STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

BEVERLY EAVES PERDUE
GOVERNOR

EUGENE A. CONTI, JR.
SECRETARY

January 20, 2012

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

ATTN: Ms. Sarah Hair
NCDOT Coordinator

Dear Madam:

Subject: **Request for Section 404 Individual Permit and Section 401 Water Quality Certification Modification** for the widening of NC 49 from East of NC 73 to East of SR 2630 (Cline Road) in Cabarrus County. Federal Aid Project No. NHS-0049(26), Division 10, TIP No. R-2533CC.

Reference: USACE Individual Permit Action ID SAW-2010-00726, dated June 6, 2011.
NCDWQ Water Quality Certification No. 003847, dated January 19, 2011.

The purpose of this letter is to request a modification to the United States Army Corps of Engineers (USACE) Individual Permit and North Carolina Division of Water Quality Certification for the above referenced project. The requested modification is to rectify problems that have occurred during the placement of a 1650 mm RCP at Site 7. Currently there is a considerable elevation difference between the undisturbed portion of the stream and the pipe inlet. There is approximately 2.85 feet of fall occurring within the approximate 26 feet of stream as it enters the pipe. NCDOT proposes to rectify this problem by installing a log sill in the area of the stream before it enters the pipe. The log sill will be used to direct the stream flow (thalweg) toward the center of the channel and to provide grade control. The log sill will be constructed of hardwood tree species with a minimum diameter of 12-inches. The length of each log shall be sufficient to allow proper construction and so they can be keyed into the banks a minimum of 1.5 meters (approx. 5 feet).

The addition of the log sill at Site 7 will cause 26 feet of permanent stream impact due to the installation of the pipe. The area impacted will occur in an area where temporary impacts

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

TELEPHONE: 919-707-6100
FAX: 919-212-5785

WEBSITE: WWW.NCDOT.ORG

LOCATION:
1020 BIRCH RIDGE DRIVE
RALEIGH NC 27610-4328

were to already occur. The attached wetland summary sheet reflects the changes in impacts at this site. The design for the placement of the log sills has been discussed and approved by the USACE and NCDWQ. The USACE has determined that no new mitigation would be required for this work.

Thank you for your assistance with this project. If you have any questions or need additional information, please contact Mr. Jason Dilday at jldilday@ncdot.gov or (919) 707-6111. A copy of this modification application will also be posted at http://www.ncdot.org/planning/pe/naturalunit/Permit.html.

Sincerely,

E. L. Lusk

for Gregory J. Thorpe, Ph.D., Manager
Project Development and Environmental Analysis Unit

CC:
NCDOT Permit Application Standard Distribution List

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 *	200+17/201+21-L-REV	3@3.7 x 3.7 RCBC	0.025					0.11	0.07	108	125	
		Bank Stabilization								98		
		UT Channel Relocation						0.01		36		
2	212+13/212+79 -L-REV	1@11.0 x 2.7 BOTTOMLESS RCBC						0.01	0.12	46	184	
		Bank Stabilization								39		
3 *	213+52/214+02 -L-REV	Roadway Fill	0.200									
4	218+26/219+34 -L-REV	2@2.7 x 2.7 RCBC						0.09	0.01	361	39	
	Shopping Center Access	2@2.7 x 2.7 RCBC										
		Bank Stabilization								46		
5 *	9+90/12+47 -Y1-REV RT	1050mm RCP	0.089					0.06		837		
		Bank Stabilization								10		
6	11+87/12+70 -Y1-REV	2@2.7 x 2.7 RCBC						0.09	0.02	371	89	
	12+11.6 -Y16-REV	2@2.7 x 2.7 RCBC										
		Bank Stabilization								66		
7	219+45/219+59 -L-REV	1 @ 1650mm RCP						0.14		928	17	
		1 @ 1800mm RCP										
8	11+06-Y16REV-RT	600 RCP						<0.01		10		
		Bank Stabilization								10		
9	220+00/220+28 -L-REV LT	450mm RCP						0.02		118		
TOTALS:			0.31					0.53	0.22	3084	454	

ENGLISH IMPACTS

* WETLAND CONSIDERED TOTAL TAKE.

