



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

MICHAEL F. EASLEY
GOVERNOR

LYNDO TIPPETT
SECRETARY

May 4, 2008

MEMORANDUM TO: Mr. Jay Swain, Jr., PE
Division 13 Engineer

FROM: Philip S. Harris, P.E., Unit Head
Natural Environment Unit
Project Development and Environmental Analysis Branch

SUBJECT: Buncombe County, Replace Bridge No. 262 on SR 3452 over
South Hominy Creek; T.I.P. Number B-4037; Federal Aid No.
BRZ-3452(1); State Project 8.2844701

A handwritten signature in black ink, appearing to read "E. F. Harris".

Attached are the permit drawings for the above referenced project. The U.S. Army Corps of Engineers Section 404 Nationwide Permit Number 33 and N.C. Division of Water Quality Section 401 General Water Quality Certification were distributed on April 2, 2008. The following permit drawings were missing from the previous distribution and should be included with the permit package for T.I.P. B-4037.

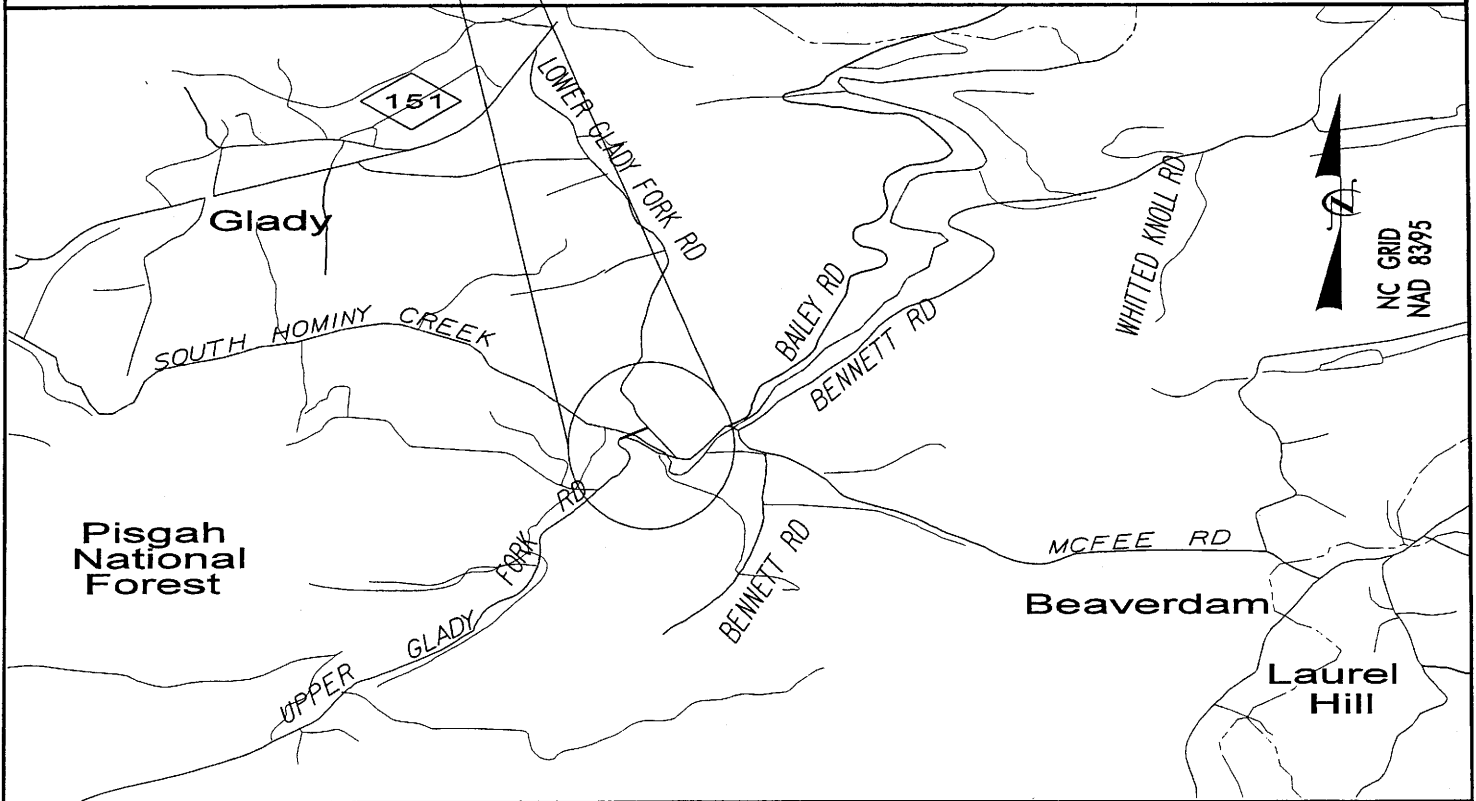
PSH/jld

Attachment

Cc:

