



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

PAT L. MCCRORY
GOVERNOR

ANTHONY J. TATA
SECRETARY

January 15, 2015

MEMORANDUM TO: Mr. Mike Mills, PE
Division 7 Engineer

FROM: *for* Philip S. Harris, III, P.E. 
Natural Environment Section
Project Development and Environmental Analysis Unit

SUBJECT: I-73 Connector, from NC 68 to West of Western Loop,
Greensboro; Guilford County; Federal Project No. NHF-
0073(25); WBS No. 43245.1.1
TIP I-5110

Attached are the U.S. Army Corps of Engineers Section 404 Nationwide Permit as well as the modified N.C. Division of Water Resources (NCDWR) Section 401 Water Quality Certification and the Jordan Lake Buffer Authorization. All environmental permits have been received for the construction of this project.

A copy of this permit package will be posted on the NCDOT website at:
<https://connect.ncdot.gov/resources/Environmental>, under *Quick Links > Issued Permits*

cc: w/o attachment (see website for attachments)

Mr. Randy Garris, P.E., State Contract Officer
Mr. Jerry Parker, Division Environ. Officer
Dr. Majed Al-Ghandour, P.E., Program Dev. and TIP
Mr. Glenn Mumford, P.E., Roadway Design
Mr. Matt Lauffer, P.E., Hydraulics
Mr. Tom Koch, P.E., Structure Design
Mr. Mark Staley, Roadside Environmental
Mr. Robert Memory, Utilities Unit
Mr. Ron Hancock, P.E., State Roadway Construction Engineer
Mr. Kevin Bowen, P.E., State Bridge Construction Engineer
Mr. Eric Midkiff, P.E., PDEA
Ms. Beth Harmon, NCEEP
Ms. Karen Capps, PE, Transportation Program Management

PROJECT COMMITMENTS

T.I.P No. I-5110

**I-73 Connector, From NC 68 to West of Greensboro
Western Loop Greensboro, Guilford County
Federal-Aid Project No. NHF-0073(25)
WBS No. 42345.1.1**

COMMITMENTS FROM PROJECT DEVELOPMENT AND DESIGN

Division 7 and Roadway Design Unit

The Federal Aviation Administration (FAA) regulations under CFR, Part 77 and Advisory Circular (AC) 70/7460.2K require a sponsoring agency to notify FAA of any proposed construction or alteration of objects that may affect the navigable airspace. NCDOT will inform the construction contractor of FAA's regulations governing obstructions to navigable airspace and ensure said contractor submits FAA Form 7460-1 within the time period specified in CFR, Part 77. NCDOT will also be certain the contractor has calculated the maximum height of construction equipment allowed in a particular location according to FAA's policies and regulations.

The PTI Airport Master Plan Update includes the possible development of a third parallel runway located to the northwest of the two existing runways. A network of connecting taxiways would be needed, and one of these is envisioned to cross the I-73 Connector project area to support future air cargo and distribution facilities. NCDOT has been in close coordination with the PTI Airport during the planning phase of this project and will continue the coordination throughout the project's development to ensure the roadway design is compatible with the future taxiway network proposed in the PTI Airport Master Plan Update.

Roadway Design Unit

Prior to construction, the Roadway Design Unit will conduct a study to determine if an access road is warranted for the Hollandsworth Drive neighborhood.

Hydraulics Unit

FAA's Advisory Circular (AC) 150/5200-33B, Hazardous Wildlife Attractants On or Near Airports provides guidance on land uses that attract wildlife on or near public airports. This guidance dictates airport operators, local planners, and developers refrain from considering proposed land uses that could attract or sustain wildlife populations.

NCDOT will use Best Management Practices that do not attract waterfowl or other animals that are a danger to aircraft. Wet detention ponds and stormwater wetlands are not recommended for use with the I-73 Connector. FAA's AC 150/5200-33B will be considered during final design.

The Hydraulics Unit will coordinate with the NC Floodplain Mapping Program (FMP), to determine 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).

Division 7

This project involves construction activities on or adjacent to Federal Emergency Management Agency regulated streams. Therefore, the Division shall submit sealed as-built construction plans to the Hydraulics Unit upon completion of project construction, certifying that the drainage structures and roadway embankment that are located within the 100-year floodplain were built as shown in the construction plans, both horizontally and vertically.

COMMITMENTS DEVELOPED FROM PERMITTING

Division 7 and Project Development and Environmental Analysis Unit – Natural Environment Section

404 condition 4

Note: Construction of a taxiway bridge for a future proposed Piedmont Triad International Airport (PTIA) taxiway (SAW-2012-01547) is ongoing within the I-5110 project corridor; no impacts to waters of the US were proposed or approved as part of this project. The US Army Corps of Engineers reiterates that, although the bridge portion of the taxiway as proposed involves no regulated activities in waters of the US, the Department of Army (DA) authorization of I-5110 (SAW-2011-000317) in no way insinuates or ensures DA authorization of the remainder of the PTIA taxiway. Nor does the location of the PTIA taxiway bridge under construction preclude an evaluation of the full range of alternatives during any future request for DA authorization of the remainder of the PTIA taxiway.

Project Development and Environmental Analysis Unit – Natural Environment Section and Hydraulics Unit

401 condition 4

Any modifications to this 401 Water Quality Certification that propose additional stream impacts or increased impervious surface requiring additional stormwater management may be subject to the Jordan Water Supply Nutrient Strategy (15A NCAC 02B.0267). The NCDOT shall coordinate with the NCDWR prior to submitting a modification request to determine the applicability of the Jordan Water Supply Nutrient Strategy (15A NCAC 02H.0502). This

condition does not apply to major modifications for additional sections of the project that were covered under the Finding of No Significant Impact or approved in the Avoidance and Minimization stage of the project.

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

Action Id. SAW-2011-00317 County: Guilford U.S.G.S. Quad: NC-SUMMERFIELD

GENERAL PERMIT (REGIONAL AND NATIONWIDE) VERIFICATION

Permittee: NC Department of Transportation
attn: Richard Hancock
Address: 1598 Mail Service Center
Raleigh, NC, 27699-1598

Size (acres)	<u>~190</u>	Nearest Town	<u>Greensboro</u>
Nearest Waterway	<u>Brush Creek</u>	River Basin	<u>Haw. North Carolina.</u>
USGS HUC	<u>3030002</u>	Coordinates	<u>36.127425 N, -79.958056 W</u>

Location description: The project extends from the existing Bryan Boulevard / Airport Parkway interchange (36.122376 N, -79.936111 W) to just west of existing NC 68 where it ties to R-2413A (SAW-2013-00557) (36.125545 N, -79.963769 W), in Greensboro, Guilford County, North Carolina.

Description of projects area and activity: Construct a 1.6 mile, four-lane, median-divided freeway on new location, extending from the existing Bryan Boulevard / Airport Parkway interchange to just west of existing NC 68 where it ties to R-2413A (SAW-2013-00557), including four (4) distinct crossings (projects):

- 1) Site 1 requires the permanent discharge (loss) of fill material into 130 linear feet (0.01 acre) of stream channel due to road fill/culvert installation, the permanent discharge of fill material into 10 linear feet (<0.01 acre) of stream channel due to bank stabilization, and the temporary discharge of fill material into 10 linear feet (<0.01 acre) of stream channel due to construction access;
- 2) Site 2 requires the permanent discharge (loss) of fill material into <0.01 acre of riparian wetlands and 334 linear feet (0.05 acre) of stream channel due to road fill/culvert installation, the permanent discharge of fill material into 20 linear feet (<0.01 acre) of stream channel due to bank stabilization, and the temporary discharge of fill material into 20 linear feet (<0.01 acre) of stream channel due to construction access;
- 3) Site 3 requires the permanent discharge (loss) of fill material into <0.43 acre of open waters (pond) due to road fill/culvert installation and 18 linear feet (<0.01 acre) of stream channel due to bank stabilization, and the temporary discharge of fill material into 24 linear feet (<0.01 acre) of stream channel due to construction access for stabilization;
- 4) Site 4 requires the permanent discharge (loss) of fill material into 51 linear feet (0.05 acre) of stream channel due to road fill/culvert extension and the temporary discharge of fill material into 8 linear feet (<0.01 acre) of stream channel due to construction access.

Applicable Law: Section 404 (Clean Water Act, 33 USC 1344)
 Section 10 (Rivers and Harbors Act, 33 USC 403)

Authorization: Nationwide Permit Number: NWP 14 Linear Transportation Projects.
SEE ATTACHED RGP or NWP GENERAL, REGIONAL AND SPECIAL CONDITIONS

Your work is authorized by the above referenced permit provided it is accomplished in strict accordance with the attached conditions and your submitted application and attached information dated and received by email 11/25/2014. Any violation of the attached conditions or deviation from your submitted plans may subject the permittee to a stop work order, a restoration order, a Class I administrative penalty, and/or appropriate legal action.

This verification will remain valid until the expiration date identified below unless the nationwide authorization is modified, suspended or revoked. If, prior to the expiration date identified below, the nationwide permit authorization is reissued and/or modified, this verification will remain valid until the expiration date identified below, provided it complies with all requirements of the modified nationwide permit. If the nationwide permit authorization expires or is suspended, revoked, or is modified, such that the activity would no longer comply with the terms and conditions of the nationwide permit, activities which have commenced (i.e., are under construction) or are under contract to commence in reliance upon the nationwide permit, will remain authorized provided the activity is completed within twelve months of the date of the nationwide permit's expiration, modification or revocation, unless discretionary authority has been exercised on a case-by-case basis to modify, suspend or revoke the authorization.

Activities subject to Section 404 (as indicated above) may also require an individual Section 401 Water Quality Certification. You should contact the NC Division of Water Quality (telephone 919-807-6300) to determine Section 401 requirements.

For activities occurring within the twenty coastal counties subject to regulation under the Coastal Area Management Act (CAMA), prior to beginning work you must contact the N.C. Division of Coastal Management.

This Department of the Army verification does not relieve the permittee of the responsibility to obtain any other required Federal, State or local approvals/permits.

If there are any questions regarding this verification, any of the conditions of the Permit, or the Corps of Engineers regulatory program, please contact **David Bailey at 919-554-4884 ext 30 or David.E.Bailey2@usace.army.mil**.

Corps Regulatory Official: BAILEY.DAVID.E.1379 Digitally signed by BAILEY.DAVID.E.1379283736
DN: cn=US, o=U.S. Government, ou=DOJ, ou=PKI,
ou=ISA, cn=BAILEY.DAVID.E.1379283736
Date: 2014.12.22 13:00:19 -05'00' 283736 Date: **12/22/2014**

Expiration Date of Verification: **03/18/2017**

The Wilmington District is committed to providing the highest level of support to the public. To help us ensure we continue to do so, please complete our customer Satisfaction Survey online at <http://regulatory.usacesurvey.com/>.

Copy furnished:

Dave Wanucha, NCDENR-DWR, 450 W. Hanes Mill Rd, Suite 300, Winston-Salem, NC 27105

Matt Cook, RK&K, 900 Ridgefield Road, Raleigh, NC 27609

SAW-2011-00317 Special Conditions:

1. 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 attached 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.
2. Unless otherwise requested in the applicant's application and depicted on the approved work plans, culverts greater than 48 inches in diameter will be buried at least one foot below the bed of the stream. Culverts 48 inches in diameter and less shall be buried or placed on the stream bed as practicable and appropriate to maintain aquatic passage, and every effort shall be made to maintain existing channel slope. The bottom of the culvert must be placed at a depth below the natural stream bottom to provide for passage during drought or low flow conditions. Destabilizing the channel and head cutting upstream should be considered in the placement of the culvert.
3. Borrow and Waste
 - a. To ensure that all borrow and waste activities occur on high ground and do not result in the degradation of adjacent wetlands and streams, except as authorized by this permit, the permittee shall require its contractors and/or agents to identify all areas to be used to borrow material, or to dispose of dredged, fill, or waste material. The permittee shall provide the USACE with appropriate maps indicating the locations of proposed borrow or waste sites as soon as the permittee has that information. The permittee will coordinate with the USACE before approving any borrow or waste sites that are within 400 feet of any streams or wetlands.
 - b. To ensure that all borrow and waste activities occur on high ground and do not result in the degradation of adjacent waters and wetlands, except as authorized by this permit, the permittee shall require its contractors and/or agents to identify all areas to be used to borrow material or to dispose of dredged, fill or waste material. The permittee shall provide the Corps of Engineers with appropriate maps indicating the locations of proposed borrow or waste sites as soon as such information is available. The permittee will coordinate with the Corps of Engineers before approving any borrow or waste sites that are within 400 feet of any stream or wetland. All jurisdictional wetland delineations on borrow and waste areas shall be verified by the Corps of Engineers and shown on the approved reclamation plans. The permittee shall maintain documentation of the location and characteristics of all borrow and disposal sites associated with this project. This documentation will include data regarding soils, vegetation and hydrology sufficient to clearly demonstrate compliance all permit conditions. All information will be available to the Corps of Engineers upon request. The permittee shall require its contractors to complete and execute reclamation plans for each waste and borrow site and provide written documentation that the reclamation plans have been implemented and all work is completed. This documentation will be provided to the Corps of Engineers within 30 days of the completion of the reclamation work.
4. Note: Construction of a taxiway bridge for a future proposed Piedmont Triad International Airport (PTIA) taxiway (SAW-2012-01547) is ongoing within the I-5110 project corridor; no impacts to waters of the US were proposed or approved as part of this project. The US Army Corps of Engineers reiterates that, although the bridge portion of the taxiway as proposed involves no regulated activities in waters of the US, the Department of Army (DA) authorization of I-5110 (SAW-2011-000317) in no way insinuates or ensures DA authorization of the remainder of the PTIA taxiway. Nor does the location of the PTIA taxiway bridge under construction preclude an evaluation of the full range of alternatives during any future request for DA authorization of the remainder of the PTIA taxiway.

Corps Regulatory Official: **BAILEY.DAVID.E.1379283736**
Digitally signed by
BAILEY.DAVID.E.1379283736
DN: c=US, o=U.S. Government,
ou=DoD, ou=PKI, ou=USA,
cn=BAILEY.DAVID.E.1379283736
Date: 2014.12.22 13:00:32 -05'00'

Date: **12/22/2014**

Expiration Date of Verification: **03/18/2017**

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

Permittee: North Carolina Department of Transportation
Project Name: NCDOT/I5110/Division 7

Action ID: SAW-2011-00317
County: Guilford

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 Ecosystem Enhancement Program (NCEEP), 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: 03030002, Cape Fear River Basin			
Stream Impacts (linear feet)			Wetland Impacts (acres)			
Warm	Cool	Cold	Riparian Riverine	Riparian Non-Riverine	Non-Riparian	Coastal
515						

*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: 03030002, Cape Fear River Basin			
Stream Mitigation (credits)			Wetland Mitigation (credits)			
Warm	Cool	Cold	Riparian Riverine	Riparian Non-Riverine	Non-Riparian	Coastal
566						

Mitigation Site Debited: North Carolina Ecosystem Enhancement Program (NCEEP)

(List the name of the bank to be debited. For umbrella banks, also list the specific site. For NCEEP, list NCEEP. If the NCEEP 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 NCEEP), 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: NCDENR EEP

Name of Sponsor's Authorized Representative: Beth Harman

Beth Harman _____ Date of Signature 01/05/2015

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:

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, 11405 Falls of Neuse Road, 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: David Bailey
USACE Field Office: Raleigh Regulatory Field Office
US Army Corps of Engineers
3331 Heritage Trade Drive, Suite 105
Wake Forest, North Carolina 27587

Email: David.E.Bailey2@usace.army.mil

BAILEY.DAVID.E.1379283736

Digitally signed by BAILEY.DAVID.E.1379283736
DN: c=US, o=U.S. Government, ou=DoD, ou=PKI, ou=USA,
cn=BAILEY.DAVID.E.1379283736
Date: 2014.12.22 13:00:47 -05'00'

USACE Project Manager Signature

December 22, 2014

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>.

Determination of Jurisdiction:

- A. Based on preliminary information, there appear to be waters of the US including wetlands within the above described project area. This preliminary determination is not an appealable action under the Regulatory Program Administrative Appeal Process (Reference 33 CFR Part 331).
- B. There are Navigable Waters of the United States within the above described project area subject to the permit requirements of Section 10 of the Rivers and Harbors Act and Section 404 of the Clean Water Act. Unless there is a change in the law or our published regulations, this determination may be relied upon for a period not to exceed five years from the date of this notification.
- C. There are waters of the US and/or wetlands within the above described project area subject to the permit requirements of Section 404 of the Clean Water Act (CWA)(33 USC § 1344). Unless there is a change in the law or our published regulations, this determination may be relied upon for a period not to exceed five years from the date of this notification.
- D. The jurisdictional areas within the above described project area have been identified under a previous action. Please reference jurisdictional determination issued 1/28/2014. Action ID: SAW-SAW-2013-00557.

Basis For Determination: The site exhibits features with Ordinary High Water and wetlands as defined in the 1987 wetland delineation manual and applicable regional supplements. The waters on site include Brush Creek and 4 unnamed tributaries (UTs) - all Relatively Permanent Waters (RPWs), which flow via Brush Creek (RPW), Reedy Creek (RPW), and Reedy Fork (RPW) to the Haw River, a Traditionally Navigable Water – and abutting wetlands and one impoundment. This determination is based on field verifications by Andrew Williams (USACE) on 9/7/2011 and David E. Bailey ((USACE) on 8/12/2014.

Remarks: This verification is valid only for waters of the US including wetlands that are shown on Permit Drawings 1 of 17 (Wetland and Stream Impacts) included in your submitted application and attached information dated and received by email 11/25/2014, and the information submitted by The Catena Group via email on 7/22/2014 with changes made in the field on 8/12/2014 regarding the north side of the existing crossing of Bryan Blvd. over a UT to Brush Creek.

E. Attention USDA Program Participants

This delineation/determination has been conducted to identify the limits of Corps' Clean Water Act jurisdiction for the particular site identified in this request. The delineation/determination may not be valid for the wetland conservation provisions of the Food Security Act of 1985. If you or your tenant are USDA Program participants, or anticipate participation in USDA programs, you should request a certified wetland determination from the local office of the Natural Resources Conservation Service, prior to starting work.

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

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

US Army Corps of Engineers
South Atlantic Division
Attn: Jason Steele, Review Officer
60 Forsyth Street SW, Room 10M15
Atlanta, Georgia 30303-8801
Phone: (404) 562-5137

In order for an RFA to be accepted by the Corps, the Corps must determine that it is complete, that it meets the criteria for appeal under 33 CFR part 331.5, and that it has been received by the Division Office within 60 days of the date of the NAP. Should you decide to submit an RFA form, it must be received at the above address by 2/20/2015.

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

Corps Regulatory Official: BAILEY.DAVID.E.1379283736

Digitally signed by BAILEY.DAVID.E.1379283736
DN: c=US, o=U.S. Government, ou=DOD, ou=PKI, ou=USA,
cn=BAILEY.DAVID.E.1379283736
Date: 2014.12.22 13:01:08 -05'00'

David E. Bailey

Date of JD: 12/22/2014

Expiration Date of JD: 12/22/2019

**NOTIFICATION OF ADMINISTRATIVE APPEAL OPTIONS AND PROCESS AND
REQUEST FOR APPEAL**

Applicant: NC DOT		File Number: SAW-2011-00317	Date: 12/22/2014
Attached is:		See Section below	
<input type="checkbox"/>	INITIAL PROFFERED PERMIT (Standard Permit or Letter of permission)	A	
<input type="checkbox"/>	PROFFERED PERMIT (Standard Permit or Letter of permission)	B	
<input type="checkbox"/>	PERMIT DENIAL	C	
<input checked="" type="checkbox"/>	APPROVED JURISDICTIONAL DETERMINATION	D	
<input type="checkbox"/>	PRELIMINARY JURISDICTIONAL DETERMINATION	E	

SECTION I - The following identifies your rights and options regarding an administrative appeal of the above decision. Additional information may be found at or <http://www.usace.army.mil/Missions/CivilWorks/RegulatoryProgramandPermits.aspx> or the Corps regulations at 33 CFR Part 331.

A: INITIAL PROFFERED PERMIT: You may accept or object to the permit.

- **ACCEPT:** If you received a Standard Permit, you may sign the permit document and return it to the district engineer for final authorization. If you received a Letter of Permission (LOP), you may accept the LOP and your work is authorized. Your signature on the Standard Permit or acceptance of the LOP means that you accept the permit in its entirety, and waive all rights to appeal the permit, including its terms and conditions, and approved jurisdictional determinations associated with the permit.
- **OBJECT:** If you object to the permit (Standard or LOP) because of certain terms and conditions therein, you may request that the permit be modified accordingly. You must complete Section II of this form and return the form to the district engineer. Your objections must be received by the district engineer within 60 days of the date of this notice, or you will forfeit your right to appeal the permit in the future. Upon receipt of your letter, the district engineer will evaluate your objections and may: (a) modify the permit to address all of your concerns, (b) modify the permit to address some of your objections, or (c) not modify the permit having determined that the permit should be issued as previously written. After evaluating your objections, the district engineer will send you a proffered permit for your reconsideration, as indicated in Section B below.

B: PROFFERED PERMIT: You may accept or appeal the permit

- **ACCEPT:** If you received a Standard Permit, you may sign the permit document and return it to the district engineer for final authorization. If you received a Letter of Permission (LOP), you may accept the LOP and your work is authorized. Your signature on the Standard Permit or acceptance of the LOP means that you accept the permit in its entirety, and waive all rights to appeal the permit, including its terms and conditions, and approved jurisdictional determinations associated with the permit.
- **APPEAL:** If you choose to decline the proffered permit (Standard or LOP) because of certain terms and conditions therein, you may appeal the declined permit under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division engineer. This form must be received by the division engineer within 60 days of the date of this notice.

C: PERMIT DENIAL: You may appeal the denial of a permit under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division engineer. This form must be received by the division engineer within 60 days of the date of this notice.

D: APPROVED JURISDICTIONAL DETERMINATION: You may accept or appeal the approved JD or provide new information.

- **ACCEPT:** You do not need to notify the Corps to accept an approved JD. Failure to notify the Corps within 60 days of the date of this notice, means that you accept the approved JD in its entirety, and waive all rights to appeal the approved JD.
- **APPEAL:** If you disagree with the approved JD, you may appeal the approved JD under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the district engineer. This form must be received by the division engineer within 60 days of the date of this notice.

E: PRELIMINARY JURISDICTIONAL DETERMINATION: You do not need to respond to the Corps regarding the preliminary JD. The Preliminary JD is not appealable. If you wish, you may request an approved JD (which may be appealed), by contacting the Corps district for further instruction. Also you may provide new information for further consideration by the Corps to reevaluate the JD.

SECTION II - REQUEST FOR APPEAL or OBJECTIONS TO AN INITIAL PROFFERED PERMIT

REASONS FOR APPEAL OR OBJECTIONS: (Describe your reasons for appealing the decision or your objections to an initial proffered permit in clear concise statements. You may attach additional information to this form to clarify where your reasons or objections are addressed in the administrative record.)

ADDITIONAL INFORMATION: The appeal is limited to a review of the administrative record, the Corps memorandum for the record of the appeal conference or meeting, and any supplemental information that the review officer has determined is needed to clarify the administrative record. Neither the appellant nor the Corps may add new information or analyses to the record. However, you may provide additional information to clarify the location of information that is already in the administrative record.

POINT OF CONTACT FOR QUESTIONS OR INFORMATION:

If you have questions regarding this decision and/or the appeal process you may contact:

**District Engineer, Wilmington Regulatory Division
attn: David E. Bailey
Raleigh Regulatory Field Office
3331 Heritage Trade Drive, Suite 105
Wake Forest, North Carolina 27587**

If you only have questions regarding the appeal process you may also contact:

**Mr. Jason Steele, Administrative Appeal Review Officer
CESAD-PDO
U.S. Army Corps of Engineers, South Atlantic Division
60 Forsyth Street, Room 10M15
Atlanta, Georgia 30303-8801
Phone: (404) 562-5137**

RIGHT OF ENTRY: Your signature below grants the right of entry to Corps of Engineers personnel, and any government consultants, to conduct investigations of the project site during the course of the appeal process. You will be provided a 15 day notice of any site investigation, and will have the opportunity to participate in all site investigations.

<hr/> Signature of appellant or agent.	Date:	Telephone number:
---	-------	-------------------

For appeals on Initial Proffered Permits send this form to:

District Engineer, Wilmington Regulatory Division, Attn: David Bailey, 69 Darlington Avenue, Wilmington, North Carolina 28403

For Permit denials, Proffered Permits and approved Jurisdictional Determinations send this form to:

**Division Engineer, Commander, U.S. Army Engineer Division, South Atlantic, Attn: Mr. Jason Steele, Administrative Appeal Officer, CESAD-PDO, 60 Forsyth Street, Room 10M15, Atlanta, Georgia 30303-8801
Phone: (404) 562-5137**

Action ID Number: SAW-2011-00317

County: Guilford

Permittee: NC Department of Transportation (attn: Richard Hancock)

Project Name: NCDOT/I5110/Division7

Date Verification Issued: 12/22/2014

Project Manager: David Bailey

Upon completion of the activity authorized by this permit and any mitigation required by the permit, sign this certification and return it to the following address:

US ARMY CORPS OF ENGINEERS
WILMINGTON DISTRICT
attn: David E. Bailey
Raleigh Regulatory Field Office
3331 Heritage Trade Drive, Suite 105
Wake Forest, North Carolina 27587

Please note that your permitted activity is subject to a compliance inspection by a U. S. Army Corps of Engineers representative. Failure to comply with any terms or conditions of this authorization may result in the Corps suspending, modifying or revoking the authorization and/or issuing a Class I administrative penalty, or initiating other appropriate legal action.

I hereby certify that the work authorized by the above referenced permit has been completed in accordance with the terms and condition of the said permit, and required mitigation was completed in accordance with the permit conditions.

Signature of Permittee

Date

**NATIONWIDE PERMIT 14
DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS
FINAL NOTICE OF ISSUANCE AND MODIFICATION OF NATIONWIDE PERMITS
FEDERAL REGISTER
AUTHORIZED MARCH 19, 2012**

Linear Transportation Projects. Activities required for the construction, expansion, modification, or improvement of linear transportation projects (e.g., roads, highways, railways, trails, airport runways, and taxiways) in waters of the United States. For linear transportation projects in non-tidal waters, the discharge cannot cause the loss of greater than 1/2-acre of waters of the United States. For linear transportation projects in tidal waters, the discharge cannot cause the loss of greater than 1/3-acre of waters of the United States. Any stream channel modification, including bank stabilization, is limited to the minimum necessary to construct or protect the linear transportation project; such modifications must be in the immediate vicinity of the project.

This NWP also authorizes temporary structures, fills, and work necessary to construct the linear transportation project. Appropriate measures must be taken to maintain normal downstream flows and minimize flooding to the maximum extent practicable, when temporary structures, work, and discharges, including cofferdams, are necessary for construction activities, access fills, or dewatering of construction sites. Temporary fills must consist of materials, and be placed in a manner, that will not be eroded by expected high flows. Temporary fills must be removed in their entirety and the affected areas returned to pre-construction elevations. The areas affected by temporary fills must be revegetated, as appropriate.

This NWP cannot be used to authorize non-linear features commonly associated with transportation projects, such as vehicle maintenance or storage buildings, parking lots, train stations, or aircraft hangars.

Notification: The permittee must submit a pre-construction notification to the district engineer prior to commencing the activity if: (1) the loss of waters of the United States exceeds 1/10-acre; or (2) there is a discharge in a special aquatic site, including wetlands. (See general condition 31.) (Sections 10 and 404)

Note: Some discharges for the construction of farm roads or forest roads, or temporary roads for moving mining equipment, may qualify for an exemption under Section 404(f) of the Clean Water Act (see 33 CFR 323.4).

NATIONWIDE PERMIT CONDITIONS

The following General Conditions must be followed in order for any authorization by a NWP to be valid:

1. Navigation. (a) No activity may cause more than a minimal adverse effect on navigation.

(b) Any safety lights and signals prescribed by the U.S. Coast Guard, through regulations or otherwise, must be installed and maintained at the permittee's expense on authorized facilities in navigable waters of the United States.

(c) The permittee understands and agrees that, if future operations by the United States require the removal, relocation, or other alteration, of the structure or work herein authorized, or if, in the opinion of the Secretary of the Army or his authorized representative, said structure or work shall cause unreasonable obstruction to the free navigation of the navigable waters, the permittee will be required, upon due notice from the Corps of Engineers, to remove, relocate, or alter the structural work or obstructions caused thereby, without expense to the United States. No claim shall be made against the United States on account of any such removal or alteration.

2. Aquatic Life Movements. No activity may substantially disrupt the necessary life cycle movements of those species of aquatic life indigenous to the waterbody, including those species that normally migrate through the area, unless the activity's primary purpose is to impound water. All permanent and temporary crossings of waterbodies shall be suitably culverted, bridged, or otherwise designed and constructed to maintain low flows to sustain the movement of those aquatic species.

3. Spawning Areas. Activities in spawning areas during spawning seasons must be avoided to the maximum extent practicable. Activities that result in the physical destruction (e.g., through excavation, fill, or downstream smothering by substantial turbidity) of an important spawning area are not authorized.

4. Migratory Bird Breeding Areas. Activities in waters of the United States that serve as breeding areas for migratory birds must be avoided to the maximum extent practicable.

5. Shellfish Beds. No activity may occur in areas of concentrated shellfish populations, unless the activity is directly related to a shellfish harvesting activity authorized by NWPs 4 and 48, or is a shellfish seeding or habitat restoration activity authorized by NWP 27.

6. Suitable Material. No activity may use unsuitable material (e.g., trash, debris, car bodies, asphalt, etc.). Material used for construction or discharged must be free from toxic pollutants in toxic amounts (see Section 307 of the Clean Water Act).

