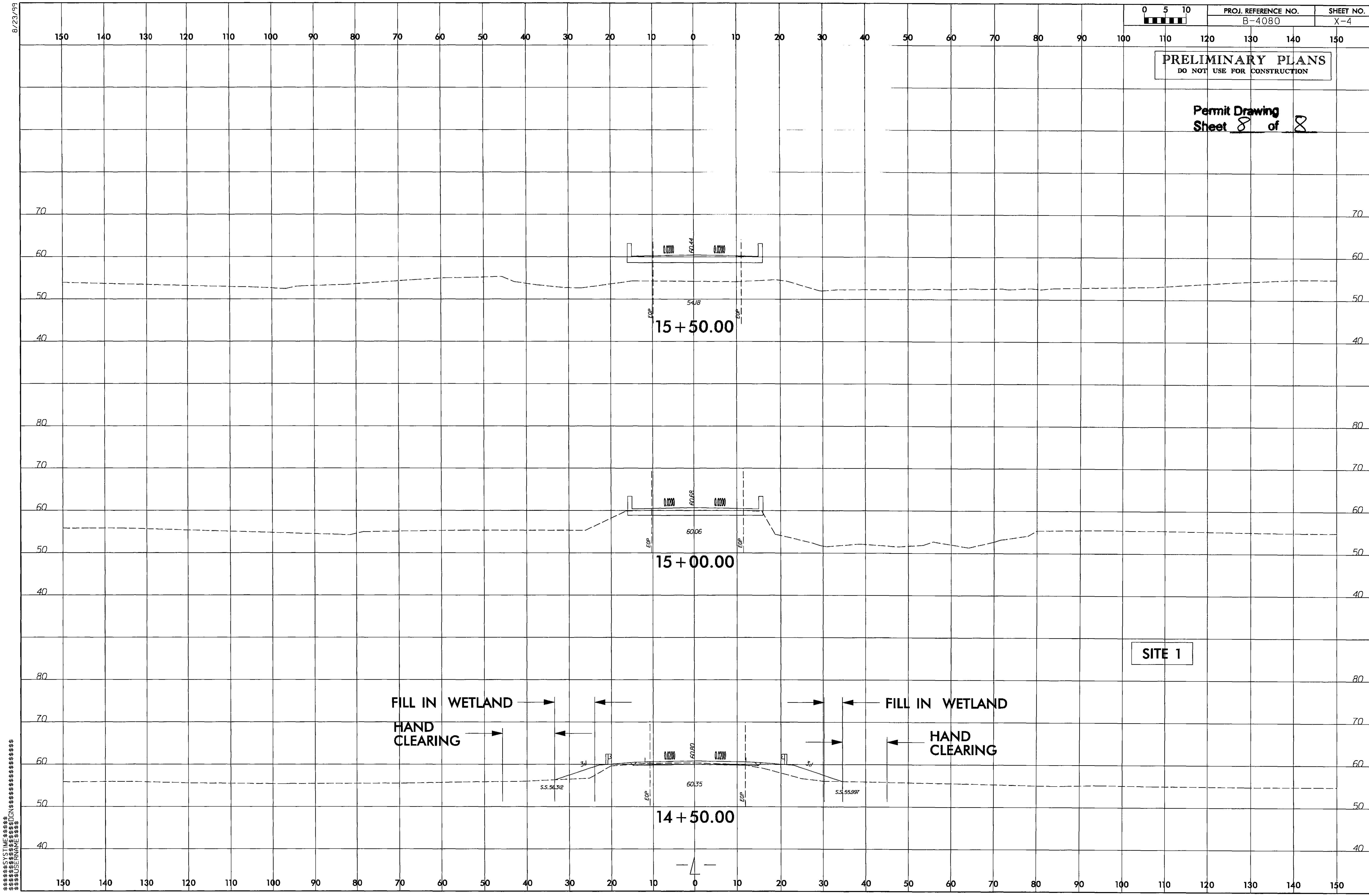
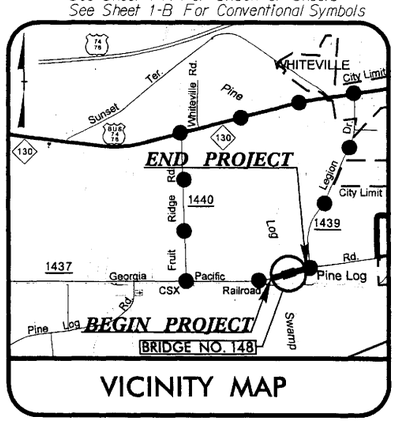
$$$$$$$$$$$$DGN$$$$$$$$$$$$$$$$$$$$
$$$$$$USERNAME$$$$


8/23/99
PROJ. REFERENCE NO.
B-4080
SHEET NO.
X-4
0 5 10
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION
Permit Drawing
Sheet 8 of 8
0.0200
60.44
0.0200
54.18
EOP
15+50.00
0.0200
60.68
0.0200
60.06
EOP
15+00.00
SITE 1
FILL IN WETLAND
HAND CLEARING
FILL IN WETLAND
HAND CLEARING
3:1
0.0200
60.80
0.0200
3:1
S.S. 56.312
60.35
S.S. 55.997
EOP
14+50.00
$$$$$SYSTIME$$$$$
$$$$$$$$$DGN$$$$$$$$$$$$$$$$$$
$$$$USERNAME$$$$

TIP PROJECT: B-4080

CONTRACT:

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



VICINITY MAP

(THIS PROJECT IS NOT INCLUDED WITHIN ANY MUNICIPAL BOUNDARIES)

OFFSITE DETOUR

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

COLUMBUS COUNTY

LOCATION: BRIDGE NO. 148 OVER PINE LOG SWAMP ON SR 1437

TYPE OF WORK: GRADING, DRAINAGE, PAVING AND STRUCTURE

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-4080	1	

STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION
33442.1.1	BRSTP-1437 (2)	PE
33442.2.1	BRSTP-1437 (2)	R/W-UTIL.
33442.3.1	BRSTP-1437 (2)	CONST.

R/W PLANS

4

NAD 83/95

BEGIN TIP PROJECT B-4080
-L- STA. 11+50.00

BEGIN BRIDGE
-L- STA. 14+65.00

BEGIN APPROACH SLAB
-L- STA. 14+41.00

END BRIDGE
-L- STA. 15+90.00

END APPROACH SLAB
-L- STA. 16+14.00

PINE LOG SWAMP

TO CHADBOURN

SR 1437 PINE LOG RD.

-L-

TO WHITEVILLE

SR 1437 PINE LOG RD.

CSX RAILROAD

END TIP PROJECT B-4080
-L- STA. 19+00.00

NCDOT CONTACT : CATHY HOUSER, P.E.
ROADWAY DESIGN-ENGINEERING COORDINATION

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

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

GRAPHIC SCALES

50 25 0 50 100
PLANS

50 25 0 50 100
PROFILE (HORIZONTAL)

10 5 0 10 20
PROFILE (VERTICAL)

DESIGN DATA

ADT 2008 = 4,135
ADT 2028 = 6,917
DHV = 10 %
D = 60 %
T = 7 % *
V = 60 MPH

* TTST 4% DUAL 3%

FUNC. CLASS = URBAN COLLECTOR

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2006 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
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Jeanne K. Richter P.E.
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Jody L. Cole
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HYDRAULICS ENGINEER

SIGNATURE: P.E.

ROADWAY DESIGN ENGINEER

SIGNATURE: P.E.

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

P.E.

PROJECT REFERENCE NO.	SHEET NO.
B-4080	1B

Note: Not to Scale

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

CONVENTIONAL PLAN SHEET SYMBOLS

BOUNDARIES AND PROPERTY:

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

BUILDINGS AND OTHER CULTURE:

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

HYDROLOGY:

- Stream or Body of Water
- Hydro, Pool or Reservoir
- Jurisdictional Stream — JS
- Buffer Zone 1 — BZ 1
- Buffer Zone 2 — BZ 2
- Flow Arrow
- Disappearing Stream
- Spring
- Wetland
- Proposed Lateral, Tail, Head Ditch — FLOW
- False Sump

RAILROADS:

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

RIGHT OF WAY:

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

ROADS AND RELATED FEATURES:

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

VEGETATION:

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

EXISTING STRUCTURES:

MAJOR:

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

MINOR:

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

UTILITIES:

POWER:

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

TELEPHONE:

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

WATER:

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

TV:

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

GAS:

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

SANITARY SEWER:

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

MISCELLANEOUS:

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

SURVEY CONTROL SHEET B-4080

PROJECT REFERENCE NO.	SHEET NO.
B-4080	1-C
Location and Surveys	

BL

POINT	DESC.	NORTH	EAST	ELEVATION	L STATION	OFFSET
1	B4080 - BL1	208558.5740	2081642.2315	66.37	10+00.00	5.27 RT
2	B4080 - BL2	208806.6455	2082513.2603	63.47	19+05.27	5.13 LT
3	B4080 - BL3	208677.8660	2082112.7510	59.30	14+85.74	14.98 RT
4	B4080 - BL4	208819.8250	2082620.6660	57.74	OUTSIDE PROJECT LIMITS.	
5	B4080 - BL5	208911.4820	2083102.5080	58.35	OUTSIDE PROJECT LIMITS.	

80 ELEVATION - 68.12
N 208411 E 2080965
L STATION 10+00
S 77° 39' 16.0" W DIST 693.07
RAILROAD SPIKE IN BASE OF 18 INCH PINE

81 ELEVATION - 61.33
N 208962 E 2082784
L STATION 20+00
N 53° 49' 54.0" E DIST 222.40
RAILROAD SPIKE IN BASE OF 24 INCH HARDWOOD

-L- POT STA. 11+50.00
BEGIN TIP PROJECT B-4080
BEGIN CONSTRUCTION
LOCALIZED COORDINATES
N= 208601.0314
E= 2081786.0965

-L- POT STA. 19+00.00
END TIP PROJECT B-4080
END CONSTRUCTION
LOCALIZED COORDINATES
N= 208804.7861
E= 2082507.8886

DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCDOT FOR MONUMENT ""B-4080-1""
WITH NAD 1983/95 STATE PLANE GRID COORDINATES OF NORTHING: 208462.2701(ft) EASTING: 2080351.6989(ft)
THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 1.000005080
THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM ""B-4080-1"" TO -L- STATION POT 11+50.00 IS N 84° 22' 28.1723" E 1441.09'
ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES
VERTICAL DATUM USED IS NAVD 88

NOTE: DRAWING NOT TO SCALE

NOTES:

1. *THE CONTROL DATA FOR THIS PROJECT CAN BE FOUND ELECTRONICALLY BY SELECTING PROJECT CONTROL DATA AT:*
   HTTP://WWW.NCDOT.ORG/DOH/PRECONSTRUCT/HIGHWAY/LOCATION/PROJECT/

   THE FILES TO BE FOUND ARE AS FOLLOWS:
   B4080_LS_CONTROL_070306.TXT

   SITE CALIBRATION INFORMATION HAS NOT BEEN PROVIDED FOR THIS PROJECT. IF FURTHER INFORMATION IS NEEDED, PLEASE CONTACT THE LOCATION AND SURVEYS UNIT.

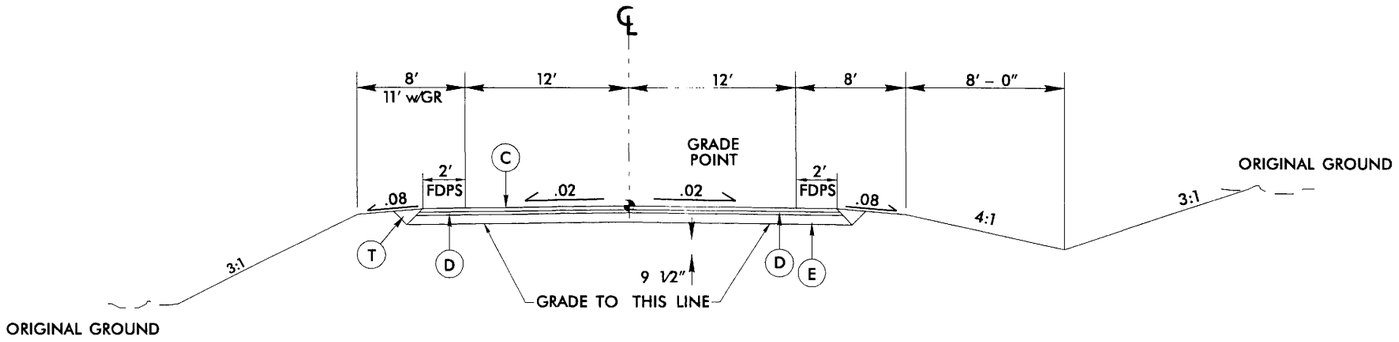
2. *INDICATES GEODETIC CONTROL MONUMENTS USED OR SET FOR HORIZONTAL PROJECT CONTROL BY THE NCDOT LOCATION AND SURVEYS UNIT.*
   PROJECT CONTROL ESTABLISHED USING GLOBAL POSITIONING SYSTEM.
   NETWORK ESTABLISHED FROM NGS ONLINE POSITIONING SERVICE (OPUS)
   SEE GPS CALIBRATION SHEET FOR HORIZONTAL AND VERTICAL COORDINATE VALUES.

PROJECT REFERENCE NO.	SHEET NO.
B-4080	2
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

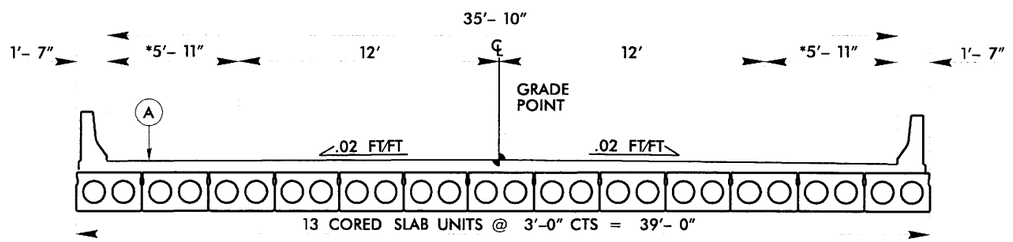
PAVEMENT SCHEDULE			
A	VAR. PORTLAND CEMENT CONCRETE PAVEMENT.	E	PROP. APPROX. 4" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.
C	PROP. APPROX. 3" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.	T	EARTH MATERIAL.
D	PROP. APPROX. 2½" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0B, AT AN AVERAGE RATE OF 285 LBS. PER SQ. YD.		

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



TYPICAL SECTION NO. 1

-L- STA. 11+50.00 TO STA. 14+65.00 (BEGIN BRIDGE)
-L- STA. 15+90.00 (END BRIDGE) TO STA. 19+00.00



TYPICAL BRIDGE SECTION NO. 2

-L- STA. 14+65.00 (BEGIN BRIDGE) TO STA. 15+90.00 (END BRIDGE)
* WIDENED SHOULDER DUE TO HYDRAULIC SPREAD

COMPUTED BY: J.Cole DATE: 09/17/07
CHECKED BY: P.Audlair DATE: 09/18/07

PROJECT REFERENCE NO.	SHEET NO.
B-4080	3-A

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

SUMMARY OF EARTHWORK

IN CUBIC YARDS

LOCATION	UNCLASSIFIED EXCAVATION	UNDERCUT	EMBT + 25%	BORROW	WASTE
-L- 11+50.00 TO -L- 14+65.00	87		544	457	
(BEGIN BRIDGE)					
-L- 15+90.00 TO -L- 19+00.00	165		293	128	
(END BRIDGE)					
SUBTOTAL	252		837	585	
TOTALS	252		837	585	
PROJECT TOTALS	252		837	585	
EST. 5% FOR REPLACING					
TOPSOIL ON ON BORROW PIT				30	
GRAND TOTALS	252			615	
SAY	300			650	

EST. SELECT GRANULAR MATERIAL = 200 C.Y.
EST. UNDERCUT EXCAVATION = 200 C.Y.

NOTE: Approximate quantities only. Unclassified Excavation, Borrow Excavation, Fine Grading, Clearing and Grubbing and Removal of Exist Asphalt Pavement will be paid for at the contract lump sum price for "Grading."

PROJECT REFERENCE NO.	SHEET NO.
B-4080	4
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

REVISIONS

-L-
PI Sta 11+31.36
Δ = 0°41'26.6" (RT)
D = 0°40'26.6"
L = 102.47'
T = 51.24'
R = 8,500.00'
eMAX. = EXIST.

-L-
PI Sta 19+50.94
Δ = 1°27'03.0" (RT)
D = 1°28'43.0"
L = 98.12'
T = 49.06'
R = 3,875.00'
eMAX. = .05
Ds = 60MPH

-L- POT Sta. 10+00.00

BEGIN TIP PROJECT B-4080
-L- STA. 11+50.00
BEGIN CONSTRUCTION

-L- PT Sta. 11+82.59

BEGIN BRIDGE
-L- STA. 14+65.00

BEGIN APPROACH SLAB
-L- STA. 14+41.00

END BRIDGE
-L- STA. 15+90.00

END APPROACH SLAB
-L- STA. 16+14.00

END TIP PROJECT B-4080
-L- STA. 19+00.00
END CONSTRUCTION

-L- PC Sta. 10+80.12

-L- PC Sta. 19+01.88

-L- PT Sta. 20+00.00

BL-3 -BL- Sta. 17+94.96
-L- Sta. 14+85.24
(15.04' RT)

BL-4 -BL- Sta. 23+22.34

N 73°33'00.7" E

N 74°14'27.4" E

N 74°14'27.4" E

N 89°05'37" E
177.08'

MARGARET WARD
DB 410 PG 167

MARGARET WARD
DB 410 PG 167

FENTRESS NUE
DB 510 PG 407
PB 12 PG 32

SEABOARD COASTLINE RAILROAD

SR 1437 PINE LOG RD
22.5' BST

PINE LOG SWAMP

PAVEMENT - BRIDGE RELATIONSHIP

BEGIN APPROACH SLAB
-L- STA. 14+41.00

END APPROACH SLAB
-L- STA. 16+14.00

TYPE B-77

TYPE B-77

-L-

35'-0"

5'-11"

12'-12"

2' FDPS

8:1

BM80 ELEV. 68.12
N 208410.6470 E 2080965.1100
BL STA. 6+18.50 62.01' RIGHT

BM81 ELEV. 61.33
N 2089615.632 E 2082783.741
BL STA. 25+09.36 109.29' LEFT

NOTE: BENCH MARK 80 & 81 ARE LOCATED OUTSIDE OF PROJECT LIMITS.

