STATE OF NORTH CAROLINA
# DEPARTMENT OF TRANSPORTATION

MICHAEL F. EASLEY
GOVERNOR

LYNDO TIPPETT
SECRETARY

August 5, 2008

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

Attn: Mr. William Wescott
NCDOT Coordinator

Dear Sir:

Subject: **Revised Application for Individual Section 404 and 401 Permits and Neuse Riparian Buffer Authorization** for the construction of the southern section of Crescent Road from US 70 to US 258 in Lenoir County, west of Kinston. State Project No. 8.2200101. Federal Aid Project Number STP-224(3). TIP No. R-2719A., WBS 34501.1.1.

Reference: Application for Individual Section 404 and 401 Permits and Neuse Riparian Buffer Authorization dated February 15, 2008

The purpose of this letter is to provide a revision to the application for a Section 404 Individual Permit, Section 401 Water Quality Certification, and Neuse Riparian Buffer Authorization. In addition to the cover letter this application package includes the following: revised permit drawings, a set of revised half size roadway plans, and a revised mitigation plan.

This revision describes the changes in the wetlands impacts due to the outcome of the reverification of the wetlands; also to describe the design change at the railroad crossing. NCDOT redelineated wetlands, due to the expiration of the jurisdictional determination. Several of the wetland lines were shifted as a result of this redelineation. Permit sites 8, 9, 10, 14, and 16 were changed and were verified by William Wescott with the USACE on March 6, 2008.

The design of the project at the railroad crossing has changed, but will not affect the jurisdictional impacts. The railroad grade separation at approximate Station 85+98 was redesigned to provide 24-foot clearance over the railroad. This was accommodated by providing girders with less depth. An additional design change shortened the bridge length by adding retaining walls; thus end fill slopes were eliminated. The revised plans for changes associated with the railroad revisions will be provided as soon as they become available.

The rest of the referenced permit application that was submitted February 15, 2008 remains accurate.

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

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

WEBSITE: WWW.NCDOT.ORG

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

The revised wetland and design will not change the existing permit application with respect to:

- Protected Species
- FEMA compliance
- Cultural Resources
- Avoidance and Minimization

**Summary of Impacts**

Waters of the U.S.: Revised impacts to jurisdictional areas total 12.05 acres of permanent wetland impacts and 2,363 linear feet of permanent stream impacts. Of these impacts 2.7 acre are in riparian wetlands and 9.35 are in non-riparian wetlands.

Temporary Impacts: There will be 1,227 feet of temporary impacts in surface waters. Proposed temporary impacts to wetlands of 0.35 acres of Temporary Fill in Wetlands in the Hand Clearing areas for the installation of erosion control measures, including some or all of the following: Temporary Silt Fence, Special Sediment Control Fence, and Temporary Rock Silt Checks.

Hand Clearing: There will be 1.15 acre of hand clearing within the wetlands.

Neuse Riparian Buffers: Revised impacts to riparian buffers total 348,634 $ft^2$; of this Zone 1 has 214,078 $ft^2$ and Zone 2 has 134,556 $ft^2$ of proposed impacts.

Utility Impacts: There will be no impacts to jurisdictional resources as a result of utility relocations.

**Table 1. Impacts to Wetlands within R-2719A**

| Permit Drawing Site Number | Wetland Classification within 2002 NRTR | Wetland Site ID 2004 LEDPA Meeting | Type | Permanent (ac.) | Hand Clearing (ac.) | Mitigation Required* |
|---|---|---|---|---|---|---|
| 7 | Headwater Swamp | C | riparian | 0.03 | <0.01 | Yes |
| 8 | Headwater Swamp | D | riparian | 2.67 | 0.20 | Yes |
| 9 | Wet Pine Flats /Pocosin | E | non-riparian | 2.93 | 0.31 | Yes |
| 10 | Wet Pine Flats /Pocosin | E | non-riparian | 1.96 | 0.18 | Yes |
| 11 | Wet Pine Flats /Pocosin | F | non-riparian | 1.39 | 0.14 | Yes |
| 12 | Wet Pine Flats /Pocosin | F | non-riparian | 0.95 | 0.10 | Yes |
| 13 | Wet Pine Flats /Pocosin | G | non-riparian | 0.76 | 0.09 | Yes |
| 14** | Wet Pine Flats /Pocosin | H | non-riparian | 0.94 | 0.04 | Yes |
| 15 | Wet Pine Flats /Pocosin | I | non-riparian | 0.06 | 0.01 | Yes |
| 16 | Wet Pine Flats /Pocosin | J | non-riparian | 0.36 | 0.08 | Yes |
| 18 | Wet Pine Flats /Pocosin | A | non-riparian | 0.00 | <0.01 | Yes |
| Total | | | | 12.05 | 1.15 | |

Notes: * Mitigation requirement for permanent impacts only. ** An additional 0.02 ac. of impacts added due to the total take.

**Summary of Mitigation**

The NCDOT has avoided and minimized impacts to jurisdictional resources to the greatest extent possible as described in the original application. The unavoidable impacts to; 12.05 ac of wetlands, 2,363 ft of streams, and 258,773 $ft^2$ of buffers will be offset by compensatory mitigation provided by onsite mitigation and other mitigation within the NCDOT debit ledger for this area. The following are the site names that are referred to in Tables 2-4 as well as the mitigation package that was attached to the original permit application: Banks School Road Site 1 and 2, Crescent Road Site, NEU-CON MBI – Casey King, and Jeffrey's Warehouse. Attached is revised mitigation information for the Cresent Road and Jeffrey's Warehouse sites. The revisions are due to wetland impact changes. Also, please note there were no changes to the buffer impacts nor the sources of buffer mitigation. However, there has been a change in the quantities being debited from the Cresent Road and Jeffrey's Warehouse sites. Please replace the original information for these sites in the mitigation packet with the revised attached information.

**Table 2. Summary of Wetland Mitigation for R-2719A**

| Site | Riverine Wetland Mitigation | | |
|---|---|---|---|
| | **Restoration (1:1)** | **Preservation (5:1)** | **Total Credits Proposed** |
| Banks School Road (Site 2) | 0.68 acre | n/a | 0.68 acre |
| Jeffrey's Warehouse | 2.02 acres | n/a | 2.02 acres |
| | **Non-Riverine Mitigation** | | |
| NEU-CONMBI-Casey King | 6.59 acres | n/a | 6.59 acres |
| Jeffrey's Warehouse | 2.76 acres | n/a | 2.76 acres |
| **Totals** | **12.05 acres** | n/a | **12.05 acres** |

**Table 3. Summary of Stream Mitigation for R-2719A**

| Site | Stream Mitigation (lf) (Ratio) | | |
|---|---|---|---|
| | **Restoration (1:1)** | **Preservation (5:1)** | **Total Credits Proposed** |
| Banks School Road (Site 1) | 2,077 ft | n/a | 2,077 ft |
| Banks School Road (Site 2) | 286 ft | n/a | 286 ft |
| **Totals** | **2,363 ft** | n/a | **2,363 ft** |

**Table 4. Summary of Buffer Mitigation for R-2719A**

| Site | Buffer Mitigation (sq. ft) | |
|---|---|---|
| | **Restoration** | **Total Credits Proposed** |
| Banks School Road (Site 1) | 165,963 | 165,963 |
| Banks School Road (Site 2) | 91,476 | 91,476 |
| Cresent Road Site | 200,376 | 200,376 |
| Jeffrey's Warehouse | 172,387 | 172,387 |
| **Totals** | **630,202** | **630,202** |

**Regulatory Approvals**

Section 404: Please incorporate these revisions into the previously submitted Individual Section 404 permit application.

Section 401: We are also requesting a Section 401 Water Quality Certification from the NCDWQ. In compliance with Section 143-215.3D(e) of the NCAC, we have provided $570.00 with the previous application to act as payment for processing the Section 401 permit. We are providing five (5) copies of this revision to the NCDWQ, for their review and approval.

Neuse Riparian Buffer Authorization: NCDOT requests that the NC Division of Water Quality review this application and issue a written approval for a Neuse Riparian Buffer Authorization.

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

If you have any questions or need additional information, please call Mr. Chris Manley, at 919-715-1487.

Sincerely,

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

**cc List:**

W/attachment

Mr. Brian Wrenn, NCDWQ (5 Copies)
Ms. Kathy Matthews, USEPA

W/o attachment (see website for attachments)

Dr. David Chang, P.E., Hydraulics
Mr. Greg Perfetti, P.E., Structure Design
Mr. Victor Barbour, P.E., Project Services Unit
Mr. Mark Staley, Roadside Environmental
Mr. C. E. Lassiter, P.E., Division 2 Engineer
Mr. Jay Johnson, Division 2 Environmental Officer
Mr. Scott McLendon, USACE, Wilmington
Mr. Gary Jordan, USFWS
Mr. Travis Wilson, NCWRC
Mr. Ron Sechler, NMFS
Ms. Anne Deaton, NCDMF
Mr. Jay Bennett, P.E., Roadway Design
Mr. Majed Alghandour, P. E., Programming and TIP
Mr. Art McMillan, P.E., Highway Design
Mr. Ted Devens, PE, Project Planning Engineer
Mr. Drew Joyner, PE, Human Environment Unit Head
Mr. Clarence W. Coleman, P.E., FHWA
Ms. LeiLani Paugh, NEU
Mr. Randy Griffin, NEU

## Cresent Road Site

The site is situated immediately south and adjacent to C.F.Harvey Road (Crescent Road) in the western portion of Lenoir County (Figure 1). It lies approximately 2 miles (3.2 kilometers) northeast of Kinston within HU 3020202. The Crescent Road Site was constructed as an on-site stream mitigation project in order to provide mitigation for stream impacts associated with the construction of R-2719BA.

The US Army Corps of Engineers (USACE) permit for R-2719BA dated June 12, 2001 states that the Crescent Road onsite mitigation site is to provide a minimum of 0.58 acres of riverine wetland restoration and 1,706 linear feet of stream restoration to offset unavoidable impacts imposed by the adjacent roadway project. According to the as-built drawings of the site, the site actually restored 3.71 acres of riverine wetland restoration, 2,291 linear feet of stream restoration, and 7.6 acres of Neuse River riparian buffer.

The fourth year of monitoring has been completed (Year 2007). Based on the overall monitoring assessment, the Crescent Road Site has met the required monitoring criteria. Based on information obtained from the US Geological Survey (USGS), the Crescent Road Site has already met the required monitoring protocols for hydrology as it relates to bankfull events. The NCDOT will continue stream monitoring at the Crescent Road Mitigation Site for 2008.

| Site name | HUC | River Basin | Division | County |
|---|---|---|---|---|
| Crescent Road | 3020202 | Neuse | 2 | Lenoir |

| Mitigation Type | As Built Quantity | Available | Debit | Debit |
|---|---|---|---|---|
| | | | R-2719 | R-2719A |
| Riverine Wetland Restoration | 3.35 | 2.77 | 0.58 | |
| Stream Restoration | 2,009 | 303 | 1,706 | |
| Buffer (S.F.) | 200,376 | 0 | | 200,376 |

## Jeffrey's Warehouse

The site is located adjacent to US 117 in Goldsboro (Figure 1) within HU 3020201. It was constructed to provide mitigation for stream impacts associated with TIP number R-1030AA in Wayne County. The mitigation project covers approximately 3,380 linear feet of channel length and 7.27 acres of Neuse River riparian buffer. Construction was completed during 2006 by the NCDOT.