7. Water Supply Intakes. No activity may occur in the proximity of a public water supply intake, except where the activity is for the repair or improvement of public water supply intake structures or adjacent bank stabilization.

8. Adverse Effects From Impoundments. If the activity creates an impoundment of water, adverse effects to the aquatic system due to accelerating the passage of water, and/or restricting its flow must be minimized to the maximum extent practicable.

9. Management of Water Flows. To the maximum extent practicable, the pre-construction course, condition, capacity, and location of open waters must be maintained for each activity, including stream channelization and storm water management activities, except as provided below. The activity must be constructed to withstand expected high flows. The activity must not restrict or impede the passage of normal or high flows, unless the primary purpose of the activity is to impound water or manage high flows. The activity may alter the pre-construction course, condition, capacity, and location of open waters if it benefits the aquatic environment (e.g., stream restoration or relocation activities).

10. Fills Within 100-Year Floodplains. The activity must comply with applicable FEMA-approved state or local floodplain management requirements.

11. Equipment. Heavy equipment working in wetlands or mudflats must be placed on mats, or other measures must be taken to minimize soil disturbance.

12. Soil Erosion and Sediment Controls. Appropriate soil erosion and sediment controls must be used and maintained in effective operating condition during construction, and all exposed soil and other fills, as well as any work below the ordinary high water mark or high tide line, must be permanently stabilized at the earliest practicable date. Permittees are encouraged to perform work within waters of the United States during periods of low-flow or no-flow.

13. Removal of Temporary Fills. Temporary fills must be removed in their entirety and the affected areas returned to pre-construction elevations. The affected areas must be revegetated, as appropriate.

14. Proper Maintenance. Any authorized structure or fill shall be properly maintained, including maintenance to ensure public safety and compliance with applicable NWP general conditions, as well as any activity-specific conditions added by the district engineer to an NWP authorization.

15. Single and Complete Project. The activity must be a single and complete project. The same NWP cannot be used more than once for the same single and complete project.

16. Wild and Scenic Rivers. No activity may occur in a component of the National Wild and Scenic River System, or in a river officially designated by Congress as a “study river” for possible inclusion in the system while the river is in an official study status, unless the appropriate Federal agency with direct management responsibility for such river, has determined in writing that the proposed activity will not adversely affect the Wild and Scenic River designation or study status. Information on Wild and Scenic Rivers may be obtained from the appropriate Federal land management agency responsible for the designated Wild and Scenic River or study river (e.g., National Park Service, U.S. Forest Service, Bureau of Land Management, U.S. Fish and Wildlife Service).

17. Tribal Rights. No activity or its operation may impair reserved tribal rights, including, but not limited to, reserved water rights and treaty fishing and hunting rights.

18. Endangered Species. (a) No activity is authorized under any NWP which is likely to directly or indirectly jeopardize the continued existence of a threatened or endangered species or a species proposed for such designation, as identified under the Federal Endangered Species Act (ESA), or which will directly or indirectly destroy or adversely modify the critical habitat of such species. No activity is authorized under any NWP which “may affect” a listed species or critical habitat, unless Section 7 consultation addressing the effects of the proposed activity has been completed.

(b) Federal agencies should follow their own procedures for complying with the requirements of the ESA. Federal permittees must provide the district engineer with the appropriate documentation to demonstrate compliance with those requirements. The district engineer will review the documentation and determine whether it is sufficient to address ESA compliance for the NWP activity, or whether additional ESA consultation is necessary.

(c) Non-federal permittees must submit a pre-construction notification to the district engineer if any listed species or designated critical habitat might be affected or is in the vicinity of the project, or if the project is located in designated critical habitat, and shall not begin work on the activity until notified by the district engineer that the requirements of the ESA have been satisfied and that the activity is authorized. For activities that might affect Federally-listed endangered or threatened species or designated critical habitat, the pre-construction notification must include the name(s) of the endangered or threatened species that might be affected by the proposed work or that utilize the designated critical habitat that might be affected by the proposed work. The district engineer will determine whether the proposed activity “may affect” or will have “no effect” to listed species and designated critical habitat and will notify the non-Federal applicant of the Corps’ determination within 45 days of receipt of a complete pre-construction notification. In cases where the non-Federal applicant has identified listed species or critical habitat that might be affected or is in the vicinity of the project, and has so notified the Corps, the applicant shall not begin work until the Corps has provided notification the proposed activities will have “no effect” on listed species or critical habitat, or until Section 7 consultation has been completed. If the non-Federal applicant has not heard back from the Corps within 45 days, the applicant must still wait for notification from the Corps.

(d) As a result of formal or informal consultation with the FWS or NMFS the district engineer may add species-specific regional endangered species conditions to the NWPs.

(e) Authorization of an activity by a NWP does not authorize the “take” of a threatened or endangered species as defined under the ESA. In the absence of separate authorization (e.g., an ESA Section 10 Permit, a Biological Opinion with “incidental take” provisions, etc.) from the U.S. FWS or the NMFS, The Endangered Species Act prohibits any person subject to the jurisdiction of the United States to take a listed species, where "take" means to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct. The word “harm” in the definition of “take” means an act which actually kills or injures wildlife. Such an act may include significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding or sheltering.

(f) Information on the location of threatened and endangered species and their critical habitat can be obtained directly from the offices of the U.S. FWS and NMFS or their world wide web pages at <http://www.fws.gov/> or <http://www.fws.gov/ipac> and <http://www.noaa.gov/fisheries.html> respectively.

19. Migratory Birds and Bald and Golden Eagles. The permittee is responsible for obtaining any “take” permits required under the U.S. Fish and Wildlife Service’s regulations governing compliance with the Migratory Bird Treaty Act or the Bald and Golden Eagle Protection Act. The permittee should contact the appropriate local office of the U.S. Fish and Wildlife Service to determine if such “take” permits are required for a particular activity.

20. Historic Properties. (a) In cases where the district engineer determines that the activity may affect properties listed, or eligible for listing, in the National Register of Historic Places, the activity is not authorized, until the requirements of Section 106 of the National Historic Preservation Act (NHPA) have been satisfied.

(b) Federal permittees should follow their own procedures for complying with the requirements of Section 106 of the National Historic Preservation Act. Federal permittees must provide the district engineer with the appropriate documentation to demonstrate compliance with those requirements. The district engineer will review the documentation and determine whether it is sufficient to address section 106 compliance for the NWP activity, or whether additional section 106 consultation is necessary.

(c) Non-federal permittees must submit a pre-construction notification to the district engineer if the authorized activity may have the potential to cause effects to any historic properties listed on, determined to be eligible for listing on, or potentially eligible for listing on the National Register of Historic Places, including previously unidentified properties. For such activities, the pre-construction notification must state which historic properties may be affected by the proposed work or include a vicinity map indicating the location of the historic properties or the potential for the presence of historic properties. Assistance regarding information on the location of or potential for the presence of historic resources can be sought from the State Historic Preservation Officer or Tribal Historic Preservation Officer, as appropriate, and the National Register of Historic Places (see 33 CFR 330.4(g)). When reviewing pre-construction notifications, district engineers will comply with the current procedures for addressing the requirements of Section 106 of the National Historic Preservation Act. The district engineer shall make a reasonable and good faith effort to carry out appropriate identification efforts, which may include background research, consultation, oral history interviews, sample field investigation, and field survey. Based on the information submitted and these efforts, the district engineer shall determine whether the proposed activity has the potential to cause an effect on the historic properties. Where the non-Federal applicant has identified historic properties on which the activity may have the potential to cause effects and so notified the Corps, the non-Federal applicant shall not begin the activity until notified by the district engineer either that the activity has no potential to cause effects or that consultation under Section 106 of the NHPA has been completed.

(d) The district engineer will notify the prospective permittee within 45 days of receipt of a complete pre-construction notification whether NHPA Section 106 consultation is required. Section 106 consultation is not required when the Corps determines that the activity does not have the potential to cause effects on historic properties (see 36 CFR §800.3(a)). If NHPA

section 106 consultation is required and will occur, the district engineer will notify the non-Federal applicant that he or she cannot begin work until Section 106 consultation is completed. If the non-Federal applicant has not heard back from the Corps within 45 days, the applicant must still wait for notification from the Corps.

(e) Prospective permittees should be aware that section 110k of the NHPA (16 U.S.C. 470h-2(k)) prevents the Corps from granting a permit or other assistance to an applicant who, with intent to avoid the requirements of Section 106 of the NHPA, has intentionally significantly adversely affected a historic property to which the permit would relate, or having legal power to prevent it, allowed such significant adverse effect to occur, unless the Corps, after consultation with the Advisory Council on Historic Preservation (ACHP), determines that circumstances justify granting such assistance despite the adverse effect created or permitted by the applicant. If circumstances justify granting the assistance, the Corps is required to notify the ACHP and provide documentation specifying the circumstances, the degree of damage to the integrity of any historic properties affected, and proposed mitigation. This documentation must include any views obtained from the applicant, SHPO/THPO, appropriate Indian tribes if the undertaking occurs on or affects historic properties on tribal lands or affects properties of interest to those tribes, and other parties known to have a legitimate interest in the impacts to the permitted activity on historic properties.

21. Discovery of Previously Unknown Remains and Artifacts. If you discover any previously unknown historic, cultural or archeological remains and artifacts while accomplishing the activity authorized by this permit, you must immediately notify the district engineer of what you have found, and to the maximum extent practicable, avoid construction activities that may affect the remains and artifacts until the required coordination has been completed. The district engineer will initiate the Federal, Tribal and state coordination required to determine if the items or remains warrant a recovery effort or if the site is eligible for listing in the National Register of Historic Places.

22. Designated Critical Resource Waters. Critical resource waters include, NOAA-managed marine sanctuaries and marine monuments, and National Estuarine Research Reserves. The district engineer may designate, after notice and opportunity for public comment, additional waters officially designated by a state as having particular environmental or ecological significance, such as outstanding national resource waters or state natural heritage sites. The district engineer may also designate additional critical resource waters after notice and opportunity for public comment.

(a) Discharges of dredged or fill material into waters of the United States are not authorized by NWP 7, 12, 14, 16, 17, 21, 29, 31, 35, 39, 40, 42, 43, 44, 49, 50, 51, and 52 for any activity within, or directly affecting, critical resource waters, including wetlands adjacent to such waters.

(b) For NWPs 3, 8, 10, 13, 15, 18, 19, 22, 23, 25, 27, 28, 30, 33, 34, 36, 37, and 38, notification is required in accordance with general condition 31, for any activity proposed in the designated critical resource waters including wetlands adjacent to those waters. The district engineer may authorize activities under these NWPs only after it is determined that the impacts to the critical resource waters will be no more than minimal.

23. Mitigation. The district engineer will consider the following factors when determining appropriate and practicable mitigation necessary to ensure that adverse effects on the aquatic environment are minimal:

(a) The activity must be designed and constructed to avoid and minimize adverse effects, both temporary and permanent, to waters of the United States to the maximum extent practicable at the project site (i.e., on site).

(b) Mitigation in all its forms (avoiding, minimizing, rectifying, reducing, or compensating for resource losses) will be required to the extent necessary to ensure that the adverse effects to the aquatic environment are minimal.

(c) Compensatory mitigation at a minimum one-for-one ratio will be required for all wetland losses that exceed 1/10-acre and require pre-construction notification, unless the district engineer determines in writing that either some other form of mitigation would be more environmentally appropriate or the adverse effects of the proposed activity are minimal, and provides a project-specific waiver of this requirement. For wetland losses of 1/10-acre or less that require pre-construction notification, the district engineer may determine on a case-by-case basis that compensatory mitigation is required to ensure that the activity results in minimal adverse effects on the aquatic environment. Compensatory mitigation projects provided to offset losses of aquatic resources must comply with the applicable provisions of 33 CFR part 332.

(1) The prospective permittee is responsible for proposing an appropriate compensatory mitigation option if compensatory mitigation is necessary to ensure that the activity results in minimal adverse effects on the aquatic environment.

(2) Since the likelihood of success is greater and the impacts to potentially valuable uplands are reduced, wetland restoration should be the first compensatory mitigation option considered.

(3) If permittee-responsible mitigation is the proposed option, the prospective permittee is responsible for submitting a mitigation plan. A conceptual or detailed mitigation plan may be used by the district engineer to make the decision on the NWP verification request, but a final mitigation plan that addresses the applicable requirements of 33 CFR 332.4(c)(2) – (14) must be approved by the district engineer before the permittee begins work in waters of the United States, unless the district engineer determines that prior approval of the final mitigation plan is not practicable or not necessary to ensure timely completion of the required compensatory mitigation (see 33 CFR 332.3(k)(3)).

(4) If mitigation bank or in-lieu fee program credits are the proposed option, the mitigation plan only needs to address the baseline conditions at the impact site and the number of credits to be provided.

(5) Compensatory mitigation requirements (e.g., resource type and amount to be provided as compensatory mitigation, site protection, ecological performance standards, monitoring requirements) may be addressed through conditions added to the NWP authorization, instead of components of a compensatory mitigation plan.

(d) For losses of streams or other open waters that require pre-construction notification, the district engineer may require compensatory mitigation, such as stream rehabilitation, enhancement, or preservation, to ensure that the activity results in minimal adverse effects on the aquatic environment.

(e) Compensatory mitigation will not be used to increase the acreage losses allowed by the acreage limits of the NWPs. For example, if an NWP has an acreage limit of 1/2-acre, it cannot be used to authorize any project resulting in the loss of greater than 1/2-acre of waters of

the United States, even if compensatory mitigation is provided that replaces or restores some of the lost waters. However, compensatory mitigation can and should be used, as necessary, to ensure that a project already meeting the established acreage limits also satisfies the minimal impact requirement associated with the NWP.

(f) Compensatory mitigation plans for projects in or near streams or other open waters will normally include a requirement for the restoration or establishment, maintenance, and legal protection (e.g., conservation easements) of riparian areas next to open waters. In some cases, riparian areas may be the only compensatory mitigation required. Riparian areas should consist of native species. The width of the required riparian area will address documented water quality or aquatic habitat loss concerns. Normally, the riparian area will be 25 to 50 feet wide on each side of the stream, but the district engineer may require slightly wider riparian areas to address documented water quality or habitat loss concerns. If it is not possible to establish a riparian area on both sides of a stream, or if the waterbody is a lake or coastal waters, then restoring or establishing a riparian area along a single bank or shoreline may be sufficient. Where both wetlands and open waters exist on the project site, the district engineer will determine the appropriate compensatory mitigation (e.g., riparian areas and/or wetlands compensation) based on what is best for the aquatic environment on a watershed basis. In cases where riparian areas are determined to be the most appropriate form of compensatory mitigation, the district engineer may waive or reduce the requirement to provide wetland compensatory mitigation for wetland losses.

(g) Permittees may propose the use of mitigation banks, in-lieu fee programs, or separate permittee-responsible mitigation. For activities resulting in the loss of marine or estuarine resources, permittee-responsible compensatory mitigation may be environmentally preferable if there are no mitigation banks or in-lieu fee programs in the area that have marine or estuarine credits available for sale or transfer to the permittee. For permittee-responsible mitigation, the special conditions of the NWP verification must clearly indicate the party or parties responsible for the implementation and performance of the compensatory mitigation project, and, if required, its long-term management.

(h) Where certain functions and services of waters of the United States are permanently adversely affected, such as the conversion of a forested or scrub-shrub wetland to a herbaceous wetland in a permanently maintained utility line right-of-way, mitigation may be required to reduce the adverse effects of the project to the minimal level.

24. Safety of Impoundment Structures. To ensure that all impoundment structures are safely designed, the district engineer may require non-Federal applicants to demonstrate that the structures comply with established state dam safety criteria or have been designed by qualified persons. The district engineer may also require documentation that the design has been independently reviewed by similarly qualified persons, and appropriate modifications made to ensure safety.

25. Water Quality. Where States and authorized Tribes, or EPA where applicable, have not previously certified compliance of an NWP with CWA Section 401, individual 401 Water Quality Certification must be obtained or waived (see 33 CFR 330.4(c)). The district engineer or State or Tribe may require additional water quality management measures to ensure that the authorized activity does not result in more than minimal degradation of water quality.

26. Coastal Zone Management. In coastal states where an NWP has not previously received a state coastal zone management consistency concurrence, an individual state coastal zone management consistency concurrence must be obtained, or a presumption of concurrence must occur (see 33 CFR 330.4(d)). The district engineer or a State may require additional measures to ensure that the authorized activity is consistent with state coastal zone management requirements.

27. Regional and Case-By-Case Conditions. The activity must comply with any regional conditions that may have been added by the Division Engineer (see 33 CFR 330.4(e)) and with any case specific conditions added by the Corps or by the state, Indian Tribe, or U.S. EPA in its section 401 Water Quality Certification, or by the state in its Coastal Zone Management Act consistency determination.

28. Use of Multiple Nationwide Permits. The use of more than one NWP for a single and complete project is prohibited, except when the acreage loss of waters of the United States authorized by the NWPs does not exceed the acreage limit of the NWP with the highest specified acreage limit. For example, if a road crossing over tidal waters is constructed under NWP 14, with associated bank stabilization authorized by NWP 13, the maximum acreage loss of waters of the United States for the total project cannot exceed 1/3-acre.

29. Transfer of Nationwide Permit Verifications. If the permittee sells the property associated with a nationwide permit verification, the permittee may transfer the nationwide permit verification to the new owner by submitting a letter to the appropriate Corps district office to validate the transfer. A copy of the nationwide permit verification must be attached to the letter, and the letter must contain the following statement and signature:

“When the structures or work authorized by this nationwide permit are still in existence at the time the property is transferred, the terms and conditions of this nationwide permit, including any special conditions, will continue to be binding on the new owner(s) of the property. To validate the transfer of this nationwide permit and the associated liabilities associated with compliance with its terms and conditions, have the transferee sign and date below.”

(Transferee)

(Date)

30. Compliance Certification. Each permittee who receives an NWP verification letter from the Corps must provide a signed certification documenting completion of the authorized activity and any required compensatory mitigation. The success of any required permittee-responsible mitigation, including the achievement of ecological performance standards, will be addressed separately by the district engineer. The Corps will provide the permittee the certification document with the NWP verification letter. The certification document will include:

(a) A statement that the authorized work was done in accordance with the NWP authorization, including any general, regional, or activity-specific conditions;

(b) A statement that the implementation of any required compensatory mitigation was completed in accordance with the permit conditions. If credits from a mitigation bank or in-lieu fee program are used to satisfy the compensatory mitigation requirements, the certification must include the documentation required by 33 CFR 332.3(1)(3) to confirm that the permittee secured the appropriate number and resource type of credits; and

(c) The signature of the permittee certifying the completion of the work and mitigation.

31. Pre-Construction Notification. (a) Timing. Where required by the terms of the NWP, the prospective permittee must notify the district engineer by submitting a pre-construction notification (PCN) as early as possible. The district engineer must determine if the PCN is complete within 30 calendar days of the date of receipt and, if the PCN is determined to be incomplete, notify the prospective permittee within that 30 day period to request the additional information necessary to make the PCN complete. The request must specify the information needed to make the PCN complete. As a general rule, district engineers will request additional information necessary to make the PCN complete only once. However, if the prospective permittee does not provide all of the requested information, then the district engineer will notify the prospective permittee that the PCN is still incomplete and the PCN review process will not commence until all of the requested information has been received by the district engineer. The prospective permittee shall not begin the activity until either:

(1) He or she is notified in writing by the district engineer that the activity may proceed under the NWP with any special conditions imposed by the district or division engineer; or

(2) 45 calendar days have passed from the district engineer's receipt of the complete PCN and the prospective permittee has not received written notice from the district or division engineer. However, if the permittee was required to notify the Corps pursuant to general condition 18 that listed species or critical habitat might be affected or in the vicinity of the project, or to notify the Corps pursuant to general condition 20 that the activity may have the potential to cause effects to historic properties, the permittee cannot begin the activity until receiving written notification from the Corps that there is "no effect" on listed species or "no potential to cause effects" on historic properties, or that any consultation required under Section 7 of the Endangered Species Act (see 33 CFR 330.4(f)) and/or Section 106 of the National Historic Preservation (see 33 CFR 330.4(g)) has been completed. Also, work cannot begin under NWPs 21, 49, or 50 until the permittee has received written approval from the Corps. If the proposed activity requires a written waiver to exceed specified limits of an NWP, the permittee may not begin the activity until the district engineer issues the waiver. If the district or division engineer notifies the permittee in writing that an individual permit is required within 45 calendar days of receipt of a complete PCN, the permittee cannot begin the activity until an individual permit has been obtained. Subsequently, the permittee's right to proceed under the NWP may be modified, suspended, or revoked only in accordance with the procedure set forth in 33 CFR 330.5(d)(2).

(b) Contents of Pre-Construction Notification: The PCN must be in writing and include the following information:

(1) Name, address and telephone numbers of the prospective permittee;

(2) Location of the proposed project;

(3) A description of the proposed project; the project's purpose; direct and indirect adverse environmental effects the project would cause, including the anticipated amount of loss of water of the United States expected to result from the NWP activity, in acres, linear feet, or other appropriate unit of measure; any other NWP(s), regional general permit(s), or individual permit(s) used or intended to be used to authorize any part of the proposed project or any related activity. The description should be sufficiently detailed to allow the district engineer to determine that the adverse effects of the project will be minimal and to determine the need for compensatory mitigation. Sketches should be provided when necessary to show that the activity complies with the terms of the NWP. (Sketches usually clarify the project and when provided results in a quicker decision. Sketches should contain sufficient detail to provide an illustrative description of the proposed activity (e.g., a conceptual plan), but do not need to be detailed engineering plans);

(4) The PCN must include a delineation of wetlands, other special aquatic sites, and other waters, such as lakes and ponds, and perennial, intermittent, and ephemeral streams, on the project site. Wetland delineations must be prepared in accordance with the current method required by the Corps. The permittee may ask the Corps to delineate the special aquatic sites and other waters on the project site, but there may be a delay if the Corps does the delineation, especially if the project site is large or contains many waters of the United States. Furthermore, the 45 day period will not start until the delineation has been submitted to or completed by the Corps, as appropriate;

(5) If the proposed activity will result in the loss of greater than 1/10-acre of wetlands and a PCN is required, the prospective permittee must submit a statement describing how the mitigation requirement will be satisfied, or explaining why the adverse effects are minimal and why compensatory mitigation should not be required. As an alternative, the prospective permittee may submit a conceptual or detailed mitigation plan.

(6) If any listed species or designated critical habitat might be affected or is in the vicinity of the project, or if the project is located in designated critical habitat, for non-Federal applicants the PCN must include the name(s) of those endangered or threatened species that might be affected by the proposed work or utilize the designated critical habitat that may be affected by the proposed work. Federal applicants must provide documentation demonstrating compliance with the Endangered Species Act; and

(7) For an activity that may affect a historic property listed on, determined to be eligible for listing on, or potentially eligible for listing on, the National Register of Historic Places, for non-Federal applicants the PCN must state which historic property may be affected by the proposed work or include a vicinity map indicating the location of the historic property. Federal applicants must provide documentation demonstrating compliance with Section 106 of the National Historic Preservation Act.

(c) Form of Pre-Construction Notification: The standard individual permit application form (Form ENG 4345) may be used, but the completed application form must clearly indicate that it is a PCN and must include all of the information required in paragraphs (b)(1) through (7) of this general condition. A letter containing the required information may also be used.

(d) Agency Coordination: (1) The district engineer will consider any comments from Federal and state agencies concerning the proposed activity's compliance with the terms and conditions of the NWPs and the need for mitigation to reduce the project's adverse environmental effects to a minimal level.

(2) For all NWP activities that require pre-construction notification and result in the loss of greater than 1/2-acre of waters of the United States, for NWP 21, 29, 39, 40, 42, 43, 44, 50, 51, and 52 activities that require pre-construction notification and will result in the loss of greater than 300 linear feet of intermittent and ephemeral stream bed, and for all NWP 48 activities that require pre-construction notification, the district engineer will immediately provide (e.g., via e-mail, facsimile transmission, overnight mail, or other expeditious manner) a copy of the complete PCN to the appropriate Federal or state offices (U.S. FWS, state natural resource or water quality agency, EPA, State Historic Preservation Officer (SHPO) or Tribal Historic Preservation Office (THPO), and, if appropriate, the NMFS). With the exception of NWP 37, these agencies will have 10 calendar days from the date the material is transmitted to telephone or fax the district engineer notice that they intend to provide substantive, site-specific comments. The comments must explain why the agency believes the adverse effects will be more than minimal. If so contacted by an agency, the district engineer will wait an additional 15 calendar days before making a decision on the pre-construction notification. The district engineer will fully consider agency comments received within the specified time frame concerning the proposed activity's compliance with the terms and conditions of the NWPs, including the need for mitigation to ensure the net adverse environmental effects to the aquatic environment of the proposed activity are minimal. The district engineer will provide no response to the resource agency, except as provided below. The district engineer will indicate in the administrative record associated with each pre-construction notification that the resource agencies' concerns were considered. For NWP 37, the emergency watershed protection and rehabilitation activity may proceed immediately in cases where there is an unacceptable hazard to life or a significant loss of property or economic hardship will occur. The district engineer will consider any comments received to decide whether the NWP 37 authorization should be modified, suspended, or revoked in accordance with the procedures at 33 CFR 330.5.

(3) In cases of where the prospective permittee is not a Federal agency, the district engineer will provide a response to NMFS within 30 calendar days of receipt of any Essential Fish Habitat conservation recommendations, as required by Section 305(b)(4)(B) of the Magnuson-Stevens Fishery Conservation and Management Act.

(4) Applicants are encouraged to provide the Corps with either electronic files or multiple copies of pre-construction notifications to expedite agency coordination.

D. District Engineer's Decision

1. In reviewing the PCN for the proposed activity, the district engineer will determine whether the activity authorized by the NWP will result in more than minimal individual or cumulative adverse environmental effects or may be contrary to the public interest. For a linear project, this determination will include an evaluation of the individual crossings to determine whether they individually satisfy the terms and conditions of the NWP(s), as well as the cumulative effects caused by all of the crossings authorized by NWP. If an applicant requests a waiver of the 300 linear foot limit on impacts to intermittent or ephemeral streams or of an otherwise applicable limit, as provided for in NWPs 13, 21, 29, 36, 39, 40, 42, 43, 44, 50, 51 or 52, the district engineer will only grant the waiver upon a written determination that the NWP activity will result in minimal adverse effects. When making minimal effects determinations the district engineer will consider the direct and indirect effects caused by the NWP activity. The district engineer will also consider site specific factors, such as the environmental setting in the

vicinity of the NWP activity, the type of resource that will be affected by the NWP activity, the functions provided by the aquatic resources that will be affected by the NWP activity, the degree or magnitude to which the aquatic resources perform those functions, the extent that aquatic resource functions will be lost as a result of the NWP activity (e.g., partial or complete loss), the duration of the adverse effects (temporary or permanent), the importance of the aquatic resource functions to the region (e.g., watershed or ecoregion), and mitigation required by the district engineer. If an appropriate functional assessment method is available and practicable to use, that assessment method may be used by the district engineer to assist in the minimal adverse effects determination. The district engineer may add case-specific special conditions to the NWP authorization to address site-specific environmental concerns.

2. If the proposed activity requires a PCN and will result in a loss of greater than 1/10-acre of wetlands, the prospective permittee should submit a mitigation proposal with the PCN. Applicants may also propose compensatory mitigation for projects with smaller impacts. The district engineer will consider any proposed compensatory mitigation the applicant has included in the proposal in determining whether the net adverse environmental effects to the aquatic environment of the proposed activity are minimal. The compensatory mitigation proposal may be either conceptual or detailed. If the district engineer determines that the activity complies with the terms and conditions of the NWP and that the adverse effects on the aquatic environment are minimal, after considering mitigation, the district engineer will notify the permittee and include any activity-specific conditions in the NWP verification the district engineer deems necessary. Conditions for compensatory mitigation requirements must comply with the appropriate provisions at 33 CFR 332.3(k). The district engineer must approve the final mitigation plan before the permittee commences work in waters of the United States, unless the district engineer determines that prior approval of the final mitigation plan is not practicable or not necessary to ensure timely completion of the required compensatory mitigation. If the prospective permittee elects to submit a compensatory mitigation plan with the PCN, the district engineer will expeditiously review the proposed compensatory mitigation plan. The district engineer must review the proposed compensatory mitigation plan within 45 calendar days of receiving a complete PCN and determine whether the proposed mitigation would ensure no more than minimal adverse effects on the aquatic environment. If the net adverse effects of the project on the aquatic environment (after consideration of the compensatory mitigation proposal) are determined by the district engineer to be minimal, the district engineer will provide a timely written response to the applicant. The response will state that the project can proceed under the terms and conditions of the NWP, including any activity-specific conditions added to the NWP authorization by the district engineer.

3. If the district engineer determines that the adverse effects of the proposed work are more than minimal, then the district engineer will notify the applicant either: (a) That the project does not qualify for authorization under the NWP and instruct the applicant on the procedures to seek authorization under an individual permit; (b) that the project is authorized under the NWP subject to the applicant's submission of a mitigation plan that would reduce the adverse effects on the aquatic environment to the minimal level; or (c) that the project is authorized under the NWP with specific modifications or conditions. Where the district engineer determines that mitigation is required to ensure no more than minimal adverse effects occur to the aquatic environment, the activity will be authorized within the 45-day PCN period, with activity-specific

conditions that state the mitigation requirements. The authorization will include the necessary conceptual or detailed mitigation or a requirement that the applicant submit a mitigation plan that would reduce the adverse effects on the aquatic environment to the minimal level. When mitigation is required, no work in waters of the United States may occur until the district engineer has approved a specific mitigation plan or has determined that prior approval of a final mitigation plan is not practicable or not necessary to ensure timely completion of the required compensatory mitigation.