Mr. Majed Alghandour, P.E., Programming and TIP
Mr. Jay Bennett, P.E., Roadway Design
Dr. David Chang, P.E., Hydraulics
Mr. Randy Garris, P.E., State Contract Officer
Mr. Art McMillian, P.E., Highway Design
Mr. Greg Perfetti, P.E., Structure Design
Mr. Mark Staley, Roadside Environmental
Mr. John F. Sullivan, FHWA
Ms. Beth Harmon, EEP
Ms. Teresa Hart, P.E., PDEA Western Region Unit Head
Mr. Roger Bryan, Division Environmental Officer

NORTH CAROLINA



WETLAND PERMIT DRAWING VICINITY MAP

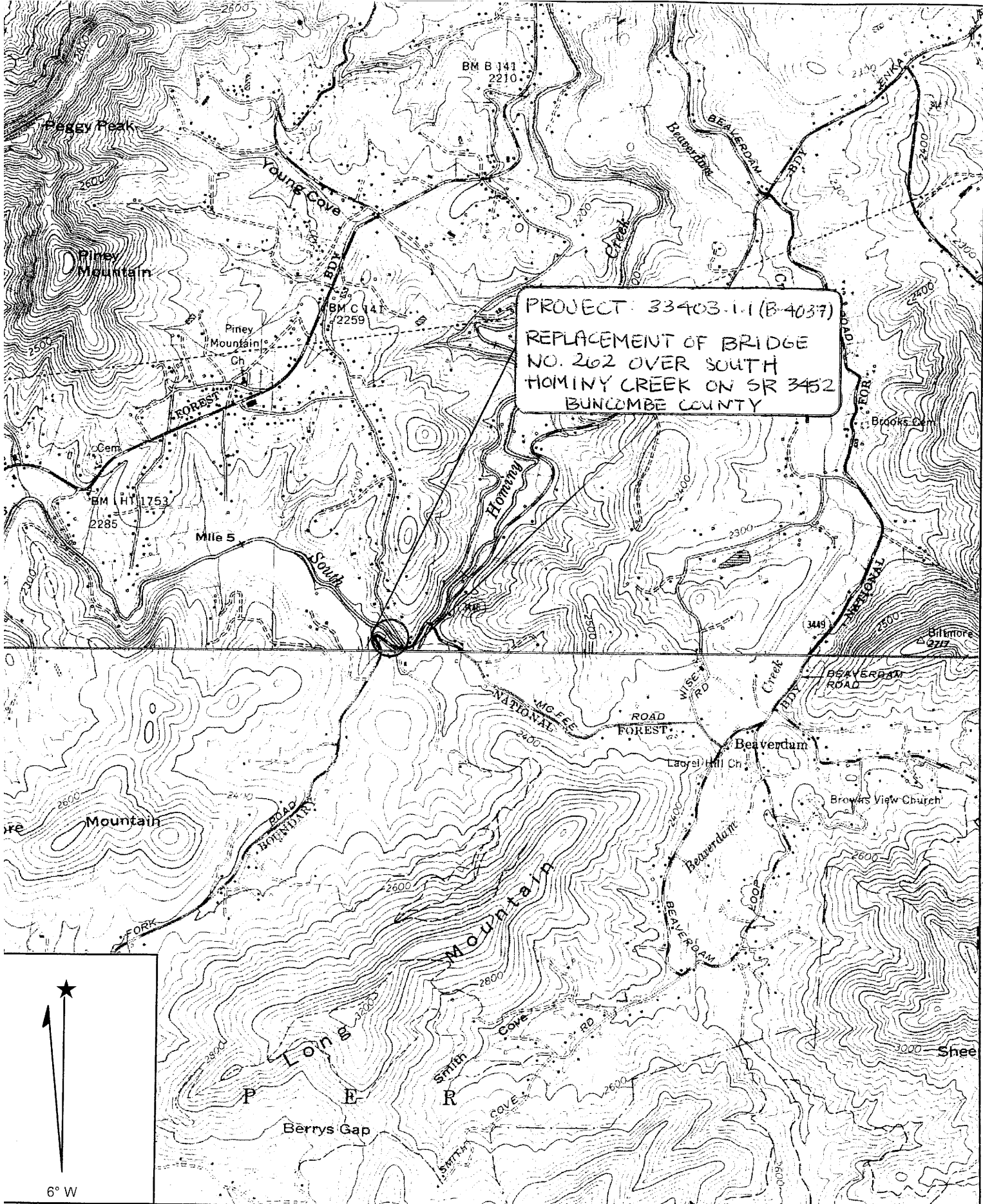
B-4037

Permit Drawing
Sheet 1 of 10

**DIVISION OF HIGHWAYS
BUNCOMBE COUNTY**

**PROJECT: 33403.1.1 (B-4037)
REPLACEMENT OF BRIDGE NO.262
OVER SOUTH HOMINY CREEK
ON SR 3452**

9/4/2007



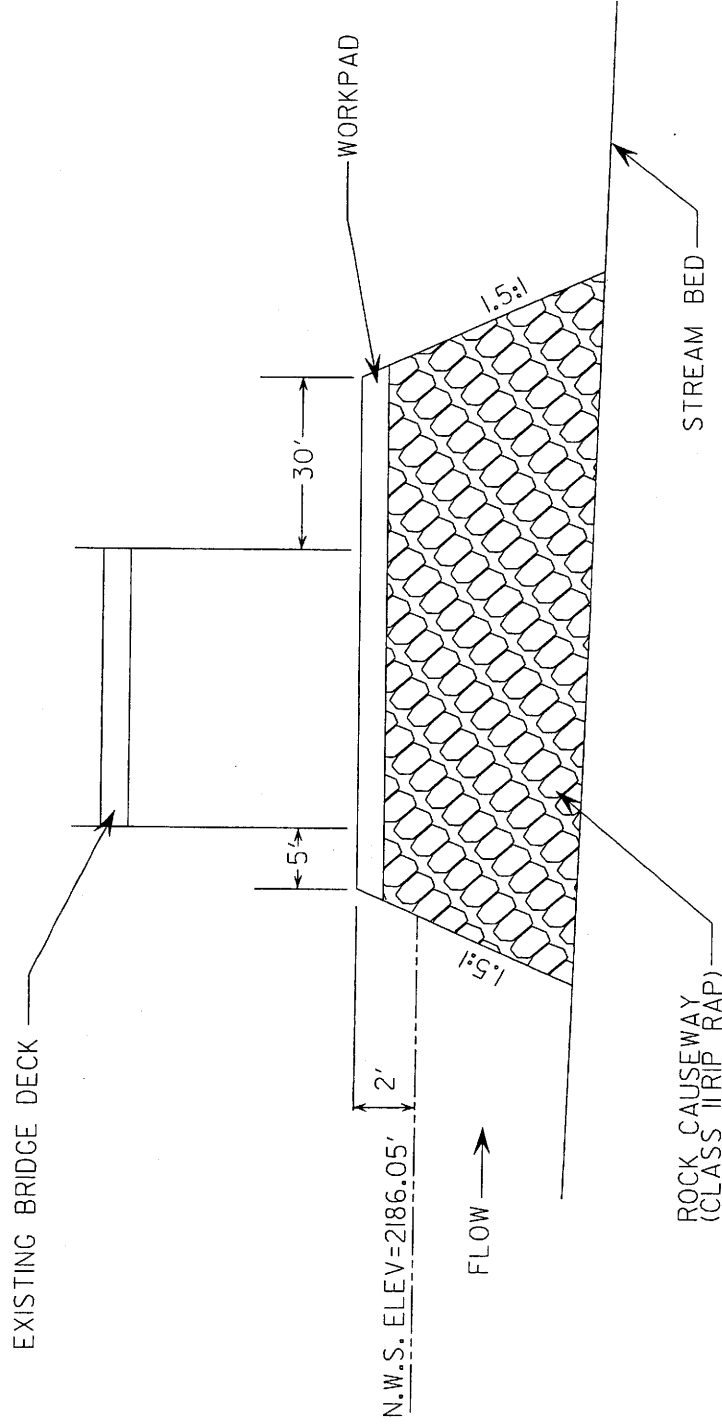
