STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

ROY COOPER
GOVERNOR

JAMES H. TROGDON, III
SECRETARY

December 27, 2019

MEMORANDUM TO: Mr. Michael Pettyjohn, P.E.
Division 11 Engineer

FROM: MAT for Philip S. Harris, III, P.E., Manager
Environmental Analysis Unit

SUBJECT: 404 and 401 Permit Renewal and Modification for the improvements to US 221 in Ashe and Watauga Counties, Division 11; WBS No 34518.1.1, **TIP: R-2915 and R-2915 E.**

Enclosed is the US Army Corps of Engineers Permit, NC Division of Water Resources Water Quality Certification, and Project Commitments ("greensheet") for the above-referenced project. All environmental permits have been received for the construction of this project.

The permit package has been posted on the NCDOT website at:
https://xfer.services.ncdot.gov/pdea/PermIssued/

ec:

Mr. Ron Davenport, P.E. Contracts Management
Mr. Kevin Hining, Division Environmental Officer
Dr. Majed Al-Ghandour, P.E., Programming and TIP
Mr. Stephen Morgan, P.E., Hydraulics
Mr. Brian Hanks, P.E., Structure Design
Mr. Mark Staley, Roadside Environmental
Mr. Lamar Sylvester, P.E., State Roadway Construction Engineer

Mailing Address:
NC DEPARTMENT OF TRANSPORTATION
ENVIRONMENTAL ANALYSIS UNIT
1598 MAIL SERVICE CENTER
RALEIGH NC 27699-1598

Telephone: (919) 707-6000
Customer Service: 1-877-368-4968
Website: www.ncdot.gov

Location:
1000 BIRCH RIDGE DRIVE
RALEIGH NC 27610

PROJECT COMMITMENTS

T.I.P Project No. R-2915
Widening of US 221 Business/ NC 88 in Jefferson
Watauga and Ashe Counties
Federal Aid Project No. STP-0221(10)
WBS Element 34518.1.1

COMMITMENTS FROM PROJECT DEVELOPMENT AND DESIGN

Division 11 Construction Unit

NCDOT will coordinate with the North Carolina Wildlife Resources Commission to determine the status of the potential WRC public access project at South Fork New River.
The coordination for developing public access to a river on a road project begins before project design. No plans were submitted from WRC for incorporation of public access to the River. This particular project has been designed with controlled access and very minimal access points. In particular, this is a four lane divided facility and access to the River at the crossing is dangerous.

NCDOT will comply with the North Carolina Wildlife Resources Commission's moratorium prohibiting in-stream work and land disturbance within the 25-foot trout buffer from October 15 to April 15 for all streams supporting wild trout, including, but not limited to, Beaver Creek, Call Creek, Cole Branch, Gap Creek, Little Gap Creek, and Old Field Creek.

Design Standards in Sensitive Watersheds will be adhered to during project construction (15A NCAC 4B.0124).

NCDOT will re-survey the South Fork New River within the footprint of the existing and proposed bridge at that crossing prior to permitting to ensure no individuals of Virginia spiraea have inhabited the area.
The crossing of the South Fork New River was re-surveyed in July 2014 by NCDOT biologists.

The Hydraulics Unit will coordinate with the NC Floodplain Mapping Program (FMP) to determine the status of the project with regard to applicability of NCDOT's Memorandum of Agreement or approval of a Conditional Letter of Map Revision (CLOMR) and subsequent final Letter of Map Revision (LOMR).

NCDOT will provide an individual Section 404 permit for the U.S. Army Corps of Engineers and a Section 401 Water Quality Certification for the North Carolina Division of Water Quality.

NCDOT will design the roadway alignment and profile in front of the Fleetwood Community Center to not impact the underground storage tanks. No permanent right of way will be purchased from the Fleetwood Community Center. Temporary construction easement may be necessary to properly tie the proposed to the existing.

COMMITMENTS FROM PERMITTING

Division 11 Construction Unit

401 Condition 1: When final design plans are completed for R-2915 Sections C and E, a modification to the 401 Water Quality Certification shall be submitted with five copies and fees to the NC Division of Water resources. Final designs shall reflect all appropriate avoidance, minimization, and mitigation for impacts to wetlands, streams, and other surface waters, and buffers. No construction activities that impact any wetlands, streams or surface waters located in R-2915 Sections C and E shall begin until after the permittee applies for, and receives a written modification of the 401 Water Quality Certification from the NC Division of Water Resources.

401 Condition 4: Streams with Trout classifications require that in-stream work and land disturbance within the 25-foot buffer zone are prohibited during the trout-spawning season of October 15 through April 15 to protect the egg and fry stages of trout.

401 Condition 5: Where possible, hand clearing in wetlands should be used in Section R-2915A rather than mechanized clearing.

401 Condition 6: The relocated portion of a wetland at Permit Site 7 for Section R-2915B should be a grassed swale that has been designed to match the grade and shape of the existing wetland as much as possible.

401 Condition 7: Ensure that the planned installation of a cross vane structure at the downstream end of Old Field Creek at Permit Site 6 for Section R-2915D is constructed in such manner that alleviates scour and erosion to the maximum extent practical.

401 Condition 8: Channel relocations shall be completed and stabilized, and approved on site by NCDWR staff, prior to diverting water into the new channel. Stream banks shall be matted with coir-fiber matting. Vegetation used for bank stabilization shall be limited to native riparian vegetation, and should include establishment of a vegetated buffer on both sides of the relocated channel to the maximum extent practical. Also, additional rip-rap, above which was approved in final approved design drawings, may be allowed if it is necessary to maintain the physical integrity of the stream, but the applicant must provide written justification and any calculations used to determine the extent of rip-rap coverage requested. Once the stream has been turned into the new channel, it may be necessary to relocate stranded fish to the new channel to prevent fish kills.

401 Condition 19: Due to site conditions at Permit Site 9 for Section R-2915B, NCDWR will not require the burial of the culvert inlet in this location. However, design and placement of the culvert and other structures shall be installed in such a manner that the original stream profiles are not altered (i.e., the depth of the channel must not be reduced by a widening of the streambed). Existing stream dimensions (including pattern and profile) are to be maintained above and below locations of each culvert. The structures shall be designed and installed to allow for fish and other wildlife movement as well as prevent headcutting of the stream. The applicant may be required to provide evidence that the equilibrium has been maintained if requested in writing by the NCDWR.

Roadside Environmental Unit

401 Condition 3: Where streams within the project area carry supplemental classifications as Trout (Tr), High Quality Waters (HQW) or Outstanding Resource Waters (ORW), stormwater shall be directed to vegetated buffer areas, grasslined ditches or other means appropriate to the site for the purpose of pre-treating storm water runoff prior to discharging directly into streams. Mowing of existing vegetated buffers is strongly discouraged. Grassed swales should also be utilized throughout the project to reduce water velocity, promote infiltration and provide treatment for discharge before runoff enters streams. The permittee shall use Design Standards in Sensitive Watersheds per 15A NCAC 4B.0124(a)-(e) in areas draining to ORW, HQW waters. However, due to the size of the project, the NCDOT shall not be required to meet 15A NCAC 4B.0124(a) regarding the maximum amount of uncovered acres. Temporary cover (wheat, millet, or similar annual grain) or permanent herbaceous cover shall be planted on all bare soil within IS business days of ground disturbing activities to provide erosion control.

DEPARTMENT OF THE ARMY
WILMINGTON DISTRICT, CORPS OF ENGINEERS
151 PATTON AVENUE
ROOM 208
ASHEVILLE, NORTH CAROLINA 28801-5006

December 27, 2019

Regulatory Division

Action ID: SAW-2012-00882

North Carolina Department of Transportation
Division of Highways
Mr. Philip S. Harris III, P.E., C.P.M.
Natural Environment Section Head
1598 Mail Service Center
Raleigh, North Carolina 27699-1598

Dear Mr. Harris:

I refer to your Department of the Army (DA) Individual Permit dated January 7, 2015, in which we authorized the placement of fill material into 3.04 acre of wetlands and 7,886 linear feet (lf) of stream, and temporary placement of fill material into 0.31 acres of Waters of the US, associated with the widening of US Highway 221 from US 421 to US 221 Business/NC 88 in Jefferson, in Watauga and Ashe Counties, North Carolina (TIP Numbers R-2519 A-E). This was a phased permit and only authorized work on Sections A, B and D. Sections C and E were not authorized to commence until final design was completed, impacts to waters and wetlands were minimized to the extent practicable, and all modified plans including, but not limited to, a compensatory mitigation plan were submitted and approved by the US Army Corps of Engineers (the Corps). Also refer to the modifications issued August 31, 2016 authorizing the final design of Section C and the modification December 7, 2017 authorizing impact modifications under the old bridge crossing the South Fork New River in Section B.

By letter dated April 7, 2017, you requested a modification for final impacts associated with changes to two permit sites in Section B as a result of a driveway modification and new temporary wetland fill. The requested changes involve an additional 0.15 acre of temporary wetland impact at Section B Site 4. It also includes the relocation of the stream impact at Site 3 for a total of 71 linear feet of permanent stream impact, a reduction of 40 linear feet compared to the previously authorized impact. This modification request would bring the overall projected impacts (Sections A-E) associated with this modification request for the project to 3.11 acres of permanent wetland impacts, 0.15 acre of temporary wetland impacts, 8,156 linear feet of permanent stream impacts (6,983 linear feet of fill and 1,173 linear feet of bank stabilization), and 0.34 acre of temporary stream impacts.

By letter dated June 15, 2018, we received another modification request for changes to Site 1B on Section B. This request would result in an additional 20 linear feet of bank stabilization along Gap Creek. This modification request would bring the overall projected impacts (Sections A-E) associated with this modification request for the project to 3.11 acres of permanent wetland impacts, 0.15 acre of temporary wetland impacts, 8,176 linear feet of permanent stream impacts (6,983 linear feet of fill and 1,193 linear feet of bank stabilization), and 0.34 acre of temporary stream impacts.

By letter dated April 5, 2019, we received a request to modify and extend this permit to include the final impacts for R-2915E. This final design of Section E proposes impacts to 0.46 acre of permanent wetland impacts, 0.01 acre of temporary impact, 1,366 linear feet of permanent stream impacts (907 linear feet of channel fill and 459 linear feet of bank stabilization) and 576 linear feet (0.07 acre) of temporary stream impacts. The total stream impacts for R-2915E have increased since the preliminary impacts presented in 2014 as a few streams have been delineated since then, the slopes have changed in a few locations, bank stabilization impacts have been added, and drainage design at the time was very preliminary. The overall projected impacts (Sections A-E) associated with this modification request for the project changed to 3.05 acres of permanent wetland impacts, 0.15 acre of temporary wetland impacts, 0.05 acre of hand clearing in wetlands, 9,137 linear feet of permanent stream impacts (7,485 linear feet of fill and 1,652 linear feet of bank stabilization), and 0.41 acre of temporary stream impacts

After review of the information you submitted and the inclusion of the following special conditions, we have determined that your existing DA authorization is modified to include the work detailed in your submittals dated April 7, 2017, June 15, 2018 and April 5, 2019.

1. All work authorized by this permit must be performed in strict compliance with the originally approved application and plans for R-2915, which were received on July 22, 2014 and the updated modification request and plans dated July 28, 2016, April 7, 2017, November 20, 2017, June 15, 2018 except where superseded by this authorization.

2. In order to compensate for impacts associated with this permit, mitigation shall be provided in accordance with the provisions outlined on the most recent version of the enclosed Compensatory Mitigation Responsibility Transfer Form. The requirements of this form, including any special conditions listed on this form, are hereby incorporated as special conditions of this permit authorization. Mitigation for R-2915 Sections A, B, C and D were already required by permit issued January 7, 2015 and subsequent modifications detailed above. A Mitigation Responsibility Transfer Form is enclosed requiring the offset of final design impacts to Section E of R-2915.

In addition to special conditions stated above, all conditions of the original permit and its modifications apply except those superseded by this authorization. The expiration date has been extended to December 31, 2024.

If you have questions, please contact Steve Kichefski at (828) 271-7980, extension 4234.

FOR THE COMMANDER

Monte Matthews
Lead Project Manager
Regulatory Division

Enclosure

cc (without enclosure):

Michael Turchy – NCDOT
Dave Wanucha - NCDWR
Marla Chambers – NCWRC
Amanetta Somerville – USEPA
Claire Ellwanger – USFWS
Felix Davila - FHWA
Monte Matthews – USACE

U.S. ARMY CORPS OF ENGINEERS
Wilmington District
Compensatory Mitigation Responsibility Transfer Form

Permittee: NCDOT/ Attn: Mr. Philip Harris **Action ID: SAW-2012-00882**
Project Name: NCDOT / R 2915 / US 221 / DIV 11 / EEP **County: Ashe**

Instructions to Permittee: The Permittee must provide a copy of this form to the Mitigation Sponsor, either an approved Mitigation Bank or the North Carolina Division of Mitigation Services (NCDMS), who will then sign the form to verify the transfer of the mitigation responsibility. Once the Sponsor has signed this form, it is the Permittee's responsibility to ensure that to the U.S. Army Corps of Engineers (USACE) Project Manager identified on page two is in receipt of a signed copy of this form before conducting authorized impacts, unless otherwise specified below. If more than one mitigation Sponsor will be used to provide the mitigation associated with the permit, or if the impacts and/or the mitigation will occur in more than one 8-digit Hydrologic Unit Code (HUC), multiple forms will be attached to the permit, and the separate forms for each Sponsor and/or HUC must be provided to the appropriate mitigation Sponsors.

Instructions to Sponsor: The Sponsor must verify that the mitigation requirements (credits) shown below are available at the identified site. By signing below, the Sponsor is accepting full responsibility for the identified mitigation, regardless of whether or not they have received payment from the Permittee. Once the form is signed, the Sponsor must update the bank ledger and provide a copy of the signed form and the updated bank ledger to the Permittee, the USACE Project Manager, and the Wilmington District Mitigation Office (see contact information on page 2). The Sponsor must also comply with all reporting requirements established in their authorizing instrument.

Permitted Impacts and Compensatory Mitigation Requirements

Permitted Impacts Requiring Mitigation*: **8-digit HUC and Basin:** 05050001, New River Basin

Stream Impacts (linear feet)			Wetland Impacts (acres)			
Warm	Cool	Cold	Riparian Riverine	Riparian Non-Riverine	Non-Riparian	Coastal
		907	0.3	0.16		

*If more than one mitigation sponsor will be used for the permit, only include impacts to be mitigated by this sponsor.

Compensatory Mitigation Requirements: **8-digit HUC and Basin:** 05050001, New River Basin

Stream Mitigation (credits)			Wetland Mitigation (credits)			
Warm	Cool	Cold	Riparian Riverine	Riparian Non-Riverine	Non-Riparian	Coastal
		1814	0.6	0.32		

Mitigation Site Debited: NCDMS
(List the name of the bank to be debited. For umbrella banks, also list the specific site. For NCDMS, list NCDMS. If the NCDMS acceptance letter identifies a specific site, also list the specific site to be debited).

Section to be completed by the Mitigation Sponsor

Statement of Mitigation Liability Acceptance: I, the undersigned, verify that I am authorized to approve mitigation transactions for the Mitigation Sponsor shown below, and I certify that the Sponsor agrees to accept full responsibility for providing the mitigation identified in this document (see the table above), associated with the USACE Permittee and Action ID number shown. I also verify that released credits (and/or advance credits for NCDMS), as approved by the USACE, are currently available at the mitigation site identified above. Further, I understand that if the Sponsor fails to provide the required compensatory mitigation, the USACE Wilmington District Engineer may pursue measures against the Sponsor to ensure compliance associated with the mitigation requirements.

Mitigation Sponsor Name: _____

Name of Sponsor's Authorized Representative: _____

_____ _____
Signature of Sponsor's Authorized Representative **Date of Signature**

USACE Wilmington District
Compensatory Mitigation Responsibility Transfer Form, Page 2

Conditions for Transfer of Compensatory Mitigation Credit:

- Once this document has been signed by the Mitigation Sponsor and the USACE is in receipt of the signed form, the Permittee is no longer responsible for providing the mitigation identified in this form, though the Permittee remains responsible for any other mitigation requirements stated in the permit conditions.
- Construction within jurisdictional areas authorized by the permit identified on page one of this form can begin only after the USACE is in receipt of a copy of this document signed by the Sponsor, confirming that the Sponsor has accepted responsibility for providing the mitigation requirements listed herein. For authorized impacts conducted by the North Carolina Department of Transportation (NCDOT), construction within jurisdictional areas may proceed upon permit issuance; however, a copy of this form signed by the Sponsor must be provided to the USACE within 30 days of permit issuance. NCDOT remains fully responsible for the mitigation until the USACE has received this form, confirming that the Sponsor has accepted responsibility for providing the mitigation requirements listed herein.
- Signed copies of this document must be retained by the Permittee, Mitigation Sponsor, and in the USACE administrative records for both the permit and the Bank/ILF Instrument. It is the Permittee's responsibility to ensure that the USACE Project Manager (address below) is provided with a signed copy of this form.
- If changes are proposed to the type, amount, or location of mitigation after this form has been signed and returned to the USACE, the Sponsor must obtain case-by-case approval from the USACE Project Manager and/or North Carolina Interagency Review Team (NCIRT). If approved, higher mitigation ratios may be applied, as per current District guidance and a new version of this form must be completed and included in the USACE administrative records for both the permit and the Bank/ILF Instrument.

Comments/Additional Conditions: Mitigation for R-2915 Sections A/B/C/D were already required by the permit issued January 7, 2015 and the August 31, 2016 modification, this additional compensatory mitigation is required to offset final design impacts to R-2915 Section E.

This form is not valid unless signed below by the USACE Project Manager and by the Mitigation Sponsor on Page 1. ***Once signed, the Sponsor should provide copies of this form along with an updated bank ledger to: 1) the Permittee, 2) the USACE Project Manager at the address below, and 3) the Wilmington District Mitigation Office, Attn: Todd Tugwell, 3331 Heritage Trade Drive, Suite 105, Wake Forest, NC 27587 (email: todd.tugwell@usace.army.mil)***. Questions regarding this form or any of the permit conditions may be directed to the USACE Project Manager below.

USACE Project Manager: Steve Kichefski
USACE Field Office: Asheville Regulatory Field Office
US Army Corps of Engineers
151 Patton Avenue, Room 208
Asheville, NC 28801-5006
Email: **steven.l.kichefski@usace.army.mil**

KICHEFSKI.STEVEN.L.1386908539

Digitally signed by KICHEFSKI.STEVEN.L.1386908539
Date: 2019.12.20 13:40:12 -05'00'

USACE Project Manager Signature

December 20, 2019
Date of Signature

Current Wilmington District mitigation guidance, including information on mitigation ratios, functional assessments, and mitigation bank location and availability, and credit classifications (including stream temperature and wetland groupings) is available at http://ribits.usace.army.mil.

Environmental Quality

ROY COOPER
Governor

MICHAEL S. REGAN
Secretary

S. JAY ZIMMERMAN
Director

April 28, 2017

Mr. Philip S. Harris, III, P.E., CPM
Natural Environment Section Head
Project Development and Environmental Analysis
North Carolina Department of Transportation
1598 Mail Service Center
Raleigh, North Carolina, 27699-1598

Subject: Modification to the 401 Water Quality Certification Pursuant to Section 401 of the Federal Clean Water Act with ADDITIONAL CONDITIONS for US 221 Widening from US 421 to US 221 Business/NC88 in Jefferson located in Watauga and Ashe Counties. Federal Aid Project No. STP-0221(13); TIP No. R-2915. WBS 34518.1.1. NCDWR Project No. 20140762v.3

Dear Mr. Harris:

Attached hereto is a modification of Certification No. 004001 issued to The North Carolina Department of Transportation (NCDOT) originally dated September 8, 2014 and subsequently modified on August 23, 2016.

If we can be of further assistance, do not hesitate to contact us.

Sincerely,

S. Jay Zimmerman, Director
Division of Water Resources

Attachments

Electronic copy only distribution:
Steve Kichefski, US Army Corps of Engineers, Asheville Field Office
Heath Slaughter, Division 11 Environmental Officer
Colin Mellor, NC Department of Transportation
Carla Dagnino, NC Department of Transportation
Dr. Cynthia Van Der Wiele, US Environmental Protection Agency
Marella Buncick, US Fish and Wildlife Service
Marla Chambers, NC Wildlife Resources Commission
Beth Harmon, Division of Mitigation Services
Dave Wanucha, NC Division of Water Resources Winston Salem Regional Office
File Copy

Modification to the 401 Water Quality Certification Pursuant to Section 401 of the Federal Clean Water Act with ADDITIONAL CONDITIONS

THIS CERTIFICATION is issued in conformity with the requirements of Section 401 Public Laws 92-500 and 95-217 of the United States and subject to the North Carolina Division of Water Resources (NCDWR) Regulations in 15 NCAC 2H .0500. This certification authorizes the NCDOT to temporarily impact an additional 0.15 acres of jurisdictional wetlands, 71 linear feet (40 linear feet less than originally approved) of jurisdictional streams in Ashe County. The project shall be constructed pursuant to the modification dated received April 7, 2017. The authorized impacts are as described below:

Stream Impacts in the New River Basin

Site	Permanent Fill in Intermittent Stream (linear ft)	Temporary Fill in Intermittent Stream (linear ft)	Permanent Fill in Perennial Stream (linear ft)	Temporary Fill in Perennial Stream (linear ft)	Total Stream Impact (linear ft)	Stream Impacts Requiring Mitigation (linear ft)
Original approved impacts at Site 3	-	-	111	-	111	
New impacts with this approval at Site 3	-	-	(40)	-	(40)	(40)
Totals	-	-	71		71	(40)

Total Stream Impact for (Site/Modification): 71 linear feet (40 linear feet less)

Wetland Impacts in the New River Basin (riverine)

Site	Fill (ac)	Fill (temporary) (ac)	Excavation (ac)	Mechanized Clearing (ac)	Hand Clearing (ac)	Total Wetland Impact (ac)
Original approved impacts at Site 3	<0.01	-	-	<0.01	-	<0.02
New additional impacts with this approval at Site 3	-	0.15	-	-	-	0.15
Totals	<0.01	0.15	-	<0.01	-	0.17

Total Wetland Impact for Site: 0.17 acres.

The application provides adequate assurance that the discharge of fill material into the waters of the New River Basin in conjunction with the proposed development will not result in a violation of applicable Water Quality Standards and discharge guidelines. Therefore, the State of North Carolina certifies that this activity will not violate the applicable portions of Sections 301, 302, 303, 306, 307 of PL 92-500 and PL 95-217 if conducted in accordance with the application and conditions hereinafter set forth.

This approval is only valid for the purpose and design that you submitted in your modified application dated received April 7, 2017. All the authorized activities and conditions of certification associated with the original Water Quality Certification dated September 8, 2017 and subsequently modified on August 23, 2016 still apply except where superseded by this certification. Should your project change, you are required to notify the NCDWR and submit a new application. If the property is sold, the new owner must be given a copy of this Certification and approval letter, and is thereby responsible for complying with all the conditions. If any additional wetland impacts, or stream impacts, for this project (now or in the future) exceed one acre or 150 linear feet, respectively, additional compensatory mitigation may be required as described in 15A NCAC 2H .0506 (h) (6) and (7). For this approval to remain valid, you are required to comply with all the conditions listed below. In addition, you should obtain all other federal, state or local permits before proceeding with your project including (but not limited to) Sediment and Erosion control, Coastal Stormwater, Non-discharge and Water Supply watershed regulations. This Certification

shall expire on the same day as the expiration date of the corresponding Corps of Engineers Permit.

Condition(s) of Certification:

1. Following completion of the project, the temporary sediment basin installed in the wetland at Site 4 will be removed along with any captured sediment. Original wetland dimensions and natural grade or better will be reestablished. The wetland will be seeded with a native wetland seed mix and coir fiber matted. [15A NCAC 02H.0506(b)(3) and (c)(3)]

Violations of any condition herein set forth may result in revocation of this Certification and may result in criminal and/or civil penalties. This Certification shall become null and void unless the above conditions are made conditions of the Federal 404 and/or Coastal Area Management Act Permit. This Certification shall expire upon the expiration of the 404 or CAMA permit.

If you wish to contest any statement in the attached Certification you must file a petition for an administrative hearing. You may obtain the petition form from the office of Administrative hearings. You must file the petition with the office of Administrative Hearings within sixty (60) days of receipt of this notice. A petition is considered filed when it is received in the office of Administrative Hearings during normal office hours. The Office of Administrative Hearings accepts filings Monday through Friday between the hours of 8:00am and 5:00pm, except for official state holidays. The original and one (1) copy of the petition must be filed with the Office of Administrative Hearings.

The petition may be faxed-provided the original and one copy of the document is received by the Office of Administrative Hearings within five (5) business days following the faxed transmission.
The mailing address for the Office of Administrative Hearings is:

Office of Administrative Hearings
6714 Mail Service Center
Raleigh, NC 27699-6714
Telephone: (919) 431-3000, Facsimile: (919) 431-3100

A copy of the petition must also be served on DEQ as follows:

Mr. Sam M. Hayes, General Counsel
Department of Environmental Quality
1601 Mail Service Center

This the 28th day of April 2017

DIVISION OF WATER RESOURCES

S. Jay Zimmerman, Director

WQC No. 004001

Environmental Quality

ROY COOPER
Governor

MICHAEL S. REGAN
Secretary

LINDA CULPEPPER
Interim Director

June 26, 2018

Mr. Philip S. Harris, III, P.E., CPM
Natural Environment Section Head
Project Development and Environmental Analysis
North Carolina Department of Transportation
1598 Mail Service Center
Raleigh, North Carolina, 27699-1598

Subject: Modification to the 401 Water Quality Certification Pursuant to Section 401 of the Federal Clean Water Act with ADDITIONAL CONDITIONS for US 221 Widening from US 421 to US 221 Business/NC88 in Jefferson located in Watauga and Ashe Counties. Federal Aid Project No. STP-0221(13); TIP No. R-2915. WBS 34518.1.1. NCDWR Project No. 20140762v4

Dear Mr. Harris:

Attached hereto is a modification of Certification No. 004001 issued to The North Carolina Department of Transportation (NCDOT) originally dated September 8, 2014, subsequently modified on August 23, 2016 and again on April 28, 2017.

If we can be of further assistance, do not hesitate to contact us.

Sincerely,

Linda Culpepper, Interim Director
Division of Water Resources

Attachments

Electronic copy only distribution:
Steve Kichefski, US Army Corps of Engineers, Asheville Field Office
Heath Slaughter, Division 11 Environmental Officer
Colin Mellor, NC Department of Transportation
Carla Dagnino, NC Department of Transportation
Marella Buncick, US Fish and Wildlife Service
Marla Chambers, NC Wildlife Resources Commission
File Copy

Modification to the 401 Water Quality Certification Pursuant to Section 401 of the Federal Clean Water Act with ADDITIONAL CONDITIONS

THIS CERTIFICATION is issued in conformity with the requirements of Section 401 Public Laws 92-500 and 95-217 of the United States and subject to the North Carolina Division of Water Resources (NCDWR) Regulations in 15 NCAC 2H .0500. This certification authorizes the NCDOT to impact an additional 20.0 linear feet of permanent impacts for stream bank stabilization purposes in Ashe County. The project shall be constructed pursuant to the modification dated received June 15, 2018. The authorized impacts are as described below:

Stream Impacts in the New River Basin, R-2915 B-Section

Site	Permanent Fill in Perennial Stream (linear ft)		Temporary Fill in Perennial Stream (linear ft)	Total Stream Impact (linear ft)	Stream Impacts Requiring Mitigation (linear ft)
	Bank Stabilization	Culvert			
Original approved impacts at Site 1B	35	15	6	56	15
New impacts with this approval at Site 1B	20	-	-	20	-
Totals	**55**	**15**	**6**	**76**	**15**

Total Stream Impact for Site: 76 linear feet

The application provides adequate assurance that the discharge of fill material into the waters of the New River Basin in conjunction with the proposed development will not result in a violation of applicable Water Quality Standards and discharge guidelines. Therefore, the State of North Carolina certifies that this activity will not violate the applicable portions of Sections 301, 302, 303, 306, 307 of PL 92-500 and PL 95-217 if conducted in accordance with the application and conditions hereinafter set forth.

This approval is only valid for the purpose and design that you submitted in your modified application dated June 15, 2018. All the authorized activities and conditions associated with the original Water Quality Certification dated September 8, 2017, subsequently modified on August 23, 2016 and again on April 28, 2017 still apply except where superseded by this certification. Should your project change, you are required to notify the NCDWR and submit a new application. If the property is sold, the new owner must be given a copy of this Certification and approval letter, and is thereby responsible for complying with all the conditions. If any additional wetland impacts, or stream impacts, for this project (now or in the future) exceed one acre or 300 linear feet, respectively, additional compensatory mitigation may be required as described in 15A NCAC 2H .0506 (h) (6) and (7). For this approval to remain valid, you are required to comply with all the conditions listed below. In addition, you should obtain all other federal, state or local permits before proceeding with your project including (but not limited to) Sediment and Erosion control, Coastal Stormwater, Non-discharge and Water Supply watershed regulations. This Certification shall expire on the same day as the expiration date of the corresponding Corps of Engineers Permit.

Condition(s) of Certification:

1. All the authorized activities and conditions associated with the original Water Quality Certification dated September 8, 2017, subsequently modified on August 23, 2016 and again on April 28, 2017 still apply except where superseded by this certification.

Violations of any condition herein set forth may result in revocation of this Certification and may result in criminal and/or civil penalties. This Certification shall become null and void unless the above conditions are made conditions of the Federal 404 and/or Coastal Area Management Act Permit. This Certification shall expire upon the expiration of the 404 or CAMA permit.

If you wish to contest any statement in the attached Certification you must file a petition for an administrative hearing. You may obtain the petition form from the office of Administrative hearings. You must file the petition with the office of Administrative Hearings within sixty (60) days of receipt of this notice. A petition is considered

filed when it is received in the office of Administrative Hearings during normal office hours. The Office of Administrative Hearings accepts filings Monday through Friday between the hours of 8:00am and 5:00pm, except for official state holidays. The original and one (1) copy of the petition must be filed with the Office of Administrative Hearings.

The petition may be faxed-provided the original and one copy of the document is received by the Office of Administrative Hearings within five (5) business days following the faxed transmission.
The mailing address for the Office of Administrative Hearings is:

Office of Administrative Hearings
6714 Mail Service Center
Raleigh, NC 27699-6714
Telephone: (919) 431-3000, Facsimile: (919) 431-3100

A copy of the petition must also be served on DEQ as follows:

Mr. Bill F. Lane, General Counsel
Department of Environmental Quality
1601 Mail Service Center

This the 26th day of June 2018

DIVISION OF WATER RESOURCES

Linda Culpepper, Interim Director

WQC No. 004001

ROY COOPER
Governor
MICHAEL S. REGAN
Secretary
LINDA CULPEPPER
Director

NORTH CAROLINA
Environmental Quality

May 22, 2019

Mr. Philip S. Harris, III, P.E., CPM
Natural Environment Section Head
Project Development and Environmental Analysis
North Carolina Department of Transportation
1598 Mail Service Center
Raleigh, North Carolina, 27699-1598

Subject: Modification to the 401 Water Quality Certification Pursuant to Section 401 of the Federal Clean Water Act with ADDITIONAL CONDITIONS for US 221 Widening from US 421 to US 221 Business/NC88 in Jefferson located in Watauga and Ashe Counties. Federal Aid Project No. STP-0221(13); TIP No. R-2915. WBS 34518.1.FR6. NCDWR Project No. 20140762v5

Dear Mr. Harris:

Attached hereto is a copy of Certification No. 004001 issued to The North Carolina Department of Transportation (NCDOT) dated May 22, 2019.

If we can be of further assistance, do not hesitate to contact us.

Sincerely,

DocuSigned by:
Amy Chapman
9C9886312DCD474...

Linda Culpepper, Director
Division of Water Resources

Attachments

Electronic copy only distribution:
Steve Kichefsky, US Army Corps of Engineers, Asheville Field Office
Kevin Hining, Division 11 Environmental Officer
Erin Cheely, NC Department of Transportation
Chris Militscher, US Environmental Protection Agency
Claire Ellwanger, US Fish and Wildlife Service
Marla Chambers, NC Wildlife Resources Commission
File Copy

401 Water Quality Certification Pursuant to Section 401 of the Federal Clean Water Act with ADDITIONAL CONDITIONS

THIS CERTIFICATION is issued in conformity with the requirements of Section 401 Public Laws 92-500 and 95-217 of the United States and subject to the North Carolina Division of Water Resources (NCDWR) Regulations in 15 NCAC 2H .0500. This certification authorizes the NCDOT to impact an additional 907 linear feet of permanent fill impacts, 576 linear feet for temporary impacts, 459 linear feet for bank stabilization and 0.46 acres of wetland impacts in Ashe County for R-2915 Section E. The project shall be constructed pursuant to the modification dated received April 24, 2019. The authorized impacts are as described below:

Stream Impacts in the New River Basin for R-2915E

Site	Permanent Fill in Perennial Stream (linear ft)		Temporary Fill in Perennial Stream (linear ft)	Fill in Intermittent Stream		Total Stream Impact (linear ft)	Stream Impacts Requiring Mitigation (linear ft)
	Fill	Bank Stabilization		Fill	Bank Stabilization		
2A	-	14	17	-	-	31	-
2B	57	-	21	-	-	78	-
4B	-	-	-	10*	11	21	-
6A	52	-	10	-	-	62	-
6B	-	27	10	-	-	37	-
7	-	-	24	-	-	24	-
8A	-	-	32	-	-	32	-
8B	-	-	20	-	-	20	-
9A	-	-	-	33, 7*	10	50	-
9B	-	-	19	-	-	19	-
11A	-	-	22	-	-	22	-
11B	-	-	10	-	-	10	-
11C	-	-	11	-	-	11	-
11D	27	-	10	-	-	37	-
12	-	17	10	-	-	27	-
13A	31	11	10	-	-	52	-
13B	60	-	-	-	-	60	-
13C	-	-	-	25, 23*	-	48	-
14A	23	23	10	-	-	56	-

Stream Impacts in the New River Basin for R-2915E

Site	Permanent Fill in Perennial Stream (linear ft)		Temporary Fill in Perennial Stream (linear ft)	Fill in Intermittent Stream		Total Stream Impact (linear ft)	Stream Impacts Requiring Mitigation (linear ft)
	Fill	Bank Stabilization		Fill	Bank Stabilization		
14B	63	-	-	-	-	63	-
15A	31	15	10	-	-	56	-
15B	-	-	23	-	-	23	-
17A	115	-	-	-	-	115	-
17B	-	-	-	146	-	146	-
18	39	-	12	-	-	51	-
19	22	8	10	-	-	40	-
20	-	-	25	-	-	25	-
22A	-	-	22	-	-	22	-
22B	61	31	10	-	-	102	-
23	55	-	-	-	-	55	-
24A	30	-	22	-	-	52	-
24B	-	18	-	-	-	18	-
24C	-	20	20	-	-	40	-
25A	13	-	12	-	-	25	-
25B	-	17	20	-	-	37	-
26A	19	-	8	-	-	27	-
26B	-	8	-	-	-	8	-
26C	-	32	20	-	-	52	-
27A	-	15	-	-	-	15	-
27B	-	18	30	-	-	48	-
28A	-	88	10	-	-	98	-
28B	-	59	10	-	-	69	-
29	5	-	15	-	-	20	-
30	-	17	21	-	-	38	-

Stream Impacts in the New River Basin for R-2915E

Site	Permanent Fill in Perennial Stream (linear ft)		Temporary Fill in Perennial Stream (linear ft)	Fill in Intermittent Stream		Total Stream Impact (linear ft)	Stream Impacts Requiring Mitigation (linear ft)
	Fill	Bank Stabilization		Fill	Bank Stabilization		
Totals	**703**	**438**	**536**	**204, 40***	**21**	**1,942**	-

***Temporary Fill** **Total Stream Impacts for Project: 1,942 linear feet**

Wetland Impacts in the New River Basin for R-2915E

Site	Fill (ac)	Excavation (ac)	Mechanized Clearing (ac)	Total Wetland Impact (ac)
1	-	-	<0.01	<0.01
2B	0.02	-	<0.01	0.03
3	<0.01	-	0.03	0.03
4A	<0.01	-	-	<0.01
4B	<0.01	-	0.03	0.03
5	<0.01	-	0.01	0.01
6A	0.04	-	0.02	0.07
8B	<0.01*	-	-	
9A	0.09	-	-	0.09
10	<0.01	-	<0.01	<0.01
13B	0.01	-	-	0.01
15A	0.01	-	<0.01	0.02
15B	-	-	0.01	0.01
16	0.03	-	-	0.03
21	0.03	0.01	<0.01	0.04
26A	0.01	0.04	-	0.05
31	0.02	-	-	0.02
Total	**0.28, <0.01***	**0.05**	**0.13**	**0.46**

*** Temporary Fill** **Total Preliminary Wetland Impact for Project: 0.46 acres.**

The application provides adequate assurance that the discharge of fill material into the waters of the New River Basin in conjunction with the proposed development will not result in a violation of applicable Water Quality Standards and discharge guidelines. Therefore, the State of North Carolina certifies that this activity will not violate the applicable portions of Sections 301, 302, 303, 306, 307 of PL 92-500 and PL 95-217 if conducted in accordance with the application and conditions hereinafter set forth.

This approval is only valid for the purpose and design that you submitted in your modified application dated receive April 24, 2019. All the authorized activities and conditions associated with the original Water Quality Certification dated September 8, 2014, subsequently modified on August 23, 2016, April 28, 2017, November 27, 2017 by email and again on June 26, 2018, still apply except where superseded by this certification. Should your project change, you are required to notify the NCDWR and submit a new application. If the property is sold, the new owner must be given a copy of this Certification and approval letter and is thereby responsible for complying with all the Conditions. Compensatory mitigation may be required as described in 15A NCAC 2H .0506 (h) (6) and (7) for any additional wetland impacts or stream impacts that exceed 300 linear feet for this project (now or in the future). For this approval to remain valid, you are required to comply with all the conditions listed below. In addition, you should obtain all other federal, state or local permits before proceeding with your project including (but not limited to) Sediment and Erosion control, Coastal Stormwater, Non-discharge and Water Supply watershed regulations. This Certification shall expire on the same day as the expiration date of the corresponding Corps of Engineers Permit.

Condition(s) of Certification:

Specific Conditions

1. Compensatory mitigation for 0.46 acres of impact to wetlands is required. We understand that you have chosen to perform compensatory mitigation for impacts to streams through the North Carolina Division of Mitigation Service (DMS) (formerly NCEEP), and that the DMS has agreed to implement the mitigation for the project. The DMS has indicated in a letter dated March 29, 2019 that they will assume responsibility for satisfying the federal Clean Water Act compensatory mitigation requirements for the above-referenced project, in accordance with the DMS Mitigation Banking Instrument signed July 28, 2010.

2. All the authorized activities and conditions associated with the original Water Quality Certification dated September 8, 2014, subsequently modified on August 23, 2016, April 28, 2017, November 27, 2017 by email and June 26, 2018 still apply except where superseded by this certification.

Violations of any condition herein set forth may result in revocation of this Certification and may result in criminal and/or civil penalties. This Certification shall become null and void unless the above conditions are made conditions of the Federal 404 and/or Coastal Area Management Act Permit. This Certification shall expire upon the expiration of the 404 or CAMA permit.

If you wish to contest any statement in the attached Certification you must file a petition for an administrative hearing. You may obtain the petition form from the office of Administrative hearings. You must file the petition with the office of Administrative Hearings within sixty (60) days of receipt of this notice. A petition is considered filed when it is received in the office of Administrative Hearings during normal office hours. The Office of Administrative Hearings accepts filings Monday through Friday between the hours of 8:00am and 5:00pm, except for official state holidays. The original and one (1) copy of the petition must be filed with the Office of Administrative Hearings.

The petition may be faxed-providing the original and one copy of the document is received by the Office of Administrative Hearings within five (5) business days following the faxed transmission.
The mailing address for the Office of Administrative Hearings is:

Office of Administrative Hearings
6714 Mail Service Center
Raleigh, NC 27699-6714

Telephone: (919) 431-3000, Facsimile: (919) 431-3100

A copy of the petition must also be served on DEQ as follows:

Mr. Bill F. Lane, General Counsel
Department of Environmental Quality
1601 Mail Service Center

This the 22nd day of May 2019

DIVISION OF WATER RESOURCES

DocuSigned by:
Amy Chapman
9C9886312DCD474...

Linda Culpepper, Interim Director

WQC No. 004001

ROY COOPER
Governor
MICHAEL S. REGAN
Secretary
LINDA CULPEPPER
Director

NORTH CAROLINA
Environmental Quality

NCDWR Project No.: _____ **County:** _____

Applicant: _____

Project Name: _____

Date of Issuance of 401 Water Quality Certification: _____

Certificate of Completion
Upon completion of all work approved within the 401 Water Quality Certification or applicable Buffer Rules, and any subsequent modifications, the applicant is required to return this certificate to the 401 Transportation Permitting Unit, North Carolina Division of Water Resources, 1617 Mail Service Center, Raleigh, NC, 27699-1617. This form may be returned to NCDWR by the applicant, the applicant's authorized agent, **or** the project engineer. It is not necessary to send certificates from all of these.

Applicant's Certification

I, _____, hereby state that, to the best of my abilities, due care and diligence was used in the observation of the construction such that the construction was observed to be built within substantial compliance and intent of the 401 Water Quality Certification and Buffer Rules, the approved plans and specifications, and other supporting materials.

