STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

MICHAEL F. EASLEY
GOVERNOR

LYNDO TIPPETT
SECRETARY

August 12, 2008

U. S. Army Corps of Engineers
Regulatory Field Office
Post Office Box 1000
Washington, NC 27889-1000

ATTN: Mr. William J. Biddlecome
NCDOT Coordinator

Dear Sir:

Subject: **Nationwide Permit 23 Application** for the Replacement of Bridge No. 45 on SR 1100 (Grabtown Rd.) over Choowatic Creek in Bertie County. Federal Aid Project No. BRZ-1100(10), TIP No. B-4026, WBS Element 33393.1.1.

Please find enclosed permit drawings and half-size plan sheets for the above referenced project. A Categorical Exclusion (CE) was completed for this project on October 13, 2006, and distributed shortly thereafter. Additional copies are available upon request. The NCDOT proposes to replace existing Bridge No. 45 on SR 1100 over Choowatic Creek in Beaufort County. The project involves replacement of the existing 35 ft. structure with an 80-ft., 2-span, prestressed concrete cored slab bridge at approximately the same location, and a slightly higher roadway elevation, using top-down construction. Bridge substructure will consist of steel piles. Permanent impacts will consist of 0.1 ac. to riparian wetlands in the Choowatic Creek floodplain. Traffic will be detoured off-site during construction.

Impacts to Waters of the United States

General Description: The project is located in the Roanoke River Basin (HUC 03010107). A best usage classification of "C SW" has been assigned to Choowatic Creek [DWQ Index # 24-2-7-2]. Neither High Quality Waters (HQW), Water Supplies (WS-I: undeveloped watersheds or WS-II: predominately undeveloped watersheds), nor Outstanding Resource Waters (ORW) occur within 1.0 mi. of the project study area. Choowatic Creek is not designated as a North Carolina Natural or Scenic River, or as a National Wild and Scenic River. Additionally, Choowatic Creek is not listed on the Final 2006 303(d) list of impaired waters due to sedimentation for the Roanoke River Basin, nor does it drain into any Section 303(d) waters within 1.0 mi. of the project study area.

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

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

WEBSITE: WWW.NCDOT.ORG

LOCATION:
TRANSPORTATION BUILDING
1 SOUTH WILMINGTON STREET
RALEIGH NC

Permanent Impacts: Riparian wetlands adjacent to Choowatic Creek will be impacted by the proposed project. Construction of the proposed project will result in a permanent impact of 0.1 ac. from roadway fill and excavation of existing bridge approach slope (see permit drawings).

Temporary Impacts: In addition to permanent impacts, this project will also result in 0.06 ac. of temporary fill in riparian 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/or Temporary Rock Silt Checks.

Hand Clearing: Hand clearing of 0.25 ac. in riparian wetlands will be necessary for project construction outside of the new fill slope.

Utility Impacts: No impacts to jurisdictional resources will occur due to relocation of utilities in the project area. Wetland and stream impacts due to the relocation of telephone, power, and water lines in the project area will be avoided by using directional bore techniques, with bore pits located outside of jurisdictional resources.

Bridge Demolition

The existing bridge consists of a timber caps on timber piles substructure supporting a concrete floor on timber joists. Best Management Practices for Bridge Demolition and Removal will be followed to prevent any temporary fill from entering Waters of the United States.

Federal Protected Species

As of January 31, 2008 the USFWS lists two federally protected species for Bertie County (Table 1).

Table 1. Federally protected species of Bertie County.

Scientific Name	Common Name	Federal Status	Habitat	Biological Conclusion
Picoides borealis	Red-cockaded woodpecker	E	No	No Effect
Acipenser brevirostrum	Shortnose sturgeon	E	No	No Effect

Bald Eagle

The bald eagle (*Haliaeetus leucocephalus*) was delisted from the Endangered Species Act as of August 8, 2007. However, it is still protected under the Bald and Golden Eagle Protection Act. No suitable nesting or foraging habitat exists within 660 feet of the project limits.

In-Stream Work Moratorium

The CE Project Commitments note an in-stream construction moratorium from February 15 to June 30, as requested by the NC Division of Marine Fisheries (NCDMF). However, per

the attached email dated February 19, 2008, NCDMF has deferred to the **February 15 to June 15 in-stream work moratorium** as requested by the North Carolina Wildlife Resources Commission (NCWRC) for anadromous fish. NCDOT will adhere to this in-stream work moratorium and implement Stream Crossing Guidelines for Anadromous Fish Passage as applicable.

Avoidance and Minimization

Avoidance examines all appropriate and practicable possibilities of averting impacts to "Waters of the United States". Due to the presence of surface waters and wetlands within the project study area, avoidance of all impacts is not possible. The NCDOT is committed to incorporating all reasonable and practicable design features to avoid and minimize jurisdictional impacts. Minimization measures were incorporated as part of the project design, these included:

- Use of an off-site detour during construction,
- Construction of a 45-ft. longer bridge,
- Use of 3:1 fill slopes in jurisdictional areas,
- Portions of the existing bridge approach slope will be graded down to existing wetland elevation,
- Use of a Pre-formed Scour Hole.

Mitigation

Due to the limited amount of permanent impacts to jurisdictional wetlands, NCDOT is not proposing mitigation for this project.

Project Schedule

The review date for this project is March 3, 2009 and the Let Date is April 21, 2009.

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 a Nationwide Permit 23 authorize these activities (72 CFR; 11092-11198, March 12, 2007).

Section 401 Permit: We anticipate 401 General Certification number 3701 will apply to this project. NCDOT will adhere to all conditions of this General Water Quality Certification. NCDOT is providing two copies of this application to the North Carolina Department of Environmental and Natural Resources, Division of Water Quality, for their review.

CAMA: Due to the absence of any Areas of Environmental Concern (see attached email dated May 28, 2002), this project will not require a CAMA permit as confirmed by North

Carolina Division of Coastal Management staff. As previously stated the project will require a Nationwide permit, which has been determined to be consistent with the State's coastal program.
A copy of this application will be posted on the NCDOT website at: http://www.doh.dot.state.nc.us/preconstruct/pe/neu/permit.html

Thank you for your time and assistance with this project. Please contact Mr. David E. Bailey at debailey@ncdot.gov or (919) 715-7257 if you have any questions or need additional information.

Sincerely,

E. L. Lusk

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

cc:
W/attachment
Mr. Brian Wrenn, NCDWQ (2 Copies)

W/o attachment (see website for attachments)
Mr. Scott McLendon, USACE, Wilmington
Ms. Cathy Brittingham, NCDCM
Mr. Travis Wilson, NCWRC
Mr. Gary Jordan, USFWS
Mr. Ron Sechler, NMFS
Ms. Anne Deaton, NCDMF
Dr. David Chang, P.E., Hydraulics
Mr. Greg Perfetti, P.E., Structure Design
Mr. Mark Staley, Roadside Environmental
Mr. Victor Barbour, P.E., Project Services Unit
Mr. Anthony Roper, P.E., Division 1 Engineer
Mr. Clay Willis, Division 1 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. Tracy Walter, PDEA

Bailey, David E

From: Sara Winslow [sara.winslow@ncmail.net]
Sent: Tuesday, February 19, 2008 8:27 AM
To: Chris Rivenbark
Cc: Ron Sechler; Wilson, Travis W.; Gary Jordan; David E. Bailey
Subject: Re: B-4026 Moratorium Dates

Chris
NCDMF moratorium time period of February 15 - June 30 is the standard anadromous time period for these inland systems. The time period through June 30 ensures that the environmental integrity of the area is protected if the spawning season should occur late. Since the jurisdiction is WRC, we would defer to their time period.

Sara

Chris Rivenbark wrote:

> B-4026 Bridge No. 45 on SR 1100 over Choowatic Creek, Bertie County.
>
> Ron,
> To summarize our phone conversation last week, we have received three
> different moratorium dates from four resource agencies for B-4026.
> The requested in-water work moratorium dates are as follows:
>
> NMFS in-water work restricted to October 1-March 1 (no in-water work
> March 2 - September 30) USFWS February 15- June 15 NCWRC February 15-
> June 15 NCDMF February 15- June 30
>
> To simplify the requests, you mentioned that you would differ to
> NCWRC's requested moratorium do to the project's location in Inland
> Waters. If this is accurate, please reply with a confirmation email.
>
> Travis, Sara, and Gary, would you mind replying as well?
>
> Thank you all for your help.
>

--
Sara E. Winslow
Northern District Manager
NC Division of Marine Fisheries
Elizabeth City, NC 27909
Phone: 252-264-3911

Subject: Bridge Replacement Projects CFY 2005
Date: Tue, 28 May 2002 13:05:27 -0400
From: Bill Arrington <Bill.Arrington@ncmail.net>
Organization: NC DENR DCM
To: "William T. Goodwin" <bgoodwin@dot.state.nc.us>
CC: Cathy Brittingham <Cathy.Brittingham@ncmail.net>

Mr. Goodwin,

I have visited each of the 14 bridge replacement sites included in your March 1, 2002 letter, located in the 20 Coastal counties under the jurisdiction of the Division of Coastal Management.

General comments regarding bridge replacement projects would include:

1. Existing access to coastal waters and land adjacent to coastal waters should be preserved. This would include trails, driveways, roads, boat ramps, clear channels, vertical clearance under bridges, parking spaces, etc.

2. The design of storm water diversion should add treatment prior to discharging. No storm water should be discharged to the waters and wetlands in coastal areas. Deck drains discharging to waters or wetlands should be eliminated from bridge replacements. Storm water collected from bridges and approaches should be disposed of by infiltration as far from the waters and wetlands as possible. The planning and design of these replacements is crucial to protecting the surrounding water quality. Bridges within one half mile of SA waters or ORW waters will need special attention dedicated to storm water collection, treatment and disposal.

3. Without specific proposals including accurate details of the proposed bridge replacement structures and associated impacts, comments included herein are general in nature and give no assurance of the ability to permit any bridge replacement proposal in these locations. Specific comments below are based on the assumption that the bridge replacements would be of the same general width, length and on the current alignment with no on site detour. Bridge replacements that vary from this would usually cause greater environmental impacts and require additional coordination with the resource agencies.

4. Any structure required to be built in wetlands or over the water to facilitate the construction of the bridge replacement or a detour around construction should be a temporary bridge.

Specific comments on the above referenced projects would include:

1. B-3611 in Beaufort County - RED LIGHT PROJECT - AEC's in the project area include CW, CS, PTW, and PTS. The potential for significant environmental impacts exists. Any project in this area will require a high level of coordination with all resource agencies. The existing bridge and causeway impacted the AEC's significantly and the potential for mitigation involving restoration and enhancement credits is great. (including the abandoned roadbed to the west of the existing road)

2. B-4024 in Beaufort County - GREEN LIGHT PROJECT - AEC's in the project area include PTW and PTS. This project has the potential for minimal impacts.

3. B-4026 in Bertie County - DCM has no jurisdiction

4.B-4031 in Brunswick County - RED LIGHT PROJECT - AEC's in the

project area include CW, CS and PTW. Construction of the existing bridge has significantly impacted the AEC's. Restoration and enhancement mitigation potential is as great as the potential to adversely effect the AEC's.

5. B-4086 in Craven County - GREEN LIGHT PROJECT - AEC's in the project area include PTW and PTS. Parking area as in the northwest corner should be maintained.

6. B-4150 in Hertford County - YELLOW LIGHT PROJECT - AEC's in the project area include PTW and PTS. Parking and access to the road along the creek should be preserved.

7. B-4154 in Hyde County - DCM has no jurisdiction.

8. B-4214 in Onslow County - YELLOW LIGHT PROJECT - AEC's in the project area include PTW, PTS, CW, ES, EW. Wetlands surrounding this bridge should be protected as much as possible. Tidal wetlands in the northeast quadrant and wetlands in the Coastal Shoreline Buffer have the greatest significance. There exists a moderate potential for mitigation.

9. B-4215 in Onslow County - GREEN LIGHT PROJECT - AEC's in the project area include PTW and PTS. A moderate potential for mitigation may be possible with the lengthening of the bridge.

10. B-4219 in Pamlico County - RED LIGHT PROJECT - AEC's in project area include CW, CS, PTW, PTS and EW. The existing bridge has impacted the surrounding waters and wetlands. The inlet for this creek has closed in and only has water exchange at high tide. The bridge needs to be extended and the fill causeway removed. Great mitigation potential. Should preserve parking spaces for public access.

11. B-4221 in Pamlico County - GREEN LIGHT PROJECT - AEC's in project area include PTS and PTW. Access to farm roads in NW and SE quadrants should be preserved. A moderate potential for mitigation may exist with lengthening the bridge and removing causeway.

12. B-4223 in Pender County - YELLOW LIGHT PROJECT - AEC's in the project area include PTW and PTS. Any realignment or expansion of fill slopes should move to the south to avoid impacts to the access and business and residence on the north side of the bridge.

13. B-4227 in Perquimans County - GREEN LIGHT PROJECT - AEC's in the project area include PTW and PTS. Access adjacent to the bridge should be maintained.

14. B-4314 in Washington County- GREEN LIGHT PROJECT - AEC's in project area include PTW and PTS.

Thank you for providing DCM with the opportunity to comment on these projects in advance of their planning. Advance notification of environmental concerns should allow the design and permitting process to work more smoothly.

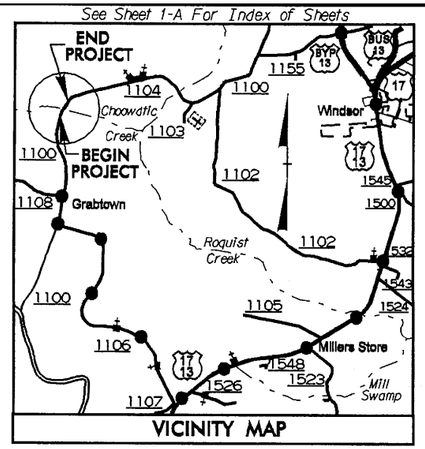
Thank you,

Bill

09/08/9

TIP PROJECT: B-4026

CONTRACT: C202091



OFF-SITE DETOUR ROUTE

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

BERTIE COUNTY

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-4026	1	

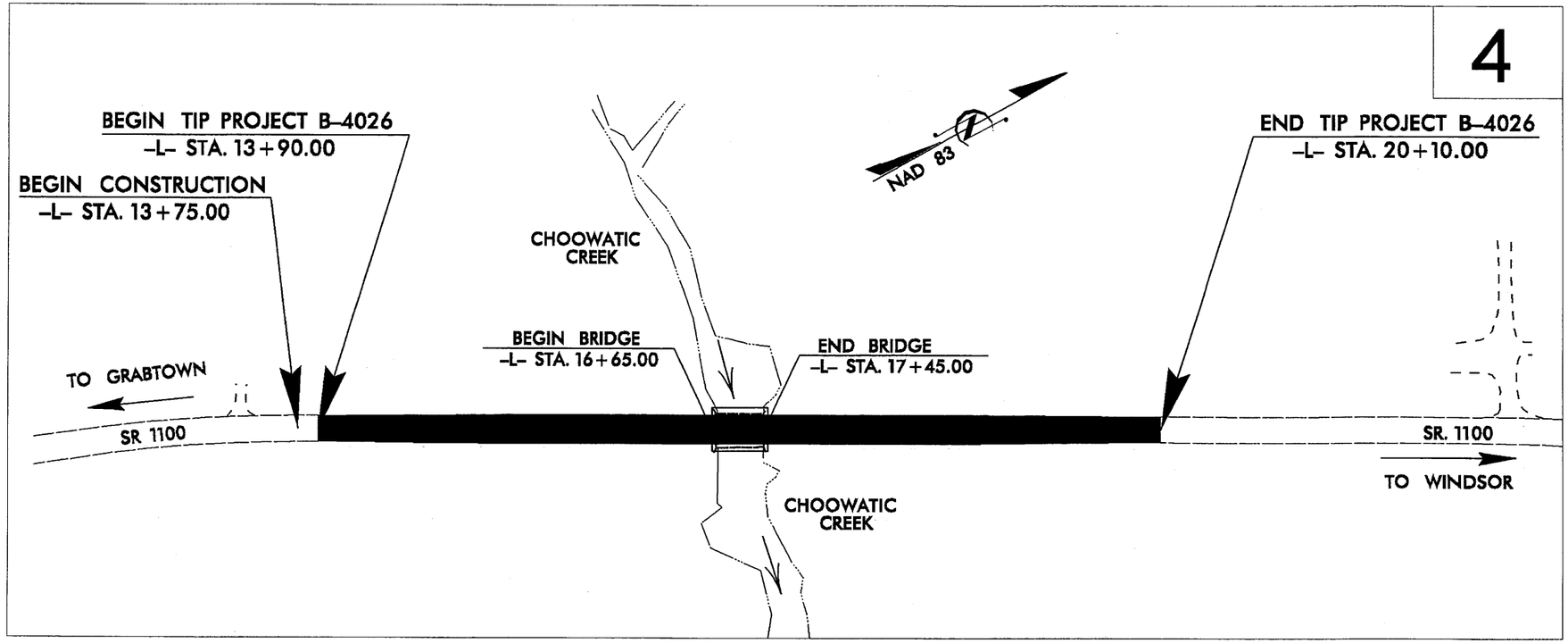
STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION
33393.1.1	BRZ-1100 (10)	PE
33393.2.1	BRZ-1100 (10)	R/W & UTIL.

LOCATION: BRIDGE NO. 45 OVER CHOOWATIC CREEK ON SR 1100

WETLAND PERMIT DRAWINGS
06/18/08

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

4



NOTE: METHOD OF CLEARING: III

NOTE: THIS PROJECT IS NOT WITHIN ANY MUNICIPAL BOUNDARIES.

Permit Drawing
Sheet 1 of 11

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 2006 = 900 VPD
ADT 2030 = 1300 VPD
DHV = 14 %
D = 60 %
T = 3 % *
V = 60 MPH
* TTST 1% DUAL 2%
FUNC CLASS = COLLECTOR

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT B-4026 = 0.102 MI
LENGTH STRUCTURE TIP PROJECT B-4026 = 0.015 MI
TOTAL LENGTH OF TIP PROJECT B-4026 = 0.117 MI

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

2006 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE: APRIL 14, 2008

LETTING DATE: APRIL 21, 2009

JAMES A. SPEER, PE
PROJECT ENGINEER

NYA K. BOAYUE, PE
PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

SIGNATURE: P.E.

ROADWAY DESIGN ENGINEER

SIGNATURE: P.E.

