



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

MICHAEL F. EASLEY
GOVERNOR

LYNDO TIPPETT
SECRETARY

April 1, 2008

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: **Request for Modification to Individual Permit Application and 401 Water Quality Certification** for the US 64 Relocation from US 19/74/129 in Murphy to east of NC 141 in Peachtree, Cherokee County. State Project No. 8.1910203. Federal Aid Project FR-14-1(1). TIP No. R-0977A. NCDOT Division 14. Debit \$570.00 from WBS Element 34357.1.1

Reference: - USACE Individual Permit, Action ID No. 200530150 (February 2, 2005), and Modification (July 3, 2006)
- DWQ WQC No. 3487, DWQ Project No. 20041594 (December 21, 2004), and Modifications (November 22, 2005 and June 16, 2006)

Dear Mr. Baker:

The U.S. Army Corps of Engineers (USACE) has authorized the North Carolina Department of Transportation (NCDOT) to place fill in waters of the United States, and the North Carolina Division of Water Quality (DWQ) has authorized the water quality certification to construct the subject road project. The original Section 404 Individual Permit (IP) and the original 401 Water Quality Certification (WQC) authorized the discharge of fill material into 0.82 acre of wetland and 6,812 linear feet of stream channel in and adjacent to the waters of the Hiwassee River, Martin Creek, Hampton Creek, McCombs Branch and several unnamed tributaries.

A modification to the Section 401 WQC, dated November 22, 2005 (referenced above) resulted in authorization for additional temporary impacts to surface waters for work pads

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

TELEPHONE: 919-715-1334 or
919-715-1335

FAX: 919-715-5501

WEBSITE: WWW.NCDOT.ORG

LOCATION:
2728 CAPITAL BLVD. SUITE 240
RALEIGH NC 27604

(Sites 4A and Site 16A) and for a diversion channel (Site 9). A subsequent modification to the Section 404 Individual Permit (IP) and the Section 401 Water Quality Certification (WQC), dated July 3, 2006 and June 16, 2006, respectively (referenced above) authorized temporary barriers (Site 6) and bank stabilization (Site 9).

The purpose of this letter is to request a modification of the existing Section 404 IP and Section 401 WQC. The activities and impacts occurring at each site are described, and revised project impacts are listed in Tables 1 and 2. Permit drawings and a Rapanos package are attached to this permit modification application. The EEP Acceptance Letter will be forwarded upon receipt by NCDOT.

A site visit was conducted on March 12, 2008 with Mr. Mike Parker, DWQ and Mr. David Baker, ACOE, both from their respective Asheville Regional Offices. Mr. Parker and Mr. Baker reviewed the modification sites with Mr. Mark Davis, NCDOT Division Environmental Officer, and were in agreement with the actions proposed in this modification application.

Permit Site 5A

Modification activity at Station 10+55 -2A- (see Mod-April 2008 Site 5A Sheet)

In a resolution dated January 23, 2006, the Cherokee County Board of Commissioners requested that NCDOT provide access to the newly constructed US 64 from SR 1556 (Martins Creek Road) in the vicinity of Morgan Hill (Sta. 19+40 -LC1B-). This decision was based on increased traffic volume along Martins Creek Road and the undue hardship it would place on area residents to get to Murphy Medical Center and Tri-County Community College. The new Y-line (-Y2A-) will require the placement of 131 feet of RCP in an unnamed tributary to the Hiwassee River. There will be <0.01 acre of impacts due to dewatering for pipe installation.

Existing Permitted Impact: 518 linear feet

Revised Impact: 649 linear feet (131 LF of new impact)

New Temporary Impacts: <0.01 acre

Mitigation: needed for 131 linear feet of permanent stream impact.

Permit Site 11

Modification activity from Station 11+10 to 11+60 -Y3- (see Mod-April 2008 Site 11 Sheet)

Due to the exposure of a forced main sewer line and reduced shoulder width along SR 1558 (Harshaw Road), NCDOT plans on removing three 8-foot sections of RCP and construct a 4-foot long junction box (Sta. 11+60 -Y3-). One 8-foot section of RCP will be stubbed out to turn the stream away from the sewer line and road shoulder. This will also require the relocation of approximately 135 feet of an unnamed tributary to the Hiwassee River to gain additional shoulder width along Harshaw Road. Natural stream design techniques will be utilized and the riparian area will be vegetated with native species. There will be 0.02 acre of temporary impact due to dewatering in order to install the junction box and pipe.

Existing Permitted Impact: 1,598 linear feet

Revised Impact: 1,733 linear feet (**135 LF of new impact**)

New Temporary Impact: **0.02 acre**

Mitigation: Natural stream design will be utilized for the 135 feet of stream relocation. Natural stream design will also be utilized for the 12 linear foot section of stream created to tie the new junction box to the relocated stream resulting in a total of 147 feet of natural stream design. The 135 feet of impact, along with the 147 feet of natural stream design results in 12 feet of mitigation credit to be used on this project.

Permit Site 16B (new site)

Modification activity at Station 69+37 -LREV-RT- (see Mod-April 2008 Site 16B Sheet)

Due to potential erosion and scour problems along the streambank of the Hiwassee River where the riprap-lined tail ditch confluences with the river, DWQ suggested that NCDOT extend the riprap-lined ditch an additional 20 feet down the slope to the Hiwassee River. The original plans show the tail ditch ending at the top of the streambank, which is 12 to 15 feet high. This tail ditch drains a hazardous spill basin, which collects stormwater from bridge number 5 spanning the Hiwassee River. Twenty feet of streambank along the Hiwassee River will be stabilized with riprap.

New Impact: **20 LF of new stream impact**

Mitigation: mitigation is not warranted for streambank stabilization, as it does not constitute loss of Waters of the U.S.