Signature: _____ Date: _____

Agent's Certification

I, _____, hereby state that, to the best of my abilities, due care and diligence was used in the observation of the construction such that the construction was observed to be built within substantial compliance and intent of the 401 Water Quality Certification and Buffer Rules, the approved plans and specifications, and other supporting materials.

Signature: _____ Date:_____

Engineer's Certification

_____ Partial _____ Final

I, _____, as a duly registered Professional Engineer in the State of North Carolina, having been authorized to observe (periodically, weekly, full time) the construction of the project for the Permittee hereby state that, to the best of my abilities, due care and diligence was used in the observation of the construction such that the construction was observed to be built within substantial compliance and intent of the 401 Water Quality Certification and Buffer Rules, the approved plans and specifications, and other supporting materials.

Signature _____ Registration No. _____

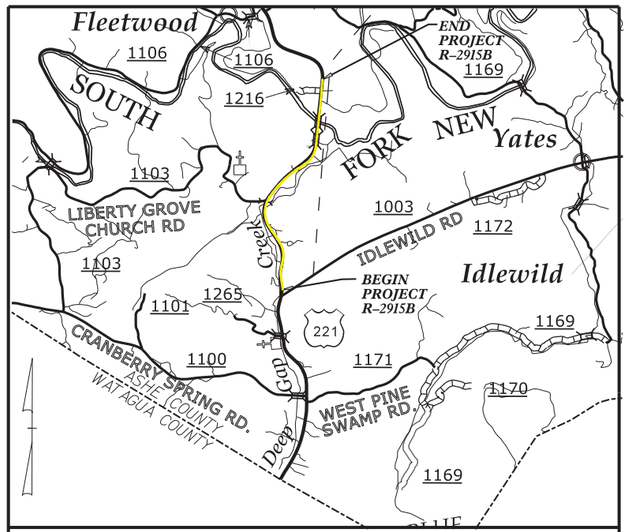
Date _____

09/08/99

TIP PROJECT: R-2915B

CONTRACT:

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



VICINITY MAP

RW PLANS

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

ASHE COUNTY

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	R-2915B	1	

STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION
34518.1.3	STP-0221(40)	P.E.
34518.2.FR2	STP-0221(40)	R /W
34518.2.UFR2	STP-0221(40)	UTILITIES

PERMIT DRAWING
SHEET 1 OF 31

Revised 4/6/17

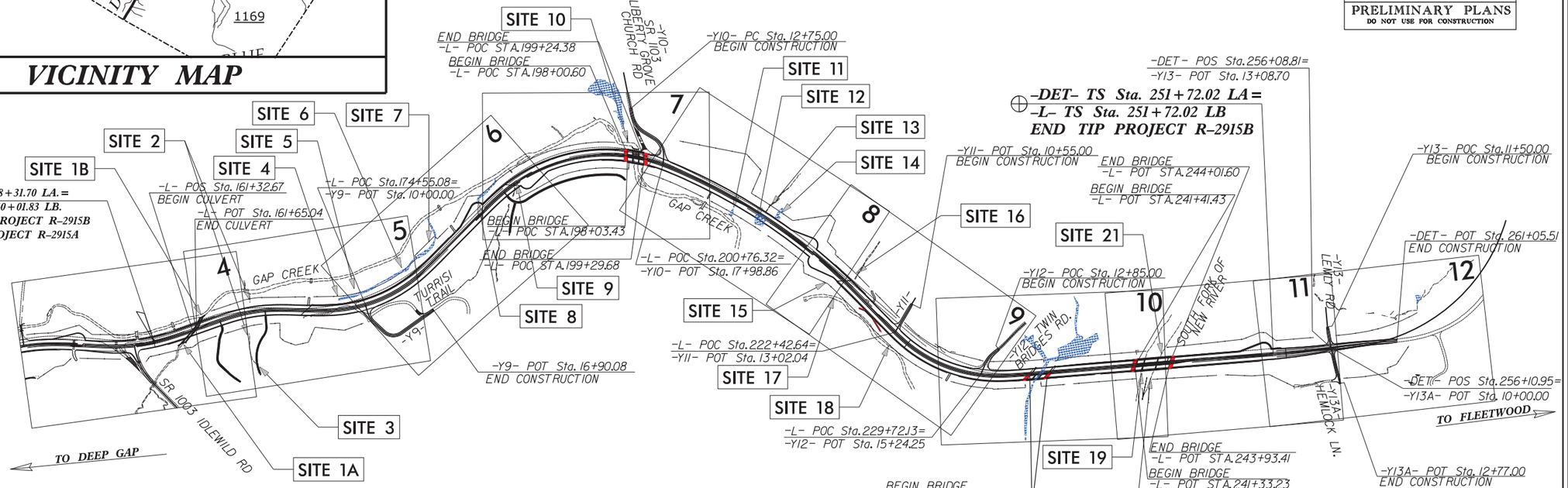
LOCATION: US 221 FROM SR 1003 (IDLEWILD ROAD) TO NORTH OF SOUTH FORK NEW RIVER

TYPE OF WORK: GRADING, DRAINAGE, PAVING, AND STRUCTURES

NAD 83/CORS

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION



WETLAND AND SURFACE WATER IMPACTS PERMIT

NOTE : THIS IS A PARTIAL CONTROLLED ACCESS PROJECT WITH ACCESS BEING LIMITED TO ONE DRIVEWAY PER PARCEL.

THIS PROJECT IS NOT WITHIN ANY MUNICIPAL BOUNDARIES.

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

NCDOT CONTACT: BRENDA L. MOORE, P.E.

GRAPHIC SCALES

50 25 0 50 100
PLANS

50 25 0 50 100
PROFILE (HORIZONTAL)

10 5 0 10 20
PROFILE (VERTICAL)

DESIGN DATA

ADT 2015 = 12,089
ADT 2035 = 20,204
DHV = 10 %
D = 65 %
T = 9 % *
V = 50 MPH
* TTST 2% DUAL 7%
FUNC CLASS = ARTERIAL
STATEWIDE TIER

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT R-2915B = 1.675 MILES

LENGTH STRUCTURE TIP PROJECT R-2915B = 0.094 MILES

TOTAL LENGTH TIP PROJECT R-2915B = 1.769 MILES

Prepared in the Office of:
CDM Smith
5400 Glenwood Avenue, Suite 300, Raleigh, NC 27612

2012 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
SEPTEMBER 30, 2013

LETTING DATE:
JUNE 16, 2015

DOUGLAS B. SAUNDERS, P.E.
PROJECT ENGINEER

RICKY E. STATON
PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

P.E.
SIGNATURE:

ROADWAY DESIGN ENGINEER

P.E.
SIGNATURE:

STATE OF NORTH CAROLINA • DEPARTMENT OF TRANSPORTATION

6/6/2014
R2915B_Hyd_prm_wet_psh_01.dgn
bklam

5/14/99

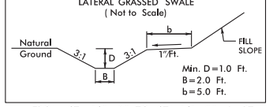
PROJECT REFERENCE NO.	SHEET NO.
R-2915B	2D-1
RW SHEET NO.	

HYDRAULICS ENGINEER

PERMIT DRAWING
SHEET 2 OF 31

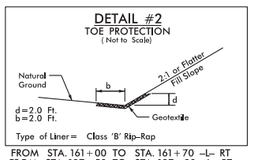
Revised 4/6/17

DETAIL #1
LATERAL GRASSED SWALE
(Not to Scale)



FROM STA. 160+20 TO STA. 161+00 –L– RT
FROM STA. 234+35 TO STA. 238+00 –L– RT

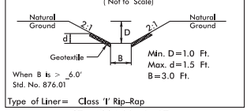
DETAIL #2
TOE PROTECTION
(Not to Scale)



Type of Liner= Class 'B' Rip-Rap

FROM STA. 161+00 TO STA. 161+70 –L– RT
FROM STA. 197+50 TO STA. 197+80 –L– RT
FROM STA. 250+00 TO STA. 251+50 –L– RT
FROM STA. 251+00 TO STA. 252+50 –L– LT
FROM STA. 15+05 TO STA. 15+50 –DR1REV– RT
FROM STA. 15+00 TO STA. 15+50 –DR1REV– LT

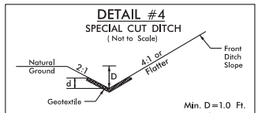
DETAIL #3
STANDARD BASE DITCH
(Not to Scale)



Type of Liner= Class 'I' Rip-Rap

STA. 166+00 –L– LT

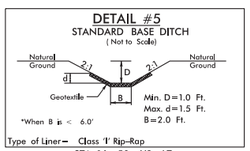
DETAIL #4
SPECIAL CUT DITCH
(Not to Scale)



Type of Liner= Class 'B' Rip-Rap

FROM STA. 16+20 TO STA. 16+90 –Y9– RT

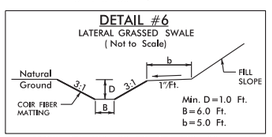
DETAIL #5
STANDARD BASE DITCH
(Not to Scale)



Type of Liner= Class 'I' Rip-Rap

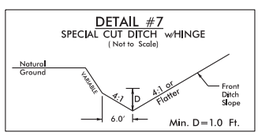
STA. 16+50 –Y9– LT

DETAIL #6
LATERAL GRASSED SWALE
(Not to Scale)



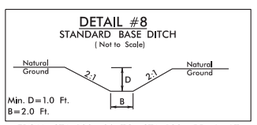
FROM STA. 180+00 TO STA. 182+00 –L– LT

DETAIL #7
SPECIAL CUT DITCH wHINGE
(Not to Scale)



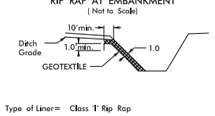
FROM STA. 196+50 TO STA. 197+00 –L– RT

DETAIL #8
STANDARD BASE DITCH
(Not to Scale)



FROM STA. 198+80 TO STA. 199+55 –L– LT

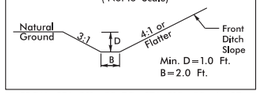
DETAIL #9
RIP RAP AT EMBANKMENT
(Not to Scale)



Type of Liner= Class 'I' Rip Rap

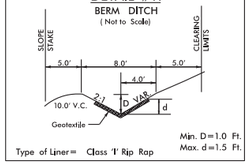
FROM STA. 198+70 TO STA. 198+90 –L– LT
FROM STA. 217+27 TO STA. 217+40 –L– LT
FROM STA. 242+50 TO STA. 242+70 –L– RT
FROM STA. 243+40 TO STA. 243+60 –L– LT

DETAIL #10
SPECIAL CUT GRASSED SWALE
(Not to Scale)



FROM STA. 211+80 TO STA. 215+55 –L– RT

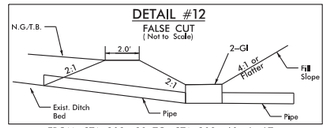
DETAIL #11
BERM DITCH
(Not to Scale)



Type of Liner= Class 'I' Rip Rap

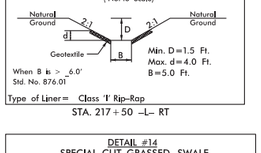
FROM STA. 171+50 TO STA. 172+75 –L– RT

DETAIL #12
FALSE CUT
(Not to Scale)



FROM STA. 208+80 TO STA. 209+60 –L– LT

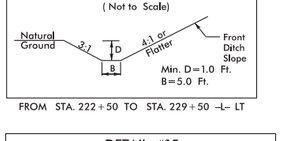
DETAIL #13
STANDARD BASE DITCH
(Not to Scale)



Type of Liner= Class 'I' Rip-Rap

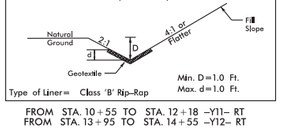
STA. 217+50 –L– RT

DETAIL #14
SPECIAL CUT GRASSED SWALE
(Not to Scale)



FROM STA. 222+50 TO STA. 229+50 –L– LT

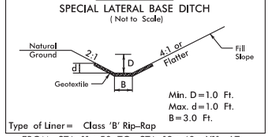
DETAIL #15
SPECIAL LATERAL 'V' DITCH
(Not to Scale)



Type of Liner= Class 'B' Rip-Rap

FROM STA. 10+55 TO STA. 12+18 –Y11– RT
FROM STA. 13+95 TO STA. 14+55 –Y12– RT

DETAIL #16
SPECIAL LATERAL BASE DITCH
(Not to Scale)



Type of Liner= Class 'B' Rip-Rap

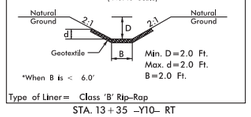
FROM STA. 11+50 TO STA. 12+40 –Y11– LT

DETAIL #17
ROADWAY DITCH
(Not to Scale)

Type of Liner= Class 'B' Rip-Rap

FROM STA. 252+00 TO STA. 255+50 –DET– RT
FROM STA. 253+21 TO STA. 255+50 –DET– LT
FROM STA. 256+42 TO STA. 261+05 –DET– RT
FROM STA. 256+50 TO STA. 260+50 –DET– LT

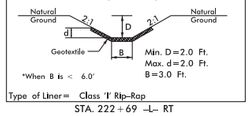
DETAIL #18
STANDARD BASE DITCH
(Not to Scale)



Type of Liner= Class 'B' Rip-Rap

STA. 13+35 –Y10– RT

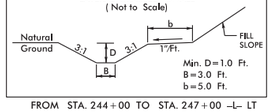
DETAIL #19
STANDARD BASE DITCH
(Not to Scale)



Type of Liner= Class 'I' Rip-Rap

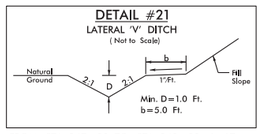
STA. 222+69 –L– RT

DETAIL #20
LATERAL GRASSED SWALE
(Not to Scale)



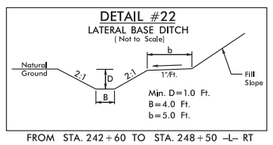
FROM STA. 244+00 TO STA. 247+00 –L– LT

DETAIL #21
LATERAL 'V' DITCH
(Not to Scale)



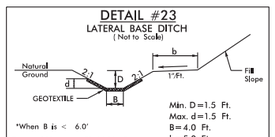
FROM STA. 247+00 TO STA. 249+00 –L– LT

DETAIL #22
LATERAL BASE DITCH
(Not to Scale)



FROM STA. 242+60 TO STA. 248+50 –L– RT

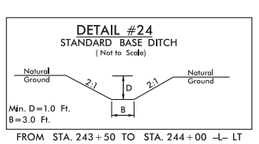
DETAIL #23
LATERAL BASE DITCH
(Not to Scale)



Type of Liner= CL 'I' Rip-Rap

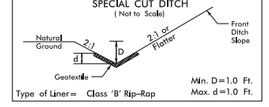
FROM STA. 248+50 TO STA. 250+00 –L– RT

DETAIL #24
STANDARD BASE DITCH
(Not to Scale)



FROM STA. 243+50 TO STA. 244+00 –L– LT

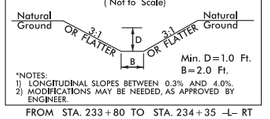
DETAIL #25
SPECIAL CUT DITCH
(Not to Scale)



Type of Liner= Class 'B' Rip-Rap

FROM STA. 16+40 TO STA. 19+00 –DR1REV– LT
FROM STA. 15+50 TO STA. 16+05 –DR1REV– LT
FROM STA. 10+20 TO STA. 10+50 –DR2REV– RT
FROM STA. 10+15 TO STA. 10+50 –DR2REV– LT

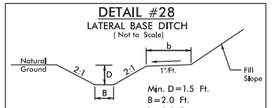
DETAIL #27
STANDARD BASE GRASSED SWALE
(Not to Scale)



*NOTES:
1) LONGITUDINAL SLOPES BETWEEN 0.3% AND 4.0%.
2) MODIFICATIONS MAY BE NEEDED, AS APPROVED BY ENGINEER.

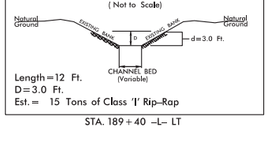
FROM STA. 233+80 TO STA. 234+35 –L– RT

DETAIL #28
LATERAL BASE DITCH
(Not to Scale)



FROM STA. 215+00 TO STA. 217+40 –L– LT

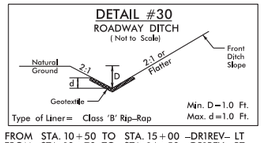
DETAIL #29
PIPE OUTLET CHANNEL
(Not to Scale)



Length=12 Ft.
D=3.0 Ft.
Est.= 15 Tons of Class 'I' Rip-Rap

STA. 189+40 –L– LT

DETAIL #30
ROADWAY DITCH
(Not to Scale)



Type of Liner= Class 'B' Rip-Rap

FROM STA. 10+50 TO STA. 15+00 –DR1REV– LT
FROM STA. 10+70 TO STA. 14+50 –DR1REV– RT
FROM STA. 15+50 TO STA. 16+50 –DR1REV– RT
FROM STA. 10+50 TO STA. 12+80 –DR2REV– RT
FROM STA. 10+50 TO STA. 12+00 –DR2REV– LT
FROM STA. 10+50 TO STA. 16+00 –Y9– LT & RT
FROM STA. 10+84 TO STA. 15+00 –DR3– LT
FROM STA. 11+30 TO STA. 15+00 –DR3– RT
FROM STA. 17+00 TO STA. 19+72 –DR3– RT
FROM STA. 17+00 TO STA. 19+30 –DR3– LT
FROM STA. 10+25 TO STA. 11+55 –DR5– LT
FROM STA. 10+25 TO STA. 11+00 –DR5– RT
FROM STA. 10+50 TO STA. 12+10 –Y13A– RT
FROM STA. 10+50 TO STA. 12+50 –Y13A– LT

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5/14/99

PERMIT DRAWING
SHEET 3 OF 31

Revised 4/6/17

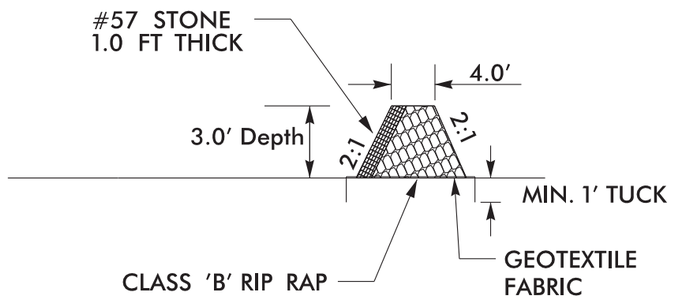
PROJECT REFERENCE NO.	SHEET NO.
R-2915B	2D-2
RW SHEET NO.	

HYDRAULICS ENGINEER

DETAIL #31

FILTER BERM SECTION VIEW

(Not to Scale)



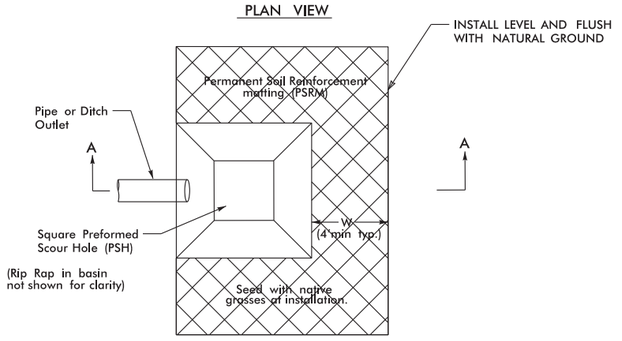
EST 10 TONS #57 STONE
EST 40 TONS CL B RIP RAP
EST 70 SY GEOTEXTILE

STA. 198 + 00 –L– RT

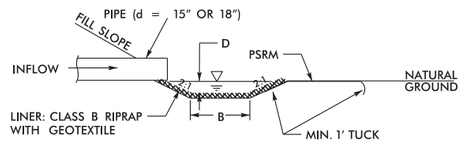
PREFORMED SCOUR HOLE

*NOT TO SCALE

PLAN VIEW



SECTION A–A



STATION	B FT.	D FT.
FOR 15" PIPE	4.0	1.0
165+00 -L- LT	4.0	1.0
171+50 -L- LT	4.0	1.0
200+00 -L- RT	4.0	1.0
204+00 -L- RT	4.0	1.0
206+50 -L- RT	4.0	1.0
211+27 -L- RT	4.0	1.0
216+75 -L- RT	4.0	1.0
221+95 -L- RT	4.0	1.0
231+50 -L- RT	4.0	1.0
232+80 -L- RT	4.0	1.0
238+00 -L- LT	4.0	1.0
FOR 18" PIPE	6.0	1.0
182+30 -L- LT	6.0	1.0

DETAIL #36

(NOT TO SCALE)

SKEWED MULTI–BARREL CULVERT LOW FLOW CHANNEL,SILLS AND FLOOD PLAIN

*NOTES:

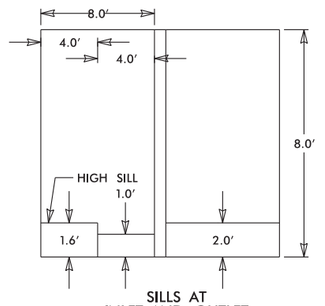
1) NATIVE MATERIAL BETWEEN SILLS/BAFFLES IN THE CULVERT SHALL PROVIDE A CONTINUOUS LOW FLOW CHANNEL. NATIVE MATERIAL CONSISTS OF MATERIAL THAT IS EXCAVATED FROM THE THE STREAM OR FLOODPLAIN AT THE PROJECT SITE DURING CONSTRUCTION. ONLY MATERIAL THAT IS EXCAVATED FROM THE STREAM BED MAY BE USED TO LINE THE LOW FLOW CULVERT BARREL. RIP–RAP MAY BE USED TO SUPPLEMENT THE NATIVE MATERIAL IN THE HIGH FLOW CULVERT BARREL(S). IF RIP–RAP IS USED TO LINE THE HIGH FLOW CULVERT BARREL(S), NATIVE MATERIAL SHOULD BE PLACED ON TOP TO FILL VOIDS AND PROVIDE A FLAT SURFACE FOR ANIMAL PASSAGE. NATIVE MATERIAL IS SUBJECT TO APPROVAL BY THE ENGINEER AND MAY BE SUBJECT TO PERMIT CONDITIONS.

2) SILLS/BAFFLES ARE TO BE 1.0 FT. WIDE, CAST SEPARATELY AND ATTACHED BY DOWELS.

3) TOP OF LOW FLOW SILLS/BAFFLES SHOULD MATCH STREAM BED ELEVATION IN LOW FLOW CHANNEL OF STREAM. (THALWEG)

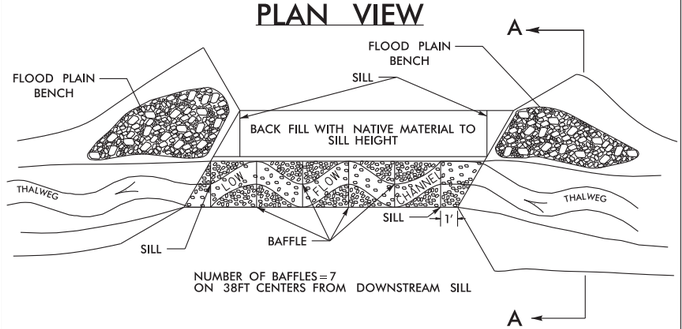
4) DO NOT SET ELEVATION OF HIGH SILL/BAFFLES ABOVE BANK FULL.

5) NUMBER OF SILL/BAFFLES DETERMINED BY THE ENGINEER.



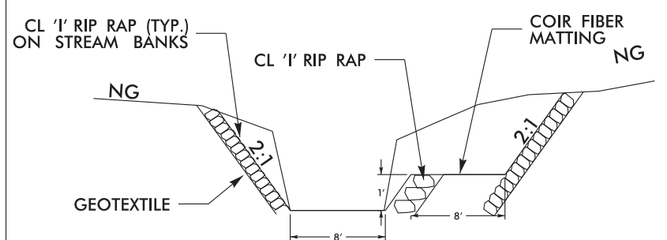
SILLS AT INLET AND OUTLET

PLAN VIEW



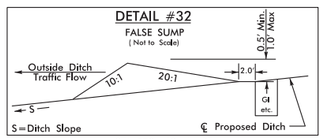
SECTION A–A

INLET AND OUTLET CHANNEL



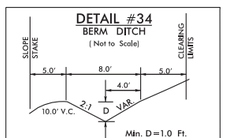
STA. 160 + 40.08 –L– RT
STA. 162 + 28.52 –L– LT

DETAIL #32
FALSE SUMP
(Not to Scale)



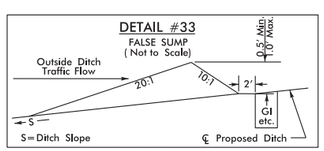
STA. 178 + 63 –L– RT
STA. 182 + 84 –L– RT
STA. 188 + 90 –L– RT
STA. 192 + 15 –L– RT
STA. 195 + 60 –L– RT
STA. 197 + 14 –L– RT
STA. 256 + 75 –DET– LT
STA. 14 + 86 –Y10– LT
STA. 15 + 72 –Y10– LT

DETAIL #34
BERM DITCH
(Not to Scale)



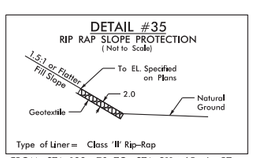
FROM STA. 165 + 45 TO STA. 166 + 05 –L– RT
FROM STA. 170 + 65 TO STA. 171 + 50 –L– RT

DETAIL #33
FALSE SUMP
(Not to Scale)



STA. 167 + 37 –L– RT
STA. 171 + 37 –L– RT
STA. 173 + 87 –L– RT
STA. 201 + 62 –L– LT
STA. 204 + 14 –L– LT
STA. 206 + 64 –L– LT
STA. 252 + 10 –DET– RT
STA. 12 + 90 –Y9– RT
STA. 16 + 10 –Y9– RT
STA. 14 + 32 –DR3– RT

DETAIL #35
RIP RAP SLOPE PROTECTION
(Not to Scale)



FROM STA. 199 + 70 TO STA. 211 + 65 –L– RT
FROM STA. 215 + 50 TO STA. 219 + 20 –L– RT
FROM STA. 221 + 63 TO STA. 223 + 80 –L– RT

8/19/2016
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bellam

PROJECT REFERENCE NO.	SHEET NO.
R-2915B	4
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

CDM Smith — Camp Dresser & McKee, 5400 Glenwood Avenue, Suite 300, Raleigh, NC 27612-3228, NC COA No. F-0412

SUNGATE DESIGN GROUP, P.A.

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

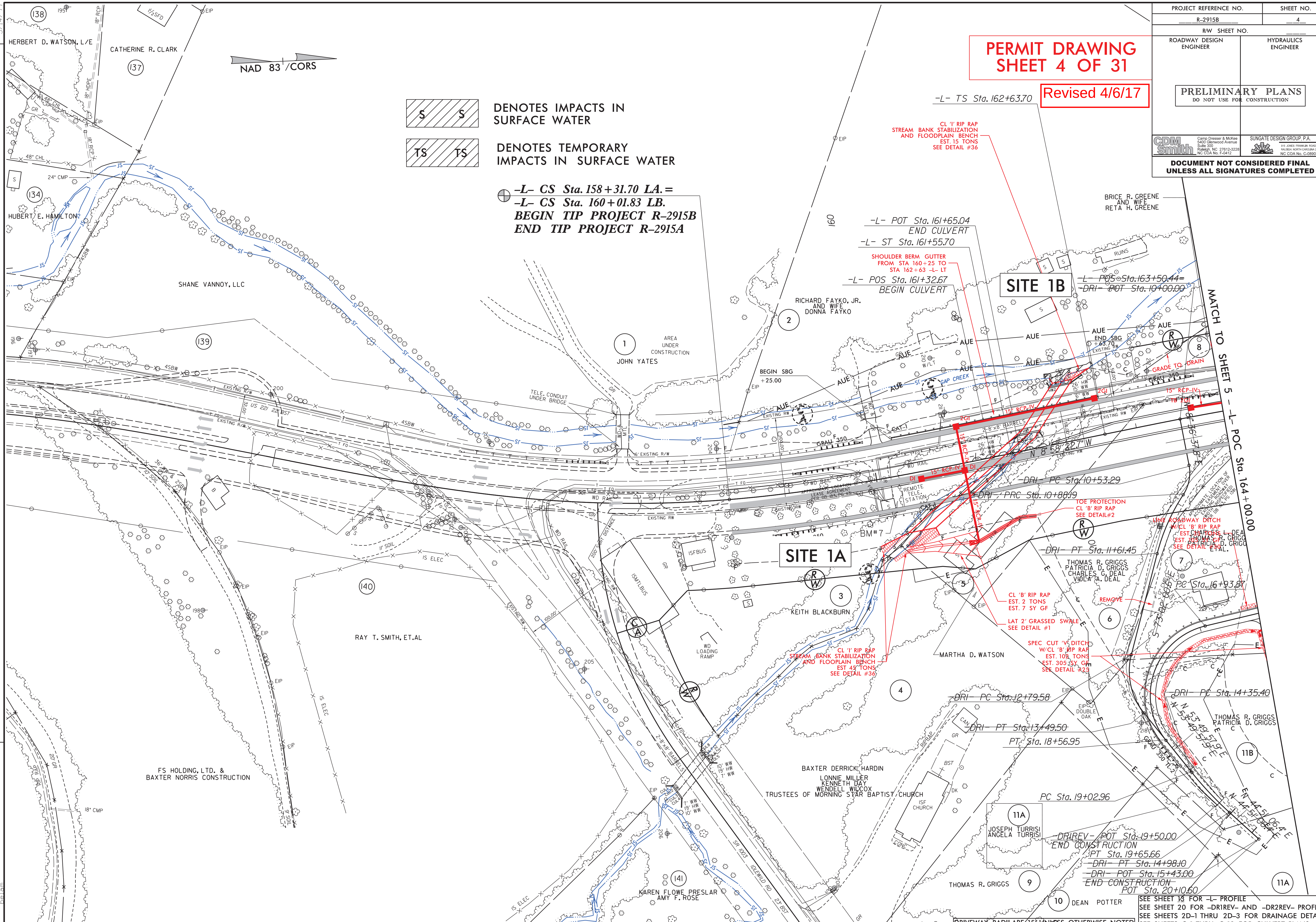
PERMIT DRAWING SHEET 4 OF 31

Revised 4/6/17

S — DENOTES IMPACTS IN SURFACE WATER

TS — DENOTES TEMPORARY IMPACTS IN SURFACE WATER

-L- CS Sta. 158+31.70 LA. =
-L- CS Sta. 160+01.83 LB.
BEGIN TIP PROJECT R-2915B
END TIP PROJECT R-2915A



NAD 83 / CORS
SITE 1A
SITE 1B
MATCH TO SHEET 5 -L- POC Sta. 164+00.00
-L- TS Sta. 162+63.70
-L- POT Sta. 161+65.04
END CULVERT
-L- ST Sta. 161+55.70
-L- POS Sta. 161+32.67
BEGIN CULVERT
-L- POS Sta. 163+50.44=
-DRI- POT Sta. 10+00.00
CL 'I' RIP RAP
STREAM BANK STABILIZATION AND FLOODPLAIN BENCH
EST. 15 TONS
SEE DETAIL #36
SHOULDER BERM GUTTER FROM STA 160+25 TO STA 162+63 -L- LT
TOE PROTECTION CL 'B' RIP RAP SEE DETAIL #2
CL 'B' RIP RAP EST. 2 TONS EST. 7 SY GF
LAT 2' GRASSED SWALE SEE DETAIL #1
SPEC CUT 'V' DITCH W/CL 'B' RIP RAP EST. 105 TONS EST. 305 SY GF SEE DETAIL #23
CL 'I' RIP RAP STREAM BANK STABILIZATION AND FLOODPLAIN BENCH EST 45 TONS SEE DETAIL #36
-DRI- PC Sta. 10+53.29
-DRI- / PRC Sta. 10+88.19
-DRI- PT Sta. 11+61.45
-DRI- PC Sta. 12+79.58
-DRI- PT Sta. 13+49.50
PT Sta. 18+56.95
PC Sta. 19+02.96
-DRI- PC Sta. 14+35.40
-DRIREV- POT Sta. 19+50.00
END CONSTRUCTION
PT Sta. 19+65.66
-DRI- PT Sta. 14+98.10
-DRI- POT Sta. 15+43.00
END CONSTRUCTION
POT Sta. 20+10.60
PC Sta. 16+93.87
N 8°58'22.7" W
HERBERT D. WATSON, L/E
CATHERINE R. CLARK
HUBERT E. HAMILTON
SHANE VANNOY, LLC
JOHN YATES
RICHARD FAYKO, JR. AND WIFE DONNA FAYKO
BRICE R. GREENE AND WIFE RETA H. GREENE
KEITH BLACKBURN
THOMAS R. GRIGGS PATRICIA D. GRIGGS CHARLES G. DEAL VIOLA A. DEAL
MARTHA D. WATSON
RAY T. SMITH, ET.AL
FS HOLDING, LTD. & BAXTER NORRIS CONSTRUCTION
BAXTER DERRICK HARDIN LONNIE MILLER KENNETH DAY WENDELL WILCOX TRUSTEES OF MORNING STAR BAPTIST CHURCH
JOSEPH TURRISI ANGELA TURRISI
THOMAS R. GRIGGS
DEAN POTTER
KAREN FLOWE PRESLAR AMY F. ROSE
THOMAS R. GRIGGS PATRICIA D. GRIGGS
GAP CREEK
US 221
BEGIN SBG +25.00
END SBG +63.70
TELE. CONDUIT UNDER BRIDGE
AREA UNDER CONSTRUCTION
REMOTE TELE. STATION
WD LOADING RAMP
RUINS
BM#7
GRADE TO DRAIN
REMOVE

DRIVEWAY RADII ARE 15' UNLESS OTHERWISE NOTED

SEE SHEET 13 FOR -L- PROFILE
SEE SHEET 20 FOR -DR1REV- AND -DR2REV- PROFILE
SEE SHEETS 2D-1 THRU 2D-3 FOR DRAINAGE DETAILS
SEE SHEETS C-1 THRU C-13 FOR CULVERT PLANS

REVISIONS

5/14/99

1/23/2017
R2915B_Hyd_prm_wet_psh_04.dgn

PROJECT REFERENCE NO.	SHEET NO.
R-2915B	4
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

CDM Smith — Camp Dresser & McKee, 5400 Glenwood Avenue, Suite 300, Raleigh, NC 27612-3228, NC COA No. F-0412

SUNGATE DESIGN GROUP, P.A.

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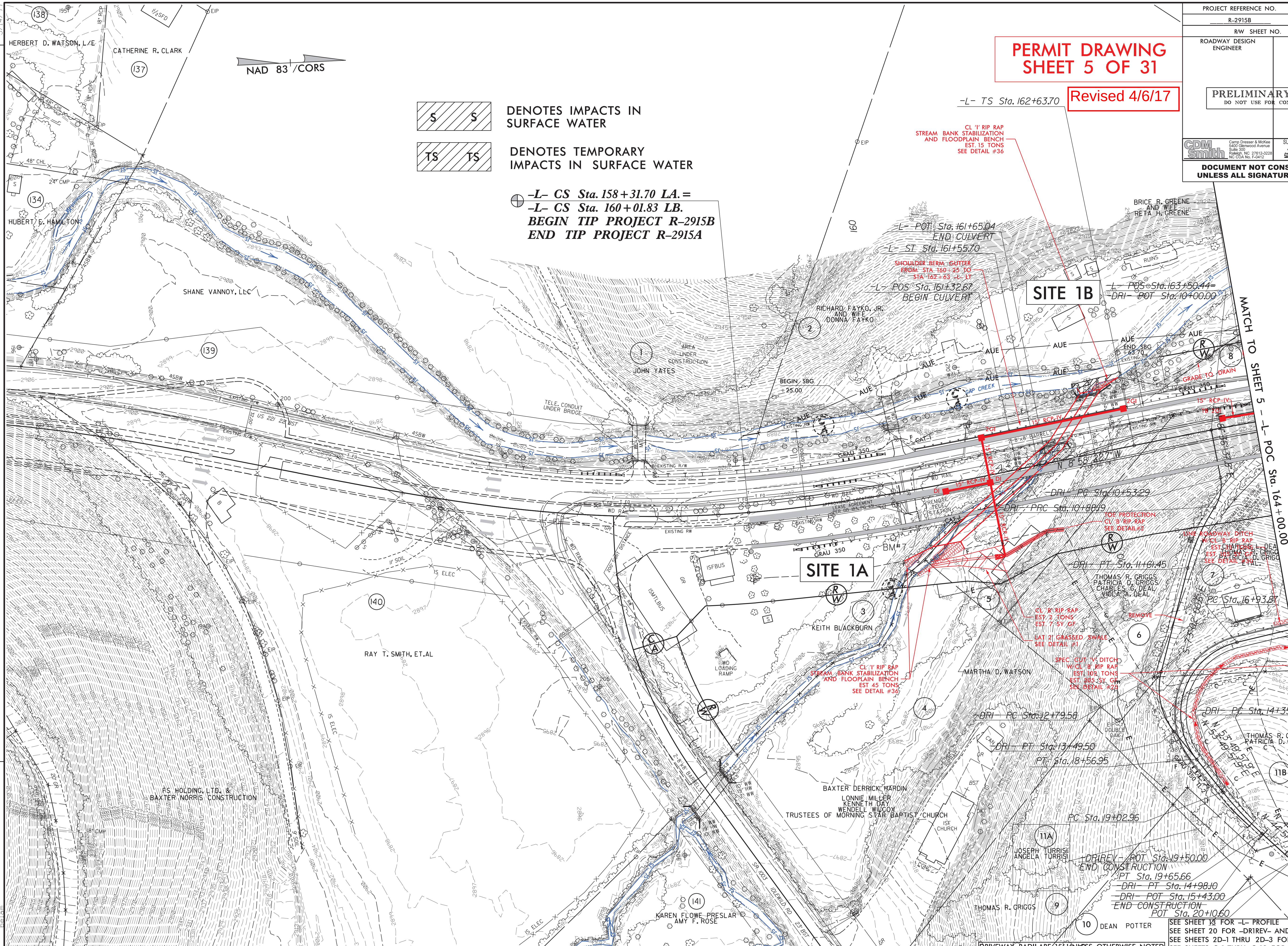
Revised 4/6/17



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DENOTES TEMPORARY IMPACTS IN SURFACE WATER
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-L- CS Sta. 160+01.83 LB.
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END TIP PROJECT R-2915A
NAD 83 /CORS
SITE 1A
SITE 1B
MATCH TO SHEET 5 -L- POC Sta. 164+00.00
-L- TS Sta. 162+63.70
-L- POT Sta. 161+65.04
END CULVERT
-L- ST Sta. 161+55.70
-L- POS Sta. 161+32.67
BEGIN CULVERT
-L- POS Sta. 163+50.44=
-DRI- POT Sta. 10+00.00
-DRI- PC Sta. 10+53.29
-DRI- PRC Sta. 10+88.19
-DRI- PT Sta. 11+61.45
-DRI- PC Sta. 12+79.58
-DRI- PT Sta. 13+49.50
PT Sta. 18+56.95
PC Sta. 19+02.96
PC Sta. 16+93.87
-DRI- PC Sta. 14+35.40
-DR1REV- POT Sta. 19+50.00
END CONSTRUCTION
PT Sta. 19+65.66
-DRI- PT Sta. 14+98.10
-DRI- POT Sta. 15+43.00
END CONSTRUCTION
POT Sta. 20+10.60
CL 'I' RIP RAP STREAM BANK STABILIZATION AND FLOODPLAIN BENCH EST. 15 TONS SEE DETAIL #36
CL 'I' RIP RAP STREAM BANK STABILIZATION AND FLOODPLAIN BENCH EST 45 TONS SEE DETAIL #36
SHOULDER BERM GUTTER FROM STA 160+25 TO STA 162+63 -L- LT
TOE PROTECTION CL 'B' RIP RAP SEE DETAIL #2
CL 'B' RIP RAP EST. 2 TONS EST. 7 SY GF
LAT 2' GRASSED SWALE SEE DETAIL #1
SPEC CUT V DITCH W/ CL 'B' RIP RAP EST. 102 TONS EST. 305 SY GF SEE DETAIL #28
GRADE TO DRAIN
REMOVE
HERBERT D. WATSON, L/E
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TELE. CONDUIT UNDER BRIDGE
AREA UNDER CONSTRUCTION
N 8°58'22.7" W

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SEE SHEET 13 FOR -L- PROFILE
SEE SHEET 20 FOR -DR1REV- AND -DR2REV- PROFILE
SEE SHEETS 2D-1 THRU 2D-3 FOR DRAINAGE DETAILS
SEE SHEETS C-1 THRU C-13 FOR CULVERT PLANS

REVISIONS

5/14/99

1/23/2017 R2915B_Hyd_prm_wet_psh_04_con.dgn

PROJECT REFERENCE NO.	SHEET NO.
R-2915B	5
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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SUNGATE DESIGN GROUP, P.A. — NC COA No. C-0890

