



STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION

MICHAEL F. EASLEY  
GOVERNOR

LYNDO TIPPETT  
SECRETARY

June 19, 2007

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

ATTENTION: Mr. Eric Alsmeyer  
NCDOT Coordinator, Division 5

Dear Sir:

SUBJECT: **Notice of Intent to Use Section 404 Nationwide Permit 13** for the replacement of Bridge No. 38 over Six Pound Creek on SR 1306 (Wise-Five Forks Rd), Division 5, Warren County. Federal Aid Project No: BRZ-1306 (10), State Project No: 8.2411201, TIP Project No: B-4309.

Please see the enclosed copies of the permit drawings and roadway plans for the subject project. The North Carolina Department of Transportation (NCDOT) proposes to replace Bridge No. 38 over Six Pound Creek on SR 1306 (Wise-Five Forks Rd) in Warren County. The current 72-foot long, three-span bridge has a sufficiency rating of 43 out of 100 (for a new structure) and is considered functionally obsolete and structurally deficient. The replacement of this structure will result in safer traffic conditions.

The project proposes to demolish the existing bridge and construct a one span, 39-inch pre-stressed concrete box beam bridge on the existing horizontal alignment. This new structure will span Six Pound Creek. The new bridge will be 95 feet long and 33 feet wide and will have two 11-foot lanes and 3-foot, 11-inch shoulders. The bridge approaches will have two 11-foot lanes and 6-foot shoulders. The shoulder on the north side of the approaches will be paved and widened to 9 feet where guardrail is present. During construction, SR 1306 will be closed near the existing bridge and traffic will be re-routed using an offsite detour.

**IMPACTS TO WATERS OF THE UNITED STATES**

General Description

The project is located in the Roanoke River Basin (sub-basin 03-02-07) in Warren County. This area is part of Hydrologic Cataloging Unit 03010106. Water resources within the project study area include Six Pound Creek, two unnamed tributaries of Six Pound Creek (UT 1 and UT 2), and three wetlands (Wetlands 1, 2, and 3).

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

TELEPHONE: 919-715-1334  
FAX: 919-715-1501  
WEBSITE: [WWW.NCDOT.ORG](http://WWW.NCDOT.ORG)

**LOCATION:**  
2728 CAPITAL BLVD., SUITE 240  
RALEIGH NC 27604

Six Pound Creek is a perennial stream that flows south to north through the project study area. It is assigned Stream Index Number 23-13 (07/01/1973) by the N.C. Division of Water Quality (NCDWQ) and has a best usage classification of C. The creek has a top-of-bank width of approximately 30 feet and a wetted width of 20 to 25 feet. During field visits, 1 to 3 feet of clear, fast flowing water was observed. The bankfull depth was approximately 4 feet, there was moderate sediment deposition, and the substrate was primarily composed of sand and silt.

UT 1 is a perennial tributary that flows east to west, with its confluence into Six Pound Creek located immediately upstream (south) of the existing bridge. During the above-mentioned field visits, the tributary had a top-of-bank width of approximately 3 feet, a wetted width of 2 feet, and a bankfull depth of 2 feet throughout the project study area. One to 2 inches of fast flowing water was observed in the channel. The water clarity was clear with minimal sediment deposition and the substrate was composed of sand and silt. UT 2 is also a perennial stream, flowing west to east into Six Pound Creek immediately downstream (north) of the existing bridge. The tributary has a top-of-bank width of approximately 3 feet, a wetted width of 2 feet, and a bankfull depth of 3 feet throughout the project study area. One to 2 feet of water was observed in the channel. The water clarity was clear and the substrate was composed of sand, silt, and clay.

**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 mile of the project study area.** Additionally, neither Six Pound Creek nor any of its tributaries within 1.0 mile of the project are listed on NCDWQ's 2004 Final 303(d) List of Impaired Waters.

Wetland 1 is a beaver-impounded wetland located to the north of SR 1306 and west of Six Pound Creek. This riverine wetland extends beyond the project study area to the north. Wetland 2 is a riverine wetland that is located to the south of SR 1306 and to the west of Six Pound Creek. Wetland 3 is a linear, forested riverine wetland located to the south of SR 1306 and east of Six Pound Creek. This wetland extends beyond the project study area limits to the south. All three wetlands are classified as palustrine forested, broad-leaved deciduous communities (PFO1 Cowardin classification).

#### Permanent Impacts

There will be no wetland impacts associated with this project.

There will be a total of 14 linear feet of permanent stream impacts due to the placement of riprap along the eastern bank of Six Pound Creek. A bed of Class "B" riprap will be placed at the outlet of the lateral V-ditch just north of the bridge and will extend from the outlet to the bank of the creek. The purpose of the riprap is to prevent scour at the ditch outlet and to stabilize the stream bank. Impacts are expected to occur between Sta. -L- 17+05 and Sta. -L- 17+15.

#### Temporary Impacts

No temporary fill into surface waters is anticipated.

#### Bridge Demolition

Bridge No. 38 is a three-span bridge composed of timber decking and joists in spans one and three and timber decking on steel I-beams in span two. All components of the bridge will be removed without dropping any components into Waters of the U.S. The piers associated with the in-stream bent will either be removed or snapped off level to the streambed. NCDOT shall adhere to NCDOT's Best Management Practices (BMPs) for Bridge Demolition and Removal.

Utility Impacts

There are no utility impacts to jurisdictional areas associated with this project. To avoid jurisdictional impacts, Embarq will place a directional bore under Six Pound Creek north of the existing bridge.

**AVOIDANCE, MINIMIZATION, AND COMPENSATORY MITIGATION**

The NCDOT is committed to incorporating all reasonable and practicable design features to avoid and minimize jurisdictional impacts and to provide full compensatory mitigation of all remaining, unavoidable jurisdictional impacts. Avoidance measures were taken during the planning and National Environmental Policy Act (NEPA) compliance stages; minimization measures were incorporated as part of the project design.

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

Avoidance/Minimization

- Use of a pre-formed scour hole.
- Use of Class “B” riprap at the lateral V-ditch outlet for bank stabilization and scour prevention.
- Temporary construction impacts due to erosion and sedimentation will be minimized through implementation of stringent erosion control methods and use of NCDOT’s BMPs for Protection of Surface Waters and BMPs for Bridge Demolition and Removal.

Compensatory Mitigation

No compensatory mitigation is proposed for the 14 feet of permanent impacts to Six Pound Creek. These impacts are minimal and only for bank stabilization and will not create an adverse effect on the aquatic environment.

**FEDERALLY PROTECTED SPECIES**

Plants and animals with federal classifications of Endangered (E), Threatened (T), Proposed Endangered (PE), and Proposed Threatened (PT) are protected under provisions of Section 7 and Section 9 of the Endangered Species Act of 1973, as amended. As of its most recent update on May 10, 2007, the United States Fish and Wildlife Service (USFWS) website lists three federally-protected species for Warren County: the bald eagle (*Haliaeetus leucocephalus*), dwarf wedgemussel (*Alasmidonta heterodon*), and Tar River spiny mussel (*Elliptio steinstansana*).

**Table 1. Federally protected species in Warren County**

Species Name	Common Name	Federal Classification	Impact	Compensatory Mitigation
<i>Haliaeetus leucocephalus</i>	bald eagle	T	No Effect	No
<i>Alasmidonta heterodon</i>	dwarf wedgemussel	E	No Effect	Yes (marginal)
<i>Elliptio steinstansana</i>	Tar River spiny mussel	E	No Effect	No

The bald eagle was added to the U.S. Fish and Wildlife Service list of protected species for Warren County after the NRTR (February 2003) was completed. A species survey and habitat assessment was performed by NCDOT biologists Jim Mason and Greg Price on August 25, 2006. No bald eagle

individuals or nests were observed during the site visit. Additionally, no suitable habitat for the bald eagle existed within the project study area. Furthermore, a search of the North Carolina Natural Heritage Program (NCNHP) database (most recently on May 3, 2007) revealed no known occurrences of this species within 1.0 mile of the project. Therefore, a biological conclusion of **No Effect** has been assigned to this species.

A mussel survey was conducted for both the dwarf wedgemussel and the Tar River spinymussel by NCDOT biologists Neil Medlin, Anne Burroughs, Jason Mays, and Jared Gray on March 23, 2004. Marginal habitat for the dwarf wedgemussel existed in Six Pound Creek, but most available habitat was either covered by algal growth or silt. No habitat existed for the Tar River Spinymussel. No individuals from either species were discovered during the survey. Additionally, NCNHP records (most recently checked on May 3, 2007) do not show any populations of either species within 1.0 mile (upstream or downstream) of the project. Therefore, a biological conclusion of **No Effect** has been assigned for both species and no further surveys are required.

### **SCHEDULE**

The project calls for a review date of November 27, 2007, a letting of January 15, 2008, and a date of availability of February 26, 2008. It is expected that the contractor will choose to start construction in February/March 2008.

### **REGULATORY APPROVALS**

Section 404 Permit: This document hereby serves as a notice of intent to use Section 404 Nationwide Permit 13 for bank stabilization. Since the activities associated with this project meet all conditions related to this permit, we will not be requesting written authorization.

Section 401 Permit: We anticipate that Section 401 General Water Quality Certification (WQC) 3626 will apply to this project. The NCDOT will adhere to all general conditions of this WQC. Therefore, written concurrence from the NCDWQ is not required. In accordance with 15A NCAC 2H, Section .0500 (a) and 15A NCAC 2B, Section .0200, we are providing two copies of this notice to the North Carolina Department of Environment and Natural Resources (NCDENR), NCDWQ, as notification.



A copy of this notice will be posted on the NCDOT Website at: <http://www.ncdot.org/doh/preconstruct/pe/>. If you have any questions or need additional information please call Mr. Jim Mason at (919) 715-5531.