Permit Site 19

Modification activity at Station 10+60 -YREV- (see Mod-April 2008 Site 19 Sheet)

Due to driveway conflicts associated with the grade of the proposed Y9, the adjacent property owner requested that NCDOT redesign the Y-line to better accommodate access to his property. NCDOT proposes to remove the partially constructed Y9, which includes removal of a 115-foot section of pipe from an unnamed tributary (UT) to McCombs Branch and restoring the stream. The relocation of Y9 will require the piping of a 92-foot long adjacent section of UT to McCombs Branch, and the piping of 28 feet of a stream that confluences with UT to McCombs Branch. In addition, there will be 0.02 acre of impact due to fill and 0.01 acre of impact from mechanical clearing of an adjacent wetland. There will be 0.02 acre of new temporary impacts due to dewatering in order to remove the existing pipe and reinstall on new location.

Existing Permitted Impact: 151 linear feet of stream impact (a 115-foot pipe segment and a 36-foot long riprap segment located upstream)

Revised Impact: 271 linear feet of stream impact (**120 LF of new stream impact**), and **0.03 acre of new wetland impact**).

New Temporary Impact: **0.02 acre**

Mitigation: 5 LF of net stream mitigation and 0.03 acre of wetland mitigation needed.

The 5 LF of net mitigation results from the difference between the 115 linear feet of stream to be restored with the pipe removal and the 120 linear feet of new stream impact.

Permit Site 22

Modification at Station 10+00 -Y10- (see Mod-April 2008 Site 22 Sheet)

Due to a slightly perched culvert, DWQ requested that NCDOT construct a cross-vane at the culvert outlet under SR 1549 (McCombs Road) to provide backwater to accommodate aquatic life passage. One (1) rock cross-vane will be installed to raise the water level in the vicinity of the pipe outlets to alleviate the erosion occurring at the pipe outlets. There will be <0.01 acre of impact due to dewatering in order to construct the cross-vane.

Permitted Impact: 59 linear feet of stream impact.

Revised Impact: no change (cross-vane is within area of permitted impact).

New Temporary Impact: <0.01 acre

Mitigation: No mitigation warranted.

In summary, there will be 406 linear feet of new stream impact, of which 20 linear feet does not warrant mitigation. With the 147 feet of natural stream design at Site 11 and the removal of pipe and restoration of the 115 linear feet of stream at Site 19, the net amount of mitigation needed as a result of the modification activities is 124 linear feet. Wetland mitigation needed as a result of the proposed activities at Site 19 is 0.03 acre. There will be a total of 0.04 acre of new temporary impacts due to dewatering. The impacts and mitigation are presented in Tables 1 and 2.

Table 1. Summary of Stream Impacts / New Mitigation

Site Number	Stream Name	Permanent Impact (LF)	Temporary Impact (acre)	New Mitigation Needed (LF)
1	UT to Hiwassee River	66	-	-
4	UT to Hiwassee River	354	-	-
4A	Hiwassee River	-	0.11*	-
5	UT to Hiwassee River	113	-	-
5A	UT to Hiwassee River	649 (131)	<0.01	131
6	Martin Creek	-	0.01**	-
7	UT to Martin Creek	22	-	-
8	UT to Hampton Creek	89	-	-
9	Hampton Creek	1,002**	230 (LF)*	-
10	UT to Hampton Creek	725	-	-
11	UT to Hiwassee River	1,733 (135)	0.02	- 12 LF (credit)
12	UT to Hiwassee River	220	-	-
14	UT to Hiwassee River	358	-	-
15	UT to Hiwassee River	125	-	-
16	UT to Hiwassee River	453	-	-
16A	Hiwassee River	-	0.02*	-
16B	Hiwassee River	20	-	not warranted
18	UT to McCombs Branch	381	-	-
19	UTs to McCombs Branch	271 (120)	0.02	5 (net)
20	UT to McCombs Branch	504	-	-
21	UT to McCombs Branch	105	-	-
22	UT to McCombs Branch	59	<0.01	not warranted
TOTAL		6,843 (406)	0.18 (0.04), 230 LF	124

Bold = revised impact totals based on March 28, 2008 Modification Application (permanent impact values from this modification depicted in parenthesis)

* revised based on DWQ 401WQC Modification dated November 22, 2005

** revised based on DWQ 401WQC Modification dated June 16, 2006, and USACE 404 Mod dated July 3, 2006

Table 2. Summary of Riverine Wetland Impacts

Site Number	Fill in Wetlands (acre)	Excavation in Wetlands (acre)	Mechanized Clearing in Wetlands (acre)
1	0.12	< 0.01*	-
3	0.17	-	-
3A	-	0.22	-
4	0.02	-	-
11	0.05	0.05	-
17	0.12	-	-
18	0.07	-	-
19	0.02	-	0.01
21	< 0.01*	< 0.01*	-
TOTAL	0.57 (0.02)	0.27	0.01

Bold = revision based on March 27, 2008 Modification Application

* 0 used in place of < 0.01 for calculating totals.

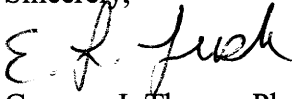
Mitigation

As noted previously, mitigation is needed for 124 linear feet of stream impact and 0.03 acre of wetland impact. The Ecosystem Enhancement Program (EEP) will provide mitigation for the additional 124 linear feet of stream impacts and the 0.03 acre of wetland impact. NCDOT will forward the EEP acceptance letter upon receipt.

The NCDOT respectfully requests that the referenced Section 404 Permit and Section 401 Water Quality Certification be modified to reflect the revisions outlined in this application. In compliance with Section 143-215.3D(e) of the NCAC, NCDOT will provide \$570 to act as payment for processing the Section 401 modification. We are providing five (5) copies of this application to the North Carolina Department of Environment and Natural Resources, Division of Water Quality for their review.

If you have any questions or need additional information please call Bill Barrett at (919) 715-1624, or contact via e-mail at wabarrett@dot.state.nc.us.

