



STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION

BEVERLY EAVES PERDUE  
GOVERNOR

EUGENE A. CONTI, JR.  
SECRETARY

November 4, 2009

U.S. Army Corps of Engineers  
Regulatory Field Office  
151 Patton Avenue, Room 208  
Asheville, NC 28801-5006

ATTN: Mr. David Baker  
NCDOT Coordinator

Subject: **Modification Request for Individual Section 404 Permit and to Individual Section 401 Certification for Section R-2518A**  
For US 19/US 19E Improvements  
From US 19/23 to SR 1421 (Windy Gap Road)  
Yancey County  
NCDOT Division 13  
State Project Numbers 6.869005T and 6.909001T  
T.I.P. Project Number R-2518A  
Debit \$570.00 from WBS Element 34634.1.2

Reference:

- Application for Individual Section 404 and 401 permits for TIP R-2518A, R-2518B, and R-2519A, submitted June 26, 2007
- Revisions to the permit application, October 1, 2007
- Individual 401 Water Quality Certification No. 3706 issued October 11, 2007.
- Individual Section 404 Permit SAW 2007 -2197-357/300 issued April 1, 2008.
- Conference call with field meeting at site with ACOE, NCDWQ, USFWS, NCWRC and NCDOT on October 12, & 13, 2009

Dear Mr. Baker:

This letter addresses modifications to Section R-2518A of the 19E Widening Project that extends from US 19/23 to SR 1421 (Windy Gap Road) in Yancey County. The North Carolina Department of Transportation (NCDOT) requests approval for revisions to the above referenced permits. NCDOT proposes to eliminate a formerly planned retaining wall depicted on previously submitted Roadway Plan Sheets 30 -31 (Stations 100+80 to 103+80). This modification is requested for permanent impacts of **1,228** linear feet of Ivy Gap Branch from new culvert installation (Site 25 on attached permit drawings and impact summary sheet). The revised total stream impacts for R-2518A are 8,197 linear feet.

During the merger process a retaining wall was recommended by the Corps and the North Carolina Division of Water Quality (NCDWQ) to avoid impacts to Ivy Gap Branch. The retaining wall was originally listed as an Avoidance and Minimization measure in the June 26, 2007 Individual Permit Application. During the design process NCDOT anticipated a small toe wall approximately 10-20 feet in height. As the design progressed and geotechnical studies were completed it was determined that, due to poor soil conditions, a rock buttress was needed to prevent wall settlement and failure. Due to the buttress and proximity of the stream and roadway; the wall has increased to approximately 1000' in length, ranging from 85' to 100' in height with a construction cost of over 5 million dollars.

The following options to piping Ivy Gap Branch were considered but are not practicable:

- An option to steepen the rock buttress fill was abandoned due to the proximity of the roadway. The wall can not be shifted or it will impact the roadbed and if the rock fill is placed on a maximum slope it will still impact the stream.
- Constructing rock fill to steepen slope was considered but the toe of fill still covered the entire stream.
- Shifting the stream location to the west, using natural stream design to offset impacts, was not plausible due to current slope and natural ground conditions.
- Building a shorter length retaining wall would not save much on cost and the wall would be the same height and only protect a few feet of stream.
- Obtaining a design exception for vertical curves and horizontal curves was dismissed as an option on this type of facility because the curve changes would exceed current design standards.
- Terraced walls were considered then dismissed as cost prohibitive and because of limited space for construction without impacting the stream.
- Building several smaller walls was considered to be cost prohibitive and still impacted the stream as much as the piping option.

The fill slope that will replace the retaining wall will impact **1228** LF of Ivy Gap Branch (WSII-HQW) in the French Broad River Basin (HUC 06010105). Ivy Gap Branch from Station 97+70 to 105+00 -L- was identified as a preservation site; Site Q in Stream Mitigation Plan, US 19, R-2518A On-Site Mitigation, Madison County, North Carolina dated August 2006. The mitigation ratio that was used for preservation was 4:1. Therefore, the 1228 LF of impacts to the stream will reduce the credit received in the preservation by 307 LF (1228 LF/4). Therefore, NCDOT will impact **1228** LF of stream plus lose 307 LF of credit already used on the project resulting in a new mitigation requirement of **1535** LF. At the request of the North Carolina Division of Water Quality; NCDOT will pursue the mitigation through EEP at a 3:1 ratio.

