



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

BEVERLY EAVES PERDUE
GOVERNOR

EUGENE A. CONTI, JR.
SECRETARY

December 6, 2011

Mr. Bill Biddlecome
U.S. Army Corps of Engineers
Regulatory Field Office
Post Office Box 1000
Washington, NC 27889-1000

Mr. Stephen Lane
Division of Coastal Management
N. C. Dept. of Env. & Natural Resources
400 Commerce Avenue
Morehead City, NC 28557

Dear Sir:

Subject:

Application for an Individual Section 401 Water Quality Certification, Individual Section 404 Permit and CAMA Major Permit for the construction of US 158 from the Murfreesboro Bypass to US 13 west of Winton, Hertford County, TIP No. R-2583, State Project No. 6.079007T

The North Carolina Department of Transportation (NCDOT), Division of Highways, in consultation with the Federal Highway Administration (FHWA), proposes to widen and construct new alignment of US 158 from the Murfreesboro Bypass to US 13 west of Winton. The project is approximately 8.1 miles in length.

Included with this application are:

- ENG Form 4345
- 4B and 4C Merger Process meeting minutes
- Permit Drawings
- NCEEP Mitigation Letter
- CAMA Major Permit Application Forms

1.0 Purpose and Need

The purpose and need for this Project, as identified in the State Environmental Assessment (SEA), is to provide system linkage, support economic development and to ensure future safety along the project limits.

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

TELEPHONE: 919-707-6100
FAX: 919-212-5785
WEBSITE: WWW.NCDOT.ORG

LOCATION:
1020 BIRCH RIDGE DRIVE
RALEIGH NC 27610-4328

2.0 Project Description

The proposed project will widen US 158 in Hertford County to a multi-lane facility from the Murfreesboro Bypass to US 13 west of Winton. A four-lane divided facility, consisting of four 12-foot travel lanes, paved shoulder and a 46-foot wide grassed median, is proposed.

3.0 Summary of Impacts

Total impacts on the project are presented on the table below and the attached Wetland Permit Impact Summary (Table 1).

	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)
Totals:	2.96	-	0.67	0.75	0.88	0.25	0.11	1832	222	-

4.0 Summary of Mitigation

This project has been designed to avoid and minimize impacts to jurisdictional areas in accordance with the National Environmental Policy Act (NEPA) throughout the design process. Compensatory wetland and stream mitigation will be provided by the North Carolina Ecosystem Enhancement Program (NCEEP). See attached letter.

5.0 Project Schedule

This project is part of the NCDOT's Design Build Program. Utility relocating is permitted separately under a CAMA general permit and scheduled to begin in the spring of 2012 and last approximately one year. Roadway construction will be carried out concurrently with the utility relocation and is scheduled to begin in summer 2012 and be completed the summer of 2013.

6.0 NEPA Document Status

The State Environmental Assessment (SEA) was completed on April 27, 2006. The SEA explains the purpose and need for the project, provides a description of the alternatives considered, and characterizes the social, economic, and environmental effects. The SEA was approved and circulated to federal, state and local agencies. A State Finding of No Significant Impact (SFONSI) was approved on June 3, 2008. Jurisdictional wetlands and stream areas were verified and re-verified throughout the process. The most recent re-verification by the USACE was in September 2011. Copies of the project documents have been provided to regulatory review agencies involved in the approval process. Additional copies will be provided upon request.

R-2583 has gone through the NEPA/404 merger process. The 4A meeting was held on January 17, 2008. The 4B and 4C meetings were held on July 20, 2011 and October 20, 2011, respectively.

6.1 Independent Utility

R-2583 is in compliance with 23 CFR Part 771-111(f) which lists the FHWA characteristics of the independent utility of a project. The project meets the criteria for independent utility as discussed below:

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

7.0 Resource Status

The project is located in the Chowan River Basin, USGS Hydrologic Unit 03040204, NCDWQ Subbasin 03-01-02. Potecasi Creek (NCDWQ Index No. 25-4-8, 9/6/79) and Mill Branch (NCDWQ Index No. 25-4-8-11, 9/6/79) are the only named streams within the project area. Both named streams are classified as Class C Nutrient Sensitive Waters (NSW). The unnamed tributaries to these streams have not been classified; unclassified tributaries carry the same classification as the classified stream to which they are a tributary. No High Quality Waters (HQW), Waster Supplies (WS-1: undeveloped watersheds or WS-II: predominately undeveloped watersheds), nor Outstanding Resource Waters (ORW) occur within 1.0 mile of the project study area.

7.1 Wetland Delineations

A wetland identification and preliminary assessment analysis for the study area was performed and summarized in the September 2004 Natural Resources Technical Report (NRTR) and January 2006 Addendum. After the selection of the preferred Alternative, the wetlands within the preferred corridor were delineated based on the 1987 USACE Wetland Delineation Manual. A preliminary design was prepared to avoid and minimize wetlands to the maximum extent possible. This delineation was verified by the USACE, Wilmington District on February 5, 2004. The project area was subsequently increased by approximately 50 acre and an Addendum to the NRTR was prepared in January 2006. A second JD was issued by Bill Biddlecome of the USACE, Wilmington District on March 30, 2006. The jurisdictional areas within the corridor were again re-evaluated based on a concern raised after the July 2011 4B meeting. The revised delineation was approved by Mr. Biddlecome in September 2011.

Jurisdictional wetlands within the project area are shown on the attached permit plans and described in detail in the SAE, 2004 NRTR and 2006 Addendum.

7.2 Stream Delineations

Stream assessments were included in the 2004 NRTR and 2006 Addendum. These assessments and delineations were approved by the USACE, Wilmington District in the above discussed verifications.

7.3 Characterization of Jurisdictional Sites

7.3.1 Wetlands

Six wetlands types were identified with the project corridor and described in the 2004 NRTR. The wetlands vary in size, vegetation, hydrologic regime and location on the landscape. The below descriptions were taken from the 2004 NRTR.

Pine Savanna Wetland

One site, this wetland type is composed of a monoculture of loblolly pine. Sub-canopy and shrub layer are sparse and comprised of American holly, red maple and sweetgum. This wetland can be classified as Palustrine, forested wetland, needle-leaved evergreen, intermittently flooded (PFO4C).

Headwater Ditch

These are jurisdictional ditches that either drain from jurisdictional wetlands or occur within mapped hydric soil units. On site, the ditches run through agricultural areas and pine plantation. They exhibit wetland vegetation, wetland hydrology and hydric soils. These wetlands can be classified as forest or scrub-shrub broad-leaved deciduous (PFO1C or PSS1C).

Headwater Forest Wetland

Within the project corridor, headwater wetlands generally begin as depression adjacent to uplands that collect surface water. Many begin at the discharge point of agricultural drainage ditches. Stream channels begin in these wetlands. These wetlands can be classified as palustrine, forest wetlands, broad-leaved deciduous and needle leaved evergreen (PFO1/4C).

Swamp Forest Wetland

These wetlands are associated with streams. They are frequently or permanently inundated. This wetland can be classified as palustrine, forested wetland, broad-leaved deciduous (PFO1B/C).

Scrub-Shrub Wetland

These are recently disturbed wetlands usually through timber harvesting activities. These wetlands can be classified as palustrine, shrub-shrub wetlands, broad-leaved deciduous (PSS1A/B).

Bottomland Hardwood Forest Wetlands

The bottomland hardwood forests are typically associated with larger streams. The canopy is dominated by bald cypress. These wetlands can be classified as palustrine, forested wetland, broad-leaved deciduous vegetation (PFO1C).

Riparian Forest Wetlands

Riparian Forest wetlands are typically located in small depressions within the upland floodplains of perennial streams. These wetlands can be classified as palustrine, forested wetlands, broad-leaved deciduous vegetation (PFO1B).

7.4 Impacts to Jurisdictional Resources

Total impacts on the project are presented on the table below and the attached Wetland Permit Impact Summary (Table 1).

	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)
Totals:	2.96	-	0.67	0.75	0.88	0.25	0.11	1832	222	-

8.0 Protected Species

Plants and animals with federal classification of Endangered (E), Threatened, Proposed Endangered (PE) and proposed Threatened (PT) are protected under provisions of Section 7 and Section 9 of the Endangered Species Act of 1973, as amended. The United States Fish and Wildlife Service (last update 09/22/2010) and the NVNHP (last updated 10/18/2011) list one federally protected species for Hertford County.

Common Name	Scientific Name	Federal Status	Habitat Present	Biological Conclusion
Red-cockaded woodpecker	<i>Picoides borealis</i>	E	Yes	No Effect

HDR and HARP personnel conducted a survey of the Study Area on December 10 and 11, 2003. Limited suitable habitat for the Red-cockaded woodpecker was identified. No individuals or nest cavities of this species were observed during the site visit.

8.1 Bald and Golden Eagle Protection act (BGPA)

In the July 9, 2007 Federal Register (72:37346-37372), the bald eagle was declared recovered and removed from the Federal List of Threatened and Endangered wildlife. This removal took effect August 8, 2007. After delisting, the Bald and Golden Eagle Protection Act (Eagle Act) (16 U.S.C. 668-668d) becomes the primary law protecting bald eagles. Surveys for bald eagles were conducted concurrently with the RCW surveys. No individuals or nests were identified during the surveys. This project will have no effect on the bald eagle.

9.0 Cultural Resources

The potential effect of the proposed R-2583 on cultural resources in the project area was evaluated in accordance with Section 106 of the National Historic Preservation Act of 1966, as amended. As described in Section E.2 of the SEA, three properties within the proposed study area were determined eligible for the National Register. However, the proposed project will not result in an effect upon the eligible historic properties. The State Historic

Preservation Office concurs that the proposed project would not have an effect upon these historic properties (see letter dated January 2006 in Appendix B of the SEA). According to the Project Commitments (SFONSI Green Sheets - Signed June 3, 2008), an archaeological commitment was made for data recovery on Site 31HF268. Data recovery will be conducted by the Department. Construction activities of any kind shall not take place within Site 31HF268 until all data recovery efforts have been completed by either the NCDOT Archaeology Unit or one of their consultants. Purchase of this property has been initiated. NCDOT will be notified once the acquisition is completed.

If any previously unknown historic or archeological remains are discovered while accomplishing the authorized work, NCDOT Staff Archaeologist and / or NCDOT Project Development Engineer shall immediately notify, to initiate the required State/Federal coordination.

Two graves will be relocated as a result of the project (approximately Sta. 295+10 Lt. and 360+25 Rt.). These graves will be relocated following applicable North Carolina Statutes (i.e. NC GS 65 or NC GS 70, Article 3) and will be determined in consultation with the NCDOT Archaeology Group.

10.0 FEMA Compliance

The project has been coordinated with appropriate state and local agencies, including the North Carolina Floodplain Mapping Program (NCFMP) to assure compliance with FEMA, state and local floodway regulations.

11.0 Mitigation Options

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 and NEPA compliance stages; minimization measures were incorporated as part of the project design.

11.1 Avoidance and Minimization

All jurisdictional features were delineated, field verified and surveyed within the R-2583 corridor. Using this information, preliminary designs were adjusted to avoid and/or minimize impacts to jurisdictional areas. NCDOT employs many strategies to avoid and minimize impacts to jurisdictional areas in all of its designs. Many of these strategies have been incorporated into BMP documents that have been reviewed and approved by the resource agencies and which will be followed throughout construction. All wetland areas not affected by the project will be protected from unnecessary encroachment. Individual avoidance and minimization items are as follows:

- Staging of construction equipment or construction supplies will not be allowed in wetlands or near surface waters.
- The project was designed to avoid or minimize disturbance to aquatic life movements

- BMP's will be implemented to minimize long-term water quality impacts.
- No excavation, fill or land clearing will occur within Water of the U.S. or other jurisdictional area, except as authorized by the USACE. The location and characteristics of all borrow or waste sites will be documented. All documentation will be available to the USACE upon request.
- No work will take place that will impact anadromous fish spring migration – February 15 – June 15.
- Crossings of jurisdictional areas were angled to cross as close to perpendicular as possible.
- Median widths were reduced to 46 feet.
- The use of 3:1 fill slopes in jurisdictional areas.
- The use of bridges verses culverts where practicable.
- The use of hand clearing in jurisdictional areas where practicable.
- Staged construction of all box culverts.
- Lowered profile grade to reduce project footprint.

11.2 Compensation

The NCDOT has avoided and minimized impacts to jurisdictional resources to the greatest extent possible as described above. The 3.43 acres of unavoidable wetland impacts and 1,887 linear feet of unavoidable stream impacts will be offset through compensatory mitigation from the North Carolina Ecosystem Enhancement Program (NCEEP). See attached letter.

12.0 Indirect and Cumulative Effects

Indirect and Cumulative Effects are discussed in Section H of the SEA. The improved roadway should prove an incentive for economic developments in Winton and Hertford County by providing a four-lane highway connection to Interstate-95. This improved regional access is vital to the attraction of new industry and employment opportunities. As new industries and business establish other development may occur which may result in an increased population and greater demand for housing. Development along the corridor will change the character of the area from rural to a more suburban setting. The proposed controlled access should limit land use changes and increase safety of the roadway. As the economy grows the low median income is expected to increase and poverty rates decrease.

Existing land planning and development policies, the lack of access to new land, the large amount of rural land, limited availability of utilities outside developed areas, low population growth and limited development pressure should limit the potential for induced growth to further degrade water quality in the area.

13.0 Regulatory Approvals

Section 404: Application is hereby made for a USACE Individual 404 Permit as required for the above-described activities.

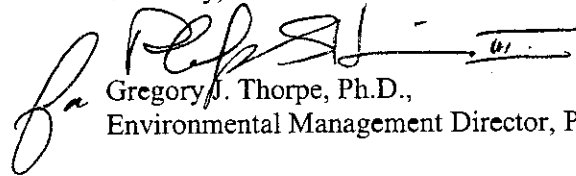
Section 401: This letter serves as a request for a Section 401 Water Quality Certification from the N.C. Division of Water Quality.

CAMA Major Permit: This letter serves as a request for a CAMA major permit.

Please contact me with any questions.

Thank you for your cooperation.

Sincerely,

A handwritten signature in black ink, appearing to read "Gregory J. Thorpe", is written over a horizontal line.

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

Enclosures

**U.S. ARMY CORPS OF ENGINEERS
APPLICATION FOR DEPARTMENT OF THE ARMY PERMIT
(33 CFR 325)**

OMB APPROVAL NO. 0710-0003
EXPIRES: 31 AUGUST 2012

Public reporting for this collection of information is estimated to average 11 hours per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of the collection of information, including suggestions for reducing this burden, to Department of Defense, Washington Headquarters, Executive Services and Communications Directorate, Information Management Division and to the Office of Management and Budget, Paperwork Reduction Project (0710-0003). Respondents should be aware that notwithstanding any other provision of law, no person shall be subject to any penalty for failing to comply with a collection of information if it does not display a currently valid OMB control number. Please DO NOT RETURN your form to either of those addresses. Completed applications must be submitted to the District Engineer having jurisdiction over the location of the proposed activity.

PRIVACY ACT STATEMENT

Authorities: Rivers and Harbors Act, Section 10, 33 USC 403; Clean Water Act, Section 404, 33 USC 1344; Marine Protection, Research, and Sanctuaries Act, Section 103, 33 USC 1413; Regulatory Programs of the Corps of Engineers; Final Rule 33 CFR 320-332. Principal Purpose: Information provided on this form will be used in evaluating the application for a permit. Routine Uses: This information may be shared with the Department of Justice and other federal, state, and local government agencies, and the public and may be made available as part of a public notice as required by Federal law. Submission of requested information is voluntary, however, if information is not provided the permit application cannot be evaluated nor can a permit be issued. One set of original drawings or good reproducible copies which show the location and character of the proposed activity must be attached to this application (see sample drawings and/or instructions) and be submitted to the District Engineer having jurisdiction over the location of the proposed activity. An application that is not completed in full will be returned.

(ITEMS 1 THRU 4 TO BE FILLED BY THE CORPS)

1. APPLICATION NO.	2. FIELD OFFICE CODE	3. DATE RECEIVED	4. DATE APPLICATION COMPLETE
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(ITEMS BELOW TO BE FILLED BY APPLICANT)

5. APPLICANT'S NAME First - Gregory Middle - J Last - Thorpe Company - North Carolina Department of Transportation E-mail Address - gthorpe@ncdot.gov		8. AUTHORIZED AGENT'S NAME AND TITLE (agent is not required) First - Robert Middle - S Last - Lepsic Company - ARCADIS G&M of NC, Inc. E-mail Address - robert.lepsic@arcadis-us.com	
6. APPLICANT'S ADDRESS: Address- 1598 Mail Service Center City - Raleigh State - NC Zip - 27699 Country - US		9. AGENT'S ADDRESS: Address- 801 Corporate Center Drive Suite 300 City - Raleigh State - NC Zip - 27607 Country - US	
7. APPLICANT'S PHONE NOS. w/AREA CODE a. Residence b. Business c. Fax 919-707-6000		10. AGENTS PHONE NOS. w/AREA CODE a. Residence b. Business c. Fax 919-854-9812 919-854-5448	

STATEMENT OF AUTHORIZATION

11. I hereby authorize, ARCADIS G&M to act in my behalf as my agent in the processing of this application and to furnish, upon request, supplemental information in support of this permit application.

E. J. Lusk
SIGNATURE OF APPLICANT

DATE

12-13-11

NAME, LOCATION, AND DESCRIPTION OF PROJECT OR ACTIVITY

12. PROJECT NAME OR TITLE (see instructions) US 158 Widening from Murfreesboro to US 13 west of Winton			
13. NAME OF WATERBODY, IF KNOWN (if applicable) See Attached		14. PROJECT STREET ADDRESS (if applicable) Address City - State - Zip -	
15. LOCATION OF PROJECT Latitude: -N 036 24' 21.09" Longitude: -W 076 59' 35.56"			
16. OTHER LOCATION DESCRIPTIONS, IF KNOWN (see instructions) State Tax Parcel ID Municipality Section - Township - Range -			

17. DIRECTIONS TO THE SITE

See Attached

18. Nature of Activity (Description of project, include all features)

See Attached

19. Project Purpose (Describe the reason or purpose of the project, see instructions)

See Attached

USE BLOCKS 20-23 IF DREDGED AND/OR FILL MATERIAL IS TO BE DISCHARGED

20. Reason(s) for Discharge

See Attached

21. Type(s) of Material Being Discharged and the Amount of Each Type in Cubic Yards:

Type	Type	Type
Amount in Cubic Yards	Amount in Cubic Yards	Amount in Cubic Yards

22. Surface Area in Acres of Wetlands or Other Waters Filled (see instructions)

Acres 2.96

or

Linear Feet 1,832

23. Description of Avoidance, Minimization, and Compensation (see instructions)

See Attached

24. Is Any Portion of the Work Already Complete? ☐ Yes ☒ No IF YES, DESCRIBE THE COMPLETED WORK

25. Addresses of Adjoining Property Owners, Lessees, Etc., Whose Property Adjoins the Waterbody (if more than can be entered here, please attach a supplemental list).

a. Address- See Attached

City - State - Zip -

b. Address-

City - State - Zip -

c. Address-

City - State - Zip -

d. Address-

City - State - Zip -

e. Address-

City - State - Zip -

26. List of Other Certificates or Approvals/Denials received from other Federal, State, or Local Agencies for Work Described in This Application.

AGENCY	TYPE APPROVAL*	IDENTIFICATION NUMBER	DATE APPLIED	DATE APPROVED	DATE DENIED
See Attached					

* Would include but is not restricted to zoning, building, and flood plain permits

27. Application is hereby made for permit or permits to authorize the work described in this application. I certify that this information in this application is complete and accurate. I further certify that I possess the authority to undertake the work described herein or am acting as the duly authorized agent of the applicant.

Loyan William Son Grey Thorpe PHD 12/14/2011 Robert J. Smith 12/13/11
SIGNATURE OF APPLICANT DATE SIGNATURE OF AGENT DATE

The Application must be signed by the person who desires to undertake the proposed activity (applicant) or it may be signed by a duly authorized agent if the statement in block 11 has been filled out and signed.

18 U.S.C. Section 1001 provides that: Whoever, in any manner within the jurisdiction of any department or agency of the United States knowingly and willfully falsifies, conceals, or covers up any trick, scheme, or disguises a material fact or makes any false, fictitious or fraudulent statements or representations or makes or uses any false writing or document knowing same to contain any false, fictitious or fraudulent statements or entry, shall be fined not more than \$10,000 or imprisoned not more than five years or both.

MEETING NOTES



Date: July 20, 2011

HNTB Project No: 55694

Meeting Name: R-2583 (Design-Build) CP 4B Hydraulics Design Review Meeting

Location: Structures Conference Room C

Purpose: CP 4B Hydraulics Design Review Meeting

Attending:	David Wainwright, NC DWQ	Bill Zerman, NCDOT Hydraulics
	Bill Biddlecome, USACE	Khaled Al-Akhdar, NCDOT-TPMU
	Cathy Brittingham, DCM	Roger Rochelle, NCDOT-TPMU
	Gary Jordan, USFWS	Ron Wilkins, NCDOT-Utilities
	Travis Wilson, NCWRC	Chris Manley, NCDOT-NEU
	Chris Milltscher, USEPA	Chris Rivenbark, NCDOT-NEU
	Jonathan Bivens, ST Wooten	Phil Harris, NCDOT-NEU
	Mike Stephens, ST Wooten	Elizabeth Lusk, NCDOT-NEU
	Michael Alford, ST Wooten	Mark Staley, NCDOT-REU
	Enrico Roque, HNTB	Benjamin Henegar, HNTB
	James Byrd, HNTB	Bob Lepsic, ARCADIS

The following is a summary of the discussions and decisions reached during the CP 4B Meeting held on July 20, 2011 for the US 158 Widening Design-Build Project:

- **Introduction**

- Khaled provided a brief project overview and introduced the Design-Build Team.
- James Byrd advised that schematic (red-line) hydraulic designs would be reviewed "on screen" as opposed to a marked-up set of plans.
- Byrd also advised that a majority of field work had been completed so HNTB has site photos of many of the jurisdictional sites.
- Byrd further advised that all pipes and culverts east of US158 Business under the main line would be either filled with flowable material or removed and replaced with new crossings in accordance with the Project Contract and as a result of Division requirements.

- **-L- Sta. 23+00 +/-**
 - Existing 42" CMP will be removed and replaced with a 42" RCP upstream and a 48" downstream.
 - The difference in pipe sizing between upstream and downstream is attributed to the downstream pipe being buried 1.0' since the outfall is a JS. The 48" RCP will be analyzed as a 42" RCP to account for the buryment.
 - Upstream - Wetland WTT, no JS.
 - Ditches that drain towards the wetlands will be designed to taper out to zero depth and stop short of the wetlands to allow for diffused flow.
 - David Wainwright questioned how diffused flow would be obtained?
 - Byrd advised that as the ditch depth reduces towards "0", flow would begin to spill out and flow over natural ground.
 - Downstream - Wetland WSS, JS SS.
 - Riprap outlet protection will be placed on banks only.
- **-L- Sta. 41+00 +/-**
 - Existing 36" RCP will be removed and replaced with a 36" RCP.
 - Upstream - no jurisdictional area.
 - Downstream - Wetland WRR, no JS.
 - Roadside ditches will discharge directly into outfall.
 - Outfall had no measured flow.
- **-L- Sta. 95+00 +/-**
 - Existing 36" RCP will be removed and replaced with a 30" RCP.
 - Upstream - no jurisdictional area.
 - Downstream - Wetland WQQ, no JS.
 - The wetland currently shown on the plans has been filled by the property owner.
 - The proposed project will not impact the wetland.
- **-L- Sta. 148+00 +/- (Stream SD - Potecasi Creek Tributary 1)**
 - Existing 2 @ 12' x 6' RCBC will be removed and replaced with 2 @ 12' x 8' RCBC.
 - Potecasi Creek Tributary 1 is a FEMA Limited Detailed Study Stream and meets NCFMP MOA criteria.
 - One of the reasons the existing RCBC is being upsized is so that the inverts can be buried the minimum required depth of 1.0'.
 - This site was reviewed in the field with DCM and the D-B Team. DCM claimed jurisdiction downstream of US158 but not upstream.