FURTHER INFORMATION

1. District Engineers have authority to determine if an activity complies with the terms and conditions of an NWP.
2. NWPs do not obviate the need to obtain other federal, state, or local permits, approvals, or authorizations required by law.
3. NWPs do not grant any property rights or exclusive privileges.
4. NWPs do not authorize any injury to the property or rights of others.
5. NWPs do not authorize interference with any existing or proposed Federal project.

DEFINITIONS

Best management practices (BMPs): Policies, practices, procedures, or structures implemented to mitigate the adverse environmental effects on surface water quality resulting from development. BMPs are categorized as structural or non-structural.

Compensatory mitigation: The restoration (re-establishment or rehabilitation), establishment (creation), enhancement, and/or in certain circumstances preservation of aquatic resources for the purposes of offsetting unavoidable adverse impacts which remain after all appropriate and practicable avoidance and minimization has been achieved.

Currently serviceable: Useable as is or with some maintenance, but not so degraded as to essentially require reconstruction.

Direct effects: Effects that are caused by the activity and occur at the same time and place.

Discharge: The term “discharge” means any discharge of dredged or fill material.

Enhancement: The manipulation of the physical, chemical, or biological characteristics of an aquatic resource to heighten, intensify, or improve a specific aquatic resource function(s). Enhancement results in the gain of selected aquatic resource function(s), but may also lead to a decline in other aquatic resource function(s). Enhancement does not result in a gain in aquatic resource area.

Ephemeral stream: An ephemeral stream has flowing water only during, and for a short duration after, precipitation events in a typical year. Ephemeral stream beds are located above the water table year-round. Groundwater is not a source of water for the stream. Runoff from rainfall is the primary source of water for stream flow.

Establishment (creation): The manipulation of the physical, chemical, or biological characteristics present to develop an aquatic resource that did not previously exist at an upland site. Establishment results in a gain in aquatic resource area.

High Tide Line: The line of intersection of the land with the water’s surface at the maximum height reached by a rising tide. The high tide line may be determined, in the absence

of actual data, by a line of oil or scum along shore objects, a more or less continuous deposit of fine shell or debris on the foreshore or berm, other physical markings or characteristics, vegetation lines, tidal gages, or other suitable means that delineate the general height reached by a rising tide. The line encompasses spring high tides and other high tides that occur with periodic frequency but does not include storm surges in which there is a departure from the normal or predicted reach of the tide due to the piling up of water against a coast by strong winds such as those accompanying a hurricane or other intense storm.

Historic Property: Any prehistoric or historic district, site (including archaeological site), building, structure, or other object included in, or eligible for inclusion in, the National Register of Historic Places maintained by the Secretary of the Interior. This term includes artifacts, records, and remains that are related to and located within such properties. The term includes properties of traditional religious and cultural importance to an Indian tribe or Native Hawaiian organization and that meet the National Register criteria (36 CFR part 60).

Independent utility: A test to determine what constitutes a single and complete non-linear project in the Corps regulatory program. A project is considered to have independent utility if it would be constructed absent the construction of other projects in the project area. Portions of a multi-phase project that depend upon other phases of the project do not have independent utility. Phases of a project that would be constructed even if the other phases were not built can be considered as separate single and complete projects with independent utility.

Indirect effects: Effects that are caused by the activity and are later in time or farther removed in distance, but are still reasonably foreseeable.

Intermittent stream: An intermittent stream has flowing water during certain times of the year, when groundwater provides water for stream flow. During dry periods, intermittent streams may not have flowing water. Runoff from rainfall is a supplemental source of water for stream flow.

Loss of waters of the United States: Waters of the United States that are permanently adversely affected by filling, flooding, excavation, or drainage because of the regulated activity. Permanent adverse effects include permanent discharges of dredged or fill material that change an aquatic area to dry land, increase the bottom elevation of a waterbody, or change the use of a waterbody. The acreage of loss of waters of the United States is a threshold measurement of the impact to jurisdictional waters for determining whether a project may qualify for an NWP; it is not a net threshold that is calculated after considering compensatory mitigation that may be used to offset losses of aquatic functions and services. The loss of stream bed includes the linear feet of stream bed that is filled or excavated. Waters of the United States temporarily filled, flooded, excavated, or drained, but restored to pre-construction contours and elevations after construction, are not included in the measurement of loss of waters of the United States. Impacts resulting from activities eligible for exemptions under Section 404(f) of the Clean Water Act are not considered when calculating the loss of waters of the United States.

Non-tidal wetland: A non-tidal wetland is a wetland that is not subject to the ebb and flow of tidal waters. The definition of a wetland can be found at 33 CFR 328.3(b). Non-tidal wetlands contiguous to tidal waters are located landward of the high tide line (i.e., spring high tide line).

Open water: For purposes of the NWPs, an open water is any area that in a year with normal patterns of precipitation has water flowing or standing above ground to the extent that an ordinary high water mark can be determined. Aquatic vegetation within the area of standing or

flowing water is either non-emergent, sparse, or absent. Vegetated shallows are considered to be open waters. Examples of “open waters” include rivers, streams, lakes, and ponds.

Ordinary High Water Mark: An ordinary high water mark is a line on the shore established by the fluctuations of water and indicated by physical characteristics, or by other appropriate means that consider the characteristics of the surrounding areas (see 33 CFR 328.3(e)).

Perennial stream: A perennial stream has flowing water year-round during a typical year. The water table is located above the stream bed for most of the year. Groundwater is the primary source of water for stream flow. Runoff from rainfall is a supplemental source of water for stream flow.

Practicable: Available and capable of being done after taking into consideration cost, existing technology, and logistics in light of overall project purposes.

Pre-construction notification: A request submitted by the project proponent to the Corps for confirmation that a particular activity is authorized by nationwide permit. The request may be a permit application, letter, or similar document that includes information about the proposed work and its anticipated environmental effects. Pre-construction notification may be required by the terms and conditions of a nationwide permit, or by regional conditions. A pre-construction notification may be voluntarily submitted in cases where pre-construction notification is not required and the project proponent wants confirmation that the activity is authorized by nationwide permit.

Preservation: The removal of a threat to, or preventing the decline of, aquatic resources by an action in or near those aquatic resources. This term includes activities commonly associated with the protection and maintenance of aquatic resources through the implementation of appropriate legal and physical mechanisms. Preservation does not result in a gain of aquatic resource area or functions.

Re-establishment: The manipulation of the physical, chemical, or biological characteristics of a site with the goal of returning natural/historic functions to a former aquatic resource. Re-establishment results in rebuilding a former aquatic resource and results in a gain in aquatic resource area and functions.

Rehabilitation: The manipulation of the physical, chemical, or biological characteristics of a site with the goal of repairing natural/historic functions to a degraded aquatic resource. Rehabilitation results in a gain in aquatic resource function, but does not result in a gain in aquatic resource area.

Restoration: The manipulation of the physical, chemical, or biological characteristics of a site with the goal of returning natural/historic functions to a former or degraded aquatic resource. For the purpose of tracking net gains in aquatic resource area, restoration is divided into two categories: re-establishment and rehabilitation.

Riffle and pool complex: Riffle and pool complexes are special aquatic sites under the 404(b)(1) Guidelines. Riffle and pool complexes sometimes characterize steep gradient sections of streams. Such stream sections are recognizable by their hydraulic characteristics. The rapid movement of water over a coarse substrate in riffles results in a rough flow, a turbulent surface, and high dissolved oxygen levels in the water. Pools are deeper areas associated with riffles. A slower stream velocity, a streaming flow, a smooth surface, and a finer substrate characterize pools.

Riparian areas: Riparian areas are lands adjacent to streams, lakes, and estuarine-marine shorelines. Riparian areas are transitional between terrestrial and aquatic ecosystems, through

which surface and subsurface hydrology connects riverine, lacustrine, estuarine, and marine waters with their adjacent wetlands, non-wetland waters, or uplands. Riparian areas provide a variety of ecological functions and services and help improve or maintain local water quality. (See general condition 23.)

Shellfish seeding: The placement of shellfish seed and/or suitable substrate to increase shellfish production. Shellfish seed consists of immature individual shellfish or individual shellfish attached to shells or shell fragments (i.e., spat on shell). Suitable substrate may consist of shellfish shells, shell fragments, or other appropriate materials placed into waters for shellfish habitat.

Single and complete linear project: A linear project is a project constructed for the purpose of getting people, goods, or services from a point of origin to a terminal point, which often involves multiple crossings of one or more waterbodies at separate and distant locations. The term “single and complete project” is defined as that portion of the total linear project proposed or accomplished by one owner/developer or partnership or other association of owners/developers that includes all crossings of a single water of the United States (i.e., a single waterbody) at a specific location. For linear projects crossing a single or multiple waterbodies several times at separate and distant locations, each crossing is considered a single and complete project for purposes of NWP authorization. However, individual channels in a braided stream or river, or individual arms of a large, irregularly shaped wetland or lake, etc., are not separate waterbodies, and crossings of such features cannot be considered separately.

Single and complete non-linear project: For non-linear projects, the term “single and complete project” is defined at 33 CFR 330.2(i) as the total project proposed or accomplished by one owner/developer or partnership or other association of owners/developers. A single and complete non-linear project must have independent utility (see definition of “independent utility”). Single and complete non-linear projects may not be “piecemealed” to avoid the limits in an NWP authorization.

Stormwater management: Stormwater management is the mechanism for controlling stormwater runoff for the purposes of reducing downstream erosion, water quality degradation, and flooding and mitigating the adverse effects of changes in land use on the aquatic environment.

Stormwater management facilities: Stormwater management facilities are those facilities, including but not limited to, stormwater retention and detention ponds and best management practices, which retain water for a period of time to control runoff and/or improve the quality (i.e., by reducing the concentration of nutrients, sediments, hazardous substances and other pollutants) of stormwater runoff.

Stream bed: The substrate of the stream channel between the ordinary high water marks. The substrate may be bedrock or inorganic particles that range in size from clay to boulders. Wetlands contiguous to the stream bed, but outside of the ordinary high water marks, are not considered part of the stream bed.

Stream channelization: The manipulation of a stream’s course, condition, capacity, or location that causes more than minimal interruption of normal stream processes. A channelized stream remains a water of the United States.

Structure: An object that is arranged in a definite pattern of organization. Examples of structures include, without limitation, any pier, boat dock, boat ramp, wharf, dolphin, weir, boom, breakwater, bulkhead, revetment, riprap, jetty, artificial island, artificial reef, permanent

mooring structure, power transmission line, permanently moored floating vessel, piling, aid to navigation, or any other manmade obstacle or obstruction.

Tidal wetland: A tidal wetland is a wetland (i.e., water of the United States) that is inundated by tidal waters. The definitions of a wetland and tidal waters can be found at 33 CFR 328.3(b) and 33 CFR 328.3(f), respectively. Tidal waters rise and fall in a predictable and measurable rhythm or cycle due to the gravitational pulls of the moon and sun. Tidal waters end where the rise and fall of the water surface can no longer be practically measured in a predictable rhythm due to masking by other waters, wind, or other effects. Tidal wetlands are located channelward of the high tide line, which is defined at 33 CFR 328.3(d).

Vegetated shallows: Vegetated shallows are special aquatic sites under the 404(b)(1) Guidelines. They are areas that are permanently inundated and under normal circumstances have rooted aquatic vegetation, such as seagrasses in marine and estuarine systems and a variety of vascular rooted plants in freshwater systems.

Waterbody: For purposes of the NWP, a waterbody is a jurisdictional water of the United States. If a jurisdictional wetland is adjacent – meaning bordering, contiguous, or neighboring – to a waterbody determined to be a water of the United States under 33 CFR 328.3(a)(1)-(6), that waterbody and its adjacent wetlands are considered together as a single aquatic unit (see 33 CFR 328.4(c)(2)). Examples of “waterbodies” include streams, rivers, lakes, ponds, and wetlands.

Final Regional Conditions 2012

NOTICE ABOUT WEB LINKS IN THIS DOCUMENT:

The web links (both internal to our District and any external links to collaborating agencies) in this document are valid at the time of publication. However, the Wilmington District Regulatory Program web page addresses, as with other agency web sites, may change over the timeframe of the five-year Nationwide Permit renewal cycle, in response to policy mandates or technology advances. While we will make every effort to check on the integrity of our web links and provide re-direct pages whenever possible, we ask that you report any broken links to us so we can keep the page information current and usable. We apologize in advanced for any broken links that you may encounter, and we ask that you navigate from the regulatory home page (wetlands and stream permits) of the Wilmington District Corps of Engineers, to the “Permits” section of our web site to find links for pages that cannot be found by clicking directly on the listed web link in this document.

Final 2012 Regional Conditions for Nationwide Permits (NWP) in the Wilmington District

1.0 Excluded Waters

The Corps has identified waters that will be excluded from the use of all NWP’s during certain timeframes. These waters are:

1.1 Anadromous Fish Spawning Areas

Waters of the United States identified by either the North Carolina Division of Marine Fisheries (NCDMF) or the North Carolina Wildlife Resources Commission (NCWRC) as anadromous fish spawning areas are excluded during the period between February 15 and June 30, without prior written approval from NCDMF or NCWRC and the Corps.

1.2 Trout Waters Moratorium

Waters of the United States in the twenty-five designated trout counties of North Carolina are excluded during the period between October 15 and April 15 without prior written approval from the NCWRC. (See Section 2.7 for a list of the twenty-five trout counties).

1.3 Sturgeon Spawning Areas as Designated by the National Marine Fisheries Service (NMFS)

Waters of the United States designated as sturgeon spawning areas are excluded during the period between February 1 and June 30, without prior written approval from the NMFS.

2.0 Waters Requiring Additional Notification

The Corps has identified waters that will be subject to additional notification requirements for activities authorized by all NWP's. These waters are:

2.1 Western NC Counties that Drain to Designated Critical Habitat

For proposed activities within Waters of the U.S. that require a Pre-Construction Notification pursuant to General Condition 31 (PCN) and are located in the sixteen counties listed below, applicants must provide a copy of the PCN to the US Fish and Wildlife Service, 160 Zillicoa Street, Asheville, North Carolina 28801. This PCN must be sent concurrently to the US Fish and Wildlife Service and the Corps Asheville Regulatory Field Office. Please see General Condition 18 for specific notification requirements related to Federally Endangered Species and the following website for information on the location of designated critical habitat.

Counties with tributaries that drain to designated critical habitat that require notification to the Asheville US Fish and Wildlife Service: Avery, Cherokee, Forsyth, Graham, Haywood, Henderson, Jackson, Macon Mecklenburg, Mitchell, Stokes, Surry, Swain, Transylvania, Union and Yancey.

Website and office addresses for Endangered Species Act Information:

The Wilmington District has developed the following website for applicants which provides guidelines on how to review linked websites and maps in order to fulfill NWP general condition 18 requirements: <http://www.saw.usace.army.mil/wetlands/ESA>

Applicants who do not have internet access may contact the appropriate US Fish and Wildlife Service offices listed below or the US Army Corps of Engineers at (910) 251- 4633:

US Fish and Wildlife Service
Asheville Field Office
160 Zillicoa Street
Asheville, NC 28801
Telephone: (828) 258-3939

Asheville US Fish and Wildlife Service Office counties: All counties west of and including Anson, Stanly, Davidson, Forsyth and Stokes Counties

US Fish and Wildlife Service
Raleigh Field Office
Post Office Box 33726
Raleigh, NC 27636-3726
Telephone: (919) 856-4520

Raleigh US Fish and Wildlife Service Office counties: all counties east of and including Richmond, Montgomery, Randolph, Guilford, and Rockingham Counties.

2.2 Special Designation Waters

Prior to the use of any NWP in any of the following identified waters and contiguous wetlands in North Carolina, applicants must comply with Nationwide Permit General Condition 31 (PCN). The North Carolina waters and contiguous wetlands that require additional notification requirements are:

“Outstanding Resource Waters” (ORW) or “High Quality Waters” (HQW) as designated by the North Carolina Environmental Management Commission; “Inland Primary Nursery Areas” (IPNA) as designated by the NCWRC; “Contiguous Wetlands” as defined by the North Carolina Environmental Management Commission; or “Primary Nursery Areas” (PNA) as designated by the North Carolina Marine Fisheries Commission.

2.3 Coastal Area Management Act (CAMA) Areas of Environmental Concern

Non-federal applicants for any NWP in a designated “Area of Environmental Concern” (AEC) in the twenty (20) counties of Eastern North Carolina covered by the North Carolina Coastal Area Management Act (CAMA) must also obtain the required CAMA permit. Development activities for non-federal projects may not commence until a copy of the approved CAMA permit is furnished to the appropriate Wilmington District Regulatory Field Office (Wilmington Field Office – 69 Darlington Avenue, Wilmington, NC 28403 or Washington Field Office – 2407 West 5th Street, Washington, NC 27889).

2.4 Barrier Islands

Prior to the use of any NWP on a barrier island of North Carolina, applicants must comply with Nationwide Permit General Condition 31 (PCN).

2.5 Mountain or Piedmont Bogs

Prior to the use of any NWP in a Bog classified by the North Carolina Wetland Assessment Methodology (NCWAM), applicants shall comply with Nationwide Permit General Condition 31 (PCN). The latest version of NCWAM is located on the NC DWQ web site at: <http://portal.ncdenr.org/web/wq/swp/ws/pdu/ncwam> .

2.6 Animal Waste Facilities

Prior to use of any NWP for construction of animal waste facilities in waters of the US, including wetlands, applicants shall comply with Nationwide Permit General Condition 31 (PCN).

2.7 Trout Waters

Prior to any discharge of dredge or fill material into streams or waterbodies within the twenty-five (25) designated trout counties of North Carolina, the applicant shall comply with Nationwide Permit General Condition 31 (PCN). The applicant shall also provide a copy of the notification to the appropriate NCWRC office to facilitate the determination of any potential

impacts to designated Trout Waters. Notification to the Corps of Engineers will include a statement with the name of the NCWRC biologist contacted, the date of the notification, the location of work, a delineation of wetlands, a discussion of alternatives to working in the mountain trout waters, why alternatives were not selected, and a plan to provide compensatory mitigation for all unavoidable adverse impacts to mountain trout waters.

NCWRC and NC Trout Counties

Western Piedmont Region Coordinator	Alleghany	Caldwell	Watauga
20830 Great Smoky Mtn. Expressway	Ashe	Mitchell	Wilkes
Waynesville, NC 28786	Avery	Stokes	
Telephone: (828) 452-2546	Burke	Surry	

Mountain Region Coordinator	Buncombe	Henderson	Polk
20830 Great Smoky Mtn. Expressway	Cherokee	Jackson	Rutherford
Waynesville, NC 28786	Clay	Macon	Swain
Telephone: (828) 452-2546	Graham	Madison	Transylvania
Fax: (828) 452-7772	Haywood	McDowell	Yancey

3.0 List of Corps Regional Conditions for All Nationwide Permits

The following conditions apply to all Nationwide Permits in the Wilmington District:

3.1 Limitation of Loss of Perennial Stream Bed

NWPs may not be used for activities that may result in the loss or degradation of greater than 300 total linear feet of perennial, intermittent or ephemeral stream, unless the District Commander has waived the 300 linear foot limit for ephemeral and intermittent streams on a case-by-case basis and he determines that the proposed activity will result in minimal individual and cumulative adverse impacts to the aquatic environment. Loss of stream includes the linear feet of stream bed that is filled, excavated, or flooded by the proposed activity. Waivers for the loss of ephemeral and intermittent streams must be in writing and documented by appropriate/accepted stream quality assessments*. This waiver only applies to the 300 linear feet threshold for NWPs.

*NOTE: Applicants should utilize the most current methodology prescribed by Wilmington District to assess stream function and quality. Information can be found at:

<http://www.saw.usace.army.mil/wetlands/permits/nwp/nwp2012> (see “Quick Links”)

3.2 Mitigation for Loss of Stream Bed

For any NWP that results in a loss of more than 150 linear feet of perennial and/or ephemeral/intermittent stream, the applicant shall provide a mitigation proposal to compensate for more than minimal individual and cumulative adverse impacts to the aquatic environment. For stream losses less than 150 linear feet, that require a PCN, the District Commander may determine, on a case-by-case basis that compensatory mitigation is required to ensure that the activity results in minimal adverse effect on the aquatic environment.

3.3 Pre-construction Notification for Loss of Streambed Exceeding 150 Feet.

Prior to use of any NWP for any activity which impacts more than 150 total linear feet of perennial stream or ephemeral/ intermittent stream, the applicant must comply with Nationwide Permit General Condition 31 (PCN). This applies to NWPs that do not have specific notification requirements. If a NWP has specific notification requirements, the requirements of the NWP should be followed.

3.4 Restriction on Use of Live Concrete

For all NWPs which allow the use of concrete as a building material, live or fresh concrete, including bags of uncured concrete, may not come into contact with the water in or entering into waters of the US. Water inside coffer dams or casings that has been in contact with wet concrete shall only be returned to waters of the US when it is no longer poses a threat to aquatic organisms.

3.5 Requirements for Using Riprap for Bank Stabilization

For all NWPs that allow for the use of riprap material for bank stabilization, the following measures shall be applied:

3.5.1. Filter cloth must be placed underneath the riprap as an additional requirement of its use in North Carolina waters.

3.5.2. The placement of riprap shall be limited to the areas depicted on submitted work plan drawings.

3.5.3. The riprap material shall be clean and free from loose dirt or any pollutant except in trace quantities that would not have an adverse environmental effect.

3.5.4. It shall be of a size sufficient to prevent its movement from the authorized alignment by natural forces under normal conditions.

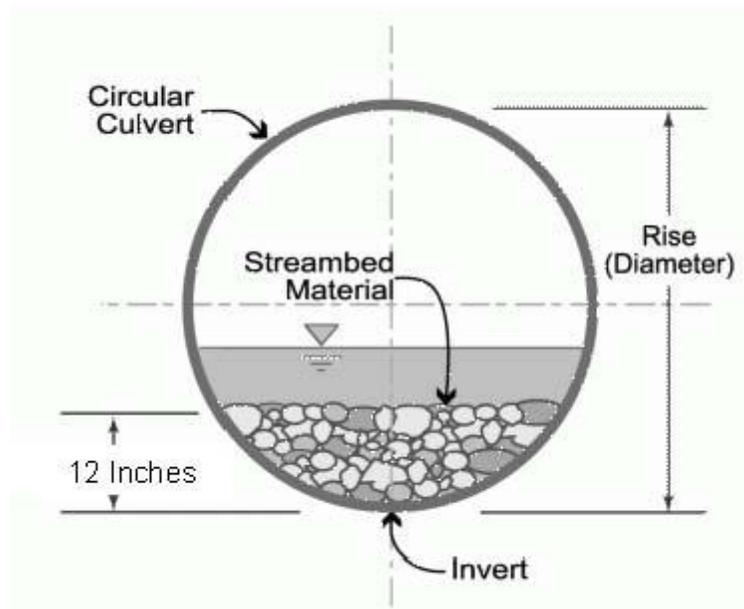
3.5.5. The riprap material shall consist of clean rock or masonry material such as, but not limited to, granite, marl, or broken concrete.

3.5.6. A waiver from the specifications in this Regional Condition may be requested in writing. The waiver will only be issued if it can be demonstrated that the impacts of complying with this Regional condition would result in greater adverse impacts to the aquatic environment.

3.6 Safe Passage Requirements for Culvert Placement

For all NWP's that involve the construction/installation of culverts, measures will be included in the construction/installation that will promote the safe passage of fish and other aquatic organisms. The dimension, pattern, and profile of the stream above and below a pipe or culvert should not be modified by widening the stream channel or by reducing the depth of the stream in connection with the construction activity. The width, height, and gradient of a proposed culvert should be such as to pass the average historical low flow and spring flow without adversely altering flow velocity. Spring flow should be determined from gage data, if available. In the absence of such data, bankfull flow can be used as a comparable level.

In the twenty (20) counties of North Carolina designated as coastal counties by the Coastal Area Management Act (CAMA): All pipes/culverts must be sufficiently sized to allow for the burial of the bottom of the pipe/culvert at least one foot below normal bed elevation when they are placed within the Public Trust Area of Environmental Concern (AEC) and/or the Estuarine Waters AEC as designated by CAMA, and/or all streams appearing as blue lines on United States Geological Survey (USGS) 7.5-minute quadrangle maps.



In all other counties: Culverts greater than 48 inches in diameter will be buried at least one foot below the bed of the stream. Culverts 48 inches in diameter or less shall be buried or placed on the stream bed as practicable and appropriate to maintain aquatic passage, and every effort shall be made to maintain the existing channel slope. The bottom of the culvert must be placed at a

depth below the natural stream bottom to provide for passage during drought or low flow conditions.

Culverts are to be designed and constructed in a manner that minimizes destabilization and head cutting. Destabilizing the channel and head cutting upstream should be considered and appropriate actions incorporated in the design and placement of the culvert.

A waiver from the depth specifications in this condition may be requested in writing. The waiver will be issued if it can be demonstrated that the proposal would result in the least impacts to the aquatic environment.

All counties: Culverts placed within riparian and/or riverine wetlands must be installed in a manner that does not restrict the flow and circulation patterns of waters of the United States. Culverts placed across wetland fills purely for the purposes of equalizing surface water do not have to be buried.

3.7 Notification to NCDENR Shellfish Sanitation Section

Applicants shall notify the NCDENR Shellfish Sanitation Section prior to dredging in or removing sediment from an area closed to shell fishing where the effluent may be released to an area open for shell fishing or swimming in order to avoid contamination from the disposal area and cause a temporary shellfish closure to be made. Such notification shall also be provided to the appropriate Corps of Engineers Regulatory Field Office. Any disposal of sand to the ocean beach should occur between November 1 and April 30 when recreational usage is low. Only clean sand should be used and no dredged sand from closed shell fishing areas may be used. If beach disposal were to occur at times other than stated above or if sand from a closed shell fishing area is to be used, a swimming advisory shall be posted, and a press release shall be issued by the permittee.

3.8 Preservation of Submerged Aquatic Vegetation

Adverse impacts to Submerged Aquatic Vegetation (SAV) are not authorized by any NWP within any of the twenty coastal counties defined by North Carolina's Coastal Area Management Act of 1974 (CAMA).

3.9 Sedimentation and Erosion Control Structures and Measures

3.9.1. All PCNs will identify and describe sedimentation and erosion control structures and measures proposed for placement in waters of the US. The structures and measures should be depicted on maps, surveys or drawings showing location and impacts to jurisdictional wetlands and streams.

4.0 Additional Regional Conditions for Specific Nationwide Permits

4.1 NWP #14 - Linear Transportation Crossings

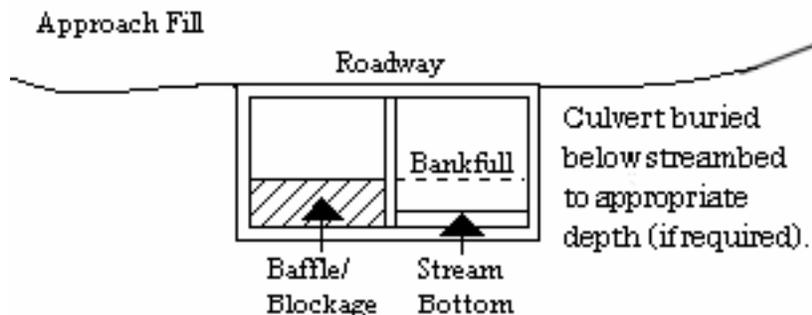
4.1.1. If appropriate, applicants shall employ natural channel design (see definition below and NOTE below) to the maximum extent practicable for stream relocations. In the event it is not appropriate to employ natural channel design, any stream relocation shall be considered a permanent impact and the applicant shall provide a mitigation plan to compensate for the loss of aquatic function associated with the proposed activity.

Natural Channel Design: A geomorphologic approach to stream restoration based on an understanding of valley type, general watershed conditions, dimension, pattern, profile, hydrology and sediment transport of natural, stable channels (reference condition) and applying this understanding to the reconstruction of a stable channel.

NOTE: For projects located within the Coastal Plain ecoregion of North Carolina and within headwater areas across the state, applicants should reference the following links for more information regarding appropriate stream design:

<http://www.saw.usace.army.mil/wetlands/permits/nwp>

4.1.2. Bank-full flows (or less) shall be accommodated through maintenance of the existing bank-full channel cross sectional area. Additional culverts at such crossings shall be allowed only to receive flows exceeding bank-full.



4.1.3. Where adjacent floodplain is available, flows exceeding bank-full should be accommodated by installing culverts at the floodplain elevation.

4.1.4. This NWP authorizes only upland to upland crossings and cannot be used in combination with Nationwide Permit 18 to create an upland within waters of the United States, including wetlands.

4.1.5. This NWP cannot be used for private projects located in tidal waters or tidal wetlands.

4.1.6. Excavation of existing stream channels shall be limited to the minimum necessary to construct or install the proposed culvert. The final width of the impacted streams at the culvert inlet and outlet should be no greater than the original stream width. A waiver from this condition may be requested in writing. The waiver will be issued if it can be demonstrated that it is not

practicable to limit the final width of the culvert to that of the impacted stream at the culvert inlet and outlet and the proposed design would result in less impacts to the aquatic environment.



North Carolina Department of Environment and Natural Resources

Pat McCrory
Governor

Donald van der Vaart
Secretary

January 13, 2015
Guilford County
NCDWR Project No. 20141226
I-73 Connector
TIP No. I-5110

APPROVAL of 401 WATER QUALITY CERTIFICATION and JORDAN LAKE RIPARIAN BUFFER AUTHORIZATION with ADDITIONAL CONDITIONS

Mr. Richard Hancock, P.E., Manager
NCDOT, Project Development and Environmental Analysis Unit
Century Center – Building B
1020 Birch Ridge Drive
Raleigh, NC 27610

Dear Mr. Hancock:

You have our approval, in accordance with the conditions listed below, for the following impacts for the new location I-73 Connector (I-5110), from NC 68 to West of Greensboro Western Loop in Guilford County. *This is a modification of the original permit dated January 9, 2015. This certification replaces the original certification issued to you on January 9, 2015.* This revision removed 20 linear feet of temporary stream impacts from mitigation totals (Site 2 in Table 1). The revised stream mitigation totals are noted below in Table 1 (334 linear feet) and reflect the mitigation totals accounted for in your permit application.