Sincerely,



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

w/ attachments

- Mr. Brian Wrenn, NCDWQ (5 Copies)
- Ms. Marella Buncick, USFWS
- Ms. Marla Chambers, NCWRC
- Ms. Kathy Matthews, USEPA-Whitter, NC
- Mr. Ronald Mikulak, USEPA – Atlanta, GA
- Mr. Harold Draper, TVA
- Mr. Clarence W. Coleman, P.E., FHWA

w/o attachments (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. B. Setzer, P.E., Division Engineer
Mr. Mark Davis, DEO
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
Ms. Theresa Ellerby, PDEA Project Planning Engineer
Mr. Drew Joyner, PE, Human Environment Unit Head

WETLAND PERMIT IMPACT SUMMARY

Site No.	Station (From/To)	Structure Size / Type	WETLAND IMPACTS			SURFACE WATER IMPACTS			Natural Stream Design (ft.)		
			Fill In Wetlands (ac.)	Temp. Fill In Wetlands (ac.)	Excavation In Wetlands (ac.)	Mechanized Clearing (Method III) (ac.)	Fill In SW (Natural) (ac.)	Additional SW Impacts (ft.)		Temp. Fill In SW (ac.)	Existing Channel Impacted (ft.)
1	10+80 -LC1B- RT.	150 CS	0.12		<.01*		<.01*		66		
2		DELETED THIS SITE									
3	14+60 -LC1B-	NONE	0.17								
3A	15+60 -L1CB-	RIP RAP DITCH			0.22						
4	14+80 -LC1B-	750	0.02				0.07		354		
4A	16+00 -L1CB-	NON DESTRUCTIVE WORK BRIDGE									
5	12+64 -Y1REV-	450 CS									
5A	18+30 -LC1B-	1200							113		
6	24+00 -LC1B-	TEMPORARY WORK BRIDGE									
7	28+90 -LREV- RT.	800 CS						0	22		
8	34+80 -LREV- RT.	150 CS							89		
9	35+50 -LREV-	2 @ 2.4 X 2.4 RCBC							971		
10	36+50 -LREV-	750							725		
11	10+20 TO 15+50 -Y3- RT.	MULTIPLE PIPES	0.05		0.05				135		
12	54+20 -LREV- LT.	900							1598	** 948	
13		DELETED THIS SITE							220		
14	58+00 -LREV-	750							358		
15	61+40 -LREV-	150 CS							125		
16	64+40 -LREV-	1200 CS							453		
16A	68+00 -LREV-	BRIDGE									
16B	69+37 -LREV- RT	Embankment Rip Rap							20		
17	76+40, 76+80 RT. -LREV-	900	0.12								
18	82+00 -LREV-	1500	0.07						381		
19	10+60 -Y9REV-	2 @ 1200	0.02						151	** 115	
20	85+00 -LREV-	1500 CS							504		
21	12+75 -Y6-	1 @ 1.5 X 1.5 CONCRETE BOX	<.01*		<.01*				105		
22	10+00 -Y10-	1 @ 1200, 1 @ 1500							59		
TOTALS:			0.57	0	0.27	0.01	0.79	0	406	6812	1099

* Used 0 in place of <.01 when calculating totals.

** Site 11: Original + Additional = (801+147)

Site 19: Original proposed 2 @ 1200 RCP has been installed but will be removed (115') and relocated (92'); Additional impact of 120 feet includes main stream and trib (92' + 28').

Site 22 - Addition of rock vane at outlet results in no net gain of impact. Accounted for in original impact. Temporary dewatering impacts at sites 5A (<0.01), 11(0.0a), 19(0.0a), and 2a (<0.01)

Form Revised 3/22/01

NCDOT

DIVISION OF HIGHWAYS
CHEROKEE COUNTY

PROJECT 8.1910203 (R-977A)
PROPOSED US 64 RELOCATION FROM
EXISTING US 19-74-129 IN MURPHY
TO EAST OF NC 141 IN PEACHTREE

SHEET OF SHEET
REV 3/08
8/17/2004

	PROJECT REFERENCE NO.	SHEET NO.
	R-977A	6
	HIGHWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
CONST. REV.		
R/W REV.		

REVISIONS

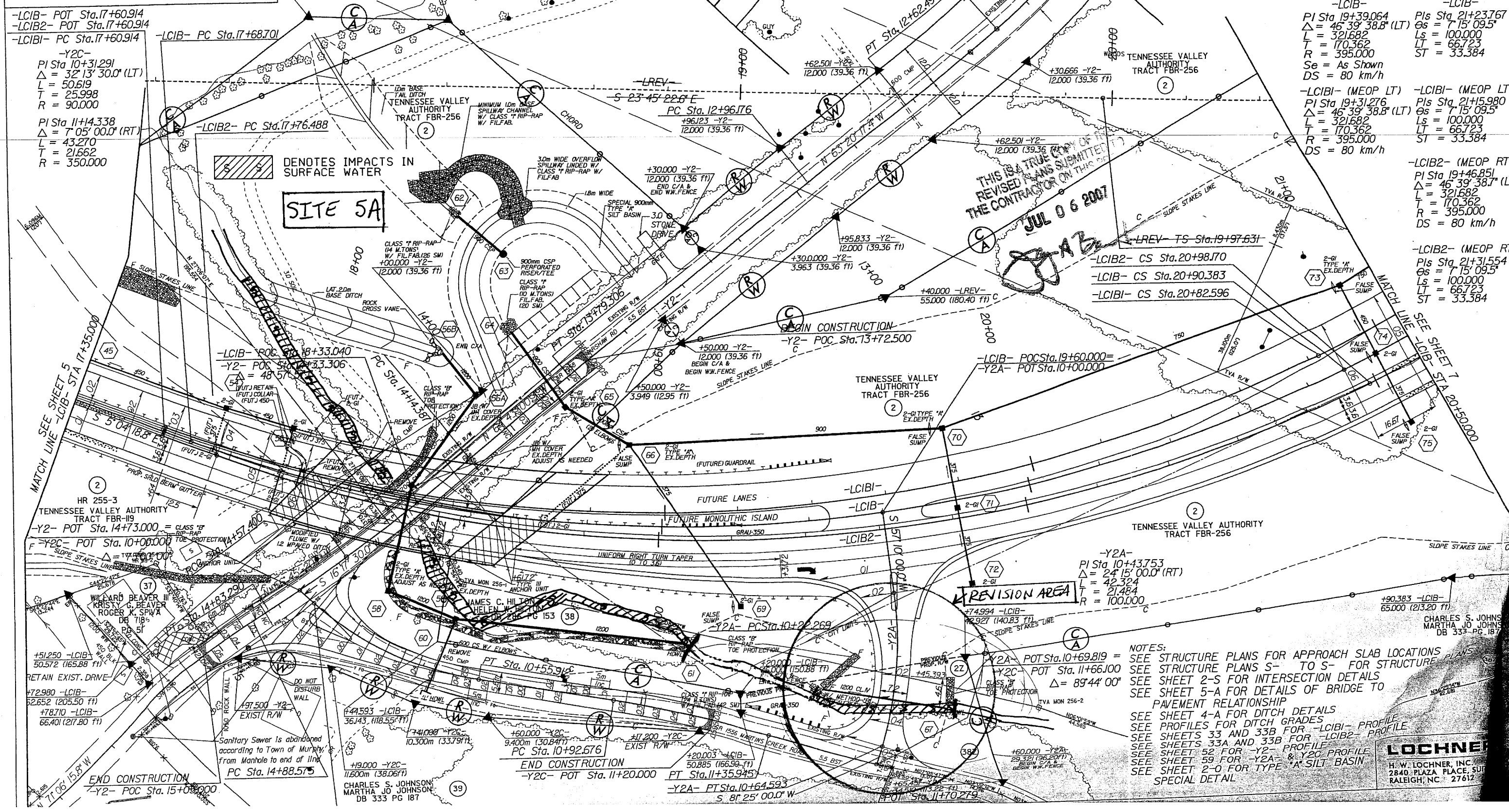
2-16-07 - ADDED ALIGNMENT -Y2A- TO CONNECT AT MARTIN'S CREEK ROAD, REMOVED DRAINAGE STRUCTURES 67 & 68, ADDED GUARDRAIL & ADDED 1200mm RCP CL.N.W. METHOD 'B' INSTALLATION