PROJECT 33403.1.1 (B-4037)
 REPLACEMENT OF BRIDGE
 NO. 262 OVER SOUTH
 HOMINY CREEK ON SR 3452
 BUNCOMBE COUNTY

Name: ENKA
 Date: 8/8/2006
 Scale: 1 inch equals 2000 feet

Permit Drawing
 Sheet 2 of 10

Location: 035° 30' 07.4" N 082° 42' 08.4" W
 Caption: Project: 33403.1.1 (B-4037)
 Replacement of Bridge No. 262
 Over S. Hominy Cr. on SR3452
 Sheet 2

CAUSEWAY DETAIL
(NOT TO SCALE)

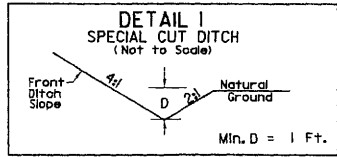


NC DOT
 DIVISION OF HIGHWAYS
 BUNCOMBE COUNTY
 PROJECT: 33403.1.1 (B-4037)
 REPLACEMENT OF BRIDGE NO.262
 OVER SOUTH HOMINY CREEK
 ON SR 3452

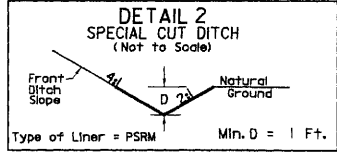
8 / 13 / 2007

QUANTITIES OF ESTIMATES: CAUSEWAY 1
 VOLUME OF CLASS II RIP RAP= 275 yds³
 AREA OF CLASS II RIP RAP= 0.06 acres
 Estimate 400 Tons Class II Rip Rap

