



STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION

PAT L. MCCRORY  
GOVERNOR

ANTHONY J. TATA  
SECRETARY

March 22, 2013

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 Modifications to the Section 404 Individual Permit and Section 401 Water Quality Certification for I-485 (Charlotte Outer Loop) from east of I-77 to I-85 in Mecklenburg County. Division 10, TIP's R-2248 E and R-2123 CE, Debit \$570 from WBS 34410.3.GV2

**Reference:** USACE Individual Permit Action ID SAW-2011-01237, dated Nov.22, 2011.  
NCDWQ Water Quality Certification No. 003868, dated October 14, 2011.  
NCDOT Modification Application dated June 4,2012  
NCDWQ Water Quality Certification Modification dated Jun 21, 2012

Due to changes in design, the following modifications have been made that impact jurisdictional resources for the Yadkin River portion of the R-2248 E Section of the Charlotte Outer Loop Project in Mecklenburg County. This modification request will combine the previous request dated June 4, 2012 and the most recent changes in project impacts.

**R-2123 CE – Interchange Portion with I-85 and Future I-485**

There are no changes to jurisdictional sites for this section of the project.

## **R-2248 E – Roadway Portion of Future I-485 between I-85 and NC 115**

There are several changes to the permit sites for Yadkin River Basin portion of R-2248 E only. The revisions were due to utility modifications, pedestrian/ greenway access, and project limit changes. The portion of the project that goes through the Catawba River Basin remains unchanged.

### **Permit Site 5**

(streams)

**Revision:** Length of 8' x 7' RCBC increased from 489 to 525 linear feet. (+36 linear feet)  
Bank Stabilization (BS) has decreased from 56 to 44 linear feet. (-12 linear feet BS)  
Temporary stream impacts have decreased from 184 to 175 linear feet (-9 linear feet)

**Reason:** The 8' x 7' RCBC was lengthened and slightly shifted to the south. Minor grade, fill slope, and alignment changes were necessary to accommodate the approach to the new bridge over Stream S7.

**Reference:** Permit Site 5, Roadway Plan Sheet 11 (Permit Drawing Sheets 19 and 20 of 108, REVISED MARCH 2012)

### **Permit Site 6**

(streams)

**Revision:** Elimination of 9' x 7' RCBC at Site 6 (-276 linear feet)  
Elimination of BS impacts at Site 6 (-36 linear feet BS)  
Temporary impacts have decreased from 96 linear feet to 0 (-96 linear feet)

**Reason:** Dual bridges will be constructed to cross the area including Stream S7.

**Reference:** Permit Site 5, Roadway Plan Sheet 11 and 12 (Permit Drawing Sheets 19, 20, 21, and 22 of 108, REVISED MARCH 2012).

### **Permit Site 8**

(streams)

**Revision:** Reduction in impacts to Stream S11 from 2497 to 2397 linear feet (-100 linear feet)  
BS impacts at this site remain the same.

**Reason:** Vertical roadway profile for Service Road A was lowered and the 8'x9' RCBC was shortened to reduce impacts and construction costs.

**Reference:** Permit Site 8, Permit Drawing Sheets 35 and 36 of 108, REVISED JULY 2012

### **Permit Site 9**

(streams)

**Revision:** Reduction in impacts to Stream S15 from 81 lf to 49 lf (- 32 linear feet)  
BS impacts at this site remain the same.

**Reason:** Vertical profile for Service Road A lowered and the 42” RCP was shortened to reduce impacts and construction costs.

**Reference:** Permit Site 9, Permit Drawing Sheets 35 and 36 of 108, REVISED JULY 2012

### **Permit Site 12**

(wetlands)

**Revision:** An increase in impacts from 0.164 to 0.799 acre of mechanized clearing (+0.635 acre riparian wetland)  
An increase in impacts from 0.0 to 0.262 acre of excavation (+0.262 acre riparian wetland)  
A decrease in impacts from 0.612 to 0.497 acre of hand clearing (HC) (-0.11 acre riparian wetland)  
Note- the HC area will now be considered for mitigation due the change in the wetland type/function.

**Reason:** A new sewer line will cross portions of Wetland WBA increasing the excavation and mechanized clearing impacts – this sewer line was re-routed due to constructability issues.

**Reference:** Permit Site 12, Roadway Plan Sheets 20A and 33 (Permit Drawing Sheets 43, 44, 53 and 54 of 108, REVISED JULY 2012)

No impacts to Stream S11 will occur; the sewer line crossing of S11 will be accomplished via trenchless install (bore & jack).

Amount of permanent or temporary fill in streams has not changed at this site.

### **Permit Site 13:**

(wetlands)

**Revision:** An increase in impacts from 0.03 to 0.12 acre of mechanized clearing (+0.09 acre wetland)  
An increase in impacts from 0.0 to 0.03 acre of excavation (+0.03 acre wetland)  
Note – increased impacts at this site are to non-riparian wetlands.

**Reason:** Water line and utility pole guy-wire anchors added, south of Y22.

**Reference:** Roadway Plan Sheets 20B and 31 (Permit Drawing Sheets 45, 46, 51 and 52 of 108, REVISED MARCH 2012)

**Permit Site 13 continued:**

Within the wetland area to be mechanically cleared, a 15-foot wide corridor centered on the water line will be maintained as an access for future repair and maintenance. The wetland type conversion (forested to herbaceous) within this 15 foot-wide corridor will result in an area of 0.05 acre to be maintained as herbaceous wetland.

**Permit Site 14**

(wetlands and streams)

**Revision:** Elimination of 2 @ 7' x 8' RCBC (replacement)  
Reduction in impacts from 0.617 to 0.596 of fill (- 0.021 acre riparian wetland)  
Reduction of 35 feet BS (-35 feet BS)  
Temporary impacts have decreased from 57 linear feet to 0 (-57 linear feet)

**Reason:** The project no longer includes this stream crossing.

**Reference:** Roadway Plan Sheets 20C and 33 (Permit Drawing Sheets 47, 48 of 108 REVISED MARCH 2012 and 53 and 54 of 108, REVISED July 2012)

## IMPACTS AND MITIGATION FROM 2011 PERMITS

Before summarizing this above request for permit impact modification, please see the following review of the existing permitted impacts and mitigation for the entire project. Please note that mitigation requirement calculation errors are summarized as well.

### **R-2123C– all Yadkin River Basin (no requested changes to permit sites in this section):**

#### Permit Application submitted 2011

Impacts = 0.79 acre wetland 5999 linear feet streams

Mitigation proposed = 1.58 acre riparian wetland 11,278 linear feet stream

404 Permit Mitigation required = 3.16 acre wetlands 11,278 linear feet streams

*Wetland mitigation requirement is double the normal requirement – this was due to reporting units to EEP instead of impacts (see June 7, 2011 EEP letter). Mitigation requirement for this section should have been 1.58 acre wetland (for 0.79 acre impacts @ 2:1)*

### **R-2248E – Yadkin and Catawba River Basins (no requested changes to the Catawba permit sites):**

#### Permit Application submitted 2011

##### Catawba River Basin Impacts

0.655 acre wetland – 0.48 (previous mitigation on project) = 0.17 acre wetland

899 linear feet stream – 348 (previous mitigation on project) = 551

Mitigation proposed = 0.34 acre wetland and 1102 linear feet stream

Permit Mitigation required = 0.34 acre wetland and 1102 linear feet stream

##### Yadkin River Basin Impacts

6.22 acre riparian wetland and 0.42 acre non-riparian wetland

7257 – 407 feet (bank stabilization) – 50 feet (day-lighting stream) = 6800 linear feet

Wetland mitigation proposed = 12.44 acre riparian wetland and 0.84 acre non-riparian wetland

Stream mitigation proposed = 13,600 linear feet stream

Permit Mitigation required = 13.28 acre riparian wetland and 0.84 acre non-riparian wetland and 13,600 linear feet stream

*Mitigation requirement is 0.84 acre riparian wetland over the normal requirement – this was due to incorrectly adding the riparian wetland amount to the non-riparian wetland amount and also having a separate non-riparian requirement (see the April 21, 2011 EEP letter). Mitigation requirement for these wetland impacts should have been 12.44 acre riparian and 0.84 non-riparian (for 6.22 acre and 0.42 acre impacts @ 2:1)*

**R-2248E Yadkin River Basin Impact Changes:**

	<b>Wetlands</b>						<b>Streams</b>	
	Fill (acre)	Excavation (acre)	Excavation Non-riparian	Mechanized clearing (acre)	Mechanized clearing Non-riparian	Hand Clearing (acre)	Permanent (linear feet)	BS (linear feet)
Site 5							+36	-12
Site 6							-276	-36
Site 8							-100	
Site 9							-32	
Site 12		+0.262		+0.635		-0.11*		
Site 13			+0.03		+0.09			
Site 14	-0.021							-35
<b>Totals</b>	-0.021	+0.262	+0.03	+0.635	+0.09	-0.11*	-372	-83

\*Hand Clearing (HC) impacts were reduced from 0.61 to 0.5 and will now require mitigation due to changes in the flora resulting in a change in wetland function

*Note – additional non-riparian wetland impacts constitutes 0.12 acre*

According to the current USACE mitigation requirements, the EEP has provided the following:

- 0.34 acres riparian wetland mitigation and 1,102 linear feet of stream mitigation in the Catawba River Basin
- 16.44 acres riparian wetland and 0.84 acres non-riparian wetland mitigation and 24,878 linear feet of stream channel mitigation in the Yadkin River Basin

**R-2248E – Summary of Impact Changes and Proposed Mitigation**

	Riparian Wetland (acre)	Non-riparian Wetland (acre)	Stream (linear feet)
2011 Original Impacts	6.22	0.42	6800 <sup>a</sup>
Add'l 2013 Impacts	1.38	0.12	-372 <sup>b</sup>
Total Impacts	7.60	0.54	6,428
<sup>c</sup> Total Mitigation Credits Needed @2:1	15.19	1.08	12,856
Mitigation Credits Provided per 2011 404 Permit	14.86*	0.84	13,600
<b>Add'l Mitigation Credits Needed</b>	<b>0.33</b>	<b>0.24</b>	<b>-744</b>

\*This number includes the overage of mitigation credits from both R-2248 and R-2123 in the Yadkin River Basin

<sup>a</sup>Does not include 407 feet BS and 50 feet day-lighted stream

<sup>b</sup>Does not include 83 feet reduction in BS


<sup>c</sup>Mitigation is calculated for USACE requirements at 2:1 ratio; DWQ requirement is covered by USACE's ratio

Please note that EEP has additional concerns about the non-riparian wetlands requirements in the November 2011 permit. In EEP's April, 21, 2011 letter, the EEP indicated that "...non-riparian wetland impacts located in the mountains and piedmont areas of North Carolina will be accepted as requested but mitigated utilizing riparian wetland mitigation credits." This requirement is due to the difficulty of finding non-riparian wetlands in the piedmont.

Condition W of the existing 404 specifically states that "... EEP will provide...0.84 acres equivalent non-riparian wetlands...". The Ecosystem Enhancement Program is requesting that this wording be changed to reflect the non-riparian issue resolved at the IRT meeting. Please direct any questions regarding this mitigation concern to Beth Harmon at 919 715-1929 or beth.harmon@ncdenr.gov.

We hereby request modifications to the Section 404 and 401 Permits. Thank you for your assistance with this project. If you have any questions or need additional information regarding the permit modification request, please contact Michael Turchy at [maturchy@ncdot.gov](mailto:maturchy@ncdot.gov). A copy of this modification application will also be posted at <http://www.ncdot.org/planning/pe/naturalunit/Permit.html>.