Based on the overall monitoring assessment, the site has met the required monitoring criteria for the first year of monitoring and is stable at this time. There is evidence along the floodplain that the site has experienced several bankfull events since construction was completed in March 2006. The NCDOT will continue stream monitoring at the site in 2008.

| Site name | HUC | River Basin | Division | County |
|---|---|---|---|---|
| Jefferey's Warehouse (JALO) | 3020201 | Neuse | 4 | Wayne |

| Mitigation Type | As Built Quantity | Available | Debit | Debit | Debit | Debit | Debit |
|---|---|---|---|---|---|---|---|
| | | | B-3528 | B-4300 | R-2719A | B-4592 | B-4304 |
| Stream Restoration | 3,731 | 3,279 | 452(226@2:1) | | | | |
| Riverine Wetland Restoration | 3.66 | 0.72 | | | 2.02 | | 0.92 |
| Non-Riverine Wetland Restoration | 23.02 | 20.26 | | | 2.76 | | |
| Riverine Wetland Preservation | 12.36 | 12.36 | | | | | |
| Neuse Buffer Restoration (S.F.) | 689,607 | 381,517 | 75,577 | 40,075 | 172,387 | 16,398 | 3,653 |

## WETLAND PERMIT IMPACT SUMMARY

| | | | WETLAND IMPACTS | | | | | SURFACE WATER IMPACTS | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Site No. | Station (From/To) | Structure Size / Type | Permanent Fill In Wetlands (ac) | Temp. Fill In Wetlands (ac) | Excavation in Wetlands (ac) | Mechanized Clearing in Wetlands (ac) | Hand Clearing in Wetlands (ac) | Permanent SW impacts (ac) | Temp. SW impacts (ac) | Existing Channel Impacts Permanent (ft) | Existing Channel Impacts Temp. (ft) | Natural Stream Design (ft) |
| 1 | -Y1- 74+43 | 3@12'x10' RCBC | | | | | | 0.10 | 0.05 | 499 | 208 | |
| 2 | -Y1RPCA- 16+14 | 3@12'X10' RCBC | | | | | | 0.18 | 0.07 | 619 | 245 | |
| 3 | -L- 69+50 | 60" RCP | | | | | | 0.01 | < 0.01 | 158 | 18 | |
| 4 | -Y1RPCA- 9+20 | 60" RCP | | | | | | 0.01 | < 0.01 | 119 | 18 | |
| 5A | -SVRD5- 21+90 | 2@60" RCP | | | | | | 0.02 | 0.01 | 50 | 18 | |
| 5B | -L- 87+80 LT | TEMP 2@36" CSP | | | | | | 0.02 | < 0.01 | 21 | 61 | |
| 6* | -L- 103+73 | 36" RCP | | | | | | 0.03 | 0.01 | 286 | 36 | 286* |
| 7 | -L- 108+40 TO 109+40 | Roadway Fill | 0.03 | | | | <0.01 | | | | | |
| 8 | -L- 113+26 TO 119+26 | Roadway Fill | 2.67 | | | | 0.20 | | | | | |
| 9 | -L- 119+50 TO 127+61 | Roadway Fill | 2.93 | | | | 0.31 | | | | | |
| 10 | -L- 127+61 TO 133+27 | Roadway Fill | 1.96 | | | | 0.18 | | | | | |
| 11 | -L- 135+50 TO 140+70 | 2@9'X8' RCBC | 1.36 | | 0.03 | | 0.14 | 0.03 | 0.03 | 237 | 182 | |
| 12 | -L- 150+80 TO 154+00 | 2@8'X8' RCBC | 0.94 | | 0.01 | | 0.10 | 0.02 | 0.02 | 188 | 155 | |
| 13 | -L- 154+80 TO 158+90 | Roadway Fill | 0.73 | | 0.03 | | 0.09 | | | | | |
| 14** | -L- 203+39 TO 206+22 | Roadway Fill | 0.89 | | 0.01 | 0.02 | 0.04 | | | | | |
| 15 | -L- 241+20 TO 241+90 | Roadway Fill | 0.06 | | | | 0.01 | | | | | |
| 16 | -L- 249+10 TO 253+80 | Roadway Fill | 0.36 | | | | 0.08 | | | | | |
| 17 | -Y6- 33+75 | TEMP 48" CSP | | | | | | | 0.02 | | 109 | |
| 18 | -Y1- 18+30 | EXISTING BRIDGE | | | | | <0.01 | | | | | |
| 19* | -Y1- 38+22 | 2@9'X6' RCBC | | | | | | 0.04 | 0.04 | 186 | 177 | |
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |
| TOTALS: | | | 11.93 | 0.00 | 0.08 | 0.02 | 1.15 | 0.46 | 0.25 | 2363 | 1227 | 286 |

* SEE MITIGATION PLANS

** The wetland impact to site 14 aong right side should be considered as a "total take", and the additional impact area is 0.02 acre.
Therefore, the total wetland impact = (0.89+0.01+0.02+0.04)+0.02 = 0.98 acre

Site 5B - Temporary impacts/pipes due to need for Construction Access

0.35 acres of Temporary Fill In Wetlands in the Hand Clearing areas for erosion control measures.

Permit Drawing
Sheet 5 of 66

NC DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

LENOIR COUNTY
PROJECT: 34501.1.1 (R-2719A)

SHEET June-08

ATN Revised 3/31/05

8/17/99

REVISIONS

GRAPHIC SCALE
50 25 0 50 100
PLANS

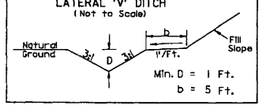
Prepared by
URS
URS Corporation - North Carolina
1600 Perimeter Park Drive
Morrisville, North Carolina 27560
TELEPHONE (919) 461-1100 FAX (919) 461-1415

| PROJECT REFERENCE NO. | SHEET NO. |
|---|---|
| R-2719A | 2-L |
| R/W SHEET NO. 2-L | |
| ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER |

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

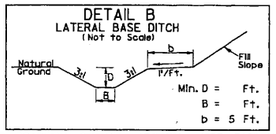
Permit Drawing
Sheet 7 of 66

## DETAIL A
LATERAL 'V' DITCH
(Not to Scale)



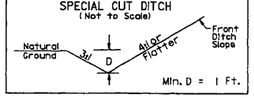

| SHEET | ROADWAY | STATION - STATION | SIDE |
|---|---|---|---|
| 4 | -Y1LPC- | 9+00 - 10+87 | RT |
| 4 | -Y1LPC- | 10+87 - 14+34 | RT |
| 4,5 | -Y1- | 71+00 - 74+00 | RT |
| 5 | -Y1RPCA- | 30+70 - 32+70 | RT |
| 6 | -Y1RPCA- | 2+00 - 4+00 | LT |
| 11 | -L- | 141+65 - 144+00 | RT |
| 12 | -L- | 154+10 - 155+77 | RT |
| 16 | -L- | 203+00 - 204+60 | RT |
| 18,19 | -Y24RPB- | 8+50 - 10+20 | RT |
| 19 | -Y24RPB- | 16+05 - 17+50 | RT |
| 19 | -Y24LPC- | 3+87 - 11+75 | LT |
| 25,26 | -Y1- | 46+50 - 48+90 | LT |
| 27 | -Y1- | 98+60 - 99+60 | RT |

## DETAIL B
LATERAL BASE DITCH
(Not to Scale)




| SHEET | ROADWAY | STATION - STATION | SIDE | BASE | MIN. D |
|---|---|---|---|---|---|
| 4 | -Y1- | 59+20 - 60+10 | RT | 2' | 1' |
| 4 | -Y1- | 60+10 - 63+30 | RT | 5' | 2.9' |
| 4 | -Y1RPB- | 21+20 - 22+90 | RT | 2' | 1' |
| 4,26 | -Y1- | 48+00 - 60+10 | RT | 2' | 1.6' |
| 5 | -Y1RPA- | 9+50 - 15+80 | LT | 2' | 1' |
| 5,27 | -Y1- | 84+80 - 88+00 | LT | 2' | 1' |
| 7,8 | -L- | 87+80 - 99+00 | LT | 4' | 1' |
| 11 | -L- | 138+77 - 141+21 | RT | 4' | 1' |
| 12 | -L- | 153+46 - 155+50 | LT | 4' | 1' |
| 16,17 | -L- | 211+50 - 214+00 | RT | 2' | 1' |
| 17 | -L- | 218+00 - 222+50 | RT | 2' | 1' |
| 17 | -L- | 220+50 - 222+70 | RT | 4' | 1' |
| 18 | -L- | 233+50 - 235+50 | LT | 4' | 2.5' |
| 18 | -L- | 235+50 - 237+10 | RT | 2' | 1' |
| 18,19 | -L- | 237+10 - 241+50 | RT | 4' | 2' |
| 19 | -L- | 241+50 - 243+00 | RT | 2' | 1.5' |
| 19 | -Y24LPB- | 8+90 - 10+74 | RT | 2' | 2' |
| 19,20 | -L- | 251+15 - 253+50 | RT | 2' | 1' |
| 25 | -Y1- | 37+90 - 39+90 | LT | 5' | 1.7' |
| 25 | -Y1- | 39+90 - 46+50 | LT | 2' | 1.6' |

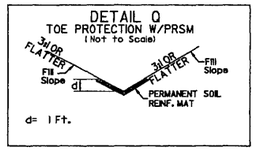
## DETAIL C
SPECIAL CUT DITCH
(Not to Scale)




| SHEET | ROADWAY | STATION - STATION | SIDE |
|---|---|---|---|
| 9 | -SVRD1- | 13+00 - 14+00 | LT |
| 9 | -SVRD1- | 10+20 - 10+50 | LT |
| 9 | -SVRD1- | 10+20 - 10+50 | RT |
| 14,15 | -SVRD4- | 15+00 - 18+65 | LT |
| 14,15 | -SVRD4- | 15+00 - 19+35 | RT |
| 15 | -SVRD3- | 36+50 - 37+00 | RT |
| 15 | -SVRD3- | 44+50 - 45+18 | LT |
| 15 | -SVRD3- | 45+00 - 45+66 | RT |
| 15 | -L- | 190+00 - 199+50 | RT |
| 15 | -L- | 190+00 - 199+50 | LT |
| 15 | -SVRD4- | 11+50 - 13+50 | LT |
| 16 | -Y5- | 13+50 - 15+00 | LT |
| 17,18 | -L- | 222+70 - 228+00 | RT |
| 18 | -Y24RPC- | 0+90 - 10+00 | RT |
| 18 | -Y24RPC- | 10+00 - 13+75 | RT |
| 19 | -Y24RPC- | 18+50 - 21+00 | RT |
| 19 | -Y24- | 22+50 - 25+35 | RT |

| SHEET | ROADWAY | STATION - STATION | SIDE |
|---|---|---|---|
| 19 | -SVRD2- | 13+00 - 14+00 | LT |
| 19 | -Y24RPB- | 17+50 - 18+50 | LT |
| 21 | -Y6- | 33+93 - 34+00 | RT |
| 21 | -Y6- | 33+85 - 34+00 | LT |
| 21 | -D1- | 10+00 - 11+00 | LT |
| 21,22 | -D1- | 10+00 - 12+00 | RT |
| 23 | -Y10- | 11+00 - 12+17 | RT |
| 23 | -Y1- | 21+20 - 24+50 | LT |
| 24 | -Y1- | 31+00 - 31+80 | LT |
| 27 | -Y9- | 11+50 - 14+90 | LT |
| 28 | -Y1- | 105+00 - 110+50 | LT |
| 33 | -Y9- | 11+50 - 13+00 | RT |
| 33 | -Y9- | 11+50 - 14+90 | LT |
| 34 | -Y8- | 14+85 - 15+30 | RT |
| 34 | -Y8- | 15+50 - 24+47 | LT |
| 34 | -Y8- | 17+50 - 24+47 | RT |
| 34 | -Y9- | 26+50 - 30+65 | LT |
| 34 | -Y9- | 25+50 - 31+90 | RT |

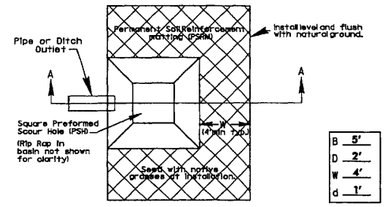
## DETAIL Q
TOE PROTECTION W/PRSM
(Not to Scale)



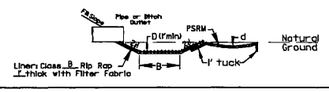

| SHEET | RDWY | STATION - STATION | SIDE |
|---|---|---|---|
| 6 | -L- | 73+90 - 78+00 | MED |
| 19 | -L- | 242+72 - 244+66 | LT |
| 19 | -L- | 243+15 - 244+75 | RT |

## DETAIL M
PREFORMED SCOUR HOLE

PLAN VIEW



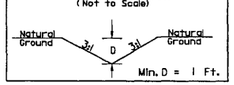

SECTION A-A




4/4/02

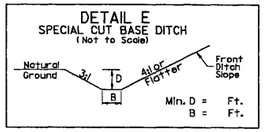
| SHEET | ROADWAY | STATION | SIDE |
|---|---|---|---|
| 4 | -Y1LPC- | 5+00 | RT |
| 4 | -Y1LPC- | 8+00 | RT |
| 4 | -Y1RPCA- | 35+00 | RT |
| 5 | -Y1RPCA- | 11+50 | RT |
| 5 | -Y1RPCA- | 22+65 | RT |
| 8 | -L- | 107+00 | RT |
| 10 | -L- | 119+00 | RT |
| 11 | -L- | 143+00 | LT |
| 19 | -L- | 246+00 | LT |
| 19 | -L- | 246+00 | RT |
| 19 | -Y24LPB- | 6+00 | RT |
| 20 | -Y1- | 17+10 | RT |
| 20 | -L- | 255+00 | LT |
| 23 | -L- | 258+50 | LT |

## DETAIL D
STANDARD 'V' DITCH
(Not to Scale)



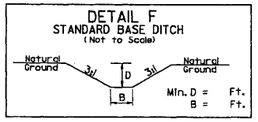

| SHEET | ROADWAY | STATION | SIDE |
|---|---|---|---|
| 5 | -Y1- | 85+00 | LT |
| 7 | -SVRD5- | 26+50 | RT |
| 9 | -Y3- | 20+50 | LT |
| 13 | -SVRD3- | 21+60 | LT |
| 14 | -SVRD4- | 18+50 | LT |
| 15 | -SVRD4- | 15+80 | LT |
| 16 | -Y5- | 13+00 | RT |
| 24 | -Y1- | 24+70 | RT |

