



STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION

PAT L. MCCRORY  
GOVERNOR

ANTHONY J. TATA  
SECRETARY

February 26, 2013  
*First Revision April 12, 2013*  
*Second Revision May 22, 2013*

U. S. Army Corps of Engineers  
Regulatory Field Office  
3331 Heritage Trade Drive, Suite 105  
Wake Forest, NC 27587

ATTN: Mr. Andy Williams  
NCDOT Coordinator

SUBJECT: **Revised Application for Section 404 Individual Permit and Section 401 Individual Water Quality Certification** for the proposed Greensboro Western Loop from north of SR 2176 (Bryan Boulevard) to SR 2303 (Lawndale Drive), Guilford County, Division 7. Federal Aid Project No. STP-NHF-124(1), WBS Element No. 34820.1.2, TIP No. U-2524C and D.

Debit \$570.00 from WBS Element No. 34820.1.2

Dear Sir:

The North Carolina Department of Transportation (NCDOT) proposes to construct a section of the Greensboro Western Loop from north of SR 2176 (Bryan Boulevard) to SR 2303 (Lawndale Drive) in Greensboro, for a total of 4.8 miles. The project involves constructing a six-lane divided facility on new location.

The first revision of the permit application cover letter (April 12, 2013) involved changes to the Surface Waters and Compensatory Mitigation sections (U-2524C section only) including Tables 3 and 6, respectively. The changes were due to an additional 36 linear feet of bank stabilization at Permit Site 13.

This second revision of the cover letter includes additional changes to the Surface Waters, Wetlands, and Compensatory Mitigation sections (U-2524C section only) including Tables 3, 5, and 6, respectively. The changes were due to new impacts (Permit Site 10A) consisting of 0.01 acres of temporary wetland fill and 0.01 acres of mechanized clearing from a recently proposed temporary detour. There is also a reduction in stream impacts at Permit Site 3 (from 345 feet to 338 feet) due to moving the toe protection to the cut fill line from its original location that was outside of the cut fill line. This revision letter also incorporates changes made in the first revision cover letter. Please refer to all mentioned sections for impacts and mitigation updates in this revised cover letter. Revised permit sheets 1 of 39, 2 of 39, 7 of 39, 8 of 39, 39 of 39 and two new permit sheets (22A of 39 and 22B of 39) are attached. Total stream mitigation required has decreased while wetland mitigation has increased. A revised NCEEP acceptance letter is forthcoming.

**MAILING ADDRESS:**  
NC DEPARTMENT OF TRANSPORTATION  
PROJECT DEVELOPMENT & ENVIRONMENTAL ANALYSIS UNIT  
1598 MAIL SERVICE CENTER  
RALEIGH NC 27699-1548

TELEPHONE: 919-707-6000  
FAX: 919-212-5785  
WEBSITE: [NCDOT.GOV](http://NCDOT.GOV)

**LOCATION:**  
CENTURY CENTER, BUILDING B  
1020 BIRCH RIDGE DRIVE  
RALEIGH NC 27610

## PROJECT SCHEDULE

For construction purposes, the remaining Greensboro Western Loop project has been broken down into two sections, C and D. Sections A and B were permitted separately and completed in 2008. Table 1 reflects the project breakdown and section termini.

**Table 1. Description of Project Sections for Construction Purposes**

Section	Project Termini	Let Date
U-2524A & B	North of I-85 to North of 2176 (10 miles)	Complete (July 3, 2008)
U-2524C	North of SR 2176 to US 220 (3.0 miles)	September 17, 2013
U-2524D	US 220 to SR 2303 (1.8 miles)	October 18, 2016

Permit drawings for the proposed project have been prepared based on final design for U-2524C and preliminary design for U-2524D. The NCDOT will apply for any relevant permit modifications for U-2524D when final design is complete. Construction will not commence on U-2524D until permit modifications have been received based on final designs.

This project calls for a letting date of September 17, 2013 and a review date of July 30, 2013 for Section U-2524C. The letting date for Section U-2524D is October 18, 2016. However, the letting dates may advance as additional funds become available.

## PURPOSE AND NEED

The purposes of the proposed project are (1) provide an efficient connection for major thoroughfares such as I-85, I-40, High Point Road, West Market Street, and US 220; (2) improve service for local north-south traffic; and (3) improve access to the Piedmont Triad International Airport and the major employers in the western section of Greensboro from the north and south.

## NEPA DOCUMENT STATUS

A Final Environmental Impact Statement (FEIS) and Record of Decision (ROD) for U-2524 (includes Sections U-2524C and D) were approved on February 28, 1995 and August 17, 1995, respectively, and have been provided to the appropriate agencies. Right of Way Consultations for U-2524C and U-2524D to update the U-2524 FEIS were approved on May 3, 2011 and June 15, 2011, respectively. Additional copies will be provided upon request.

## INDEPENDENT UTILITY

The subject project is in compliance with 23 CFR Part 771.111(f), which lists the Federal Highway Administration (FHWA) characteristics of independent utility of a project:

- (1) The project connects logical termini and is of sufficient length to address environmental matters on a broad scope;
- (2) The project is usable and a reasonable expenditure, even if no additional transportation improvements are made in the area;
- (3) The project does not restrict consideration of alternatives for other reasonably foreseeable transportation improvements..

## RESOURCE STATUS

Wetland delineations within the U-2524C construction footprint followed the field delineation method outlined in the *1987 Corps of Engineers Wetland Delineation Manual* (USACE, 1987) and the *Interim Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Eastern Mountains and Piedmont Region* (USACE, 2010). Stream identification and classification followed the *Methodology for the Identification of Intermittent and Perennial Streams and Their Origins* (North Carolina Division of Water Quality [NCDWQ], 2010).

Within the U-2524C construction footprint, 16 streams and 19 wetlands were identified. Eight streams were identified within the U-2524D construction footprint. Jurisdictional areas were initially verified by USACE Regulatory Specialist Jean Manuel on December 10, 2001 and re-verified by USACE Regulatory Specialist Todd Tugwell on March 30, 2006. No jurisdictional determination (JD) was received from USACE for either field visits. Jurisdictional features were last re-verified by USACE Regulatory Specialist Andy Williams and NCDWQ representative Amy Euliss on July 25, 2012 for U-2524C only. A request packet for the final JD for U-2524C was submitted to the USACE on September 4, 2012. No written JD was received from the USACE for the re-verification.

## IMPACTS TO WATERS OF THE UNITED STATES

### U-2524C

This project lies within the Piedmont Physiographic Province in the Cape Fear River Basin [Hydrologic Unit Code (HUC) 03030002]. Jurisdictional features within the U-2524C construction footprint that will be impacted include 13 unnamed tributaries (UT) to Horsepen Creek [NCDWQ Classification WS-III; NSW; NCDWQ Index No. 16-11-5-(0.5)], Horsepen Creek and 1 UT to Horsepen Creek [NCDWQ Classification WS-III; NSW, CA; NCDWQ Index No. 16-11-5-(2)] and 15 riparian wetlands.

### U-2524D

Jurisdictional features within the U-2524D construction footprint that will be impacted include one UT to Horsepen Creek [NCDWQ Classification WS-III; NSW, CA; NCDWQ Index No. 16-11-5-(2)], Richland Creek, and five UTs to Richland Creek [NCDWQ Classification WS-III; NSW; NCDWQ Index No 16-11-7-(1)]. No wetlands were located within the U-2524D footprint based upon field verification from 2006.

There are no designated Outstanding Resource Waters (ORW), High Quality Waters (HQW), Water Supply I (WS-I), or Water Supply II (WS-II) waters within 1.0 mile of the project area. All streams within the project area and within a mile of the project area are listed on the 2012 303(d) Final List of Impaired Waters of North Carolina due to impaired ecological/biological integrity.

**Surface Waters**

**U-2524C**

Total surface water impacts for U-2524C are 3,113 linear feet of permanent stream impacts and 358 linear feet of temporary stream impacts. Tables 2-3 list the site number, reference number, stream name, amount of permanent and temporary impacts, and amount of mitigation required.