DIVISION OF HIGHWAYS STATE OF NORTH CAROLINA

P.E.
STATE HIGHWAY DESIGN ENGINEER

17-JUN-2008 13:55
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pshepard AT HY2394g

Property Owner Contact Report

TIP # *B-4026*

Owner Last Name/ Business	*Owner First Name*	*Address*	*City/Town*	*State*	*Zip Code*	*Contact/ Relationship*	*Home Phone*	*Contacted By*	*Contact Date*	*How Contacted*	*Comments*
Chowatic Lands, Inc. (1)				NC							
Heckstall, Jr.	William C.	804 Gatling Street	Windsor	NC	27983	Jane & Gilliam Outlaw Farms	Mother	G. R. Bigney	11/21/01	Person/Letter	Good & Good. Gillam farms got a phtocopy of panel location from the Heckstalls.
Sanderlin, et ux	Louis T.			NC							
Trustees of the Horace G. & Barbara J. Ward, Jr. (2)				NC							

Permit Drawing Sheet 2 of 11

WETLAND PERMIT IMPACT SUMMARY

Site No.	Station (From/To)	Structure Size / Type	WETLAND IMPACTS: Permanent Fill In Wetlands (ac)	Temp. Fill In Wetlands (ac)	Excavation in Wetlands (ac)	Mechanized Clearing in Wetlands (ac)	Hand Clearing in Wetlands (ac)	SURFACE WATER IMPACTS: Permanent SW impacts (ac)	Temp. SW impacts (ac)	Existing Channel Impacts Permanent (ft)	Existing Channel Impacts Temp. (ft)	Natural Stream Design (ft)
1	13+89 to	N/A			0.006							
	14+78 -L- LEFT											
	15+12 TO		0.027		0.003							
2	16+83 -L- LEFT											
3	13+89 TO						0.085					
	16+73-L- LEFT											
4	15+59 TO		0.012		0.004		0.025					
	16+84 -L- RIGHT											
5	17+28 TO		0.028				0.073					
	20+14 -L- LEFT											
6	17+22 TO		0.016		0.002		0.070					
	19+75 -L- RIGHT											
TOTALS:			0.08		0.02		0.25					

<0.01 ac. of Permanent Fill in Surface Waters due to bridge bents

0.06 ac. of Temporary Fill in Wetlands in the Hand Clearing areas for erosion control measures

NC DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

BERTIE COUNTY
WBS - 33393.1.1 (B-4026)

SHEET 7/3/2008

Permit Drawing

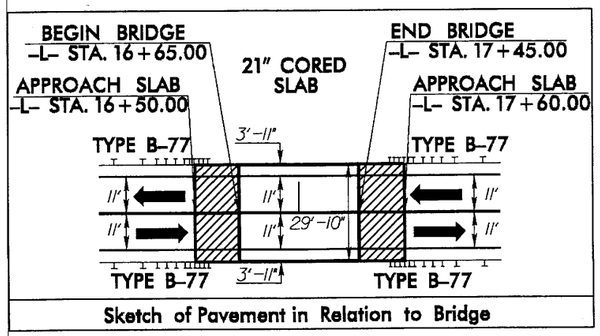
ATN Revised 3/31/05

PROJECT REFERENCE NO.	SHEET NO.
B-4026	4
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

8/17/99

REVISIONS



Sketch of Pavement in Relation to Bridge

50' 0' 50' 100' 150'
GRAPHIC SCALE

F F DENOTES FILL IN WETLAND

HC HC DENOTES HAND CLEARING

NAD 83

15

20

BEGIN STATE PROJECT B-4026
-L- STA. 13+90

BEGIN CONSTRUCTION
-L- STA. 13+75

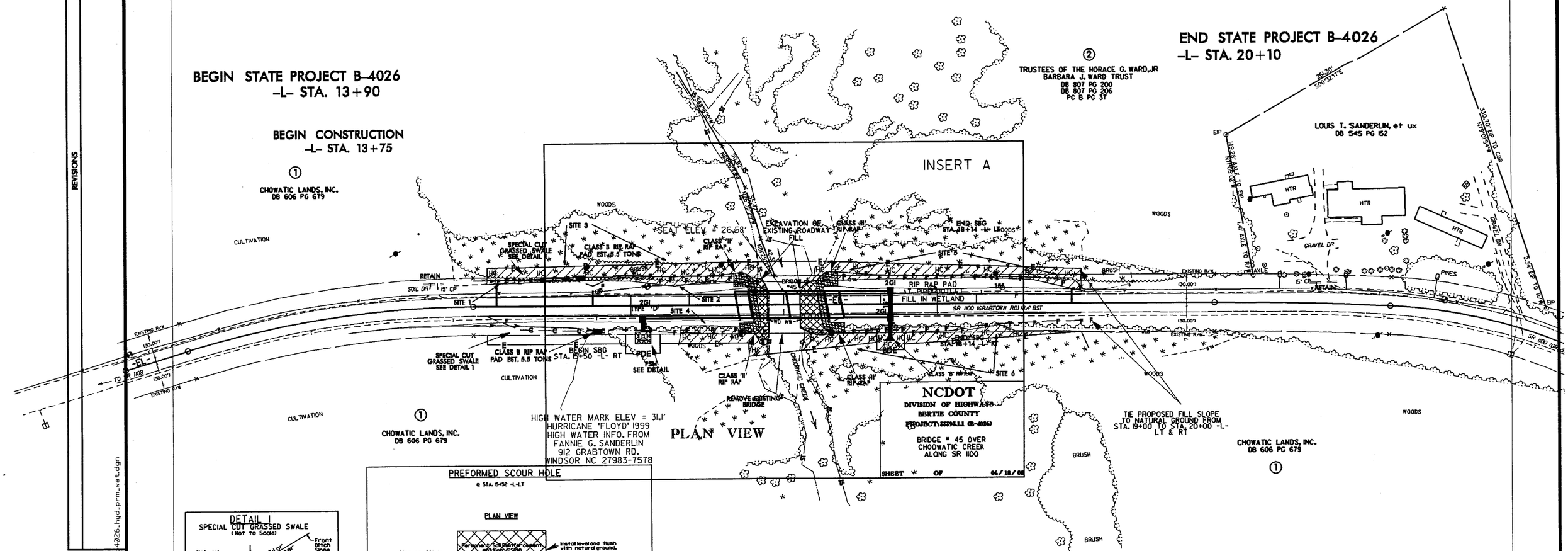
① CHOWATIC LANDS, INC.
DB 606 PG 679

② TRUSTEES OF THE HORACE G. WARD, JR
BARBARA J. WARD TRUST
DB 807 PG 200
DB 807 PG 206
PC B PG 37

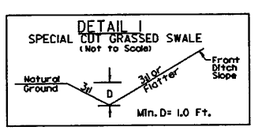
INSERT A

END STATE PROJECT B-4026
-L- STA. 20+10

LOUIS T. SANDERLIN, et ux
DB 545 PG 152



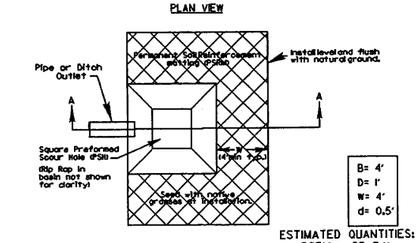
DETAIL 1
SPECIAL CUT GRASSED SWALE
(Not to Scale)



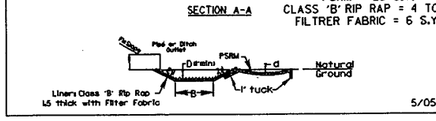
FROM STA. 13+75 TO 15+00 -L- RT
STA. 13+75 TO 14+75 -L- LT

PREFORMED SCOUR HOLE
@ STA. 15+52 -L-LT

PLAN VIEW



SECTION A-A



5/05

ESTIMATED QUANTITIES:
PSRM = 25 S.Y.
CLASS 'B' RIP RAP = 4 TONS
FILTRER FABRIC = 6 S.Y.

PROPOSED 2 @ 40'
21" PRESTRESSED CONCRETE CORED SLAB

NOTE:
NO DECK DRAINS REQUIRED

Permit Drawing
Sheet 4 of 11

NOTE: SEE SHEET NO. 5 FOR -L- PROFILE
NOTE: SEE SHEET S-1 THRU S- FOR STRUCTURE PLANS

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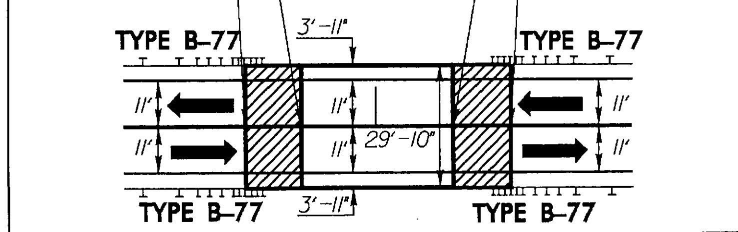
PROJECT REFERENCE NO.	SHEET NO.
B-4026	4
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

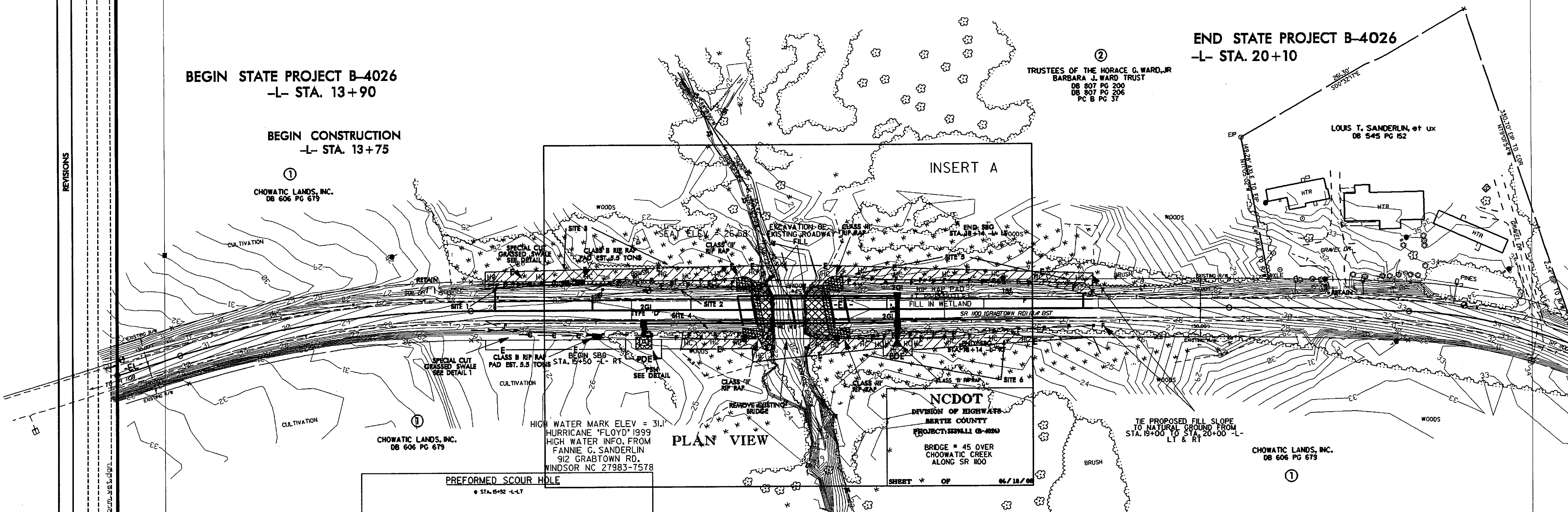


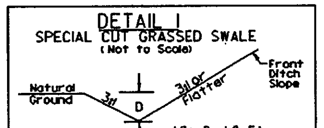
Sketch of Pavement in Relation to Bridge

50' 0' 50' 100' 150'
GRAPHIC SCALE

F/F DENOTES FILL IN WETLAND

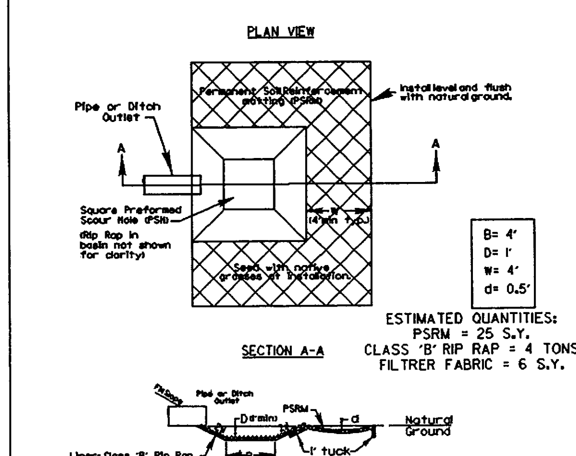
HC/HC DENOTES HAND CLEARING





FROM STA. 13+75 TO 15+00 -L- RT
STA. 13+75 TO 14+75 -L- LT

PREFORMED SCOUR HOLE
@ STA. 15+52 -L-LT



ESTIMATED QUANTITIES:
PSRM = 25 S.Y.
CLASS 'B' RIP RAP = 4 TONS
FILTRER FABRIC = 6 S.Y.

5/05

PROPOSED 2 @ 40'
21" PRESTRESSED CONCRETE
CORED SLAB

NOTE:
NO DECK DRAINS REQUIRED

Permit Drawing
Sheet 5 of 17

NOTE: SEE SHEET NO. 5 FOR -L- PROFILE
NOTE: SEE SHEET S-1 THRU S- FOR STRUCTURE PLANS

REVISIONS

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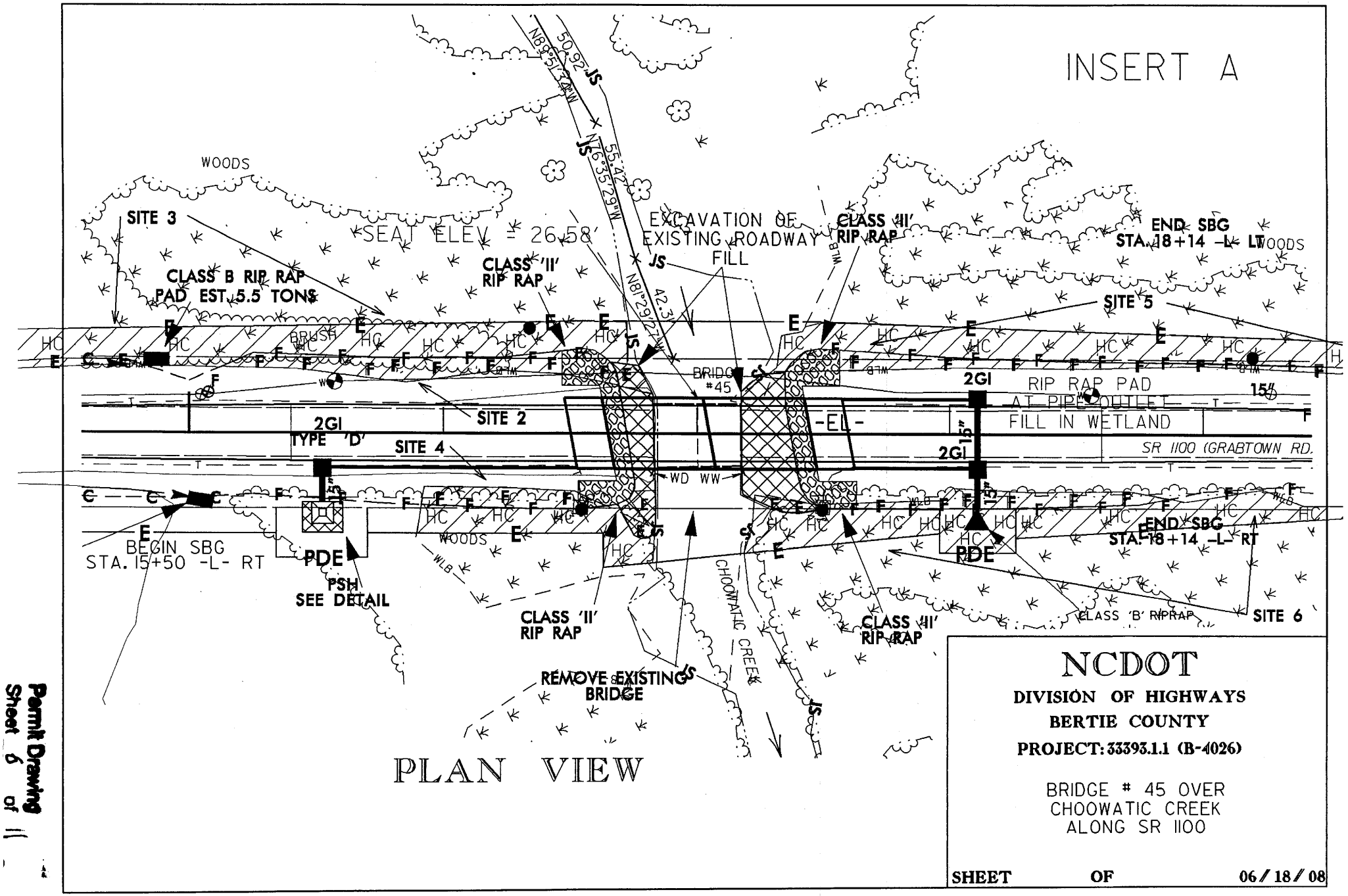


Permit Drawing
Sheet 6 of 11

PROJECT REFERENCE NO.	SHEET NO.
B-4026	5
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

5/14/98

BRIDGE HYDRAULIC DATA

DESIGN DISCHARGE	= 800	CFS
DESIGN FREQUENCY	= 25	YRS
DESIGN HW ELEVATION	= 28.9	FT
BASE DISCHARGE	= 1300	CFS
BASE FREQUENCY	= 100	YRS
BASE HW ELEVATION	= 28.2	FT
OVERTOPPING DISCHARGE	= 1274	CFS
OVERTOPPING FREQUENCY	= 100	YRS
OVERTOPPING ELEVATION	= 28.1	FT
NORMAL WATER SURFACE ELEVATION	= 22.5	FT
DATE OF SURVEY	= 01/31/07	
W.S. ELEVATION AT DATE OF SURVEY	= 22.6	FT

-L-

BM # 11 RR SPIKE IN BASE OF 30" SWEET GUM
-L- STA. 19+34.38 31.18 RT.
N 818379 E 2582477 ELEV. = 25.98'

BEGIN RESURFACING
-L- STA. 13+80

PI = 17+00.00
EL = 28.69'
VC = 180'
K = 205

END RESURFACING
-L- STA. 20+10

BEGIN GRADE
-L- STA. 15+25
EL = 28.06'

END GRADE
-L- STA. 18+50
EL = 27.91'

BRIDGE @ STA 17+05 -L-
ELEV. = 28.44'
SKEW = 80°
PROPOSED 2 @ 10'-2" PRESTRESSED CONCRETE CORED SLAB

PI = 14+50.00
EL = 25.80'

-1.70400%
-1.02000%
+2.40000%
+0.76600%
-1.05200%

BEGIN RIGHT DITCH
-L- STA. 13+75
EL = 26.20'

BEGIN LEFT DITCH
-L- STA. 13+75
EL = 25.20'

END RIGHT DITCH
-L- STA. 15+00
EL = 25.40'

END LEFT DITCH
-L- STA. 14+75
EL = 24.40'