## DETAIL E
SPECIAL CUT BASE DITCH
(Not to Scale)



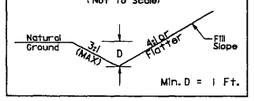

| SHEET | ROADWAY | STATION TO STATION | SIDE | BASE | MIN. D |
|---|---|---|---|---|---|
| 14 | -SVRD4- | 18+65 - 19+38 | RT | 2' | 1' |
| 25, 26 | -Y1RPCA- | 55+75 - 67+25 | LT | 4' | 1.4' |
| 28 | -Y1- | 110+50 - 112+40 | LT | 2' | 1' |
| 28,29 | -Y1- | 112+40 - 118+00 | LT | 2' | 1.8' |

## DETAIL F
STANDARD BASE DITCH
(Not to Scale)



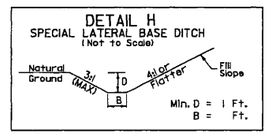

| SHEET | ROADWAY | STATION | SIDE | BASE | MIN. D |
|---|---|---|---|---|---|
| 5 | -Y1RPCA- | 20+70 | RT | 2' | 1' |
| 14 | -SVRD3- | 32+45 | RT | 2' | 1' |
| 17 | -L- | 222+70 | RT | 2' | 1' |
| 18 | -L- | 232+12 | LT | 4' | 2' |
| 18 | -L- | 233+50 | LT | 6' | 2.5' |
| 18 | -Y24RPB- | 8+00 | LT | 2' | 2' |
| 18 | -Y24RPC- | 9+60 | LT | 2' | 2' |
| 18 | -Y24RPC- | 5+12 | RT | 5' | 1' |
| 18 | -Y24RPC- | 10+00 | RT | 7' | 1' |
| 19 | -Y24- | 21+80 | LT | 2' | 2' |
| 19 | -Y24- | 36+75 | RT | 2' | 1' |
| 19 | -Y24RPB- | 15+85 | LT | 4' | 1' |
| 28 | -Y1- | 106+30 - 109+60 | RT | 2' | 1' |
| 33 | -Y9- | 11+50 | RT | 2' | 1' |
| 4, 26 | -Y1- | 59+00 | RT | 3' | 1' |

## DETAIL G
SPECIAL LATERAL 'V' DITCH
(Not to Scale)




| SHEET | ROADWAY | STATION - STATION | SIDE |
|---|---|---|---|
| 18 | -L- | 234+50 - 235+50 | RT |
| 18 | -Y24RPC- | 2+80 - 8+00 | RT |
| 19 | -Y24RPC- | 14+20 - 16+50 | LT |
| 19 | -Y24RPC- | 16+00 - 18+50 | RT |
| 23 | -Y1- | 20+30 - 22+00 | RT |

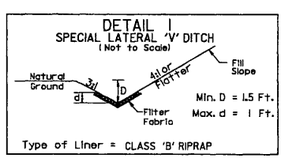
## DETAIL H
SPECIAL LATERAL BASE DITCH
(Not to Scale)




| SHEET | ROADWAY | STATION - STATION | SIDE | BASE | MIN. D |
|---|---|---|---|---|---|
| 19 | -Y24RPC- | 14+85 - 16+00 | RT | 2' | 1' |
| 19 | -Y24- | 20+40 - 24+00 | LT | 2' | 2' |
| 21 | -Y6- | 32+50 - 33+80 | RT | 4' | 1.5' |
| 34 | -Y9- | 30+65 - 32+50 | LT | 2' | 1' |

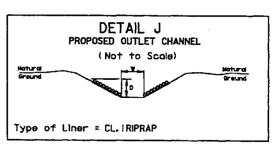
MIN. D = 1.5'

## DETAIL I
SPECIAL LATERAL 'V' DITCH
(Not to Scale)



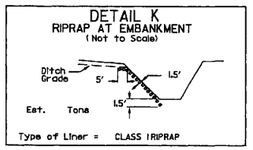

| SHEET | ROADWAY | STATION - STATION | SIDE |
|---|---|---|---|
| 21 | -Y6- | 33+14 - 33+75 | LT |

## DETAIL J
PROPOSED OUTLET CHANNEL
(Not to Scale)



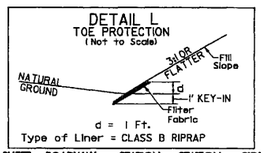

| SHEET | ROADWAY | STATION | SIDE | W | D |
|---|---|---|---|---|---|
| 4 | -L- | 69+50 | RT | 5' | 4' |
| 5 | -Y1RPCA- | 9+40 | LT | 5' | 4' |
| 7 | -SVRD5- | 21+90 | LT | 10' | 4' |
| 8 | -L- | 101+80 | LT | 8' | 5' |
| 24 | -Y1- | 31+50 | RT | 5' | 5.5' |

## DETAIL K
RIPRAP AT EMBANKMENT
(Not to Scale)



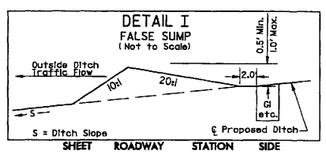

| SHEET | ROADWAY | STATION | SIDE |
|---|---|---|---|
| 18 | -Y24RPB- | 4+50 | LT |
| 19 | -L- | 241+50 | RT |
| 21 | -Y6- | 33+85 | LT |
| 21 | -Y6- | 33+93 | RT |

## DETAIL L
TOE PROTECTION
(Not to Scale)



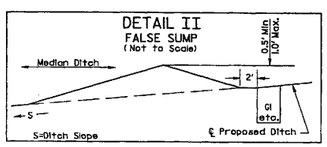

| SHEET | ROADWAY | STATION - STATION | SIDE |
|---|---|---|---|
| 4,26 | -Y1RPCA- | 43+00 - 55+50 | LT |
| 8 | -L- | 101+94 - 109+00 | LT |
| 10 | -L- | 119+80 - 125+00 | LT |
| 10 | -L- | 130+00 - 131+00 | LT |
| 11 | -L- | 131+00 - 133+25 | LT |
| 11 | -L- | 137+75 - 140+20 | LT |
| 12 | -L- | 151+00 - 153+65 | RT |
| 17 | -L- | 216+50 - 218+00 | RT |

## DETAIL I
FALSE SUMP
(Not to Scale)



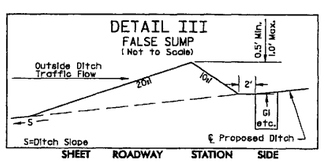

| SHEET | ROADWAY | STATION | SIDE |
|---|---|---|---|
| 11 | -L- | 144+00 | LT |
| 13 | -L- | 158+80 | LT |
| 13 | -L- | 161+80 | LT |
| 13 | -L- | 164+80 | LT |
| 13 | -L- | 168+30 | LT |
| 14 | -L- | 172+00 | LT |
| 17 | -L- | 222+90 | RT |

## DETAIL II
FALSE SUMP
(Not to Scale)



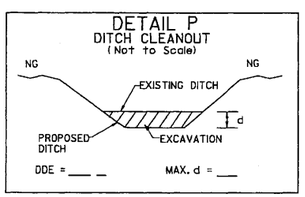

| SHEET | ROADWAY | STATION | SIDE |
|---|---|---|---|
| 7 | -L- | 94+00 | MED |
| 8 | -L- | 101+50 | MED |
| 8 | -L- | 107+00 | MED |
| 10 | -L- | 119+00 | MED |
| 10 | -L- | 123+00 | MED |
| 11 | -L- | 144+00 | MED |
| 13 | -L- | 158+80 | MED |
| 13 | -L- | 161+80 | MED |
| 13 | -L- | 164+80 | MED |
| 13 | -L- | 168+30 | MED |
| 14 | -L- | 172+00 | MED |
| 14 | -L- | 175+00 | MED |
| 16 | -L- | 202+80 | MED |
| 17 | -L- | 220+50 | MED |
| 18 | -L- | 227+03 | MED |
| 18 | -L- | 238+00 | MED |
| 20 | -L- | 258+50 | MED |
| 23 | -Y1- | 15+60 | MED |
| 27 | -Y1- | 90+80 | MED |
| 28 | -Y1- | 105+00 | MED |

## DETAIL III
FALSE SUMP
(Not to Scale)



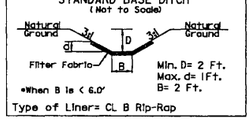

| SHEET | ROADWAY | STATION | SIDE |
|---|---|---|---|
| 13 | -L- | 164+80 | RT |
| 14 | -L- | 172+00 | RT |
| 18 | -Y24RPC- | 9+60 | RT |

## DETAIL P
DITCH CLEANOUT
(Not to Scale)




| SHEET | ROADWAY | STATION - STATION | SIDE | MAX. d | DDE (CY) |
|---|---|---|---|---|---|
| 29 | -Y1- | 118+00 - 120+70 | LT | 1' | 50 |
| 4 | -Y1- | 63+30 - 63+80 | RT | 2.7' | 36 |
| 4 | -Y1- | 64+60 - 67+40 | RT | 2.7' | 160 |
| 4, 5 | -Y1- | 70+60 - 73+40 | RT | 2.4' | 140 |
| 15 | -L- | 194+40 - 196+10 | RT | 2' | 100 |
| 18 | -L- | 227+30 - 227+90 | LT | 3' | 120 |
| 18 | -L- | 227+90 - 231+10 | LT | 2.1' | 90 |

## DETAIL R
STANDARD BASE DITCH
(Not to Scale)




| SHEET | ROADWAY | STATION | SIDE |
|---|---|---|---|
| 18 | -L- | 226+75 | RT |

5/27/2008
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RS & Associates, P.C.

MILLED RUMBLE STRIPS SHALL BE PLACED ON -L- ACCORDING TO NCDOT STANDARD DRAWING No.665.01

NOTE: FOR -L- PROFILE, SEE SHEET 39
FOR -SVRDI- PROFILE, SEE SHEET 62
SEE SHEET 2-L FOR DRAINAGE DITCH DETAILS

GRAPHIC SCALE
50 25 0 50 100
PLANS

Prepared by
URS
URS Corporation - North Carolina
1600 Perimeter Park Drive
Morrisville, North Carolina 27560
TELEPHONE (919) 461-1100 FAX (919) 461-1415

| PROJECT REFERENCE NO. | SHEET NO. |
|---|---|
| R-2719A | 9 |
| R/W SHEET NO. | 9 |
| ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER |

Permit Drawing
Sheet 24 of 66

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

ENGLISH

## SKETCH SHOWING ROADWAY APPROACHING BRIDGE

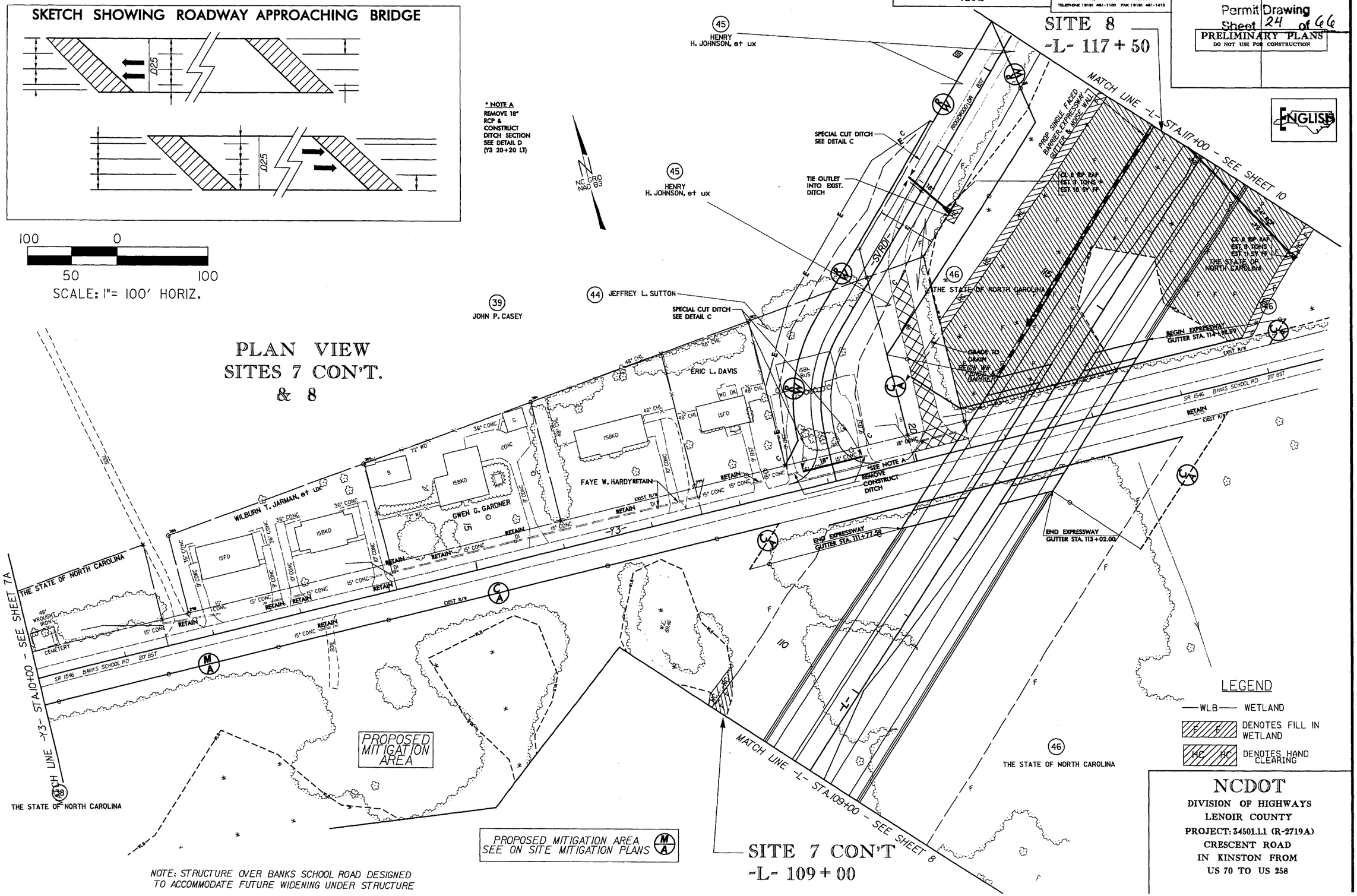



100 0
50 100
SCALE: 1"= 100' HORIZ.