EXIST. ROAD FILL TO BE EXCAVATED

BEGIN GRADE B-4080
-L- Sta. 11+50.00
ELEV. = 60.74'

END GRADE B-4080
-L- Sta. 19+00.00
ELEV. = 59.03'

PI = 12+73.63
EL = 60.34'
VC = 100'
K = 140
DS = 60 MPH

PI = 14+50.00
EL = 61.04'
VC = 200'
K = 198
DS = 70 MPH

PI = 16+50.00
EL = 59.80'
VC = 100'
K = 583
DS = 80 MPH

PI = 18+20.00
EL = 59.05'
VC = 100'
K = 237
DS = 80 MPH

EXISTING GROUND
PROPOSED GRADE
EXISTING BRIDGE TO BE REMOVED
EXIST. GRADE
(-)0.321%
(+)0.3945%
(+)0.3945%
(-)0.6167%
(-)0.6167%
(-)0.4450%
(-)0.4450%
(-)0.0226%
2:1
3.5' MIN.
CLASS II RIP RAP W/FF (STR. PAY ITEM)
AREA TO BE EXCAVATED (STR. PAY ITEM)

STRUCTURE HYDRAULIC DATA

DESIGN DISCHARGE	=	1000	CFS
DESIGN FREQUENCY	=	25	YRS
DESIGN HW ELEVATION	=	58.5	FT
BASE DISCHARGE	=	1600	CFS
BASE FREQUENCY	=	100	YRS
BASE HW ELEVATION	=	59.3	FT
OVERTOPPING DISCHARGE	=	2000	CFS
OVERTOPPING FREQUENCY	=	200	YRS
OVERTOPPING ELEVATION	=	59.8	FT

Approximate quantities only. Unclassified excavation, fine grading clearing and grubbing and removal of existing pavement will be paid for at the lump sum price for "Grading".

PROJ. REFERENCE NO.	SHEET NO.
B-4080	X-1

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

CROSS-SECTION SUMMARY

NOTE: EMBANKMENT COLUMN DOES NOT INCLUDE BACKFILL FOR UNDERCUT

Stations L	Uncl. Exc. (cu.yd.)	Embt (cu.yd)
11+50.00	0	0
12+00.00	0	0
12+50.00	18	31
13+00.00	30	58
13+50.00	19	100
14+00.00	9	141
14+50.00	8	163
14+65.00	3	51

Stations L	Uncl. Exc. (cu.yd.)	Embt (cu.yd)
15+90.00	0	0
16+00.00	5	20
16+50.00	34	83
17+00.00	40	65
17+50.00	35	47
18+00.00	34	39
18+50.00	17	39
19+00.00	0	0

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	B-4080	X-2

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

12+50.00

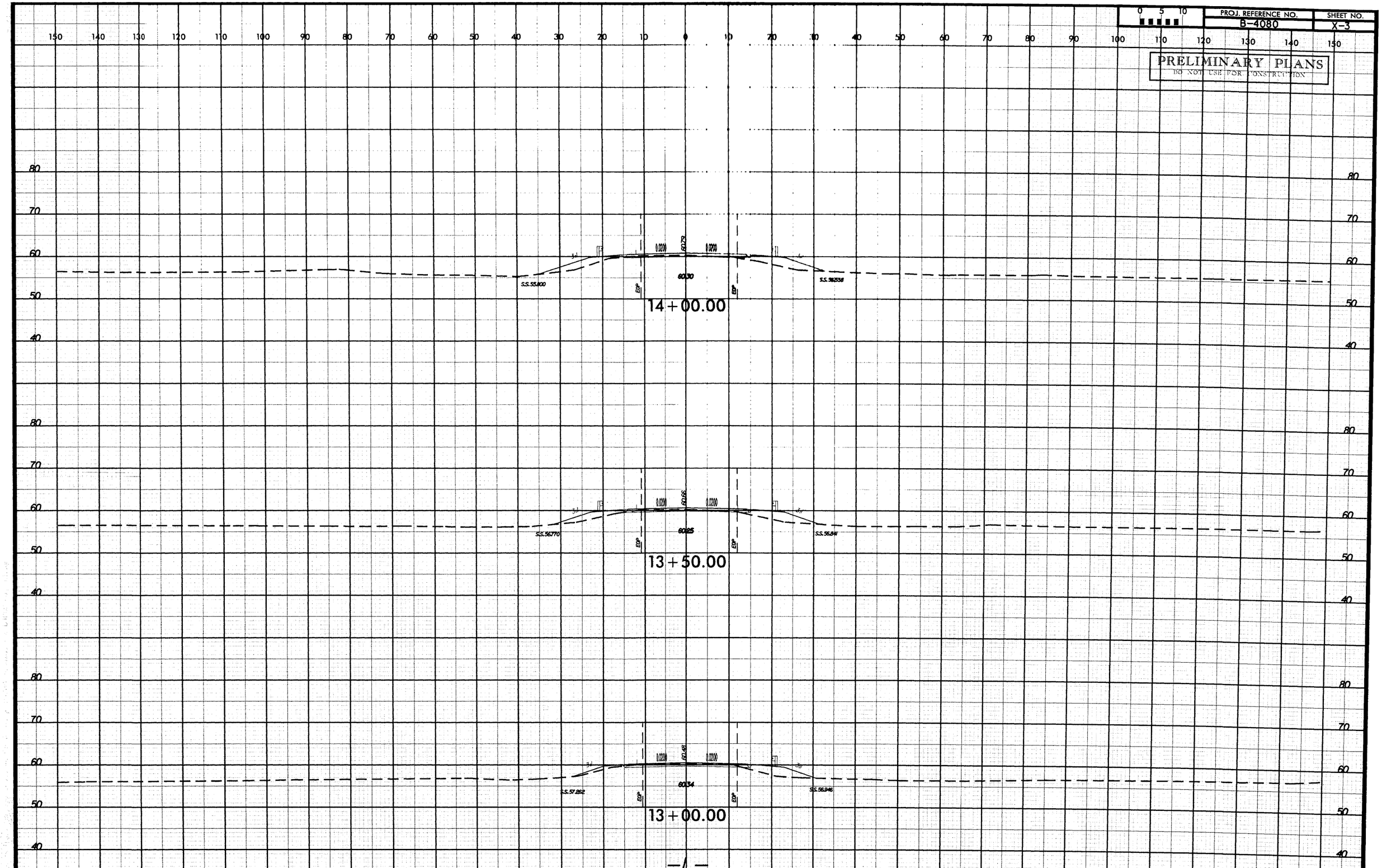
12+00.00

11+50.00

11+00.00

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	B-4080	X-3

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION



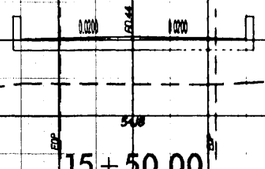
PROJ. REFERENCE NO.	SHEET NO.
B-4080	X-4

0 5 10

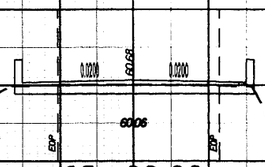
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

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

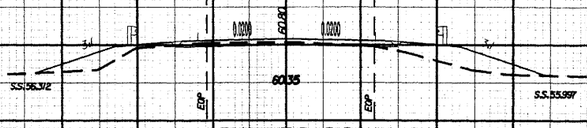
70 60 50 40 80 70 60 50 40 80 70 60 50 40



15+50.00



15+00.00

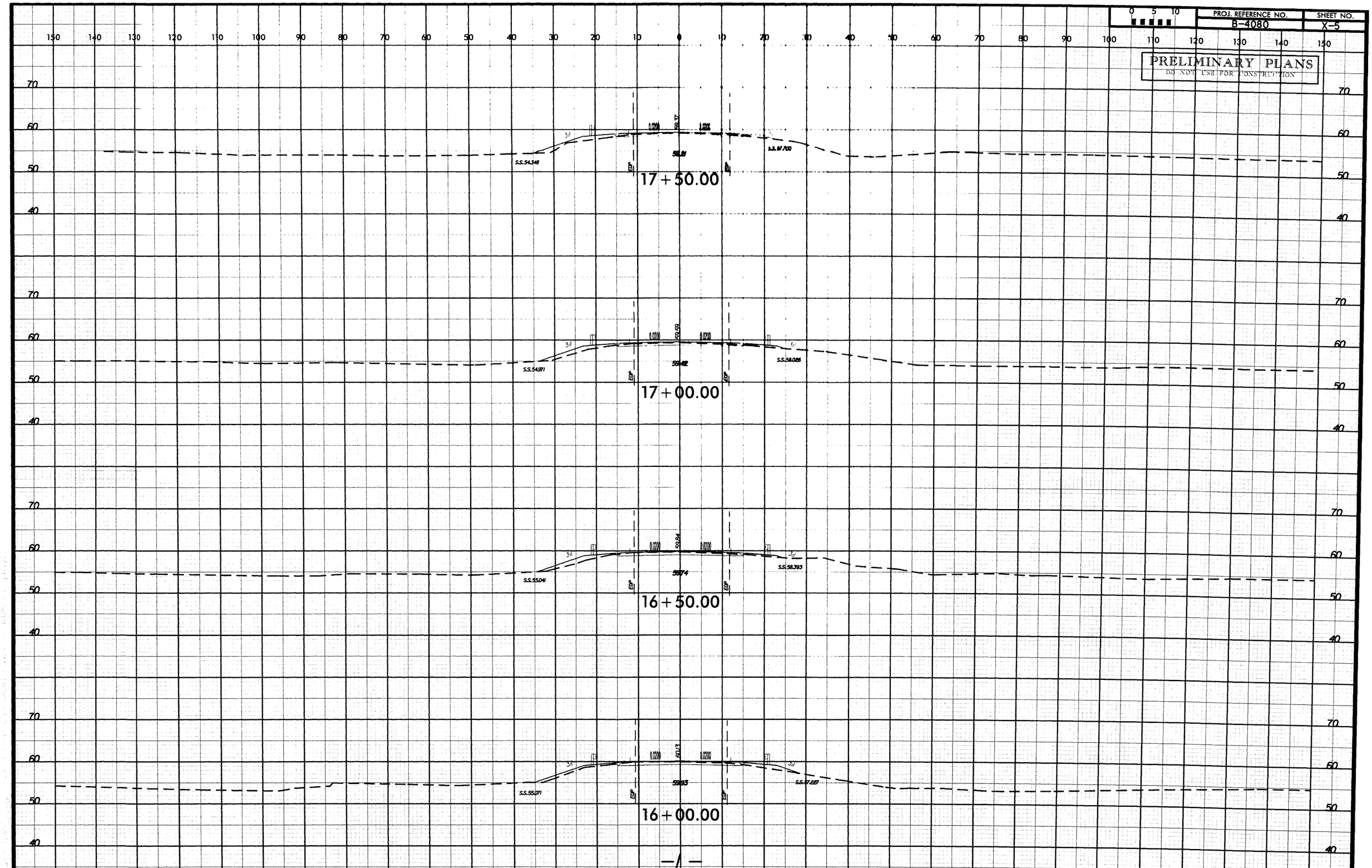


14+50.00

PROJ. REFERENCE NO. B-4080

SHEET NO. X-5

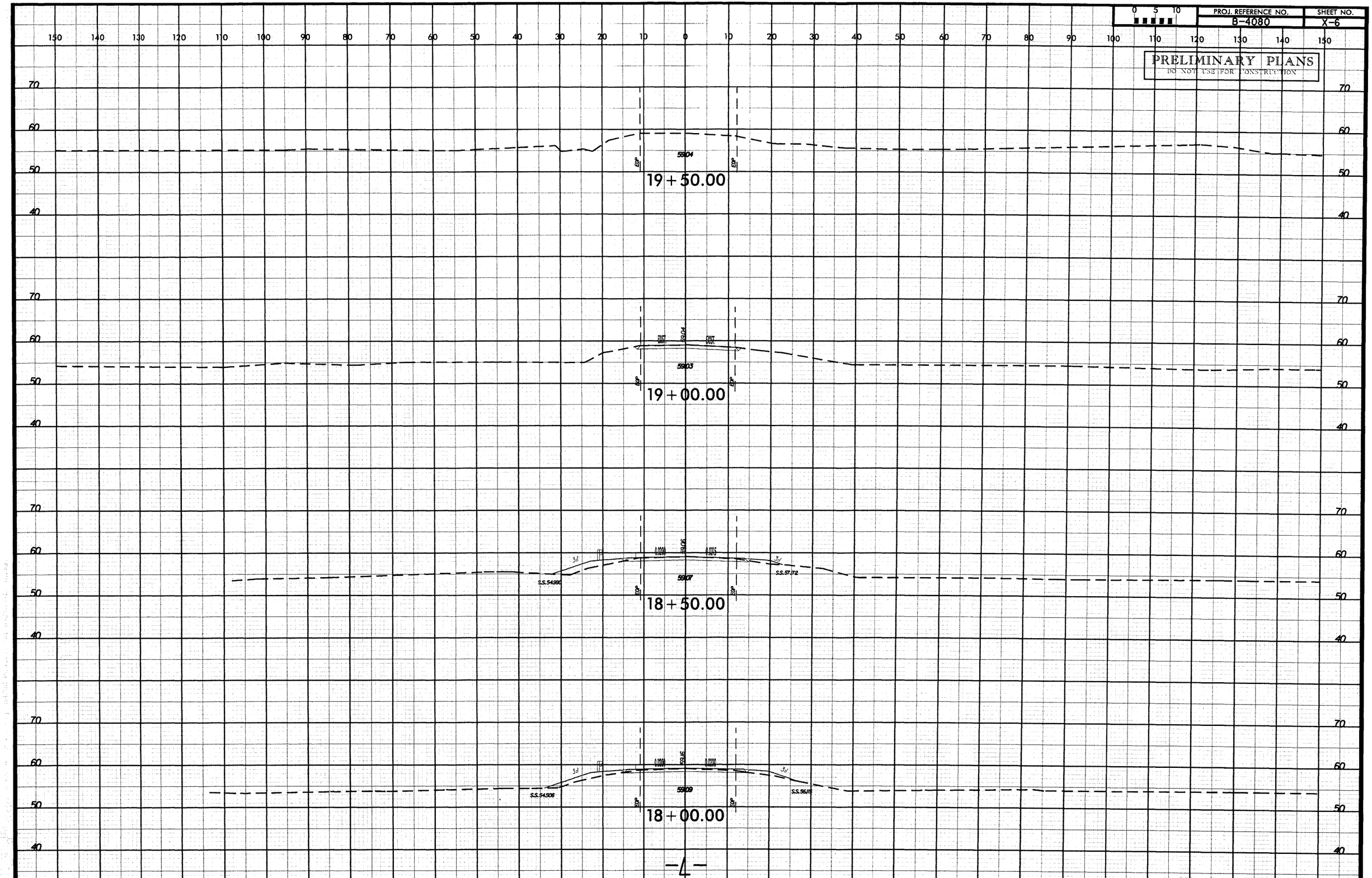
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION



PROJ. REFERENCE NO. B-4080

SHEET NO. X-6

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION



Columbus County
Bridge No. 148 on SR 1437
Over Pine Log Swamp
Federal-Aid Project No. BRSTP-1437(2)
State Project No. 8.2430901
WBS No. 33442.1.1
TIP No. B-4080

Categorical Exclusion
United States Department of Transportation
Federal Highway Administration
And
North Carolina Department of Transportation

Approved:

5/3/06 — Patrick Weaver
Date FOR **Gregory J. Thorpe, Ph.D.**
Environmental Management Director
Project Development and Environmental Analysis Branch
North Carolina Department of Transportation

5/3/06 — John D. Rigsbee
Date **John F. Sullivan III, P.E.**
for **Division Administrator**
Federal Highway Administration

Columbus County
Bridge No. 148 on SR 1437
Over Pine Log Swamp
Federal-Aid Project No. BRSTP-1437(2)
State Project No. 8.2430901
WBS No. 33442.1.1
TIP No. B-4080

Categorical Exclusion

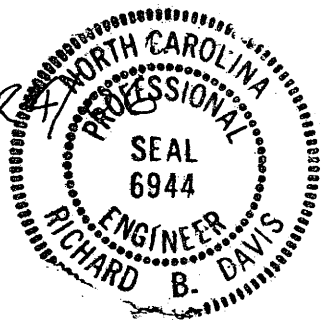
April 2006

Document Prepared by:

THE LPA GROUP OF NORTH CAROLINA, P.A.