- Upstream - Wetland WPP
 - Ditch from back station will discharge directly into creek.
 - Station ahead, riprap toe protection is proposed to form a ditch with the fill slope and existing ground.
 - The D-B Team understands that a large portion of the wetlands from -L- Sta. 148+00 to Sta. 154+00 (RT) will be impacted.
- Downstream - Wetland WPP
 - The existing RCBC will be removed and the outfall channel excavated through the roadway embankment.
 - Riprap will be placed on the new channel banks but not in the stream bed.
 - Bill Zerman questioned whether the RCBC outlet could be shifted to the west to better align with the downstream channel.
 - Byrd advised that the outlet location was set in conjunction with the proposed cul-de-sac and any movement to the west would impact additional properties.
- -L- Sta. 163+00 +/-
 - Existing 18" RCP will be removed and replaced with a 18" RCP.
 - Upstream - no jurisdictional area.
 - Downstream - Linear Wetland WNN, no JS.
 - Bill Biddlecome advised that the linear wetlands will be revisited and confirmed.
- -L- Sta. 168+00 +/-
 - Existing 24" RCP will be removed and replaced with a 24" RCP.
 - Upstream - no jurisdictional area.
 - Downstream - Linear Wetland WMM, no JS.
 - Bill Biddlecome advised that the linear wetlands will be revisited and confirmed.
- -L- Sta. 175+00 +/-
 - Existing 42" RCP will be removed and replaced with a 48" RCP. Upsizing is due to inverts being buried the minimum required depth of 1.0'.
 - Upstream - Wetland WLL and JS SQ.
 - Downstream - Wetland WLL and JS SQ.
 - Chris Militscher questioned how the pipe alignment was set?
 - Byrd advised that since the existing pipe had to be removed, the new pipe would be installed in the same trench. Byrd added that while the outlet alignment is not directly downstream, moving the pipe to the west would result in a more severe outlet skew.
 - Byrd advised that utility relocations at this site would be by direction bore.

- **-L- Sta. 178+00 +/- (LT) - Wetland WKK**
 - Chris Militscher questioned the functionality of the wetland given that no jurisdictional features are shown upstream or downstream.
 - Militscher also expressed safety concerns with proposed fill slopes in close proximity to the roadway.
 - Cross sections from 177+00 to 179+50 were reviewed.
 - Militscher advised that std. fill slopes should be used through this area.

- **-L- Sta. 190+00 +/-**
 - Existing 48" RCP will be removed and replaced with a 48" RCP. 48" RCP will be buried the minimum required depth of 1.0'.
 - Upstream - Wetland WJJ and JS SC.
 - Downstream - Wetland WJJ and JS SC.
 - Byrd advised that utility relocations at this site would be by direction bore.

- **-L- Sta. 209+50 +/-**
 - Existing 36" RCP will be removed and replaced with a 36" RCP. The downstream portion of the 36" RCP will be buried the minimum required depth of 1.0'.
 - Upstream - No JS.
 - Downstream -JS SJ.
 - Chris Militscher questioned whether this stream was spring fed since there is no jurisdictional feature upstream.
 - Byrd advised that this site had not been field investigated yet and added that a spring would be looked for.

- **-L- Sta. 219+50 +/-**
 - Byrd advised that this section of the project was on "new location".
 - Byrd added that there was a small portion of JS under the roadway but that it does not extend upstream or downstream.

- **-L- Sta. 239+00 +/-**
 - Upstream - Wetland WCC and JS SF.
 - Byrd advised that this wetland will be a total take.
 - Downstream - Wetland WCC and JS SF.
 - Byrd advised that outlet pipe is at flat slope to minimize outlet velocities into wetland.

- **-L- Sta. 242+00 +/- (Stream SB - Potecasi Creek)**
 - Byrd advised that the wetlands are being spanned by the proposed dual bridges.
 - Byrd added that there are no deck drains and that all bridge runoff is discharged outside jurisdictional areas.
 - Potecasi Creek is a FEMA Limited Detailed Study Stream and meets NCFMP MOA criteria.
 - Byrd advised that the existing US158 bridge was being removed entirely and that the ground behind the vertical abutments would be sloped back at 3:1 and riprapped.
 - This site was reviewed in the field with DCM and the D-B Team. DCM claimed jurisdiction on this reach of the creek.
 - Cathy Brittingham questioned the existing and proposed bridge lengths and clear distances from the WSEL to the low chord.
 - From a review of field survey and design data, the existing US158 bridge has a vertical clear distance of 11.5' while the proposed bridge crossings have a vertical clearance of 16.4'.
 - Byrd advised that the existing US158 bridge is 120' in length while the proposed crossings are approximately 375' (US) & 330' (DS) respectively.
 - Byrd advised that the vertical clearances of proposed bridges were set to provide 2' of freeboard from the design year storm ((50-yr) to the low chord or approximately 15.5'.
 - Gary Jordan questioned whether any consideration had been given to removing all of the roadway embankment for existing US158?
 - Jonathan Bivens advised that there was a waterline in the fill that would require relocation if the fill were removed so it was not considered.
- **-L- Sta. 255+50 +/- (LT) - Wetland WX**
 - Byrd advised that a proposed 18" RCP would discharge into the wetland.
 - Byrd added that there are no other jurisdictional features in the vicinity of this wetland.
- **-L- Sta. 339+50 +/-**
 - Existing box culvert and 36" CMP extensions will be removed and replaced with a 30" RCP.
 - Upstream - Wetland WG, no JS.
 - Downstream - Linear Wetland WE, no JS.
 - As previously noted, all linear wetlands will be revisited and confirmed.
- **-L- Sta. 352+00 +/- (Stream SA - Mill Branch)**
 - Byrd advised that the 4 existing box culverts will be removed and replaced with a combination of box culvert and large concrete pipes.
 - Byrd added that 3 of the 4 box culverts were constructed in 1922 and extended in 1977.
 - This site was reviewed in the field with DCM and the D-B Team. DCM did not claim jurisdiction.
 - Upstream and downstream - Wetland WD.

- **-L- Sta. 359+50 +/-**
 - Existing 24" RCP closed drainage system will be removed and replaced with a 36" RCP system.
 - Upstream - Wetland WC, no JS.
 - Byrd advised that feature is the outfall from the Wackenhut Correctional facility stormwater pond.
 - Bill Biddlecome advised that his notes indicated that this is JS SP.
 - Downstream - No jurisdictional features.
- **-L- Sta. 369+50 +/-**
 - Existing 18" RCP will be filled with flowable material. Due to proposed roadway profile, there will not be a pipe outlet into this linear wetland.
 - Upstream - No jurisdictional features.
 - Downstream - Wetland WB.

James Byrd advised that there were no additional jurisdictional impacts on the -L- Line or any of the -Y- Lines. Byrd added that the CP 4C Meeting is currently scheduled for October 20, 2012.

After the formal meeting concluded, Khaled advise the D-B Team that the Agencies are going to revisit and verify all sites. He added that the information from these verifications should be available sometime in September. Khaled was informed by the D-B Team that a September date was unacceptable and would create serious scheduling concerns.

This is our understanding of items discussed and decisions reached. Please contact us if there are changes or additions.

Submitted by,
 HNTB CORPORATION
 James A. Byrd, PE
 Hydraulics Manager

cc: Attendees

MEETING NOTES



Date: October 20, 2011

HNTB Project No: 55694

Meeting Name: R-2583 (Design-Build) CP 4C Permit Drawing Review Meeting

Location: Structures Conference Room C

Purpose: CP 4C Permit Drawing Review Meeting

Attending:	David Wainwright, NCDWQ	Bill Zerman, NCDOT Hydraulics
	Bill Biddlecome, USACE	Khaled Al-Akhdar, NCDOT-TPMU
	Chandrakant Sura, NCDOT-CM	Kerry Morrow, NCDOT-TPB
	Gary Jordan, USFWS	Ron Wilkins, NCDOT-Utilities
	Travis Wilson, NCWRC	Chris Manley, NCDOT-NEU
	Bob Capehart, NCDOT - Div. 1	Chris Rivenbark, NCDOT-NEU
	Jonathan Bivens, ST Wooten	Mark Laugisch, NCDOT-REU
	Michael Alford, ST Wooten	Mark Staley, NCDOT-REU
	Enrico Roque, HNTB	Benjamin Henegar, HNTB
	Phillip Rogers, HNTB	Robert Lepsic, ARCADIS

The following is a summary of the discussions and decisions reached during the CP 4C Meeting held on October 20, 2011 for the US 158 Widening Design-Build Project:

- **Introduction**

- Khaled provided a brief overview and turned it over to the Design-Build Team.
- The Design-Build Team provided revised hard copies of the Impact Summary Sheet.
- Phillip Rogers stated that the main purpose of the revised Impact Summary Sheet is due to the change in how permanent and temporary stream impacts were tabulated. In general, temporary stream impact was added approximately 10' from the end of the rip rap outlet or channel improvements. In addition, this change was also included in the permit drawings presented at the meeting, even though the previous copy provided to the agencies did not include it.
- Mr. Rogers provided a brief summary of each permit site. In addition, agency questions and concerns were discussed as noted below.

- **Site 1**
 - Mr. Rogers discussed how lateral ditches that drain toward wetlands will be tapered down to zero depth in order to diffuse flow before entering the wetlands. In addition, swale outlet data has been provided on the permit drawings. The same general approach is being used at multiple sites. There were no questions for this site.
- **Site 2**
 - Mr. Wainwright asked about how stormwater is being treated before entering the culvert through a 15" RCP. Mr. Henegar stated that most of the runoff will receive grass swale treatment before discharging into the box culvert. Mr. Henegar also noted that the discharge would be relatively low (approximately 5-6 cfs) at this location.
- **Site 3**
 - Mr. Wainwright inquired about the alignment of the proposed 48" RCP outlet as well as the outlet velocity and the depth of the existing channel downstream. Mr. Henegar stated that the V10 is 6 cfs and that the channel is approximately 1 ft deep. The agencies agreed that the proposed alignment is okay and no further action is required.
- **Site 4**
 - The question was asked as to why we are showing hand clearing in the existing easement left of Sta. 177+50. Since the existing easement is already likely cleared in this location. Mr. Rogers stated that some clearing appeared to be needed in this area based on survey and that due to rounding to the nearest hundredth acre, all of the wetland within the easement was shown hatched as impact.
- **Site 5**
 - Mr. Biddlecome inquired about why we are showing so much hand clearing right of Sta. 190+00 where we are proposing trenchless installation of utilities. Mr. Rogers stated that hand clearing was shown to the limits of the PUE due the placement of overhead power lines in this easement.
- **Site 6**
 - There were no questions for this site.
- **Site 7**
 - There were no questions for this site.
- **Site 8**
 - There were no questions for this site.
- **Site 9**
 - Mr. Biddlecome inquired about utilizing hand clearing instead of mechanized clearing in the wetland left of Sta. 241+00. Mr. Bivens stated that he felt that it would be unlikely that the D-B team would be able to construct this area without mechanically clearing due to topography.

- **Site 10**
 - An inquiry was made regarding the temporary work bridge vertical clearance. It was also stated that The D-B team should coordinate with DCM concerning minimum horizontal and vertical clearance since Potecasi Creek is often used for canoeing. Mr. Rogers stated that the approximate work bridge elevation currently noted on the roadway profile sheet is 7.5'. Mr. Bivens stated that the work bridge design has not been finalized and that the D-B team will work to accommodate the required horizontal and vertical clearances.
 - Mr. Biddlecome requested that the D-B team account for mechanized clearing in the wetlands where the proposed piers will be located in addition to the hand clearing already shown. These bridge impacts will be included as a note on the impact summary table.
 - Mr. Capehart stated that the limits of hand clearing off the proposed bridges does not look sufficient. The current hand clearing limits are offset at 10'. The D-B team agreed with this comment and will revise the hand clearing offset to 30'.
 - Mr. Jordan inquired about the proposed bridge length over Potecasi Creek as he recalled a project commitment to a minimum bridge length of 390'. Mr Rogers stated that the longer of the two dual bridges is approximately 370' and that the design does span the wetland. Mr. Bivens reiterated that the proposed profile has been lowered from the original design and that this would make a difference in the estimated bridge length. Gary stated that he agrees that the intent was to span the wetlands which the D-B team is accomplishing, however for future reference it may be better to define the toe of slope when setting span commitments and also asked that NCDOT notify the agencies of any deviation from future commitments.
- **Site 11**
 - There were no questions for this site.
- **Site 12**
 - Mr. Wainwright requested that the D-B team provide an additional scaled detail for this site as well as other similar sites, in order to show impacts more clearly. The D-B team agreed to include this detail for a few sites as needed.
- **Site 13**
 - There were no questions for this site.
- **Site 14**
 - There were no questions for this site.
- **Site 15**
 - Mr. Biddlecome requested that the area right of Sta. 339+00 include excavation in wetlands where trenching will be required in order to install utilities. It was also requested that wetland impacts be shown accordingly for all similar sites. The D-B team agreed to revise the permit drawings and update the impact summary accordingly.

- **Site 16**
 - There were no questions for this site.
- **Site 17**
 - There were no questions for this site.

This is our understanding of items discussed and decisions reached. Please contact us if there are changes or additions.

Submitted by,
HNTB CORPORATION
Phillip E. Rogers, PE
Project Engineer

cc: Attendees

**U.S. ARMY CORPS OF ENGINEERS
WILMINGTON DISTRICT**

Action Id. 200411102

County: Hertford

U.S.G.S. Quad: Murfreesboro, NC

NOTIFICATION OF JURISDICTIONAL DETERMINATION

Property Owner/Agent: NCDOT, Gregory J. Thorpe, Ph.D.
Address: Environmental Management Director, PDEA
1548 Mail Service Center
Raleigh, North Carolina 27699-1548
Telephone No.: (919) 733-3141

Property description:

Size (acres) Addendum Area - 52 acres

Nearest Waterway Potecasi Creek

USGS HUC 03010204 & 03010203

Nearest Town Murfreesboro & Winton

River Basin Chowan

Coordinates N 36.4091931 W 77.0083175

Location description Note - This JD is an addendum to a previous JD that was approved and signed on 2/5/2004 for TIP # R-2583. The additional project area is approximately 4800-feet long (.9 miles) and varies in width from approximately 800-feet wide on the westerly portion to less than 100-feet wide where it joins up with the previous project areas. Previous wetland areas WBB, WZ, and WU have been deleted and wetland areas WY and WX were slightly altered. Stream SF was changed from Perennial to intermittent. The addendum project area is adjacent to an unnamed tributary to Potecasi Creek and Potecasi Creek.

Indicate Which of the Following Apply:

- ☐ Based on preliminary information, there may be wetlands on the above described property. We strongly suggest you have this property inspected to determine the extent of Department of the Army (DA) jurisdiction. To be considered final, a jurisdictional determination must be verified by the Corps. This preliminary determination is not an appealable action under the Regulatory Program Administrative Appeal Process (Reference 33 CFR Part 331).
- ☐ There are Navigable Waters of the United States within the above described property subject to the permit requirements of Section 10 of the Rivers and Harbors Act and Section 404 of the Clean Water Act. Unless there is a change in the law or our published regulations, this determination may be relied upon for a period not to exceed five years from the date of this notification.
- ☒ There are waters of the U.S. including wetlands on the above described project area subject to the permit requirements of Section 404 of the Clean Water Act (CWA)(33 USC § 1344). Unless there is a change in the law or our published regulations, this determination may be relied upon for a period not to exceed five years from the date of this notification.
- ☐ We strongly suggest you have the wetlands on your property delineated. Due to the size of your property and/or our present workload, the Corps may not be able to accomplish this wetland delineation in a timely manner. For a more timely delineation, you may wish to obtain a consultant. To be considered final, any delineation must be verified by the Corps.
- ☒ The waters of the U.S. including wetland on your project area have been delineated and the delineation has been verified by the Corps. We strongly suggest you have this delineation surveyed. Upon completion, this survey should be reviewed and verified by the Corps. Once verified, this survey will provide an accurate depiction of all areas subject to CWA jurisdiction on your property which, provided there is no change in the law or our published regulations, may be relied upon for a period not to exceed five years.
- ☐ The wetlands have been delineated and surveyed and are accurately depicted on the plat signed by the Corps Regulatory Official identified below on _____. Unless there is a change in the law or our published regulations, this determination may be relied upon for a period not to exceed five years from the date of this notification.
- ☐ There are no waters of the U.S., to include wetlands, present on the above described property which are subject to the permit requirements of Section 404 of the Clean Water Act (33 USC 1344). Unless there is a change in the law or our published regulations, this determination may be relied upon for a period not to exceed five years from the date of this notification.
- ☒ The property is located in one of the 20 Coastal Counties subject to regulation under the Coastal Area Management Act (CAMA). You should contact the Division of Coastal Management in Elizabeth City, NC, at (252) 264-3901 to determine their requirements.

Action ID: 200411102

Placement of dredged or fill material within waters of the US and/or wetlands without a Department of the Army permit may constitute a violation of Section 301 of the Clean Water Act (33 USC § 1311). If you have any questions regarding this determination and/or the Corps regulatory program, please contact Bill Biddlecome at (252) 975-1616 ext. 26.

C. Basis For Determination

This site exhibits wetland criteria as described in the 1987 Corps Wetland Delineation Manual and is part of a broad continuum of wetlands connected to Potecasi Creek, a tributary to the Meherrin River which is a tributary to the Chowan River.

D. Remarks

Cross reference action I.D. (JD) # 200411102 dated 2/5/2004, and action I.D. # 200211081.

E. Appeals Information (This information applies only to approved jurisdictional determinations as indicated in B. above)

This correspondence constitutes an approved jurisdictional determination for the above described site. If you object to this determination, you may request an administrative appeal under Corps regulations at 33 CFR part 331. Enclosed you will find a Notification of Appeal Process (NAP) fact sheet and request for appeal (RFA) form. If you request to appeal this determination you must submit a completed RFA form to the South Atlantic Division, Division Office at the Following address:

Mr. Michael F. Bell, Administrative Appeal Review Officer
CESAD-ET-CO-R
U.S. Army Corps of Engineers, South Atlantic Division
60 Forsyth Street, Room 9M15
Atlanta, Georgia 30303-8801

In order for an RFA to be accepted by the Corps, the Corps must determine that it is complete, that it meets the criteria for appeal under 33 CFR part 331.5, and that it has been received by the Division Office within 60 days of the date of the NAP. Should you decide to submit an RFA form, it must be received at the above address by May 30, 2006.

****It is not necessary to submit an RFA form to the Division Office if you do not object to the determination in this correspondence.****

Corps Regulatory Official: William J. Biddlecome

Date 03/30/2006

Expiration Date 03/30/2011

Copy furnished:

John Jamison

HDR Engineering, Inc. of the Carolinas

3733 National Drive, Suite 207

Raleigh, North Carolina 27612-4845



February 15, 2011

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

Dear Dr. Thorpe:

Subject: EEP Mitigation Acceptance Letter:

R-2583, US 158 from the Murfreesboro Bypass to US 13 West of Winton, Hertford County

The purpose of this letter is to notify you that the Ecosystem Enhancement Program (EEP) will provide the compensatory stream, riparian and non-riparian wetland mitigation for the subject project. Based on the information supplied by you on February 2, 2011, the impacts are located in CU 03010204 of the Chowan River Basin in the Northern Outer Coastal Plain (NOCP) Eco-Region, and are as follows:

Chowan 03010204 NOCP	Stream			Wetlands			Buffer (Sq. Ft.)	
	Cold	Cool	Warm	Riparian	Non-Riparian	Coastal Marsh	Zone 1	Zone 2
Impacts (feet/acres)	0	0	1,890	1.40	4.80	0	0	0
Mitigation Units (Credits-up to 2:1)	0	0	3,780	2.80	9.60	0	0	0

EEP commits to implementing sufficient compensatory stream, riparian wetland and non-riparian wetland mitigation credits to offset the impacts associated with this project in accordance with the N.C. Department of Environment and Natural Resources' Ecosystem Enhancement Program In-Lieu Fee Instrument dated July 28, 2010. If the above referenced impact amounts are revised, then this mitigation acceptance letter will no longer be valid and a new mitigation acceptance letter will be required from EEP.

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

Sincerely,

William D. Gilmore, P.E.
EEP Director

cc: Mr. Bill Biddlecome, USACE – Washington Regulatory Field Office
Mr. Brian Wrenn, Division of Water Quality, Wetlands/401 Unit
File: R-2583

Restoring... Enhancing... Protecting Our State



PROPERTY OWNERS

NAMES AND ADDRESSES

PARCEL NO.	NAMES	ADDRESSES
4	JOSEPH E. DIXON	404 MAPLE ST. MURFREESBORO, NC 27855
74	JESSE E. VAUGHAN	105 COLLIN RD. MURFREESBORO, NC 27855
72	FENTON BLOUNT FERGUSON, EST	609 CHOWAN ST. MURFREESBORO, NC 27855
77	ANN V. WEATHERSBEE	915 US 158 WEST MURFREESBORO, NC 27855
81	ROBERT B. HARRELL	507 SPRING AVE. MURFREESBORO, NC 27855
82	SELMA V. MAJETTE	816 US 158 WEST AHOSKI, NC 27910
88	TILMAN VAN HAND Jr.	815 US 158 W AHOSKIE, NC 27910
83	TALL COTTON STABLES, INC	RT 1 BOX 383B MURFREESBORO, NC 27855
89	E.R. EVANS & SONS, INC	434 E WOODROW SCHOOL RD. MURFREESBORO, NC 27855
90	JOHN C. JONES	PO BOX 368 AHOSKIE, NC 27910
95	CARNEY GATLING	35 PRINCESS AVE. MARLTIN, NJ 8053
96	LEONE & VERNON STEPHENSON	31 SPRUCE ST. BRIDGETON, NJ 8302
105	TOWN OF WINTON	PO BOX 134 WINTON, NC 27986
117	CHERRY F. GODWIN	407 US 158 WEST AHOSKIE, NC 27910
119	DARRELL T. BRACY	432 US 158 W AHOSIKE, NC 27910
120	WACKENHUT CORRECTIONS CORP	621 N W 53RD ST. SUITE 700 BOCA RATON, FL 33487
121	ALBERT T. BEVERLY	311 US 158 WEST WINTON, NC 27986

HERTFORD COUNTY
PROJECT: R-2583
US 158 WIDENING FROM
MURFREESBORO BYPASS
TO US 13 WEST OF WINTON

SENDER. COMPLETE THIS SECTION

- Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

John Charles Jones
PO Box 368
Ahoskie, NC 27910

COMPLETE THIS SECTION ON DELIVERY

A. Signature

John Jones

☐ Agent☐ Addressee

B. Received by (Printed Name)

John Jones

C. Date of Delivery

D. Is delivery address different from item 1? ☐ YesIf YES, enter delivery address below: ☐ No

3. Service Type

☐ Certified Mail☐ Express Mail☐ Registered☐ Return Receipt for Merchandise☐ Insured Mail☐ C.O.D.

4. Restricted Delivery? (Extra Fee)

☐ Yes

2. Article Number

(Transfer from service label)

7011 0110 0000 0620 0986

PS Form 3811, February 2004

Domestic Return Receipt

102595-02-M-1540

SENDER. COMPLETE THIS SECTION

- Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

Annie Baker
142 Sheriff Road
Ahoskie, NC 27910

COMPLETE THIS SECTION ON DELIVERY

A. Signature

Annie Baker

☐ Agent☐ Addressee

B. Received by (Printed Name)

Annie Baker

C. Date of Delivery

10/15/11

D. Is delivery address different from item 1? ☐ YesIf YES, enter delivery address below: ☐ No

3. Service Type

☐ Certified Mail☐ Express Mail☐ Registered☐ Return Receipt for Merchandise☐ Insured Mail☐ C.O.D.

