



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

ROY COOPER
GOVERNOR

JAMES H. TROGDON, III
SECRETARY

July 24, 2017

U. S. Army Corps of Engineers
Regulatory Field Office
151 Patton Avenue, Room 208
Asheville, NC 28801-5006

ATTN: Ms. Crystal Amschler
NCDOT Coordinator

Subject: **Application for Section 404 Nationwide Permit 23, 33, and 401 Water Quality Certification** for the proposed replacement of Bridge No. 444 over East Fork Stewarts Creek on SR 1506 (Price Dairy Road) in Union County, Federal Aid Project No. BRZ-1506(3), Division 10, TIP No. B-5370.
Debit \$240 from WBS 46085.1.1.

Dear Madam:

The North Carolina Department of Transportation (NCDOT) proposes to replace Bridge No. 444 over East Fork Stewarts Creek on SR 1506, Price Dairy Road. Bridge No 444 is a 31 foot-long single-span bridge. The replacement structure will be a 43.6 foot-long, triple-barrel box culvert with 10' (width) x 8' (height) barrels. Traffic will be maintained off site during construction.

Impacts include:

96 linear feet of permanent impact to East Fork Stewarts Creek which includes 26' of stream modification on each side of the culvert (52' total) to properly align the stream to the new structure,

25 feet of temporary stream impacts for the temporary dewatering (for the installation of impervious dikes) to construct the culvert in dry conditions, and

<0.01 acre of permanent wetland fill (the total wetland size is 258 square feet), and <0.01 acre of temporary wetland fill to accommodate for the wider shoulders (11' lanes with 4' shoulders replacing 8' lanes with 6-inch shoulders).

Due to the size of the wetland impacted (<0.01 ac, 258 square feet), NCDOT does not propose mitigation for this impact.

Please see enclosed copies of the Pre-Construction Notification (PCN), stormwater management plan, permit drawings, design plans, and DMS mitigation acceptance for the above-referenced project. The Programmatic Categorical Exclusion (PCE) was completed in September 2015 and distributed shortly thereafter. Additional copies are available upon request.

This project calls for a letting date of February 20, 2018 and a review date of January 2, 2018.

A copy of this permit application and its distribution list will be posted on the NCDOT Website at: <http://connect.ncdot.gov/resources/Environmental>. If you have any questions or need additional information, please contact Michael Turchy at maturchy@ncdot.gov or (919) 707-6157.

Sincerely,



PH Philip S. Harris III, P.E., C.P.M.
Natural Environment Section Head

cc: NCDOT Standard Permit Application Distribution List



Office Use Only:
 Corps action ID no. _____
 DWQ project no. _____
 Form Version 1.4 January 2009

e-Construction Notification (PCN) Form		
Applicant Information		
1. Processing		
1a. Type(s) of approval sought from the Corps:	<input checked="" type="checkbox"/> Section 404 Permit <input type="checkbox"/> Section 10 Permit	
1b. Specify Nationwide Permit (NWP) number: 23, 33 or General Permit (GP) number:		
1c. Has the NWP or GP number been verified by the Corps?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
1d. Type(s) of approval sought from the DWQ (check all that apply):		
<input checked="" type="checkbox"/> 401 Water Quality Certification – Regular <input type="checkbox"/> Non-404 Jurisdictional General Permit <input type="checkbox"/> 401 Water Quality Certification – Express <input type="checkbox"/> Riparian Buffer Authorization		
1e. Is this notification solely for the record because written approval is not required?	For the record only for DWQ 401 Certification: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	For the record only for Corps Permit: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
1f. Is payment into a mitigation bank or in-lieu fee program proposed for mitigation of impacts? If so, attach the acceptance letter from mitigation bank or in-lieu fee program.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
1g. Is the project located in any of NC's twenty coastal counties. If yes, answer 1h below.	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
1h. Is the project located within a NC DCM Area of Environmental Concern (AEC)?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
2. Project Information		
2a. Name of project:	B-5370 Replacement of Bridge 444 over East Fork Stewarts Creek on SR 1506 (Price Dairy Raod)	
2b. County:	Union	
2c. Nearest municipality / town:	Monroe	
2d. Subdivision name:	n/a	
2e. NCDOT only, T.I.P. or state project no:	B-5370	
3. Owner Information		
3a. Name(s) on Recorded Deed:	North Carolina Department of Transportation	
3b. Deed Book and Page No.		
3c. Responsible Party (for LLC if applicable):		
3d. Street address:	1598 Mail Service Center	
3e. City, state, zip:	Raleigh, NC 27699-1598	
3f. Telephone no.:	919-707-6157	
3g. Fax no.:	919-212-5785	
3h. Email address:	maturchy@ncdot.gov	

4. Applicant Information (if different from owner)	
4a. Applicant is:	<input type="checkbox"/> Agent <input type="checkbox"/> Other, specify:
4b. Name:	
4c. Business name (if applicable):	
4d. Street address:	
4e. City, state, zip:	
4f. Telephone no.:	
4g. Fax no.:	
4h. Email address:	
5. Agent/Consultant Information (if applicable)	
5a. Name:	
5b. Business name (if applicable):	
5c. Street address:	
5d. City, state, zip:	
5e. Telephone no.:	
5f. Fax no.:	
5g. Email address:	

B. Project Information and Prior Project History	
1. Property Identification	
1a. Property identification no. (tax PIN or parcel ID):	n/a
1b. Site coordinates (in decimal degrees):	Latitude: 35.043466 Longitude: - 80.557916 (DD.DDDDDD) (-DD.DDDDDD)
1c. Property size:	Approximately 1 acre
2. Surface Waters	
2a. Name of nearest body of water (stream, river, etc.) to proposed project:	East Fork Stewarts Creek
2b. Water Quality Classification of nearest receiving water:	WS-III
2c. River basin:	Yadkin-Pee Dee River Basin
3. Project Description	
3a. Describe the existing conditions on the site and the general land use in the vicinity of the project at the time of this application: The land use is farmland with maintained disturbed dispersed throughout.	
3b. List the total estimated acreage of all existing wetlands on the property: There are two wetlands on the property totaling 0.016 acre. (The avoided wetland is <0.01 acre (421 sq ft), the impacted wetland is <0.01 (258 sq ft).	
3c. List the total estimated linear feet of all existing streams (intermittent and perennial) on the property: Approximately 354 linear feet of stream exist within project study area.	
3d. Explain the purpose of the proposed project: The purpose of the project is to replace a structurally deficient and functionally obsolete bridge, built in 1958 that is approaching the end of its useful life. The bridge is currently posted for 15 tons for single vehicles and 19 tons for tractor-trailer semi-trucks.	
3e. Describe the overall project in detail, including the type of equipment to be used: The project involves replacing a 31-foot long, single span bridge with a 43.6-foot, triple barrel box culvert structure at the same location. Traffic will be maintained on an off-site detour during construction. Standard culvert and road building equipment, such as trucks, dozers, and cranes will be used.	
4. Jurisdictional Determinations	
4a. Have jurisdictional wetland or stream determinations by the Corps or State been requested or obtained for this property / project (including all prior phases) in the past? Comments:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Unknown
4b. If the Corps made the jurisdictional determination, what type of determination was made?	<input type="checkbox"/> Preliminary <input type="checkbox"/> Final
4c. If yes, who delineated the jurisdictional areas? Name (if known):	Agency/Consultant Company: Other:
4d. If yes, list the dates of the Corps jurisdictional determinations or State determinations and attach documentation.	
5. Project History	
5a. Have permits or certifications been requested or obtained for this project (including all prior phases) in the past?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Unknown
5b. If yes, explain in detail according to "help file" instructions.	

6. Future Project Plans	
6a. Is this a phased project?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
6b. If yes, explain.	