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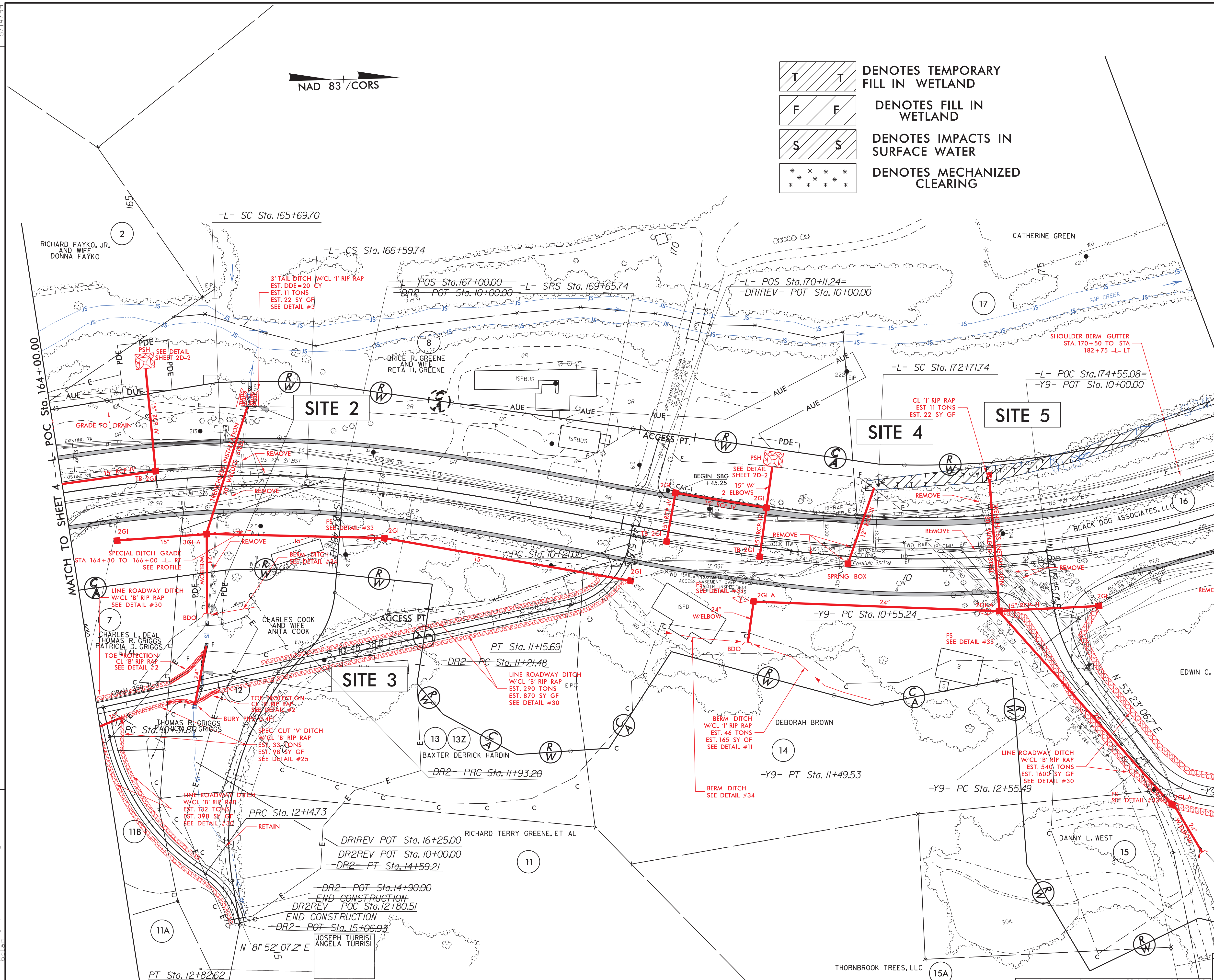
PERMIT DRAWING SHEET 7 OF 31

Revised 4/6/17



NAD 83 /CORS
DENOTES TEMPORARY FILL IN WETLAND
DENOTES FILL IN WETLAND
DENOTES IMPACTS IN SURFACE WATER
DENOTES MECHANIZED CLEARING
SITE 2
SITE 3
SITE 4
SITE 5
MATCH TO SHEET 4 -L- POC Sta. 164+00.00
MATCH TO SHEET 6 -L- POC Sta. 177+00.00
MATCH TO SHEET 6 -Y9- POT Sta. 15+00.00
-L- SC Sta. 165+69.70
-L- CS Sta. 166+59.74
-L- POS Sta.167+00.00
-DR2- POT Sta. 10+00.00
-L- SRS Sta. 169+65.74
-L- POS Sta.170+11.24=
-DR1REV- POT Sta. 10+00.00
-L- SC Sta. 172+71.74
-L- POC Sta.174+55.08=
-Y9- POT Sta. 10+00.00
-Y9- PC Sta. 10+55.24
-Y9- PT Sta. 11+49.53
-Y9- PC Sta. 12+55.49
-Y9- PT Sta. 13+92.44
PT Sta. 11+15.69
-DR2- PC Sta. 11+21.48
-DR2- PRC Sta. 11+93.20
PRC Sta. 12+14.73
DR1REV POT Sta. 16+25.00
DR2REV POT Sta. 10+00.00
-DR2- PT Sta. 14+59.21
-DR2- POT Sta.14+90.00
END CONSTRUCTION
-DR2REV- POC Sta.12+80.51
END CONSTRUCTION
-DR2- POT Sta. 15+06.93
PT Sta. 12+82.62
N 81° 52' 07.2" E
N 53° 23' 06.7" E
N 25° 04' 38.6" W
(1) N 79° 11' 21.2" E
RICHARD FAYKO, JR. AND WIFE DONNA FAYKO
BRICE R. GREENE AND WIFE RETA H. GREENE
CHARLES COOK AND WIFE ANITA COOK
CHARLES L. DEAL THOMAS R. GRIGGS PATRICIA D. GRIGGS
THOMAS R. GRIGGS PATRICIA D. GRIGGS
BAXTER DERRICK HARDIN
RICHARD TERRY GREENE, ET AL
DEBORAH BROWN
CATHERINE GREEN
BLACK DOG ASSOCIATES, LLC
EDWIN C. INGLE
DANNY L. WEST
DUSTIN N. STACY AND WIFE SHARON B. STACY
JOSEPH TURRISI ANGELA TURRISI
THORNBROOK TREES, LLC
3' TAIL DITCH W/CL 'I' RIP RAP EST. DDE=20 CY EST. 11 TONS EST. 22 SY GF SEE DETAIL #3
LINE ROADWAY DITCH W/CL 'B' RIP RAP SEE DETAIL #30
TOE PROTECTION CL 'B' RIP RAP SEE DETAIL #2
LINE ROADWAY DITCH W/CL 'B' RIP RAP EST. 290 TONS EST. 870 SY GF SEE DETAIL #30
SPEC. CUT 'V' DITCH W/CL 'B' RIP RAP EST. 33 TONS EST. 98 SY GF SEE DETAIL #25
LINE ROADWAY DITCH W/CL 'B' RIP RAP EST. 132 TONS EST. 398 SY GF SEE DETAIL #30
BERM DITCH W/CL 'I' RIP RAP EST. 46 TONS EST. 165 SY GF SEE DETAIL #11
BERM DITCH SEE DETAIL #34
CL 'I' RIP RAP EST 11 TONS EST. 22 SY GF
SHOULDER BERM GUTTER STA. 170+50 TO STA 182+75 -L- LT
LINE ROADWAY DITCH W/CL 'B' RIP RAP EST. 540 TONS EST. 1600 SY GF SEE DETAIL #30
SPECIAL DITCH GRADE STA. 164+50 TO 166+00 -L- RT SEE PROFILE
GRADE TO DRAIN
SPRING BOX

SEE SHEET 13 FOR -L- PROFILE
SEE SHEET 17 FOR -Y9- PROFILE
SEE SHEET 20 FOR -DR1REV- AND -DR2REV- PROFILE
SEE SHEETS 2D-1 THRU 2D-3 FOR DRAINAGE DETAILS

DRIVEWAY RADII ARE 15' UNLESS NOTED OTHERWISE

REVISIONS

5/14/99

4/4/2017 R2915B_Hyd_prm_wet_psh_05.dgn

PROJECT REFERENCE NO.	SHEET NO.
R-2915B	5
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

CDM Smith — Camp Dresser & McKee, 5400 Glenwood Avenue, Suite 200, Raleigh, NC 27612-3238, NC COA No. F-0412
SUNGATE DESIGN GROUP, P.A., 915 JONES FRANKLIN ROAD, RALEIGH, NORTH CAROLINA 27606, NC COA No. C-0890

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PERMIT DRAWING SHEET 8 OF 31

Revised 4/6/17

REVISIONS 5/14/99

NAD 83 /CORS

T T DENOTES TEMPORARY FILL IN WETLAND
F F DENOTES FILL IN WETLAND
S S DENOTES IMPACTS IN SURFACE WATER
DENOTES MECHANIZED CLEARING

SITE 2
SITE 3
SITE 4
SITE 5

-L- POC Sta. 164+00.00
MATCH TO SHEET 4 -L- POC Sta. 164+00.00
-L- POC Sta. 177+00.00
MATCH TO SHEET 9 -L- POC Sta. 177+00.00
-Y9- POT Sta. 15+00.00
MATCH TO SHEET 9 -Y9- POT Sta. 15+00.00

-L- SC Sta. 165+69.70
-L- CS Sta. 166+59.74
-L- POS Sta. 167+00.00
DR2 POT Sta. 10+00.00
-L- SRS Sta. 169+65.74
-L- POS Sta. 170+11.24=
DR1REV- POT Sta. 10+00.00
-L- SC Sta. 172+71.74
-L- POC Sta. 174+55.08=
-Y9- POT Sta. 10+00.00
PC Sta. 10+21.08
PT Sta. 11+15.69
DR2 PC Sta. 11+21.48
DR2 PRC Sta. 11+93.20
PRC Sta. 12+14.73
DR1REV POT Sta. 16+25.00
DR2REV POT Sta. 10+00.00
DR2 PT Sta. 14+59.21
DR2 POT Sta. 14+90.00
END CONSTRUCTION
-DR2REV- POC Sta. 12+80.51
END CONSTRUCTION
DR2 POT Sta. 15+06.93
PT Sta. 12+82.62
-Y9- PC Sta. 10+55.24
-Y9- PT Sta. 11+49.53
-Y9- PC Sta. 12+55.49
-Y9- PT Sta. 13+92.44

RICHARD FAYKO, JR. AND WIFE DONNA FAYKO
CATHERINE GREEN
BRICE R. GREENE AND WIFE RETA H. GREENE
CHARLES L. DEAL, THOMAS R. GRIGGS, PATRICIA D. GRIGGS ETAL
CHARLES COOK AND WIFE ANITA COOK
THOMAS R. GRIGGS AND PATRICIA D. GRIGGS
BAXTER DERRICK HARDIN
RICHARD TERRY GREENE, ET AL
JOSEPH TUF AND ANGELA TUF
DEBORAH BROWN
BLACK DOG ASSOCIATES, LLC
EDWIN C. INGLE
DANNY L. WEST
DUSTIN N. STACY AND WIFE SHARON B. STACY
THORNBROOK TREES, LLC

3' TAIL DITCH W/CL 'I' RIP RAP EST. D1250 20 CY EST. 11 TONS EST. 22 SY GF SEE DETAIL #3
SHOULDER BERM GUTTER STA. 170+50 TO STA 182+75 -L- LT
CL 'I' RIP RAP EST 11 TONS EST. 22 SY GF
PDE PSH1 SEE DETAIL SHEET 2D-2
PSH SEE DETAIL SHEET 2D-2
GRADE TO DRAIN
REMOVE US 221 2F BST
REMOVE
SPECIAL DITCH GRADE STA. 164+90 TO 166+90 -L- RT SEE PROFILE
LINE ROADWAY DITCH W/CL 'B' RIP RAP SEE DETAIL #30
LINE ROADWAY DITCH W/CL 'B' RIP RAP EST. 290 TONS EST. 870 SY GF SEE DETAIL #30
TOE PROTECTION CL 'B' RIP RAP SEE DETAIL #2
CUT DITCH W/CL 'B' RIP RAP EST. 330 TONS EST. 28 SY GF SEE DETAIL #25
BERM DITCH W/CL 'I' RIP RAP EST. 46 TONS EST. 165 SY GF SEE DETAIL #31
BERM DITCH SEE DETAIL #34
SIDE ROADWAY DITCH W/CL 'B' RIP RAP EST. 640 TONS EST. 1810 SY GF SEE DETAIL #30
FS SEE DETAIL #33
FS SEE DETAIL #39
BDO
SPRING BOX
ACCESS EASEMENT, OVER TYPED ROUTE WIDTH UNDEFINED SEE DETAIL #35
24" W/ELBOW
15" W/ 2 ELBOWS
RETAIN
ACCESS PT.
BEGIN SBG SHEET 2D-2 45.25
Possible Spring
ROCK RW
BROKEN STONE
ISFD
ISFBUS
SOIL
GAP CREEK

DRIVEWAY RADII ARE 15' UNLESS NOTED OTHERWISE

SEE SHEET 13 FOR -L- PROFILE
SEE SHEET 17 FOR -Y9- PROFILE
SEE SHEET 20 FOR -DR1REV- AND -DR2REV- PROFILE
SEE SHEETS 2D-1 THRU 2D-3 FOR DRAINAGE DETAILS

4/4/2017
R2915B_Hyd_prm_wet_psh_05_con.dgn
bellamy

PROJECT REFERENCE NO.	SHEET NO.
R-2915B	6
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PERMIT DRAWING SHEET 9 OF 31

Revised 4/6/17

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

CDM Smith — Camp Dresser & McKee, 5400 Glenwood Avenue, Suite 30, Raleigh, NC 27612-3238, NC COA No. F-0412

SUNGATE DESIGN GROUP, P.A., 101 JONES FRANKLIN ROAD, RALEIGH, NORTH CAROLINA 27606, NC COA No. C-0850

S S DENOTES IMPACTS IN SURFACE WATER

E E DENOTES EXCAVATION IN WETLAND

F F DENOTES FILL IN WETLAND

DENOTES MECHANIZED CLEARING

T T DENOTES TEMPORARY FILL IN WETLAND

NAD 83 / CORS

MILLER PROPERTIES OF ASHE, LLC, CHARLES F. PRITCHARD (21)

-L- CS Sta. 178+39.62

SITE 6

CATHERINE GREEN (17)

CL 'I' RIP RAP EST. 7 TONS EST. 15 SY GF

-L- ST Sta. 181+45.62

SHOULDER BERM GUTTER FROM STA 170+50 TO STA 182+75 -L- LT

LAT 6' GRASSED SWALE W/COIR FIBER MATTING EST. 340 SY SEE DETAIL #6

SITE 7

PSH SEE DETAIL SHEET 2D-2

PDE

ACCESS PT

END SBG +77.75

-L- TS Sta. 185+41.14

-L- SC Sta. 188+47.14

-L- POS Sta. 188+09.10=
-DR3- POT Sta. 10+00.00

SITE 8

CL 'B' RIP RAP EST. 1 TON EST. 5 SY GF

15" CSP W/ELBOW

REMOVE

CL 'I' RIP RAP (BANKS ONLY) SEE DETAIL #29

SITE 9

36" RCP-III

SPECIAL EXTRA DEPTH 36" JUNCTION BOX SEE SHEET 2C-6

GAP CREEK

MATCH TO SHEET 5 -L- POC Sta. 177+00.00

MATCH TO SHEET 7 -L- POC Sta. 190+00.00

US 221 22' BST

N 34° 48' 05.0" W

-DR3- PC Sta. 10+54.16

JAMES D. ALEXANDER, DONNA J. ALEXANDER (22)

JONATHAN ROY COLLINS, LYNN IRISH (19)

FS SEE DETAIL #32

BLACK DOG ASSOCIATES, LLC

LINE ROADWAY DITCH W/CL 'B' RIP RAP EST. 540 TONS EST. 1600 SY GF SEE DETAIL #30

2' BASE DITCH W/CL 'I' RIP RAP EST. DDE=110 CY EST. 70 TONS EST. 120 SY GF SEE DETAIL #5

(16)

MATCH TO SHEET 5 -Y9- POT Sta. 15+00.00

N 25° 04' 38.6" W

TURRISI TRAIL 18' BST

72" ROCK WALL

-Y9- POT Sta. 16+90.08
END CONSTRUCTION

LINE EXTG DITCH W/CL 'B' RIP RAP EST. 40 TONS EST. 80 SY GF

SPECIAL CUT DITCH W/CL 'B' RIP RAP SEE DETAIL #4

DUSTIN N. STACY AND WIFE, SHARON B. STACY (16B)

RODNEY C. OLIVER, MILLICENT J. OLIVER (18)

EDWARD PHILLIPS (20)

GLENN MISINCO (16C)

CARTER D. RANDALL, JEANNIE C. RANDALL (15B)

-DR3- PRC Sta. 12+02.77
-DR3- POC Sta. 11+16.30=
-DR3B- POT Sta. 10+00.00
-DR3B- PC Sta. 10+81.99
-DR3B- PT Sta. 11+31.74

-DR3B- POT Sta. 12+57.84

-DR3B- POT Sta. 12+35.00
END CONSTRUCTION

RICHARD E. WATSON, LISA H. WATSON (23)

LINE ROADWAY DITCH W/CL 'B' RIP RAP EST. 275 TONS EST. 800 SY GF SEE DETAIL #30

GARY F. TAYLOR, VICKIE TAYLOR (24)

S 64° 49' 06.1" E

SEE SHEET 14 FOR -L- PROFILE
SEE SHEET 17 FOR -Y9- PROFILE
SEE SHEET 21 FOR -DR3- PROFILE
SEE SHEET 21 FOR -DR3B- PROFILE
SEE SHEET 2B-1 FOR U-TURN BULB DETAILS
SEE SHEET 2C-G FOR EXTRA DEPTH BOX DETAIL
SEE SHEETS 2D-1 THRU 2D-3 FOR DRAINAGE DETAILS
DRIVEWAY RADII ARE 15' UNLESS NOTED OTHERWISE

REVISIONS

01/31/14 – R/W REVISIONS: UPDATED PROPERTY OWNER NAMES AND DEED REFERENCES ON PARCELS 16, 20 AND 21; SUBDIVIDED PARCEL 16 CREATING PARCELS 16, 16B AND 16C. – PJS
09/08/14 – R/W REVISIONS: UPDATING THE PROPERTY LINES ON PARCEL 16C; CREATED PARCELS 15A; UPDATED PROPERTY OWNER NAME AND DEED REFERENCE ON PARCEL 21. – DJC
04/10/15 – R/W REVISIONS: REVISED THE PROPOSED R/W AND TCE ON PARCEL 23. – CJT
05/2015 – R/W REVISIONS: UPDATED PROPERTY OWNER NAMES AND DEED REFERENCE ON PARCEL 16B. – DJC

5/14/99

4/4/2017
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tsyam

PERMIT DRAWING
SHEET 10 OF 31

Revised 4/6/17

PROJECT REFERENCE NO.	SHEET NO.
R-2915B	6
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

CDM Smith — Camp Dresser & McKee, 5400 Glenwood Avenue, Suite 300, Raleigh, NC 27612-3228, NC COA No. F-0412

SUNGATE DESIGN GROUP, P.A., 915 JONES FRANKLIN ROAD, RALEIGH, NORTH CAROLINA 27606, NC COA No. C-0890

S S DENOTES IMPACTS IN SURFACE WATER

E E DENOTES EXCAVATION IN WETLAND

F F DENOTES FILL IN WETLAND

DENOTES MECHANIZED CLEARING

T T DENOTES TEMPORARY FILL IN WETLAND

NAD 83 / CORS

SITE 6

SITE 7

SITE 8

SITE 9

-L- CS Sta. 178+39.62

-L- ST Sta. 181+45.62

-L- TS Sta. 185+41.14

-L- SC Sta. 188+47.14

-L- POS Sta. 188+09.10=
-DR3- POT Sta. 10+00.00

-DR3- PC Sta. 10+54.16

-DR3- PRC Sta. 12+02.77

-DR3- POC Sta. 11+16.30=
-DR3B- POT Sta. 10+00.00

-DR3B- PC Sta. 10+81.99

-DR3B- PT Sta. 11+31.74

-DR3B- POT Sta. 12+57.84

-DR3B- POT Sta. 12+35.00
END CONSTRUCTION

-Y9- POT Sta. 16+90.08
END CONSTRUCTION

MATCH TO SHEET 5 -L- POC Sta. 177+00.00

MATCH TO SHEET 5 -Y9- POT Sta. 15+00.00

MATCH TO SHEET 7 -L- POC Sta. 190+00.00

CATHERINE GREEN 17

MILLER PROPERTIES OF ASHE, LLC
CHARLES F. PRITCHARD 21

JAMES O. ALEXANDER
DONNA J. ALEXANDER 22

JONATHAN ROY COLLINS
TERRY LYNN IRISH 19

BLACK DOG ASSOCIATES, LLC 16

GARY L. TAYLOR
MICHELE TAYLOR 24

RICHARD E. WATSON
LISA H. WATSON 23

DUSTIN N. STACY
AND WIFE
SHARON B. STACY 16B

RODNEY C. OLIVER
MILLICENT J. OLIVER 18

EDWARD PHILLIPS 20

GLENN MISINCO 16C

CARTER D. RANDALL
JEANNIE C. RANDALL 15B

CL 'I' RIP RAP
EST. 7 TONS
EST. 15 SY GF

SHOULDER BERM GUTTER
FROM STA 170+50 TO
STA 182+75 -L- LT

LT 6' GRASSED SWALE
W/COIR FIBER MATTING
EST. 340 SY
SEE DETAIL #6

PSH
SEE DETAIL
SHEET 2D-2

PDE

ACCESS PT 1

CL 'B' RIP RAP
EST. 1 TONS
EST. 5 SY GF

36" RCP III
SPECIAL EXTRA
DEPTH 34"
JUNCTION BOX
SEE SHEET 2C-6

CL 1 RIP RAP
(BANKS ONLY)
SEE DETAIL #29

ONE ROADWAY DITCH
W/CL 'B' RIP RAP
EST. 240 TONS
EST. 1020 SY GF
SEE DETAIL #30

2' BASE DITCH
W/CL 'I' RIP RAP
EST. DDE 110 CY
EST. 70 TONS
EST. 120 SY GF
SEE DETAIL #5

TURRISTRIAL 18' BST

72" ROCK WALL

12' BST

TINE EXTG. DITCH
W/CL 'B' RIP RAP
EST. 40 TONS
EST. 80 SY GF

SPECIAL CUT DITCH
W/CL 'B' RIP RAP
SEE DETAIL #4

ONE ROADWAY DITCH
W/CL 'B' RIP RAP
EST. 375 TONS
EST. 800 SY GF
SEE DETAIL #30

N 34° 48' 05.0" W

N 25° 04' 38.5" W

REMOVE

SEE DETAIL #32

SEE DETAIL #33

SEE DETAIL #30

SEE DETAIL #29

SEE DETAIL #34

SEE SHEET 14 FOR -L- PROFILE
SEE SHEET 17 FOR -Y9- PROFILE
SEE SHEET 21 FOR -DR3- PROFILE
SEE SHEET 21 FOR -DR3B- PROFILE
SEE SHEET 2B-1 FOR U-TURN BULB DETAILS
SEE SHEET 2C-G FOR EXTRA DEPTH BOX DETAIL
SEE SHEETS 2D-1 THRU 2D-3 FOR DRAINAGE DETAILS
DRIVEWAY RADII ARE 15' UNLESS NOTED OTHERWISE

REVISIONS

01/3/14 - R/W REVISIONS: UPDATED PROPERTY OWNER NAMES AND DEED REFERENCES ON PARCELS 16, 20 AND 21; SUBDIVIDED PARCEL 16 CREATING PARCELS 16, 16B AND 16C. - PJS

09/08/14 - R/W REVISIONS: UPDATING THE PROPERTY LINES ON PARCEL 16C, CREATED PARCELS 15A; UPDATED PROPERTY OWNER NAME AND DEED REFERENCE ON PARCEL 21. - DJC

04/10/15 - R/W REVISIONS: REVISED THE PROPOSED R/W AND TCE ON PARCEL 23 - CJT

05/2015 - R/W REVISIONS: UPDATED PROPERTY OWNER NAMES AND DEED REFERENCE ON PARCEL 16B - DJC

5/14/99

4/4/2017
R2915B_Hyd_prm_wet_psh_06_con.dgn
default

WETLAND PERMIT IMPACT SUMMARY

Site No.	Station (From/To)	Structure Size / Type	WETLAND 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)	SURFACE WATER IMPACTS: Permanent SW impacts (ac)	Temp. SW impacts (ac)	Existing Channel Impacts Permanent (ft)	Existing Channel Impacts Temp. (ft)	Natural Stream Design (ft)
1A	159+80 / 160+40 -L- RT	BANK STABILIZATION (TRIB.)						0.01	< 0.01	44	21	
	160+40 / 161+80 -L-	CULVERT (TRIB.)						0.05		170		
1B	162+15 / 162+30 -L- LT	CULVERT (GAP CREEK)						< 0.01	< 0.01	15	6	
	162+15 / 162+65 -L- LT	BANK STABILIZATION (GAP CREEK)						< 0.01		35		
2	165+73 -L-	BDO / 30" RCP						< 0.01		5		
	166+00 -L- LT	TAIL DITCH						< 0.01		29		
3	15+32 / 15+00 -DR1REV-	24" PIPE						< 0.01		71		
4	172+58 / 172+85 -L- LT	12" RCP	< 0.01	0.15		< 0.01						
5	174+00 -L- LT	30" CSP	< 0.01									
6	178+50 -L- LT	24" CSP	< 0.01									
7	180+00 / 182+00 -L- LT	ROAD FILL	0.05		0.03							
8	186+21 / 186+43 -L- LT	ROAD FILL	< 0.01			< 0.01						
9	187+63 / 189+15 -L-	36" RCP						0.01		124		
	189+35 / 189+45 -L- LT	BANK STABILIZATION						< 0.01		23		
10	197+20 / 198+90 -L-	BANK STABILIZATION						0.02		154		
	198+80 / 198+90 -L-	WORKPAD / CULVERT REMOVAL							0.02		57	
11	207+00 / 207+05 -L- RT	ROAD FILL	< 0.01			< 0.01						
12	208+72 / 209+51 -L- RT	ROAD FILL	0.12			< 0.01						
13	209+23 -L- LT	24" Pipe						< 0.01	< 0.01	52	8	
14	210+01 / 210+36 -L- LT	ROAD FILL			0.01	< 0.01						
15	215+54 / 217+43 -L- RT	ROAD FILL	0.14			0.05						
16	217+48 -L- LT	60" RCP						< 0.01		27		
	217+45 -L- LT	BANK STABILIZATION						< 0.01		9		
SUBTOTALS*:			0.32	0.15	0.04	0.06		0.12	0.03	758	92	

*Rounded totals are sum of actual impacts

NOTES:
Site 10: Total Permanent Pier Impacts = 25.1 SF = 0.0006 AC
Site 15: Fill Imapcts = 0.14 ac, Mechanized Clearing Impacts=0.013, Total Take Impacts=0.036

Revised 4/6/17

ATN Revised 3/12/13

NC DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
4-4-2017
R-2915B ASHE COUNTY
ON US 221 FROM SR 1003 (IDLEWILD RD)
TO NORTH OF SOUTH FORK NEW RIVER

WETLAND PERMIT IMPACT SUMMARY

Site No.	Station (From/To)	Structure Size / Type	WETLAND 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)	SURFACE WATER IMPACTS: Permanent SW impacts (ac)	Temp. SW impacts (ac)	Existing Channel Impacts Permanent (ft)	Existing Channel Impacts Temp. (ft)	Natural Stream Design (ft)
17	217+22 / 217+75 -L- RT	BANK STABILIZATION						< 0.01		54		
18	222+55 / 222+83 -L- RT	BANK STABILIZATION						< 0.01		53		
19	241+75 / 243+25 -L-	WORK PAD							0.12		115	
20	242+41 / 242+54 -L- RT	BANK STABILIZATION						< 0.01		19		
21	243+31 / 243+46 -L- LT	BANK STABILIZATION						< 0.01		20		
SUBTOTALS*:								0.02	0.12	146	115	
SUBTOTALS FROM PAGE 1*:			0.32	0.15	0.04	0.06		0.12	0.03	758	92	
TOTALS*:			0.32	0.15	0.04	0.06		0.14	0.15	904	207	

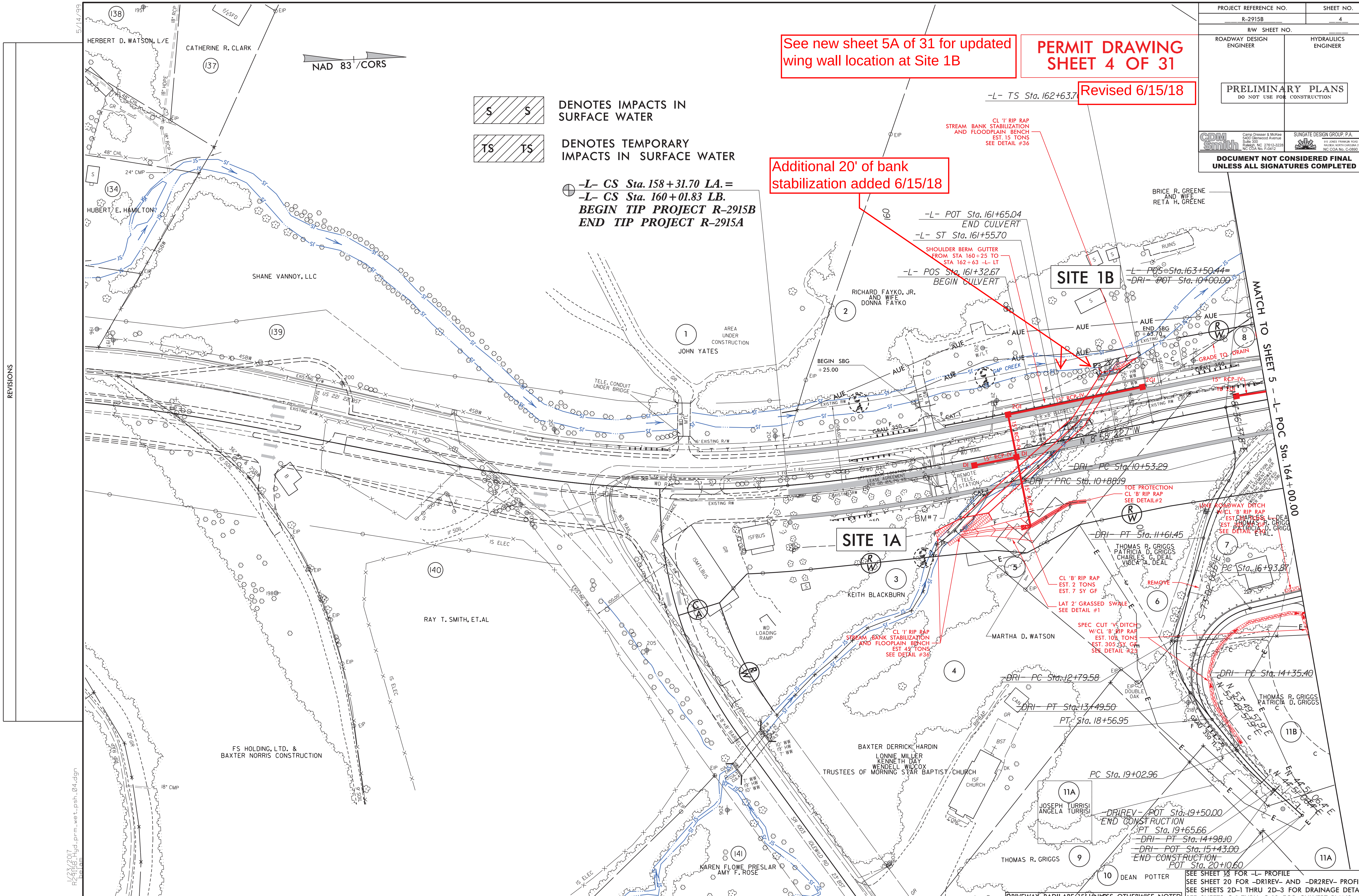
*Rounded totals are sum of actual impacts

NOTES:
Site 19: Total Permanent Pier Impacts = 150.8 SF = 0.003 AC

Revised 4/6/17

ATN Revised 3/12/13

NC DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
4-4-2017
R-2915B ASHE COUNTY
ON US 221 FROM SR 1003 (IDLEWILD RD)
TO NORTH OF SOUTH FORK NEW RIVER


PROJECT REFERENCE NO.
R-2915B
SHEET NO.
4
R/W SHEET NO.
ROADWAY DESIGN ENGINEER
HYDRAULICS ENGINEER
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED
PERMIT DRAWING SHEET 4 OF 31
Revised 6/15/18
See new sheet 5A of 31 for updated wing wall location at Site 1B
Additional 20' of bank stabilization added 6/15/18
NAD 83 / CORS
DENOTES IMPACTS IN SURFACE WATER
DENOTES TEMPORARY IMPACTS IN SURFACE WATER
-L- CS Sta. 158+31.70 LA. =
-L- CS Sta. 160+01.83 LB.
BEGIN TIP PROJECT R-2915B
END TIP PROJECT R-2915A
SITE 1B
SITE 1A
MATCH TO SHEET 5 -L- POC Sta. 164+00.00
HERBERT D. WATSON, L/E
CATHERINE R. CLARK
HUBERT E. HAMILTON
SHANE VANNOY, LLC
JOHN YATES
RICHARD FAYKO, JR. AND WIFE DONNA FAYKO
BRICE R. GREENE AND WIFE RETA H. GREENE
KEITH BLACKBURN
RAY T. SMITH, ET.AL
FS HOLDING, LTD. & BAXTER NORRIS CONSTRUCTION
MARTHA D. WATSON
THOMAS R. GRIGGS PATRICIA D. GRIGGS CHARLES G. DEAL VIOLA A. DEAL
BAXTER DERRICK HARDIN
LONNIE MILLER
KENNETH DAY
WENDELL WILCOX
TRUSTEES OF MORNING STAR BAPTIST CHURCH
JOSEPH TURRISI ANGELA TURRISI
THOMAS R. GRIGGS
DEAN POTTER
KAREN FLOWE PRESLAR AMY F. ROSE
THOMAS R. GRIGGS PATRICIA D. GRIGGS
-L- TS Sta. 162+63.70
-L- POT Sta. 161+65.04 END CULVERT
-L- ST Sta. 161+55.70
-L- POS Sta. 161+32.67 BEGIN CULVERT
-L- POS Sta. 163+50.44 = -DRI- POT Sta. 10+00.00
-DRI- PC Sta. 10+53.29
-DRI- PRC Sta. 10+88.19
-DRI- PT Sta. 11+61.45
-DRI- PC Sta. 12+79.58
-DRI- PT Sta. 13+49.50
-DRI- PC Sta. 14+35.40
PC Sta. 16+93.87
PT Sta. 18+56.95
PC Sta. 19+02.96
-DRIREV- POT Sta. 19+50.00 END CONSTRUCTION
PT Sta. 19+65.66
-DRI- PT Sta. 14+98.10
-DRI- POT Sta. 15+43.00 END CONSTRUCTION
POT Sta. 20+10.60
CL 'I' RIP RAP STREAM BANK STABILIZATION AND FLOODPLAIN BENCH EST. 15 TONS SEE DETAIL #36
SHOULDER BERM GUTTER FROM STA 160+25 TO STA 162+63 -L- LT
TOE PROTECTION CL 'B' RIP RAP SEE DETAIL #2
CL 'B' RIP RAP EST. 2 TONS EST. 7 SY GF
LAT 2' GRASSED SWALE SEE DETAIL #1
SPEC CUT 'V' DITCH W/CL 'B' RIP RAP EST. 105 TONS EST. 305 SY GF SEE DETAIL #23
CL 'I' RIP RAP STREAM BANK STABILIZATION AND FLOODPLAIN BENCH EST 45 TONS SEE DETAIL #36
GAP CREEK
N 8°58'22.7" W
DRIVEWAY RADII ARE 15' UNLESS OTHERWISE NOTED
SEE SHEET 13 FOR -L- PROFILE
SEE SHEET 20 FOR -DR1REV- AND -DR2REV- PROFILE
SEE SHEETS 2D-1 THRU 2D-3 FOR DRAINAGE DETAILS
SEE SHEETS C-1 THRU C-13 FOR CULVERT PLANS
REVISIONS

PROJECT REFERENCE NO.	SHEET NO.
R-2915B	4
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

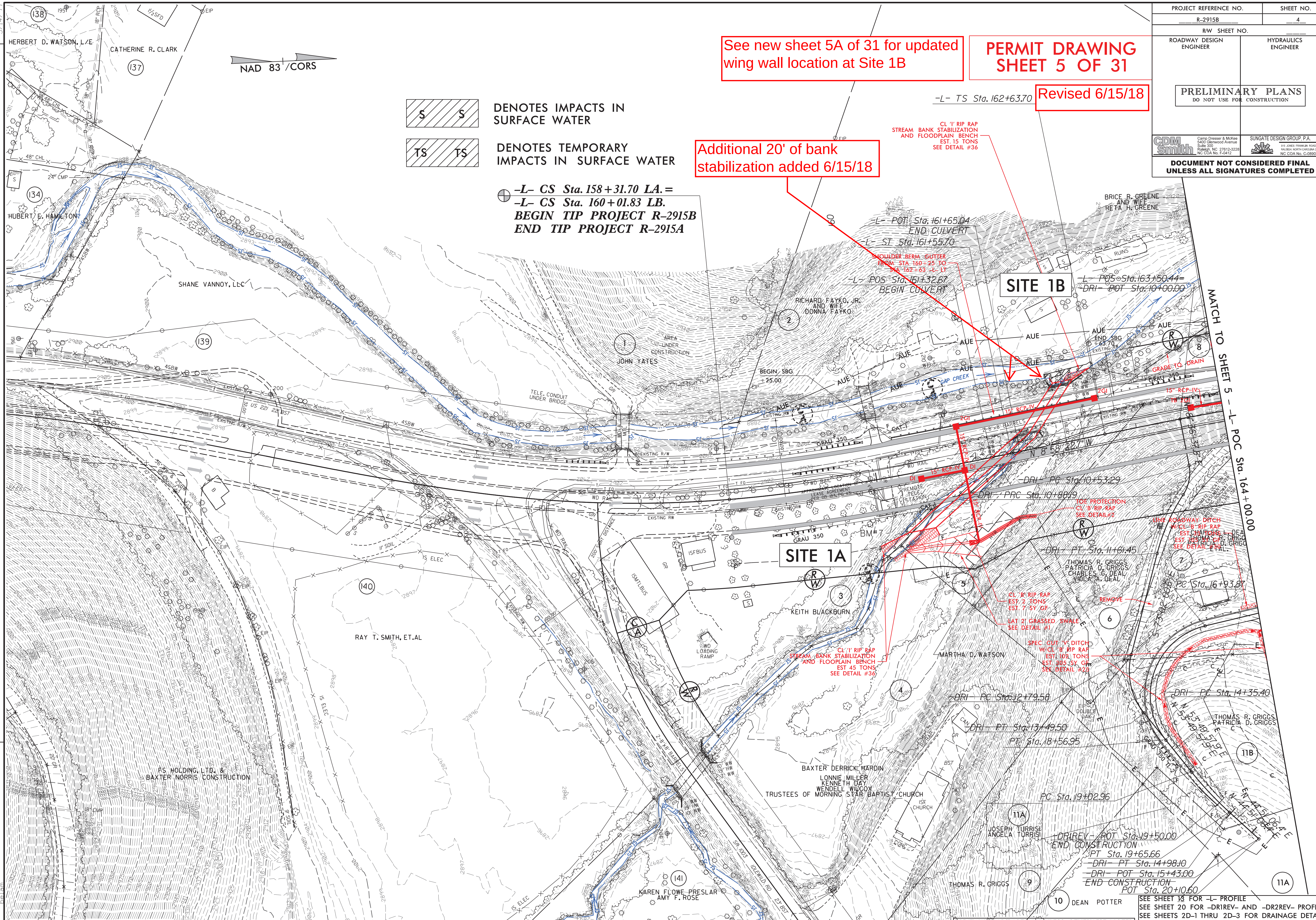
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PERMIT DRAWING SHEET 5 OF 31

Revised 6/15/18

See new sheet 5A of 31 for updated wing wall location at Site 1B

Additional 20' of bank stabilization added 6/15/18



DENOTES IMPACTS IN SURFACE WATER
DENOTES TEMPORARY IMPACTS IN SURFACE WATER
-L- CS Sta. 158+31.70 LA. =
-L- CS Sta. 160+01.83 LB.
BEGIN TIP PROJECT R-2915B
END TIP PROJECT R-2915A
NAD 83 /CORS
SITE 1B
SITE 1A
MATCH TO SHEET 5 -L- POC Sta. 164+00.00
-L- TS Sta. 162+63.70
-L- POT Sta. 161+65.04 END CULVERT
-L- ST Sta. 161+55.70
-L- POS Sta. 161+32.67 BEGIN CULVERT
-L- POS Sta. 163+50.44= -DRI- POT Sta. 10+00.00
CL 'I' RIP RAP STREAM BANK STABILIZATION AND FLOODPLAIN BENCH EST. 15 TONS SEE DETAIL #36
CL 'I' RIP RAP STREAM BANK STABILIZATION AND FLOODPLAIN BENCH EST 45 TONS SEE DETAIL #36
HERBERT D. WATSON, L/E
CATHERINE R. CLARK
HUBERT E. HAMILTON
SHANE VANNOY, LLC
JOHN YATES
RICHARD FAYKO, JR. AND WIFE DONNA FAYKO
BRICE R. GREENE AND WIFE RETA H. GREENE
KEITH BLACKBURN
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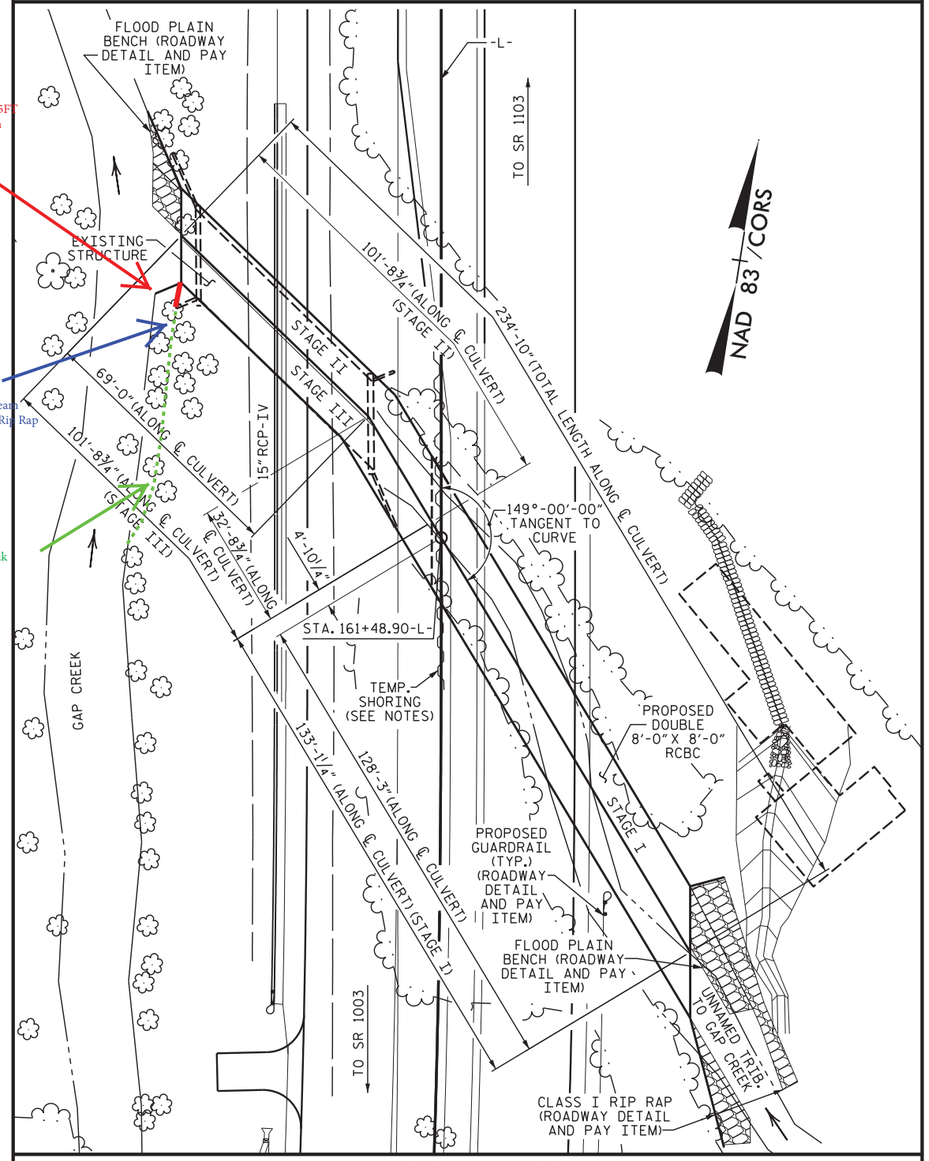
BAXTER DERRICK HARDIN LONNIE MILLER KENNETH DAY WENDELL WILCOX TRUSTEES OF MORNING STAR BAPTIST CHURCH
JOSEPH TURRISI ANGELA TURRISI
THOMAS R. GRIGGS
DEAN POTTER
KAREN FLOWE PRESLAR AMY F. ROSE
-DRI- PC Sta. 10+53.29
-DRI- PRC Sta. 10+88.19
-DRI- PT Sta. 11+61.45
-DRI- PC Sta. 12+79.58
-DRI- PT Sta. 13+49.50
PT Sta. 18+56.95
PC Sta. 19+02.96
-DRIREV- POT Sta. 19+50.00 END CONSTRUCTION
PT Sta. 19+65.66
-DRI- PT Sta. 14+98.10
-DRI- POT Sta. 15+43.00 END CONSTRUCTION
POT Sta. 20+10.60
-DRI- PC Sta. 14+35.40
PC Sta. 16+93.87
N 8°58'22.7" W
DRIVEWAY RADII ARE 15' UNLESS OTHERWISE NOTED

SEE SHEET 18 FOR -L- PROFILE
SEE SHEET 20 FOR -DR1REV- AND -DR2REV- PROFILE
SEE SHEETS 2D-1 THRU 2D-3 FOR DRAINAGE DETAILS
SEE SHEETS C-1 THRU C-13 FOR CULVERT PLANS

REVISIONS

F. A. PROJECT No.: STP-0221(40)

B.M. #7: CHISELED SQUARE IN CONCRETE FLOOR OF TELEPHONE EXCHANGE, N. 927977, E. 1262292, STA. 160+18.41 -L- 24' RT. EL. 2900.68



Rotate Wing Wall 5FT from Plan Location towards Existing Streambank.