4. Restricted Delivery? (Extra Fee)

☐ Yes

2. Article Number

(Transfer from service label)

7011 0110 0000 0620 1006

PS Form 3811, February 2004

Domestic Return Receipt

102595-02-M-1540

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- 23+00	1 @ 48" RCP	0.08	-	0.01	0.02	-	0.01	0.01	60	34	-
2	-L- 146+94 TO 154+23	2 @ 12' x 8' RCBC	1.25	-	0.45	-	-	0.08	0.01	230	20	-
3	-L- 172+45 TO 176+66	48" RCP	0.38	-	-	0.11	0.05	0.01	0.01	114	10	-
4	-L- 177+35 TO 179+36	-	0.01	-	0.09	0.15	0.02	-	-	-	-	-
5	-L- 185+51 TO 191+97	54" RCP	0.12	-	-	0.06	0.10	0.01	0.01	175	20	-
6	-L- 209+39	36" RCP	-	-	-	-	-	0.01	0.01	97	10	-
7	-L- 218+25 TO 221+76	36" RCP	-	-	-	-	-	0.03	0.01	618	26	-
8	-L- 230+30	15" RCP	-	-	-	-	-	0.01	0.01	190	4	-
9	-L- 237+05 TO 241+50	24" RCP	0.37	-	-	0.04	-	0.01	-	130	-	-
10	-L- 241+66 TO 244+75	72" Modified Bulb Tee Girder Bridge	-	-	-	-	0.68	-	-	-	-	-
11	-L- 255+75	18" RCP	0.05	-	-	0.02	-	-	-	-	-	-
12	-L- 278+27	15" RCP	-	-	0.01	-	0.01	-	-	-	-	-
13	-L- 283+40	24" RCP	-	-	0.01	-	-	-	-	-	-	-
14	-L- 291+25	-	-	-	0.01	-	-	-	-	-	-	-
15	-L- 337+75 TO 340+00	30" RCP	0.03	-	0.08	0.12	-	-	-	-	-	-
16	-L- 349+96	72" RCP	-	-	-	-	-	0.01	0.01	18	10	-
16	-L- 351+58	1 @ 10' x 6' RCBC	-	-	-	-	-	0.03	0.01	72	18	-
16	-L- 352+44	1 @ 9' x 5' RCBC	-	-	-	-	-	0.03	0.01	70	20	-
16	-L- 354+21	66" RCP	0.67	-	-	0.22	-	-	-	-	-	-
17	-L- 360+10	36" RCP	-	-	0.01	0.01	0.02	0.01	0.01	58	50	-
TOTALS:			2.96	-	0.67	0.75	0.88	0.25	0.11	1832	222	-

Note: An additional 0.01 acres of Mechanized Clearing in wetlands is required for installation of temporary and permanent bridge piers at Site 10.

NC DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

HERTFORD COUNTY
PROJECT: 35489.3.1 R-2583

SHEET OF

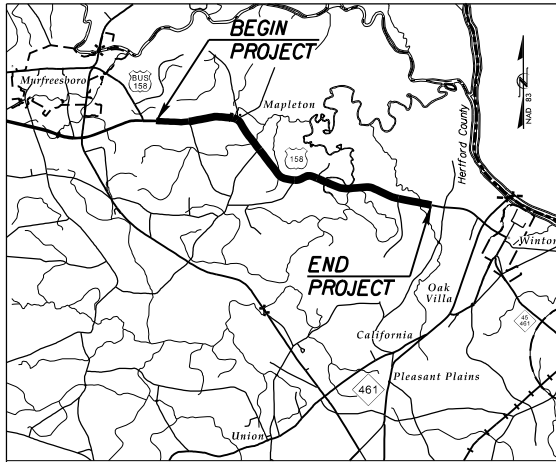
10/3/2011

09/08/99

TIP PROJECT: R-2583

CONTRACT: C202615

See Sheet 1-A For Index of Sheets



VICINITY MAP

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

HERTFORD COUNTY

**LOCATION: US 158 WIDENING FROM THE MURFREESBORO
BYPASS TO US 13 WEST OF WINTON**

**TYPE OF WORK: GRADING, DRAINAGE, PAVING, WIDENING, RESURFACING,
GUARDRAIL, STRUCTURES & CULVERTS**

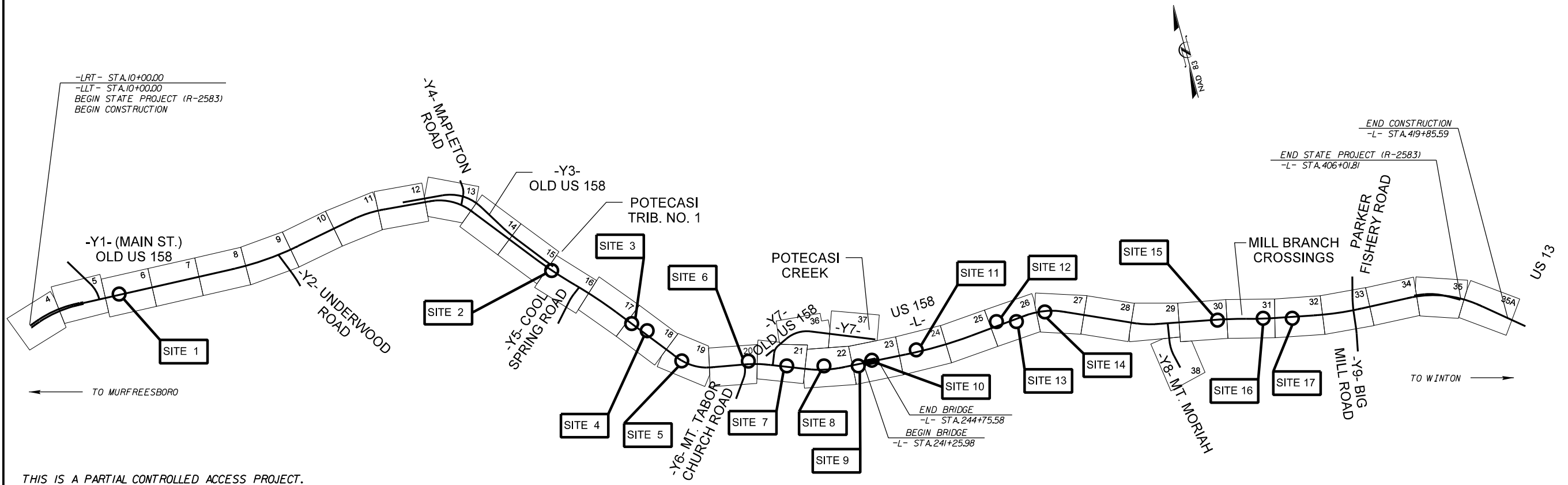
WETLAND & STREAM IMPACTS

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	R-2583	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
35489.3.1	N/A	CONST.	



HNTB HNTB NORTH CAROLINA, P.C.
343 E. Six Forks Road, Suite 200
Raleigh, North Carolina 27609
NC License No: C-1554

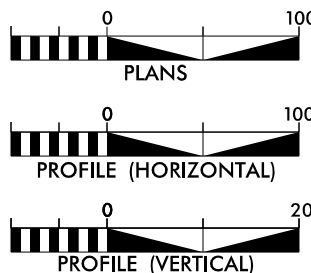
DATE: OCTOBER 3, 2011



THIS IS A PARTIAL CONTROLLED ACCESS PROJECT.

CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD III.

GRAPHIC SCALES



DESIGN DATA

ADT (2005)= 3600
ADT (2030)= 7500
DHV = 11 %
D = 55 %
T = 20 % *
V = 60 MPH
* TTST =13% DUAL =7%
FUNC CLASS =
PRINCIPLE RURAL
ARTERIAL

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT R-2583= 7.719 MI.
LENGTH STRUCTURES TIP PROJECT R-2583= 0.066 MI.
TOTAL LENGTH TIP PROJECT R-2583= 7.785 MI.

ALL LENGTHS BASED OFF WEST BOUND LANES

Prepared In the Office of:
HNTB NORTH CAROLINA, P.C.
343 E. Six Forks Road, Raleigh NC, 27609

2006 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
MARCH 24, 2011

LETTING DATE:
MARCH 24, 2011

ENRICO A. ROQUE, P.E.
PROJECT ENGINEER

ANTHONY THOMPSON, P.E.
PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

SIGNATURE: _____ P.E.

ROADWAY DESIGN
ENGINEER

SIGNATURE: _____ P.E.

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA



STATE HIGHWAY DESIGN ENGINEER P.E.



MATCH LINE TO SHEET 5
STA. 17+00



PERMIT DRAWINGS
SHEET ____ OF ____

 S.T. WOOTEN CORPORATION	PROJECT REFERENCE NO. <i>R-2583</i>		SHEET NO. 6
	SHEET NO. ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER
HNTB HNTB NORTH CAROLINA, P.C. 343 E. Six Forks Road, Suite 200 Raleigh, North Carolina 27609 NC License No: C-1554			
DATE: OCTOBER 3, 2011			
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION			

5/14/99
9:51:31 AM
R-2583 crm_wetland_xsc.dgn
338861237NAME###

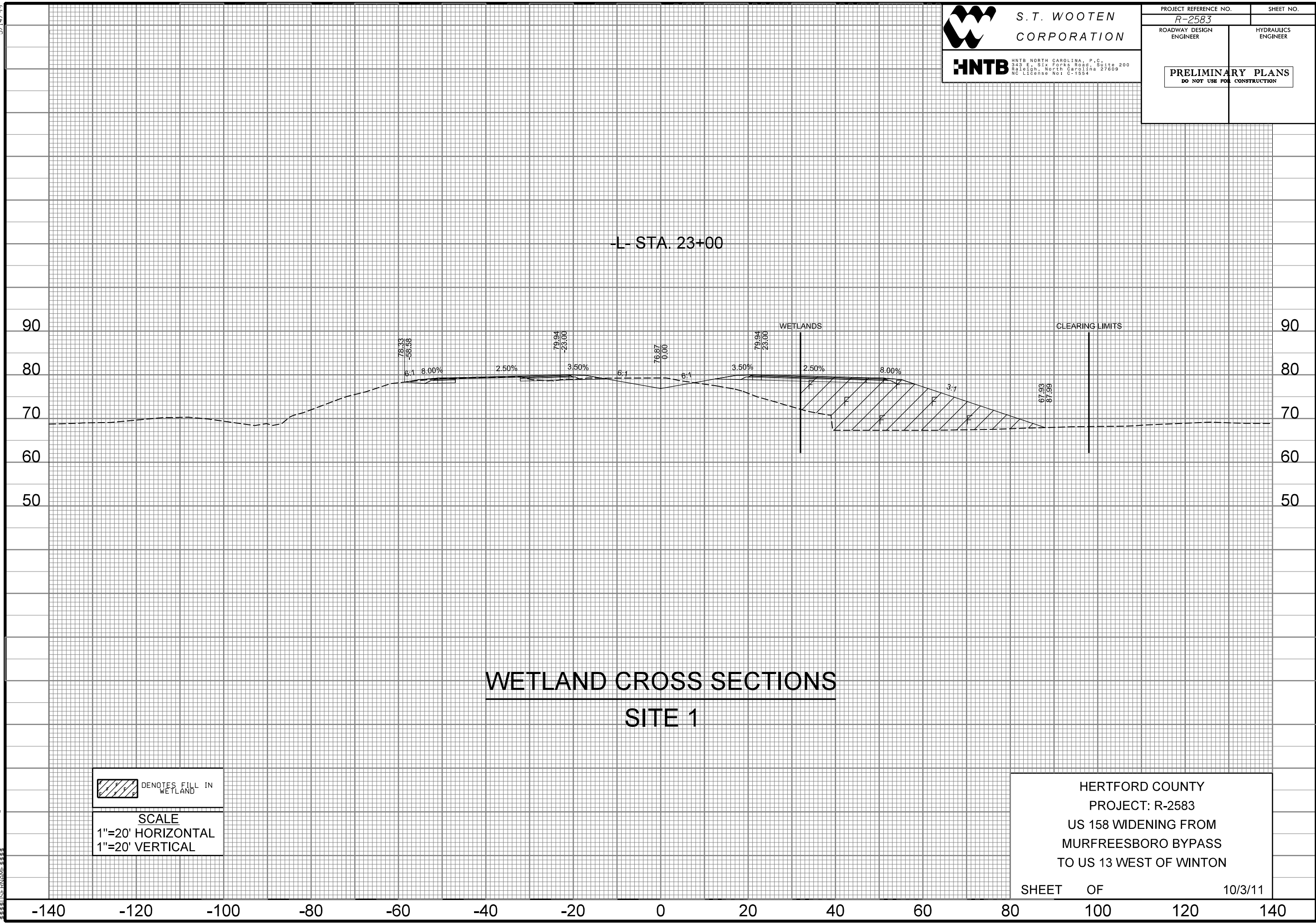


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CORPORATION



HNTB NORTH CAROLINA, P.C.
349 E. SIX FORKS ROAD, SUITE 200
RALEIGH, NORTH CAROLINA 27609
NC LICENSE NO: C-1554

PROJECT REFERENCE NO.		SHEET NO.
R-2583		
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER	
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION		



-140 -120 -100 -80 -60 -40 -20 0 20 40 60 80 100 120 140

50 60 70 80 90



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CORPORATION

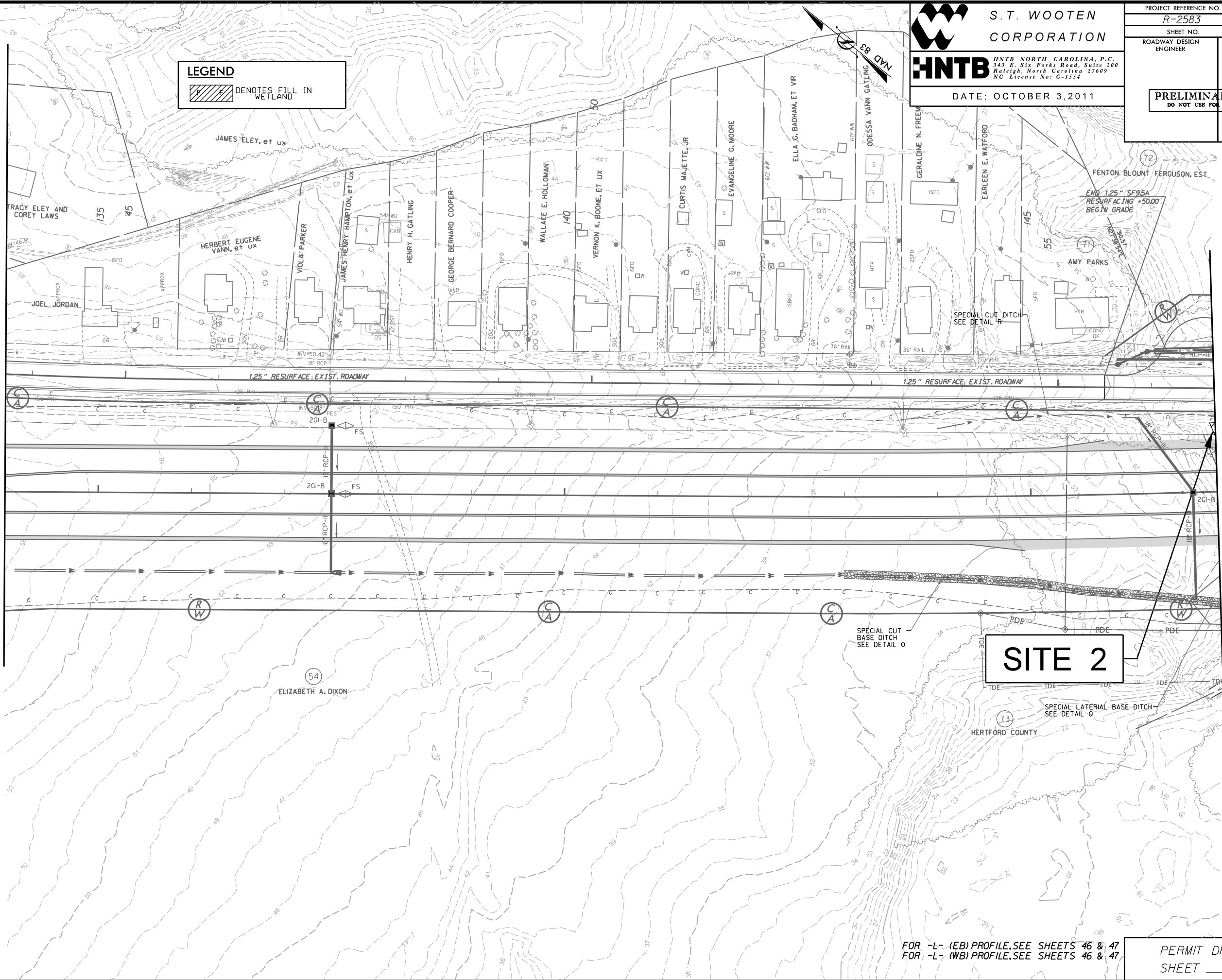
HNTB HNTB NORTH CAROLINA, P.C.
343 E. Six Forks Road, Suite 200
Raleigh, North Carolina 27609
NC License No: C-1554

DATE: OCTOBER 3, 2011



PERMIT DRAWINGS
SHEET ____ OF ____

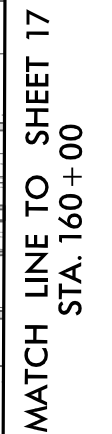
REVISIONS



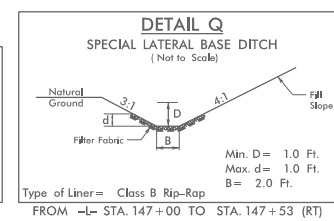
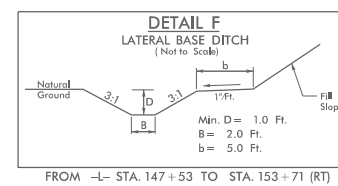
MATCH LINE TO SHEET 16
STA. 147+00

FOR -L- (EB) PROFILE, SEE SHEETS 46 & 47
FOR -L- (WB) PROFILE, SEE SHEETS 46 & 47

PERMIT DRAWINGS
SHEET ____ OF ____



SITE 2



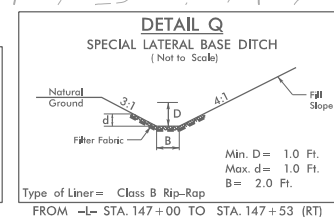
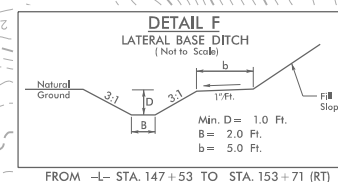
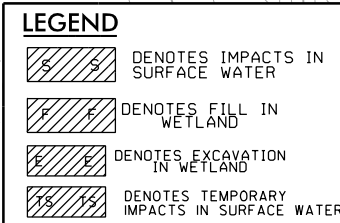
NOTE:
SEE SHEET 2E FOR CROSSOVER DETAILS
FOR -L- PROFILE, SEE SHEETS 47 & 48
FOR -Y5- PROFILE, SEE SHEET 59

PERMIT DRAWINGS
SHEET ____ OF ____

MATCH LINE TO SHEET 15
STA. 147+00

MATCH LINE TO SHEET 17
STA. 160+00

SITE 2



NOTE:
SEE SHEET 2E FOR CROSSOVER DETAILS
FOR -L- PROFILE, SEE SHEETS 47 & 48
FOR -Y5- PROFILE, SEE SHEET 59

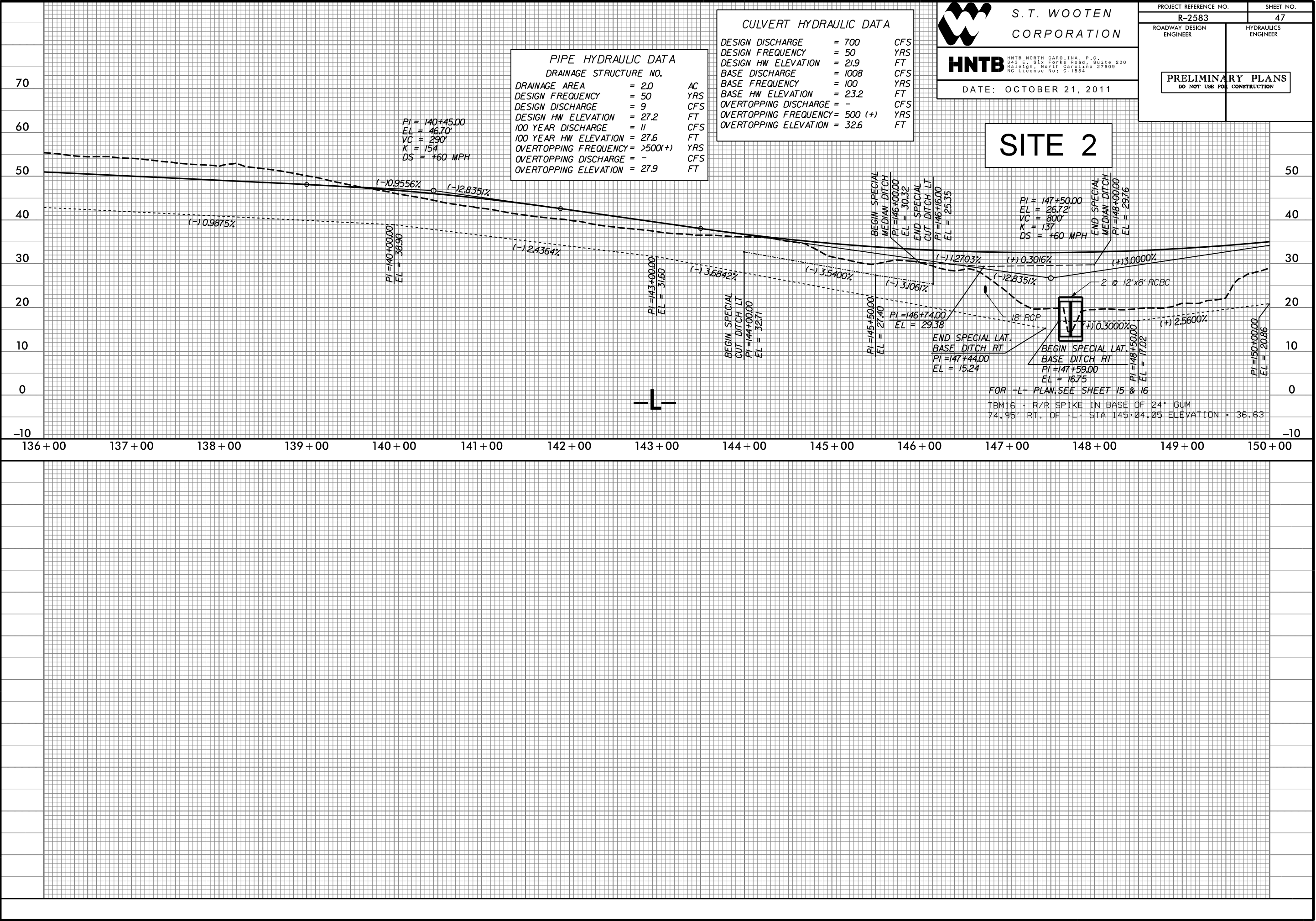
PERMIT DRAWINGS
SHEET ____ OF ____

REVISIONS

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5/28/99

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5/14/99



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HNTB NORTH CAROLINA, P.C.
343 E. SIX FORKS ROAD, SUITE 200
RALEIGH, NORTH CAROLINA 27609
NC LICENSE NO. C-1554

PROJECT REFERENCE NO.