**Utilities**

A total of 160 linear feet of temporary stream impact will occur due to stream access and utility line removal (Colonial Pipe Line) for Section U-2524C. These impacts will involve trenching the stream banks and replacing to natural grade. Utility impacts for Section U-2524D will be evaluated during the permit modification process.

**Table 2. U-2524C Streams Impacted and Their Descriptions**

<b>Permit Site No.</b>	<b>Stream ID in CP 4A Packet</b>	<b>JD Package ID</b>	<b>Stream Name</b>	<b>Classification</b>
1	2S	SA	UT to Horsepen Creek	Perennial
2	2S	SA	UT to Horsepen Creek	Perennial
2	2S	SB	UT to Horsepen Creek	Perennial
3	2S	SC	UT to Horsepen Creek	Perennial
3A	2S	SD	UT to Horsepen Creek	Perennial
4	4S	SE	UT to Horsepen Creek	Perennial
5	4S	SF	UT to Horsepen Creek	Perennial
5A	4S	SG	UT to Horsepen Creek	Perennial
6	4S	SH	UT to Horsepen Creek	Intermittent
7	5S	SI	UT to Horsepen Creek	Perennial
7A	5S	SJ	UT to Horsepen Creek	Perennial
8	9S	SL	UT to Horsepen Creek	Perennial
10	12S	SM	UT to Horsepen Creek	Perennial
13	13S	SP	UT to Horsepen Creek	Perennial
13	14S	SO	Horsepen Creek	Perennial
HC1	14S	SO	Horsepen Creek	Perennial
HC2	14S	SO	Horsepen Creek	Perennial
HC3	14S	SO	Horsepen Creek	Perennial
HC4	14S	SO	Horsepen Creek	Perennial
HC5	14S	SO	Horsepen Creek	Perennial
II			UT to Horsepen Creek	Intermittent

Note: Permit Site Nos. HC1-HC5 and II are impacts by Colonial Pipe Line utilities; see utility drawings.

**Table 3. U-2524C Surface Water Impacts (Final)**

Permit Site No.	Impact Type	Permanent Impact Length (ft)	Impacts requiring NCDWQ mitigation (ft)	Impacts requiring USACE mitigation (ft) <sup>1</sup>	Temporary Impact Length (ft)
1	48" RCP	385	385	385	13
	Bank Stabilization	11	11	0 <sup>2</sup>	
2	30" RCP	13	0 <sup>3</sup>	13	14
	Bank Stabilization	32	32 <sup>4</sup>	0 <sup>2</sup>	
3	36" RCP	11	0 <sup>3</sup>	0 <sup>2</sup>	
	Bank Stabilization	338	338	338	20
3A	36" RCP	30	30	30	
4	10' x 7' RCBC	331	331	331	46
	Bank Stabilization	30	30	0 <sup>2</sup>	
5	10' x 6' RCBC	688	688	688	40
	Bank Stabilization	37	37	0 <sup>2</sup>	
5A	Fill	90	0 <sup>3</sup>	90	
	Bank Stabilization	25	0 <sup>3</sup>	0 <sup>2</sup>	
6	Fill	60	0 <sup>5</sup>	0 <sup>5</sup>	15
7	30" RCP	227	227	227	10
	Bank Stabilization	11	11	0 <sup>2</sup>	
7A	15" RCP	57	0 <sup>3</sup>	57	
8	54" RCP	412	412	412	20
	Bank Stabilization	13	13	0 <sup>2</sup>	
10	Bank Stabilization	16	0 <sup>3</sup>	0 <sup>2</sup>	
13	Bridge, Roadway	204	204	204	20
	Bank Stabilization	60	60 <sup>6</sup>	0 <sup>2</sup>	
		22	0 <sup>3</sup>	0 <sup>2</sup>	

Permit Site No.	Impact Type	Permanent Impact Length (ft)	Impacts requiring NCDWQ mitigation (ft)	Impacts requiring USACE mitigation (ft) <sup>1</sup>	Temporary Impact Length (ft)
HC1	Utilities				40
HC2	Utilities				20
HC3	Utilities				20
HC4	Utilities				20
HC5	Utilities				20
II <sup>7</sup>	Utilities				40
<b>Totals</b>		<b>3,113</b>	<b>2,819</b>	<b>2,775</b>	<b>358</b>

<sup>1</sup>Determined from USACE during verification site visit on July 25, 2012. <sup>2</sup>Mitigation for bank stabilization not required by USACE. <sup>3</sup>Mitigation not required by NCDWQ (less than 150 linear feet of stream). <sup>4</sup>Same stream as Site 1; different stream than stream with 11 feet of bank stabilization. <sup>5</sup>Stream deemed unimportant by the USACE requiring no mitigation by USACE and NCDWQ. <sup>6</sup>Different stream than stream with 22 feet of bank stabilization. <sup>7</sup>Stream identified by Colonial Pipe Lines and not field verified by NCDOT, USACE, or NCDWQ since it was outside of NCDOT project area limits during field verification process.

U-2524D

Total preliminary surface water impacts for U-2524D are 4,604 linear feet of permanent stream impacts and 80 linear feet of temporary stream impacts. Table 4 below lists the permit site number, reference number, stream name, and amount of preliminary permanent and temporary impacts.

**Table 4. U-2524D Surface Water Descriptions and Impacts (Preliminary)**

Permit Site No.	Stream ID in CP 4A Packet	Stream Name	Classification	Permanent Impact (ft)	Temporary Impact (ft)
1	16S	UT to Horsepen Creek	Perennial	393	10
2	17S	UT to Richland Creek	Perennial	919	10
3	17S	UT to Richland Creek	Perennial	1,488	10
4	17S	UT to Richland Creek	Perennial	35 <sup>1</sup>	
4	19S	Richland Creek	Perennial	1218	20
5	20S	UT to Richland Creek	Perennial	141 <sup>1</sup>	10
6	21S	UT to Richland Creek	Perennial	311	10
7	Not Identified	UT to Richland Creek	Perennial	99 <sup>1</sup>	10
<b>Total Impacts</b>				<b>4,604</b>	<b>80</b>

<sup>1</sup>Mitigation not required by NCDWQ (less than 150 linear feet of stream). NCDWQ mitigation for remaining streams are assumed at 1:1 and USACE mitigation for all streams assumed at 2:1 until final field reverification is made.

**Wetlands**

**U-2524C**

There will be a total of 6.13 acres of permanent riparian wetland impacts associated with this section. These impacts will result from 4.03 acres of permanent fill, 0.34 acres of excavation, and 1.76 acres of mechanized clearing. There will also be 0.79 acres of temporary excavation impacts due to utilities, 0.01 acres of temporary fill, and 4.38 acres of wetland impacts due to hand clearing. Permanent and temporary wetland impacts are summarized below in Table 5 for U-2524C.

**Utilities**

There will be 0.52 acres (0.33 acres for Colonial Pipe Line, 0.19 acres for Plantation Pipe Line) of permanent wetland impact due to mechanized clearing for utility lines in Section U-2524C. The 0.79 acres of temporary wetland impacts will involve excavating and sidecasting the wetland soil to remove the existing lines and then replacing the sidecasted soil back.

**U-2524D**

No wetland impacts are anticipated in Section U-2524D. Utility impacts for Section U-2524D will be evaluated during the permit modification process.