UNCLASSIFIED STRUCTURE EXCAVATION

30 30
20 20

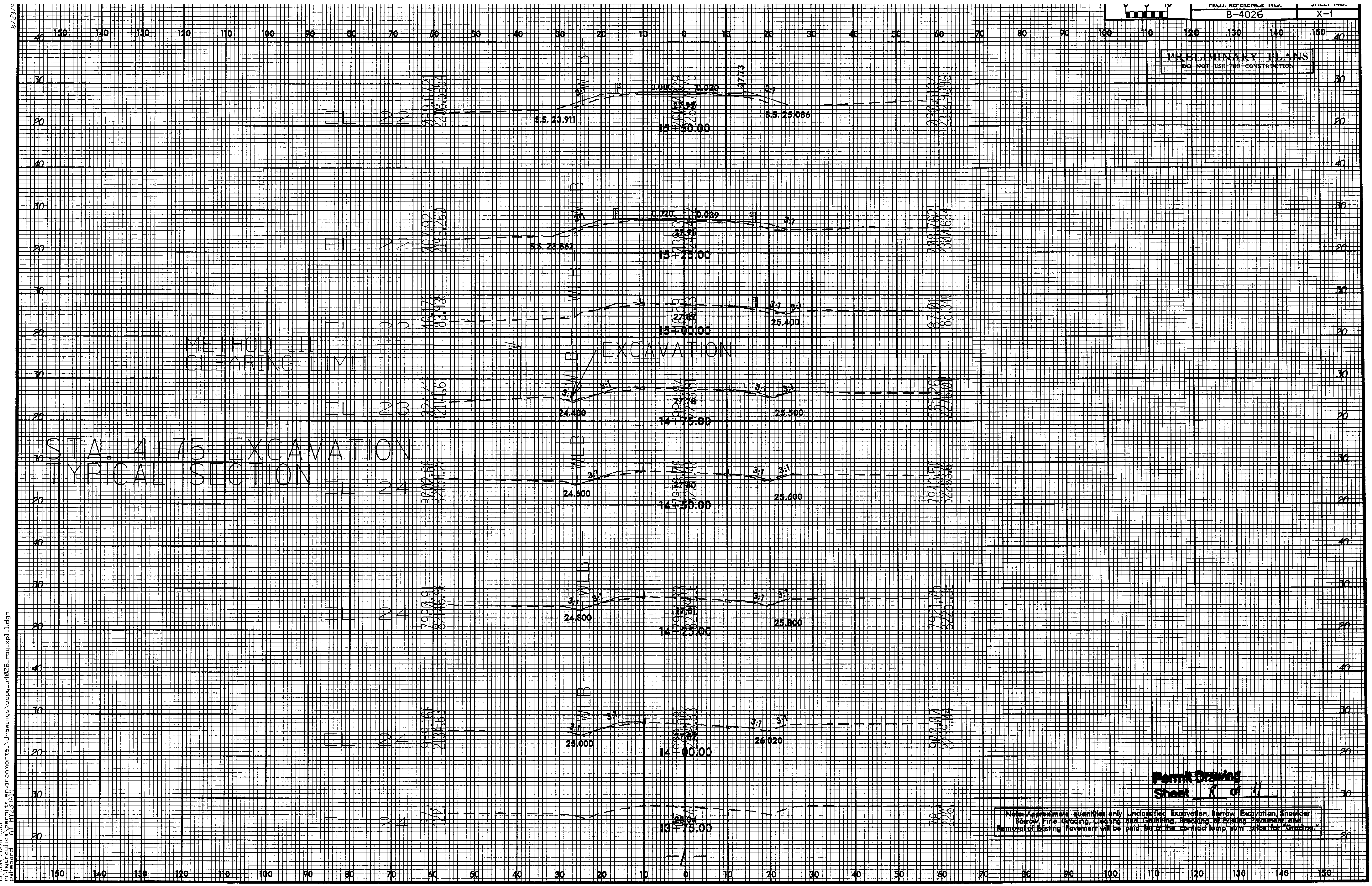
13 14 15 16 17 18 19 20 21 22 23 24

BM # 10 RR SPIKE IN BASE OF 30" SYCAMORE
-L- STA. 14+04.89 97.17' LT.
N 817982 E 2582105 ELEV. = 27.2'

SEE SHEET 4 FOR -L- DESIGN

17-JUN-2008 13:20
r:\hydraulics\Permits\environmental\drawings\b4026_rdy_pfl.dgn
rshepard

Permit Drawing
Sheet 7 of 11


PROJ. REFERENCE NO.
B-4026
SHEET NO.
X-1
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION
METHOD III
CLEARING LIMIT
EXCAVATION
STA. 14+75 EXCAVATION
TYPICAL SECTION
-WLB-
S.S. 23.911
S.S. 25.086
15+50.00
S.S. 23.862
15+25.00
25.400
15+00.00
24.400
25.500
14+75.00
24.600
25.600
14+50.00
24.800
25.800
14+25.00
25.000
26.020
14+00.00
13+75.00
Permit Drawing
Sheet 8 of 11
Note: Approximate quantities only. Unclassified Excavation, Borrow Excavation, Shoulder Borrow, Fine Grading, Clearing and Grubbing, Breaking of Existing Pavement, and Removal of Existing Pavement will be paid for at the contract lump sum price for "Grading."

10-JUN-2008 13:10
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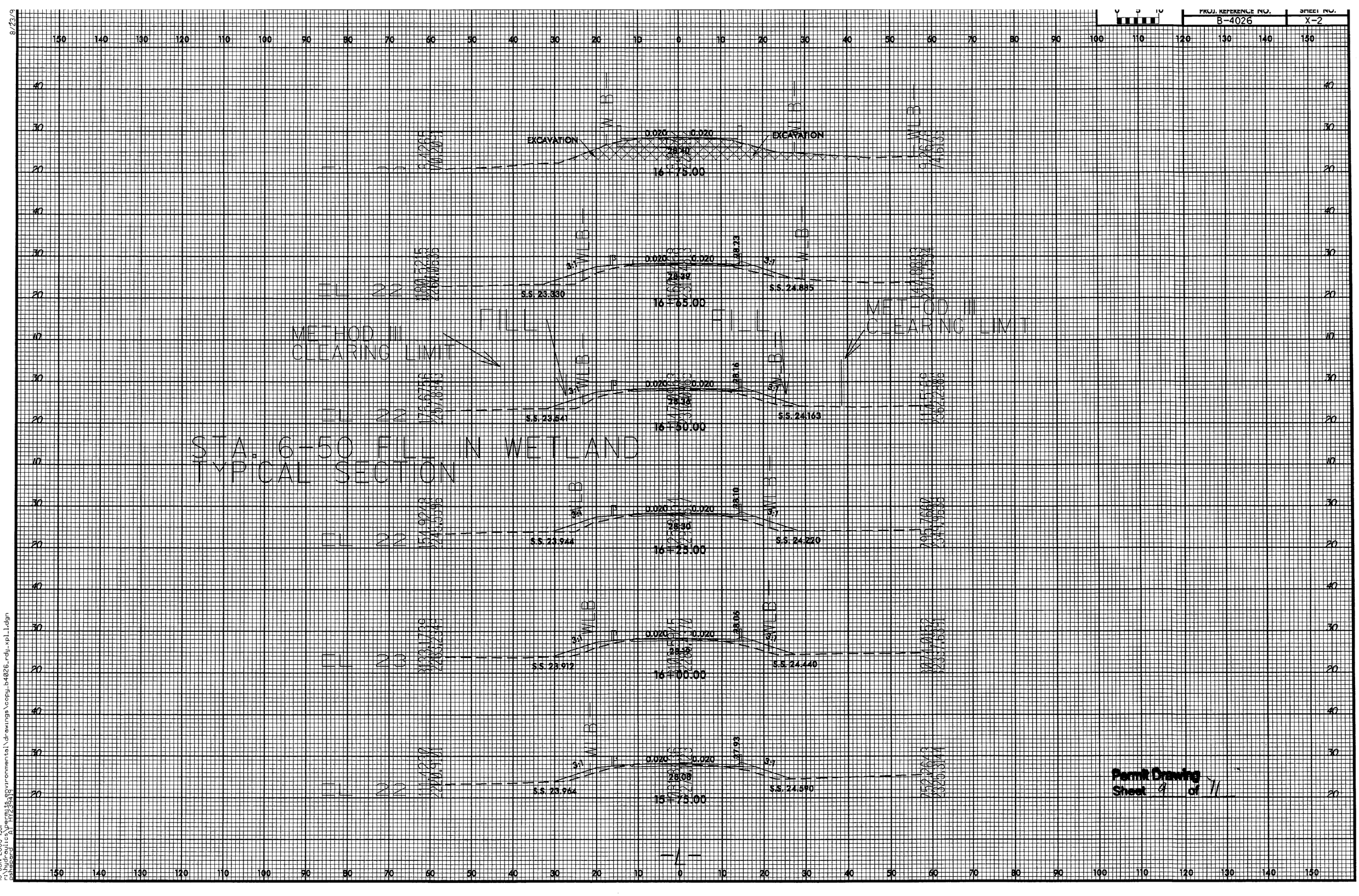
psheppard AT HY2394J9

PROJ. REFERENCE NO.	SHEET NO.
B-4026	X-2



STA. 16+50 FILL IN WETLAND
TYPICAL SECTION

Permit Drawing
Sheet 9 **of** 11

8/23/9

10-JUN-2008 13:11
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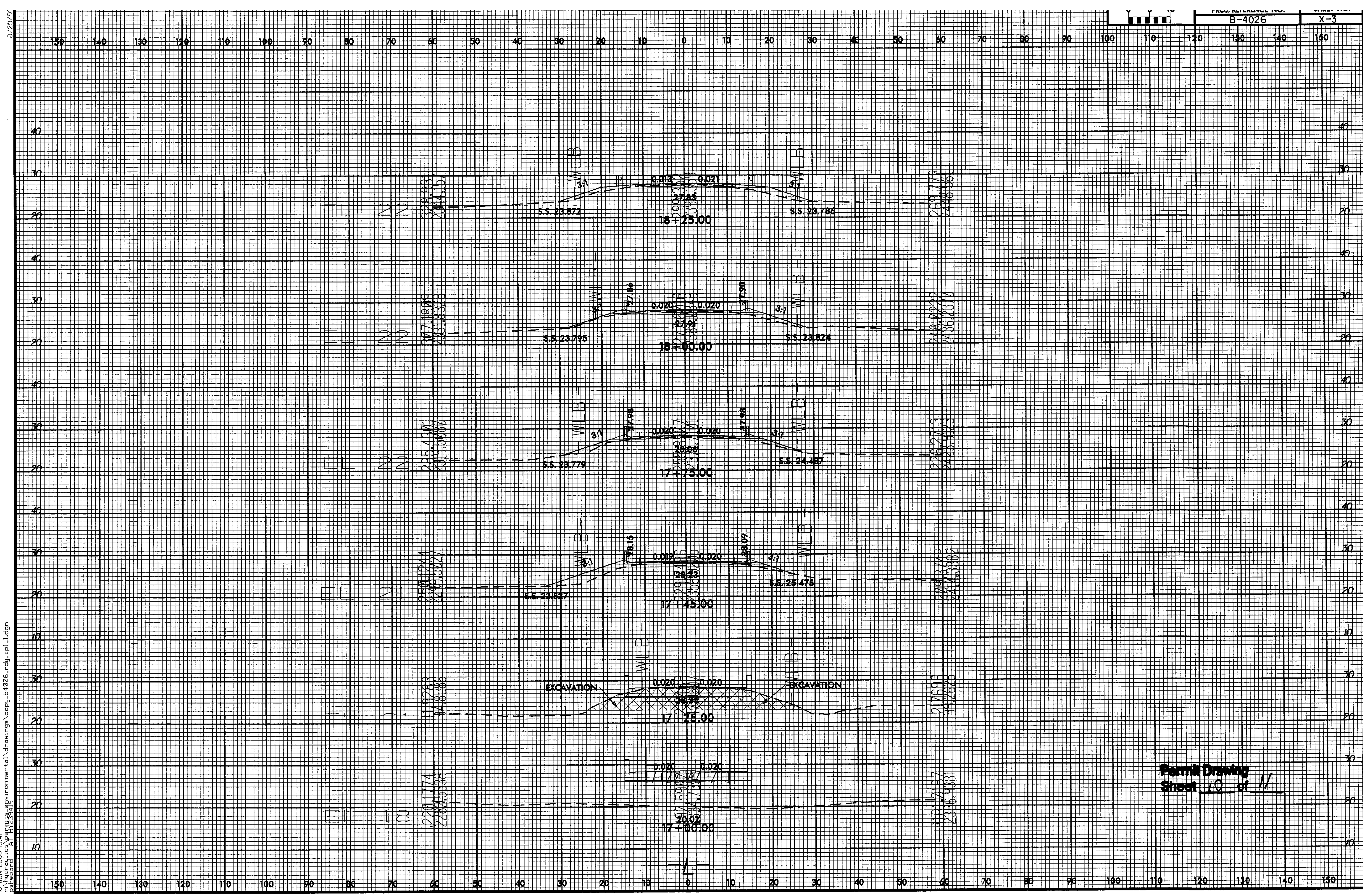
oshepard AT HY239419



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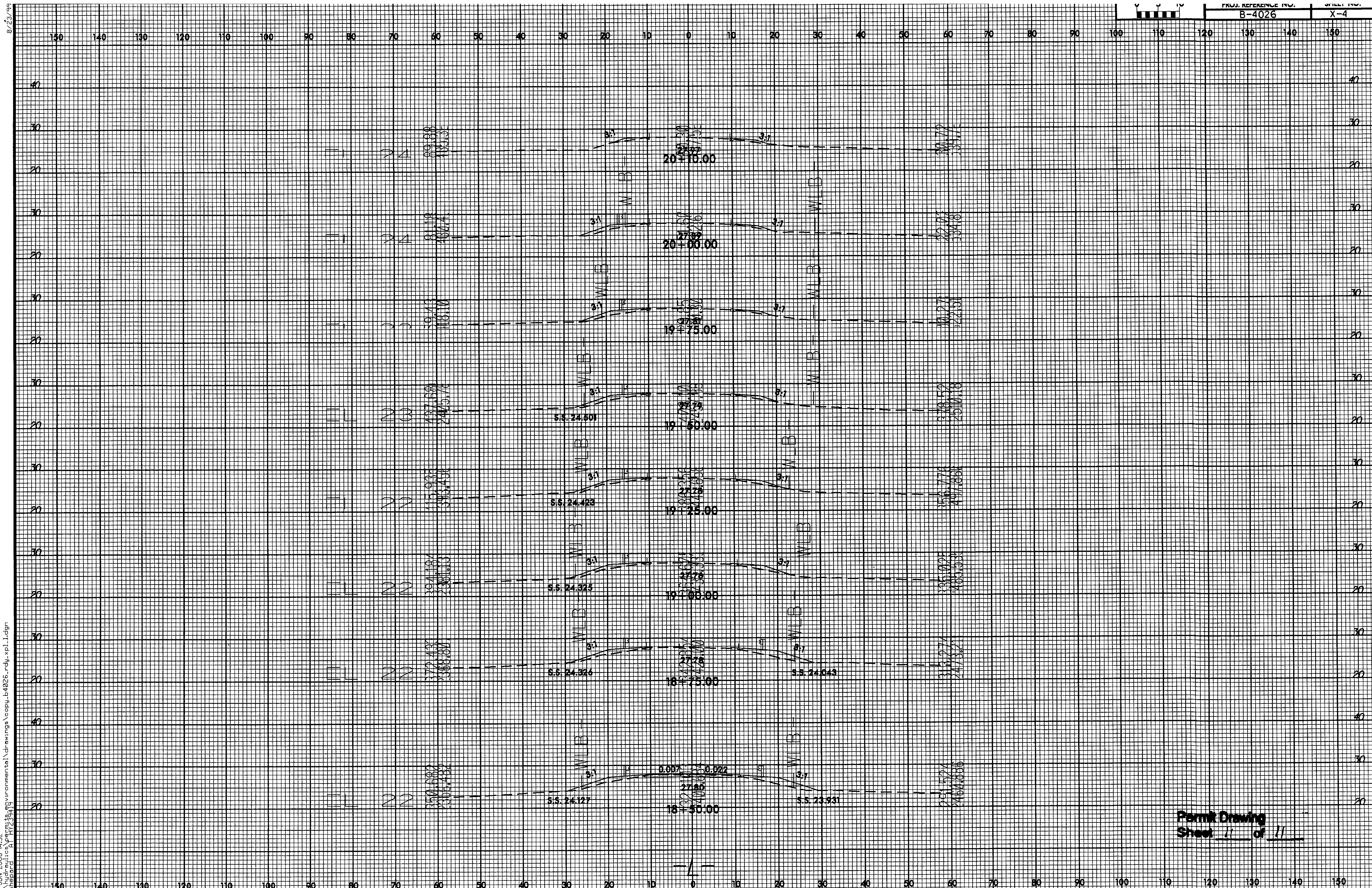
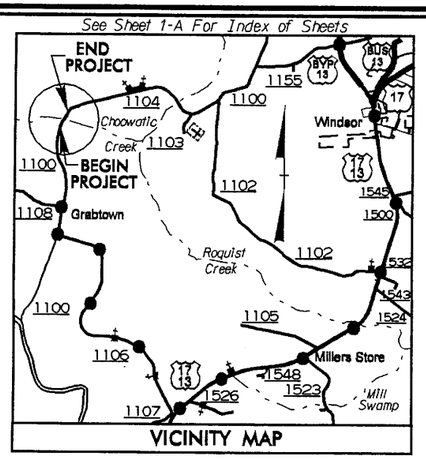

PROJ. REFERENCE NO.
B-4026
SHEET NO.
X-4
20+10.00
20+00.00
19+75.00
19+50.00
S.S. 24.501
19+25.00
S.S. 24.423
19+00.00
S.S. 24.325
18+75.00
S.S. 24.326
S.S. 24.043
18+50.00
S.S. 24.127
S.S. 23.931
WLB
3:1
Permit Drawing
Sheet 11 of 11

09/08/99

TIP PROJECT: B-4026

CONTRACT: C202091



OFF-SITE DETOUR ROUTE

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

BERTIE COUNTY

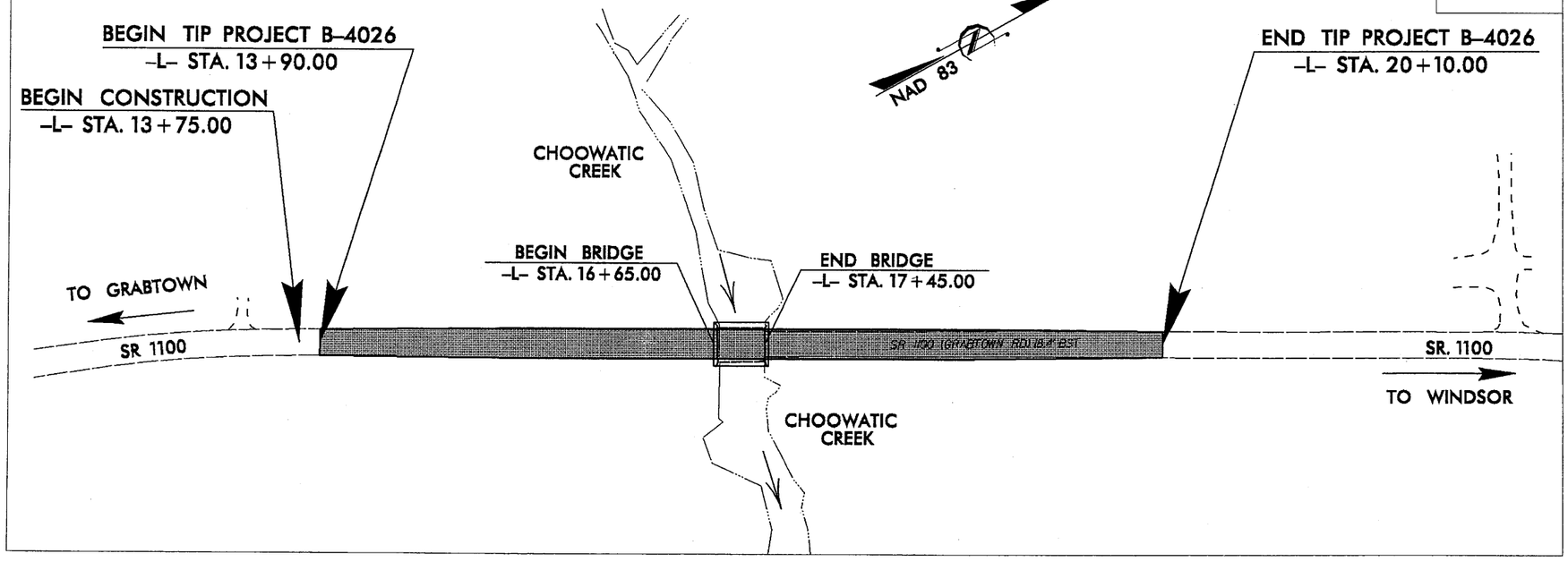
LOCATION: BRIDGE NO. 45 OVER CHOOWATIC CREEK ON SR 1100

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

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-4026	1	

STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION
33393.1.1	BRZ-1100 (10)	PE
33393.2.1	BRZ-1100 (10)	R/W & UTIL.

4



NOTE: METHOD OF CLEARING: III

NOTE: THIS PROJECT IS NOT WITHIN ANY MUNICIPAL BOUNDARIES.