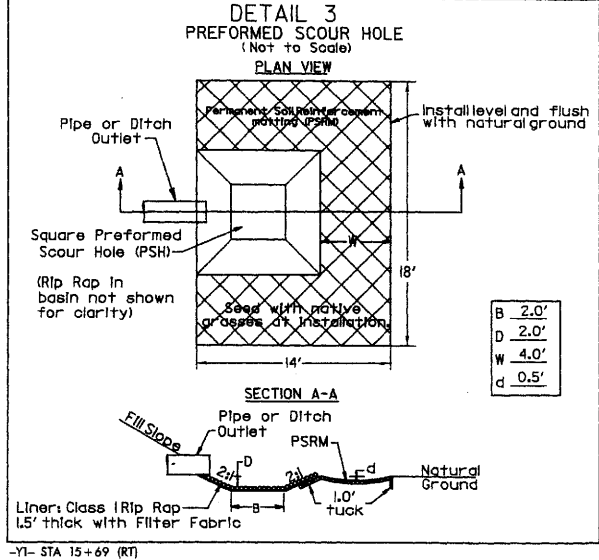
Permit Drawing
 Sheet 5 of 10



-L- STA 12+00 TO 13+00 (RT)
-YI- STA 15+00 TO 15+58 (LT)
-YI- STA 15+58 TO 16+50 (LT)



-L- STA 13+00 TO 13+50 (RT)
-YI- STA 14+68 TO 15+00 (LT)



Permit Drawing
Sheet 6 of 10

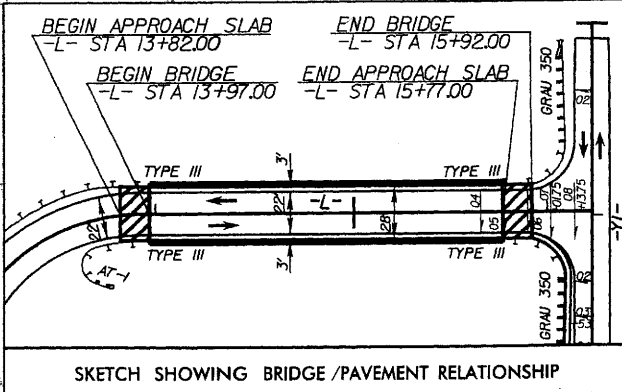
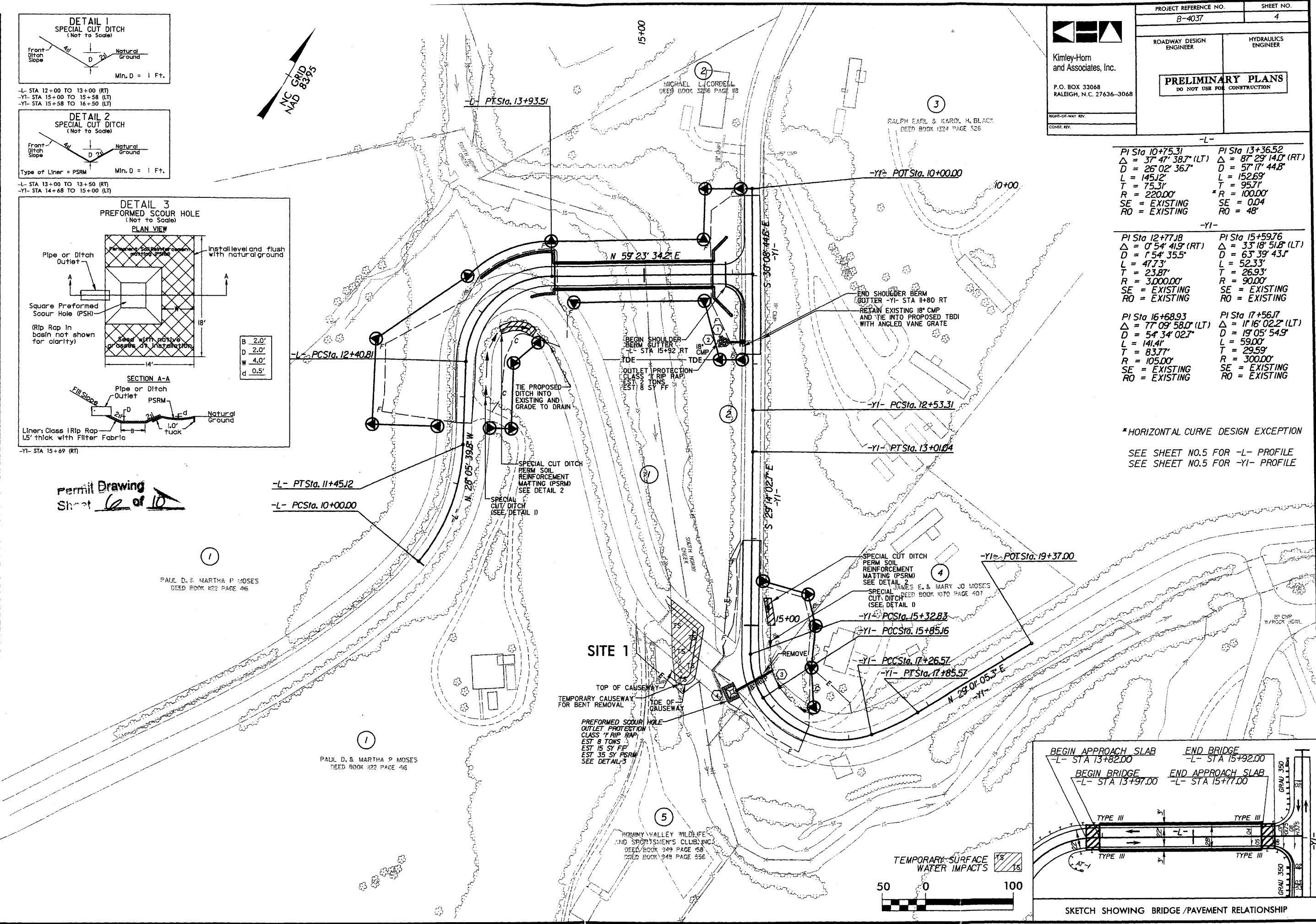
N/C GRID
NAD 83 95