Sincerely,

  
for

Gregory J. Thorpe, Ph.D., Manager

Project Development and Environmental Analysis Unit

CC: NCDOT Permit Application Standard Distribution List

**WETLAND PERMIT IMPACT SUMMARY**

Site No.	Station (From/To)	Structure Size / Type	WETLAND IMPACTS					SURFACE WATER IMPACTS				
			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	-L- (1259+00/1260+50)	Roadway Fill	0.385			0.020		0.02		297		
2	-L- (1266+00/1266+50)	Roadway Fill	0.222			0.028		0.05		602		
3	-Y10- (65+50)	54" Pipe	0.015			0.011		<0.01	<0.01	48	38	
3		Bank Stabilization								24		
4	-L- (1297+00/1299+50)	84" Pipe	0.507		0.042	0.079		0.08	<0.01	428	8	
4		Bank Stabilization								69		
5	-L- (1342+00/1343+00)	8'x7' RCBC	0.116					0.04	0.01	525	175	
5		Bank Stabilization								44		
6	-L- (1345+00)	9'X7' RCBC						0.00	0.00	0	0	
6		Bank Stabilization								0		
7	-L- (1355+00/1367+00)	Roadway Fill	1.723			0.061		0.09	0.01	1561	127	
7		Bank Stabilization								21		
8	-L- (1390+00/1415+00)	Roadway Fill	1.060					0.21	0.01	2397	56	
8		Bank Stabilization								28		
9	-L- (1421+00)	42" Pipe						<0.01	<0.01	49	8	
9		Bank Stabilization								37		
10	-L- (1441+00)	60" Pipe						<0.01	<0.01	44	18	
10		Bank Stabilization								51		
11	-L- (1465+00/1476+00)	Roadway Fill	0.144					<0.01	<0.01	138	48	
12	-Y22- (54+00/60+00)	Roadway Fill	1.609			0.164						
12		Temp. Wrk. Br.		0.051								
12		Bridge/Int. Bents	0.010									0.497
12		Bridge/Splash Pads	0.017									
12		Sewer line/Manholes			0.262	0.635						
13	-Y20- (41+00/48+00)	Roadway Fill	0.311							0.030		
13		Water line			0.028	0.078						
13		Utility Pole Anchors			0.001	0.008						
14	-L- (1486+00/1495+00)	Roadway Fill	0.596					0.40	<0.01	803	34	
14	-Y25- (23+23)	2 @ 7' x 8' RCBC	0.000					0.00	0.00	0	0	
14		Bank Stabilization								0		
15	-Y22- (86+00/90+00)	72" Pipe	0.080			0.012		0.03	<0.01	295	21	
15		Bank Stabilization								50		
16	-L- (1526+20/1526+45)	48" Pipe	0.031					0.01		190		
TOTALS:			6.83	0.05	0.33	1.13	0.50	0.96	0.07	7701	533	0

Site 8 - 1.556 ac. Perm. Surface Water Impact - Fill in Isolated Pond, Decrease of .01 ac Perm. Surface Water Impact, Increase of .01 ac Temp Surface Water Impact  
 Site 9 - Decrease of <0.01 ac Perm Surface Water Impact, Decrease of <0.01 ac Temp Surface Water Impact  
 Site 11 - 0.128 ac. Perm. Surface Water Impact - Fill in Isolated Pond  
 Site 14 - 50 lf of 24" rcp Pipe Removal  
 Site 16 - 0.667 ac. Perm. Surface Water Impact - Drained Isolated Pond  
\*\*\*\*Site 12 - increase of 0.486ac mechanized clearing impacts for sewer line installation, 0.220ac will be maintained for repair access.  
\*\*\*\*Site 13 - of 0.078ac mechanized clearing impacts for water line installation, 0.050ac will be maintained for repair access.  
 Permanent wetland type conversion will result in 0.050ac mitigable wetland impacts at this site.

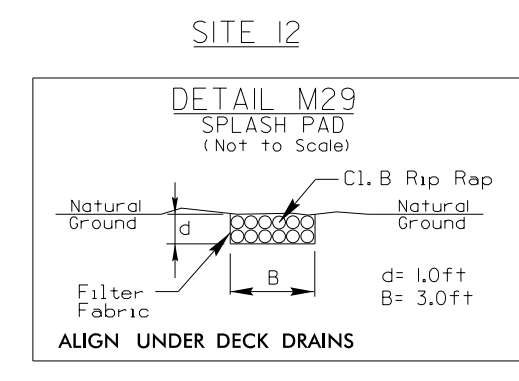
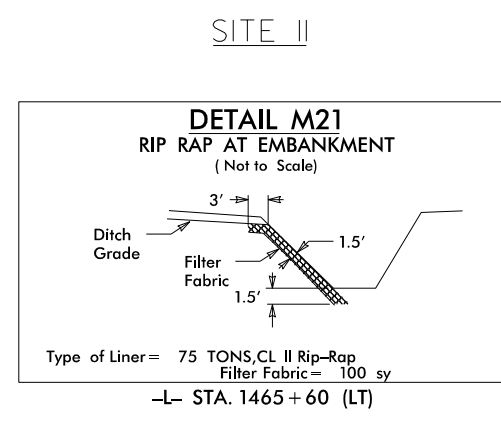
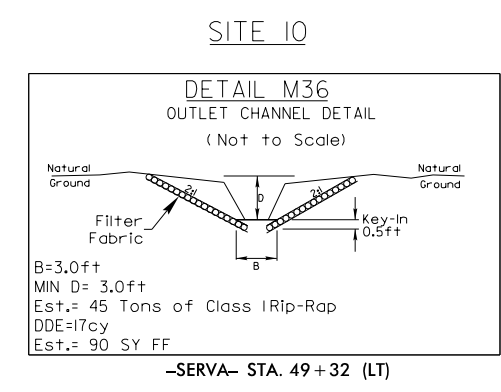
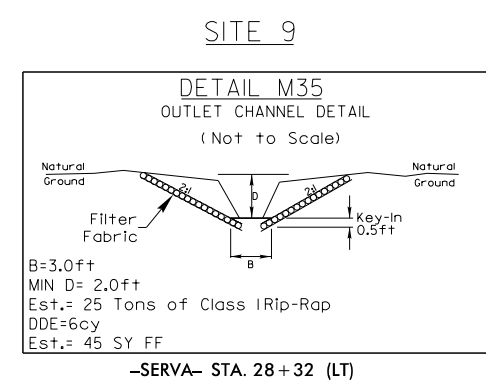
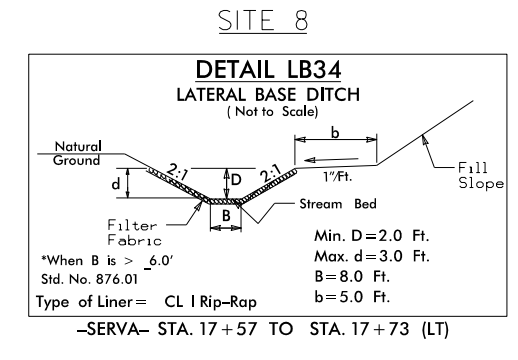
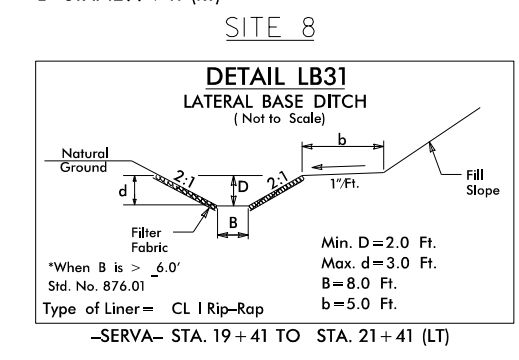
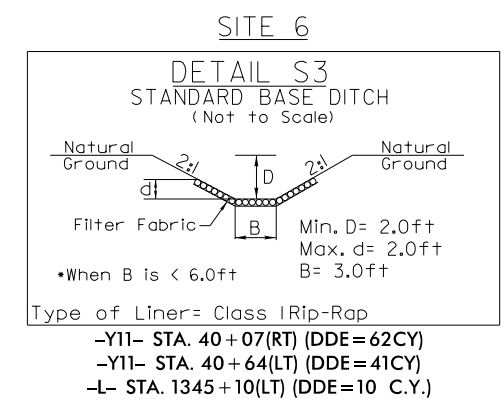
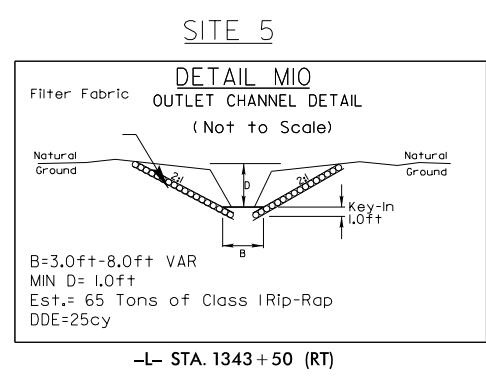
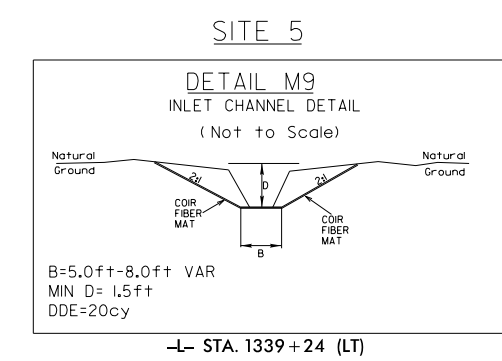
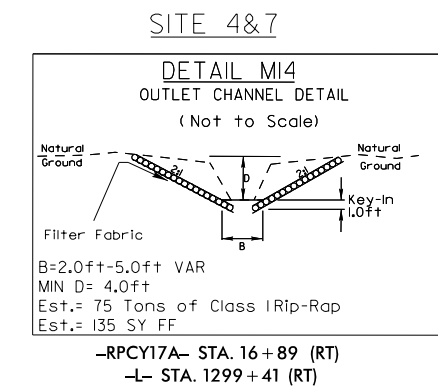
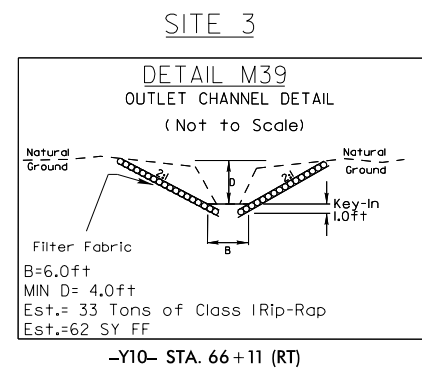
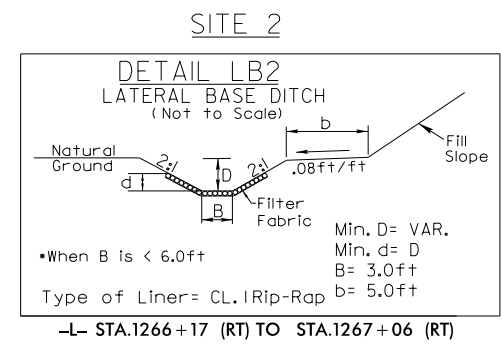
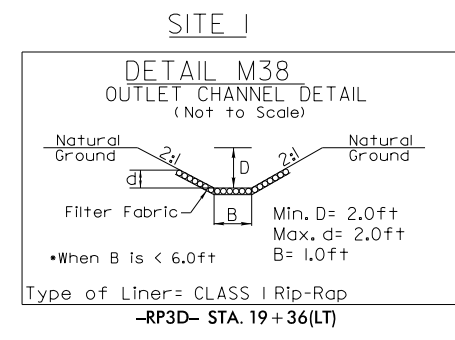
Revised July 2012  
 Permit Drawing  
 Sheet 2 of 108