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 2006 =	900 VPD
ADT 2030 =	1300 VPD
DHV =	14 %
D =	60 %
T =	3 % *
V =	60 MPH
* TTST 1%	DUAL 2%
FUNC CLASS =	COLLECTOR

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT B-4026 = 0.102 MI
LENGTH STRUCTURE TIP PROJECT B-4026 = 0.015 MI
TOTAL LENGTH OF TIP PROJECT B-4026 = 0.117 MI

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

2006 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE: APRIL 14, 2008

LETTING DATE: APRIL 21, 2009

JAMES A. SPEER, PE
PROJECT ENGINEER

NYA K. BOAYUE, PE
PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

SIGNATURE: P.E.

ROADWAY DESIGN ENGINEER

SIGNATURE: P.E.

DIVISION OF HIGHWAYS STATE OF NORTH CAROLINA

P.E.
STATE HIGHWAY DESIGN ENGINEER

18-JUN-2008 10:57
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$$$$USERNAME$$$$

3/15/06

PROJECT REFERENCE NO.	SHEET NO.
B-4026	1B

Note: Not to Scale

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

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

CONVENTIONAL PLAN SHEET SYMBOLS

BOUNDARIES AND PROPERTY:

- State Line
- County Line
- Township Line
- City Line
- Reservation Line
- Property Line
- Existing Iron Pin — EIP
- Property Corner
- Property Monument — ECM
- Parcel/Sequence Number — 23
- 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
- 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 35
- Switch — SWITCH
- RR Abandoned
- RR Dismantled

RIGHT OF WAY:

- Baseline Control Point
- Existing Right of Way Marker
- Existing Right of Way Line
- Proposed Right of Way Line
- Proposed Right of Way Line with Iron Pin and Cap Marker
- Proposed Right of Way Line with Concrete or Granite Marker
- Existing Control of Access
- Proposed Control of Access
- Existing Easement Line — 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:

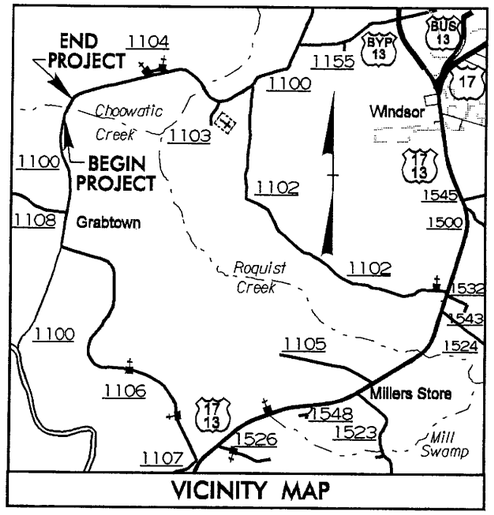
- Sanitary Sewer Manhole
- Sanitary Sewer Cleanout
- U/G Sanitary Sewer Line — SS
- Above Ground Sanitary Sewer — A/G Sanitary Sewer
- Recorded SS Forced Main Line — FSS
- Designated SS Forced Main Line (S.U.E.*) — FSS

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.

PROJECT REFERENCE NO.	SHEET NO.
B-4026	1C
LOCATION AND SURVEYS	

SURVEY CONTROL SHEET B-4026



VICINITY MAP

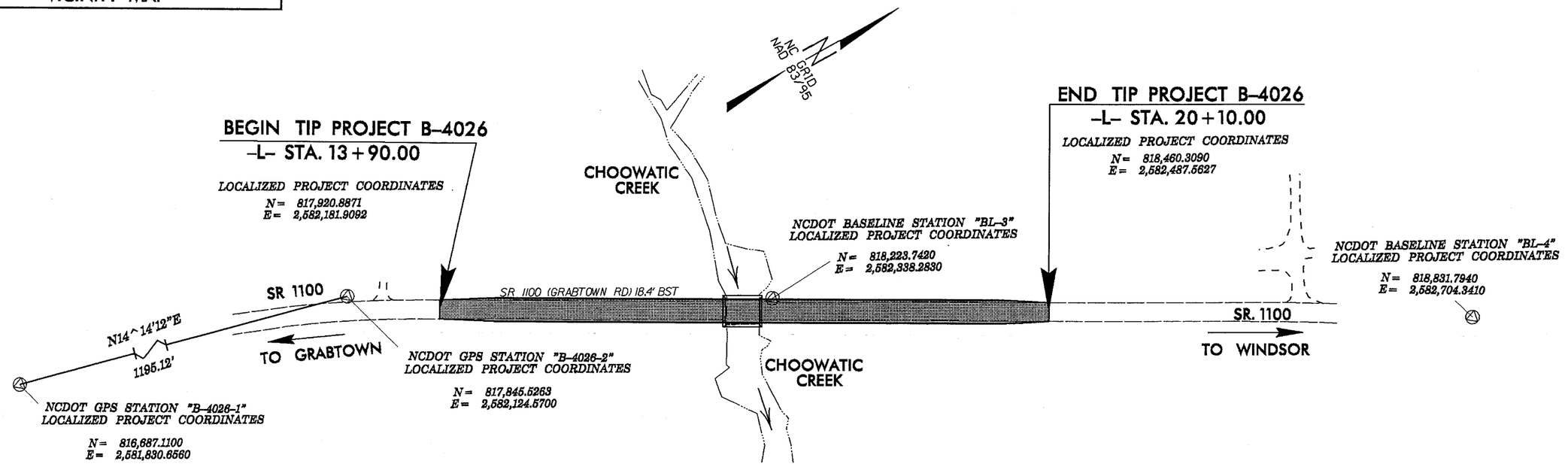
CONTROL DATA

BL

POINT	DESC.	NORTH	EAST	ELEVATION	L STATION	OFFSET
BL2	GPS B4026-2	817845.5263	2582124.5700	27.94	12+97.26	15.65 LT
BL3	BL-3	818223.7420	2582338.2830	26.71	17+30.59	13.25 LT
BL4	BL-4	818831.7940	2582704.3410	34.18	24+37.94	14.55 LT

BENCHMARK DATA

```
**************************************
BM10        ELEVATION = 27.18
N 817982        E 2582105
L STATION 14+05 97 LEFT
30"SYCAMORE
**************************************
**************************************
BM11        ELEVATION = 25.97
N 818379        E 2582477
L STATION 19+34 31 RIGHT
30"SWEET GUM
**************************************
```



DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCDOT FOR MONUMENT "B4026-1" WITH NAD 1983/95 STATE PLANE GRID COORDINATES OF NORTHING: 816687.110(ft) EASTING: 2581830.656(ft) THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.99995779 THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "B4026-1" TO -L- STATION 13+90.00 IS N 15° 53' 29" E 1282.80 ft ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES VERTICAL DATUM USED IS NAVD 88

NOTE: DRAWING NOT TO SCALE

NOTES:

THE CONTROL DATA FOR THIS PROJECT CAN BE FOUND ELECTRONICALLY BY SELECTING HTTP:\WWW.DOH.DOT.STATE.NC.US/PRECONSTRUCT/HIGHWAY/LOCATION/PROJECT

FILE: b4026_ls_control_070706.txt

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

△ *INDICATES GEODETIC CONTROL MONUMENTS USED OR SET FOR HORIZONTAL PROJECT CONTROL BY THE NCDOT LOCATION AND SURVEYS UNIT.*

PROJECT CONTROL ESTABLISHED UTILIZING GLOBAL POSITIONING SYSTEM. NETWORK FOR GPS "B4026-1" ESTABLISHED FROM NGS ONLINE POSITIONING USER SERVICE (OPUS)

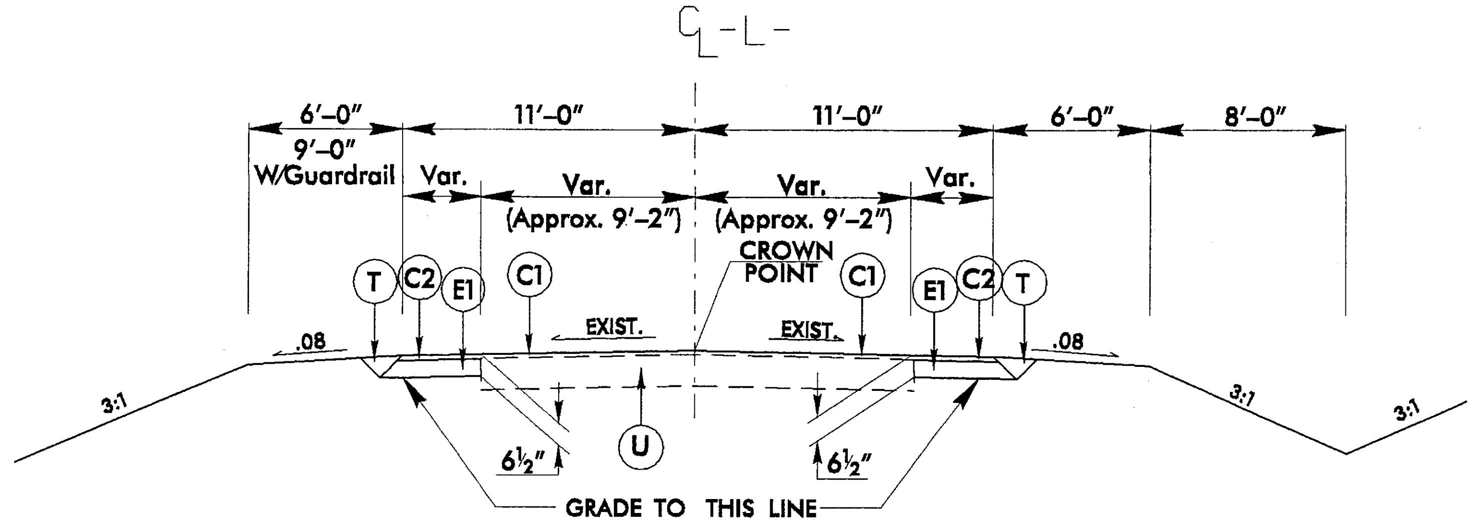
PROJECT REFERENCE NO.	SHEET NO.
B-4026	2
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

PAVEMENT SCHEDULE

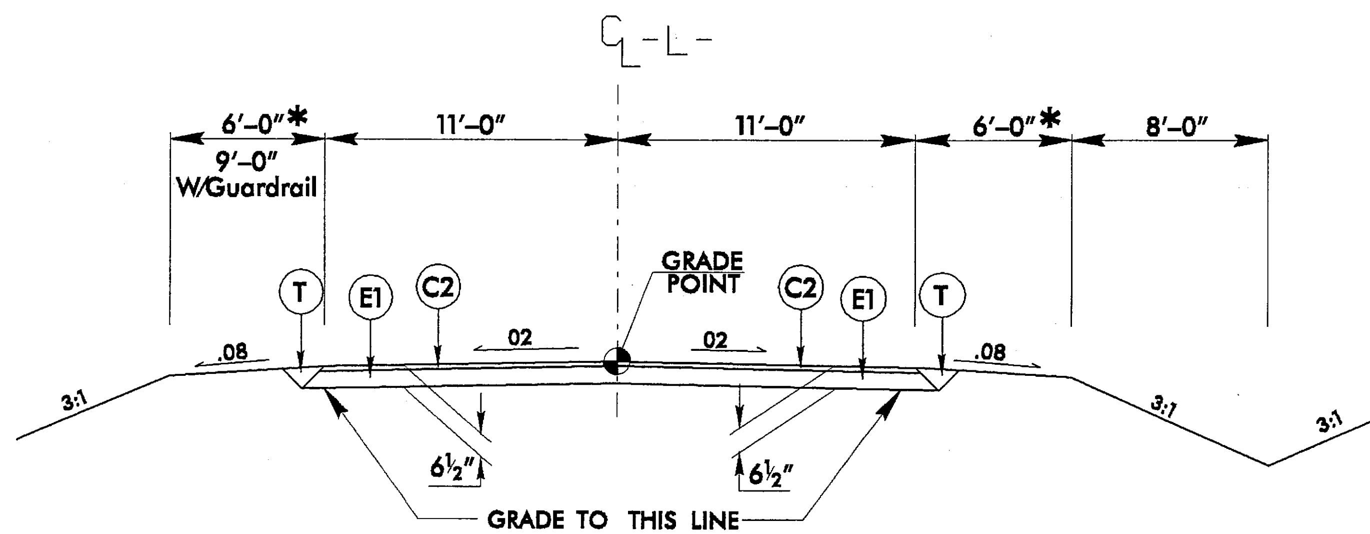
C1	PROP. APPROX. 1¼" ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 137.5 LBS. PER SQ. YD.
C2	PROP. APPROX. 2½" ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 137.5 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.
C3	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 110 LBS. PER SQ. YD. PER 1" DEPTH TO BE IN LAYERS NOT TO EXCEED 1.5" IN DEPTH
E1	PROP. APPROX. 4.0" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.
E2	PROP. VAR. DEPTH ASPHALT BASE SURFACE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1" DEPTH TO BE IN LAYERS NOT GREATER THAN 5.5" IN DEPTH OR LESS THAN 3.0" IN DEPTH
U	EXISTING PAVEMENT.
T	EARTH MATERIAL.

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



TYPICAL SECTION NO. 1

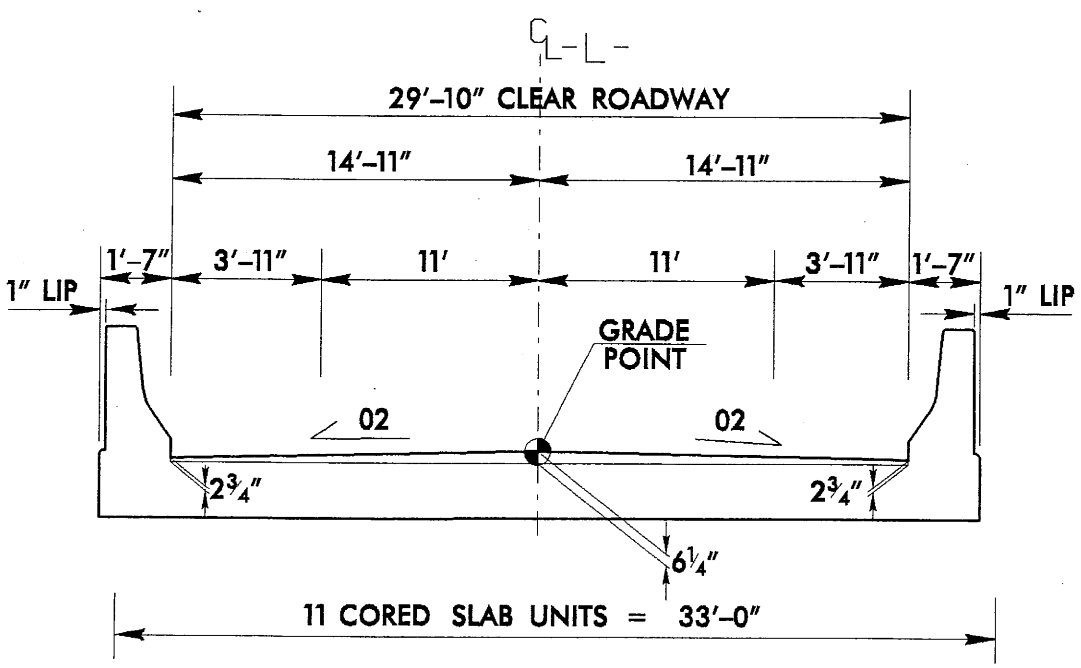
USE TYPICAL SECTION NO. 1
-L- STA. 13+90.00 to -L- STA. 15+25.00
-L- STA. 18+50.00 to -L- STA. 20+10.00



TYPICAL SECTION NO. 2

USE TYPICAL SECTION NO. 2
-L- STA. 15+25.00 to -L- STA. 16+65.00 (BEG. BRIDGE)
-L- STA. 17+45.00 (END BRIDGE) to -L- STA. 18+50.00

* INSTALL SHOULDER BERM GUTTER AS FOLLOWS:
STA. 15+50.00 TO STA. 16+51.71 RT
STA. 17+57.91 TO STA. 18+14.00 LT
STA. 17+61.79 TO STA. 18+14.00 RT
SEE ROADWAY STD. DRWG. No. 846.02



TYPICAL SECTION ON STRUCTURE

BEGIN BRIDGE -L- STA. 16+65.00 TO END BRIDGE -L- STA. 17+45.00

10/26/98

18-JUN-2008 10:58 b4026_rdy_typ.dgn

12/05/07

COMPUTED BY: _____ DATE: _____
CHECKED BY: _____ DATE: _____

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

PROJECT REFERENCE NO.	SHEET NO.
B-4026	3-A

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

SUMMARY OF EARTHWORK

STATION	STATION	UNCL. EXCAV.	EMBANK.	BORROW	WASTE
13+90.00	16+65.00	69	249	180	
17+45.00	20+10.00	41	233	192	
SUBTOTALS:		110	482	372	
SHOULDER MATERIAL			31	31	
PROJECT TOTALS:		110	513	403	
5% FOR BORROW PIT				20	
GRAND TOTALS:		110	513	423	
SAY: (PLUS 15%)		130		490	

UNDERCUT EXCAVATION = 200 CY
SELECT MATERIAL (CLASS II OR III) = 200 CY

18-JUN-2008 10:58
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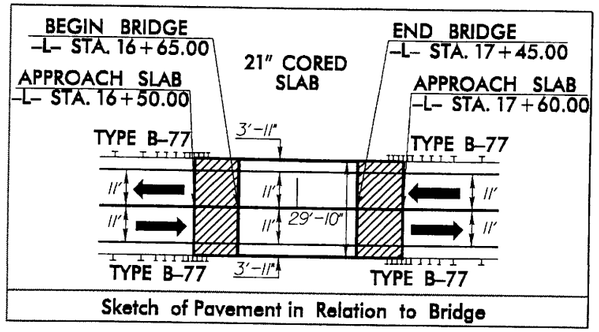
PROJECT REFERENCE NO.	SHEET NO.
B-4026	4
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

REVISIONS

8/12/05



Sketch of Pavement in Relation to Bridge

NAD 83

15

20

BEGIN STATE PROJECT B-4026
-L- STA. 13+90

BEGIN CONSTRUCTION
-L- STA. 13+75

① CHOWATIC LANDS, INC.
DB 606 PG 679

-BL- 2 POT 5+00.00
(GPS B4026-2)
-L- STA. 12+97.26
15.65' (LT.)

CULTIVATION

RETAIN

SOIL DRY

15" CP

N 29° 28' 07.9" E

GRAU 350

TYPE B-77

TB 2GI

11' TYPE 'D'

11' TB 2GI

11' SR 1100 (GRABTOWN RD) 18.4' BST

BM#10
6+09 -BL- 84.3' LT
-L- STA. 14+04.89
97.17 (LT.)
RR SPIKE IN BASE
OF 30" SYCAMORE

CLASS B RIP RAP
PAD EST. 5.5 TONS
SPECIAL CUT
GRASSED SWALE
SEE DETAIL 1

+90.00
40.00'
EXIST. R/W

BEGIN BRIDGE
-L- STA.16+65.00

BEGIN APPROACH SLAB
-L- STA.16+51.02

WOODS

+25.00

50'

SEA ELEV = 26.58'

CLASS 'I' RIP RAP

+55.00
45.00'

-BL- 3 PINC 9+34.42 =
-L- STA. 17+30.59
13.25' (LT.)

EXCAVATION
GRADE TO EXISTING
ADJACENT WETLAND ELEV.