Permit Drawing
Sheet 6 of 40
revised 1/17/12

NC DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

CABARRUS COUNTY
WBS - 34448.1.1 (R-2533CC)

SHEET 1.13.2012

ATN Revised 3/31/05

WETLAND PERMIT IMPACT SUMMARY

Site No.	Station (From/To)	Structure Size / Type	WETLAND IMPACTS: Permanent Fill In Wetlands (ha)	Temp. Fill In Wetlands (ha)	Excavation in Wetlands (ha)	Mechanized Clearing in Wetlands (ha)	Hand Clearing in Wetlands (ha)	SURFACE WATER IMPACTS: Permanent SW impacts (ha)	Temp. SW impacts (ha)	Existing Channel Impacts Permanent (m)	Existing Channel Impacts Temp. (m)	Natural Stream Design (m)
1 *	200+17/201+21-L-REV	3@3.7 x 3.7 RCBC	0.010					0.046	0.026	33	38	
		Bank Stabilization								30		
		UT Channel Relocation						0.003		11		
2	212+13/212+79 -L-REV	1@11.0 x 2.7 BOTTOMLESS RCBC						0.007	0.048	14	56	
		Bank Stabilization								12		
3 *	213+52/214+02 -L-REV	Roadway Fill	0.081									
								0.037	0.006	110	12	
4	218+26/219+34 -L-REV	2@2.7 x 2.7 RCBC										
	Shopping Center Access	2@2.7 x 2.7 RCBC								14		
		Bank Stabilization						0.026		255		
5	9+90/12+47 -Y1-REV RT	1050mm RCP	0.036							3		
		Bank Stabilization						0.035	0.009	113	27	
6	11+87/12+70 -Y1-REV	2@2.7 x 2.7 RCBC										
	12+11.6 -Y16-REV	2@2.7 x 2.7 RCBC								20		
		Bank Stabilization						0.058		283	5	
7	219+45/219+59 -L-REV	1 @ 1650mm RCP										
		1 @ 1800mm RCP										
								<0.001		3		
8	11+06-Y16REV-RT	600 RCP								3		
		Bank Stabilization										
								0.008		36		
9	220+00/220+28 -L-REV LT	450mm RCP										
TOTALS:			0.127					0.220	0.089	940	138	

METRIC IMPACTS

* WETLAND CONSIDERED A TOTAL TAKE.

