US Army Corps
Of Engineers
Wilmington District

PUBLIC NOTICE

Issue Date: March 28, 2013
Comment Deadline: April 12, 2013
Corps Action ID #: SAW-200901730
TIP Project No. C-4901 A, D

The Wilmington District, Corps of Engineers (Corps) issued a Public Notice on January 30, 2013, concerning an application received from Mr. Marc Hamel of the North Carolina Department of Transportation Rail Division (NCDOT Rails), seeking a Department of the Army permit authorization for permanent impacts to 1154 linear feet of jurisdictional stream channels and 3.48 acres of jurisdictional wetlands adjacent to Jimmy's Creek which is a tributary of the Yadkin River, associated with the proposed safety improvements to approximately 4.2 miles of existing rail corridor located south of Bower Station to Lake Station, south of Thomasville, in Davidson County, North Carolina. The NCDOT Rails has identified this project as TIP Project C-4901A, D. Subsequent to comments and review of the referenced Public Notice, it was discovered the calculation of impacts to jurisdictional stream channels had a discrepancy between totals determined by a gps-delineation file survey compared to the modeled and surveyed stream channel boundaries. The more detailed modeled and surveyed stream channel boundaries resulted in the determination of an additional 91 linear feet of permanent impacts to jurisdictional stream channels (revised total permanent impact to jurisdictional stream channel is 1245 linear feet). Attached is revised plans and impact summary table for the project. The foot-print of the project has not change, but attached documents include a more detailed summary of impacts to jurisdictional waters. The purpose of this Public Notice is to identify discrepancy in the impact summary to jurisdictional stream channels and offer an opportunity to comment to commenting agencies.

Specific plans, alternatives, and locations are described below and shown on the attached plans. This Public Notice and all attached plans are also available on the Wilmington District Web Site at
http://www.saw.usace.army.mil/Missions/RegulatoryPermitProgam.aspx

Applicant:
N C Department of Transportation; Rail Division
Attn: Mr. Marc Hamel
1553 Mail Service Center
Raleigh, NC 27699-1553

Authority

The Corps will evaluate this application and decide whether to issue, conditionally issue, or deny the proposed work pursuant to applicable procedures of Section 404(b) of the Clean Water Act (33U.S.C. 1344).

Location

The project area associated with the C-4901 project encompasses approximately 183.3 acres and generally consists of the area within 100 feet of the center of the existing railway and outward along Upper Lake Road (State Route [SR] 2024) and Turner Road (SR 2005). Along these roadways, the project area extends up to 1475 feet from the existing rail line with widths that range from 75 to 350 feet from the roadway center. This existing rail corridor is located south of Thomasville, in Davidson County, North Carolina. Water resources within the project area include Jimmy's Creek which part of the Yadkin River Basin (U.S. Geological Survey [USGS] Hydrologic Unit [HUC] 03040103). The approximate midpoint of the project is located at 35.8453° N., -80.1806° W.

Existing Site Conditions

The rail within the project corridor currently consists of a single track, allowing one train access to this portion of the rail at any given time. NCDOT Rails proposes to construct a second track adjacent to the existing track. The rail corridor north of Bowers and south of Lake currently has double tracks and this project will eliminate traffic bottlenecks. This section of rail previously contained two tracks; however, portions of the double track were removed as redundant in the 1960's as part of a signal system improvement project. Since that time, rail traffic has greatly increased and additional capacity and service reliability are needed. In addition, the alignments of specific curves in this section inhibit the ability to achieve high speed passenger train service.

The rail corridor is located southwest of Thomasville to just northeast of Lexington running adjacent to Jimmy's Creek in rolling topography consisting of open ridges and wooded valleys typical of the North Carolina Piedmont. Land use in the area around the rail corridor is mostly industrial with an active granite quarry, an asphalt plant, and a county landfill with a few rural residential properties including a trailer park located at the Lower Lake Road crossing.

Axiom Environmental, Inc., consultants for NCDOT Rails, conducted a jurisdictional delineation of the proposed project property. Mr. John Thomas of the Raleigh Regulatory Field Office, Wilmington District Corps of Engineers conducted site inspections with ECS Carolinas consultants to verify these jurisdictional delineations on May 4, 2010.

Applicant's Stated Purpose

This project will improve overall corridor capacity and improve passenger train schedule reliability by allowing freight and passenger trains to quickly and efficiently maneuver past one other. In addition, the implementation of this project is intended to provide a combination of alignment and safety improvements to provide high speed passenger service on one of the most heavily traveled railroads in the state.

Project Description

The rail within the project corridor currently consists of a single track, allowing one train access to this portion of the rail at any given time. The Rail Division proposes to construct a second track adjacent to the existing track. The rail corridor north of Bowers and south of Lake currently has double tracks and this project will eliminate traffic bottlenecks. This section of rail previously contained two tracks; however, portions of the double track were removed as redundant in the 1960's as part of a signal system improvement project. Since that time, rail traffic has greatly increased and additional capacity and service reliability are needed. This project is divided into two sections:

- Rail grading (C-4901A), which will include preparation for the second track, replacement of the rail bridge superstructure over Abbott's Creek, replacement of the rail bridge over Jimmy's Creek, and rehabilitation of the rail bridge over Rich Fork Creek;
- Track work (C-4901D), which includes the installation of 4.1 miles of the second track.

In addition, the alignments of specific curves in this project rail corridor inhibit the ability to achieve high speed passenger train service. The proposed project will realign the three curves within the project rail corridor that are currently greater than 1º 30' to improve them to the 90 miles per hour design speed for higher speed passenger service. This will include the 1º 54' curve beginning just south of Jimmys Creek (depicted on the attached Design Plans as "Hamby Creek Trib") and the 2º curve that it transitions into (depicted on the attached Design Plans, Sheets 10-12). This compound curve ends just north of Lower Lake Road. The proposed project will also improve the 2º curve beginning south of Abbotts Creek (Design Plans, Sheet 18). The curve realignments will also benefit freights by reducing drag and hence reducing fuel consumption, emissions, and wheel noise. Therefore, NCDOT's track improvements within the corridor focus on increasing safety, track capacity, reliability, and train speed.

Based upon 65 percent plans dated November 15, 2012, and Permit Drawings dated December 6, 2012, the project is anticipated to permanently impact approximately 1154 linear feet of streams (revised to 1254 linear feet) and approximately 3.48 acres of jurisdictional wetland areas. In addition to jurisdictional wetlands, one isolated wetland area is anticipated to receive 0.53 acre of impact. All impacts to jurisdictional streams and jurisdictional and isolated wetland areas are anticipated in conjunction with the C-4901A portion of the project. The attached Permit Drawings depict the locations and extents of jurisdictional and isolated area impacts, and the attached Wetland Permit Impact Summary provides details of impacts at each impact site.

Compensatory mitigation for this project is anticipated from warm water stream and riparian wetland mitigation credits from the NCEEP. Based upon agreements stipulated in the "Memorandum of Agreement Among the North Carolina Department of Environment and Natural Resources, the North Carolina Department of Transportation, and the United States Army Corps of Engineers, Wilmington District" (MOA), it is understood that the NCEEP will assume responsibility for satisfying the remainder of Clean Water Act compensatory mitigation requirements for this project (1,474 warm-water stream mitigation credits and 6.77 riparian wetland mitigation credits). A request by applicant has been made to NCEEP for the additional 91 linear feet of jurisdictional stream channel impacts. The offsetting mitigation provided by the NCEEP will derive from an inventory of assets already in existence within U.S. Geological Survey (USGS) Hydrologic Unit (HU) 03040103. A Mitigation Acceptance Letter from the NCEEP, dated January 4, 2013, was included in the permit request package.

Detailed Study Alternatives

The ranges of alternatives that have been considered include the No-Build Alternative, Alternate Mode of Transportation Alternative, and the Build Alternative within the existing rail corridor that consist of the Best-Fit improvements to the existing facility. After a preliminary evaluation, it was determine that the Best-Fit alternative should be carried forward for detailed study due to its ability to meet the stated Purpose and Need.

Other Required Authorizations

This notice and all applicable application materials are being forwarded to the appropriate State agencies for review. The Corps will generally not make a final permit decision until the North Carolina Division of Water Quality (NCDWQ) issues, denies, or waives State certification required by Section 401 of the Clean Water Act (PL 92-500). The receipt of the application and this public notice combined with appropriate application fee at the

North Carolina Division of Water Quality central office in Raleigh will constitute initial receipt of an application for a 401 Water Quality Certification. A waiver will be deemed to occur if the NCDWQ fails to act on this request for certification within sixty days of the date of the receipt of this notice in the NCDWQ Central Office. Additional information regarding the Clean Water Act certification may be reviewed at the NCDWQ Central Office, 401 Oversight and Express Permits Unit, 2321 Crabtree Boulevard, Raleigh, North Carolina 27604-2260. All persons desiring to make comments regarding the application for certification under Section 401 of the Clean Water Act should do so in writing delivered to the North Carolina Division of Water Quality (NCDWQ), 1650 Mail Service Center, Raleigh, North Carolina 27699-1650 Attention: Ms. Karen Higgins by April 12, 2013.

Essential Fish Habitat

This notice initiates the Essential Fish Habitat (EFH) consultation requirements of the Magnuson-Stevens Fishery Conservation and Management Act. The Corps' initial determination is that the proposed project will not adversely impact EFH or associated fisheries managed by the South Atlantic or Mid Atlantic Fishery Management Councils or the National Marine Fisheries Service.

Cultural Resources

The Corps has consulted the latest published version of the National Register of Historic Places and is not aware that any registered properties, or properties listed as being eligible for inclusion therein are located within the project area or will be affected by the proposed work. Presently, unknown archeological, scientific, prehistoric, or historical data may be located within the project area and/or could be affected by the proposed work.

Endangered Species

The Corps has reviewed the project area, examined all information provided by the applicant and consulted the latest North Carolina Natural Heritage Database. Based on available information, the Corps is not aware of the presence of species listed as threatened or endangered or their critical habitat formally designated pursuant to the Endangered Species Act of 1973 within the project area. A final determination on the effects of the proposed project will be made upon additional review of the project and completion of any necessary biological assessment and/or consultation with the U.S. Fish and Wildlife Service and/or National Marine Fisheries Service.

Evaluation

The decision whether to issue a permit will be based on an evaluation of the probable impacts, including cumulative impacts, of the proposed activity on the public interest. That decision will reflect the national concern for both protection and utilization of important resources. The benefit which reasonably may be expected to accrue from the proposal must be balanced against its reasonably foreseeable detriments. All factors which may be relevant to the proposal will be considered including the cumulative effects thereof; among those are conservation, economics, aesthetics, general environmental concerns, wetlands, historic properties, fish and wildlife values, flood hazards, flood plain values (in accordance with Executive Order 11988), land use, navigation, shoreline erosion and accretion, recreation, water supply and conservation, water quality, energy needs, safety, food and fiber production, mineral needs, considerations of property ownership, and, in general, the needs and welfare of the people. For activities involving the discharge of dredged or fill materials in waters of the United States, the evaluation of the impact of the activity on the public interest will include application of the Environmental Protection Agency's 404(b)(1) guidelines.

Commenting Information

The Corps of Engineers is soliciting comments from the public; Federal, State and local agencies and officials, including any consolidate State Viewpoint or written position of the Governor; Indian Tribes and other interested parties in order to consider and evaluate the impacts of this proposed activity. Any comments received will be considered by the Corps of Engineers to determine whether to issue, modify, condition or deny a permit for this proposal. To make this decision, comments are used to assess impacts on endangered species, historic properties, water quality, general environmental effects and the other public interest factors listed above. Comments are used in the preparation of an Environmental Assessment (EA) and/or an Environmental Impact Statement (EIS) pursuant to the National Environmental Policy Act (NEPA). Comments are also used to determine the need for a public hearing and to determine the overall public interest of the proposed activity.

Any person may request, in writing, within the comment period specified in this notice, that a public hearing be held to consider the application. Requests for public hearings shall state, with particularity, the reasons for holding a public hearing. Requests for a public hearing shall be granted, unless the District Engineer determines that the issues raised are insubstantial or there is otherwise no valid interest to be served by a hearing.