4/24/06

Richard B. Davis, P.E.
Project Manager



For the North Carolina Department of Transportation

Vincent J. Rhea, P.E.
Project Development Engineer

PROJECT COMMITMENTS

Columbus County
Bridge No. 148 on SR 1437
Over Pine Log Swamp
Federal-Aid Project No. BRSTP-1437(2)
State Project No. 8.2430901
WBS No. 33442.1.1
TIP No. B-4080

In addition to the standard Nationwide Permit #23 and #33 Conditions, the General Nationwide Permit Conditions, Section 404 Conditions, Regional Conditions, State Consistency Conditions, NCDOT's Guidelines for Best Management Practices for the Protection of Surface Waters, NCDOT's Guidelines for Best Management Practices for Bridge Demolition and Removal, General Certification Conditions, and Section 401 Conditions of Certification would all apply to the proposed bridge replacement project. There are no special commitments associated with the proposed replacement of Bridge No. 148.

Columbus County
Bridge No. 148 on SR 1437
Over Pine Log Swamp
Federal-Aid Project No. BRSTP-1437(2)
State Project No. 8.2430901
WBS No. 33442.1.1
TIP No. B-4080

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Columbus County
Bridge No. 148 on SR 1437
Over Pine Log Swamp
Federal-Aid Project No. BRSTP-1437(2)
State Project No. 8.2430901
WBS No. 33442.1.1
TIP No. B-4080

INTRODUCTION: The replacement of Bridge No. 148 is included in the North Carolina Department of Transportation (NCDOT) 2006-2012 Transportation Improvement Program and in the Federal-Aid Bridge Replacement Program. The location is shown on Figure 1. No substantial environmental impacts are anticipated. The project is classified as a Federal "Categorical Exclusion."

I. PURPOSE AND NEED

The NCDOT Bridge Maintenance Unit records indicate that the bridge has a sufficiency rating of 37.2 out of a possible 100 for a new structure. The bridge is considered to be functionally obsolete. The replacement of this inadequate structure would result in safer and more efficient traffic operations.

II. EXISTING CONDITIONS

The project is located in Columbus County on SR 1437, approximately 1.0 mile west of its junction with SR 1439 (Figure 1). Land use in the project vicinity consists of residential properties, fallow agricultural fields, forest, and wetlands.

Bridge No. 148 was constructed in 1951 and currently has a posted weight limit of 15 tons for single vehicles and 22 tons for truck tractors with semi trailers (TTST). The overall length of the two span bridge is 37 feet, with a bed to crown height of 11 feet. It has a clear roadway width of 24 feet carrying two travel lanes. Bridge No. 148 has a reinforced concrete deck on I-beams supported by a substructure consisting of timber piles with reinforced concrete caps.

In the vicinity of the bridge, SR 1437 is a 22-foot, two-lane roadway with 6-foot unpaved shoulders. The existing bridge is in a horizontal tangent and is skewed 90 degrees to the roadway. Both approaches are in tangent approximately 900 feet from the ends of the bridge with good site distances. The east approach vertical grade falls toward the bridge and continues to fall across the bridge to a sag located approximately 200 feet from the west end of the bridge. The speed limit is posted at 55 miles per hour (mph), and SR

1437 is classified as an Urban Collector in the Statewide Functional Classification System.

The current (2006) traffic volume of 3900 vehicles per day (vpd) is expected to increase to 6500 vpd by the year 2025. These volumes include 3 percent dual tired vehicles and 4 percent TTSTs.

Two crashes were reported in the vicinity of the bridge during a recent three-year period. One of the crashes resulted in a non-fatal injury, and the other was property damage only.

There are no utilities attached directly to the structure; however there are underground telephone lines (overhead at the bridge) along both sides of SR 1437.

The bridge is located in the Whiteville City School District. There is one school bus that crosses the bridge twice daily. In a letter dated September 6, 2002, the Director of Transportation for the Columbus County/Whiteville City Schools stated that the one school bus could easily be rerouted. A copy of the letter is attached in the Appendix.

The studied route does not contain any bicycle accommodations, nor is it a designated bicycle route. Therefore, no bicycle accommodations have been included as part of this project.

A letter dated August 31, 2004 was sent to Columbus County Emergency Management soliciting comments on the proposed alternatives for the bridge replacement. No response was received regarding which alternative Emergency Management would prefer.

III. ALTERNATIVES

A. Project Description

The proposed project would consist of replacing Bridge No. 148 on SR 1437 over Pine Log Swamp with a wider and safer structure that would lead to safer and more efficient traffic operations in the area.

Based on a preliminary hydraulic analysis that was conducted in conjunction with field reconnaissance of the site, the recommended length of the proposed replacement structure is a 90-foot long bridge. The replacement bridge would provide a clear roadway width of 40 feet, carrying two 12-foot wide travel lanes with 8-foot offsets (Figure 3B).

The roadway approaches would provide two 12-foot travel lanes, 2-foot paved shoulders, and a total shoulder width of 8 feet. The roadway grade would be approximately the same as the existing road (Figure 3A). The design speed of the roadway approaches is 60 mph, and the posted speed would be 55 mph.

B. Build Alternatives

There are two alternatives for replacing Bridge No. 148, which are outlined below:

Alternative 1
Alternative 1 would replace the existing bridge with new a structure constructed in the same location as the existing bridge (Figures 2A and 2B). Permanent approach work would extend approximately 280 feet west of the bridge and approximately 150 feet east with a total length (including the bridge) of approximately 520 feet. During construction, traffic would be maintained on an off-site detour (Figure 1). The studied detour utilizes SR 1439 (Legion Drive), US 76-74 Business/NC 130, and SR 1440 (Fruit Ridge Road) to get from one side of Bridge No.148 to the other. There are no posted structures on the proposed detour. The detour is approximately 3.45 miles long. With an additional travel time of 4 minutes over the expected detour period of six to eight months, the delay for this off-site detour is considered to be acceptable under NCDOT guidelines. The majority of the traffic currently using Bridge No. 148 is bound for the City of Whiteville or destinations served by US 701. This traffic would use SR 1440 and US 74-76 Business to reach their destinations and would not be routed over SR 1439. The Division Construction Engineer has recommended that SR 1440 be widened and resurfaced in order to handle the traffic increase created by this detour. The cost of this improvement is included in the cost estimates below.

Alternative 2
Alternative 2 would replace the existing bridge with a new structure constructed in the same location as the existing bridge (Figure 2A). Alternative 2 would use a temporary on-site detour north of the existing bridge to maintain traffic during construction. Temporary approach work would extend approximately 625 feet west of the bridge and approximately 750 feet east of the bridge for a total length of approximately 1,375 feet. The detour structure would consist of three 84-inch diameter corrugated steel pipes. The detour structure would be located approximately 50 feet, centerline to centerline, north of the existing bridge and provide a total roadway width of 30 feet and would carry two 12-foot wide travel lanes with 3-foot paved shoulders. The detour roadway approaches would provide two 12-foot travel lanes and 8-foot unpaved shoulders. The design speed of the detour approaches is 50 mph, and the posted speed limit would be 45 mph. The total length of the temporary detour would be approximately 1,050 feet.

C. Alternatives Eliminated from Further Study

The "Do-Nothing" alternative was eliminated from further study because the existing bridge is considered functionally obsolete and structurally deficient. Over time the bridge would continue to deteriorate and would eventually lead to the closing of the bridge. Due to daily traffic flow considerations, this alternative is not an option.

D. Preferred Alternative

Alternative 1, replacing the bridge in its existing location and utilizing an off-site detour, was selected as the Preferred Alternative. Alternative 1 was selected because using an off-site detour minimizes costs and impacts to natural resources caused by temporary construction. The plan sheet for the Preferred Alternative is included in Figure 2B.

IV. ESTIMATED COSTS

The estimated costs for each alternative, based on current dollars, are shown below:

Table 1. Estimated Project Costs

	ALT 1 (Preferred Alternative)	ALT 2
Roadway Approaches	$140,975	$315,720
Proposed New Bridge	$306,000	$306,000
Temporary Structure	$0	$45,000
Widen & Resurface SR 1440	$98,000	$0
Structure Removal	$15,840	$15,840
Misc. & Mobilization	$111,185	$197,440
Engineering & Contingencies	$101,000	$120,000
Total Construction Costs	**$773,000**	**$1,000,000**
Right of Way and Utilities	$51,000	$54,125
Total Project Cost	**$824,000**	**$1,054,125**

The estimated cost of the project as shown in the 2006-2012 NCDOT Transportation Improvement Program is $1,155,000 including $150,000 spent in prior years, $55,000 for right-of-way and $950,000 for construction.

V. NATURAL RESOURCES

A. Methodology

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

- United States Geological Survey (USGS) 7.5 minute quadrangle maps (Whiteville and Chadbourn, NC 1990)
- NCDOT aerial photograph of the project area (2001)
- Soil maps and descriptions of the soils found in the project area (Columbus County Soil Survey, Natural Resources Conservation Service [NRCS] 1990)

- North Carolina Department of the Environment and Natural Resources (NCDENR), Division of Water Quality (DWQ) basin-wide assessment information (NCDWQ 2004)
- United States Fish and Wildlife Service (USFWS) list of protected and candidate species (USFWS 2003)
- North Carolina Natural Heritage Program (NHP) files of rare species and unique habitats

Water resource information was obtained from publications posted on the World Wide Web by DWQ.

The USFWS provided a list of threatened and endangered species known to occur in Columbus County on December 30, 2003 (updated March 14, 2006), prior to initiation of the field investigation. Information concerning species under state protection was obtained from the NHP database of rare species and unique habitats. The NHP database was consulted to determine if known protected species occurrences have been previously documented from the coverage area of the USGS Whiteville quadrangle prior to the field investigation. NHP files were reviewed for known locations of listed species and significant natural areas on March 29, 2004.

A field investigation was conducted within the project study area by THE LPA GROUP of North Carolina (LPA) biologists on February 3, 2004. The project vicinity is an area extending 0.5-mile from the study area. The study area for B-4080 extends 590 feet west of the existing bridge and 650 feet east of the existing bridge (approximately 0.24 miles total) and encompasses a 200-foot wide corridor centered along the existing centerline of SR 1437.

Water resources were identified, and their physical characteristics were recorded. For the purposes of this study, a habitat assessment was performed within the project study area. Plant communities and associated wildlife were identified using a variety of observation techniques; including active searching, visual observations, and identification of characteristic signs of wildlife (sounds, tracks, scats, and burrows). Terrestrial community classifications generally follow Schafale and Weakley (1990), where appropriate; and plant nomenclature follows Radford *et al.* (1968). Biotic communities were mapped using sub-meter accuracy Global Positioning System (GPS) equipment and aerial photography of the project site. Vertebrate nomenclature follows Potter *et al.* (1980), Martof *et al.* (1980), Rhode *et al.* (1994), the American Ornithologists' Union (2001), and Webster *et al.* (1991).

Jurisdictional wetland areas were identified using the three parameter approach (hydrophytic vegetation, hydric soils, wetland hydrology) established in the *U.S. Army Corps of Engineers Wetlands Delineation Manual* (Environmental Laboratory 1987). The boundaries of the jurisdictional areas were flagged and mapped in the field using sub-meter accuracy GPS equipment. Jurisdictional areas were characterized according to the classification scheme established by Cowardin *et al.* (1979).

B. Physiography and Soils

The project study area is located in the Coastal Plain Physiographic Province of North Carolina. The topography in the project study area is nearly level to gently sloping. Elevations in the project study area range from approximately 66 to 82 feet above mean sea level (USGS 1990). The project study area consists of existing maintained right-of-way including fill slopes, rural, residential, and forested areas. Surrounding land uses include agricultural, residential, commercial, and forested lands.

According to the Columbus County Soil Survey General Soil Map, the project study area is located within an area mapped as Norfolk-Lynchburg-Goldsboro soil association (NRCS 1990). Soil associations contain one or more detailed map units and occupy a unique natural landscape. Detailed map units are named for the major soil series within the unit, but may contain minor inclusions of other soil series. The soil survey describes the Norfolk-Lynchburg-Goldsboro soil association as nearly level to gently sloping, well drained to somewhat poorly drained upland soils that have a sandy or loamy surface layer and a loamy subsoil.

There are three detailed map unit types that occur within the project study area, including:

- Goldsboro fine sandy loam, 0 to 2 percent slopes, (*Aquic Paleudults*);
- Lynchburg fine sandy loam, 2 to 7 percent slopes, *(Aeric Paleaquults)*; and,
- Megget fine sandy loam, frequently flooded, <2 percent slopes, (*Typic Albaqualfs*).

Megget fine sandy loam is listed as a hydric soil in Columbus County (USDA 1991). Goldsboro fine sandy loam and Lynchburg fine sandy loam are listed as having hydric inclusions such as Rains soils (*Typic Paleaquults*) (USDA 1991).

C. Water Resources

1.0 Waters Impacted

The project study area is located in the 03-07-58 sub-basin of the Lumber River Basin (NCDWQ 2004a). The study area is part of the USGS hydrologic unit 03040203 (EPA 2004). Two bodies of water are located in the project study area. These include Pine Log Swamp and Pine Log Branch. Pine Log Branch originates northwest of the project area in the wetlands of Pine Log Bay and flows southeast into Pine Log Swamp near the town of Whiteville in central Columbus County. Pine Log Branch has been assigned the Stream Index Number (SIN) 15-4-8-7; Pine Log Swamp has been assigned the SIN 15-4-1-1-2-2-3 (NCDWQ 2004b).

2.0 Water Resource Characteristics

Pine Log Swamp is a perennial swamp with a very slow flow over substrate consisting of fine sandy loam with a high organic content at the surface. Pine Log Swamp would provide a warm water aquatic habitat. Water clarity at the time of the site inspection was moderate (due to tannic staining). There is no well defined stream channel within the project study area. The study area consists predominantly of swamp, which is apparently inundated due to multiple beaver dams that are present within and down stream of the study area. Pine Log Swamp most closely resembles Rosgen stream type DA6. The inundated portion was approximately 500 feet wide through the study area. Riffles and pools were not evident. Surface flow through the study area is interrupted by SR 1437 and forced through the opening provided at the bridge. The existing bridge opening is 55 feet wide, and some scouring was evident beneath and immediately downstream of the bridge. Water depth at the bridge was estimated to be three to four feet at the time of the field visit.

2.1 Best Usage and Water Quality Classification

A Best Usage Classification is 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. Pine Log Swamp and Pine Log Branch have both been assigned a Best Use Classification of C and Sw (NCDWQ 2004b). Classification C indicates fresh waters that support aquatic life propagation and survival, fishing, wildlife, secondary recreation, and agriculture. Secondary recreation would include, wading, boating, and other uses involving human body contact with water where such activities take place in an infrequent, unorganized, or incidental manner. There are no restrictions on watershed development or types of discharges (NCDWQ 2004c). Point source discharges of treated wastewater are permitted in these waters, pursuant to Rules .0104 and .0211 of 15A NCAC 2B; local programs to control non-point source and stormwater discharge of pollution are required. Supplemental classification Sw designation refers to Swamp Waters, which are described as having low velocities, low pH, and low dissolved oxygen (DENR 2004c).

There are no Outstanding Resource Waters (ORW), High Quality Waters (HQW), WS-I, or WS-II waters within the project vicinity (NCDWQ 2004b). Pine Log Swamp and Pine Log Branch are not designated as North Carolina Natural and Scenic Rivers (NCNSR), or as National Wild and Scenic Rivers (NWSR, NPS 2004).

2.2 Macroinvertebrate Monitoring

There are two benthic macroinvertebrate sampling stations near the study area, one at Soules Swamp (at SR 1420) which is approximately two miles southwest of the study area, and one at White Marsh (at SR 1001) which is approximately seven miles southeast of the study area (NCDWQ 2003a). White Marsh was sampled on February 1, 2001, and Soules Swamp was sampled on March 5, 1992; however, the DWQ did not rate these

areas in the 2003 *Lumber River Basinwide Water Quality Management Plan* (NCDWQ 2003b). The reason they were not rated is that swamp streams present a unique challenge because of their seasonally interrupted flows, lower dissolved oxygen, lower pH, dark water, and braided channels (NCDWQ 2003c). The DWQ is still in the process of developing a special criterion for swampy streams (NCDWQ 2003c).

2.3 North Carolina Index of Biotic Integrity

The only fish sampling station in the sub-basin is at the Brown Marsh Swamp (at SR 1700), which is approximately 10 miles north of the study area (NCDWQ 2003b). This station was sampled on March 27, 1996; however, the DWQ is currently revising their rating methods for fish communities, and therefore, Brown Marsh Swamp has not been rated (NCDWQ 2003b).

2.4 Section 303(d) Waters

None of the water resources within the project study corridor are designated as biologically impaired water bodies regulated under the provisions of the Clean Water Act (CWA) §303(d) (NCDWQ 2002b).

2.5 Permitted Dischargers

There are no permitted NPDES discharges to Pine Log Branch or Pine Log Swamp (NCDWQ 2003d). However, there are four permitted point source discharges within a five mile radius of the study area (NCDWQ 2003a). These are either located downstream of the project area, or are in streams that converge with Pine Log Branch and Pine Log Swamp at a point downstream from the project study area.

2.6 Non-Point Source Discharges

LPA biologists reviewed aerial photography and conducted a limited visual observation of potential NPS discharges located within and near the project study area. Atmospheric deposition from passing vehicles; fertilizers, herbicides, and insecticides from nearby residential and agricultural areas; and hydrocarbon and chemical runoff from nearby roadways were identified as potential sources of NPS pollution near the project study area.

3.0 Anticipated Impacts to Water Resources

Short-term impacts to water quality, such as sedimentation and turbidity, may result from construction-related activities. Temporary construction impacts due to erosion and sedimentation would be minimized through implementation of a stringent erosion control schedule and the use of Best Management Practices (BMPs). The contractor would be required to 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 pursuant to NCDOT's *Standard Specifications for Roads and Structures.* These measures include the use of dikes, berms, silt basins, and other containment measures to control runoff. Measures also include the elimination of construction staging areas adjacent to waterways. Disturbed sites would be revegetated with herbaceous cover after construction to help reduce runoff and lessen sediment loadings. Direct discharges into streams would be avoided whenever possible. Runoff would be permitted to filter through roadside vegetation in order to remove possible contaminants and to decrease runoff velocities.