CLASS 'I' RIP RAP

+47.00
45.00'

END BRIDGE
-L- STA.17+45.00

BEGIN SBG
-L- STA.17+57.91

END APPROACH SLAB
-L- STA.17+58.98

END SBG
-L- STA.18+14.00

+10.00
36.00'
EXIST. R/W

② TRUSTEES OF THE HORACE G. WARD, JR
BARBARA J. WARD TRUST
DB 807 PG 200
DB 807 PG 206
PC B PG 37

WOODS

BRUSH

EXISTING R/W

BEGIN SBG
-L- STA.15+50.00

+34.00
50.00'
40.00'
EXIST. R/W

+70.00
50.00'
40.00'
EXIST. R/W

END SBG
-L- STA.16+51.71

CLASS 'I' RIP RAP

+63.00
54.00'
40.00'

CLASS B RIP RAP
PAD EST. 5.5 TONS
150' TAPER

SPECIAL CUT
GRASSED SWALE
SEE DETAIL 1

PDE

PSH
SEE DETAIL

REMOVE
EXISTING
BRIDGE

GRAU 350

TYPE B-77

CHOWATIC CREEK

CLASS 'I' RIP RAP

CLASS 'B' RIPRAP

PDE

+98.00
48.00'
40.00'
EXIST. R/W

BEGIN SBG
-L- STA.17+81.79

END SBG
-L- STA.18+14.00

+26.00
48.00'
42.00'
EXIST. R/W

+10.00
EXIST. R/W

150' TAPER

WOODS

BM#11
11+39 -BL- 39.0' RT
-L- STA. 19+34.48
31.18' (RT.)
RR SPIKE IN BASE
OF 30" SWEET GUM

-BL- 4 POT 16+44.16
-L- STA. 24+37.94
14.55' (LT.)

WOODS

END STATE PROJECT B-4026
-L- STA. 20+10

29.30'
S 00°52'17" E

330.70' TRP TO COR
N 39°05'54" W

EIP

N 39°28' ABLE TO EIP
THIRTEEN 20" WOODS

LOUIS T. SANDERLIN, et ux
DB 545 PG 152

HTR

HTR

HTR

GRAVEL DR

GRAVEL DR

PINES

15" CP

RETAIN

EXISTING R/W

N 31° 02' 55" E

11' SR 1100 (GRABTOWN RD) 18.4' BST

N 29° 32' 14" E

(30.00')

EXISTING R/W

CHOWATIC LANDS, INC.
DB 606 PG 679

① CHOWATIC LANDS, INC.
DB 606 PG 679

CULTIVATION

HIGH WATER MARK ELEV = 31.1'
HURRICANE 'FLOYD' 1999
HIGH WATER INFO. FROM
FANNIE G. SANDERLIN
912 GRABTOWN RD.
WINDSOR NC 27983-7578

BRUSH

BRUSH

DETAIL 1
SPECIAL CUT GRASSED SWALE
(Not to Scale)

Natural Ground
3rd
D
3rd or Flatter
Front Ditch Slope
Min. D= 1.0 Ft.

FROM STA. 13+75 TO 15+00 -L- RT
STA. 13+75 TO 14+75 -L- LT

PREFORMED SCOUR HOLE
@ STA. 15+52 -L-LT

PLAN VIEW

Permanent Soil Reinforcement matting (PSRM)
Install level and flush with natural ground.
Pipe or Ditch Outlet
Square Preformed Scour Hole (PSH)
(Rip Rap in basin not shown for clarity)
Seed with native grasses at installation.
A
A
B= 4'
D= 1'
W= 4'
d= 0.5'

ESTIMATED QUANTITIES:
PSRM = 25 S.Y.
CLASS 'B' RIP RAP = 4 TONS
FILTRER FABRIC = 6 S.Y.

SECTION A-A

Pipe or Ditch Outlet
PSRM
1'(min)
d
Natural Ground
B
1' tuck
Liner: Class 'B' Rip Rap 1.5 thick with Filter Fabric

5/05

NOTE: SEE SHEET NO. 5 FOR -L- PROFILE
NOTE: SEE SHEET S-1 THRU S- FOR STRUCTURE PLANS

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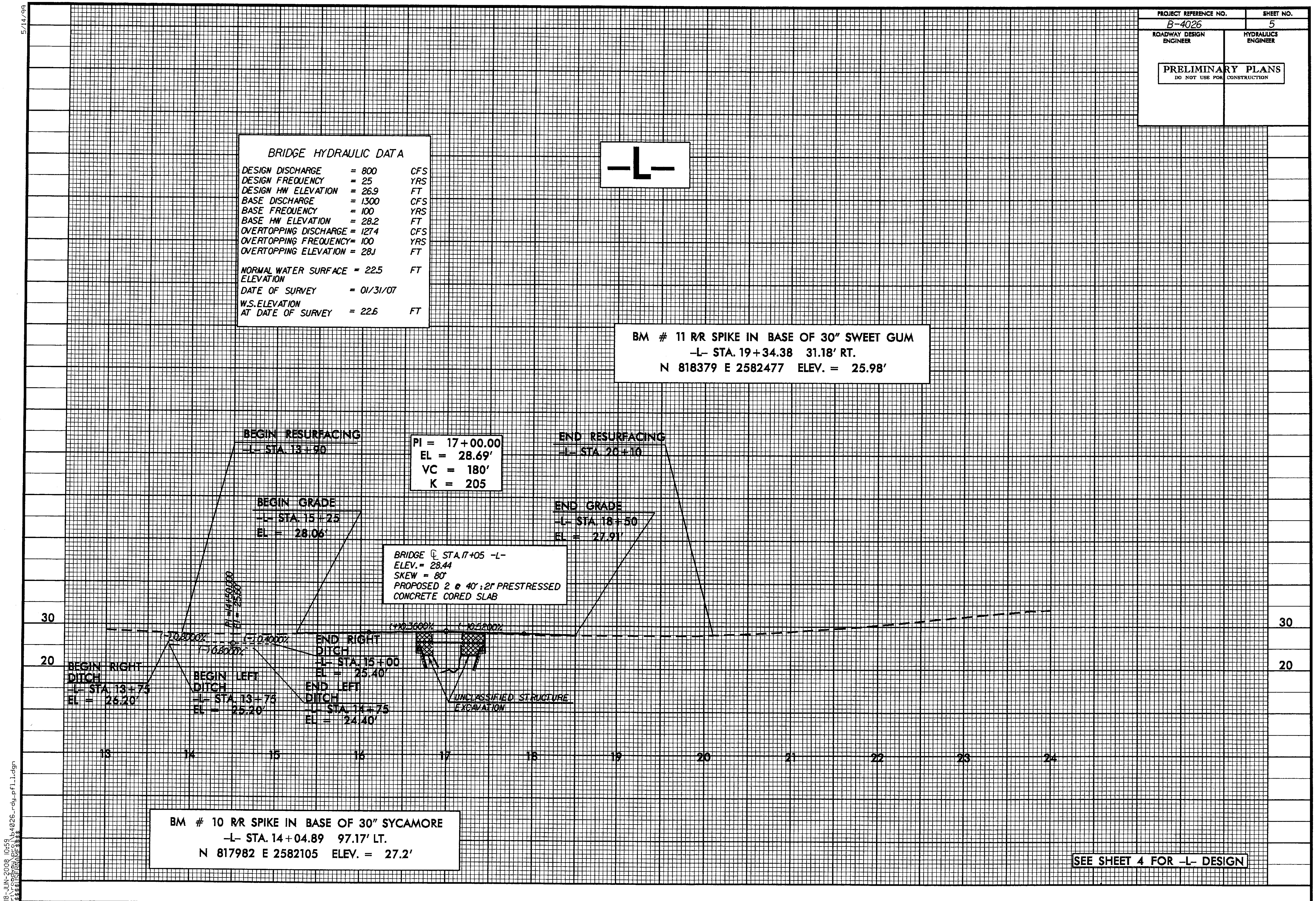
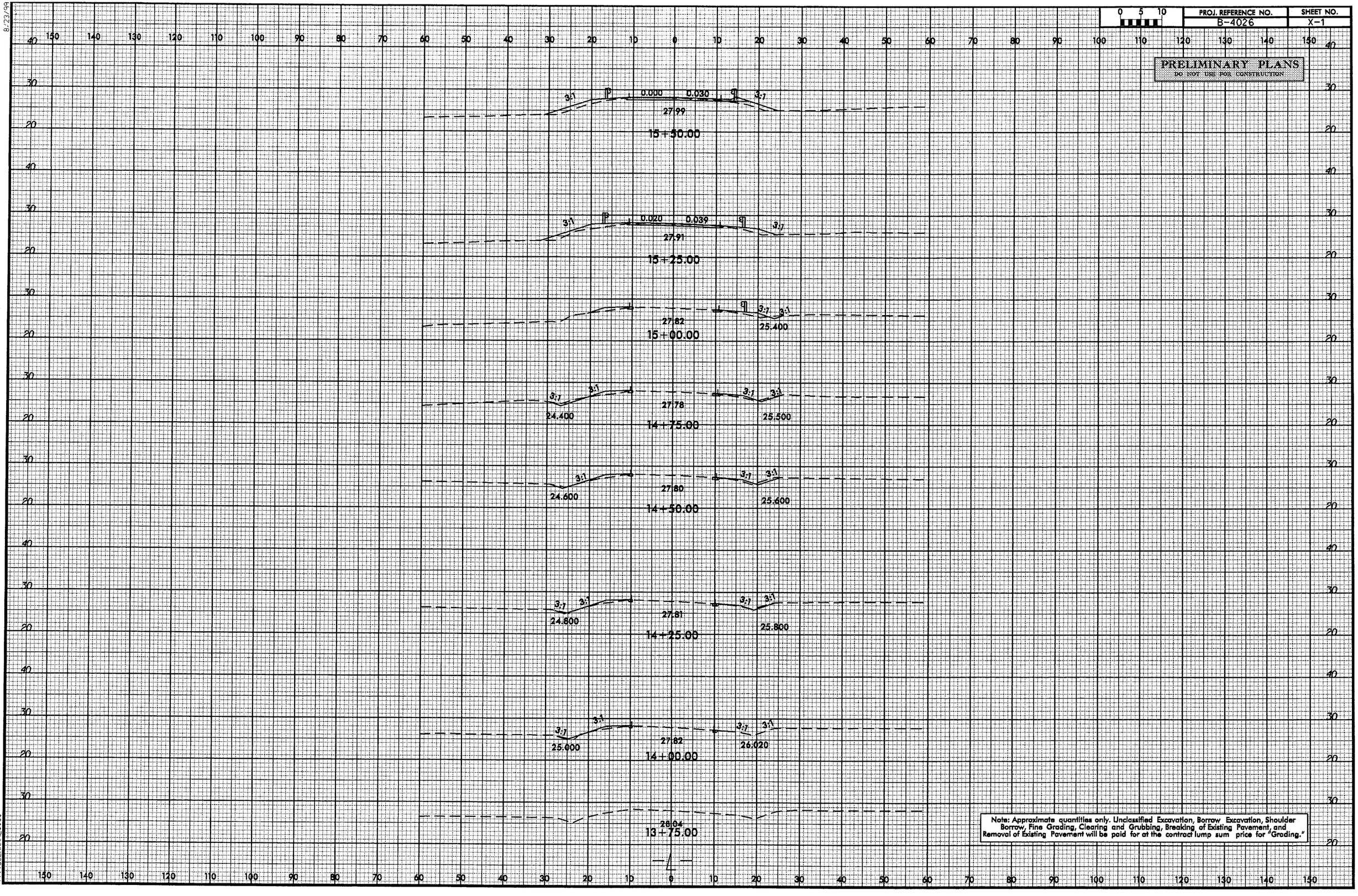

5/14/99
PROJECT REFERENCE NO. B-4026
SHEET NO. 5
ROADWAY DESIGN ENGINEER
HYDRAULICS ENGINEER
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION
-L-
BRIDGE HYDRAULIC DATA
DESIGN DISCHARGE = 800 CFS
DESIGN FREQUENCY = 25 YRS
DESIGN HW ELEVATION = 26.9 FT
BASE DISCHARGE = 1300 CFS
BASE FREQUENCY = 100 YRS
BASE HW ELEVATION = 28.2 FT
OVERTOPPING DISCHARGE = 1274 CFS
OVERTOPPING FREQUENCY = 100 YRS
OVERTOPPING ELEVATION = 28.1 FT
NORMAL WATER SURFACE ELEVATION = 22.5 FT
DATE OF SURVEY = 01/31/07
W.S. ELEVATION AT DATE OF SURVEY = 22.6 FT
BM # 11 R/R SPIKE IN BASE OF 30" SWEET GUM
-L- STA. 19+34.38 31.18' RT.
N 818379 E 2582477 ELEV. = 25.98'
BEGIN RESURFACING
-L- STA. 13+90
PI = 17+00.00
EL = 28.69'
VC = 180'
K = 205
END RESURFACING
-L- STA. 20+10
BEGIN GRADE
-L- STA. 15+25
EL = 28.06'
END GRADE
-L- STA. 18+50
EL = 27.91'
BRIDGE ℄ STA. 17+05 -L-
ELEV. = 28.44
SKEW = 80°
PROPOSED 2 @ 40'; 21" PRESTRESSED CONCRETE CORED SLAB
PI = 14+50.00
EL = 25.60
(-)0.8000%
(-)0.8000%
(-)0.4000%
(+)0.3600%
(-)0.5200%
30
20
BEGIN RIGHT DITCH
-L- STA. 13+75
EL = 26.20'
BEGIN LEFT DITCH
-L- STA. 13+75
EL = 25.20'
END RIGHT DITCH
-L- STA. 15+00
EL = 25.40'
END LEFT DITCH
-L- STA. 14+75
EL = 24.40'
UNCLASSIFIED STRUCTURE EXCAVATION
13
14
15
16
17
18
19
20
21
22
23
24
BM # 10 R/R SPIKE IN BASE OF 30" SYCAMORE
-L- STA. 14+04.89 97.17' LT.
N 817982 E 2582105 ELEV. = 27.2'
SEE SHEET 4 FOR -L- DESIGN
18-JUN-2008 10:59

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	B-4026	X-1

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION



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

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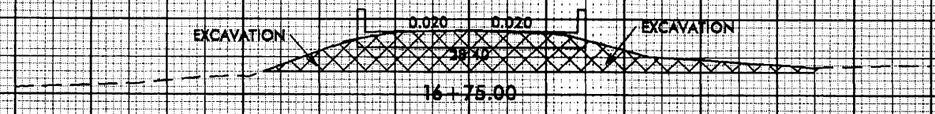
	B-4026	X-2



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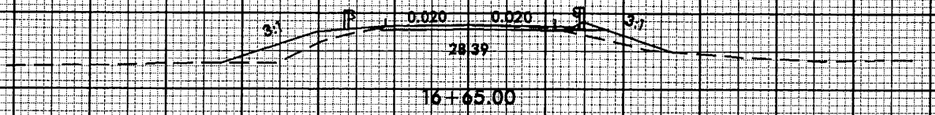

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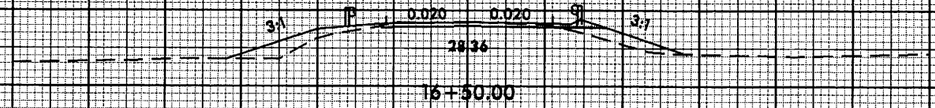

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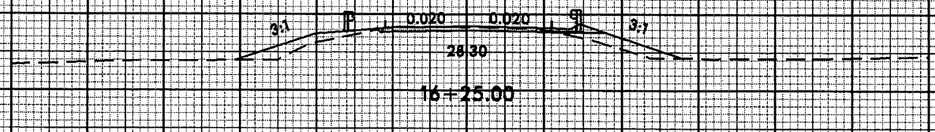

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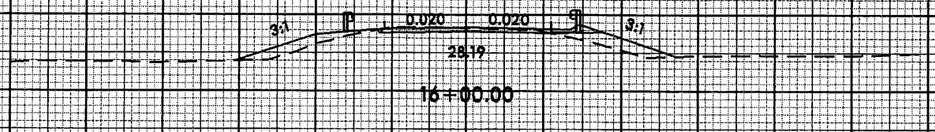

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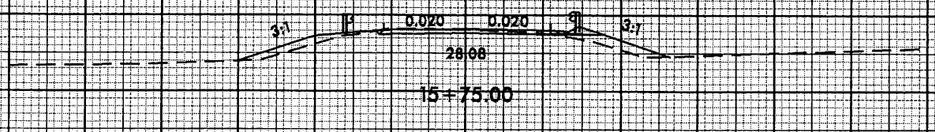

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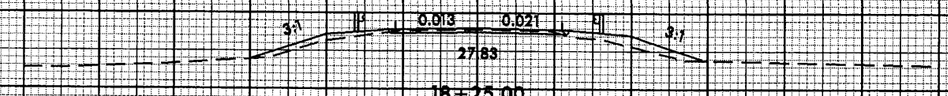

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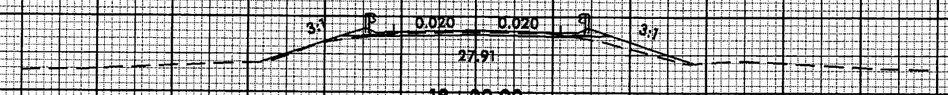

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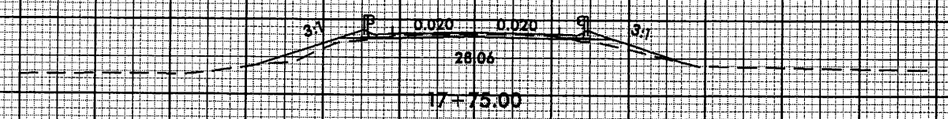

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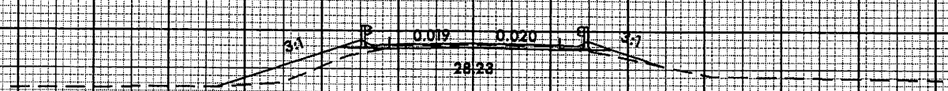

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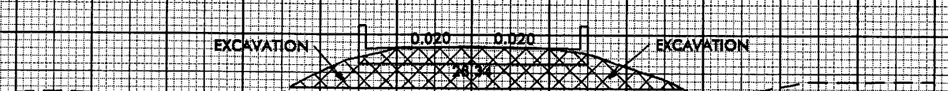

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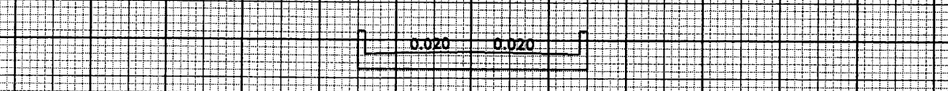