NC DEPARTMENT OF TRANSPORTATION  
 DIVISION OF HIGHWAYS  
  
 MECKLENBURG COUNTY  
 WBS - 34410.3.GV2 (R-2248E)

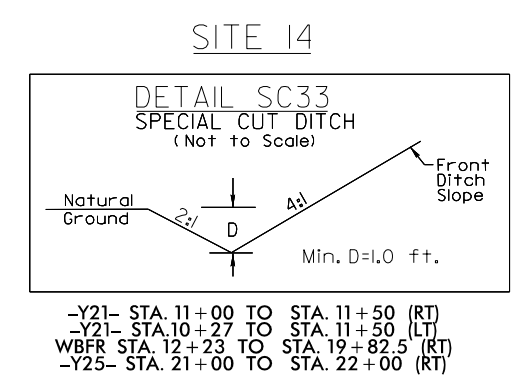


PROJECT REFERENCE NO.	SHEET NO.
R / W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

Permit Drawing  
Sheet 7 of 108



**DETAIL M29:**  
-L- STA. 1465+56 TO STA. 1466+38 & STA. 1466+74 TO STA. 1468+75 WB LT  
-L- STA. 1466+59 TO STA. 1467+09 & STA. 1467+39 TO STA. 1469+64 WB RT  
-L- STA. 1466+79 TO STA. 1467+23 & STA. 1467+50 TO STA. 1469+84 EB LT  
-L- STA. 1467+62 TO STA. 1468+10 & STA. 1468+69 TO STA. 1470+75 EB RT  
-Y22- STA. 52+33 TO STA. 52+61 & STA. 53+01 TO STA. 54+25 LT  
-Y22- STA. 52+30 TO STA. 52+61 & STA. 53+01 TO STA. 54+25 RT

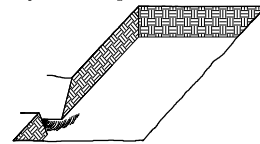


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MARCH 2012

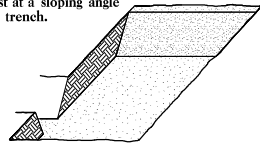
SITE 14  
DETAIL S46

PLANTING DETAILS  
SEEDLING / LINER BAREROOT PLANTING DETAIL

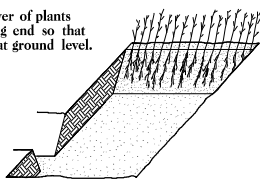
**HEALING IN**  
1. Locate a healing-in site in a shady, well protected area.  
2. Excavate a flat bottom trench 12 inches deep and provide drainage.



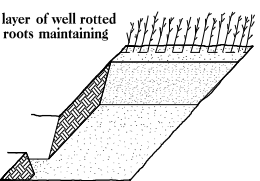
3. Backfill the trench with 2 inches well rotted sawdust. Place a 2 inch layer of well rotted sawdust at a sloping angle at one end of the trench.



4. Place a single layer of plants against the sloping end so that the root collar is at ground level.

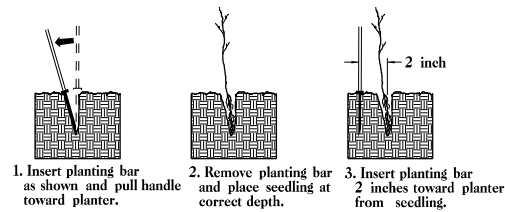


5. Place a 2 inch layer of well rotted sawdust over the roots maintaining a sloping angle.

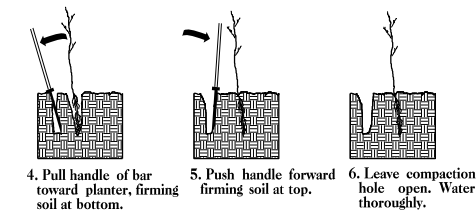


6. Repeat layers of plants and sawdust as necessary and water thoroughly.

**DIBBLE PLANTING METHOD USING THE KBC PLANTING BAR**



1. Insert planting bar as shown and pull handle toward planter.  
2. Remove planting bar and place seedling at correct depth.  
3. Insert planting bar 2 inches toward planter from seedling.



4. Pull handle of bar toward planter, firming soil at bottom.  
5. Push handle forward firming soil at top.  
6. Leave compaction hole open. Water thoroughly.

**PLANTING NOTES:**

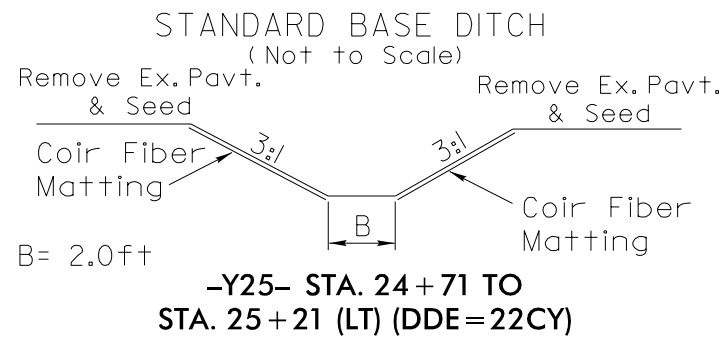
**PLANTING BAG**  
During planting, seedlings shall be kept in a moist canvas bag or similar container to prevent the root systems from drying.



**KBC PLANTING BAR**  
Planting bar shall have a blade with a triangular cross section, and shall be 12 inches long, 4 inches wide and 1 inch thick at center.



**ROOT PRUNING**  
All seedlings shall be root pruned, if necessary, so that no roots extend more than 10 inches below the root collar.



- TREE REFORESTATION SHALL BE PLANTED 6 FT. TO 10 FT. ON CENTER, RANDOM SPACING, AVERAGING 8 FT. ON CENTER, APPROXIMATELY 680 PLANTS PER ACRE.
- USE NATIVE HERBACEOUS RIPARIAN SEED MIXTURE FOR THE RIPARIAN BUFFER.

**REFORESTATION**

MIXTURE, TYPE, SIZE, AND FURNISH SHALL CONFORM TO THE FOLLOWING:

25% PLATANUS OCCIDENTALIS	AMERICAN SYCAMORE	12 in - 18 in BR
25% ACER NEGUNDO	BOXELDER	12 in - 18 in BR
25% PRUNUS SEROTINA	BLACK CHERRY	12 in - 18 in BR
25% SALIX NIGRA	BLACK WILLOW	12 in - 18 in BR

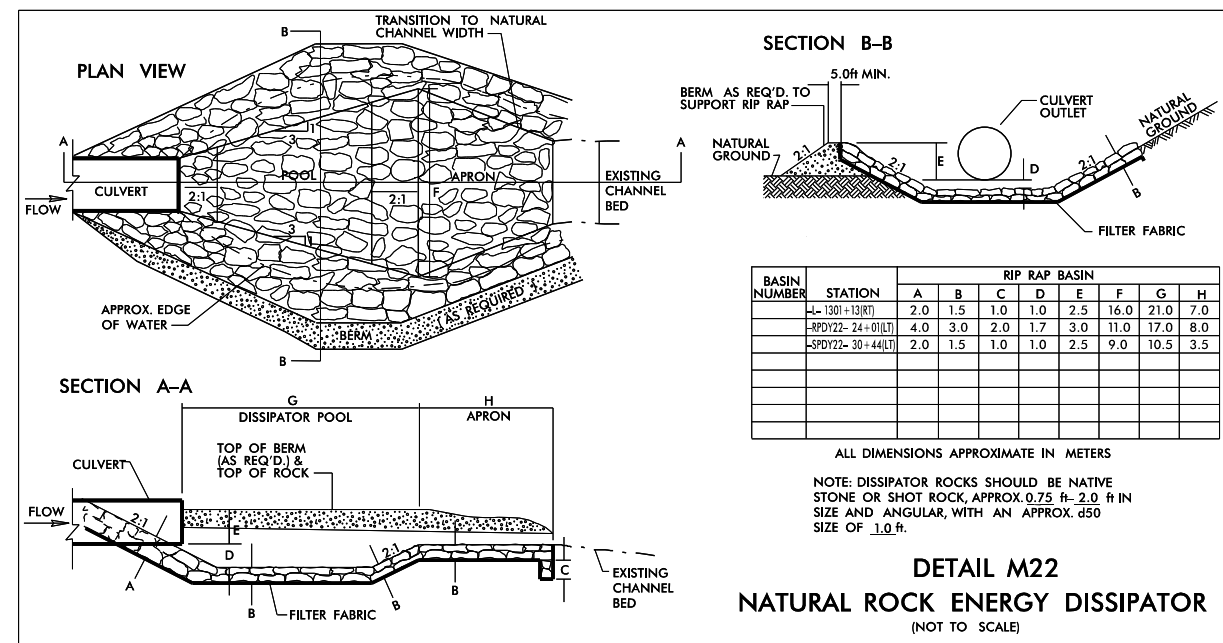
**REFORESTATION DETAIL**  
N.C.D.O.T. - ROADSIDE ENVIRONMENTAL UNIT

PROJECT REFERENCE NO.	SHEET NO.
R / W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

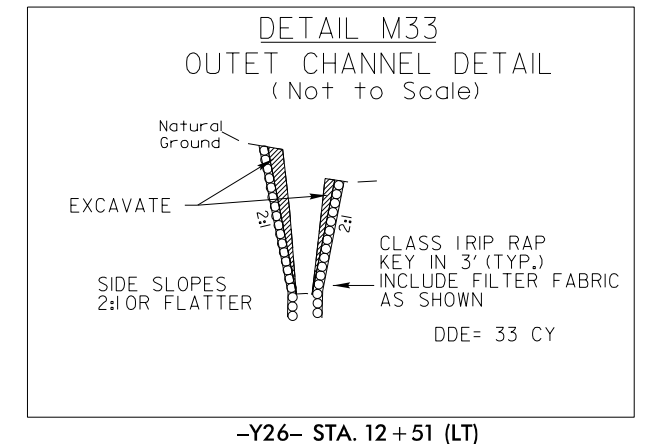
Permit Drawing  
Sheet 8 of 108

REVISED  
MARCH 2012

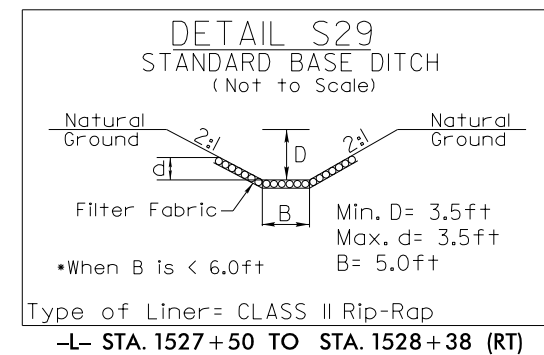
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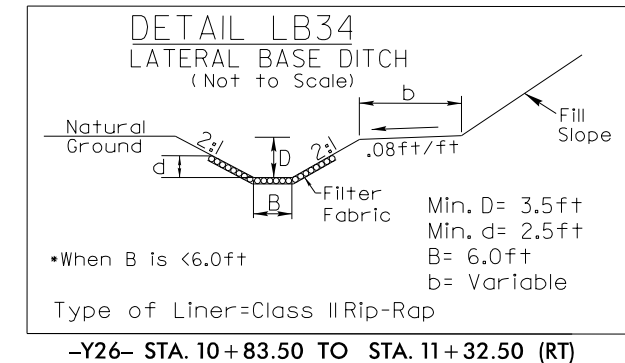
SITE 15