C. Proposed Impacts Inventory						
1. Impacts Summary						
1a. Which sections were completed below for your project (check all that apply):						
<input checked="" type="checkbox"/> Wetlands <input checked="" type="checkbox"/> Streams - tributaries <input type="checkbox"/> Buffers <input type="checkbox"/> Open Waters <input type="checkbox"/> Pond Construction						
2. Wetland Impacts						
If there are wetland impacts proposed on the site, then complete this question for each wetland area impacted.						
2a. Wetland impact number – Permanent (P) or Temporary (T)	2b. Type of impact	2c. Type of wetland (if known)	2d. Forested	2e. Type of jurisdiction (Corps - 404, 10 DWQ – non-404, other)	2f. Area of impact (acres)	
Site 1 <input checked="" type="checkbox"/> P <input type="checkbox"/> T	Fill	Bottomland Hardwood Forest	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input checked="" type="checkbox"/> Corps <input type="checkbox"/> DWQ	<0.01 (wetland size is 258 sq ft')	
Site 1 <input type="checkbox"/> P <input checked="" type="checkbox"/> T	Temporary access	Bottomland Hardwood Forest	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input checked="" type="checkbox"/> Corps <input type="checkbox"/> DWQ	<0.01	
2g. Total wetland impacts					<0.01	
2h. Comments:						
3. Stream Impacts						
If there are perennial or intermittent stream impacts (including temporary impacts) proposed on the site, then complete this question for all stream sites impacted.						
3a. Stream impact number - Permanent (P) or Temporary (T)	3b. Type of impact	3c. Stream name	3d. Perennial (PER) or intermittent (INT)?	3e. Type of jurisdiction (Corps - 404, 10 DWQ – non-404, other)	3f. Average stream width (feet)	3g. Impact length (linear feet)
Site 1 <input checked="" type="checkbox"/> P <input type="checkbox"/> T	Culvert (structure)	East Fork Stewarts Creek	<input checked="" type="checkbox"/> PER <input type="checkbox"/> INT	<input checked="" type="checkbox"/> Corps <input type="checkbox"/> DWQ	10	44
Site 1 <input checked="" type="checkbox"/> P <input type="checkbox"/> T	Channelization to Structure	East Fork Stewarts Creek	<input checked="" type="checkbox"/> PER <input type="checkbox"/> INT	<input checked="" type="checkbox"/> Corps <input type="checkbox"/> DWQ	10	52
Site 1 <input type="checkbox"/> P <input checked="" type="checkbox"/> T	Temporary Dewatering for Culvert Installation	East Fork Stewarts Creek	<input checked="" type="checkbox"/> PER <input type="checkbox"/> INT	<input checked="" type="checkbox"/> Corps <input type="checkbox"/> DWQ	10	<0.01 acre
3h. Total stream and tributary impacts					Permanent = 96' Temp = <0.01 ac NW 23 = 96' NW 33 = <0.01 ac	
3i. Comments:						

4. Open Water Impacts

If there are proposed impacts to lakes, ponds, estuaries, tributaries, sounds, the Atlantic Ocean, or any other open water of the U.S. then individually list all open water impacts below.

4a. Open water impact number – Permanent (P) or Temporary (T)	4b. Name of waterbody (if applicable)	4c. Type of impact	4d. Waterbody type	4e. Area of impact (acres)
O1 <input type="checkbox"/> P <input type="checkbox"/> T				
O2 <input type="checkbox"/> P <input type="checkbox"/> T				
O3 <input type="checkbox"/> P <input type="checkbox"/> T				
O4 <input type="checkbox"/> P <input type="checkbox"/> T				

4f. Total open water impacts

4g. Comments:

5. Pond or Lake Construction

If pond or lake construction proposed, then complete the chart below.

5a. Pond ID number	5b. Proposed use or purpose of pond	5c. Wetland Impacts (acres)			5d. Stream Impacts (feet)		5e. Upland (acres)	
		Flooded	Filled	Excavated	Flooded	Filled	Excavated	Flooded
P1								
P2								
5f. Total								

5g. Comments:

5h. Is a dam high hazard permit required? Yes No If yes, permit ID no:

5i. Expected pond surface area (acres):

5j. Size of pond watershed (acres):

5k. Method of construction:

6. Buffer Impacts (for DWQ)

If project will impact a protected riparian buffer, then complete the chart below. If yes, then individually list all buffer impacts below. If any impacts require mitigation, then you **MUST** fill out Section D of this form.

6a. Project is in which protected basin?		<input type="checkbox"/> Neuse <input type="checkbox"/> Tar-Pamlico <input type="checkbox"/> Other: <input type="checkbox"/> Catawba <input type="checkbox"/> Randleman			
6b. Buffer impact number – Permanent (P) or Temporary (T)	6c. Reason for impact	6d. Stream name	6e. Buffer mitigation required?	6f. Zone 1 impact (square feet)	6g. Zone 2 impact (square feet)
B1 <input type="checkbox"/> P <input type="checkbox"/> T			<input type="checkbox"/> Yes <input type="checkbox"/> No		
B2 <input type="checkbox"/> P <input type="checkbox"/> T			<input type="checkbox"/> Yes <input type="checkbox"/> No		
6h. Total buffer impacts					

6i. Comments:

D. Impact Justification and Mitigation

1. Avoidance and Minimization

1a. Specifically describe measures taken to avoid or minimize the proposed impacts in designing project.

Traffic will be maintained off-site during construction, thus minimizing the project footprint.

A culvert was selected as the replacement structure due to the small size of the watershed (3.6 square miles), and long term maintenance cost.

The stream is unnaturally widened at bridge, as the current bridge behaves like an over-widened culvert. The new culvert will maintain East Fork Stewarts Creek natural steam width (10') through the crossing by way of sills in the outer two barrels.

Two, 2-foot sills will be located in the outside barrels and a 1-foot sill will be located in the center barrel. Native material will be backfilled to sill heights. Floodplain benches adjacent to the outside barrels are proposed above and below the culvert.

An old/ abandoned structure located upstream of the current bridge (also unnaturally over-widened) will also be removed.

The new structure has been minimized as much as practicable to avoid impacts to the adjacent confluence with an unnamed tributary.

1b. Specifically describe measures taken to avoid or minimize the proposed impacts through construction techniques.

Best Management Practices (BMPs) will be utilized during construction to attempt to reduce the stormwater impacts to the receiving streams due to erosion and runoff.

2. Compensatory Mitigation for Impacts to Waters of the U.S. or Waters of the State		
2a. Does the project require Compensatory Mitigation for impacts to Waters of the U.S. or Waters of the State?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
2b. If yes, mitigation is required by (check all that apply):	<input type="checkbox"/> DWQ <input checked="" type="checkbox"/> Corps	
2c. If yes, which mitigation option will be used for this project?	<input type="checkbox"/> Mitigation bank <input checked="" type="checkbox"/> Payment to in-lieu fee program <input type="checkbox"/> Permittee Responsible Mitigation	
3. Complete if Using a Mitigation Bank		
3a. Name of Mitigation Bank:		
3b. Credits Purchased (attach receipt and letter)	Type	Quantity
3c. Comments:		
4. Complete if Making a Payment to In-lieu Fee Program		
4a. Approval letter from in-lieu fee program is attached.	<input checked="" type="checkbox"/> Yes	
4b. Stream mitigation requested:	44 linear feet	
4c. If using stream mitigation, stream temperature:	<input checked="" type="checkbox"/> warm <input type="checkbox"/> cool <input type="checkbox"/> cold	
4d. Buffer mitigation requested (DWQ only):	square feet	
4e. Riparian wetland mitigation requested:	acre	
4f. Non-riparian wetland mitigation requested:	acres	
4g. Coastal (tidal) wetland mitigation requested:	acres	
4h. Comments:		
5. Complete if Using a Permittee Responsible Mitigation Plan		
5a. If using a permittee responsible mitigation plan, provide a description of the proposed mitigation plan.		

6. Buffer Mitigation (State Regulated Riparian Buffer Rules) – required by DWQ

6a. Will the project result in an impact within a protected riparian buffer that requires buffer mitigation?

Yes **No**

6b. If yes, then identify the square feet of impact to each zone of the riparian buffer that requires mitigation. Calculate the amount of mitigation required.

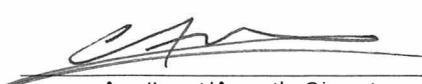
Zone	6c. Reason for impact	6d. Total impact (square feet)	Multiplier	6e. Required mitigation (square feet)
Zone 1			3 (2 for Catawba)	
Zone 2			1.5	
6f. Total buffer mitigation required:				

6g. If buffer mitigation is required, discuss what type of mitigation is proposed (e.g., payment to private mitigation bank, permittee responsible riparian buffer restoration, payment into an approved in-lieu fee fund).