Written comments pertinent to the proposed work, as outlined above, will be received by the Corps of Engineers, Wilmington District, until 5pm, April 12, 2013. Comments should be submitted to John Thomas, Raleigh Regulatory Field Office, 3331 Heritage Trade Drive, Suite 105, Wake Forest, North Carolina 27587.

CONTRACT: C203160 TIP PROJECT: C-4901A

NCDOT
RAIL DIVISION

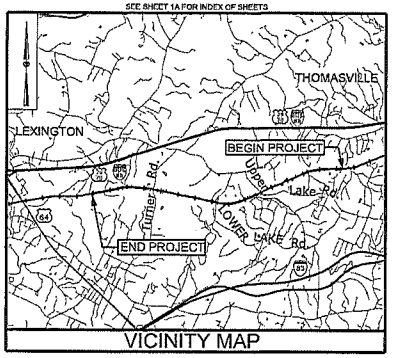
DAVIDSON COUNTY

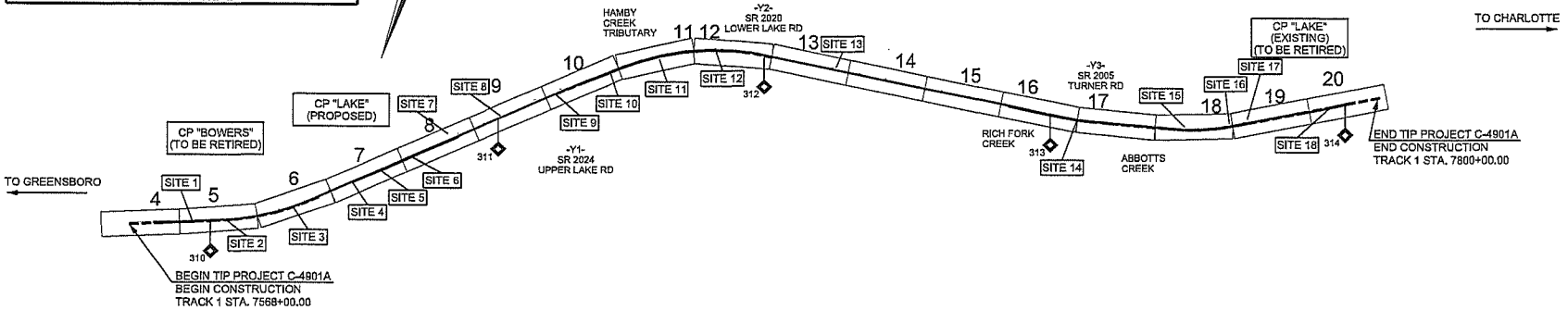
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	C-4901A	1	

STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION
49010.1.STR03T1B		P.E.
43219.2.STR02C4901		ROW
49010.3.STR01T4A		UTIL. & CONST.

PROJECT TITLE: NCRR/NS MAINLINE BOWERS TO LAKE RAILROAD ROADBED (MP 309.8 TO MP 314.0)

TYPE OF WORK: GRADING, DRAINAGE, STRUCTURE





WETLAND AND STREAM IMPACTS

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

PERMIT DRAWINGS
DATE: MARCH 12, 2013

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

THIS PROJECT IS NOT WITHIN ANY MUNICIPAL BOUNDARIES

GRAPHIC SCALES

PLANS 50 0 50 100

PROFILE (HORIZONTAL) 50 0 50 100

PROFILE (VERTICAL) 5 0 5 20

PROJECT LENGTH

LENGTH OF RAIL TIP PROJECT	4.302 MILES
LENTGH OF STRUCTURES TIP PROJECT	0.092 MILES
TOTAL LENGTH OF TIP PROJECT	4.394 MILES

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

2012 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE: AUGUST 2012

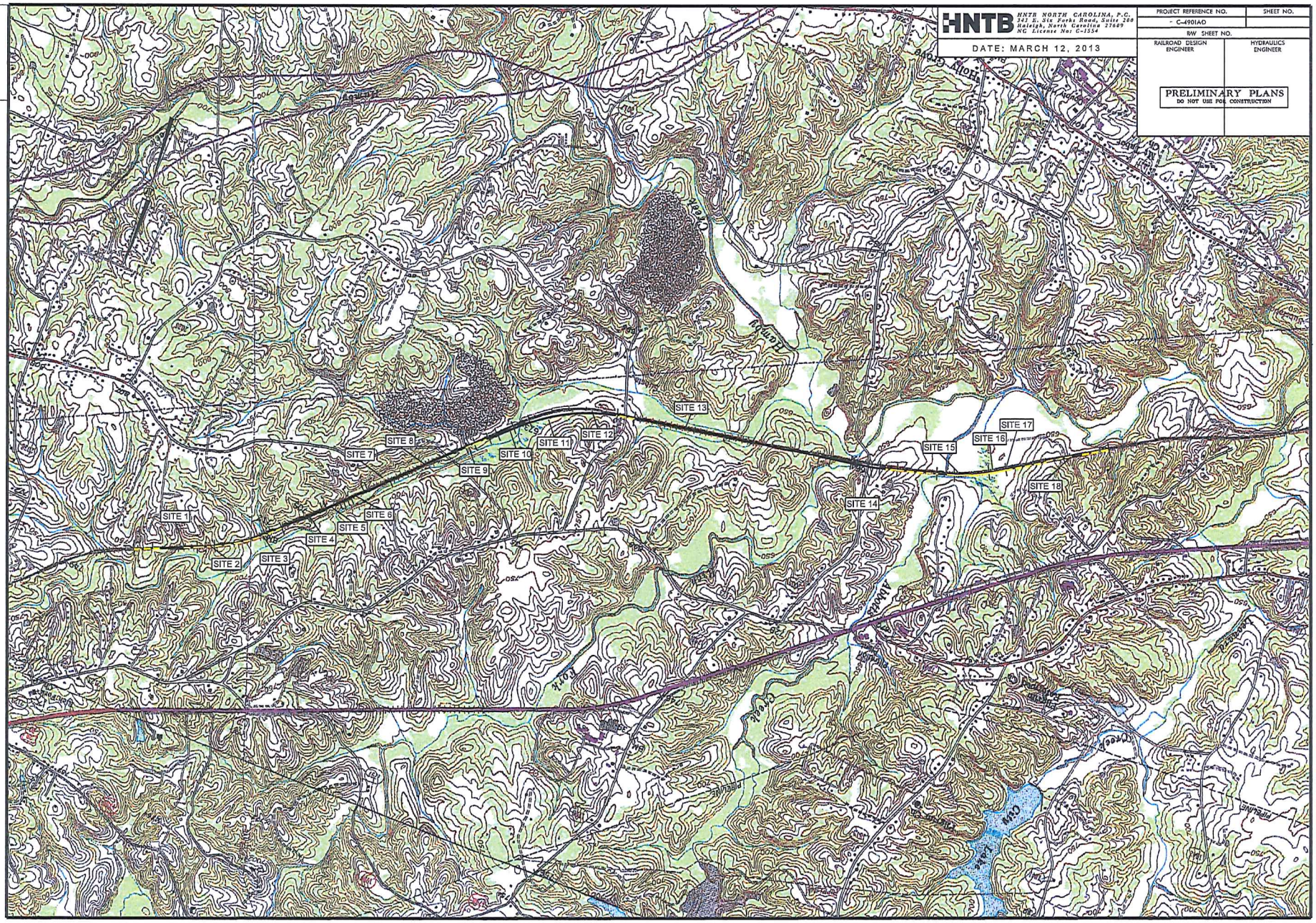
LETTING DATE: JUNE 2013

COREY VERNIER, P.E.
RAIL PROJECT ENGINEER
ENRICO ROQUE, P.E.
RAIL PROJECT DESIGN ENGINEER
DAVID HAWKINS, P.E.
STRUCTURE PROJECT ENGINEER
JAMES BYRD, P.E.
HYDRAULICS PROJECT ENGINEER
JASON ORTHNER, P.E.
NCDOT PROJECT MANAGER

RAIL ENGINEER
SIGNATURE: P.E.

HYDRAULICS ENGINEER
SIGNATURE: P.E.

NC DEPARTMENT OF TRANSPORTATION
RAIL DIVISION
ENGINEERING AND SAFETY BRANCH
CAPITAL YARD
1553 MAIL SERVICE CENTER
RALEIGH, NC 27699-1553