**Table 5. U-2524C Wetland Impacts (Final)**

Permit Site No.	Wetland ID in CP 4A Packet	JD Package ID	Impact Type	Permanent Impacts (ac)	Temporary Impacts (ac)
1	1W	WA and WB	Permanent Fill	0.10	
			Mechanized Clearing	0.02	
7	Not Identified	WC and WD	Permanent Fill	0.01	
9	11W and 12W	WE, WF, WG, WH	Mechanized Clearing	0.02	
10A	13W	WI	Mechanized Clearing	0.01	
10A	13W	WJ	Temporary Fill		0.01
11	13W	WK	Mechanized Clearing	0.19	
12	13W	WL	Permanent Fill	1.93 (2:1 Ratio) 0.64 (1:1 Ratio)	
			Mechanized Clearing	0.34 (2:1 Ratio) 0.02 (1:1 Ratio)	
13	13W	WM	Permanent Fill	0.59 (2:1 Ratio) 0.65 (1:1 Ratio)	
			Excavation	0.34	
			Mechanized Clearing	0.22 (2:1 Ratio) 0.42 (1:1 Ratio)	
14	15W	WQ	Permanent Fill	0.11	
W1	13W	WL	Mechanized Clearing	0.20	

Permit Site No.	Wetland ID in CP 4A Packet	JD Package ID	Impact Type	Permanent Impacts (ac)	Temporary Impacts (ac)
W2	13W	WM	Temporary Excavation		0.79
W3	15W	WN	Mechanized Clearing	0.12	
W4	15W	WQ	Mechanized Clearing	0.01	
1*	15W	WN	Mechanized Clearing	0.14	
2*	15W	WO	Mechanized Clearing	0.04	
3*	15W	WP	Mechanized Clearing	0.01	
<b>Total Impacts</b>				<b>6.13</b>	<b>0.80</b>

Notes: Permit Site Nos. W1 - W4 are from Colonial Pipe Line utilities and Permit Site Nos. 1\* - 3\* are from Plantation Pipe Line utilities. Most permanent impacts require 2:1 mitigation except for Permit Sites 12 and 13 within the utility easement which USACE determined as 1:1 mitigation.

### FEDERALLY PROTECTED SPECIES

Plants and animals with a Federal classification of Endangered (E) or Threatened (T) are protected under provisions of Section 7 and Section 9 of the Endangered Species Act (ESA) of 1973, as amended. As of December 3, 2012, the U.S. Fish and Wildlife Service (USFWS) list one federally protected species for Guilford County: Small whorled pogonia (*Isotria medeoloides*). A species description and biological conclusion for the small whorled pogonia was not stated in the FEIS because the species was added to the USFWS county list of protected species after the documents were completed. A survey was done by NCDOT biologists on May 20, 2009 and a biological conclusion of "No Effect" was given for small whorled pogonia. A search of the North Carolina Natural Heritage Database on January 18, 2013 revealed no known occurrences of any federally protected species within 1.0 mile of the limits of this section.

Since the FEIS the bald eagle has been delisted for Guilford County. The bald eagle has been delisted as of August 2007 and is not subject to Section 7 consultation and a biological conclusion is not required. However, the bald eagle remains protected by the Bald and Golden Eagle Protection Act. No habitat exists in the vicinity of U-2524 for the bald eagle.

### CULTURAL RESOURCES

No archaeological sites or historic structures listed on or eligible for the National Register will be impacted by U-2524. The North Carolina Department of Cultural Resources, State Historic Preservation Office (HPO) concurs with this finding. Correspondence from the HPO is included in Appendix B of the FEIS.

### FEMA COMPLIANCE

There are streams within the project limits that are within Federal Emergency Management Agency (FEMA)-designated flood zones. Coordination between the NCDOT Hydraulics Unit

U-2524C & D Individual Permit Application



and FEMA will occur prior to LET to ensure that NCDOT is in full compliance with applicable floodplain ordinances.

### **INDIRECT AND CUMULATIVE EFFECTS**

The ICI is currently underway and will be submitted to the NCDWQ upon completion.

### **WILD AND SCENIC RIVERS**

This project will not impact any designated Wild and Scenic Rivers or any rivers included in the list of study rivers (Public Law 90-542, as amended) or North Carolina Natural and Scenic Rivers.

### **ESSENTIAL FISH HABITAT**

The project will not impact any essential fish habitat afforded protection under the Magnuson-Stevens Act of 1996 (16 U.S.C 1801 *et seq.*).

### **MITIGATION OPTIONS**

The USACE has adopted, through the Council on Environmental Quality (CEQ), a wetland mitigation policy that embraces the concept of “no net loss of wetlands” and sequencing. The purpose of this policy is to restore and maintain the chemical, biological, and physical integrity of the waters of the United States. CEQ has defined mitigation of wetland and surface water impacts to include: avoiding impacts, minimizing impacts, rectifying impacts, reducing impacts over time, and compensating for impacts (40 CFR 1508.20).

The NCDOT is committed to incorporating all reasonable and practicable design features to avoid and minimize jurisdictional impacts, and to provide full compensatory mitigation of all remaining, unavoidable jurisdictional impacts. Avoidance measures were taken during the planning phase and minimization measures were incorporated as part of the project design. Minimization includes the examination of appropriate and practicable steps to reduce the adverse impacts.

#### **Avoidance and Minimization**

Avoidance and minimization has been employed in the project area to the maximum extent practicable. The following measures were implemented for the project:

#### **U-2524C Minimization Measures**

- NCDOT’s Best Management Practices (BMPs) for the Protection of Surface Waters will be enforced;
- Use of Design Standards in Sensitive Watersheds through entire project;
- Impacts to wetlands and surface waters were minimized using 2:1 side slopes where practicable;
- Ditches that discharge directly into wetlands have been designed to “daylight” to zero depth just outside the wetland boundaries to diffuse flow and reduce velocities;

- Grass swale (39) treatment will be utilized in drainage systems discharging into jurisdictional streams;
- Impacts from steep cross pipe slopes (discharging into jurisdictional wetlands or streams) have been reduced with the use of junction boxes, flat exit pipe slopes, and non-buried upstream inverts;
- Five hazardous spill basins (one for stormwater treatment as well) will be utilized for receiving waters classified as Critical Area;
- Pre-formed scour holes will be constructed at four locations: -L- 287+50, :-L- 297+80, :-L- 381+05, and :-L- 382+34;
- Elimination and/or reduction of permanent wetland impacts at Permit Sites 9, 11, 12, and 13 due to bridging;
- Elimination and/or reduction of permanent stream impacts at Permit Sites 9 and 13 due to bridging;
- A 1.5:1 fill slope with rock plating will be used at Permit Site 8 to avoid stream impacts.

For additional avoidance/minimization for U-2524C see attached Stormwater Management Plan. Despite these best efforts of NCDOT, permitted stream impacts (7,688 linear feet) for U-2524C/U-2524D did increase from the impacts reported in the FEIS (6,833 linear feet). This increase is mainly due to new streams and additional jurisdictional stream sections to the FEIS listed streams found within the project area that were not calculated in the FEIS. Overall, wetland impacts significantly decreased from 16.6 acres reported in the FEIS to 6.12 acres recorded in this permit application mainly due to bridging.

**Compensatory Mitigation**

U-2524C

Compensatory mitigation requirements for stream and wetland impacts are summarized in Table 6. The U-2524C section will permanently impact a total of 3,113 feet of warm water streams. There are 278 feet of bank stabilization and 60 feet of an intermittent stream that do not require mitigation by the USACE, resulting in 2,775 feet of stream impacts requiring USACE 2:1 mitigation. Mitigation requirements for U-2524C by NCDWQ is 2,819 feet at 1:1. The USACE requirement exceeds the NCDWQ requirement and will be provided by NCEEP. NCEEP will also provide mitigation for the 6.13 acres of permanent riparian wetland impacts resulting from roadway fill, excavation, and mechanized clearing.

**Table 6. U-2524C Required Compensatory Mitigation Summary (Final)**

	<b>Stream Impacts in Length (ft)</b>	<b>Riparian Wetland Impacts (ac)</b>
<b>Required USACE Mitigation</b>	2,775 @ 2:1	4.40 @ 2:1 1.73 @ 1:1
<b>Total USACE Mitigation</b>	<b>5,550</b>	<b>10.53</b>
<b>Required NCDWQ Mitigation</b>	2,819 at 1:1	6.13 @ 1:1
<b>Total NCDWQ Mitigation</b>	<b>2,819</b>	<b>6.13</b>

U-2524D

Compensatory mitigation requirements for stream and wetland impacts are summarized in Table 7. The U-2524D section will permanently impact a total of 4,604 feet of warm water streams requiring USACE 2:1 mitigation. The mitigation requirement for U-2524D by NCDWQ is 4,329 feet at 1:1. The 14,772 feet of mitigation provided by the NCEEP for permanent impacts to warm water streams covers all stream mitigation requirements for U-2524C and D.