6h. Comments:

E. Stormwater Management and Diffuse Flow Plan (required by DWQ)	
1. Diffuse Flow Plan	
1a. Does the project include or is it adjacent to protected riparian buffers identified within one of the NC Riparian Buffer Protection Rules?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
1b. If yes, then is a diffuse flow plan included? If no, explain why. Comments:	<input type="checkbox"/> Yes <input type="checkbox"/> No
2. Stormwater Management Plan	
2a. What is the overall percent imperviousness of this project?	n/a %
2b. Does this project require a Stormwater Management Plan?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
2c. If this project DOES NOT require a Stormwater Management Plan, explain why:	
2d. If this project DOES require a Stormwater Management Plan, then provide a brief, narrative description of the plan: see attached permit drawings	
2e. Who will be responsible for the review of the Stormwater Management Plan?	<input type="checkbox"/> Certified Local Government <input type="checkbox"/> DWQ Stormwater Program <input checked="" type="checkbox"/> DWQ 401 Unit
3. Certified Local Government Stormwater Review	
3a. In which local government's jurisdiction is this project?	n/a
3b. Which of the following locally-implemented stormwater management programs apply (check all that apply):	<input type="checkbox"/> Phase II <input type="checkbox"/> NSW <input type="checkbox"/> USMP <input type="checkbox"/> Water Supply Watershed <input type="checkbox"/> Other:
3c. Has the approved Stormwater Management Plan with proof of approval been attached?	<input type="checkbox"/> Yes <input type="checkbox"/> No
4. DWQ Stormwater Program Review	
4a. Which of the following state-implemented stormwater management programs apply (check all that apply):	<input type="checkbox"/> Coastal counties <input type="checkbox"/> HQW <input type="checkbox"/> ORW <input type="checkbox"/> Session Law 2006-246 <input type="checkbox"/> Other: N/A
4b. Has the approved Stormwater Management Plan with proof of approval been attached?	<input type="checkbox"/> Yes <input type="checkbox"/> No n/a
5. DWQ 401 Unit Stormwater Review	
5a. Does the Stormwater Management Plan meet the appropriate requirements?	<input type="checkbox"/> Yes <input type="checkbox"/> No n/a
5b. Have all of the 401 Unit submittal requirements been met?	<input type="checkbox"/> Yes <input type="checkbox"/> No n/a

F. Supplementary Information	
1. Environmental Documentation (DWQ Requirement)	
1a. Does the project involve an expenditure of public (federal/state/local) funds or the use of public (federal/state) land?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
1b. If you answered "yes" to the above, does the project require preparation of an environmental document pursuant to the requirements of the National or State (North Carolina) Environmental Policy Act (NEPA/SEPA)?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
1c. If you answered "yes" to the above, has the document review been finalized by the State Clearing House? (If so, attach a copy of the NEPA or SEPA final approval letter.) Comments: - PCE completed September 28, 2015.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
2. Violations (DWQ Requirement)	
2a. Is the site in violation of DWQ Wetland Rules (15A NCAC 2H .0500), Isolated Wetland Rules (15A NCAC 2H .1300), DWQ Surface Water or Wetland Standards, or Riparian Buffer Rules (15A NCAC 2B .0200)?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
2b. Is this an after-the-fact permit application?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
2c. If you answered "yes" to one or both of the above questions, provide an explanation of the violation(s):	
3. Cumulative Impacts (DWQ Requirement)	
3a. Will this project (based on past and reasonably anticipated future impacts) result in additional development, which could impact nearby downstream water quality?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
3b. If you answered "yes" to the above, submit a qualitative or quantitative cumulative impact analysis in accordance with the most recent DWQ policy. If you answered "no," provide a short narrative description.	
4. Sewage Disposal (DWQ Requirement)	
4a. Clearly detail the ultimate treatment methods and disposition (non-discharge or discharge) of wastewater generated from the proposed project, or available capacity of the subject facility. Not applicable.	

5. Endangered Species and Designated Critical Habitat (Corps Requirement)		
5a. Will this project occur in or near an area with federally protected species or habitat?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
5b. Have you checked with the USFWS concerning Endangered Species Act impacts?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
5c. If yes, indicate the USFWS Field Office you have contacted.	<input type="checkbox"/> Raleigh <input type="checkbox"/> Asheville	
5d. What data sources did you use to determine whether your site would impact Endangered Species or Designated Critical Habitat? USFWS website: Schweinitz's sunflower- No Effect, habitat present, last survey: 10/20/2015 Michaux's sumac – No Effect, habitat present, last survey: 10/20/2015 Carolina heelsplitter – No Effect due to “preferred habitat absent from East Fork Stewarts Creek.” and “Lake Twitty (Lake Stewart) would act as a barrier for mussels, this isolating any mussels in East Fork Stewarts Creek, which eliminates long term viability for mussels.”		
6. Essential Fish Habitat (Corps Requirement)		
6a. Will this project occur in or near an area designated as essential fish habitat?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
6b. What data sources did you use to determine whether your site would impact Essential Fish Habitat?		
7. Historic or Prehistoric Cultural Resources (Corps Requirement)		
7a. Will this project occur in or near an area that the state, federal or tribal governments have designated as having historic or cultural preservation status (e.g., National Historic Trust designation or properties significant in North Carolina history and archaeology)?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
7b. What data sources did you use to determine whether your site would impact historic or archeological resources?		
8. Flood Zone Designation (Corps Requirement)		
8a. Will this project occur in a FEMA-designated 100-year floodplain?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
8b. If yes, explain how project meets FEMA requirements:		
8c. What source(s) did you use to make the floodplain determination? approved NEPA documents		
<i>for</i> Philip S. Harris C.P.M., P.E. Applicant/Agent's Printed Name	 Applicant/Agent's Signature <small>(Agent's signature is valid only if an authorization letter from the applicant is provided.)</small>	07-24-2017 Date



July 6, 2017

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

Dear Mr. Harris:

Subject: Mitigation Acceptance Letter:

B-5370, Replace Bridge Number 444 over East Fork Stewards Creek on SR 1506, Union County

The purpose of this letter is to notify you that the Division of Mitigation Services (DMS) will provide the compensatory stream mitigation for the subject project. Based on the information supplied by you on July 6, 2017, the impacts are located in CU 03040105 of the Yadkin River basin in the Southern Piedmont (SP) Eco-Region, and are as follows:

Yadkin 03040105 SP	Stream			Wetlands			Buffer (Sq. Ft.)	
	Cold	Cool	Warm	Riparian	Non-Riparian	Coastal Marsh	Zone 1	Zone 2
Impacts (feet/acres)	0	0	44.0	0	0	0	0	0

*Some of the stream impacts may be proposed to be mitigated at a 1:1 mitigation ratio. See permit application for details.

This mitigation acceptance letter replaces the mitigation acceptance letter issued on June 1, 2017. The impacts and associated mitigation needs were under projected by the NCDOT in the 2017 impact data. DMS will commit to implement sufficient compensatory stream mitigation credits to offset the impacts associated with this project as determined by the regulatory agencies using the delivery timeline listed in Section F.3.c.iii of the In-Lieu Fee Instrument dated July 28, 2010. If the above referenced impact amounts are revised, then this mitigation acceptance letter will no longer be valid and a new mitigation acceptance letter will be required from DMS.

If you have any questions or need additional information, please contact Beth Harmon at 919-707-8420.