Per the original permit concerning Site Q, NCDOT *shall monitor the preservation sites by visual inspection. Photos will be taken and plant survival will be documented. The monitoring shall be conducted annually for a minimum of five (5) years after final planting.* Due to the deletion of the retaining wall, NCDOT commits to the following monitoring of Site Q:

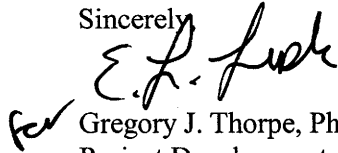
*The following components of Level 1 monitoring will be performed each year of the 5-year monitoring period: Reference photos, plant survival (i.e., identify specific problems areas (missing, stressed, damaged or dead plantings), estimated causes and proposed/required remedial action); visual inspection of channel stability. Physical measurements of channel stability/morphology will not be performed. A monitoring report will be submitted within sixty (60) days after completing the monitoring.*

Please see attached permit modification drawings pages 1 - 9 dated November 2, 2009 and the Ecosystem Enhancement Program (EEP) Mitigation Acceptance Letter.

The construction R-2518A began on July 15, 2008.

Thank you for your assistance with this project. If you have any questions or need additional information, please contact Mr. Jeffrey Hemphill (919) 715-1458.

Sincerely



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

W/attachment

Mr. Brian Wrenn, NCDWQ (5 Copies)  
Ms. Marella Buncick, USFWS  
Ms. Marla Chambers, NCWRC  
Ms. Kathy Matthews, USEPA-Whitter, NC  
Dr. Charles Nicholson, TVA

W/o attachment (see website for attachments)

Dr. David Chang, P.E., Hydraulics  
Mr. Victor Barbour, P.E., Project Services Unit  
Mr. Greg Perfetti, P.E., Structure Design  
Mr. Mark Staley, Roadside Environmental  
Mr. J.J. Swain, P.E. (Div. 13), Division Engineer  
Mr. Roger Bryan (Div. 13)  
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  
Ms. Beth Harmon, EEP  
Mr. Todd Jones, NCDOT External Audit Branch  
Mr. Steve Brown, PDEA Project Planning Engineer  
Mr. Drew Joyner, PE, Human Environment Unit Head  
Mr. Clarence W. Coleman, P.E., FHWA



November 5, 2009

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

Dear Dr. Thorpe:

Subject: EEP Mitigation Acceptance Letter:

**R-2518A**, US 19 from I-26 to 0.8 km East of Yancey County Line, Madison County

The purpose of this letter is to notify you that the Ecosystem Enhancement Program (EEP) will provide the stream mitigation for the subject project. Based on the information supplied by you on November 3, 2009, the impacts are located in CU 06010105 of the French Broad River Basin in the Northern Mountains (NM) Eco-Region, and are as follows:

French Broad 06010105 NM	Stream			Wetlands			Buffer (Sq. Ft.)	
	Cold	Cool	Warm	Riparian	Non-Riparian	Coastal Marsh	Zone 1	Zone 2
Impacts (feet/acres)	1,535	0	0	0	0	0	0	0
Mitigation Units	4,605	0	0	0	0	0	0	0

Per the mitigation request from the NCDOT, EEP commits to implementing sufficient stream mitigation credits up to a mitigation ratio of 3:1 (with a minimum 1:1 being stream restoration type mitigation credits) to offset the impacts associated with this project by the end of the MOA Year in which this project is permitted, in accordance with Section X of the Amendment No. 2 to the Memorandum of Agreement between the North Carolina Department of Environment and Natural Resources, the North Carolina Department of Transportation, and the U. S. Army Corps of Engineers, fully executed on March 8, 2007. If the above referenced impact amounts are revised, then this mitigation acceptance letter will no longer be valid and a new mitigation acceptance letter will be required from EEP.