**Table 7. U-2524D Required Compensatory Mitigation Summary (Preliminary)**

	<b>Stream Impacts in Length (ft)</b>	<b>Riparian Wetland Impacts (ac)</b>
<b>Required USACE Mitigation</b>	4,604 @ 2:1	0
<b>Total USACE Mitigation</b>	<b>9,208</b>	<b>0</b>
<b>Required NCDWQ Mitigation</b>	4,329 @ 1:1	0
<b>Total NCDWQ Mitigation</b>	<b>4,329</b>	<b>0</b>

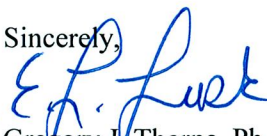
**REGULATORY APPROVALS**

Application is hereby made for a Department of the Army Section 404 Individual Permit as required for the above-described activities for the proposed T.I.P. Project U-2524C and D. The NCDOT understands that a permit modification will be required for Section U-2524D after final design is complete and prior to construction.

We are also hereby requesting a Section 401 Individual Water Quality Certification from NCDWQ. In compliance with Section 143-215.3D (e) of the NCAC, we will provide \$570.00 to act as payment for processing the Section 401 permit. We are providing two copies of this application to the North Carolina Department of Environment and Natural Resources (NCDENR), NCDWQ, for their review and approval.

A copy of this permit application and its distribution list will be posted on the NCDOT website at <https://connect.ncdot.gov/resources/Environmental/Pages/default.aspx>. Thank you for your time and assistance with this project. Please contact Greg Price at either [gwprice@ncdot.gov](mailto:gwprice@ncdot.gov) or (919) 707-6148 if you have any questions or need additional information.

Sincerely,

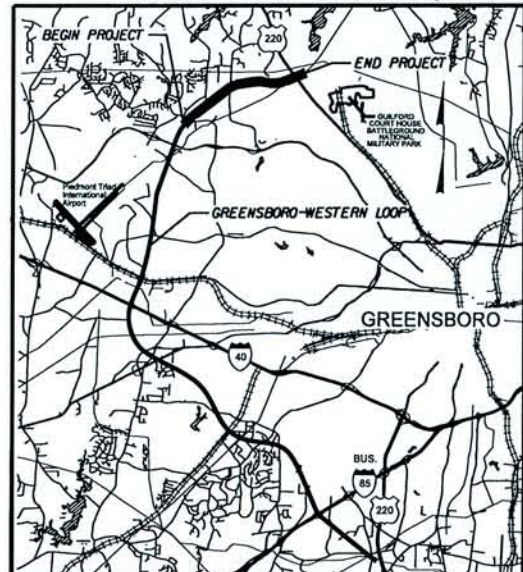
*for* 

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

Cc:  
NCDOT Permit Application Standard Distribution List

09/28/09

See Sheet 1-A For Index of Sheets  
See Sheet 1-B For Conventional Symbols



VICINITY MAP

# STATE OF NORTH CAROLINA DIVISION OF HIGHWAYS

## GUILFORD COUNTY

LOCATION: GREENSBORO-WESTERN LOOP FROM NORTH OF SR 2176  
(BRYAN BOULEVARD) TO US 220 (BATTLEGROUND AVENUE). Rev Sheet 1 of 39

TYPE OF WORK: GRADING, PAVING, CULVERTS, DRAINAGE,  
STRUCTURES, SIGNING, ITS, TRAFFIC SIGNAL  
AND RETAINING WALLS.

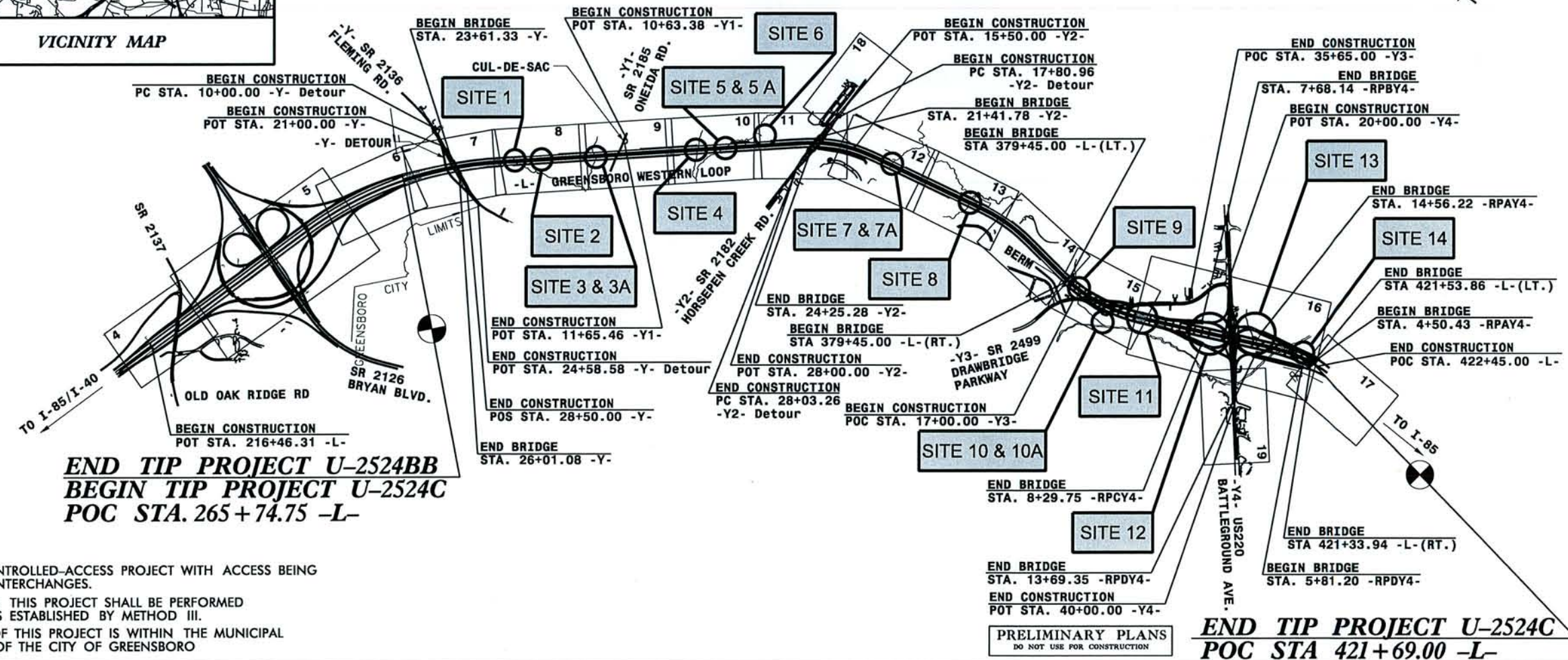
### WETLAND & STREAM IMPACTS

Permit Drawing  
5/20/13  
Rev Sheet 1 of 39  
NAD 83

TIP PROJECT: U-2524C

CONTRACT: C203197

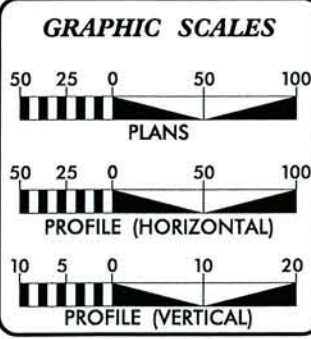
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	U-2524C	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
34820.2.18	NHF-0708(52)	P.E.	
34820.2.18	NHF-0708(52)	R.O.W./UTILITY	



NOTES:  
THIS IS A CONTROLLED-ACCESS PROJECT WITH ACCESS BEING LIMITED TO INTERCHANGES.  
CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD III.  
A PORTION OF THIS PROJECT IS WITHIN THE MUNICIPAL BOUNDARIES OF THE CITY OF GREENSBORO

END TIP PROJECT U-2524BB  
BEGIN TIP PROJECT U-2524C  
POC STA. 265 + 74.75 -L-

END TIP PROJECT U-2524C  
POC STA 421+69.00 -L-



**DESIGN DATA**

ADT 2013 =	35,113
ADT 2035 =	46,200
DHV =	11 %
D =	55 %
T =	9 % *
V =	70 MPH
CLASSIFICATION:	FREWAY
4% TTST	DUAL 5%

**PROJECT LENGTH**

LENGTH ROADWAY TIP PROJECT U-2524C	= 2.158 MILES
LENGTH STRUCTURES TIP PROJECT U-2524C	= 0.795 MILES
TOTAL LENGTH OF TIP PROJECT U-2524C	= 2.953 MILES