Sincerely,

James B. Stanfill
Credit Management Supervisor

cc: Mr. Crystal Amschler, USACE – Asheville Regulatory Field Office
Ms. Amy Chapman, NCDWR
File: B-5370





North Carolina Department of Transportation

Highway Stormwater Program
STORMWATER MANAGEMENT PLAN

FOR NCDOT PROJECTS



(Version 2.06; Released June 2016)

WBS Element: 46085.1.1 TIP No.: B-5370 County(ies): Union Page 1 of 2

General Project Information

WBS Element:	46085.1.1	TIP Number:	B-5370	Project Type:	Bridge Replacement	Date:	3/30/2017
NCDOT Contact:	William (Bill) H. Elam Jr., PE		Contractor / Designer:	Reid B. Robol, PE			
Address:	1020 Birch Ridge Rd. Raleigh, 27610		Address:	1151 SE Cary Parkway, Suite 101 Cary NC, 27518			
	Phone:	919-707-6718		Phone:	919-557-0929		
	Email:	belam@ncdot.gov		Email:	rrobol@ecologicaleng.com		
City/Town:	Town of Unionville		County(ies):	Union			
River Basin(s):	Yadkin-Pee Dee		CAMA County?	No			
Wetlands within Project Limits?	Yes						

Project Description

Project Length (lin. miles or feet):	0.06	Surrounding Land Use:	Rural residential, agricultural					
	Proposed Project			Existing Site				
Project Built-Up Area (ac.)	0.3	ac.	0.1	ac.				
Typical Cross Section Description:	11' lanes with 4' shoulders			8' lanes with with 0.5' shoulders				
Annual Avg Daily Traffic (veh/hr/day):	Design/Future:	527	Year:	2038	Existing:	345	Year:	2018
General Project Narrative: (Description of Minimization of Water Quality Impacts)	State project B-5370 involves the replacement of the existing NCDOT Bridge #890444 on SR 1719 over East Fork Stewarts Creek. Bridge #890444 consists of 1@30'-6" timber deck on I-beams with timber caps and piles. The proposed crossing will be a 3@10'X8' RCBC with 2.0' sills in the outside barrels and 1.0' sill in the center barrel. Native material will utilized as backfill to sill heights. The proposed culvert will eliminate direct roadway runoff to the surface water. No deck drains are proposed.							

Waterbody Information

Surface Water Body (1):	East Fork Stewarts Creek		NCDWR Stream Index No.:	13-17-36-9-2			
NCDWR Surface Water Classification for Water Body	Primary Classification:	Water Supply III (WS-III)					
	Supplemental Classification:	None					
Other Stream Classification:	None						
Impairments:	None						
Aquatic T&E Species?	No Comments:						
NRTR Stream ID:	East Fork Stewarts Creek				Buffer Rules in Effect:	N/A	
Project Includes Bridge Spanning Water Body?			Deck Drains Discharge Over Buffer?	No		Dissipator Pads Provided in Buffer?	N/A
Deck Drains Discharge Over Water Body?	No		(If yes, provide justification in the General Project Narrative)		(If yes, describe in the General Project Narrative; if no, justify in the General Project Narrative)		
	(If yes, provide justification in the General Project Narrative)						



North Carolina Department of Transportation
Highway Stormwater Program
STORMWATER MANAGEMENT PLAN
 FOR NCDOT PROJECTS



(Version 2.06; Released June 2016)

WBS Element: 46085.1.1 **TIP No.:** B-5370 **County(ies):** Union **Page** 2 **of** 2

Bridge to Culvert Avoidance and Minimization

Proposed Structure Summary

Sheet No. & Station	Sheet No.: 4	Station: 18+16 -L-	Number of Barrels:	3
Drainage Area (ac or sq mi):	3.6 Sq. Miles		Barrel Width/Diameter (ft):	10
Surface Water Body:	(1) East Fork Stewarts Creek		Barrel Height (ft):	8
Culvert Type:	Reinforced Concrete Box Culvert		Culvert Length (ft)	43.6
Avoidance and Minimization Efforts: (Bridge to Culvert)	Culvert Burial Minimization - Native material will be utilized as backfill to a Sill height of 1.0' in the center barrel and 2.0' in the outer barrels. Erosion control - Bank stabilization with class II rip rap will be utilized up and downstream to avoid bank erosion. Impervious dikes and silt fence will be used during the construction of the culvert. Minimize clearing - There shall be minimal clearing of vegetation on the existing shoulders/side slopes during the construction of the proposed culvert and roadway.			

Stream Slope

Fish and/or Aquatic Life Passage

Existing Average Stream Slope (%):	0.44 %	Existing Low Flow Channel Dimensions in the Stream:	10'-20' Base, 2:1 side slopes, 1.0' depth of water		
Proposed Culvert Slope (%):	0.44 %				
Culvert Burial		Proposed Low Flow Dimensions Through the Culvert:	Center barrel is the low flow barrel - 1' buried 10'x8'.		
Proposed Culvert Burial Depth (ft):	1.0' in center barrel, 2.0' in outside barrels				
Existing Streambed Material:	cobbles, coarse sand	Existing Low Flow Velocities in the Stream (ft/s):	2		
Proposed Sills/Baffles:	2.0' Sills will be located in the outside barrels of the 3@10'x8' RCBC. A 1.0' sill will be located in the center barrel. Native material will be backfilled to Sill heights. Native material consist of material that is being excavated from the stream bed at the project site during culvert construction. Native material is subject to approval by the engineer and may be subject to permit conditions.			Proposed Low Flow Velocities Through the Culvert (ft/s):	2
				Alternating Low Flow Sills/Baffles:	Alternating sills/baffles are not needed due to the low flow barrel matching the width of the existing low flow channel.

Culvert/Stream Alignment

Stream Patterns Upstream and Downstream of the Culvert that Could Affect Fish Passage and Bank Stability:	The existing bridge and proposed culvert are located within a slight bend of the channel. Amored bank work has been proposed to minimize potential bank erosion at the inlet and outlet.		
Bed Forms Impacted by Culvert (riffles, pools, glides, etc.):	NA		
Low Flow Floodplain Bench Required? (provide justification)	Yes	In order to match the existing channel dimensions, floodplain benches adjacent to the outside barrels are proposed above and below the culvert.	
Sharp Bends at Inlet/Outlet? (describe culvert alignment with stream)	No		
Stream Realignment Necessary? (provide justification)	No		
Bank Stabilization:	Class II Rip Rap is proposed as bank stabilization approximately 22' upstream and 33' downstream.		

Outlet Velocities

Natural Stream Channel 2-yr Velocity (ft/s):	4.3	Natural Stream Channel 10-yr Velocity (ft/s):	5.5
Proposed Culvert 2-yr Outlet Velocity (ft/s):	4.3	Proposed Culvert 10-yr Outlet Velocity (ft/s):	5.4

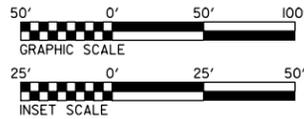
Roadway Geometric Considerations

Evaluate/Describe Roadway Geometric Constraints:

There is an abandoned bridge immediately downstream of the existing bridge that contracts the channel. The proposed culvert design recommends removing the abandoned bridge and creating benches to better match existing channel dimensions and to aid in conveyance. Excavated banks will be stabilized with rip rap.