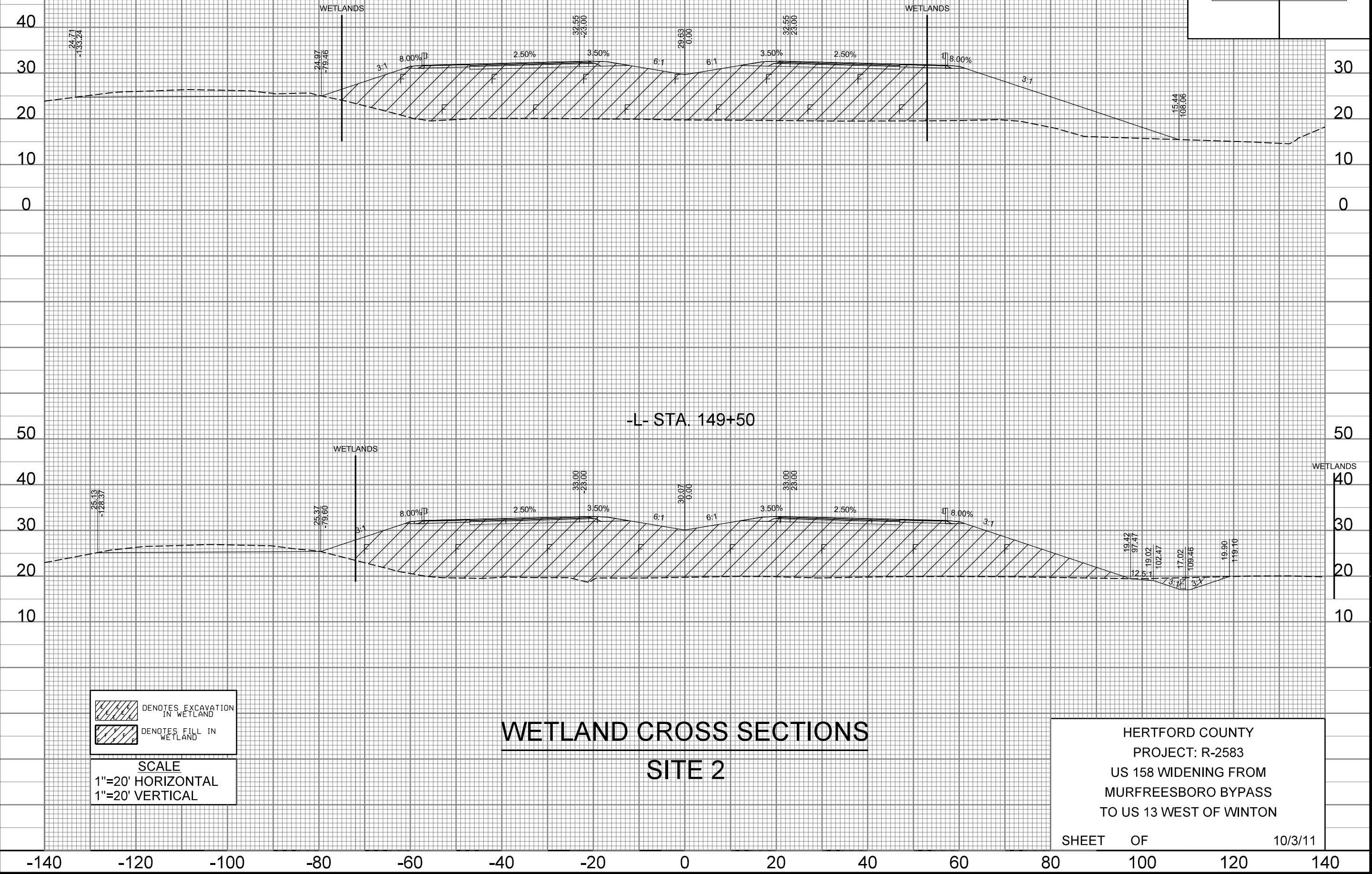
R-2583

SHEET NO.

ROADWAY DESIGN
ENGINEER

HYDRAULICS
ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION



DENOTES EXCAVATION
IN WETLAND

DENOTES FILL IN
WETLAND

SCALE
1"=20' HORIZONTAL
1"=20' VERTICAL

WETLAND CROSS SECTIONS SITE 2

HERTFORD COUNTY
PROJECT: R-2583
US 158 WIDENING FROM
MURFREESBORO BYPASS
TO US 13 WEST OF WINTON

SHEET OF 10/3/11

9:52:01 AM c:\p\m\wetland_xsc.dgn

5/14/99



S.T. WOOTEN
CORPORATION



HNTB NORTH CAROLINA, P.C.
343 E. SIX FORKS ROAD, SUITE 200
RALEIGH, NORTH CAROLINA 27609
NC LICENSE NO. C-1554

PROJECT REFERENCE NO.

R-2583

SHEET NO.

ROADWAY DESIGN
ENGINEER

HYDRAULICS
ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

50

40

30

20

10

0

50

40

30

20

10

0

CL- STA. 147+68.89
PROP. 2 @ 12' X 8' RCBC
GP ELEV. = 32.58
SKEW = 100°

NATURAL GROUND ALONG
C OF CULVERT

EXISTING LEFT TOP OF BANK

EXISTING RIGHT TOP OF BANK

3:1 (NORMAL)

3:1 (NORMAL)

PROPOSED 50 YEAR
W.S. ELEV. = 21.9

PROPOSED 100 YEAR
W.S. ELEV. = 23.21

N.W.S. ELEV. = 16.2

PROPOSED STREAM BED

PROPOSED OUTLET
ELEV. = 13.00
(BURIED 1 FT.)

ELEV. 13.38

S = 0.4269%

PROPOSED INLET
ELEV. = 13.75
(BURIED 1 FT.)

PROFILE ALONG STRUCTURE SITE 2

SCALE
1"=50' HORIZONTAL
1"=10' VERTICAL

HERTFORD COUNTY
PROJECT: R-2583
US 158 WIDENING FROM
MURFREESBORO BYPASS
TO US 13 WEST OF WINTON

SHEET OF

10/3/11

200

150

100

50

0

50

100

150

200

h:\3734 PM
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3/3/11 10:30 AM

8/17/99

REVISIONS

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12/5/99
R-2583 pr-m-psh-17A.dgn



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CORPORATION

HNTB

HNTB NORTH CAROLINA, P.C.
343 E. Six Forks Road, Suite 200
Raleigh, North Carolina 27609
NC License No: C-1554

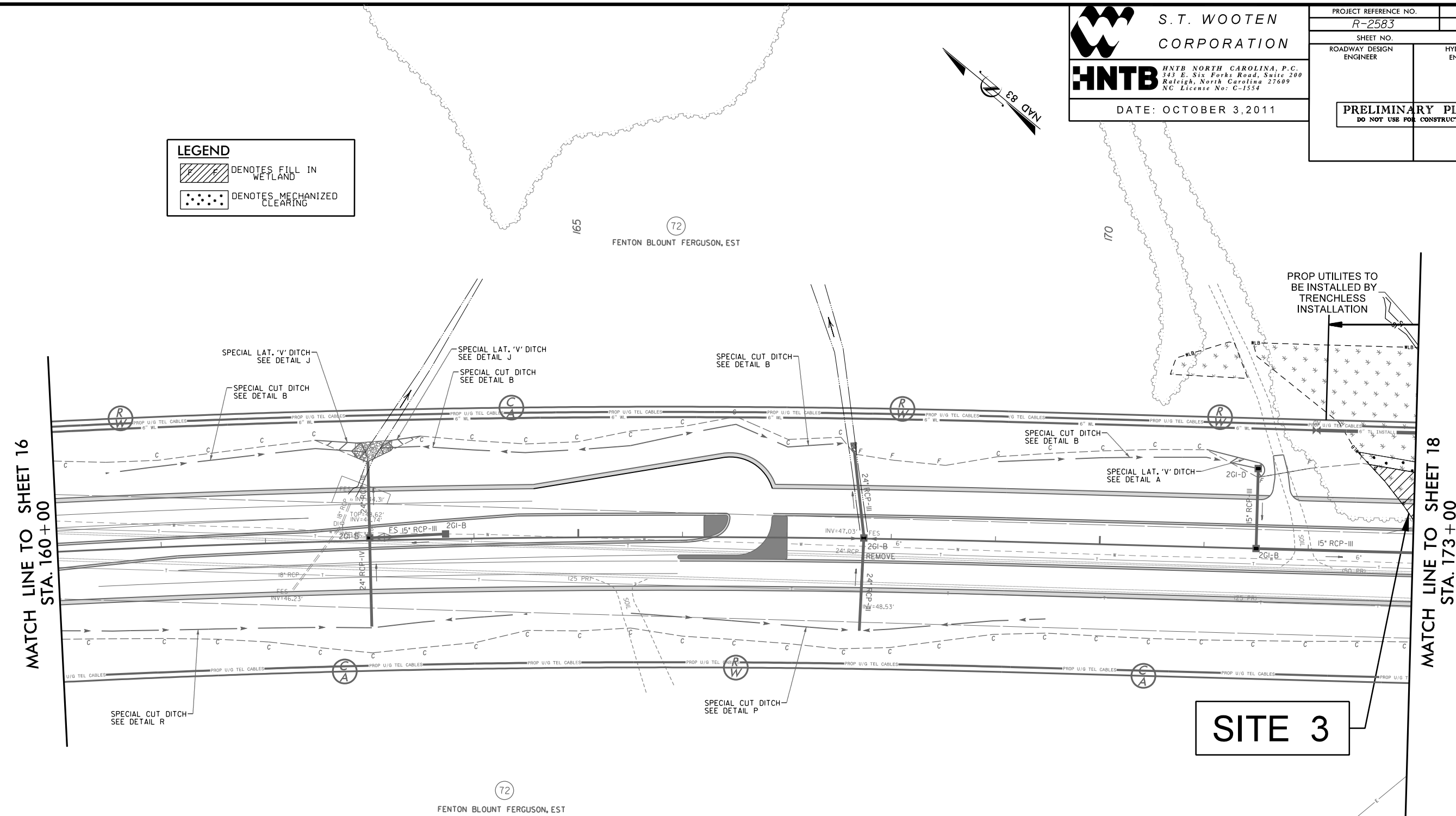
DATE: OCTOBER 3, 2011

PROJECT REFERENCE NO. R-2583	SHEET NO. 17
SHEET NO. ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

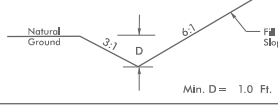
LEGEND

 DENOTES FILL IN WETLAND

 DENOTES MECHANIZED CLEARING

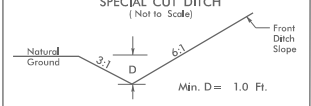


DETAIL J
SPECIAL LATERAL 'V' DITCH
(Not to Scale)



FROM -L- STA. 162+50 TO STA. 162+98 (LT)
FROM -L- STA. 163+12 TO STA. 163+50 (LT)

DETAIL B
SPECIAL CUT DITCH
(Not to Scale)



FROM -L- STA. 160+50 TO STA. 162+50 (LT)
FROM -L- STA. 163+50 TO STA. 167+50 (LT)
FROM -L- STA. 169+00 TO STA. 171+00 (LT)

NOTE:
SEE SHEET 2E FOR CROSSOVER & U-TURN BULBOUT DETAILS
FOR -L- PROFILE, SEE SHEET 4B

PERMIT DRAWINGS
SHEET ____ OF ____

8/17/99

125742.DWG 159-2583 pr-m.psh.17B.dgn

REVISIONS



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CORPORATION



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343 E. Six Forks Road, Suite 200
Raleigh, North Carolina 27609
NC License No: C-1554

PROJECT REFERENCE NO.
R-2583

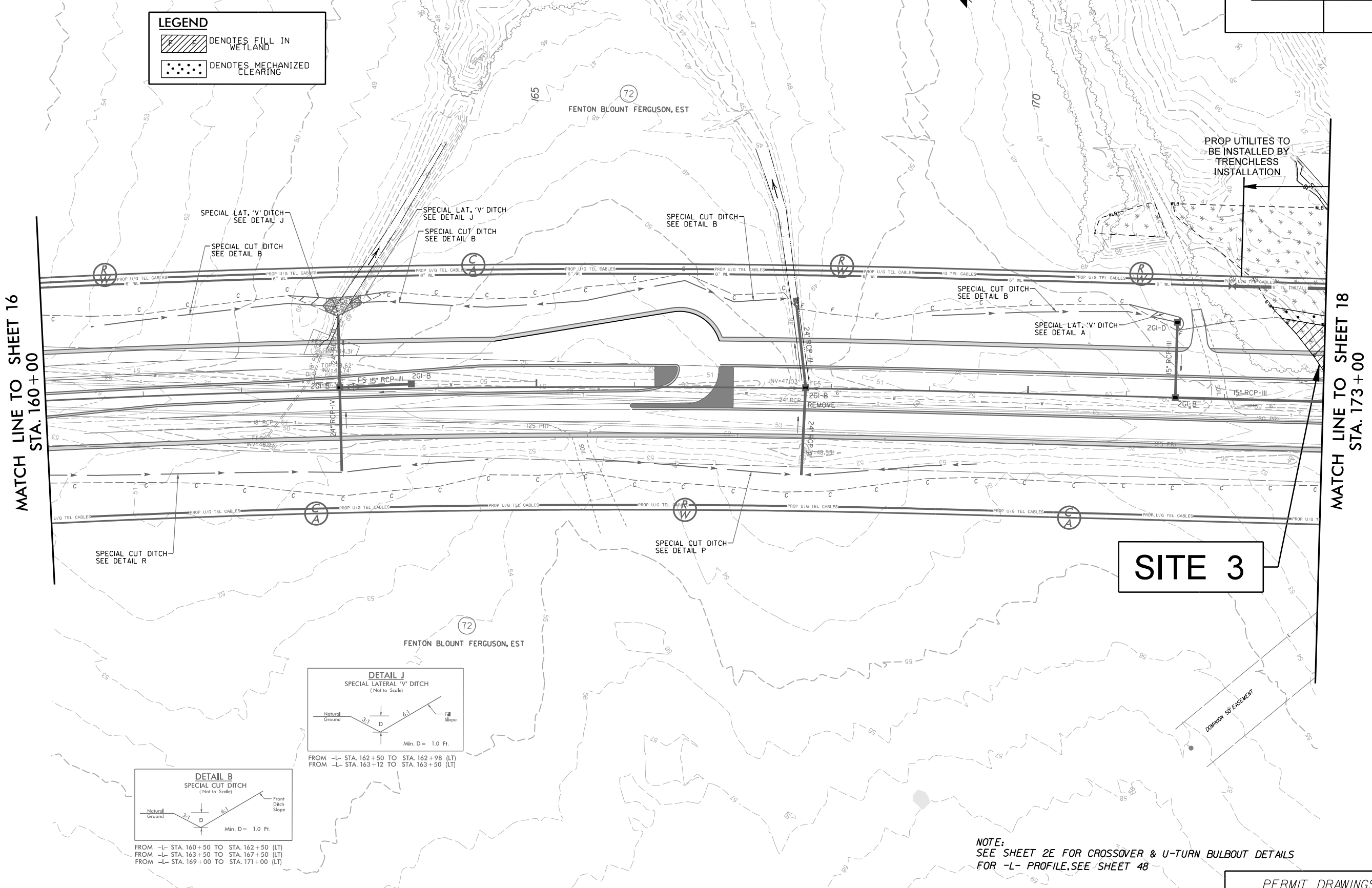
SHEET NO.
17

SHEET NO.
ROADWAY DESIGN
ENGINEER

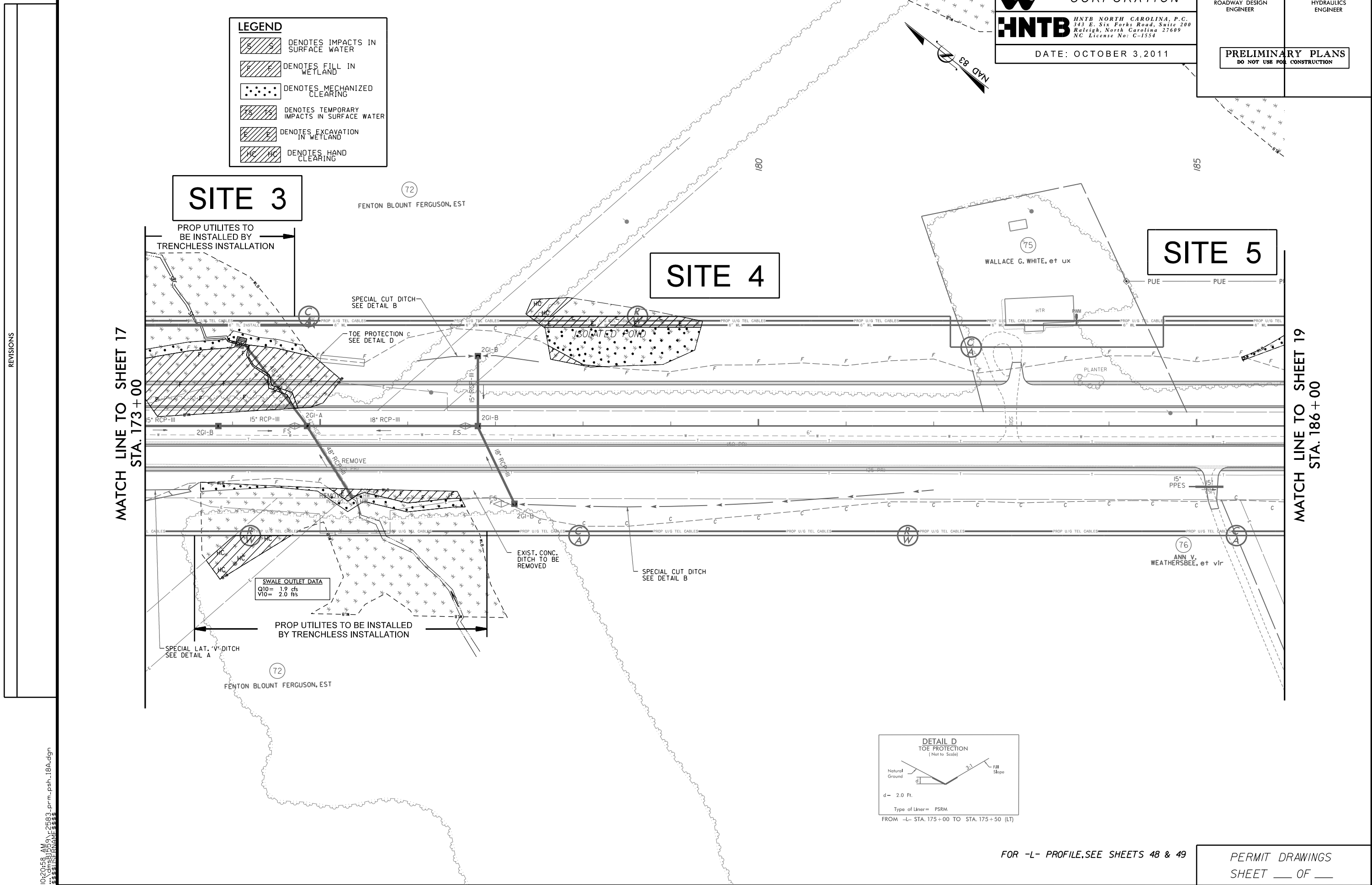
HYDRAULICS
ENGINEER

DATE: OCTOBER 3, 2011

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION



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5/14/99



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CORPORATION



HNTB NORTH CAROLINA, P.C.
349 E. SIX FORKS ROAD, SUITE 200
RALEIGH, NORTH CAROLINA 27609
NC LICENSE NO. C-1554

PROJECT REFERENCE NO.

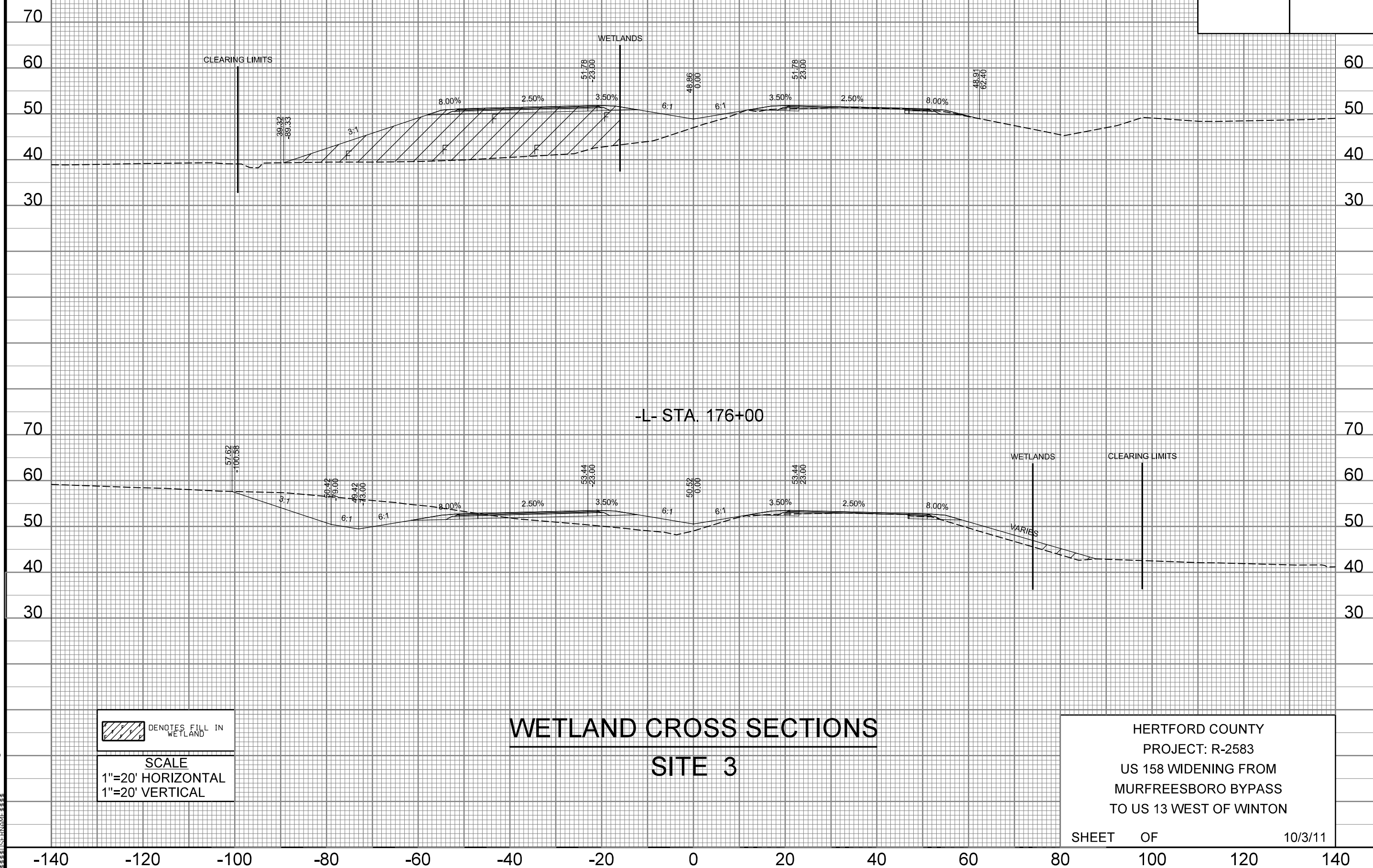
R-2583

SHEET NO.