2006 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:	SEPTEMBER 23, 2011
LETTING DATE:	SEPTEMBER 17, 2013

HYDRAULICS ENGINEER

EDWARD S. ROBBINS, P.E.  
PROJECT ENGINEER

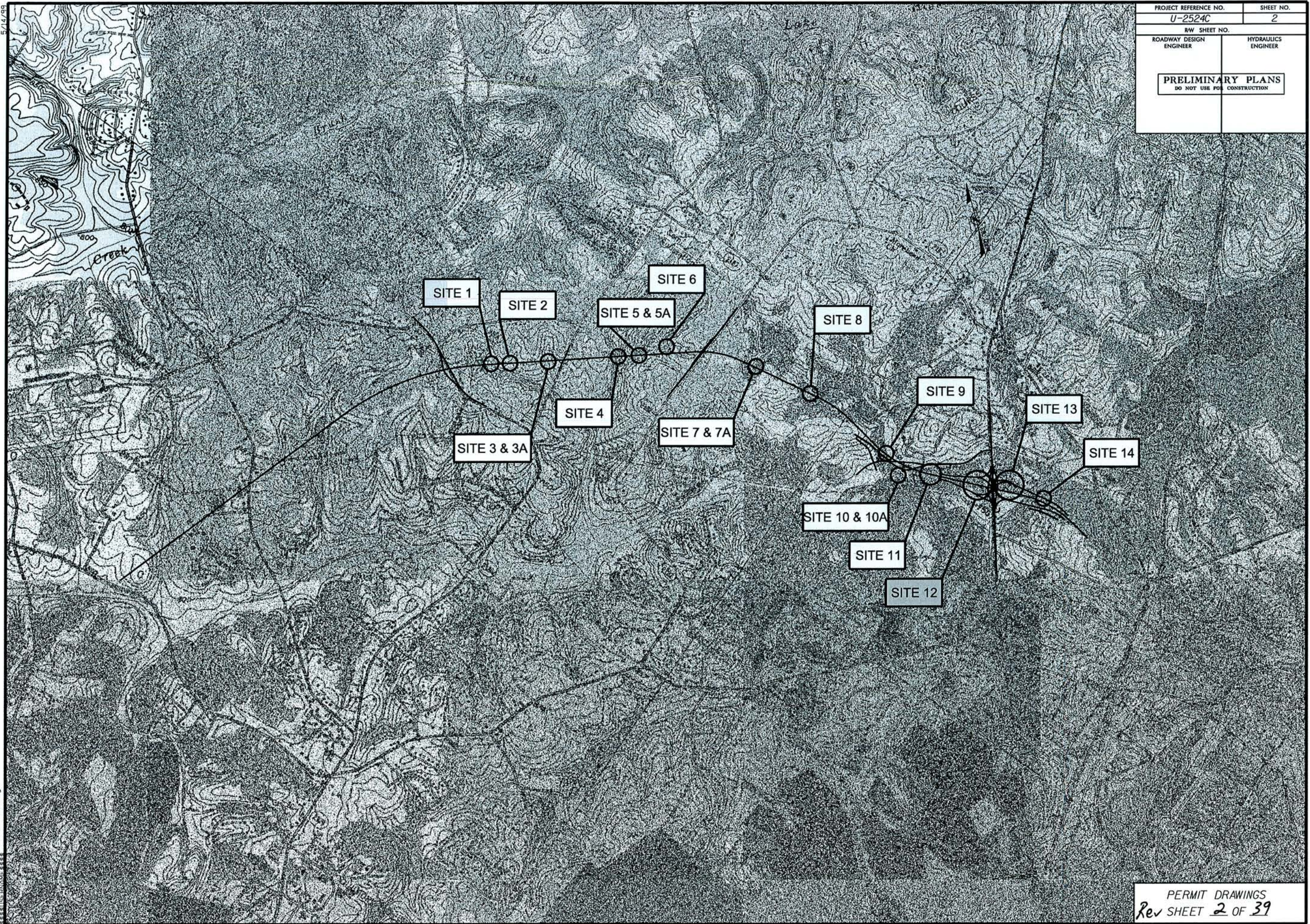
DAVID GARRETT  
PROJECT DESIGN ENGINEER

PRELIMINARY PLANS  
DO NOT USE FOR CONSTRUCTION

1:23:33 PM  
\\s\shs\U2524C\RDY\_TSH.dgn  
\$\$\$\$\$USERNAME\$\$\$\$\$

5/14/09

PROJECT REFERENCE NO. U-2524C	SHEET NO. 2
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
<b>PRELIMINARY PLANS</b> DO NOT USE FOR CONSTRUCTION	



I:\24151\PM\U-2524C.PRM\_0040.dgn

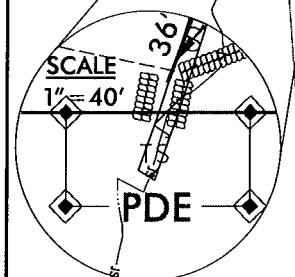
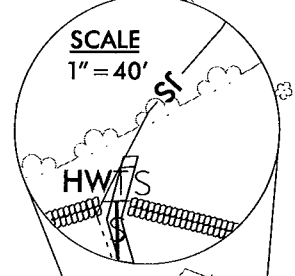
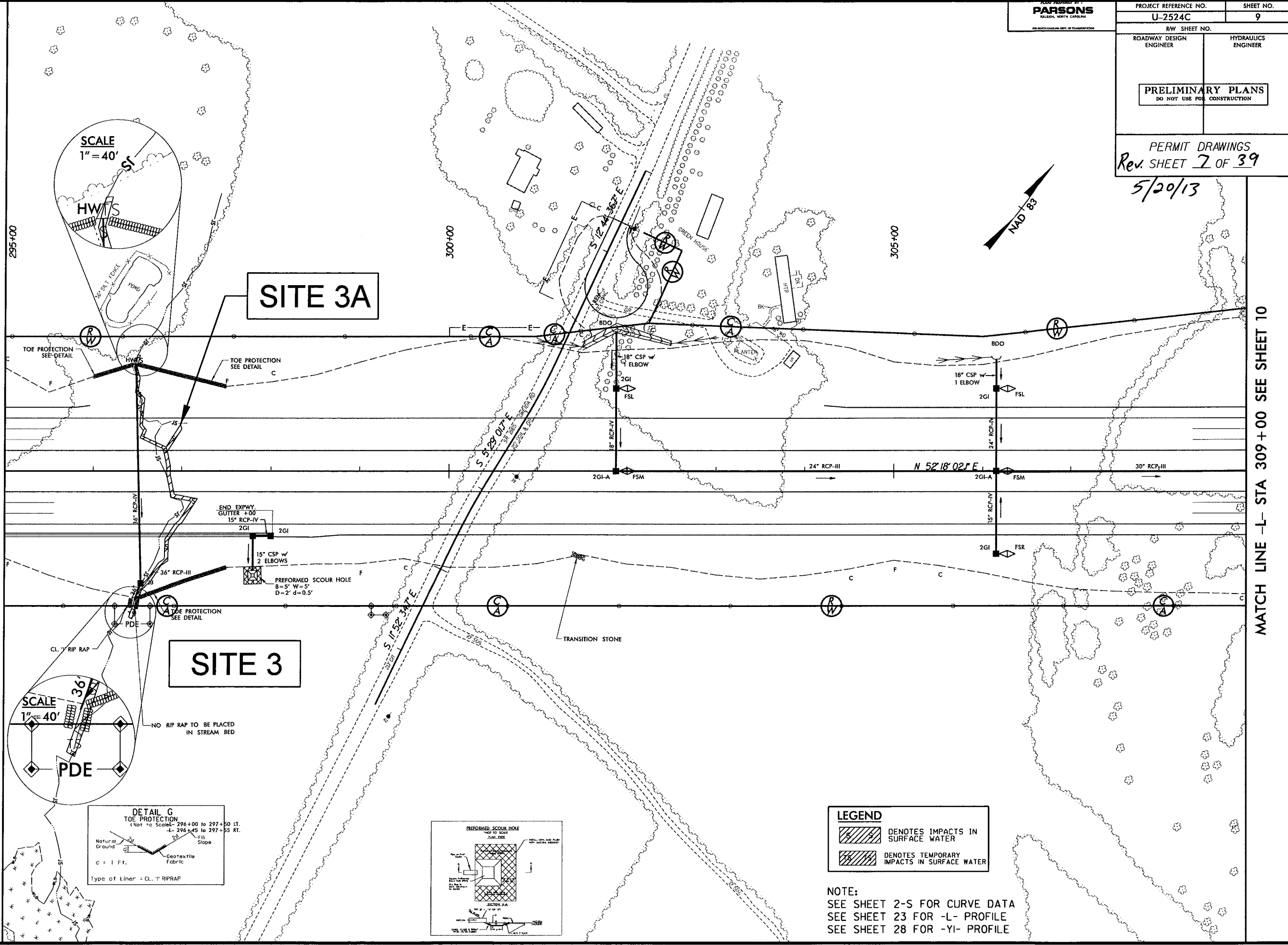
PERMIT DRAWINGS  
Rev SHEET 2 OF 39