* NOTE A
REMOVE 18" RCP & CONSTRUCT DITCH SECTION SEE DETAIL D (Y3 20+20 LT)

NC GRID NAD 83

# PLAN VIEW
# SITES 7 CON'T. & 8




NOTE: STRUCTURE OVER BANKS SCHOOL ROAD DESIGNED TO ACCOMMODATE FUTURE WIDENING UNDER STRUCTURE

LEGEND
—WLB— WETLAND
F F DENOTES FILL IN WETLAND
HC HC DENOTES HAND CLEARING

NCDOT
DIVISION OF HIGHWAYS
LENOIR COUNTY
PROJECT: 34501.1.1 (R-2719A)
CRESCENT ROAD
IN KINSTON FROM
US 70 TO US 258

REVISIONS
3/3/06 - REVISED PARCEL NUMBER IN LOWER RIGHT CORNER OF SHEET FROM 46 TO 38
3/22/06 - REVISED RIGHT OF WAY ON PARCEL 45 PER RIGHT OF WAY REQUEST TO ELIMINATE REMNANT
- ADDED MATCHLINE TO SHEET 7A AND ADDED MITIGATION AREA BOUNDARY

8/17/99
6/27/2008
R:\Hydraulics\Permits_2008_05_30 (Updates)\r-2719a_hyd_prm_wet_09.dgn
Kp & Associates, P.C.

MILLED RUMBLE STRIPS SHALL BE PLACED ON -L- ACCORDING TO NCDOT STANDARD DRAWING No.665.01

NOTE: FOR -L- PROFILE, SEE SHEET 39
FOR -SVRDI- PROFILE, SEE SHEET 62
SEE SHEET 2-L FOR DRAINAGE DITCH DETAILS

GRAPHIC SCALE
50 25 0 50 100
PLANS


Prepared by
URS
URS Corporation - North Carolina
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Morrisville, North Carolina 27560
TELEPHONE (919) 461-1100 FAX (919) 461-1415


| PROJECT REFERENCE NO. | SHEET NO. |
|---|---|
| R-2719A | 9 |
| R/W SHEET NO. | 9 |
| ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER |

Permit Drawing
Sheet 25 of 66

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

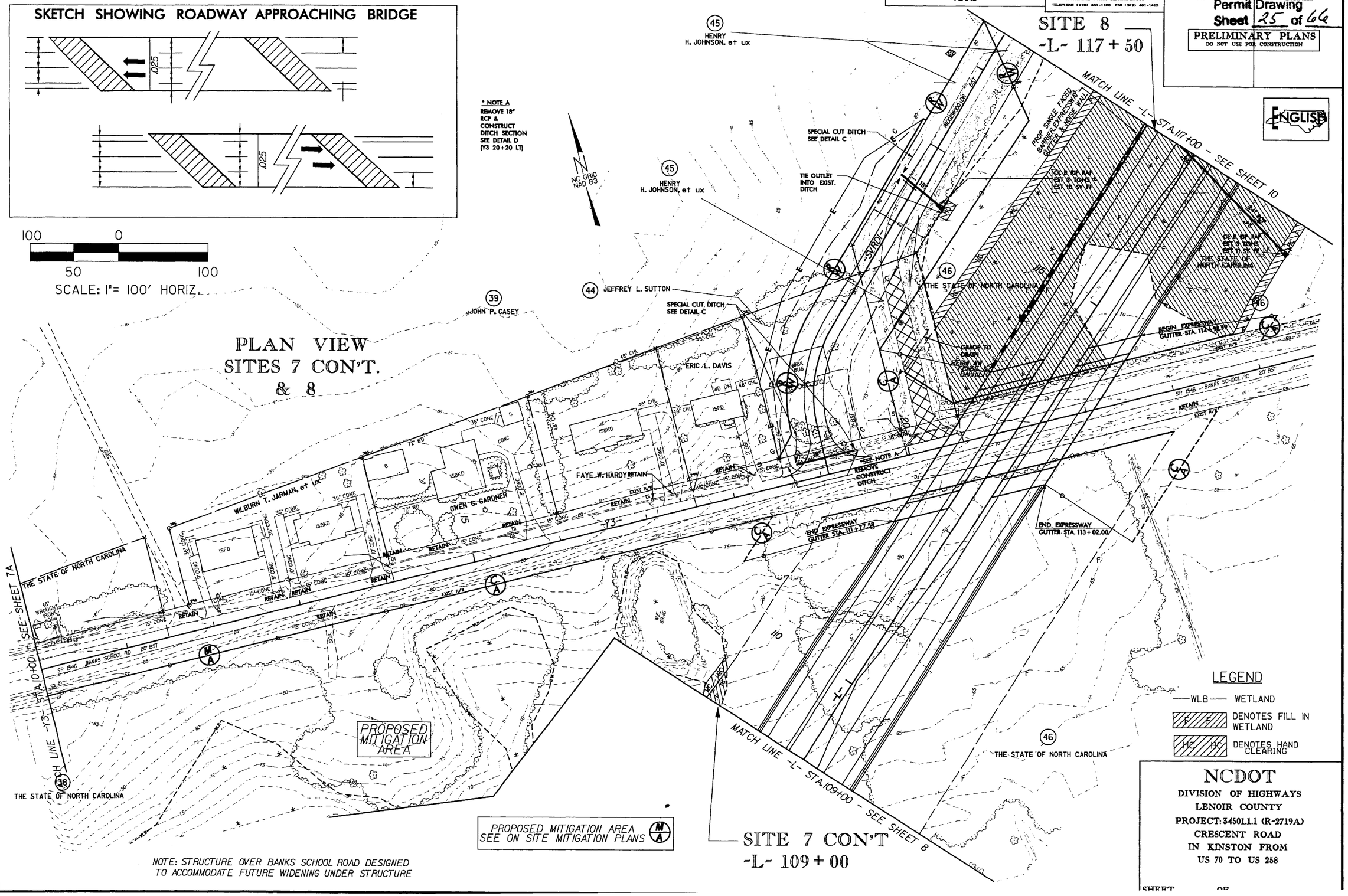
ENGLISH

## SKETCH SHOWING ROADWAY APPROACHING BRIDGE




100 0
50 100
SCALE: 1"= 100' HORIZ.

# PLAN VIEW
# SITES 7 CON'T. & 8




## LEGEND

| | |
|---|---|
| —WLB— | WETLAND |
| F F | DENOTES FILL IN WETLAND |
| HC HC | DENOTES HAND CLEARING |

# NCDOT
DIVISION OF HIGHWAYS
LENOIR COUNTY
PROJECT: 34501.1.1 (R-2719A)
CRESCENT ROAD
IN KINSTON FROM
US 70 TO US 258

SHEET OF

REVISIONS
32306 - REVISED PARCEL NUMBER IN LOWER RIGHT CORNER OF SHEET FROM 46 TO 38
32206 - REVISED RIGHT OF WAY ON PARCEL 45 PER RIGHT OF WAY REQUEST TO ELIMINATE REMNANT
— - ADDED MATCHLINE TO SHEET 7A AND ADDED MITIGATION AREA BOUNDARY

8/17/99

6/27/2008
R:\Hydraulics\Permits_2008_05_30 (Updates)\r-2719a_hyd_prm_wet_09.dgn
K.R. Associates, P.C.

NOTE: FOR -L- PROFILE, SEE SHEET 40
SEE SHEET 2-L FOR DRAINAGE DITCH DETAILS
MILLED RUMBLE STRIPS SHALL BE PLACED ON -L- ACCORDING TO NCDOT STANDARD DRAWING No.665.01

GRAPHIC SCALE
50 25 0 50 100
PLANS

Prepared by
URS
URS Corporation - North Carolina
1600 Perimeter Park Drive
Morrisville, North Carolina 27560
TELEPHONE (919) 461-1100 FAX (919) 461-1415

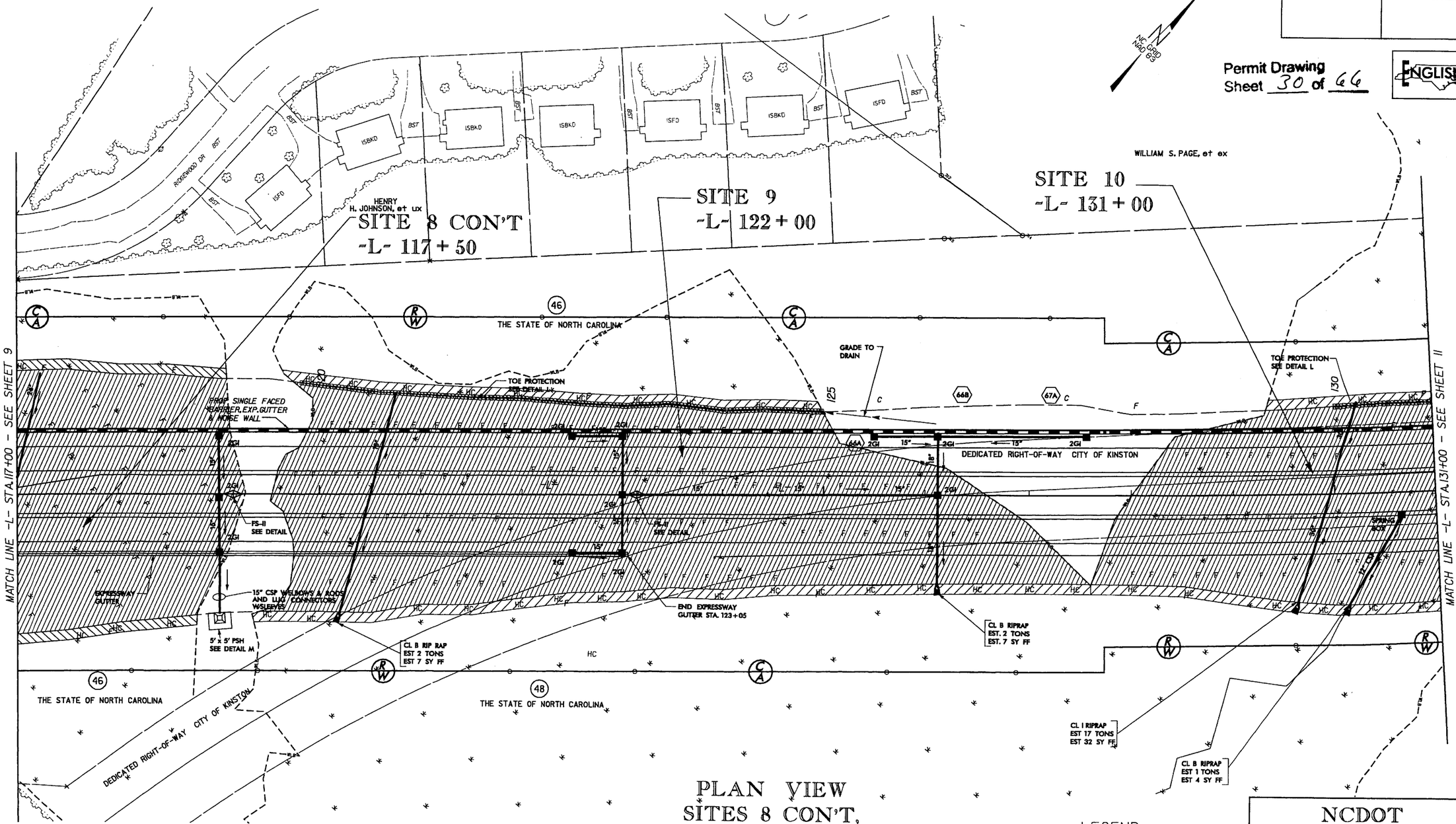
| PROJECT REFERENCE NO. | SHEET NO. |
|---|---|
| R-2719A | 10 |
| R/W SHEET NO. | 10 |
| ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER |

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

NC GRID NAD 83

Permit Drawing
Sheet 30 of 66

ENGLISH




PLAN VIEW
SITES 8 CON'T,
9 & 10

100 0
50 100
SCALE: 1"= 100' HORIZ.