If you have any questions or need additional information, please contact Ms. Beth Harmon at 919-715-1929.

Sincerely,

William D. Gilmore, P.E.  
EEP Director

cc: Mr. David Baker, USACE – Asheville Regulatory Field Office  
Mr. Brian Wrenn, Division of Water Quality, Wetlands/401 Unit  
File: R-2518A

*Restoring... Enhancing... Protecting Our State*



WETLAND PERMIT IMPACT SUMMARY											
Site No.	Station (From/To)	Structure Size / Type	WETLAND IMPACTS				SURFACE WATER IMPACTS				
			Fill In Wetlands Permanent (ha)	Fill In Wetlands Temporary (ha)	Excavation In Wetlands (ha)	Mechanized Clearing (Method III) (ha)	Permanent SW impacts (ha)	Temp. SW impacts (ha)	Existing Channel Impacts Permanent (m)	Existing Channel Impacts Temporary (m)	Natural Stream Design (m)
1	11+47 -Y1-	EXIST. 1350 & 800 CSP					0.001	0.001	4	3	
1A	14+60 -L-	EXIST. 600 & 400 CSP					0.004		44		
2	19+70 -L-	RCBC					0.035	0.004	65	6	
3	21+26 -L-	RCBC					0.023	0.003	45	6	
3A	11+30 -Y2-	BRIDGE						0.009		11	
4	27+18 -L-	1350 CSP					0.001	0.010	26	3	
5	31+61 -L-	RCBC					0.010	0.001	52	3	
6	33+78 -L-	RCBC					0.016	0.004	45	6	
7	37+00 -L-	RCBC & CHANNEL RELOC.					0.094	0.002	356	6	
7A	39+01 -L-	1200 RCP	0.004				0.004	0.001	46	3	
8	45+38 -L-	RCBC					0.017	0.001	47	3	
9	47+20 -L-	1200 CSP	0.067				0.003	0.001	27	3	
10	51+55 -L-	1200 CSP					0.002	0.001	12	6	
11	56+39 -L-	RCBC & CHANNEL RELOC.					0.055	0.001	326	3	
12	60+00 -L-	600 RCP	0.064								
SHEET TOTALS:			0.135				0.265	0.039	1095	62	

Note: Natural Stream Design length is included in Mitigation Plan.

NC DEPARTMENT OF TRANSPORTATION  
 DIVISION OF HIGHWAYS  
 MADISON / YANCEY COUNTY  
 PROJECT # - WBS 34445.1.1 (R-2518A)  
 US 19 FROM I-26 TO 0.8 Km EAST OF YANCEY CO. LINE  
 Rev. d 10/28/09

SHEET OF

PERMIT MODIFICATION  
 NOV 2, 2009 PAGE 1

WETLAND PERMIT IMPACT SUMMARY											
Site No.	Station (From/To)	Structure Size / Type	WETLAND IMPACTS				SURFACE WATER IMPACTS				
			Fill In Wetlands Permanent (ha)	Fill In Wetlands Temporary (ha)	Excavation In Wetlands (ha)	Mechanized Clearing (Method III) (ha)	Permanent SW impacts (ha)	Temp. SW impacts (ha)	Existing Channel Impacts Permanent (m)	Existing Channel Impacts Temporary (m)	Natural Stream Design (m)
13	65+71 -L-	900 RCP					0.002	0.001	24	6	
13A	67+40 -L-	450 CSP							59		
14	70+10 -L-	RCBC					0.011	0.001	52	3	
15	78+00 -L-	RCBC					0.036	0.002	145	6	
16	79+29 -L-	900 RCP					0.003	0.001	29	3	
17	81+52 -L-	RCBC					0.015	0.001	93	6	
18	82+69 -L-	RCBC & CHANNEL RELOC.					0.033	0.001	194	6	
19	88+14 -L-	1200 RCP	0.023				0.003	0.001	39	6	
20	91+26 -L-	900 RCP					0.002	0.001	34	6	
21	92+89 -L-	1000 CSP					0.009	0.001	99	19	
22	96+48 -L-	800 CSP					0.004	0.001	45	6	
23	98+00 -L-	1200 CSP					0.003	0.001	30	6	
24	109+33 -L-	RCBC					0.014	0.001	70	6	
25	102+60 -L-	1700 CSP(ALUMINIZED)					0.036	0.002	374	11	
SHEET TOTALS:			0.023				0.171	0.015	1287	90	
<b>PROJECT TOTALS</b>			<b>0.158</b>			<b>0.007</b>	<b>0.436</b>	<b>0.054</b>	<b>2382</b>	<b>152</b>	