5/20/13

B/17/99

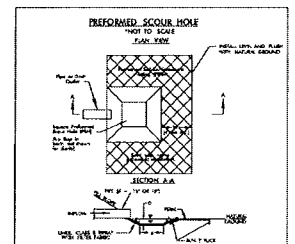
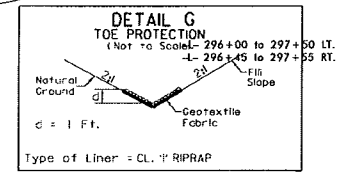
MATCH LINE -L- STA 295+00 SEE SHEET 8

MATCH LINE -L- STA 309+00 SEE SHEET 10



**SITE 3**

**SITE 3A**



**LEGEND**

	DENOTES IMPACTS IN SURFACE WATER
	DENOTES TEMPORARY IMPACTS IN SURFACE WATER

NOTE:  
SEE SHEET 2-S FOR CURVE DATA  
SEE SHEET 23 FOR -L- PROFILE  
SEE SHEET 28 FOR -YI- PROFILE

REVISIONS

10:30:45 AM U:\2524C\_RDY\_PSH\_09A.dgn

8/17/99

PARSONS  
RALEIGH, NORTH CAROLINA  
FOR NORTH CAROLINA DEPT. OF TRANSPORTATION

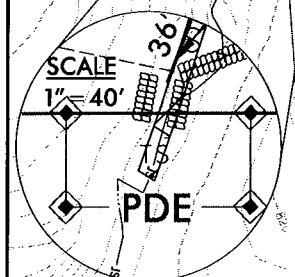
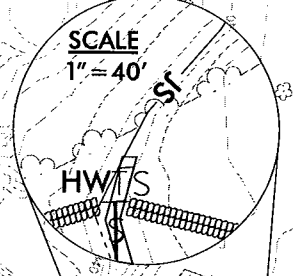
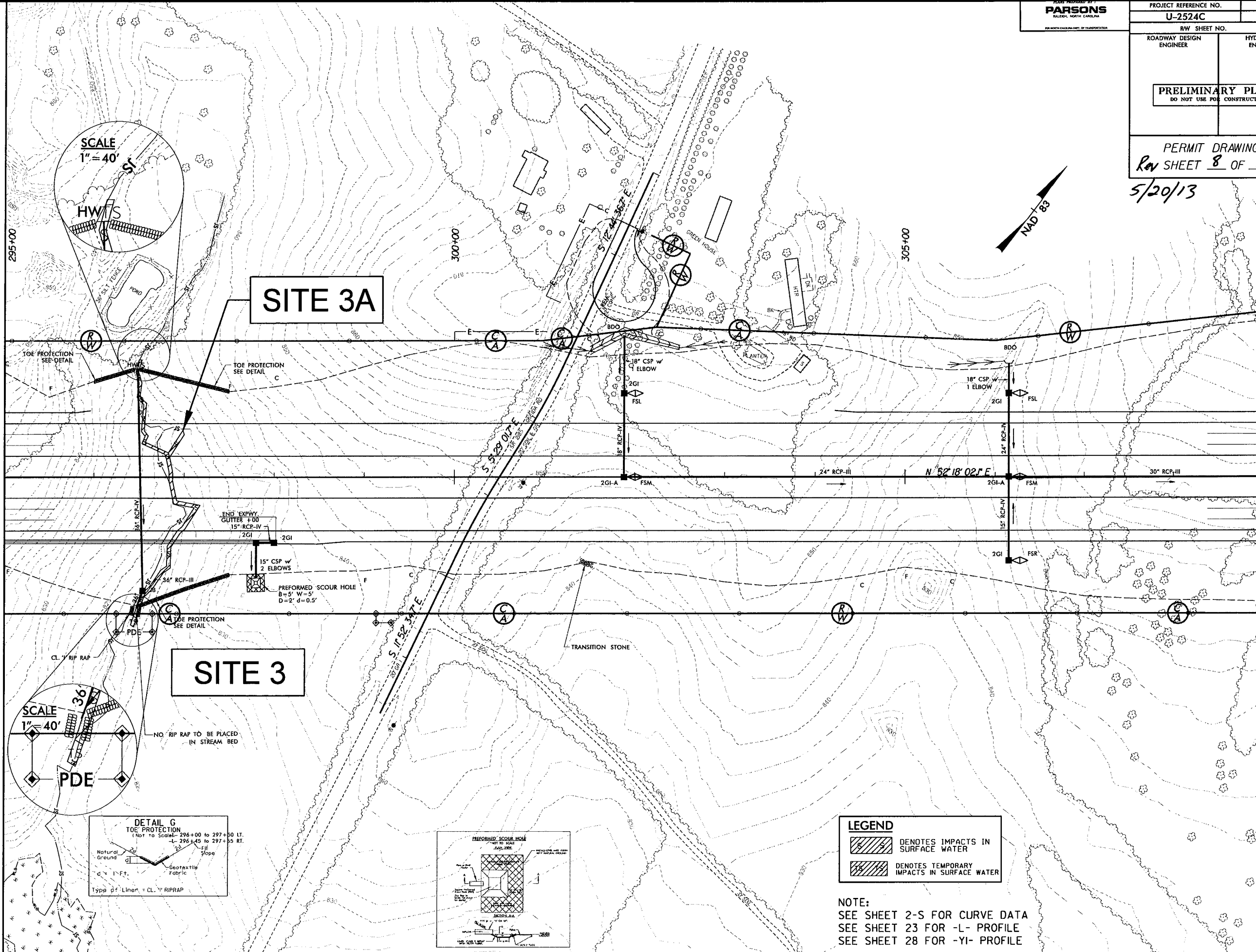
PROJECT REFERENCE NO. U-2524C SHEET NO. 9

RW SHEET NO. ROADWAY DESIGN ENGINEER HYDRAULICS ENGINEER

PRELIMINARY PLANS  
DO NOT USE FOR CONSTRUCTION  
PERMIT DRAWINGS  
Rev SHEET 8 OF 39  
5/20/13

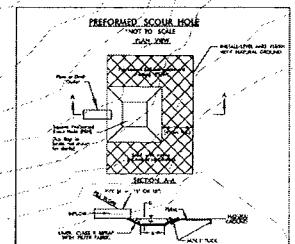
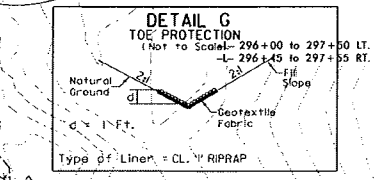
MATCH LINE -L- STA 295+00 SEE SHEET 8