LEGEND

—WLB— WETLAND

F F DENOTES FILL IN WETLAND

HC HC DENOTES HAND CLEARING

NCDOT
DIVISION OF HIGHWAYS
LENOIR COUNTY
PROJECT: 34501.1.1 (R-2719A)
CRESCENT ROAD
IN KINSTON FROM
US 70 TO US 258

8/17/99

8/27/2008
R:\Hydraulics\Permits_2008_05_30 (Updates)\r-2719a_hyd_prm_wet_10.dgn
Kimley-Horn & Associates, Inc.

NOTE: FOR -L- PROFILE, SEE SHEET 40
SEE SHEET 2-L FOR DRAINAGE DITCH DETAILS
MILLED RUMBLE STRIPS SHALL BE PLACED ON -L- ACCORDING TO NCDOT STANDARD DRAWING No.665.01

GRAPHIC SCALE
50 25 0 50 100
PLANS

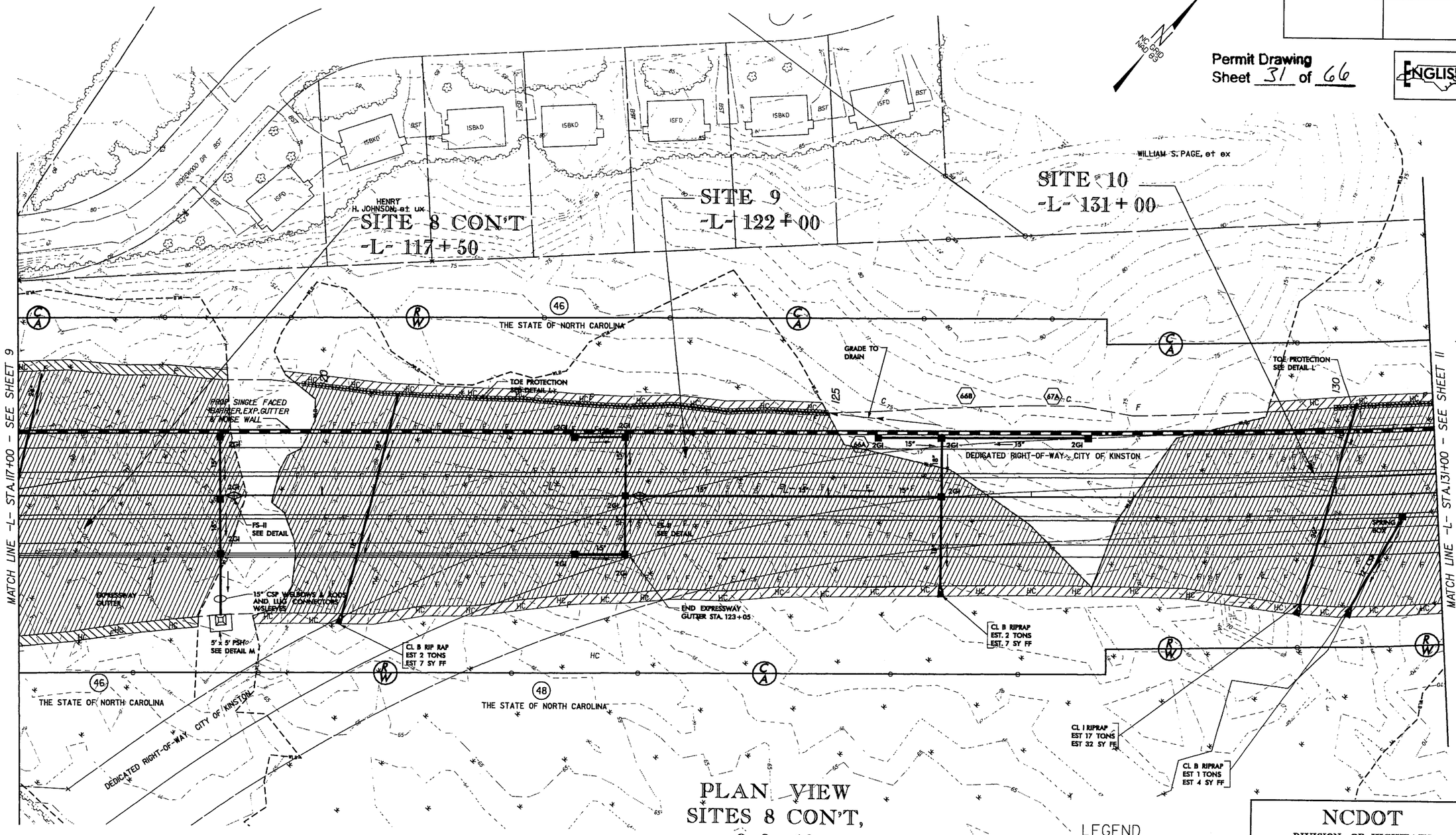
Prepared by
URS
URS Corporation - North Carolina
1600 Perimeter Park Drive
Morrisville, North Carolina 27560
TELEPHONE (919) 461-1100 FAX (919) 461-1415

| PROJECT REFERENCE NO. | SHEET NO. |
|---|---|
| R-2719A | 10 |
| R/W SHEET NO. | 10 |
| ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER |

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

Permit Drawing
Sheet 31 of 66

ENGLISH




PLAN VIEW
SITES 8 CON'T, 9 & 10

100 0 50 100
SCALE: 1"= 100' HORIZ.

LEGEND
—WLB— WETLAND
F F DENOTES FILL IN WETLAND
HC HC DENOTES HAND CLEARING

NCDOT
DIVISION OF HIGHWAYS
LENOIR COUNTY
PROJECT: 34501.1.1 (R-2719A)
CRESCENT ROAD
IN KINSTON FROM
US 70 TO US 258

8/17/99

6/27/2008
R:\Hydraulics\Permits_2008_05_30 (Updates)\r-2719a_hyd_prm_wet_10.dgn
KG & Associates P.C.

8/17/99

NOTE: FOR -L- PROFILE, SEE SHEET 43
SEE SHEET 2-L FOR DRAINAGE DITCH DETAILS
MILLED RUMBLE STRIPS SHALL BE PLACED ON -L-
ACCORDING TO NCDOT STANDARD DRAWING No. 665.01

GRAPHIC SCALE
50 25 0 50 100
PLANS

Prepared by
URS
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Morrisville, North Carolina 27560
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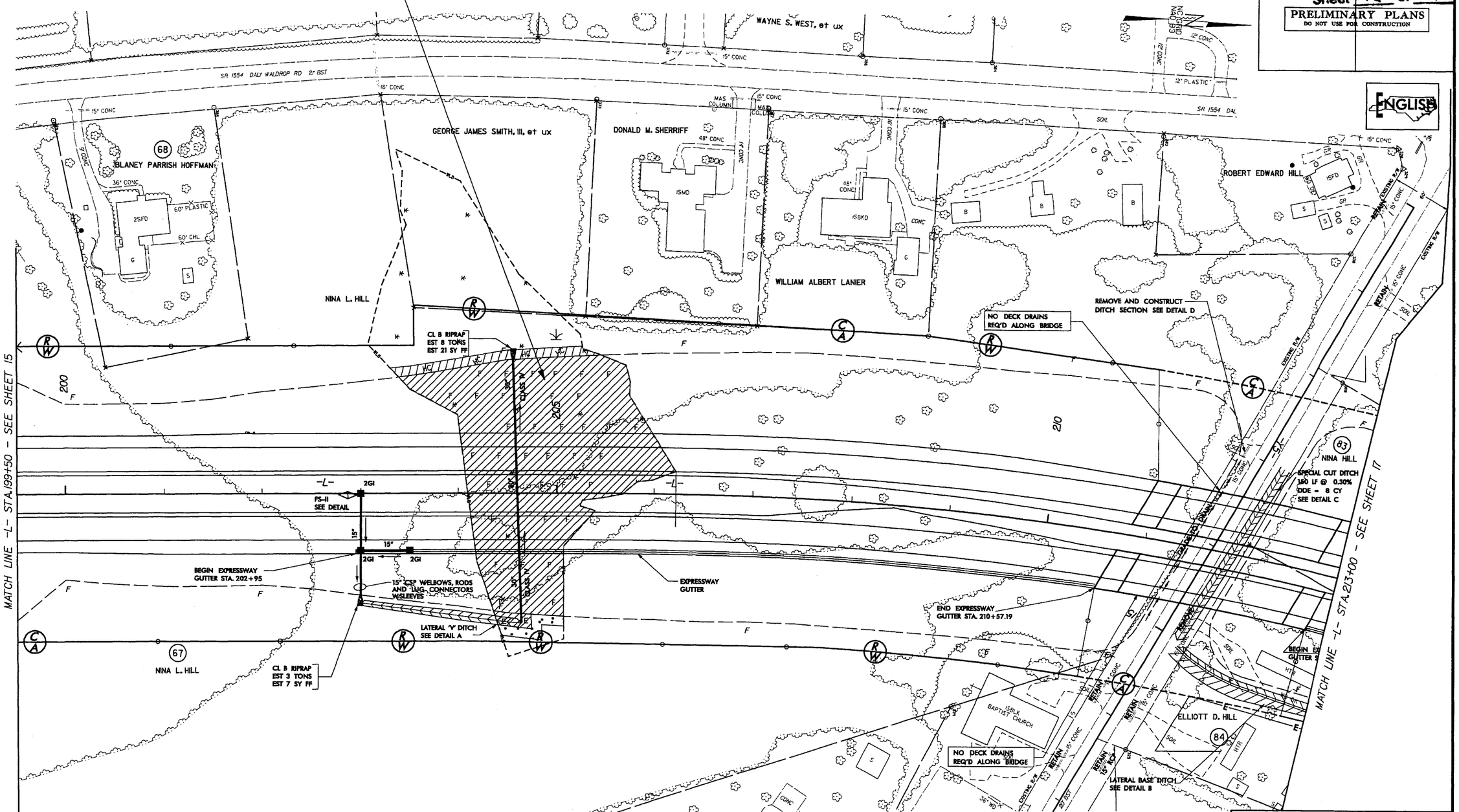
| PROJECT REFERENCE NO. | SHEET NO. |
|---|---|
| R-2719A | 16 |
| R/W SHEET NO. | 16 |
| ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER |

Permit Drawing
Sheet 46 of 66

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

ENGLISH




100 0 50 100
SCALE: 1"= 100' HORIZ.

PLAN VIEW
SITE 14

LEGEND

| | |
|---|---|
| DENOTES EXCAVATION IN WETLAND | WLB WETLAND |
| DENOTES HAND CLEARING | DENOTES FILL IN WETLAND |
| | DENOTES MECHANIZED CLEARING |

NCDOT
DIVISION OF HIGHWAYS
LENOIR COUNTY
PROJECT: 34501.1.1 (R-2719A)
CRESCENT ROAD
IN KINSTON FROM
US 70 TO US 258

SHEET OF

8/27/2008
R:\Hydraulics\Permits_2008_05_30 (Updates)\r-2719a_hyd_prm_wet_16.dgn

8/17/99

NOTE: FOR -L- PROFILE, SEE SHEET 43
SEE SHEET 2-L FOR DRAINAGE DITCH DETAILS
MILLED RUMBLE STRIPS SHALL BE PLACED ON -L-
ACCORDING TO NCDOT STANDARD DRAWING No. 665.01