NC DEPARTMENT OF TRANSPORTATION  
 DIVISION OF HIGHWAYS  
 MADISON / YANCEY COUNTY  
 PROJECT # - WBS 34445.1.1 (R-2518A)  
 US 19 FROM I-26 TO 0.8 Km EAST OF YANCEY CO. LINE  
 Rev.'d 10/28/09

Note: Natural Stream Design length is included in Mitigation Plan.

SHEET OF

PERMIT MODIFICATION  
 NOV 2, 2009 PAGE 2

WETLAND PERMIT IMPACT SUMMARY											
Site No.	Station (From/To)	Structure Size / Type	WETLAND IMPACTS				SURFACE WATER IMPACTS				
			Fill In Wetlands Permanent (ac)	Fill In Wetlands Temporary (ac)	Excavation In Wetlands (ac)	Mechanized Clearing (Method III) (ac)	Permanent SW impacts (ac)	Temp. SW impacts (ac)	Existing Channel Impacts Permanent (ft)	Existing Channel Impacts Temporary (ft)	Natural Stream Design (ft)
1	11+47 -Y1-	EXIST. 1350 & 600 CSP					0.002	0.002	13	10	
1A	14+60 -L-	EXIST. 600 & 400 CSP				0.010			144		
2	19+70 -L-	RCBC				0.09	0.010	0.09	213	20	
3	21+26 -L-	RCBC				0.06	0.007	0.06	148	20	
3A	11+30 -Y2-	BRIDGE					0.022			36	
4	27+18 -L-	1350 CSP				0.002	0.025	0.002	85	10	
5	31+61 -L-	RCBC				0.02	0.002	0.02	171	10	
6	33+78 -L-	RCBC				0.04	0.010	0.04	148	20	
7	37+00 -L-	RCBC & CHANNEL RELOC.				0.23	0.005	0.23	1168	20	
7A	39+01 -L-	1200 RCP	0.01			0.01	0.002	0.01	151	10	
8	45+38 -L-	RCBC				0.04	0.002	0.04	154	10	
9	47+20 -L-	1200 CSP	0.17				0.002	0.007	89	10	
10	51+55 -L-	1200 CSP				0.005	0.002	0.005	39	20	
11	56+39 -L-	RCBC & CHANNEL RELOC.				0.135	0.002	0.135	1071	10	
12	60+00 -L-	600 RCP	0.16								
SHEET TOTALS:			0.34			0.02	0.093	0.651	3594	206	

Note: Natural Stream Design length is included in Mitigation Plan.

NC DEPARTMENT OF TRANSPORTATION  
 DIVISION OF HIGHWAYS  
 MADISON / YANCEY COUNTY  
 PROJECT # - WBS 34445.1.1 (R-2518A)  
 US 19 FROM I-26 TO 0.8 Km EAST OF YANCEY CO. LINE  
 Rev. d 10/28/09