Table 1. Stream Impacts in the Cape Fear 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)
1 (RCP)	130	10	-	-	140	-
1 (Stabilization)	10	-	-	-	10	-
2 (RCP)	334	20	-	-	354	334
2 (Stabilization)	20	-	-	-	20	-
3 (Stabilization)	-	-	18	24	42	-
4 (CSP)	-	-	51	8	59	-
Total	494	30	69	32	625	334

Total Stream Impact for Project: 625 linear feet.

Table 2. Wetland Impacts in the Cape Fear River Basin (Riverine)

Site	Fill (ac)	Fill (temporary) (ac)	Excavation (ac)	Mechanized Clearing (ac)	Hand Clearing (ac)	Area under Bridge (ac)	Total Wetland Impact (ac)
2	<001	-	-	-	-	-	<0.01
Total	<0.01	-	-	-	-	-	<0.01

Total Wetland Impact for Project: <0.01 acres.

Table 3. Open Water Impacts in the Cape Fear River Basin

Site	Permanent Fill in Open Waters (ac)	Temporary Fill in Open Waters (ac)	Total Fill in Open Waters (ac)
1	0.43	-	0.43
Total	0.43	-	0.43

Total Open Water Impact for Project: 0.43acres.

Table 4. Jordan Lake Riparian Buffer Impacts

Site	Zone 1 Impact (sq ft)	= Zone 1 Buffers (not wetlands) (sq ft)	Zone 1 Buffer Mitigation Required (using 3:1 ratio)	Zone 2 Impact (sq ft)	= Zone 2 Buffers (not wetlands) (sq ft)	Zone 2 Buffer Mitigation Required (using 1.5:1 ratio)
2 (Road Crossing)	21,955	21,955	65,865	14,027	14,027	21,040.5
3 (Road Crossing)	21,551	21,551	64,653	14,243	14,243	21,364.5
4 (Road Crossing)	2,986	2,986	0	1,720	1,720	0
4 (Utility)	942	942	0	1,158	1,158	0
Totals	47,434	47,343	130,518	31,148	31,148	42,405

Notes: Wetland area was not deducted from buffer because wetland mitigation was not requested. Utility impacts occur within maintenance area of sanitary sewer.

Total Buffer Impact for Project: 78,491 square feet.

Total Mitigation Required for Zone 1 plus Zone 2: 172,923 square feet.

The project shall be constructed in accordance with your application dated received November 24, 2014. After reviewing your application, we have decided that these impacts are covered by General Water Quality Certification Number 3886. This certification corresponds to the Nationwide Permit 14 issued by the Corps of Engineers. This approval is also valid for the Jordan Lake Riparian Buffer Rules per 15A NCAC 02B .0267. In addition, you should acquire any other federal, state or local permits before you proceed with your project including (but not limited to) Sediment and Erosion Control, Non-Discharge and Water Supply Watershed regulations. This approval will expire with the accompanying 404 permit.

This approval is valid solely for the purpose and design described in your application (unless modified below). Should your project change, you must 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 total wetland fills for this project (now or in the future) exceed one acre, or of total impacts to streams (now or in the future) exceed 150 linear feet, compensatory mitigation may be required as described in 15A NCAC 2H .0506 (h) (6) and (7). Additional buffer impacts may require compensatory mitigation as described in 15A NCAC 02B .0268. For this approval to remain valid, you must adhere to the conditions listed in the attached certification(s) and any additional conditions listed below.

Stream Mitigation [15A NCAC 2H.0506(h)]

Compensatory mitigation for 334 linear feet of impact to streams is required. We understand that you have chosen to perform compensatory mitigation for impacts to streams through the North Carolina Ecosystem Enhancement Program (EEP), and that the EEP has agreed to implement the mitigation for the project. EEP has indicated in a letter dated October 28, 2014 that they will assume responsibility for satisfying the federal Clean Water Act compensatory mitigation requirements for the above-referenced project, in accordance with the EEP Mitigation Banking Instrument signed July 28, 2010.

Riparian Buffer Mitigation [15A NCAC 02B.0268]

Compensatory mitigation for impacts to 43,506.0 square feet of protected riparian buffers in Zone 1 and 28,270.0 square feet of protected riparian buffers in Zone 2 shall be required. We understand that you have chosen to perform compensatory mitigation for impacts to protected buffers through use of the North Carolina Ecosystem Enhancement Program (EEP). Mitigation for unavoidable impacts to Jordan Lake Riparian Buffers shall be provided in the Cape Fear River Basin and done in accordance with 15A NCAC 2B .0268. EEP has indicated in a letter dated October 28, 2014 that they will assume responsibility for satisfying the compensatory mitigation requirements for the above-referenced project, in accordance with EEP's Mitigation Banking Instrument signed July 28, 2010.

Condition(s) of Certification:

1. All stormwater runoff shall be directed as sheetflow through stream buffers at non-erosive velocities, unless otherwise approved by this certification [15A NCAC 02B.0267(8)].
2. All riparian buffers impacted by the placement of temporary fill or clearing activities shall be restored to the preconstruction contours and revegetated. Maintained buffers shall be permanently revegetated with non-woody species by the end of the growing season following completion of construction. For the purpose of this condition, maintained buffer areas are defined as areas within the transportation corridor that will be subject to regular NCDOT maintenance activities including mowing. The area with non-maintained buffers shall be permanently revegetated with native woody species before the next growing season following completion of construction. [15A NCAC 02B.0267]
3. Pursuant to 15A NCAC 2B .0267, sediment and erosion control devices shall not be placed in Zone 1 of any Jordan Lake Riparian Buffer without prior approval by the NCDWR. At this time, the NCDWR has approved no sediment and erosion control devices in Zone 1, outside of the approved project impacts, anywhere on this project. Moreover, sediment and erosion control devices shall be allowed in Zone 2 of the buffers provided that Zone 1 is not compromised and that discharge is released as diffuse flow. [15A NCAC 2B .0267(8)].
4. Any modifications to this 401 Water Quality Certification that propose additional stream impacts or increased impervious surface requiring additional stormwater management may be subject the Jordan Water Supply Nutrient Strategy (15A NCAC 02B .0267). The NCDOT shall coordinate with the NCDWR prior to submitting a modification request to determine the applicability of the Jordan Water Supply Nutrient Strategy (15A NCAC 02H.0502). This condition does not apply to major modifications for additional sections of the project that were covered under the Finding of No Significant Impact or approved in the Avoidance and Minimization stage of the project.

General Conditions

1. Unless otherwise approved in this certification, placement of culverts and other structures in open waters and streams shall be placed below the elevation of the streambed by one foot for all culverts with a diameter greater than 48 inches, and 20 percent of the culvert diameter for culverts having a diameter less than 48 inches, to allow low flow passage of water and aquatic life. Design and placement of culverts and other structures including temporary erosion control measures shall not be conducted in a manner that may result in dis-equilibrium of wetlands or streambeds or banks, adjacent to or upstream and downstream of the above structures. The applicant is required to provide evidence that the equilibrium is being maintained if requested in writing by the NCDWR. If this condition is unable to be met due to bedrock or other limiting features encountered during construction, please contact the NCDWR for guidance on how to proceed and to determine whether or not a permit modification will be required. [15A NCAC 02H.0506(b)(2)]
2. If concrete is used during construction, a dry work area shall be maintained to prevent direct contact between curing concrete and stream water. Water that inadvertently contacts uncured concrete shall not be discharged to surface waters due to the potential for elevated pH and possible aquatic life and fish kills. [15A NCAC 02B.0200]
3. During the construction of the project, no staging of equipment of any kind is permitted in waters of the U.S., or protected riparian buffers. [15A NCAC 02H.0506(b)(2)]

4. The dimension, pattern and profile of the stream above and below the crossing shall not be modified. Disturbed floodplains and streams shall be restored to natural geomorphic conditions. [15A NCAC 02H.0506(b)(2)]
5. The use of rip-rap above the Normal High Water Mark shall be minimized. Any rip-rap placed for stream stabilization shall be placed in stream channels in such a manner that it does not impede aquatic life passage. [15A NCAC 02H.0506(b)(2)]
6. The Permittee shall ensure that the final design drawings adhere to the permit and to the permit drawings submitted for approval. [15A NCAC 02H .0507 (c) and 15A NCAC 02H .0506 (b)(2) and (c)(2)]
7. All work in or adjacent to stream waters shall be conducted in a dry work area. Approved BMP measures from the most current version of the NCDOT Construction and Maintenance Activities manual such as sandbags, rock berms, cofferdams and other diversion structures shall be used to prevent excavation in flowing water. [15A NCAC 02H.0506(b)(3) and (c)(3)]
8. Heavy equipment shall be operated from the banks rather than in the stream channel in order to minimize sedimentation and reduce the introduction of other pollutants into the stream. [15A NCAC 02H.0506(b)(3)]
9. All mechanized equipment operated near surface waters must be regularly inspected and maintained to prevent contamination of stream waters from fuels, lubricants, hydraulic fluids, or other toxic materials. [15A NCAC 02H.0506(b)(3)]
10. No rock, sand or other materials shall be dredged from the stream channel except where authorized by this certification. [15A NCAC 02H.0506(b)(3)]
11. Discharging hydroseed mixtures and washing out hydroseeders and other equipment in or adjacent to surface waters is prohibited. [15A NCAC 02H.0506(b)(3)]
12. The permittee and its authorized agents shall conduct its activities in a manner consistent with State water quality standards (including any requirements resulting from compliance with §303(d) of the Clean Water Act) and any other appropriate requirements of State and Federal law. If the NCDWR determines that such standards or laws are not being met (including the failure to sustain a designated or achieved use) or that State or federal law is being violated, or that further conditions are necessary to assure compliance, the NCDWR may reevaluate and modify this certification. [15A NCAC 02B.0200]
13. All fill slopes located in jurisdictional wetlands shall be placed at slopes no flatter than 3:1, unless otherwise authorized by this certification. [15A NCAC 02H.0506(b)(2)]
14. A copy of this Water Quality Certification shall be maintained on the construction site at all times. In addition, the Water Quality Certification and all subsequent modifications, if any, shall be maintained with the Division Engineer and the on-site project manager. [15A NCAC 02H .0507(c) and 15A NCAC 02H .0506 (b)(2) and (c)(2)]
15. The outside buffer, wetland or water boundary located within the construction corridor approved by this authorization shall be clearly marked by highly visible fencing prior to any land disturbing activities. Impacts to areas within the fencing are prohibited unless otherwise authorized by this certification. [15A NCAC 02H.0501 and .0502].
16. The issuance of this certification does not exempt the Permittee from complying with any and all statutes, rules, regulations, or ordinances that may be imposed by other government agencies (i.e. local, state, and federal) having jurisdiction, including but not limited to applicable buffer rules, stormwater management rules, soil erosion and sedimentation control requirements, etc.
17. The Permittee shall report any violations of this certification to the Division of Water Resources within 24 hours of discovery. [15A NCAC 02B.0506(b)(2)]
18. Upon completion of the project (including any impacts at associated borrow or waste sites), the NCDOT Division Engineer (or appointee) shall complete and return the enclosed "Certification of Completion Form" to notify the NCDWR when all work included in the 401 Certification has been completed. [15A NCAC 02H.0502(f)]

19. Native riparian vegetation must be reestablished in the riparian areas within the construction limits of the project by the end of the growing season following completion of construction.[15A NCAC 02B.0267(10)]
20. There shall be no excavation from, or waste disposal into, jurisdictional wetlands or waters associated with this permit without appropriate modification. Should waste or borrow sites, or access roads to waste or borrow sites, be located in wetlands or streams, compensatory mitigation will be required since that is a direct impact from road construction activities.[15A NCAC 02H.0506(b)(3) and (c)(3)]
21. Erosion and sediment control practices must be in full compliance with all specifications governing the proper design, installation and operation and maintenance of such Best Management Practices in order to protect surface waters standards [15A NCAC 02H.0506(b)(3) and (c)(3):
 - a. The erosion and sediment control measures for the project must be designed, installed, operated, and maintained in accordance with the most recent version of the *North Carolina Sediment and Erosion Control Planning and Design Manual*.
 - b. The design, installation, operation, and maintenance of the sediment and erosion control measures must be such that they equal, or exceed, the requirements specified in the most recent version of the *North Carolina Sediment and Erosion Control Manual*. The devices shall be maintained on all construction sites, borrow sites, and waste pile (spoil) projects, including contractor-owned or leased borrow pits associated with the project.
 - c. For borrow pit sites, the erosion and sediment control measures must be designed, installed, operated, and maintained in accordance with the most recent version of the *North Carolina Surface Mining Manual*.
 - d. The reclamation measures and implementation must comply with the reclamation in accordance with the requirements of the Sedimentation Pollution Control Act.
22. Sediment and erosion control measures shall not be placed in wetlands or waters unless otherwise approved by this Certification. [15A NCAC 02H.0506(b)(3) and (c)(3)]

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 DENR as follows:

Mr. John Evans, General Counsel
Department of Environment and Natural Resources
1601 Mail Service Center

This letter completes the review of the Division of Water Resources under Section 401 of the Clean Water Act. If you have any questions, please contact Dave Wanucha at (336)776-9703 or dave.wanucha@ncdenr.gov.

Sincerely,



Thomas A Reeder, Director
Division of Water Resources

Electronic copy only distribution:

David Bailey, US Army Corps of Engineers, Raleigh Field Office
Jerry Parker, Division 7 Environmental Officer
Colin Mellor, NC Department of Transportation
Rachelle Beauregard, NC Department of Transportation
Dr. Cynthia Van Der Wiele, US Environmental Protection Agency
Gary Jordan, US Fish and Wildlife Service
Travis Wilson, NC Wildlife Resources Commission
Beth Harmon, Ecosystem Enhancement Program
Dave Wanucha, NC Division of Water Resources Winston Salem Regional Office
File Copy



North Carolina Department of Environment and Natural Resources

Pat McCrory
Governor

Donald van der Vaart
Secretary

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, 1650 Mail Service Center, Raleigh, NC, 27699-1650. 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 _____

Water Quality Certification No. 3886

GENERAL CERTIFICATION FOR PROJECTS ELIGIBLE FOR U.S. ARMY CORPS OF ENGINEERS NATIONWIDE PERMIT NUMBER 14 (LINEAR TRANSPORTATION PROJECTS) AND REGIONAL GENERAL PERMIT 198200031 (WORK ASSOCIATED WITH BRIDGE CONSTRUCTION, MAINTENANCE OR REPAIR CONDUCTED BY NCDOT OR OTHER GOVERNMENT AGENCIES) AND RIPARIAN AREA PROTECTION RULES (BUFFER RULES)

Water Quality Certification Number 3886 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 Quality (DWQ) Regulations in 15A NCAC 02H .0500 and 15A NCAC 02B .0200 for the discharge of fill material to waters and adjacent wetland areas or to wetland areas that are not a part of the surface tributary system to interstate waters or navigable waters of the United States (as described in 33 CFR 330 Appendix A (B) (14) of the Corps of Engineers regulations (Nationwide Permit No. 14 and Regional General Permit 198200031) and for the Riparian Area Protection Rules (Buffer Rules) in 15A NCAC 02B .0200.

The State of North Carolina certifies that the specified category of activity will not violate applicable portions of Sections 301, 302, 303, 306 and 307 of the Public Laws 92-500 and 95-217 if conducted in accordance with the conditions hereinafter set forth.

Any proposed fill or modification of wetlands and/or waters, including streams, under this General Certification requires application to, and written approval from the Division of Water Quality except for the single family lot exemption described below.

Activities meeting any one (1) of the following thresholds or circumstances require *written approval* for a 401 Water Quality Certification from the Division of Water Quality (the "Division"):

- a) Any temporary or permanent impacts to wetlands, open waters and/or streams, including stream relocations, except for construction of a driveway to a single family lot as long as the driveway involves *less than 25 feet* of temporary and/or permanent stream channel impacts, including any in-stream stabilization needed for the crossing; or
- b) Any impact associated with a high density project (as defined in Item (A)(iv) of the **401 Stormwater Requirements**) that is not subject to either a state stormwater program (such as, but not limited to, Coastal Counties, HQW, ORW or state-implemented Phase II NPDES) or a certified community's stormwater program; or
- c) Any impact associated with a Notice of Violation or an enforcement action for violation(s) of DWQ Wetland Rules (15A NCAC 02H .0500), Isolated Wetland Rules (15A NCAC 02H .1300), DWQ Surface Water or Wetland Standards, or Riparian Buffer Rules (15A NCAC 02B .0200); or
- d) Any impacts to streams and/or buffers in the Neuse, Tar-Pamlico, or Catawba River Basins or in the Randleman, Jordan or Goose Creek Watersheds (or any other basin or watershed with Riparian Area Protection Rules [Buffer Rules] in effect at the time of application) *unless* the activities are listed as "EXEMPT" from these rules or a Buffer Authorization Certificate is issued through N.C. Division of Coastal Management (DCM) delegation for "ALLOWABLE" activities.

In accordance with North Carolina General Statute 143-215.3D(e), written approval for a 401 Water Quality General Certification must include the appropriate fee. If a project also requires a CAMA Permit, then one payment to both agencies shall be submitted and will be the higher of the two fees.

Activities included in this General Certification that do not meet one of the thresholds listed above do not require written approval from the Division as long as they comply with

Water Quality Certification No. 3886

the Conditions of Certification listed below. If any of these Conditions cannot be met, then written approval from the Division is required.

Conditions of Certification:

1. No Impacts Beyond those Authorized in the Written Approval or Beyond the Threshold of Use of this Certification

No waste, spoil, solids, or fill of any kind shall occur in wetlands, waters, or riparian areas beyond the footprint of the impacts depicted in the Pre-Construction Notification, as authorized in the written approval from the Division or beyond the thresholds established for use of this Certification without written authorization, including incidental impacts. All construction activities, including the design, installation, operation, and maintenance of sediment and erosion control Best Management Practices shall be performed so that no violations of state water quality standards, statutes, or rules occur. Approved plans and specifications for this project are incorporated by reference and are enforceable parts of this permit.

2. Standard Erosion and Sediment Control Practices

Erosion and sediment control practices must be in full compliance with all specifications governing the proper design, installation and operation and maintenance of such Best Management Practices and if applicable, comply with the specific conditions and requirements of the NPDES Construction Stormwater Permit issued to the site:

- a. Design, installation, operation, and maintenance of the sediment and erosion control measures must be such that they equal or exceed the requirements specified in the most recent version of the *North Carolina Sediment and Erosion Control Manual*. The devices shall be maintained on all construction sites, borrow sites, and waste pile (spoil) projects, including contractor-owned or leased borrow pits associated with the project.
- b. For borrow pit sites, the erosion and sediment control measures must be designed, installed, operated, and maintained in accordance with the most recent version of the *North Carolina Surface Mining Manual*.
- c. Reclamation measures and implementation must comply with the reclamation in accordance with the requirements of the Sedimentation Pollution Control Act and the Mining Act of 1971.
- d. Sufficient materials required for stabilization and/or repair of erosion control measures and stormwater routing and treatment shall be on site at all times.
- e. If the project occurs in waters or watersheds classified as Primary Nursery Areas (PNAs), SA, WS-I, WS-II, High Quality (HQW), or Outstanding Resource (ORW) waters, then the sedimentation and erosion control designs must comply with the requirements set forth in 15A NCAC 04B .0124, *Design Standards in Sensitive Watersheds*.

Water Quality Certification No. 3886

3. No Sediment and Erosion Control Measures in Wetlands or Waters

Sediment and erosion control measures shall not be placed in wetlands or waters. Exceptions to this condition require application submittal to and written approval by the Division. If placement of sediment and erosion control devices in wetlands and waters is unavoidable, then design and placement of temporary erosion control measures shall not be conducted in a manner that may result in dis-equilibrium of wetlands, stream beds, or banks, adjacent to or upstream and downstream of the above structures. All sediment and erosion control devices shall be removed and the natural grade restored within two (2) months of the date that the Division of Land Resources (DLR) or locally delegated program has released the specific area within the project.

4. Construction Stormwater Permit NCG010000

An NPDES Construction Stormwater Permit is required for construction projects that disturb one (1) or more acres of land. This Permit allows stormwater to be discharged during land disturbing construction activities as stipulated in the conditions of the permit. If your project is covered by this permit, full compliance with permit conditions including the erosion & sedimentation control plan, inspections and maintenance, self-monitoring, record keeping and reporting requirements is required. A copy of the general permit (NCG010000), inspection log sheets, and other information may be found at <http://portal.ncdenr.org/web/wq/ws/su/npdessw#tab-w>.

The North Carolina Department of Transportation (NCDOT) shall be required to be in full compliance with the conditions related to construction activities within the most recent version of their individual NPDES (NCS000250) stormwater permit.

5. Construction Moratoriums and Coordination

If activities must occur during periods of high biological activity (i.e. sea turtle nesting, fish spawning, or bird nesting), then biological monitoring may be required at the request of other state or federal agencies and coordinated with these activities.

All moratoriums on construction activities established by the NC Wildlife Resources Commission (WRC), US Fish and Wildlife Service (USFWS), NC Division of Marine Fisheries (DMF), or National Marine Fisheries Service (NMFS) to lessen impacts on trout, anadromous fish, larval/post-larval fishes and crustaceans, or other aquatic species of concern shall be implemented. Exceptions to this condition require written approval by the resource agency responsible for the given moratorium.

Work within the twenty-five (25) designated trout counties or identified state or federal endangered or threatened species habitat shall be coordinated with the appropriate WRC, USFWS, NMFS, and/or DMF personnel.

6. Work in the Dry

All work in or adjacent to stream waters shall be conducted so that the flowing stream does not come in contact with the disturbed area. Approved best management practices from the most current version of the NC Sediment and Erosion Control Manual, or the NC DOT Construction and Maintenance Activities Manual, such as sandbags, rock berms, cofferdams, and other diversion structures shall be used to minimize excavation in flowing water. Exceptions to this condition require application submittal to and written approval by the Division.

Water Quality Certification No. 3886

7. Riparian Area Protection (Buffer) Rules

Activities located in the protected riparian areas (whether jurisdictional wetlands or not), within the Neuse, Tar-Pamlico, or Catawba River Basins or in the Randleman, Jordan, or Goose Creek Watersheds (or any other basin or watershed with buffer rules) shall be limited to "uses" identified within and constructed in accordance with 15A NCAC 02B .0233, .0259, .0243, .0250, .0267 and .0605, and shall be located, designed, constructed, and maintained to have minimal disturbance to protect water quality to the maximum extent practicable through the use of best management practices. All buffer rule requirements, including diffuse flow requirements, must be met.

8. If concrete is used during the construction, then all necessary measures shall be taken to prevent direct contact between uncured or curing concrete and waters of the state. Water that inadvertently contacts uncured concrete shall not be discharged to waters of the state due to the potential for elevated pH and possible aquatic life/ fish kills.
9. Bridge deck drains shall not discharge directly into the stream. Stormwater shall be directed across the bridge and pre-treated through site-appropriate means (grassed swales, pre-formed scour holes, vegetated buffers, etc.) before entering the stream. Please refer to the most current version of *Stormwater Best Management Practices*. Exceptions to this condition require written approval by the Division.

10. Compensatory Mitigation

In accordance with 15A NCAC 02H .0506 (h), compensatory mitigation may be required for losses of equal to or greater than 150 linear feet of streams (intermittent and perennial) and/or equal to or greater than one (1) acre of wetlands. For linear public transportation projects, impacts equal to or exceeding 150 linear feet per stream shall require mitigation.

Buffer mitigation may be required for any project with Buffer Rules in effect at the time of application for activities classified as "Allowable with Mitigation" or "Prohibited" within the Table of Uses.

A determination of buffer, wetland, and stream mitigation requirements shall be made for any General Water Quality Certification for this Nationwide and/or Regional General Permit. Design and monitoring protocols shall follow the US Army Corps of Engineers Wilmington District *Stream Mitigation Guidelines* (April 2003) or its subsequent updates. Compensatory mitigation plans shall be submitted to the Division for written approval as required in those protocols. The mitigation plan must be implemented and/or constructed before any impacts occur on site. Alternatively, the Division will accept payment into an in-lieu fee program or a mitigation bank. In these cases, proof of payment shall be provided to the Division before any impacts occur on site.

Water Quality Certification No. 3886

11. Relocated stream designs should include the same dimensions, patterns, and profiles as the existing channel (or a stable reference reach if the existing channel is unstable), to the maximum extent practical. The new channel should be constructed in the dry and water shall not be turned into the new channel until the banks are stabilized. Vegetation used for bank stabilization shall be limited to native woody species, and should include establishment of a 30-foot wide wooded and an adjacent 20-foot wide vegetated buffer on both sides of the relocated channel to the maximum extent practical. A transitional phase incorporating appropriate erosion control matting materials and seedling establishment is allowable, however matting that incorporates plastic mesh and/or plastic twine shall not be used in wetlands, riparian buffers or floodplains as recommended by the North Carolina Sediment and Erosion Control Manual. Rip-rap, A-Jacks, concrete, gabions or other hard structures may be allowed if it is necessary to maintain the physical integrity of the stream; however, the applicant must provide written justification and any calculations used to determine the extent of rip-rap coverage. Please note that if the stream relocation is conducted as a stream restoration as defined in the US Army Corps of Engineers Wilmington District, April 2003 *Stream Mitigation Guidelines* (or its subsequent updates), the restored length may be used as compensatory mitigation for the impacts resulting from the relocation.

12. Stormwater Management Plan Requirements

All applications shall address stormwater management throughout the entire project area per the 401 Stormwater Requirements, referenced herein as "**Attachment A**" at the end of this Certification.

13. Placement of Culverts and Other Structures in Waters and Wetlands

Culverts required for this project shall be designed and installed in such a manner that the original stream profiles are not altered and allow for aquatic life movement during low flows. Existing stream dimensions (including the cross section dimensions, pattern, and longitudinal profile) must be maintained above and below locations of each culvert.

Placement of culverts and other structures in waters and streams must be below the elevation of the streambed by one foot for all culverts with a diameter greater than 48 inches, and 20 percent of the culvert diameter for culverts having a diameter less than or equal to 48 inches, to allow low flow passage of water and aquatic life.

When topographic constraints indicate culvert slopes of greater than 5%, culvert burial is not required, provided that all alternative options for flattening the slope have been investigated and aquatic life movement/ connectivity has been provided when possible (rock ladders, crossvanes, etc). Notification to the Division including supporting documentation to include a location map of the culvert, culvert profile drawings, and slope calculations shall be provided to the Division 60 days prior to the installation of the culvert.

When bedrock is present in culvert locations, culvert burial is not required provided that there is sufficient documentation of the presence of bedrock. Notification to the Division including supporting documentation such as, but not limited to, a location map of the culvert, geotechnical reports, photographs, etc shall be provided to the Division a minimum of 60 days prior to the installation of the culvert. If bedrock is discovered during construction, then the Division shall be notified by phone or email within 24 hours of discovery.

If other site-specific topographic constraints preclude the ability to bury the culverts as described above and/or it can be demonstrated that burying the culvert would result in destabilization of the channel, then exceptions to this condition require application submittal to, and written approval by, the Division of Water Quality, regardless of the total impacts to streams or wetlands from the project.

Water Quality Certification No. 3886

Installation of culverts in wetlands must ensure continuity of water movement and be designed to adequately accommodate high water or flood conditions. Additionally, when roadways, causeways, or other fill projects are constructed across FEMA-designated floodways or wetlands, openings such as culverts or bridges must be provided to maintain the natural hydrology of the system as well as prevent constriction of the floodway that may result in destabilization of streams or wetlands.

The establishment of native, woody vegetation and other soft stream bank stabilization techniques must be used where practicable instead of riprap or other bank hardening methods.

14. All temporary fill and culverts shall be removed and the impacted area returned to natural conditions within 60 days of the determination that the temporary impact is no longer necessary. The impacted areas shall be restored to original grade, including each stream's original cross sectional dimensions, plan form pattern, and longitudinal bed and bed profile, and the various sites shall be stabilized with natural woody vegetation (except for the approved maintenance areas) and restored to prevent erosion.
15. All temporary pipes/ culverts/ riprap pads etc, shall be installed in all streams as outlined in the most recent edition of the *North Carolina Sediment and Erosion Control Planning and Design Manual* or the *North Carolina Surface Mining Manual* so as not to restrict stream flow or cause dis-equilibrium during use of this General Certification.
16. Any riprap required for proper culvert placement, stream stabilization, or restoration of temporarily disturbed areas shall be restricted to the area directly impacted by the approved construction activity. All rip-rap shall be buried and/or "keyed in" such that the original stream elevation and streambank contours are restored and maintained. Placement of rip-rap or other approved materials shall not result in de-stabilization of the stream bed or banks upstream or downstream of the area.
17. Any rip-rap used for stream stabilization shall be of a size and density so as not to be able to be carried off by wave, current action, or stream flows and consist of clean rock or masonry material free of debris or toxic pollutants. Rip-rap shall not be installed in the streambed except in specific areas required for velocity control and to ensure structural integrity of bank stabilization measures.
18. A one-time application of fertilizer to re-establish vegetation is allowed in disturbed areas including riparian buffers, but is restricted to no closer than 10 feet from top of bank of streams. Any fertilizer application must comply with all other Federal, State and Local regulations.
19. If this Water Quality Certification is used to access building sites, then all lots owned by the applicant must be buildable without additional impacts to streams or wetlands. The applicant is required to provide evidence that the lots are buildable without requiring additional impacts to wetlands, waters, or buffers if required to do so in writing by the Division. For road construction purposes, this Certification shall only be utilized from natural high ground to natural high ground.
20. Deed notifications or similar mechanisms shall be placed on all retained jurisdictional wetlands, waters, and protective buffers within the project boundaries in order to assure compliance for future wetland, water, and buffer impact. These mechanisms shall be put in place at the time of recording of the property or of individual lots, whichever is appropriate. A sample deed notification can be downloaded from the 401/Wetlands Unit web site at <http://portal.ncdenr.org/web/wg/swp/ws/401/certsandpermits/apply/forms>. The text of the sample deed notification may be modified as appropriate to suit to a specific project. Documentation of deed notifications shall be provided to the Division upon request.