GRAPHIC SCALE
50 25 0 50 100
PLANS

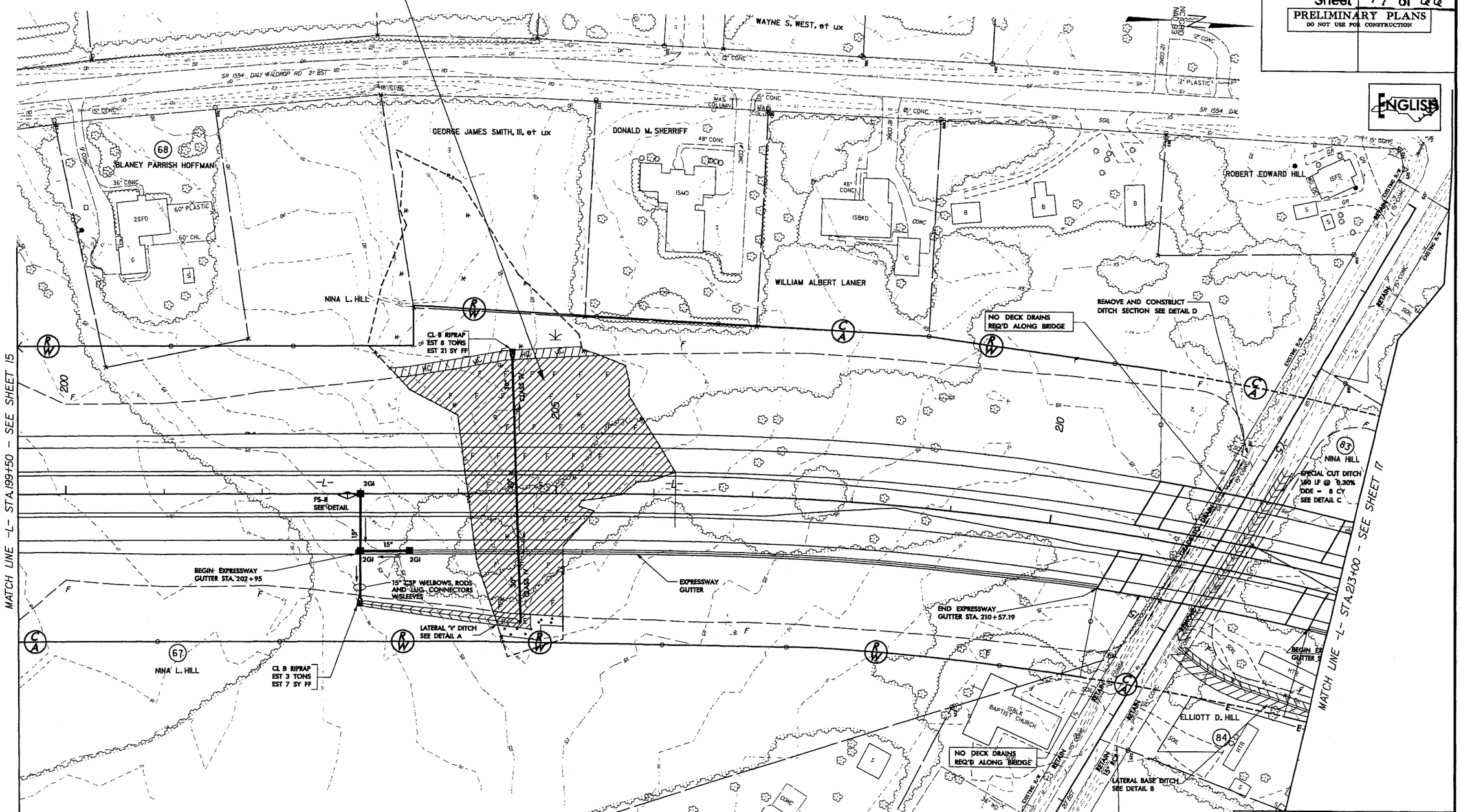
Prepared by
URS
URS Corporation - North Carolina
1600 Perimeter Park Drive
Morrisville, North Carolina 27560
TELEPHONE (919) 461-1100 FAX (919) 461-1415

| PROJECT REFERENCE NO. | SHEET NO. |
|---|---|
| R-2719A | 16 |
| R/W SHEET NO. | 16 |
| ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER |

Permit Drawing
Sheet 47 of 66

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

ENGLISH




100 0
50 100
SCALE: 1"= 100' HORIZ.

PLAN VIEW
SITE 14

LEGEND

| | |
|---|---|
| E E | DENOTES EXCAVATION IN WETLAND |
| HC HC | DENOTES HAND CLEARING |
| —WLB— | WETLAND |
| F F | DENOTES FILL IN WETLAND |
| | DENOTES MECHANIZED CLEARING |

NCDOT
DIVISION OF HIGHWAYS
LENOIR COUNTY
PROJECT: 34501.1.1 (R-2719A)
CRESCENT ROAD
IN KINSTON FROM
US 70 TO US 258

SHEET OF

8/27/2008
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Prepared by
**URS**
URS Corporation – North Carolina
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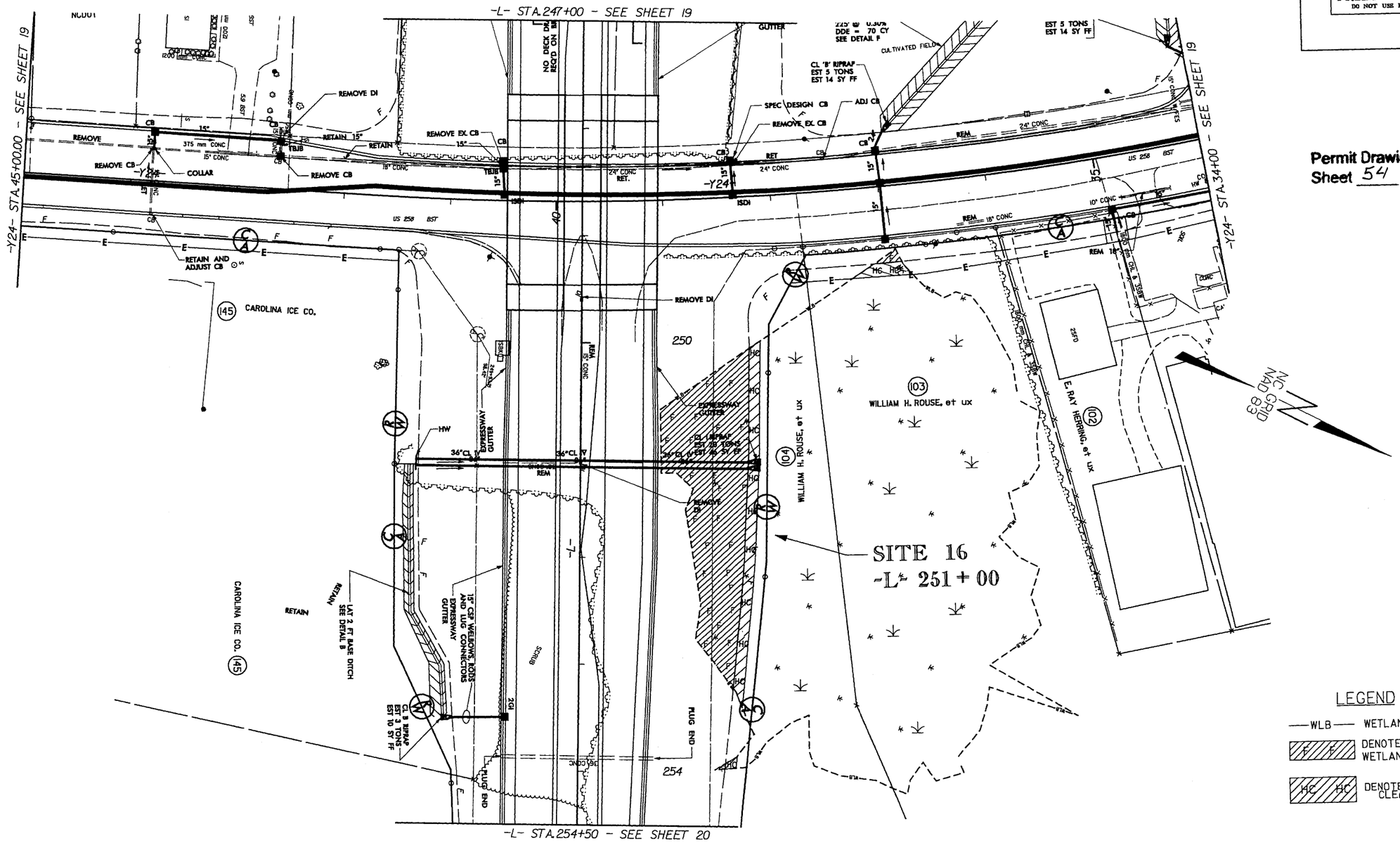
| PROJECT REFERENCE NO. | SHEET NO. |
|---|---|
| R-2719A | 19A |
| R/W SHEET NO. | |
| ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER |

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

ENGLISH

Permit Drawing
Sheet 54 of 66




LEGEND

—WLB— WETLAND

F F DENOTES FILL IN WETLAND

HC HC DENOTES HAND CLEARING

PLAN VIEW
SITE 16

100 0 50 100

NCDOT
DIVISION OF HIGHWAYS
LENOIR COUNTY
PROJECT: 34501.1.1 (R-2719A)
CRESCENT ROAD
IN KINSTON FROM
US 70 TO US 258

8/17/99

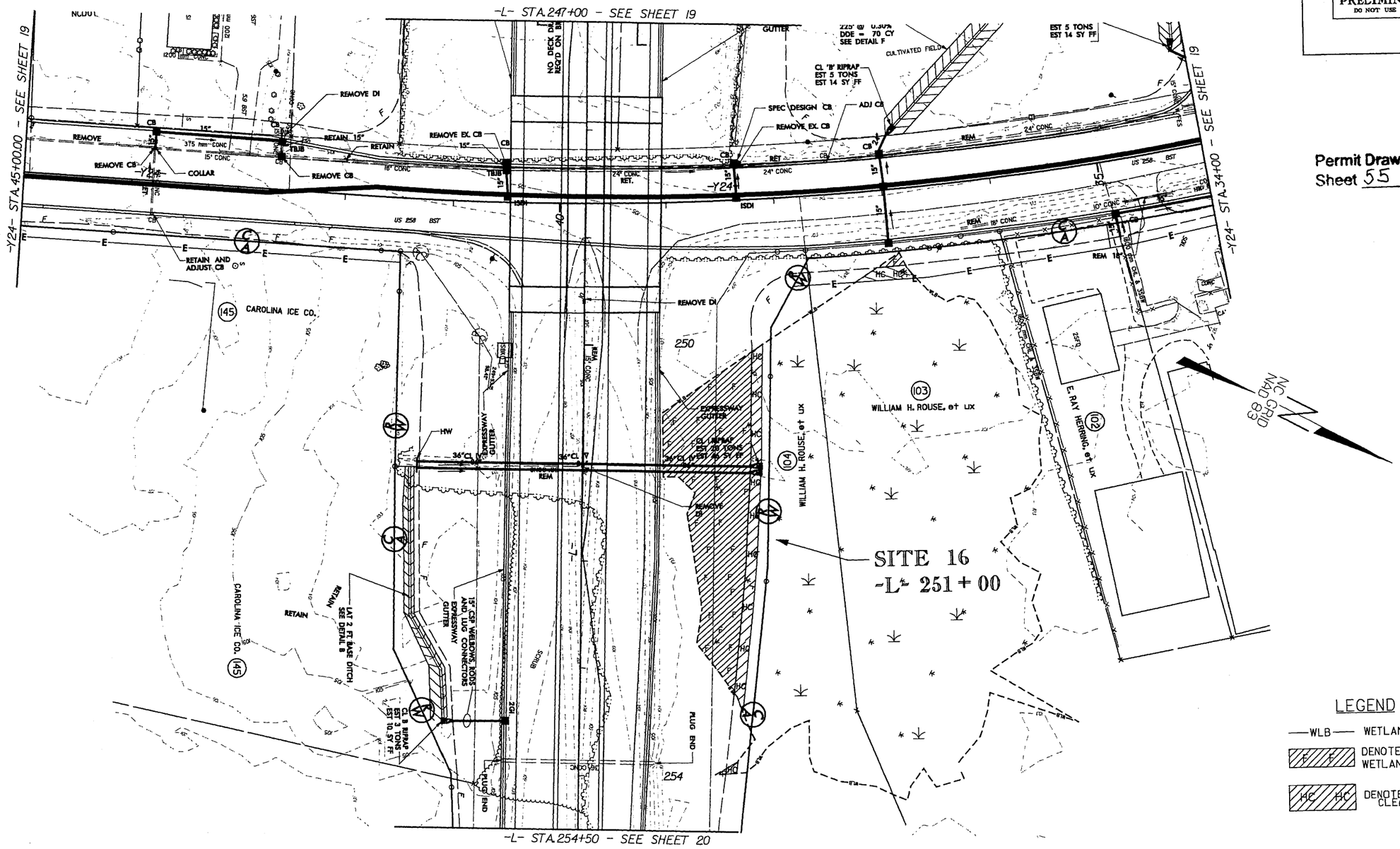
Prepared by
**URS**
URS Corporation – North Carolina
1600 Perimeter Park Drive
Morrisville, North Carolina 27560
TELEPHONE (919) 461-1100 FAX (919) 461-1415

| PROJECT REFERENCE NO. | SHEET NO. |
|---|---|
| R-2719A | 19A |
| R/W SHEET NO. | |
| ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER |

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

ENGLISH

Permit Drawing
Sheet 55 of 66




LEGEND

—WLB— WETLAND

F F DENOTES FILL IN WETLAND

HC HC DENOTES HAND CLEARING

PLAN VIEW
SITE 16

100 0 50 100
SCALE: 1"= 100' HORIZ

NCDOT
DIVISION OF HIGHWAYS
LENOIR COUNTY
PROJECT: 34501.1.1 (R-2719A)
CRESCENT ROAD
IN KINSTON FROM
US 70 TO US 258

SHEET OF

8/17/99

2008
draulics\Permits_2008_05_30 (Updates)\r2719a_hyd_prm_wet_19a.dgn
Associates, P.C.