Other impacts to water quality that would be anticipated as a result of this project include changes in water temperature due to more exposure to sunlight (from the removal of vegetation beside the canals), increased shade due to construction of new structures, and changes in stormwater flows due to changes in the amount of impervious surface adjacent to the stream channel. However, due to the limited amount of overall change in the surrounding areas, impacts would be expected to be temporary in nature.

Waters within the study area have been assigned a Best Usage Classification of C and Sw, which falls into the category of a Case 3 stream according to Best Management Practices for Bridge Demolition and Removal (BMP-BDRs). A Case 3 stream has no special restrictions other than those outlined in Best Management Practices for Protection of Surface Waters.

3.1 Impacts Related to Bridge Demolition and Removal

Section 402-2 of NCDOT's *Standard Specifications for Roads and Structures* is entitled *Removal of Existing Structure.* This section outlines restrictions and BMP-BDRs, and details guidelines for calculating maximum potential temporary fill in water resource resulting from demolition of an existing bridge. These standards would be followed during the replacement of Bridge No. 148.

There is the potential that the superstructure could be dropped into Waters of the United States during demolition and removal of Bridge No. 148. The superstructure consists of a reinforced concrete deck and concrete curbs supported on I-beams. The maximum potential temporary fill in the Pine Log Swamp resulting from bridge demolition activities would be approximately 43.44 cubic yards.

D. Biotic Resources

Terrestrial and aquatic communities are included in the description of biotic resources. Systems described in the following sections include communities of associated plants and animals. These descriptions refer to the dominant flora and fauna observed in each community during the field investigation. Descriptions of the terrestrial systems are presented in the context of plant community classifications. These classifications follow Schafale and Weakley (1990) where possible. Representative faunal species that are likely to occur in these habitats (based on published range distributions) are also cited.

Scientific nomenclature and common names are used for species described. Subsequent references to the same species are by the common name only. Fauna observed and/or heard (in the case of bird species) during field investigations are denoted with an asterisk (*).

1.0 Plant Communities

Upland vegetative communities within the study corridor are all classified as disturbed-maintained communities. Distinct vegetative assemblages have become established in three different upland areas due to land use patterns and frequencies of disturbance.

Wetland vegetative communities within the study corridor include an inundated hardwood forest community and an adjacent area of wetland dominated by planted pines.

A more detailed description of these communities follows.

1.1 Disturbed-Maintained Communities

Three types of upland habitat that have recently been or are currently impacted by human disturbance are present in the study corridor; including regularly maintained roadside shoulders, a fallow agricultural field, and residential areas. The majority of these habitats are kept in a low-growing or early successional state. The fallow agricultural field within the project area is dominated by loblolly pine (*Pinus taeda*) saplings and broomsedge (*Andropogon virginicus*). The residential area includes maintained lawns and refuse piles near outbuildings. These areas are dominated by various turf grasses, ornamental and exotic vegetation. Vegetation along the road shoulders consists of grasses and opportunistic weedy species. Native vegetation is also present in transition zones between residential and natural areas.

1.2 Wetland Communities

Two wetland areas are present within the study area. These wetlands consist predominantly of inundated hardwood forest with an adjacent area of planted pines. The dominant tree species in the hardwood forest include bald cypress (*Taxodium distichum*), swamp tupelo (*Nyssa biflora*), red maple (*Acer rubrum*), tulip poplar (*Liriodendron tulipifera*), loblolly pine, and Chinese privet (*Ligustrum sinense*). Additional species observed include giant cane (*Arundinaria gigantea*), red bay (*Persea borbonia*), American holly (*Ilex opaca*), supplejack (*Berchemia scandens*), wild grape (*Vitis* sp.), climbing hydrangea (*Decumaria barbara*), and laurel-leaf catbrier (*Smilax laurifolia*). The area of planted pine was dominated by loblolly pine and also included water oak (*Quercus nigra*), laurel oak (*Quercus laurifolia*), sweet gum (*Liquidambar styraciflua*), Chinese privet, and Japanese honeysuckle (*Lonicera japonica*). Section 4.1 provides further information on these wetlands. The wetland communities dominate the study area and may be classified as predominantly Coastal Plain Small Stream Swamp (Blackwater Subtype), as described by Schafale and Weakley (1990).

2.0 Wildlife

The study area was visually surveyed for signs of terrestrial and aquatic wildlife. Little wildlife was observed during the field investigation. Fauna likely to occur in the study area based on published ranges are also included.

2.1 Terrestrial Wildlife

Bird species observed or likely to occur in the study area include such species as the American robin* (*Turdus migratorius*), mockingbird* (*Mimus polyglottos*), golden-crowned kinglet* (*Regulus satrapa*), yellow-bellied sapsucker (*Sphyrapicus varius*), and the Carolina wren* (*Thryothorus ludovicianus*).

Mammals observed or likely to occur in the study area include such species as the opossum* (*Didelphis virginiana*), raccoon (*Procyon lotor*), beaver* (*Castor canadensis*), and the white-tailed deer (*Odocoileus virginianus*).

Terrestrial reptiles observed or likely to occur in the study area include such species as the green anole* (*Anolis carolinensis*), black rat snake (*Elaphe obsoleta*), milk snake (*Lampropeltis triangulum*), Eastern box turtle (*Terrapene carolina*), and the common king snake (*Lampropeltis getulus*).

Terrestrial amphibians observed or likely to occur in the study area include such species as the mud salamander (*Pseudotriton montamus*), northern cricket frog (*Acris crepitans*), American toad (*Bufo americanus*), and the four-toed salamander (*Hemidactylum scutatum*).

3.0 Aquatic Community

According to the Columbus County Soil Survey and USGS topographic map, Pine Log Branch flows through Pine Log Swamp within the study area. However; as described in Section 2.0, *Water Resource Characteristics*; no distinct channel was observed during the field investigation. No aquatic vegetation was observed in the swamp during the field assessment. A visual survey of the swamp within the project study area was conducted to document the aquatic community.

3.1 Aquatic Wildlife

Fish species observed or likely to occur in the study area include such species as the mosquito fish* (*Gambusia affinis*), golden shiner (*Notemigonus crysoleucas*), eastern mudminnow (*Umbra pygmaea*), mud sunfish (*Acantharchus pomotis*), and the swamp darter (*Etheostoma fusiforme*).

Aquatic reptiles expected to occur in the study include such species as the yellowbelly slider (*Chrysemys scripta*), mud snake (*Farancia abacura*), redbelly water snake (*Nerodia erythrogaster*), and the cottonmouth (*Agkistrodon piscivorus*).

Aquatic amphibians expected to occur in the study area include such species as the lesser siren (*Siren intermedia*), southern dusky salamander (*Desmognathus auriculatus*), spring peeper (*Hyla crucifer*), and the southern leopard frog (*Rana sphenocephala*).

Potential habitat exists in the study area to support a variety of aquatic bird species. Suitable habitat exists for the wood duck (*Aix sponsa*), mallard (*Anas platyrhynchos*), great blue heron* (*Ardea herodias*), and the belted kingfisher* (*Megaceryle alcyon*).

4.0 Anticipated Impacts to Biotic Communities

Impacts to terrestrial and aquatic communities associated with the replacement of the existing bridge and related detours are discussed in the following sections.

4.1 Terrestrial Communities

Plant communities located within the study area total 5.24 acres (Table 2). These areas are based on a 1,267-foot long study area with a width of approximately 200 feet, situated on the centerline of existing SR 1437.

Table 2. Plant Communities Occurring within the B-4080 Study Area

Plant Community	Area Occupied by Community (acres)	Potential Impacts (acres)	
		Permanent (offsite [Preferred] and onsite detours)	Temporary (onsite detour)
Disturbed-Maintained	3.1	0.22	0.6
Wetland Communities	2.1	0.05	0.7
Total	**5.2**	**0.27**	**1.3**

Permanent impacts to wildlife resulting from the proposed project would be minimal due to the limited amount of habitat that would be impacted. Although some loss of habitat immediately adjacent to existing road shoulders would result, these areas are of limited value as wildlife habitat.

4.2 Wetland Communities

Temporary impacts include those impacts that would result from demolition of the existing bridge and construction of the replacement bridge (Table 3). For the Preferred

Alternative an offsite detour would be used during construction thereby avoiding additional temporary wetland or stream impacts that would result from an onsite detour. Permanent impacts to Waters of the United States are those impacts that occur in areas within the construction limits (Table 5). BMPs would be employed by the construction contractor to first avoid and then minimize impacts to Waters of the United States. Erosion and sedimentation would be controlled by implementation of a Sediment and Erosion Control Plan during construction. Any areas of Waters of the United States that were temporarily impacted would be restored to their original condition following completion of the disturbance activity. Potential surface water impacts are included in Table 3.

Table 3. Anticipated Impacts to Surface Waters/Wetlands

Jurisdictional Areas	**ALT. 1 (Preferred Alternative)**		**ALT. 2**	
	Permanent Impacts	**Temporary Impacts**	**Permanent Impacts**	**Temporary Impacts**
Wetland A	0.04	None	0.04	0.7
Wetland B	0.01	None	0.01	None
Total (acres)	0.05	None	0.05	0.7
Total Wetland Impacts (acres)	**0.05**		**0.75**	
Stream Impacts (acres)	None	None	None	None
Stream Impacts (linear feet)	None	None	None	None
Total Stream Impacts (linear feet)	**No Impact**		**No Impact**	

4.3 Aquatic Communities

Permanent impacts to water resources associated with either of the alternatives would be limited to 0.05 acres of clean fill material placed in the inundated, wooded swamp adjacent to the existing roadway for improvements to the bridge approaches. Therefore, impacts to aquatic communities would be minimal.

Temporary impacts to aquatic organisms may result from increased sedimentation during construction. Aquatic invertebrates would likely drift downstream during and after construction to recolonize the disturbed area. Sediments have the potential to affect fish and other aquatic life in several ways, including the clogging and abrading of gills and other respiratory surfaces, affecting the habitat by filling wetlands, and altering water chemistry. Increased sedimentation may also cause decreased light penetration through

an increase in turbidity. NCDOT's BMPs for the protection of surface waters would be enforced to reduce impacts during demolition and construction phases.

E. Special Topics

1.0 Waters of the United States

1.1 Wetlands

Jurisdictional wetlands in the project study area are palustrine in nature, as defined in Cowardin et al. (1979). Palustrine systems include all nontidal wetlands dominated by trees, shrubs, persistent emergents, and emergent mosses and all wetlands where salinity due to ocean-derived salts is below 0.5% (Cowardin et al. 1979). The dominant wetland type within the study area is dominated by broad-leaved deciduous vegetation and is seasonally flooded, giving it a Cowardin classification of PFO1C. A small portion of this wetland consists of an area dominated by planted loblolly pines with an understory of broad-leaved deciduous vegetation, which appears to be saturated/semipermanent/seasonal as evidenced by hydrologic indicators in the soil, giving it a Cowardin classification of PFO4Y.

1.2 Jurisdictional Streams

Pine Log Branch is located within the study area. However, as described in Section V. C. 2.0, *Water Resource Characteristics* the wetlands within the study corridor are inundated, and a stream channel within the wetlands was not discernable during the field investigation. Pine Log Branch is classified a Water of the United States. Based on a review of the USGS topographic map and the soil survey, there is approximately 200 linear feet of stream within the project study corridor.

2.0 Permits and Certifications

The following federal and state permits and certifications would be required prior to beginning construction.

2.1 Section 404

In accordance with provisions of Section 404 of the CWA (33 United States Code [U.S.C.] 1344), a permit would be required from the USACE for the discharge of dredged or fill material into Waters of the United States. Because the project is being documented as a Categorical Exclusion, it is expected that the project would qualify for a Nationwide Permit 23, which applies to approved Categorical Exclusions. In addition, a Nationwide Permit 33 which applies to temporary construction, access, and dewatering may be required if temporary construction is required that is not described in the Categorical Exclusion.

2.2 Water Quality Certification

Section 401 of the CWA requires that the state issue or deny a Water Quality Certification (WQC) for any federally permitted or licensed activity that many result in a discharge into Waters of the United States. Section 401 Certification allows surface waters to be temporarily impacted for the duration of the construction or other land manipulation. Issuance of a 401 Certification from the DWQ is a prerequisite to the issuance of a Section 404 Permit. If the general conditions of the corresponding WQC will be met, written concurrence from the DWQ will not be required.

3.0 Mitigation

Mitigation has been defined in NEPA regulations to include efforts which: a) avoid; b) minimize; c) rectify; d) reduce or eliminate; or e) compensate for adverse impacts to the environment [40 Code of Federal Regulations (CFR) 1508.20 (a-e)].

Federal Highway Administration policy stresses that all practicable measures should be taken to avoid or minimize impacts to wetlands that would be affected by federally, funded highway construction. A sequencing (step-down) procedure is recommended in the event that avoidance is impossible. Mitigation employed outside of the highway right-of-way must be reviewed and approved on a case-by-case basis.

Avoidance – Wetlands and Waters of the United States are present along both sides of the proposed project. Because the project involves replacement of an existing structure, impacts to adjacent wetlands caused by improvements to the existing bridge approaches and replacement of bridge piers cannot be avoided.

Minimization – Impacts to the adjacent wetlands would be minimized by using 3:1 fill slopes through wetlands. No lateral ditches would be constructed in wetlands. Utilization of BMPs would be required of the contractor to further minimize wetland impacts. The selection of Alternative 1 (off-site detour) as the Preferred Alternative minimizes impacts that would be caused by temporary construction.

Compensatory mitigation – According to the conditions of the Nationwide Permit, the USACE would determine if the impacts are minimal and would at that time determine if compensatory mitigation is required. However, because the project would cause less than 0.1-acre of impact to wetlands, it is anticipated that no mitigation would be required. Final mitigation decision rests with the USACE.

F. Protected Species

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

1.0 Species Under Federal Protection

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 eight federally protected species listed for Columbus County (USFWS database dated March 7, 2002, Columbus County List updated March 14, 2006) are provided in Table 4.

Table 4. Federally Protected Species Listed for Columbus County, NC

Common Name	Scientific Name	Federal Status*	Biological Conclusion
Vertebrates			
Bald Eagle	*Haliaeetus leucocephalus*	T(P/D)	No Effect
Red-cockaded woodpecker	*Picoides borealis*	E	No Effect
Wood stork	*Mycteria americana*	E	No Effect
Shortnose sturgeon	*Acipenser brevirostrum*	E	No Effect
Waccamaw silverside	*Menidia extensa*	T	No Effect
American alligator	*Alligator mississippiensis*	T(S/A)	Not Applicable
Vascular Plants			
Rough-leaved loosestrife	*Lysimachia asperulaefolia*	E**	No Effect
Cooley's meadowrue	*Thalictrum cooleyi*	E	No Effect
*E- Endangered, T- Threatened, T(SA)- Threatened due to similarity of appearance **- Historic record (last observed over 50 years ago).			

Bald Eagle (*Haliaeetus leucocephalus)*
Adult bald eagles have a white head, white tail, and a large yellow bill, with the rest of its plumage being dark in color. Immature bald eagles are dark with light splotching on the body, underwing coverts, flight feathers, and tail base. The bird averages 31 to 37 inches in length with a 70 to 90 inch wingspan.

Breeding areas are normally within 2.5 miles of coastal areas, bays, rivers, lakes, or other bodies of water that can provide them with their main food sources; fish, waterfowl and seabirds. Manmade reservoirs provide an excellent habitat for bald eagles (TPW 2004). Bald eagles prefer roosts in conifers or other sheltered sites in the winter; it would typically select large accessible trees for roosting areas. However, in some areas it is common to see eagles roosting in both coniferous and deciduous trees. Eagles avoid areas with nearby human activity (boat traffic, pedestrians) and development (buildings). Nest sites are usually in tall trees or on cliffs near water. The bald eagle would nest in a variety of trees including, pine, spruce, fir, cottonwood, oak, poplar, and beech. Ground nesting has been reported on the Aleutian Islands in Alaska, in Canada's Northwest

Territories, and in Ohio, Michigan, and Texas. Nests located on cliffs and rock pinnacles have been reported historically in California, Kansas, Nevada, New Mexico and Utah, but currently are known to occur only in Alaska and Arizona. Nests are usually re-used and enlarged every year. They can reach 20 feet in diameter and weigh up to 4,000 pounds (FWS 1999).

Based on a review of NHP records, there are no documented occurrences of bald eagle within a three-mile radius of the project study area.

BIOLOGICAL CONCLUSION: No Effect
According to the NHP elemental occurrence database records, there are no known occurrences of bald eagle in the project vicinity. There are no large open waters near the project study area that could be used for nesting or foraging habitat by the bald eagle. The proposed project would have No Effect on this federally threatened species.

Analysis Details –
Methodology: Analysis of the possible presence of and potential impacts to the bald eagle was conducted using an evaluation of existing information, and an assessment of the habitat requirements. Additionally, the NHP elemental occurrence database was consulted on March 29, 2004.