Armor 20FT of Stream Bank with Class II Rip Rap

Existing Streambank

LOCATION SKETCH

NOTES

ASSUMED LIVE LOAD = HL-93 OR ALTERNATE LOADING.

DESIGN FILL = 11.29 (MIN.), 11.68 (MAX.)

FOR OTHER DESIGN DATA AND NOTES, SEE STANDARD NOTES SHEET.

AFTER SERVING AS A TEMPORARY STRUCTURE THE EXISTING DOUBLE BARREL 8 FT. X 8 FT. REINFORCED CONCRETE BOX CULVERT LOCATED AT THE SAME LOCATION AS THE PROPOSED CULVERT SHALL BE REMOVED.

3"Ø WEEP HOLES INDICATED ARE TO BE IN ACCORDANCE WITH THE SPECIFICATIONS.

CONCRETE IN THE CULVERT TO BE POURED IN THE FOLLOWING ORDER:

STAGE I

1. WING FOOTINGS FOR WING 1 AND WING 2, FLOOR SLAB AND EDGE BEAM INCLUDING 4" VERTICAL WALLS TO THE CONSTRUCTION JOINT FOR STAGE I.
2. REMAINING PORTIONS OF WALLS FULL HEIGHT, WING 1 AND WING 2 FULL HEIGHT FOLLOWED BY CONCRETE SILLS AND ROOF SLAB WITH EDGE BEAM TO THE STAGE I CONSTRUCTION JOINT.

STAGE II

1. REMOVE EXISTING CULVERT.
2. WING 3 FOOTING AND FLOOR SLAB INCLUDING 4" OF ALL VERTICAL WALLS, EDGE BEAM AND CURTAIN WALL TO STAGE II CONSTRUCTION JOINTS.
3. REMAINING PORTIONS OF WALLS FULL HEIGHT AND WING 3 FULL HEIGHT, CONCRETE SILLS.

STAGE III

1. WING 4 FOOTING AND REMAINING FLOOR SLAB WITH EDGE BEAM INCLUDING 4" OF EXTERIOR VERTICAL WALL AND REMAINING CURTAIN WALL.
2. REMAINING PORTIONS OF WALLS FULL HEIGHT, WING 4 FULL HEIGHT AND CONCRETE SILLS.
3. ROOF SLAB FOR STAGES II & III, HEADWALL AND EDGE BEAM.

THE RESIDENT ENGINEER SHALL CHECK THE LENGTH OF THE CULVERT BEFORE STAKING IT OUT TO MAKE CERTAIN THAT IT WILL PROPERLY TAKE CARE OF THE FILL.

STEEL IN THE BOTTOM SLAB OF STAGE I ONLY MAY BE SPLICED AT THE PERMITTED CONSTRUCTION JOINT AT THE CONTRACTOR'S OPTION. EXTRA WEIGHT OF STEEL DUE TO THE SPLICES WILL BE PAID FOR BY THE CONTRACTOR.

TRANSVERSE CONSTRUCTION JOINTS SHALL BE USED IN THE BARREL, SPACED TO LIMIT THE POURS TO A MAXIMUM OF 70 FEET. LOCATION OF JOINTS SHALL BE SUBJECT TO APPROVAL OF THE ENGINEER.

THE CONTRACTOR SHALL PROVIDE INDEPENDENT ASSURANCE SAMPLES OF REINFORCING STEEL AS FOLLOWS: FOR PROJECTS REQUIRING UP TO 400 TONS OF REINFORCING STEEL, ONE 30 INCH SAMPLE OF EACH SIZE BAR USED, AND FOR PROJECTS REQUIRING OVER 400 TONS OF REINFORCING STEEL, TWO 30 INCH SAMPLES OF EACH SIZE BAR USED. THE BARS FROM WHICH THE SAMPLES ARE TAKEN MUST THEN BE SPLICED WITH REPLACEMENT BARS OF THE SIZE AND LENGTH OF THE SAMPLE, PLUS A MINIMUM LAP SPLICE OF THIRTY BAR DIAMETERS. PAYMENT FOR THE SAMPLES OF REINFORCING STEEL SHALL BE CONSIDERED INCIDENTAL TO VARIOUS PAY ITEMS.

FOR CULVERT DIVERSION DETAILS AND PAY ITEM, SEE EROSION CONTROL PLANS.

A 3 FOOT STRIP OF FILTER FABRIC SHALL BE ATTACHED TO THE FILL FACE OF THE WING COVERING THE ENTIRE LENGTH OF THE EXPANSION JOINT.

AT THE CONTRACTOR'S OPTION HE MAY SUBMIT, TO THE ENGINEER FOR APPROVAL, DESIGN AND DETAIL DRAWINGS FOR A PRECAST REINFORCED CONCRETE BOX CULVERT IN LIEU OF THE CAST-IN-PLACE CULVERT SHOWN ON THE PLANS. THE DESIGN SHALL PROVIDE THE SAME SIZE AND NUMBER OF BARRELS AS USED ON THE CAST-IN-PLACE DESIGN. FOR OPTIONAL PRECAST REINFORCED CONCRETE BOX CULVERT, SEE SPECIAL PROVISIONS. THE CONTRACTOR ATTENTION NEEDS TO BE DRAWN TO THE FACT THAT THE OUTLET END OF THE CULVERT WILL HAVE TO BE SKEWED TO KEEP FROM INTERFEARING WITH THE STREAM FLOW.

FOR SUBMITTAL OF WORKING DRAWINGS, SEE SPECIAL PROVISIONS.

FOR FALSEWORK AND FORMWORK, SEE SPECIAL PROVISIONS.

FOR CRANE SAFETY, SEE SPECIAL PROVISIONS.

FOR GROUT FOR STRUCTURES, SEE SPECIAL PROVISIONS.

THE REINFORCED CONCRETE BOX CULVERT SHALL BE PLACED ON THE STANDARD 1.0 FOOT BLANKET OF FOUNDATION CONDITIONING MATERIAL. SEE SECTION 414 OF THE STANDARD SPECIFICATIONS.

THE REQUIRED BEARING CAPACITY AT THE BASE OF THE CULVERT IS 1 TSF. THE REQUIRED BEARING CAPACITY SHALL BE VERIFIED.

FOR CONSTRUCTION SEQUENCE, SEE EROSION CONTROL PLANS.

FOR EROSION CONTROL MEASURES, SEE EROSION CONTROL PLANS.

FOR TRAFFIC PHASING, SEE TRAFFIC CONTROL PLANS.

AT THE CONTRACTOR'S OPTION, HE MAY SPLICE THE VERTICAL REINFORCING STEEL IN THE INTERIOR FACE OF EXTERIOR WALL AND BOTH FACES OF INTERIOR WALLS ABOVE LOWER WALL CONSTRUCTION JOINT. THE SPLICE LENGTH SHALL BE AS PROVIDED IN THE SPLICE LENGTH CHART SHOWN ON THE PLANS. EXTRA WEIGHT OF STEEL DUE TO THE SPLICES SHALL BE PAID FOR BY THE CONTRACTOR.

TEMPORARY SHORING WILL BE REQUIRED IN THE AREA INDICATED IN THE LOCATION SKETCH.

FOR LIMITS OF TEMPORARY SHORING FOR MAINTENANCE OF TRAFFIC, SEE TRAFFIC CONTROL PLANS. FOR PAY ITEM FOR TEMPORARY SHORING FOR MAINTENANCE OF TRAFFIC, SEE ROADWAY PLANS.

ROADWAY DATA

GRADE POINT ELEV. @ STA 161+48.90-L-= 2905.10
BED ELEV. @ STA. 161+48.90-L-= 2885.70
ROADWAY SLOPES = 2:1

HYDRAULIC DATA

DESIGN DISCHARGE = 550 CFS
FREQUENCY OF DESIGN FLOOD = 50 YR.
DESIGN HIGH WATER ELEV. = 2893.00
DRAINAGE AREA = 1.2 SQ MI.
BASE DISCHARGE (Q100) = 650 CFS
BASE HIGH WATER ELEV. = 2893.43

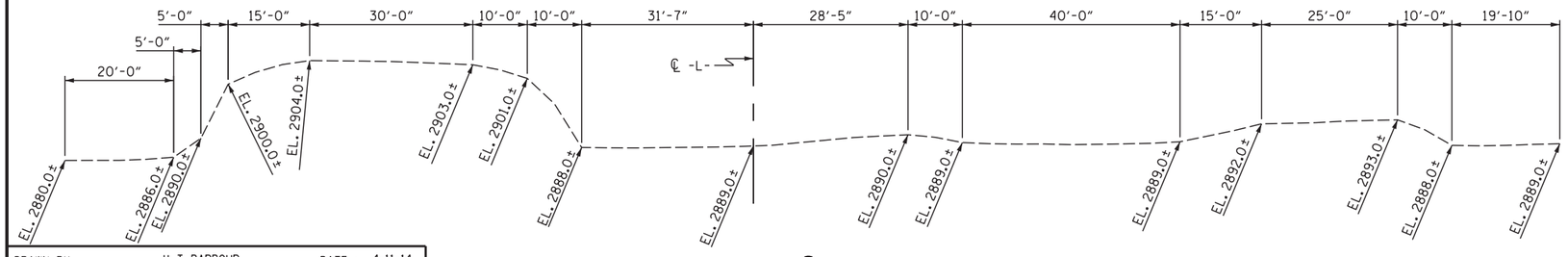
OVERTOPPING FLOOD DATA

OVERTOPPING DISCHARGE = > 900 CFS
FREQUENCY OF OVERTOPPING FLOOD = > 500 YR.
OVERTOPPING FLOOD ELEV. = 2904.40

CULVERT EXCAVATION	LUMP SUM
REMOVAL OF EXISTING STRUCTURE	LUMP SUM
FOUNDATION CONDITIONING MATERIAL	
STAGE I	207 TONS
STAGE II & III	158 TONS
TOTAL	365 TONS

TOTAL STRUCTURE QUANTITIES

STAGE I CLASS A CONCRETE BARREL @ 1.823 C.Y./FT. 242.6 C.Y. WINGS, ETC. 27.7 C.Y. TOTAL 270.3 C.Y.	STAGE I REINFORCING STEEL BARREL 32681 LBS. WINGS, ETC. 2662 LBS. TOTAL 35343 LBS.
STAGE II & III CLASS A CONCRETE BARREL @ 1.823 C.Y./FT. 185.5 C.Y. WINGS, ETC. 19.7 C.Y. TOTAL 205.2 C.Y.	STAGE II & III REINFORCING STEEL BARREL 26626 LBS. WINGS, ETC. 941 LBS. TOTAL 27567 LBS.
TOTAL CLASS A CONCRETE 475.5 C.Y.	TOTAL REINFORCING STEEL 62910 LBS.



PROFILE ALONG ℄ CULVERT

DRAWN BY : H. T. BARBOUR DATE : 4-11-14
CHECKED BY : S. B. WILLIAMS DATE : 5-14
DESIGN ENGINEER OF RECORD: B. A. DUKE DATE : 4-15

PERMIT DRAWING
SHEET 5A of 31
added 6/15/18

NORTH CAROLINA PROFESSIONAL SEAL 14855 ENGINEER DOUGLAS R. CALHOUN
Douglas R. Calhoun
7/22/2015

NORTH CAROLINA PROFESSIONAL SEAL 20125 ENGINEER MARSHALL G. CHEEK, JR.
Marshall G. Cheek, Jr.
7/22/2015

PROJECT NO. R-2915B
ASHE COUNTY
STATION: 161+48.90 -L-

SHEET 1 OF 13 CULVERT No. 542

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

DOUBLE 8 FT. X 8 FT. CONCRETE BOX CULVERT

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	C06-1
1			3			TOTAL SHEETS
2			4			13

STR. #6

WETLAND PERMIT IMPACT SUMMARY

Site No.	Station (From/To)	Structure Size / Type	WETLAND 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)	SURFACE WATER IMPACTS: Permanent SW impacts (ac)	Temp. SW impacts (ac)	Existing Channel Impacts Permanent (ft)	Existing Channel Impacts Temp. (ft)	Natural Stream Design (ft)
1A	159+80 / 160+40 -L- RT	BANK STABILIZATION (TRIB.)						0.01	< 0.01	44	21	
	160+40 / 161+80 -L-	CULVERT (TRIB.)						0.05		170		
1B	162+15 / 162+30 -L- LT	CULVERT (GAP CREEK)						< 0.01	< 0.01	15	6	
	162+15 / 162+65 -L- LT	BANK STABILIZATION (GAP CREEK)						< 0.01		55		
2	165+73 -L-	BDO / 30" RCP						< 0.01		5		
	166+00 -L- LT	TAIL DITCH						< 0.01		29		
3	15+32 / 15+00 -DR1REV-	24" PIPE						< 0.01		71		
4	172+58 / 172+85 -L- LT	12" RCP	< 0.01	0.15		< 0.01						
5	174+00 -L- LT	30" CSP	< 0.01									
6	178+50 -L- LT	24" CSP	< 0.01									
7	180+00 / 182+00 -L- LT	ROAD FILL	0.05		0.03							
8	186+21 / 186+43 -L- LT	ROAD FILL	< 0.01			< 0.01						
9	187+63 / 189+15 -L-	36" RCP						0.01		124		
	189+35 / 189+45 -L- LT	BANK STABILIZATION						< 0.01		23		
10	197+20 / 198+90 -L-	BANK STABILIZATION						0.02		154		
	198+80 / 198+90 -L-	WORKPAD / CULVERT REMOVAL							0.02		57	
11	207+00 / 207+05 -L- RT	ROAD FILL	< 0.01			< 0.01						
12	208+72 / 209+51 -L- RT	ROAD FILL	0.12			< 0.01						
13	209+23 -L- LT	24" Pipe						< 0.01	< 0.01	52	8	
14	210+01 / 210+36 -L- LT	ROAD FILL			0.01	< 0.01						
15	215+54 / 217+43 -L- RT	ROAD FILL	0.14			0.05						
16	217+48 -L- LT	60" RCP						< 0.01		27		
	217+45 -L- LT	BANK STABILIZATION						< 0.01		9		
SUBTOTALS*:			0.32	0.15	0.04	0.06		0.12	0.03	778	92	

*Rounded totals are sum of actual impacts

NOTES:
Site 10: Total Permanent Pier Impacts = 25.1 SF = 0.0006 AC
Site 15: Fill Imapcts = 0.14 ac, Mechanized Clearing Impacts=0.013, Total Take Impacts=0.036

Revised 6/15/18

ATN Revised 3/12/13

NC DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
4-4-2017
R-2915B ASHE COUNTY
ON US 221 FROM SR 1003 (IDLEWILD RD)
TO NORTH OF SOUTH FORK NEW RIVER

WETLAND PERMIT IMPACT SUMMARY

Site No.	Station (From/To)	Structure Size / Type	WETLAND 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)	SURFACE WATER IMPACTS: Permanent SW impacts (ac)	Temp. SW impacts (ac)	Existing Channel Impacts Permanent (ft)	Existing Channel Impacts Temp. (ft)	Natural Stream Design (ft)
17	217+22 / 217+75 -L- RT	BANK STABILIZATION						< 0.01		54		
18	222+55 / 222+83 -L- RT	BANK STABILIZATION						< 0.01		53		
19	241+75 / 243+25 -L-	WORK PAD							0.12		115	
20	242+41 / 242+54 -L- RT	BANK STABILIZATION						< 0.01		19		
21	243+31 / 243+46 -L- LT	BANK STABILIZATION						< 0.01		20		
SUBTOTALS*:								0.02	0.12	146	115	
SUBTOTALS FROM PAGE 1*:			0.32	0.15	0.04	0.06		0.12	0.03	778	92	
TOTALS*:			0.32	0.15	0.04	0.06		0.14	0.15	924	207	

*Rounded totals are sum of actual impacts

NOTES:
Site 19: Total Permanent Pier Impacts = 150.8 SF = 0.003 AC

Revised 6/15/18

NC DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
4-4-2017
R-2915B ASHE COUNTY
ON US 221 FROM SR 1003 (IDLEWILD RD)
TO NORTH OF SOUTH FORK NEW RIVER

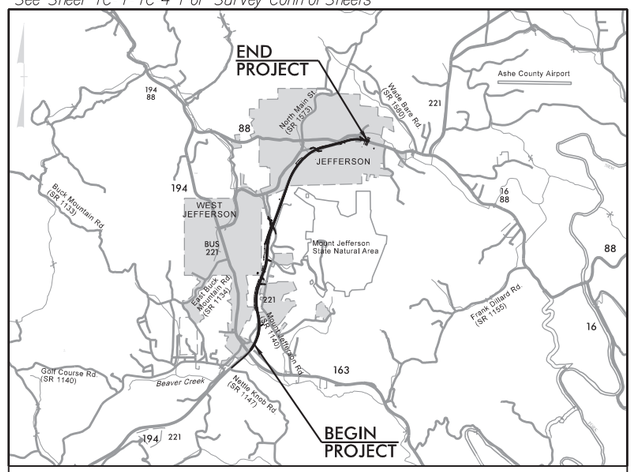
ATN Revised 3/12/13

09/08/99

TIP PROJECT: R-2915E

CONTRACT: C204356

See Sheet 1-A For Index of Sheets, General Notes, and List of Standards
See Sheet 1-B For Conventional Symbols
See Sheet 1C-1-1C-4 For Survey Control Sheets



VICINITY MAP (NTS)

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

ASHE COUNTY

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	R-2915E	1	

STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION
34518.1.FR6	STP-0221(45)	PE
34518.2.6	STP-0221(45)	R/W
34518.2.7	STP-0221(45)	UTIL.
34518.3.8	STP-0221(45)	CONST.

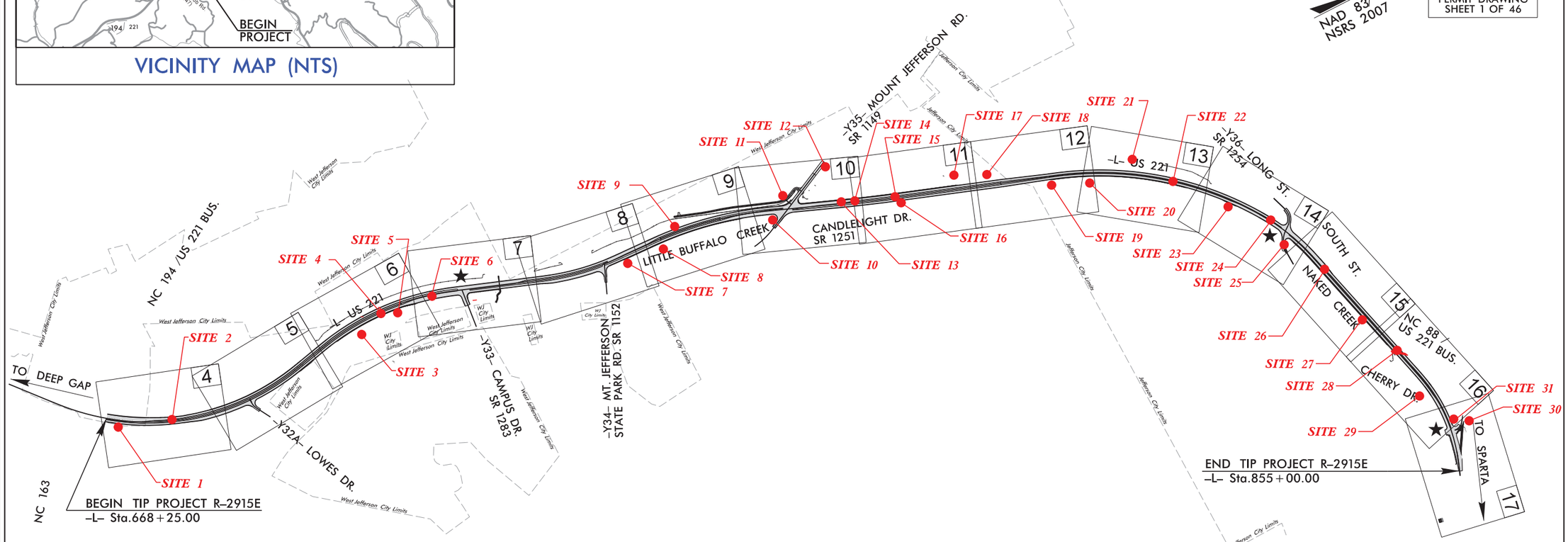
LOCATION: US 221 FROM US 221 BYPASS TO US 221 BUSINESS/NC 88 IN JEFFERSON

TYPE OF WORK: GRADING, DRAINAGE, PAVING, WIDENING, RESURFACING, CULVERTS, AND SIGNALS

WETLAND AND STREAM IMPACTS

NAD 83/ NSRS 2007

PERMIT DRAWING SHEET 1 OF 46



THIS IS A PARTIAL CONTROLLED-ACCESS PROJECT WITH ACCESS BEING LIMITED TO POINTS AS SHOWN ON PLANS.

★ PROPOSED TRAFFIC SIGNAL

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

GRAPHIC SCALES

50 25 0 50 100
PLANS

50 25 0 50 100
PROFILE (HORIZONTAL)

10 5 0 10 20
PROFILE (VERTICAL)

DESIGN DATA

ADT 2019 = 15,900
ADT 2039 = 19,400
K = 8%
D = 55%
T = 6%*
V = 60 MPH
FUNC. CLASSIFICATION = RURAL ARTERIAL
* TTST=3% + DUALS=3%

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT R-2915E..... 3.533 mi
LENGTH CULVERT TIP PROJECT R-2915E..... 0.004 mi
TOTAL LENGTH TIP PROJECT R-2915E..... 3.537 mi

NCDOT CONTACT

Joe Laws, P.E.
PROJECT ENGINEER - DIVISION 11

PLANS PREPARED BY:

RK&K
RUMMEL, KLEPPER & KAHL, LLP
900 RIDGEFIELD DRIVE, SUITE 350
RALEIGH, NORTH CAROLINA 27609
NC LICENSE NO. F-0112

FOR NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

2018 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
MAY 8, 2018

LETTING DATE:
SEPTEMBER 17, 2019

Scott D. Blevins, P.E.
PROJECT ENGINEER
RK&K, LLP

Cathy S. Houser, P.E.
PROJECT DESIGN ENGINEER
RK&K, LLP

HYDRAULICS ENGINEER

SIGNATURE: P.E.

ROADWAY DESIGN ENGINEER

SIGNATURE: P.E.

STATE OF NORTH CAROLINA * DEPARTMENT OF TRANSPORTATION *

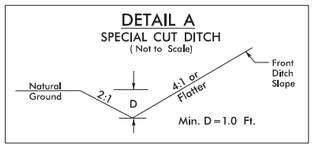
3/14/2019
R:\Hydraulics\PERMITS_Environmental\Drawings\4C\R-2915E_PRM_WET_tsh.dgn
aburke

PROJECT REFERENCE NO.	SHEET NO.
R-2915E	2D-1
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

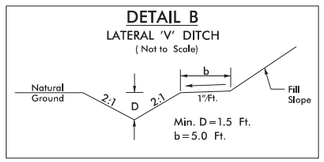
PERMIT DRAWING
SHEET 2 OF 46

DETAIL A
SPECIAL CUT DITCH
(Not to Scale)



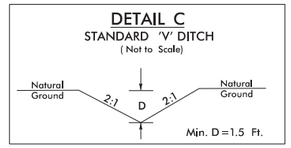
–L– STA. 669+50 TO STA. 670+00 LT
–L– STA. 675+25 TO STA. 676+00 RT
–L– STA. 677+00 TO STA. 691+50 LT
–L– STA. 767+50 TO STA. 772+00 RT

DETAIL B
LATERAL 'V' DITCH
(Not to Scale)



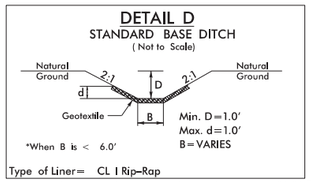
–L– STA. 670+25 TO STA. 670+50 RT
–L– STA. 676+00 TO STA. 677+03 RT
–L– STA. 677+21 TO STA. 677+50 RT
–L– STA. 693+00 TO STA. 694+50 LT
–L– STA. 707+50 TO STA. 708+25 LT
–L– STA. 805+05 TO STA. 805+19 LT
–L– STA. 816+50 TO STA. 817+75 RT
–L– STA. 826+80 TO STA. 827+50 LT
–Y36– STA. 15+24 TO STA. 16+43 RT

DETAIL C
STANDARD 'V' DITCH
(Not to Scale)



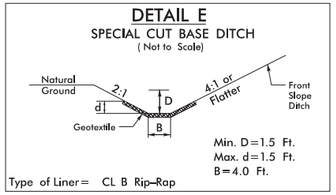
–L– STA. 734+90 RT, L=55', BEG. ELEV=3116.00, END ELEV=3114.99, S=1.84%

DETAIL D
STANDARD BASE DITCH
(Not to Scale)



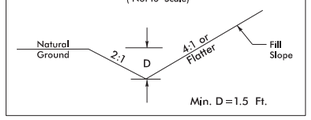
–L– STA. 771+06 LT, B=1.5', L=44', BEG. ELEV=3080.32, END ELEV=3085.00, S=10.8%
–L– STA. 780+92 LT, B=4', L=34', BEG. ELEV=3087.26, END ELEV=3090.0, S=8.1%
–L– STA. 793+00 RT, B=4', L=48', BEG. ELEV=3035.50, END ELEV=3025.26, S=21.3%
–L– STA. 812+65 LT, B=4', L=24', BEG. ELEV=2907.0, END ELEV=2904.96, S=8.5%

DETAIL E
SPECIAL CUT BASE DITCH
(Not to Scale)



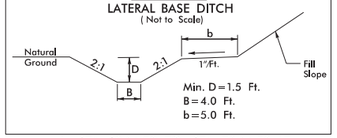
–L– STA. 839+00 TO STA. 841+77 RT

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



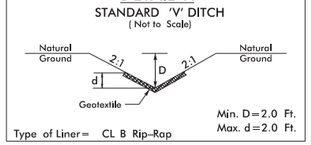
–L– STA. 729+50 TO STA. 732+15 RT
–L– STA. 741+50 TO STA. 743+00 LT
–L– STA. 757+00 TO STA. 758+00 RT
–Y34– STA. 11+00 TO STA. 12+30 RT

DETAIL G
LATERAL BASE DITCH
(Not to Scale)



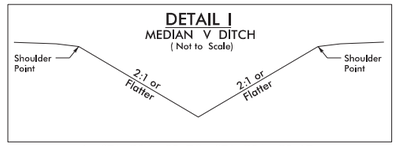
–L– STA. 694+50 TO STA. 704+50 LT
–L– STA. 705+32 TO STA. 707+50 LT
–L– STA. 708+25 TO STA. 711+00 LT
–L– STA. 796+00 TO STA. 797+50 LT
–L– STA. 810+50 TO STA. 816+50 RT
–L– STA. 820+00 TO STA. 826+80 LT

DETAIL H
STANDARD 'V' DITCH
(Not to Scale)



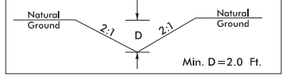
–L– STA. 740+00 TO STA. 740+37 RT, L=37' BEG. ELEV=3101.0, END ELEV=3100.0, S=2.7%
–L– STA. 836+82 TO STA. 837+14 RT, L=43' BEG. ELEV=2872.0, END ELEV=2870.28,S=4.0%

DETAIL I
MEDIAN V DITCH
(Not to Scale)



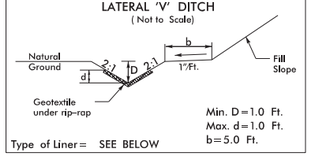
–L– STA. 754+50 TO STA. 756+72 LT

DETAIL J
STANDARD 'V' DITCH
(Not to Scale)



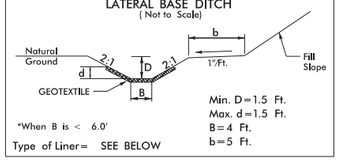
–L– STA. 700+00 TO STA. 701+29 RT
BEG. ELEV=3068.15, END ELEV=3067.75, S=0.3%

DETAIL K
LATERAL 'V' DITCH
(Not to Scale)



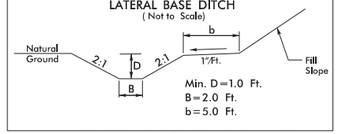
–L– STA. 670+50 TO STA. 671+50 RT, PSRM
–L– STA. 802+00 TO STA. 805+05 LT, CL I
–L– STA. 804+00 TO STA. 806+00 RT, CL B

DETAIL L
LATERAL BASE DITCH
(Not to Scale)



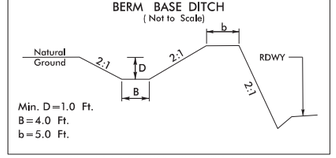
–L– STA. 704+50 TO STA. 705+32 LT, CL B
–L– STA. 797+50 TO STA. 799+13 LT, CL B
–L– STA. 809+73 TO STA. 810+50 RT, CL I
–L– STA. 838+00 TO STA. 838+92 LT, CL B

DETAIL M
LATERAL BASE DITCH
(Not to Scale)



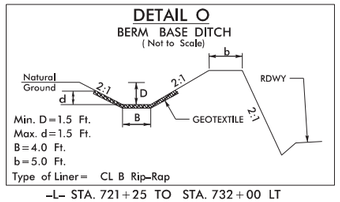
–L– STA. 788+50 TO STA. 793+00 LT

DETAIL N
BERM BASE DITCH
(Not to Scale)



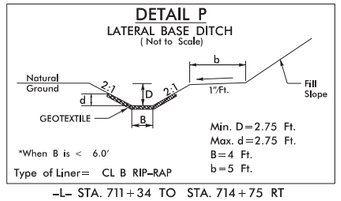
–L– STA. 714+50 TO STA. 721+25 LT
–L– STA. 738+50 TO STA. 741+00 LT
–SR1– STA. 15+16 TO STA. 17+38 LT

DETAIL O
BERM BASE DITCH
(Not to Scale)



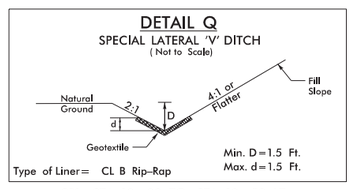
–L– STA. 721+25 TO STA. 732+00 LT

DETAIL P
LATERAL BASE DITCH
(Not to Scale)



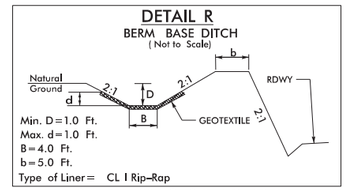
–L– STA. 711+34 TO STA. 714+75 RT

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



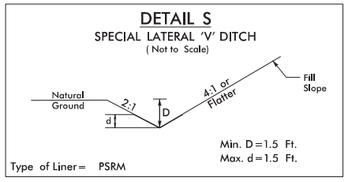
–SR1– STA. 10+00 TO STA. 10+53 LT

DETAIL R
BERM BASE DITCH
(Not to Scale)



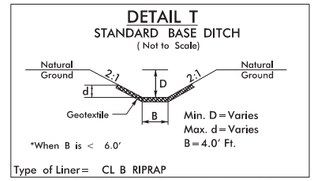
–L– STA. 741+00 TO STA. 743+00 LT

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



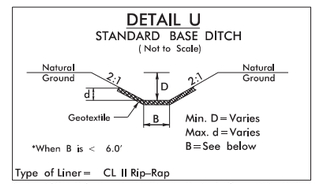
–SR1– STA. 11+70 TO STA. 15+16 LT

DETAIL T
STANDARD BASE DITCH
(Not to Scale)



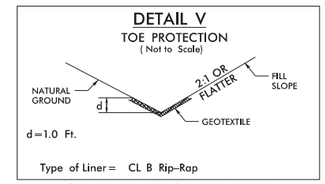
–L– STA. 844+69 LT, S=0.43% L=35'
BEG. ELEV=2862.50, END ELEV=2862.35, D & d=2.0'

DETAIL U
STANDARD BASE DITCH
(Not to Scale)



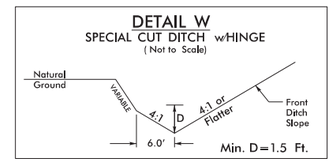
–L– STA. 763+26 RT, B=4.0', L=25', BEG. ELEV=3107.59, END ELEV.=3104.72, S=11.5%, D=1.0', d=1.0'
–L– STA. 765+60 RT, B=5', L=15', BEG. ELEV=3109.0, END ELEV=3108.5, S=3.3%, D=2.5', d=2.5'

DETAIL V
TOE PROTECTION
(Not to Scale)



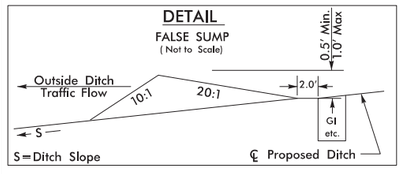
–L– STA. 711+15 TO STA. 714+00 LT
–L– STA. 768+50 TO STA. 770+30 LT
–L– STA. 793+50 TO STA. 795+42 LT

DETAIL W
SPECIAL CUT DITCH w/HINGE
(Not to Scale)

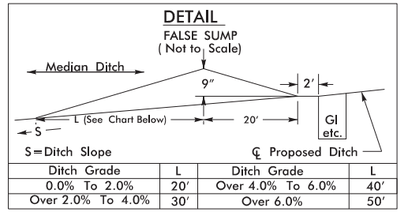


–L– STA. 720+15 TO STA. 723+50 RT
–L– STA. 726+00 TO STA. 727+50 RT
–L– STA. 761+50 TO STA. 767+50 RT
–L– STA. 774+00 TO STA. 783+50 RT
–L– STA. 841+77 TO STA. 849+50 RT

DETAIL
FALSE SUMP
(Not to Scale)

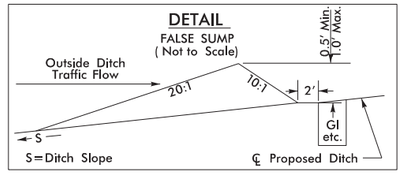


DETAIL
FALSE SUMP
(Not to Scale)



Ditch Grade	L	Ditch Grade	L
0.0% To 2.0%	20'	Over 4.0% To 6.0%	40'
Over 2.0% To 4.0%	30'	Over 6.0%	50'

DETAIL
FALSE SUMP
(Not to Scale)



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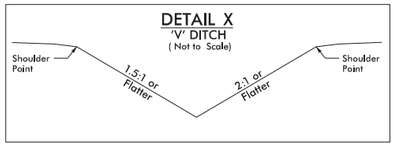
PROJECT REFERENCE NO.	SHEET NO.
R-2915E	2D-2
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

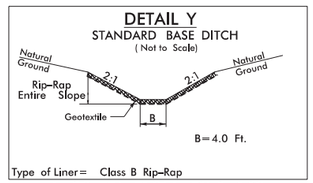
PERMIT DRAWING
SHEET 3 OF 46

DETAIL X
'V' DITCH
(Not to Scale)



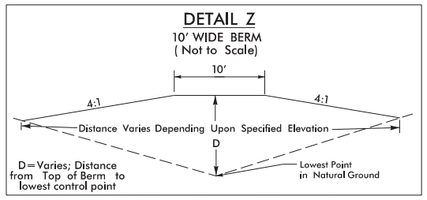
–L– STA. 743+00 TO STA. 751+50 MED/LT

DETAIL Y
STANDARD BASE DITCH
(Not to Scale)



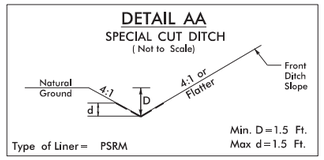
–L– STA. 776+71 LT, L=50', S=0.3%
BEG. ELEV=3093.65, END ELEV=3093.50

DETAIL Z
10' WIDE BERM
(Not to Scale)



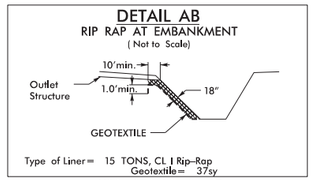
–L– STA. 693+00 LT, TOP ELEV=3079.5, D=2.5'
–L– STA. 697+87 LT, TOP ELEV=3088.0', D=2.0'
–L– STA. 704+50 LT, TOP ELEV=3087.0', D=2.0'
–L– STA. 711+00 LT, TOP ELEV=3102.5', D=3.1'
–L– STA. 802+90 RT, TOP ELEV=2964.0', D=8.3'
–L– STA. 812+30 RT, TOP ELEV=2928.0', D=2.5'
–L– STA. 816+50 RT, TOP ELEV=2914.0', D=3.1'
–L– STA. 827+50 LT, TOP ELEV=2887.0', D=1.6'

DETAIL AA
SPECIAL CUT DITCH
(Not to Scale)