6/2/99

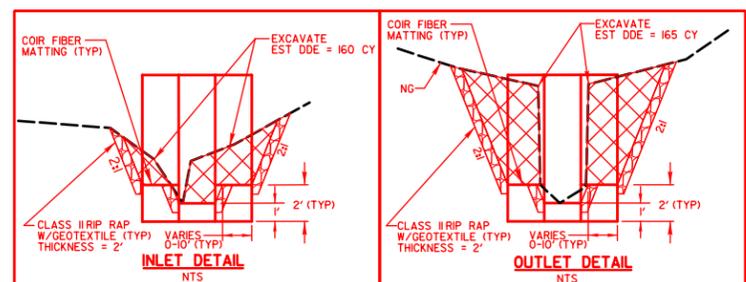
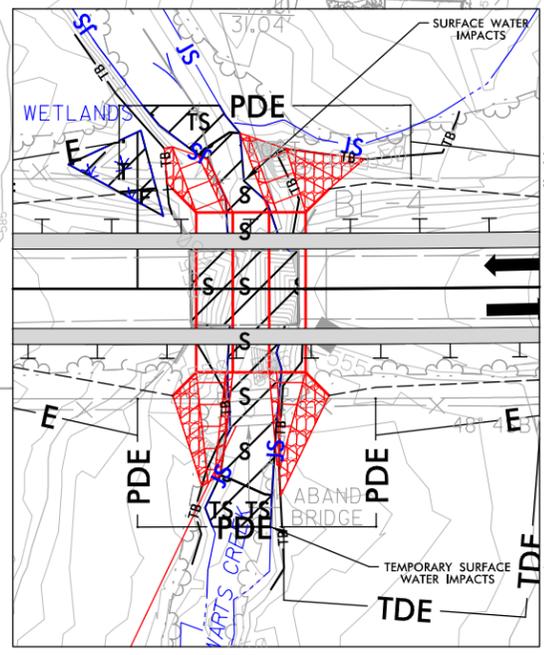
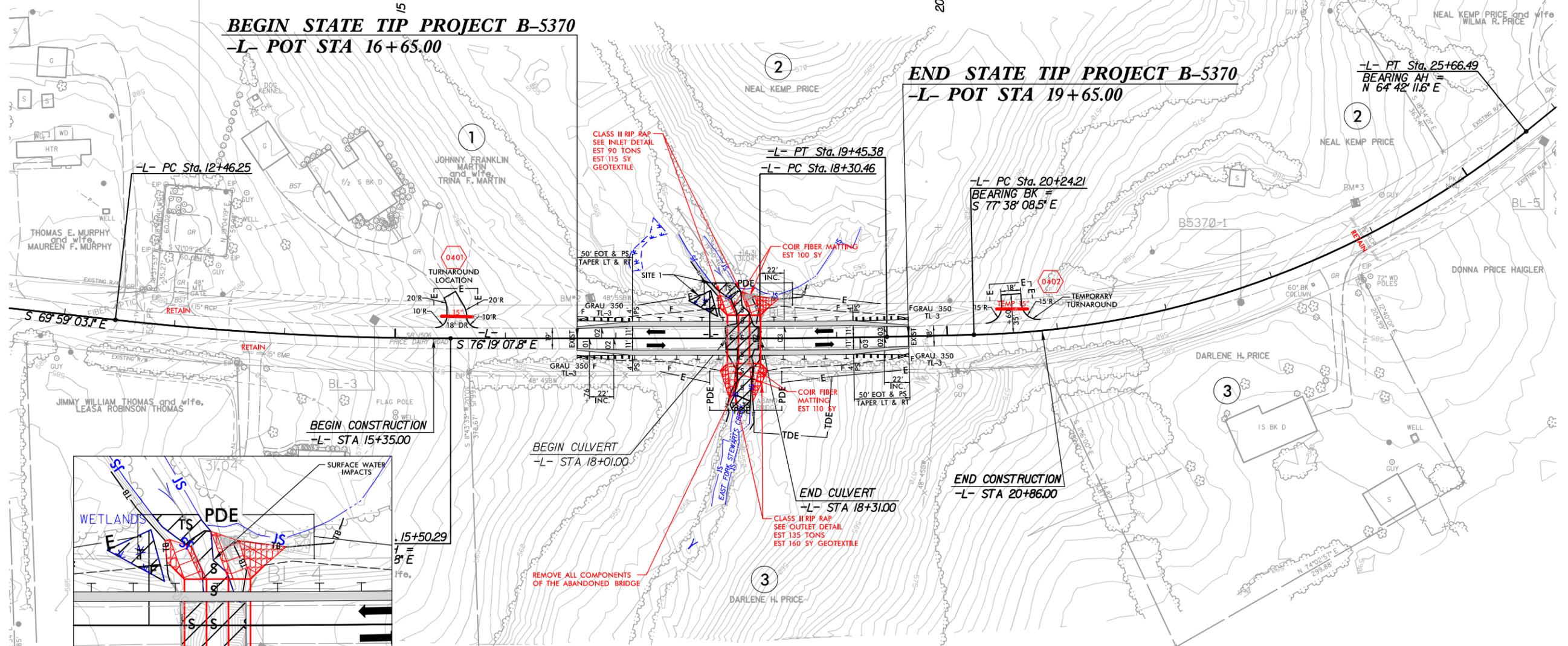
- DENOTES IMPACTS IN SURFACE WATER
- DENOTES TEMPORARY IMPACTS IN SURFACE WATER
- DENOTES FILL IN WETLAND
- DENOTES TEMPORARY FILL IN WETLAND



CROWN CASTLE
www.crowncastle.com
FOR LEASE 877-486-9377
FOR EMERGENCY 24 HOUR SERVICE 800-788-7011
CROWN BUSINESS UNIT NUMBER 876281
SITE ADDRESS 81 PRICE DAIRY ROAD, MONROE NC 28101
SITE NAME: PRICE'S DAIRY ROAD

**PERMIT DRAWING
SHEET 3 OF 7**

PROJECT REFERENCE NO. B-5370	SHEET NO. 4
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	
KCI Engineers • Planners • Scientists • Construction Managers 4601 Six Forks Road, Landmark Center II, Suite 220 Raleigh, NC 27609-5210 Phone (919) 783-9214 • Fax (919) 783-9266	NC FIRM LICENSE No: F-1148 1151 SE Cary Parkway Suite 101 Cary, NC 27518 (919) 557-0929
ECOLOGICAL ENGINEERING	



-L-		
PI Sta 13+98.43	PI Sta 18+87.92	PI Sta 23+05.56
$\Delta = 6' 20' 04.7''$ (LT)	$\Delta = 1' 19' 00.7''$ (LT)	$\Delta = 37' 39' 40.0''$ (LT)
D = 2' 05' 00.5"	D = 1' 08' 45.3"	D = 6' 56' 41.8"
L = 304.04'	L = 114.92'	L = 542.28'
T = 152.18'	T = 57.46'	T = 281.34'
R = 2,750.00'	R = 5,000.00'	R = 825.00'
	SE = .03	
	RO = 66'	
	DS = 50 MPH	

FOR -L- PROFILE, SEE SHEET 5
FOR CULVERT PLANS, SEE SHEETS C-1 THRU C-7

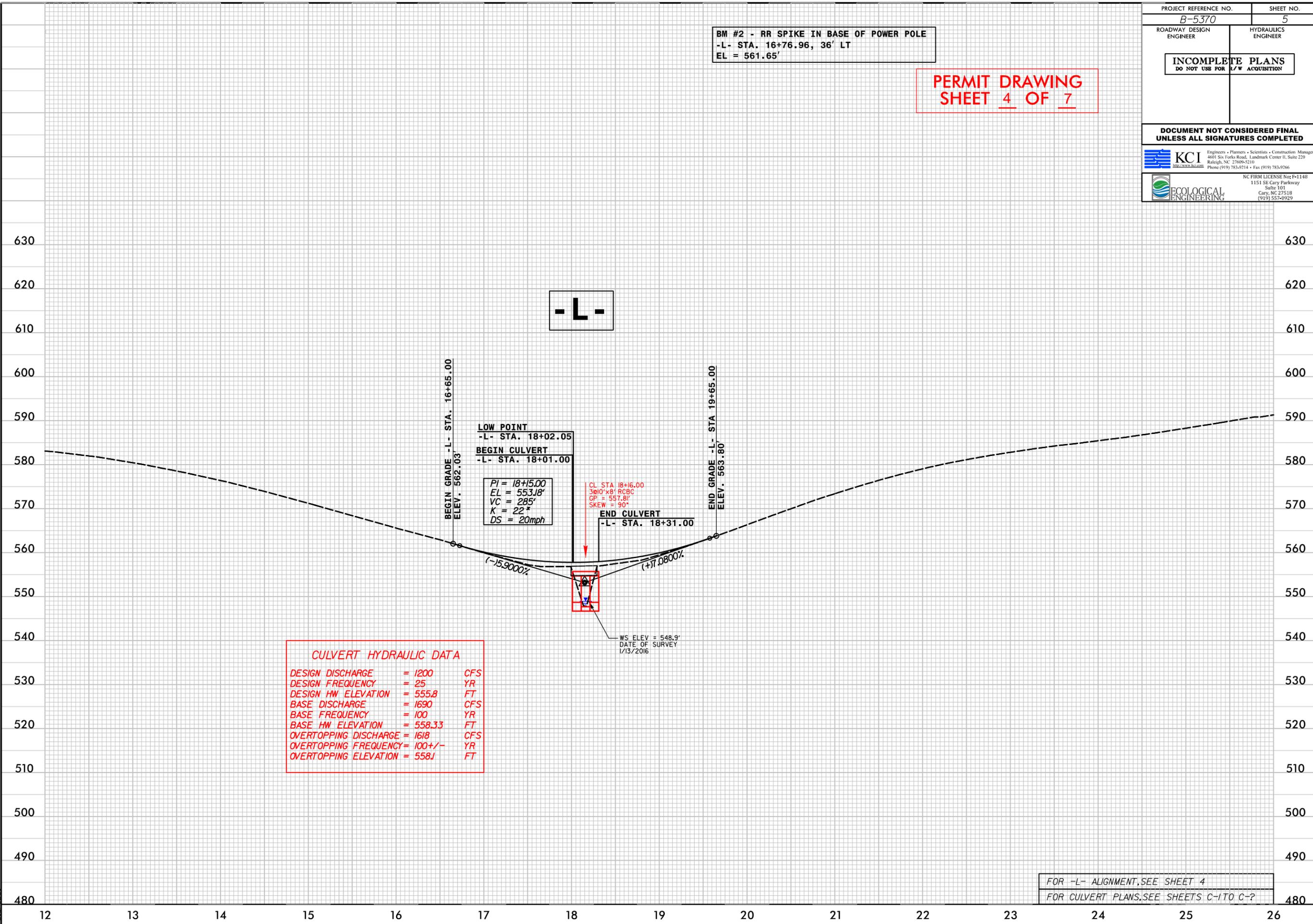
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5/14/99