SITE 16

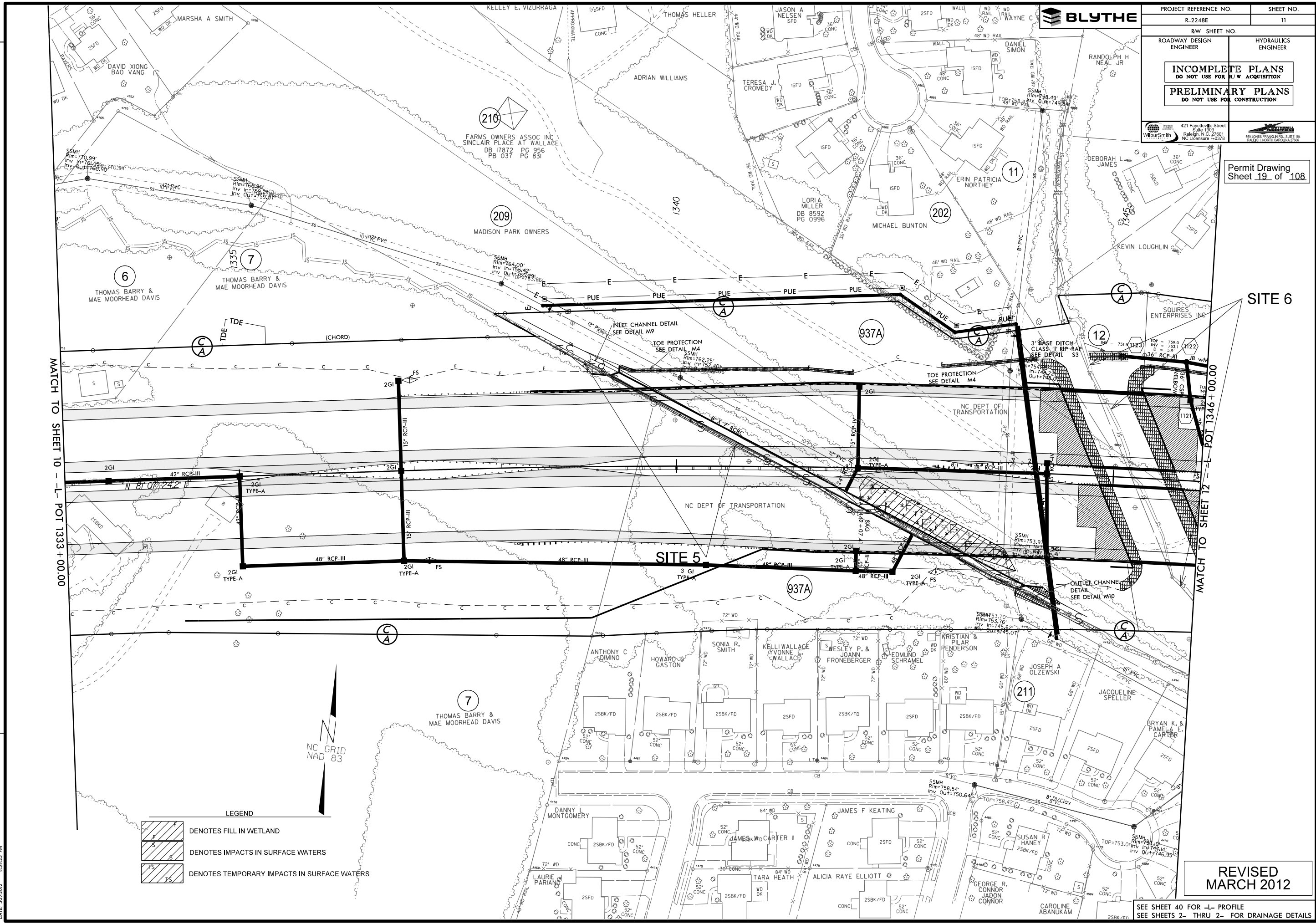


SITE 15



PROJECT REFERENCE NO. R-2248E	SHEET NO. 11
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
<b>INCOMPLETE PLANS</b> DO NOT USE FOR R/W ACQUISITION	
<b>PRELIMINARY PLANS</b> DO NOT USE FOR CONSTRUCTION	
<small>421 Fayetteville Street Suite 1303 Raleigh, N.C. 27601 NC License F-0378</small>	

Permit Drawing  
Sheet 19 of 108

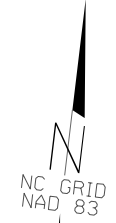


MATCH TO SHEET 10 - L- POT 1333 + 00.00

MATCH TO SHEET 12 - L- POT 1346 + 00.00

REVISIONS

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**LEGEND**

	DENOTES FILL IN WETLAND
	DENOTES IMPACTS IN SURFACE WATERS
	DENOTES TEMPORARY IMPACTS IN SURFACE WATERS

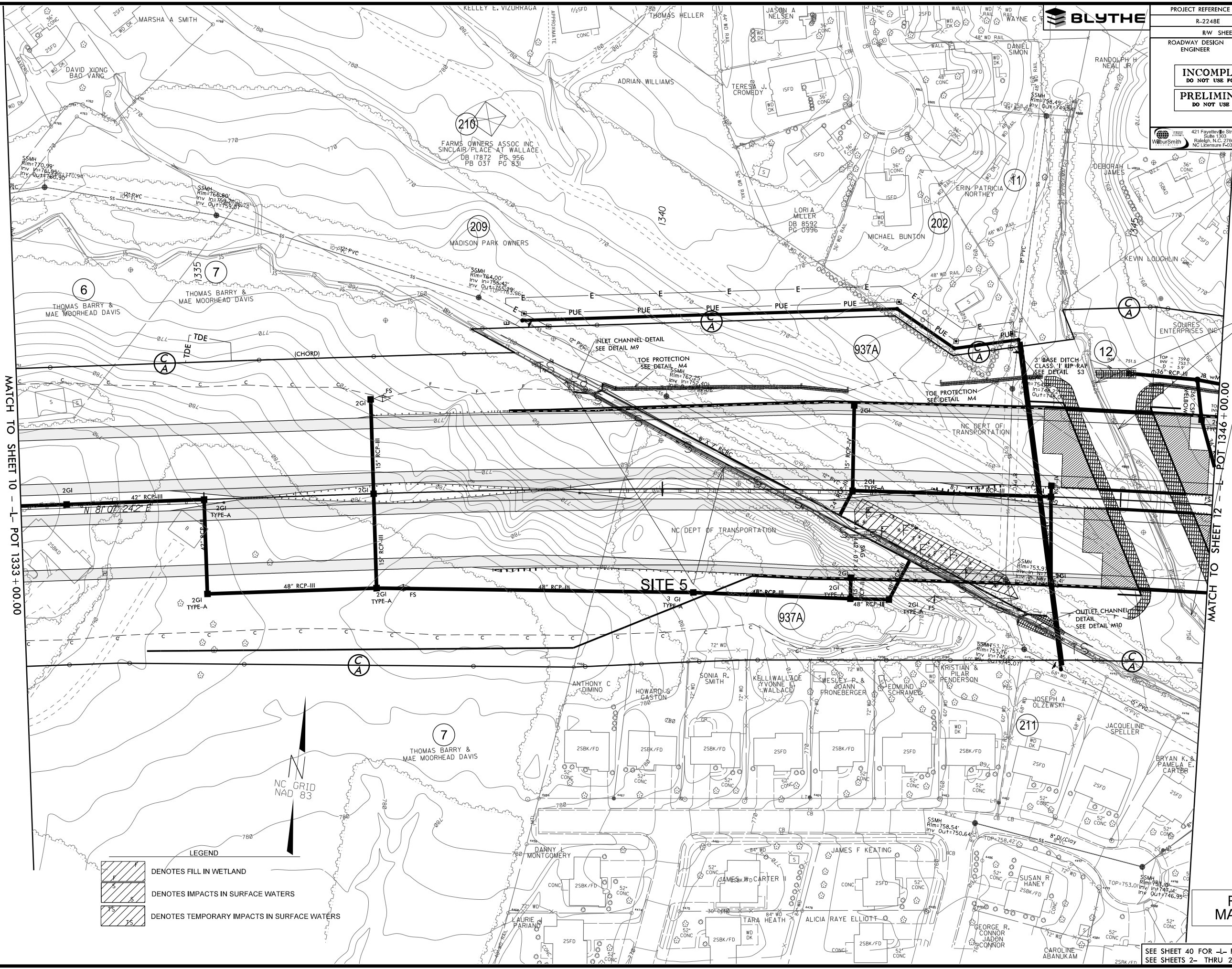
**REVISED  
MARCH 2012**

SEE SHEET 40 FOR -L- PROFILE  
SEE SHEETS 2- THRU 2- FOR DRAINAGE DETAILS

PROJECT REFERENCE NO. R-2248E	SHEET NO. 11
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
<b>INCOMPLETE PLANS</b> DO NOT USE FOR R/W ACQUISITION	
<b>PRELIMINARY PLANS</b> DO NOT USE FOR CONSTRUCTION	

421 Fayetteville Street  
Suite 1303  
Raleigh, N.C. 27601  
NC License No. F-0378

Permit Drawing  
Sheet 20 of 108



MATCH TO SHEET 10 - L- POT 1333 + 00.00

MATCH TO SHEET 12 - L- POT 1346 + 00.00

**LEGEND**

	DENOTES FILL IN WETLAND
	DENOTES IMPACTS IN SURFACE WATERS
	DENOTES TEMPORARY IMPACTS IN SURFACE WATERS

**REVISED**  
**MARCH 2012**

SEE SHEET 40 FOR -L- PROFILE  
SEE SHEETS 2- THRU 2- FOR DRAINAGE DETAILS


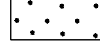
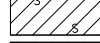
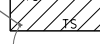
REVISIONS

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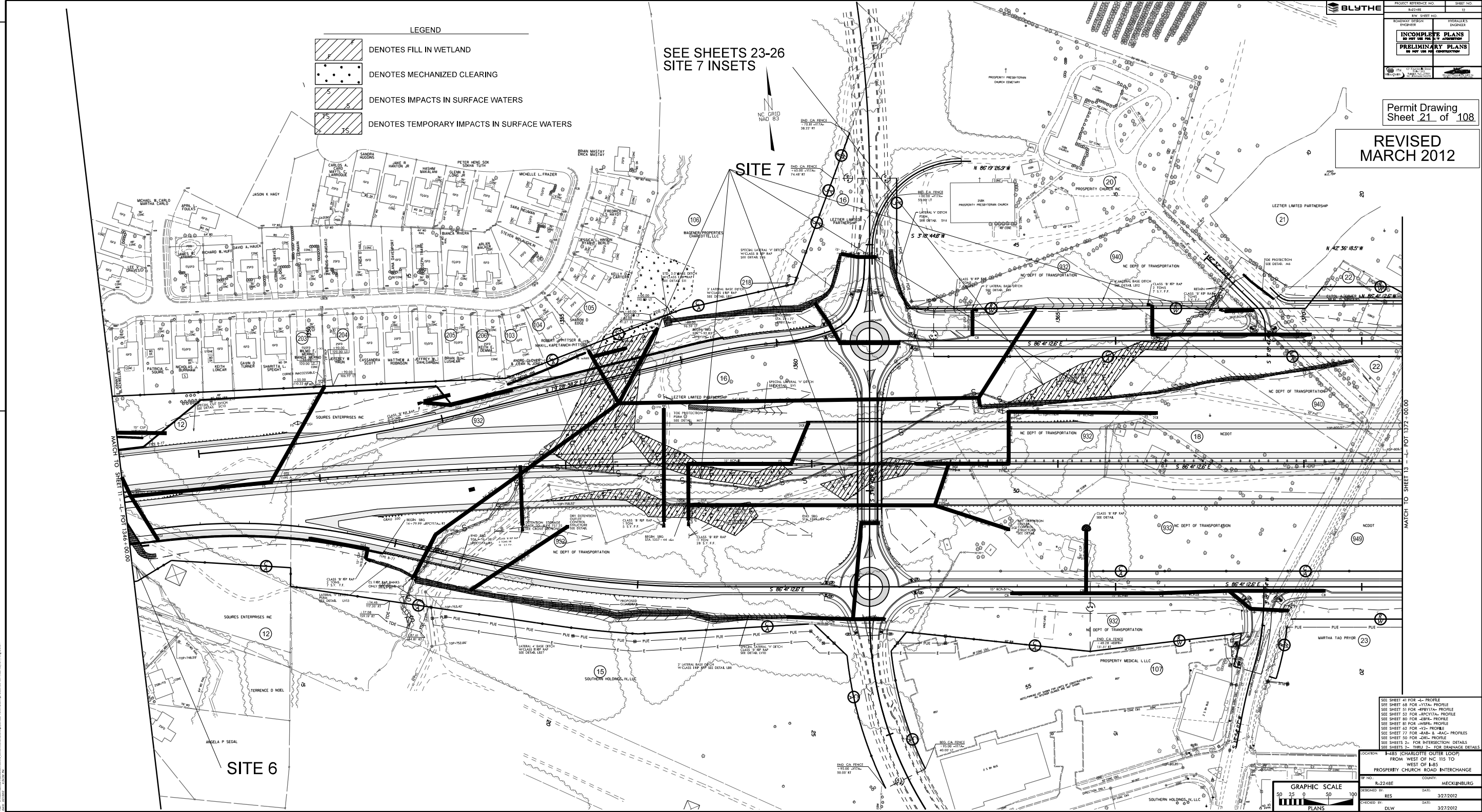
INCOMPLETE PLANS  
DO NOT USE FOR CONSTRUCTION  
PRELIMINARY PLANS  
DO NOT USE FOR CONSTRUCTION