Red-cockaded Woodpecker (*Picoides borealis*)
The red-cockaded woodpecker is a small woodpecker with a wingspan that reaches 15 inches. The plumage of the red-cockaded woodpecker includes black and white horizontal stripes on its back, white cheeks and breast, black-streaked flanks, and a black cap and throat. Males have small red spots or "cockades" on each side of the cap (USFWS, *The Red Book.* 1993). Preferred nesting habitat of the red-cockaded woodpecker is old-growth pine forests (stems ≥ 60 years old) that are relatively free of hardwood undergrowth. Suitable foraging habitat includes pine and pine hardwood stands with pine stems ≥ 30 years of age. The range of the red-cockaded woodpecker mirrors that of southern pine forests that it inhabits. Historically it was found from eastern Texas to Florida and north to New Jersey. Preferred habitat is old-growth pine forests that are relatively free of hardwood undergrowth.

BIOLOGICAL CONCLUSION: No Effect
According to the NHP elemental occurrence database records, there are no known occurrences of the red-cockaded woodpecker in the project vicinity and no suitable habitat was observed within the project study area. The proposed project would have No Effect on this federally endangered species.

Analysis Details -
Methodology: Analysis of the possible presence of and potential impacts to red-cockaded woodpecker was conducted using an evaluation of existing information and an assessment by the primary investigators of the habitat requirements and

occurrence of the species in North Carolina. The NHP elemental occurrence database records were consulted on March 29, 2004.

Wood Stork (*Mycteria americana*)
Wood storks are large, long legged wading birds that can grow up to 50 inches tall with a wingspan of 60 to 65 inches. Their plumage is white except for black primaries and secondaries and a short black tail. The head and neck are largely unfeathered and dark gray in color. The bill is black, thick at the base, and slightly decurved. Immature birds are a dingy gray color and have yellowish bills (FWS 2003).

The wood stork's habitat consists of freshwater and brackish wetlands, with nesting areas in cypress or mangrove swamps. They feed in freshwater marshes, narrow tidal creeks, or flooded tidal pools, with attractive feeding sites being depressions in marshes or swamps where fish become concentrated during periods of falling water levels (FWS 2003).

Based on a review of NHP records there are no documented occurrences of wood stork within a three-mile radius of the project study area.

BIOLOGICAL CONCLUSION: No Effect
According to the NHP element occurrence database records, there are no known occurrences of the wood stork in the project vicinity. There are no cypress or mangrove swamps used for nesting by the wood stork within the project study area. Also, freshwater marshes, narrow tidal creeks, flooded tidal pools, and depressions in marshes or swamps used by the wood stork for foraging are not present within the project study area. The proposed project would have No Effect on this federally endangered species.

Analysis Details –
Methodology: Analysis of the possible presence of and potential impacts to the wood stork was conducted using an evaluation of existing information, and an assessment of the habitat requirements. Additionally, the NHP element occurrence database was consulted on March 29, 2004.

Shortnose Sturgeon (*Acipenser brevirostrum*)
The shortnose sturgeon is a species of fish that is found in riverine, estuarine, and occasionally near shore marine environments of eastern North America and the Atlantic Ocean. The shortnose sturgeon is an anadromous species, which means that it spends portions of its life cycle in freshwater environments, but also is known to utilize saline environments. For the shortnose sturgeon, spawning and larval stages of the life cycle typically occur within freshwater areas that are above the zone of tidal influence (National Marine Fisheries Service, 1998). Juvenile and adult shortnose sturgeon in areas of the southeastern United States spend the majority of the time foraging near the freshwater/saltwater interface in riverine and estuarine environments (National Marine Fisheries Service, 1998). Shortnose sturgeons reach a maximum length of approximately

four feet. They have a short, blunt snout with the mouth located on the underside of the snout that is used to forage for prey items such as mussels and crustaceans.

BIOLOGICAL CONCLUSION: No Effect
According to the NHP elemental occurrence database records, there are no known occurrences of the shortnose sturgeon in the project vicinity and no suitable habitat was observed within the project study area. The proposed project would have No Effect on this federally endangered species.

Analysis Details -
Methodology: Analysis of the possible presence of and potential impacts to shortnose sturgeon was conducted using an evaluation of existing information and an assessment by the primary investigators of the habitat requirements and occurrence of this species in North Carolina. The NHP elemental occurrence database records were consulted on March 29, 2004.

Waccamaw Silverside (*Menidia extensa*)
The Waccamaw silverside is a small, almost transparent fish with silver stripes on both sides of the body along the lateral lines. The silverside is a thin bodied fish that reaches a length of approximately 2.5 inches. The silverside is endemic to Lake Waccamaw, but it is occasionally found in (or along) the upper limits of the Waccamaw River during periods of high water. The USFWS has designated Lake Waccamaw and a 0.4-mile section of Big Creek, from Lake Waccamaw to County Road 1947, as the silverside's critical habitat.

BIOLOGICAL CONCLUSION: No Effect
Lake Waccamaw is located 10 miles east of the study area, and no known occurrences of the Waccamaw silverside have been reported by the NHP within the project vicinity. Therefore, the proposed project would have no effect on this federally threatened species.

Analysis Details -
Methodology: Analysis of the possible presence of and potential impacts to the Waccamaw silverside was conducted using an evaluation of existing information and an assessment by the primary investigators of the habitat requirements and occurrence of this species in North Carolina. The NHP elemental occurrence database records were consulted on March 29, 2004.

American Alligator (*Alligator mississippiensis*)
The American alligator is classified as threatened due to its similarity in appearance to the American crocodile (*Crocodylus acutus*), which is endangered. The alligator ranges throughout the southeastern United States from North Carolina west to Texas and north to Arkansas. Suitable habitat for the alligator includes swamps, rivers, marshes, and lakes. Prey species for alligators include turtles, fish, ducks, wading birds, and mammals.

BIOLOGICAL CONCLUSION: Not Applicable

Analysis Details -
Methodology: Analysis of the possible presence of and potential impacts to the American alligator was conducted using an evaluation of existing information and an assessment by the primary investigators of the habitat requirements and occurrence of this species in North Carolina. The NHP elemental occurrence database records were consulted on March 29, 2004.

Rough-leaved Loosestrife (*Lysimachia asperulaefolia*)
Rough-leaved loosestrife is a tall slender perennial that reaches a height of 12 to 24 inches. The stalk is rarely branched. The leaves occur in whorls around the stem in groups of three to four. Five-petaled yellow flowers are located on terminal stems that are between two to four inches in length. The bloom period for rough-leaved loosestrife is from May to June. Suitable habitat consists of sandy soils and moist peat found in pine flatwoods, savannas, seep bogs, and pocosins.

BIOLOGICAL CONCLUSION: No Effect
According to the NHP elemental occurrence database records, there are no known occurrences of the rough-leaved loosestrife in the project vicinity, and no suitable habitat was observed within the project study area. The proposed project would have No Effect on this federally endangered species.

Analysis Details -
Methodology: Analysis of the possible presence of and potential impacts to the rough-leaved loosestrife was conducted using an evaluation of existing information and an assessment by the primary investigators of the habitat requirements and occurrence of this species in North Carolina. The NHP elemental occurrence database records were consulted on March 29, 2004.

Cooley's Meadowrue (*Thalictrum cooleyi*)
Cooley's meadowrue is a perennial plant that generally ranges in height from 31 to 39 inches. The stems tend to be erect when the plant occurs in full sun conditions and tend to be lax when in shaded conditions. Leaves generally occur in groups of three, and basal and stem leaves are typically present. Cooley's meadowrue flowers do not have petals. Sepals on male flowers range from pale yellow to white, while sepals on female flowers are green. The bloom period is mid- to late June. The natural environment for Cooley's meadowrue consists of bogs and savannahs; however, they can occur in disturbed areas such as ditches and power line clearings.

BIOLOGICAL CONCLUSION: No Effect
According to the NHP elemental occurrence database records, there are no known occurrences of Cooley's meadowrue in the project vicinity, and no suitable habitat was observed within the project study area. The proposed project would have No Effect on this federally endangered species.

Analysis Details -
Methodology: Analysis of the possible presence of and potential impacts to the Cooley's meadowrue was conducted using an evaluation of existing information and an assessment by the primary investigators of the habitat requirements and occurrence of this species in North Carolina. The NHP elemental occurrence database records were consulted on March 29, 2004.

2.0 Federal Species of Concern

Federal Species of Concern (FSC) are those plant and animal species that may or may not be listed in the future. These species are not legally protected under the Endangered Species Act and are not subject to any of its provisions, including Section 7, until they are formally proposed or listed as Threatened or Endangered.

Table 5 includes FSC listed for Columbus County (March 14, 2006) and their state classifications obtained from the NHP database. Species that are listed as Endangered (E), Threatened (T), or Special Concern (SC) on the NHP list of Rare Plant and Animal Species are afforded state protection under the State Endangered Species Act and the North Carolina Plant Protection and Conservation Act of 1979. However, the level of protection given to state-listed species does not apply to NCDOT activities.

No FSC species are recorded in the NHP database as occurring in the project vicinity.

Table 5. Federal Species of Concern (FSC) Listed for Columbus County, NC

Common Name	Scientific Name	State Status	Potential Habitat
Vertebrates			
Rafinesque's big-eared bat	*Corynorhinus rafinesquii*	T	Yes
Southeastern myotis	*Myotis austroriparius*	SC**	Yes
Bachman's sparrow	*Aimophila aestivalis*	SC**	No
Henslow's sparrow	*Ammodramus henslowii*	SR	No
Mimic glass lizard	*Ophisaurus mimicus*	SC ~	No
Carolina pygmy sunfish	*Elassoma boehlkei*	T	Yes
Waccamaw killfish- Lake Waccamaw population	*Fundulus waccamensis*	SC	No
Broadtail madtom	*Noturus* sp. 1	SC#	Yes
American eel	*Anguilla rostrata*	#	Yes
Waccamaw darter	*Etheostoma perlongum*	T#	No
Invertebrates			
Waccamaw spike	*Elliptio waccamawensis*	T	No
Yellow lampmussel	*Lampsilis cariosa*	E**	No
Waccamaw fatmuket	*Lampsilis fullerkati*	T	No
Savannah lilliput	*Toxolasma pullus*	E	No
Cape Fear threetooth	*Triodopsis soelneri*	T	No
Townes' clubtail	*Stylurus townesi*	SR**	No
Pee Dee lotic crayfish	*Procambarus lepidodactylus*	#	Yes
Waccamaw lance pearlymussel	*Elliptio* sp. 5	#	No

Hessel's hairstreak	*Callophyrs hesseli*	#	Yes
Vascular Plants			
Savanna indigo-bush	*Amorpha georgiana var confusa*	T	No
Carolina asphodel	*Tofieldia glabra*	#	No
Carolina grass-of-parnassus	*Parnassia caroliniana*	E#	No
Large-leaved grass-of-parnassus	*Parnassia grandifolia*	T	No
Chapman's sedge	*Carex chapmanii*	#	Yes
Venus flytrap	*Dionaea muscipula*	SR-L, SR	No
Chapman's three-awn	*Aristida simpliciflora*	#	No
Long beach seedbox	*Ludwigia brevipes*	#	No
Harper's fimbry	*Fimbristylis perpusilla*	T	No
A St. Johns Wort	*Hypericum* sp. 2	#	Yes
Raven's seedbox	*Ludwigia ravenii*	#	No
Carolina bogmint	*Macbridea caroliniana*	T	No
Savannah cowbane	*Oxypolis ternata*	#	No
Pineland plantain	*Plantago sparsiflora*	E	No
Swamp forest beaksedge	*Rhynchospora decurrens*	SR-P ~	Yes
Grassleaf arrowhead	*Sagittaria weatherbiana*	SR-T	Yes
Spring-flowering goldenrod	*Solidago verna*	SR-L	No
Wireleaf dropseed	*Sporobolus teretifolius sensu stricto*	T	No

E- Endangered, T- Threatened, SR- Significantly Rare, SC- Special Concern, SR-T- Rare throughout its range, SR-L – Range is limited to NC and adjacent states, SR-P – Periphery of its range in NC.
* - No longer tracked by NCNHP
** - Occurs on NCNHP list but not on USFWS list
# - Not listed as a FSC on NCNHP list
^ - Obscure record
~ - Historic record (last observed over 50 years ago)

VI. CULTURAL RESOURCES

A. Compliance Guidelines

This project is subject to compliance with Section 106 of the National Historic Preservation Act of 1966, as amended, implemented by the Advisory Council on Historic Preservation's Regulations for Compliance with Section 106, codified at 36 CFR Part 800. Section 106 requires that for federally funded, licensed, or permitted projects having effects on properties listed in or eligible for the National Register of Historic Places, the Advisory Council on Historic Preservation be given the opportunity to comment.

B. Historic Architecture

In a memorandum dated June 30, 2004 the State Historic Preservation Office (SHPO) concurred that there are no historic resources that would be affected by the proposed project. A copy of the memorandum is included in the Appendix.

C. Archaeology

The State Historic Preservation Office, in a memorandum dated March 2, 2004 recommended, "no archaeological investigation be conducted in connection with this project." A copy of the SHPO memorandum is included in the Appendix.

VII. SECTION 4(f) RESOURCES

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

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

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

No publicly owned parks or recreational facilities, wildlife and waterfowl refuges, or historic sites of national, state, or local significance would be impacted as a result of proposed project. The proposed project would not require right-of-way acquisition or easement from any land protected under Section 4(f) of the Department of Transportation Act of 1966.

VIII. ENVIRONMENTAL EFFECTS

The project is expected to have a positive effect on transportation and the surrounding community. The replacement of inadequate bridges would result in safer and more efficient traffic operations.

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

Replacement of Bridge No.148 would not have a negative effect on the quality of the human or the natural environment.

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

No adverse impact on families or the community is expected. Right-of-way acquisition would be limited. No relocatees are expected with the implementation of the proposed alternative.

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

No adverse effect on public facilities or services is expected. The project is not expected to adversely affect social, economic, or religious opportunities in the area. There would be some temporary inconvenience to local travel due construction activities.

The studied route does not contain bicycle accommodations, nor is it a designated bicycle route; therefore, no bicycle accommodations have been included as part of this project.

This project has been coordinated with the United States Department of Agriculture, Natural Resources Conservation Service (NRCS). The Farmland Protection Policy Act requires all federal agencies or their representatives to consider the potential impact to prime farmland for all land acquisition and construction projects. Soils were identified within a 0.5-mile radius of the project area, and checked to see if they were classified as prime, unique, or of state or local importance. Nine of the soils identified were on the NRCS list, *Important Farmlands of North Carolina, May 1998*. Soils in which all areas are considered prime farmland included, Goldsboro Fine Sandy Loam, 0 to 2 percent slopes (GoA), Norfolk Loamy Fine Sand, 2 to 6 percent slopes (NoB), and Norfolk loamy fine sand, 0 to 2 percent slopes (NoA). Soils in which only drained areas are considered prime farmland included, Rains Fine Sandy Loam (Ra), Lynchburg Fine Sandy Loam (Ly), Lumbee Fine Sandy Loam (Lu), and Torhunta Fine Sandy Loam (To). Soils in which all areas are considered farmland of statewide importance included, Megett Fine Sandy Loam (Me). Areas in which only drained areas are considered farmland of statewide importance included, Coxville Loam (Co). If impacts to these soils occur as a result of the proposed project, they are expected to be limited in nature.

No adverse effects to air quality are anticipated from this project. This project is an air quality "neutral" project, so it is not required to be included in the regional emissions analysis, and a project level CO analysis is not required.

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

If vegetation or wood debris is disposed of by open burning, it shall be done in accordance with applicable local laws and regulations of the North Carolina. Implementation Plan (SIP) for air quality in compliance with 15 NCAC 2D.0520 and the 1990 Clean Air Act Amendments and the National Environmental Policy Act. This evaluation completes the assessments for air quality, and no additional reports are required.

Ambient noise levels may increase during the construction of this project; however this increase would be only temporary and usually confined to daylight hours. There should be no notable change in traffic volumes after the project is complete. Therefore, this project would have no adverse effect on existing noise levels. Noise receptors in the project area would not be impacted by this project. This evaluation completes the assessment requirements for highway noise set forth in 23 CFR Part 722. No additional reports are required.

A "Geo-Environmental Impact Evaluation" was conducted by the NCDOT at the project site to identify any properties that may contain hazardous waste materials and result in future environmental liability if acquired. These hazards include, underground storage tanks (USTs), hazardous waste sites, regulated landfills, unregulated dumpsites, and any other site or materials that are considered hazardous. A field reconnaissance survey, a file search of appropriate environmental agencies, and a Geographical Information System (GIS) were used to identify any known problem sites along the proposed project alignment. The field reconnaissance survey yielded no anticipated UST sites within the project area. A GIS analysis of the project corridor showed no regulated landfills, or unregulated dumpsites were within the project limits. GIS analysis and field reconnaissance found no potential RCRA or CERCLA sites within the project limits. Based on field reconnaissance and a records search there should be no contamination issues for the B-4080 project.

Columbus County is a participant in the Federal Flood Insurance Program. The bridge is located within an Approximate Study Area. The new structure would be designed to match or lower the existing 100-year storm elevation upstream of the roadway. Since the proposed replacement of Bridge No. 148 would be a structure similar in waterway opening size, it is not anticipated that it would have any significant adverse impact on the existing floodplain, and it would not raise floodplain levels. The Federal Emergency Management Agency, Flood Insurance Rate Map (FIRM) for the project study area is attached.

Based on the above discussion, it is concluded that no substantial environmental impacts would result from the replacement of Bridge No. 148.