MILLED RUMBLE STRIPS SHALL BE PLACED ON -L- ACCORDING TO NCDOT STANDARD DRAWING No.665.01

NOTE: FOR -L- PROFILE, SEE SHEET 39
FOR -SVRDI- PROFILE, SEE SHEET 62
SEE SHEET 2-L FOR DRAINAGE DITCH DETAILS

GRAPHIC SCALE
50 25 0 50 100
PLANS


Prepared by
URS
URS Corporation – North Carolina
1600 Perimeter Park Drive
Morrisville, North Carolina 27560
TELEPHONE (919) 461-1100 FAX (919) 461-1415

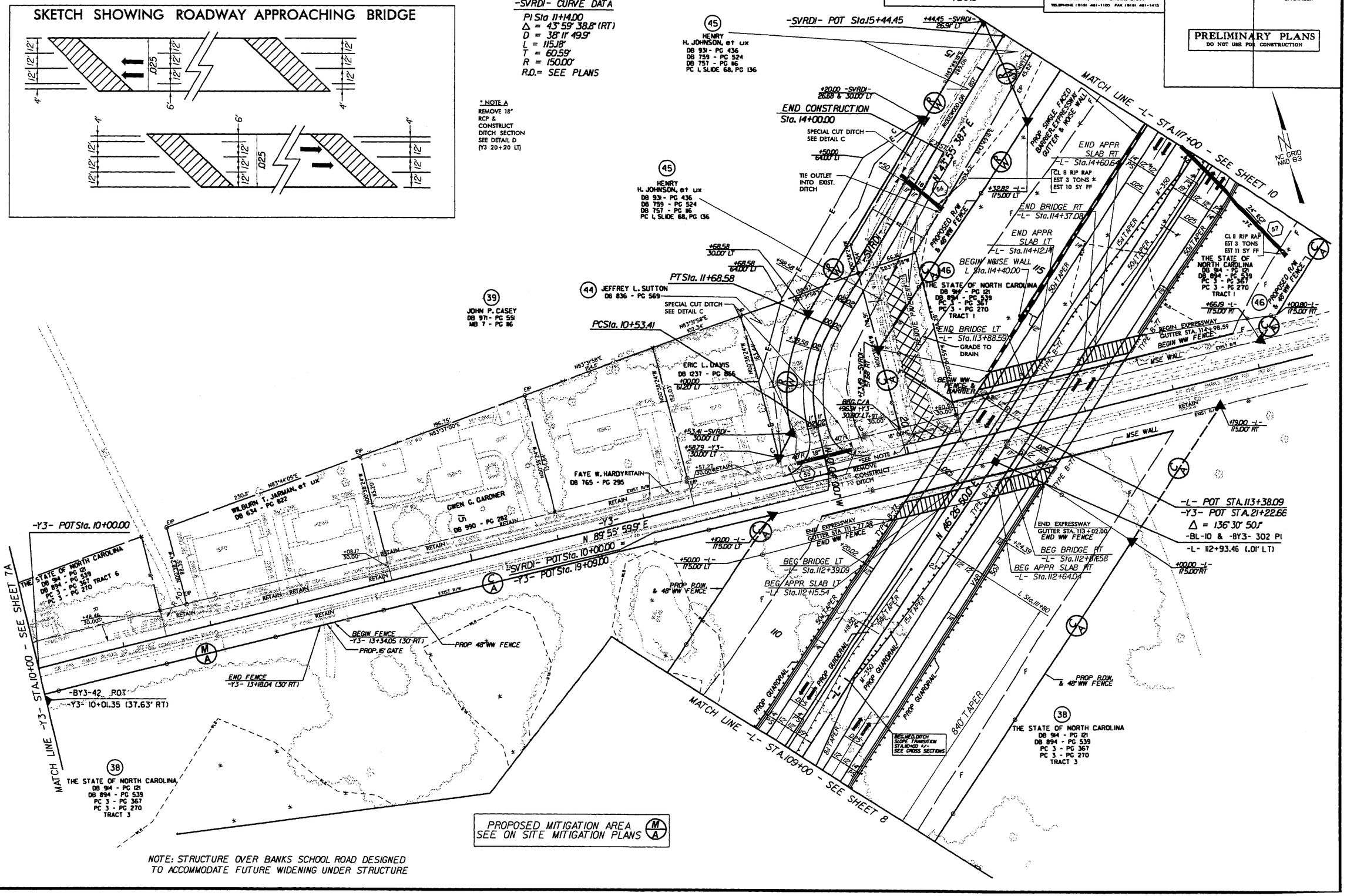

| PROJECT REFERENCE NO. | SHEET NO. |
|---|---|
| R-2719A | 9 |
| R/W SHEET NO. | 9 |
| ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER |

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

## SKETCH SHOWING ROADWAY APPROACHING BRIDGE




-SVRDI- CURVE DATA
PI Sta 11+14.00
Δ = 43° 59' 38.8" (RT)
D = 38° 11' 49.9"
L = 115.18'
T = 60.59'
R = 150.00'
R.O.= SEE PLANS




PROPOSED MITIGATION AREA SEE ON SITE MITIGATION PLANS

NOTE: STRUCTURE OVER BANKS SCHOOL ROAD DESIGNED TO ACCOMMODATE FUTURE WIDENING UNDER STRUCTURE

REVISIONS

B.17.

7/8/2008
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1:30 PM

NOTE: FOR -L- PROFILE, SEE SHEET 40
SEE SHEET 2-L FOR DRAINAGE DITCH DETAILS
MILLED RUMBLE STRIPS SHALL BE PLACED ON -L- ACCORDING TO NCDOT STANDARD DRAWING No. 665.01

-L- CURVE DATA

| | |
|---|---|
| PIs Sta 129+40.45 | PI Sta 151+30.46 |
| Θs = 1° 30' 28.0" | Δ = 47° 50' 08.7" (LT) |
| Ls = 250.00' | D = 1° 12' 22.4" |
| LT = 166.67' | L = 3,965.73' |
| ST = 83.34' | T = 2106.68' |
| | R = 4,750.00' |
| | e = 5% |

GRAPHIC SCALE
50 25 0 50 100
PLANS

Prepared by
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Morrisville, North Carolina 27560
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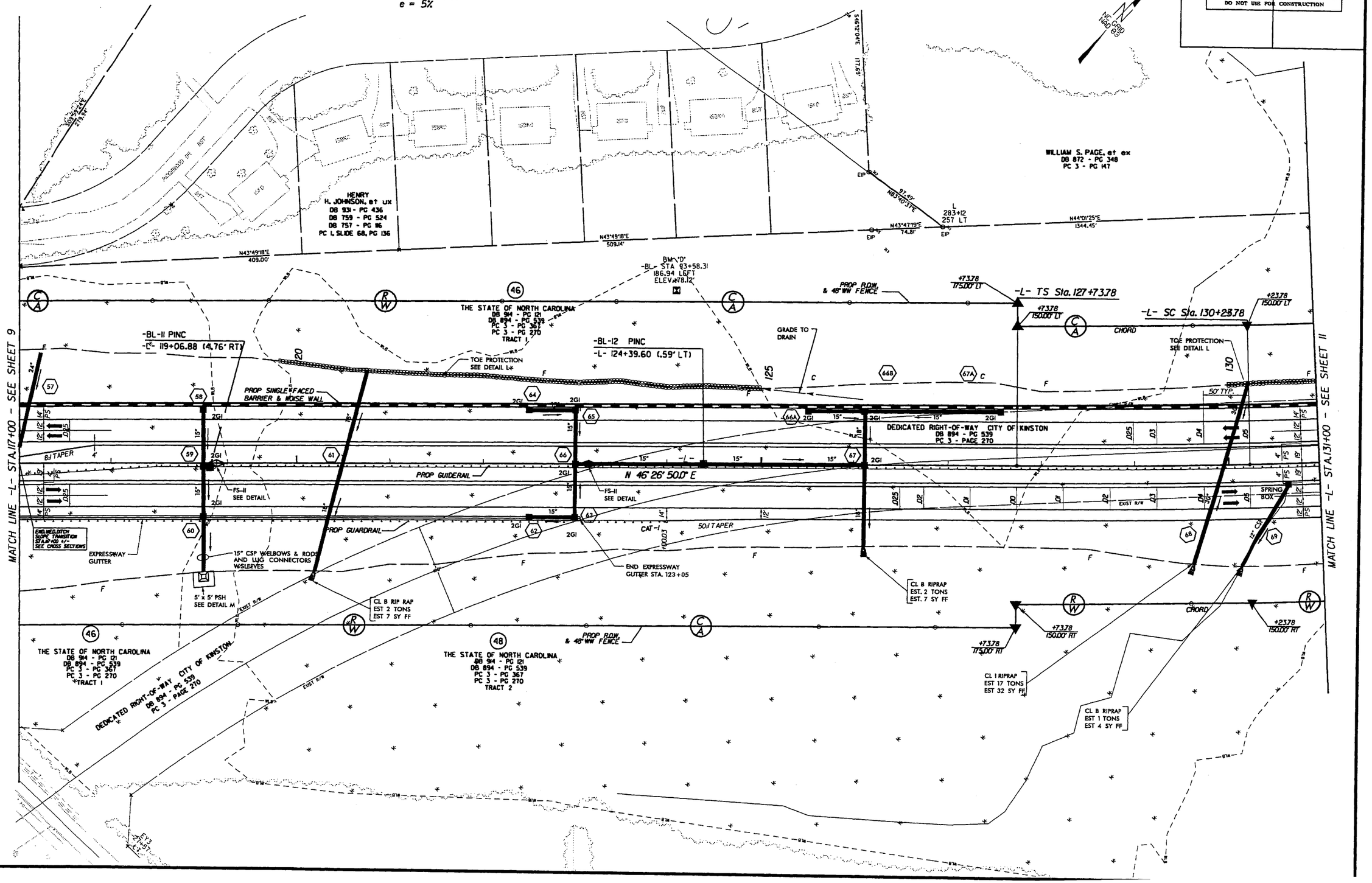
| PROJECT REFERENCE NO. | SHEET NO. |
|---|---|
| R-2719A | 10 |
| R/W SHEET NO. | 10 |
| ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER |

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION




REVISIONS

7/8/2008
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FOUNDATION RECOMMENDATION NOTES:

1. DRIVE PILES AT END BENT NO.1 AND END BENT NO.2 TO A REQUIRED BEARING CAPACITY OF 140 TONS PER PILE. THE REQUIRED BEARING CAPACITY IS EQUAL TO THE ALLOWABLE BEARING CAPACITY WITH A MINIMUM FACTOR OF SAFETY OF TWO.

2. THE ALLOWABLE BEARING CAPACITY FOR PILES AT END BENT NO.1 AND END BENT NO.2 IS 70 TONS PER PILE.

3. TESTING PILES WITH THE PILE DRIVING ANALYZER (PDA) DURING DRIVING, RESTRIKING OR REDRIVING MAY BE REQUIRED. THE ENGINEER WILL DETERMINR THE NEED FOR PDA TESTING.

4. OBSERVE A ONE-MONTH WAITING PERIOD AFTER CONSTRUCTING THE EMBANKMENT, END BENT AND REINFORCED APPROACH FILL BEFORE BEGINNING APPROACH SLAB CONSTRUCTION AT END BENT NO.1 AND END BENT NO.2.

NOTE: FOR -L- PROFILE, SEE SHEET 43
SEE SHEET 2-L FOR DRAINAGE DITCH DETAILS
MILLED RUMBLE STRIPS SHALL BE PLACED ON -L- ACCORDING TO NCDOT STANDARD DRAWING No.665.01
FOR STRUCTURE DETAILS SEE STRUCTURE PLANS S- THRU S- .