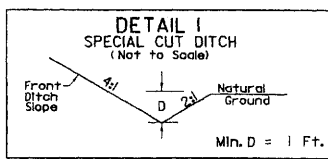
PROJECT REFERENCE NO. B-4037		SHEET NO. 4	
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION			
Kimley-Horn and Associates, Inc. P.O. BOX 33068 RALEIGH, N.C. 27636-3068			
RIGHT-OF-WAY REV. CONST. REV.			

-L-	
PI Sta 10+75.31 Δ = 37' 47" 38.7" (LT) D = 26' 02" 36.7" L = 145.12' T = 75.31' R = 220.00' SE = EXISTING RO = EXISTING	PI Sta 13+36.52 Δ = 87' 29" 14.0" (RT) D = 57' 17" 44.8" L = 152.69' T = 95.71' R = 100.00' SE = 0.04 RO = 48'
-YI-	
PI Sta 12+77.18 Δ = 0' 54" 41.9" (RT) D = 1' 54" 35.5" L = 47.33' T = 23.87' R = 3,000.00' SE = EXISTING RO = EXISTING	PI Sta 15+59.76 Δ = 33' 18" 51.8" (LT) D = 63' 39" 43.1" L = 52.33' T = 26.93' R = 90.00' SE = EXISTING RO = EXISTING
PI Sta 16+68.93 Δ = 77' 09" 58.0" (LT) D = 54' 34" 02.7" L = 141.41' T = 83.77' R = 105.00' SE = EXISTING RO = EXISTING	PI Sta 17+56.17 Δ = 17' 16" 02.2" (LT) D = 19' 05" 54.9" L = 59.00' T = 29.59' R = 300.00' SE = EXISTING RO = EXISTING

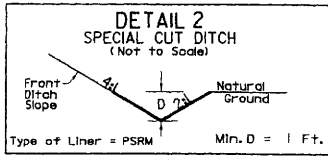
* HORIZONTAL CURVE DESIGN EXCEPTION
SEE SHEET NO.5 FOR -L- PROFILE
SEE SHEET NO.5 FOR -YI- PROFILE

R-0101036120-Permits-b4037-causeway.dgn
9/7/2007

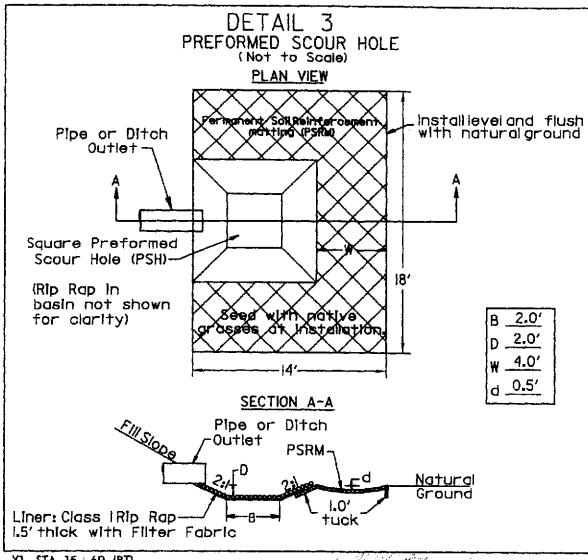




-L- STA 12+00 TO 13+00 (RT)
-YI- STA 15+00 TO 15+58 (LT)
-YI- STA 15+58 TO 16+50 (LT)