Water Quality Certification No. 3886

21. If an environmental document is required under the National or State Environmental Policy Act (NEPA or SEPA), then this General Certification is not valid until a Finding of No Significant Impact (FONSI) or Record of Decision (ROD) is issued by the State Clearinghouse.
22. In the twenty (20) coastal counties, the appropriate DWQ Regional Office must be contacted to determine if Coastal Stormwater Regulations will be required.
23. This General Certification does not relieve the applicant of the responsibility to obtain all other required Federal, State, or Local approvals.
24. The applicant/permittee and their authorized agents shall conduct all activities in a manner consistent with State water quality standards (including any requirements resulting from compliance with §303(d) of the Clean Water Act), and any other appropriate requirements of State and Federal Law. If the Division determines that such standards or laws are not being met, including failure to sustain a designated or achieved use, or that State or Federal law is being violated, or that further conditions are necessary to assure compliance, then the Division may reevaluate and modify this General Water Quality Certification.
25. When written authorization is required for use of this certification, upon completion of all permitted impacts included within the approval and any subsequent modifications, the applicant shall be required to return the certificate of completion attached to the approval. One copy of the certificate shall be sent to the DWQ Central Office in Raleigh at 1650 Mail Service Center, Raleigh, NC, 27699-1650.
26. Additional site-specific conditions, including monitoring and/or modeling requirements, may be added to the written approval letter for projects proposed under this Water Quality Certification in order to ensure compliance with all applicable water quality and effluent standards.
27. This certification grants permission to the director, an authorized representative of the Director, or DENR staff, upon the presentation of proper credentials, to enter the property during normal business hours.

This General Certification shall expire on the same day as the expiration date of the corresponding Nationwide and/or Regional General Permit. The conditions in effect on the date of issuance of Certification for a specific project shall remain in effect for the life of the project, regardless of the expiration date of this Certification.

Non-compliance with or violation of the conditions herein set forth by a specific project may result in revocation of this General Certification for the project and may also result in criminal and/or civil penalties.

The Director of the North Carolina Division of Water Quality may require submission of a formal application for Individual Certification for any project in this category of activity if it is determined that the project is likely to have a significant adverse effect upon water quality, including state or federally listed endangered or threatened aquatic species, or degrade the waters so that existing uses of the wetland or downstream waters are precluded.

Water Quality Certification No. 3886

Public hearings may be held for specific applications or group of applications prior to a Certification decision if deemed in the public's best interest by the Director of the North Carolina Division of Water Quality.

Effective date: March 19, 2012

DIVISION OF WATER QUALITY

By



Charles Wakild, P.E.

Director

History Note: Water Quality Certification (WQC) Number 3886 issued March 12, 2012 replaces WQC Number 3820 issued April 6, 2010; WQC Number 3627 issued March 2007; WQC Number 3404 issued March 2003; WQC Number 3375 issued March 18, 2002; WQC Number 3289 issued June 1, 2000; WQC Number 3103 issued February 11, 1997; WQC Number 2732 issued May 1, 1992; WQC Number 2666 issued January 21, 1992; WQC Number 2177 issued November 5, 1987. This WQC is rescinded when the Corps of Engineers reauthorizes any of the corresponding Nationwide and/or Regional General Permits or when deemed appropriate by the Director of the Division of Water Quality.

Water Quality Certification No. 3886

Attachment A: 401 Stormwater Requirements

The requirements listed below shall be implemented in order to comply with Condition 12 of this General Certification. For the North Carolina Department of Transportation, compliance with NCDOT's Individual NPDES permit NCS000250 shall serve to satisfy the 401 and Isolated Wetland Stormwater Requirements.¹

- A. **Design and Implementation Requirements.** All projects, regardless of project area, amount of built-upon area or amount of jurisdictional impact, shall meet the following stormwater design requirements:
- i. **Non-Erosive Discharge to Streams and Wetlands.** Stormwater conveyances that discharge to streams and wetlands must discharge at a non-erosive velocity prior to entering the stream or wetland during the peak flow from the ten-year storm.²
 - ii. **Vegetated Setbacks.** A 30-foot wide vegetated setback must be maintained adjacent to streams, rivers and tidal waters in areas that are not subject to a state Riparian Area Protection Rule or other more stringent vegetated setback requirements. The width of the setback shall be measured horizontally from the normal pool elevation of impounded structures, the top-of-bank of streams and rivers, and the mean high waterline of tidal waters, perpendicular to shoreline. Vegetated setback and filters required by state rules or local governments may be met concurrently with this requirement and may contain coastal, isolated or 404 jurisdictional wetlands. Non-jurisdictional portions of the vegetated setback may be cleared and graded, but must be planted with and maintained in grass or other vegetative or plant material.³
 - iii. **Construction and Operation.** The stormwater management plan must be constructed and operational before any permanent building or other structure is occupied or utilized at the site. The stormwater management plan, including drainage patterns, must be maintained in perpetuity.⁴
 - iv. **Coordination with Other Stormwater Programs.** Projects that are subject to another Division of Water Quality (DWQ) stormwater program, including (but not limited to) the 20 Coastal Counties, HQW, ORW or state-implemented Phase II NPDES, or a Certified Community's stormwater management program, must be constructed and maintained in compliance with the approved stormwater management plan.⁵
 - v. **Stormwater Design Requirements for Projects Not Covered Under Item (iv).** Projects that are not subject to another DWQ stormwater program or a Certified Community's stormwater program shall meet all of the following requirements:
 - a. **Low Density.** A site is low density if all the following requirements are met:
 1. The development has a built upon area of twenty-four percent (24%) or less, considering both current and future development. When determining the amount of built upon area, coastal wetlands shall be included; however, ponds, lakes and rivers as specified in North Carolina's Schedule of Classifications shall be excluded. If a portion of project has a density greater than 24%, the higher density area must be located in an upland area and away from surface waters and drainageways to the maximum extent practicable.⁶
 2. All stormwater runoff from the built upon areas is transported primarily via vegetated conveyances designed in accordance with the most recent version of the *NC DWQ Stormwater Best Management Practices Manual*. Alternative designs may be approved if the applicant can show that the design provides

Water Quality Certification No. 3886

equal or better water quality protection than the practices specified in the manual. The project must not include a stormwater collection system (such as piped conveyances) as defined in 15A NCAC 02B .0202(60).⁷

- b. **High Density.** Projects that do not meet the Low Density requirements shall meet the following requirements:
1. Stormwater runoff from the entire site must be treated by structural stormwater controls (BMPs) that are designed to remove eighty-five percent (85%) of the average annual amount of Total Suspended Solids (TSS). Stormwater runoff that drains directly to Nutrient Sensitive Waters (NSW) must also be treated to remove thirty percent (30%) of Total Nitrogen (TN) and Total Phosphorus (TP).⁸
 2. All BMPs must be designed in accordance with the version of the *NC DWQ Stormwater Best Management Practices Manual* that is in place on the date of stormwater management plan submittal. Alternative designs may be approved if the applicant can show that the design provides equal or better water quality protection than the practices specified in the manual.⁹
 3. DWQ may add specific stormwater management requirements on a case-by-case basis in order to ensure that a proposed activity will not violate water quality standards.¹⁰
 4. DWQ may approve Low Impact Developments (LIDs) that meet the guidance set forth in the *Low Impact Development: A Guidebook for North Carolina*.¹¹
 5. Proposed new development undertaken by a local government solely as a public road project shall follow the requirements of the NC DOT BMP Toolbox rather than Items (1)-(4) above.¹²

B. **Submittal Requirements.** The submittal requirements listed below apply only to projects that require written authorization as indicated in the applicable General Certification as well as projects that require an Isolated Wetlands Permit. **Any required documentation shall be sent to the Wetlands, Buffers and Stormwater Compliance and Permitting Unit at 1650 Mail Service Center, Raleigh, NC 27699-1650.**

- i. **Projects that are Subject to Another DWQ Stormwater Program:** If the project is subject to another DWQ stormwater program, such as the 20 Coastal Counties, HQW, ORW or state-implemented Phase II NPDES, then the applicant shall submit a copy of the stormwater approval letter before any impacts occur on site.¹³
- ii. **Projects that are Subject to a Certified Community's Stormwater Program.** If the project is subject to a certified local government's stormwater program, then the applicant shall submit one set of approved stormwater management plan details and calculations with documentation of the local government's approval before any impacts occur on site.⁵
- iii. **Projects Not Covered Under Items (i) or (ii).** If the project is not subject to another DWQ Stormwater Program or a Certified Community's stormwater program, then it shall be reviewed and approved by the DWQ through the Water Quality Certification authorization process.
 - a. **Low Density.** For low density projects, the applicant shall submit two copies of the DWQ Low Density Supplement Form with all required items.¹³

Water Quality Certification No. 3886

- b. **High Density.** For high density projects, the applicant shall submit two copies of a DWQ BMP Supplement Form and all required items at the specified scales for each BMP that is proposed.¹³
- iv. **Phasing.** Stormwater management plans may be phased on a case-by-case basis, with the submittal of a final stormwater management plan per Items (i)-(iii) above required for the current phase and a conceptual stormwater management plan for the future phase(s). The stormwater management plan for each future phase must be approved by the appropriate entity before construction of that phase is commenced. The approved stormwater management plan for each future phase must be constructed and operational before any permanent building or other structure associated with that phase is occupied.¹⁴
- v. **Stormwater Management Plan Modifications.** The stormwater management plan may not be modified without prior written authorization from the entity that approved the plan. If the project is within a Certified Community, then the applicant shall submit one set of approved stormwater management plan details and calculations with documentation of the local government's approval for record-keeping purposes. If the project is subject to DWQ review, then the applicant shall submit two copies of the appropriate Supplement Forms per Item (iii) above for any BMPs that have been modified for DWQ's review and approval.¹⁵

¹ The stormwater requirement for 401 applications is codified in 15A NCAC 02H .0506(b)(5) and (c)(5).

² Non erosive discharge rates are required in SL 2008-211§2(b)(1). The 10-year design storm standard is codified in 15A NCAC 02H .1008(f)(2) and .1008(g)(1).

³ 30-foot vegetated setbacks are required in SL 2006-246§9(d), SL 2008-211§2(b), 15A NCAC 02H .1006(2)(c) and .1007(1)(a).

⁴ Construction and maintenance of the stormwater plan is necessary to satisfy 15A NCAC 02H .0506(b)(5).

⁵ Conveys application procedure to streamline the permitting process and reduce any unnecessary duplication in the review of stormwater management plans.

⁶ Low density built upon area thresholds are set in SL 2006-246§9(c) and SL 2008-211§2(b).

⁷ The requirement for low density development to use vegetated conveyances is codified in SL 2006-246§9(c), SL 2008-211§2(b), 15A NCAC 02H .1006(2)(b) and .1007(1)(a). The Stormwater BMP Manual is also referenced in 15A NCAC 02B .0265(3)(a) and .0277(4)(e).

⁸ 85% TSS removal is required in SL 2006-246§9(d), SL 2008-211§2(b), 15A NCAC 02H .1006(2)(c), 15A NCAC 02H .1007(1)(a). The 30% TN and TP removal requirements for NSW waters are set forth in 15A NCAC 02B .0232, 15A NCAC 02B .0257(a)(1), 15A NCAC 02B .0265(3)(a) and 15A NCAC 02B .0277(4).

⁹ The Stormwater BMP Manual is also referenced in 15A NCAC 02B .0265(3)(a) and .0277(4)(e).

¹⁰ The requirement for DWQ to ensure that water quality standards are protected before issuing a 401 certification is codified in 15A NCAC 02H .0506.

¹¹ The LID Toolbox is also referenced in 15A NCAC 02B .0277(4)(g).

¹² The term "public road project" is defined in 15A NCAC 02B .0265(3)(a).

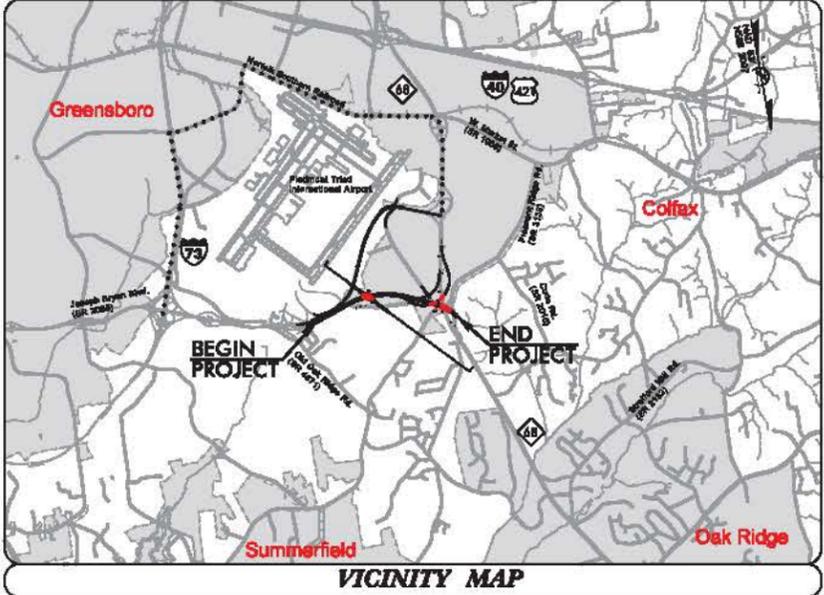
¹³ Conveys application procedure to streamline the permitting process.

¹⁴ Phased development is addressed as a "common plan of development" in 15A NCAC 02H .1003(3).

¹⁵ Procedures for modifying stormwater plans are set forth in 15A NCAC 02H .1011.

09/26/99

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



OFFSITE DETOUR ROUTE -----

A PORTION OF THIS PROJECT IS WITHIN THE MUNICIPAL BOUNDARIES OF GREENSBORO. CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED IN METHOD III. IN AREAS WITH PERMANENT UTILITY EASEMENTS, CLEARING SHALL EXTEND TO THE RIGHT OF WAY LIMITS. THIS IS A CONTROLLED-ACCESS PROJECT WITH ACCESS BEING LIMITED TO INTERCHANGES.

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

GUILFORD COUNTY

LOCATION: FUTURE I-73 FROM EAST OF SR 2127 (BROOKBANK ROAD) TO HAW RIVER
TYPE OF WORK: WETLAND AND STREAM IMPACTS

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	I-5110	1	
WM NO.	P.A. PROJ. NO.	DESCRIPTION	
42345.3.F51	NHF-0073(25)	PE	

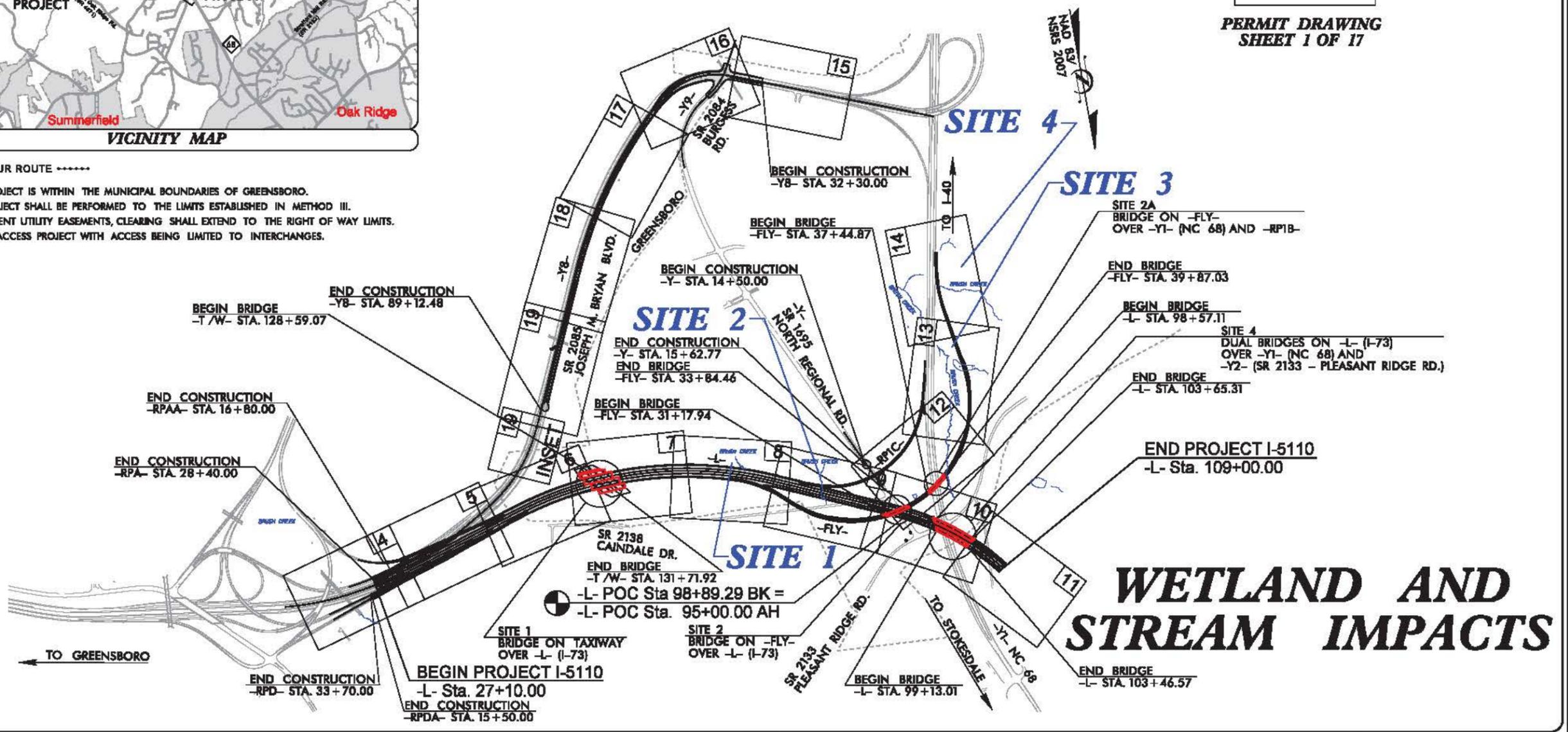


INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

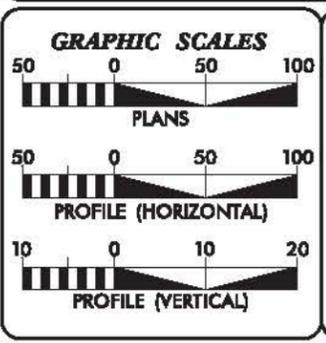
PERMIT DRAWING
SHEET 1 OF 17

TIP PROJECT: I-5110

CONTRACT: C203433



WETLAND AND STREAM IMPACTS



DESIGN DATA

ADT 2014 =	24,500
ADT 2035 =	42,200
DHV =	11%
D =	65%
T =	15%
V =	70 mph

(TTST 10% + DUALS 5%)
FUNC. CLASS = INTERSTATE

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT I-5110.....	1.528 mi
LENGTH STRUCTURES TIP PROJECT I-5110.....	0.097 mi
TOTAL LENGTH TIP PROJECT I-5110.....	1.625 mi

NC DOT CONTACT

K. Zak Hamidi, P.E.
PROJECT ENGINEER - DESIGN BUILD GROUP

PLANS PREPARED BY:

RK&K (RUMMEL, ELLIOTT & KAY, LLP)
100 BIRCHWOOD DRIVE, SUITE 400
BALDWIN, NORTH CAROLINA 27809
NC LICENSE NO. P-0112

FOR NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

2012 STANDARD SPECIFICATIONS

J.T. Peacock, Jr., P.E.
PROJECT ENGINEER

Brandon J. McInnis, P.E.
PROJECT DESIGN ENGINEER

LETTING DATE:
APRIL 2014

HYDRAULICS ENGINEER

SIGNATURE: _____ P.E.

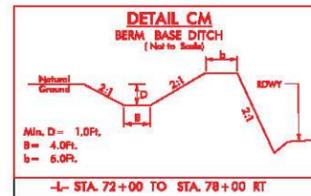
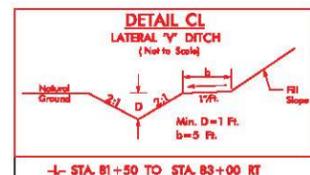
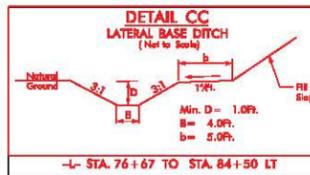
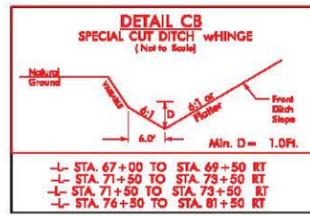
ROADWAY DESIGN ENGINEER

SIGNATURE: _____ P.E.

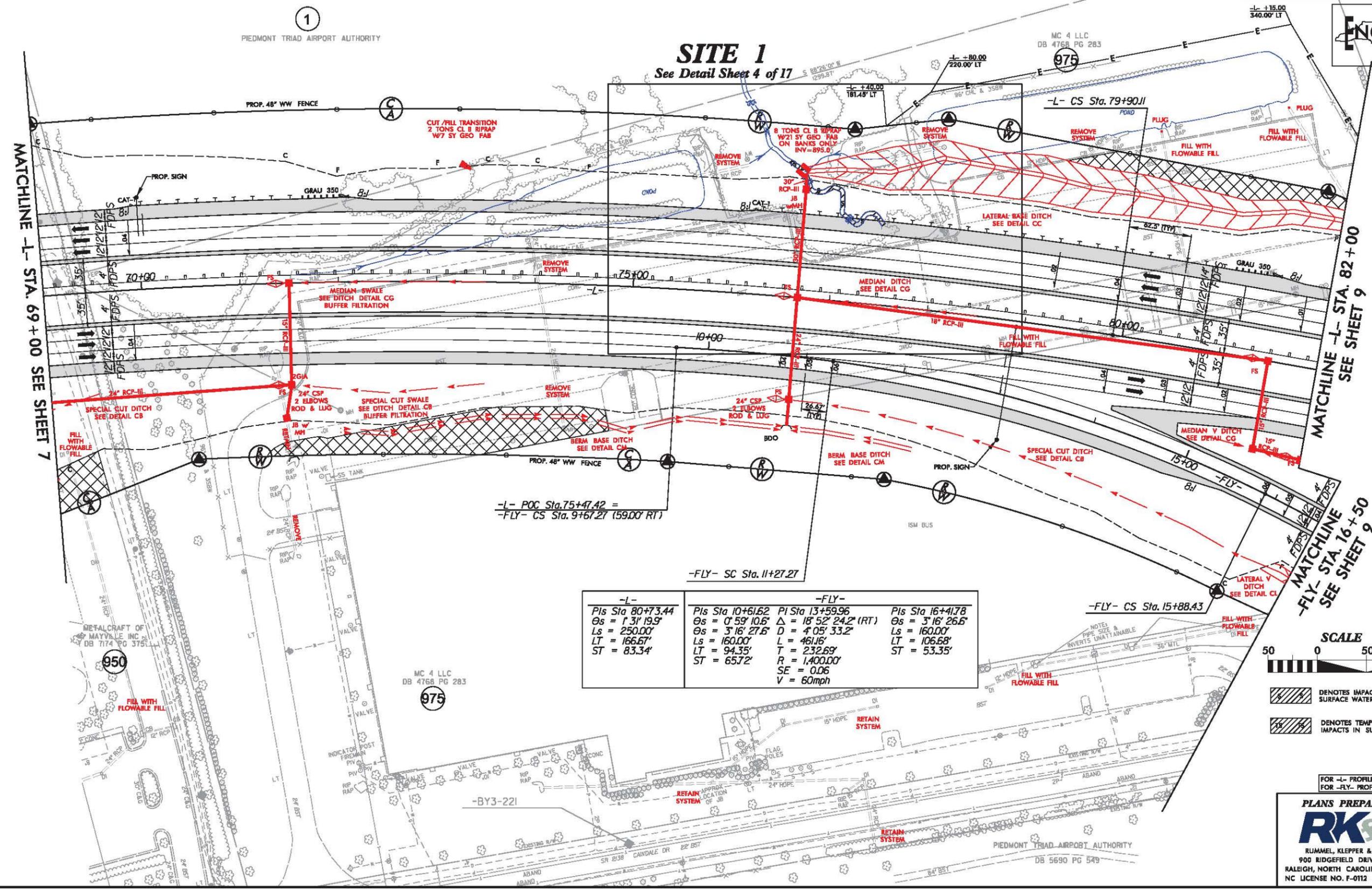


10/23/2014 R:\Hydraulics\PERMITS_Environmental\Drawings\I-5110\Wetlands\1510_Hyd_prm_wet_tsh.dgn Freys

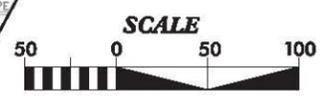
8/17/99
 I:\23\2014\PERMITS\Environmental\Drawings\1-5110\Westlands\15110_Hyd_perm_vet_psh08_w.dgn



PROJECT REFERENCE NO. 1-5110	SHEET NO. 8
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	
PERMIT DRAWING SHEET 2 OF 17	



-L-	-FLY-	-FLY-	-FLY-
PIs Sta 80+73.44	PI Sta 10+61.62	PI Sta 13+59.96	PIs Sta 16+41.78
Os = 1° 31' 19.9"	Os = 0° 59' 10.6"	Δ = 18° 52' 24.2" (RT)	Os = 3° 16' 26.6"
Ls = 250.00'	Os = 3° 16' 27.6"	D = 4° 05' 33.2"	Ls = 160.00'
LT = 166.67'	Ls = 160.00'	L = 461.16'	LT = 106.68'
ST = 83.34'	LT = 94.35'	T = 232.69'	ST = 53.35'
	ST = 65.72'	R = 1,400.00'	
		SE = 0.06	
		V = 60mph	



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

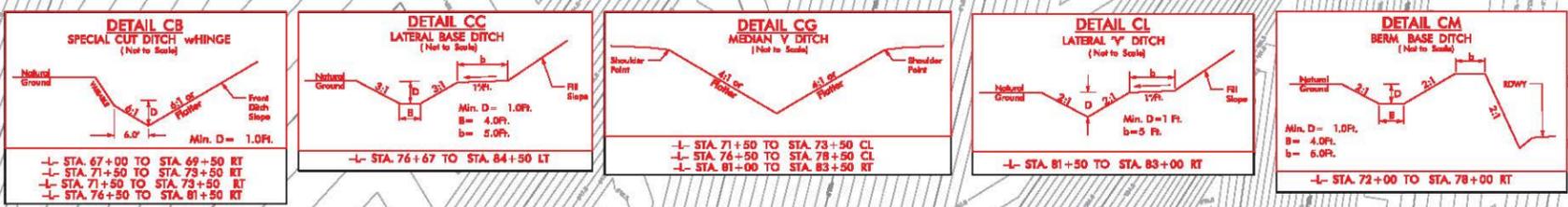
FOR -L- PROFILE SEE SHTS. 21 & 22
FOR -FLY- PROFILE SEE SHT. 23

PLANS PREPARED BY :

RK&K

RUMMEL, KLEPPER & KAHL, LLP
 900 RIDGEFIELD DRIVE SUITE 350
 RALEIGH, NORTH CAROLINA 27609-3960
 NC LICENSE NO. F-0112 • (919) 878-9560