MATCH LINE -L- STA 309+00 SEE SHEET 10



SITE 3A

SITE 3



**LEGEND**

- DENOTES IMPACTS IN SURFACE WATER
- DENOTES TEMPORARY IMPACTS IN SURFACE WATER

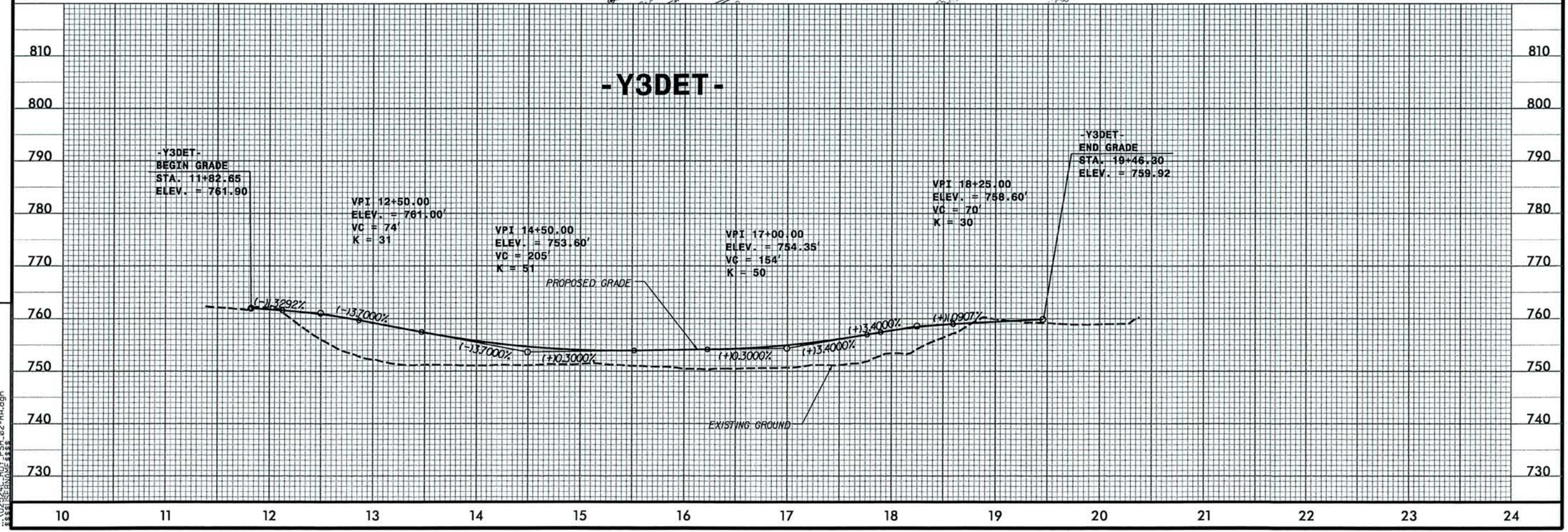
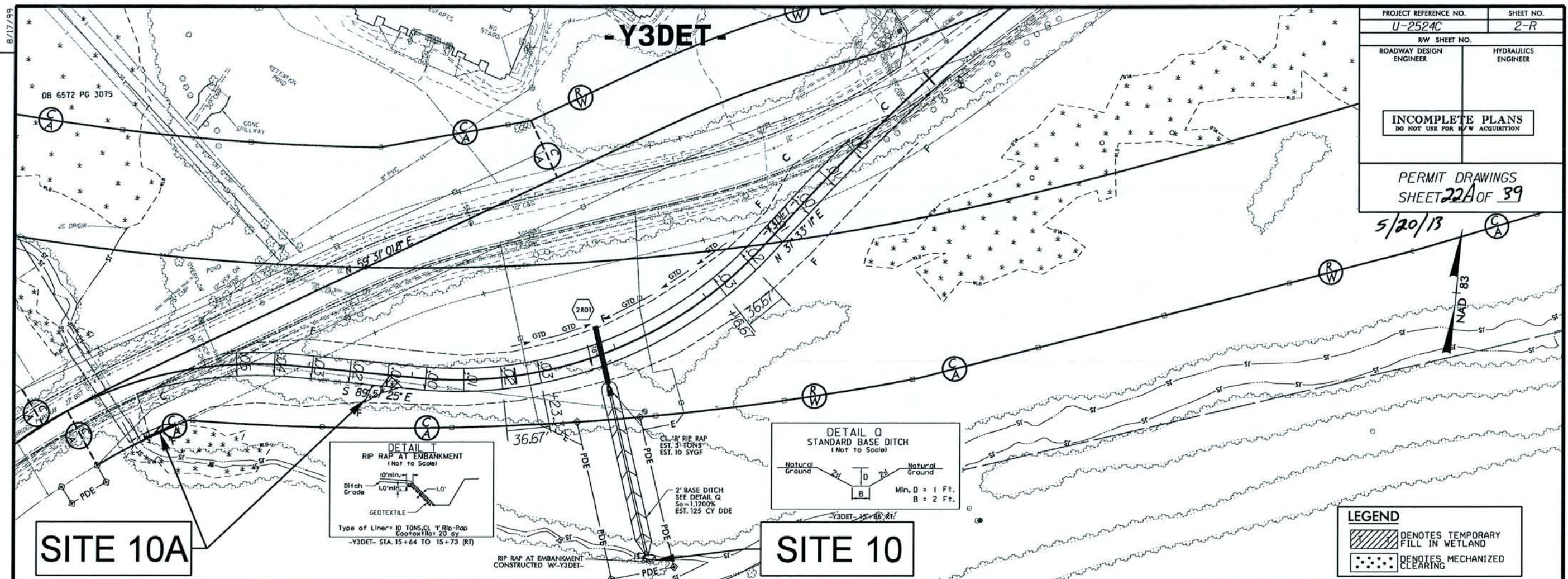
NOTE:  
SEE SHEET 2-S FOR CURVE DATA  
SEE SHEET 23 FOR -L- PROFILE  
SEE SHEET 28 FOR -YI- PROFILE

REVISIONS

D:\0505 AV\U2524C.RDY\_PSH\09B.dgn

B.17/99

PROJECT REFERENCE NO. U-2524C	SHEET NO. 2-R
R/W SHEET NO.	HYDRAULICS ENGINEER
ROADWAY DESIGN ENGINEER	
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION	
PERMIT DRAWINGS SHEET 22A OF 39	
5/20/13	