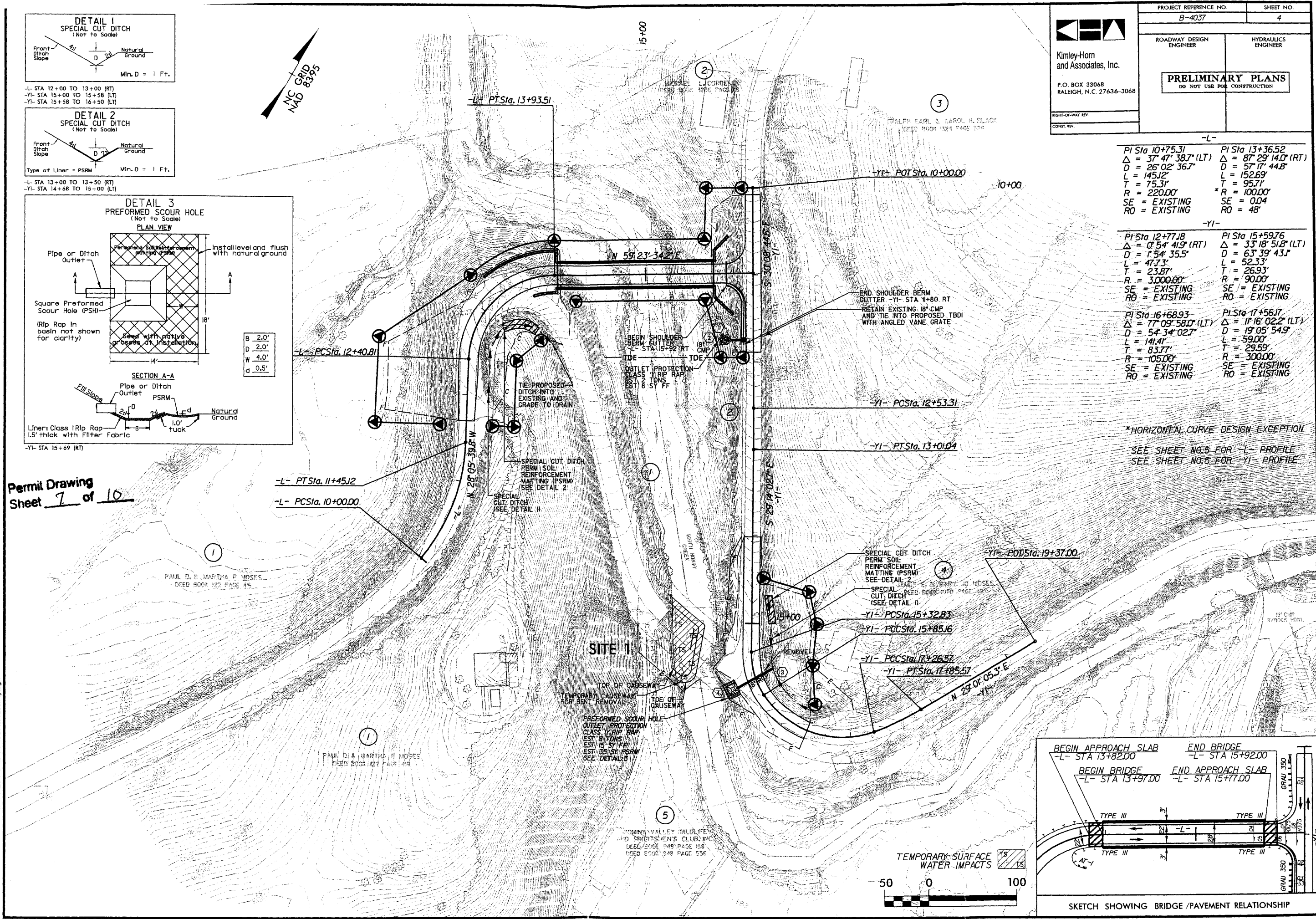


Type of Liner = PSRM
-L- STA 13+00 TO 13+50 (RT)
-YI- STA 14+68 TO 15+00 (LT)



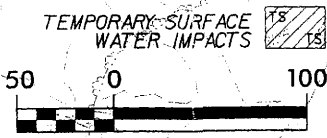
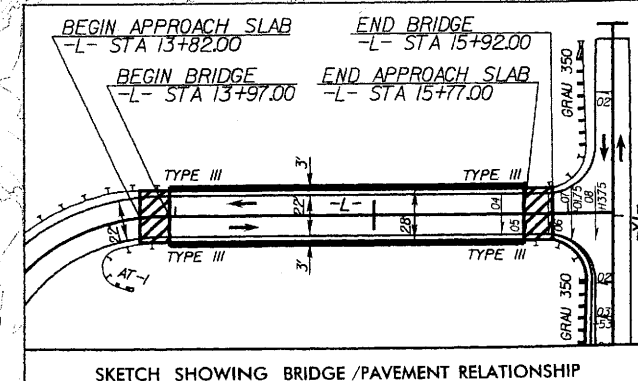
Permit Drawing
Sheet 7 of 10

R:\010316120\Permits\B-4037_causeway.dgn
9/7/2007



-L-	
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*HORIZONTAL CURVE DESIGN EXCEPTION
SEE SHEET NO. 5 FOR -L- PROFILE
SEE SHEET NO. 5 FOR -YI- PROFILE