IX. PUBLIC INVOLVEMENT

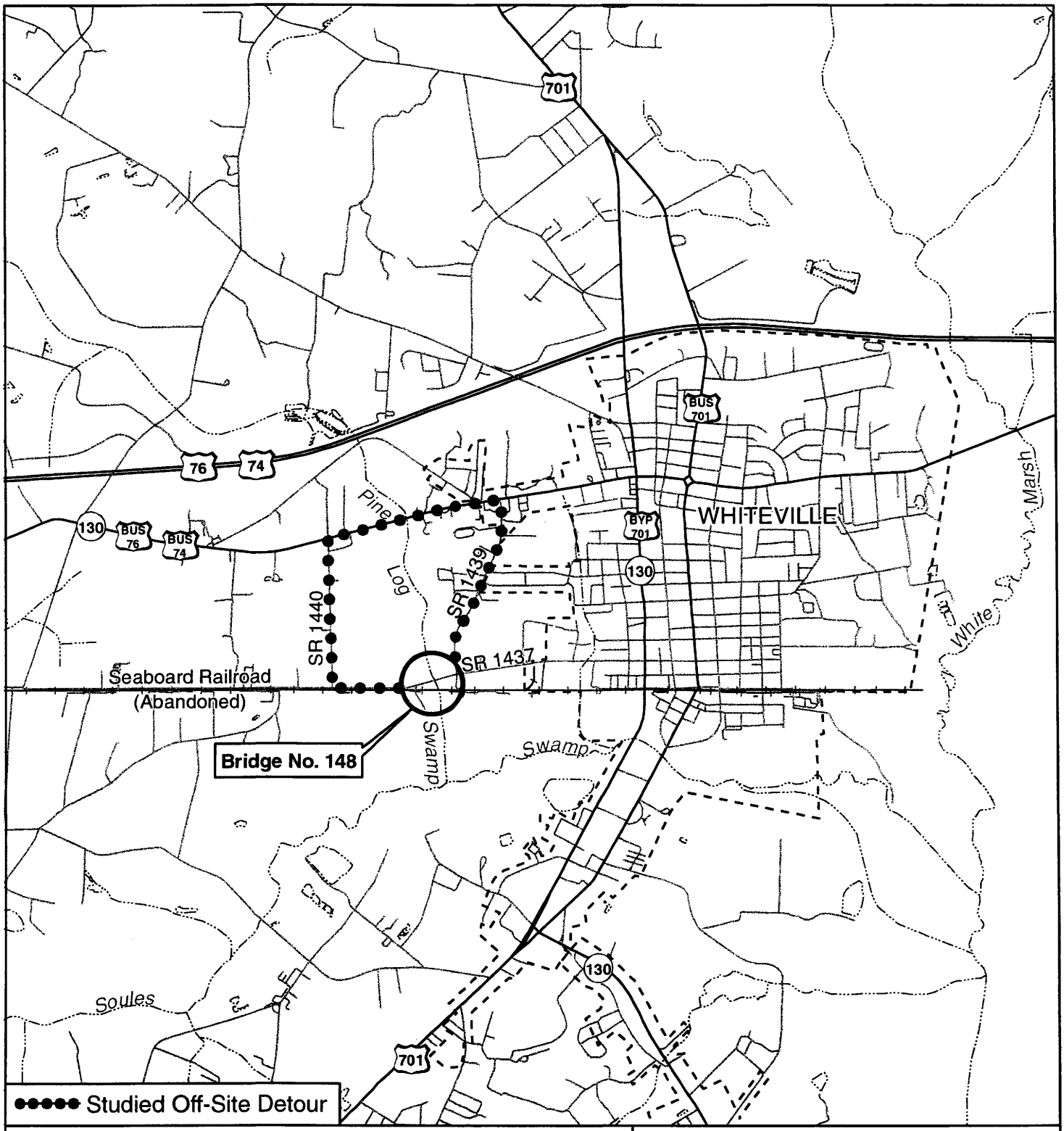
Newsletters describing the proposed bridge replacement project were sent to local residents. The newsletters give the public an opportunity to comment on the possible alternatives for the proposed bridge replacement. A copy of the newsletter is included in the Appendix. Comments received from local residents supported the preferred alternative.

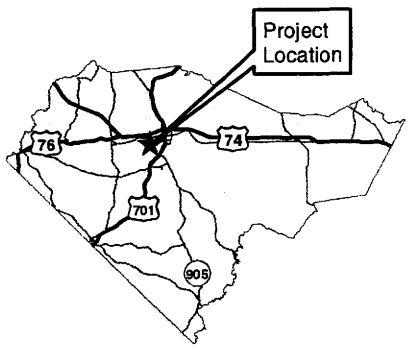
X. AGENCY COMMENTS

Comments on the proposed project were requested from federal, state and local agencies. Several agencies have commented upon the proposed bridge alignment. These comments have been considered during the environmental and design process and are included in the appendix.

According to Mr. Ron Sechler of the National Marine Fisheries Service, anadromous fish do not utilize this stream. Therefore, comment #4 from the USFWS made on December 30, 2003, and comment #9 made by the NCWRC on February 4, 2004, stating the use of "*Stream Crossings Guidelines for Anadromous Fish Passage*" need not be adhered to, and no anadromous fish moratorium is necessary.

FIGURES





Columbus County, NC

N W E S

0 4,000 Feet

North Carolina Department of Transportation
Project Development and Environmental Analysis Branch

Columbus County
Replace Bridge No. 148 on SR 1437 Over Pine Log Swamp
B-4080

PROJECT VICINITY MAP | Figure 1

North Carolina Department of Transportation
Project Development and
Environmental Analysis Branch

Columbus County
Replace Bridge No. 148 on S.R. 1437
Over Pine Log Swamp
B-4080

SCALE: 1" = 150'

Figure 2A

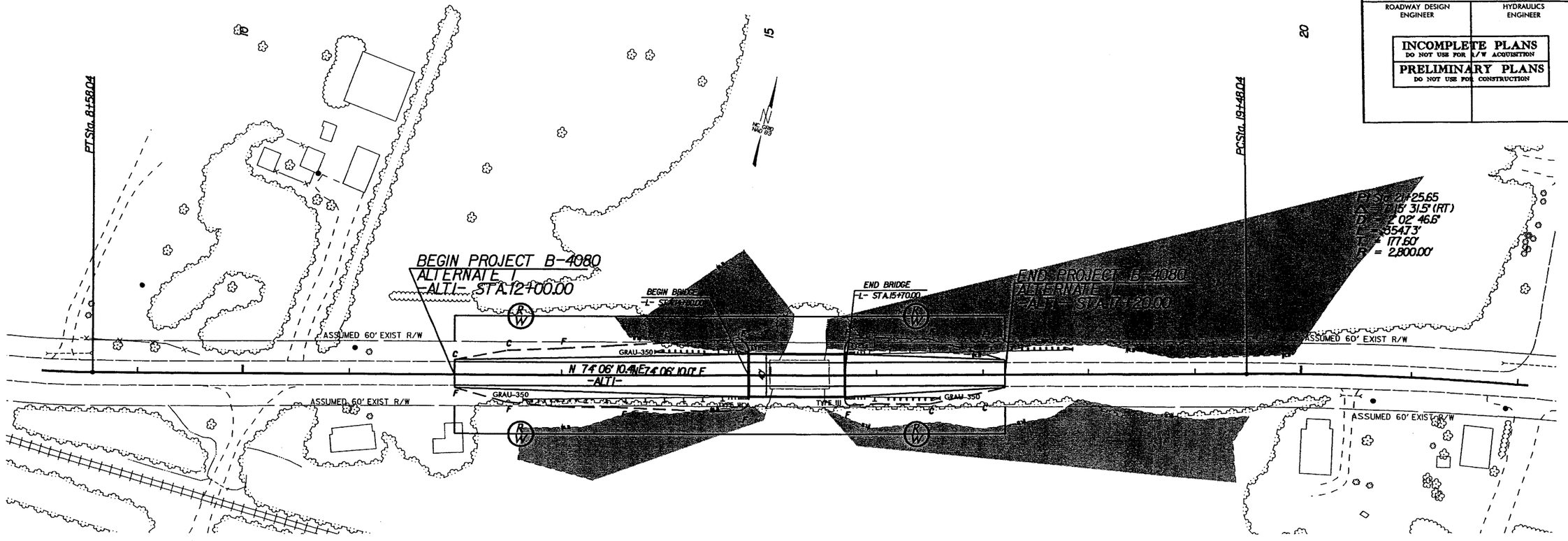
8/17/99

REVISIONS

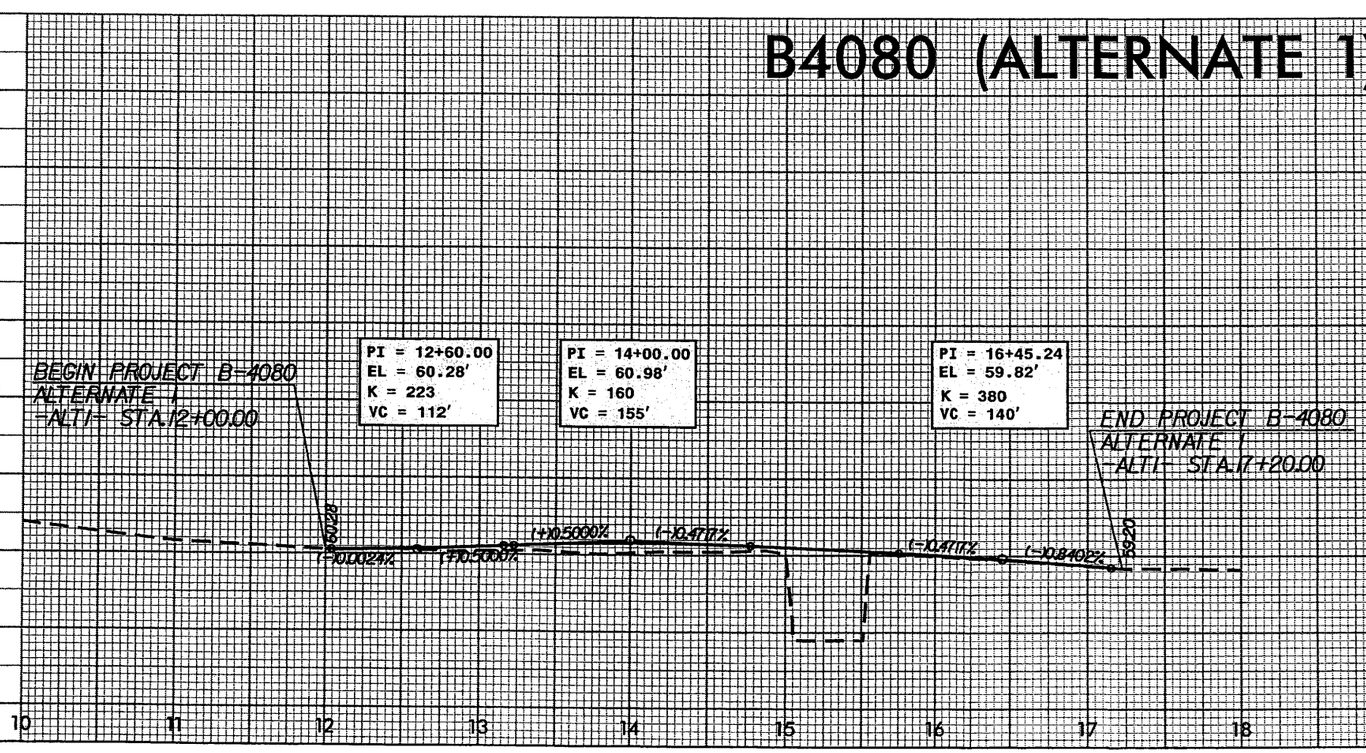
PROJECT REFERENCE NO.	SHEET NO.
B-4080	1
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

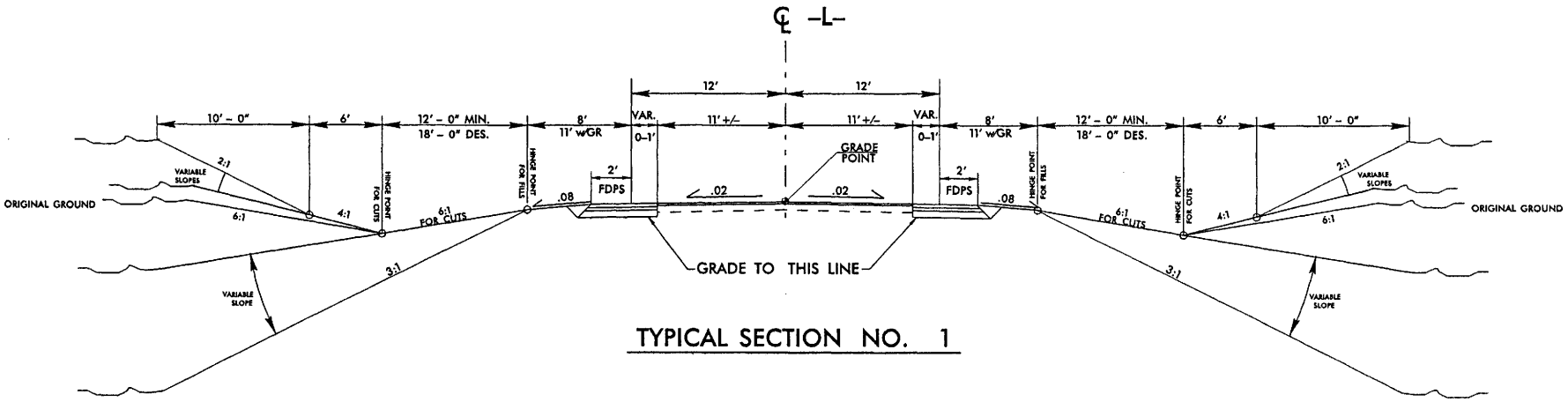


B4080 (ALTERNATE 1)

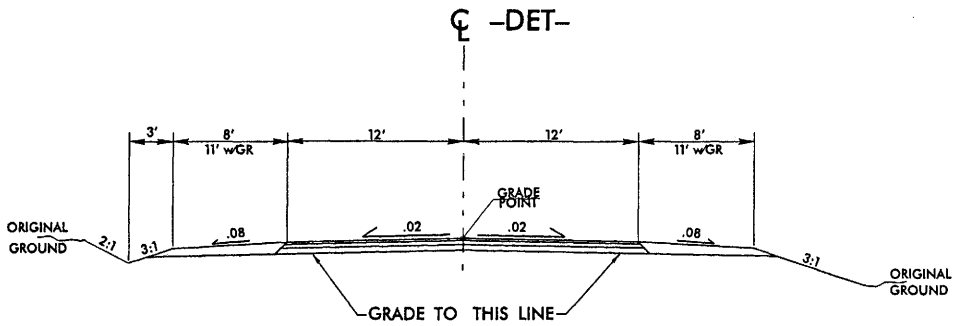


27-MAR-2006 13:37
V:\Projects\NDOT\Bridge Group 46\B4080\proj\b4080_rdy_pah1_alt1.dgn
User: AT PA20625

FIGURE 2B



TYPICAL SECTION NO. 1



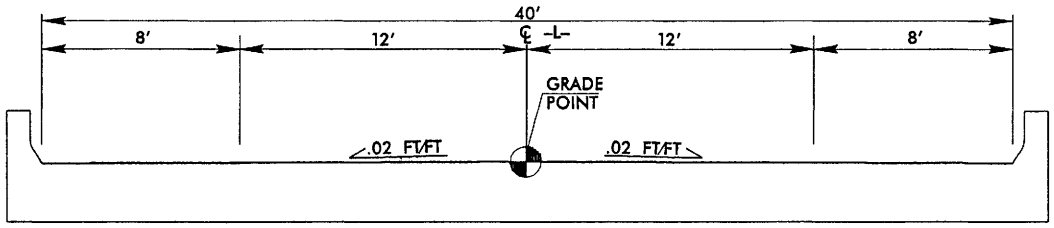
TYPICAL SECTION NO. 2

North Carolina Department of Transportation
Project Development and
Environmental Analysis Branch

Replace Bridge No. 148 on S.R. 1437
Over Pine Log Swamp
Columbus County
B-4080

NOT TO SCALE

Figure 3A



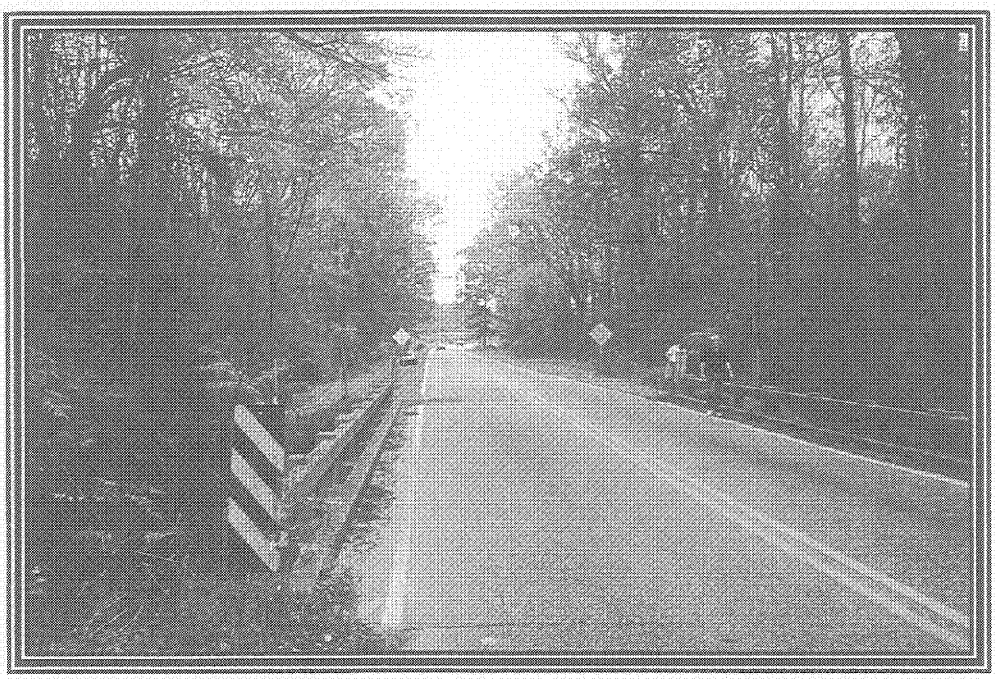
TYPICAL BRIDGE SECTION

North Carolina Department of Transportation
Project Development and
Environmental Analysis Branch