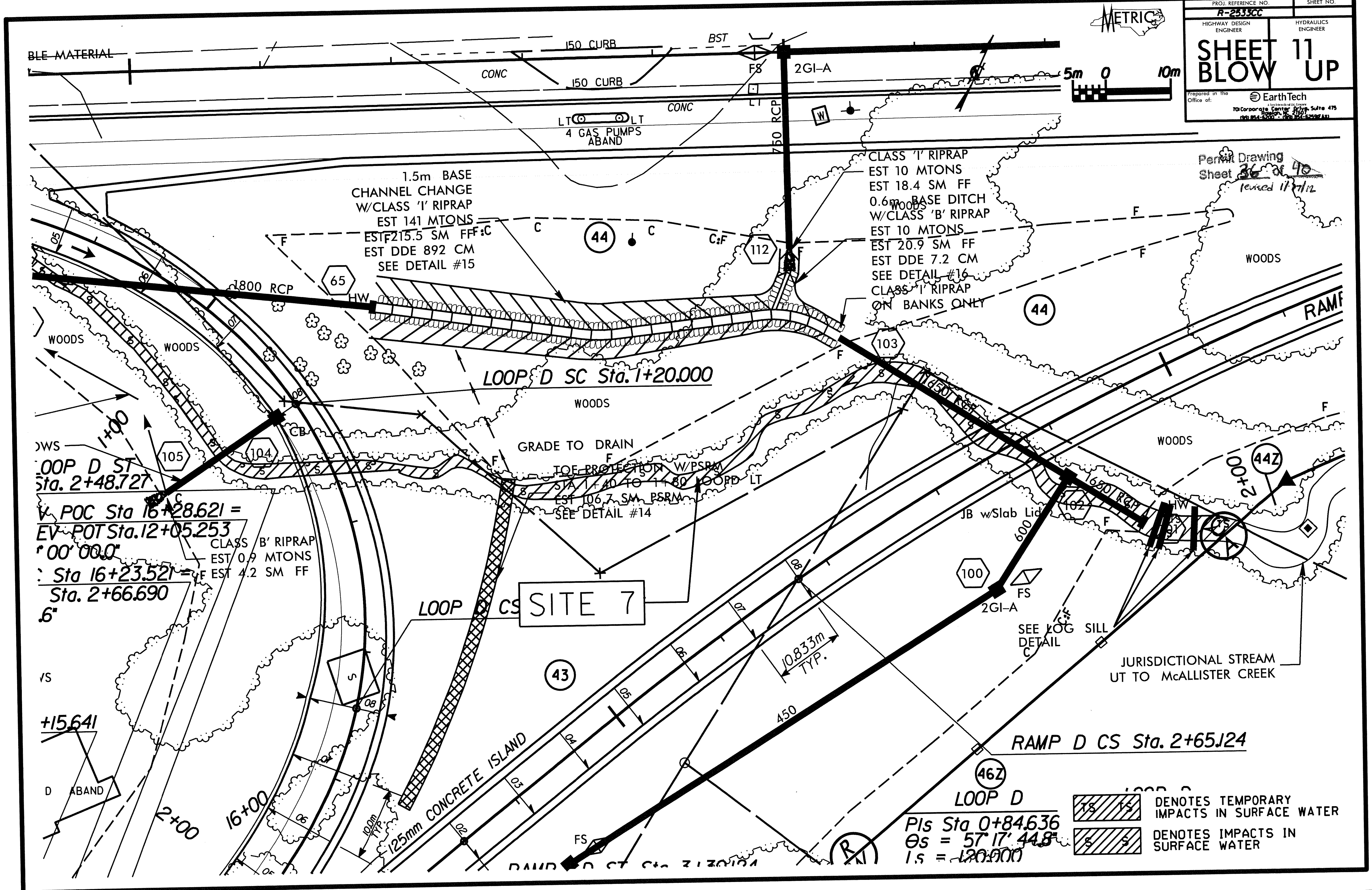
Permit Drawing
Sheet 7 of 40
revised 1/17/12

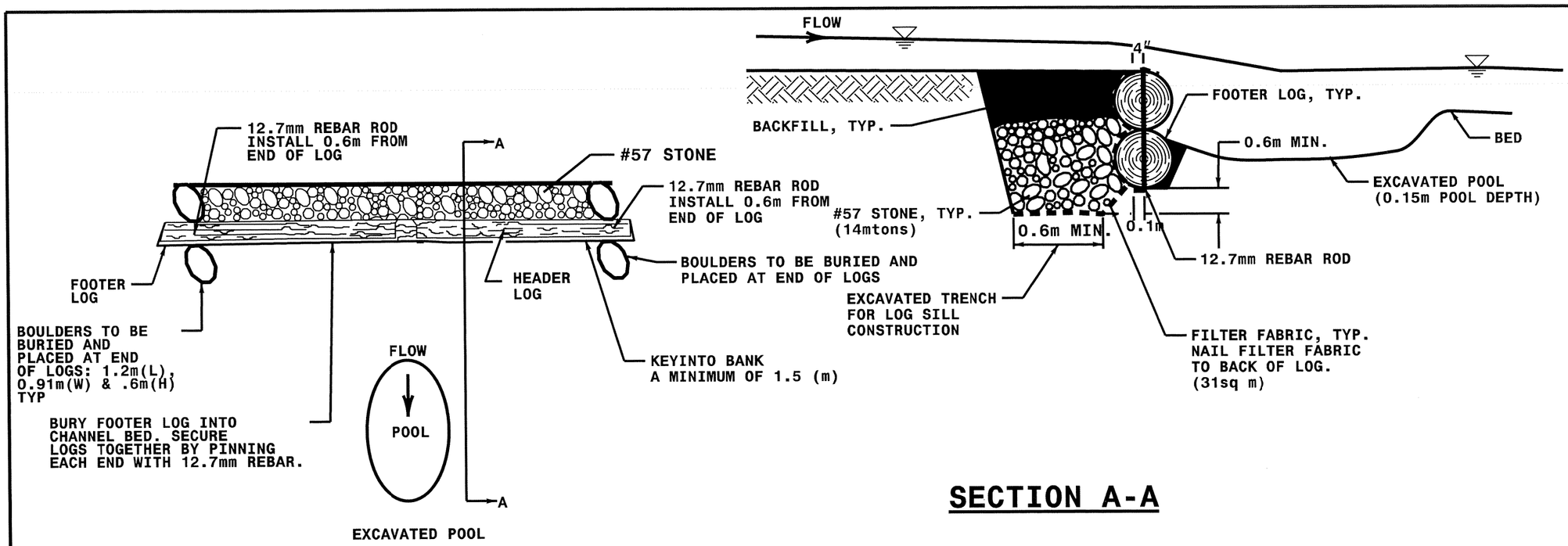
NC DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