11+00

12+00

13+00

14+00

15+00

16+00

SCALE
1" = 50' H
1" = 10' V

2,240
2,230
2,220
2,210
2,200
2,190
2,180
2,170

PROPOSED LOWSTEEL

CL STA 14+87-L-
1 @ 180'
STEEL PLATE GIRDER
CL ELEV = 2230.8'
90° SKEW

END GRADE
-L- STA 16+13.75 =
-YI- STA 10+98.00 (9' RT)
ELEV 2230.06'

-L- STA 16+22.75 =
-YI- STA 10+98.00
ELEV 2230.24'

LOW POINT

NATURAL GROUND
DOWNSTREAM

NATURAL GROUND
UPSTREAM

HIGH WATER MARK
W.S.E.L. = 2197.0'
(1977)

Q100 W.S.E.L. = 2196.1'

Q50 W.S.E.L. = 2195.3'

NORMAL W.S.E.L. = 2185.5'
(NOVEMBER 30, 2005)

500-YR TOTAL THEORETICAL SCOUR

BEGIN GRADE

MILL NOTCH TO KEY-IN SF9.5A
-L- STA 11+70.00 ELEV 2233.90'
TIE PROPOSED PAVEMENT TO EXISTING

NATURAL GROUND
@ C BRIDGE

Permit Drawing
Sheet 8 of 10

WETLAND PERMIT DRAWING

BSR PROFILE

B-4037

NCDOT
DIVISION OF HIGHWAYS
BUNCOMBE COUNTY
PROJECT: 33403.1.1 (B-4037)
REPLACEMENT OF BRIDGE NO.262
OVER SOUTH HOMINY CREEK
ON SR 3452

8/13/2007

20+00

21+00

22+00

23+00

24+00

25+00

SCALE
1" = 50' H
1" = 10' V

2,220

2,210

2,200

2,190

2,180

2,170

2,160

Permit Drawing
Sheet 9 of 10

NATURAL GROUND
@ ϕ BRIDGE

TOP OF CAUSEWAY
ELEV = 2186.05'

CL STA 23+52 -EL-
1 @ 47' (SKEW)
STEEL PLATE GIRDER ON TIMBER PILES
CL ELEV = 2196.56'

0.50 W.S.E.L. = 2195.3'

NORMAL W.S.E.L. = 2184.05'
@ EXISTING BRIDGE
(NOVEMBER 30, 2005)

WETLAND PERMIT DRAWING EXISTING BRIDGE PROFILE B-4037

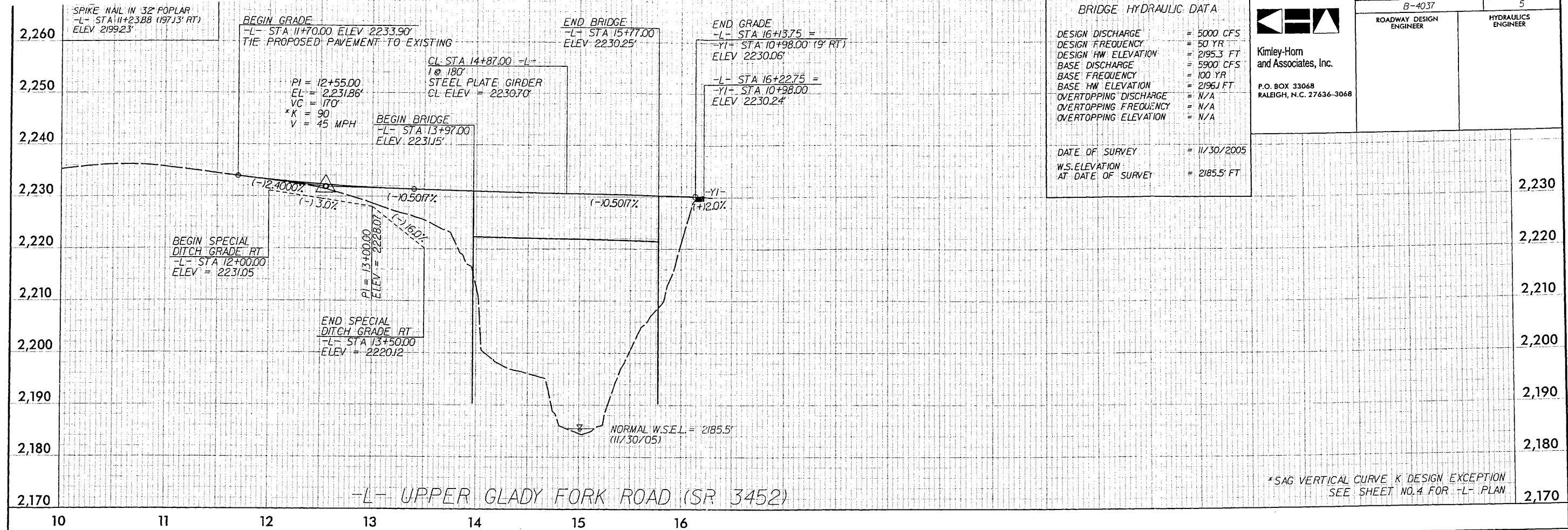
NCDOT
DIVISION OF HIGHWAYS
BUNCOMBE COUNTY
PROJECT: 33403.1.1 (B-4037)
REPLACEMENT OF BRIDGE NO.262
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Permit Drawing
Sheet 10 of 10