Replace Bridge No. 148 on S.R. 1437
Over Pine Log Swamp
Columbus County
B-4080

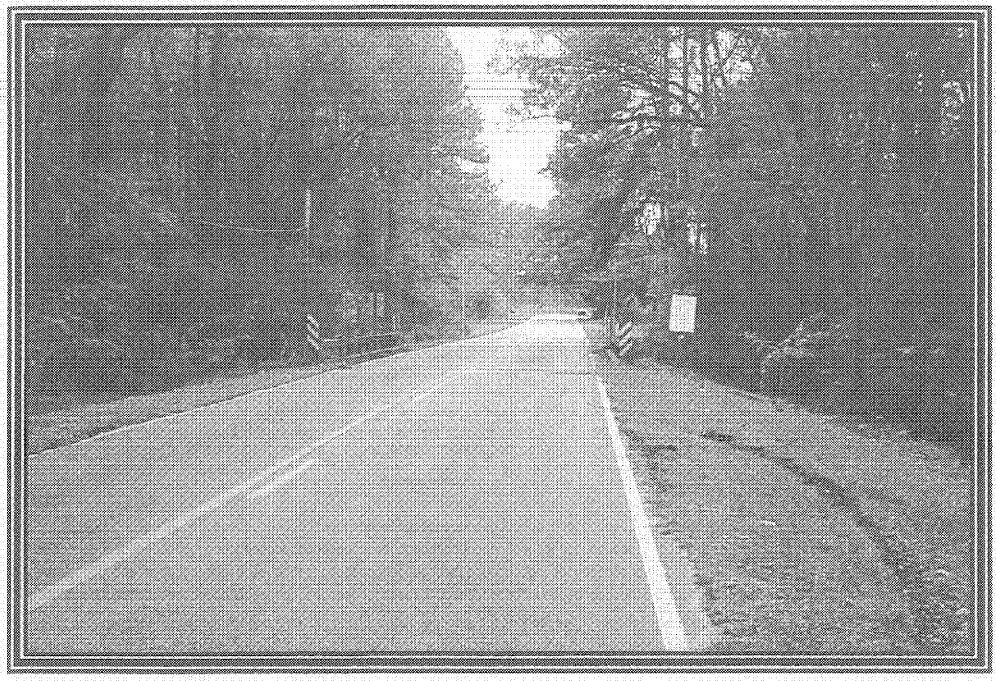
NOT TO SCALE

Figure 3B



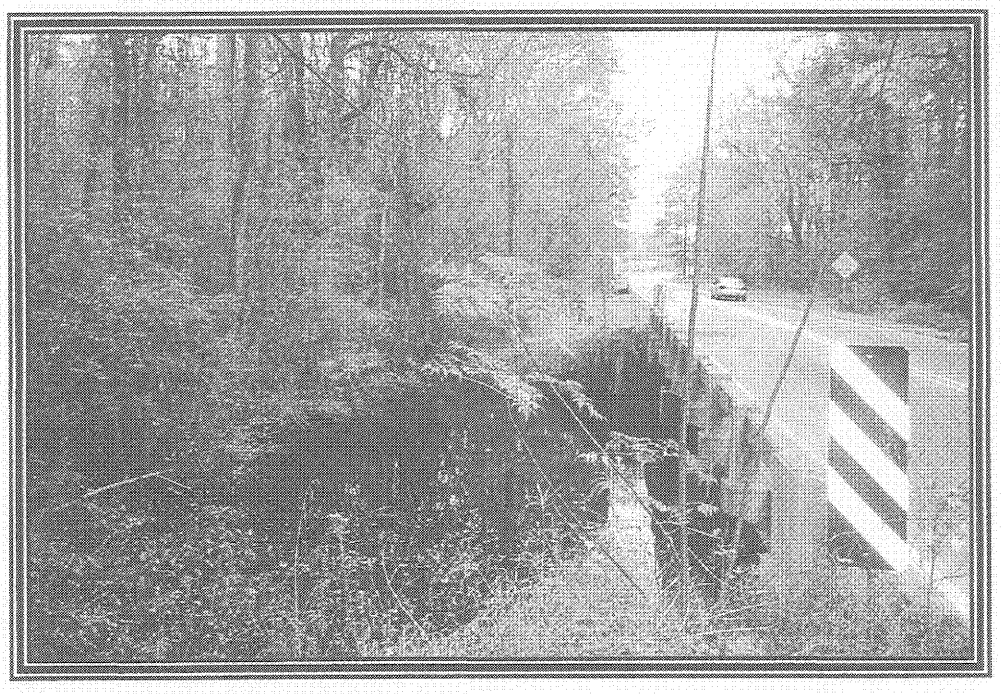
COLUMBUS
COUNTY
BRIDGE No. 148
B-4080

Looking West
on SR 1437



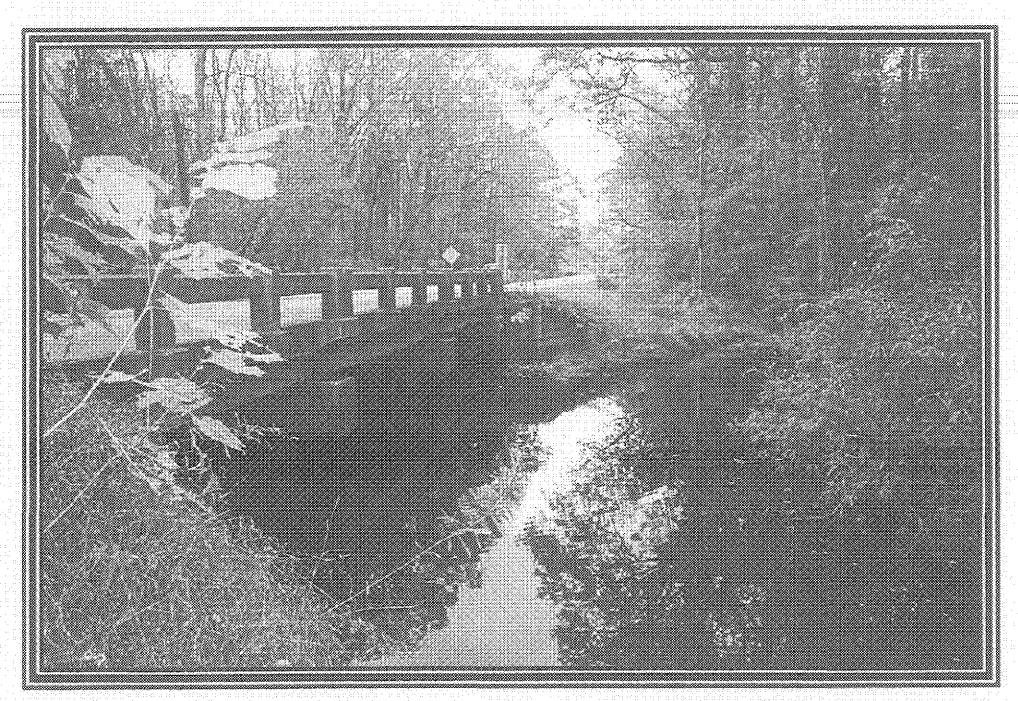
Looking East
on SR 1437

FIGURE 4A



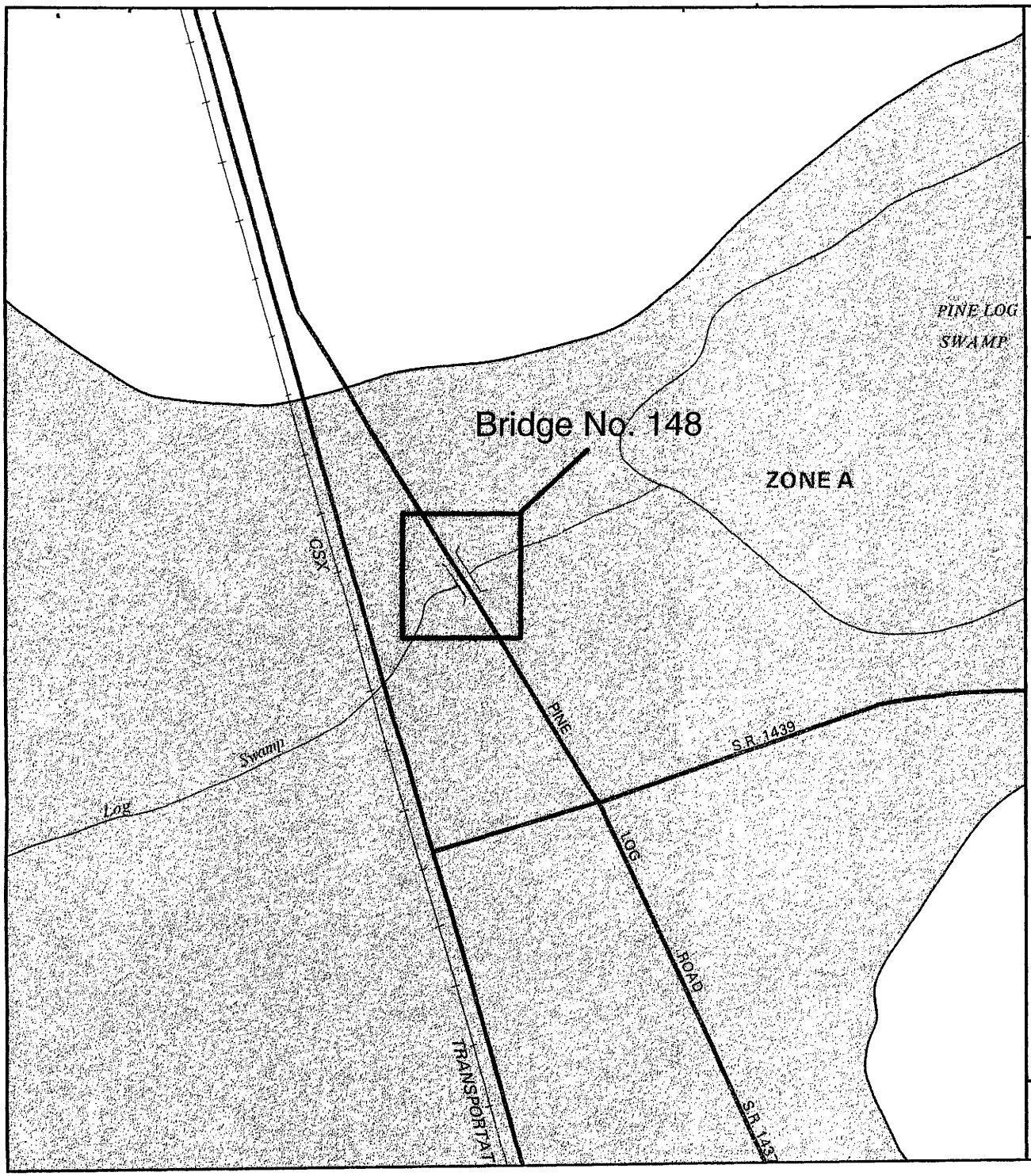
COLUMBUS
COUNTY
BRIDGE No. 148
B-4080

Looking at
South Side of
Bridge No.148



Looking at
North Side of
Bridge No.148

FIGURE 4B



APPROXIMATE SCALE

400 0 400 FEET

NATIONAL FLOOD INSURANCE PROGRAM

FIRM

FLOOD INSURANCE RATE MAP

CITY OF
WHITEVILLE,
NORTH CAROLINA
COLUMBUS COUNTY

PANEL 2 OF 6
(SEE MAP INDEX FOR PANELS NOT PRINTED)

COMMUNITY-PANEL NUMBER
370071 0002 D

MAP REVISED:
AUGUST 3, 1998

Federal Emergency Management Agency

Figure 5

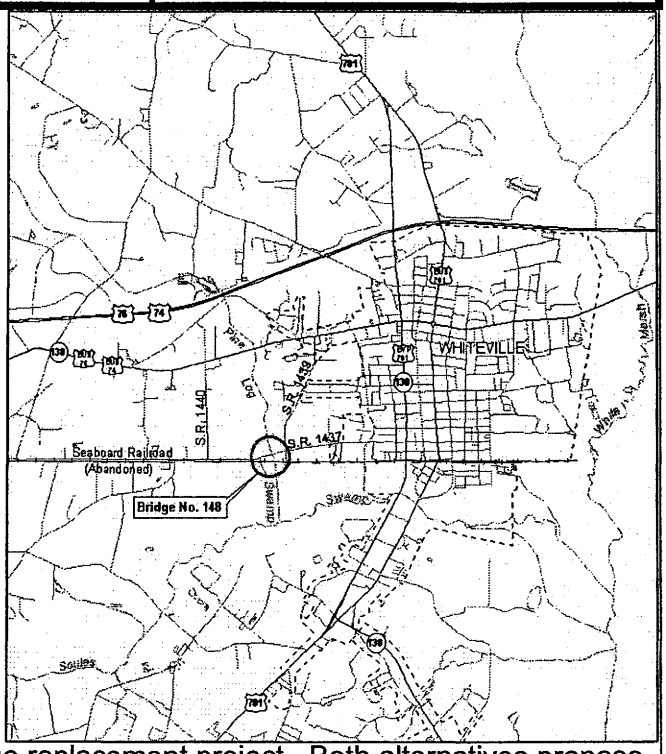
APPENDIX

Newsletter

NCDOT
T.I.P. B-4080

Volume I, Issue I

Proposed Replacement of Bridge No. 148 over Pine Log Swamp on SR 1437 (Pine Log Road)



This newsletter is published by the North Carolina Department of Transportation to provide information on the status of the proposed replacement of the bridge over Pine Log Swamp on SR 1437 (Pine Log Road) illustrated in the vicinity map to the right. The proposed project is needed to improve safety due to the deteriorated condition of the existing bridge.

PROJECT SCHEDULE

The acquisition of right-of-way is scheduled for federal fiscal year (FFY) 2006, with construction in FFY 2007.

PROJECT DESCRIPTION

Two (2) alternatives have been studied for the proposed bridge replacement project. Both alternatives propose to replace the bridge in its existing location. Alternative 1 would utilize an off-site detour to maintain traffic during construction. The proposed off-site detour route is SR 1437 (Pine Log Road) to SR 1440 (Fruit Ridge Road) to NC 130/US BUS 76/74 to SR 1439 (Legion Road) and back to SR 1437 (Pine Log Road). Alternative 2 would maintain traffic with a temporary on-site detour on the north side of the existing bridge during construction. Please see the figures shown on the back of this newsletter. Alternative 1 has been recommended as the preferred alternative because it minimizes costs and environmental impacts.

NCDOT WELCOMES CITIZEN INPUT

Public involvement is an important part of the planning process. The North Carolina Department of Transportation is committed to ensuring all issues of concern to the public are addressed and considered before any final decisions are made. If you have any questions or comments concerning the project, please feel free to contact the study team members below:

Mr. Vincent J. Rhea, PE
Project Manager
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NCDOT
T.I.P. B-4080