Permit Drawing  
Sheet 21 of 108

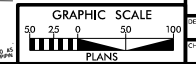
REVISED  
MARCH 2012

- LEGEND**
-  DENOTES FILL IN WETLAND
  -  DENOTES MECHANIZED CLEARING
  -  DENOTES IMPACTS IN SURFACE WATERS
  -  DENOTES TEMPORARY IMPACTS IN SURFACE WATERS

SEE SHEETS 23-26  
SITE 7 INSETS



SEE SHEET 41 FOR -L- PROFILE  
SEE SHEET 48 FOR -177A- PROFILE  
SEE SHEET 51 FOR -48Y17A- PROFILE  
SEE SHEET 52 FOR -48Y17A- PROFILE  
SEE SHEET 53 FOR -48Y17A- PROFILE  
SEE SHEET 54 FOR -48Y17A- PROFILE  
SEE SHEET 55 FOR -48Y17A- PROFILE  
SEE SHEET 56 FOR -48Y17A- PROFILE  
SEE SHEET 57 FOR -48Y17A- PROFILE  
SEE SHEET 58 FOR -48Y17A- PROFILE  
SEE SHEET 59 FOR -48Y17A- PROFILE  
SEE SHEET 60 FOR -48Y17A- PROFILE  
SEE SHEET 61 FOR -48Y17A- PROFILE  
SEE SHEET 62 FOR -48Y17A- PROFILE  
SEE SHEET 63 FOR -48Y17A- PROFILE  
SEE SHEET 64 FOR -48Y17A- PROFILE  
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SEE SHEET 67 FOR -48Y17A- PROFILE  
SEE SHEET 68 FOR -48Y17A- PROFILE  
SEE SHEET 69 FOR -48Y17A- PROFILE  
SEE SHEET 70 FOR -48Y17A- PROFILE  
SEE SHEET 71 FOR -48Y17A- PROFILE  
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SEE SHEET 92 FOR -48Y17A- PROFILE  
SEE SHEET 93 FOR -48Y17A- PROFILE  
SEE SHEET 94 FOR -48Y17A- PROFILE  
SEE SHEET 95 FOR -48Y17A- PROFILE  
SEE SHEET 96 FOR -48Y17A- PROFILE  
SEE SHEET 97 FOR -48Y17A- PROFILE  
SEE SHEET 98 FOR -48Y17A- PROFILE  
SEE SHEET 99 FOR -48Y17A- PROFILE  
SEE SHEET 100 FOR -48Y17A- PROFILE



LOCATION: I-485 (CHARLOTTE OUTER LOOP)  
FROM WEST OF NC 115 TO  
WEST OF I-85  
PROSPERITY CHURCH ROAD INTERCHANGE

TP NO. 8-2248E COUNTY: MECKLENBURG  
DESIGNED BY: RES DATE: 3/27/2012  
CHECKED BY: DLW DATE: 3/27/2012

ENTRANCE





MATCH TO SHEET 11 - LOT 13

MATCH TO SHEET 13 - LOT 1372 - 00.00

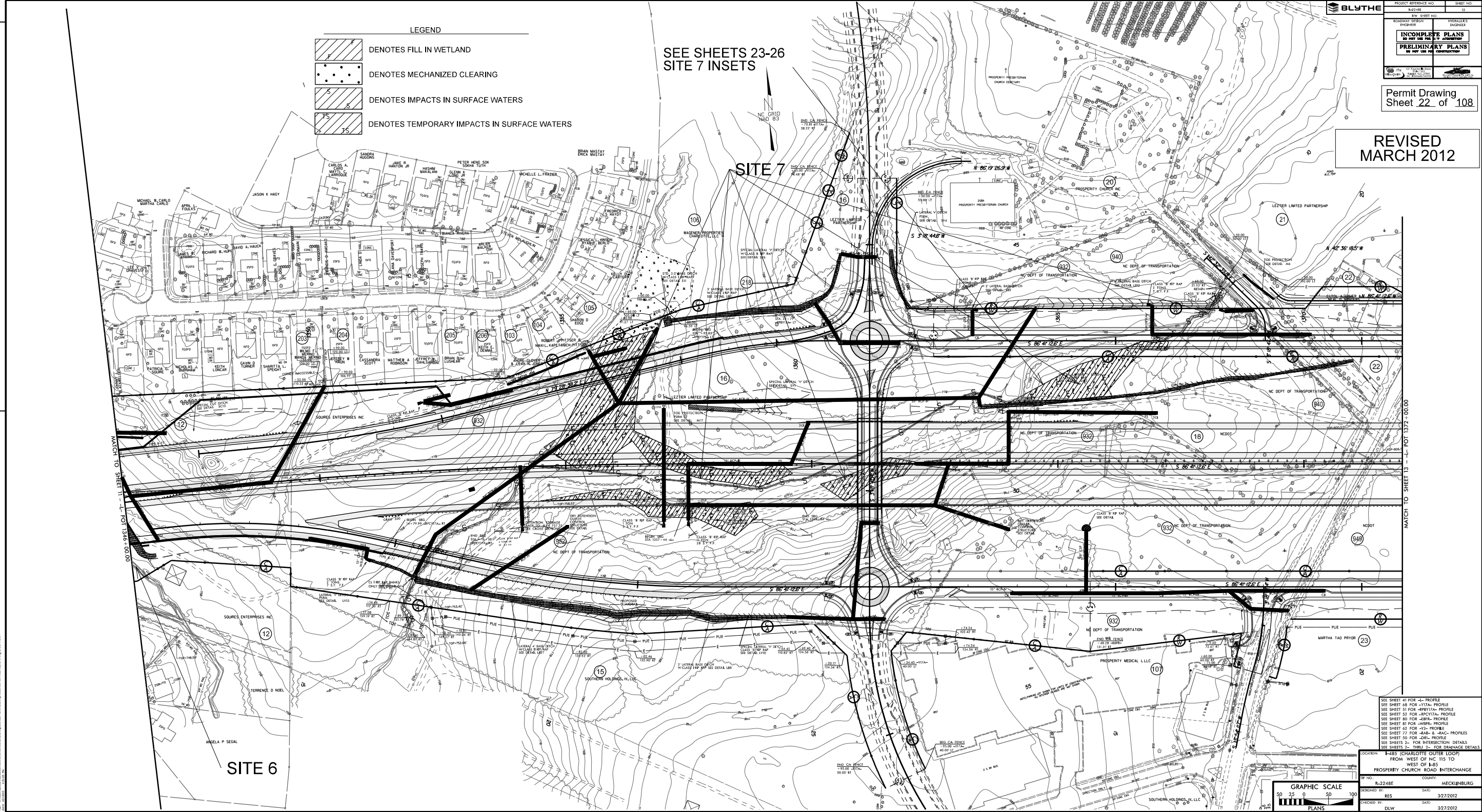
**INCOMPLETE PLANS**  
DO NOT USE FOR CONSTRUCTION  
**PRELIMINARY PLANS**  
DO NOT USE FOR CONSTRUCTION

Permit Drawing  
Sheet 22 of 108

**REVISED**  
**MARCH 2012**

- LEGEND**
-  DENOTES FILL IN WETLAND
  -  DENOTES MECHANIZED CLEARING
  -  DENOTES IMPACTS IN SURFACE WATERS
  -  DENOTES TEMPORARY IMPACTS IN SURFACE WATERS

SEE SHEETS 23-26  
SITE 7 INSETS



MATCH TO SHEET 11 FOR 1349+00.00

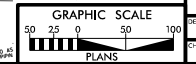
MATCH TO SHEET 13 FOR 1372+00.00

**SITE 6**

**SITE 7**

- SEE SHEET 41 FOR -L- PROFILE
- SEE SHEET 48 FOR -177A- PROFILE
- SEE SHEET 51 FOR -48Y177A- PROFILE
- SEE SHEET 52 FOR -48Y177A- PROFILE
- SEE SHEET 53 FOR -48Y177A- PROFILE
- SEE SHEET 54 FOR -48Y177A- PROFILE
- SEE SHEET 55 FOR -48Y177A- PROFILE
- SEE SHEET 56 FOR -48Y177A- PROFILE
- SEE SHEET 57 FOR -48Y177A- PROFILE
- SEE SHEET 58 FOR -48Y177A- PROFILE
- SEE SHEET 59 FOR -48Y177A- PROFILE
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- SEE SHEET 61 FOR -48Y177A- PROFILE
- SEE SHEET 62 FOR -48Y177A- PROFILE
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- SEE SHEET 72 FOR -48Y177A- PROFILE
- SEE SHEET 73 FOR -48Y177A- PROFILE
- SEE SHEET 74 FOR -48Y177A- PROFILE
- SEE SHEET 75 FOR -48Y177A- PROFILE
- SEE SHEET 76 FOR -48Y177A- PROFILE
- SEE SHEET 77 FOR -48Y177A- PROFILE
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- SEE SHEET 79 FOR -48Y177A- PROFILE
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- SEE SHEET 85 FOR -48Y177A- PROFILE
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- SEE SHEET 96 FOR -48Y177A- PROFILE
- SEE SHEET 97 FOR -48Y177A- PROFILE
- SEE SHEET 98 FOR -48Y177A- PROFILE
- SEE SHEET 99 FOR -48Y177A- PROFILE
- SEE SHEET 100 FOR -48Y177A- PROFILE

LOCATION: I-485 (CHARLOTTE OUTER LOOP)  
FROM WEST OF NC 115 TO  
WEST OF I-85  
PROSPERITY CHURCH ROAD INTERCHANGE



PROJECT NO. 8-2248E COUNTY: MECKLENBURG  
DESIGNED BY: RES DATE: 3/27/2012  
CHECKED BY: DLW DATE: 3/27/2012



REVISED  
JULY 2012

<b>PRELIMINARY PLANS</b> DO NOT USE FOR CONSTRUCTION	
Permit Drawing Sheet 36 of 108	