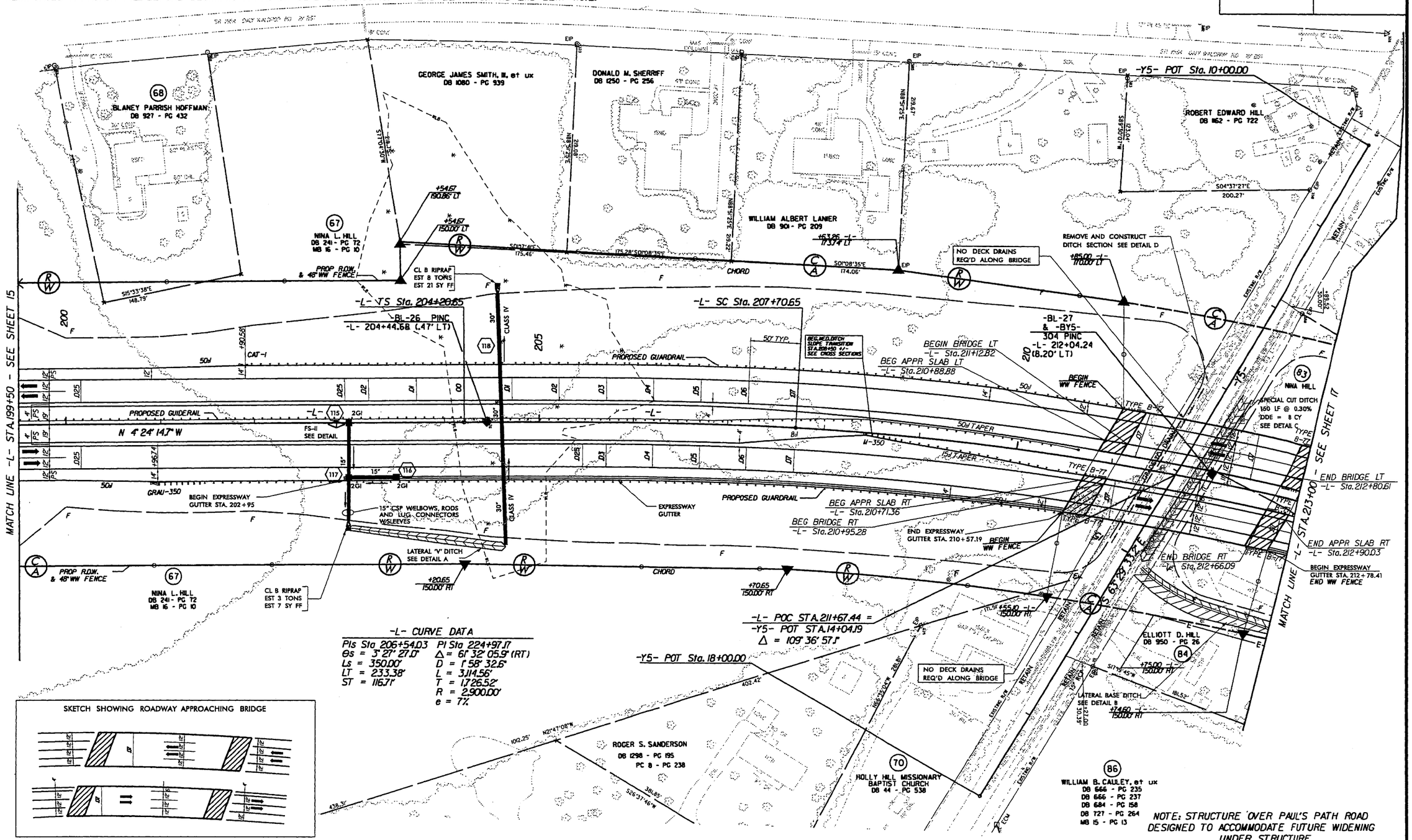
GRAPHIC SCALE
50 25 0 50 100
PLANS


Prepared by
URS
URS Corporation - North Carolina
1600 Perimeter Park Drive
Morrisville, North Carolina 27560
TELEPHONE (919) 461-1100 FAX (919) 461-1415


| PROJECT REFERENCE NO. | SHEET NO. |
|---|---|
| R-2719A | 16 |
| R/W SHEET NO. | 16 |
| ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER |

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

NC GRID NAD 83




-L- CURVE DATA

| | |
|---|---|
| PIs Sta 206+54.03 | PI Sta 224+97.17 |
| θs = 3° 27' 27.0" | Δ = 61° 32' 05.9" (RT) |
| Ls = 350.00' | D = 1° 58' 32.6" |
| LT = 233.38' | L = 3,114.56' |
| ST = 116.71' | T = 1,726.52' |
| | R = 2,900.00' |
| | e = 7% |

SKETCH SHOWING ROADWAY APPROACHING BRIDGE



REVISIONS

8/17/

7/8/2008
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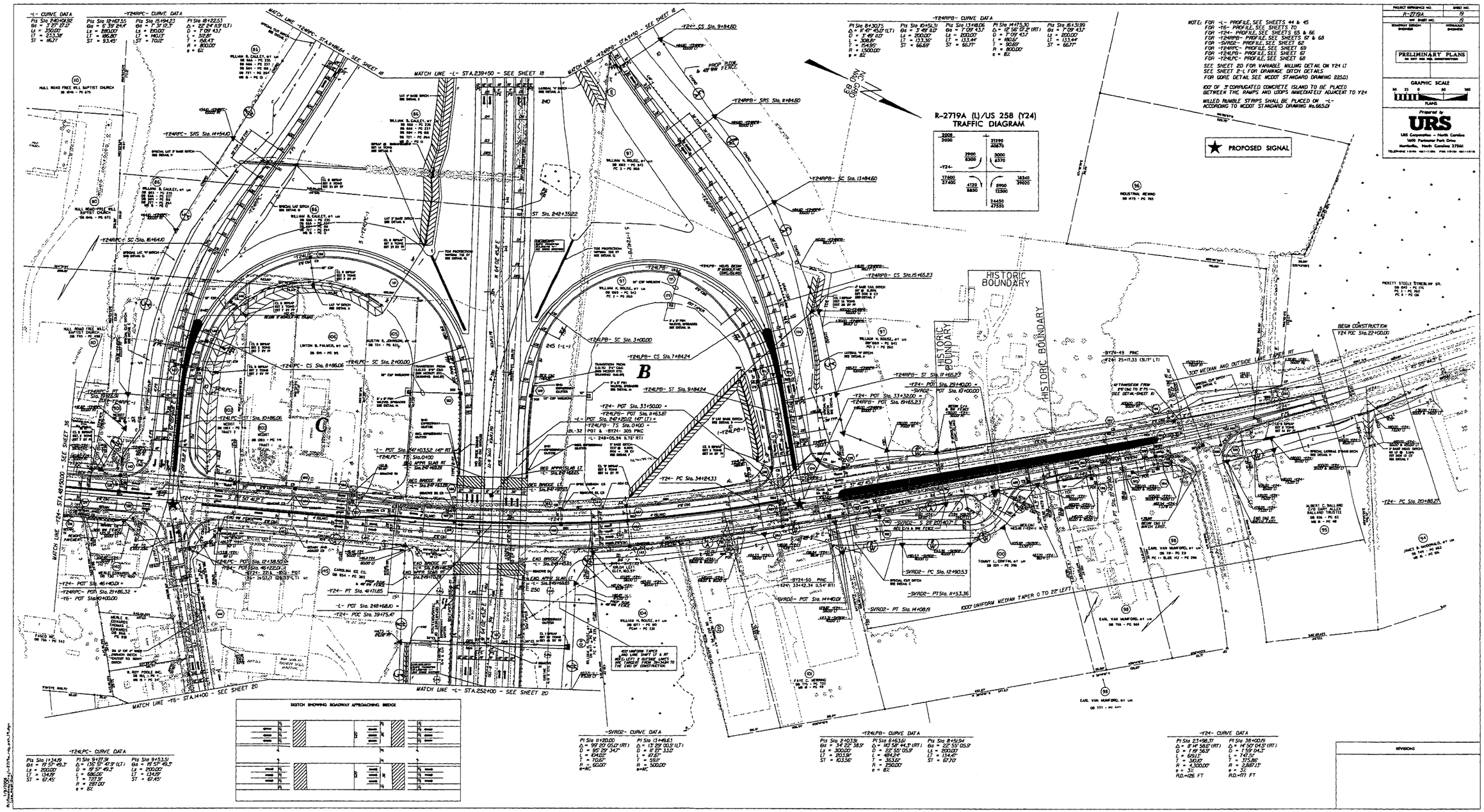
lisa moser




NOTE: FOR -L- PROFILE, SEE SHEETS 44 & 45
FOR -Y6- PROFILE, SEE SHEETS 70
FOR -Y24- PROFILE, SEE SHEETS 65 & 66
FOR -Y24RPB- PROFILE, SEE SHEETS 67 & 68
FOR -SVRD2- PROFILE, SEE SHEET 62
FOR -Y24RPC- PROFILE, SEE SHEET 69
FOR -Y24LPB- PROFILE, SEE SHEET 67
FOR -Y24LPC- PROFILE, SEE SHEET 68

SEE SHEET 20 FOR VARIABLE WIDTH DETAIL ON Y24 LT
SEE SHEET 2-L FOR DRAINAGE DITCH DETAILS
FOR CORE DETAIL SEE NCDOT STANDARD DRAWING 225.01

100' OF 3" CORRUGATED CONCRETE ISLAND TO BE PLACED BETWEEN THE RAMPS AND LOOPS IMMEDIATELY ADJACENT TO Y24

MILLED RUMBLE STRIPS SHALL BE PLACED ON -L- ACCORDING TO NCDOT STANDARD DRAWING No.665.01

-L- CURVE DATA

| Pts Sta 240+00.58 | Pts Sta 12+67.55 | Pts Sta 15+94.23 | Pt Sta 18+22.53 |
|---|---|---|---|
| Bs = S 27° 27' 27" | Bs = S 39° 24.4" | Bs = S 31° 12.5" | Δ = 22° 24' 11.5" (LT) |
| Ls = 350.00' | Ls = 280.00' | Ls = 200.00' | D = 7° 09' 43.1" |
| LT = 233.38' | LT = 185.87' | LT = 140.13' | L = 312.81' |
| ST = 116.71' | ST = 93.45' | ST = 70.12' | T = 158.43' |
| | | | R = 800.00' |
| | | | e = 6% |

-Y24RPC- CURVE DATA

| Pts Sta 12+67.55 | Pts Sta 15+94.23 | Pt Sta 18+22.53 |
|---|---|---|
| Bs = S 39° 24.4" | Bs = S 31° 12.5" | Δ = 22° 24' 11.5" (LT) |
| Ls = 280.00' | Ls = 200.00' | D = 7° 09' 43.1" |
| LT = 185.87' | LT = 140.13' | L = 312.81' |
| ST = 93.45' | ST = 70.12' | T = 158.43' |
| | | R = 800.00' |
| | | e = 6% |

-Y24RPB- CURVE DATA

| Pt Sta 8+30.75 | Pts Sta 10+51.31 | Pts Sta 13+48.06 | Pt Sta 14+75.30 | Pts Sta 16+31.99 |
|---|---|---|---|---|
| Δ = 9° 47' 45.7" (LT) | Bs = S 49° 11.0" | Bs = S 49° 11.0" | Δ = 12° 56' 07.2" (RT) | Bs = S 49° 43.7" |
| D = 3° 49' 11.0" | Ls = 200.00' | Ls = 200.00' | D = 7° 09' 43.7" | Ls = 200.00' |
| L = 306.81' | LT = 133.36' | LT = 133.44' | L = 180.55' | LT = 133.44' |
| T = 154.80' | ST = 66.69' | ST = 66.77' | T = 90.89' | ST = 66.77' |
| R = 1500.00' | | | R = 800.00' | |
| e = 8% | | | e = 8% | |

-Y24LPC- CURVE DATA

| Pts Sta 1+34.19 | Pt Sta 9+87.59 | Pts Sta 9+53.51 |
|---|---|---|
| Bs = N 51° 49.3" | Δ = 136° 51' 41.9" (LT) | Bs = N 51° 49.3" |
| Ls = 200.00' | D = 19° 51' 45.3" | Ls = 200.00' |
| LT = 134.19' | L = 686.06' | LT = 134.19' |
| ST = 67.45' | T = 727.31' | ST = 67.45' |
| | R = 287.00' | |
| | e = 8% | |

-SVRD2- CURVE DATA

| Pt Sta 11+20.00 | Pt Sta 13+49.61 |
|---|---|
| Δ = 99° 20' 05.0" (RT) | Δ = 13° 20' 00.5" (LT) |
| D = 95° 22' 34.7" | D = 11° 27' 33.1" |
| L = 104.02' | L = 117.67' |
| T = 70.67' | T = 59.11' |
| R = 60.00' | R = 500.00' |
| e=NC | e=NC |

-Y24LPB- CURVE DATA

| Pts Sta 2+03.91 | Pt Sta 6+63.61 | Pts Sta 8+15.94 |
|---|---|---|
| Bs = N 4° 22' 38.5" | Δ = 167° 55' 44.5" (RT) | Bs = S 22° 55' 05.9" |
| Ls = 300.00' | D = 22° 55' 05.9" | Ls = 200.00' |
| LT = 201.91' | L = 484.24' | LT = 134.41' |
| ST = 103.56' | T = 353.92' | ST = 67.70' |
| | R = 250.00' | |
| | e = 8% | |

-Y24- CURVE DATA

| Pt Sta 23+98.77 | Pt Sta 38+00.19 |
|---|---|
| Δ = 8° 14' 58.6" (RT) | Δ = 14° 50' 04.5" (RT) |
| D = 1° 59' 56.5" | D = 1° 59' 04.3" |
| L = 669.17' | L = 747.56' |
| T = 340.07' | T = 375.86' |
| R = 4,300.00' | R = 2,887.13' |
| e = 3% | e = 3% |
| R.D.=126 FT | R.D.=171 FT |