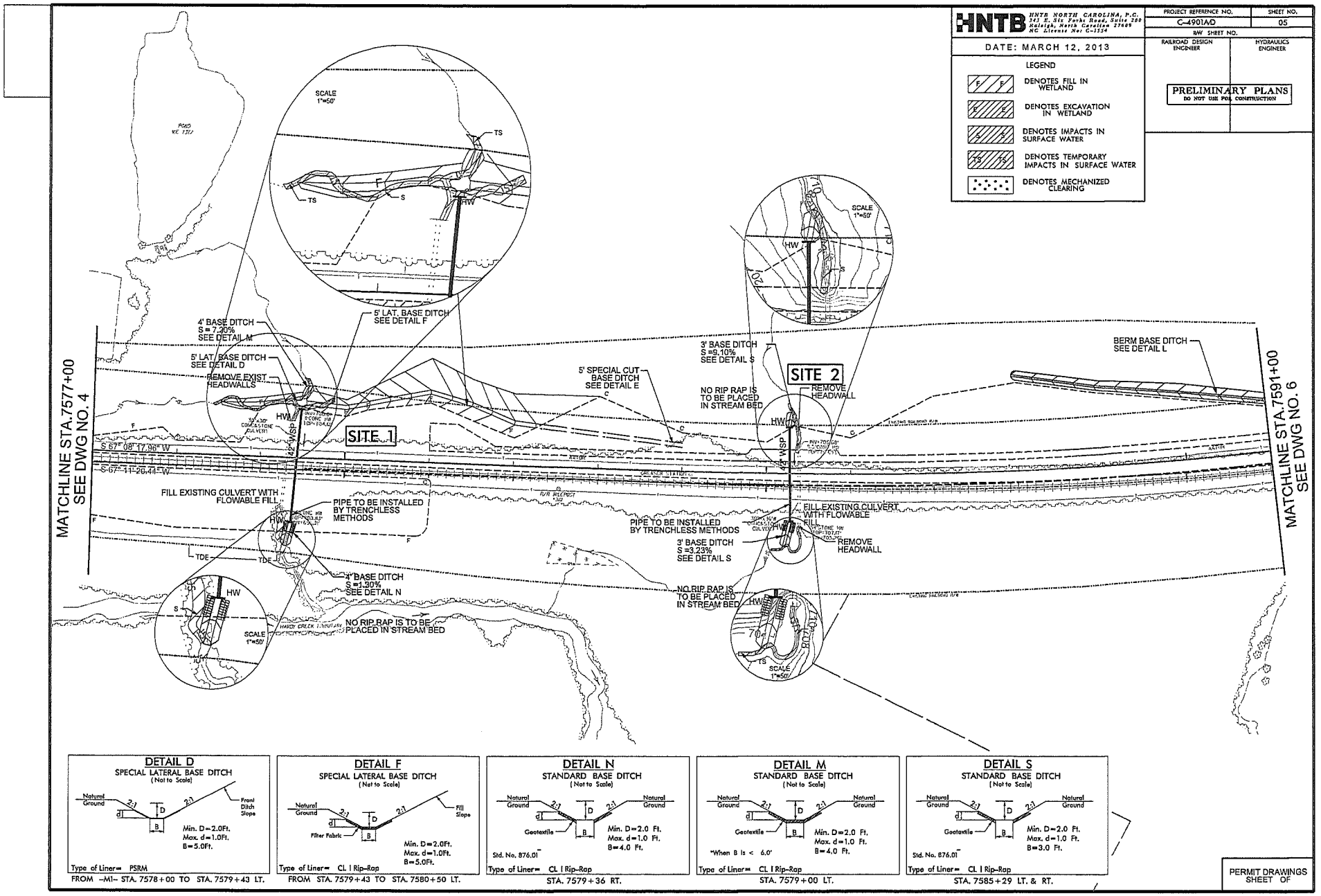
HNTB

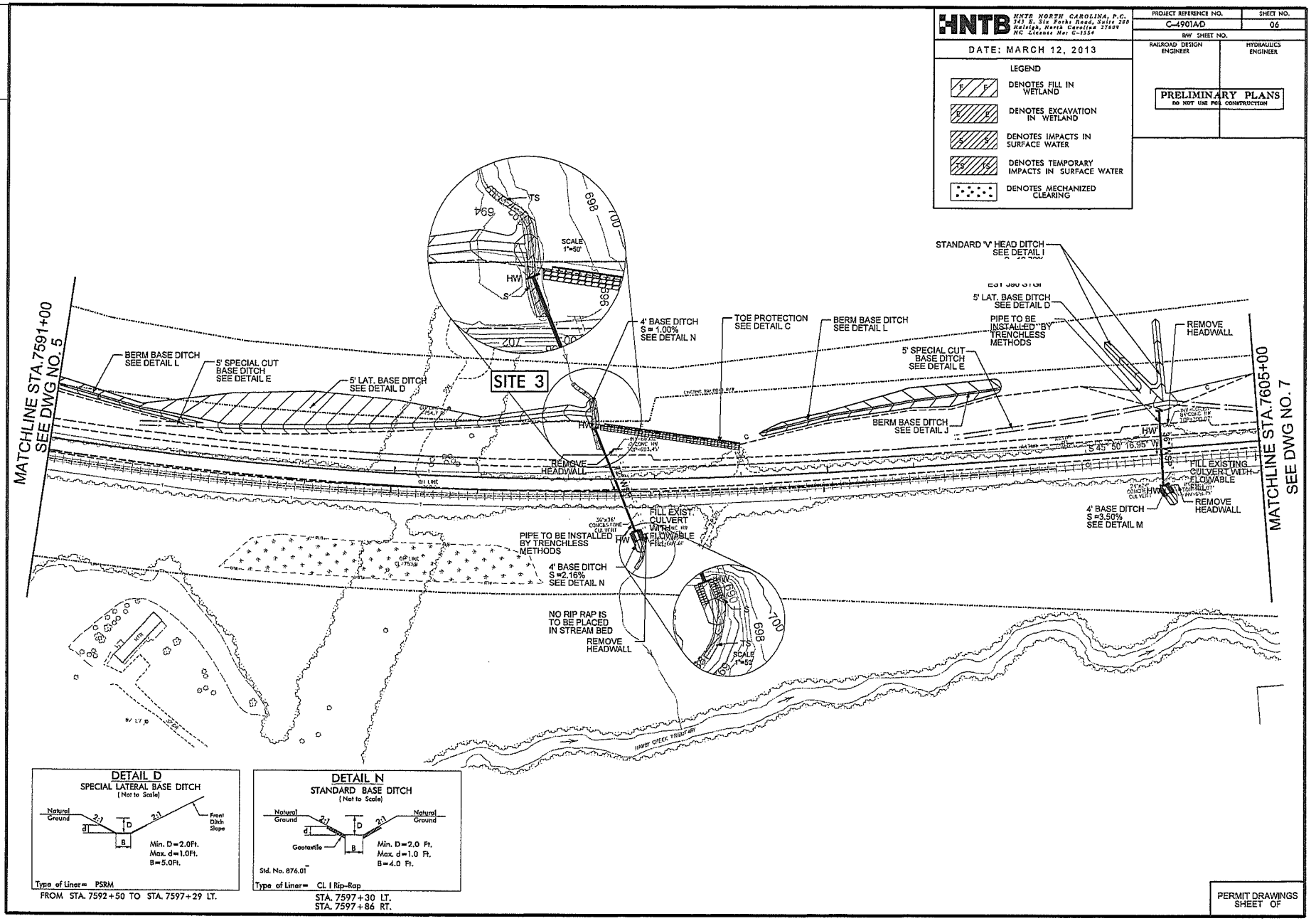
HNTB NORTH CAROLINA, P.C.
343 E. Six Forks Road, Suite 200
Raleigh, North Carolina 27609
NC License No: C-1554

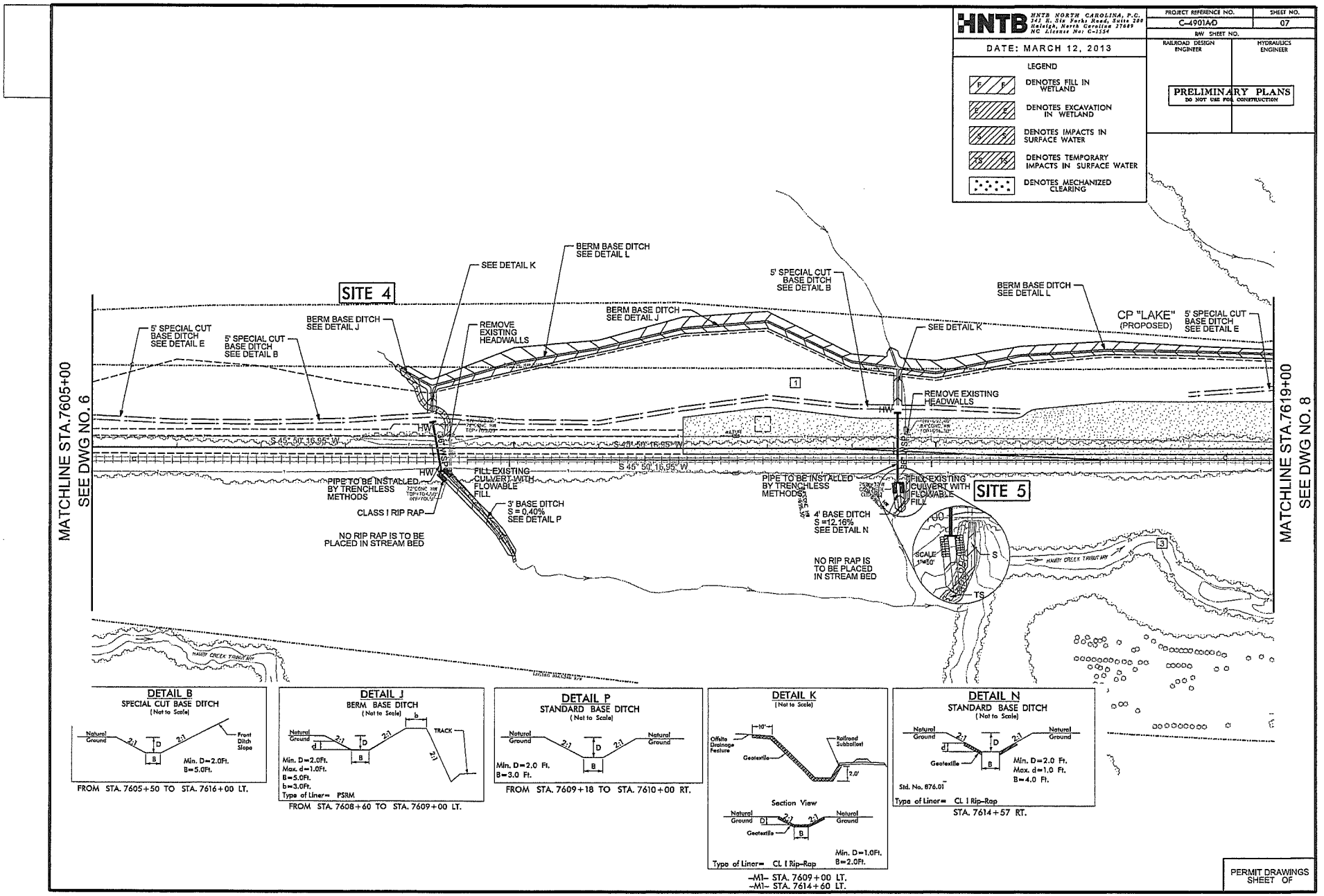
DATE: MARCH 12, 2013

PROJECT REFERENCE NO.	SHEET NO.
C-4901AD	
RW SHEET NO.	
RAILROAD DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION


HNTB NORTH CAROLINA, P.C.
343 E. Six Forks Road, Suite 200
Raleigh, North Carolina 27609
NC License No: C-1554
PROJECT REFERENCE NO. C-4901AD
SHEET NO. 05
R/W SHEET NO.
RAILROAD DESIGN ENGINEER
HYDRAULICS ENGINEER
DATE: MARCH 12, 2013
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION
LEGEND
DENOTES FILL IN WETLAND
DENOTES EXCAVATION IN WETLAND
DENOTES IMPACTS IN SURFACE WATER
DENOTES TEMPORARY IMPACTS IN SURFACE WATER
DENOTES MECHANIZED CLEARING
MATCHLINE STA.7577+00 SEE DWG NO. 4
MATCHLINE STA.7591+00 SEE DWG NO. 6
SITE 1
SITE 2
SCALE 1"=50'
4' BASE DITCH S = 7.20% SEE DETAIL M
5' LAT. BASE DITCH SEE DETAIL D
REMOVE EXIST. HEADWALLS
5' LAT. BASE DITCH SEE DETAIL F
5' SPECIAL CUT BASE DITCH SEE DETAIL E
3' BASE DITCH S =9.10% SEE DETAIL S
BERM BASE DITCH SEE DETAIL L
NO RIP RAP IS TO BE PLACED IN STREAM BED
REMOVE HEADWALL
FILL EXISTING CULVERT WITH FLOWABLE FILL
PIPE TO BE INSTALLED BY TRENCHLESS METHODS
3' BASE DITCH S =3.23% SEE DETAIL S
4' BASE DITCH S =1.90% SEE DETAIL N
NO RIP RAP IS TO BE PLACED IN STREAM BED
S 87° 08' 17.36" W
S 67° 11' 20.41" W
TDE
HW
TS
DETAIL D
SPECIAL LATERAL BASE DITCH
(Not to Scale)
Natural Ground
Front Ditch Slope
Min. D=2.0Ft.
Max. d=1.0Ft.
B=5.0Ft.
Type of Liner= PSRM
FROM -M1- STA. 7578+00 TO STA. 7579+43 LT.
DETAIL F
SPECIAL LATERAL BASE DITCH
(Not to Scale)
Fill Slope
Filter Fabric
Min. D=2.0Ft.
Max. d=1.0Ft.
B=5.0Ft.
Type of Liner= CL I Rip-Rap
FROM STA. 7579+43 TO STA. 7580+50 LT.
DETAIL N
STANDARD BASE DITCH
(Not to Scale)
Geotextile
Min. D=2.0 Ft.
Max. d=1.0 Ft.
B=4.0 Ft.
Std. No. 876.01
Type of Liner= CL I Rip-Rap
STA. 7579+36 RT.
DETAIL M
STANDARD BASE DITCH
(Not to Scale)
Min. D=2.0 Ft.
Max. d=1.0 Ft.
B=4.0 Ft.
"When B is < 6.0'
Type of Liner= CL I Rip-Rap
STA. 7579+00 LT.
DETAIL S
STANDARD BASE DITCH
(Not to Scale)
Min. D=2.0 Ft.
Max. d=1.0 Ft.
B=3.0 Ft.
Std. No. 876.01
Type of Liner= CL I Rip-Rap
STA. 7585+29 LT. & RT.
PERMIT DRAWINGS SHEET OF