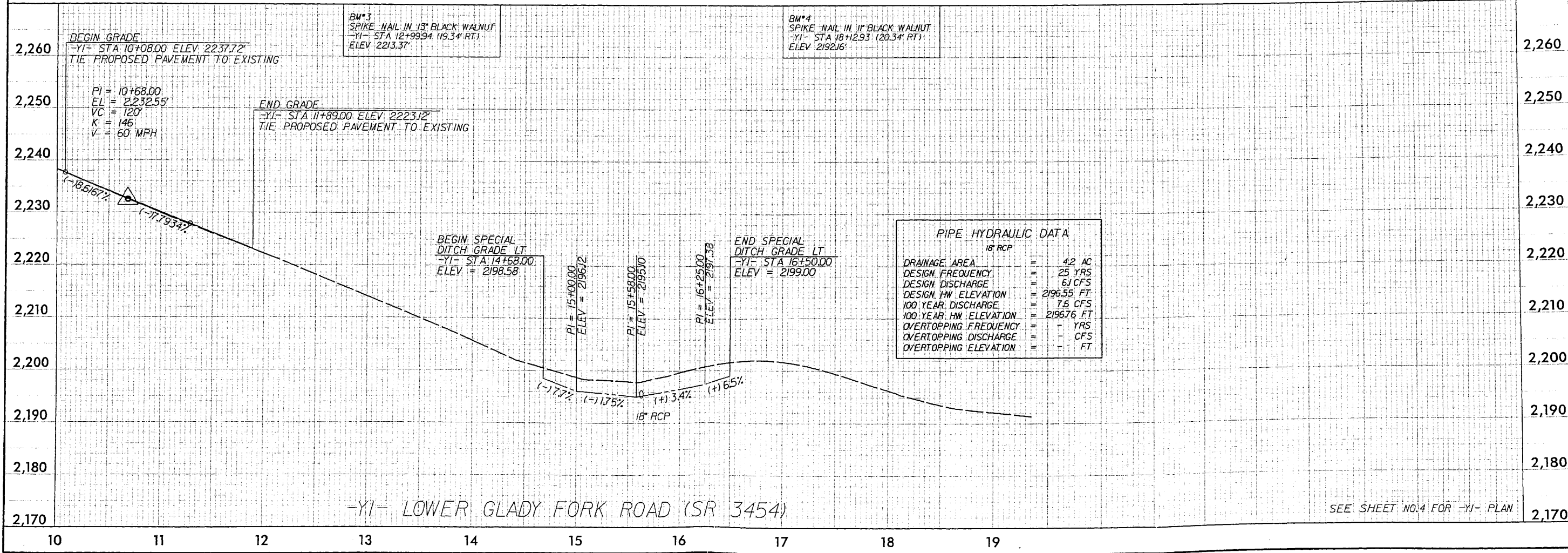
PROJECT REFERENCE NO.		SHEET NO.
B-4037		5
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER	
Kimley-Horn and Associates, Inc.	P.O. BOX 33068 RALEIGH, N.C. 27636-3068	

BRIDGE HYDRAULIC DATA

DESIGN DISCHARGE	= 5000 CFS
DESIGN FREQUENCY	= 50 YR
DESIGN HW ELEVATION	= 2195.3 FT
BASE DISCHARGE	= 5900 CFS
BASE FREQUENCY	= 100 YR
BASE HW ELEVATION	= 2196.1 FT
OVERTOPPING DISCHARGE	= N/A
OVERTOPPING FREQUENCY	= N/A
OVERTOPPING ELEVATION	= N/A
DATE OF SURVEY	= 11/30/2005
W.S. ELEVATION AT DATE OF SURVEY	= 2185.5 FT



*SAG VERTICAL CURVE K DESIGN EXCEPTION
SEE SHEET NO.4 FOR -L- PLAN



PIPE HYDRAULIC DATA

18" RCP

DRAINAGE AREA	= 4.2 AC
DESIGN FREQUENCY	= 25 YRS
DESIGN DISCHARGE	= 6.1 CFS
DESIGN HW ELEVATION	= 2196.55 FT
100 YEAR DISCHARGE	= 7.5 CFS
100 YEAR HW ELEVATION	= 2196.76 FT
OVERTOPPING FREQUENCY	= - YRS
OVERTOPPING DISCHARGE	= - CFS
OVERTOPPING ELEVATION	= - FT

SEE SHEET NO.4 FOR -YI- PLAN

8/13/2007