Sincerely



for

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

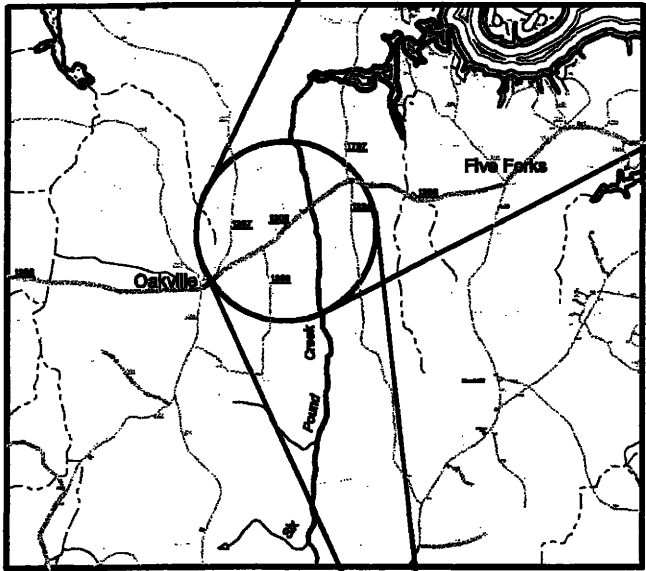
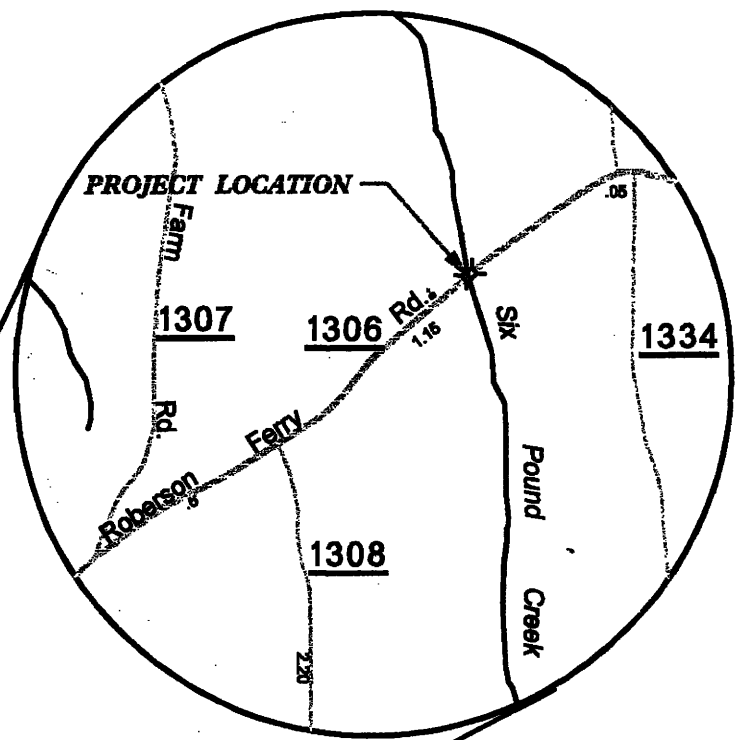
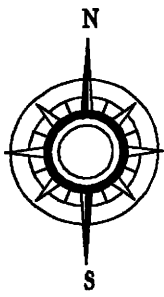
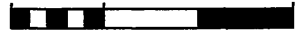
w/attachment:

Mr. John Hennessy, NCDWQ (2 Copies)  
Mr. Travis Wilson, NCWRC  
Mr. Gary Jordan, USFWS  
Dr. David Chang, P.E., Hydraulics  
Mr. Mark Staley, Roadside Environmental  
Mr. Greg Perfetti, P.E., Structure Design  
Mr. Victor Barbour, Project Services Unit  
Mr. J. Wally Bowman, PE., Division Engineer  
Mr. Chris Murray, DEO, Division 5

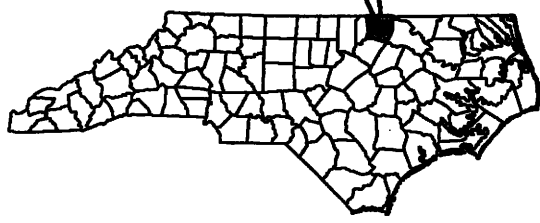
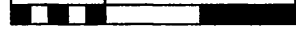
w/o attachment:

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

0.25 0 0.25 0.5 MILES



1 0 1 2 MILES



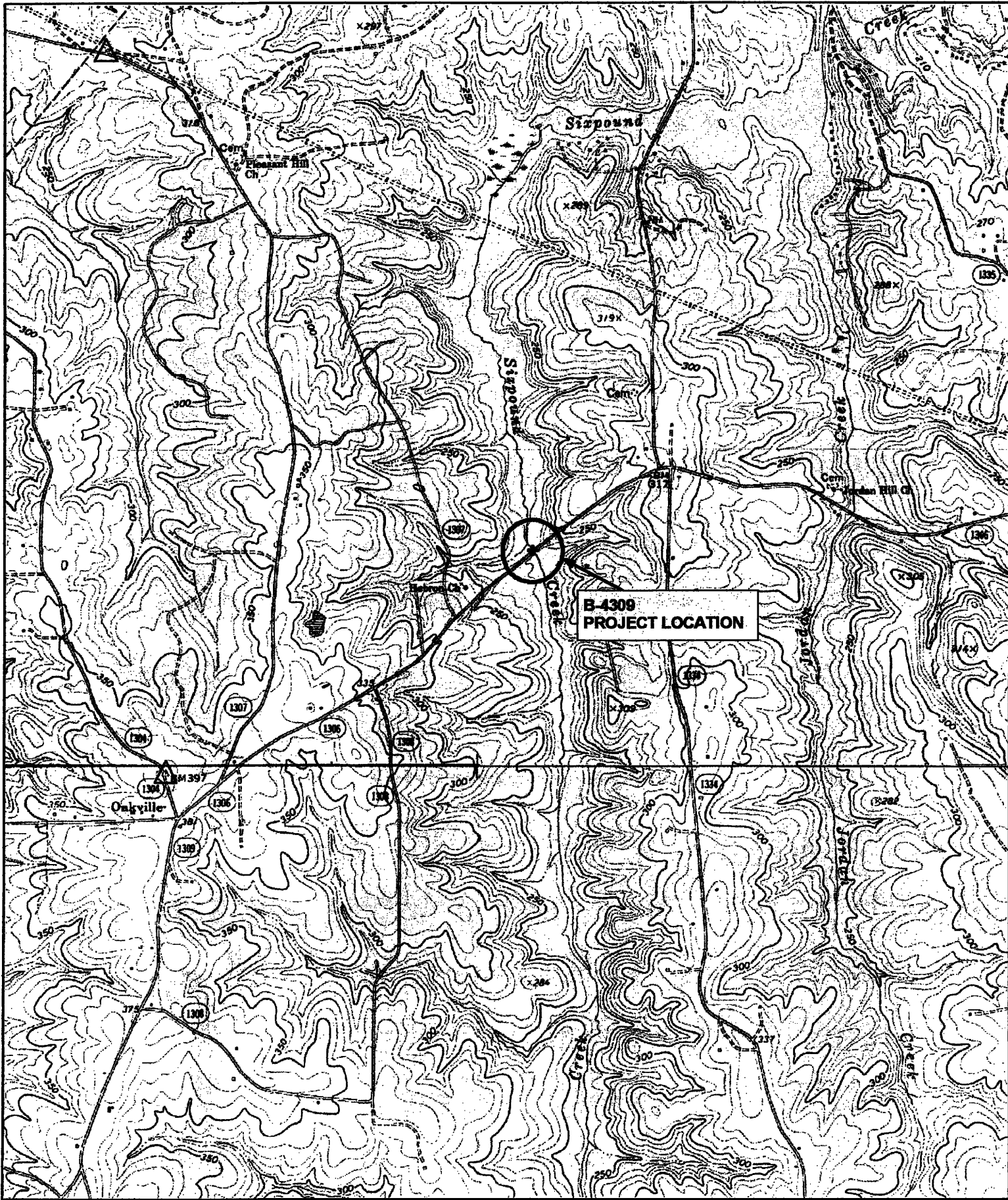
**NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
PROJECT DEVELOPMENT &  
ENVIRONMENTAL ANALYSIS BRANCH**

**WARREN COUNTY TIP NO. B-4309**

**BRIDGE NO. 38 ON SR 1306  
OVER SIX POUND CREEK**

**VICINITY MAP**

**FIGURE 1**



Name: SOUTH HILL SE  
Date: 10/13/2006  
Scale: 1 inch equals 2000 feet

Location: 036° 30' 27.53" N 078° 04' 54.21" W  
Caption: B-4309 PROJECT LOCATION

# Property Owners

**Parcel Number**

**Names**

**Addresses**

1

PH Forest Investments

15 Piedmont Center, Suite 1250  
Atlanta, GA 30305

2

Palmer Heirs, John Henry  
Peel, Nelson M.

1487 Wise Five Forks Road  
Macon, C 27551

NC DEPARTMENT OF TRANSPORTATION  
DIVISION OF HIGHWAYS

WARREN COUNTY

WBS - 33646.1.1 (B-4309)

SHEET

3 of 7

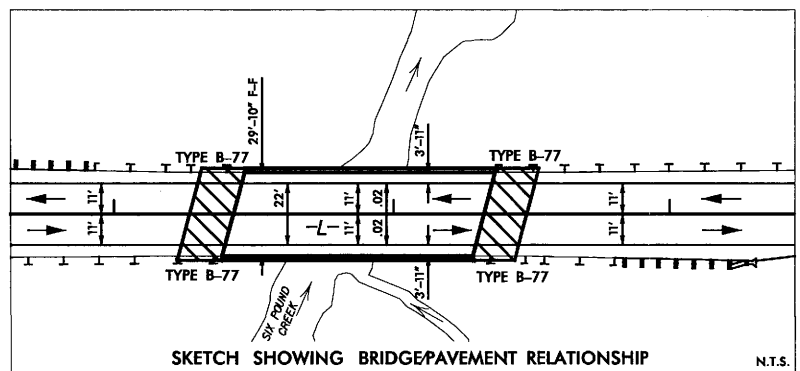
5/14/2007



8/17/99

REVISIONS

- B2906 ADDED CONSTRUCTION EASEMENT -L- STA 14+50 TO 15+50 LEFT.
- B2906 DELETED CONSTRUCTION EASEMENTS AT TURN-AROUNDS.
- 100506 CHANGED PROPOSED OUTERMOST RW OFFSETS TO 60.00 FEET.
- 100506 CHANGED PDE OFFSETS TO 72.00 FEET.
- 100506 ADDED 2 MONUMENTS AT PROP. RW FOR -L- PC STA 20+76.73. OFFSET CURVE TO CREATE RW FROM PC FORWARD.
- 12307 THE PROPERTY LINE BETWEEN PARCELS 1 & 2 WAS CHANGED AS WELL AS THE OWNER NAME FOR PARCEL 1.



**WETLAND PERMIT**  
**TEMPORARY SURFACE WATER IMPACT**  
**FROM STA. -L- 17+00 TO 17+20**

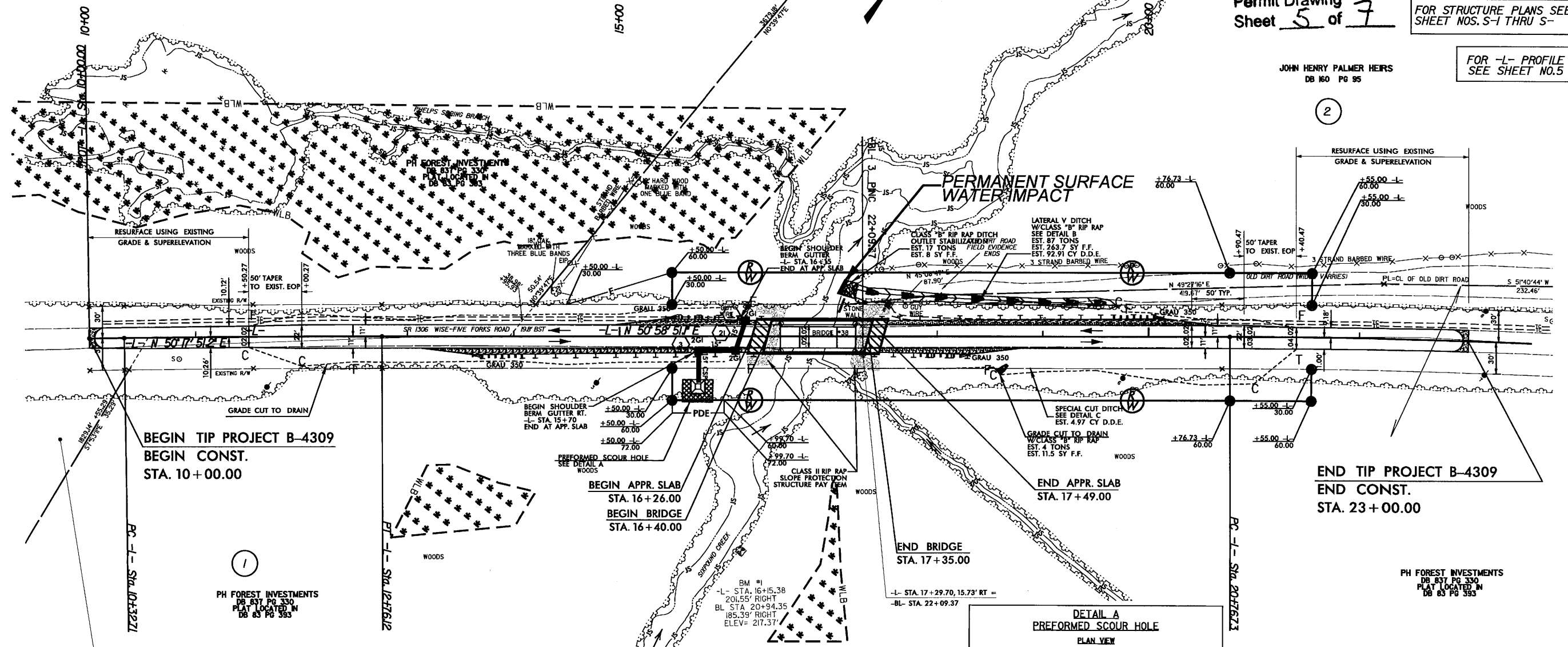
PROJECT REFERENCE NO. <b>B-4309</b>	SHEET NO. <b>4</b>
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
<b>PRELIMINARY PLANS</b> DO NOT USE FOR CONSTRUCTION	
<b>DRMP</b> ENGINEERS, PLANNERS & SCIENTISTS 1700 EAST WOODSTOCK BLVD., SUITE 205 CHARLOTTE, NORTH CAROLINA 28227 704.333.2393	