HNTB
HNTB NORTH CAROLINA, P.C.
343 E. Six Forks Road, Suite 200
Raleigh, North Carolina 27609
NC License No: C-1554
PROJECT REFERENCE NO.
C-4901AD
SHEET NO.
06
RW SHEET NO.
RAILROAD DESIGN ENGINEER
HYDRAULICS ENGINEER
DATE: MARCH 12, 2013
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION
LEGEND
DENOTES FILL IN WETLAND
DENOTES EXCAVATION IN WETLAND
DENOTES IMPACTS IN SURFACE WATER
DENOTES TEMPORARY IMPACTS IN SURFACE WATER
DENOTES MECHANIZED CLEARING
MATCHLINE STA.7591+00
SEE DWG NO. 5
MATCHLINE STA.7605+00
SEE DWG NO. 7
SITE 3
STANDARD 'V' HEAD DITCH
SEE DETAIL I
5' LAT. BASE DITCH
SEE DETAIL D
PIPE TO BE INSTALLED BY TRENCHLESS METHODS
REMOVE HEADWALL
BERM BASE DITCH
SEE DETAIL L
5' SPECIAL CUT BASE DITCH
SEE DETAIL E
4' BASE DITCH
S = 1.00%
SEE DETAIL N
TOE PROTECTION
SEE DETAIL C
BERM BASE DITCH
SEE DETAIL J
FILL EXISTING CULVERT WITH FLOWABLE FILL
4' BASE DITCH
S =3.50%
SEE DETAIL M
FILL EXIST CULVERT WITH FLOWABLE FILL
4' BASE DITCH
S =2.16%
SEE DETAIL N
NO RIP RAP IS TO BE PLACED IN STREAM BED
HAWK CREEK TRIBUTARY
DETAIL D
SPECIAL LATERAL BASE DITCH
(Not to Scale)
Natural Ground
Front Ditch Slope
Min. D=2.0Ft.
Max. d=1.0Ft.
B=5.0Ft.
Type of Liner= PSRM
FROM STA. 7592+50 TO STA. 7597+29 LT.
DETAIL N
STANDARD BASE DITCH
(Not to Scale)
Natural Ground
Geotextile
Min. D=2.0 Ft.
Max. d=1.0 Ft.
B=4.0 Ft.
Std. No. 876.01
Type of Liner= CL I Rip-Rap
STA. 7597+30 LT.
STA. 7597+86 RT.
PERMIT DRAWINGS
SHEET OF


HNTB
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343 E. Six Forks Road, Suite 200
Raleigh, North Carolina 27609
NC License No: C-1554
PROJECT REFERENCE NO.
C-4901AD
SHEET NO.
07
RW SHEET NO.
RAILROAD DESIGN ENGINEER
HYDRAULICS ENGINEER
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION
DATE: MARCH 12, 2013
LEGEND
DENOTES FILL IN WETLAND
DENOTES EXCAVATION IN WETLAND
DENOTES IMPACTS IN SURFACE WATER
DENOTES TEMPORARY IMPACTS IN SURFACE WATER
DENOTES MECHANIZED CLEARING
MATCHLINE STA.7605+00
SEE DWG NO. 6
MATCHLINE STA.7619+00
SEE DWG NO. 8
SITE 4
SITE 5
5' SPECIAL CUT BASE DITCH SEE DETAIL E
5' SPECIAL CUT BASE DITCH SEE DETAIL B
BERM BASE DITCH SEE DETAIL J
BERM BASE DITCH SEE DETAIL L
SEE DETAIL K
REMOVE EXISTING HEADWALLS
CP "LAKE" (PROPOSED)
PIPE TO BE INSTALLED BY TRENCHLESS METHODS
FILL EXISTING CULVERT WITH FLOWABLE FILL
CLASS I RIP RAP
NO RIP RAP IS TO BE PLACED IN STREAM BED
3' BASE DITCH S = 0.40% SEE DETAIL P
4' BASE DITCH S =12.16% SEE DETAIL N
S 45° 50' 16.95" W
HANDY CREEK TRIBUTARY
DETAIL B
SPECIAL CUT BASE DITCH
(Not to Scale)
Natural Ground
Front Ditch Slope
Min. D=2.0Ft.
B=5.0Ft.
FROM STA. 7605+50 TO STA. 7616+00 LT.
DETAIL J
BERM BASE DITCH
(Not to Scale)
TRACK
Min. D=2.0Ft.
Max. d=1.0Ft.
B=5.0Ft.
b=3.0Ft.
Type of Liner= PSRM
FROM STA. 7608+60 TO STA. 7609+00 LT.
DETAIL P
STANDARD BASE DITCH
(Not to Scale)
Min. D=2.0 Ft.
B=3.0 Ft.
FROM STA. 7609+18 TO STA. 7610+00 RT.
DETAIL K
(Not to Scale)
Offsite Drainage Feature
Railroad Subballast
Geotextile
Section View
Min. D=1.0Ft.
B=2.0Ft.
Type of Liner= CL I Rip-Rap
-M1- STA. 7609+00 LT.
-M1- STA. 7614+60 LT.
DETAIL N
STANDARD BASE DITCH
(Not to Scale)
Min. D=2.0 Ft.
Max. d=1.0 Ft.
B=4.0 Ft.
Std. No. 876.01
Type of Liner= CL I Rip-Rap
STA. 7614+57 RT.
PERMIT DRAWINGS
SHEET OF

HNTB NORTH CAROLINA, P.C.
343 S. Sth Forks Road, Suite 200
Raleigh, North Carolina 27609
NC License No: C-1324

PROJECT REFERENCE NO.	SHEET NO.
C-4901A/D	08

RW SHEET NO.

RAILROAD DESIGN ENGINEER | HYDRAULICS ENGINEER

DATE: MARCH 12, 2013

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

LEGEND

- DENOTES FILL IN WETLAND
- DENOTES EXCAVATION IN WETLAND
- DENOTES IMPACTS IN SURFACE WATER
- DENOTES TEMPORARY IMPACTS IN SURFACE WATER
- DENOTES MECHANIZED CLEARING

MATCHLINE STA.7619+00
SEE DWG NO. 7

MATCHLINE STA.7633+00
SEE DWG NO. 9

5' SPECIAL CUT BASE DITCH SEE DETAIL E

BERM BASE DITCH SEE DETAIL L

5' SPECIAL LAT. BASE DITCH SEE DETAIL F

PIPE TO BE INSTALLED BY TRENCHLESS METHODS

REMOVE EXISTING HEADWALLS

TOE PROTECTION SEE DETAIL C

SITE 7

SITE 6

FILL EXISTING CULVERT WITH FLOWABLE FILL

4' BASE DITCH S=3.37% SEE DETAIL N

NO RIP RAP IS TO BE PLACED IN STREAM BED

SCALE 1"=50'

S 45° 50' 16.95" W

HW

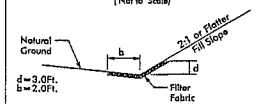
TS

S

682

684

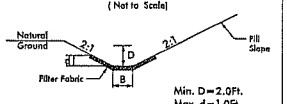
DETAIL C
TOE PROTECTION
(Not to Scale)



d=2.0Ft.
b=2.0Ft.
Type of Liner= CL II Rip-Rap

FROM STA. 7620+54 TO STA. 7633+00 LT.

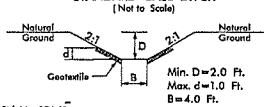
DETAIL F
SPECIAL LATERAL BASE DITCH
(Not to Scale)



Min. D=2.0Ft.
Max. d=1.0Ft.
B=5.0Ft.
Type of Liner= CL I Rip-Rap

FROM STA. 7619+75 TO STA. 7620+40 LT.

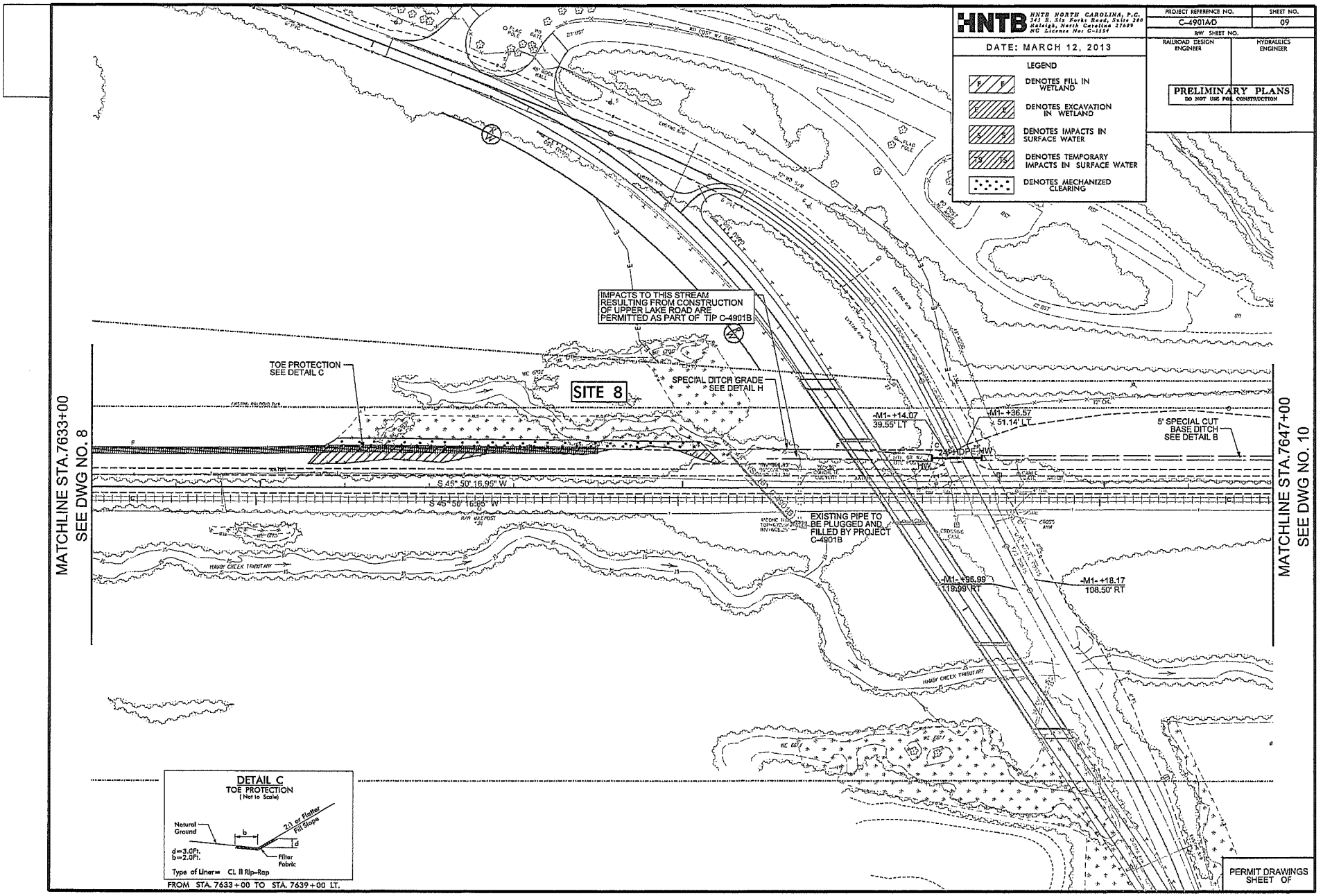
DETAIL N
STANDARD BASE DITCH
(Not to Scale)



Min. D=2.0 Ft.
Max. d=1.0 Ft.
B=4.0 Ft.
Std. No. 876.01
Type of Liner= CL I Rip-Rap

STA. 7620+72 RT.