SHEET OF

PERMIT MODIFICATION  
 NOV 2, 2009 PAGE 3

WETLAND PERMIT IMPACT SUMMARY											
Site No.	Station (From/To)	Structure Size / Type	WETLAND IMPACTS				SURFACE WATER IMPACTS				
			Fill In Wetlands Permanent (ac)	Fill In Wetlands Temporary (ac)	Excavation In Wetlands (ac)	Mechanized Clearing (Method III) (ac)	Permanent SW impacts (ac)	Temp. SW impacts (ac)	Existing Channel Impacts Permanent (ft)	Existing Channel Impacts Temporary (ft)	Natural Stream Design (ft)
13	65+71 -L-	900 RCP					0.006	0.002	79	20	
13A	67+40 -L-	450 CSP					0.03	0.002	171	10	
14	70+10 -L-	RCBC					0.09	0.005	476	20	
15	78+00 -L-	RCBC					0.01	0.002	95	10	
16	79+29 -L-	900 RCP					0.04	0.002	305	20	
17	81+52 -L-	RCBC					0.08	0.002	637	20	
18	82+69 -L-	RCBC & CHANNEL RELOC.					0.01	0.002	128	20	
19	88+14 -L-	1200 RCP	0.06				0.006	0.002	111	20	
20	91+26 -L-	900 RCP					0.022	0.002	710	62	
21	92+89 -L-	1000 CSP					0.010	0.002	148	20	
22	96+48 -L-	800 CSP					0.007	0.002	98	20	
23	98+00 -L-	1200 CSP					0.03	0.002	230	20	
24	109+33 -L-	RCBC					0.09	0.005	1228	36	
25	102+60 -L-	1700 CSP (ALUMINIZED)					0.425	0.037	4603	298	
SHEET TOTALS:			0.06				1.076	0.130	8197	504	
<b>PROJECT TOTALS</b>			<b>0.40</b>			<b>0.02</b>	<b>1.076</b>	<b>0.130</b>	<b>8197</b>	<b>504</b>	

Note: Natural Stream Design length is included in Mitigation Plan.

NC DEPARTMENT OF TRANSPORTATION  
 DIVISION OF HIGHWAYS  
 MADISON / YANCEY COUNTY  
 PROJECT # - WBS 34445.1.1 (R-2518A)  
 US 19 FROM I-26 TO 0.8 Km EAST OF YANCEY CO. LINE  
 Rev'd 10/22/09

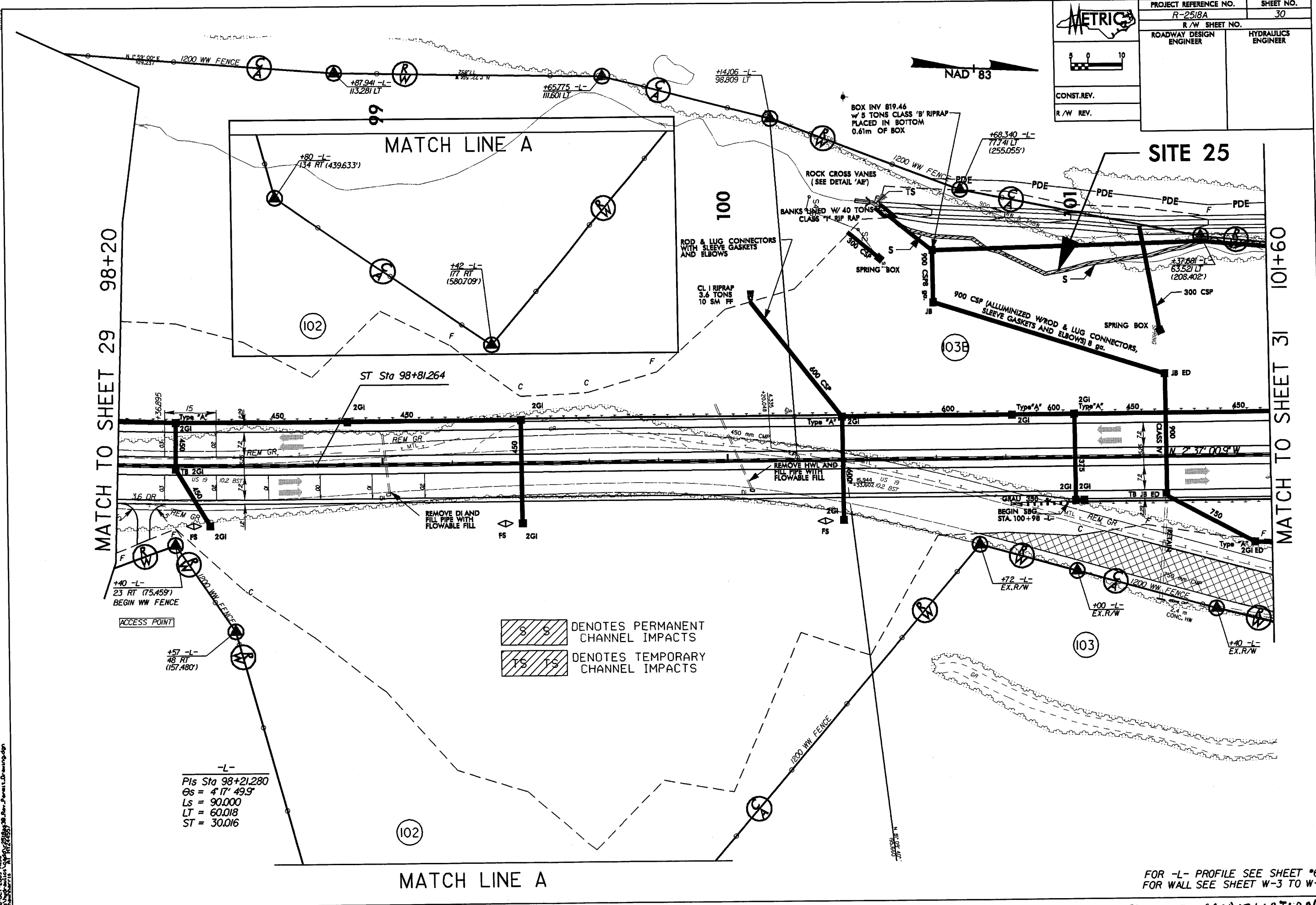
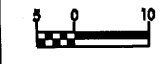
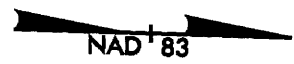
SHEET OF