Permit Drawing  
 Sheet **5** of **7**

FOR STRUCTURE PLANS SEE  
 SHEET NOS. S-1 THRU S-5

FOR -L- PROFILE  
 SEE SHEET NO.5

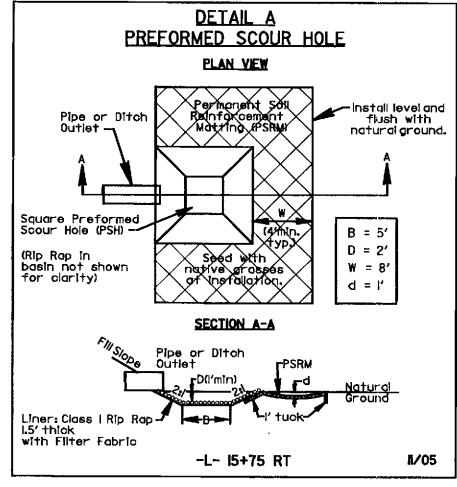
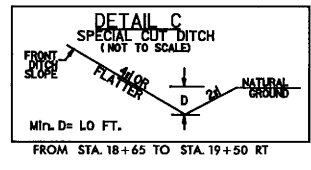
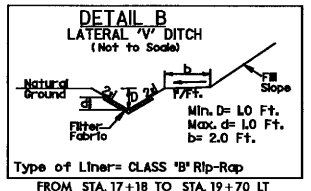
JOHN HENRY PALMER HEIRS  
 DB 160 PG 95



**CURVE DATA**

**CURVE 1**  
 PI -L- Sta 11+54.42  
 $\Delta = 0^\circ 40' 59.9''$  (RT)  
 $D = 0' 16' 50.8''$   
 $L = 243.41'$   
 $T = 121.71'$   
 $R = 20,410.36'$   
 $\theta = NC$   
 DESIGN SPEED = 60 MPH

**CURVE 2**  
 PI -L- Sta 22+55.70  
 $\Delta = 2^\circ 49' 09.8''$  (RT)  
 $D = 0^\circ 47' 16.2''$   
 $L = 357.86'$   
 $T = 178.97'$   
 $R = 7,272.55'$   
 $\theta = NC$   
 DESIGN SPEED = 60 MPH



SUSTAINABLE FORESTS  
 DB 70 PG 17  
 AND DEED DATED  
 25 SEP 86  
 (40 ACRE TRACT)  
 PLAT LOCATED IN  
 DB 83 PG 393

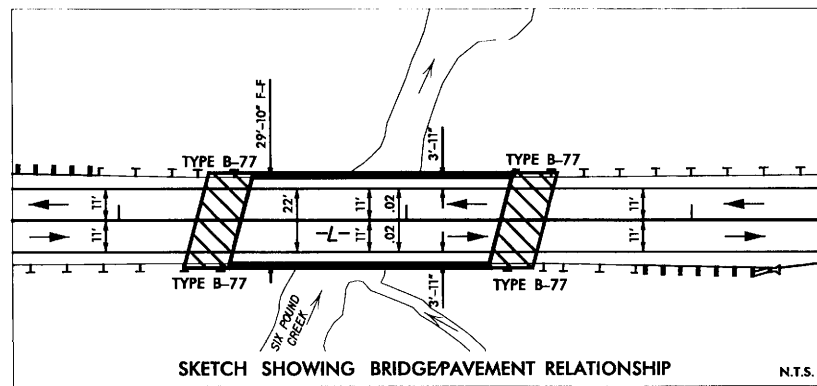
PERMANENT SURFACE  
 WATER IMPACT

04/02/2007  
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 2:35:55 PM

8/17/99

REVISIONS

- 82906 ADDED CONSTRUCTION EASEMENT -L- STA 14+50 TO 15+50 LEFT.
- 82906 DELETED CONSTRUCTION EASEMENTS AT TURN-AROUNDS.
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**WETLAND PERMIT**  
**TEMPORARY SURFACE WATER IMPACT**  
**FROM STA. -L- 17+00 TO 17+20**

PROJECT REFERENCE NO. <b>B-4309</b>	SHEET NO. <b>4</b>
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
<b>PRELIMINARY PLANS</b> DO NOT USE FOR CONSTRUCTION	
<b>DRMP</b> DESIGNERS - PLANNERS - ENGINEERS 17506 EAST INDEPENDENCE BLVD., SUITE 105 CHARLOTTE, NORTH CAROLINA 28227 1704-335-2288	

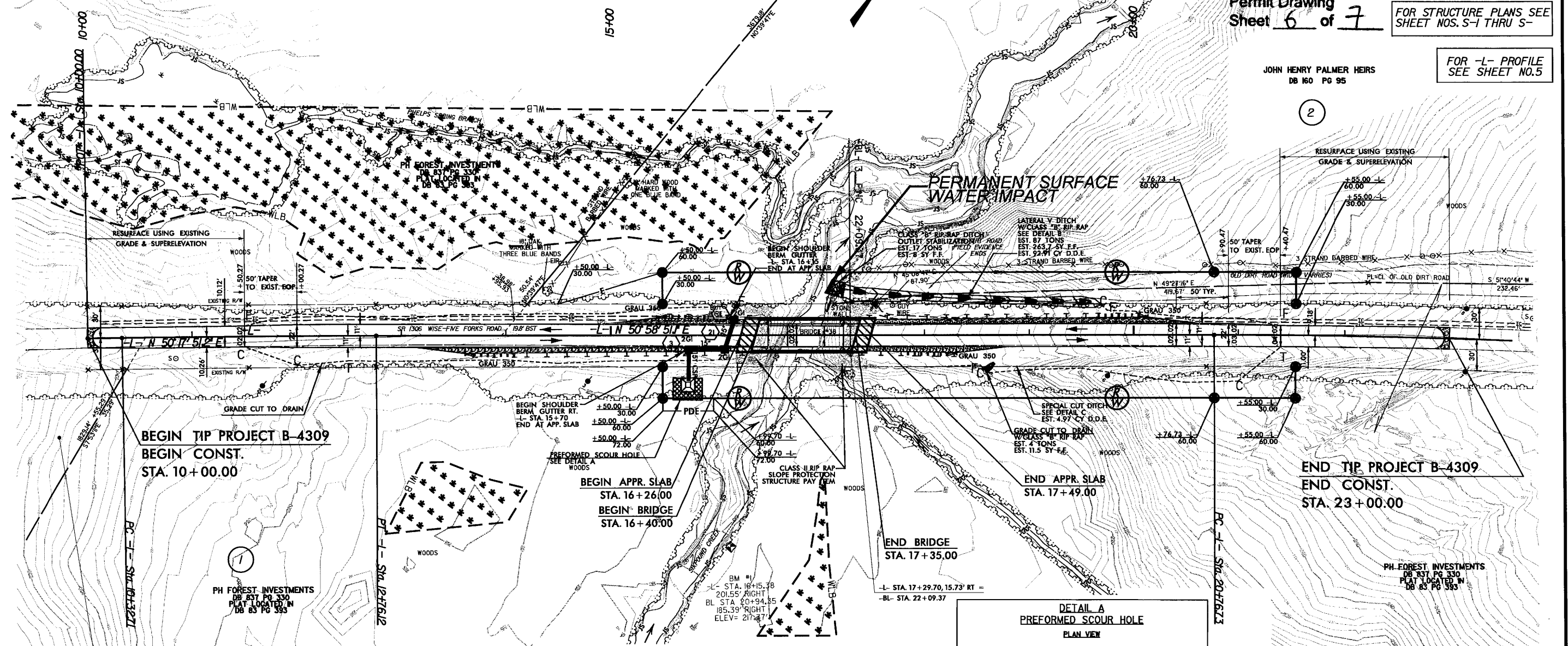
Permit Drawing Sheet **6** of **7**

FOR STRUCTURE PLANS SEE SHEET NOS. S-1 THRU S-

FOR -L- PROFILE SEE SHEET NO.5

JOHN HENRY PALMER HEIRS  
DB 160 PG 95

2



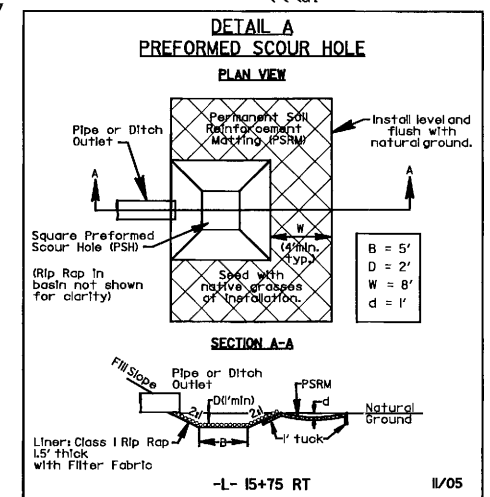
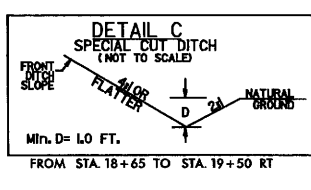
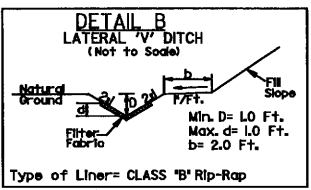
SUSTAINABLE FORESTS  
 DB 712 PG 17  
 AND DEED DATED  
 11-25-97 BY  
 140 ACRE TRACT  
 PLAT LOCATED IN  
 DB 83 PG 393

PERMANENT SURFACE WATER IMPACT

**CURVE DATA**

**CURVE 1**  
 PI -L- Sta 11+54.42  
 $\Delta = 0^\circ 40' 59.9''$  (RT)  
 $D = 0^\circ 16' 50.6''$   
 $L = 243.41'$   
 $T = 121.71'$   
 $R = 20,410.36'$   
 $\theta = NC$   
 DESIGN SPEED = 60 MPH