PERMIT DRAWINGS
SHEET OF


HNTB
HNTB NORTH CAROLINA, P.C.
343 E. Six Forks Road, Suite 200
Raleigh, North Carolina 27609
NC License No: C-1554
PROJECT REFERENCE NO.
C-4901A/D
SHEET NO.
09
RW SHEET NO.
RAILROAD DESIGN ENGINEER
HYDRAULICS ENGINEER
DATE: MARCH 12, 2013
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION
LEGEND
DENOTES FILL IN WETLAND
DENOTES EXCAVATION IN WETLAND
DENOTES IMPACTS IN SURFACE WATER
DENOTES TEMPORARY IMPACTS IN SURFACE WATER
DENOTES MECHANIZED CLEARING
MATCHLINE STA.7633+00
SEE DWG NO. 8
MATCHLINE STA.7647+00
SEE DWG NO. 10
IMPACTS TO THIS STREAM RESULTING FROM CONSTRUCTION OF UPPER LAKE ROAD ARE PERMITTED AS PART OF TIP C-4901B
TOE PROTECTION SEE DETAIL C
SITE 8
SPECIAL DITCH GRADE SEE DETAIL H
-M1- +14.07
39.55' LT
-M1- +36.57
51.14' LT
5' SPECIAL CUT BASE DITCH SEE DETAIL B
24" HDPE
S 45° 50' 16.95" W
EXISTING PIPE TO BE PLUGGED AND FILLED BY PROJECT C-4901B
-M1- +96.99
119.99' RT
-M1- +18.17
108.50' RT
DETAIL C
TOE PROTECTION
(Not to Scale)
Natural Ground
2:1 or Flatter Fill Slope
Filter Fabric
d=3.0Ft.
b=2.0Ft.
Type of Liner= CL II Rip-Rap
FROM STA. 7633+00 TO STA. 7639+00 LT.
PERMIT DRAWINGS
SHEET OF

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

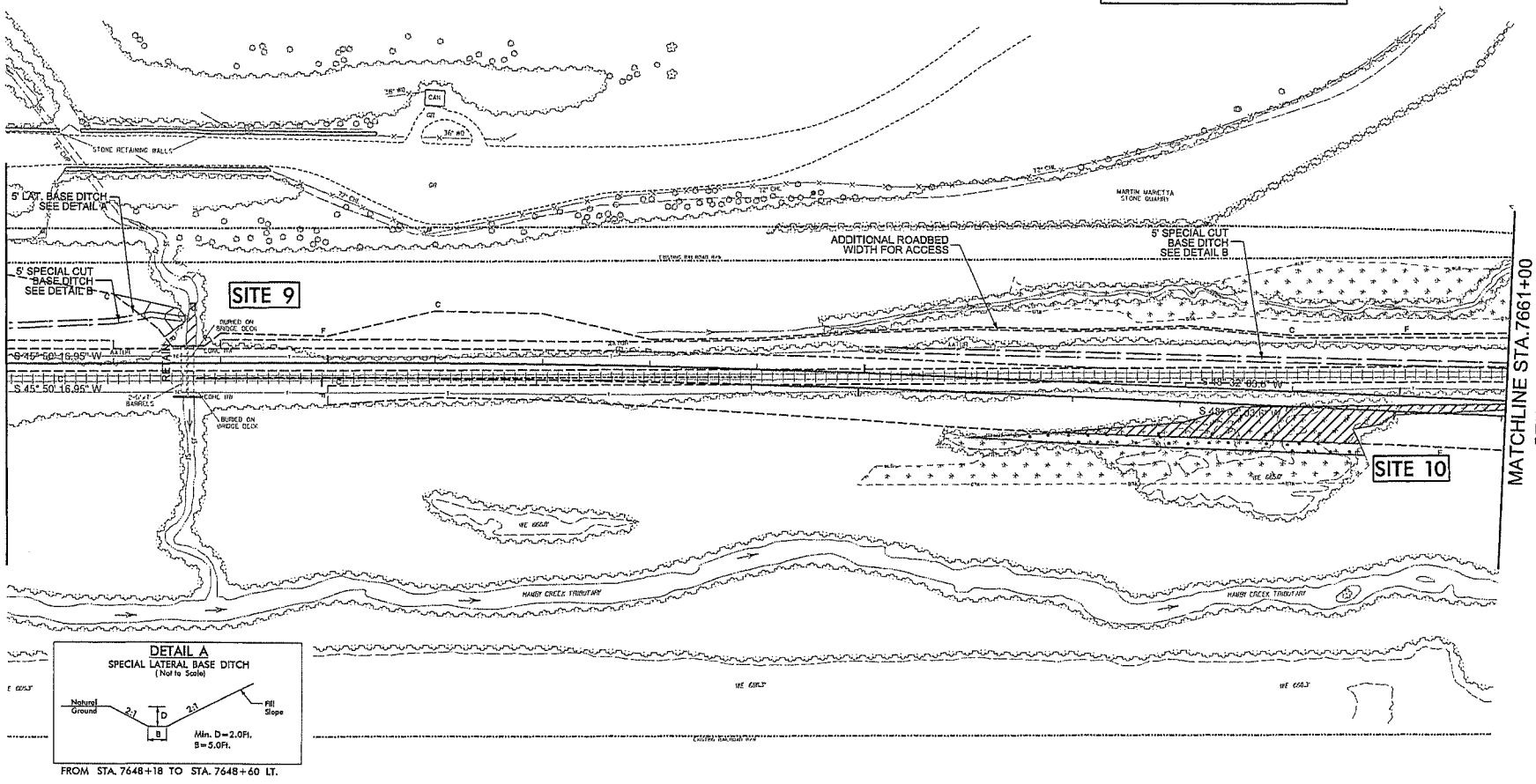
PROJECT REFERENCE NO.	SHEET NO.
C-4901AD	10
RW SHEET NO.	
RAILROAD DESIGN ENGINEER	HYDRAULICS ENGINEER

DATE: MARCH 12, 2013

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

LEGEND

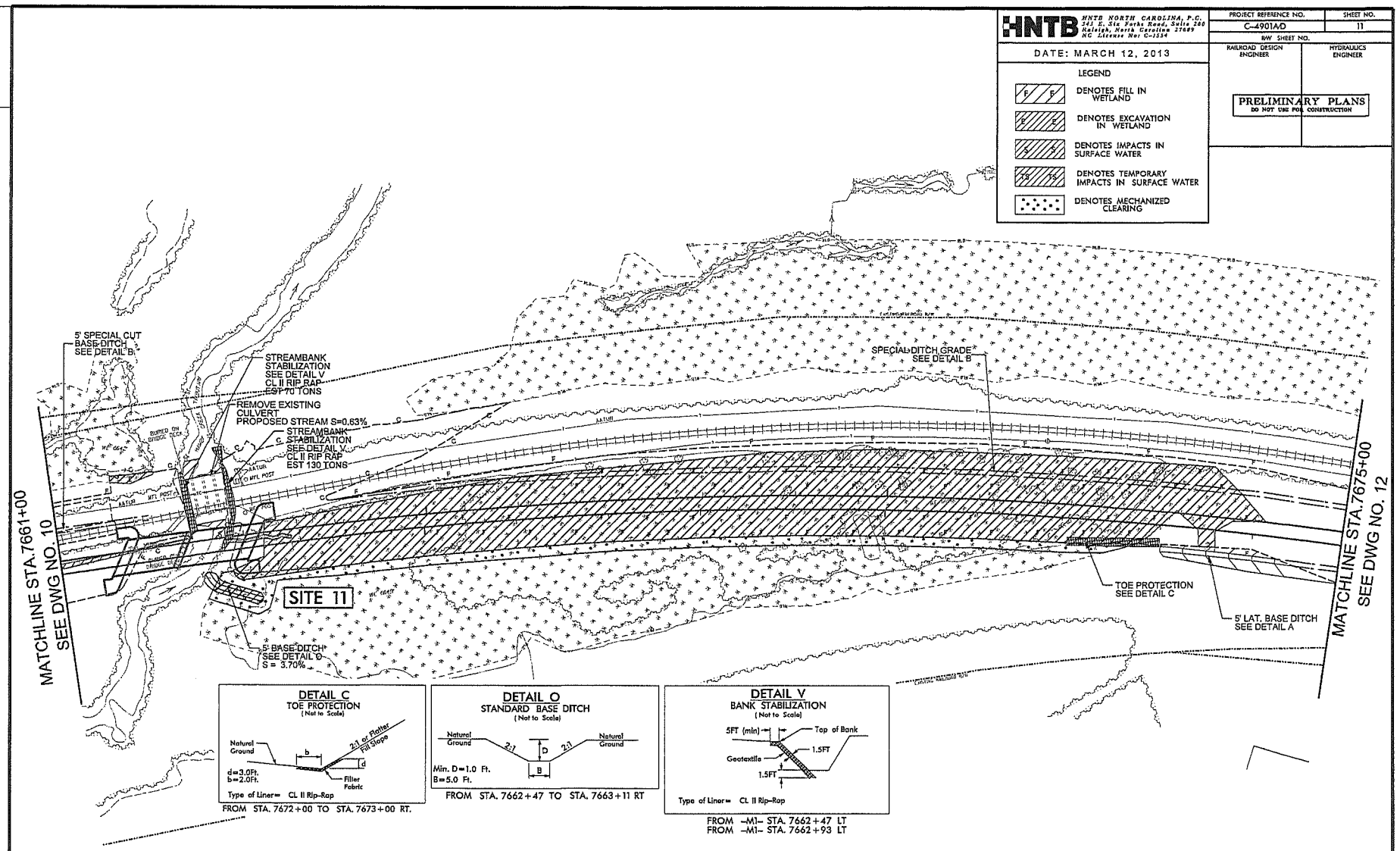
- DENOTES FILL IN WETLAND
- DENOTES EXCAVATION IN WETLAND
- DENOTES IMPACTS IN SURFACE WATER
- DENOTES TEMPORARY IMPACTS IN SURFACE WATER
- DENOTES MECHANIZED CLEARING