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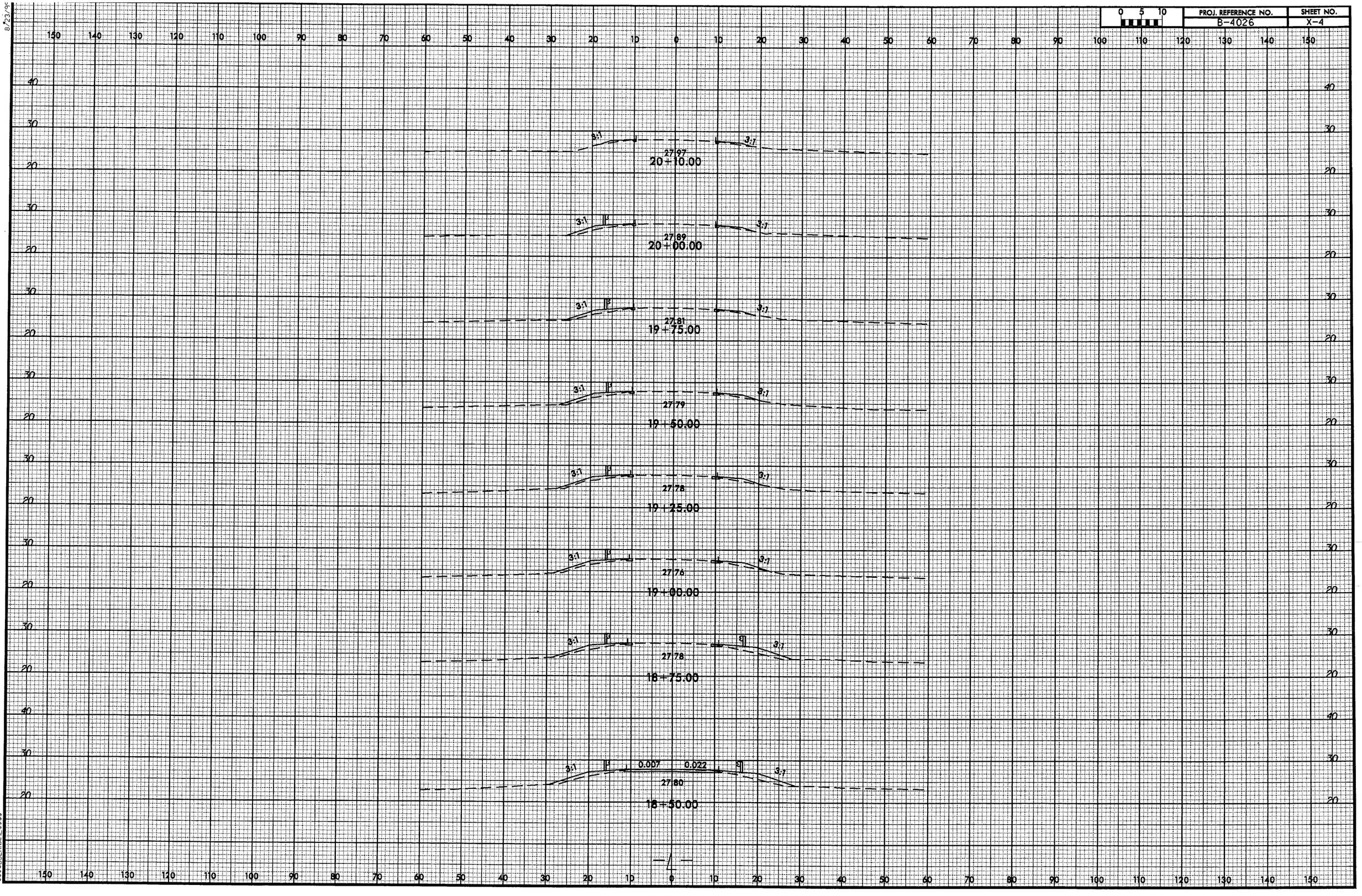

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SR 1100

Bridge No. 45 over Choowatic Creek

Bertie County

Federal-Aid Project No. BRZ-1100(10)

WBS No. 33393.1.1

State Project No. 8.2010401

T.I.P. No. B-4026

CATEGORICAL EXCLUSION

UNITED STATES DEPARTMENT OF TRANSPORTATION

FEDERAL HIGHWAY ADMINISTRATION

AND

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

DIVISION OF HIGHWAYS

APPROVED:

10/9/06
DATE

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

10/13/06
DATE

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

Bertie County

Bridge No. 45 on SR 1100 Over Choowatic Creek

Federal-Aid Project No. BRZ-1100(10)

WBS No. 33393.1.1

State Project No. 8.2010401

T.I.P. No. B-4026

CATEGORICAL EXCLUSION

October 2006

Document Prepared by:
Greenhorne & O'Mara, Inc.

Michelle Ward
Project Manager

10/9/06
Date

Michael A. Retton, P.E.
Associate

NORTH CAROLINA PROFESSIONAL SEAL 030049 ENGINEER MICHAEL A. RETTON

10/2/06
Date

For the North Carolina Department of Transportation
Project Development and Environmental Analysis Branch

Bryan D. Kluchar, P.E.
Project Engineer
Bridge Project Development Unit

10/9/06

Tracy Walter
Planning Engineer
Bridge Project Development Unit

PROJECT COMMITMENTS

Bertie County
Bridge No. 45 on SR 1100 Over Choowatic Creek
Federal-Aid Project No. BRZ-1100(10)
WBS No. 33393.1.1
State Project No. 8.2010401
T.I.P. No. B-4026

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

Division Engineer:

The following measures will be carried out for the replacement of Bridge No. 45:

1. An in-stream construction moratorium will be implemented from February 1 to June 30 to protect anadromous fish during spawning.

NCDOT Resident Engineer should notify local EMS and Bertie County schools a minimum of 30 days prior to road closure.

Hydraulics Unit and Roadside Environmental:

1. A clear bank (riprap free) area of at least 10 feet will remain on each side of the stream underneath the bridge.

Hydraulics Unit and Structure Design Unit:

1. Bridge deck drains will not be allowed to discharge directly into the stream.

Hydraulics Unit:

1. A state stormwater permit will be obtained.

Bertie County
Bridge No. 45 on SR 1100 Over Choowatic Creek
Federal-Aid Project No. BRZ-1100(10)
WBS No. 33393.1.1
State Project No. 8.2010401
T.I.P. No. B-4026

INTRODUCTION: The replacement of Bridge No. 45 is included in the 2006-2012 North Carolina Department of Transportation (NCDOT) State Transportation Improvement Program (STIP) and the Federal-Aid Bridge Replacement Program. The location is shown in Figure 1. No substantial environmental impacts are anticipated. The project is classified as a Federal "Categorical Exclusion."

I. PURPOSE AND NEED STATEMENT

Bridge Maintenance Unit records indicated the bridge has a sufficiency rating of 26.8 out of a possible 100 for a new structure. Based on a structural appraisal of 2 of 9, the bridge is considered functionally obsolete and structurally deficient. The replacement of an inadequate structure will result in safer and more efficient traffic operations.

II. EXISTING CONDITIONS

SR 1100 (Grabtown Road) is classified as a rural minor collector. Land use in the area is rural, consisting primarily of agricultural properties. There is a cluster of mobile homes north of the bridge.

Bridge No. 45 was constructed in 1952. The existing structure is 35 feet in length, and consists of two spans with the maximum span at approximately 17.5'. The clear roadway width on the bridge is 22.2 feet, providing two nine-foot travel lanes. The superstructure consists of a reinforced concrete floor on timber joists with an asphalt wearing surface. The end bents and interior bents consist of timber caps on timber piles. The bed to crown height is eight feet. The normal depth of flow is six feet. The posted weight limit is 11 tons for single vehicles (SV) and 17 tons for truck-tractors semi-trailers (TTST).

The existing bridge and approaches on SR 1100 are tangent. The approach roadway on SR 1100 consists of two nine-foot lanes with four-foot grass shoulders.

The estimated 2006 average daily traffic volume is 900 vehicles per day (vpd). The projected traffic volume by the design year 2030 is 1300 vpd. The volumes include 1 percent TTST and 2 percent dual tired vehicles.

The posted speed limit on SR 1100 in the vicinity of the bridge is 55 mph.

SR 1100 is not part of a designated bicycle route and there are no indications that an unusual number of bicyclists are using this route.

There are aerial power lines running on the west side of SR 1100 that cross Choowatic Creek. There are underground telephone cables on the east side of SR 1100 that become aerial at the bridge and return underground just past the bridge. Utility impacts are anticipated to be low.

There were no accidents reported in the vicinity of Bridge No. 45 for a recent three-year period.

A total of six school buses cross over Bridge No. 45 daily.

III. ALTERNATIVES

A. Project Description

The proposed approach roadway will consist of a 22-foot travelway providing for two 11-foot travel lanes with five-foot grass shoulders. The proposed structure will provide a 28-foot minimum travel way, consisting of two 11-foot travel lanes with three-foot shoulders. The proposed right-of-way width varies 60 feet to 100 feet. The design speed will be 60 mph.

Based on a preliminary hydraulic analysis, Bridge No. 45 will be replaced with a structure approximately 60 feet in length. The structure provides two 11-foot lanes and three-foot shoulders on each side. The roadway grade of the new structure will be approximately the same as the existing grade at this location. The length of the proposed structure may increase or decrease as necessary to accommodate peak flows as determined from a more detailed hydraulic analysis to be performed during the final design phase of the project.

B. Build Alternatives

Three (3) build alternatives studied for replacing the existing bridge are described below.

Alternate A (Preferred) replaces the bridge at the existing location with a new structure. The length of the approach roadway will be approximately 250 feet to the south of the proposed bridge and 330 feet to the north of the proposed bridge. During construction traffic will be maintained by an off-site detour along SR 1106 (St. Francis Road) and US 17/13 that is approximately 10.9 miles (17.5 kilometers) in length. (See Figure 1)

NCDOT Guidelines for Evaluation of Offsite Detours for Bridge Replacement Projects considers multiple project variables beginning with the additional time traveled by the average road user resulting from the offsite detour. The offsite detour for this project would include SR 1106 and US 17/13. The majority of traffic on the road is through traffic. The detour for the average road user would result in 20 minutes additional travel time (10.9 miles additional travel). Up to a 10-month duration of construction is expected on this project.

Based on the Guidelines, the criteria above indicate that on the basis of delay alone the detour is acceptable. Bertie County Emergency Services has indicated that the detour is acceptable. NCDOT Division 1 has indicated the condition of all roads, bridges and intersections on the offsite detour are acceptable without improvement and concurs with the use of the detour.

Alternate B replaces the bridge at the existing location with a new structure. The length of the approach roadway will be approximately 250 feet to the south of the proposed bridge and 330 feet to the north of the proposed bridge. During construction, traffic will be maintained by an on-site one-lane temporary detour structure that is approximately 73 feet in length located east of the existing bridge. Traffic will be maintained in a one-lane pattern through the use of portable traffic signals.

Alternate B was not selected as the preferred alternate because it has a greater construction cost, greater environmental impacts, and longer construction duration due to the construction of both a temporary and permanent structure.

C. Alternatives Eliminated from Further Study

Alternate C replaces the bridge approximately 13.7 feet to the east of the existing bridge location with a new structure to be stage-constructed. The length of the approach roadway will be approximately 668 feet to the south of the proposed bridge and 1074 feet to the north of the proposed bridge. During construction, traffic will be shifted to the west side of the existing structure in a one-lane pattern while constructing Stage I of the proposed structure. Traffic will then be shifted to the new alignment in a one-lane pattern while Stage II construction of the proposed structure is being completed. Traffic will be maintained in a one-lane pattern through the use of portable traffic signals.

This alternate was eliminated from the reasonable and feasible alternatives due the difficulty of construction and additional environmental impacts. To stage construct the proposed bridge, removal of a portion of the existing bridge may not be possible due to the existing girder spacing.

The "Do-Nothing" Alternative will eventually necessitate removal of the bridge. This is not desirable due to the traffic service provided by SR 1100.

"Rehabilitation" of the existing structure is not feasible due to its age and deteriorated condition. Rehabilitation of a timber structure is generally practical only when a few members are damaged or prematurely deteriorated. Timber components have deteriorated to a point making rehabilitation impractical.

D. Preferred Alternative

Alternate A, replacing the bridge at the existing location with a new structure, is the preferred alternate. Alternate A was selected because of its comparatively lower construction cost, lower environmental impacts, and lesser construction time. The

currently proposed 60-foot bridge is based on minimum information. The actual proposed bridge lengths, type, and materials will be determined during the design stage, when more detailed information is available.

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

IV. ESTIMATED COST

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

	Alternate A (Preferred)	**Alternate B**
Structure Removal (existing)	$ 6,904	$ 6,904
Structure (proposed)	$ 134,400	$ 134,400
Detour Structure and Approaches	-0-	$ 155,894
Roadway Approaches	$ 164,417	$ 221,236
Miscellaneous and Mobilization	$ 94,279	$ 171,566
Engineering and Contingencies	$ 75,000	$ 110,000
ROW/Const. Easements/Utilities:	$ 45,800	$ 75,800
TOTAL	$ 520,800	$ 875,800

V. NATURAL RESOURCES

The information contained in this section is based on the Natural Resources Technical Report (May 2005) prepared by Ecoscience Corporation.

A. Physiography and Soils

Based on soil mapping for Bertie County (NRCS 1990), the project study area is underlain by five soil series: Augusta fine sandy loam (*Aeric Endoaquults*), Bibb (*Typic Fluvaquents*) and Johnston loams (*Cumulic Humaquepts*), Roanoke fine sandy loam (*Typic Endoaquults*), Wahee sandy loam (*Aeric Endoaquults*), and Wickham fine sandy loam (*Typic Hapludults*). The Bibb, Johnston, and Roanoke series are considered to be hydric in Bertie County; and the Augusta, Wahee, and Wickham series are considered to have hydric inclusions in Bertie County by the NRCS (1991).

B. Water Resources

1. Waters Impacted

The project study area is located within sub-basin 03-02-10 of the Roanoke River Basin (NCDWQ 2001). This area is part of USGS Hydrologic Unit 03010107 (Seaber et al. 1987) of the Mid-Atlantic/Gulf Region. The structure targeted for replacement spans Choowatic Creek. The portion of Choowatic Creek that lies

within the project study area has been assigned Stream Index Number 24-2-7-2 by the N.C. Division of Water Quality (NCDWQ) (NCDWQ 2001).

2. Water Resource Characteristics

Choowatic Creek enters the project study area as a first-order, perennial stream with moderate flow over a sand substrate. At Bridge No. 45, Choowatic Creek is approximately 30 feet wide. The banks of Choowatic Creek range up to 1 foot high and are gently sloping. During field investigations, the water level appeared normal and water clarity was fair.

Classifications are assigned to waters of the State of North Carolina based on the existing or contemplated best usage of various streams or segments of streams in the basin. The classification of Choowatic Creek in the project study area is **C Sw** (NCDWQ 2001). Class **C** water denotes freshwaters protected for secondary recreation, fishing, wildlife, fish and aquatic life propagation and survival, and other uses. The **Sw** classification is a supplemental water classification denoting swamp waters that have a naturally occurring low pH, low dissolved oxygen, and low velocities. No Outstanding Resource Waters (**ORW**), High Quality Waters (**HQW**), Water Supply I (**WS-I**), or Water Supply II (**WS-II**) waters occur within 1 mile of the project study area (NCDWQ 2001).

3. Impacts Related to Bridge Demolition and Removal

Choowatic Creek flows into Roquist Creek approximately 1 mile east of the project study area. This direct connection and perennial flows enable Choowatic Creek to possibly support a passage for migratory fish. Therefore, this project can be classified by NCDOT's Best Management Practices for Bridge Demolition and Removal as Case 2, where in-stream work will be avoided during moratorium periods associated with fish migration, spawning, and fish nursery areas. This conclusion is based upon the classification of the waters within the project study area, as well as comments received from NCWRC. Design and scheduling of bridge replacement should avoid the necessity of in-stream activities during the spring migration period for anadromous fish species (February 1 to June 30) within Choowatic Creek. NCDOT will coordinate with the various resource agencies during project planning to ensure that all concerns regarding bridge demolition are resolved.

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

C. Biotic Resources

1. Plant Communities and Associated Wildlife

Five distinct plant communities were identified within the project study area: disturbed/maintained land, agriculture, Coastal Plain Bottomland Hardwood Forest (Brownwater Subtype), mixed hardwood/pine forest, and pine plantation. These communities are described below. Faunal species detected in or near the project study area during field investigations are designated with an asterisk (*).

2. Aquatic Communities

One aquatic community, Choowatic Creek, is located within the project study area. Physical characteristics of a water body and the condition of the water resource influence faunal composition of aquatic communities. Terrestrial communities adjacent to a water resource also greatly influence aquatic communities. Duckweed (*Lemna* sp.) is present within Choowatic Creek throughout the project study area. Vegetation along the bank of the creek is typical of the Coastal Plain Bottomland Hardwood Forest including bald cypress, swamp black gum (*Nyssa biflora*), sweetgum, and sycamore (*Platanus occidentalis*).

3. Anticipated Impacts to Biotic Communities

Permanent and temporary impacts are anticipated as a result of this project. Permanent impacts are considered to be those impacts that occur within proposed cut-fill limits. Temporary impacts are considered to be those impacts which occur within the cut-fill footprint associated with the temporary detour of Alternate 1. Plant communities within the project study area were delineated to determine the approximate area and location of each. A summary of plant community areas and the potential impacts to each is presented in Table 1.

Table 1. Area of Plant Communities within Cut-Fill Lines

Plant Community	Alternate 1	Alternate 2		
	Permanent	Permanent	Temporary	Total
Disturbed/Maintained Land	0.6	0.6	0.4	1.0
Coastal Plain Bottomland Hardwood Forest	0.1	0.1	0.2	0.3
Agriculture	---	---	0.2	0.2
Mixed Pine/Hardwood Forest	<0.1	<0.1	<0.1	<0.1
Total	0.7	0.7	0.8	1.5

Areas are given in acres.

D. Special Topics

1. "Waters of the United States": Jurisdictional Issues

Surface waters within the embankments of Choowatic Creek are subject to jurisdictional consideration under Section 404 of the Clean Water Act as waters of the United States (33 CFR section 328.3). NWI mapping (Quitsna, NC 7.5-minute quadrangle [1981]) indicates that Choowatic Creek exhibits characteristics of a palustrine, forested, seasonally flooded system consisting of a mixture of broad-leaved and needle-leaved deciduous vegetation (PF01/2C; Cowardin et al. 1979). This classification typically describes a cypress-gum swamp and is common along major streams within the Coastal Plain. Field investigations confirm this classification. Approximately 210 linear feet of Choowatic Creek lies within the project study area.

Wetlands adjacent to Choowatic Creek are subject to jurisdictional consideration under Section 404 of the Clean Water Act as waters of the United States (33 CFR section 328.3). These areas are defined by the presence of three primary criteria: hydric soils, hydrophytic vegetation, and evidence of hydrology at or near the surface for a portion (12.5 percent) of the growing season (Environmental Laboratory 1987). Field investigations indicate that two types of wetlands occur within the project study area. Wetlands 1, 2, and 3 (see Figure 2) exhibit characteristics of a palustrine, forested, seasonally flooded wetland consisting of a mixture of broad-leaved and needle-leaved deciduous vegetation (PF01/2C) (Cowardin et al. 1979). Wetland 4 (see Figure 2) exhibits characteristics of a palustrine, scrub/shrub, seasonally flooded wetland, consisting of broad-leaved deciduous vegetation (PSS1C) (Cowardin et al. 1979).

All four wetlands are expected to be impacted by the proposed project. Impacts will result from a widening of the fill slope and are expected to be minimal. Impacts to jurisdictional areas are shown in Table 2. Jurisdictional areas within the project study area were delineated to determine the approximate area and location of each. For purposes of quantification in this report, areas of jurisdictional open water are considered to be Choowatic Creek. Permanent and temporary impacts are considered to be areas of vegetated wetlands and linear distances of open water occurring within the proposed cut-fill limits.

Table 2. Projected Impacts to Jurisdictional Areas

Jurisdictional Areas	Alternate 1	Alternate 2		
	Permanent	Permanent	Temporary	Total
Wetland 1	0.05	0.05	0.19	0.24
Wetland 2	<0.01	<0.01	0.05	0.05
Wetland 3	0.02	0.02	--	0.02
Wetland 4	0.05	0.05	--	0.05
Total	**0.12**	**0.12**	**0.24**	**0.36**

Areas are given in acres.

Alternate 1 has the lesser amount of anticipated impacts to jurisdictional areas within the project study area. Alternate 2 results in three times the wetland impacts of Alternate 1, although two-thirds of the impacts associated with Alternate 2 are considered "temporary."

2. Permits

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

This project may be processed as a Categorical Exclusion (CE) under Federal Highway Administration (FHWA) guidelines. The USACE has made available Nationwide Permit (NWP) No. 23 (67 FR 2020, 2082; January 15, 2002) for CE's due to expected minimal impact. NCDWQ has made available a General 401 Water Quality Certification for NWP No. 23 (GC 3403). If temporary structures are necessary for construction activities, access fills, or dewatering of the site, then a NWP No. 33 (67 FR 2020, 2087; January 15, 2002) permit and associated General 401 Water Quality Certification (GC 3366) will be required. In the event that NWP No. 23 or 33 will not suffice, minor impacts attributed to bridging and associated approach improvements are expected to qualify under General Bridge Permit No. 031 and its associated General 401 Water Quality Certification (GC 3404). Notification to the Wilmington USACE District office is required if this general permit is utilized.