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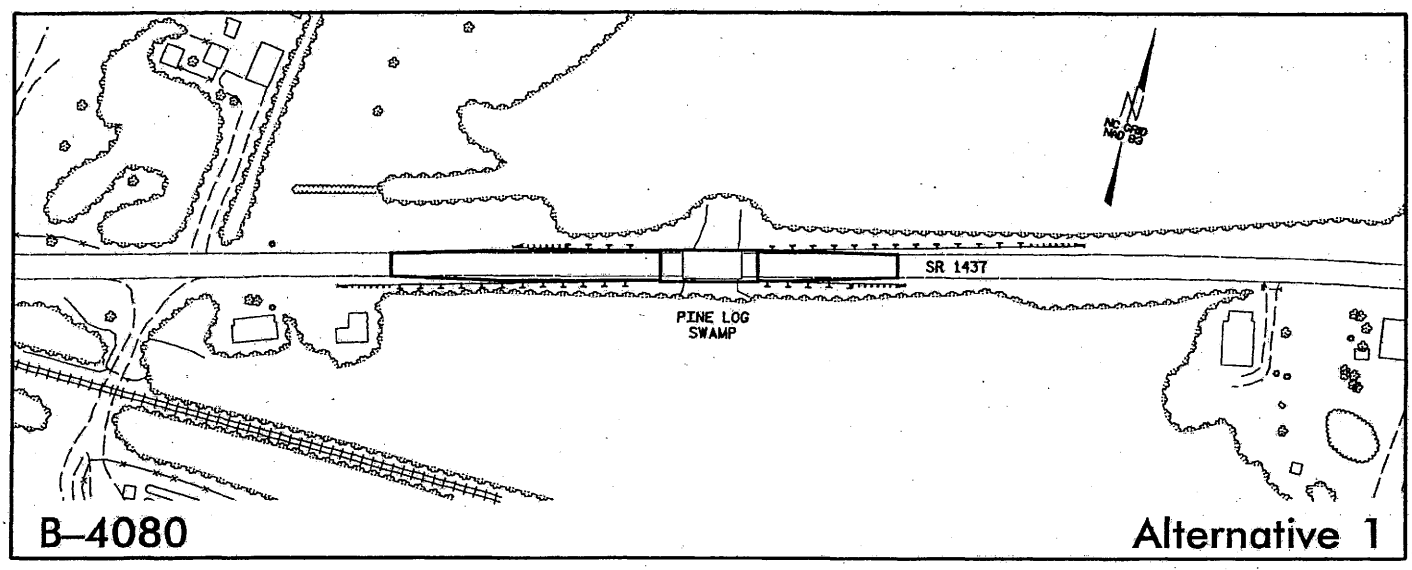
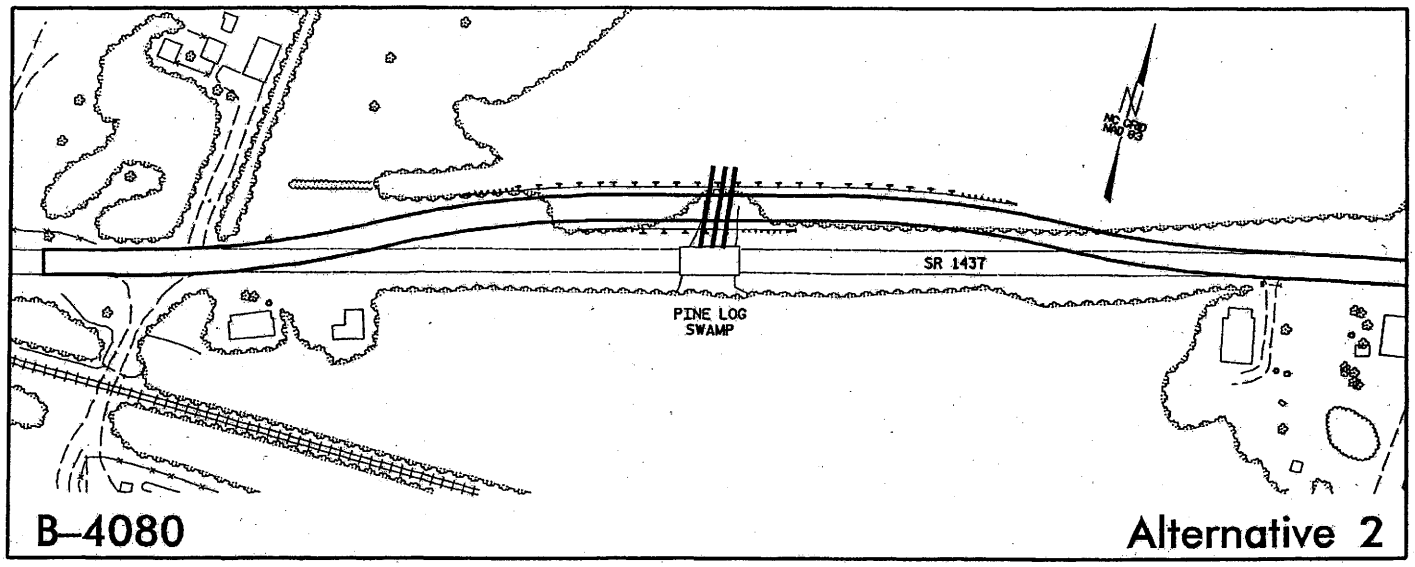
Postal Customer





United States Department of the Interior

FISH AND WILDLIFE SERVICE
Raleigh Field Office
Post Office Box 33726
Raleigh, North Carolina 27636-3726

December 30, 2003

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 Bridge No. 148 on SR 1437 over Pine Log Swamp, Columbus County, North Carolina (TIP No. B-4080). 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.

There are six federally threatened or endangered species listed for Columbus County: the shortnose sturgeon (*Acipenser brevirostrum*), American alligator (*Alligator mississippiensis*), Waccamaw silverside (*Menidia extensa*), red-cockaded woodpecker (*Picoides borealis*), rough-leaved loosestrife (*Lysimachia asperulaefolia*) and Cooley's meadowrue (*Thalictrum cooleyi*). Although the North Carolina Natural Heritage Program (NCNHP) database does not indicate any known occurrences of these species near the project vicinity, use of the NCNHP data should not be substituted for actual field surveys if suitable habitat occurs near the project site. The NCNHP database only indicates the presence of known occurrences of federally protected species and does not necessarily mean that such species are not present. It may simply mean that the area has not been surveyed. Information about the habitats in which these species are often found is provided on our web site, http://endangered.fws.gov/ . If suitable habitat occurs within the project vicinity for any of the listed species, surveys should be conducted to determine presence or absence of the species. All survey documentation must include survey methodologies and results.

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: Richard Spencer, USACE, Wilmington, NC
David Franklin, USACE, Wilmington, NC
Beth Barnes, NCDWQ, Raleigh, NC
Travis Wilson, NCWRC, Creedmoor, NC
Chris Militscher, USEPA, Raleigh, NC

DEPARTMENT OF THE ARMY
WILMINGTON DISTRICT, CORPS OF ENGINEERS
P.O. BOX 1890
WILMINGTON. NORTH CAROLINA 28402-1890

REPLY TO
ATTENTION OF:

January 28, 2004

Regulatory Division

Subject: Action ID No. 200400346

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

Dear Dr. Thorpe:

I am responding to your letter to Mr. Mike Bell dated December 8, 2003 requesting scoping comments on TIP Projects B-4080, Bridge number 148 on SR 1437 over Pine Log Swamp, State Project Number 8.2430901, Columbus County, NCDOT Division 6. Based on the information provided for this project in the referenced letter, it appears that jurisdictional areas as defined at 33 CFR 328.3(a) are located within the proposed project scoping area. In accordance with Section 404 of the Clean Water Act of 1977, as amended, Department of the Army (DA) authorization will be required for the discharge of dredged, excavated or fill material into waters of the United States, including wetlands that are identified in association with this project.

Although this project may qualify as a FHWA Categorical Exclusion, to qualify for nationwide permit authorization under Nationwide Permit #23 or any other form of general permit, the application and/or project planning report should contain sufficient information to document that all proposed activities associated with the project do not have more than a minimal individual or cumulative impact on the aquatic environment. All activities, including temporary construction, demolition, access, and dewatering activities, should be included in the application and/or project planning report. A copy of the project planning report should be included with the application submittal. The report should contain an adequate description of all proposed activities, both permanent and temporary. The amount of permanent and temporary impacts to waters and wetlands as well as a description of the type of habitat that will be affected by the proposed project should also be included in the report. In addition, the report should provide a reasonable estimate of the linear feet of adverse impacts to streams and acreage impacts to verified wetlands. The type of DA authorization and any specific permit requirements will depend on the crossing design, extent of the fill work within jurisdictional areas, construction methods and other public interest and environmental factors.

Our experience has shown that replacing bridges with culverts often results in more than minimal impacts on the aquatic environment and the proposed project would therefore not be

eligible for authorization under a general permit. These impacts are generally associated with alteration of hydrologic pathways and hydraulics, disruption of the free movement of aquatic and terrestrial organisms indigenous to the area, and increased impacts to aquatic habitat. If a bridge is proposed for replacement with a culvert, NCDOT must demonstrate that the work will not result in more than minimal impacts on the aquatic environment, specifically addressing the passage of aquatic life including anadromous fish, if applicable. The work must also not alter the stream hydraulics and create flooding of adjacent properties or result in unstable stream banks. In some cases, a hydraulic analysis (HECRAS) may be required and should be included with the application. In addition, the report should address the impacts that the culvert would have on recreational navigation and natural wildlife corridors, if applicable.

Lengthening existing bridges can often benefit the ecological and hydrological functions of the associated wetlands and streams. In addition, longer bridges were there are large adjacent contiguous forested floodplains could enhance existing wildlife passage thereby creating a safer roadway. Most bridge approaches are connected to earthen causeways that were built in floodplain wetlands and streams. Replacing these causeways with longer bridges would allow previously impacted wetlands to be restored. In an effort to encourage this type of restoration effort, mitigation credit for wetland restoration activities can be provided to offset the added costs of lengthening an existing bridge.

Off-site temporary construction detours should be fully explored in lieu of on-site detours constructed in wetlands. If an on-site detour is the requested action, justification should be provided that demonstrates that alternatives, including an off-site alternative, with lower aquatic resource impacts are not practicable. On-site detours, unless constructed on a spanning structure or on a previous detour that was used in a past construction activity, can cause permanent wetland impacts due to soil compression resulting from the on-site detour fill placed on compressible soils and associated heavy equipment compaction. Substantial soil compression in wetland systems may in turn cause a subsurface hydrologic barrier in the wetland, which would alter the hydrologic regime of the wetland and impair its ecological and hydrologic functions. For proposed projects and associated on-site detours that cause minimal losses of wetlands, an approved wetland restoration and monitoring plan will be required prior to issuance of a DA Nationwide or Regional general permit. For proposed projects and associated on-site detours that cause substantial wetland losses, an individual DA permit and a compensatory mitigation proposal for the unavoidable wetland impacts may be required.

Endangered Species Act (ESA) federally listed species may be found within close proximity to the bridge project. All work related to federally listed ESA species as required by Section 7 of the ESA including copies of all correspondence and meeting minutes with the U.S. Fish and Wildlife Service and/or the NOAA Marine Fisheries Service associated with the subject projects should be coordinated with this office.

If concrete structures, such as bridge piers and footers, are a component of these projects, methods must be employed to avoid any contact of "live" concrete with surface waters and all instream construction should be conducted in the "dry" by use of stream diversion methods. If temporary stream diversions are to be utilized, a plan and description should be provided showing the proposed structure and method of diversion. A restoration plan will be required showing how the diversion area will be returned to pre-construction conditions following the

completion of the project. If restoration involves revegatation of the disturbed area, the plan should include a planting scheme using only endemic vegetation. Bridge piers and footers should be located outside of the waterway whenever possible and where not practicable should be keep to a minimum.

Based on the information provided for the referenced project site, the apparent level of wetland impacts, and scope of the project, the referenced project does not appear to warrant coordination pursuant to the integrated Section 404/NEPA-merger agreement.

We appreciate this opportunity to provide you with our scoping comments. Should you have any questions or wish to discuss our comments further, please call me at the Wilmington Field Office at 910-251-4172.

Sincerely,

Richard K. Spencer
NCDOT Project Manager

CF:

Mr. Vincent J. Rhea, P.E.
Project Development Engineer
North Carolina Department of Transportation
Project Development and Environmental Analysis
1548 Mail Service Center
Raleigh, North Carolina 27699-1548

Mr. John Dorney
NCDENR-DWQ
Wetlands Section
1621 Mail Service Center
Raleigh, NC 27699-1621

Mr. Travis Wilson
Highway Coordinator
North Carolina Wildlife Resources Commission
1141 I-85 Service Road
Creedmoor, North Carolina 27522

Mr. Gary Jordan
United States Fish & Wildlife Service
Fish and Wildlife Enhancement
Post Office Box 33726
Raleigh, North Carolina 27636-3726

Mr. Chris Militscher
U.S. EPA
Raleigh Office
310 New Bern Avenue, Room 206
Raleigh, North Carolina 27601

Mr. James J. Rerko
North Carolina Department of Transportation
Division 6
P.O. Box 1150
Fayetteville, North Carolina 28302

Mr. Art King, DEO
North Carolina Department of Transportation
Division 8
P.O. Box 1067
Aberdeen, North Carolina 28315

North Carolina Wildlife Resources Commission

Charles R. Fullwood, Executive Director

MEMORANDUM

TO: Vincent J. Rhea
Project Development and Environmental Analysis Branch, NCDOT

FROM: Travis Wilson, Highway Project Coordinator
Habitat Conservation Program

DATE: February 5, 2004

SUBJECT: NCDOT Bridge Replacements in Johnston, Moore, Montgomery, Brunswick, Bladen, Cumberland, Scotland, and Columbus counties. TIP Nos. B-4165, B-4207, B-4204, B-4030, B-4029, B-4092, B-4274, B-4080, and B-4078.

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.

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

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

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

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

8. In streams that contain threatened or endangered species, NCDOT biologist Mr. Hal Bain 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-4165, Johnston County, Bridge No. 89 over Sassarixa Swamp on SR 1162. We recommend replacing this bridge with a bridge. Standard recommendations apply.

2. B-4207, Moore County, Bridge No. 43 over McLendons Creek on NC 22-24-27. We recommend replacing this bridge with a bridge. McLendons Creek contains habitat suitable for the federally endangered Cape Fear shiner, a survey should be conducted to determine the presence or absence of this species. Standard recommendations apply.

3. B-4204, Montgomery County, Bridge No. 28 over Rock Creek on NC 109. We recommend replacing this bridge with a bridge. Standard recommendations apply.

4. B-4030, Brunswick County, Bridge No. 9 over Bear Branch on NC 103. We recommend replacing this bridge with a bridge. Standard recommendations apply.

5. B-4029, Bladen County, Bridge No. 8 over canal on NC 210. We recommend replacing this bridge with a bridge. Standard recommendations apply.

6. B-4092, Cumberland County, Bridge No. 80 over Little Rockfish Creek on SR 1108. We recommend replacing this bridge with a bridge. A significant fishery for sunfish exists at this site, therefore we request in in-water work moratorium for sunfish from April 1 to June 30. Standard recommendations apply.

7. B-4274, Scotland County, Bridge No. 14 over Big Shoe Heel Creek on NC 144. We recommend replacing this bridge with a bridge. A significant fishery for sunfish exists at this site, therefore we request in in-water work moratorium for sunfish from April 1 to June 30. Standard recommendations apply.

8. B-4080, Columbus County, Bridge No. 148 over Pine Log Swamp on SR 1437. We recommend replacing this bridge with a bridge. Standard recommendations apply.

9. B-4078, Columbus County, Bridge No. 10 over Waccamaw River Overflow on NC 130. 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

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

March 2, 2004

MEMORANDUM

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

FROM: David Brook DSR for David Brook

SUBJECT: Bridge No. 189 on SR 1437 over Pine Log Swamp, B-4080, Columbus County, ER03-3637

Thank you for your letter of December 8, 2003, concerning the above project.

We are unable to comment on the potential effect of this project on historical/architectural resources until we receive further information. Please forward a United States Geological Survey (USGS) quadrangle for the appropriate location to us indicating the project limits and the Area of Potential Effects (APE).

If there are any structures on or immediately adjacent to the project area which appear to be more than fifty years old, please provide photographs of them, keyed to the 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.

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

3x1

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

June 30, 2004

MEMORANDUM

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

FROM: David Brook DSB for David Brook

SUBJECT: Bridge No. 148 on SR 1437 over Pine Swamp, B-4080, Columbus County, ER03-3637

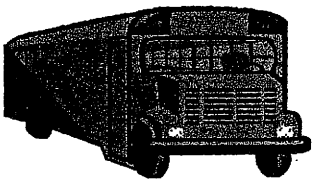
Thank you for your memorandum of May 6, 2004, concerning the above project.

We have conducted a review of the proposed undertaking and are aware of no historic resources which would be affected by the project. Therefore, we have no comment on the undertaking as proposed.

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



Columbus County/Whiteville City School Bus Garage
1231 Chadbourn Hwy, Whiteville, NC 28472
Phone # (910) 642-2586 Fax # (910) 641-0875

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

From: Jimmie Hewett, Director of Transportation

Date: September 6, 2002

Re: Information on bridge replacement

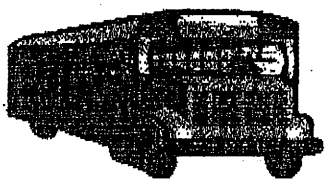
B-4080 Bridge No 148 on SR 1437 over Pine Log Swamp: This bridge is in the Whiteville City School District and based on the information we received for the 2001-2002 school year there is only one bus that crosses this bridge. It crosses twice, once in the morning and once in the afternoon. This bus can be easily rerouted.

B-4079 Bridge No 20 on NC 904 over Fork Juniper Swamp: This bridge is in the Guideway Elementary and South Columbus High School Districts. Based on the information we received for the 2001-2002 school year there are two buses that cross this bridge for a total of six times a day. The elementary school bus crosses this bridge twice in the morning and twice in the afternoon. The high school bus crosses this bridge once in the morning and once in the afternoon. In this case the elementary school students will have to walk or have their parents transport them out to meet the bus if a suitable turnaround can not be found. The high school bus can be rerouted.

B-4078 Bridge No. 10 on NC 130 over Waccamaw River Overflow: This bridge is in the Old Dock Elementary and South Columbus High School Districts. Based on the information we received for the 2001-2002 school year there are two buses that cross this bridge for a total of four times daily. They both cross once in the morning and once in the afternoon. In this case the students will have to walk or have their parents transport them to the closest turnaround or intersection. There is no alternate route.

I hope this information is helpful to you. If you have any questions, please give me a call.

klg



Columbus County/Whiteville City School Bus Garage
1231 Chadbourn Hwy, Whiteville, NC 28472
Phone # (910) 642-2586 Fax # (910) 641-0875

To: Dr. J. David Edwards, Ph.D., Section Chief
School Planning, Department of Public Instruction

From: Jimmie Hewett, Director of Transportation

Date: December 19, 2003

Re: Information on Replacement of Bridge # 148 & 10.

Bridge No 148 on SR 1437 over Pine Log Swamp: This bridge is in the Whiteville City School District and based on the information we received for the 2003-2004 school year there are four buses that cross this bridge. They each cross twice, once in the morning and once in the afternoon. This replacement would be handled by rerouting the buses.

Bridge No. 10 on NC 130 over Waccamaw River Overflow: This bridge is in the Old Dock Elementary and South Columbus High School Districts. Based on the information we received for the 2003-2004 school year, there are two buses that cross this bridge for a total of four times daily. They both cross once in the morning and once in the afternoon. In this case the students will have to walk or have their parents transport them to the closest turnaround or intersection. There is no alternate route.

I hope this information is helpful to you. If you have any questions, please give me a call.

klg