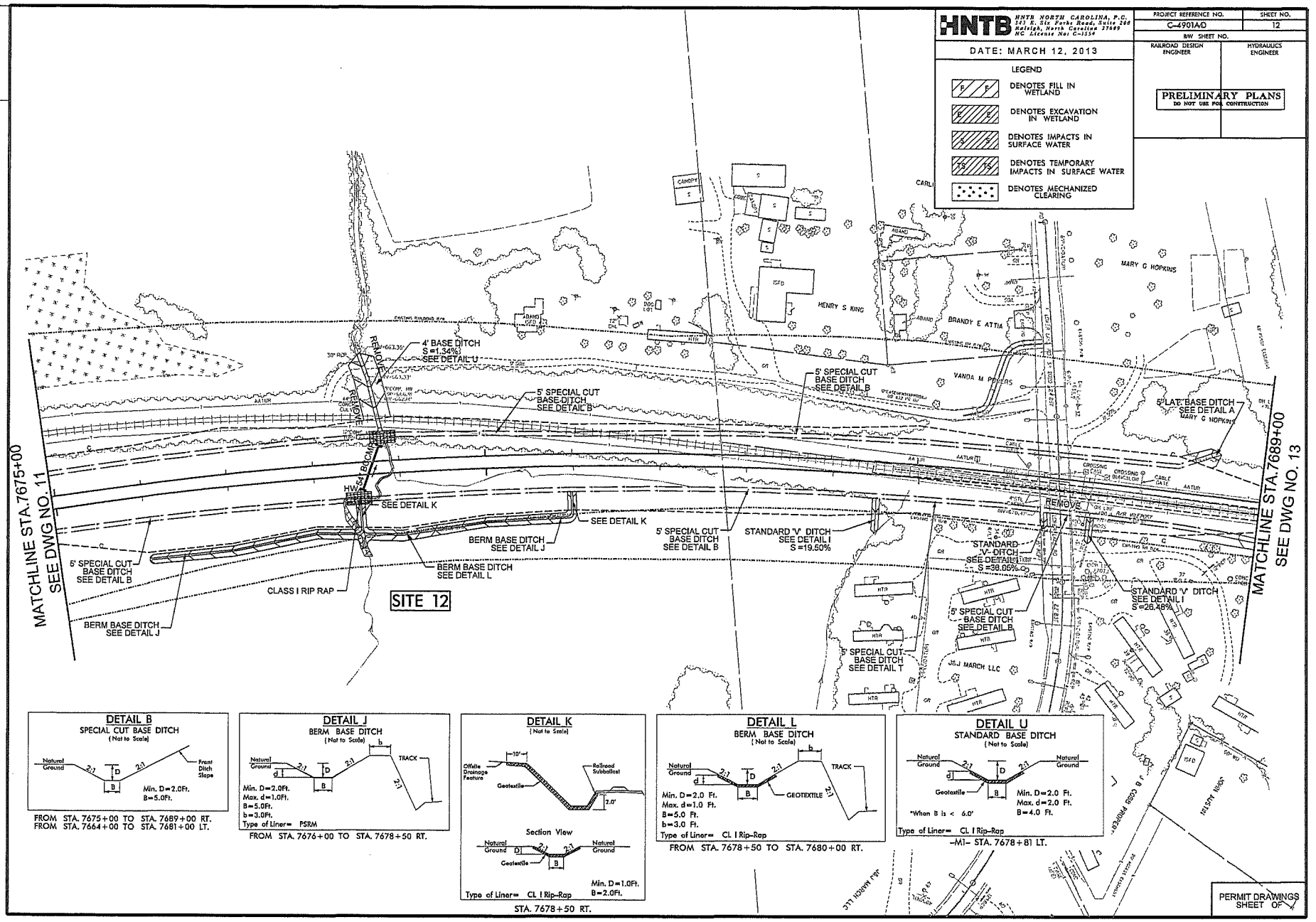


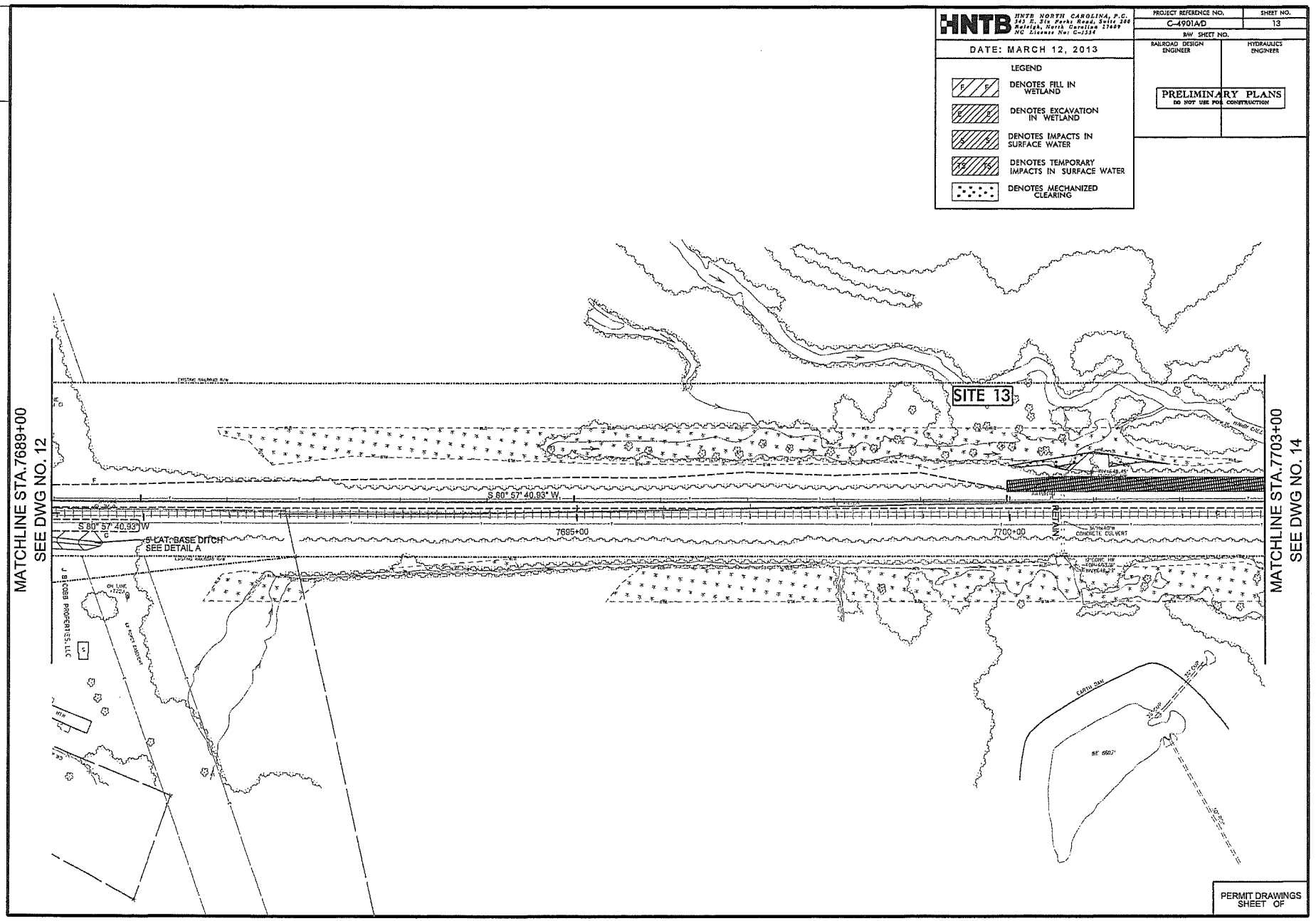
DETAIL A
SPECIAL LATERAL BASE DITCH
(Not to Scale)

FROM STA. 7648+18 TO STA. 7648+60 LT.

PERMIT DRAWINGS
SHEET OF


HNTB NORTH CAROLINA, P.C.
343 E. Six Forks Road, Suite 200
Raleigh, North Carolina 27609
NC License No: C-1554
PROJECT REFRENCE NO.
C-4901AD
SHEET NO.
11
RW SHEET NO.
RAILROAD DESIGN ENGINEER
HYDRAULICS ENGINEER
DATE: MARCH 12, 2013
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION
LEGEND
DENOTES FILL IN WETLAND
DENOTES EXCAVATION IN WETLAND
DENOTES IMPACTS IN SURFACE WATER
DENOTES TEMPORARY IMPACTS IN SURFACE WATER
DENOTES MECHANIZED CLEARING
5' SPECIAL CUT BASE DITCH SEE DETAIL B
STREAMBANK STABILIZATION SEE DETAIL V CL II RIP RAP EST 70 TONS
REMOVE EXISTING CULVERT
PROPOSED STREAM S=0.63%
STREAMBANK STABILIZATION SEE DETAIL V CL II RIP RAP EST 130 TONS
SPECIAL DITCH GRADE SEE DETAIL B
SITE 11
5' BASE DITCH SEE DETAIL O S = 3.70%
TOE PROTECTION SEE DETAIL C
5' LAT. BASE DITCH SEE DETAIL A
MATCHLINE STA.7661+00 SEE DWG NO. 10
MATCHLINE STA.7675+00 SEE DWG NO. 12
DETAIL C
TOE PROTECTION
(Not to Scale)
Natural Ground
2:1 or Flatter Fill Slope
Filter Fabric
d=3.0Ft.
b=2.0Ft.
Type of Liner= CL II Rip-Rap
FROM STA. 7672+00 TO STA. 7673+00 RT.
DETAIL O
STANDARD BASE DITCH
(Not to Scale)
Natural Ground
2:1
Natural Ground
Min. D=1.0 Ft.
B=5.0 Ft.
FROM STA. 7662+47 TO STA. 7663+11 RT
DETAIL V
BANK STABILIZATION
(Not to Scale)
5FT (min)
Top of Bank
1.5FT
Geotextile
1.5FT
Type of Liner= CL II Rip-Rap
FROM -M1- STA. 7662+47 LT
FROM -M1- STA. 7662+93 LT
PERMIT DRAWINGS
SHEET OF