CABARRUS COUNTY
WBS - 34448.1.1 (R-2533CC)

SHEET 1.13.2012

WHE Revised 5/21/2008


PROJ. REFERENCE NO.
R-2535CC
SHEET NO.
HIGHWAY DESIGN ENGINEER
HYDRAULICS ENGINEER
SHEET 11 BLOW UP
METRIC
5m 0 10m
Prepared in the Office of:
EarthTech
Permit Drawing Sheet 36 of 40
revised 11/7/12
150 CURB
BST
FS
2GI-A
CONC
LT
4 GAS PUMPS ABAND
750 RCP
1.5m BASE CHANNEL CHANGE W/CLASS 'I' RIPRAP
EST 141 MTONS
EST 215.5 SM FF
EST DDE 892 CM
SEE DETAIL #15
CLASS 'I' RIPRAP
EST 10 MTONS
EST 18.4 SM FF
0.6m BASE DITCH W/CLASS 'B' RIPRAP
EST 10 MTONS
EST 20.9 SM FF
EST DDE 7.2 CM
SEE DETAIL #16
CLASS 'I' RIPRAP ON BANKS ONLY
44
112
65
1800 RCP
HW
103
WOODS
RAMP
LOOP D SC Sta. 1+20.000
1650 RCP
GRADE TO DRAIN
TOE PROTECTION W/PSRM
STA 1+40 TO 1+80 LOOPD LT
EST 106.7 SM PSRM
SEE DETAIL #14
LOOP D ST Sta. 2+48.727
105
104
CB
POC Sta 16+28.621 =
POT Sta. 12+05.253
00' 00.0"
Sta 16+23.521 =
Sta. 2+66.690
CLASS 'B' RIPRAP
EST 0.9 MTONS
EST 4.2 SM FF
1+00
JB w/Slab Lid
102
650 RCP
600
44Z
2+00
100
2GI-A
SEE LOG SILL DETAIL
SITE 7
LOOP D CS
43
10.833m TYP.
JURISDICTIONAL STREAM UT TO McALLISTER CREEK
450
RAMP D CS Sta. 2+65.124
46Z
LOOP D
PIs Sta 0+84.636
θs = 57° 17' 44.8"
Ls = 120.000
+15.641
ABAND
2+00
16+00
10.0m TYP.
125mm CONCRETE ISLAND
DENOTES TEMPORARY IMPACTS IN SURFACE WATER
DENOTES IMPACTS IN SURFACE WATER