ENGLISH

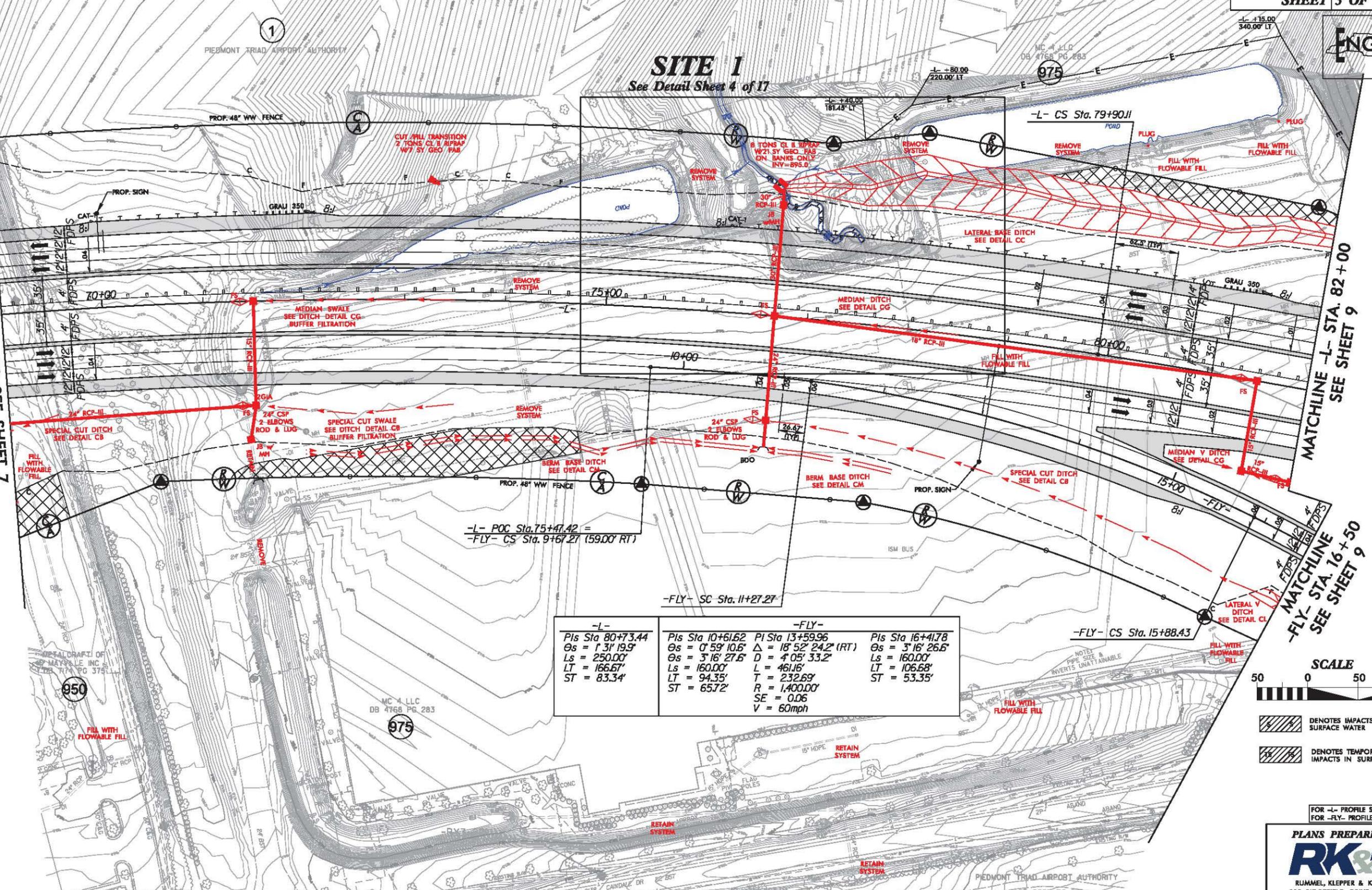


MATCHLINE -L- STA. 69+00 SEE SHEET 7

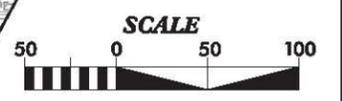
MATCHLINE -L- STA. 82+00
SEE SHEET 9

MATCHLINE -FLY- STA. 16+50
SEE SHEET 9

SITE 1
See Detail Sheet 4 of 17



-L-	-FLY-	-FLY-	-FLY-
PIs Sta 80+73.44	PIs Sta 10+61.62	PIs Sta 13+59.96	PIs Sta 16+41.78
Os = 1' 31" 19.9"	Os = 0' 59" 10.6"	Δ = 18' 52" 24.2" (RT)	Os = 3' 16" 26.6"
Ls = 250.00'	Ls = 3' 16" 27.6"	D = 4' 05" 33.2"	Ls = 160.00'
LT = 166.67'	L = 160.00'	L = 461.16'	LT = 106.68'
ST = 83.34'	LT = 94.35'	T = 232.69'	ST = 53.35'
	SE = 0.06	R = 1,400.00'	
	V = 60mph		



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

FOR -L- PROFILE SEE SHTS. 21 & 22
FOR -FLY- PROFILE SEE SHT. 23

PLANS PREPARED BY :

RK&K

RUMMEL, KLEPPER & KAHL, LLP
900 RIDGEFIELD DRIVE SUITE 350
RALEIGH, NORTH CAROLINA 27609-3960
NC LICENSE NO. F-0112 • (919) 878-9560

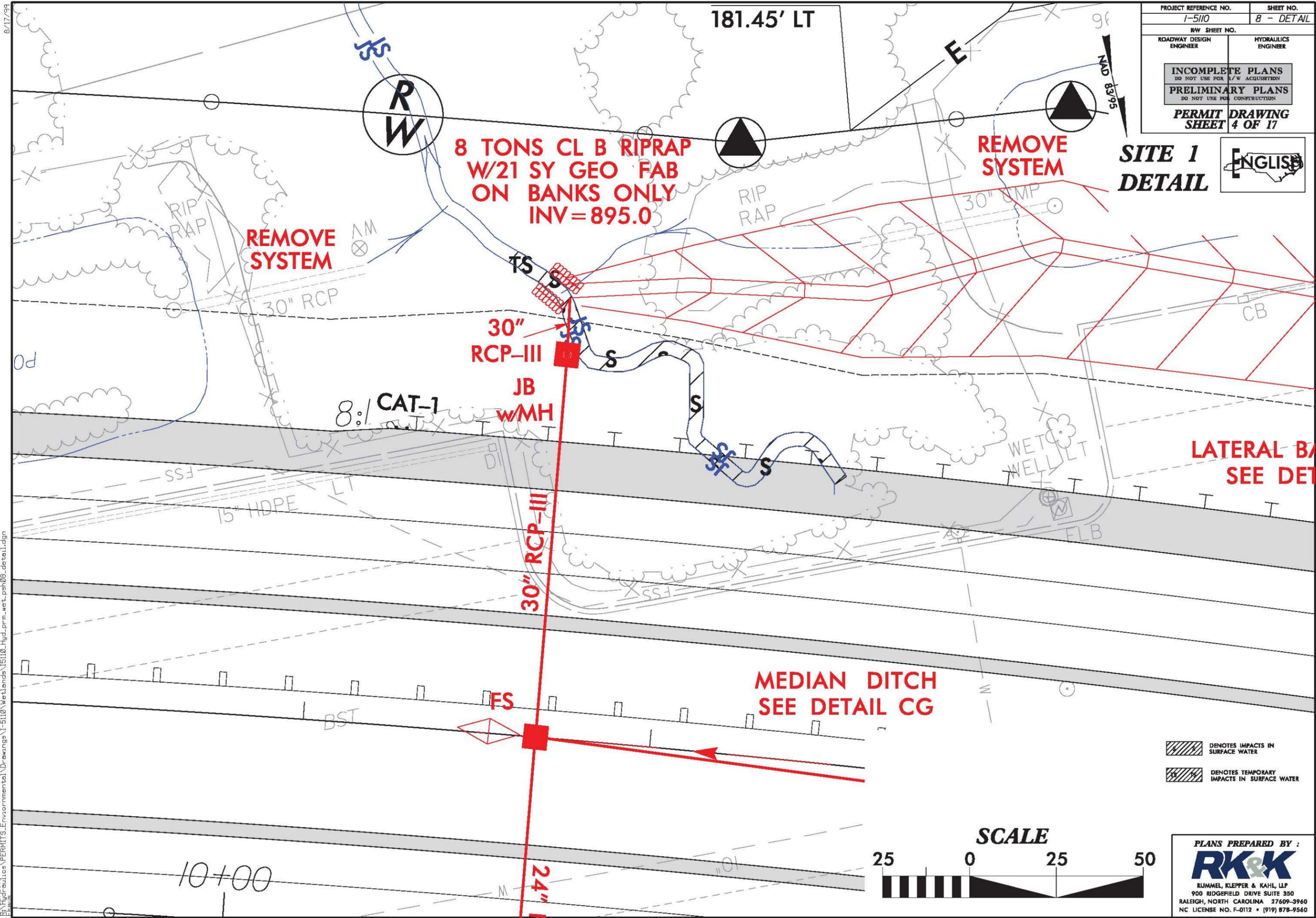
B:\17\99\10\23\2014\PERMITS\Environmental\Drawings\1-5110\Westlands\15110_Hyd_perm_vet_psh08.dgn

6/17/99

PROJECT REFERENCE NO. 1-5110	SHEET NO. 8 - DETAIL
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION	
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	
PERMIT SHEET	DRAWING SHEET 4 OF 17

**SITE 1
DETAIL**

ENGLISH



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



PLANS PREPARED BY :

RK&K

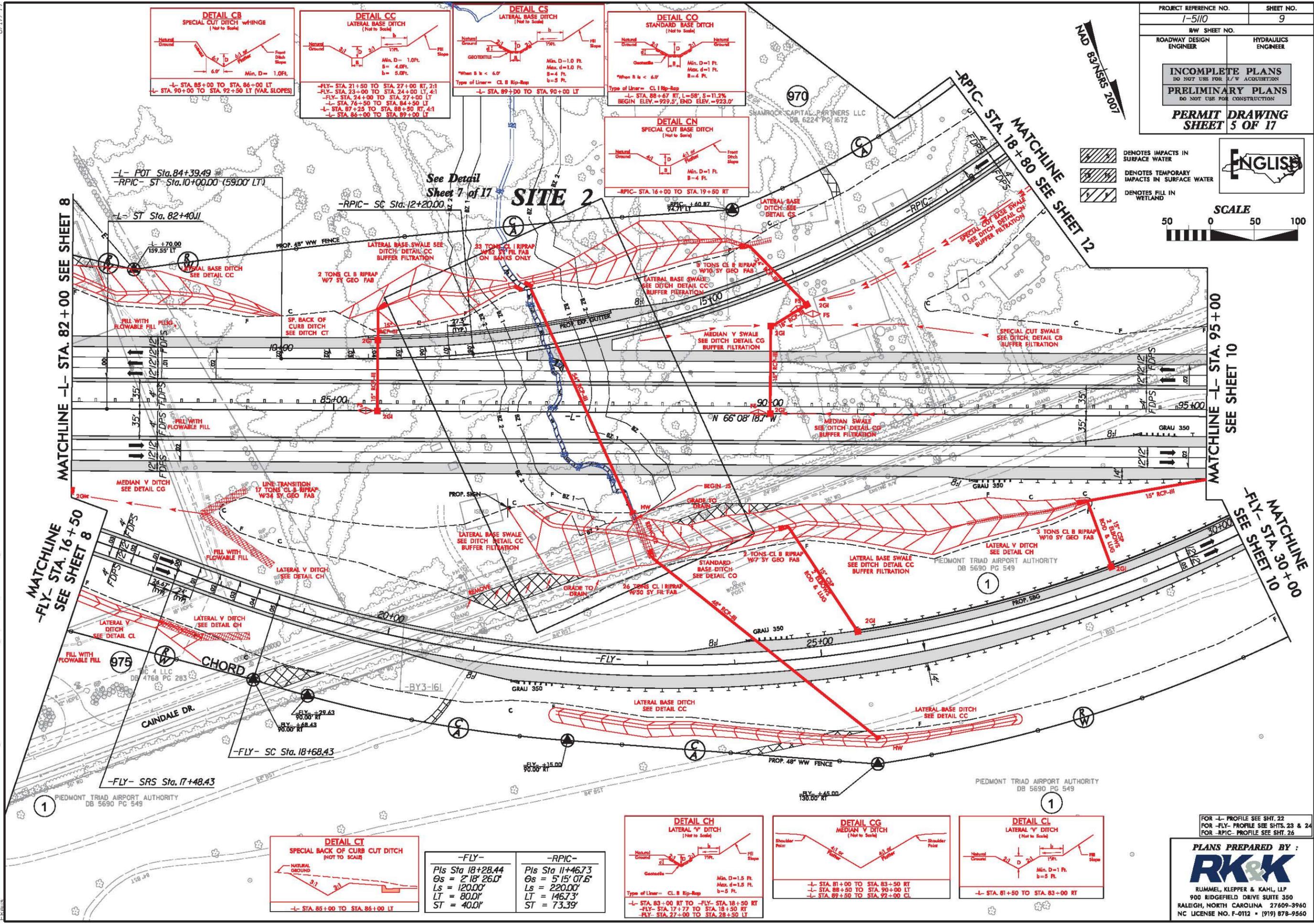
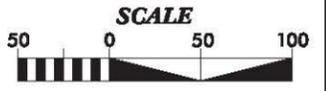
RUMMEL, KLEPPER & KAHL, LLP
 900 RIDGEFIELD DRIVE SUITE 350
 RALEIGH, NORTH CAROLINA 27609-3960
 NC LICENSE NO. F-0112 • (919) 878-9560

I:\23\2014\PERMITS_Environmental\Drawings\1-5110\Wetlands\15110_Hyd.prm_wet_psh08-detail.dgn
 10/23/2014 10:00 AM

NAD 83/NGS 2007



- DENOTES IMPACTS IN SURFACE WATER
- DENOTES TEMPORARY IMPACTS IN SURFACE WATER
- DENOTES FILL IN WETLAND

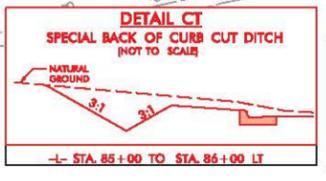
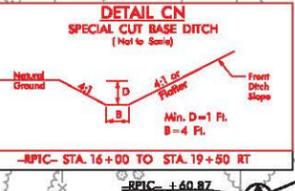
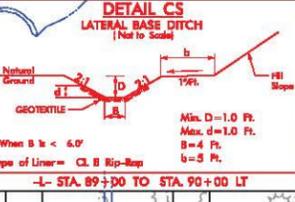
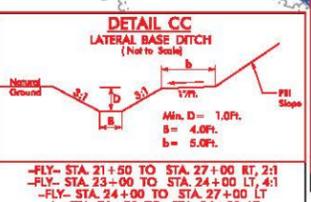


MATCHLINE -L- STA. 82+00 SEE SHEET 8

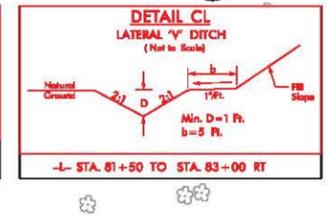
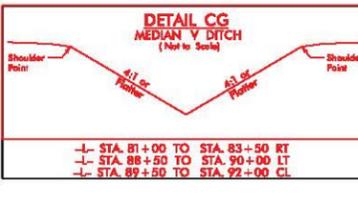
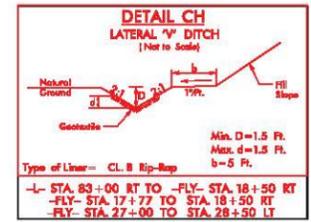
MATCHLINE -L- STA. 95+00 SEE SHEET 10

MATCHLINE -FLY- STA. 16+50 SEE SHEET 8

MATCHLINE -FLY- STA. 30+00 SEE SHEET 10



-FLY-	-RPIC-
Pls Sta 18+28.44	Pls Sta 11+46.73
Os = 2' 18" 26.0"	Os = 5' 15" 07.6"
Ls = 120.00'	Ls = 220.00'
LT = 80.0'	LT = 146.73'
ST = 40.0'	ST = 73.39'



FOR -L- PROFILE SEE SHT. 22
FOR -FLY- PROFILE SEE SHTS. 23 & 24
FOR -RPIC- PROFILE SEE SHT. 26

PLANS PREPARED BY :

 RUMMEL, KLEPPER & KAHL, LLP
 900 RIDGEFIELD DRIVE SUITE 350
 RALEIGH, NORTH CAROLINA 27609-3960
 NC LICENSE NO. F-0112 • (919) 878-9560

B:17/99
10/23/2014
C:\Users\jcales\Documents\Drawings\1-5110\Westlands\15110_Hyd.prm.vet_psh09_wodgn

B:17/99
 I:\23\2014\PERMITS\Environmental\Drawings\1-5110\Westlands\15110_Hyd.prm.vet_psh09.dgn

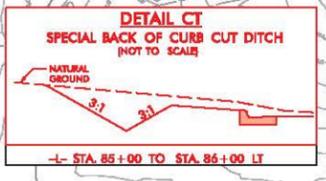
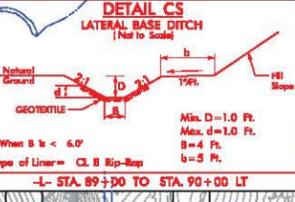
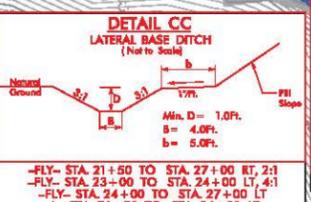
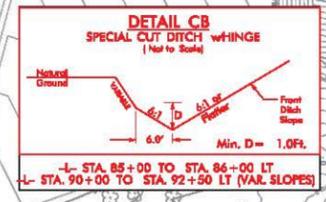
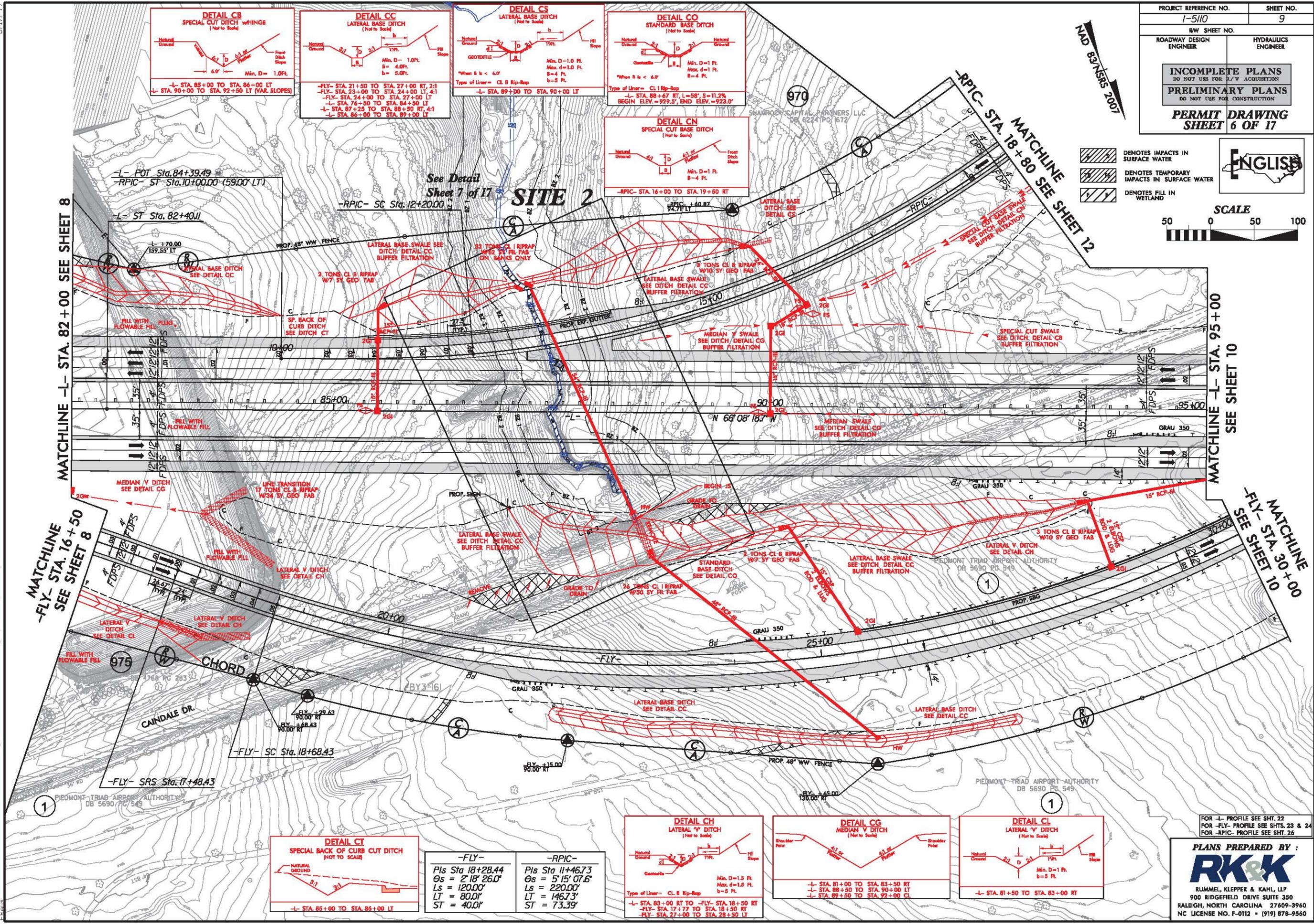
PROJECT REFERENCE NO.	SHEET NO.
1-5110	9
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR E/W ACQUISITION PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	
PERMIT DRAWING SHEET 6 OF 17	

NAD 83 NGS 2007
 62°15'55" W

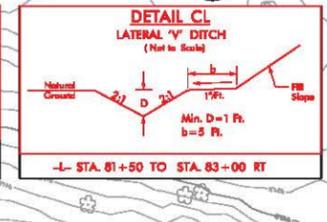
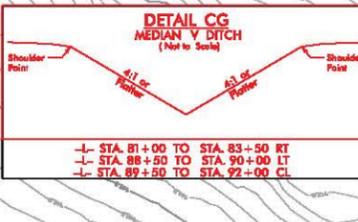
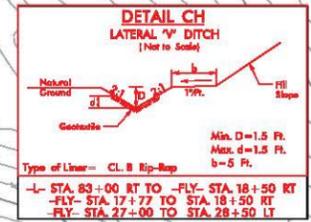
DENOTES IMPACTS IN SURFACE WATER
 DENOTES TEMPORARY IMPACTS IN SURFACE WATER
 DENOTES FILL IN WETLAND

SCALE
 50 0 50 100

ENGLISH



-FLY-	-RPIC-
Pls Sta 18+28.44	Pls Sta 11+46.73
Os = 2' 18" 26.0"	Os = 5' 15" 07.6"
Ls = 120.00'	Ls = 220.00'
LT = 80.0'	LT = 146.73'
ST = 40.0'	ST = 73.39'



FOR -L- PROFILE SEE SHT. 22
 FOR -FLY- PROFILE SEE SHTS. 23 & 24
 FOR -RPIC- PROFILE SEE SHT. 26

PLANS PREPARED BY :
RK&K
 RUMMEL, KLEPPER & KAHL, LLP
 900 RIDGEFIELD DRIVE SUITE 350
 RALEIGH, NORTH CAROLINA 27609-3960
 NC LICENSE NO. F-0112 • (919) 878-9560

PROJECT REFERENCE NO. 1-5110	SHEET NO. 9 - DETAIL
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION	
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	
PERMIT SHEET	DRAWING 7 OF 17

**SITE 2
DETAIL**



NAD 83/NSRS 2007

(TYP.)

90' .06

07 .07

08 .08

BZ 2

BZ 1

BZ 2

BZ 1

BZ 2

BZ 2

BZ 1

BZ 1

BZ

F

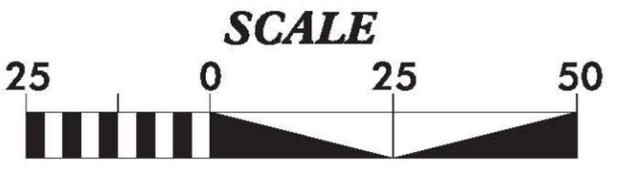
C

54" RCP-III

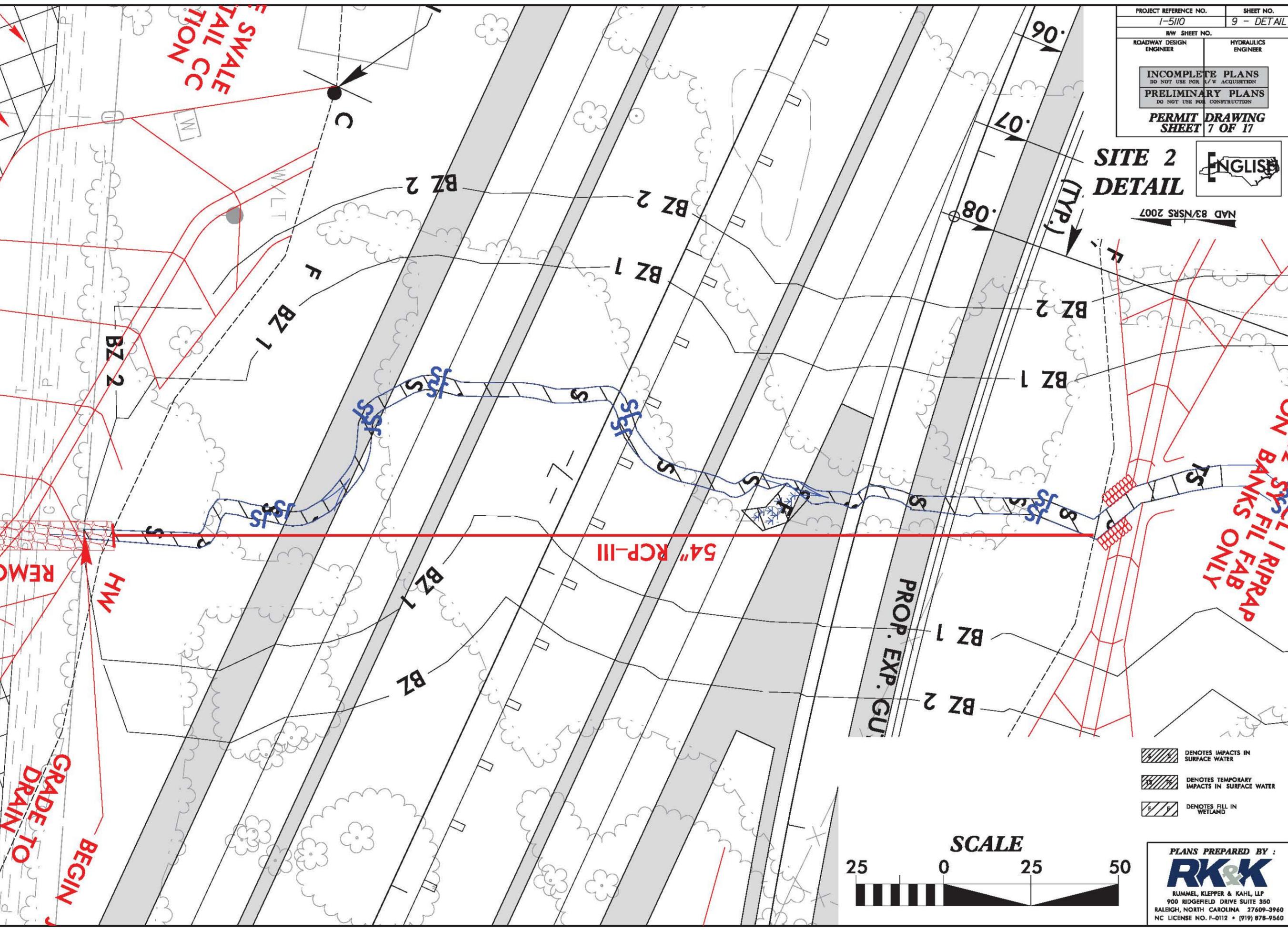
PROP. EXP. GU.