2-16-07 - ADDED SECOND TAKING FOR PARCELS 38 & 2

6-06-07 - ADDED ALIGNMENT -Y2C- AND LOWERED -Y2- TO ACCOMMODATE ACCEPTABLE VERTICAL CLEARANCE UNDER THE -L- LINE OVERPASS.

6-06-07 - ADDED PARCEL *39 AT THE PROPERTY OF CHARLES AND MARTHA JOHNSON DB 333 PG 187.

RIGHT OF WAY PLAN SHEETS 6 AND 7



-LCIB-
 PI Sta 19+39.064
 $\Delta = 46^\circ 39' 38.8''$ (LT)
 L = 321.682
 T = 170.362
 R = 395.000
 Se = As Shown
 DS = 80 km/h

-LCIB-
 PI Sta 21+23.767
 $\Delta = 7^\circ 15' 09.5''$
 Ls = 100.000
 LT = 66.723
 ST = 33.384

-LCIBI- (MEOP LT)
 PI Sta 19+31.276
 $\Delta = 46^\circ 39' 38.7''$ (LT)
 L = 321.682
 T = 170.362
 R = 395.000
 DS = 80 km/h

-LCIBI- (MEOP RT)
 PI Sta 19+46.851
 $\Delta = 46^\circ 39' 38.7''$ (LT)
 L = 321.682
 T = 170.362
 R = 395.000
 DS = 80 km/h

-LCIB2- (MEOP RT)
 PI Sta 21+31.554
 $\Delta = 7^\circ 15' 09.5''$
 Ls = 100.000
 LT = 66.723
 ST = 33.384

THIS IS A TRUE COPY OF THE REVISED PLANS SUBMITTED TO THE CONTRACTOR ON THIS DATE
JUL 06 2007
 [Signature]

NOTES:

SEE STRUCTURE PLANS FOR APPROACH SLAB LOCATIONS

SEE STRUCTURE PLANS S- TO S- FOR STRUCTURE PLANS

SEE SHEET 2-S FOR INTERSECTION DETAILS

SEE SHEET 5-A FOR DETAILS OF BRIDGE TO PAVEMENT RELATIONSHIP

SEE SHEET 4-A FOR DITCH DETAILS

SEE PROFILES FOR DITCH GRADES

SEE SHEETS 33 AND 33B FOR -LCIBI- PROFILE

SEE SHEETS 33A AND 33B FOR -LCIB2- PROFILE

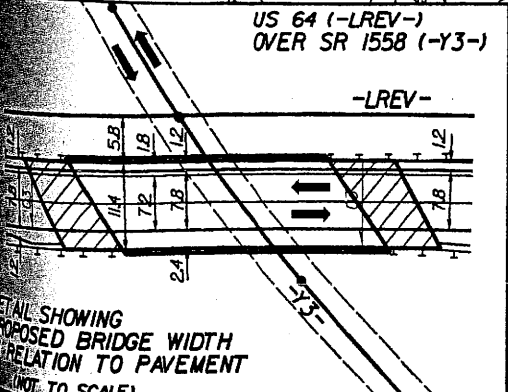
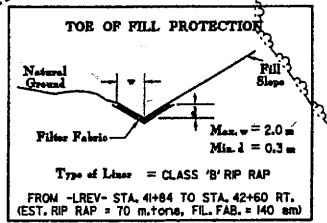
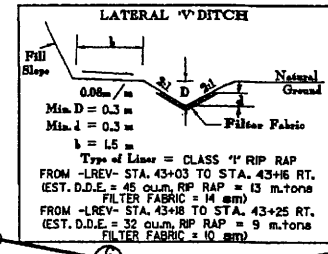
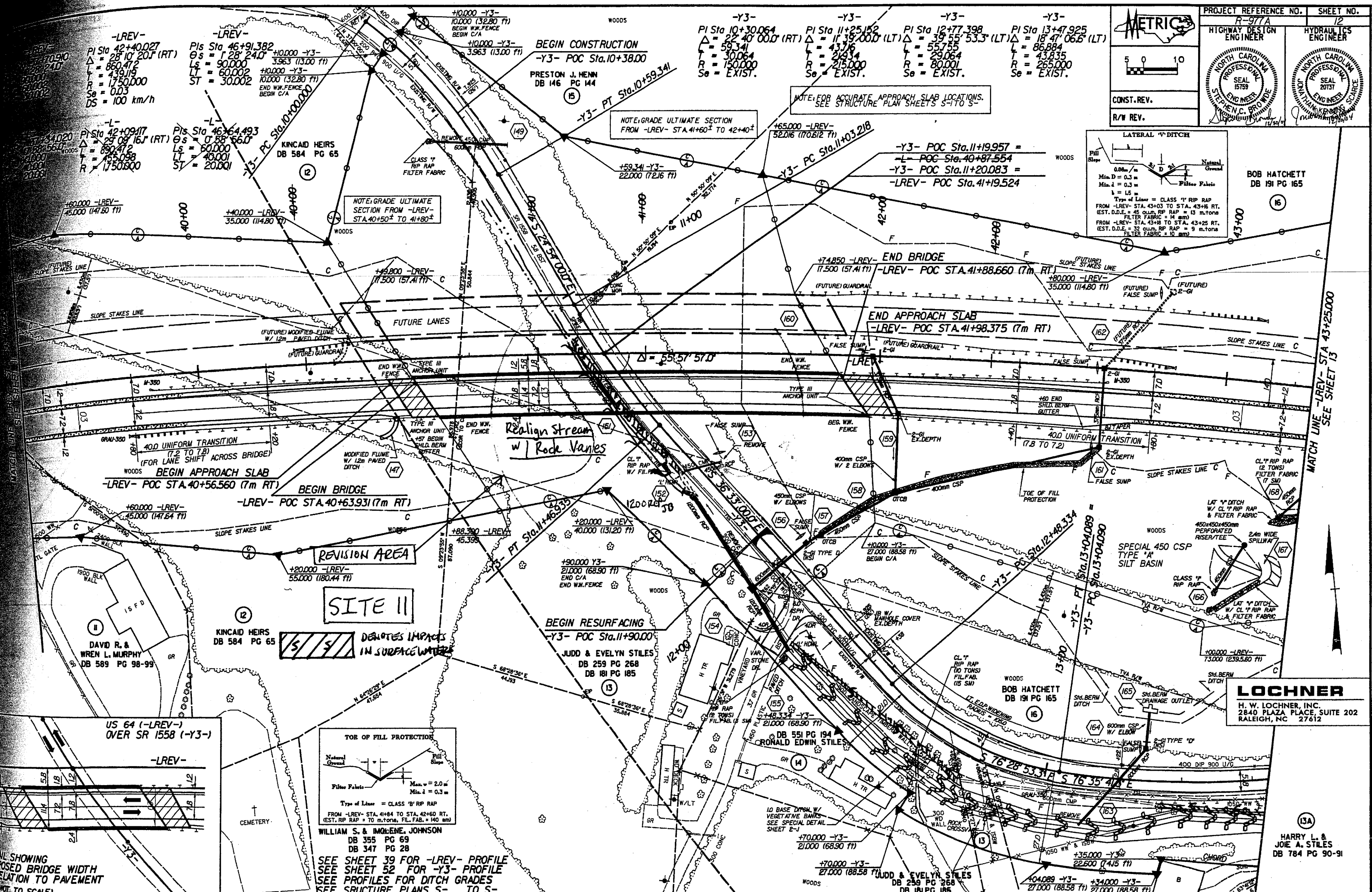
SEE SHEET 52 FOR -Y2- & -Y2C PROFILE

SEE SHEET 59 FOR -Y2A- & -Y2C PROFILE

SEE SHEET 2-0 FOR TYPE 'A' SILT BASIN SPECIAL DETAIL

LOCHNER
 H.W. LOCHNER, INC.
 2840 PLAZA PLACE, SUITE
 RALEIGH, NC 27612

	PROJECT REFERENCE NO.	SHEET NO.
	R-977A	12
	HIGHWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
	STEVEN C. PROWSE	BOB HATCHETT
CONST. REV.		
R/W REV.		



WILLIAM S. & IMOLENE JOHNSON
DB 355 PG 69
DB 347 PG 28

SEE SHEET 39 FOR -LREV- PROFILE
SEE SHEET 52 FOR -Y3- PROFILE
SEE PROFILES FOR DITCH GRADES
SEE STRUCTURE PLANS S- TO S-

LOCHNER
H. W. LOCHNER, INC.
2840 PLAZA PLACE, SUITE 202
RALEIGH, NC 27612

HARRY L. & JOIE A. STILES
DB 784 PG 90-91

MATCH LINE -LREV- STA 43+25.000 SEE SHEET 13

REVISIONS

-LREV-
 Pts Sta 62+68.352
 $\theta_s = 2^\circ 56' 41.9''$
 $L_s = 90.000$
 $LT = 60.008$
 $ST = 30.008$

-LREV-
 PI Sta 66+99.236
 $\Delta = 49^\circ 13' 51.2''$ (RT)
 $L = 751.836$
 $T = 400.892$
 $R = 875.000$
 $S_e = 0.06$
 $DS = 105 \text{ km/h}$

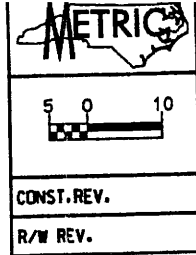
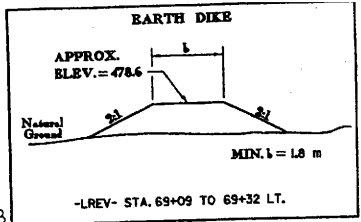
-LREV-
 Pts Sta 70+90.888
 $\theta_s = 2^\circ 56' 41.9''$
 $L_s = 90.000$
 $LT = 60.008$
 $ST = 30.008$

-L-
 Pts Sta 62+31.683
 $\theta_s = 1^\circ 57' 51.9''$
 $L_s = 60.000$
 $LT = 40.002$
 $ST = 20.002$