PERMIT MODIFICATION  
 NOV 2, 2009 PAGE 4





PROJECT REFERENCE NO. R-2518A	SHEET NO. 30
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
CONST. REV.	
R/W REV.	



MATCH TO SHEET 29 98+20

MATCH TO SHEET 31 101+60

MATCH LINE A

SITE 25

MATCH LINE A



 DENOTES PERMANENT CHANNEL IMPACTS  
 DENOTES TEMPORARY CHANNEL IMPACTS

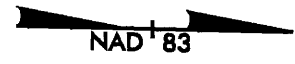
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 Ls = 90.000  
 LT = 60.018  
 ST = 30.016

FOR -L- PROFILE SEE SHEET #61  
FOR WALL SEE SHEET W-3 TO W-5

PERMIT MODIFICATION  
NOV 2, 2009 PAGE 5

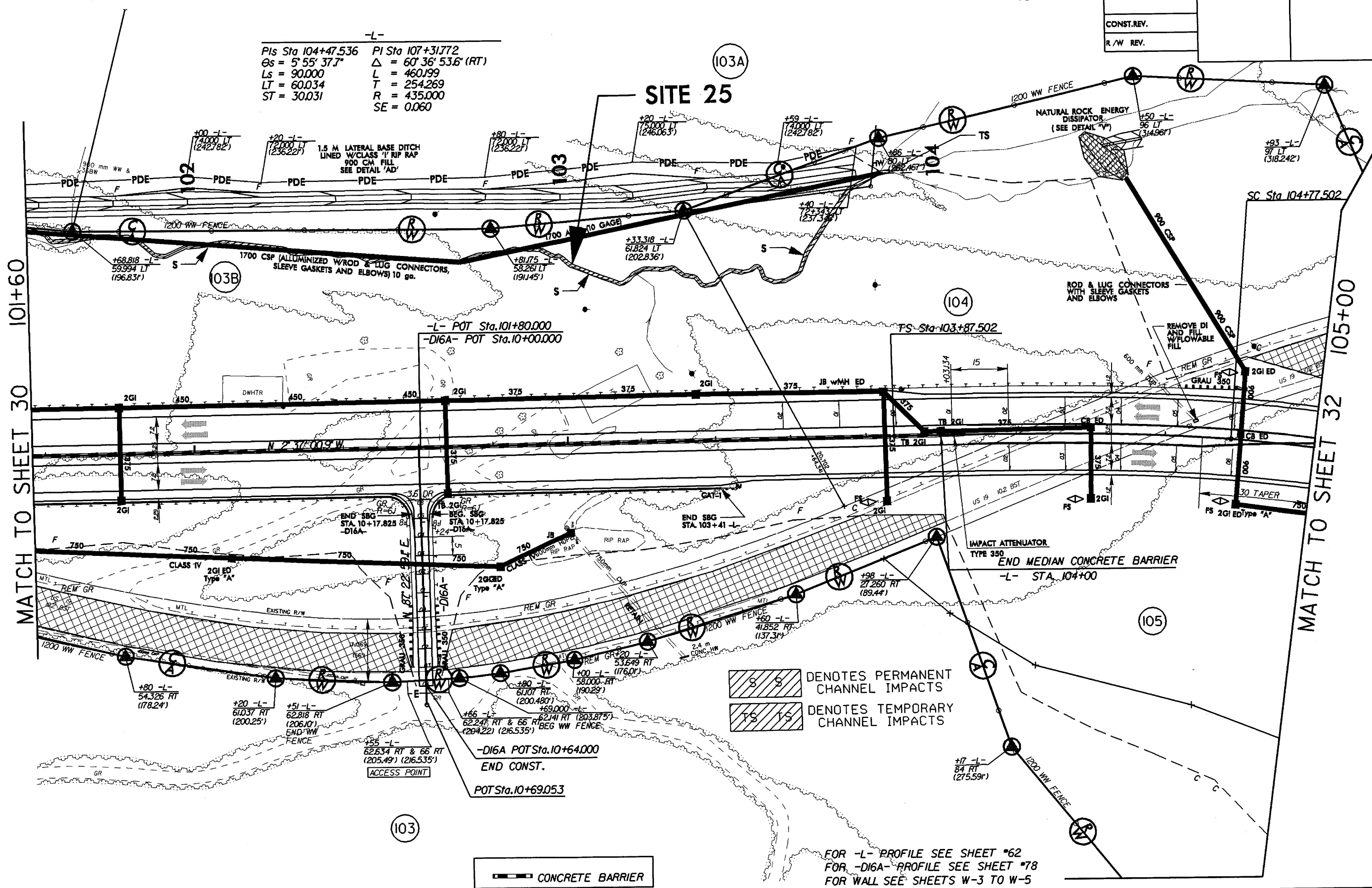
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	PROJECT REFERENCE NO.	SHEET NO.
	R-2518A	31
	R/W SHEET NO.	
	ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
CONST. REV.		
R/W REV.		



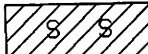
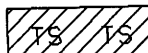
-L-  
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 $LT = 60.034$   $T = 254.269$   
 $ST = 30.031$   $R = 435.000$   
 $SE = 0.060$

**SITE 25**



MATCH TO SHEET 30 101+60

MATCH TO SHEET 32 105+00

 DENOTES PERMANENT CHANNEL IMPACTS  
 DENOTES TEMPORARY CHANNEL IMPACTS

 CONCRETE BARRIER

FOR -L- PROFILE SEE SHEET #62  
 FOR -D16A- PROFILE SEE SHEET #78  
 FOR WALL SEE SHEETS W-3 TO W-5

PROJECT: 2008 1435  
 DRAWING: 2518A-31  
 DATE: 11/12/08  
 DRAWN BY: J. HARRIS  
 CHECKED BY: J. HARRIS  
 APPROVED BY: J. HARRIS  
 PROJECT LOCATION: 101+60 TO 105+00