HNTB
HNTB NORTH CAROLINA, P.C.
343 E. Six Forks Road, Suite 260
Raleigh, North Carolina 27609
NC License No: C-1554
PROJECT REFERENCE NO.
C-4901AD
SHEET NO.
12
RW SHEET NO.
RAILROAD DESIGN ENGINEER
HYDRAULICS ENGINEER
DATE: MARCH 12, 2013
LEGEND
DENOTES FILL IN WETLAND
DENOTES EXCAVATION IN WETLAND
DENOTES IMPACTS IN SURFACE WATER
DENOTES TEMPORARY IMPACTS IN SURFACE WATER
DENOTES MECHANIZED CLEARING
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION
MATCHLINE STA.7675+00
SEE DWG NO. 11
MATCHLINE STA.7689+00
SEE DWG NO. 13
4' BASE DITCH
S=1.34%
SEE DETAIL U
5' SPECIAL CUT
BASE DITCH
SEE DETAIL B
5' FLAT BASE DITCH
SEE DETAIL A
MARY G HOPKINS
HENRY S KING
BRANDY E ATTIA
VANDA M PEARS
REMOVE
HW-54 BRANCH
SEE DETAIL K
BERM BASE DITCH
SEE DETAIL J
BERM BASE DITCH
SEE DETAIL L
CLASS I RIP RAP
STANDARD 'V' DITCH
SEE DETAIL I
S=19.50%
STANDARD 'V' DITCH
SEE DETAIL I
S=38.05%
STANDARD 'V' DITCH
SEE DETAIL I
S=26.48%
5' SPECIAL CUT
BASE DITCH
SEE DETAIL T
J&J MARCH LLC
SITE 12
DETAIL B
SPECIAL CUT BASE DITCH
(Not to Scale)
Natural Ground
Front Ditch Slope
Min. D=2.0Ft.
B=5.0Ft.
FROM STA. 7675+00 TO STA. 7689+00 RT.
FROM STA. 7664+00 TO STA. 7681+00 LT.
DETAIL J
BERM BASE DITCH
(Not to Scale)
TRACK
Min. D=2.0Ft.
Max. d=1.0Ft.
B=5.0Ft.
b=3.0Ft.
Type of Liner= PSRM
FROM STA. 7676+00 TO STA. 7678+50 RT.
DETAIL K
(Not to Scale)
Offsite Drainage Feature
Geotextile
Railroad Subballast
Section View
Min. D=1.0Ft.
B=2.0Ft.
Type of Liner= CL I Rip-Rap
STA. 7678+50 RT.
DETAIL L
BERM BASE DITCH
(Not to Scale)
TRACK
GEOTEXTILE
Min. D=2.0 Ft.
Max. d=1.0 Ft.
B=5.0 Ft.
b=3.0 Ft.
Type of Liner= CL I Rip-Rap
FROM STA. 7678+50 TO STA. 7680+00 RT.
DETAIL U
STANDARD BASE DITCH
(Not to Scale)
Geotextile
Min. D=2.0 Ft.
Max. d=2.0 Ft.
B=4.0 Ft.
*When B is < 6.0'
Type of Liner= CL I Rip-Rap
-M1- STA. 7678+81 LT.
PERMIT DRAWINGS
SHEET OF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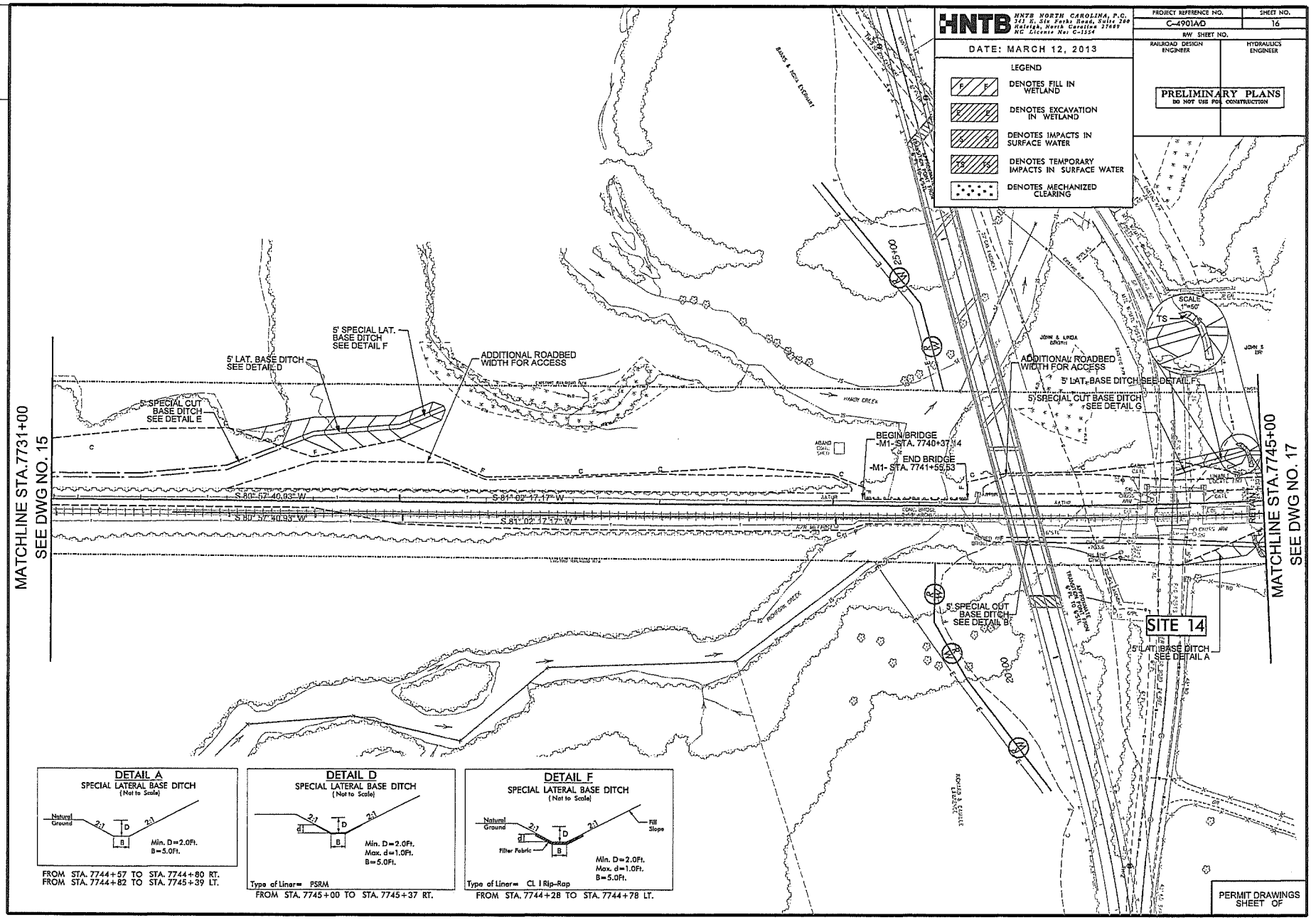
343 E. Six Forks Road, Suite 200
Raleigh, North Carolina 27609
NC License No: C-1554
PROJECT REFERENCE NO.
C-4901A/D
SHEET NO.
13
RW SHEET NO.
RAILROAD DESIGN ENGINEER
HYDRAULICS ENGINEER
DATE: MARCH 12, 2013
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION
LEGEND
DENOTES FILL IN WETLAND
DENOTES EXCAVATION IN WETLAND
DENOTES IMPACTS IN SURFACE WATER
DENOTES TEMPORARY IMPACTS IN SURFACE WATER
DENOTES MECHANIZED CLEARING
MATCHLINE STA.7689+00
SEE DWG NO. 12
MATCHLINE STA.7703+00
SEE DWG NO. 14
SITE 13
S 80° 57' 40.93" W
S 80° 57' 40.93" W
5' LAT. BASE DITCH
SEE DETAIL A
7695+00
7700+00
RELIANY
J. BICOSSE PROPERTIES, LLC
EARTH DAM
PERMIT DRAWINGS
SHEET OF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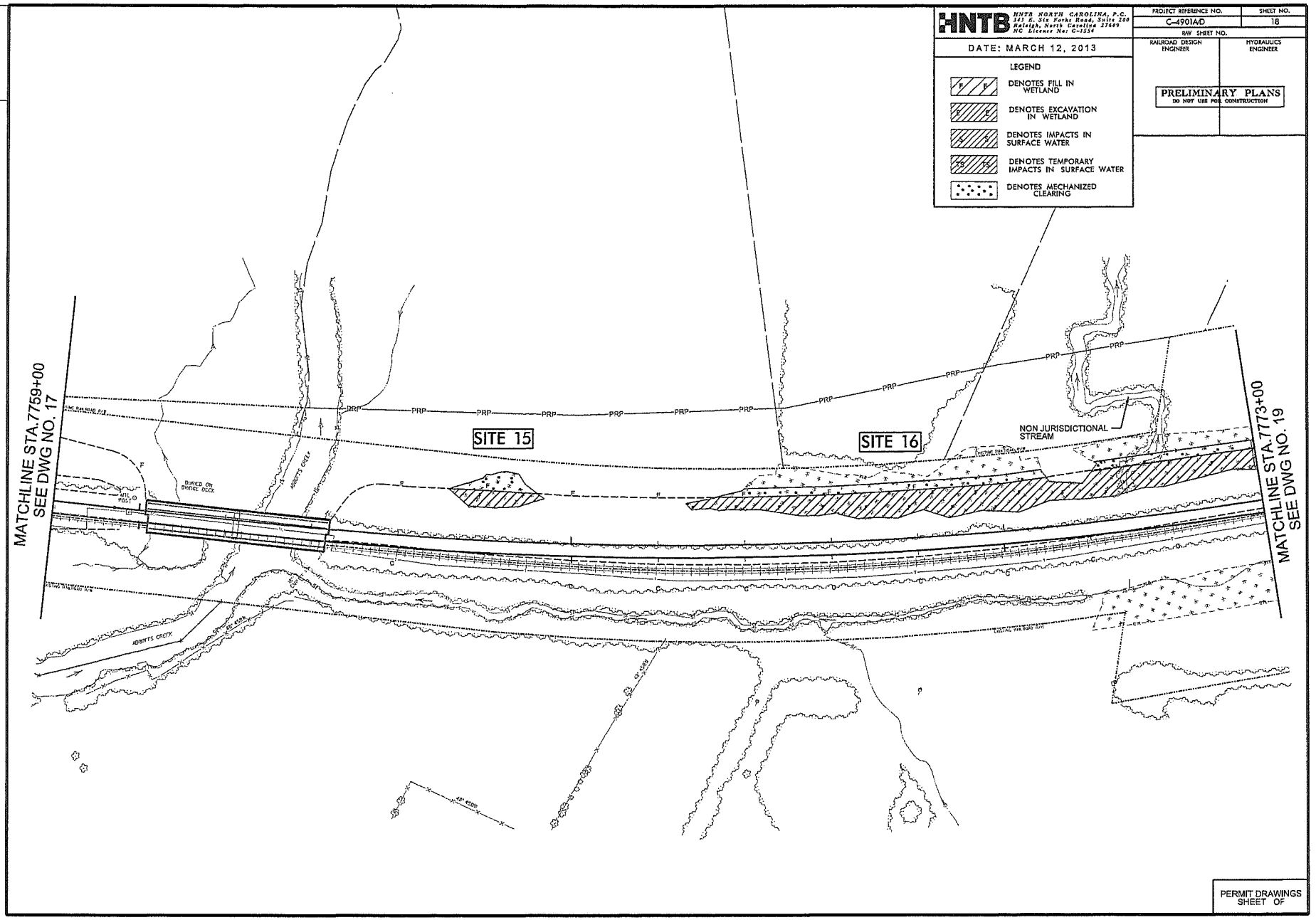
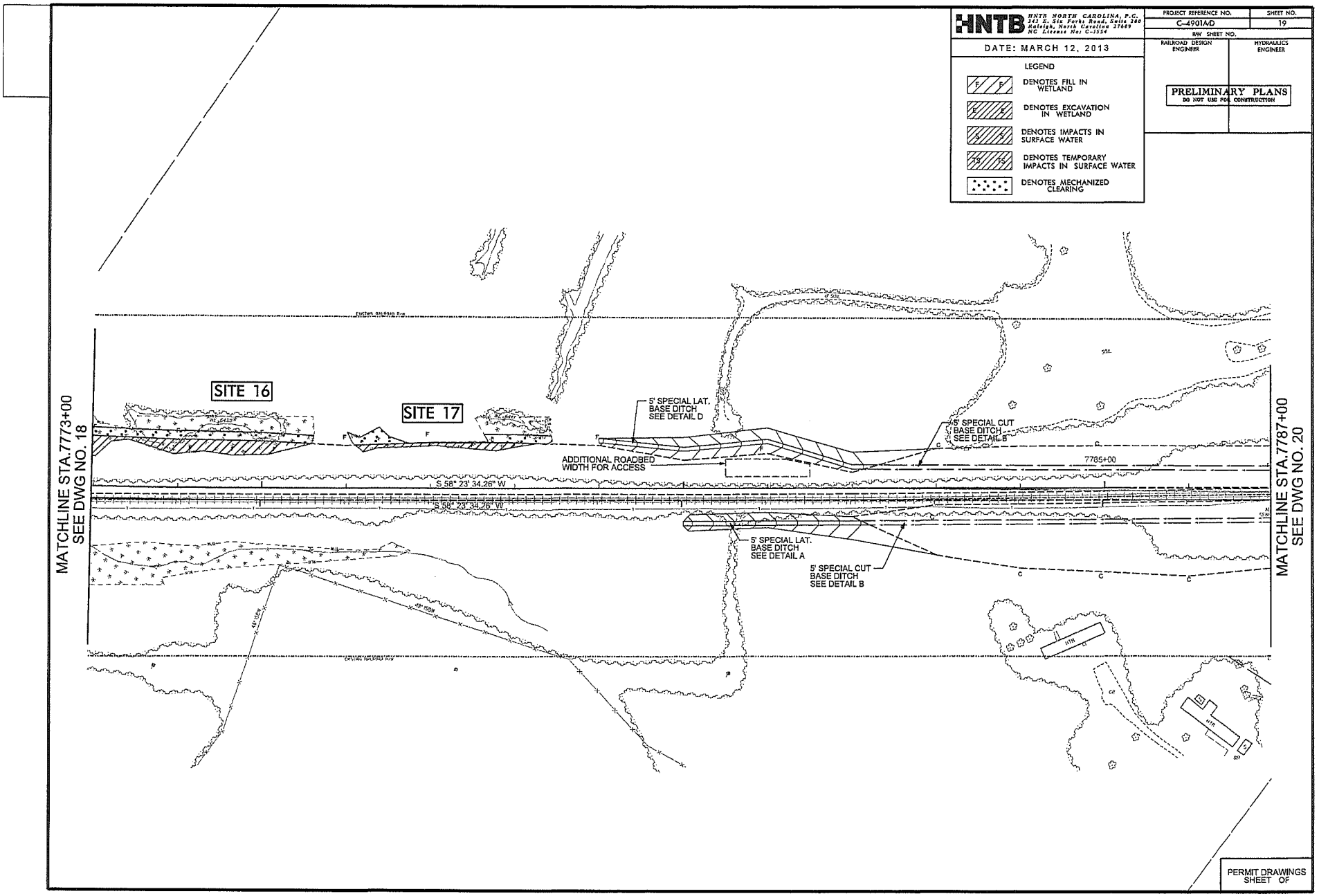
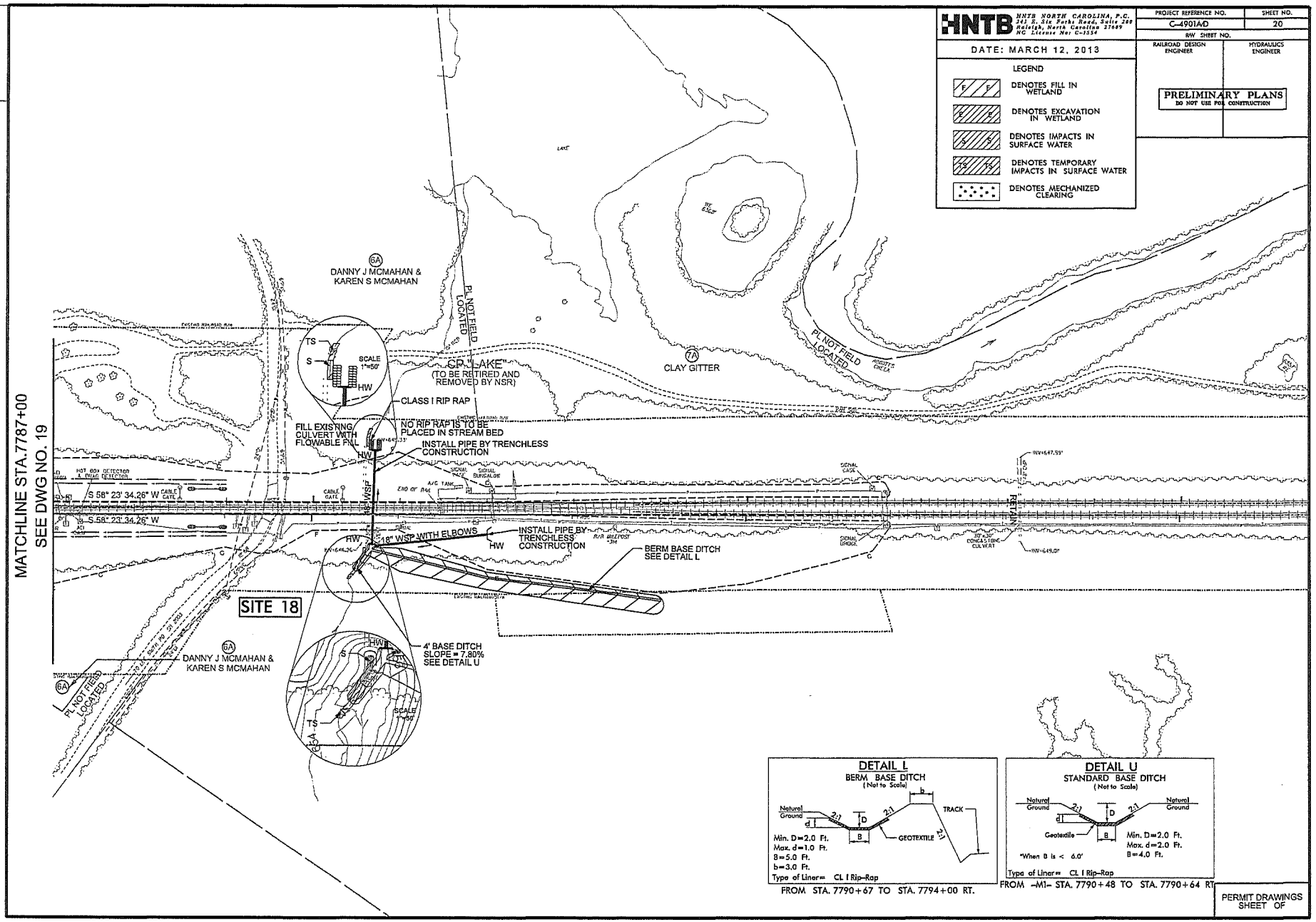
343 E. Six Forks Road, Suite 200
Raleigh, North Carolina 27609
NC License No: C-1554
PROJECT REFERENCE NO.
C-4901AD
SHEET NO.
16
RW SHEET NO.
RAILROAD DESIGN ENGINEER
HYDRAULICS ENGINEER
DATE: MARCH 12, 2013
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION
LEGEND
DENOTES FILL IN WETLAND
DENOTES EXCAVATION IN WETLAND
DENOTES IMPACTS IN SURFACE WATER
DENOTES TEMPORARY IMPACTS IN SURFACE WATER
DENOTES MECHANIZED CLEARING
MATCHLINE STA.7731+00
SEE DWG NO. 15
MATCHLINE STA.7745+00
SEE DWG NO. 17
5' LAT. BASE DITCH SEE DETAIL D
5' SPECIAL LAT. BASE DITCH SEE DETAIL F
ADDITIONAL ROADBED WIDTH FOR ACCESS
5' SPECIAL CUT BASE DITCH SEE DETAIL E
BEGIN BRIDGE -M1- STA. 7740+37.14
END BRIDGE -M1- STA. 7741+55.53
S 80° 57' 40.93" W
S 81° 02' 17.17" W
5' SPECIAL CUT BASE DITCH SEE DETAIL B
SITE 14
5' LAT. BASE DITCH SEE DETAIL A
SCALE 1"=50'
TS
HINCH CREEK
ROWAN CREEK
DETAIL A
SPECIAL LATERAL BASE DITCH
(Not to Scale)
Natural Ground
2:1
D
B
Min. D=2.0Ft.
B=5.0Ft.
FROM STA. 7744+57 TO STA. 7744+80 RT.
FROM STA. 7744+82 TO STA. 7745+39 LT.
DETAIL D
SPECIAL LATERAL BASE DITCH
(Not to Scale)
d
Min. D=2.0Ft.
Max. d=1.0Ft.
B=5.0Ft.
Type of Liner= PSRM
FROM STA. 7745+00 TO STA. 7745+37 RT.
DETAIL F
SPECIAL LATERAL BASE DITCH
(Not to Scale)
Fill Slope
Filter Fabric
Min. D=2.0Ft.
Max. d=1.0Ft.
B=5.0Ft.
Type of Liner= CL I Rip-Rap
FROM STA. 7744+28 TO STA. 7744+78 LT.
PERMIT DRAWINGS
SHEET OF