SITE 8

SITE 9

MATCH TO SHEET 14  
-SERVA- POT 19+00.00

MATCH TO SHEET 16  
-SERVA- POT 31+95.00

MATCH TO SHEET 14 -L- POT 1411+00.00

MATCH TO SHEET 16 -L- POT 1424+00.00

**LEGEND**

	DENOTES IMPACTS IN SURFACE WATERS
	DENOTES TEMPORARY IMPACTS IN SURFACE WATERS

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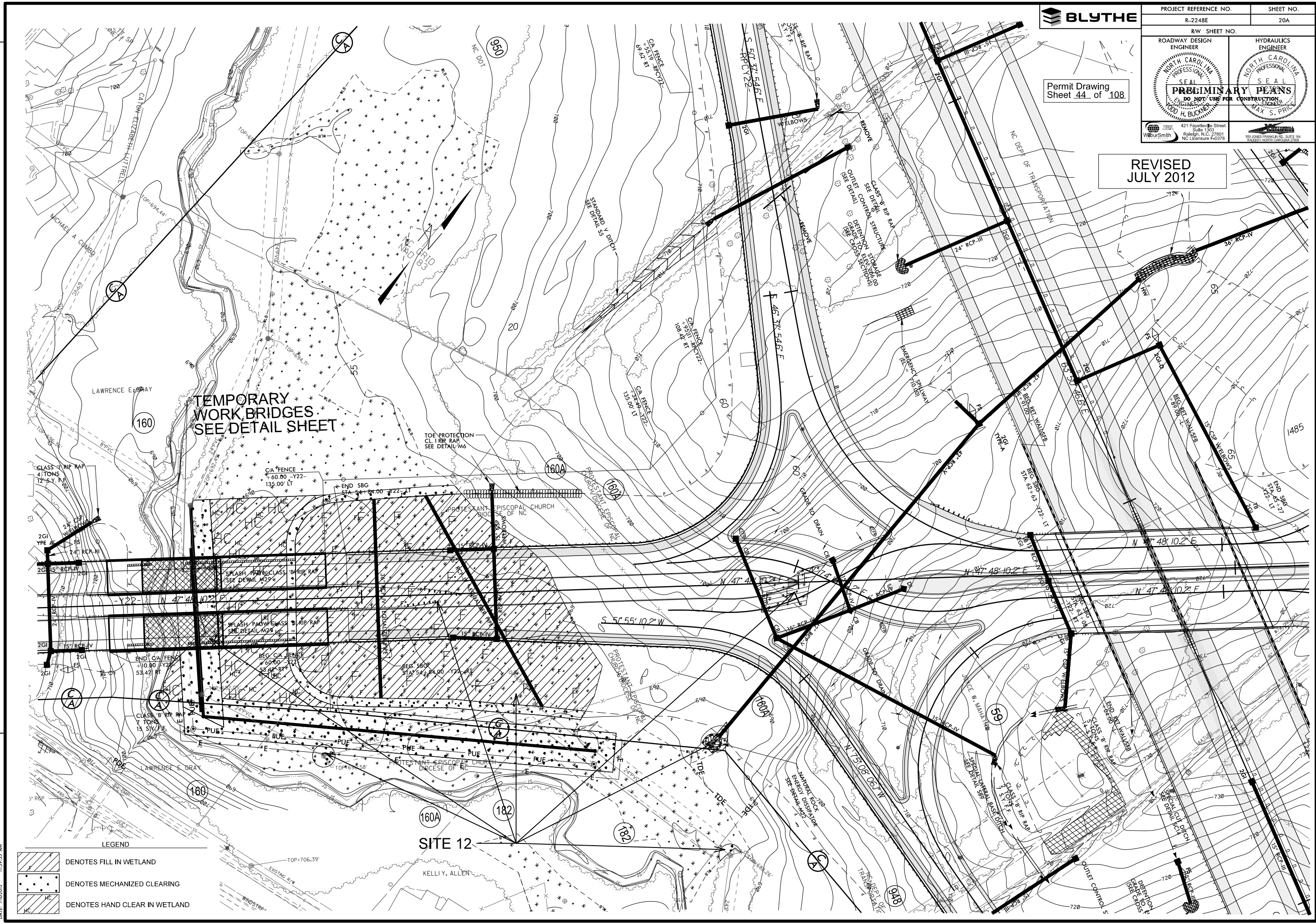
SEE SHEET 43 FOR -L- PROFILE  
 SEE SHEET 78 FOR -SERVA- PROFILE  
 SEE SHEETS 2- THRU 2- FOR DRAINAGE DETAILS



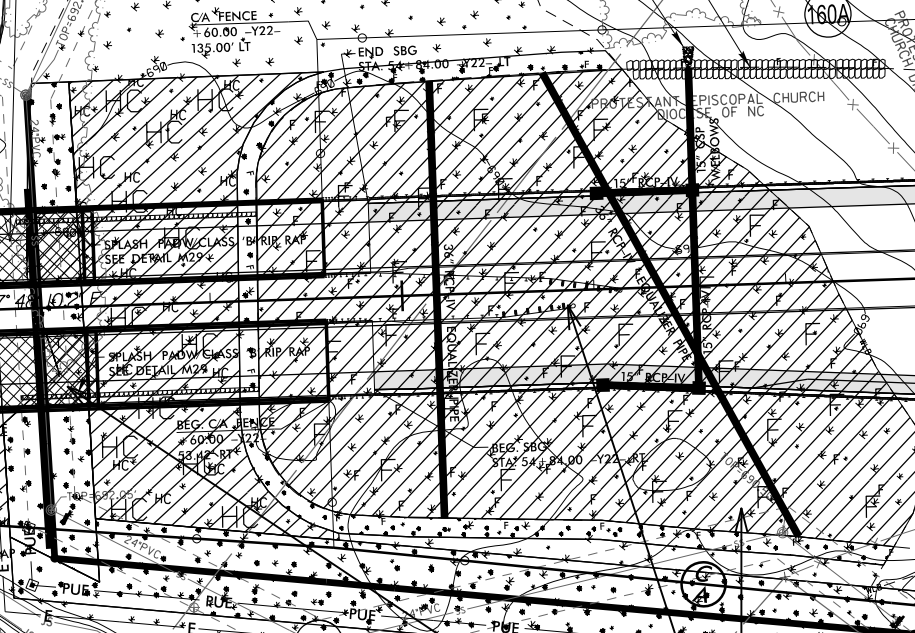


Permit Drawing  
Sheet 44 of 108

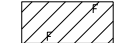
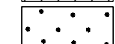
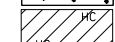
**REVISED  
JULY 2012**



**TEMPORARY  
WORK BRIDGES  
SEE DETAIL SHEET**



**LEGEND**

	DENOTES FILL IN WETLAND
	DENOTES MECHANIZED CLEARING
	DENOTES HAND CLEAR IN WETLAND

REVISIONS

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DATE: 7/10/2012 11:39:55 AM



Roadway Design ENGINEER	Hydraulics ENGINEER
<b>PRELIMINARY PLANS</b> DO NOT USE FOR CONSTRUCTION	
<small>421 Fayetteville Street, Suite 1303, Raleigh, N.C. 27601, NC License F-0378 559 Jones Franklin Rd., Suite 104, Raleigh, North Carolina 27609</small>	

Permit Drawing  
Sheet 54 of 108

**REVISED  
JULY 2012**

REVISIONS

LEGEND

	DENOTES FILL IN WETLAND
	DENOTES MECHANIZED CLEARING
	DENOTES HAND CLEAR IN WETLAND

MATCH TO SHEET 32 - Y22 - POT STA. 47 + 50.00

MATCH TO SHEET 32 - Y25 - POT STA. 12 + 70.00

MATCH TO SHEET 20 - Y22 - POT 57 + 50.00

**TEMPORARY  
WORK BRIDGES  
SEE DETAIL SHEET**

**SITE 12**

**SITE 14**

SEE SHEET 73 FOR -Y22- PROFILE  
SEE SHEET 75 FOR -Y25- PROFILE  
SEE SHEETS 2- THRU 2- FOR DRAINAGE DETAILS

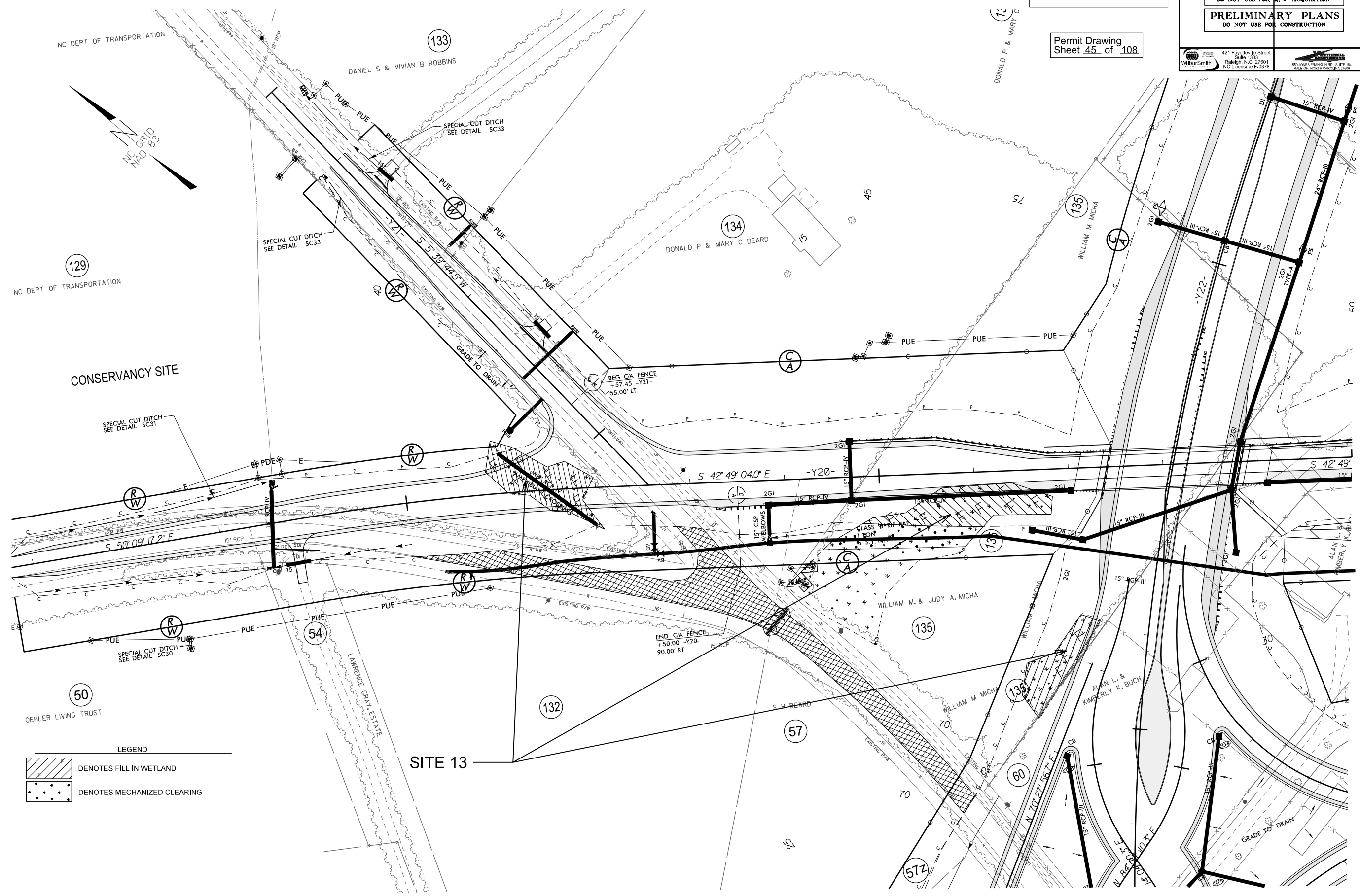
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PROJECT REFERENCE NO. R-2248E	SHEET NO. 20B
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
<b>INCOMPLETE PLANS</b> DO NOT USE FOR R/W ACQUISITION	
<b>PRELIMINARY PLANS</b> DO NOT USE FOR CONSTRUCTION	
<small>421 Fayetteville Street Suite 1303 Raleigh, N.C. 27601 NC License F-0378</small>	