CL 1 RIPRAP
SFC FIL FAB
ON BANKS ONLY

-  DENOTES IMPACTS IN SURFACE WATER
-  DENOTES TEMPORARY IMPACTS IN SURFACE WATER
-  DENOTES FILL IN WETLAND

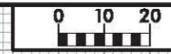


PLANS PREPARED BY:
RK&K
RUMMEL, KLEPPER & KAHL, LLP
900 RIDGEFIELD DRIVE SUITE 350
RALEIGH, NORTH CAROLINA 27609-3960
NC LICENSE NO. F-0112 • (919) 878-9560

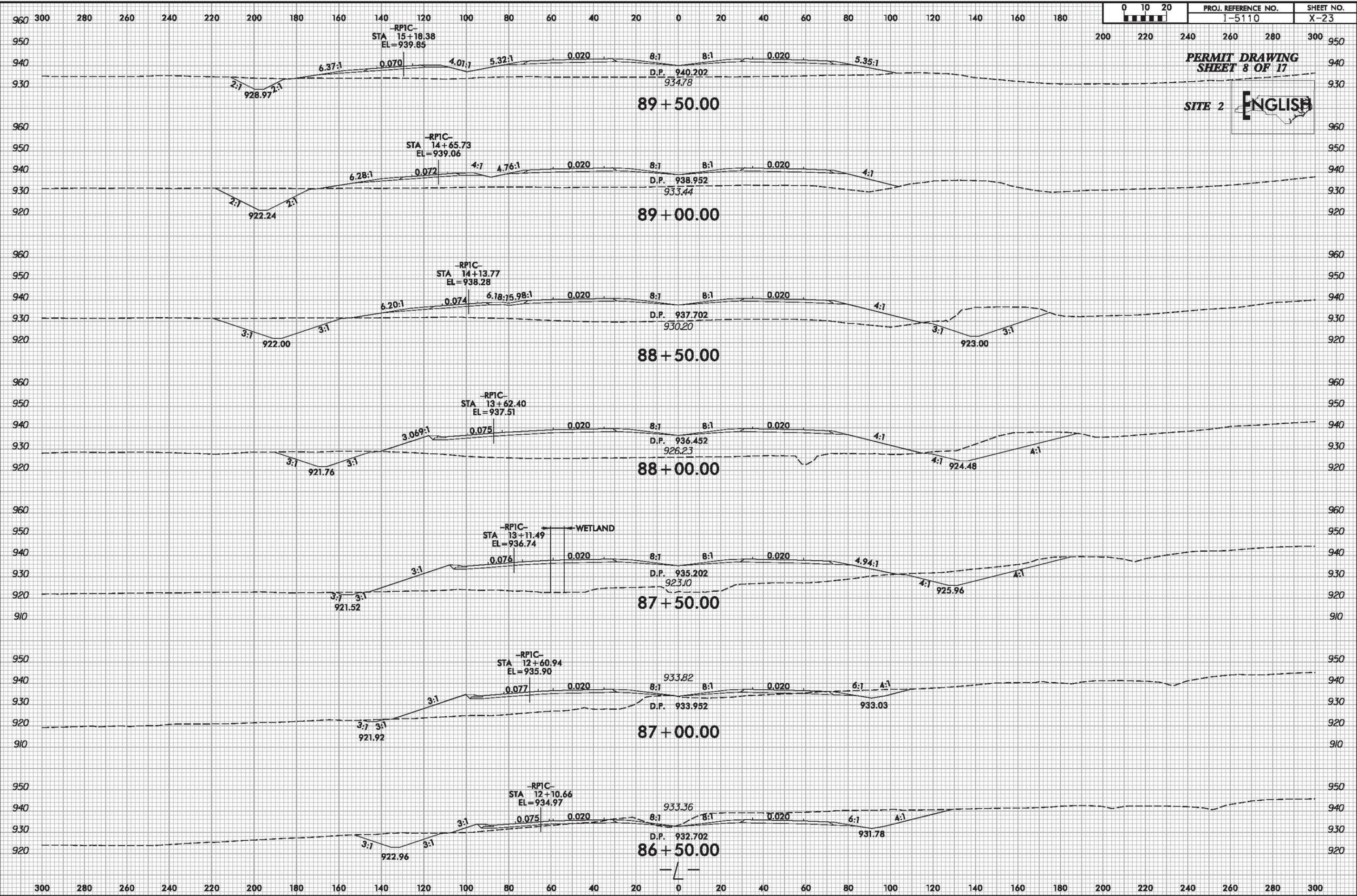


6/17/99
 10/23/2014
 C:\Hydro\Projects\PERMITS_Environmental\Drawings\1-5110\Wetlands\15110_Hyd.prm_wet_psh09_detail.dgn

8/23/99



PROJ. REFERENCE NO.	SHEET NO.
I-5110	X-23



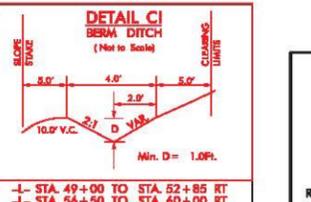
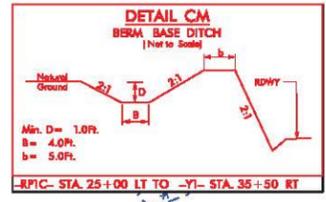
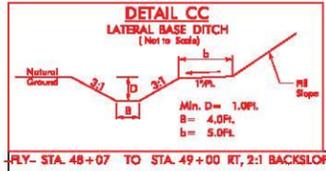
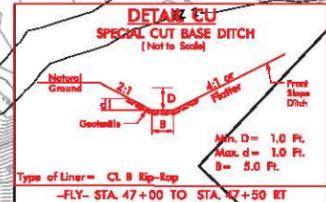
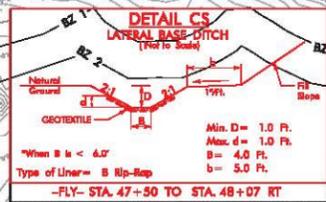
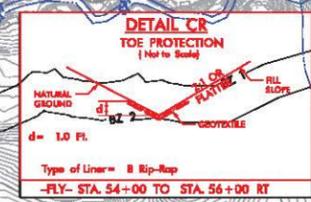
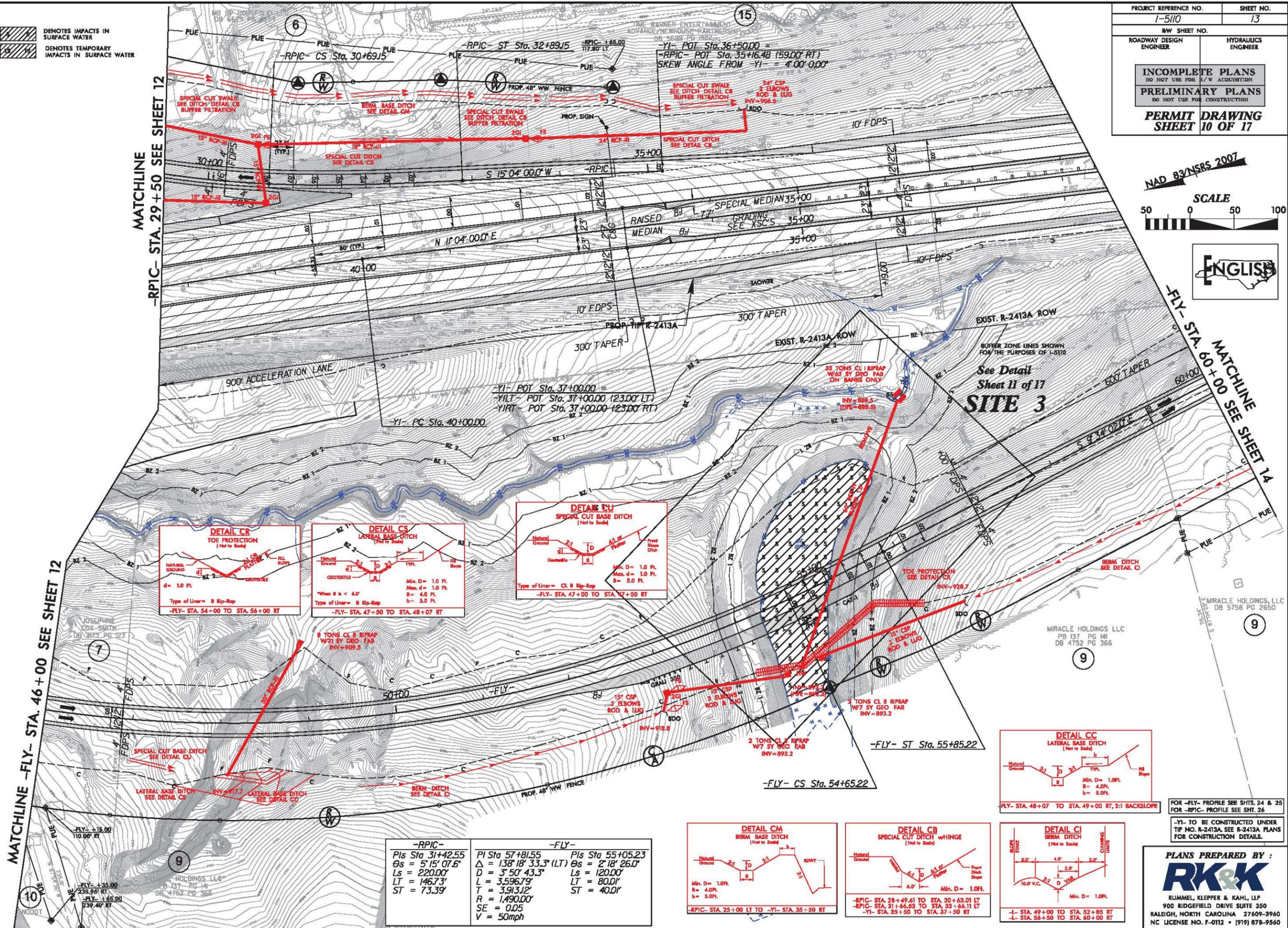
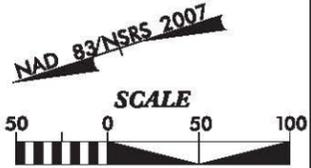
PERMIT DRAWING SHEET 8 OF 17



10/23/2014 8:11:00 AM I:\Hydro\Projects\PERMITS_Environmental\Drawings\I-5110\Wetlands\I-5110_Hyd_perm_wet_xpl_L_BEG.dgn

DENOTES IMPACTS IN SURFACE WATER
 DENOTES TEMPORARY IMPACTS IN SURFACE WATER

PROJECT REFERENCE NO.	SHEET NO.
1-5110	13
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	
PERMIT DRAWING SHEET 10 OF 17	



-RPIC-	-FLY-
PIs Sta 31+42.55 Δs = 5'15" 07.6" Ls = 220.00' LT = 146.73' ST = 73.39'	PIs Sta 57+81.55 Δ = 138'18" 33.3" (LT) Δs = 2'18" 26.0" Ls = 120.00' LT = 80.0' ST = 40.0'
PIs Sta 55+05.23 Δ = 138'18" 33.3" (LT) Δs = 2'18" 26.0" Ls = 120.00' LT = 80.0' ST = 40.0'	

FOR -FLY- PROFILE SEE SHTS. 24 & 25 FOR -RPIC- PROFILE SEE SHT. 26

-YI- TO BE CONSTRUCTED UNDER TIP NO. R-2413A. SEE R-2413A PLANS FOR CONSTRUCTION DETAILS.

PLANS PREPARED BY :

 RUMMEL, KLEPPER & KAHL, LLP
 900 RIDGEFIELD DRIVE SUITE 350
 RALEIGH, NORTH CAROLINA 27609-3960
 NC LICENSE NO. F-0112 • (919) 878-9560

B:17/99
 I:\Projects\1013\1013\Drawings\1-5110\Westlands\15110_Hyd_perm_wet_psh13.dgn
 10/23/2014

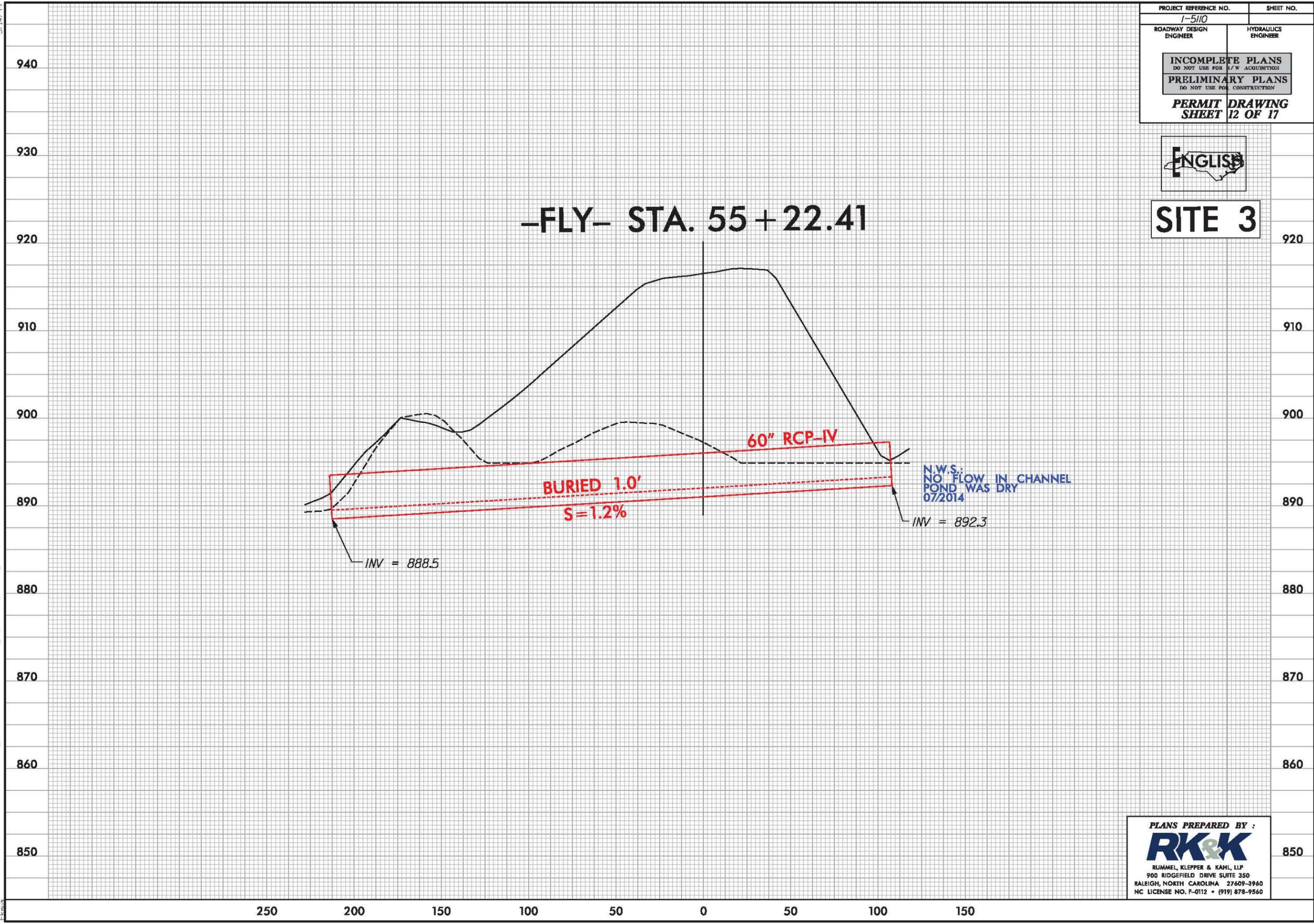
5/14/99

PROJECT REFERENCE NO. 1-5110	SHEET NO.
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS <small>DO NOT USE FOR A/W ACQUISITION</small>	
PRELIMINARY PLANS <small>DO NOT USE FOR CONSTRUCTION</small>	
PERMIT DRAWING SHEET 12 OF 17	



SITE 3

-FLY- STA. 55 + 22.41



INV = 888.5

BURIED 1.0'
S=1.2%

N.W.S.
NO FLOW IN CHANNEL
POND WAS DRY
07/2014

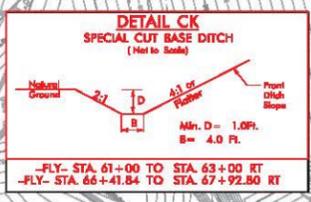
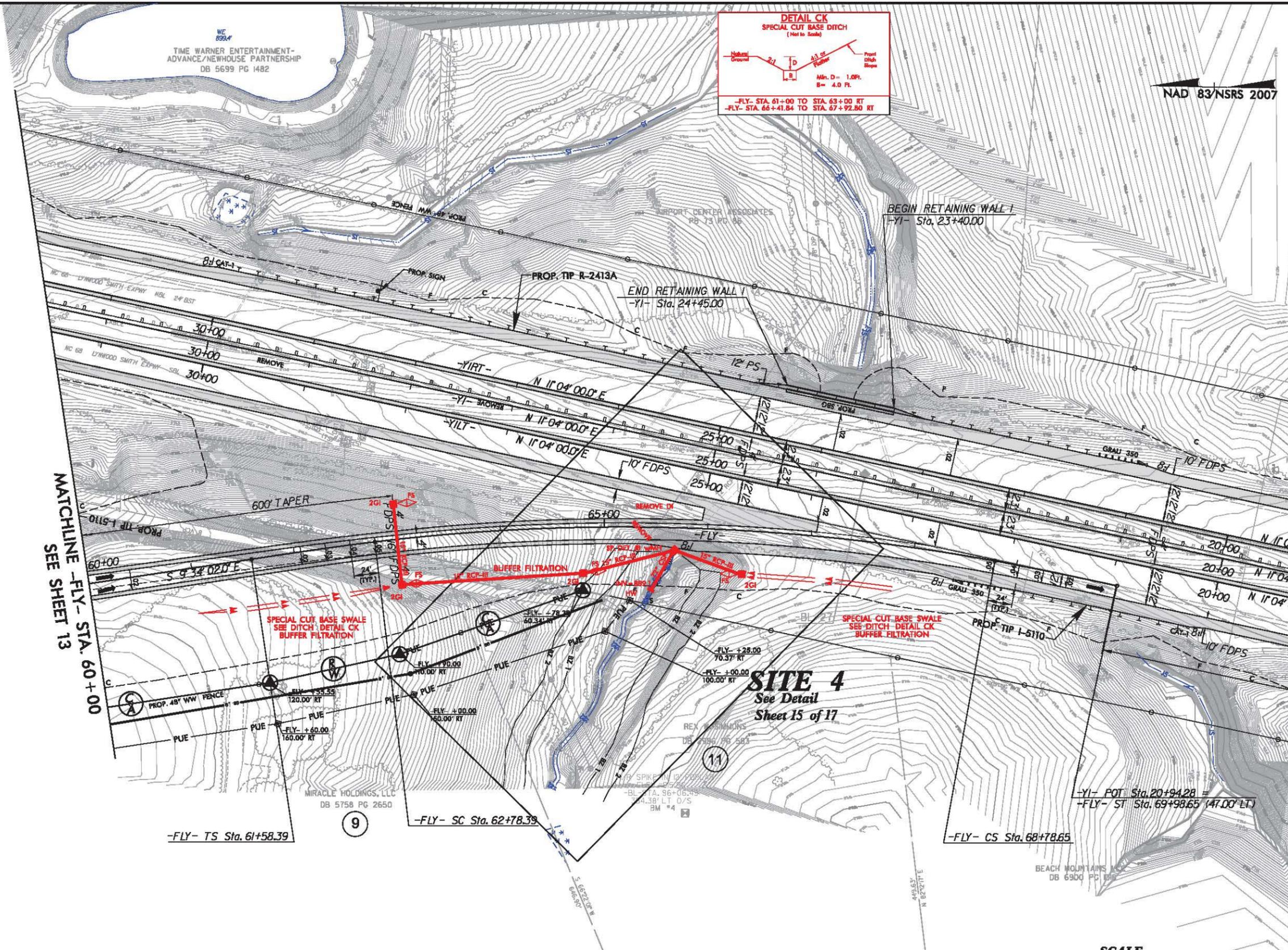
INV = 892.3

PLANS PREPARED BY :
RK&K
 RUMMEL, KLEPPER & KAHL, LLP
 900 RIDGEFIELD DRIVE SUITE 350
 RALEIGH, NORTH CAROLINA 27609-3960
 NC LICENSE NO. F-0112 • (919) 878-9560

I:\Projects\PERMITS_Environmental\Drawings\1-5110\Westlands\5110_Hyd.prm.wat.pf.06.dgn
 10/23/2014
 10:00 AM

8/17/99
 H:\24\2014\PERMITS\Environmental\Drawings\1-5110\Westlands\15110_Hyd_perm_vet_psh14.dgn
 8/24/2014
 H:\24\2014\PERMITS\Environmental\Drawings\1-5110\Westlands\15110_Hyd_perm_vet_psh14.dgn

PROJECT REFERENCE NO.	SHEET NO.
1-5110	14
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	
PERMIT DRAWING SHEET 14 OF 17	

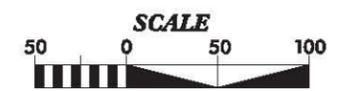


NAD 83/NSRS 2007

MATCHLINE -FLY- STA. 60+00
 SEE SHEET 13

SITE 4
 See Detail
 Sheet 15 of 17

-FLY-		
PIs Sta 62+38.40	PI Sta 65+80.80	PIs Sta 69+18.65
$\Theta_s = 1^{\circ}43'07.9''$	$\Delta = 17^{\circ}11'46.1''$ (RT)	$\Theta_s = 1^{\circ}43'07.9''$
Ls = 120.00'	D = 2'51'53.2"	Ls = 120.00'
LT = 80.00'	L = 600.26'	LT = 80.00'
ST = 40.00'	T = 302.40'	ST = 40.00'
	R = 2,000.00'	
	SE = 0.05	
	V = 55mph	



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

FOR -FLY- PROFILE SEE SHT. 29
 -YI- TO BE CONSTRUCTED UNDER TIP NO. R-2413A. SEE R-2413A PLANS FOR CONSTRUCTION DETAILS.

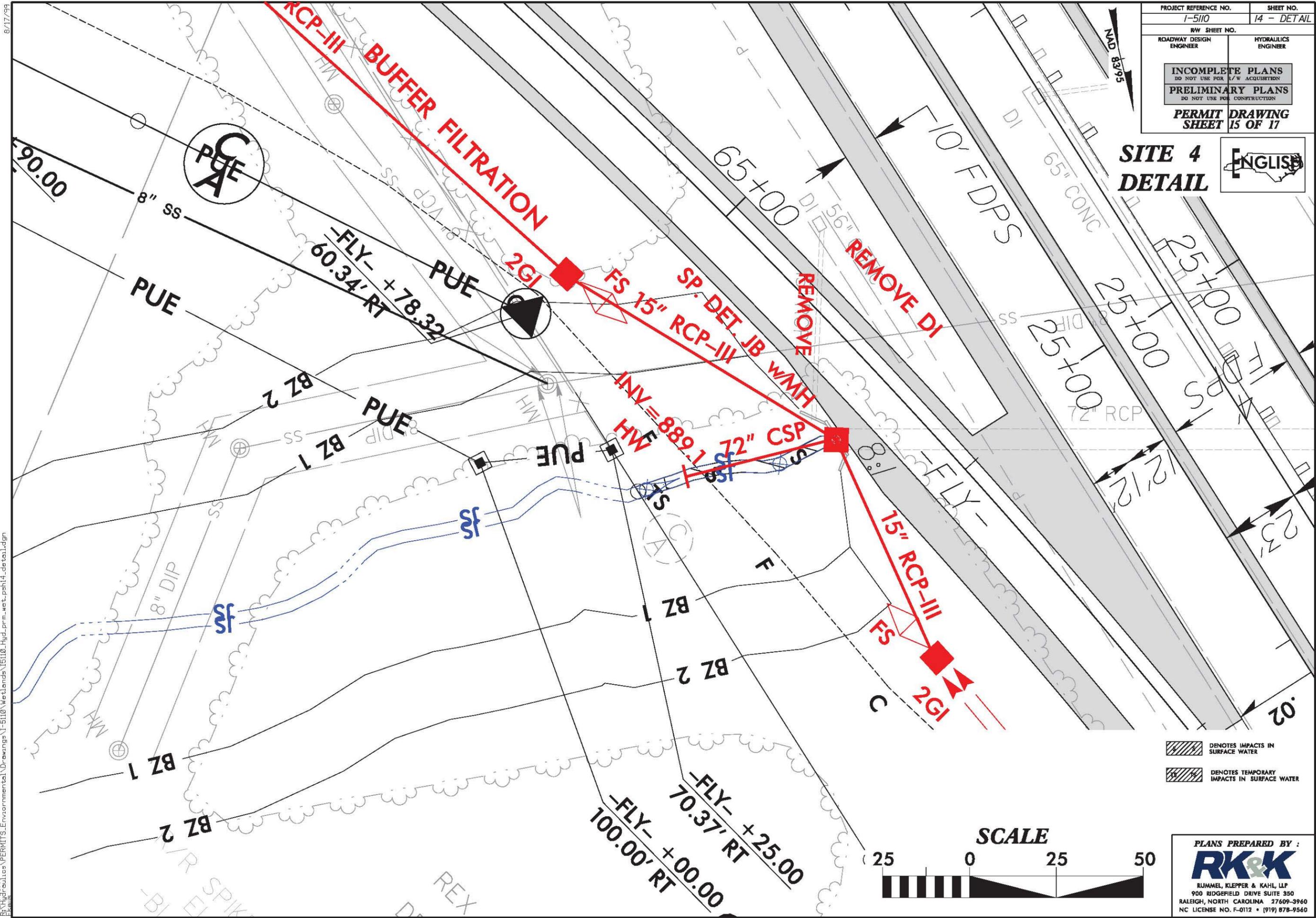
PLANS PREPARED BY :

 RUMMEL, KLEPPER & KAHL, LLP
 900 RIDGEFIELD DRIVE SUITE 350
 RALEIGH, NORTH CAROLINA 27609-3960
 NC LICENSE NO. F-0112 • (919) 878-9560

6/17/99

PROJECT REFERENCE NO. I-5110	SHEET NO. 14 - DETAIL
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION	
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	
PERMIT SHEET	DRAWING SHEET 15 OF 17

**SITE 4
DETAIL**



DENOTES IMPACTS IN SURFACE WATER
 DENOTES TEMPORARY IMPACTS IN SURFACE WATER



PLANS PREPARED BY:
RK&K
 RUMMEL, KLEPPER & KAHL, LLP
 900 RIDGEFIELD DRIVE SUITE 350
 RALEIGH, NORTH CAROLINA 27609-3960
 NC LICENSE NO. F-0112 • (919) 878-9560

I:\24\2014\Hydro\Permits\Environmental\Drawings\1-5110\Wetlands\15110_Hyd.prm_wet_psh14_detail.dgn
 6/24/2014 10:45:10 AM

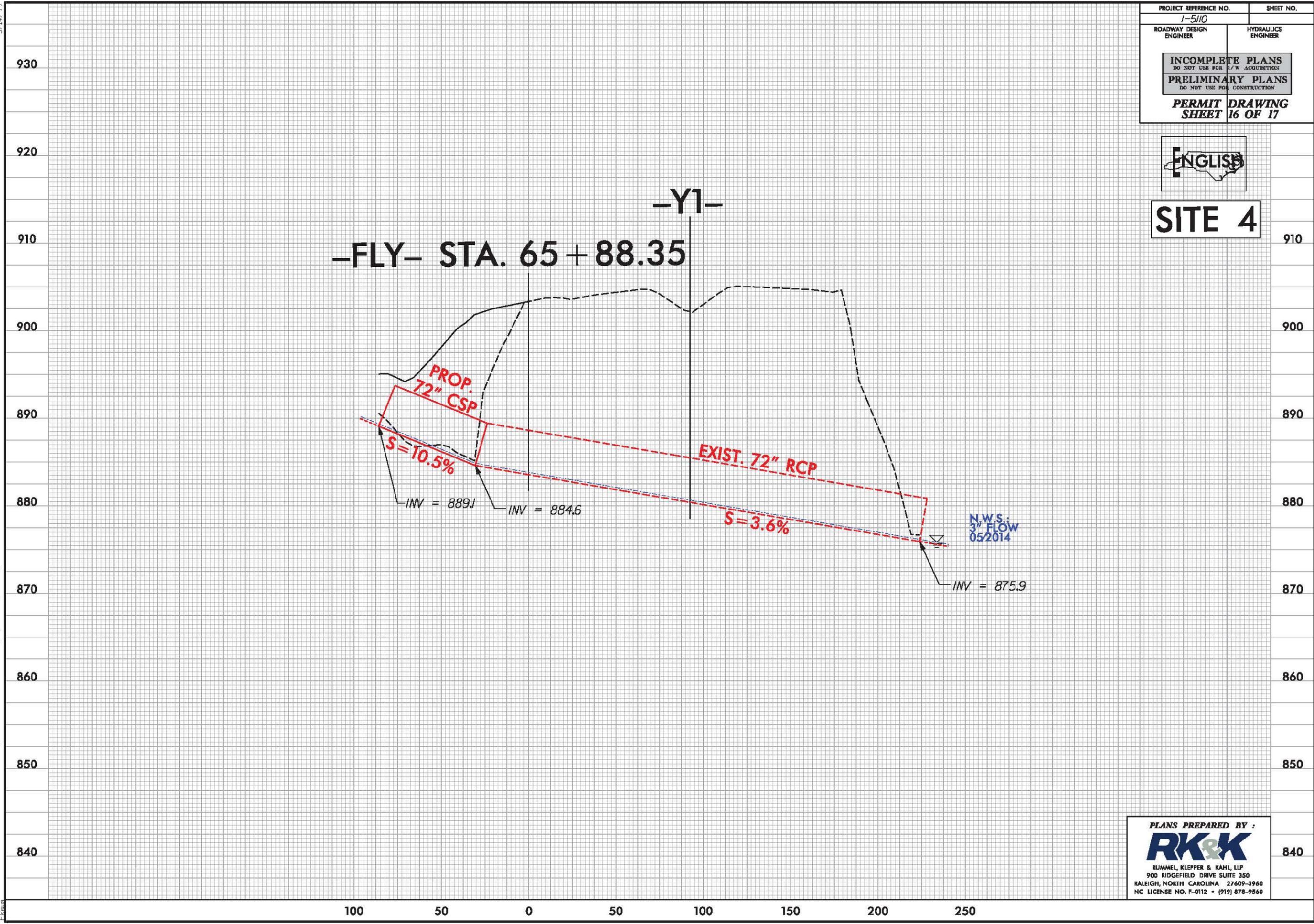
5/14/99

PROJECT REFERENCE NO. 1-5110	SHEET NO.
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS <small>DO NOT USE FOR R/W ACQUISITION</small>	
PRELIMINARY PLANS <small>DO NOT USE FOR CONSTRUCTION</small>	
PERMIT DRAWING SHEET 16 OF 17	



SITE 4

-Y1-
-FLY- STA. 65 + 88.35



PLANS PREPARED BY :
RK&K
 RUMMEL, KLEPPER & KAHL, LLP
 900 RIDGEFIELD DRIVE SUITE 350
 RALEIGH, NORTH CAROLINA 27609-3960
 NC LICENSE NO. F-0112 • (919) 878-9560

I:\Projects\PERMITS_Environmental\Drawings\1-5110\Wetlands\15110_Hyd.prm.wat.pfl08.dgn
 10/23/2014 10:14:00 AM

WETLAND PERMIT IMPACT SUMMARY

Site No.	Station (From/To)	Structure Size / Type	WETLAND IMPACTS					SURFACE WATER IMPACTS				
			Permanent Fill In Wetlands (ac)	Temp. Fill In Wetlands (ac)	Excavation in Wetlands (ac)	Mechanized Clearing in Wetlands (ac)	Hand Clearing in Wetlands (ac)	Permanent SW impacts (ac)	Temp. SW impacts (ac)	Existing Channel Impacts Permanent (ft)	Existing Channel Impacts Temp. (ft)	Natural Stream Design (ft)
1	-L- 76+49-77+49 LT	30" RCP						0.01	<0.01	130	10	
		Bank Stabilization						<0.01		10		
2	-L- 86+95-88+47	54" RCP	<0.01					0.03	<0.01	334	20	
		Bank Stabilization						<0.01		20		
3	-FLY- 54+20-57+01 RT	Bank Stabilization						<0.01	<0.01	18	24	
		Open Water Impact						0.43				
4	-FLY- 35+38-65+70 RT	72" CSP						<0.01	<0.01	51	8	
TOTALS:			<0.01					0.48	0.01	563	62	

NC DEPARTMENT OF TRANSPORTATION
 DIVISION OF HIGHWAYS

 GUILFORD COUNTY
 34429.3.S8 (I-5110)