ROADWAY DESIGN
ENGINEER

HYDRAULICS
ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION



DENOTES FILL IN
WETLAND

SCALE
1"=20' HORIZONTAL
1"=20' VERTICAL

WETLAND CROSS SECTIONS SITE 3

HERTFORD COUNTY
PROJECT: R-2583
US 158 WIDENING FROM
MURFREESBORO BYPASS
TO US 13 WEST OF WINTON

SHEET OF 10/3/11

9:52:32 AM
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8/17/99

8/17/99

REVISIONS

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10/25/99
R-2583 pr-m.psh.198.dgn
JAMES E. WEATHERSBEE, et ux



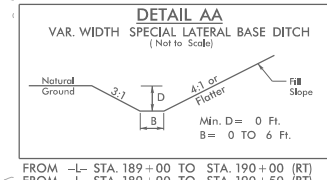
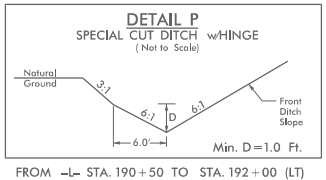
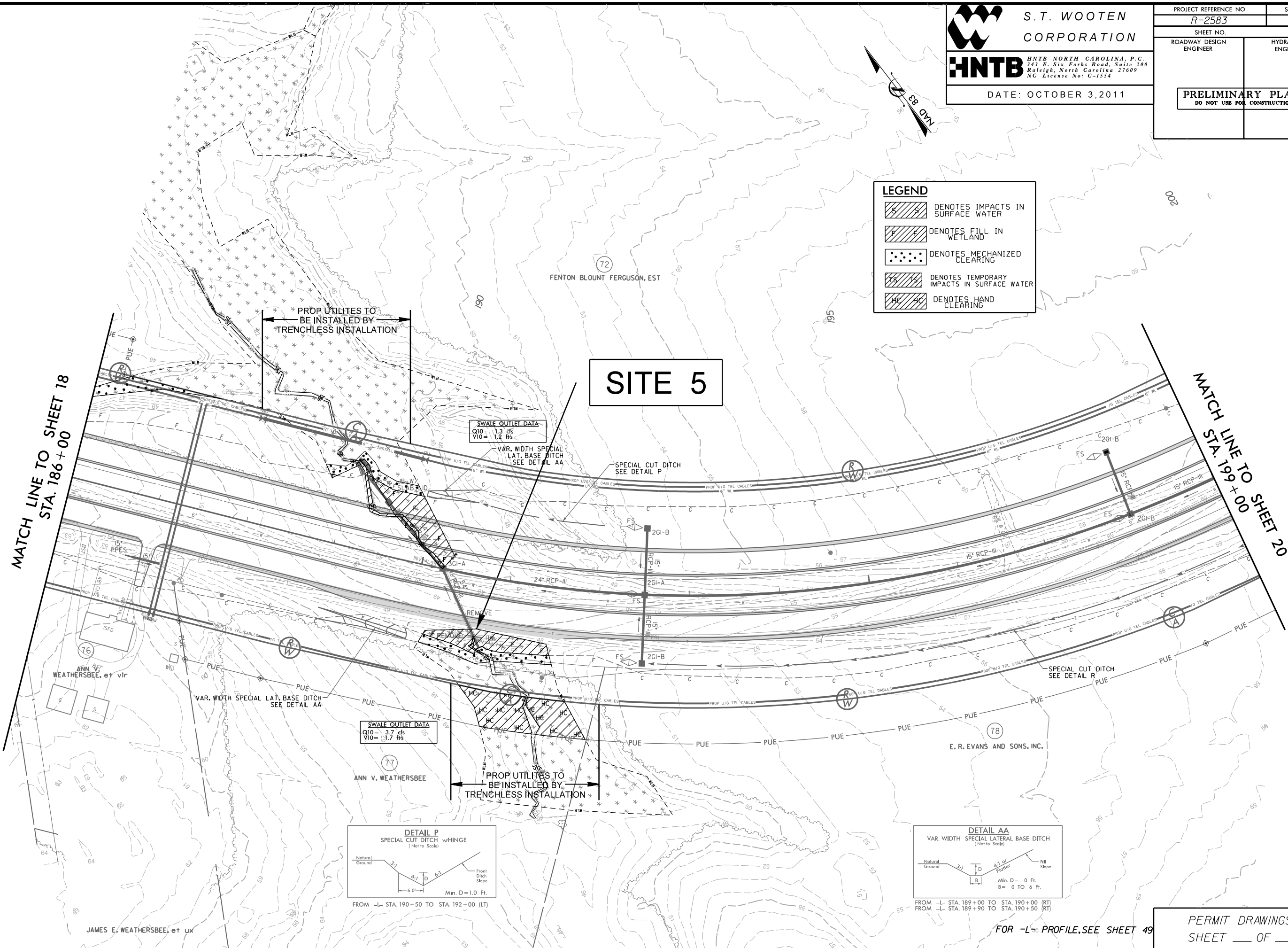
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343 E. Six Forks Road, Suite 200
Raleigh, North Carolina 27609
NC License No: C-1554

DATE: OCTOBER 3, 2011

PROJECT REFERENCE NO.	SHEET NO.
R-2583	19
SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

LEGEND	
	DENOTES IMPACTS IN SURFACE WATER
	DENOTES FILL IN WETLAND
	DENOTES MECHANIZED CLEARING
	DENOTES TEMPORARY IMPACTS IN SURFACE WATER
	DENOTES HAND CLEARING



PERMIT DRAWINGS
SHEET ____ OF ____

5/14/99

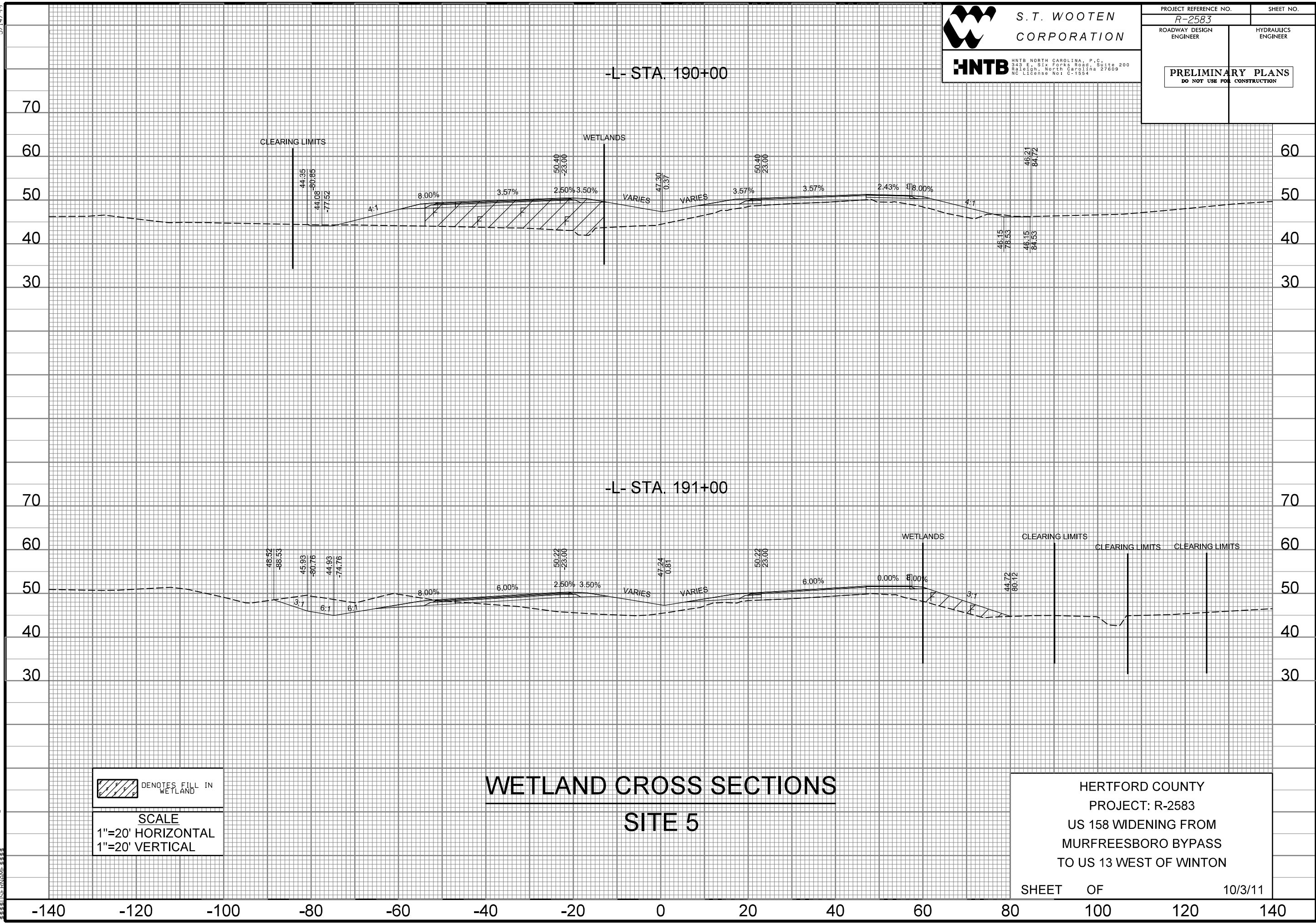


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343 E. SIX FORKS ROAD, SUITE 200
RALEIGH, NORTH CAROLINA 27609
NC LICENSE NO: C-1554

PROJECT REFERENCE NO.		SHEET NO.	
R-2583			
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION			



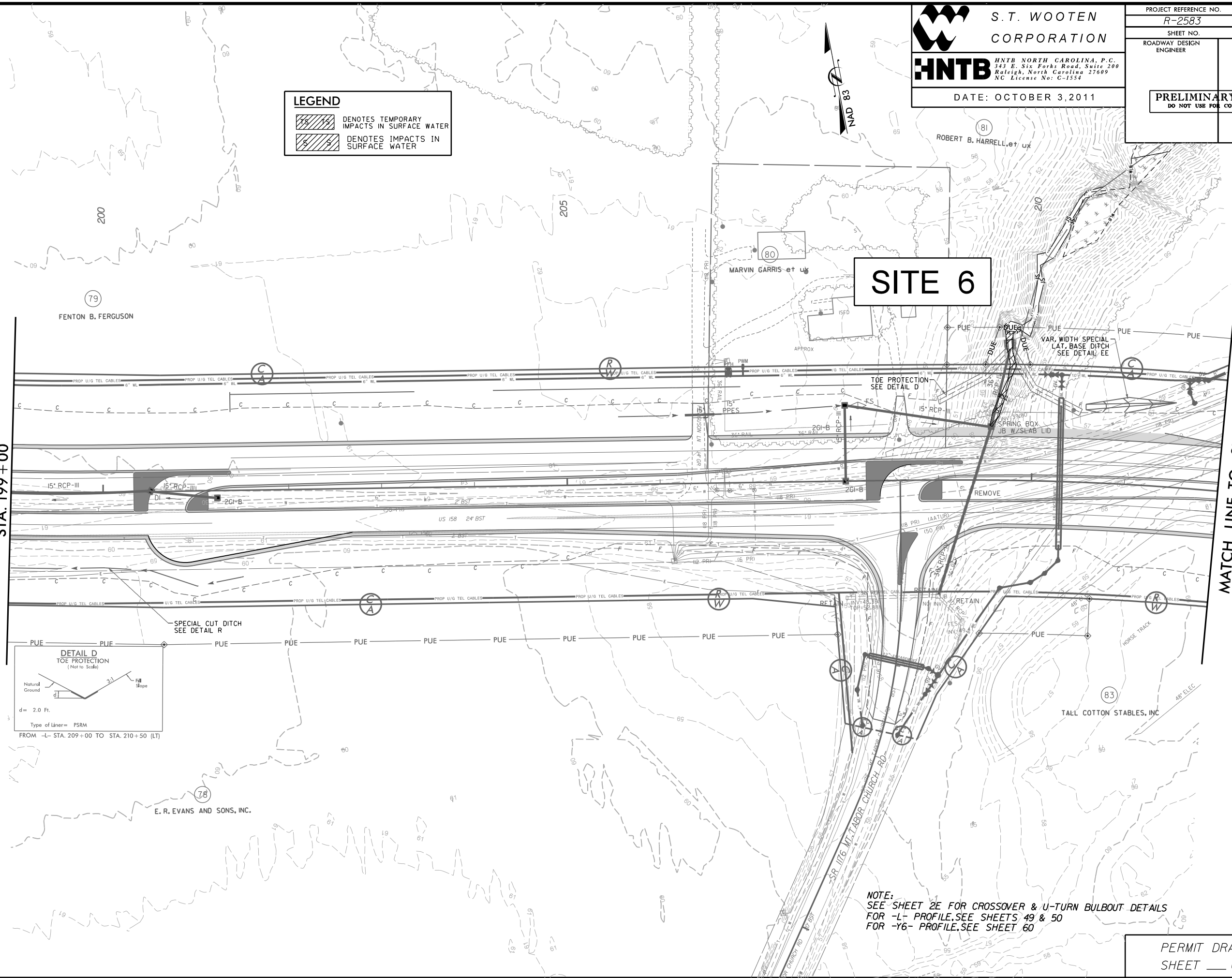
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8/17/99

REVISIONS

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R-2583 pr-m.psh_208.dgn
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\$\$\$\$\$
\$\$\$\$\$

MATCH LINE TO SHEET 19
STA. 199+00



LEGEND

	DENOTES TEMPORARY IMPACTS IN SURFACE WATER
	DENOTES IMPACTS IN SURFACE WATER

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Raleigh, North Carolina 27609
NC License No: C-1554

DATE: OCTOBER 3, 2011

PROJECT REFERENCE NO. R-2583	SHEET NO. 20
SHEET NO. ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

SITE 6

**DETAIL D
TOE PROTECTION
(Not to Scale)**

Natural Ground

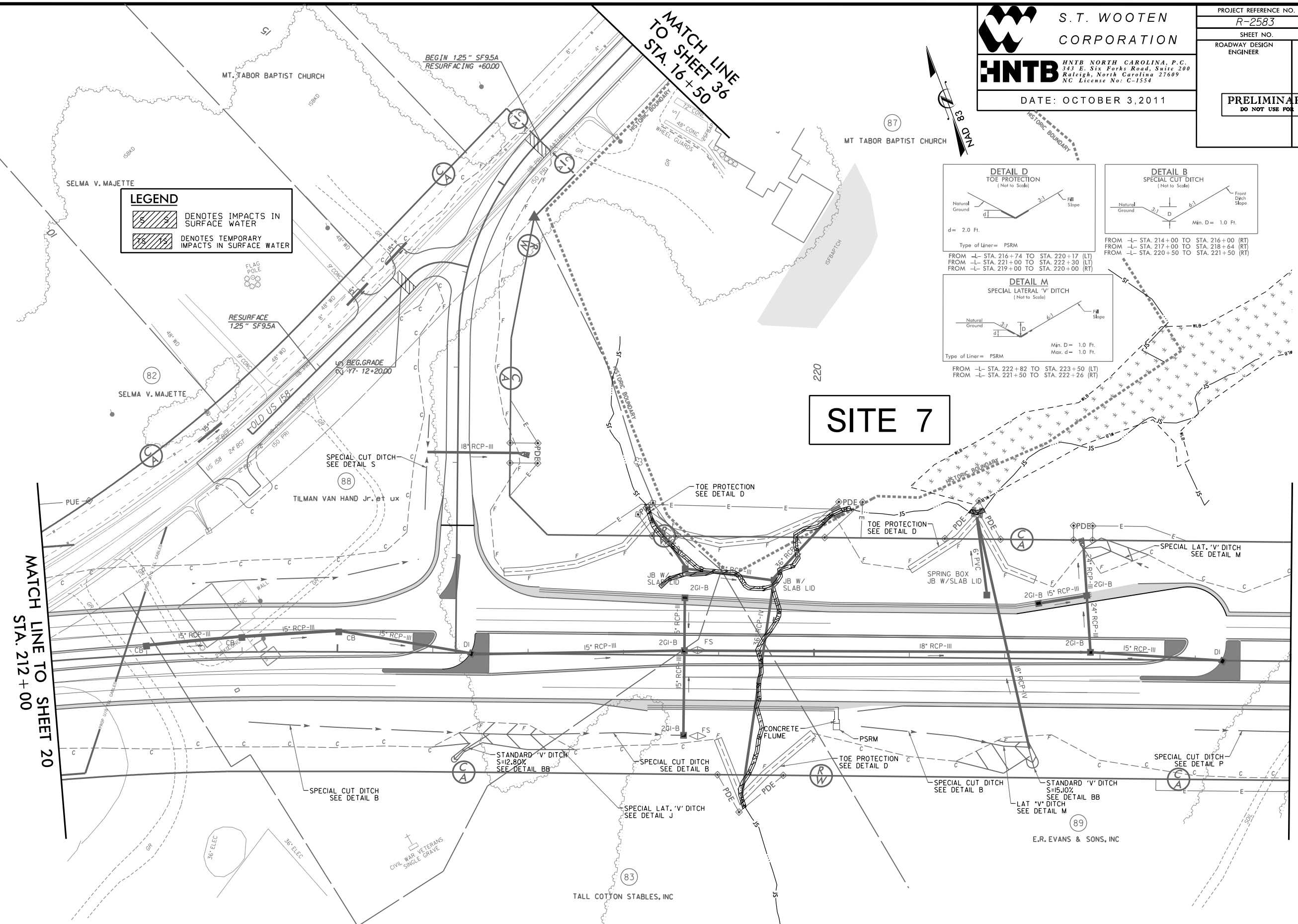
d = 2.0 Ft.

Type of Liner = PSRM

FROM -L- STA. 209+00 TO STA. 210+50 (LT)

NOTE:
SEE SHEET 2E FOR CROSSOVER & U-TURN BULBOUT DETAILS
FOR -L- PROFILE, SEE SHEETS 49 & 50
FOR -Y6- PROFILE, SEE SHEET 60