The proposed project will occur in one (Bertie) of the 20 counties covered by the Coastal Area Management Act (CAMA). Areas of Environmental Concern (AEC) within these counties are under the jurisdiction of the N.C. Division of Coastal Management (DCM). Because the project study area contains navigable waters and is located within inland fishing waters, Public Trust Areas (CAMA AECs) are expected to potentially be affected by the proposed project. Public Trust Areas are defined in 15A NCAC 07H .0207. Consideration should be given to avoiding disturbances within these areas whenever practicable. Because the project study area contains open water within a CAMA county, a DCM representative will need to verify the presence or absence of Public Trust Waters AECs. If the project study area contains Public Trust Waters AECs and replacement of the bridge avoids impacts to AECs, the DCM will review the permit application for CAMA consistency. If an AEC is proposed to be impacted, a CAMA Major Permit or General Permit for bridge replacement (15A NCAC 07H.2300) may be applicable.

The U.S. Coast Guard will potentially consider this reach of Choowatic Creek navigable for bridge administration purposes; however, this reach of Choowatic Creek may meet criteria for advance approval waterways as outlined in Title 33 CFR Section 115.70. Advance approval waterways are those that are navigable in law, but are not actually navigated by other than small boats. The Commandmant of the Coast Guard has given advance approval to the construction or repair of bridges across such waterways; therefore, a Section 10 permit (Title 33 CFR Section 115.70) for

structures and/or work in or affecting navigable waters of the United States may not be required for this project.

A state stormwater permit will be required.

3. Mitigation

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

NCDOT will propose compensatory mitigation for cumulative impacts exceeding 0.1 acre. However, utilization of BMPs is recommended in an effort to minimize impacts. A final determination regarding wetlands or stream mitigation for impacts to waters of the United States rests with DCM, with input from USACE and NCDWQ.

E. Rare and Protected Species

1. Federally Protected Species

Species with the federal classification of Endangered (E), Threatened (T), Threatened due to Similarity of Appearance (T [S/A]), or officially Proposed (P) for such listing are protected under the Endangered Species Act (ESA) of 1973, as amended (16 U.S.C. 1531 *et seq.*). The term "Endangered Species" is defined as "any species which is in danger of extinction throughout all or a significant portion of its range," and the term "Threatened Species" is defined as "any species which is likely to become an Endangered species within the foreseeable future throughout all or a significant portion of its range" (16 U.S.C. 1532). The term "Threatened due to Similarity of Appearance" is defined as a species which is not "Endangered" or "Threatened," but "closely resembles an Endangered or Threatened species" (16 U.S.C. 1532). Three federally protected species are listed for Bertie County (April 27, 2006 [USFWS 2006]): Red-cockaded woodpecker (*Picoides borealis*) and Shortnose sturgeon (*Acipenser brevirostrum*), which have a designated status of Endangered, and the Bald eagle (*Haliaeetus leucocephalus*), which has a designated status of Threatened.

Picoides borealis **(Red-cockaded Woodpecker)**
Endangered

BIOLOGICAL CONCLUSION: **NO EFFECT**

The habitat that is critical for the red cockaded woodpecker is not present. There is a pine plantation within the project study area; however, the stand is not mature enough, and the understory is too thick. The NHP database was reviewed on June 12, 2001, and again in June 2004, and no records of existing red-cockaded woodpecker occurrences were found within 1 mile of the project study area. Thus, no impacts to the red-cockaded woodpecker will result from project construction.

Haliaeetus leucocephalus **(Bald Eagle)**
Threatened

BIOLOGICAL CONCLUSION: **NO EFFECT**

On August 29, 2006, NCDOT biologists surveyed for bald eagles and their potential habitat within a one-mile radius of the project site. Suitable habitat, in the form of open water for foraging, is not present within the project vicinity. In a one-mile radius of the project site, approximately 39 percent of the landscape is forested, primarily (26 percent) encompassed by the Coastal Plain Bottomland Hardwood Forest (Brownwater Subtype) in the floodplain of Choowatic Creek. There are mature trees in the area; however, large dominant trees suitable for supporting bald eagle nests are not present. During the survey, no bald eagles or nests were observed. Further, no bald eagles were found on a visual survey along SR 1100 to the Roanoke River (2.8 miles south). Therefore, since suitable nesting and foraging habitat does not occur within one-mile of the project site, no net loss of habitat is expected to occur from replacement of Bridge No. 45.

Acipenser brevirostrum **(Shortnose Sturgeon)**
Endangered

BIOLOGICAL CONCLUSION: **NO EFFECT**

Correspondence via email (8/21/06) with North Carolina Marine Fisheries scientist Fritz Rohde concerning the suitability of habitat for the shortnose sturgeon within the project vicinity revealed that "there is no evidence that they have ever occurred there"; therefore, the Biological Conclusion for the shortnose sturgeon is "No Effect".

2. Federal Species of Concern and State Listed Species

The February 5, 2003 USFWS list (USFWS 2003) includes a category of species designated as "Federal Species of Concern" (FSC) (Table 3). A species with this designation is one that may or may not be listed in the future (formerly C2 candidate species or species under consideration for listing for which there is insufficient

information to support listing). The FSC designation provides no federal protection under the ESA for the species listed. To date, the NCNHP database has no documented occurrences of FSC species within 1 mile of the project study area.

Table 3. Federal Species of Concern

Scientific Name	Common Name	State Status*	Potential Habitat
Corynorhinus rafinesquii	Rafinesque's big-eared bat	SC	No
Ammodramus henslowii	Henslow's sparrow	SR	Yes
Dendroica cerulea	Cerulean warbler	SR	Yes
Orconectes virginiensis	Chowanoke crayfish	SR	Yes
Anguilla rostrata	American eel	SC	Yes
Myotis austroriparius	Southeastern myotis	SC	Yes
Orconectes virginiensis	Chowanoke crayfish	SC	Yes

*State Status Codes - SC: Special Concern; T: Threatened; SR: Significantly Rare (Amoroso 2002, LeGrand and Hall 2001)

VI. CULTURAL RESOURCES

A. Compliance Guidelines

This project is subject to compliance with Section 106 of the National Historical 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 federal agencies to take into account the effects of their undertakings (federally funded, licensed, or permitted projects) on properties listed in or eligible for the National Register of Historic Places, and to afford the Advisory Council on Historic Preservation a reasonable opportunity to comment.

B. Historic Architecture

A field survey of the Area of Potential Effects (APE) was conducted on June 6, 2002 and again on October 1, 2002. All structures within the APE were photographed, and later reviewed by the Architectural Historians at NCDOT and the North Carolina State Historic Preservation Office (HPO). In a concurrence form dated February 18, 2003, and a memorandum dated March 10, 2003, the State Historic Preservation Officer (SHPO) concurred that there are no historic architectural resources either listed in or eligible for listing on the National Register of Historic Places within the APE. A copy of the concurrence form and the memorandum are included in the Appendix.

C. Archaeology

The SHPO, in a memorandum dated March 10, 2003 recommended that "no archaeological investigation be conducted in connection with this project." There are no known archaeological sites within the proposed project area and 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. A copy of the memorandum is included in the Appendix.

VII. ENVIRONMENTAL EFFECTS

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

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

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

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

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

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

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

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

The Farmland Protection Policy Act requires all federal agencies or their representatives to consider the potential impact to prime farmland of all land acquisition and construction projects. All construction will take place along existing alignment. Although there are some soils classified as prime or having state or local importance in the vicinity of the project, the project will not involve the direct conversion of farmland acreage within these classifications.

This project is located in Bertie County, which has been determined to be in compliance with the National Ambient Air Quality Standards. 40 CFR Part 51 is not applicable,

because the proposed project is located in an attainment area. This project is not anticipated to create any adverse effects on the air quality of this attainment area.

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

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

In the GeoEnvironmental Impact Evaluation memorandum dated February 26, 2003, it was stated that a field survey and a file search of appropriate environmental agencies was conducted to identify any known problem sites along the proposed project alignment. Based on the field survey, no anticipated UST impacts were discovered. The Geographical Information Service (GIS) was consulted for the project corridor and research shows that no regulated or unregulated landfills or dumpsites occur within the project limits. Based on the GIS search and the field reconnaissance, no superfund sites were identified in the vicinity of the project. However, if unregulated USTs, dumpsites or landfills are identified by Right-of-Way, a further investigation should be performed prior to right-of-way acquisition to determine the extent of any contamination.

Bertie County is a participant in the National Flood Insurance Regular Program. This site on Choowatic Creek is located in a 100-year flood hazard zone where no detailed F.E.M.A. flood study has been performed. The structure requirements may be adjusted during the final hydrologic study and hydraulic design as determined appropriate to accommodate design flows. The proposed alternatives will not modify flow characteristics and will have minimal impact on floodplains due to roadway encroachment. The existing drainage patterns and groundwater will not be affected.

The project will not have a disproportionately high and adverse human health and environmental effect on any minority or low-income population.

VIII. PUBLIC INVOLVEMENT

Efforts were undertaken early in the planning process to contact local officials to involve them in the project development with scoping letters.

IX. AGENCY COMMENTS

The following are comments received during the scoping process:

National Marine Fisheries Service (NMF)

Comment: In order to protect anadromous fishery resources that may utilize the project areas as spawning or nursery habitat, work in the waters of the creek shall be restricted to the period October 1 and March 1 of any year unless prior approval is granted by the Corps of Engineers following consultation with the NMFS.

Response: An in-stream construction moratorium will be in effect from February 1 to June 30 (see Project Commitments).

United States Department of the Interior – Fish and Wildlife Service

Comment: 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 15.

Response: An in-stream construction moratorium will be in effect from February 1 to June 30 (see Project Commitments).

NCDENR – Division of Water Quality

Comment: Prefer bridge to be replaced with new bridge. However, if the bridge must be replaced by a culvert and 150 linear feet or more of stream is impacted, a stream mitigation plan will be needed prior to the issuance of a 401 Water Quality Certification.

Response: Bridge will be replaced with new bridge.

NCDENR-Division of Marine Fisheries (DMF)

Comment: Since the area is a spawning area for anadromous fish, the Division requests a moratorium from February 15 through June 30. The moratorium would apply to any in-water work and the adjacent wetlands.

Response: An in-stream construction moratorium will be in effect from February 1 to June 30 (see Project Commitments).

North Carolina Wildlife Resource Commission (NCWRC)

Comment: Due to the potential for anadromous fish at this location, NCDOT should closely follow the "Stream Crossing Guidelines for Anadromous Fish

Passage". This includes a moratorium on work within jurisdictional waters from February 15 to June 15.

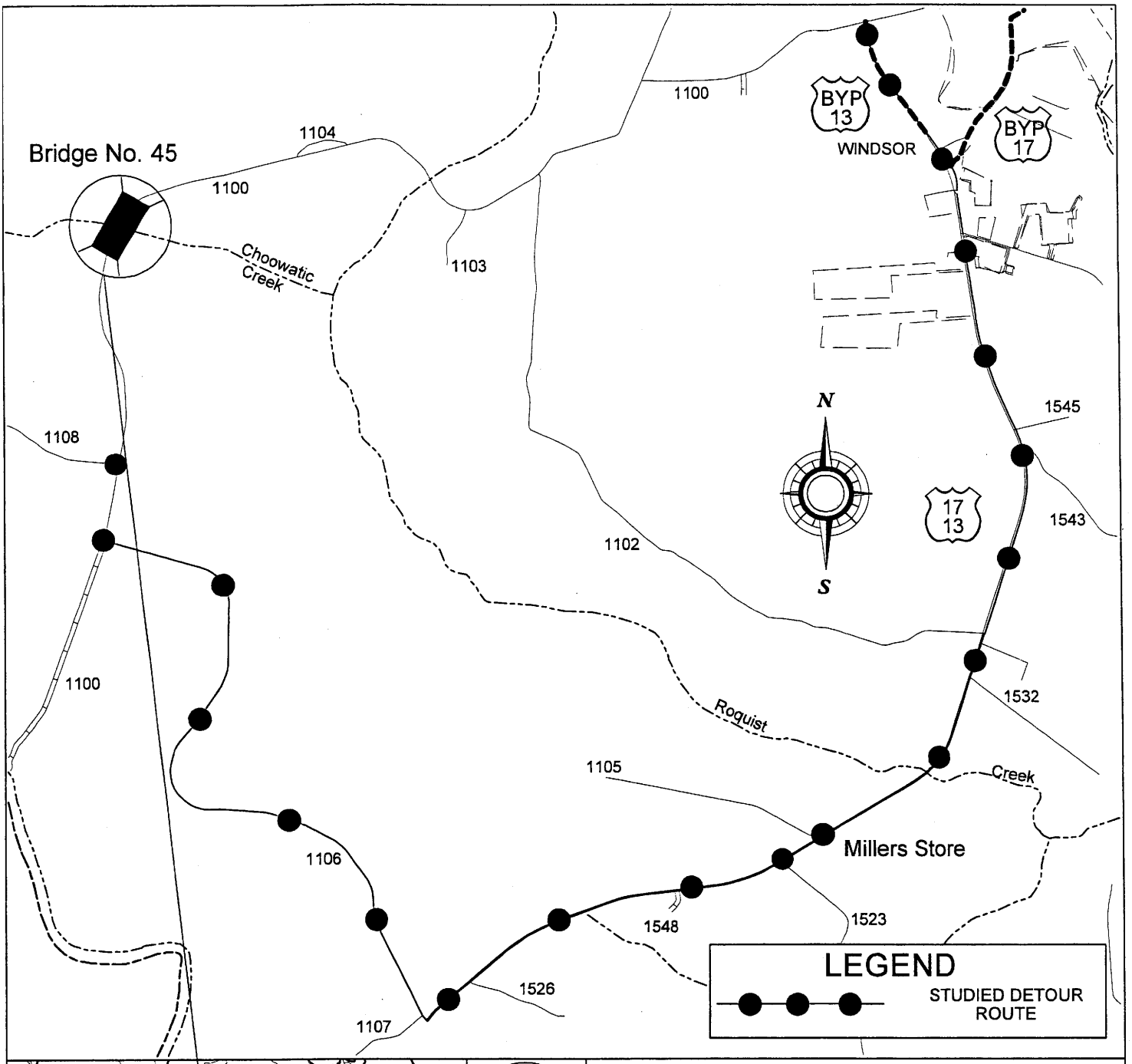
Response: An in-stream construction moratorium will be in effect from February 1 to June 30 (see Project Commitments).

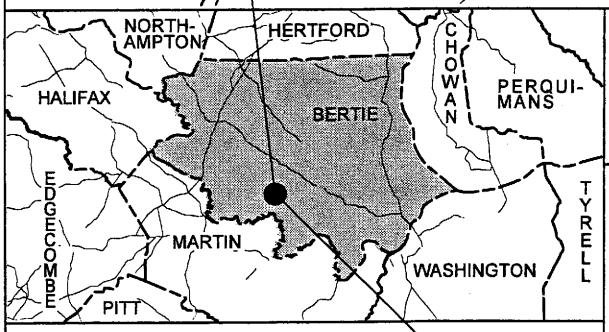
Bertie County Schools

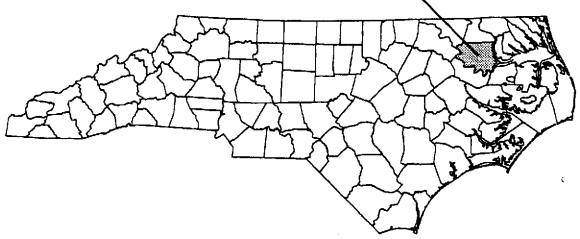
Comment: Rerouting the six buses that currently cross Bridge No. 45 will place Bertie County Schools well over our transportation budget if the rerouting takes place over a long period of time. To reroute the current six buses to go to and from student stop assignments for eight months will cost an additional $47,105.28 (as of 2000-2001 school year charge amounts) which includes all school transportation cost involved. There is an alternative route that our school buses could travel; however, we do not allow our Public School Buses to travel on roads that are a danger to our children's lives. The alternative route is considered a very unsafe route for our Bertie County Public School Buses.

Response: Closing the road and detouring traffic is the preferred alternate because of its comparatively lower construction cost, lower environmental impacts, and lesser construction time. The structure should be designed to allow the quickest construction time possible in order to limit the amount of time traffic is on the offsite detour. This may be accomplished primarily in the summer months.

FIGURES







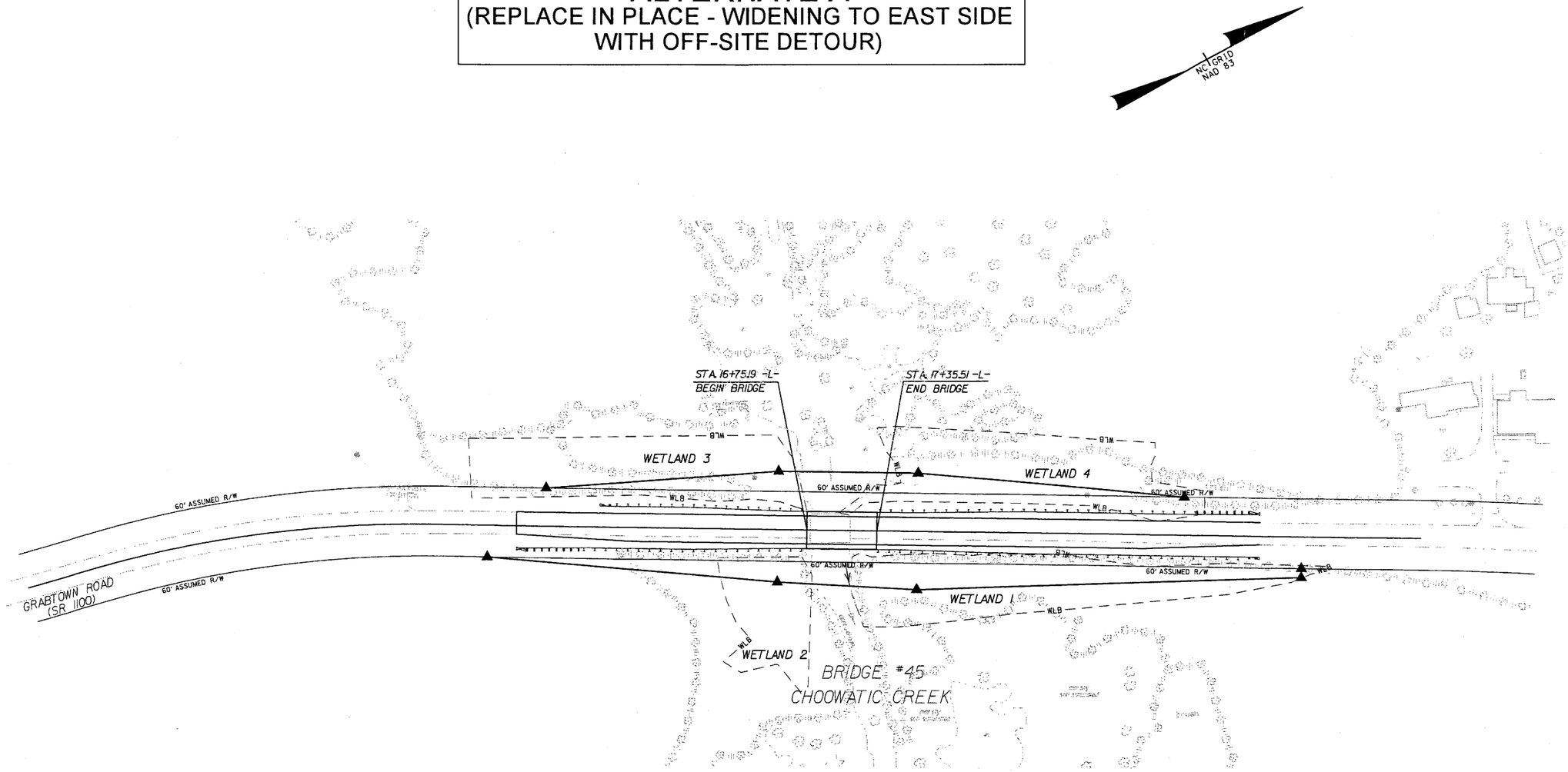
North Carolina - Department of Transportation
Division of Highways
Project Development and Environmental Analysis Branch