PROJECT REFERENCE NO. B-5370	SHEET NO. 5
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	
 <small>Engineers • Planners • Scientists • Construction Managers 4601 Six Forks Road, Landmark Center II, Suite 220 Raleigh, NC 27609-5210 Phone (919) 783-9214 • Fax (919) 783-9266</small>	
 <small>NC FIRM LICENSE No: P-1148 1151 SE Cary Parkway Suite 101 Cary, NC 27518 (919) 557-0929</small>	

BM #2 - RR SPIKE IN BASE OF POWER POLE
-L- STA. 16+76.96, 36' LT
EL = 561.65'

PERMIT DRAWING
SHEET 4 OF 7



-L-

LOW POINT
-L- STA. 18+02.05
BEGIN CULVERT
-L- STA. 18+01.00

PI = 18+15.00
EL = 553.18'
VC = 285'
K = 22*
DS = 20mph

CL STA 18+16.00
36x8 RCBC
GP = 557.81'
SKEW = 90°

END CULVERT
-L- STA. 18+31.00

CULVERT HYDRAULIC DATA

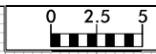
DESIGN DISCHARGE	= 1200	CFS
DESIGN FREQUENCY	= 25	YR
DESIGN HW ELEVATION	= 555.8	FT
BASE DISCHARGE	= 1690	CFS
BASE FREQUENCY	= 100	YR
BASE HW ELEVATION	= 558.33	FT
OVERTOPPING DISCHARGE	= 1618	CFS
OVERTOPPING FREQUENCY	= 100+/-	YR
OVERTOPPING ELEVATION	= 558.1	FT

WS ELEV = 548.9'
DATE OF SURVEY
1/13/2016

FOR -L- ALIGNMENT, SEE SHEET 4
FOR CULVERT PLANS, SEE SHEETS C-1 TO C-7

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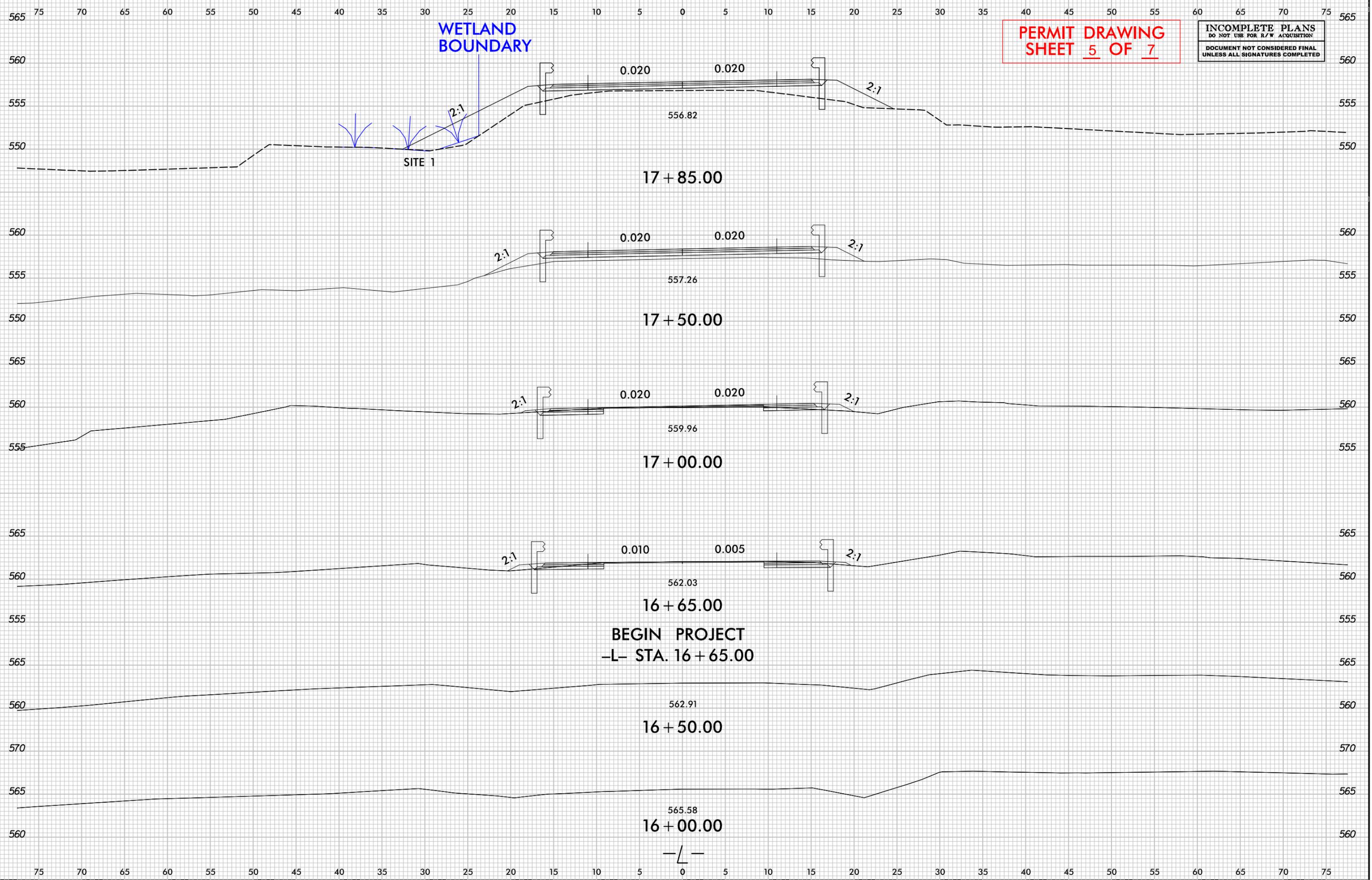
8/23/99