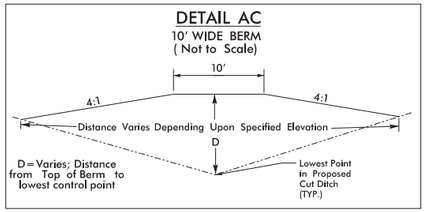
–L– STA. 783+50 TO STA. 787+00 RT

DETAIL AB
RIP RAP AT EMBANKMENT
(Not to Scale)



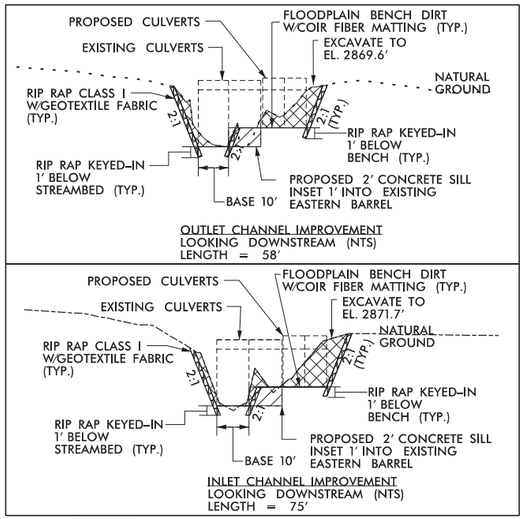
–Y36– STA. 16+94 LT
–L /US 221 BUS– STA. 849+62 LT

DETAIL AC
10' WIDE BERM
(Not to Scale)



–L– STA. 675+25 RT, TOP ELEV=3031.0', D=2.1'
–L– STA. 767+00 RT, TOP ELEV=3117.0', D=1.8'
–L– STA. 761+50 RT, TOP ELEV=3108.0', D=2.5'
–L– STA. 765+00 RT, TOP ELEV=3114.5', D=2.4'
–L– STA. 844+00 RT, TOP ELEV=2870.5', D=2.5'

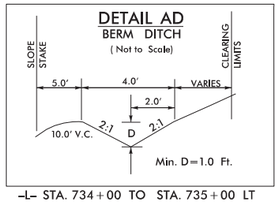
CULVERT @ –L– STA. 838+56



PERMANENT CHANNEL EXCAVATION

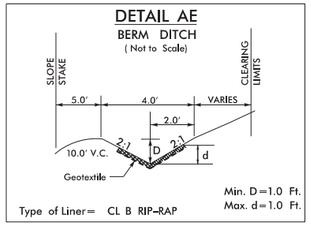
TOTAL CHANNEL EXCAVATION = 485 CY
TOTAL CL II RIP RAP = 255 TONS
TOTAL GEOTEXTILE FAB. = 270 SY

DETAIL AD
BERM DITCH
(Not to Scale)



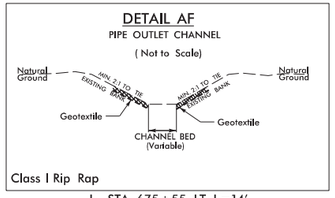
–L– STA. 734+00 TO STA. 735+00 LT

DETAIL AE
BERM DITCH
(Not to Scale)



–L– STA. 732+00 TO STA. 734+00 LT
–L– STA. 735+00 TO STA. 736+00 LT

DETAIL AF
PIPE OUTLET CHANNEL
(Not to Scale)



–L– STA. 675+55 LT, L=14'
–L– STA. 702+52 RT, L=11'
–L– STA. 704+71 RT, L=10'
–L– STA. 711+37 RT, L=20'
–L– STA. 742+12 RT, L=10'
–Y35– STA. 9+49 LT, L=22'
–L– STA. 762+56 LT, L=10'
–L– STA. 763+56 LT, L=20'
–L– STA. 768+48 LT, L=14'
–L– STA. 788+24 RT, L=8'
–L– STA. 804+92 LT, L=30'
–L– STA. 816+26 LT, L=18'
–L– STA. 827+06 RT, L=10'
–L– STA. 832+60 RT, L=10'

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PROJECT REFERENCE NO.	SHEET NO.
R-2915E	4
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PERMIT DRAWING SHEET 4 OF 46

ENGLISH

SCALE FOR INSET: 25 0 25 50

SCALE: 50 25 0 50 100

F F DENOTES FILL IN WETLAND

S S DENOTES IMPACTS IN SURFACE WATER

DENOTES MECHANIZED CLEARING

TS TS DENOTES TEMPORARY IMPACTS IN SURFACE WATER

NAD 83/NSRS 2007

WILEY AUSTIN BAKER

IT REAL ESTATE HOLDINGS, LLC

INSET A

INSET B

BEGIN TIP PROJECT R-2915E
-L- POC Sta. 668+25.00

END TIP PROJECT R-2915D
-L- POT Sta. 679+90.00

MATCHLINE -L- STA. 682+00 SEE SHEET 5

R-2915D TO BE CONST. BY OTHERS

SITE 1

SITE 2A

SITE 2B

SEE INSET A

SEE INSET B

SEE OUTFALL ANALYSIS PACKAGE

RETAIN PROPOSED SYSTEM IN R-2915D AND TIE PROPOSED DITCH TO BOX AT -L- STA. 669+50 LT

SPECIAL CUT DITCH SEE DETAIL A

RETAIN REMAINDER OF PROPOSED SYSTEM IN R-2915D

PERMIT IMPACTS FROM R-2915D

Q10=4.44 cfs
V10=1.42 fps

REMOVE DI & PIPE IN R-2915D

LATERAL V DITCH W=4 SY PSRM SEE DETAIL K

LATERAL V DITCH SEE DETAIL B

2 TONS CL B RIPRAP W/7 SY GEOTEXTILE

REMOVE 2GI AND PIPE FROM PROPOSED DRAINAGE IN R-2915D

V10=9.3 fps

42" RCP-III (BURIED 0.7')

20 TONS CL I RIPRAP W/39 SY GEOTEXTILE ON BANKS ONLY SEE DETAIL AE

REMOVE JB W/HH

REMOVE 30" CMP

30" RCP-III

REMOVE EX 24" CMP

2GI-A REMOVE SYSTEM

SPECIAL CUT DITCH SEE DETAIL A

24" RCP-III

REMOVE JB AND PIPE

SP. CUT DITCH SEE DETAIL A

LATERAL V DITCH SEE DETAIL B

2 TONS CL B RIPRAP W/7 SY GEOTEXTILE

Q10=1.72 cfs
V10=1.06 fps

RISER TOP=3049.34'

36" CMP

PLUG & FILL W/FF

18" RCP-III

15" RCP-III

2GI

2GI-A

TB-2GI

FIRST COMMUNITY BANK

BRADLEY W. JORDAN

KENNETH TIMOTHY PARSONS
HUSBAND, AND WIFE
BETTY WADDELL PARSONS

WILEY AUSTIN BAKER
AND KAY M. BAKER

LOWE'S HOME CENTERS, INC.

LARRY D. BOOTH

K. DICKSON

SR 1150 CRESCENT DR

US 221 30' BST

POND

A-A	B-B	C-C	D-D	E-E	F-F
3.0'	5.0'	3.0'	12.0'	16.0'	5.0'
0.0'	0.0'	0.0'	0.25'	0.25'	0.0'
0.5'	0.5'	1.0'	3.0'	1.0'	0.5'
0.0' ROADSIDE	0.0' INFALL	0.0' ROADSIDE	7.0' OUTFALL	8.0' INFALL	0.0' ROADSIDE

R-2915D PROPOSED DRAINAGE

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kburke

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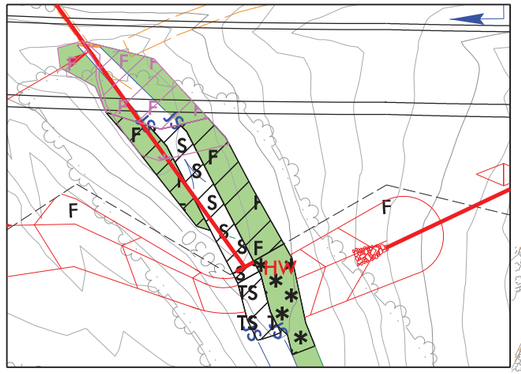
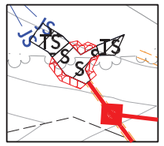
PROJECT REFERENCE NO.	SHEET NO.
R-2915E	4
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



INSET A



INSET B

25 0 25 50
SCALE FOR INSET

50 25 0 50 100
SCALE

PERMIT DRAWING SHEET 5 OF 46

ENGLISH

F F DENOTES FILL IN WETLAND

S S DENOTES IMPACTS IN SURFACE WATER

DENOTES MECHANIZED CLEARING

TS TS DENOTES TEMPORARY IMPACTS IN SURFACE WATER

LIT REAL ESTATE HOLDINGS, LLC

NAD 83/NSRS 2007

WILEY AUSTIN BAKER

FIRST COMMUNITY BANK

BRADLEY W. JORDAN

KENNETH TIMOTHY PARSONS
HUSBAND AND WIFE
BETTY WADDELL PARSONS

WILEY AUSTIN BAKER
AND KAY M. BAKER

LOWE'S HOME CENTERS, INC.

K. DICKSON

LARRY D. BOOTH

R–2915D TO BE CONST. BY OTHERS

RETAIN PROPOSED SYSTEM IN R–2915D AND TIE PROPOSED DITCH TO BOX AT –L– STA. 669+50 LT

SPECIAL CUT DITCH SEE DETAIL A

SEE OUTFALL ANALYSIS PACKAGE

SITE 2A

V10=9.3 ft/s

42" RCP–III (BURIED 0.7')

SEE INSET B

20 TONS CL I RIPRAP W/59 SY GEOTEXTILE ON BANKS ONLY SEE DETAIL AE

JB w/MH

REMOVE

30" RCP–III

REMOVE EX 24" CMP

24" RCP–III

2GI–A REMOVE SYSTEM

SPECIAL CUT DITCH SEE DETAIL A

REMOVE

18" RCP–III

2GI–A

PLUG & FILL W/FF

2GI

END TIP PROJECT R–2915D
–L– POT Sta. 679+90.00

SEE SHEET 5
MATCHLINE –L– STA. 682+00

15" RCP–III

18" 2GI

RETAIN REMAINDER OF PROPOSED SYSTEM IN R–2915D

Q10=4.44 cfs
V10=1.42 ft/s

REMOVE DI & PIPE IN R–2915D

15" RCP–III

2GI

LATERAL V DITCH W/94 SY PSRM SEE DETAIL K

LATERAL V DITCH SEE DETAIL B

2 TONS CL B RIPRAP W/7 SY GEOTEXTILE

REMOVE 2GI AND PIPE FROM PROPOSED DRAINAGE IN R–2915D

PERMIT IMPACTS FROM R–2915D

SITE 1

24" RCP–III

REMOVE JB AND PIPE

SP. CUT DITCH SEE DETAIL A

LATERAL V DITCH SEE DETAIL B

2 TONS CL B RIPRAP W/7 SY GEOTEXTILE

SEE INSET A

SITE 2B

Q10=1.72 cfs
V10=1.06 ft/s

RISER TOP=3049.34'

POND

BEGIN TIP PROJECT R–2915E
–L– POC Sta. 668+25.00

A–A	B–B	C–C	D–D	E–E	F–F
3.0'	5.0'	3.0'	12.0'	16.0'	5.0'
0.0'	0.0'	0.0'	0.25'	0.25'	0.0'
0.5'	0.5'	1.0'	3.0'	1.0'	0.5'
0.0'	0.0'	0.0'	7.0'	8.0'	0.0'
ROADSIDE	INFALL	ROADSIDE	OUTFALL	INFALL	ROADSIDE

R–2915D PROPOSED DRAINAGE

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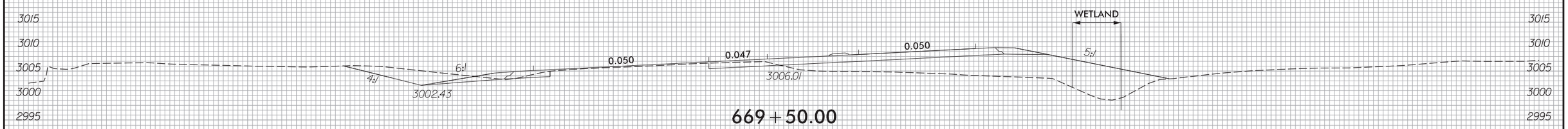
6/23/16

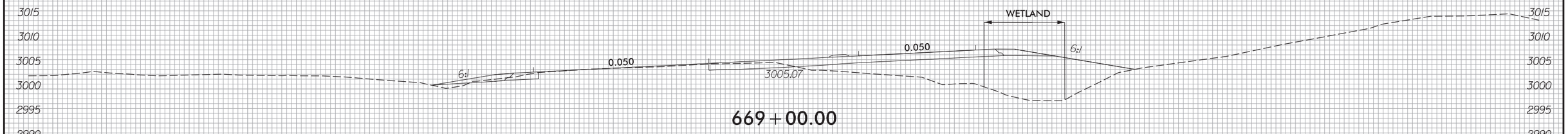
0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-2915E	X-1

PERMIT DRAWING
SHEET 6 OF 46

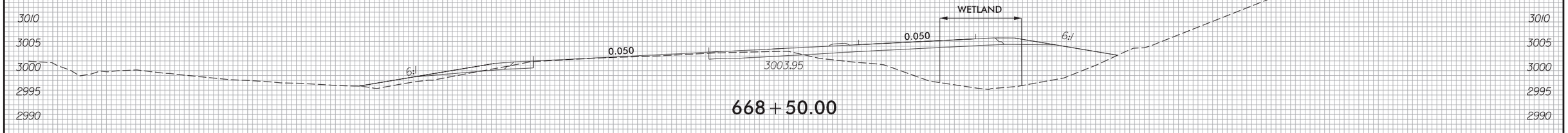
SITE 1



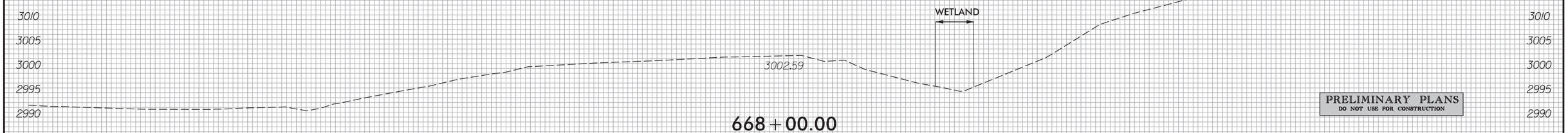
669+50.00



669+00.00



668+50.00



668+00.00

—L—

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

3/14/2019
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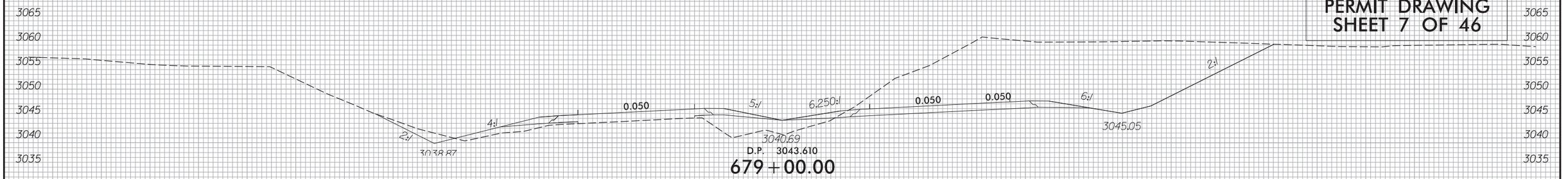
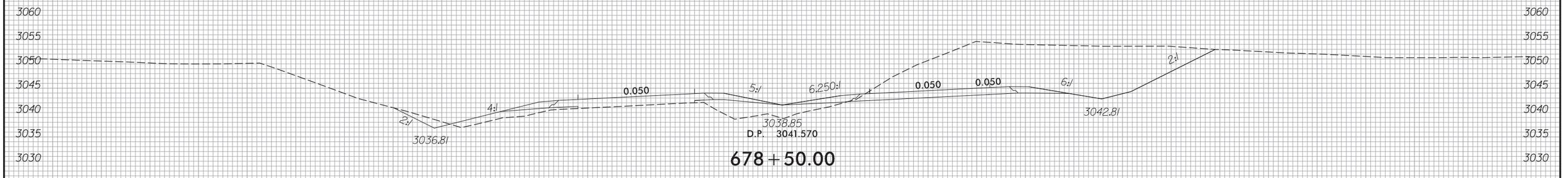
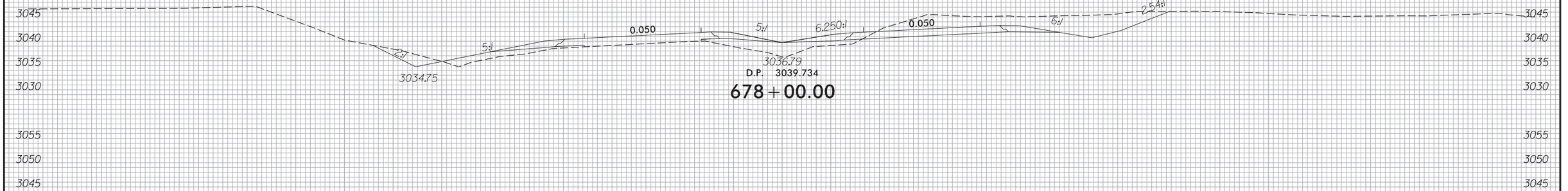
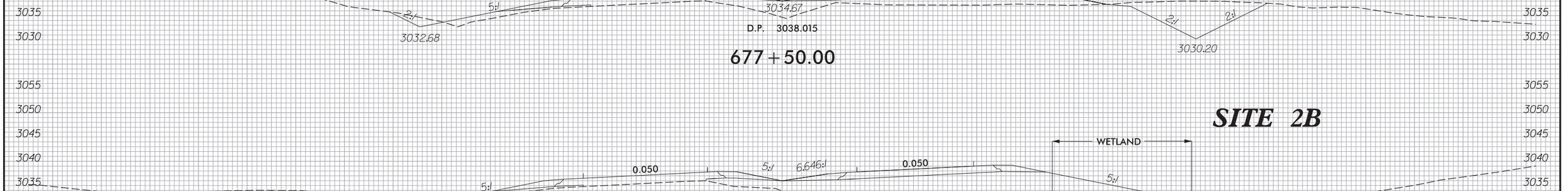
0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-2915E	X-6

PERMIT DRAWING
SHEET 7 OF 46









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PROJECT REFERENCE NO.	SHEET NO.
R-2915E	6
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

NAD 83/NSRS 2007

A–A: 15.0′ / 0.0′ / 1.0′ / 4.0′ / ROADSIDE
B–B: 16.0′ / 0.25′ / 2.0′ / 4.0′ / OUTFALL
C–C: 4.0′ / 0.2′ / 0.5′ / 1.0′ / OUTFALL
D–D: 6.0′ / 0.25′ / 2.0′ / 4.0′ / OUTFALL
E–E: 5.0′ / 0.2′ / 0.5′ / 1.0′ / OUTFALL
F–F: 16.0′ / 0.5′ / 3.5′ / 5.0′ / OUTFALL
G–G: 3.0′ / 0.0′ / 0.5′ / 0.0′ / OUTFALL
H–H: 10.0′ / 0.25′ / 2.0′ / 4.0′ / OUTFALL

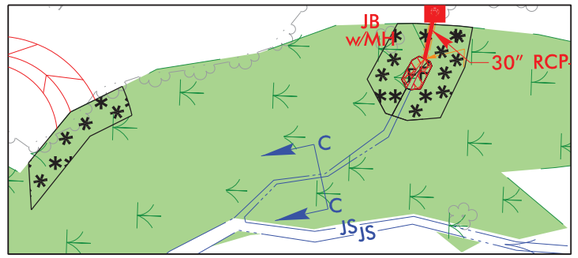
ENGLISH

PERMIT DRAWING SHEET 8 OF 46

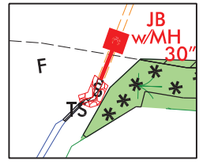
25 0 25 50 SCALE FOR INSET

50 25 0 50 100 SCALE

F F DENOTES FILL IN WETLAND
S S DENOTES IMPACTS IN SURFACE WATER
DENOTES MECHANIZED CLEARING
TS TS DENOTES TEMPORARY IMPACTS IN SURFACE WATER



INSET A



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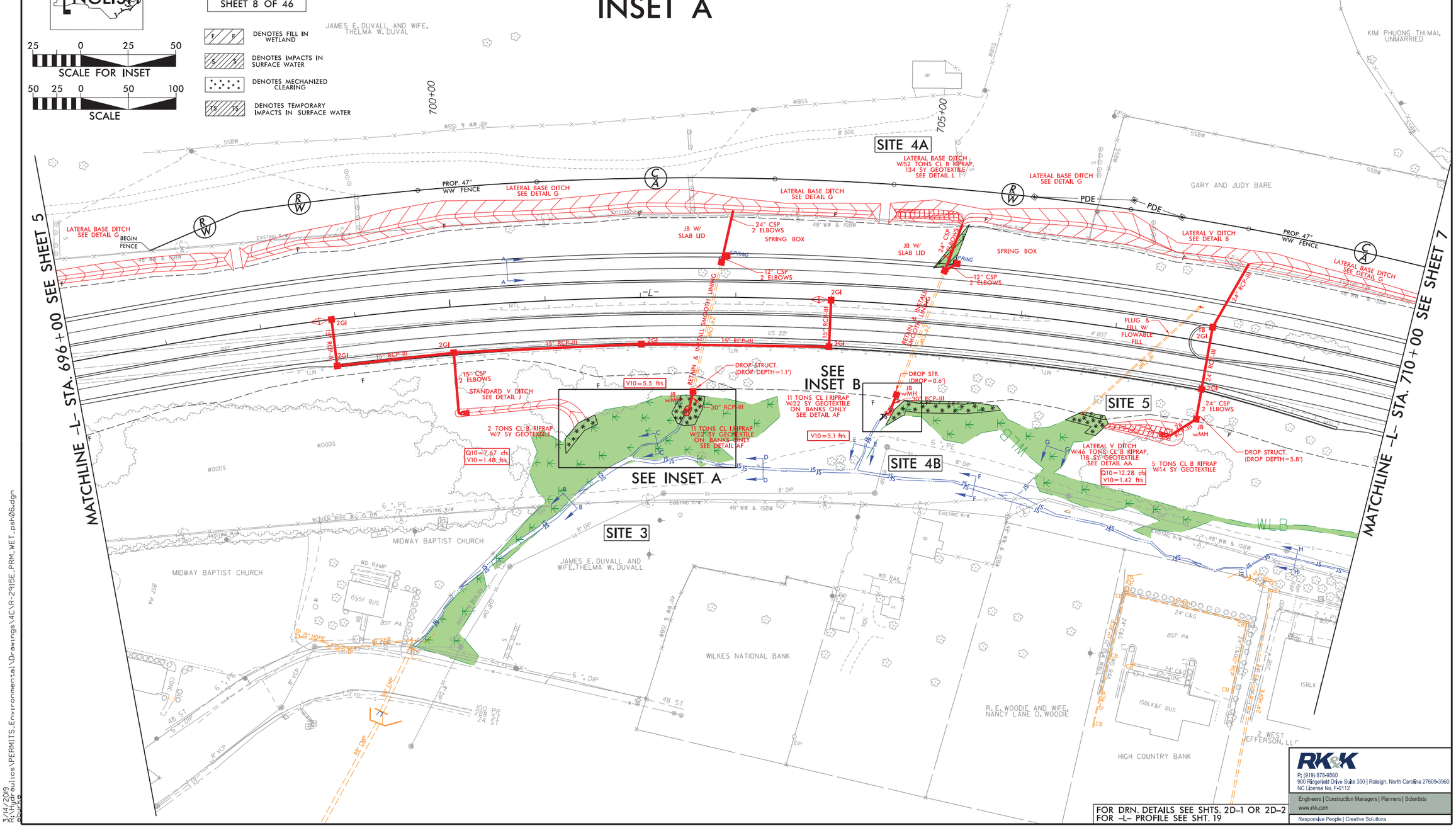

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PROJECT REFERENCE NO.	SHEET NO.
R-2915E	6
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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A–A: 15.0′, 0.0′, 1.0′, 4.0′ ROADSIDE
B–B: 16.0′, 0.25′, 2.0′, 4.0′ OUTFALL
C–C: 4.0′, 0.2′, 0.5′, 1.0′ OUTFALL
D–D: 6.0′, 0.25′, 2.0′, 4.0′ OUTFALL
E–E: 5.0′, 0.2′, 0.5′, 1.0′ OUTFALL
F–F: 16.0′, 0.5′, 3.5′, 5.0′ OUTFALL
G–G: 3.0′, 0.0′, 0.5′, 0.0′ OUTFALL
H–H: 10.0′, 0.25′, 2.0′, 4.0′ OUTFALL

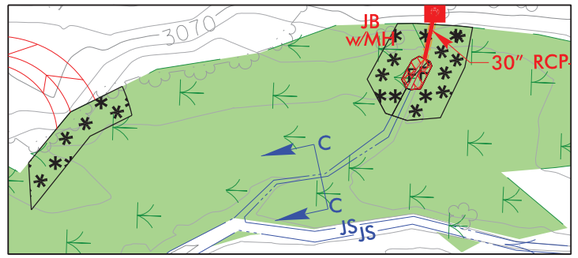
ENGLISH

PERMIT DRAWING SHEET 9 OF 46

F F DENOTES FILL IN WETLAND
S S DENOTES IMPACTS IN SURFACE WATER
DENOTES MECHANIZED CLEARING
TS TS DENOTES TEMPORARY IMPACTS IN SURFACE WATER

25 0 25 50
SCALE FOR INSET

50 25 0 50 100
SCALE



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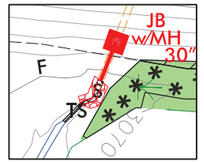

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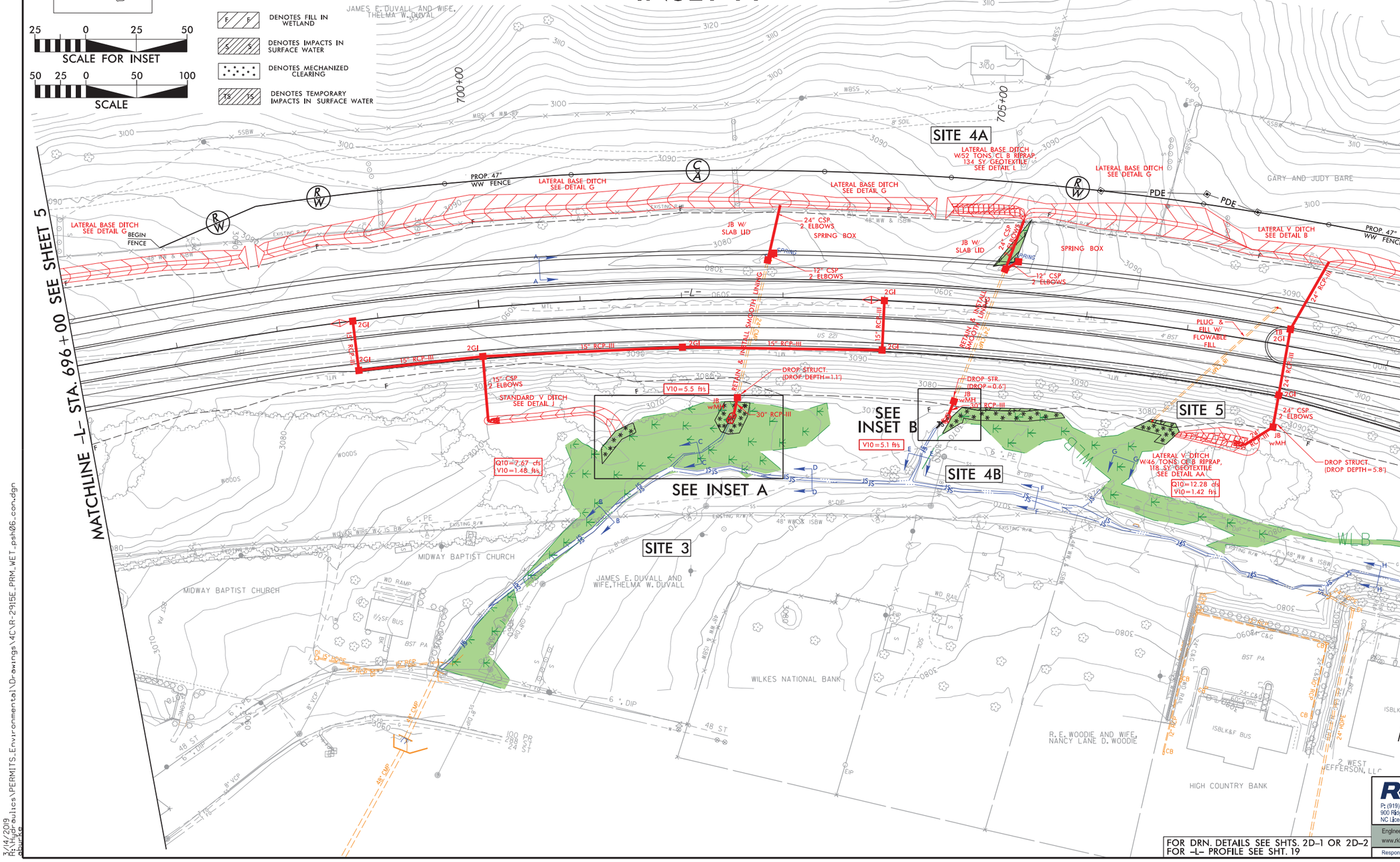

FOR DRN. DETAILS SEE SHTS. 2D–1 OR 2D–2
FOR –L– PROFILE SEE SHT. 19

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0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-2915E	X-24

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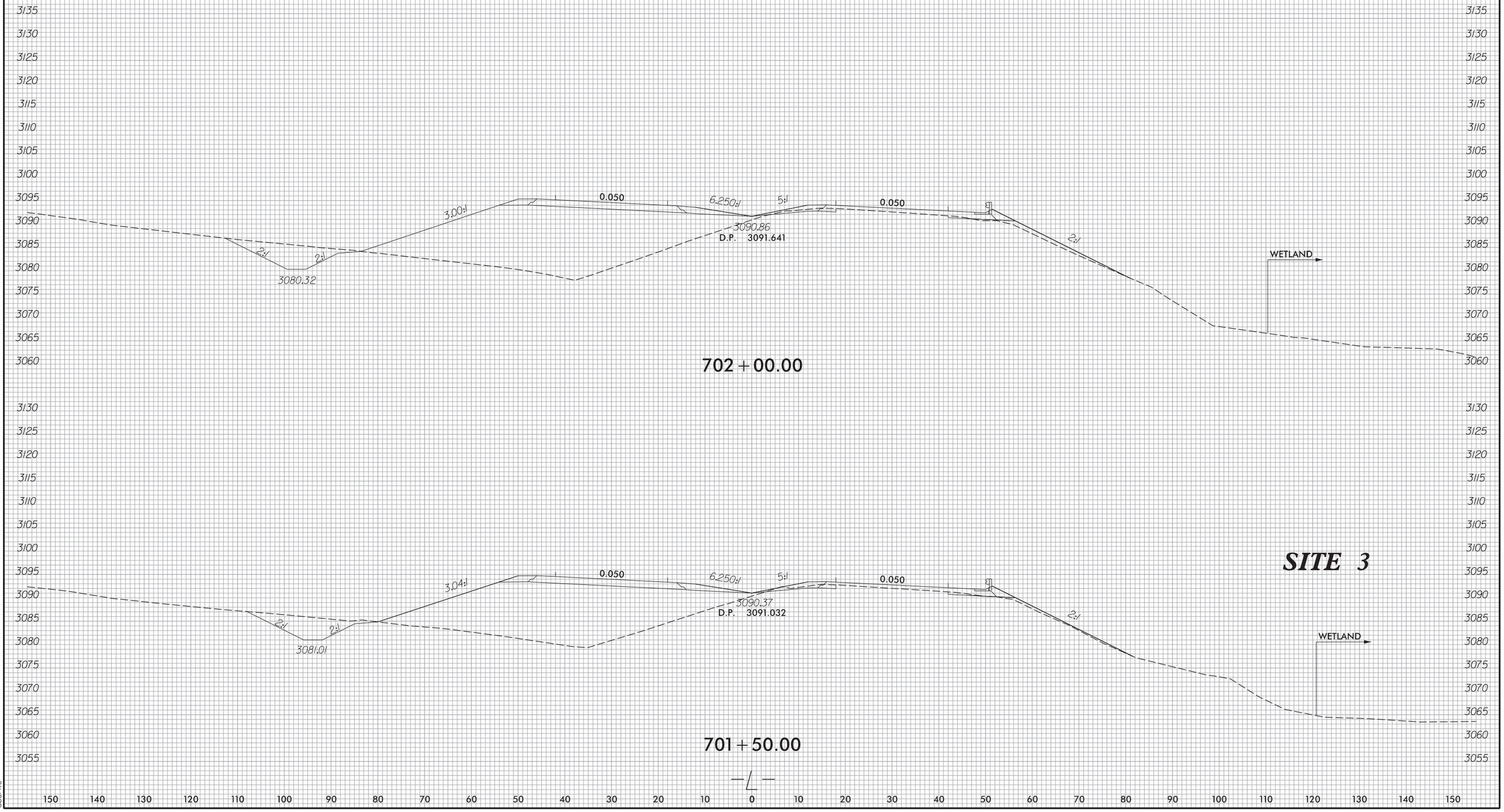
PERMIT DRAWING
SHEET 10 OF 46



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0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-2915E	X-27

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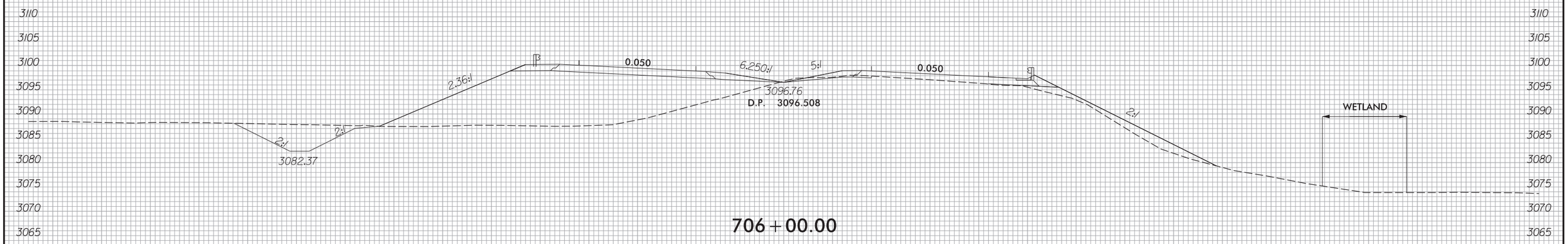
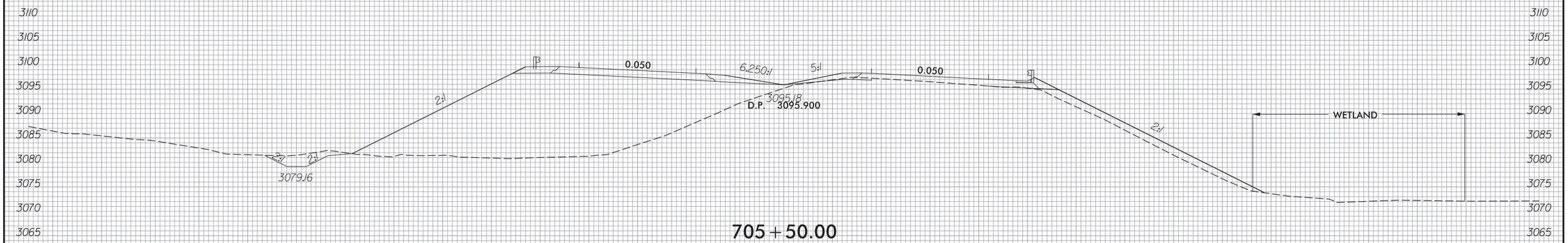
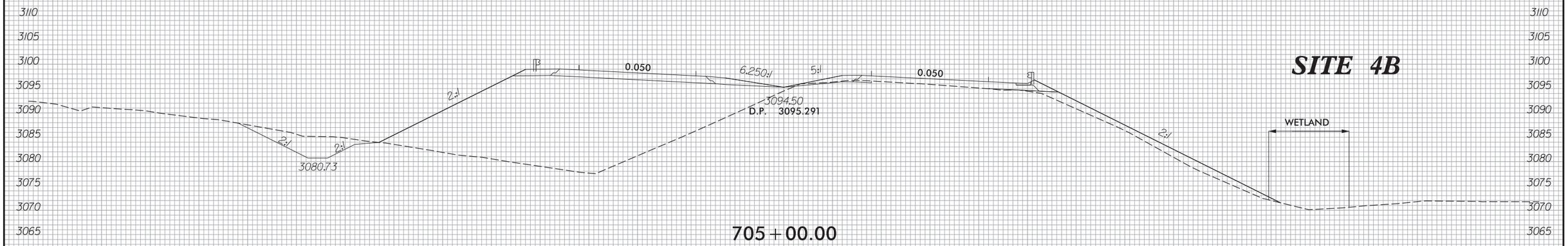
PERMIT DRAWING
SHEET 11 OF 46







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—L—

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6/23/16

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-2915E	X-28

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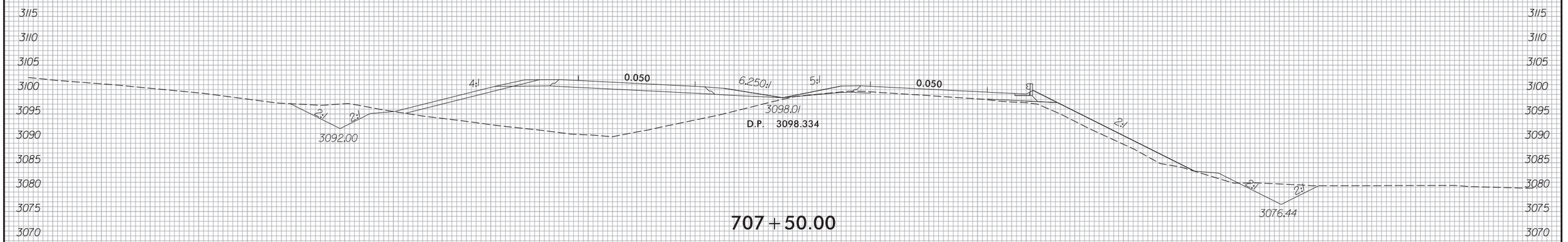
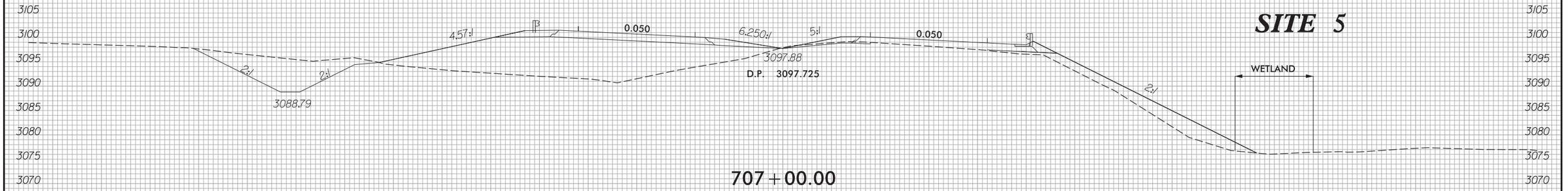
PERMIT DRAWING
SHEET 12 OF 46



707+50.00



SITE 5

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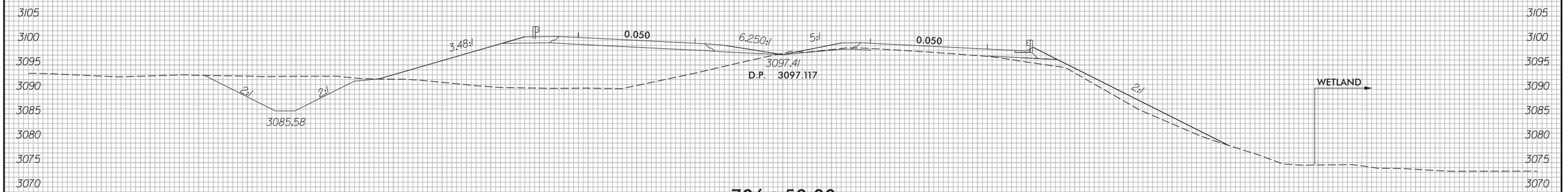