-L-
 PI Sta 66+70.867
 $\Delta = 57^\circ 11' 43.7''$ (RT)
 $L = 781.836$
 $T = 419.886$
 $R = 875.000$

-L-
 Pts Sta 70+53.519
 $\theta_s = 1^\circ 57' 51.9''$
 $L_s = 60.000$
 $LT = 40.002$
 $ST = 20.002$

NOTE: FOR ACCURATE APPROACH SLAB LOCATIONS, SEE STRUCTURE PLAN SHEETS S-1 TO S-5



R-977A
 HIGHWAY DESIGN ENGINEER
 NORTH CAROLINA PROFESSIONAL SEAL 5789
 STEVEN C. BRODIE

HYDRAULICS ENGINEER
 NORTH CAROLINA PROFESSIONAL SEAL 20137
 JOHN W. THOMAS

ULICS NEER
 NORTH CAROLINA PROFESSIONAL SEAL 20137
 JOHN W. THOMAS

CONST. REV.
 R/W REV.

TRI-COUNTY COMMUNITY COLLEGE MOD. - MARCH 2008 SITE 16B
 DB 409 PG 75
 DB 363 PG 27
 DB 310 PG 81
 DB 306 PG 121

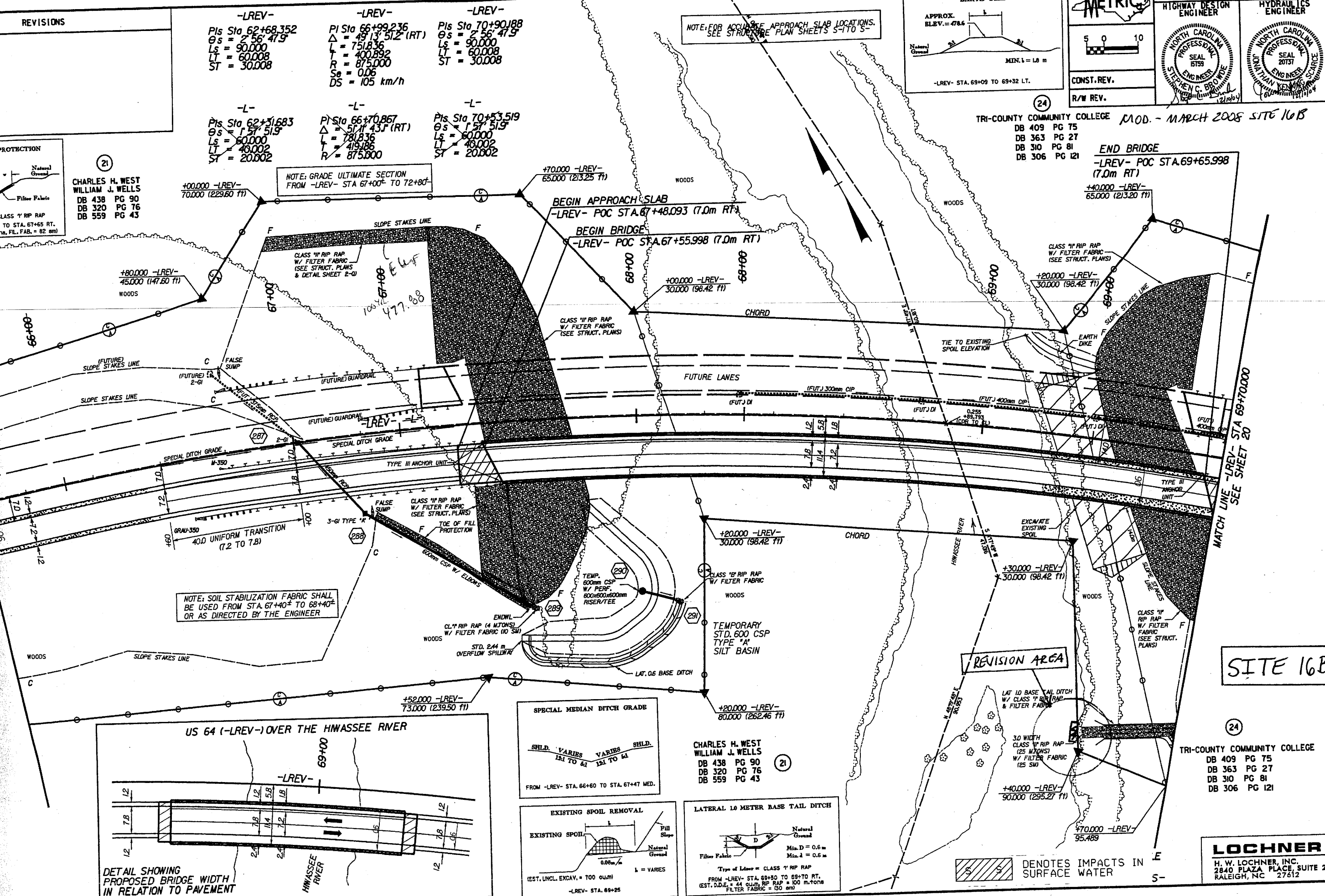
END BRIDGE
 -LREV- POC STA. 69+65.998 (7.0m RT)

PROTECTION
 Natural Ground
 Filter Fabric
 CHARLES H. WEST
 WILLIAM J. WELLS
 DB 438 PG 90
 DB 320 PG 76
 DB 559 PG 43

NOTE: GRADE ULTIMATE SECTION FROM -LREV- STA 67+00 TO 72+80

BEGIN APPROACH SLAB
 -LREV- POC STA. 67+48.093 (7.0m RT)

BEGIN BRIDGE
 -LREV- POC STA. 67+55.998 (7.0m RT)