PERMIT DRAWINGS
SHEET ____ OF ____



NOTE:
SEE SHEET 2E FOR CROSSOVER & U-TURN BULBOUT DETAILS
FOR -L- PROFILE, SEE SHEET 50
FOR -Y7- PROFILE, SEE SHEET 60

PERMIT DRAWINGS
SHEET ____ OF ____

REVISIONS

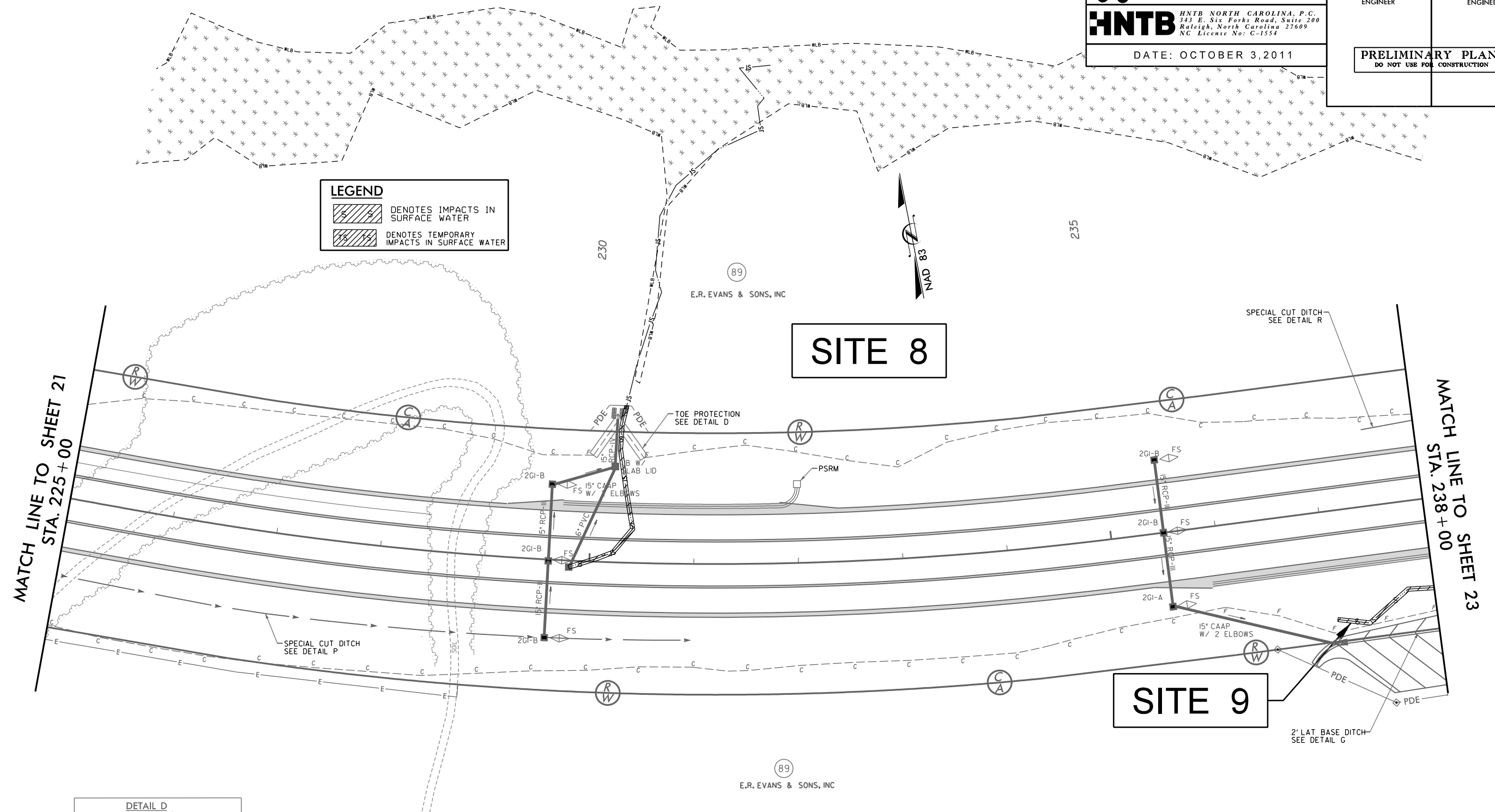
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10:24:52 AM
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$$$$$USERNAME$$$$$
```


DETAIL M
SPECIAL LATERAL 'V' DITCH
(Not to Scale)

Min. D = 1.0 Ft.
Max. d = 1.0 Ft.

Type of Liner = PSRM

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION



DETAIL D
TOE PROTECTION
(Not to Scale)

Natural Ground

3:1

Fill Slope

d

d = 2.0 Ft.

Type of Liner = PSRM

FROM -L- STA. 230+00 TO STA. 230+50 (LT)

REVISIONS

8/17/99

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l:10:16 PM
...\\dms8i559\2583-prm-psh-22A.dgn
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8/17/99

REVISIONS

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343 E. Six Forks Road, Suite 200
Raleigh, North Carolina 27609
NC License No: C-1554

DATE: OCTOBER 3, 2011

PROJECT REFERENCE NO. R-2583	SHEET NO. 22
SHEET NO. ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

MATCH LINE TO SHEET 21
STA. 225+00

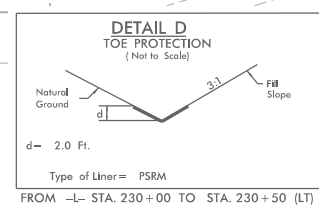
MATCH LINE TO SHEET 23
STA. 238+00

LEGEND

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

SITE 8

SITE 9

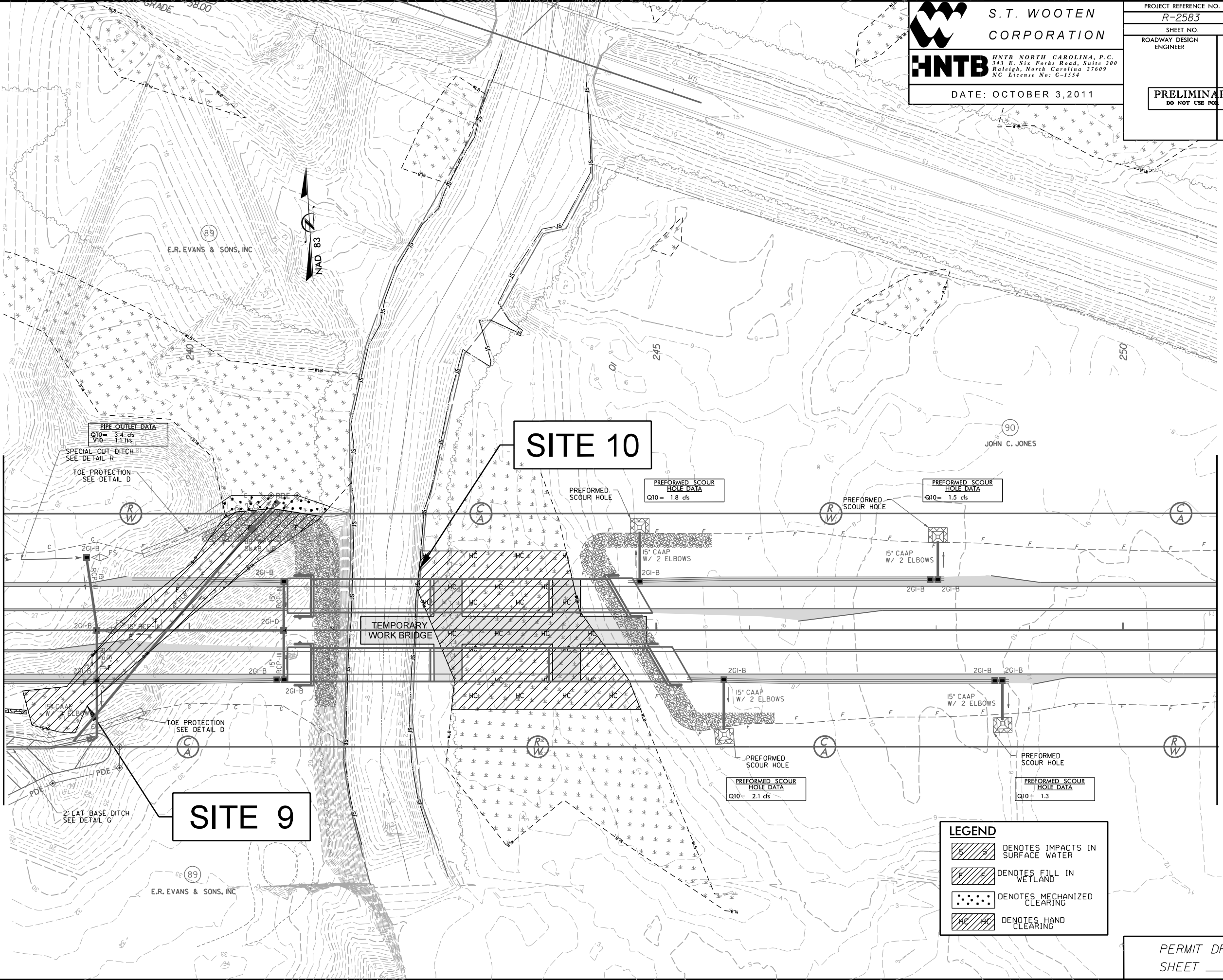


FOR -L- PROFILE, SEE SHEETS 50 & 51

PERMIT DRAWINGS
SHEET ____ OF ____

8/17/99
REVISIONS
11/4/25 PM 18:55:59 \\2583 pr-m.psh_238.dgn
\$\$\$\$\$SYTIME\$\$\$\$\$

MATCH LINE TO SHEET 22
STA. 238+00





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HNTB NORTH CAROLINA, P.C.
343 E. Six Forks Road, Suite 200
Raleigh, North Carolina 27609
NC License No: C-1554

DATE: OCTOBER 3, 2011

PROJECT REFERENCE NO. R-2583	SHEET NO. 23
SHEET NO. ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

LEGEND


DENOTES IMPACTS IN SURFACE WATER


DENOTES FILL IN WETLAND


DENOTES MECHANIZED CLEARING


DENOTES HAND CLEARING

PROJECT REFERENCE NO.	SHEET NO.
R-2583	51
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS

DO NOT USE FOR CONSTRUCTION

**HNTB**

HNTB NORTH CAROLINA, P.C.
343 E. Six Forks Road, Suite 200
Raleigh, North Carolina 27609
NC License No: C-1554

DATE: OCTOBER 21, 2011

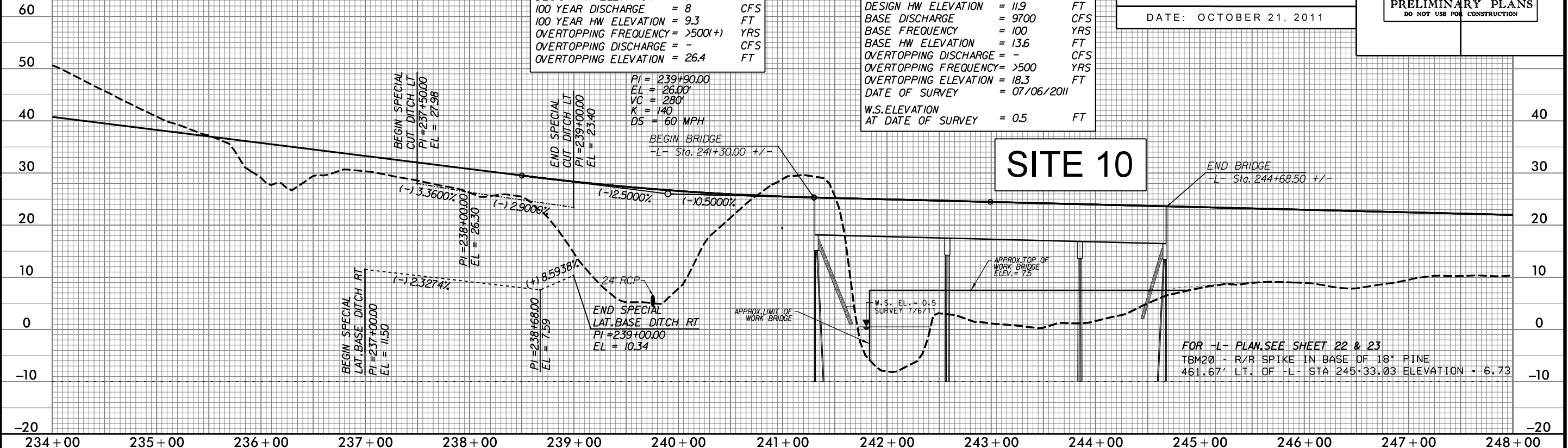
PIPE HYDRAULIC DATA
DRAINAGE STRUCTURE NO.2314

DRAINAGE AREA	= 11.5	AC
DESIGN FREQUENCY	= 50	YRS
DESIGN DISCHARGE	= 7	CFS
DESIGN HW ELEVATION	= 9J	FT
100 YEAR DISCHARGE	= 8	CFS
100 YEAR HW ELEVATION	= 9.3	FT
OVERTOPPING FREQUENCY	= >500(+)	YRS
OVERTOPPING DISCHARGE	= -	CFS
OVERTOPPING ELEVATION	= 26.4	FT

BRIDGE HYDRAULIC DATA

DESIGN DISCHARGE	=	8200	CFS
DESIGN FREQUENCY	=	50	YRS
DESIGN HW ELEVATION	=	11.9	FT
BASE DISCHARGE	=	9700	CFS
BASE FREQUENCY	=	100	YRS
BASE HW ELEVATION	=	13.6	FT
OVERTOPPING DISCHARGE	=	-	CFS
OVERTOPPING FREQUENCY	=	>500	YRS
OVERTOPPING ELEVATION	=	18.3	FT
DATE OF SURVEY	=	07/06/2011	
W.S.ELEVATION AT DATE OF SURVEY	=	0.5	FT

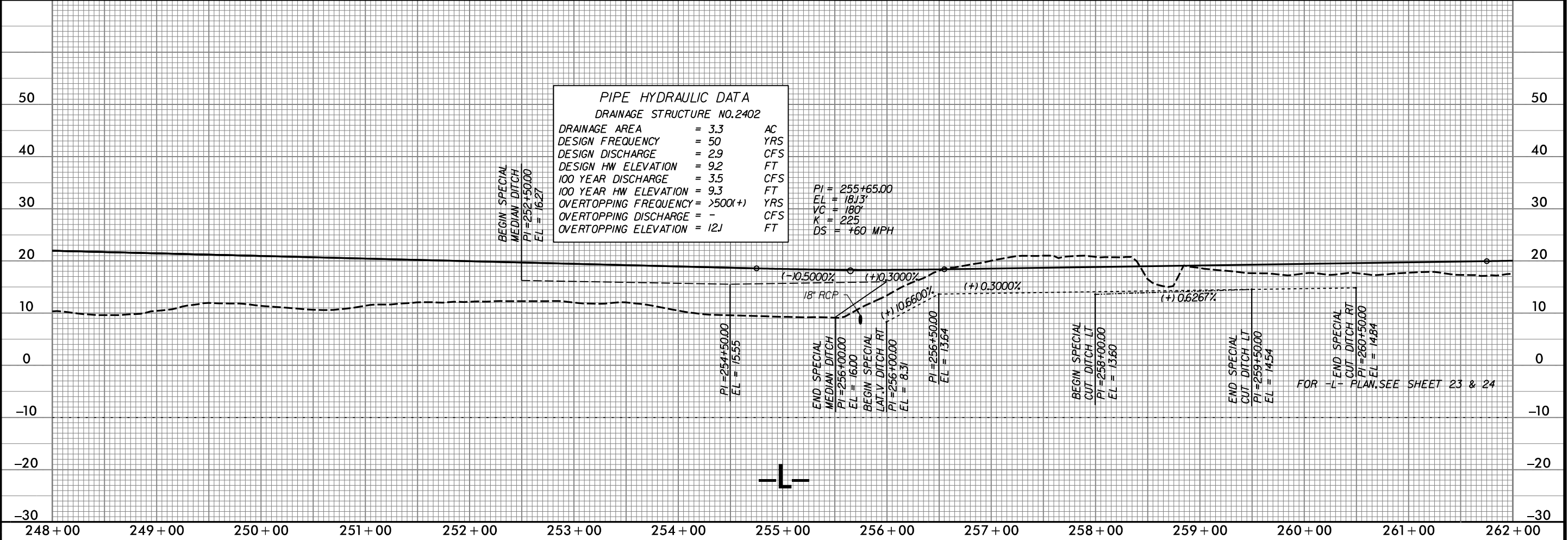
SITE 10



PIPE HYDRAULIC DATA
DRAINAGE STRUCTURE NO.2402

DRAINAGE AREA	= 3.3	AC
DESIGN FREQUENCY	= 50	YRS
DESIGN DISCHARGE	= 2.9	CFS
DESIGN HW ELEVATION	= 9.2	FT
100 YEAR DISCHARGE	= 3.5	CFS
100 YEAR HW ELEVATION	= 9.3	FT
OVERTOPPING FREQUENCY	= >500(+)	YRS
OVERTOPPING DISCHARGE	= -	CFS
OVERTOPPING ELEVATION	= 12J	FT

$PI = 255 + 65.00$
 $EL = 1813'$
 $VC = 180'$
 $K = 225$
 $DS = +60 \text{ MPH}$



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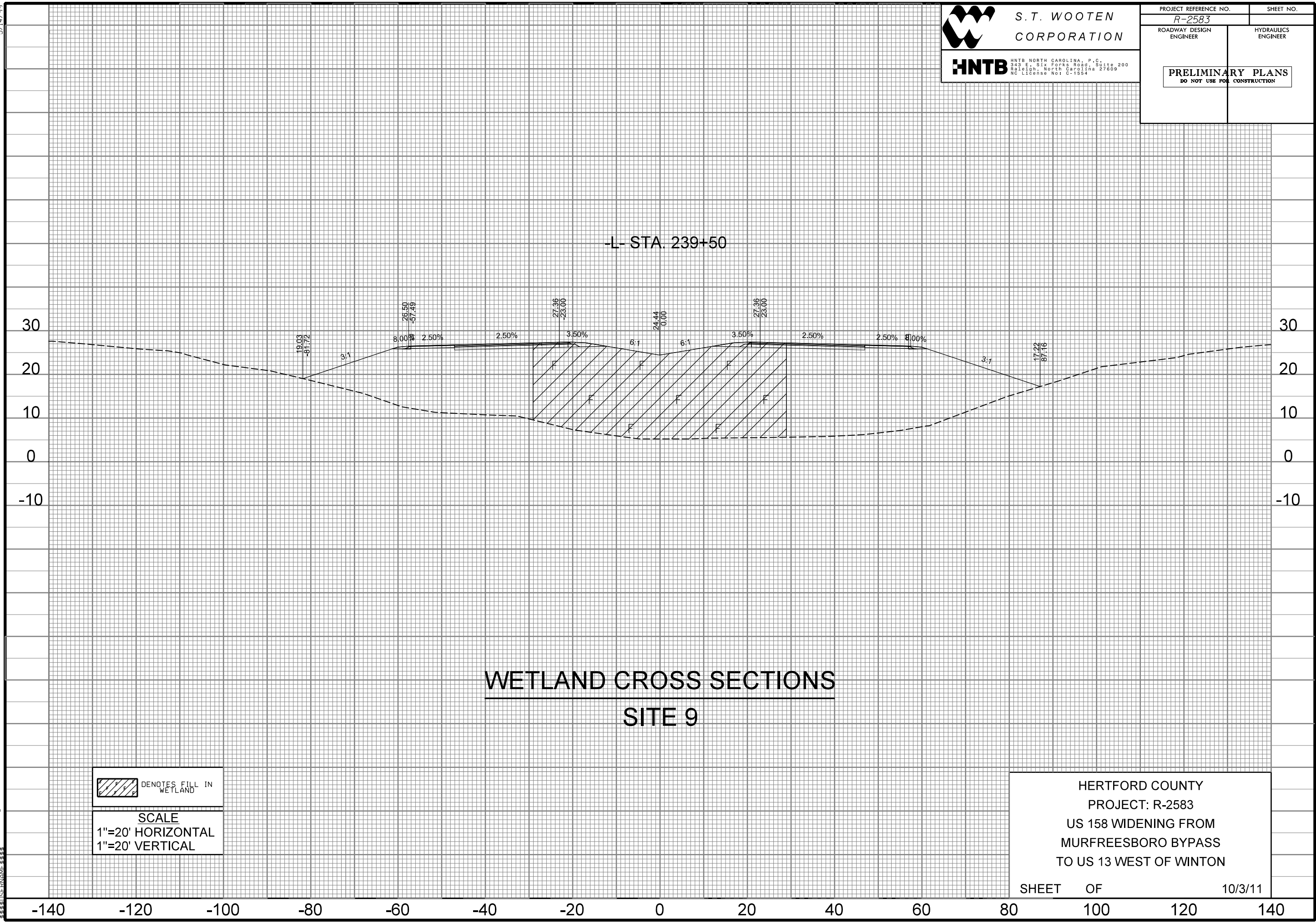


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CORPORATION



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349 E. SIX FORKS ROAD, SUITE 200
RALEIGH, NORTH CAROLINA 27609
NC LICENSE NO: C-1554

PROJECT REFERENCE NO.		SHEET NO.
R-2583		
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER	
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION		



8/17/99

REVISIONS

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343 E. Six Forks Road, Suite 200
Raleigh, North Carolina 27609
NC License No: C-1554

DATE: OCTOBER 3, 2011

PROJECT REFERENCE NO.	SHEET NO.
R-2583	24
SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

MATCH LINE TO SHEET 23
STA. 251+00

SITE 11

PERFORMED SCOUR
HOLE DATA
Q10 = 1.9 cfs

PREFORMED
SCOUR HOLE

PIPE OUTLET DATA
Q10 = 1.5 cfs
V10 = 3.9 f/s

SPECIAL CUT DITCH
SEE DETAIL B

LAT 'V' DITCH
SEE DETAIL E

SPECIAL CUT DITCH
SEE DETAIL R

LEGEND



DENOTES FILL IN
WETLAND



DENOTES MECHANIZED
CLEARING

NOTE:
SEE SHEET 2E FOR CROSSOVER & U-TURN BULBOUT DETAILS
FOR -L- PROFILE, SEE SHEETS 5I & 5J

PERMIT DRAWINGS
SHEET ____ OF ____

MATCH LINE TO SHEET 25
STA. 264+00

8/17/99

REVISIONS

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CORPORATION



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343 E. Six Forks Road, Suite 200
Raleigh, North Carolina 27609
NC License No: C-1554

DATE: OCTOBER 3, 2011

PROJECT REFERENCE NO.	SHEET NO.
R-2583	24
SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

MATCH LINE TO SHEET 23
STA. 251+00

SITE 11

PERFORMED SCOUR
HOLE DATA
Q10 = 1.9 cfs

PREFORMED
SCOUR HOLE

PIPE OUTLET DATA
Q10 = 1.5 cfs
V10 = 3.9 f/s

SPECIAL CUT DITCH
SEE DETAIL B

SPECIAL CUT DITCH
SEE DETAIL R

LAT 'V' DITCH
SEE DETAIL E

LEGEND