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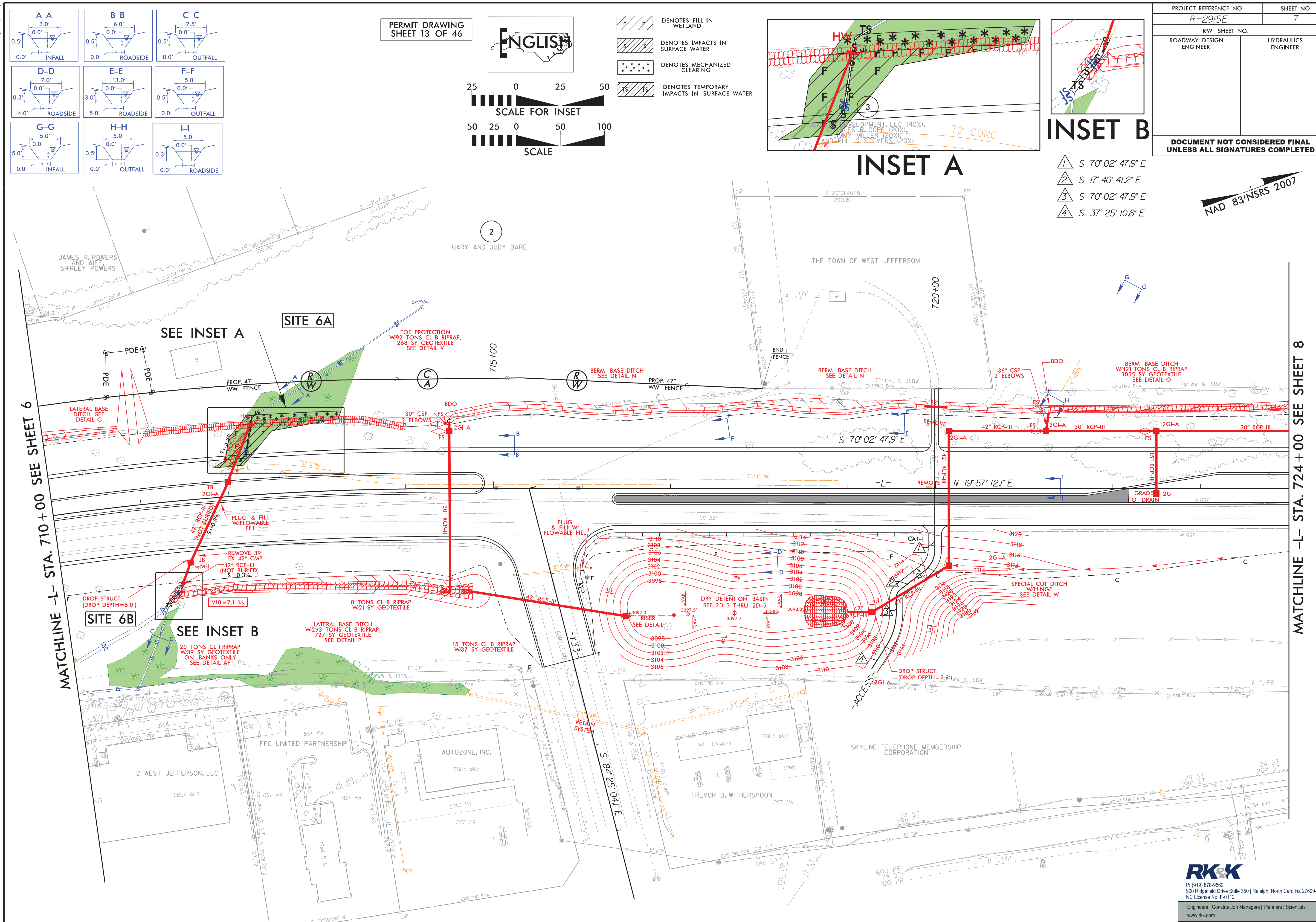

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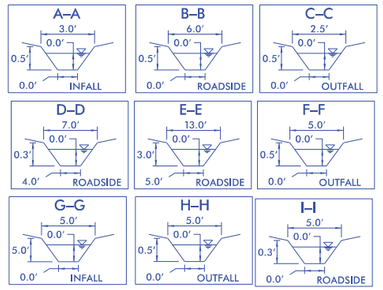
3/14/2019

8/17/99



PERMIT DRAWING
SHEET 14 OF 46

ENGLISH

25 0 25 50
SCALE FOR INSET

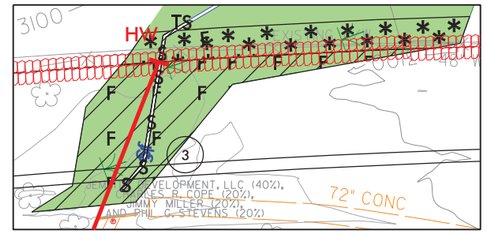
50 25 0 50 100
SCALE

F F DENOTES FILL IN WETLAND

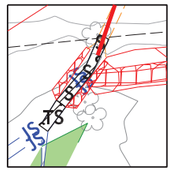
S S DENOTES IMPACTS IN SURFACE WATER

DENOTES MECHANIZED CLEARING

TS TS DENOTES TEMPORARY IMPACTS IN SURFACE WATER



INSET A



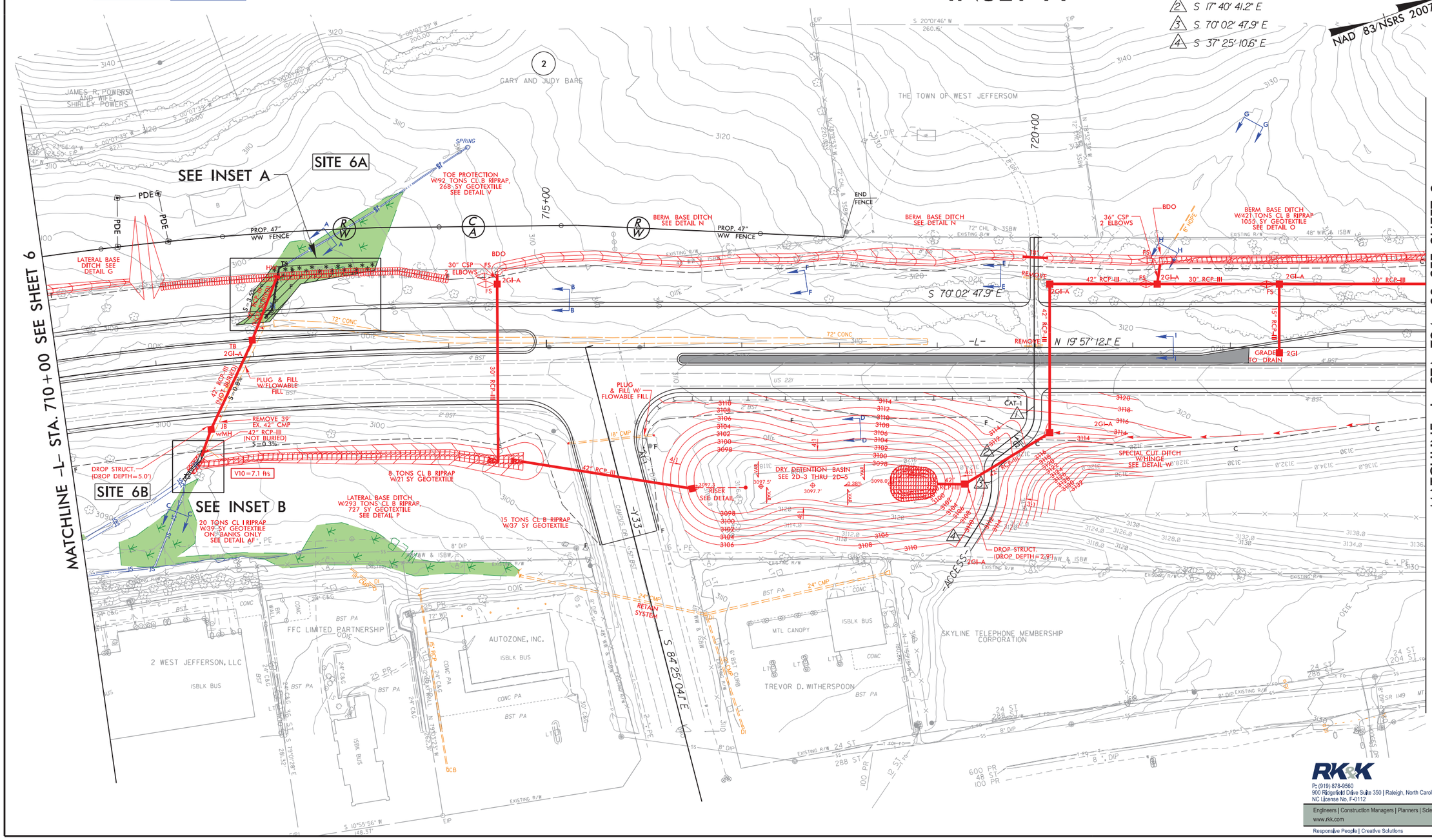
INSET B

PROJECT REFERENCE NO.	SHEET NO.
R-2915E	7
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

1 S 70° 02' 47.9" E
2 S 17° 40' 41.2" E
3 S 70° 02' 47.9" E
4 S 37° 25' 10.6" E

NAD 83/NSRS 2007



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0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-2915E	X-32

PERMIT DRAWING
SHEET 15 OF 46

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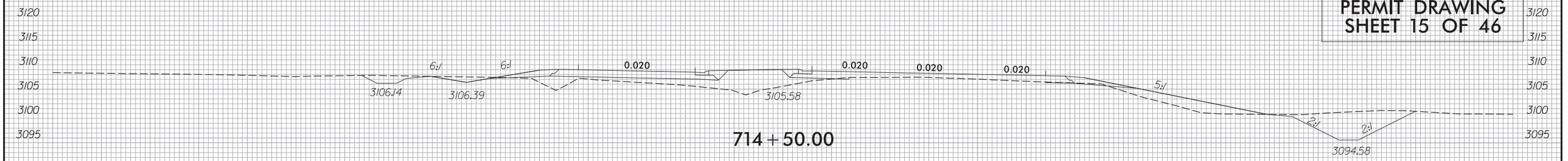
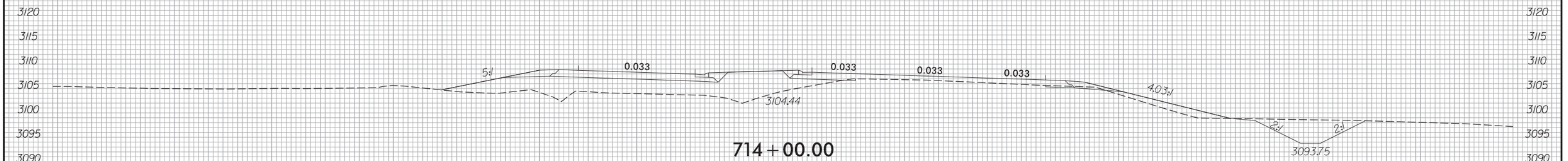
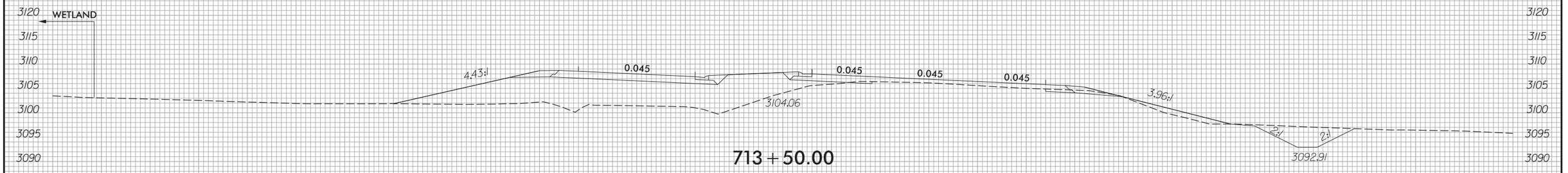


714 + 50.00



714 + 00.00



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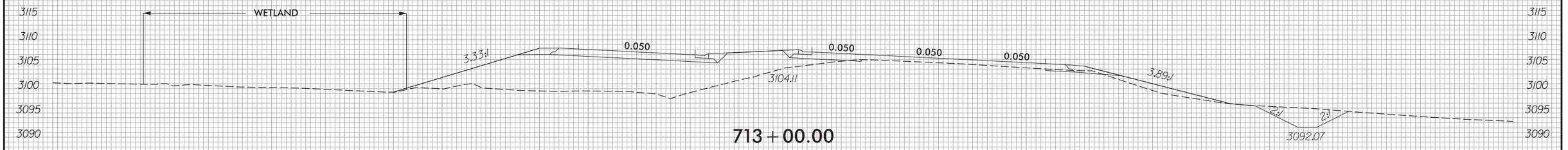
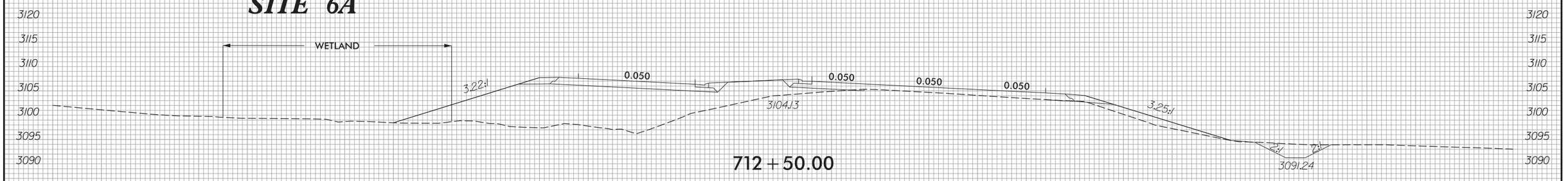


713 + 00.00

SITE 6A



712 + 50.00

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

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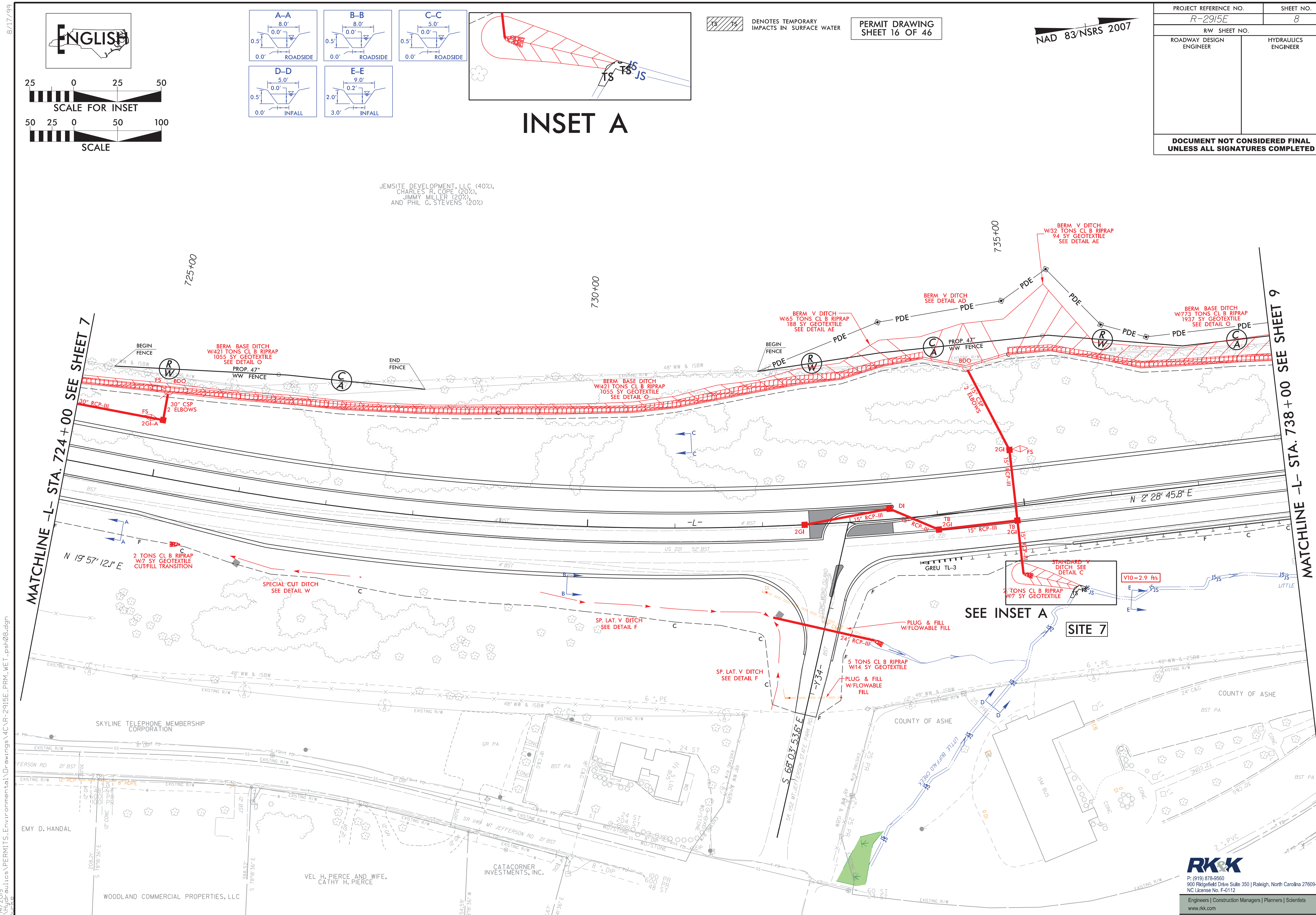
aburke



PROJECT REFERENCE NO.
R-2915E
SHEET NO.
8
R/W SHEET NO.
ROADWAY DESIGN ENGINEER
HYDRAULICS ENGINEER
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED
PERMIT DRAWING SHEET 16 OF 46
DENOTES TEMPORARY IMPACTS IN SURFACE WATER
NAD 83/NSRS 2007
ENGLISH
SCALE FOR INSET
SCALE
INSET A
A-A
B-B
C-C
D-D
E-E
ROADSIDE
INFALL
JEMSITE DEVELOPMENT, LLC (40%), CHARLES R. COPE (20%), JIMMY MILLER (20%), AND PHIL G. STEVENS (20%)
725+00
730+00
735+00
MATCHLINE -L- STA. 724+00 SEE SHEET 7
MATCHLINE -L- STA. 738+00 SEE SHEET 9
BEGIN FENCE
END FENCE
PROP. 47" WW FENCE
BERM BASE DITCH W/421 TONS CL B RIPRAP 1055 SY GEOTEXTILE SEE DETAIL O
BERM V DITCH W/65 TONS CL B RIPRAP 188 SY GEOTEXTILE SEE DETAIL AE
BERM V DITCH SEE DETAIL AD
BERM V DITCH W/32 TONS CL B RIPRAP 94 SY GEOTEXTILE SEE DETAIL AE
BERM BASE DITCH W/773 TONS CL B RIPRAP 1937 SY GEOTEXTILE SEE DETAIL O
30" RCP-III
30" CSP 2 ELBOWS
2GI-A
15" CSP 2 ELBOWS
15" RCP-III
24" RCP-III
N 2° 28' 45.8" E
N 19° 57' 12.1" E
S 68° 03' 53.6" E
2 TONS CL B RIPRAP W/7 SY GEOTEXTILE CUT/FILL TRANSITION
SPECIAL CUT DITCH SEE DETAIL W
SP. LAT. V DITCH SEE DETAIL F
PLUG & FILL W/FLOWABLE FILL
5 TONS CL B RIPRAP W/14 SY GEOTEXTILE
STANDARD V DITCH SEE DETAIL C
2 TONS CL B RIPRAP W/7 SY GEOTEXTILE
V10 = 2.9 ft/s
SEE INSET A
SITE 7
GREU TL-3
-Y34-
LITTLE BUFFALO CREEK
SKYLINE TELEPHONE MEMBERSHIP CORPORATION
COUNTY OF ASHE
EMY D. HANDAL
WOODLAND COMMERCIAL PROPERTIES, LLC
VEL H. PIERCE AND WIFE, CATHY H. PIERCE
CATACORNER INVESTMENTS, INC.
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ENGLISH

25 0 25 50
SCALE FOR INSET

50 25 0 50 100
SCALE

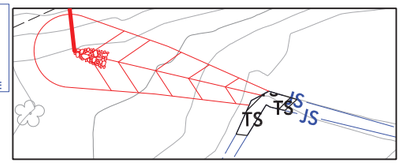
A–A 8.0′ 0.0′ 0.5′ 0.0′ ROADSIDE

B–B 8.0′ 0.0′ 0.5′ 0.0′ ROADSIDE

C–C 5.0′ 0.0′ 0.5′ 0.0′ ROADSIDE

D–D 5.0′ 0.0′ 0.5′ 0.0′ INFALL

E–E 9.0′ 0.2′ 2.0′ 3.0′ INFALL



INSET A

TS TS DENOTES TEMPORARY IMPACTS IN SURFACE WATER

PERMIT DRAWING
SHEET 17 OF 46

NAD 83/NSRS 2007

PROJECT REFERENCE NO.	SHEET NO.
R-2915E	8
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

JEMSITE DEVELOPMENT, LLC (40%),
CHARLES R. COPE (20%),
JIMMY MILLER (20%),
AND PHIL G. STEVENS (20%)

MATCHLINE –L– STA. 724+00 SEE SHEET 7

MATCHLINE –L– STA. 738+00 SEE SHEET 9

725+00 730+00 735+00

N 19° 57' 12.1" E

N 2° 28' 45.8" E

S 68° 03' 53.6" E

734.

SEE INSET A

SITE 7

BEGIN FENCE

END FENCE

PROP. 47" WW FENCE

BDO

FS

BERM BASE DITCH
W/421 TONS CL B RIPRAP
1055 SY GEOTEXTILE
SEE DETAIL O

30" RCP-III

30" CSP
2 ELBOWS

2GI-A

2 TONS CL B RIPRAP
W/7 SY GEOTEXTILE
CUT/FILL TRANSITION

SPECIAL CUT DITCH
SEE DETAIL W

SP. LAT. V DITCH
SEE DETAIL F

BERM V DITCH
W/65 TONS CL B RIPRAP
188 SY GEOTEXTILE
SEE DETAIL AE

BERM V DITCH
SEE DETAIL AD

BERM V DITCH
W/32 TONS CL B RIPRAP
94 SY GEOTEXTILE
SEE DETAIL AE

BERM BASE DITCH
W/773 TONS CL B RIPRAP
1937 SY GEOTEXTILE
SEE DETAIL O

PDE

15" CSP
2 ELBOWS

15" RCP-III

2GI

DI

TB 2GI

STANDARD V DITCH SEE DETAIL C

V10=2.9 fps

2 TONS CL B RIPRAP
W/7 SY GEOTEXTILE

PLUG & FILL
W/FLOWABLE FILL

24" RCP-III

5 TONS CL B RIPRAP
W/14 SY GEOTEXTILE

GREU TL-3

SKYLINE TELEPHONE MEMBERSHIP CORPORATION

EMY D. HANDAL

WOODLAND COMMERCIAL PROPERTIES, LLC

VEL H. PIERCE AND WIFE, CATHY H. PIERCE

CATACORNER INVESTMENTS, INC.

COUNTY OF ASHE

SR 1148 MT JEFFERSON RD

US 221

LITTLE BUFFALO CREEK

LITTLE

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abuie

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ENGLISH

PERMIT DRAWING
SHEET 18 OF 46

F F DENOTES FILL IN WETLAND

S S DENOTES IMPACTS IN SURFACE WATER

TS TS DENOTES TEMPORARY IMPACTS IN SURFACE WATER

T T DENOTES TEMPORARY FILL IN WETLAND

25 0 25 50
SCALE FOR INSET

50 25 0 50 100
SCALE

JEMSITE DEVELOPMENT, LLC (40%),
CHARLES R. COPE (20%),
JIMMY MILLER (20%),
AND PHIL C. STEVENS (20%)

A–A: 3.0′ / 0.2′ / 1.0′ / 1.0′ INFALL

B–B: 13.0′ / 0.2′ / 2.0′ / 8.0′ OUTFALL

C–C: 8.0′ / 0.25′ / 3.0′ / 5.0′ OUTFALL

D–D: 7.0′ / 0.3′ / 2.5′ / 5.0′ OUTFALL

E–E: 8.0′ / 0.5′ / 3.0′ / 6.0′ OUTFALL

NAD 83/NSRS 2007

PROJECT REFERENCE NO.	SHEET NO.
R-2915E	9
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

JOHNNY J. SULLIVAN

MATCHLINE –L– STA. 738+00 SEE SHEET 8

MATCHLINE –L– STA. 751+00 SEE SHEET 10

740+00

745+00

750+00

SITE 9A

SITE 8A
V10=3.6 ft/s

SITE 9B
V10=8.3 ft/s

SITE 8B

SEE INSET A

SEE INSET B

SEE INSET C

SP. LAT. V DITCH W85 TONS CL B RIPRAP, 237 SY GEOTEXTILE SEE DETAIL Q

BERM BASE DITCH W181 TONS CL I RIPRAP, 371 SY GEOTEXTILE SEE DETAIL R

BERM BASE DITCH W773 TONS CL B RIPRAP 1937 SY GEOTEXTILE SEE DETAIL O

BERM BASE DITCH SEE DETAIL N

PROP. 47" WW FENCE

24" CSP 2 ELBOWS

24" CMP 2 ELBOWS

4OTCB

SP. LAT. V DITCH SEE DETAIL F

SPRING BOX

'V' DITCH SEE DETAIL X

SP. LAT. V DITCH W595 SY-PSRM SEE DETAIL S

BDO REMOVE RISER & 9' EX. 24" CMP

PLUG & FILL SYSTEM W/ FLOWABLE FILL

PLUG & FILL W/FLOWABLE FILL

REMOVE 20'± EX. 30" CMP

DROP STRUCTURE (DROP DEPTH=1.4')

30" RCP-III

F STD. V DITCH W20 TONS CL B RIPRAP, 53 SY GEOTEXTILE SEE DETAIL H

7 TONS CL I RIPRAP W15 SY GEOTEXTILE

11 TONS CL I RIPRAP W22 SY GEOTEXTILE ON BANKS ONLY SEE DETAIL AF

CORNER OF BUILDING AT CONTROL ELEV.= 3090.62 (SURVEYED 100616)

N 19°17'15.2" E

N 2°28'45.8" E

N 20°25'56.7" E

INSET A

INSET B

INSET C

FOR DRN. DETAILS SEE SHTS. 2D-1 OR 2D-2
FOR –L– PROFILE SEE SHT. 20
FOR –SR1– PROFILE SEE SHT. 26

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aburke

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ENGLISH

PERMIT DRAWING
SHEET 19 OF 46

F F DENOTES FILL IN WETLAND

S S DENOTES IMPACTS IN SURFACE WATER

TS TS DENOTES TEMPORARY IMPACTS IN SURFACE WATER

T T DENOTES TEMPORARY FILL IN WETLAND

25 0 25 50
SCALE FOR INSET

50 25 0 50 100
SCALE

JEMSITE DEVELOPMENT, LLC (40%),
CHARLES R. COPE (20%),
JIMMY MILLER (20%),
AND PHIL C. STEVENS (20%)

JOHNNY J. SULLIVAN

A–A
3.0′
0.2′
1.0′
1.0′
INFALL

B–B
13.0′
0.2′
2.0′
8.0′
OUTFALL

C–C
8.0′
0.25′
3.0′
5.0′
OUTFALL

D–D
7.0′
0.3′
2.5′
5.0′
OUTFALL

E–E
8.0′
0.5′
3.0′
6.0′
OUTFALL

NAD 83/NSRS 2007

PROJECT REFERENCE NO.	SHEET NO.
R-2915E	9
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

MATCHLINE –L– STA. 738+00 SEE SHEET 8

MATCHLINE –L– STA. 751+00 SEE SHEET 10

740+00

745+00

750+00

SITE 9A

SITE 8A
V10=3.6 ft/s

SITE 8B

SITE 9B
V10=8.3 ft/s

SEE INSET A

SEE INSET B

SEE INSET C

BERM BASE DITCH W773 TONS CL B RIPRAP 1937 SY GEOTEXTILE SEE DETAIL O

BERM BASE DITCH SEE DETAIL N

BERM BASE DITCH W181 TONS CL I RIPRAP 371 SY GEOTEXTILE SEE DETAIL R

SP LAT V DITCH W185 TONS CL B RIPRAP 237 SY GEOTEXTILE SEE DETAIL Q

SP LAT V DITCH SEE DETAIL F

SP LAT V DITCH W595 SY PSRM SEE DETAIL S

PROP 47" WW FENCE

BDO

PDE

GREU

SPRING

SPRING BOX

24" CSP 2 ELBOWS

40TCB

24" CMP 2 ELBOWS

2 24" CSP ELBOWS

24" RCP-III

15" RCP-III

30" RCP-III

2GI

2GI-A

TB 2GI

TB 2GI-A

FS

PLUG & FILL W/FLOWABLE FILL

PLUG & FILL SYSTEM 'W' FLOWABLE FILL

'V' DITCH SEE DETAIL X

BDO REMOVE RISER & 9' EX 24" CMP

CONC PAD

STD V DITCH W20 TONS CL B RIPRAP 53 SY GEOTEXTILE SEE DETAIL H

7 TONS CL I RIPRAP W15 SY GEOTEXTILE

REMOVE 20' EX 30" CMP

DROP STRUCTURE (DROP DEPTH=1.4')

11 TONS CL I RIPRAP W22 SY GEOTEXTILE ON BANKS ONLY SEE DETAIL AF

CORNER OF BUILDING AT CONTROL ELEV. = 3090.62 (SURVEYED 100616)

N 19°17'15.2" E

N 2°28'45.8" E

N 20°25'56.7" E

BUFFALO CREEK

LITTLE BUFFALO CREEK

COUNTY OF ASHE

CS PROPERTIES OF ASHE, INC.

SR 1149 MT JEFFERSON RD

US 221

INSET A

INSET B

INSET C

FOR DRN. DETAILS SEE SHTS. 2D–1 OR 2D–2
FOR –L– PROFILE SEE SHT. 20
FOR –SR1– PROFILE SEE SHT. 26

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abruce

6/23/16

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-2915E	X-53

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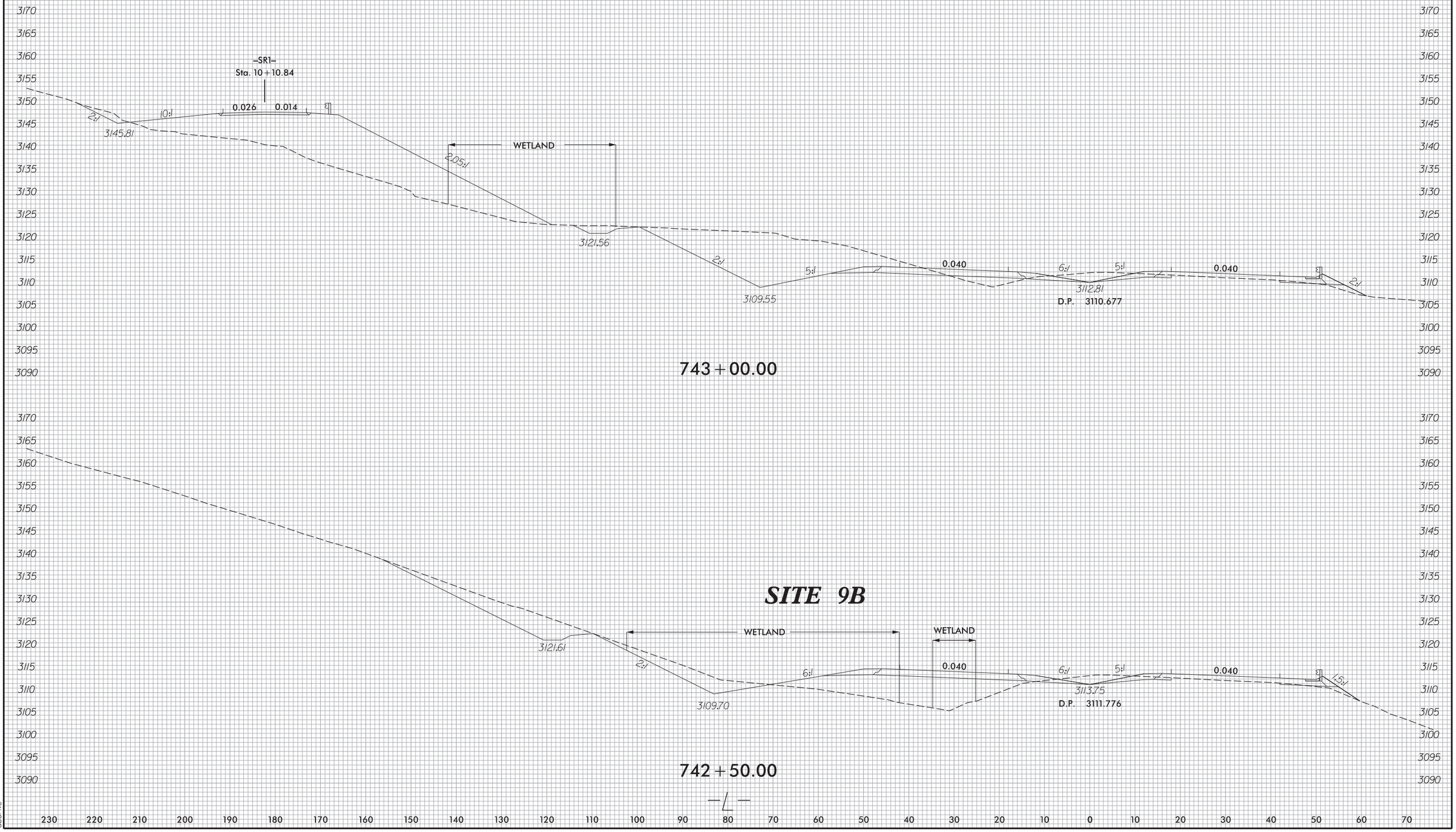
PERMIT DRAWING
SHEET 20 OF 46



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dburke

8/17/99

PROJECT REFERENCE NO.	SHEET NO.
R-2915E	10
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

SCALE FOR INSET: 25 0 25 50

SCALE: 50 25 0 50 100

F F DENOTES FILL IN WETLAND

S S DENOTES IMPACTS IN SURFACE WATER

DENOTES MECHANIZED CLEARING

TS TS DENOTES TEMPORARY IMPACTS IN SURFACE WATER

PERMIT DRAWING SHEET 21 OF 46

ENGLISH

INSET A

INSET B

INSET G

A–A: 4.0′, 0.2′, 0.5′, 2.0′ INFALL

B–B: 5.0′, 0.1′, 1.0′, 4.0′ OUTFALL

C–C: 7.0′, 0.2′, 2.0′, 3.0′ OUTFALL

D–D: 11.0′, 0.2′, 2.5′, 5.0′ OUTFALL

E–E: 8.0′, 0.2′, 0.5′, 2.0′ INFALL

F–F: 15.5′, 0.7′, 5.0′, 6.5′ OUTFALL

G–G: 19.0′, 0.9′, 8.0′, 10.0′ OUTFALL

NAD 83/NSRS 2007

MATCHLINE –L– STA. 751+00 SEE SHEET 9

MATCHLINE –L– STA. 765+00 SEE SHEET 11

SITE 11D

V10=5.0 ft/s

64 TONS CL II RIPRAP W/119 SY GEOTEXTILE EMBEDDED IN CHANNEL SEE STD. 876.01 (RIP RAP IN CHANNELS)

PIPES DO NOT INTERSECT

SEE INSET A

20 TONS CL I RIPRAP W/39 SY GEOTEXTILE

SITE 10

2 TONS CL B RIPRAP W/7 SY GEOTEXTILE

Q10=0.2 cfs

V10=0.3 ft/s

FILL IN WETLANDS (RIP-RAP PAD)

SEE INSET B

SITE 11C

SITE 11A

SITE 11B

SEE INSET F

SITE 12

V10=12.6 ft/s

RETAIN CB

RETAIN & INSTALL SMOOTH LINING

48 TONS CL I RIPRAP W/89 SY GEOTEXTILE ON BANKS ONLY SEE DETAIL AF

SEE INSET G

SITE 13A

V10=7.6 ft/s

8 TONS CL B RIPRAP W/21 SY GEOTEXTILE ON BANKS ONLY SEE DETAIL AF

SEE OUTFALL ANALYSIS PACKAGE

SEE INSET C

SEE INSET D

SITE 14A

V10=9.4 ft/s

40 TONS CL I RIPRAP W/75 SY GEOTEXTILE ON BANKS ONLY SEE DETAIL AF

SITE 13C

SITE 13B

SEE INSET E

10′ WIDE BERM TOP ELEV. 3108.0′ SEE DETAIL AC

10′ WIDE BERM TOP ELEV. 3114.5′ SEE DETAIL AC

SPECIAL CUT DITCH SEE DETAIL W

STD. BASE DITCH W/23 TONS CL II RIPRAP, 46 SY GEOTEXTILE SEE DETAIL U

JURISDICTIONAL STREAM BETWEEN EXISTING PIPES

SP. LAT. V DITCH SEE DETAIL F

2 TONS CL B RIPRAP W/7 SY GEOTEXTILE

RETAIN & INSTALL SMOOTH LINING

'V' DITCH SEE DETAIL X

PROP. 47″ WW FENCE

ROBERT CLAYTON LONG AND WIFE, SARAH DEAN LONG

RUBY R. ABSHER LIVING TRUST

REED REAL ESTATE

JOHNNY SULLIVAN AND WIFE, PHYLLIS SULLIVAN

MICHAEL ALOIA AND WIFE, CINDEE L. ALOIA

CS PROPERTIES OF ASHE, INC.

KATHY H. HOWELL AND LINDA H. BELGER

JAMES P.G. MURRAY, A 99% UNDIVIDED INTEREST AND STANLY DWAYNE ELLIOTT A 1% UNDIVIDED INTEREST

SR 1251 ROCKY RIDGE RD

SR 1251 MT JEFFERSON RD

SR 1251 CANDLELIGHT DR

INSET F

INSET C

INSET D

INSET E

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PROJECT REFERENCE NO.	SHEET NO.
R-2915E	10
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

25 0 25 50
SCALE FOR INSET

50 25 0 50 100
SCALE

F F DENOTES FILL IN WETLAND
S S DENOTES IMPACTS IN SURFACE WATER
DENOTES MECHANIZED CLEARING
TS TS DENOTES TEMPORARY IMPACTS IN SURFACE WATER

PERMIT DRAWING SHEET 22 OF 46

ENGLISH

INSET A

INSET B

INSET G

A–A: 4.0′, 0.2′, 0.5′, 2.0′ INFALL
B–B: 5.0′, 0.1′, 1.0′, 4.0′ OUTFALL
C–C: 7.0′, 0.2′, 2.0′, 3.0′ OUTFALL
D–D: 11.0′, 0.2′, 2.5′, 5.0′ OUTFALL
E–E: 8.0′, 0.2′, 0.5′, 2.0′ INFALL
F–F: 15.5′, 0.7′, 5.0′, 6.5′ OUTFALL
G–G: 19.0′, 0.9′, 8.0′, 10.0′ OUTFALL

NAD 83/NSRS 2007

MATCHLINE –L– STA. 751+00 SEE SHEET 9

MATCHLINE –L– STA. 765+00 SEE SHEET 11

SITE 11D
V10=5.0 ft/s
64 TONS CL II RIPRAP W/319 SY GEOTEXTILE EMBEDDED IN CHANNEL SEE STD. 876.01 (RIP RAP IN CHANNELS)
PIPES DO NOT INTERSECT
SEE INSET A

SITE 12
V10=12.6 ft/s
RETAIN & INSTALL SMOOTH LINING
46 TONS CL I RIPRAP W/89 SY GEOTEXTILE ON BANKS ONLY SEE DETAIL AF
SEE INSET G

SITE 13A
V10=7.6 ft/s
8 TONS CL B RIPRAP W/21 SY GEOTEXTILE ON BANKS ONLY SEE DETAIL AF
SEE OUTFALL ANALYSIS PACKAGE
SEE INSET C

SITE 13B
SEE INSET E

SITE 13C

SITE 14A
V10=9.4 ft/s
40 TONS CL I RIPRAP W/75 SY GEOTEXTILE ON BANKS ONLY SEE DETAIL AF
SEE INSET D

SITE 10
2 TONS CL B RIPRAP W/7 SY GEOTEXTILE
Q10=0.2 cfs
V10=0.3 ft/s
SEE INSET B

SITE 11C

SITE 11A

SITE 11B

SEE INSET F

RETAIN & INSTALL SMOOTH LINING

FILL IN WETLANDS (RIP-RAP PAD)

755+00

760+00

765+00

20+00

15+00

N 20° 25′ 56.7″ E SRI

N 64° 13′ 46.0″ E

N 25° 42′ 57.4″ W

S 25° 46′ 14.0″ E

N 21° 30′ 01.6″ E

ROBERT CLAYTON LONG AND WIFE, SARAH DEAN LONG

RUBY M. ABSHER LIVING TRUST

REED REAL ESTATE

JOHNNY SULLIVAN AND WIFE, PHYLLIS SULLIVAN

MICHAEL ALOIA AND WIFE, CINDEE L. ALOIA

CS PROPERTIES OF ASHE, INC.