**CURVE 2**  
 PI -L- Sta 22+55.70  
 $\Delta = 2^\circ 49' 09.8''$  (RT)  
 $D = 0^\circ 47' 16.2''$   
 $L = 357.86'$   
 $T = 178.97'$   
 $R = 7,272.55'$   
 $\theta = NC$   
 DESIGN SPEED = 60 MPH



04/02/2007 8:31:42 AM C:\Users\jacob\Documents\B4309\wetland\_permit.dgn



5/14/99

# WETLAND PERMIT

## TEMPORARY SURFACE WATER IMPACT FROM STA. -L- 17+00 TO 17+20

PROJECT REFERENCE NO. B-4309	SHEET NO. 5
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

# -L-



**BM #2**  
 -L- EXTENDED STA 27+83.50, 31.87' RT  
 -BL- STA 32+59.39, 72.40' RT  
 ELEV= 278.24

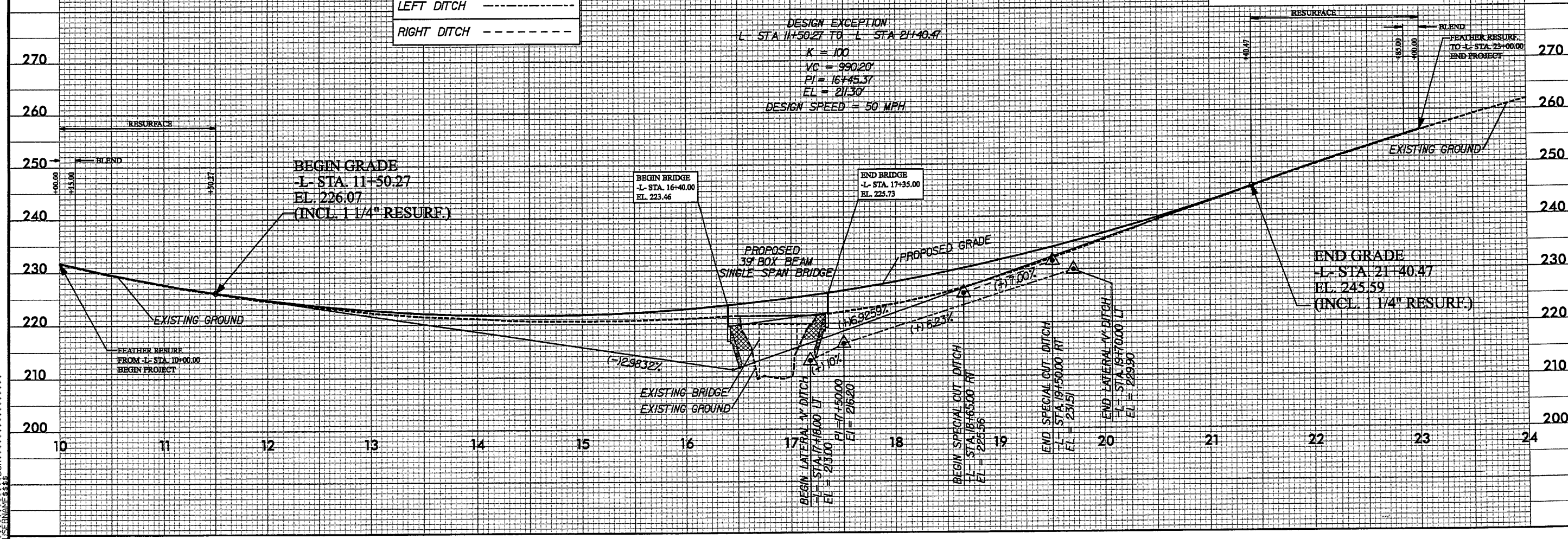
Permit Drawing  
 Sheet 7 of 7

**BM #1**  
 -L- STA 16+15.38, 201.55' RT  
 -BL- STA 20+94.35, 185.39' RT  
 ELEV= 217.37

BRIDGE HYDRAULIC DATA	
DESIGN DISCHARGE	= 2000 CFS
DESIGN FREQUENCY	= 25 YRS
DESIGN HW ELEVATION	= 218.6 FT
BASE DISCHARGE	= 3100 CFS
BASE FREQUENCY	= 100 YRS
BASE HW ELEVATION	= 220.5 FT
OVERTOPPING DISCHARGE	= 3275 CFS
OVERTOPPING FREQUENCY	= 100+ YRS
OVERTOPPING ELEVATION	= 221.6 FT
DATE OF SURVEY	= 11/2005
W.S. ELEVATION AT DATE OF SURVEY	= 212.0 FT

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

DESIGN EXCEPTION  
 -L- STA 11+50.27 TO -L- STA 21+40.47  
 K = 100  
 VC = 990.20'  
 PI = 16+45.37'  
 EL = 211.30'  
 DESIGN SPEED = 50 MPH



\*\*\*\*\*  
 C:\I\ME\\*\*\*\*\*  
 S:\I\ME\\*\*\*\*\*  
 \*\*\*\*\*



STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

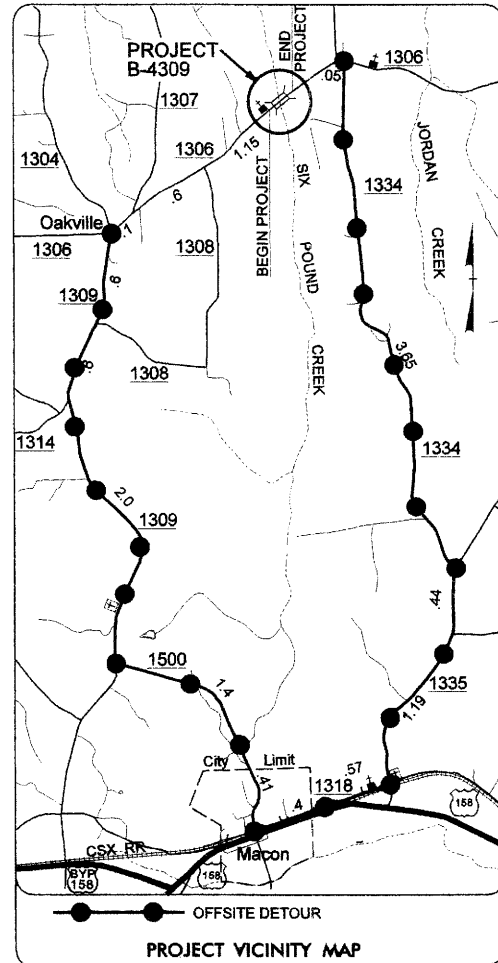
**WARREN COUNTY**

**LOCATION: BRIDGE NO. 38 ON SR 1306 OVER  
SIX POUND CREEK**

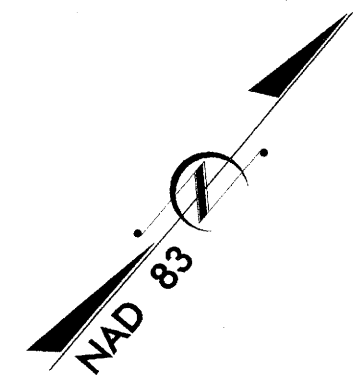
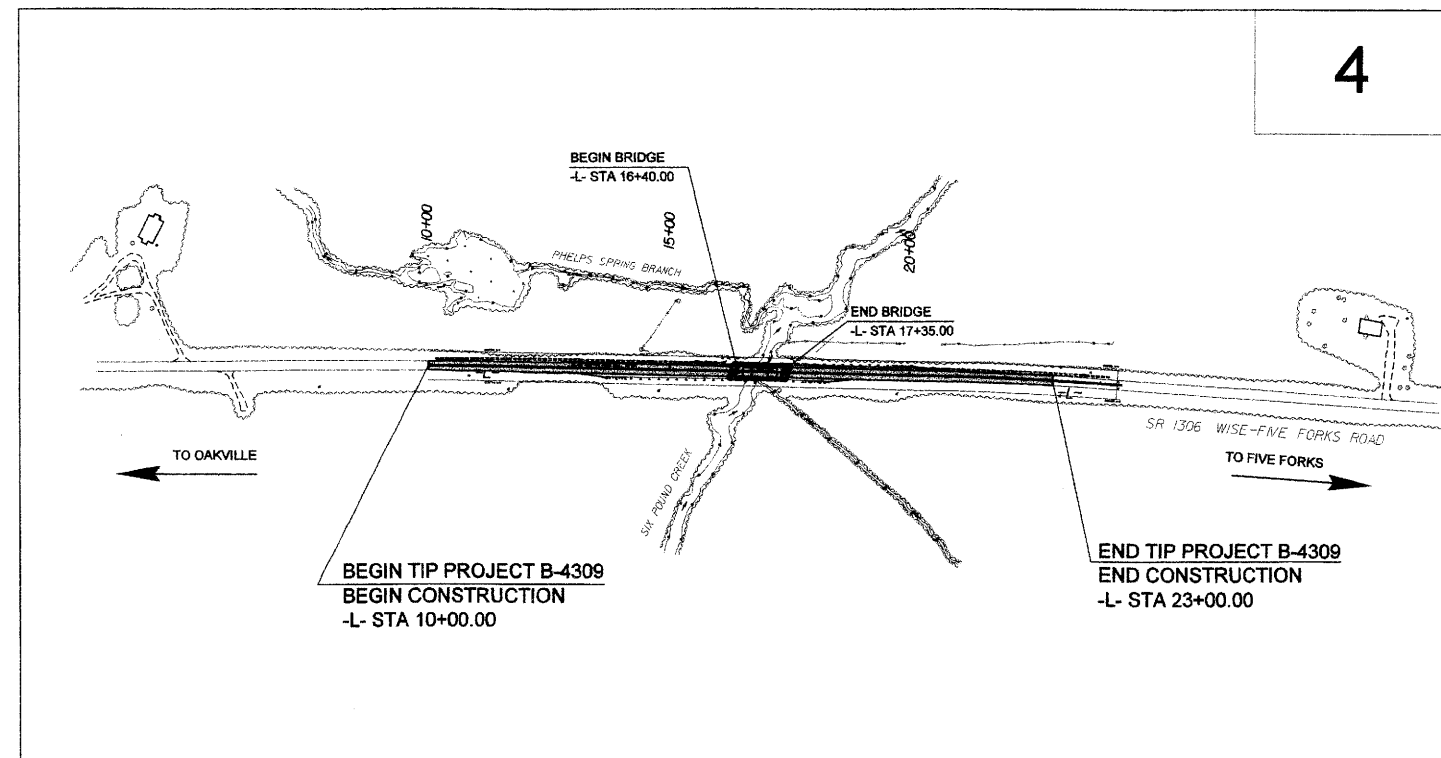
**TYPE OF WORK: GRADING, PAVING, DRAINAGE, AND STRUCTURE**

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-4309	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
33646.1.1	BRZ-1306(10)	P.E.	
33646.2.1	BRZ-1306(10)	R.W. & UTILITY	
33646.3.1	BRZ-1306(10)	CONST.	