- DENOTES FILL IN WETLAND
- DENOTES MECHANIZED CLEARING

NOTE:
SEE SHEET 2E FOR CROSSOVER & U-TURN BULBOUT DETAILS
FOR -L- PROFILE, SEE SHEETS 51 & 52

PERMIT DRAWINGS
SHEET ____ OF ____

MATCH LINE TO SHEET 25
STA. 264+00



SCALE
1"=20' HORIZONTAL
1"=20' VERTICAL

HERTFORD COUNTY
PROJECT: R-2583
US 158 WIDENING FROM
MURFREESBORO BYPASS
TO US 13 WEST OF WINTON

SHEET OF 10/3/11

5/14/99

9:54:00 AM
\\r2583-prm=wetland-xsc.dgn

LEGEND

 DENOTES MECHANIZED CLEARING

 DENOTES HAND CLEARING

 DENOTES EXCAVATION
IN WETLAND

SCALE
1" = 40'

SITE 12

SITE 13

SCALE
1" = 40'

DETAIL Z
SPECIAL LATERAL 'V'
(Not to Scale)

FOR -L- PROFILE, SEE SHEET 52

PERMIT DRAWINGS
SHEET ____ OF ____

MATCH LINE TO SHEET 25
STA. 277+00

**MATCH LINE TO SHEET 27
STA. 290+00**

REVISIONS

0:30:26 AM
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\$\$\$\$\$\\\$FNAME\$\$\$\$\$

S. T. WOOTEN
CORPORATION

HNTE

HNTB NORTH CAROLINA, P.C.
343 E. Six Forks Road, Suite 200
Raleigh, North Carolina 27609
NC License No: C-1554

DATE: OCTOBER 3, 2011

PROJECT REFERENCE NO.

R-2583

SHEET NO.

26

SHEET NO.

ROADWAY DESIGN
ENGINEER

HYDRAULICS
ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

DO NOT USE FOR CONSTRUCTION

LEGEND

 DENOTES MECHANIZED CLEARING

 DENOTES HAND CLEARING

 DENOTES EXCAVATION
IN WETLAND

SCALE
1" = 40'

SITE 12

SITE 13

SCALE
1" = 40'

DETAIL Z
SPECIAL LATERAL 'V' DITCH
(Not to Scale)

FOR -L- PROFILE, SEE SHEET 52

PERMIT DRAWINGS
SHEET ____ OF ____

MATCH LINE TO SHEET 25
STA. 277+00

MATCH LINE TO SHEET 27
STA. 290+00

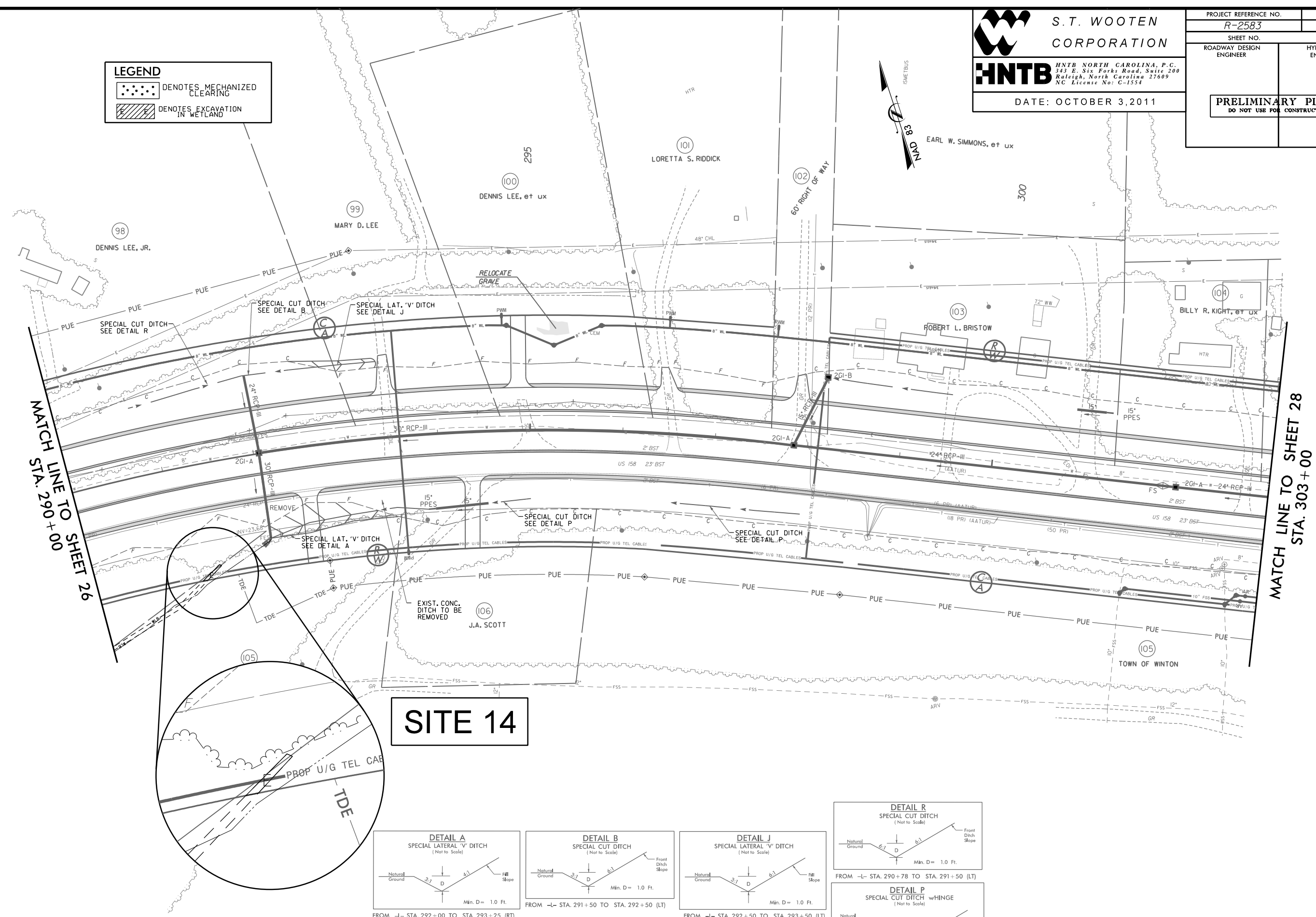
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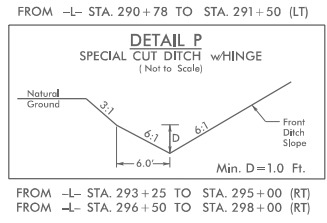
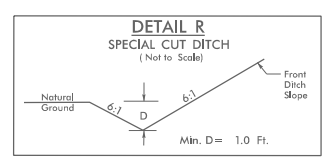
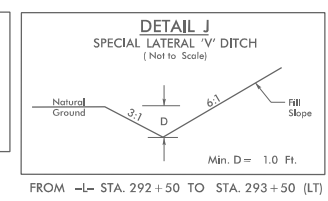
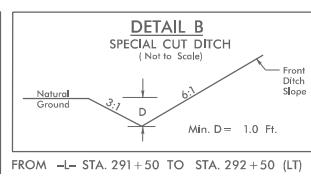
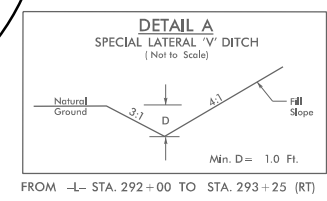
LEGEND

 DENOTES MECHANIZED CLEARING

 DENOTES EXCAVATION IN WETLAND



SITE 14



FOR -L- PROFILE, SEE SHEET 53

PERMIT DRAWINGS
SHEET ____ OF ____

REVISIONS

8/17/99

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$$$$$!SERNAME$$$$$
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8/17/99

REVISIONS

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LEGEND

 DENOTES MECHANIZED CLEARING

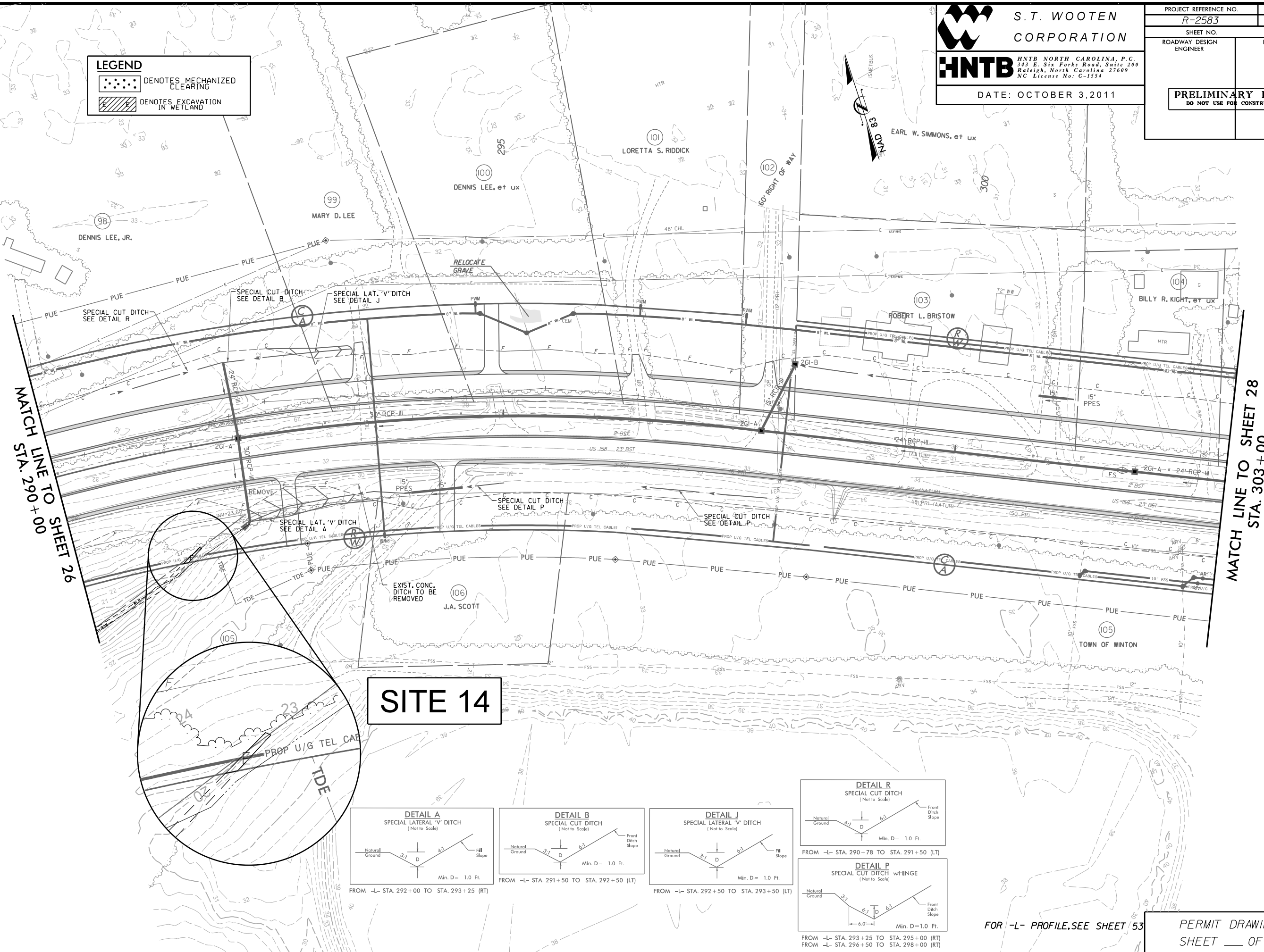
 DENOTES EXCAVATION IN WETLAND

 **S.T. WOOTEN CORPORATION**

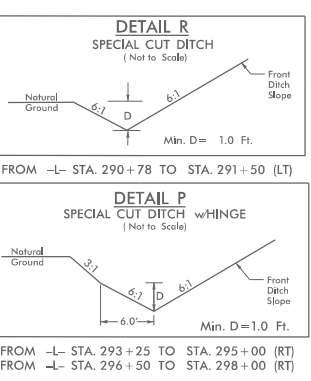
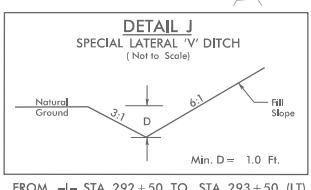
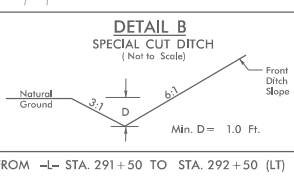
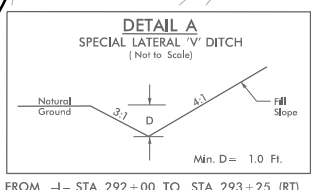
HNTB HNTB NORTH CAROLINA, P.C.
343 E. Six Forks Road, Suite 200
Raleigh, North Carolina 27609
NC License No: C-1554

DATE: OCTOBER 3, 2011

PROJECT REFERENCE NO. <i>R-2583</i>		SHEET NO. <i>27</i>	
SHEET NO.			
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION			



SITE 14



FOR -L- PROFILE, SEE SHEET 53

PERMIT DRAWINGS
SHEET ____ OF ____

8/17/99

10/31/55 AM
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S:\2583\2583.pr-m.psh_30A.dgn

REVISIONS

LEGEND

	DENOTES FILL IN WETLAND
	DENOTES MECHANIZED CLEARING
	DENOTES EXCAVATION IN WETLAND



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NC License No: C-1554

DATE: OCTOBER 3, 2011

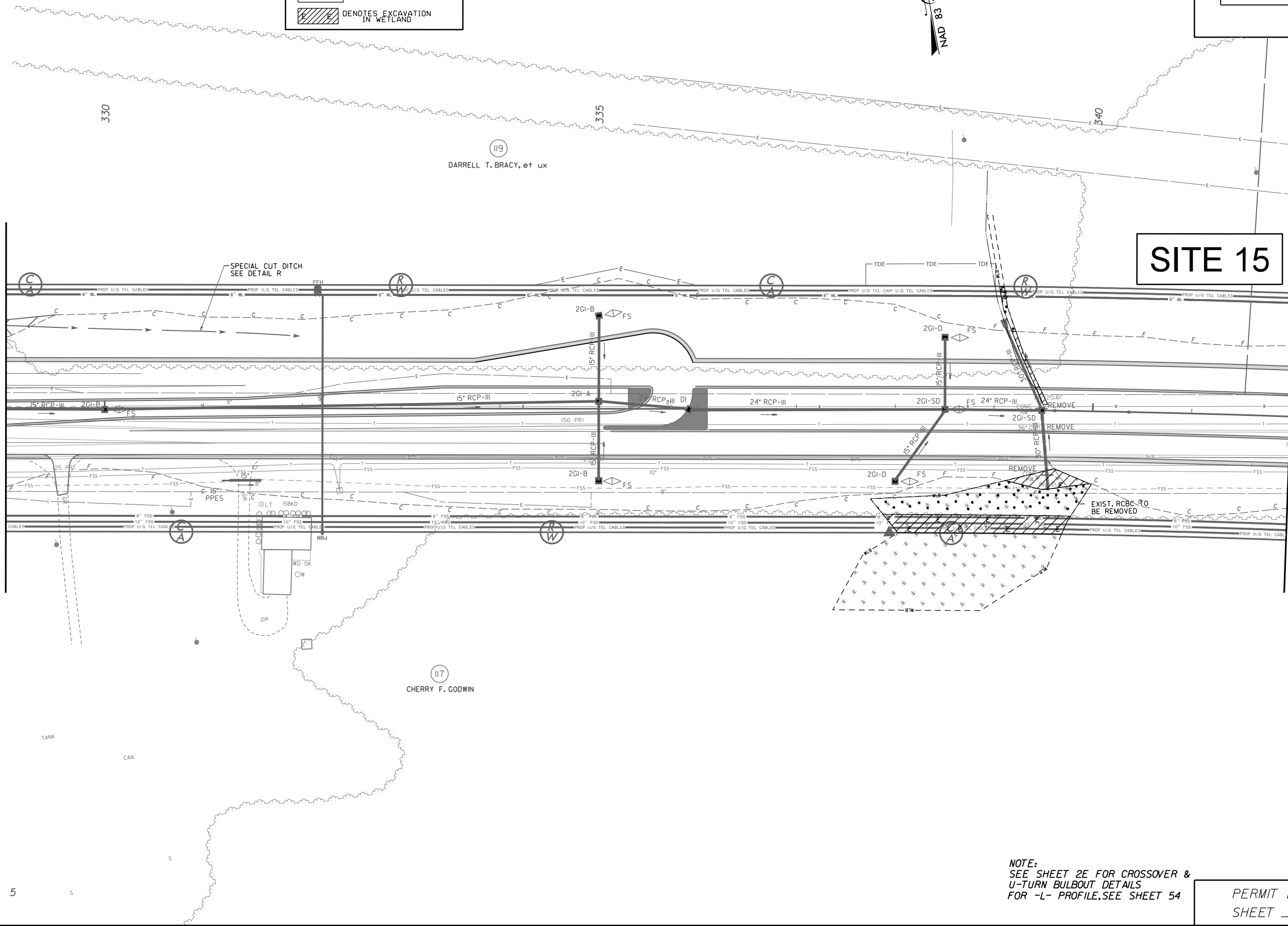
PROJECT REFERENCE NO.		SHEET NO.
R-2583		30
SHEET NO.		ROADWAY DESIGN ENGINEER
		HYDRAULICS ENGINEER
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION		



MATCH LINE TO SHEET 29
STA. 329+00

MATCH LINE TO SHEET 31
STA. 342+00

SITE 15



NOTE:
SEE SHEET 2E FOR CROSSOVER &
U-TURN BULBOUT DETAILS
FOR -L- PROFILE, SEE SHEET 54

PERMIT DRAWINGS
SHEET ____ OF ____

8/17/99

REVISIONS

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R-2583 pr-m.psh_30B.dgn
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Raleigh, North Carolina 27609
NC License No: C-1554

DATE: OCTOBER 3, 2011

PROJECT REFERENCE NO.	SHEET NO.
R-2583	30
SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

LEGEND

DENOTES FILL IN WETLAND

DENOTES MECHANIZED CLEARING

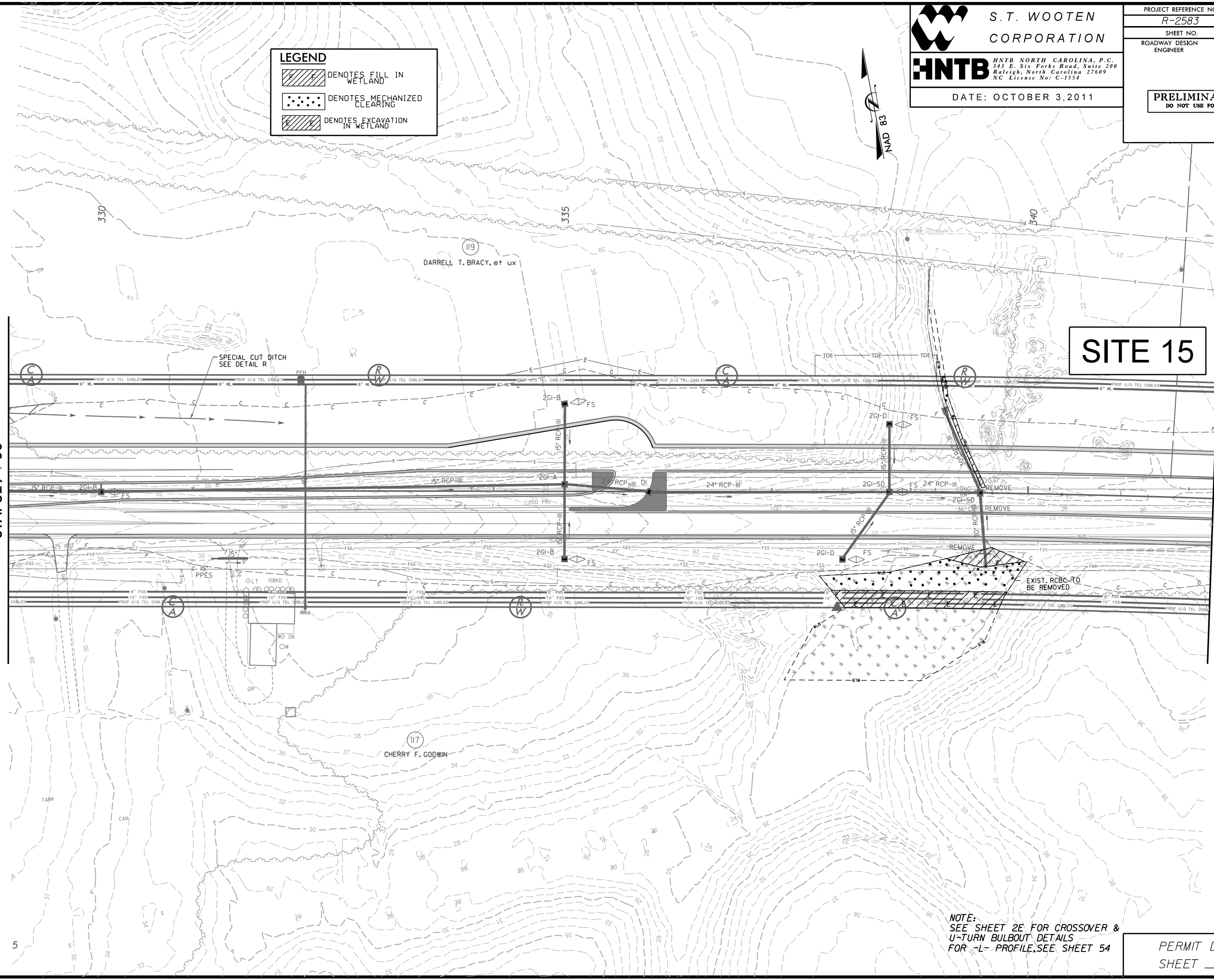
DENOTES EXCAVATION IN WETLAND



SITE 15

MATCH LINE TO SHEET 29
STA. 329+00

MATCH LINE TO SHEET 31
STA. 342+00



NOTE:
SEE SHEET 2E FOR CROSSOVER &
U-TURN BULBOUT DETAILS
FOR 'L' PROFILE, SEE SHEET 54

PERMIT DRAWINGS
SHEET ____ OF ____

-L- STA. 339+50

WETLANDS

CLEARING LIMITS

WETLAND CROSS SECTIONS

SITE 15

 DENOTES FILL IN
WETLAND

SCALE
1"=20' HORIZONTAL
1"=20' VERTICAL

HERTFORD COUNTY
PROJECT: R-2583
US 158 WIDENING FROM
MURFREESBORO BYPASS
TO US 13 WEST OF WINTON

SHEET OF 10/3/11

5/14/99

9:54:29 AM
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...\\r2583_prm-wetland-xsc.dgn



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343 E. Six Forks Road, Suite 200
Raleigh, North Carolina 27609
NC License No: C-1554

DATE: OCTOBER 3, 2011

PROJECT REFERENCE NO. R-2583		SHEET NO. 31
SHEET NO. ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION		

LEGEND

 DENOTES IMPACTS IN SURFACE WATER

 DENOTES FILL IN WETLAND

 DENOTES MECHANIZED CLEARING

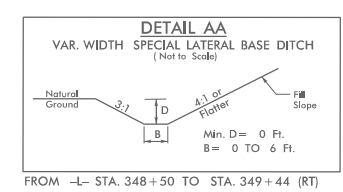
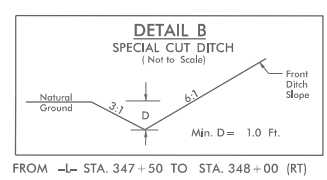
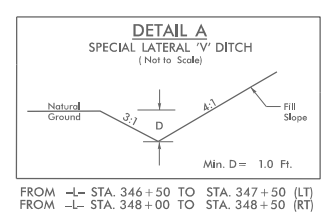
 DENOTES TEMPORARY IMPACTS IN SURFACE WATER

MATCH LINE TO SHEET 30
STA. 342+00

MATCH LINE TO SHEET 32
STA. 355+00

SITE 16

CHERRY F. GODWIN