REVISED  
MARCH 2012

Permit Drawing  
Sheet 45 of 108

REVISIONS



**LEGEND**

	DENOTES FILL IN WETLAND
	DENOTES MECHANIZED CLEARING

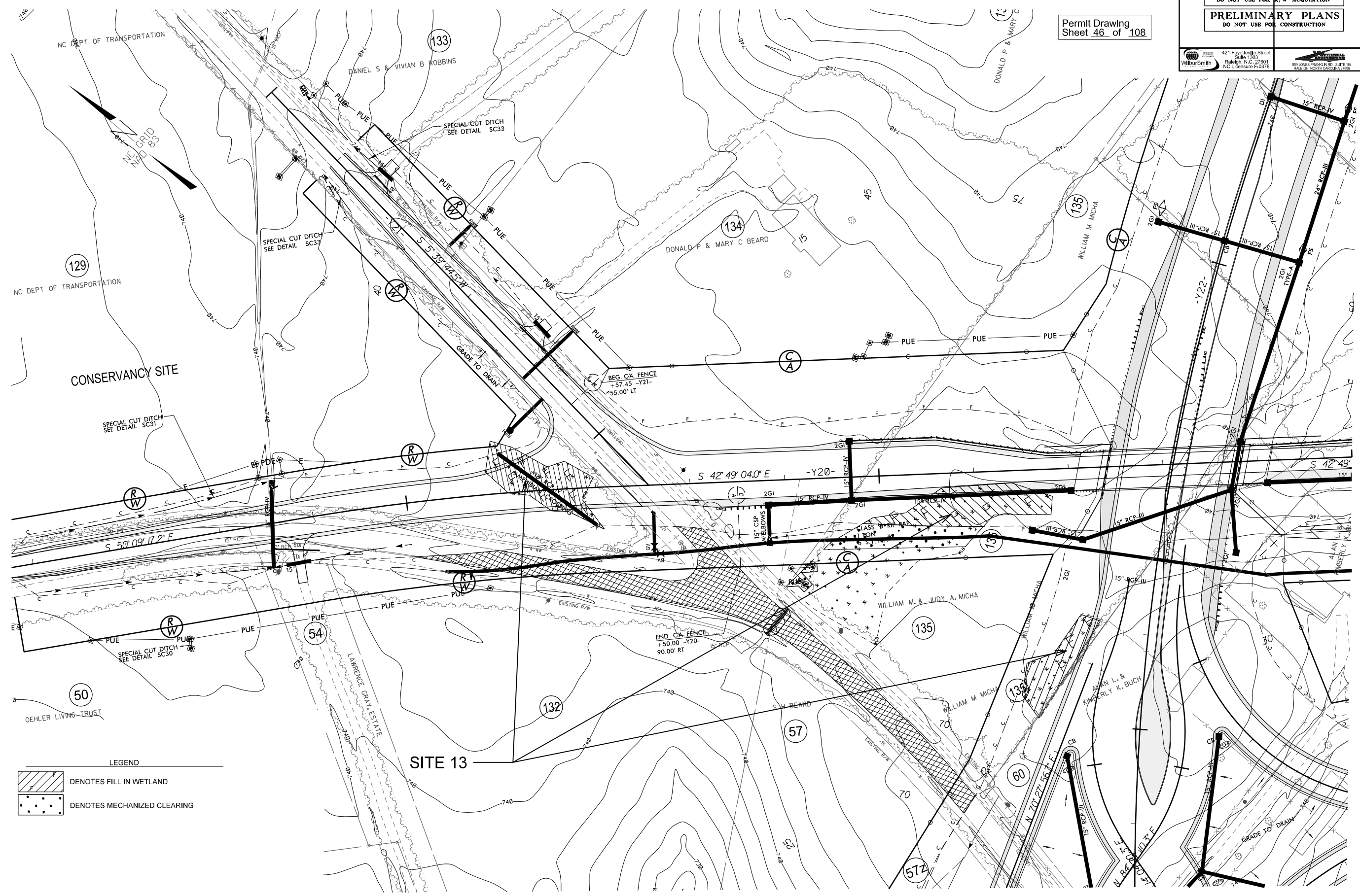
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REVISED  
MARCH 2012



Permit Drawing  
Sheet 46 of 108

PROJECT REFERENCE NO. R-2248E	SHEET NO. 20B
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
<b>INCOMPLETE PLANS</b> DO NOT USE FOR R/W ACQUISITION	
<b>PRELIMINARY PLANS</b> DO NOT USE FOR CONSTRUCTION	
<small>421 Fayetteville Street Suite 1303 Raleigh, N.C. 27601 NC License # F-0378</small>	

REVISIONS



**LEGEND**

	DENOTES FILL IN WETLAND
	DENOTES MECHANIZED CLEARING

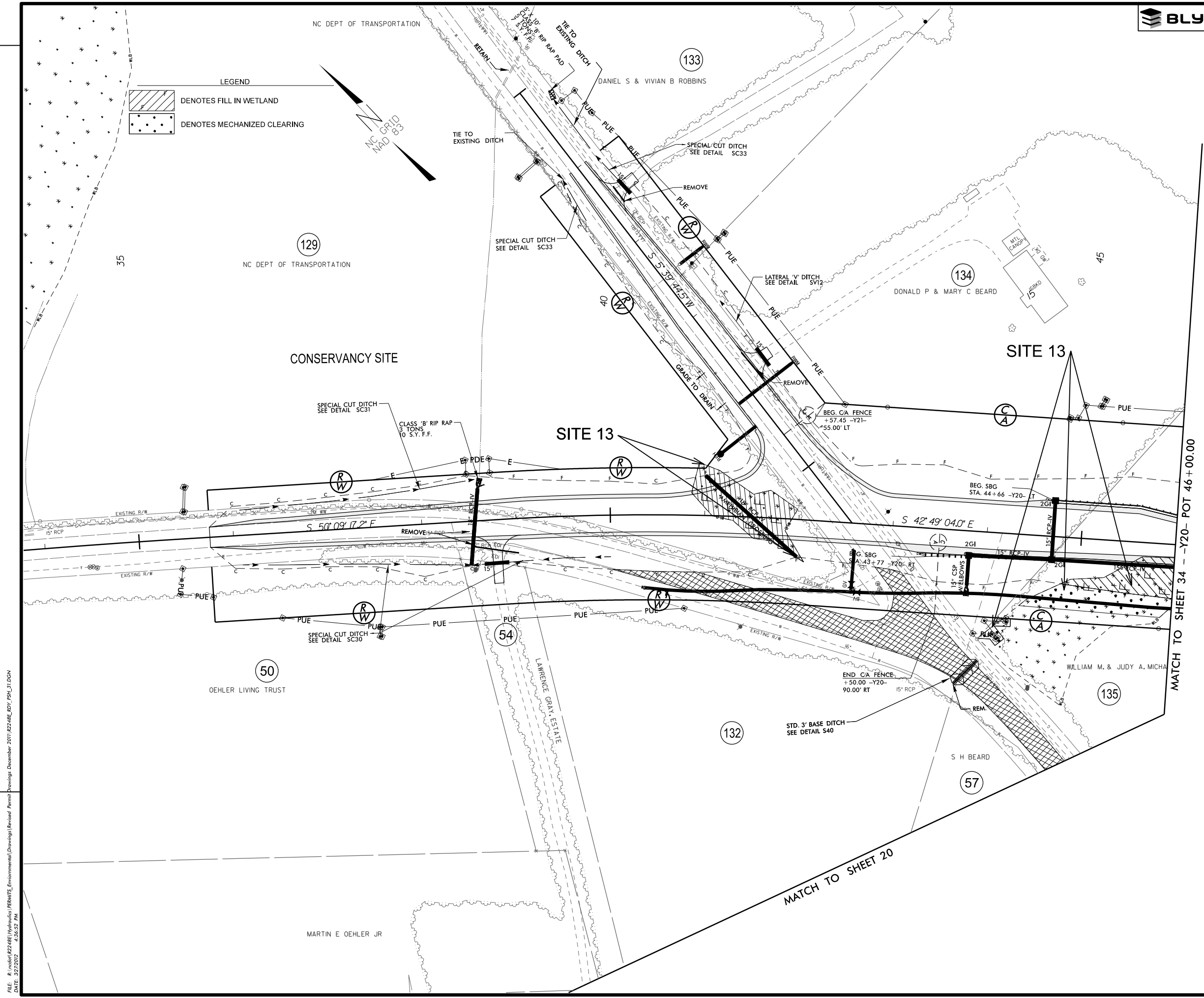
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PROJECT REFERENCE NO. R-2248E	SHEET NO. 31
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
<b>INCOMPLETE PLANS</b> DO NOT USE FOR R/W ACQUISITION	
<b>PRELIMINARY PLANS</b> DO NOT USE FOR CONSTRUCTION	
<small>421 Fayetteville Street Suite 1303 Raleigh, N.C. 27601 NC License F-0378</small>	<small>559 JONES FRANKLIN RD., SUITE 104 RALEIGH, NORTH CAROLINA 27609</small>