**TIP PROJECT: B-4309**



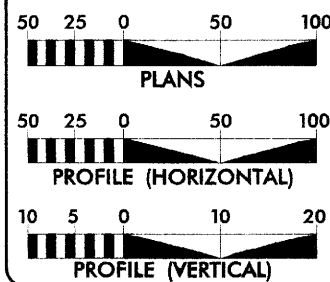
**90% PLANS**



PRELIMINARY PLANS  
DO NOT USE FOR CONSTRUCTION

NCDOT Contact: B. Doug Taylor, PE  
Roadway Design-Engineering Coordination

**GRAPHIC SCALES**



**DESIGN DATA**

ADT 2007 = 436  
ADT 2027 = 579  
DHV = 10 %  
D = 60 %  
T = 4% (TTST 2%, DUAL 2%)  
V = 60 MPH

**DESIGN EXCEPTION**

MAX. GRADE = 6.9259%  
SAG K VALUE = 100  
FUNC CLASS = RURAL LOCAL

**PROJECT LENGTH**

LENGTH ROADWAY TIP PROJECT B-4309 = 0.228 MILES  
LENGTH STRUCTURE TIP PROJECT B-4309 = 0.018 MILES  
TOTAL LENGTH TIP PROJECT B-4309 = 0.246 MILES

Prepared In the Office of  
DYER, RIDdle, MILLS & PRECOURT, INC. (DRMP)  
7506 EAST INDEPENDENCE BLVD., SUITE 105  
CHARLOTTE, NORTH CAROLINA 28227  
(704) 332-2289

**2006 STANDARD SPECIFICATIONS**

**RIGHT OF WAY DATE:**  
AUGUST 18, 2006

**LETTING DATE:**  
JANUARY 15, 2008

Ronald C. Smith, PE  
PROJECT ENGINEER

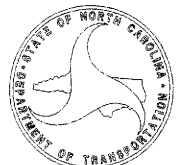
Moriah B. Ellington, PE  
PROJECT DESIGN ENGINEER

**HYDRAULICS ENGINEER**

SIGNATURE: \_\_\_\_\_ P.E.  
**ROADWAY DESIGN ENGINEER**

SIGNATURE: \_\_\_\_\_ P.E.

**DIVISION OF HIGHWAYS  
STATE OF NORTH CAROLINA**



STATE HIGHWAY DESIGN ENGINEER

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	○
Property Corner	⊗
Property Monument	⊠
Parcel/Sequence Number	⑩23
Existing Fence Line	-x-x-x-
Proposed Woven Wire Fence	○
Proposed Chain Link Fence	⊠
Proposed Barbed Wire Fence	◇
Existing Wetland Boundary	-WLS-
Proposed Wetland Boundary	-WLB-
Existing High Quality Wetland Boundary	-HQ WLS-
Existing Endangered Animal Boundary	-EAB-
Existing Endangered Plant Boundary	-EPB-

## BUILDINGS AND OTHER CULTURE:

Gas Pump Vent or U/G Tank Cap	○
Sign	⊙
Well	⊕
Small Mine	⊗
Foundation	⊠
Area Outline	⊠
Cemetery	⊠
Building	⊠
School	⊠
Church	⊠
Dam	⊠

## HYDROLOGY:

Stream or Body of Water	_____
Hydro, Pool or Reservoir	_____
River Basin Buffer	-RBB-
Flow Arrow	←
Disappearing Stream	→
Spring	⊙
Swamp Marsh	⊙
Proposed Lateral, Tail, Head Ditch	_____
False Sump	⊙

## RAILROADS:

Standard Gauge	_____
RR Signal Milepost	⊙
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	_____
Proposed Temporary Construction Easement	_____
Proposed Temporary Drainage Easement	_____
Proposed Permanent Drainage Easement	_____
Proposed Permanent Utility Easement	_____

## ROADS AND RELATED FEATURES:

Existing Edge of Pavement	_____
Existing Curb	_____
Proposed Slope Stakes Cut	_____
Proposed Slope Stakes Fill	_____
Proposed Wheel Chair Ramp	_____
Curb Cut for Future Wheel Chair Ramp	_____
Existing Metal Guardrail	_____
Proposed Guardrail	_____
Existing Cable Guiderail	_____
Proposed Cable Guiderail	_____
Equality Symbol	⊙
Pavement Removal	_____

## VEGETATION:

Single Tree	⊙
Single Shrub	⊙
Hedge	_____
Woods Line	_____
Orchard	_____
Vineyard	_____

## EXISTING STRUCTURES:

MAJOR:	
Bridge, Tunnel or Box Culvert	_____
Bridge Wing Wall, Head Wall and End Wall	_____
MINOR:	
Head and End Wall	_____
Pipe Culvert	_____
Footbridge	_____
Drainage Box: Catch Basin, DI or JB	_____
Paved Ditch Gutter	_____
Storm Sewer Manhole	⊙
Storm Sewer	_____

## UTILITIES:

POWER:	
Existing Power Pole	⊙
Proposed Power Pole	⊙
Existing Joint Use Pole	⊙
Proposed Joint Use Pole	⊙
Power Manhole	⊙
Power Line Tower	⊙
Power Transformer	⊙
U/G Power Cable Hand Hole	⊙
H-Frame Pole	⊙
Recorded U/G Power Line	_____
Designated U/G Power Line (S.U.E.*)	_____

## TELEPHONE:

Existing Telephone Pole	⊙
Proposed Telephone Pole	⊙
Telephone Manhole	⊙
Telephone Booth	⊙
Telephone Pedestal	⊙
Telephone Cell Tower	⊙
U/G Telephone Cable Hand Hole	⊙
Recorded U/G Telephone Cable	_____
Designated U/G Telephone Cable (S.U.E.*)	_____
Recorded U/G Telephone Conduit	_____
Designated U/G Telephone Conduit (S.U.E.*)	_____
Recorded U/G Fiber Optics Cable	_____
Designated U/G Fiber Optics Cable (S.U.E.*)	_____

## WATER:

Water Manhole	⊙
Water Meter	⊙
Water Valve	⊙
Water Hydrant	⊙
Recorded U/G Water Line	_____
Designated U/G Water Line (S.U.E.*)	_____
Above Ground Water Line	_____

## TV:

TV Satellite Dish	⊙
TV Pedestal	⊙
TV Tower	⊙
U/G TV Cable Hand Hole	⊙
Recorded U/G TV Cable	_____
Designated U/G TV Cable (S.U.E.*)	_____
Recorded U/G Fiber Optic Cable	_____
Designated U/G Fiber Optic Cable (S.U.E.*)	_____

## GAS:

Gas Valve	⊙
Gas Meter	⊙
Recorded U/G Gas Line	_____
Designated U/G Gas Line (S.U.E.*)	_____
Above Ground Gas Line	_____

## SANITARY SEWER:

Sanitary Sewer Manhole	⊙
Sanitary Sewer Cleanout	⊙
U/G Sanitary Sewer Line	_____
Above Ground Sanitary Sewer	_____
Recorded SS Forced Main Line	_____
Designated SS Forced Main Line (S.U.E.*)	_____

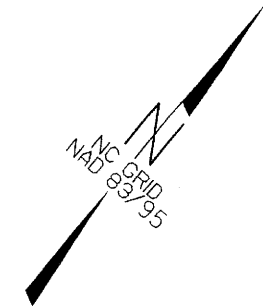
## MISCELLANEOUS:

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

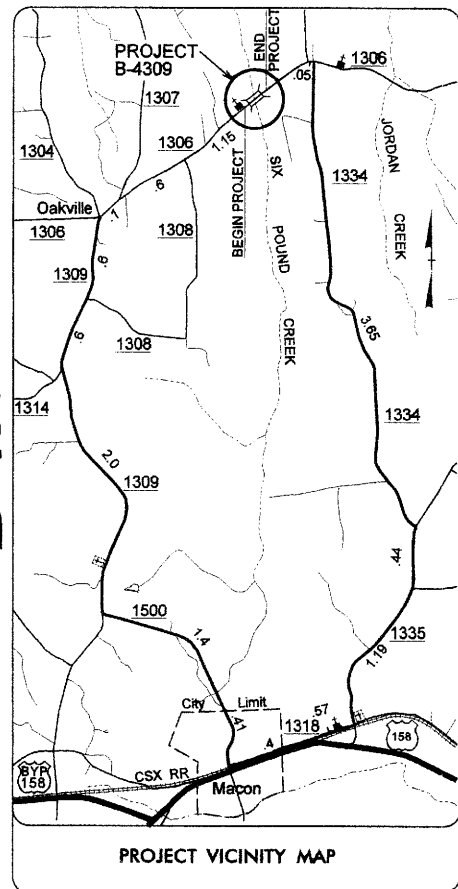
# SURVEY CONTROL SHEET B-4309

## WARREN COUNTY

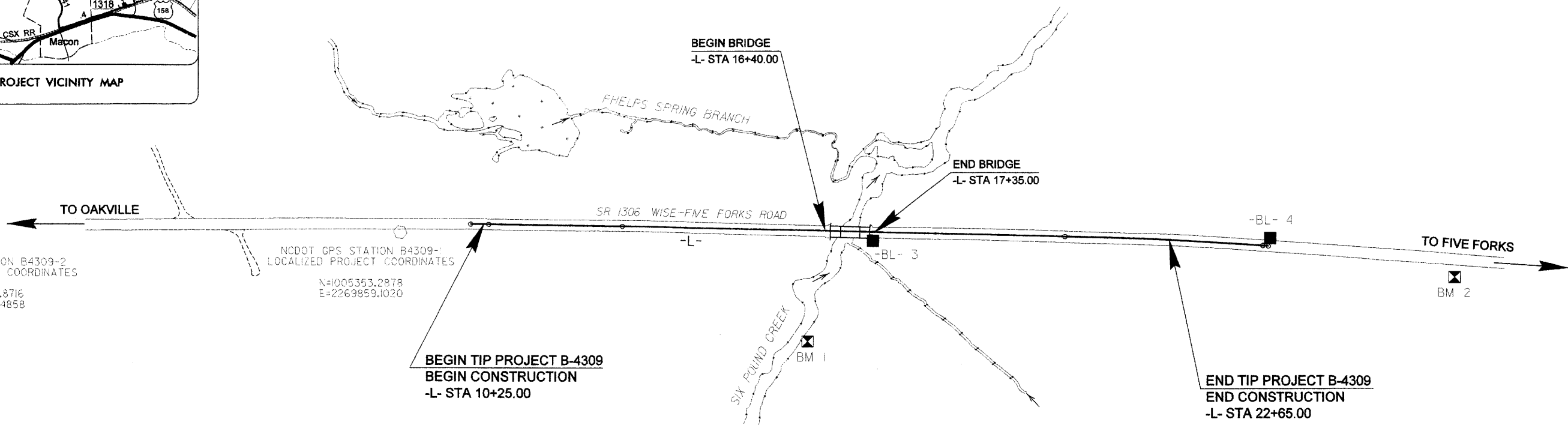
**LOCATION: BRIDGE NO. 38 OVER SIX POUND CREEK AND APPROACHES ON SR 1306 (WISE-FIVE FORKS ROAD)**



**B-4309**



PROJECT VICINITY MAP



NCDOT GPS STATION B4309-2  
LOCALIZED PROJECT COORDINATES  
N=1004796.8716  
E=2269212.4858

NCDOT GPS STATION B4309-1  
LOCALIZED PROJECT COORDINATES  
N=1005353.2878  
E=2269859.1020

BASELINE POINT	DESC.	NORTH	EAST	ELEVATION	L STATION	OFFSET
2	B4309-2	1004796.8716	2269212.4858	281.74	OUTSIDE PROJECT LIMITS	
1	B4309-1	1005353.2878	2269859.1020	237.51	OUTSIDE PROJECT LIMITS	
3	BL-3	1005894.9380	2270522.3350	221.12	17+29.70	15.73 RT
4	BL-4	1006362.9840	2271067.0140	264.28	OUTSIDE PROJECT LIMITS	

.....  
 BM1 ELEVATION = 217.37  
 N 1005679 E 2270551  
 L STATION 16+15 202' RIGHT  
 R/R SPIKE IN 20' HARD WOOD TREE  
 .....  
 BM2 ELEVATION = 278.24  
 N 1006524 E 2271366  
 L STATION 24+44.47 (OUTSIDE PROJECT LIMITS)  
 N 59° 10' 16.4" E DIST 340.53'  
 R/R SPIKE IN POWER POLE  
 .....