HNTB
HNTB NORTH CAROLINA, P.C.
343 E. Six Forks Road, Suite 200
Raleigh, North Carolina 27609
NC License No: C-1554
DATE: MARCH 12, 2013
LEGEND
DENOTES FILL IN WETLAND
DENOTES EXCAVATION IN WETLAND
DENOTES IMPACTS IN SURFACE WATER
DENOTES TEMPORARY IMPACTS IN SURFACE WATER
DENOTES MECHANIZED CLEARING
PROJECT REFERENCE NO.
C-4901A/D
SHEET NO.
18
RAW SHEET NO.
RAILROAD DESIGN ENGINEER
HYDRAULICS ENGINEER
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION
MATCHLINE STA.7759+00
SEE DWG NO. 17
MATCHLINE STA.7773+00
SEE DWG NO. 19
SITE 15
SITE 16
NON JURISDICTIONAL STREAM
PRP
ADKINS CREEK
PERMIT DRAWINGS
SHEET OF


HNTB
HNTB NORTH CAROLINA, P.C.
141 S. Six Forks Road, Suite 240
Raleigh, North Carolina 27609
NC License No: C-1554
PROJECT REFERENCE NO.
C-4901AD
SHEET NO.
19
RW SHEET NO.
RAILROAD DESIGN ENGINEER
HYDRAULICS ENGINEER
DATE: MARCH 12, 2013
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION
LEGEND
DENOTES FILL IN WETLAND
DENOTES EXCAVATION IN WETLAND
DENOTES IMPACTS IN SURFACE WATER
DENOTES TEMPORARY IMPACTS IN SURFACE WATER
DENOTES MECHANIZED CLEARING
MATCHLINE STA.7773+00
SEE DWG NO. 18
SITE 16
SITE 17
5' SPECIAL LAT. BASE DITCH SEE DETAIL D
5' SPECIAL CUT BASE DITCH SEE DETAIL B
ADDITIONAL ROADBED WIDTH FOR ACCESS
7785+00
S 58° 23' 34.26" W
5' SPECIAL LAT. BASE DITCH SEE DETAIL A
5' SPECIAL CUT BASE DITCH SEE DETAIL B
MATCHLINE STA.7787+00
SEE DWG NO. 20
PERMIT DRAWINGS
SHEET OF


HNTB NORTH CAROLINA, P.C.
343 S. Six Forks Road, Suite 200
Raleigh, North Carolina 27609
NC License No: C-1554
PROJECT REFERENCE NO. C-4901A/D
SHEET NO. 20
RW SHEET NO.
RAILROAD DESIGN ENGINEER
HYDRAULICS ENGINEER
DATE: MARCH 12, 2013
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION
LEGEND
DENOTES FILL IN WETLAND
DENOTES EXCAVATION IN WETLAND
DENOTES IMPACTS IN SURFACE WATER
DENOTES TEMPORARY IMPACTS IN SURFACE WATER
DENOTES MECHANIZED CLEARING
MATCHLINE STA.7787+00
SEE DWG NO. 19
DANNY J MCMAHAN & KAREN S MCMAHAN
CLAY GITTER
PL NOT FIELD LOCATED
"CP-LAKE" (TO BE RETIRED AND REMOVED BY NSR)
CLASS I RIP RAP
FILL EXISTING CULVERT WITH FLOWABLE FILL
NO RIP RAP IS TO BE PLACED IN STREAM BED
INSTALL PIPE BY TRENCHLESS CONSTRUCTION
18" WSP WITH ELBOWS
INSTALL PIPE BY TRENCHLESS CONSTRUCTION
BERM BASE DITCH SEE DETAIL L
4' BASE DITCH SLOPE = 7.80% SEE DETAIL U
SITE 18
S 58° 23' 34.26" W
RETURN
DETAIL L
BERM BASE DITCH
(Not to Scale)
Natural Ground
TRACK
GEOTEXTILE
Min. D=2.0 Ft.
Max. d=1.0 Ft.
B=5.0 Ft.
b=3.0 Ft.
Type of Liner= CL I Rip-Rap
FROM STA. 7790+67 TO STA. 7794+00 RT.
DETAIL U
STANDARD BASE DITCH
(Not to Scale)
Natural Ground
Geotextile
Min. D=2.0 Ft.
Max. d=2.0 Ft.
B=4.0 Ft.
*When B is < 6.0'
Type of Liner= CL I Rip-Rap
FROM -M1- STA. 7790+48 TO STA. 7790+64 RT.
PERMIT DRAWINGS
SHEET OF

WETLAND PERMIT IMPACT SUMMARY

			WETLAND IMPACTS					SURFACE WATER IMPACTS				
Site No.	Station (From/To)	Structure Size / Type	Permanent Fill In Wetlands (ac)	Temp. Fill In Wetlands (ac)	Excavation in Wetlands (ac)	Mechanized Clearing in Wetlands (ac)	Hand Clearing in Wetlands (ac)	Permanent SW impacts (ac)	Temp. SW impacts (ac)	Existing Channel Impacts Permanent (ft)	Existing Channel Impacts Temp. (ft)	Natural Stream Design (ft)
1	7579+43	42" WSP	-	-	-	-	-	0.02	0.01	251	11	-
2	7585+31	42" WSP	-	-	-	-	-	0.01	0.01	114	10	-
3	7597+56	72" WSP	-	-	-	-	-	0.01	0.01	112	32	-
4	7609+12	36" WSP	-	-	-	-	-	0.03	0.01	238	6	-
5	7614+60	36" WSP	-	-	-	-	-	0.01	0.01	50	5	-
6	7620+60	48" WSP	-	-	-	-	-	0.01	0.01	112	17	-
7	7624+94 to 7632+34 LT	Fill Slope	0.38	-	-	0.15	-	-	-	-	-	-
8	7635+60 to 7640+75 LT	Fill Slope	0.09	-	-	0.10	-	-	-	-	-	-
9	7648+60 LT	Ditch Excavation	-	-	-	-	-	-	0.01	-	40	-
10	7656+00 to 7662+45 RT	Fill Slope	0.17	-	0.008	0.07	-	-	-	-	-	-
11	7662+50 to 7674+12 RT	Fill Slope	1.98	-	0.016	0.25	-	0.02	-	115	-	-
12	7678+66	54" BCCMP	-	-	-	-	-	0.02	0.01	207	24	-
13	7700+00 to 7701+87 LT	Fill Slope	0.01	-	-	0.02	-	-	-	-	-	-
14	7745+00	Ditch Excavation	-	-	-	-	-	-	0.01	-	61	-
15	7763+50 to 7764+67 LT	Fill Slope	0.04	-	-	0.03	-	-	-	-	-	-
16	7766+32 to 7775+62 LT	Fill Slope	0.45	-	-	0.18	-	-	-	-	-	-
17	7776+00 to 7778+50 LT	Fill Slope	0.03	-	-	0.04	-	-	-	-	-	-
18	7790+66	48" WSP	-	-	-	-	-	0.01	0.01	46	16	-
			-	-	-	-	-	-	-	-	-	-
			-	-	-	-	-	-	-	-	-	-
			-	-	-	-	-	-	-	-	-	-
			-	-	-	-	-	-	-	-	-	-
			-	-	-	-	-	-	-	-	-	-
TOTALS:			3.13	0.00	0.02	0.84	0.00	0.13	0.02	1245	222	0

WSP - WELDED STEEL PIPE

BCCMP - BITUMINOUS COATED CORRUGATED METAL PIPE

NC DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
BOWERS TO LAKE GRADE SEPARATION
AND DOUBLETRACK PROJECT
C-4901 A/D

OF 3/12/2013