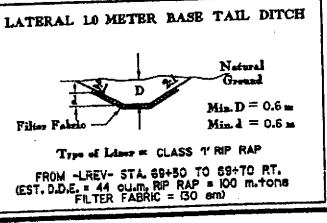
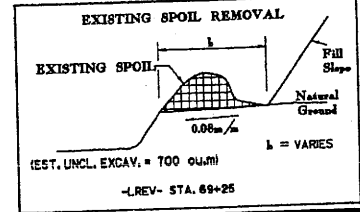
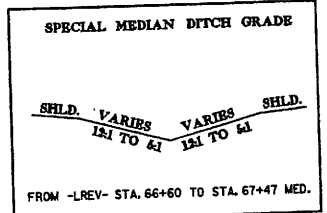
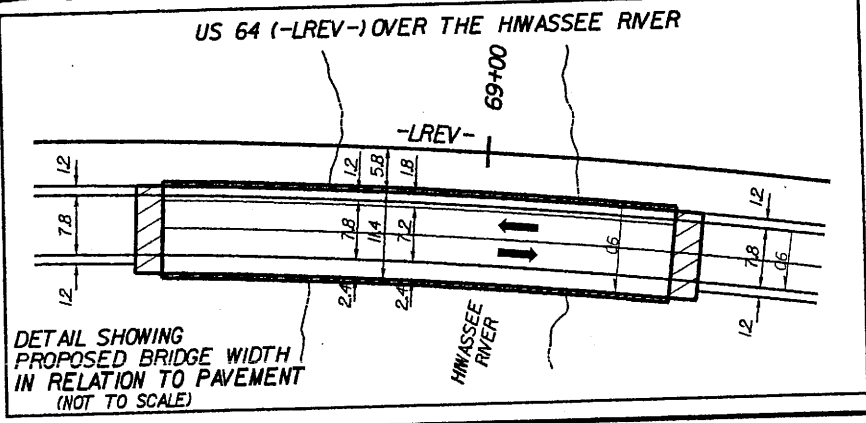


NOTE: SOIL STABILIZATION FABRIC SHALL BE USED FROM STA. 67+40 TO 68+40 OR AS DIRECTED BY THE ENGINEER

CHARLES H. WEST
 WILLIAM J. WELLS
 DB 438 PG 90
 DB 320 PG 76
 DB 559 PG 43

TRI-COUNTY COMMUNITY COLLEGE
 DB 409 PG 75
 DB 363 PG 27
 DB 310 PG 81
 DB 306 PG 121

SITE 16B



REVISION AREA

DENOTES IMPACTS IN SURFACE WATER

LOCHNER
 H. W. LOCHNER, INC.
 2840 PLAZA PLACE SUITE 202
 RALEIGH, NC 27612

202

RICHARD & MARY ALICE
McCOY
DB 500 PG 146

-LREV-
PI Sta 75+35.795
 $\Delta = 2' 12' 47.3"$
Ls = 90.000
T = 60.005
R = 536.885
ST = 30.004
So = 0.05
DS = 105 km/h

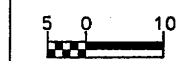
-LREV-
PI Sta 81+02.675
 $\Delta = 49' 29' 05.4" (LT)$
Ls = 1,006.179
T = 536.885
R = 1,165.000
ST = 30.004
So = 0.05
DS = 105 km/h

-LREV-
PI Sta 86+01.973
 $\Delta = 2' 12' 47.3"$
Ls = 90.000
T = 60.005
R = 536.885
ST = 30.004
So = 0.05
DS = 105 km/h

-LREV-
PI Sta 74+99.317
 $\Delta = 1' 28' 31.5"$
Ls = 60.000
T = 48.001
R = 20.601
So = 0.05
DS = 105 km/h

-LREV-
PI Sta 80+74.497
 $\Delta = 50' 57' 36.9" (LT)$
Ls = 1,836.179
T = 555.181
R = 1,165.000
ST = 30.004
So = 0.05
DS = 105 km/h

-LREV-
PI Sta 85+75.496
 $\Delta = 1' 28' 31.5"$
Ls = 60.000
T = 48.001
R = 20.601
So = 0.05
DS = 105 km/h

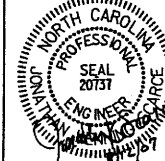


CONST. REV.

R/W REV.