**DATUM DESCRIPTION**

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCDOT FOR MONUMENT "B4309-2" WITH NAD 1983/95 STATE PLANE GRID COORDINATES OF NORTHING: 1004796.8716(ft) EASTING: 2269212.4858(ft) THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 1.00010598 THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "B4309-2" TO -L- STATION 10+00.00 IS N 48°30'14.8" E 980.22'

ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES  
 VERTICAL DATUM USED IS NAVD 88

**NOTES:**

1. THE CONTROL DATA FOR THIS PROJECT CAN BE FOUND ELECTRONICALLY BY SELECTING PROJECT CONTROL DATA AT:  
[HTTP://WWW.DOH.DOT.STATE.NC.US/PRECONSTRUCT/HIGHWAY/LOCATION/PROJECT/B4309\\_ls\\_control\\_080525.txt](http://www.doh.dot.state.nc.us/preconstruct/highway/location/project/B4309_ls_control_080525.txt)
  2. SITE CALIBRATION INFORMATION HAS NOT BEEN PROVIDED 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 USING GLOBAL POSITIONING SYSTEM.  
 NETWORK ESTABLISHED FROM NGS ONLINE POSITIONING SERVICE (OPUS)

NOTE: DRAWING NOT TO SCALE

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 11/15/06 10:56 AM



8/17/99

REVISIONS

PROJECT REFERENCE NO. **B-4309** SHEET NO. **4**

BW SHEET NO.

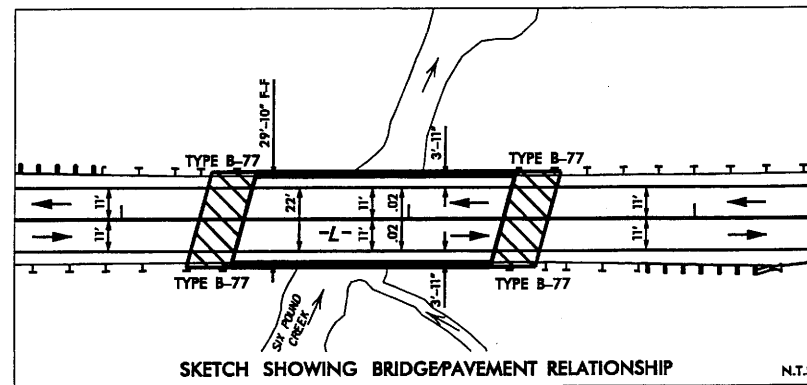
ROADWAY DESIGN ENGINEER: **RONALD C. SMITH** (Professional Seal 13690)

HYDRAULICS ENGINEER: **ROGER S. WEAVER** (Professional Seal 21656)

**DRMP** CONSULTANTS, INC. (Professional Seal 13690)

**MA Engineering** CONSULTANTS, INC. (Professional Seal 21656)

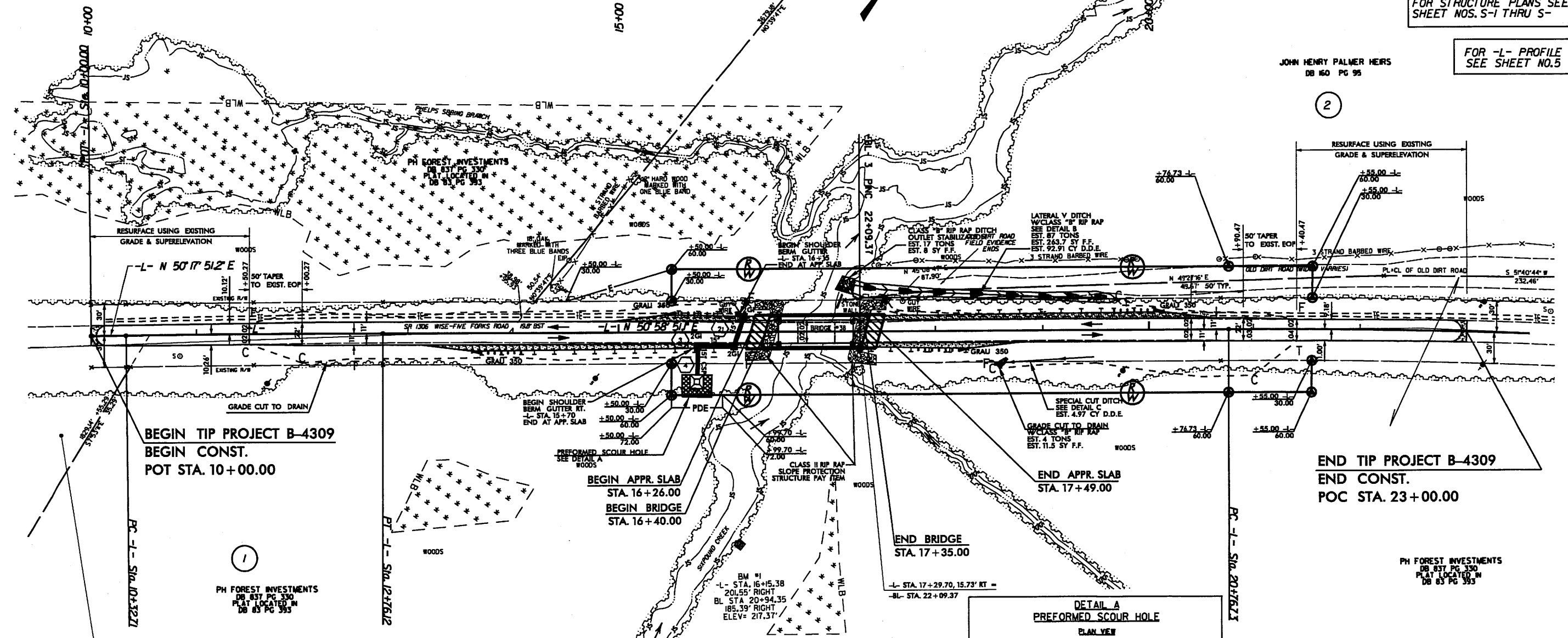
PRELIMINARY PLANS  
DO NOT USE FOR CONSTRUCTION



FOR STRUCTURE PLANS SEE SHEET NOS. S-1 THRU S-

FOR -L- PROFILE SEE SHEET NO.5

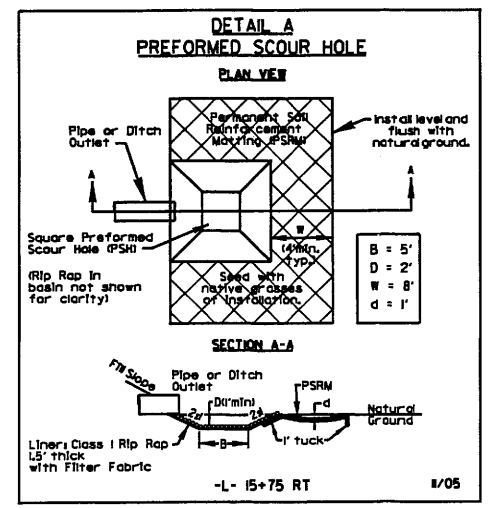
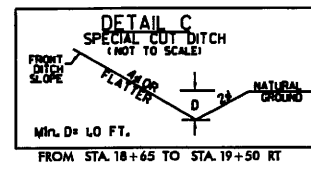
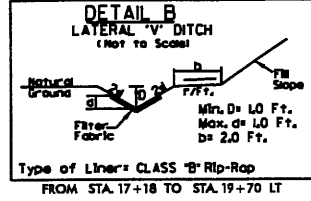
JOHN HENRY PALMER HEIRS  
DB 160 PG 95



**CURVE DATA**

**CURVE 1**  
PI -L- Sta 11+54.42  
 $\Delta = 0^{\circ}40'59.9''$  (RT)  
D = 0'16'50.6"  
L = 243.41'  
T = 121.71'  
R = 20,410.36'  
e = NC  
DESIGN SPEED = 60 MPH

**CURVE 2**  
PI -L- Sta 22+55.70  
 $\Delta = 2^{\circ}49'09.8''$  (RT)  
D = 0'41'16.2"  
L = 357.86'  
T = 178.97'  
R = 7,272.55'  
e = NC  
DESIGN SPEED = 60 MPH




SUSTAINABLE FORESTS  
DB 70 PG 87  
AND OPEN DATED  
25 SEP 96  
(40 ACRE TRACT)  
PLAT LOCATED IN  
DB 83 PG 393

SYSTEMS DESIGN  
USER NAME



5/11/09

PROJECT REFERENCE NO. B-4309	SHEET NO. 5
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	
 <b>DRMP</b> ENGINEERS - PLANNERS - SCIENTISTS <small>OVER, RIDGE, MILLS &amp; FRECHART, INC.          306 EAST WASHINGTON BLVD, SUITE 105          CHARLOTTE, NORTH CAROLINA 28227          (704) 332-2289</small>	

-L-

**BM #1**  
 -L- STA 16+15.38, 201.55' RT  
 -BL- STA 20+94.35, 185.39' RT  
 ELEV= 217.37

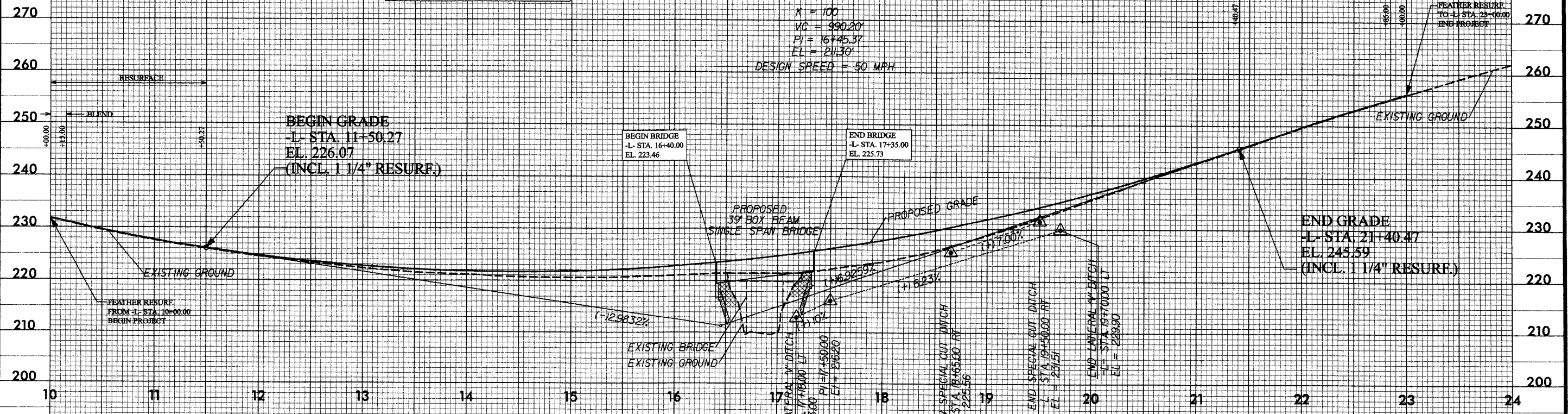
**BM #2**  
 -L- EXTENDED STA 27+83.50, 31.87' RT  
 -BL- STA 32+59.39, 72.40' RT  
 ELEV= 278.24