Permit Drawing  
Sheet 51 of 108

REVISED  
MARCH 2012

REVISIONS



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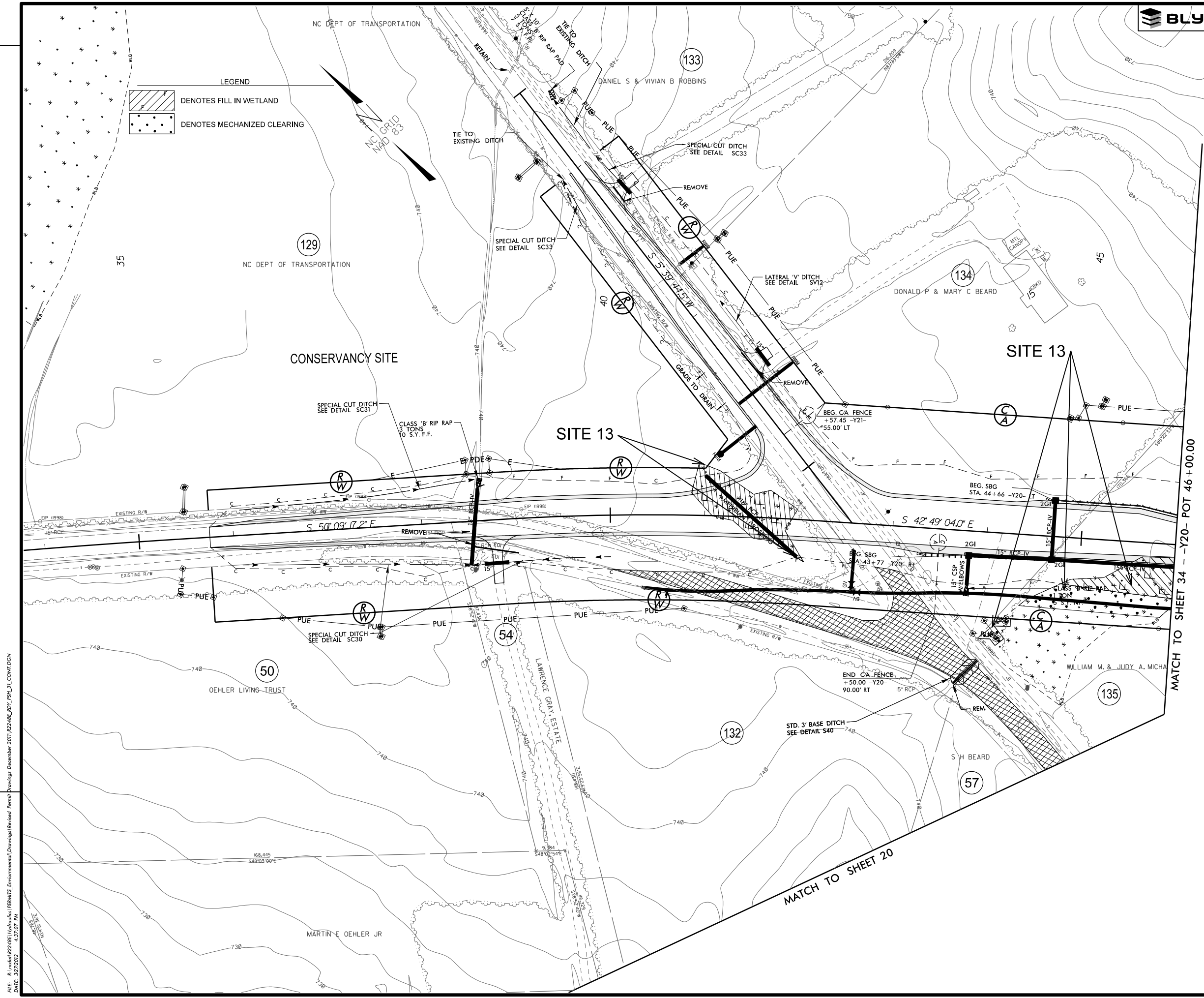
SEE SHEET 70 FOR -Y20- PROFILE  
 SEE SHEET 72 FOR -Y21- PROFILE  
 SEE SHEETS 2- THRU 2- FOR DRAINAGE DETAILS

PROJECT REFERENCE NO. R-2248E	SHEET NO. 31
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
<b>INCOMPLETE PLANS</b> DO NOT USE FOR R/W ACQUISITION	
<b>PRELIMINARY PLANS</b> DO NOT USE FOR CONSTRUCTION	
<small>421 Fayetteville Street Suite 1303 Raleigh, N.C. 27601 NC License F-0378</small>	<small>559 JONES FRANKLIN RD., SUITE 164 RALEIGH, NORTH CAROLINA 27609</small>

Permit Drawing  
Sheet 52 of 108

**REVISED**  
**MARCH 2012**

REVISIONS

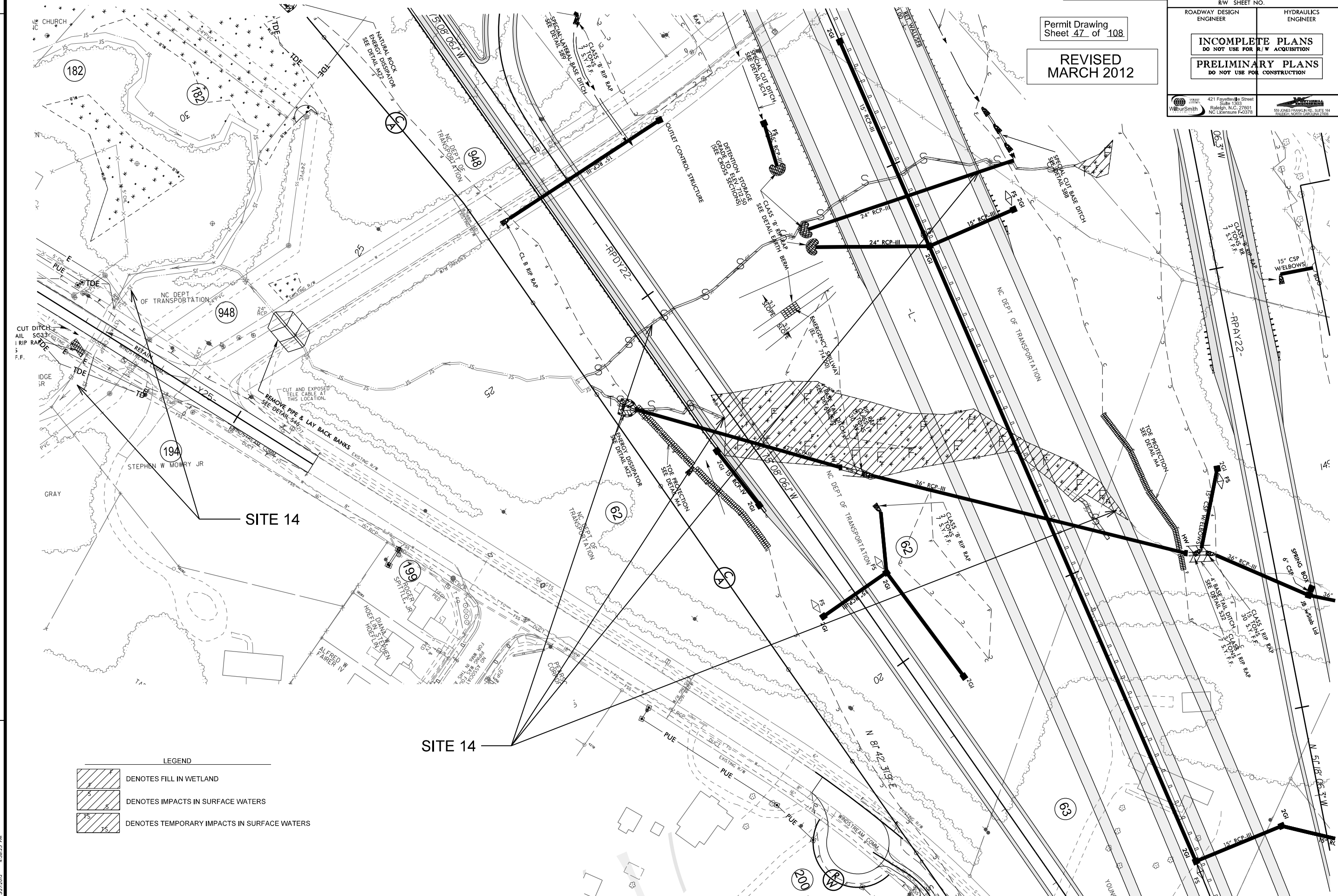


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SEE SHEET 70 FOR -Y20- PROFILE  
 SEE SHEET 72 FOR -Y21- PROFILE  
 SEE SHEETS 2- THRU 2- FOR DRAINAGE DETAILS



PROJECT REFERENCE NO. R-2248E	SHEET NO. 20C
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
<b>INCOMPLETE PLANS</b> DO NOT USE FOR R/W ACQUISITION	
<b>PRELIMINARY PLANS</b> DO NOT USE FOR CONSTRUCTION	
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REVISIONS

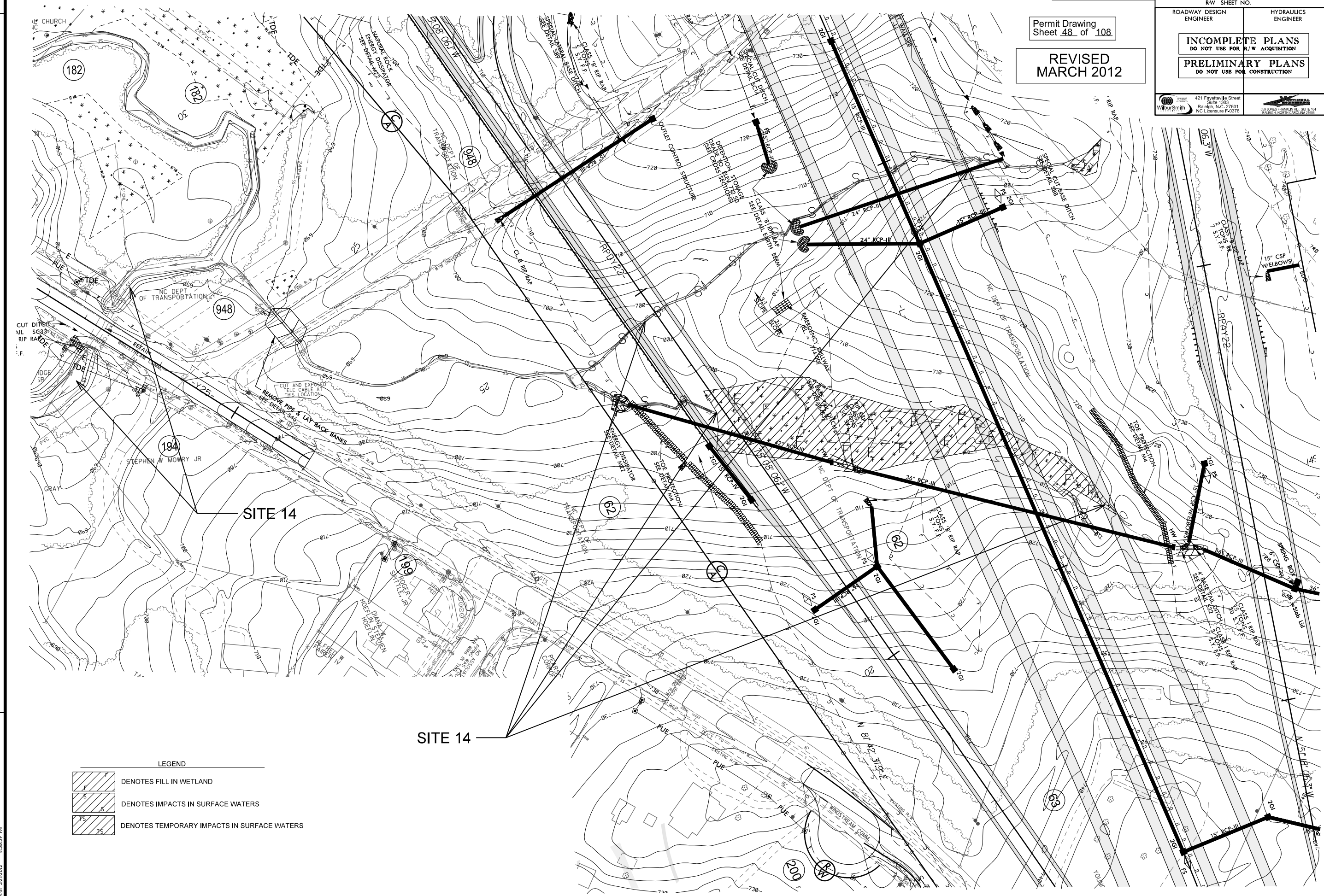
LEGEND

	DENOTES FILL IN WETLAND
	DENOTES IMPACTS IN SURFACE WATERS
	DENOTES TEMPORARY IMPACTS IN SURFACE WATERS

FILE: R:\in\01\02248E\Hydraulics\Environmental\Drawings\Revised\Permit\Drawings\2011\02248E\_R01\_P01\_20C\_S14.DGN  
DATE: 3/27/2012 4:36:25 PM

Permit Drawing  
Sheet 48 of 108

**REVISED  
MARCH 2012**



REVISIONS

**LEGEND**

	DENOTES FILL IN WETLAND
	DENOTES IMPACTS IN SURFACE WATERS
	DENOTES TEMPORARY IMPACTS IN SURFACE WATERS

FILE: R:\in\01\02248E\Hydraulics\Environmental\Drawings\Revised\Permit\Drawings\December 2011\02248E\_R01\_P01\_20C\_CONT\_SITE 14.DGN  
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