KATHY H. HOWELL AND LINDA H. BELGER

JAMES P.G. MURRAY A 99½ UNDIVIDED INTEREST AND STANLY DWAYNE ELLIOTT A ½ UNDIVIDED INTEREST

INSET F

INSET C

INSET D

INSET E

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aburke

5/14/99

PROJECT REFERENCE NO.	SHEET NO.
R-2915E	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

ENGLISH

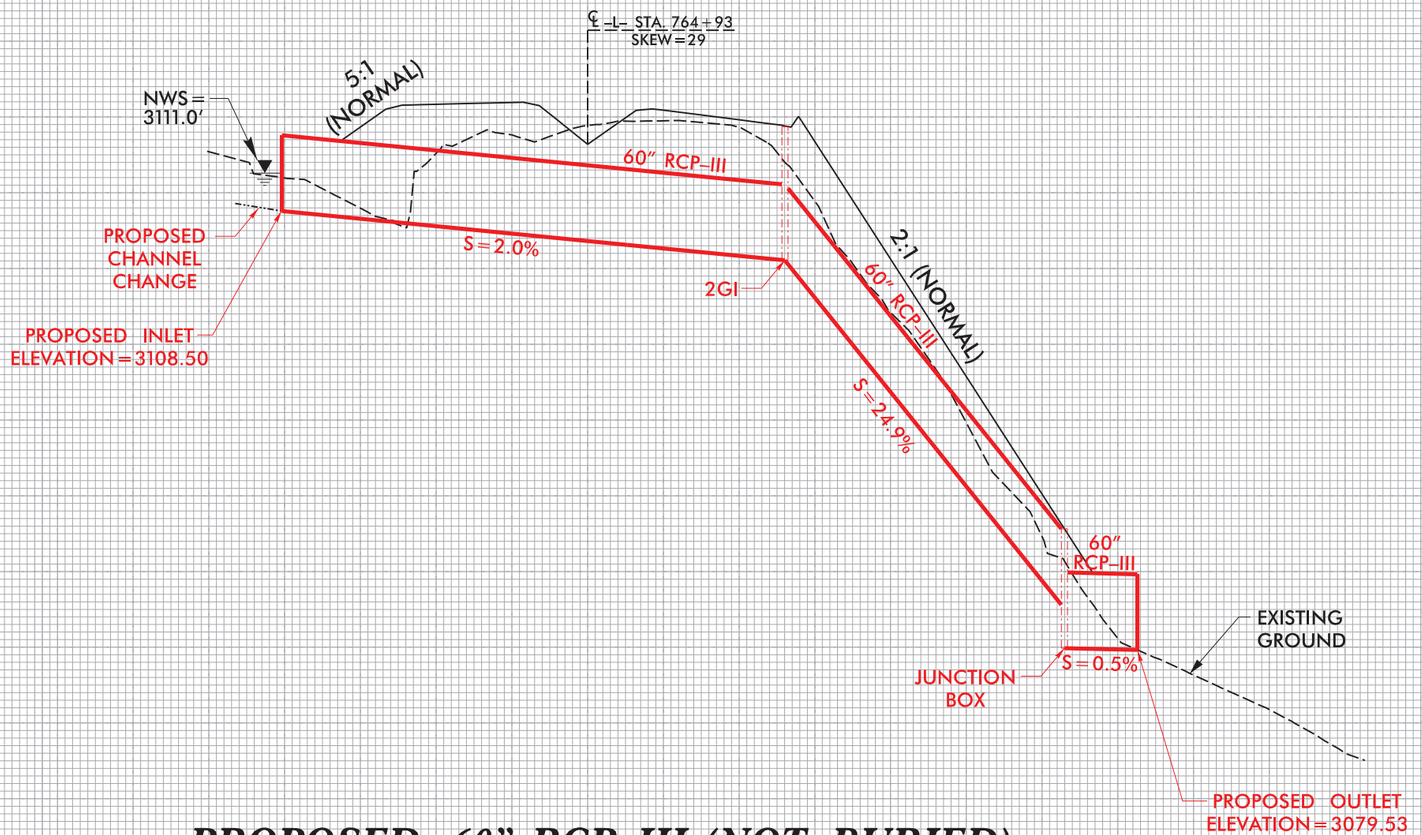
INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PERMIT DRAWING
SHEET 23 OF 46

SITE 14
–L– 764+93



PROPOSED 60" RCP–III (NOT BURIED)
(length=283')

3/14/2019
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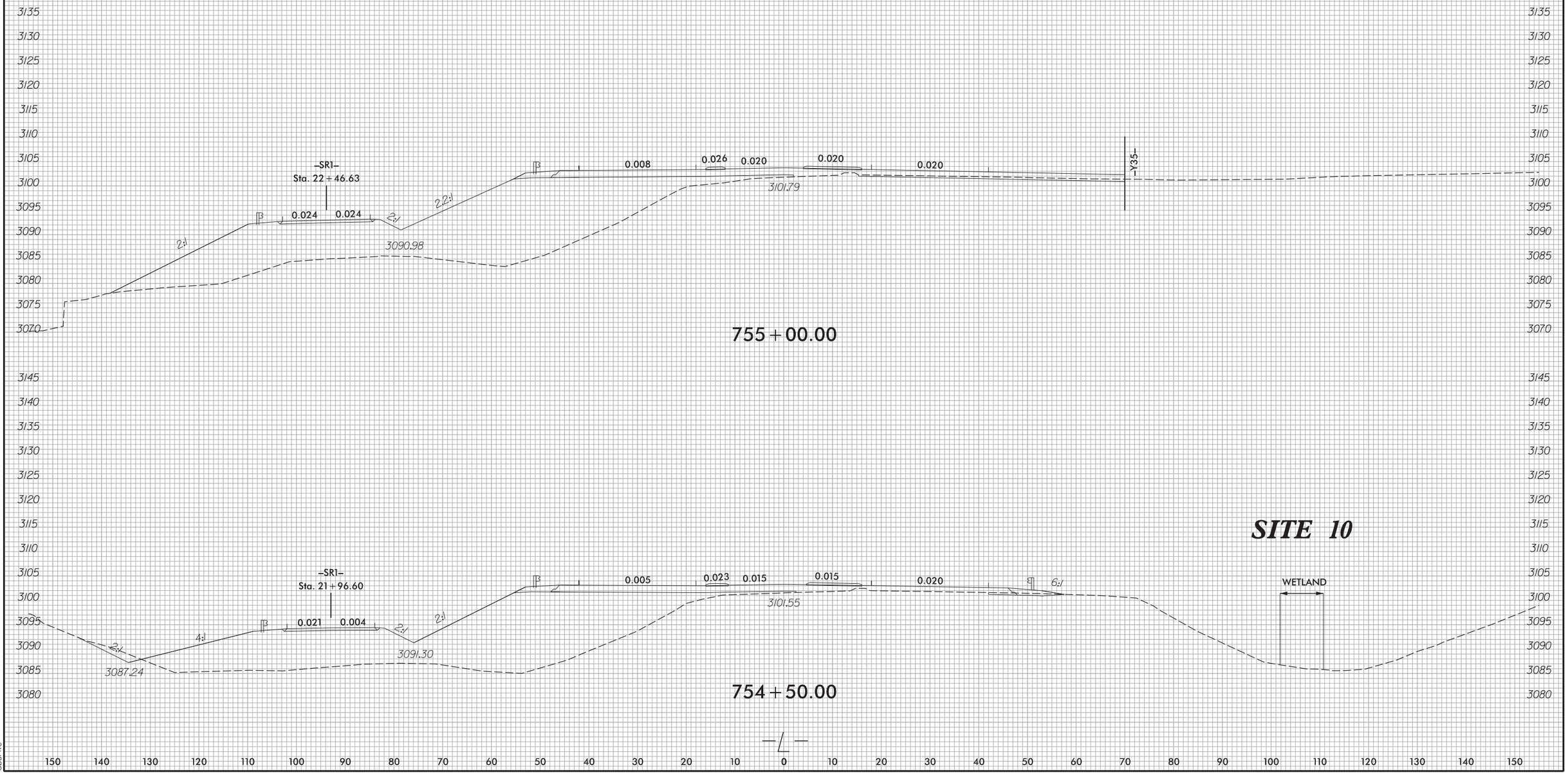
dbuse

6/23/16

0	PROJ. REFERENCE NO.	SHEET NO.
	R-2915E	X-65

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

PERMIT DRAWING
SHEET 24 OF 46



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oburke

8/17/99

ENGLISH

F F	DENOTES FILL IN WETLAND
S S	DENOTES IMPACTS IN SURFACE WATER
	DENOTES MECHANIZED CLEARING
TS TS	DENOTES TEMPORARY IMPACTS IN SURFACE WATER

PERMIT DRAWING SHEET 25 OF 46

25 0 25 50
SCALE FOR INSET

50 25 0 50 100
SCALE

NAD 83/NSRS 2007

PROJECT REFERENCE NO.	SHEET NO.
R-2915E	11
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

INSET A

INSET B

INSET C

INSET D

MATCHLINE -L- STA. 765+00 SEE SHEET 10

MATCHLINE -L- STA. 779+00 SEE SHEET 12

SITE 15A

SEE INSET A

SEE INSET B

SEE INSET C

SEE INSET D

SITE 14B

SITE 15B

SITE 16

SITE 17A

SITE 17B

MILLARD B. DANCY AND WIFE, GEORGIA L. DANCY

JERRY AND ROBIN BROWN

BOBBY LEE WADDELL WIDOWER

JERRY L. BROWN

RODNEY TERRELL MORGAN, HUSBAND, AND WIFE, CAMILLE MORGAN

MICHAEL ALOIA AND WIFE, CINDEE ALOIA

THOMAS JARMEN AND WIFE, LINDA JARMEN

WILLIAM H. WILKINSON HUSBAND, AND WIFE KAREN WILKINSON

D. NEWTON CAVINESS

CHRIS A. PELEZO AND WIFE, DORIS F. PELEZO

770+00

775+00

NCDOT

US 221

SR 1251 CANDLELIGHT DR

V10=7.3 ft/s

18 TONS CL I RIPRAP W/20 SY GEOTEXTILE ON BANKS ONLY SEE DETAIL AE

DROP STRUCT. (DROP DEPTH=6.5')

36" RCP-III

JB w/MH

36" CSP 2 ELBOWS

COLLAR

TOE PROTECTION W/58 TONS CL B RIPRAP, 169 SY GEOTEXTILE SEE DETAIL V

STD. BASE DITCH W/31 TONS CL I RIPRAP, 69 SY GEOTEXTILE SEE DETAIL D

4 TONS CL I RIPRAP W/10 SY GEOTEXTILE

18" CSP 2 ELBOWS

PLUG & FILL W/FLOWABLE FILL

DROP STRUCT. (DROP DEPTH=6.8')

18" RCP-III

N 19° 21' 11.1" E -L-

STD. BASE DITCH W/23 TONS CL II RIPRAP, 46 SY GEOTEXTILE SEE DETAIL U

10' WIDE BERM TOP ELEV. 3117.0' SEE DETAIL AC

60" RCP-III

SP. CUT DITCH SEE DETAIL W

SPECIAL CUT DITCH SEE DETAIL W

SPECIAL CUT DITCH SEE DETAIL A

CONV. DI TO JB W/MH

RETAIN & INSTALL SMOOTH LINING

10' WIDE BERM TOP ELEV. 3114.5' SEE DETAIL AC

DROP STRUCT. (DROP DEPTH=5.6')

EXISTING 36" CMP UNDER CANDLELIGHT DR. IS UNDERSIZED & PERCHED, INSTALL A JB WITH A DROP IN THE BOX TO TIE THE EXISTING 36" TO A NEW PROPOSED 60" RCP OUTLET

RETAIN SYSTEM

POND REMOVED BY OTHERS. JURISDICTIONAL STREAM REMAINS

RETAIN

HDPE (APPROX. LOCATION)

SEE OUTFALL ANALYSIS PACKAGE

DO NOT DISTURB SHED

STD. BASE DITCH W/71 TONS CL B RIPRAP, 169 SY GEOTEXTILE SEE DETAIL Y

V10=9.1 ft/s

42" CSP 2 ELBOWS

42" RCP-III

DROP STRUCT. (DROP DEPTH=7.4')

2GI

2GI-A

15" RCP-III

GREU TL-3

PLUG & FILL W/FLOWABLE FILL

42" CMP

12" CMP RISER

POND

FOR DRN. DETAILS SEE SHTS. 2D-1 OR 2D-2
FOR -L- PROFILE SEE SHT. 21

A–A	B–B	C–C	D–D	E–E	F–F	G–G
8.0' 0.1' 1.0' 5.0' OUTFALL	5.0' 0.0' 1.0' 1.5' OUTFALL	5.0' 0.0' 1.0' 3.0' OUTFALL	7.0' 0.1' 1.5' 2.0' ROADSIDE	12.0' 0.0' 4.5' 4.0' INFALL	6.0' 0.0' 1.5' 1.5' INFALL	6.0' 0.0' 2.5' 1.5' INFALL

H–H	I–I	J–J
6.0' 0.0' 2.0' 1.5' INFALL	5.0' 0.2' 0.5' 2.0' INFALL	6.0' 0.0' 1.0' 3.0' INFALL

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imeador

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ENGLISH

F F	DENOTES FILL IN WETLAND
S S	DENOTES IMPACTS IN SURFACE WATER
	DENOTES MECHANIZED CLEARING
TS TS	DENOTES TEMPORARY IMPACTS IN SURFACE WATER

PERMIT DRAWING
SHEET 26 OF 46

25 0 25 50
SCALE FOR INSET

50 25 0 50 100
SCALE

NAD 83/NSRS 2007

PROJECT REFERENCE NO.	SHEET NO.
R-2915E	11
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

INSET A

INSET B

INSET C

INSET D

MATCHLINE –L– STA. 765+00 SEE SHEET 10

MATCHLINE –L– STA. 779+00 SEE SHEET 12

SITE 15A

SEE INSET A

SEE INSET B

SITE 14B

SITE 16

SEE INSET C

SITE 15B

SITE 17A

SEE INSET D

SITE 17B

V10=7.3 ft/s

18 TONS CL I RIPRAP W/20 SY GEOTEXTILE ON BANKS ONLY SEE DETAIL AE

DROP STRUCT. (DROP DEPTH=6.5')

36" RCP-III

JB w/MH

36" CSP 2 ELBOWS

COLLAR

TOE PROTECTION W/58 TONS CL B RIPRAP, 169 SY GEOTEXTILE SEE DETAIL V

STD. BASE DITCH W/31 TONS CL I RIPRAP, 69 SY GEOTEXTILE SEE DETAIL D

4 TONS CL I RIPRAP W/10 SY GEOTEXTILE

18" CSP 2 ELBOWS

18" RCP-III

DROP STRUCT. (DROP DEPTH=6.8')

2GI

PLUG & FILL W/FLOWABLE FILL

24" RCP-III

60" RCP-III

STD. BASE DITCH W/23 TONS CL II RIPRAP, 44 SY GEOTEXTILE SEE DETAIL U

SP. CUT DITCH SEE DETAIL W

10' WIDE BERM TOP ELEV. 3117.0' SEE DETAIL AC

SPECIAL CUT DITCH SEE DETAIL W

SPECIAL CUT DITCH SEE DETAIL A

RETAIN & INSTALL SHOOTING FLUME

DROP STRUCT. (DROP DEPTH=5.6')

10' WIDE BERM TOP ELEV. 3114.5' SEE DETAIL AC

RETAIN SYSTEM

EXISTING 36" CMP UNDER CANDLELIGHT DR IS UNDERSIZED & PERCHED, INSTALL A JB WITH A DROP IN THE BOX TO TIE THE EXISTING 36" TO A NEW PROPOSED 60" RCP OUTLET

CONV. DI TO JB w/MH

POND REMOVED BY OTHERS. JURISDICTIONAL STREAM REMAINS

RETAIN

SEE OUTFALL ANALYSIS PACKAGE

DO NOT DISTURB SHED

STD. BASE DITCH W/71 TONS CL B RIPRAP, 169 SY GEOTEXTILE SEE DETAIL Y

V10=9.1 ft/s

42" CSP 2 ELBOWS

42" RCP-III

DROP STRUCT. (DROP DEPTH=7.4')

2GI-A

15" RCP-III

GREU. TL-3

PLUG & FILL W/FLOWABLE FILL

SPECIAL CUT DITCH SEE DETAIL W

JERRY L. BROWN

BOBBY LEE WADDELL WIDOWER

MILLARD B. DANCY AND WIFE, GEORGIA L. DANCY

JERRY AND ROBIN BROWN

BRIAN BORELLE AND WIFE CORDELLA MILLER

RODNEY TERRELL MORGAN, HUSBAND, AND WIFE, CAMILLE MORGAN

MICHAEL ALOIA AND WIFE, CINDEE ALOIA

THOMAS JARMEN AND WIFE, LINDA JARMEN

WILLIAM H. WILKINSON HUSBAND, AND WIFE KAREN WILKINSON

D. NEWTON CAVINESS

CHRIS A. PELEZO AND WIFE, DORIS F. PELEZO

SR 1251 CANDLELIGHT DR

US 221

N 19° 21' 11" E

770+00

775+00

A–A 8.0' 0.1' 1.0' 5.0' OUTFALL

B–B 5.0' 0.0' 1.0' 1.5' OUTFALL

C–C 5.0' 0.0' 1.0' 3.0' OUTFALL

D–D 7.0' 0.1' 1.5' 2.0' ROADSIDE

E–E 12.0' 0.0' 4.5' 4.0' INFALL

F–F 6.0' 0.0' 1.5' 1.5' INFALL

G–G 6.0' 0.0' 2.5' 1.5' INFALL

H–H 6.0' 0.0' 2.0' 1.5' INFALL

I–I 5.0' 0.2' 0.5' 2.0' INFALL

J–J 6.0' 0.0' 1.0' 3.0' INFALL

FOR DRN. DETAILS SEE SHTS. 2D–1 OR 2D–2
FOR –L– PROFILE SEE SHT. 21

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mmeador

6/23/16

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-2915E	X-78

PERMIT DRAWING
SHEET 27 OF 46

SITE 15

WETLAND

768+50.00

768+00.00

MATCHLINE

MATCHLINE

MATCHLINE

MATCHLINE

3/14/2019
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dburke

6/23/16

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-2915E	X-80

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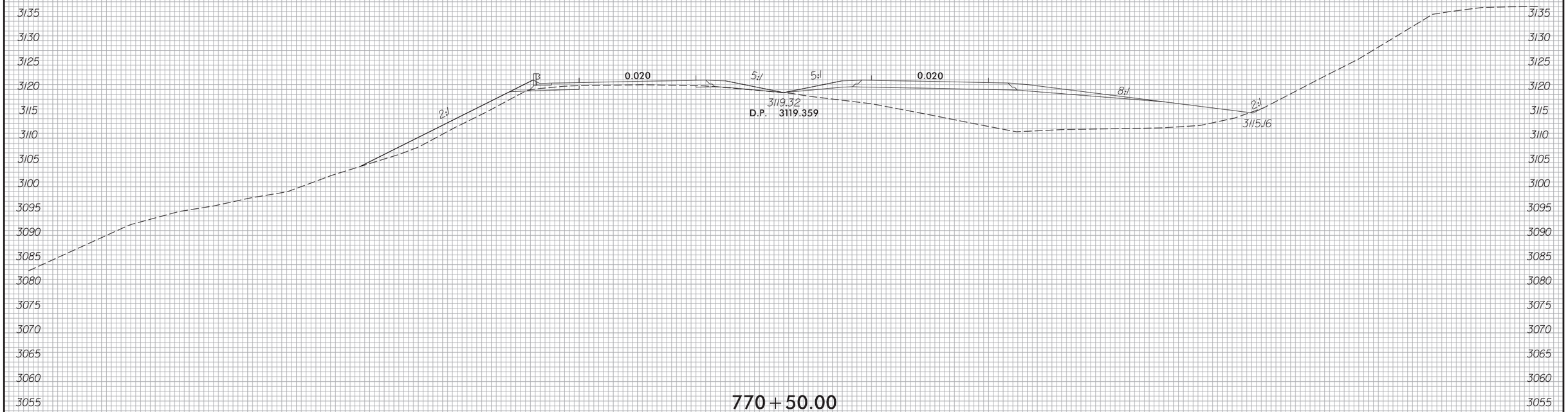
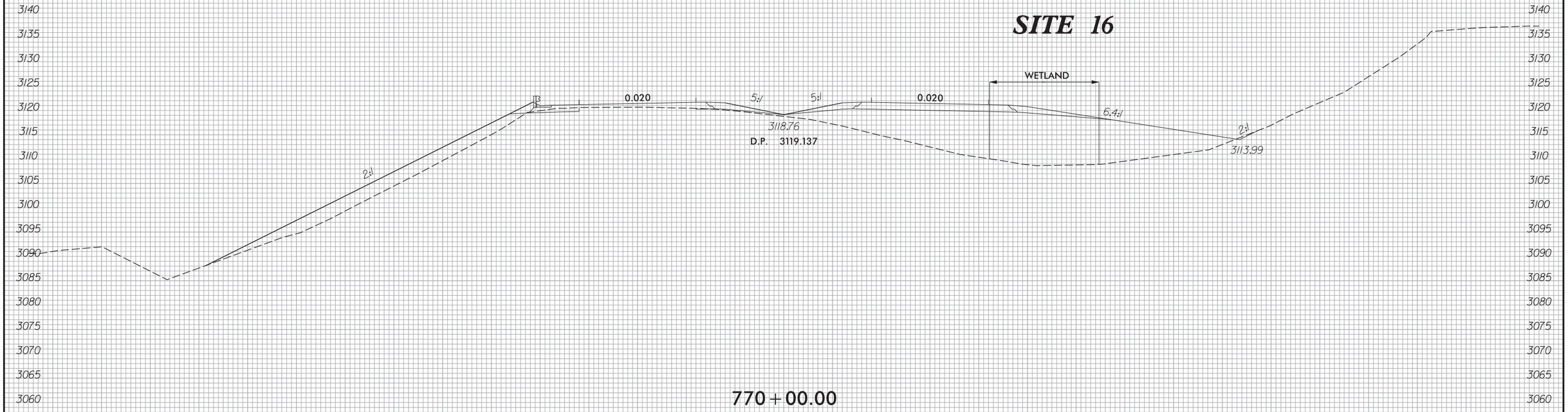
PERMIT DRAWING
SHEET 28 OF 46



770+50.00

SITE 16



770+00.00

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

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dburke

8/17/99

ENGLISH

DENOTES IMPACTS IN SURFACE WATER

DENOTES TEMPORARY IMPACTS IN SURFACE WATER

PERMIT DRAWING SHEET 29 OF 46

25 0 25 50
SCALE FOR INSET

50 25 0 50 100
SCALE

INSET A

INSET B

NAD 83/NSRS 2007

PROJECT REFERENCE NO.	SHEET NO.
R-2915E	12
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

MATCHLINE –L– STA. 779+00 SEE SHEET 11

MATCHLINE –L– STA. 793+00 SEE SHEET 13

780+00

785+00

790+00

DEREK MCCLURE

ANTHONY GLEN GOODMAN HUSBAND, AND WIFE SARAH FARMER GOODMAN

RODNEY TERREL MORGAN HUSBAND, AND WIFE CAMILLE MORGAN

TRICOUNTY PAVING, INC

JERRY WILLARD AND WIFE, ADELE M. WILLARD

PACK FAN INVESTMENTS, LLC

CINJO, INC

WALTER OLSEN AND WIFE, DONNA RUTH OLSEN

JOHN C. JONES

LEOBARDO REYES CRESCENCIO

TREE FARM

JAMES C. LITTLEFIELD AND WIFE, ANN B. LITTLEFIELD

DONNA J H WEAVER

STEPHEN J. BLEVINS & SANDRA E. BLEVINS

JERRY F. WHITLEY AND WIFE, IMOJEAN M. WHITLEY

SITE 18

SEE INSET A

STD. BASE DITCH W/31 TONS CL I RIPRAP 63 SY GEOTEXTILE SEE DETAIL D

V10=4.0 ft/s

PLUG & FILL W/FLOWABLE FILL

REMOVE 25' EX. 24" CMP

SPECIAL CUT DITCH SEE DETAIL W

COLLAR AND EXTEND 24" CSP (2 ELBOWS)

SPECIAL CUT DITCH SEE DETAIL W

SPECIAL CUT DITCH W/602 SY PSRM SEE DETAIL AA

REMOVE SYSTEM

REMOVE SYSTEM

DROP STRUCT (DROP DEPTH = 3.4')

V10=6.2 ft/s JB w/MH

7 TONS CL I RIPRAP W/15 SY GEOTEXTILE ON BANKS ONLY SEE DETAIL AF

SITE 19

SEE INSET B

LATERAL BASE DITCH SEE DETAIL M

US 221

A–A	B–B	C–C	D–D	E–E	F–F
8.0'	8.0'	4.0'	5.0'	11.0'	14.0'
0.1'	0.1'	0.0'	0.0'	0.1'	0.0'
1.5'	2.0'	1.0'	1.5'	3.0'	1.0'
4.0' OUTFALL	2.0' ROADSIDE	0.0' ROADSIDE	0.0' OUTFALL	3.0' OUTFALL	0.0' ROADSIDE

FOR DRN. DETAILS SEE SHTS. 2D–1 OR 2D–2
FOR –L– PROFILE SEE SHT. 22

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Laurie

8/17/99

ENGLISH

DENOTES IMPACTS IN SURFACE WATER

DENOTES TEMPORARY IMPACTS IN SURFACE WATER

PERMIT DRAWING SHEET 30 OF 46

25 0 25 50
SCALE FOR INSET

50 25 0 50 100
SCALE

INSET A

INSET B

NAD 83/NSRS 2007

PROJECT REFERENCE NO.	SHEET NO.
R-2915E	12
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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MATCHLINE –L– STA. 779+00 SEE SHEET 11

MATCHLINE –L– STA. 793+00 SEE SHEET 13

780+00

785+00

790+00

DEREK MCCLOSE

ANTHONY GLEN GOODMAN HUSBAND AND WIFE SARAH FARMER GOODMAN

RODNEY TERREL MORGAN HUSBAND AND WIFE CAMILLE MORGAN

TRICOUNTY PAVING, INC

JERRY WILLARD AND WIFE, ADELE M. WILLARD

PACK FAN INVESTMENTS, LLC

CINJO, INC

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JAMES C. LITTLEFIELD AND WIFE, ANN B. LITTLEFIELD

DONNA J H WEAVER

STEPHEN J. BLEVINS & SANDRA E. BLEVINS

JERRY F. WHITLEY AND WIFE, IMOJEAN M. WHITLEY

SITE 18

SEE INSET A

STD. BASE DITCH W/31 TONS CL II RIPRAP 63 SY GEOTEXTILE SEE DETAIL D

V10=4.0 ft/s

24" RCP-III

18" RCP-III

15" RCP-III

JB w/MH

2GI

FS

PLUG & FILL W/FLOWABLE FILL

REMOVE 25' EX. 24" CMP

SPECIAL CUT DITCH SEE DETAIL W

COLLAR AND EXTEND 24" CSP (2 ELBOWS)

REMOVE SYSTEM

SPECIAL CUT DITCH W/602 SY PSRM SEE DETAIL AA

LATERAL BASE DITCH SEE DETAIL M

TB 2GI

SITE 19

SEE INSET B

V10=6.2 ft/s JB w/MH

DROP STRUCT (DROP DEPTH=3.4')

7 TONS CL II RIPRAP W/15 SY GEOTEXTILE ON BANKS ONLY SEE DETAIL AF

A–A	B–B	C–C	D–D	E–E	F–F
8.0'	8.0'	4.0'	5.0'	11.0'	14.0'
0.1'	0.1'	0.0'	0.0'	0.1'	0.0'
1.5'	2.0'	1.0'	1.5'	3.0'	1.0'
4.0' OUTFALL	2.0' ROADSIDE	0.0' ROADSIDE	0.0' OUTFALL	3.0' OUTFALL	0.0' ROADSIDE

FOR DRN. DETAILS SEE SHTS. 2D–1 OR 2D–2
FOR –L– PROFILE SEE SHT. 22

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abuttle

8/17/99

ENGLISH

PERMIT DRAWING
SHEET 31 OF 46

TS TS DENOTES TEMPORARY IMPACTS IN SURFACE WATER

S S DENOTES IMPACTS IN SURFACE WATER

F F DENOTES FILL IN WETLAND

E E DENOTES EXCAVATION IN WETLAND

DENOTES MECHANIZED CLEARING

25 0 25 50
SCALE FOR INSET

50 25 0 50 100
SCALE

INSET A

INSET B

INSET C

NAD 83/NSRS 2007

PROJECT REFERENCE NO.	SHEET NO.
R-2915E	13
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

MATCHLINE –L– STA. 793+00 SEE SHEET 12

MATCHLINE –L– STA. 807+00 SEE SHEET 14

795+00

805+00

JOHN C. JONES

LEOBARDO REYES CRESCENCIO

TRACIE JORDAN

ANDREW C. JACKSON, JR.

ROBERT STEVEN FREEMAN, GREGORY DENNIS FREEMAN, AND ROY LOGAN FREEMAN

WAYNE F. STANLEY

DWIGHT C. RASH

JOHN F. BARE

BERTHA MCCLURE WOOD

MATTHEW FRAMPTON AND CHRISTOPHER FRAMPTON

JERRY F. WHITLEY AND WIFE, IMOJEAN M. WHITLEY

BENNY B. HURLEY AND VICKEY S. HURLEY

SITE 21
Q10=5.9 cfs
V10=1.9 fps

LATERAL BASE DITCH
SEE DETAIL G

LATERAL BASE DITCH
W/885 TONS CL B RIPRAP,
226 SY GEOTEXTILE,
SEE DETAIL L

TOE PROTECTION
W/62 TONS CL B RIPRAP,
181 SY GEOTEXTILE
SEE DETAIL V

PLUG & FILL W/FLOWABLE FILL

SITE 20
V10=4.4 fps

SEE INSET A

4 TONS CL I RIPRAP
W/10 SY GEOTEXTILE

STD. BASE DITCH
W/43 TONS CL I RIPRAP,
89 SY GEOTEXTILE
SEE DETAIL D

SITE 22A

SEE INSET B

SITE 22B
48 TONS CL I RIPRAP
W/75 SY GEOTEXTILE
ON BANKS ONLY
SEE DETAIL AF
V10=9.1 fps

SEE INSET C

2 TONS CL B RIPRAP
W/7 SY GEOTEXTILE

SEE OUTFALL ANALYSIS PACKAGE

PROP. 47" WW FENCE

BEGIN FENCE

LATERAL V DITCH
W/179 TONS CL I RIPRAP,
431 SY GEOTEXTILE
SEE DETAIL K

DROP STRUCT.
(DROP DEPTH=3.0')

DROP STRUCT.
(DROP DEPTH=4.6')

LATERAL V DITCH
SEE DETAIL B

LATERAL V DITCH
W/118 TONS CL B RIPRAP,
282 SY GEOTEXTILE
SEE DETAIL K

RETAIN & INSTALL SMOOTH LINING

5.91%

A–A
11.0′
0.1′
3.0′
2.5′
INFALL

B–B
4.0′
0.2′
1.5′
2.0′
OUTFALL

FOR DRN. DETAILS SEE SHTS. 2D–1 OR 2D–2
FOR –L– PROFILE SEE SHT. 23

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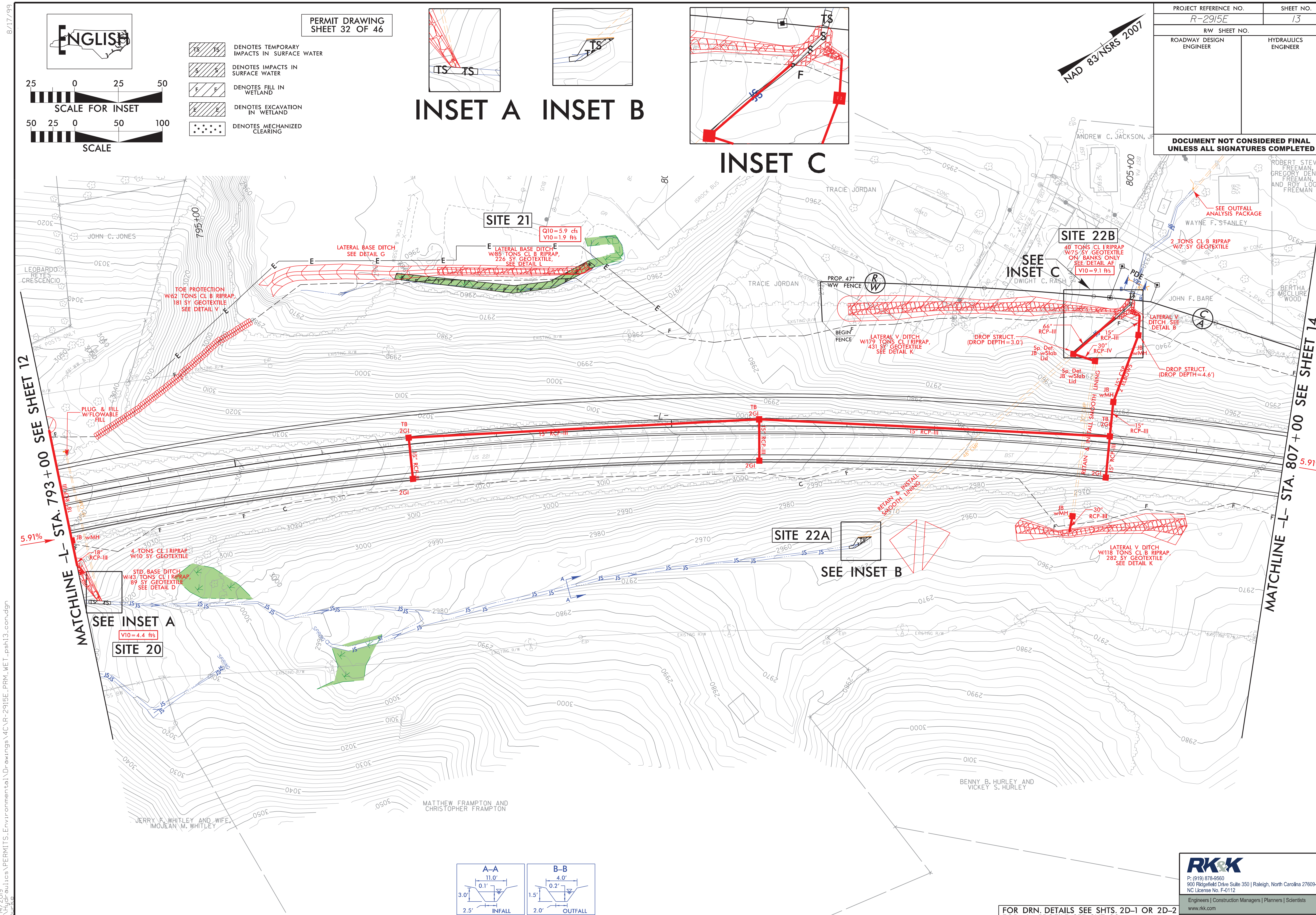
aburke



PROJECT REFERENCE NO.
R-2915E
SHEET NO.
13
R/W SHEET NO.
ROADWAY DESIGN ENGINEER
HYDRAULICS ENGINEER
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED
PERMIT DRAWING SHEET 32 OF 46
ENGLISH
SCALE FOR INSET
SCALE
DENOTES TEMPORARY IMPACTS IN SURFACE WATER
DENOTES IMPACTS IN SURFACE WATER
DENOTES FILL IN WETLAND
DENOTES EXCAVATION IN WETLAND
DENOTES MECHANIZED CLEARING
INSET A
INSET B
INSET C
NAD 83/NSRS 2007
SITE 20
SITE 21
SITE 22A
SITE 22B
SEE INSET A
SEE INSET B
SEE INSET C
Q10=5.9 cfs
V10=1.9 ft/s
V10=4.4 ft/s
V10=9.1 ft/s
LATERAL BASE DITCH SEE DETAIL G
LATERAL BASE DITCH W/85 TONS CL B RIPRAP, 226 SY GEOTEXTILE, SEE DETAIL L
TOE PROTECTION W/62 TONS CL B RIPRAP, 181 SY GEOTEXTILE SEE DETAIL V
PLUG & FILL W/FLOWABLE FILL
4 TONS CL I RIPRAP W/10 SY GEOTEXTILE
STD. BASE DITCH W/43 TONS CL I RIPRAP, 89 SY GEOTEXTILE SEE DETAIL D
LATERAL V DITCH W/179 TONS CL I RIPRAP, 431 SY GEOTEXTILE SEE DETAIL K
LATERAL V DITCH W/118 TONS CL B RIPRAP, 282 SY GEOTEXTILE SEE DETAIL K
40 TONS CL I RIPRAP W/75 SY GEOTEXTILE ON BANKS ONLY SEE DETAIL AF
2 TONS CL B RIPRAP W/7 SY GEOTEXTILE
SEE OUTFALL ANALYSIS PACKAGE
LATERAL V DITCH SEE DETAIL B
DROP STRUCT. (DROP DEPTH=3.0')
DROP STRUCT. (DROP DEPTH=4.6')
RETAIN & INSTALL SMOOTH LINING
MATCHLINE -L- STA. 793+00 SEE SHEET 12
MATCHLINE -L- STA. 807+00 SEE SHEET 14
5.91%
JOHN C. JONES
LEOBARDO REYES CRESCENCIO
TRACIE JORDAN
ANDREW C. JACKSON, JR.
ROBERT STEVEN FREEMAN, GREGORY DENNIS FREEMAN, AND ROY LOGAN FREEMAN
WAYNE F. STANLEY
DWIGHT C. RASH
JOHN F. BARE
BERTHA MCCLURE WOOD
BENNY B. HURLEY AND VICKEY S. HURLEY
MATTHEW FRAMPTON AND CHRISTOPHER FRAMPTON
JERRY F. WHITLEY AND WIFE, IMOJEAN M. WHITLEY
A-A
B-B
INFALL
OUTFALL
FOR DRN. DETAILS SEE SHTS. 2D-1 OR 2D-2
FOR -L- PROFILE SEE SHT. 23
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PROJECT REFERENCE NO.	SHEET NO.
R-2915E	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

ENGLISH

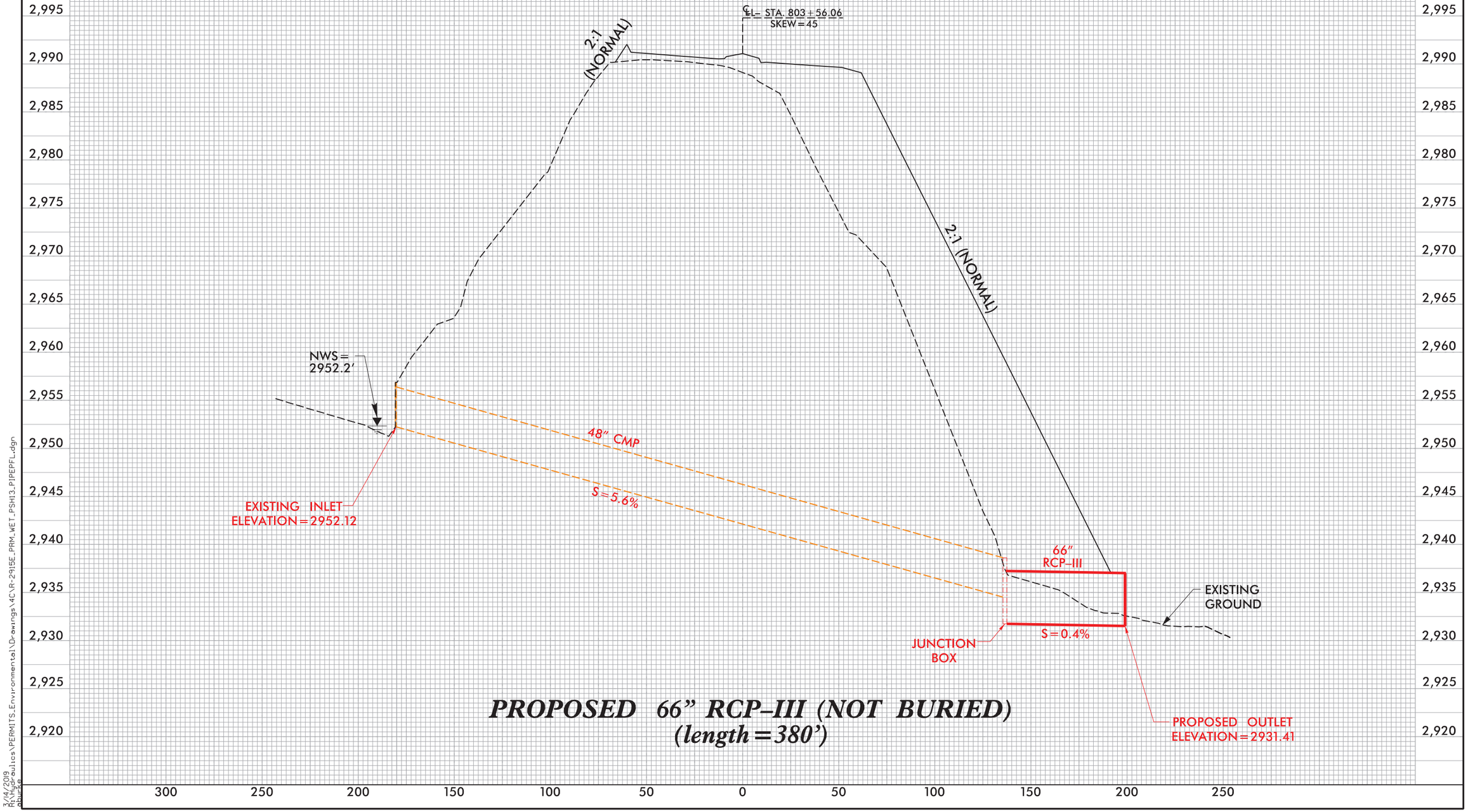
INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PERMIT DRAWING
SHEET 33 OF 46

SITE 22
–L– 803+56



PROPOSED 66" RCP–III (NOT BURIED)
(length=380')

3/14/2019
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dburke

8/17/99

ENGLISH

DENOTES IMPACTS IN SURFACE WATER

DENOTES TEMPORARY IMPACTS IN SURFACE WATER

PERMIT DRAWING
SHEET 34 OF 46

25 0 25 50
SCALE FOR INSET

50 25 0 50 100
SCALE

PROJECT REFERENCE NO.	SHEET NO.
R-2915E	14
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

A–A: 22.0', 0.0', 5.0', 8.0' ROADSIDE
B–B: 7.0', 0.1', 1.5', 2.0' INFALL
C–C: 12.0', 0.0', 1.5', 3.0' OUTFALL
D–D: 5.0', 0.2', 1.0', 2.0' INFALL
E–E: 5.0', 0.1', 1.5', 1.5' OUTFALL