 PERMIT DRAWING SHEET 17 OF 17

ATN Revised 3/31/05

PROJECT REFERENCE NO.	SHEET NO.
I-5110	BUFFER DATA
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

BUFFER DRAWING SHEET 2 OF 7



GRASS SWALE DATA DA = 0.82ac SLOPE = 1.72% L REQ. = 82' L PRO. = 150' Q2 = 2.59cfs V2 = 1.71ft/s D2 = 0.50' Q10 = 3.35cfs V10 = 1.99ft/s D10 = 0.53' BUFFER CHECK -L- STA. 27+50 TO 29+00 RT PSH 4	GRASS SWALE DATA DA = 0.47ac SLOPE = 0.3% L REQ. = 47' L PRO. = 250' Q2 = 1.58cfs V2 = 1.32ft/s D2 = 0.90' Q10 = 2.05cfs V10 = 1.40ft/s D10 = 0.99' SPECIAL CUT DITCH CQ -L- STA. 29+00 TO 31+50 RT PSH 4-5	GRASS SWALE DATA DA = 1.19ac SLOPE = 0.3% L REQ. = 119' L PRO. = 500' Q2 = 4.04cfs V2 = 1.87ft/s D2 = 1.20' Q10 = 5.23cfs V10 = 1.99ft/s D10 = 1.32' SPECIAL CUT DITCH CQ -L- STA. 31+50 TO 36+50 RT PSH 5	GRASS SWALE DATA DA = 1.39ac SLOPE = 0.3% L REQ. = 139' L PRO. = 400' Q2 = 4.40cfs V2 = 1.87ft/s D2 = 1.21' Q10 = 5.65cfs V10 = 2.00ft/s D10 = 1.37' SPECIAL CUT DITCH CQ -L- STA. 36+50 TO 40+50 RT PSH 5	GRASS SWALE DATA DA = 1.31ac SLOPE = 0.3% L REQ. = 131' L PRO. = 350' Q2 = 3.86cfs V2 = 1.85ft/s D2 = 1.18' Q10 = 5.00cfs V10 = 1.97ft/s D10 = 1.30' SPECIAL CUT DITCH CQ -L- STA. 40+50 TO 44+00 RT PSH 5	GRASS SWALE DATA DA = 1.16ac SLOPE = 0.3% L REQ. = 116' L PRO. = 300' Q2 = 3.42cfs V2 = 1.79ft/s D2 = 1.13' Q10 = 4.43cfs V10 = 1.70ft/s D10 = 1.32' SPECIAL CUT DITCH CQ -L- STA. 44+00 TO 47+00 RT PSH 6	GRASS SWALE DATA DA = 1.41ac SLOPE = 0.3% L REQ. = 141' L PRO. = 350' Q2 = 3.81cfs V2 = 1.84ft/s D2 = 1.18' Q10 = 4.94cfs V10 = 1.96ft/s D10 = 1.29' SPECIAL CUT DITCH CQ -L- STA. 47+00 TO 50+50 RT PSH 6	GRASS SWALE DATA DA = 1.40ac SLOPE = 0.30% L REQ. = 140' L PRO. = 300' Q2 = 4.11cfs V2 = 1.01ft/s D2 = 0.71' Q10 = 5.32cfs V10 = 1.08ft/s D10 = 0.78' ROADWAY DITCH -L- STA. 49+00 TO 50+66 CL PSH 6	GRASS SWALE DATA DA = 1.50ac SLOPE = 0.3% L REQ. = 150' L PRO. = 150' Q2 = 4.40cfs V2 = 1.11ft/s D2 = 0.81' Q10 = 5.69cfs V10 = 1.18ft/s D10 = 0.90' ROADWAY DITCH -L- STA. 50+50 TO 52+00 RT PSH 6
---	--	---	---	---	---	---	---	--

GRASS SWALE DATA DA = 0.33ac SLOPE = 0.30% L REQ. = 33' L PRO. = 134' Q2 = 0.98cfs V2 = 0.65ft/s D2 = 0.43' Q10 = 1.27cfs V10 = 0.69ft/s D10 = 0.47' ROADWAY DITCH -L- STA. 50+66 TO 52+00 CL PSH 6	GRASS SWALE DATA DA = 1.14ac SLOPE = 0.3% L REQ. = 114' L PRO. = 150' Q2 = 3.33cfs V2 = 0.90ft/s D2 = 0.59' Q10 = 4.31cfs V10 = 0.96ft/s D10 = 0.65' ROADWAY DITCH -L- STA. 52+00 TO 53+50 CL PSH 6	GRASS SWALE DATA DA = 1.55ac SLOPE = 0.3% L REQ. = 155' L PRO. = 200' Q2 = 4.55cfs V2 = 1.12ft/s D2 = 0.82' Q10 = 5.89cfs V10 = 1.19ft/s D10 = 0.91' ROADWAY DITCH -L- STA. 54+00 TO 56+00 RT PSH 6	GRASS SWALE DATA DA = 0.128ac SLOPE = 0.3% L REQ. = 13' L PRO. = 150' Q2 = 0.38cfs V2 = 0.55ft/s D2 = 0.34' Q10 = 0.49cfs V10 = 0.59ft/s D10 = 0.37' MEDIAN V DITCH CG -L- STA. 61+50 TO 62+00 CL PSH 7	GRASS SWALE DATA DA = 1.17ac SLOPE = 1.4% L REQ. = 117' L PRO. = 150' Q2 = 3.44cfs V2 = 1.86ft/s D2 = 0.56' Q10 = 4.46cfs V10 = 1.98ft/s D10 = 0.61' MEDIAN V DITCH CG -L- STA. 62+00 TO 63+25 CL PSH 7	GRASS SWALE DATA DA = 1.53ac SLOPE = 0.31% L REQ. = 46' L PRO. = 75' Q2 = 3.81cfs V2 = 1.08ft/s D2 = 0.77' Q10 = 4.93cfs V10 = 1.15ft/s D10 = 0.85' SPECIAL CUT W/ HINGE DITCH CB -L- STA. 62+00 TO 62+75 RT PSH 7	GRASS SWALE DATA DA = 1.60ac SLOPE = 1.10% L REQ. = 160' L PRO. = 175' Q2 = 4.69cfs V2 = 1.83ft/s D2 = 0.65' Q10 = 6.07cfs V10 = 1.96ft/s D10 = 0.72' SPECIAL CUT W/ HINGE DITCH CB -L- STA. 62+75 TO 64+50 RT PSH 7	GRASS SWALE DATA DA = 1.06ac SLOPE = 1.44% L REQ. = 106' L PRO. = 125' Q2 = 3.34cfs V2 = 1.86ft/s D2 = 0.55' Q10 = 4.33cfs V10 = 1.99ft/s D10 = 0.60' MEDIAN V DITCH CG -L- STA. 67+00 TO 68+25 CL PSH 7	GRASS SWALE DATA DA = 1.31ac SLOPE = 1.20% L REQ. = 131' L PRO. = 150' Q2 = 4.14cfs V2 = 1.84ft/s D2 = 0.61' Q10 = 5.36cfs V10 = 1.96ft/s D10 = 0.68' SPECIAL CUT W/ HINGE DITCH CB -L- STA. 67+00 TO 68+50 RT PSH 7	GRASS SWALE DATA DA = 1.17ac SLOPE = 1.3% L REQ. = 117' L PRO. = 125' Q2 = 3.71cfs V2 = 1.84ft/s D2 = 0.58' Q10 = 4.81cfs V10 = 1.97ft/s D10 = 0.64' MEDIAN V DITCH CG -L- STA. 71+50 TO 72+75 CL PSH 8
--	--	--	--	--	---	---	---	---	--

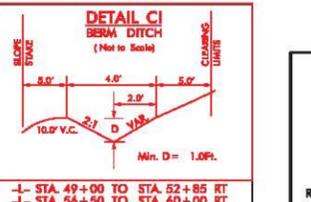
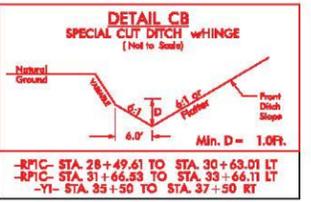
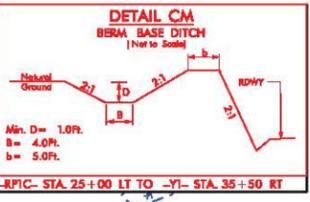
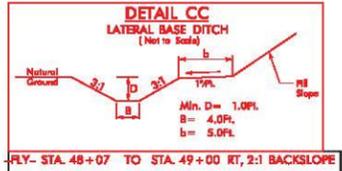
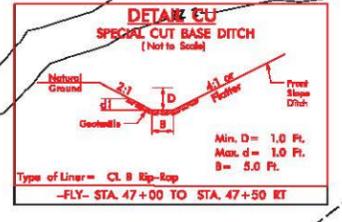
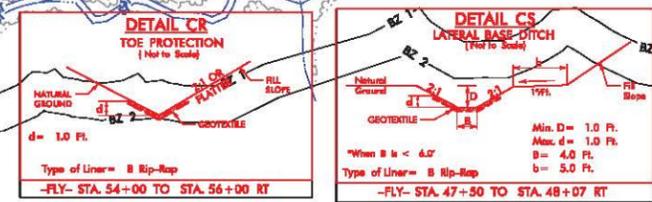
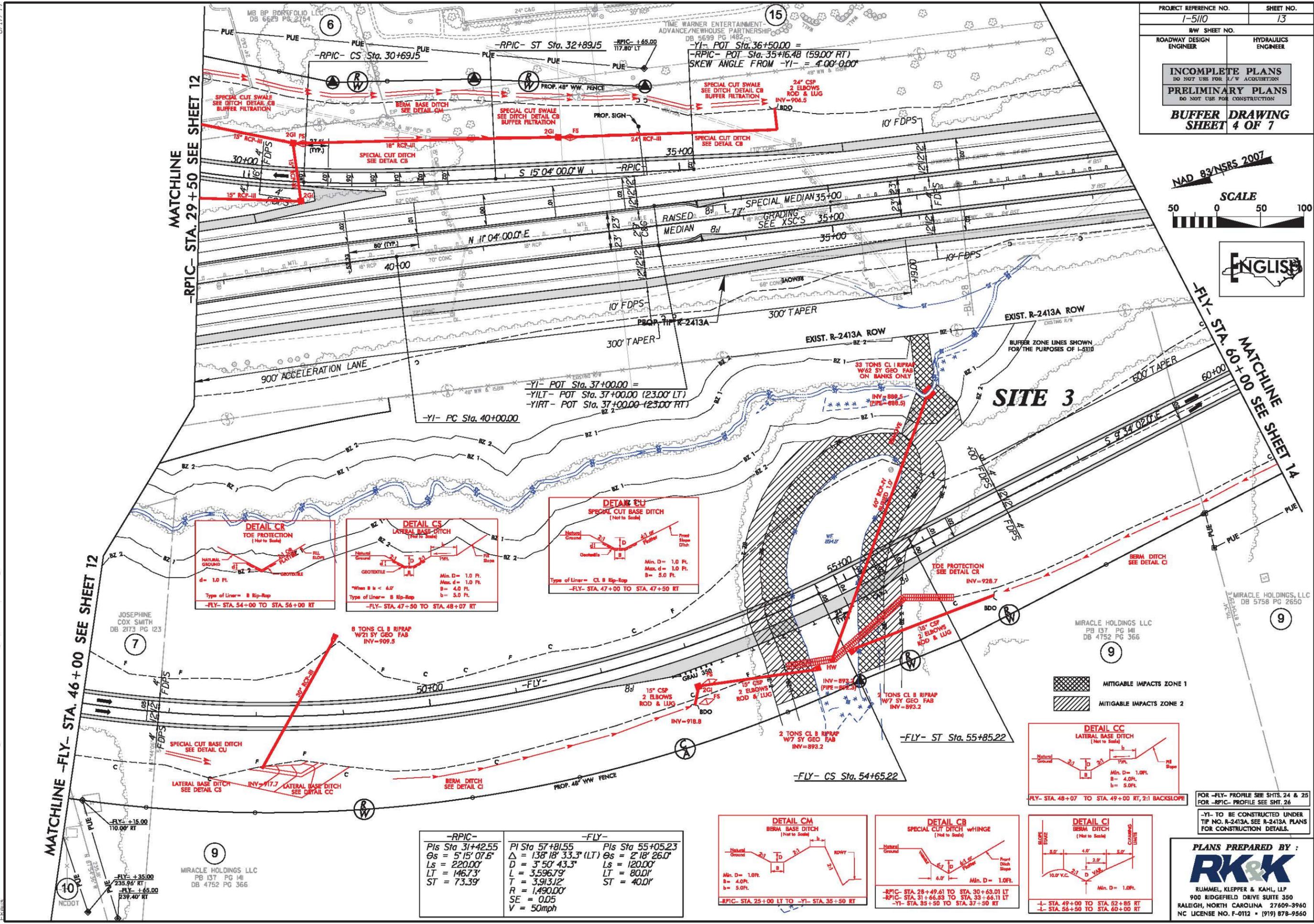
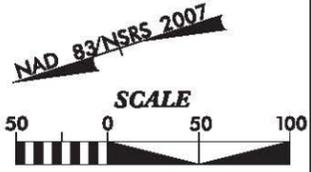
GRASS SWALE DATA DA = 1.09ac SLOPE = 1.40% L REQ. = 109' L PRO. = 125' Q2 = 3.43cfs V2 = 1.86ft/s D2 = 0.56' Q10 = 4.45cfs V10 = 1.98ft/s D10 = 0.61' SPECIAL CUT W/ HINGE DITCH CB -L- STA. 71+50 TO 72+75 RT PSH 8	GRASS SWALE DATA DA = 0.37ac SLOPE = 2.08% L REQ. = 37' L PRO. = 50' Q2 = 3.87cfs V2 = 1.78ft/s D2 = 0.27' Q10 = 5.01cfs V10 = 1.94ft/s D10 = 0.31' LATERAL BASE DITCH -L- STA. 86+00 TO 87+25 LT PSH 9	GRASS SWALE DATA DA = 1.24ac SLOPE = 0.48% L REQ. = 124' L PRO. = 125' Q2 = 18.02cfs V2 = 1.86ft/s D2 = 0.88' Q10 = 23.33cfs V10 = 2.00ft/s D10 = 1.00' LATERAL BASE DITCH -L- STA. 87+25 TO 89+00 LT PSH 9	GRASS SWALE DATA DA = 1.13ac SLOPE = 2.96% L REQ. = 113' L PRO. = 125' Q2 = 2.81cfs V2 = 1.80ft/s D2 = 0.20' Q10 = 3.64cfs V10 = 1.96ft/s D10 = 0.24' LATERAL BASE DITCH -L- STA. 87+25 TO 88+50 RT PSH 9	GRASS SWALE DATA DA = 0.30ac SLOPE = 1.0% L REQ. = 30' L PRO. = 150' Q2 = 0.95cfs V2 = 1.09ft/s D2 = 0.38' Q10 = 1.23cfs V10 = 1.16ft/s D10 = 0.42' MEDIAN V DITCH CG -L- STA. 88+50 TO 90+00 LT PSH 9	GRASS SWALE DATA DA = 1.26ac SLOPE = 1.2% L REQ. = 126' L PRO. = 150' Q2 = 3.13cfs V2 = 1.87ft/s D2 = 0.63' Q10 = 4.05cfs V10 = 2.00ft/s D10 = 0.70' MEDIAN V DITCH CG -L- STA. 90+00 TO 91+50 CL PSH 9	GRASS SWALE DATA DA = 0.66ac SLOPE = 2.0% L REQ. = 66' L PRO. = 150' Q2 = 2.08cfs V2 = 1.71ft/s D2 = 0.45' Q10 = 2.69cfs V10 = 1.83ft/s D10 = 0.50' SPECIAL CUT W/ HINGE DITCH CB -L- STA. 90+00 TO 91+50 LT PSH 9	GRASS SWALE DATA DA = 0.31ac SLOPE = 2.75% L REQ. = 31' L PRO. = 92' Q2 = 1.26cfs V2 = 1.87ft/s D2 = 0.41' Q10 = 1.63cfs V10 = 2.00ft/s D10 = 0.45' MEDIAN V DITCH CG -L- STA. 95+08 TO 96+00 CL PSH 10	GRASS SWALE DATA DA = 0.42ac SLOPE = 1.75% L REQ. = 42' L PRO. = 50' Q2 = 1.70cfs V2 = 1.70ft/s D2 = 0.50' Q10 = 2.21cfs V10 = 1.99ft/s D10 = 0.53' MEDIAN V DITCH CG -L- STA. 96+50 TO 97+00 CL PSH 10	GRASS SWALE DATA DA = 3.30ac SLOPE = 0.85% L REQ. = 240' L PRO. = 250' Q2 = 5.39cfs V2 = 1.86ft/s D2 = 0.52' Q10 = 6.97cfs V10 = 2.00ft/s D10 = 0.60' LATERAL BASE DITCH -L- STA. 96+50 TO 99+00 RT PSH 10
---	--	--	--	---	--	---	--	--	---

GRASS SWALE DATA DA = 0.21ac SLOPE = 0.30% L REQ. = 21' L PRO. = 97' Q2 = 0.85cfs V2 = 0.81ft/s D2 = 0.51' Q10 = 1.11cfs V10 = 0.86ft/s D10 = 0.57' MEDIAN V DITCH CG -L- STA. 98+00 TO 98+97.29 CL PSH 10	GRASS SWALE DATA DA = 1.63ac SLOPE = 1.50% L REQ. = 163' L PRO. = 365' Q2 = 3.10cfs V2 = 1.75ft/s D2 = 0.35' Q10 = 4.01cfs V10 = 1.90ft/s D10 = 0.40' LATERAL BASE DITCH -L- STA. 103+35 TO 107+00 RT PSH 10-11	GRASS SWALE DATA DA = 3.70ac SLOPE = 0.63% L REQ. = 370' L PRO. = 400' Q2 = 10.87cfs V2 = 1.76ft/s D2 = 0.63' Q10 = 13.96cfs V10 = 1.90ft/s D10 = 0.72' LATERAL BASE DITCH -FLY- STA. 23+00 TO 27+00 LT PSH 9	GRASS SWALE DATA DA = 0.55ac SLOPE = 3.50% L REQ. = 55' L PRO. = 65' Q2 = 1.19cfs V2 = 1.68ft/s D2 = 0.16' Q10 = 1.54cfs V10 = 1.84ft/s D10 = 0.18' STANDARD BASE DITCH CD -FLY- STA. 37+40 RT PSH 12	GRASS SWALE DATA DA = 2.54ac SLOPE = 0.90% L REQ. = 254' L PRO. = 300' Q2 = 4.13cfs V2 = 1.61ft/s D2 = 0.48' Q10 = 5.35cfs V10 = 1.89ft/s D10 = 0.51' LATERAL BASE DITCH -FLY- STA. 42+00 TO 45+00 RT PSH 12	GRASS SWALE DATA DA = 1.68ac SLOPE = 1.74% L REQ. = 168' L PRO. = 200' Q2 = 2.51cfs V2 = 1.72ft/s D2 = 0.30' Q10 = 3.24cfs V10 = 1.87ft/s D10 = 0.34' SPECIAL CUT BASE DITCH CK -FLY- STA. 61+00 TO 63+00 RT PSH 14	GRASS SWALE DATA DA = 0.30ac SLOPE = 0.90% L REQ. = 30' L PRO. = 189' Q2 = 0.74cfs V2 = 0.98ft/s D2 = 0.35' Q10 = 0.95cfs V10 = 1.05ft/s D10 = 0.39' BUFFER FILTRATION CHECK -FLY- STA. 63+00 TO 64+89.15 RT PSH 14	GRASS SWALE DATA DA = 1.26ac SLOPE = 1.70% L REQ. = 126' L PRO. = 151' Q2 = 1.88cfs V2 = 1.55ft/s D2 = 0.25' Q10 = 2.43cfs V10 = 1.69ft/s D10 = 0.30' SPECIAL CUT BASE DITCH CK -FLY- STA. 66+41.84 TO 67+92.80 RT PSH 14	GRASS SWALE DATA DA = 2.88ac SLOPE = 1.33% L REQ. = 288' L PRO. = 300' Q2 = 6.52cfs V2 = 1.81ft/s D2 = 0.41' Q10 = 8.44cfs V10 = 1.96ft/s D10 = 0.48' SPECIAL CUT BASE DITCH CT -RPIC- STA. 16+00 TO 19+00 RT PSH 9, 12	GRASS SWALE DATA DA = 1.30ac SLOPE = 1.50% L REQ. = 130' L PRO. = 150' Q2 = 3.22cfs V2 = 1.88ft/s D2 = 0.54' Q10 = 4.17cfs V10 = 2.00ft/s D10 = 0.59' SPECIAL CUT BASE DITCH CB -RPIC- STA. 25+50 TO 27+00 LT PSH 12
---	--	--	--	---	--	--	--	--	---

GRASS SWALE DATA DA = 0.87ac SLOPE = 1.15% L REQ. = 87' L PRO. = 109' Q2 = 2.09cfs V2 = 1.40ft/s D2 = 0.50' Q10 = 2.78cfs V10 = 1.64ft/s D10 = 0.53' SPECIAL CUT DITCH CB -RPIC- STA. 29+58.25 TO 30+63.01 LT PSH 13	GRASS SWALE DATA DA = 0.94ac SLOPE = 1.00% L REQ. = 94' L PRO. = 100' Q2 = 2.54cfs V2 = 1.52ft/s D2 = 0.53' Q10 = 3.29cfs V10 = 1.62ft/s D10 = 0.58' SPECIAL CUT DITCH CB -RPIC- STA. 32+65.87 TO 33+66.11 LT PSH 13	GRASS SWALE DATA DA = 0.69ac SLOPE = 2.34% L REQ. = 69' L PRO. = 100' Q2 = 2.01cfs V2 = 1.80ft/s D2 = 0.43' Q10 = 2.60cfs V10 = 1.92ft/s D10 = 0.48' SPECIAL CUT DITCH CB -YI- STA. 35+50 TO 36+50 LT PSH 13
---	---	---

PLANS PREPARED BY :

RK&K
 RUMMEL, KLEPPER & KAHL, LLP
 900 RIDGEFIELD DRIVE SUITE 350
 RALEIGH, NORTH CAROLINA 27609-3960
 NC LICENSE NO. F-0112 • (919) 878-9560



-RPIC-	-FLY-
PIs Sta 31+42.55 $\Delta = 5'15''07.6''$ $D = 220.00'$ $LT = 146.73'$ $ST = 73.39'$	PIs Sta 57+81.55 $\Delta = 138'18''33.3''$ (LT) $\Delta = 2'18''26.0''$ $D = 3'50''43.3''$ $Ls = 120.00'$ $T = 3.59679'$ $T = 3.91312'$ $R = 1,490.00'$ $SE = 0.05$ $V = 50\text{mph}$

FOR -FLY- PROFILE SEE SHTS. 24 & 25 FOR -RPIC- PROFILE SEE SHT. 26

-YI- TO BE CONSTRUCTED UNDER TIP NO. R-2413A. SEE R-2413A PLANS FOR CONSTRUCTION DETAILS.

PLANS PREPARED BY :

RK&K

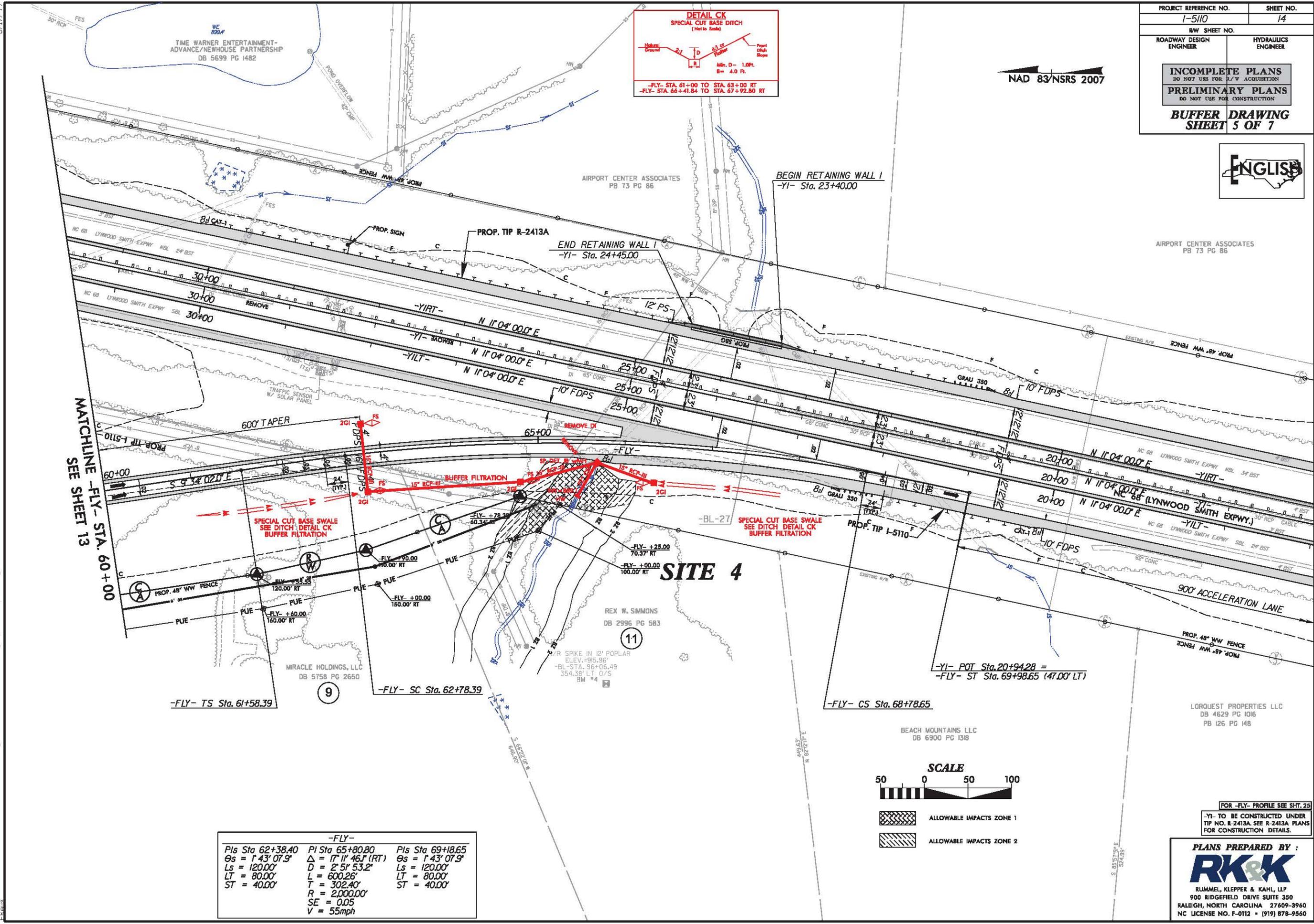
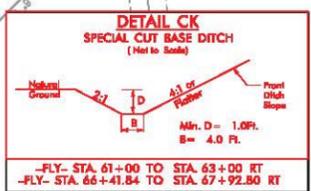
RUMMEL, KLEPPER & KAHL, LLP
 900 RIDGEFIELD DRIVE SUITE 350
 RALEIGH, NORTH CAROLINA 27609-3960
 NC LICENSE NO. F-0112 • (919) 878-9560

8/17/99
 I:\23\2004\PERMITS\Environmental\Drawings\1-5110\Buffers\1-5110_Hyd_prm_buf_psh13.dgn

PROJECT REFERENCE NO.	SHEET NO.
1-5110	14
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION	
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	
BUFFER DRAWING SHEET 5 OF 7	

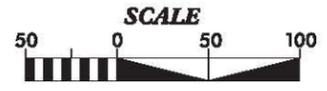


NAD 83/NSRS 2007



MATCHLINE -FLY- STA. 60+00
SEE SHEET 13

-FLY-		
PIs Sta 62+38.40	PI Sta 65+80.80	PIs Sta 69+18.65
$\Theta_s = 1^\circ 43' 07.9''$	$\Delta = 17^\circ 11' 46.1''$ (RT)	$\Theta_s = 1^\circ 43' 07.9''$
$L_s = 120.00'$	$D = 2^\circ 51' 53.2''$	$L_s = 120.00'$
$LT = 80.00'$	$L = 600.26'$	$LT = 80.00'$
$ST = 40.00'$	$T = 302.40'$	$ST = 40.00'$
	$R = 2,000.00'$	
	$SE = 0.05$	
	$V = 55\text{mph}$	



ALLOWABLE IMPACTS ZONE 1
ALLOWABLE IMPACTS ZONE 2

FOR -FLY- PROFILE SEE SHT. 29
-YI- TO BE CONSTRUCTED UNDER TIP NO. R-2413A. SEE R-2413A PLANS FOR CONSTRUCTION DETAILS.

PLANS PREPARED BY:
RK&K
RUMMEL, KLEPPER & KAHL, LLP
900 RIDGEFIELD DRIVE SUITE 350
RALEIGH, NORTH CAROLINA 27609-3960
NC LICENSE NO. F-0112 • (919) 878-9560

8/17/99
H:\2014\2014\PERMITS\Environmental\Drawings\1-5110\Buffers\15110_Hyd_prm_buf_psh14.dgn

BUFFER IMPACTS SUMMARY

SITE NO.	STRUCTURE SIZE / TYPE	STATION (FROM/TO)	IMPACT									BUFFER REPLACEMENT		
			TYPE			ALLOWABLE			MITIGABLE			ZONE 1 (ft ²)	ZONE 2 (ft ²)	
			ROAD CROSSING	BRIDGE	PARALLEL IMPACT	ZONE 1 (ft ²)	ZONE 2 (ft ²)	TOTAL (ft ²)	ZONE 1 (ft ²)	ZONE 2 (ft ²)	TOTAL (ft ²)			
2	54" RCP	-L- 86+36-88+92	X							21955	14027	35982		
3	60" RCP	-FLY- 53+80-57+06	X							21551	14243	35794		
4	72" CSP	-FLY- 64+74-66+14 RT	X			2986	1720	4706						
4	UTILITY SS	-FLY- 64+45-65+25 RT			X	942	1158	2100						
TOTAL:						3928	2878	6806	43506	28270	71776			

N.C. DEPT. OF TRANSPORTATION
 DIVISION OF HIGHWAYS

 GUILFORD COUNTY
 PROJECT: 34429.3.S8 (I-5110)

 BUFFER DRAWING SHEET 6 OF 7

BUFFER IMPACTS SUMMARY

Site	Station	WETLANDS IN BUFFER	
		ZONE 1 (ft^2)	ZONE 2 (ft^2)
2	-L- 87+54-87+64 LT	70	
TOTALS:		70	0

N.C. DEPT. OF TRANSPORTATION
 DIVISION OF HIGHWAYS

 GUILFORD COUNTY
 PROJECT: 34429.3.S8 (I-5110)

 BUFFER DRAWING 7 OF 7