PROJ. REFERENCE NO. B-5370 SHEET NO. X-1

PERMIT DRAWING SHEET 5 OF 7

INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



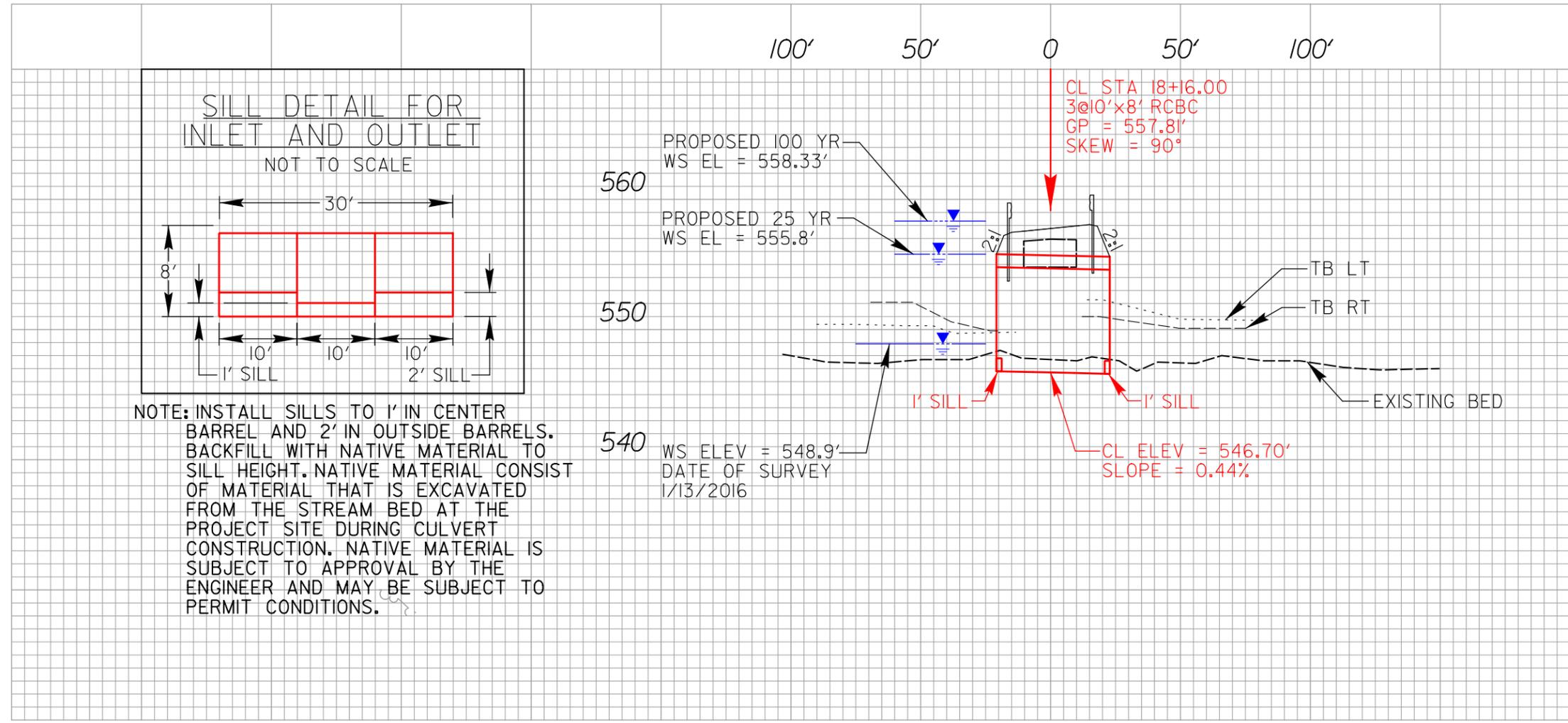
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PROJECT REFERENCE NO. B-5370	SHEET NO.
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION	

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

PERMIT DRAWING
SHEET 6 OF 7

8/17/99
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WETLAND AND SURFACE WATER IMPACTS SUMMARY

Site No.	Station (From/To)	Structure Size / Type	WETLAND IMPACTS					SURFACE WATER IMPACTS				
			Permanent Fill In Wetlands (ac)	Temp. Fill In Wetlands (ac)	Excavation in Wetlands (ac)	Mechanized Clearing in Wetlands (ac)	Hand Clearing in Wetlands (ac)	Permanent SW impacts (ac)	Temp. SW impacts (ac)	Existing Channel Impacts Permanent (ft)	Existing Channel Impacts Temp. (ft)	Natural Stream Design (ft)
1	17+66/18+29	3@10'X8' RCBC	< 0.01	< 0.01				0.04	< 0.01	96	25	
TOTALS*:			< 0.01	< 0.01				0.04	< 0.01	96	25	0

*Rounded totals are sum of actual impacts

NOTES:

NC DEPARTMENT OF TRANSPORTATION
 DIVISION OF HIGHWAYS
 3/28/2017
 UNION COUNTY
 B-5370
 46085.1.1
 SHEET 7 OF 7

09/08/99

See Sheet 1A for Index of Sheets
 See Sheet 1B for Conventional Symbols
 See Sheet 1C-1 for Survey Control Sheet

STATE OF NORTH CAROLINA
 DIVISION OF HIGHWAYS

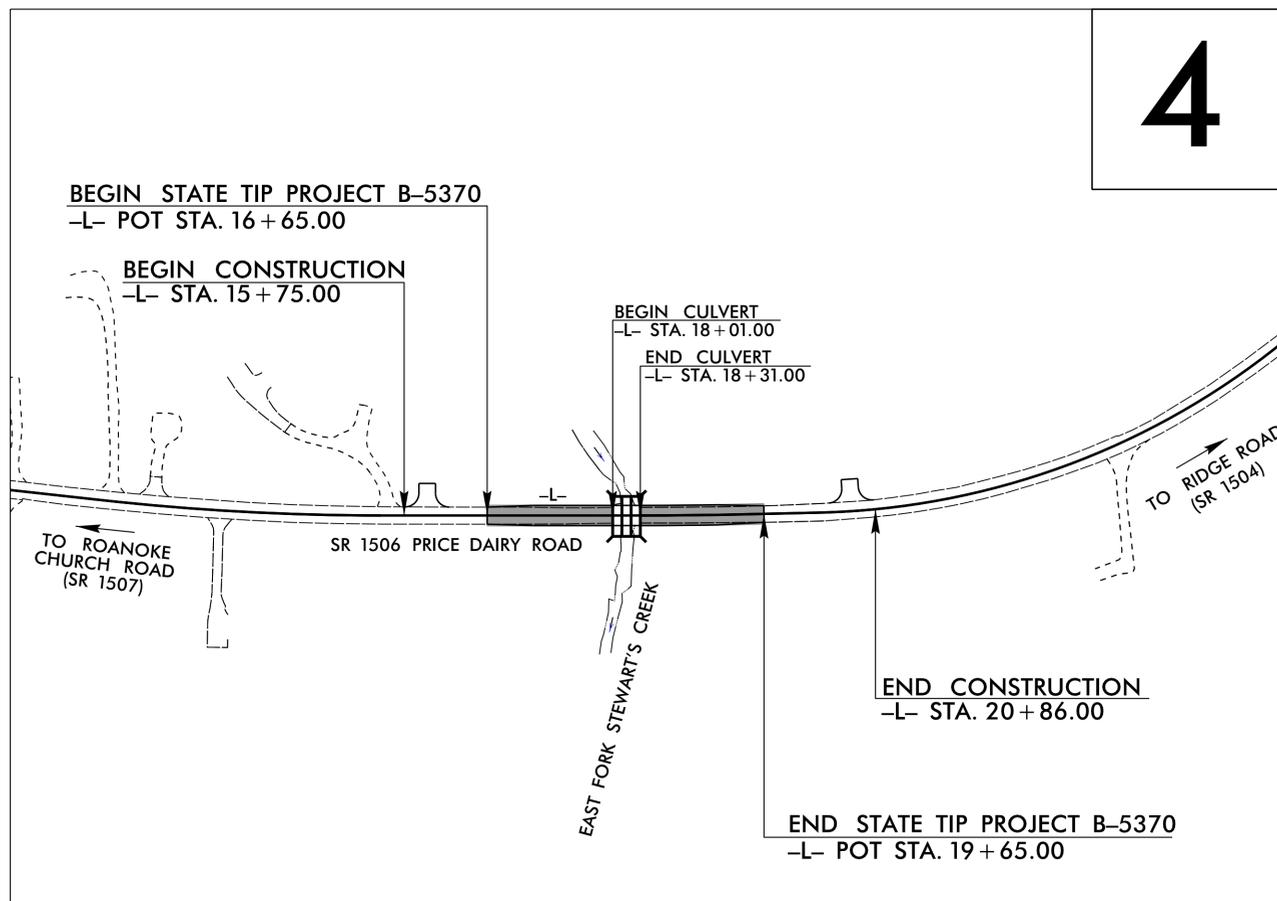
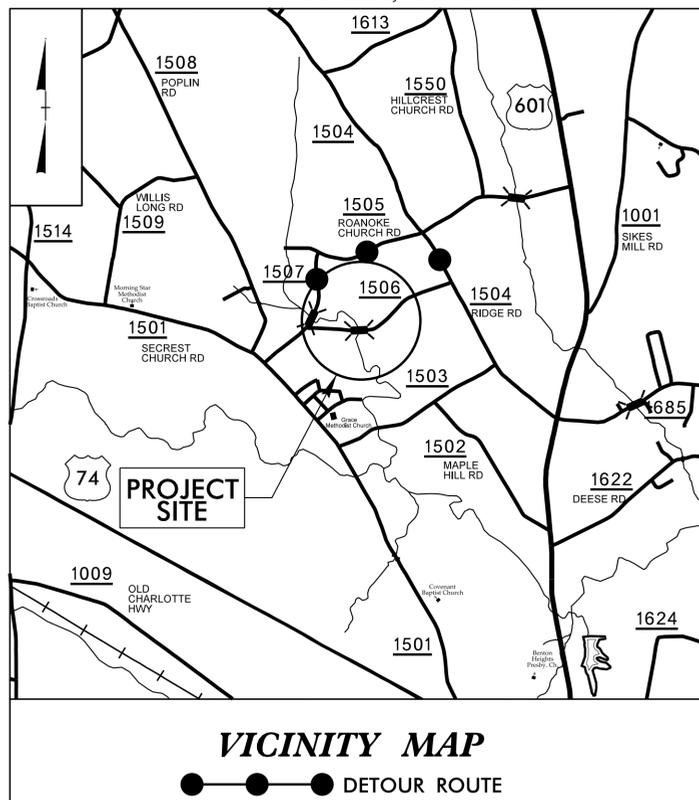
UNION COUNTY