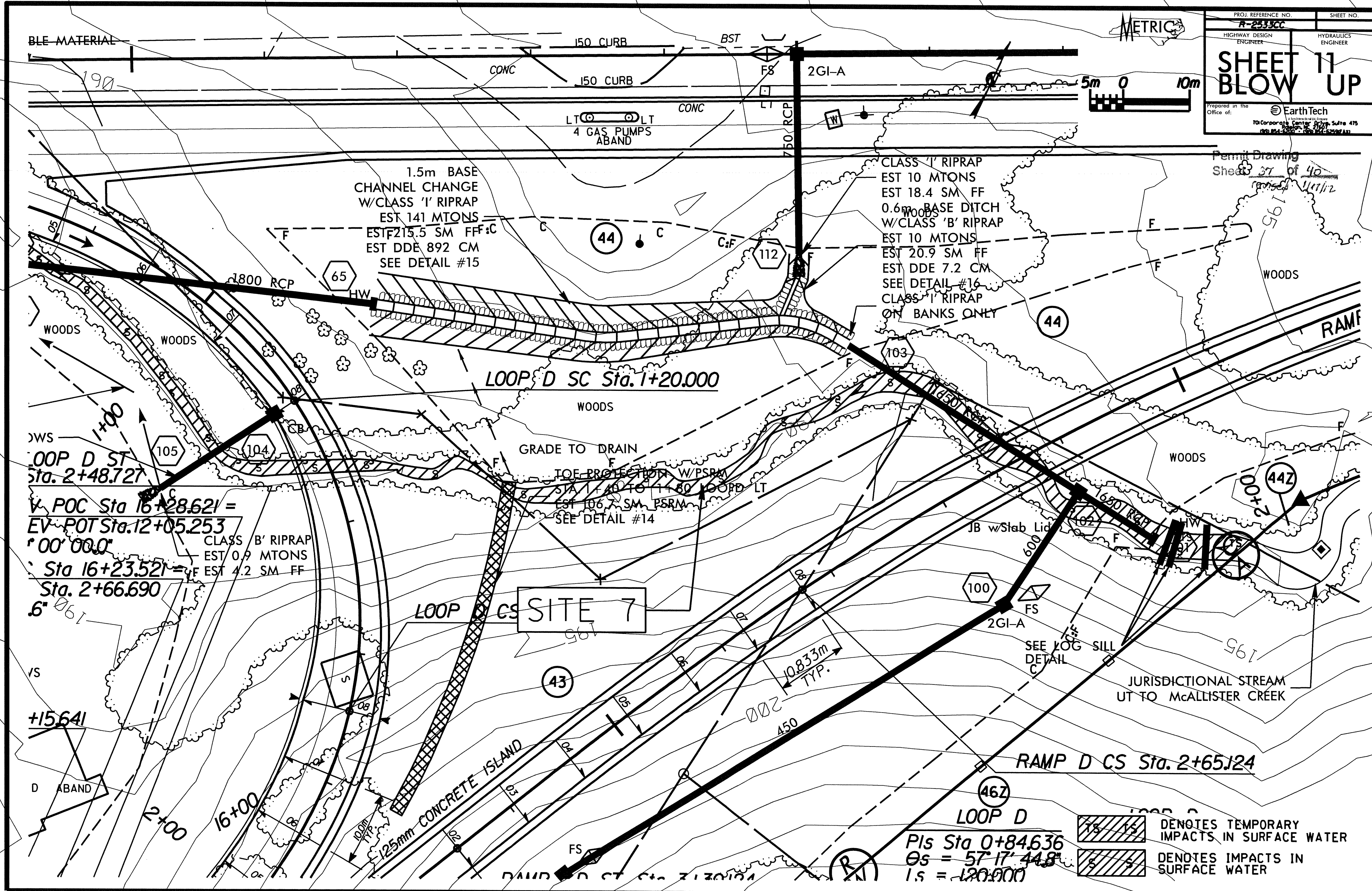
PLAN VIEW

SECTION A-A

NOTES:
1) DO NOT EXCAVATE POOL TOO CLOSE TO FOOTER LOG.
2) CLASS "A" STONE CAN BE USED TO REDUCE VOIDS BETWEEN HEADERS AND FOOTERS.
3) COMPACT BACKFILL TO EXTENT POSSIBLE OR AT THE DIRECTION OF THE ENGINEER.

LOG SILL DETAIL

NOT TO SCALE



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SHEET NO.
R-2533CC
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