FOR -L- PROFILE, SEE SHEETS 54 & 55

PERMIT DRAWINGS
SHEET ____ OF ____

8/17/99
4/27/12 PM 1:59 PM 2583 pr-m-psh_31A.dgn
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8/17/99

REVISIONS

142836 PM 11/5/99 2583 pr-m.psh_31B.dgn



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Raleigh, North Carolina 27609
NC License No: C-1554

DATE: OCTOBER 3, 2011

PROJECT REFERENCE NO. R-2583	SHEET NO. 31
SHEET NO. ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

MATCH LINE TO SHEET 30
STA. 342+00

MATCH LINE TO SHEET 32
STA. 355+00

LEGEND

 DENOTES IMPACTS IN SURFACE WATER

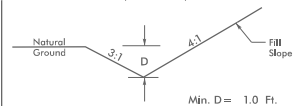
 DENOTES FILL IN WETLAND

 DENOTES MECHANIZED CLEARING

 DENOTES TEMPORARY IMPACTS IN SURFACE WATER

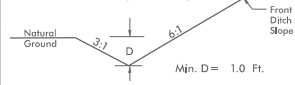
SITE 16

DETAIL A
SPECIAL LATERAL 'V' DITCH
(Not to Scale)



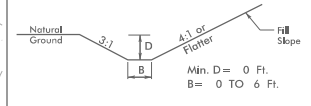
FROM -L- STA. 346+50 TO STA. 347+50 (LT)
FROM -L- STA. 348+00 TO STA. 348+50 (RT)

DETAIL B
SPECIAL CUT DITCH
(Not to Scale)



FROM -L- STA. 347+50 TO STA. 348+00 (RT)

DETAIL AA
VAR. WIDTH SPECIAL LATERAL BASE DITCH
(Not to Scale)



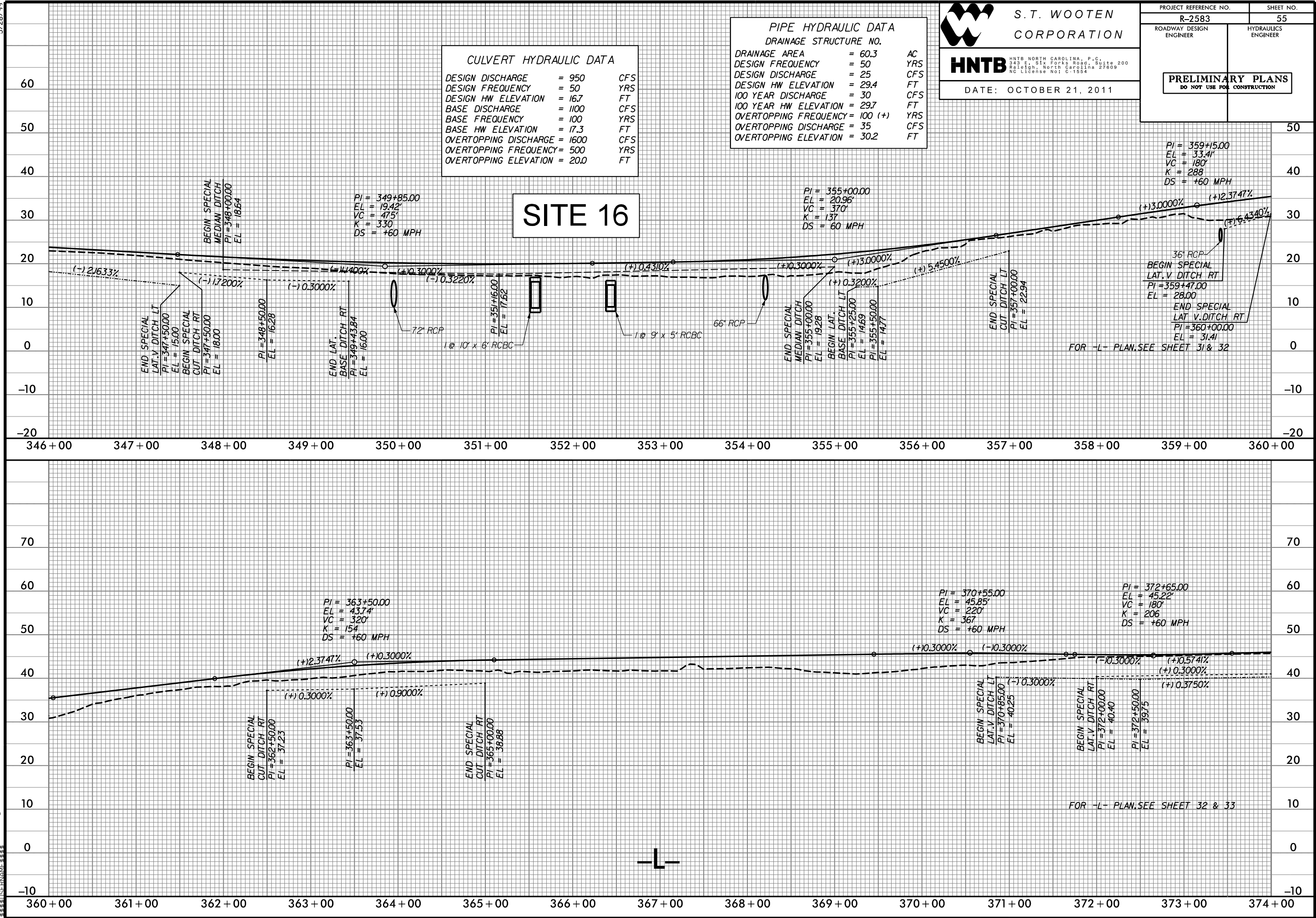
FROM -L- STA. 348+50 TO STA. 349+44 (RT)

FOR -L- PROFILE, SEE SHEETS 54 & 55

PERMIT DRAWINGS
SHEET ____ OF ____

5/28/99

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5/14/99
9:54:57 AM
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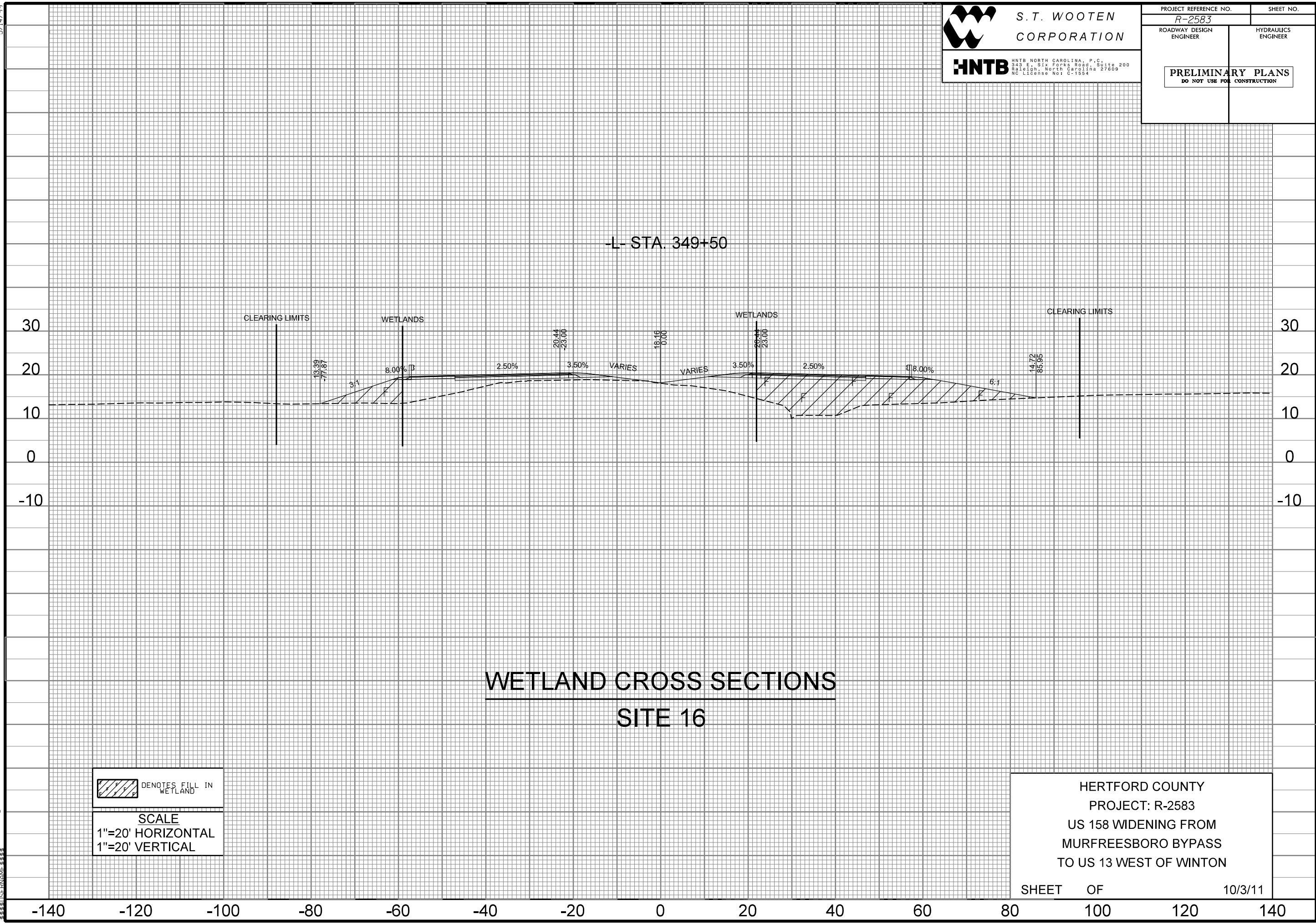


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HNTB NORTH CAROLINA, P.C.
349 E. SIX FORKS ROAD, SUITE 200
RALEIGH, NORTH CAROLINA 27609
NC LICENSE NO: C-1554

PROJECT REFERENCE NO.		SHEET NO.	
R-2583			
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION			



5/14/99



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HNTB NORTH CAROLINA, P.C.
343 E. SIX FORKS ROAD, SUITE 200
RALEIGH, NORTH CAROLINA 27609
NC LICENSE NO. C-1554

PROJECT REFERENCE NO.

R-2583

SHEET NO.

ROADWAY DESIGN
ENGINEER

HYDRAULICS
ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

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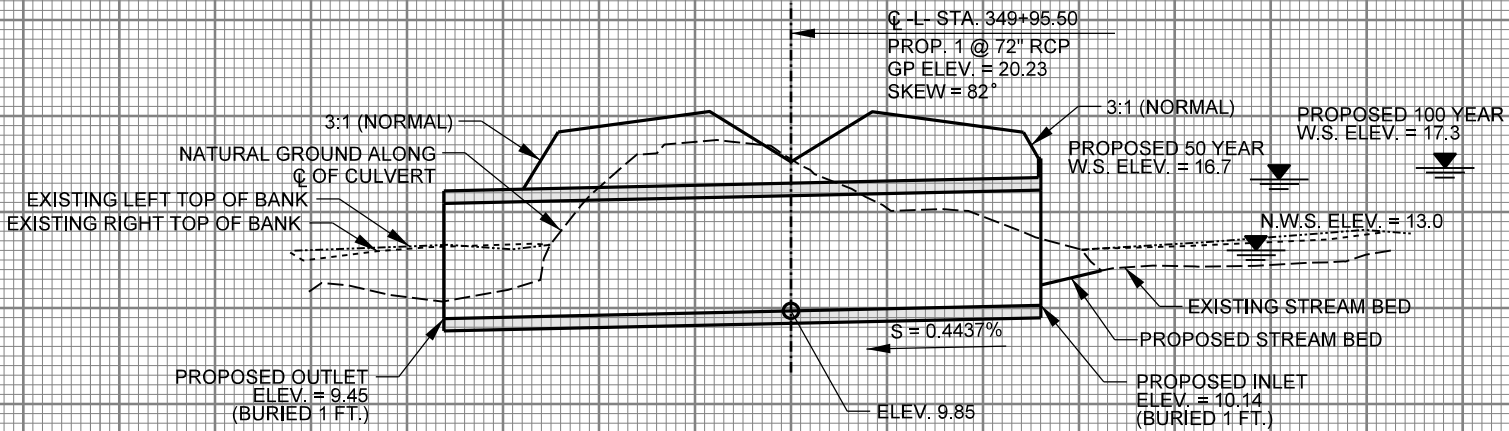
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PROFILE ALONG STRUCTURE
SITE 16

SCALE
1"=50' HORIZONTAL
1"=10' VERTICAL

HERTFORD COUNTY
PROJECT: R-2583
US 158 WIDENING FROM
MURFREESBORO BYPASS
TO US 13 WEST OF WINTON

SHEET OF

10/3/11

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5/14/99
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S.T. WOOTEN
CORPORATION

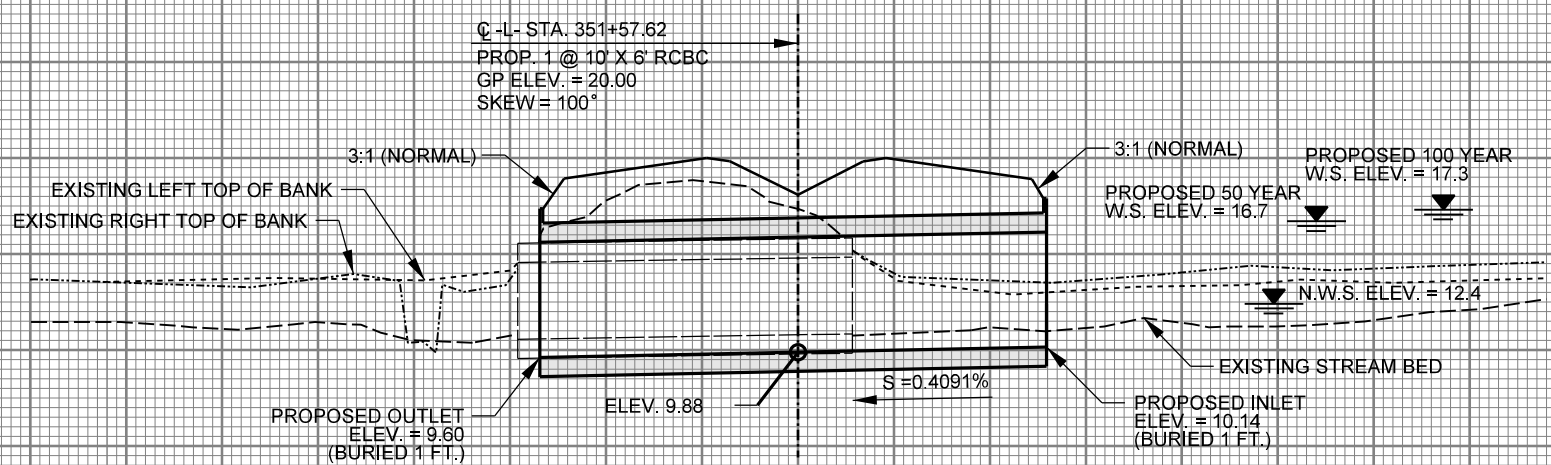


HNTB NORTH CAROLINA, P.C.
343 E. SIX FORKS ROAD, SUITE 200
RALEIGH, NORTH CAROLINA 27609
NC LICENSE NO. C-1554

PROJECT REFERENCE NO.		SHEET NO.	
R-2583			
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION			

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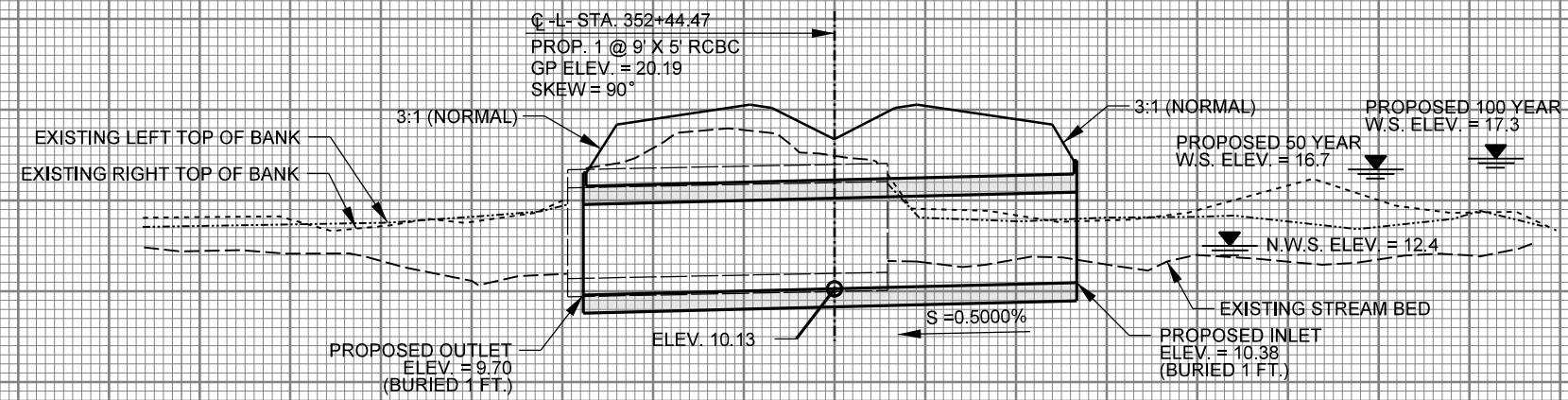


PROFILE ALONG STRUCTURE
SITE 16

SCALE
1"=50' HORIZONTAL
1"=10' VERTICAL

HERTFORD COUNTY
PROJECT: R-2583
US 158 WIDENING FROM
MURFREESBORO BYPASS
TO US 13 WEST OF WINTON
SHEET OF 10/3/11

200 150 100 50 0 50 100 150 200



PROFILE ALONG STRUCTURE

SCALE
1"=50' HORIZONTAL
1"=10' VERTICAL

HERTFORD COUNTY
PROJECT: R-2583
US 158 WIDENING FROM
MURFREESBORO BYPASS
TO US 13 WEST OF WINTON

SHEET	OF	10/3/11
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5/14/99



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HNTB NORTH CAROLINA, P.C.
343 E. SIX FORKS ROAD, SUITE 200
RALEIGH, NORTH CAROLINA 27609
NC LICENSE NO. C-1554

PROJECT REFERENCE NO.

R-2583

SHEET NO.

ROADWAY DESIGN
ENGINEER

HYDRAULICS
ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

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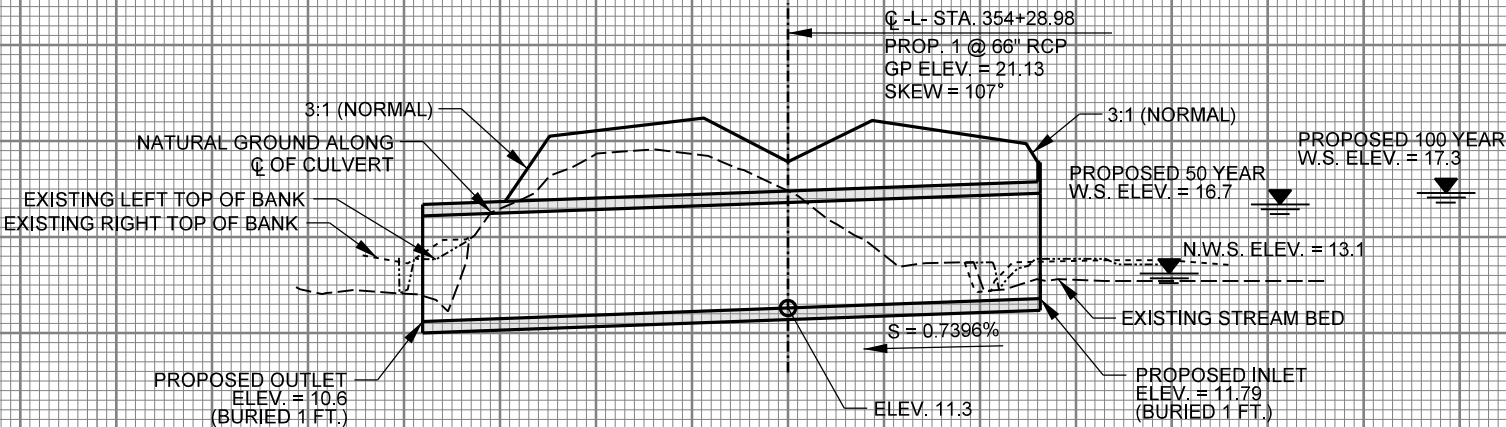
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PROFILE ALONG STRUCTURE
SITE 16

SCALE
1"=50' HORIZONTAL
1"=10' VERTICAL

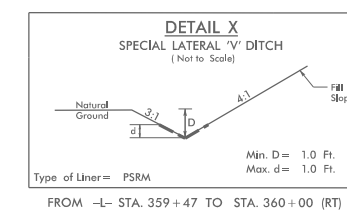
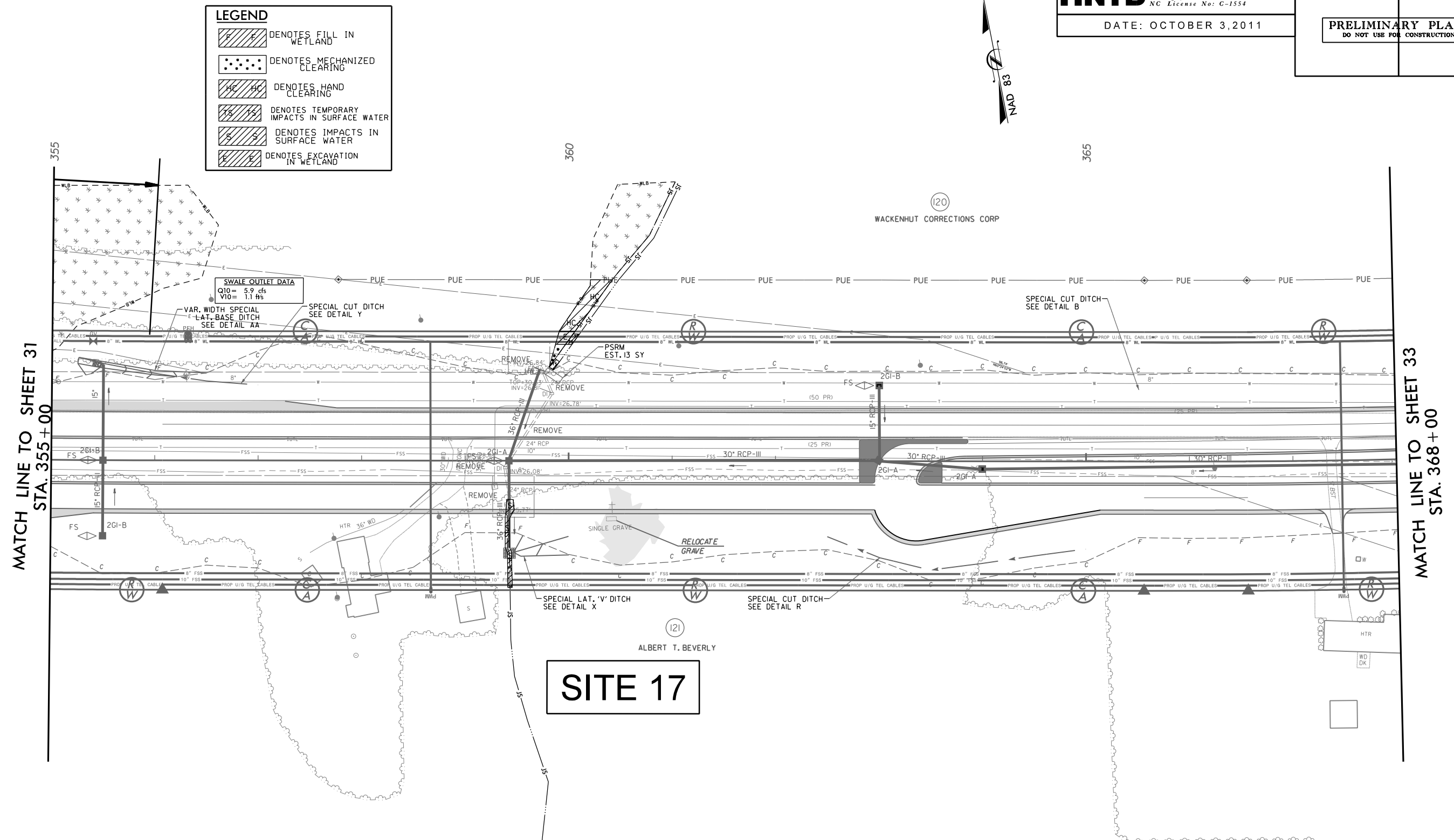
HERTFORD COUNTY
PROJECT: R-2583
US 158 WIDENING FROM
MURFREESBORO BYPASS
TO US 13 WEST OF WINTON

SHEET OF

10/3/11

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33881358NAME.dwg

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION



NOTE:
SEE SHEET 2E FOR CROSSOVER &
U-TURN BULBOUT DETAILS
FOR -L- PROFILE, SEE SHEET 55

PERMIT DRAWINGS
SHEET ____ OF ____

REVISIONS

MATCH LINE TO SHEET 31
STA. 355+00

MATCH LINE TO SHEET 33
STA. 368+00

SITE 17

10:41:45 AM
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\$\$\$\$\$!SERNAME\$\$\$\$\$

8/17/99

REVISIONS

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CORPORATION

HNTB NORTH CAROLINA, P.C.
343 E. Six Forks Road, Suite 200
Raleigh, North Carolina 27609
NC License No: C-1554

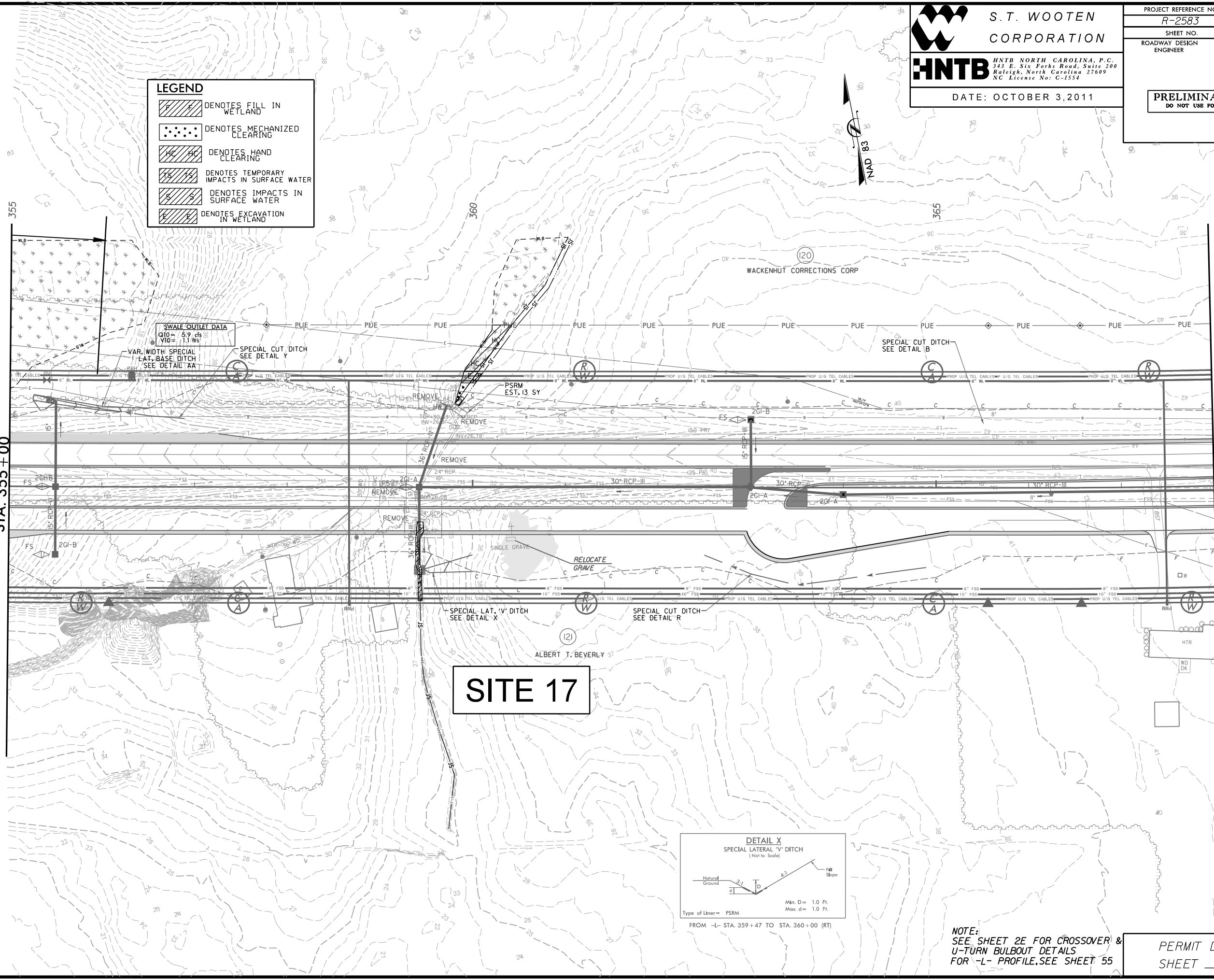
DATE: OCTOBER 3, 2011

PROJECT REFERENCE NO.	SHEET NO.
R-2583	32
SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

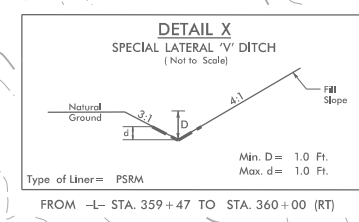
LEGEND	
	DENOTES FILL IN WETLAND
	DENOTES MECHANIZED CLEARING
	DENOTES HAND CLEARING
	DENOTES TEMPORARY IMPACTS IN SURFACE WATER
	DENOTES IMPACTS IN SURFACE WATER
	DENOTES EXCAVATION IN WETLAND

MATCH LINE TO SHEET 31
STA. 355+00

MATCH LINE TO SHEET 33
STA. 368+00



SITE 17



NOTE:
SEE SHEET 2E FOR CROSSOVER &
U-TURN BULBOUT DETAILS
FOR -L- PROFILE, SEE SHEET 55

PERMIT DRAWINGS
SHEET ____ OF ____