**BRIDGE HYDRAULIC DATA**

DESIGN DISCHARGE	= 2000 CFS
DESIGN FREQUENCY	= 25 YRS
DESIGN HW ELEVATION	= 218.6 FT
BASE DISCHARGE	= 3100 CFS
BASE FREQUENCY	= 100 YRS
BASE HW ELEVATION	= 220.5 FT
OVERTOPPING DISCHARGE	= 3275 CFS
OVERTOPPING FREQUENCY	= 100+ YRS
OVERTOPPING ELEVATION	= 221.6 FT
DATE OF SURVEY	= 11/2005
W.S.ELEVATION AT DATE OF SURVEY	= 212.0 FT

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

**DESIGN EXCEPTION**  
 -L- STA 11+50.27 TO -L- STA 21+40.47  
 N = 100  
 VC = 990.20'  
 PI = 16+45.37'  
 EL = 211.30'  
 DESIGN SPEED = 50 MPH

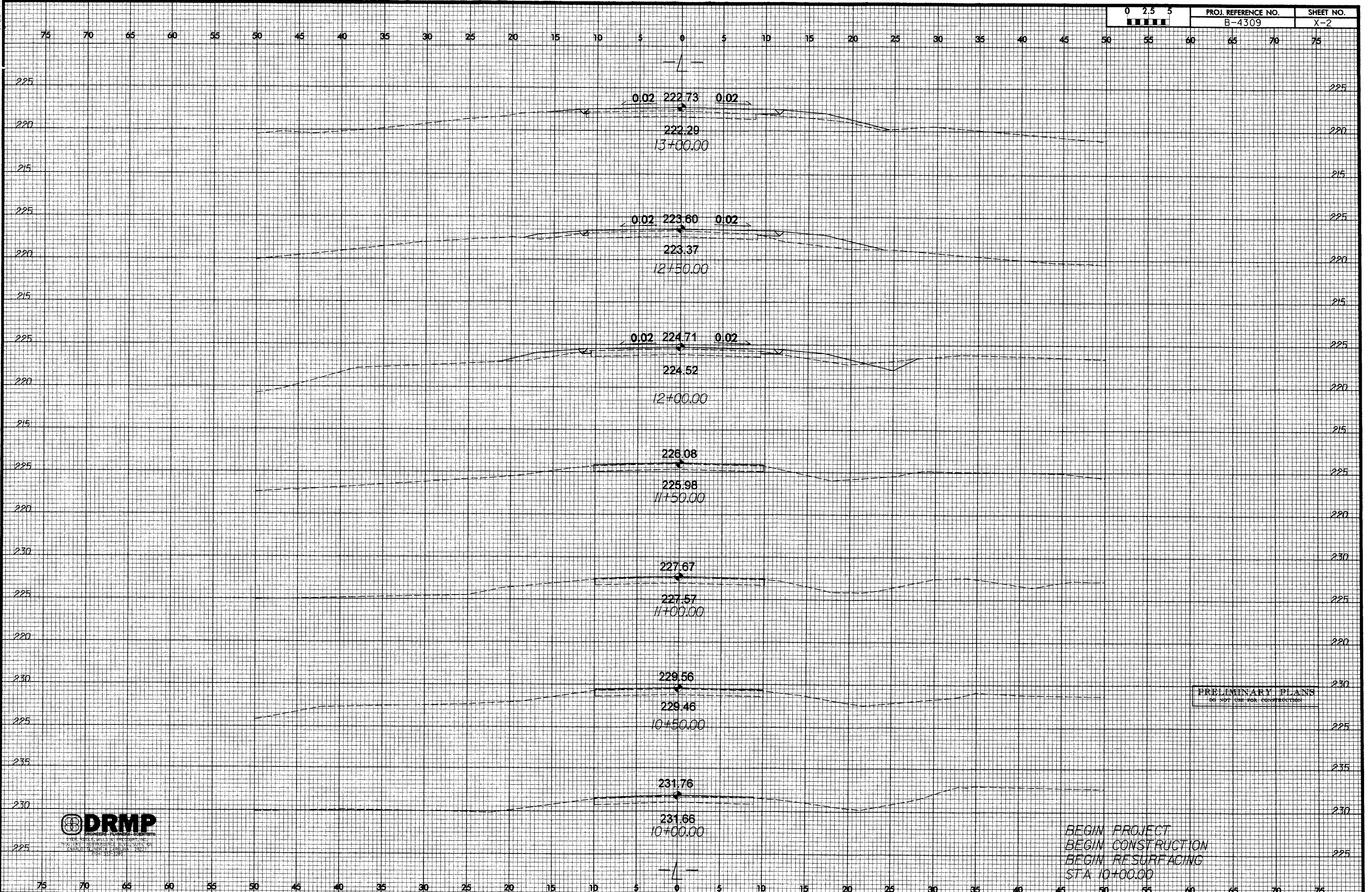


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2/23/94



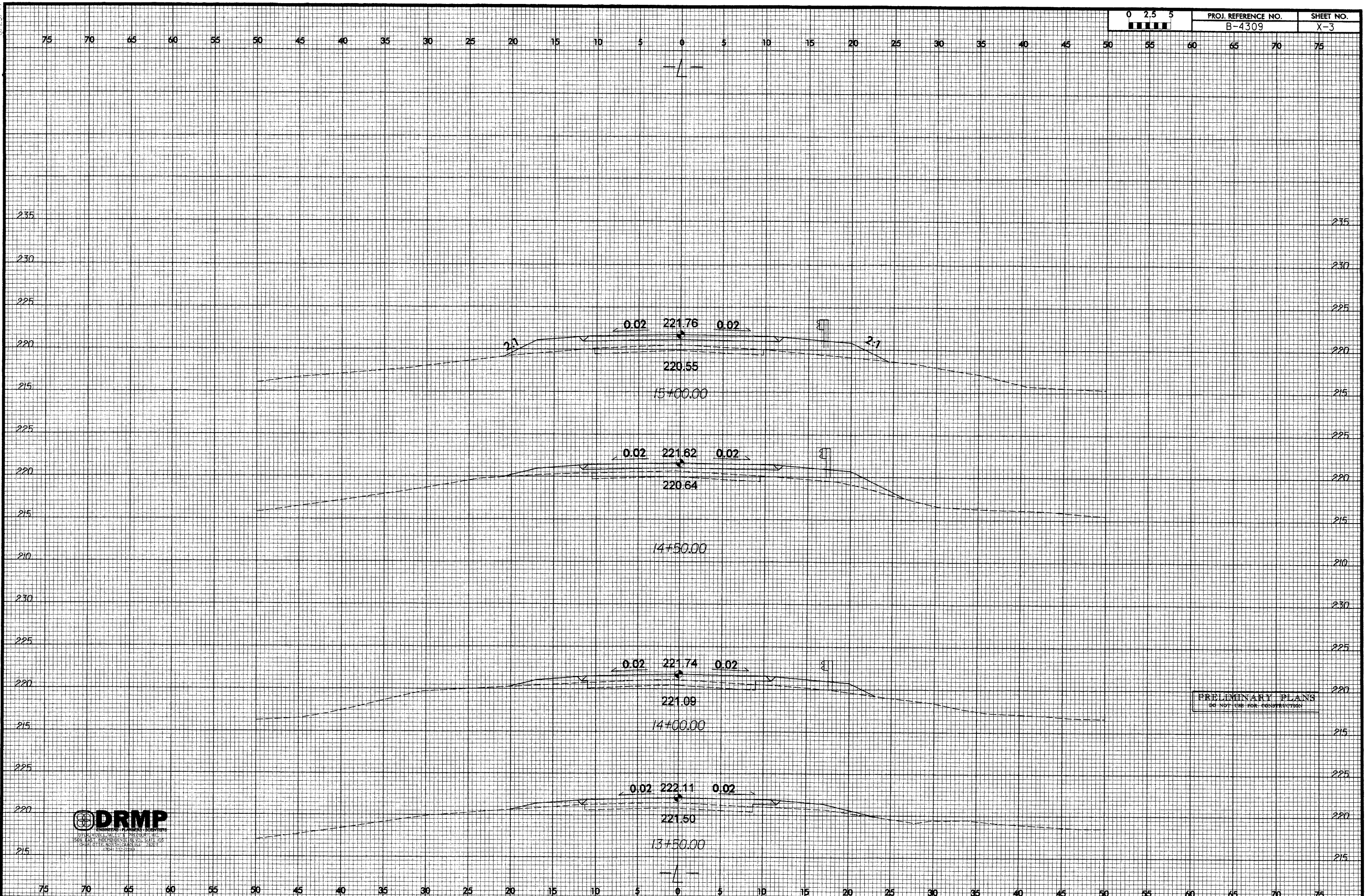
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DO NOT USE FOR CONSTRUCTION



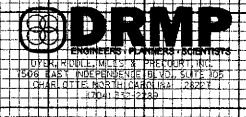
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BEGIN CONSTRUCTION  
BEGIN RESURFACING  
STA 10+00.00



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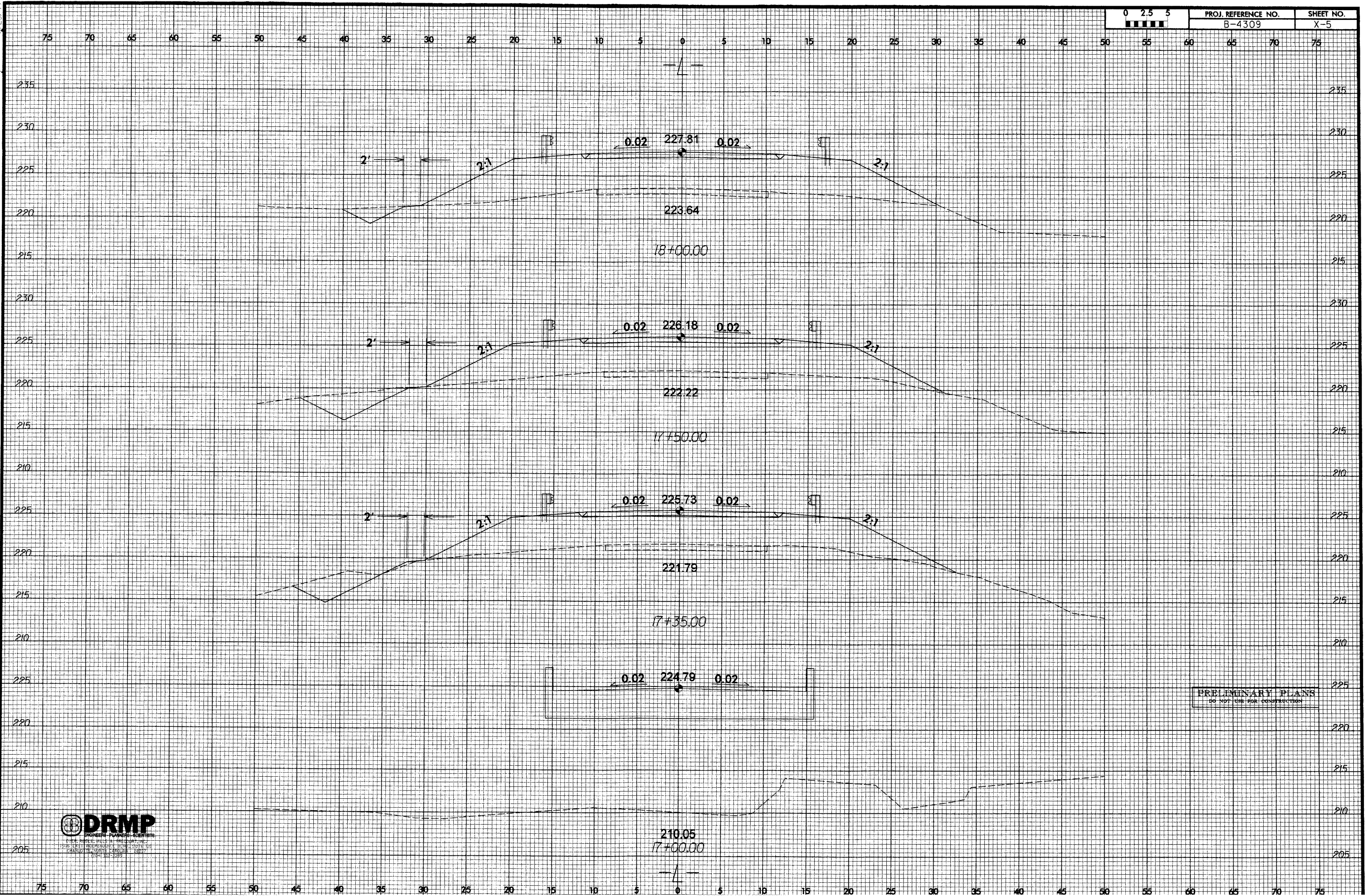
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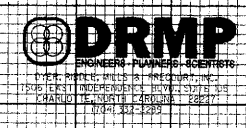