REVISIONS

1:26:57 PM  
U-2524C-ROY-PSH-02-RA.dgn

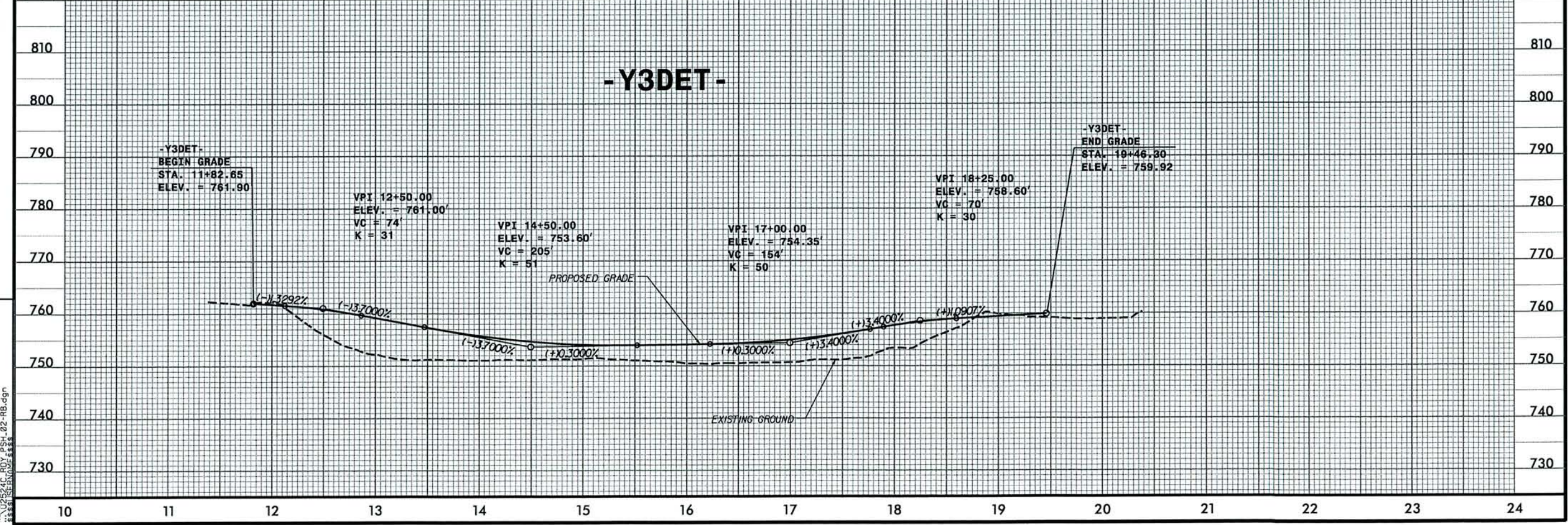
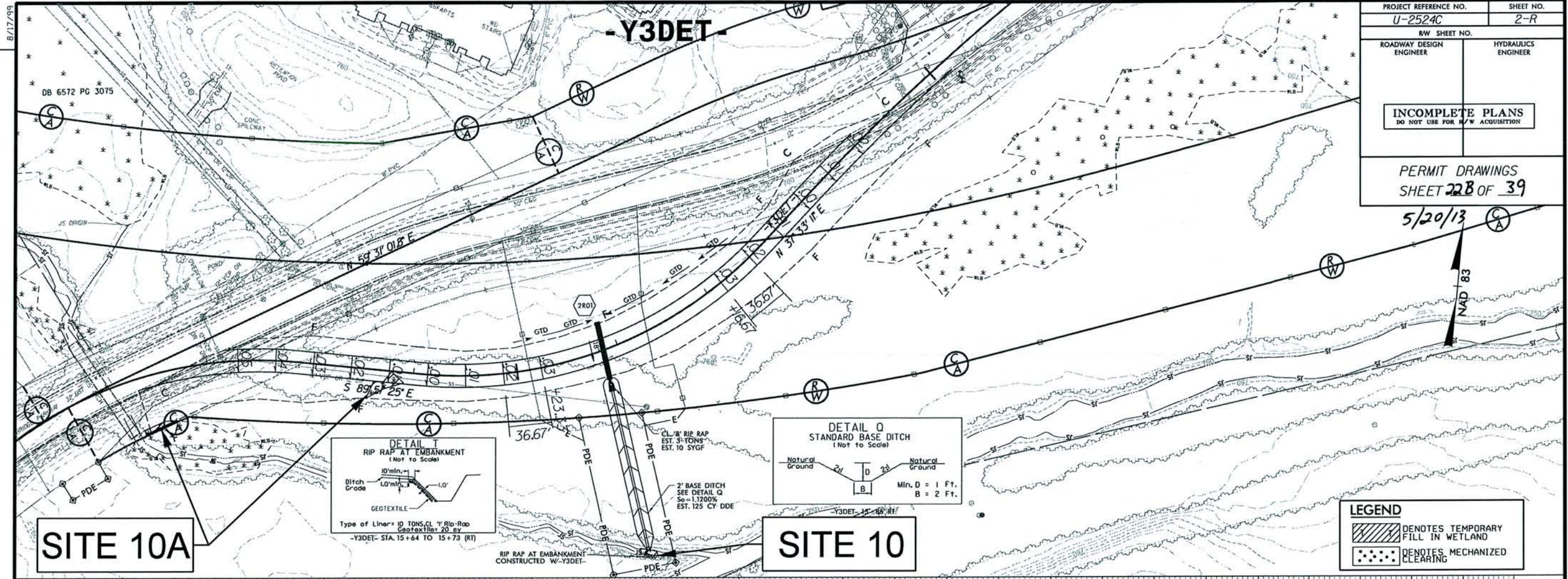


8/17/99

PROJECT REFERENCE NO. U-2524C	SHEET NO. 2-R
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
<b>INCOMPLETE PLANS</b> DO NOT USE FOR R/W ACQUISITION	

PERMIT DRAWINGS  
SHEET 228 OF 39

5/20/13



REVISIONS

1:27:10 PM  
U:\2524C\_PSH\_02-RB.dgn  
\$\$\$\$\$

**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- 283+36 TO 286+34	48" RCP	0.10	-	-	0.02	-	0.03	0.01	385	13	-
	-L- 286+11 TO 286+22	Bank Stabilization	-	-	-	-	-	-	-	11	-	-
2	-L- 287+09 TO 287+21	30" RCP	-	-	-	-	-	0.01	0.01	13	14	-
	-L- 287+00 TO 287+30	Bank Stabilization	-	-	-	-	-	-	-	11	-	-
	-L- 287+11 TO 287+17	Bank Stabilization	-	-	-	-	-	-	-	32	-	-
3	-L- 296+40 TO 297+18	36" RCP	-	-	-	-	-	0.03	0.01	338	20	-
	-L- 296+44 TO 296+52	Bank Stabilization	-	-	-	-	-	-	-	10	-	-
3A	-L- 296+82 TO 297+00	Roadway	-	-	-	-	-	0.01	-	30	-	-
4	-L- 312+90 TO 313+91	1 @ 10' x 7' RCBC	-	-	-	-	-	0.06	0.01	331	46	-
	-L- 312+95 TO 313+13	Bank Stabilization	-	-	-	-	-	-	-	30	-	-
5	-L- 314+67 TO 321+11	1 @ 10' x 6' RCBC	-	-	-	-	-	0.10	0.01	688	40	-
	-L- 314+72 TO 315+05	Bank Stabilization	-	-	-	-	-	-	-	37	-	-
5A	-L- 320+86 TO 321+95	Roadway	-	-	-	-	-	0.01	-	90	-	-
	-L- 320+78 TO 321+04	Bank Stabilization	-	-	-	-	-	-	-	25	-	-
6	-L- 323+60 TO 324+44	-	-	-	-	-	-	0.04	0.01	60	15	-
7	-L- 345+01 TO 345+88	30" RCP	0.01	-	-	-	-	0.03	0.01	227	10	-
	-L- 345+74 TO 345+85	Bank Stabilization	-	-	-	-	-	-	-	11	-	-
7A	-L- 345+02 TO 345+49	Roadway	-	-	-	-	-	0.01	-	57	-	-
8	-L- 358+77 TO 360+29	54" RCP	-	-	-	-	-	0.05	0.01	412	20	-
	-L- 359+46 TO 359+57	Bank Stabilization	-	-	-	-	-	-	-	13	-	-
9	-L- 380+47 TO 382+86	Bridge	-	-	-	0.02	0.40	-	-	-	-	-
10	-L- 387+31 TO 387+46	Bank Stabilization	-	-	-	-	-	0.01	-	16	-	-
10A	-Y3DET- 11+23 TO 13+92	Temporary Detour	-	0.01	-	0.01	-	-	-	-	-	-
11	-L- 389+65 TO 398+04	Bridge	-	-	-	0.19	1.44	-	-	-	-	-
12	-L- 399+62 TO 408+51	Bridge & Roadway	2.57	-	-	0.36	0.96	-	-	-	-	-
13	-L- 407+72 TO 415+79	Hazardous Spill Basins, Bridge, Roadway & 66" RCP	1.24	-	0.34	0.64	1.58	0.03	0.01	204	20	-
	-L- 409+67 TO 409+73	Bank Stabilization	-	-	-	-	-	-	-	12	-	-
	-L- 410+77 TO 410+89	Bank Stabilization	-	-	-	-	-	-	-	12	-	-
	-L- 411+08 TO 411+42	Bank Stabilization	-	-	-	-	-	-	-	36	-	-
	-L- 414+83 TO 415+16	Bank Stabilization	-	-	-	-	-	-	-	22	-	-
14	-L- 419+09 TO 420+79	Bridge	0.11	-	-	-	-	-	-	-	-	-
<b>TOTALS:</b>			<b>4.03</b>	<b>0.01</b>	<b>0.34</b>	<b>1.24</b>	<b>4.38</b>	<b>0.42</b>	<b>0.09</b>	<b>3113</b>	<b>198</b>	<b>-</b>

Notes: Permanent Wetland Impacts from bridge construction = 0.11 acres  
 Temporary Wetland Impacts from work bridge construction = 0.14 acres  
 See Sheet 38 of 39 for a detailed breakdown of the proposed bridge construction impacts.

NC DEPARTMENT OF TRANSPORTATION  
 DIVISION OF HIGHWAYS

GUILFORD COUNTY  
 U-2524C

Rev SHEET 39 OF 39

5/15/2013

5/20/13