FIGURE 1
VICINITY MAP

REPLACEMENT OF BRIDGE NUMBER 45 ON SR 1100 OVER CHOOWATIC CREEK BERTIE COUNTY TIP NO. B-4026

1 0 1 MILES

ALTERNATE A
(REPLACE IN PLACE - WIDENING TO EAST SIDE WITH OFF-SITE DETOUR)



PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

North Carolina - Department of Transportation
Division of Highways
Project Development and Environmental Analysis Branch

BERTIE COUNTY

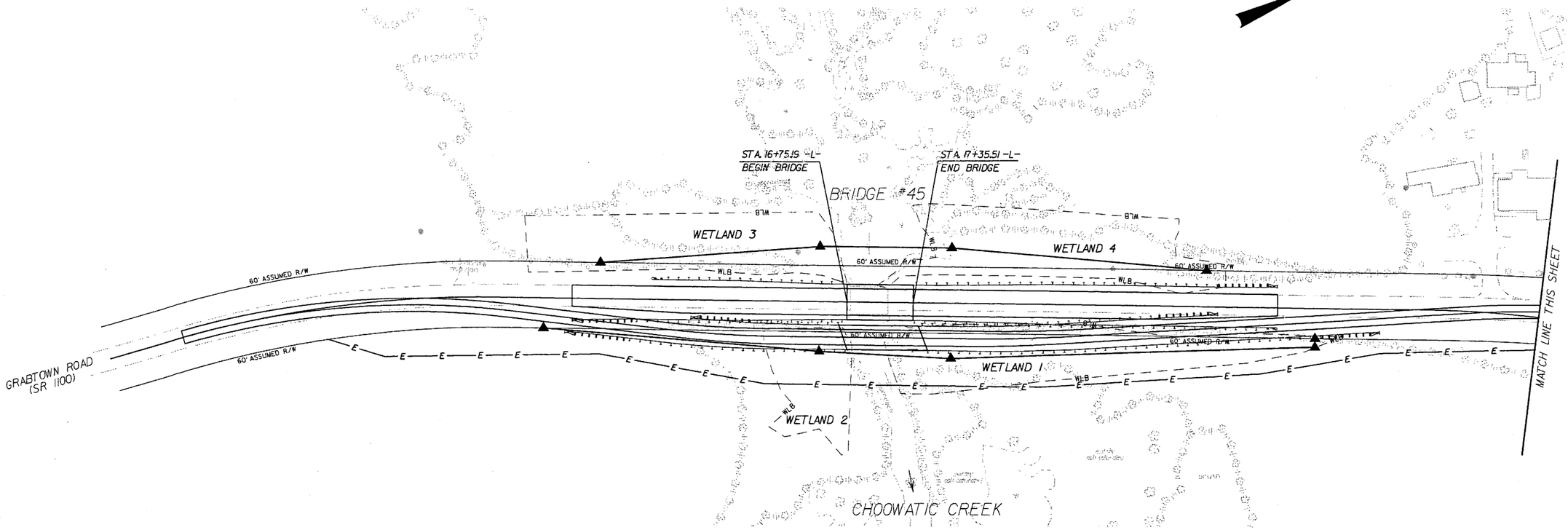
BRIDGE NUMBER 45 ON SR 1100
OVER CHOOWATIC CREEK

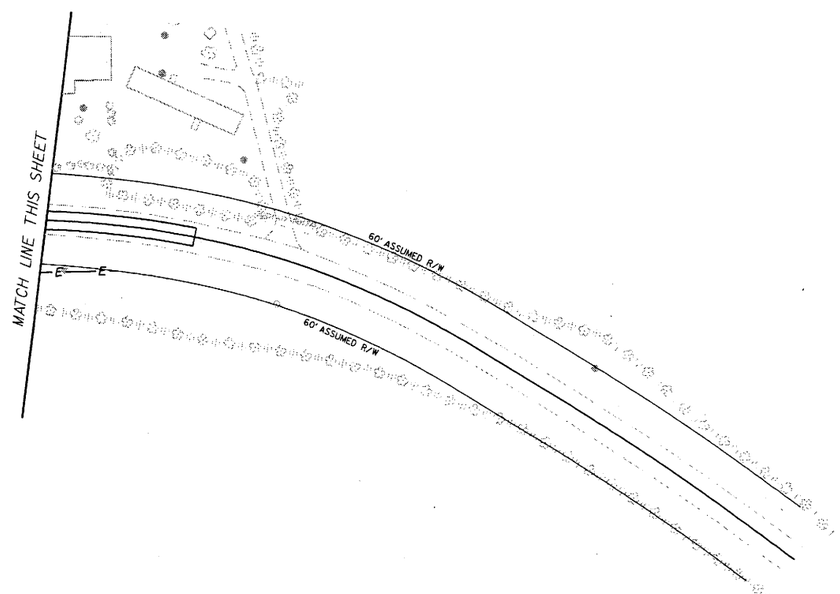
TIP NO. B-4026

100' 50' 0 100'

FIGURE 2A

ALTERNATE B
(REPLACE IN PLACE - WIDENING TO EAST SIDE WITH ONE-LANE ONSITE DETOUR ON EAST SIDE)





PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

North Carolina - Department of Transportation
Division of Highways
Project Development and Environmental Analysis Branch

BERTIE COUNTY

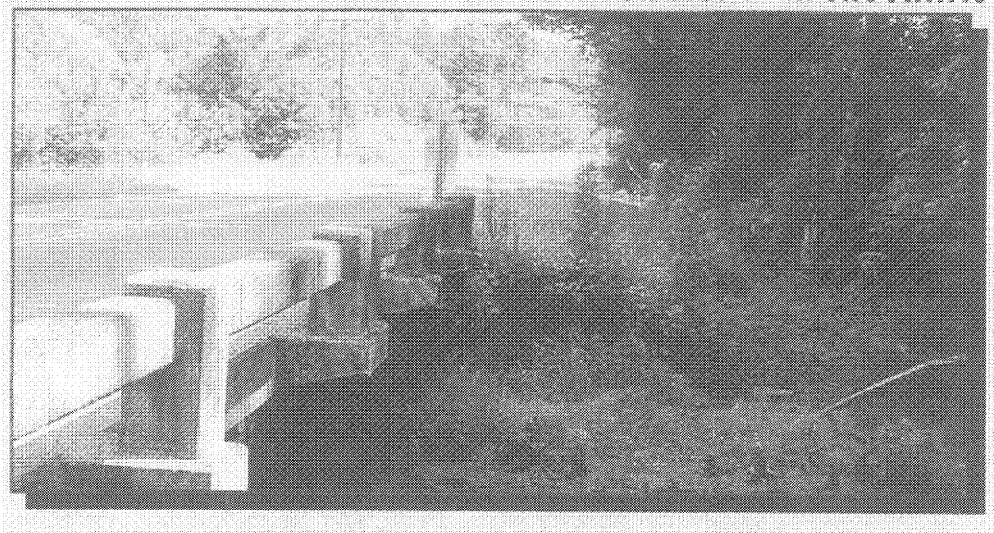
BRIDGE NUMBER 45 ON SR 1100
OVER CHOOWATIC CREEK

TIP NO. B-4026

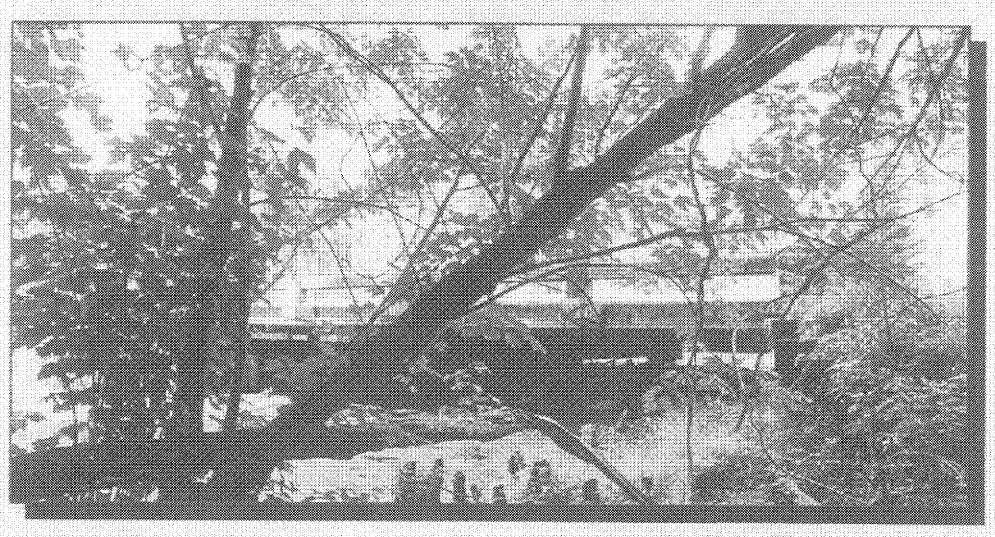
100' 50' 0 100'

FIGURE 2B

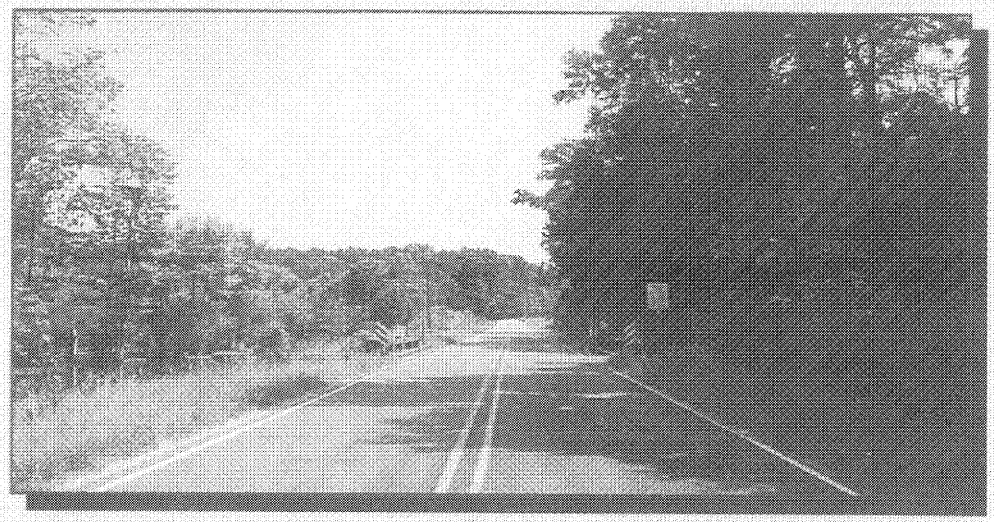
B-4026: REPLACEMENT OF BRIDGE No. 45 ON SR 1100 OVER CHOWATIC CREEK (BERTIE COUNTY)



EAST SIDE OF BRIDGE
LOOKING NORTH



EAST SIDE OF BRIDGE
LOOKING UPSTREAM



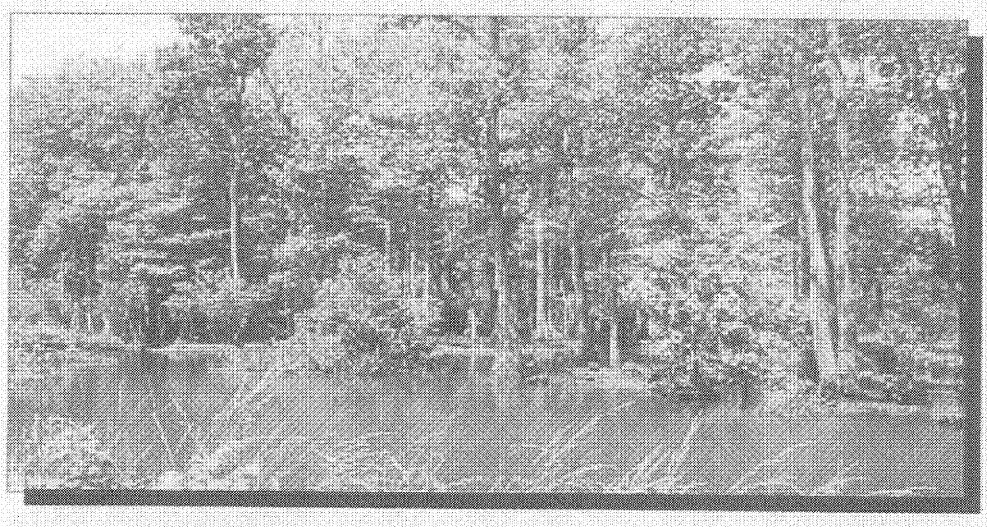
ON
SOUTH SIDE OF BRIDGE
LOOKING NORTH

Figure 3a

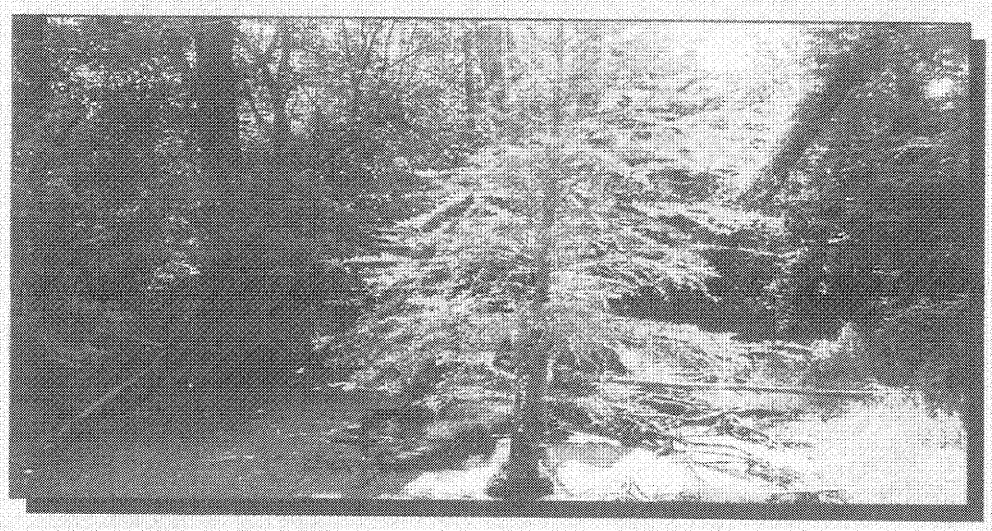
STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION	North Carolina - Department of Transportation Division of Highways Project Development and Environmental Analysis Branch	REPLACEMENT OF BRIDGE NUMBER 45 ON SR 1100 OVER CHOWATIC CREEK BERTIE COUNTY TIP NO B-4026

B-4026: REPLACEMENT OF BRIDGE No. 45 ON SR 1100 OVER CHOOWATIC CREEK (BERTIE COUNTY)

ON BRIDGE
LOOKING WEST
(UPSTREAM)



ON BRIDGE
LOOKING WEST
(UPSTREAM)



ON BRIDGE
LOOKING EAST
(DOWNSTREAM)

Figure 3b

North Carolina - Department of Transportation

Division of Highways

Project Development and
Environmental Analysis Branch

REPLACEMENT OF BRIDGE NUMBER 45
ON SR 1100 OVER CHOOWATIC CREEK
BERTIE COUNTY

TIP NO B-4026

APPENDIX A

E. Vance

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

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

Division of Historical Resources
David J. Olson, Director

March 10, 2003

MEMORANDUM

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

FROM: David Brook DSF for David Brook

SUBJECT: Replacement Bridge No. 45 over Choowatic Creek on SR 1100 (Grabtown Road), B-4026, Bertie County, ER03-0360

Thank you for your letter of January 23, 2003, concerning the above project.

Because the Department of Transportation is in the process of surveying and evaluating the National Register eligibility of all of its concrete bridges we are unable to comment on the National Register eligibility of the subject bridge. Please contact Mary Pope Furr, in the Architectural History Section, to determine if further study of the bridge is needed.

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
Matt Wilkerson

VOICE

Federal Aid # BRZ-1110(10) *TIP #* B-4026 *County*: Bertie

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

Project Description: Replace Bridge No. 45 on SR 1110 over Choowatic Creek

On 02/18/2003, representatives of the

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

Reviewed the subject project at

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

All parties present agreed

- [ ] There are no properties over fifty years old within the project's area of potential effects.
- [x] There are no properties less than fifty years old which are considered to meet Criteria Consideration G within the project's area of potential effects.
- [x] There are properties over fifty years old within the project's Area of Potential Effects (APE), but based on the historical information available and the photographs of each property, the property identified as Bridge #45 is considered not eligible for the National Register and no further evaluation of it is necessary.
- [x] There are no National Register-listed or Study Listed properties within the project's area of potential effects.
- [x] All properties greater than 50 years of age located in the APE have been considered at this consultation, and based upon the above concurrence, all compliance for historic architecture with Section 106 of the National Historic Preservation Act and GS 121-12(a) has been completed for this project.
- [x] There are no historic properties affected by this project. (*Attach any notes or documents as needed*)

Signed:

Mary Pope Furr — 2-18-2003
Representative, NCDOT — Date

for FHWA — 2/20/03
FHWA, for the Division Administrator, or other Federal Agency — Date

Ken Swallow — 2/18/03
Representative, HPO — Date

David Brook — 2-18-03
State Historic Preservation Officer — Date

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

Bertie County Schools
Murphyv.tco@bertieschools.com
Vernice Murphy
Transportation Department
TIMS Coordinator/Zone Routing Specialist
Bertie Co. Bd. of Education
P. O. Box 10
Windsor, N. C. 27983
Phone (252) 794-6046
Fax (252) 794-6085
Serving 10 Bertie County Public Schools

P. O. DRAWER 10
WINDSOR, NORTH CAROLINA 27983
PHONE (252) 794-3173 - FAX: (252) 794-5727

June 19, 2001

TO: Mr. Davis Moore,
Project Development and Environmental Analysis Branch

FROM: Mr. John F. Smith, Sr., Superintendent
Mr. Nick Shook, Assistant Superintendent
Mr. Phill Bragg, Transportation Director
Mrs. Vernice Murphy, TIMS Coordinator/Zone Routing Specialist

SUBJECT: Bridge No. 45 on Highway SR 1100, over Choowatic Creek, Bertie County TIP Project No. B-4026

After carefully examining our Public School Bus Routes that cross Bridge No. 45 on Grabtown Road, we would like to offer suggestions towards the alternative methods of replacing the bridge.

At the present time, we have a total of six buses crossing Bridge No. 45 daily. Due to the location of the bridge, rerouting those buses will place Bertie County Schools well over our transportation budget if the rerouting takes place over a long period of time. To reroute the current six buses to go to and from student stop assignments for eight months will cost an additional $47,105.28 (as of 2000-2001 school year charge amounts) which includes all school transportation cost involved. This will put Bertie County Schools Transportation Department in a troublesome financial strain while trying to meet all transportation needs throughout the school year. As you are aware, there is an alternative route that our school buses could travel; however, we do not allow our Public School Buses to travel on roads that are a danger to our children lives. The alternative route is considered a very unsafe route for our Bertie County Public Schools Buses.

We are very appreciative you value our opinion on this project and hope that you will consider other alternatives that require less than the eight to twelve months bridge closure discussed in your letter sent to us.