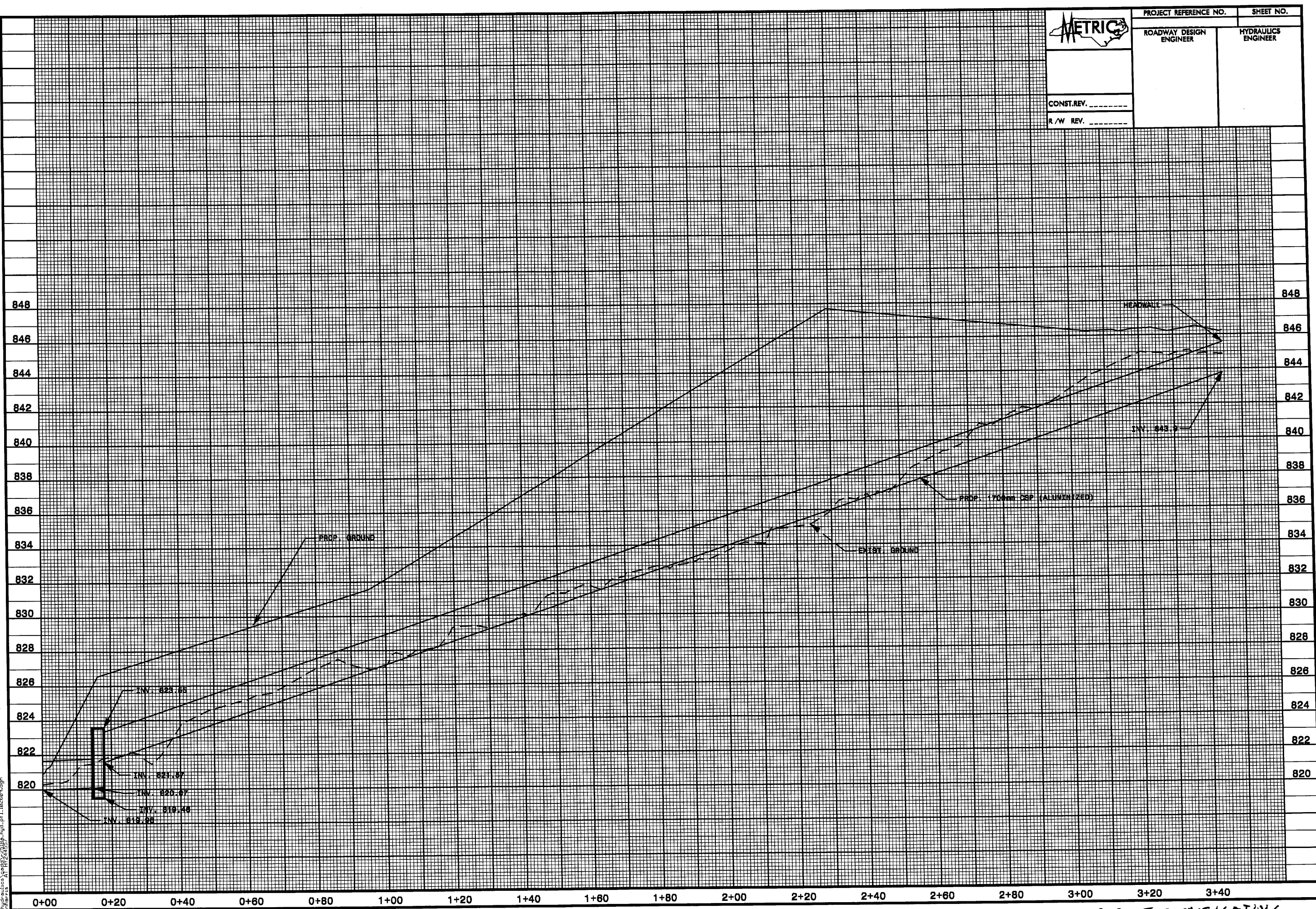
PROJECT REFERENCE NO. SHEET NO.

ROADWAY DESIGN ENGINEER HYDRAULICS ENGINEER

CONST. REV. \_\_\_\_\_

R/W REV. \_\_\_\_\_

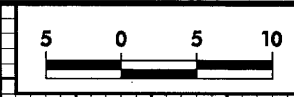
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Standard At 1/2"=1'-0"



PERMIT MODIFICATION  
NOV 2, 2009 PAGE 7



0/26/09  
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PROJECT REFERENCE NO. R-2518A SHEET NO. X-6