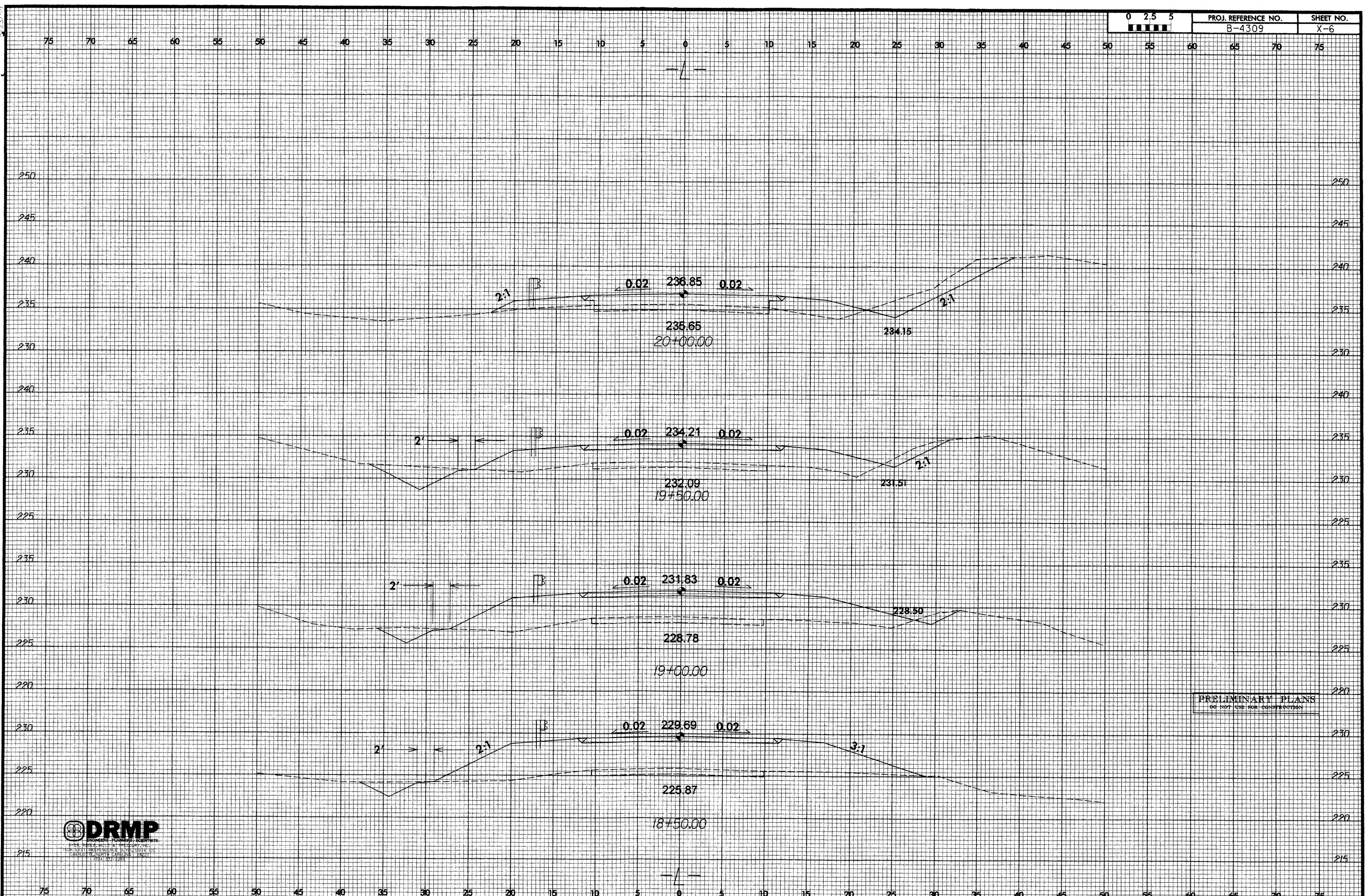


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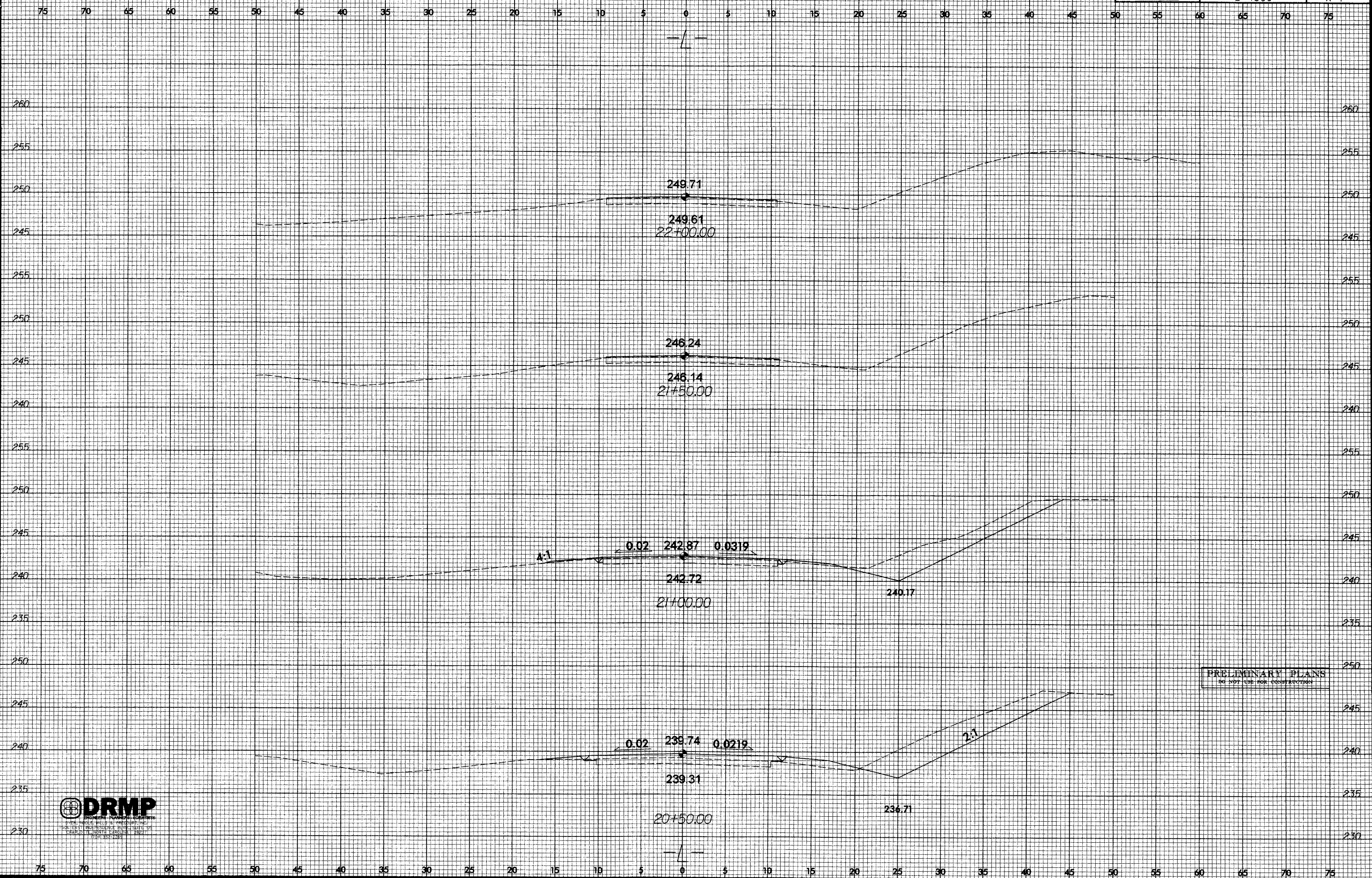


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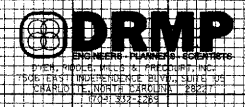


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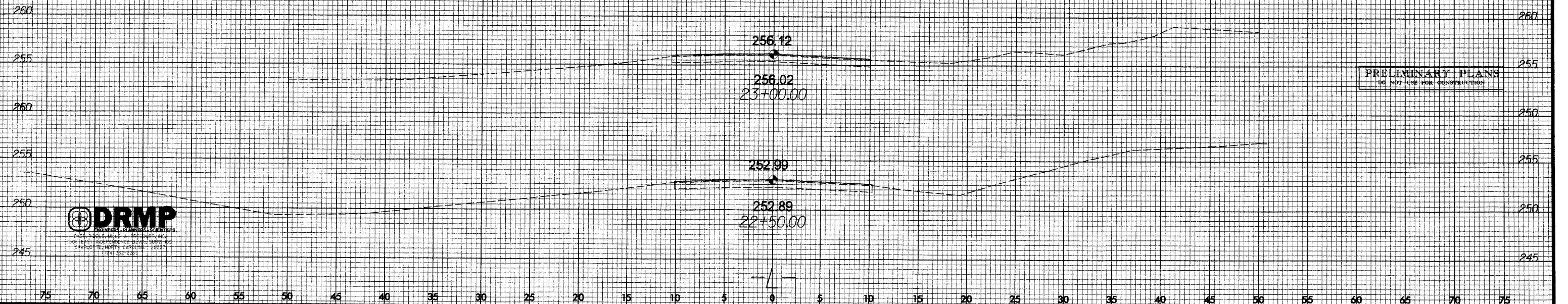
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75 70 65 60 55 50 45 40 35 30 25 20 15 10 5 0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75

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END PROJECT  
 END CONSTRUCTION  
 END RESURFACING  
 STA. 23+00.00



PRELIMINARY PLANS  
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