NAD 83/NSRS 2007

MATCHLINE –L– STA. 807+00 SEE SHEET 13

MATCHLINE –L– STA. 821+00 SEE SHEET 15

CHARLOTTE GAIL BLAKE

JOSEPH RONALD GRAYBEAL, HUSBAND AND WIFE, PATRICIA BARKER GRAYBEAL

TONY O. WOODIE

BERTHA MCCLURE WOOD

WANDA WALKER AND HUSBAND, RONALD GIRTMAN, JR

L. F. ANDERSON, JR. AND WIFE INA C. ANDERSON

UNCLE JOE'S LLC

DOUGLAS TAYLOR

BENNY B. HURLEY AND VICKEY S. HURLEY

GURNEY C. MYERS AND WIFE JOANNE S. MYERS

EDWARD VICTOR ARRIOLA AND WIFE EMILY JOHNSON ARRIOLA

CALLOWAY PROPERTIES, LLC

DONALD PROUDFOOT AND WIFE, GLORIA PROUDFOOT

N 77°12'01.9" E 136'

S 37° 02' 42.2" E

N 87° 27' 21.8" E 136'

SEE INSET A

SITE 24C
V10=9.6 ft/s

SITE 24B

SITE 24A

SITE 23

SITE 25A

SITE 25B
V10=18.6 ft/s

SEE INSET B

SEE INSET C

SEE INSET D

PLACE SPRING BOX AND 12" CSP OUTLET PIPE AT –L– 812+00 +/– LT. IF SPRING IS IMPACTED BY GRADING OPERATIONS

8 TONS CL B RIPRAP W/21 SY GEOTEXTILE

STD. BASE DITCH W/22 TONS CL I RIPRAP, 45 SY GEOTEXTILE SEE DETAIL D

40 TONS CL I RIPRAP W/75 SY GEOTEXTILE ON BANKS ONLY SEE DETAIL AF

RETAIN 24" CLAY PIPE

30" RCP-III

JB w/MH

DROP STRUCT. (DROP DEPTH=6.2')

PLUG & FILL W/FLOWABLE FILL

60" RCP-III (NOT BURIED)

15" RCP-III

20" RCP-III

2 GI

TB

DI

HW

2 TONS CL B RIPRAP W/7 SY GEOTEXTILE

LATERAL V. DITCH SEE DETAIL B

LATERAL BASE DITCH SEE DETAIL G

LATERAL BASE DITCH W/83 TONS CL I RIPRAP, 172 SY GEOTEXTILE SEE DETAIL L

15" CSP 2 ELBOWS

RETAIN & INSTALL SMOOTH LINER

BEGIN NOISE WALL AND BARRIER (Sta. 820+00

RIP RAP AT EMBANKMENT SEE DETAIL AB

LATERAL BASE DITCH SEE DETAIL G

END FENCE

INSET A

INSET B

INSET C

INSET D

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abuie

8/17/99

ENGLISH

DENOTES IMPACTS IN SURFACE WATER

DENOTES TEMPORARY IMPACTS IN SURFACE WATER

PERMIT DRAWING
SHEET 35 OF 46

25 0 25 50
SCALE FOR INSET

50 25 0 50 100
SCALE

PROJECT REFERENCE NO.	SHEET NO.
R-2915E	14
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

A–A: 22.0', 0.0', 5.0', 8.0' ROADSIDE
B–B: 7.0', 0.1', 1.5', 2.0' INFALL
C–C: 12.0', 0.0', 1.5', 3.0' OUTFALL
D–D: 5.0', 0.2', 1.0', 2.0' INFALL
E–E: 5.0', 0.1', 1.5', 1:5' OUTFALL

NAD 83/NSRS 2007

CHARLOTTE GAIL BLAKE

JOSEPH RONALD GRAYBEAL, HUSBAND, AND WIFE PATRICIA BARKER GRAYBEAL

TONY O. WOODIE

BERTHA MCCLURE WOOD

WANDA WALKER AND HUSBAND, RONALD GIRTMAN, JR

L. F. ANDERSON, JR. AND WIFE INA C. ANDERSON

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GURNEY G. MYERS AND WIFE JOANNE S. MYERS

EDWARD VICTOR ARRIOLA AND WIFE EMILY JOHNSON ARRIOLA

DONALD PROUDFOOT AND WIFE GLORIA PROUDFOOT

CALLOWAY PROPERTIES, LLC

MATCHLINE –L– STA. 807+00 SEE SHEET 13

MATCHLINE –L– STA. 821+00 SEE SHEET 15

N 77°12'01.9" E
136'

S 37°02'42.2" E
136'

S 87°27'21.8" E
136'

SR 1854 LONG ST

SITE 23

SITE 24A

SITE 24B

SITE 24C
V10=9.6 f/s

SITE 25A

SITE 25B
V10=18.6 f/s

SEE INSET A

SEE INSET B

SEE INSET C

SEE INSET D

8 TONS CL B RIPRAP W/21 SY GEOTEXTILE

STD. BASE DITCH W22 TONS CL I RIPRAP, 45 SY GEOTEXTILE SEE DETAIL D

PLACE SPRING BOX AND 12" CSP OUTLET PIPE AT ~L~ 812+00, +/- LT. IF SPRING IS IMPACTED BY GRADING OPERATIONS

30" RCP-III

JB w/MH DROP STRUCT. (DROP DEPTH=6.2')

PLUG & FILL W/FLOWABLE FILL

40 TONS CL I RIPRAP W/25 SY GEOTEXTILE ON BANKS ONLY SEE DETAIL AF

60" RCP-III (NOT BURIED)

60" RCP-III (NOT BURIED)

15" RCP-III

20" RCP-III

15" CSP 2 ELBOWS

2 TONS CL B RIPRAP W/7 SY GEOTEXTILE

LATERAL BASE DITCH SEE DETAIL G

LATERAL BASE DITCH W/83 TONS CL I RIPRAP, 172 SY GEOTEXTILE SEE DETAIL L

LATERAL V. DITCH SEE DETAIL B

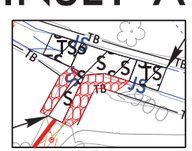
LATERAL BASE DITCH SEE DETAIL G

RETAIN & INSTALL SMOOTH LINER

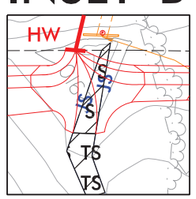
BEGIN NOISE WALL AND BARRIER Sta. 820+00

RIP RAP AT EMBANKMENT SEE DETAIL AB

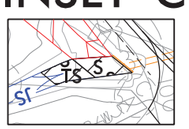
INSET A



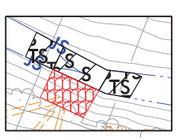
INSET B



INSET C



INSET D



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aburke

5/14/99

PROJECT REFERENCE NO.	SHEET NO.
R-2915E	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

ENGLISH

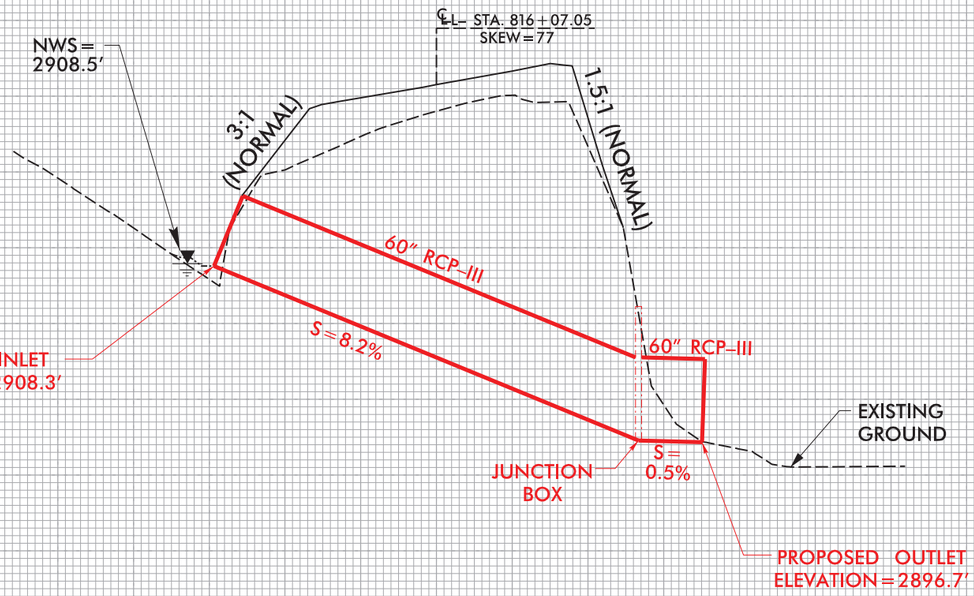
INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

PERMIT DRAWING
SHEET 36 OF 46

SITE 24
–L– 816+07



PROPOSED 60" RCP–III (NOT BURIED)
(length=162')

2,930 2,925 2,920 2,915 2,910 2,905 2,900 2,895 2,890 2,885 2,880 2,875 2,870

300 250 200 150 100 50 0 50 100 150 200 250

7/14/2019
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dlucas

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ENGLISH

DENOTES EXCAVATION IN WETLAND

DENOTES FILL IN WETLAND

DENOTES IMPACTS IN SURFACE WATER

DENOTES TEMPORARY IMPACTS IN SURFACE WATER

PERMIT DRAWING SHEET 37 OF 46

25 0 25 50
SCALE FOR INSET

50 25 0 50 100
SCALE

INSET A

INSET B

INSET C

NAD 83/NSRS 2007

PROJECT REFERENCE NO.	SHEET NO.
R-2915E	15
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

MATCHLINE –L– STA. 821+00 SEE SHEET 14

MATCHLINE –L– STA. 835+00 SEE SHEET 16

SITE 26A

SEE INSET A

SITE 26B

SEE INSET B

SITE 26C

SITE 27A

SEE INSET C

SITE 27B

REMOVE 18" CMP & RECONNECT –JS– LINE WITH 19 TONS EMBEDDED CL B RIPRAP W/54 SY GEOTEXTILE

LATERAL BASE DITCH SEE DETAIL G

LATERAL V DITCH SEE DETAIL B

2 TONS CL B RIPRAP W/7 SY GEOTEXTILE

4 TONS CL B RIPRAP W/21 SY GEOTEXTILE ON BANKS ONLY SEE DETAIL AF

V10=9.0 ft/s

V10=9.3 ft/s

PROP. NOISE WALL

-L-

N 75°12'42.2" E

HAROLD H. HUGHES AND WIFE, DIANNE B. HUGHES

JERRY W. ABSHER AND WIFE, SUSAN R. ABSHER

ROANE O. BAKER AND WIFE, RANDY A. BAKER

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BEULAH M. DARNELL AND LINDA K. DARNELL

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JOEL YATES AND WIFE, KATE YATES

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GLADYS S. KESTER

RAYMOND LEE BELCHER AND WIFE, WENDY LEE BELCHER

LARRY E. NEAVES AND JUDY B. NEAVES

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GREGORY A. FITCHLEE AND WIFE JANE M. FITCHLEE

CHARLES ANDREW CAUDILL

BRENT H. KEITH AND WIFE, MICHELLE C. KEITH

NAKED CREEK

SOUTH ST

24 ST

LONG ST

SHORT ST

SR 1254

US 221

-BYE7-37

-BYE7-38

-BLE-17

-BYE6-36

825+00

830+00

A–A
4.0' 0.2' 1.5' 1.5' INFALL

B–B
18.0' 0.5' 5.0' 10.0' OUTFALL

C–C
5.0' 0.1' 1.5' 3.0' OUTFALL

D–D
16.0' 0.1' 7.0' 3.0' INFALL

FOR DRN. DETAILS SEE SHTS. 2D–1 OR 2D–2
FOR –L– PROFILE SEE SHT. 24

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abruce

8/17/99

ENGLISH

DENOTES EXCAVATION IN WETLAND

DENOTES FILL IN WETLAND

DENOTES IMPACTS IN SURFACE WATER

DENOTES TEMPORARY IMPACTS IN SURFACE WATER

PERMIT DRAWING
SHEET 38 OF 46

25 0 25 50
SCALE FOR INSET

50 25 0 50 100
SCALE

INSET A

INSET B

INSET C

NAD 83 NSRS 2007

PROJECT REFERENCE NO.	SHEET NO.
R-2915E	15
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

MATCHLINE –L– STA. 821+00 SEE SHEET 14

MATCHLINE –L– STA. 835+00 SEE SHEET 16

SITE 26A

SEE INSET A

SITE 26B

SEE INSET B

SITE 26C

SITE 27A

SEE INSET C

SITE 27B

REMOVE 18" CMP & RECONNECT TO LINE WITH 19 TONS EMBEDDED CL B RIPRAP W/54 SY GEOTEXTILE

LATERAL BASE DITCH SEE DETAIL G

LATERAL V DITCH SEE DETAIL B

2 TONS CL B RIPRAP W/7 SY GEOTEXTILE

4 TONS CL B RIPRAP W/11 SY GEOTEXTILE ON BANKS ONLY SEE DETAIL A1

8 TONS CL B RIPRAP W/21 SY GEOTEXTILE ON BANKS ONLY SEE DETAIL A1

V10=9.0 f/s

V10=9.3 f/s

24" CSP 2 ELBOWS

24" RCP-III

30" RCP-III

15" RCP-III

60" RCP-III (BURIED 1.0')

JB w/MH

POSSIBLE JB

PROP. NOISE WALL

NAKED CREEK

SPRING

HAROLD H. HUGHES AND WIFE, DIANNE B. HUGHES

JERRY W. ABSHER AND WIFE, SUSAN R. ABSHER

ASHE COUNTY BOARD OF EDUCATION

TOWN OF JEFFERSON

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JOEL YATES AND WIFE MATE YATES

NORTH CAROLINA FARM CREDIT, ACA

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JAMES M. MCCLURE HUSBAND AND WIFE DEBORAH L. MCCLURE

JAMES EARL PENNINGTON, JR. HUSBAND AND WIFE CHRISTINA MOORE PENNINGTON

JOE RAY BLEVINS AND WIFE, MARGARET S. BLEVINS

GLADYS S. KESTER

RAYMOND LEE BELCHER AND WIFE WENDY LEE BELCHER

LARRY E. NEAVES AND WIFE GUIDY B. NEAVES

ROBERT L. ELLIOTT AND WIFE REBA S. ELLIOTT

JIMMY DARRELL GAMBILL

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CHARLES ANDREW CAUDILL

BRENT H. KEITH AND WIFE, MICHELLE C. KEITH

A–A	B–B	C–C	D–D
4.0'	18.0'	5.0'	16.0'
0.2'	0.5'	0.1'	0.1'
1.5'	5.0'	1.5'	7.0'
1.5' INFALL	10.0' OUTFALL	3.0' OUTFALL	3.0' INFALL

FOR DRN. DETAILS SEE SHTS. 2D–1 OR 2D–2
FOR –L– PROFILE SEE SHT. 24

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bburke

5/14/99

PROJECT REFERENCE NO.	SHEET NO.
R-2915E	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

ENGLISH

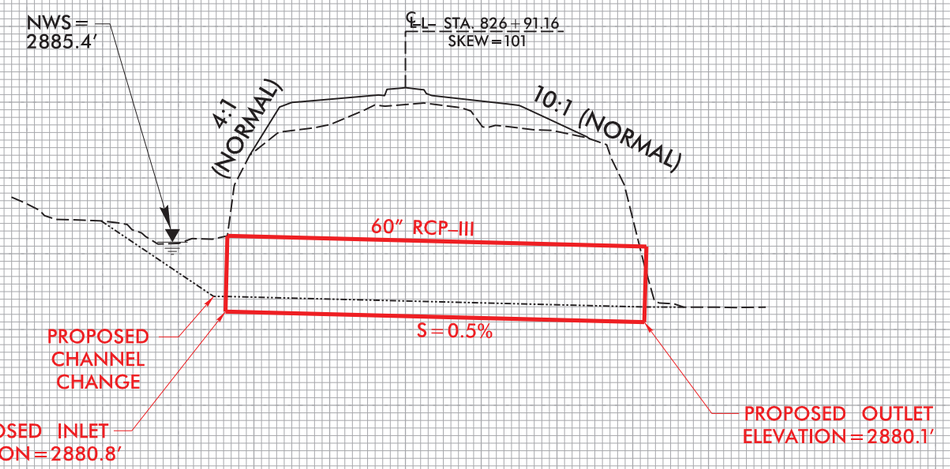
INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

PERMIT DRAWING
SHEET 39 OF 46

SITE 26
–L– 826+91



PROPOSED 60" RCP–III (BURIED 1.0')
(length=139')

2,900 2,895 2,890 2,885 2,880 2,875 2,870 2,865 2,860 2,855 2,850 2,845

300 250 200 150 100 50 0 50 100 150 200 250

3/14/2019
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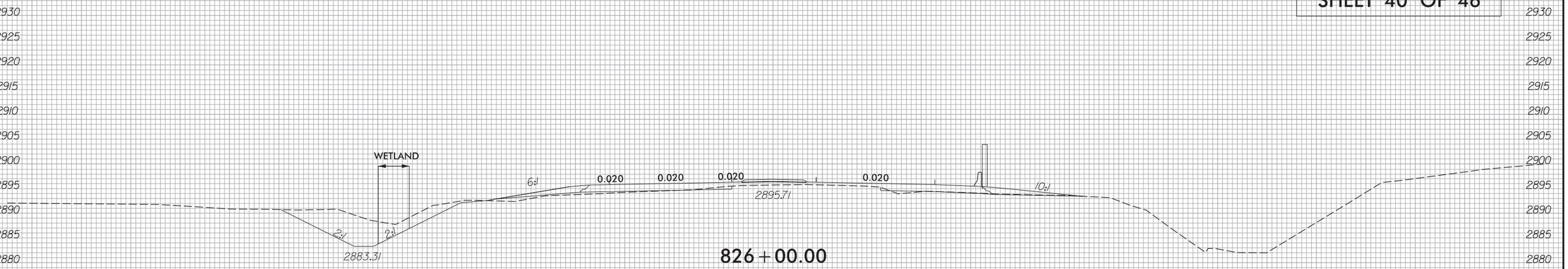
dlucas

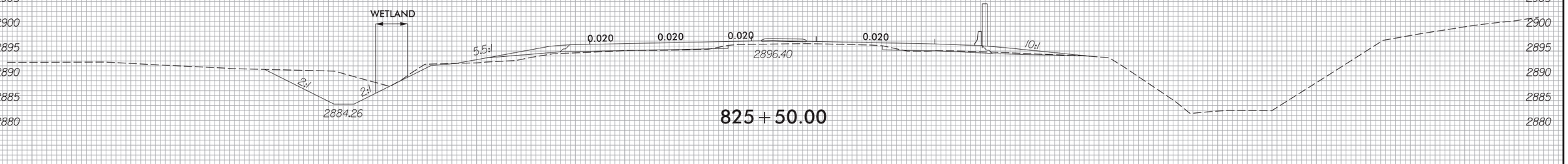
6/23/16

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-2915E	X-130

PERMIT DRAWING
SHEET 40 OF 46



SITE 26A



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aburke

8/17/99

ENGLISH

PROJECT REFERENCE NO.	SHEET NO.
R-2915E	16
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

NAD 83/NSRS 2007

A–A: 12.0' / 0.1' / 5.0' / 5.0' INFALL

B–B: 12.5' / 0.5' / 2.5' / 7.5' ROADSIDE

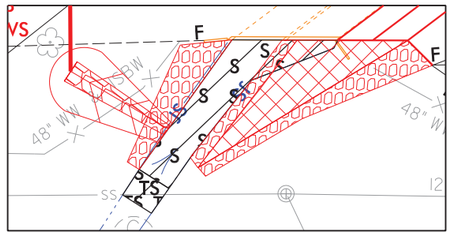
25 0 25 50
SCALE FOR INSET

50 25 0 50 100
SCALE

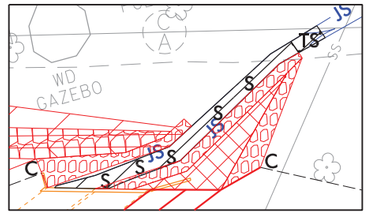
S S DENOTES IMPACTS IN SURFACE WATER

TS TS DENOTES TEMPORARY IMPACTS IN SURFACE WATER

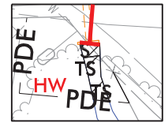
PERMIT DRAWING SHEET 41 OF 46



INSET A



INSET B



INSET C

MATCHLINE –L– STA. 835+00 SEE SHEET 15

MATCHLINE –L– STA. 848+00 SEE SHEET 17

SITE 28A

SEE INSET B

SEE CULVERT OUTLET DETAIL –L– STA. 838+56

LATERAL BASE DITCH W/38 TONS CL B RIPRAP 150 SY GEOTEXTILE SEE DETAIL L

24" RCP–III

2GI-A

24" RCP–III

FS

N 75°12'42.2" E

20 TONS CL I RIPRAP W/39 SY GEOTEXTILE

REMOVE

REMOVE 163' OF EX. 24" CMP

RETAIN 30' OF EXISTING 24" CMP

STD. BASE DITCH W/46 TONS CL B RIPRAP, 117 SY GEOTEXTILE SEE DETAIL T

NAKED CREEK

42" RCP–IV (NOT BURIED)

JB wMH

DI

15" RCP–III

15" RCP–III

2GI

2GI

15" CSP 2 ELBOWS

PROP. NOISE WALL

END NOISE WALL AND BARRIER Sta.836+85.05

BEGIN FENCE

PROP. 47" WW

END FENCE

STANDARD "V" DITCH W/24 TONS CL B RIPRAP 52 SY GEOTEXTILE SEE DETAIL H

SEE INSET A

SEE CULVERT INLET DETAIL –L– STA. 835+50

SITE 28B

PROP. 2' CONCRETE SILL INSET 1' INTO EXISTING EASTERN BARREL (INLET & OUTLET)

SP. CUT BASE DITCH W/159 TONS CL B RIPRAP, 409 SY GEOTEXTILE SEE DETAIL K

SP. CUT BASE DITCH W/17 TONS CL B RIPRAP, 44 SY GEOTEXTILE SEE DETAIL E

SP. CUT DITCH SEE DETAIL W

10' WIDE BERM TOP ELEV. 2870.5' SEE DETAIL AC

REMOVE DI & EX. 24" CMP

SEE INSET C

SITE 29

SP. CUT DITCH SEE DETAIL W

42" RCP–IV (NOT BURIED)

24" CMP

TS

PDE

HW

PDE

19

FOR DRN. DETAILS SEE SHTS. 2D–1 OR 2D–2
FOR –L– PROFILE SEE SHT. 25

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abuie

8/17/99

ENGLISH

25 0 25 50
SCALE FOR INSET

50 25 0 50 100
SCALE

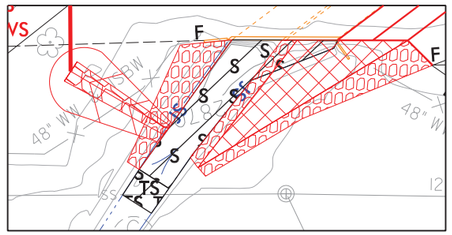
A–A: 12.0' | 0.1' | 5.0' | 5.0' | INFALL

B–B: 12.5' | 0.5' | 2.5' | 7.5' | ROADSIDE

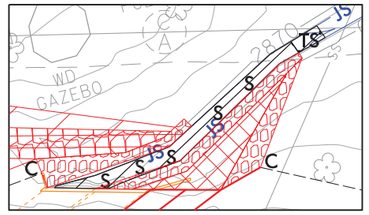
S S DENOTES IMPACTS IN SURFACE WATER

TS TS DENOTES TEMPORARY IMPACTS IN SURFACE WATER

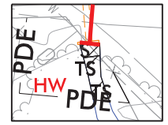
PERMIT DRAWING
SHEET 42 OF 46



INSET A



INSET B



INSET C

NAD 83 NSRS 2007

PROJECT REFERENCE NO.	SHEET NO.
R-2915E	16
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

MATCHLINE –L– STA. 835+00 SEE SHEET 15

MATCHLINE –L– STA. 848+00 SEE SHEET 17

SITE 28A

SEE INSET B

SEE INSET A
SEE CULVERT INLET DETAIL –L– STA. 838+56

SITE 28B

SEE INSET C

SITE 29

SEE CULVERT OUTLET DETAIL –L– STA. 838+56

LATERAL BASE DITCH W/38 TONS CL B RIPRAP, 130 SY GEOTEXTILE SEE DETAIL L

24" RCP-III

2GI-A 24" RCP-III FS

15" RCP-III 2GI

15" CSP 2 ELBOWS

PROP. NOISE WALL

END NOISE WALL AND BARRIER Sta.836+85.05

STANDARD V DITCH W/24 TONS CL B RIPRAP, 52 SY GEOTEXTILE SEE DETAIL T

PROP. 47" WW

BEGIN FENCE

END FENCE

PROP. 2' CONCRETE SILL INSET 1' INTO EXISTING EASTERN BARREL (INLET & OUTLET)

SP. CUT BASE DITCH W/159 TONS CL B RIPRAP, 409 SY GEOTEXTILE SEE DETAIL S

SP. CUT BASE DITCH W/17 TONS CL B RIPRAP, 44 SY GEOTEXTILE SEE DETAIL E

20' TONS CL I RIPRAP W/39 SY GEOTEXTILE

REMOVE

REMOVE 163' OF EX. 24" CMP

RETAIN 30' OF EXISTING 24" CMP

STD. BASE DITCH W/46 TONS CL B RIPRAP, 117 SY GEOTEXTILE SEE DETAIL T

42" RCP-IV (NOT BURIED)

10' WIDE BERM TOP ELEV. 2870.5 SEE DETAIL AC

SP. CUT DITCH SEE DETAIL W

REMOVE DI & EX. 24" CMP

42" RCP-IV (NOT BURIED)

TB 2GI

DI 15" RCP-III

N 75°12' 42.2" E

840+00

845+00

FOR DRN. DETAILS SEE SHTS. 2D-1 OR 2D-2
FOR –L– PROFILE SEE SHT. 25

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PROJECT REFERENCE NO.	SHEET NO.
R-2915E	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

ENGLISH

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

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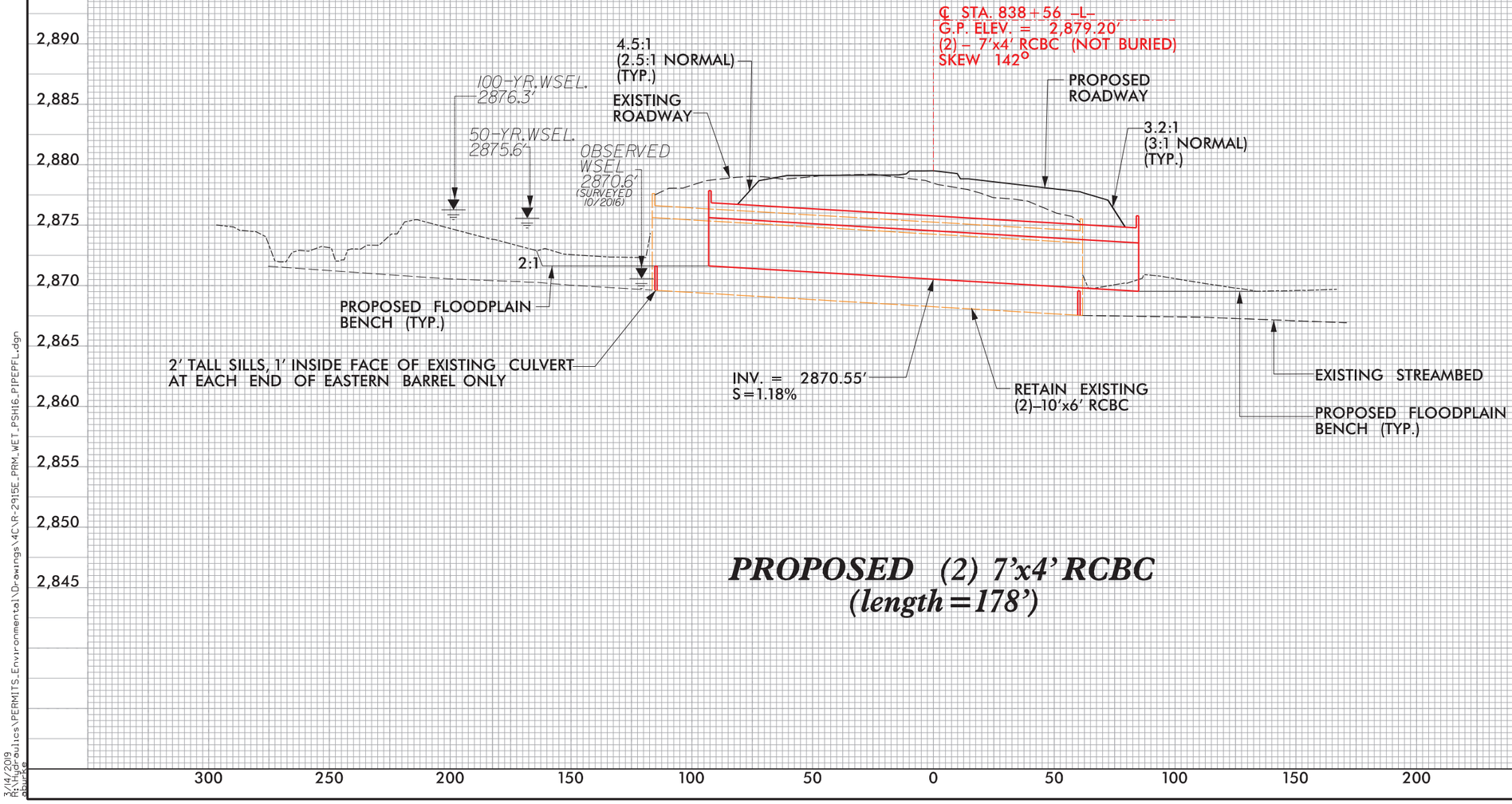
PERMIT DRAWING
SHEET 43 OF 46

SITE 28
–L– 838+56



PROPOSED (2) 7'x4' RCBC
(length=178')

7/14/2019
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dbuie

8/17/99

ENGLISH

DENOTES MECHANIZED CLEARING

DENOTES IMPACTS IN SURFACE WATER

DENOTES TEMPORARY IMPACTS IN SURFACE WATER

PERMIT DRAWING SHEET 44 OF 46

PROJECT REFERENCE NO.	SHEET NO.
R-2915E	17
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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25 0 25 50
SCALE FOR INSET

50 25 0 50 100
SCALE

NAD 83/NSRS 2007

ASHE COUNTY MEMORIAL HOSPITAL, INC.

YADKIN VALLY BANK AND TRUST COMPANY

JOHNSTON PROPERTIES, INC.

KAJAN, L.L.C.

STARWOOD INVESTMENTS, L.P.

THE COUNTY OF ASHE

COUNTY OF ASHE

SEE SHEET 16

MATCHLINE -L- STA. 848+00

850+00

855+00

-L- CS Sta. 852+58.55

V10=7.4 ft/s

SITE 30
ISLAND REMOVAL BY OTHERS
SEE INSET A

SITE 31

PDE

JB w/MH

RIP RAP AT EMBANKMENT SEE DETAIL AB

GRADE TO DRAIN

GRADE TO DRAIN TO EXISTING CB

CONV. EX CB TO 2GI

REMOVE SYSTEM

PLUG & FILL W/ FLOWABLE FILL

SP. CUT DITCH SEE DETAIL W

RETAIN SYSTEM

REMOVE EXISTING CB, COLLAR & EXTEND 18" CSP (2 ELBOWS) TO TIE TO NEW PROPOSED CB 1705

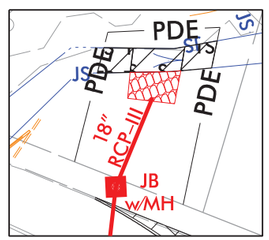
COLLAR

TIE TO EXISTING CURB & GUTTER

18" CSP 2 ELBOWS

POSSIBLE UTILITY CONFLICT

INSET A



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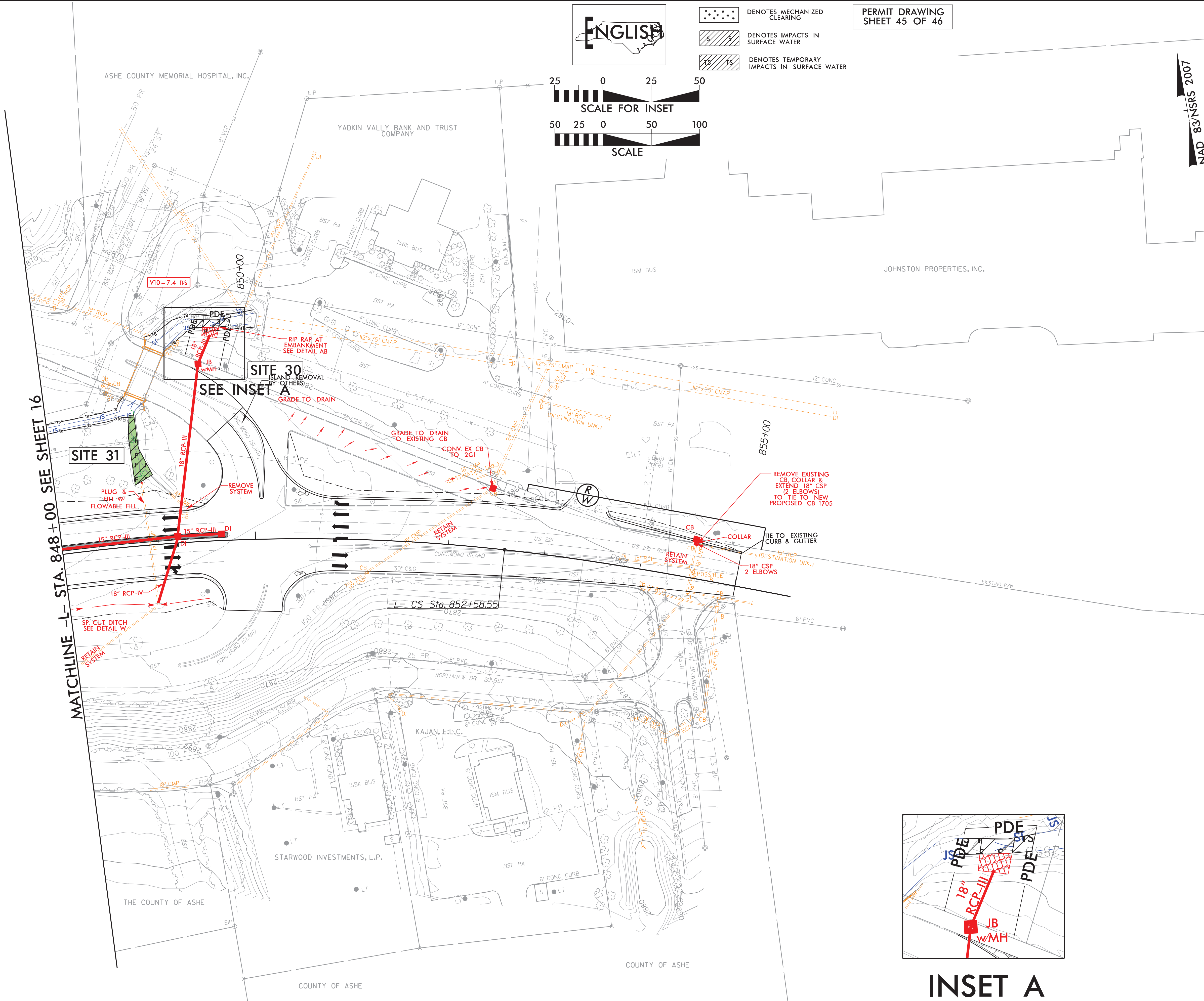

PROJECT REFERENCE NO.	SHEET NO.
R-2915E	17
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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pburke

WETLAND AND SURACE WATER IMPACTS 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- 670+03 to 670+45 RT	DITCH				< 0.01						
2A	-L- 675+33 to 675+66 LT	BANK STABILIZATION						< 0.01	< 0.01	14	17	
2B	-L- 676+43 to 677+27 RT	42" RCP-III	0.02			< 0.01		0.01	< 0.01	57	21	
3	-L- 701+14 to 702+66 RT	DITCH				0.01						
		30" RCP-III	< 0.01			0.02						
4A	-L- 705+04 to 705+37 LT	FILL	< 0.01									
4B	-L- 704+66 to 704+84 RT	30" RCP-III	< 0.01			0.03						
		BANK STABILIZATION						< 0.01	< 0.01	11	10	
5	-L- 706+60 to 707+07 RT	DITCH & EXIST. 18" CMP	< 0.01			0.01						
6A	-L- 711+85 to 713+30 LT	42" RCP-III	0.04			0.02		< 0.01	< 0.01	52	10	
6B	-L- 711+15 to 711+42 RT	BANK STABILIZATION						< 0.01	< 0.01	27	10	
7	-L- 735+40 to 735+61 RT	DITCH							< 0.01		24	
8A	-L- 740+22 to 740+56 RT	DITCH							< 0.01		32	
8B	-L- 747+64 to 747+86 RT	PLUG/FILL & HEADCUT		< 0.01					< 0.01		20	
9A	-L- 742+35 to 743+21 LT	24" CSP, 30" RCP-III	0.09					< 0.01		33		
	-L- 742+06 to 742+11 RT	BANK STABILIZATION-TRIB						< 0.01	< 0.01	10	7	
9B	-L- 741+98 to 742+15 RT	BANK STABILIZATION- LITTLE BUFFALO CREEK							< 0.01		19	
10	-L- 754+26 to 754+54 RT	15" RCP-III	< 0.01			< 0.01						
11A	-L- 750+89 to 751+24 RT	Existing 66" CMP							< 0.01		22	
11B									< 0.01		10	
11C									< 0.01		11	
11D								< 0.01	< 0.01	27	10	
12	-Y35- 9+25 to 9+50 LT	BANK STABILIZATION						< 0.01	< 0.01	17	10	
13A	-L- 762+53 to 762+76 LT	30" RCP-III						< 0.01		31		
		BANK STABILIZATION						< 0.01	< 0.01	11	10	
13B	-L- 763+07 to 763+40 RT	30" RCP-III	0.01					< 0.01		60		
13C	-L- 762+53 to 762+38 LT	SPRING BOX						< 0.01	< 0.01	25	23	
14A	-L- 763+31 to 763+73 LT	60" RCP-III						< 0.01		23		
		BANK STABILIZATION						< 0.01	< 0.01	23	10	
14B	-L- 765+28 to 765+72 RT	60" RCP-III						< 0.01		63		
15A	-L- 768+02 to 768+66 LT	36" RCP-III	0.01			< 0.01		< 0.01		31		
		BANK STABILIZATION						< 0.01	< 0.01	15	10	
15B	-L- 770+68 to 770+93 RT	EXIST. 36" CMP				0.01			< 0.01		23	
16	-L- 769+54 to 770+29 RT	EXIST. 36" CMP	0.03									
17A	-L- 776+79 to 777+26 LT	42" RCP-III						0.01		115		
17B	-L- 775+45 to 776+91 RT	DITCH						< 0.01		146		
18	-L- 780+80 to 781+00 LT	24" RCP-III & DITCH						< 0.01	< 0.01	39	12	
19	-L- 788+03 to 788+42 RT	24" RCP-III						< 0.01		22		
		BANK STABILIZATION						< 0.01	< 0.01	8	10	
20	-L- 793+05 to 793+30 RT	DITCH							< 0.01		25	
21	-L- 797+03 to 799+22 LT	FILL & DITCH	0.03		0.01	< 0.01						
22A	-L- 802+05 to 802+32 RT	EXIST. 48" CMP							< 0.01		22	
22B	-L- 804+49 to 805+11 LT	66" RCP-III						< 0.01		61		
		BANK STABILIZATION						< 0.01	< 0.01	31	10	
23	-L- 810+70 to 811+24 RT	FILL						< 0.01		55		
24A	-L- 815+76 to 815+87 RT	60" RCP-III						< 0.01	< 0.01	30	22	
24B	-L- 816+22 to 816+61 LT	BANK STABILIZATION- TRIB						< 0.01		18		
24C		BANK STABILIZATION- NAKED CREEK						< 0.01	< 0.01	20	20	
25A	-Y36- 16+29 to 16+46 RT	EXIST. 24" CMP						< 0.01	< 0.01	13	12	
25B	-Y36- 16+72 to 17+17 LT	BANK STABILIZATION						< 0.01	< 0.01	17	20	
26A	-L- 823+43 to 826+83 LT	DITCH & 60" RCP-III	0.01		0.04			< 0.01	< 0.01	19	8	
26B	-L- 826+80 to 827+32 RT	BANK STABILIZATION-TRIB						< 0.01		8		
26C		BANK STABILIZATION- NAKED CREEK						< 0.01	< 0.01	32	20	
27A	-L- 832+48 to 832+87 RT	BANK STABILIZATION-TRIB						< 0.01		15		
27B		BANK STABILIZATION- NAKED CREEK						< 0.01	< 0.01	18	30	
28A	-L- 838+81 to 839+70 LT	BANK STABILIZATION						0.01	< 0.01	88	10	
28B	-L- 837+00 to 837+71 RT	BANK STABILIZATION						0.02	< 0.01	59	10	
29	-L- 844+25 to 844+38 RT	42" RCP-IV						< 0.01	< 0.01	5	15	
30	-L- 849+47 to 849+82 LT	BANK STABILIZATION						< 0.01	< 0.01	17	21	
31	-L- 848+81 to 848+99 LT	PLUG/FILL	0.02									
TOTALS*:			0.28	< 0.01	0.05	0.13		0.14	0.07	1366	576	0

*Rounded totals are sum of actual impacts

NOTES:
1. Temporary Surface Water Impacts are expected during installation of the existing pipes that require a smooth liner

Revised 2019 03 11

NC DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
MARCH 2019
ASHE
R-2915E