HIGHWAY DESIGN ENGINEER

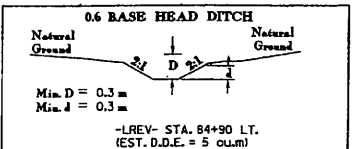
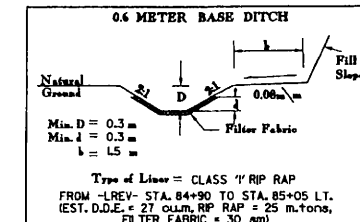
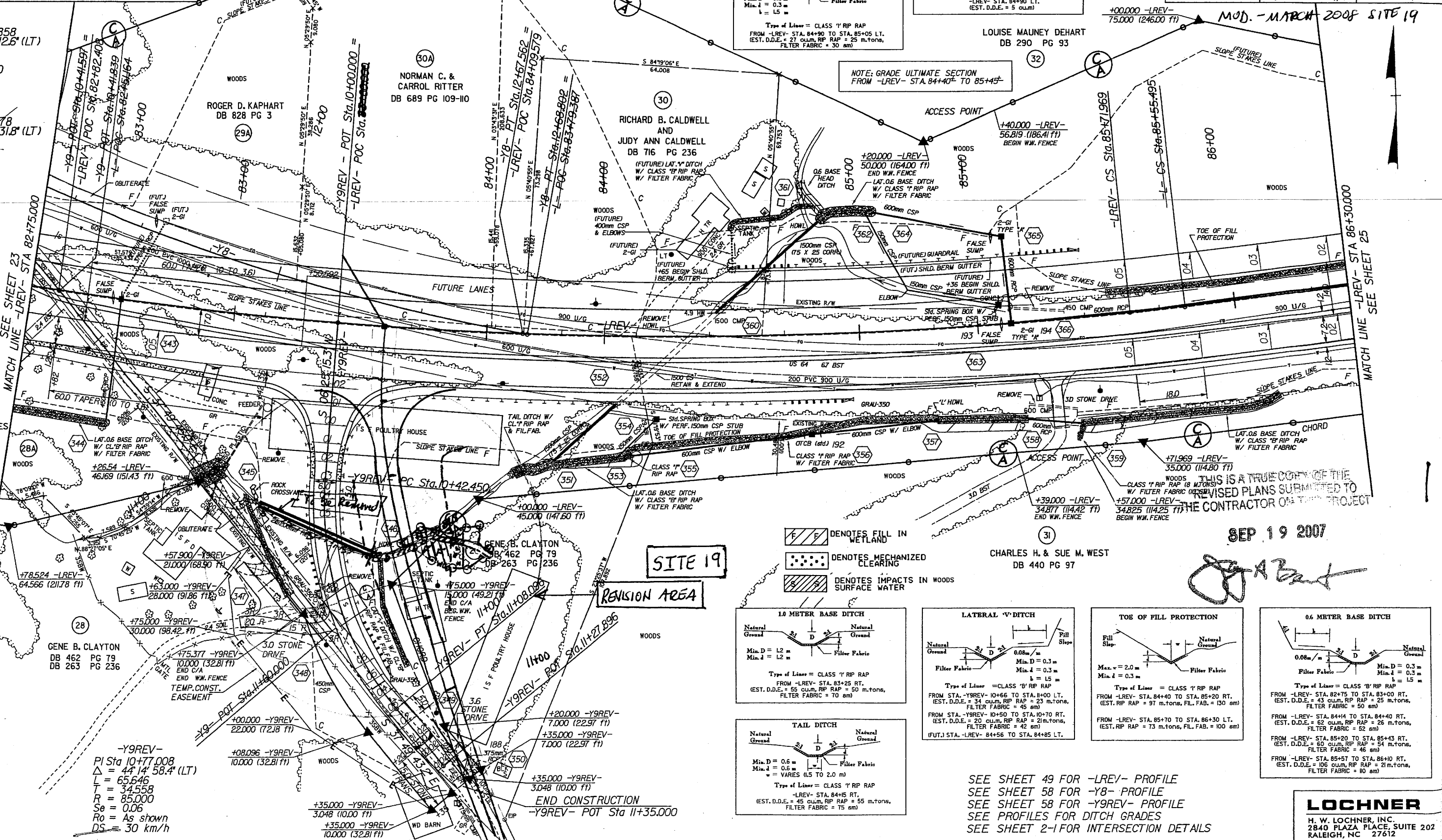
HYDRAULICS ENGINEER



MOD. - MARCH 2008 SITE 19

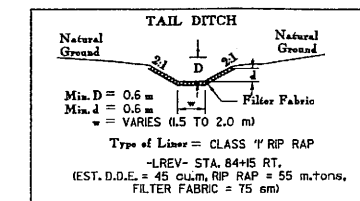
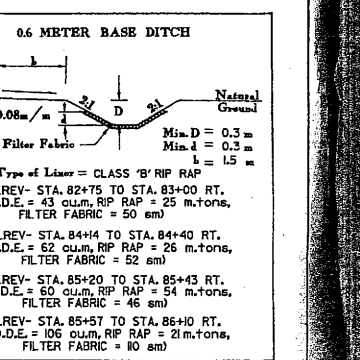
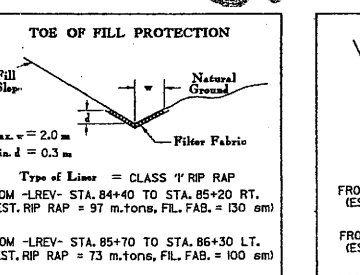
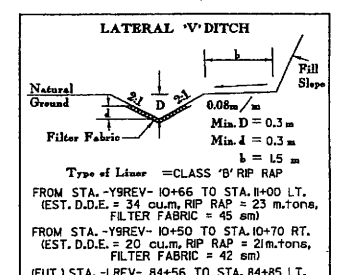
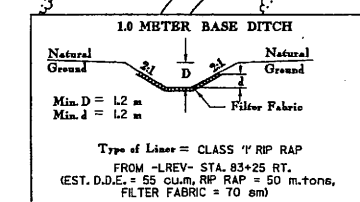
-Y8-
PI Sta 11+36.858
 $\Delta = 26' 33' 12.8" (LT)$
Ls = 268.799
T = 136.858
R = 580.000
So = EXIST.

-Y9-
PI Sta 10+18.778
 $\Delta = 22' 36' 31.8" (LT)$
Ls = 197.30
T = 9.995
R = 50.000
So = EXIST.



NOTE: GRADE ULTIMATE SECTION FROM -LREV- STA. 84+40' TO 85+45'

- DENOTES FILL IN WETLAND
- DENOTES MECHANIZED CLEARING
- DENOTES IMPACTS IN WOODS SURFACE WATER



SEE SHEET 49 FOR -LREV- PROFILE
SEE SHEET 58 FOR -Y8- PROFILE
SEE SHEET 58 FOR -Y9REV- PROFILE
SEE PROFILES FOR DITCH GRADES
SEE SHEET 2-1 FOR INTERSECTION DETAILS

LOCHNER
H. W. LOCHNER, INC.
2840 PLAZA PLACE, SUITE 202
RALEIGH, NC 27612

SITE 19
REVISION AREA

SEP 19 2007
[Signature]

THIS IS A TRUE COPY OF THE REVISED PLANS SUBMITTED TO THE CONTRACTOR ON THIS PROJECT

MICHAEL L. HUGHES
DB 758 PG III
TRACT I

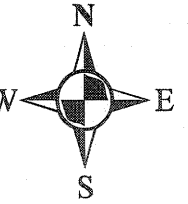
GENE B. CLAYTON
DB 462 PG 79
DB 263 PG 236

-Y9REV-
PI Sta 10+77.008
 $\Delta = 44' 14' 58.4" (LT)$
Ls = 65.646
T = 34.558
R = 85.000
So = 0.06
Ro = As shown
DS = 30 km/h

END CONSTRUCTION
-Y9REV- POT Sta 11+35.000

Rapanos Information

TIP No. R-0977A, US 64 from US 19-74-12- in Murphy to East of NC 141 in Peachtree, Cherokee County



Permit Modification Sites