**LOCATION: BRIDGE NO. 444 ON SR 1506 (PRICE DAIRY RD)
 OVER EAST FORK STEWART'S CREEK**

TYPE OF WORK: GRADING, DRAINAGE, PAVING AND STRUCTURE

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-5370	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
46085.1.1	BRZ-1506(3)	P.E.	
46085.2.1	BRZ-1506(3)	RW, UTIL.	
RIGHT-OF-WAY PLANS			

TIP PROJECT: B-5370

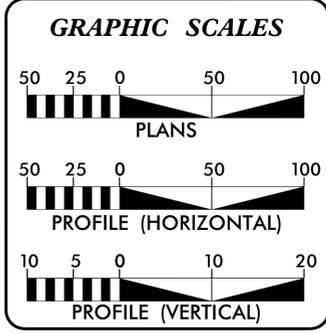


- NOTE:**
1. THIS PROJECT IS NOT WITHIN ANY MUNICIPAL BOUNDARIES.
 2. CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD II.
 3. DESIGN EXCEPTION REQUIRED FOR SAG VERTICAL CURVE K-VALUE AND VERTICAL STOPPING SIGHT DISTANCE.

DOCUMENT NOT CONSIDERED FINAL
 UNLESS ALL SIGNATURES COMPLETED

ECOLOGICAL ENGINEERING
 NC FIRM LICENSE No: F-1148
 1151 SE Cary Parkway
 Suite 101
 Cary, NC 27518
 (919) 557-0929

CONTRACT:



DESIGN DATA

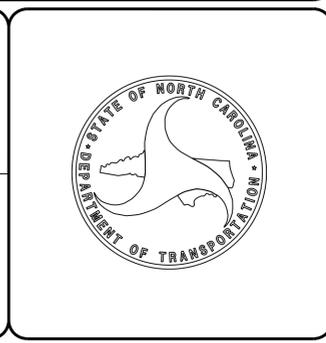
ADT 2018 =	345
ADT 2038 =	527
K =	12 %
D =	55 %
T =	21 % *
V =	50 MPH
* (TTST = 6% DUAL = 15%)	
FUNC CLASS =	LOCAL
SUB-REGIONAL TIER	

PROJECT LENGTH

LENGTH OF ROADWAY TIP PROJECT B-5370	=	0.051 MILES
LENGTH OF STRUCTURE TIP PROJECT B-5370	=	0.006 MILES
TOTAL LENGTH OF TIP PROJECT B-5370	=	0.057 MILES

Prepared in the Office of: KCI Associates of N.C., P.A. 4505 Falls of Neuse Road Suite 400 Raleigh, NC 27609-6270 Phone (919) 783-9214 Fax (919) 783-9266	Plans Prepared For: DIVISION OF HIGHWAYS 1000 Birch Ridge Dr. Raleigh NC, 27610
2012 STANDARD SPECIFICATIONS	
RIGHT OF WAY DATE: FEBRUARY 21, 2017	DEWAYNE L. SYKES, P.E. PROJECT ENGINEER
LETTING DATE: FEBRUARY 20, 2018	BARRY C. SMITH, P.E. PROJECT DESIGN ENGINEER
NCDOT CONTACT: THAD DUNCAN, P.E. PROJECT DESIGN ENGINEER - ROADWAY DESIGN	

HYDRAULICS ENGINEER	
SIGNATURE: _____	P.E.
ROADWAY DESIGN ENGINEER	
SIGNATURE: _____	P.E.



27-FEB-2017 14:51
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 \$\$\$USERNAME\$\$\$

STATE OF NORTH CAROLINA, DIVISION OF HIGHWAYS CONVENTIONAL PLAN SHEET SYMBOLS

Note: Not to Scale *S.U.E. = Subsurface Utility Engineering

BOUNDARIES AND PROPERTY:

State Line	-----
County Line	-----
Township Line	-----
City Line	-----
Reservation Line	-----
Property Line	-----
Existing Iron Pin	○ EIP
Property Corner	----->
Property Monument	□ EDM
Parcel/Sequence Number	⑫③
Existing Fence Line	-x-x-x-
Proposed Woven Wire Fence	○
Proposed Chain Link Fence	□
Proposed Barbed Wire Fence	◇
Existing Wetland Boundary	----- WLB
Proposed Wetland Boundary	----- WLB
Existing Endangered Animal Boundary	----- EAB
Existing Endangered Plant Boundary	----- EPB
Existing Historic Property Boundary	----- HPB
Known Contamination Area: Soil	☠
Potential Contamination Area: Soil	☠
Known Contamination Area: Water	☠
Potential Contamination Area: Water	☠
Contaminated Site: Known or Potential	☠ ?

BUILDINGS AND OTHER CULTURE:

Gas Pump Vent or U/G Tank Cap	○
Sign	○ S
Well	○ W
Small Mine	✕
Foundation	□
Area Outline	□
Cemetery	□
Building	□
School	□
Church	□
Dam	□

HYDROLOGY:

Stream or Body of Water	-----
Hydro, Pool or Reservoir	□
Jurisdictional Stream	----- JS
Buffer Zone 1	----- BZ 1
Buffer Zone 2	----- BZ 2
Flow Arrow	←
Disappearing Stream	-----
Spring	○
Wetland	-----
Proposed Lateral, Tail, Head Ditch	----- FLOW
False Sump	▽

RAILROADS:

Standard Gauge	-----
RR Signal Milepost	○ CSX TRANSPORTATION MILEPOST 35
Switch	□ SWITCH
RR Abandoned	-----
RR Dismantled	-----

RIGHT OF WAY:

Baseline Control Point	◆
Existing Right of Way Marker	△
Existing Right of Way Line	-----
Proposed Right of Way Line	----- RW
Proposed Right of Way Line with Iron Pin and Cap Marker	----- RW
Proposed Right of Way Line with Concrete or Granite R/W Marker	----- RW
Proposed Control of Access Line with Concrete CA Marker	----- CA

Existing Control of Access	----- CA
Proposed Control of Access	----- CA
Existing Easement Line	----- E
Proposed Temporary Construction Easement	----- E
Proposed Temporary Drainage Easement	----- TDE
Proposed Permanent Drainage Easement	----- PDE
Proposed Permanent Drainage / Utility Easement	----- DUE
Proposed Permanent Utility Easement	----- PUE
Proposed Temporary Utility Easement	----- TUE
Proposed Aerial Utility Easement	----- AUE

Proposed Permanent Easement with Iron Pin and Cap Marker

ROADS AND RELATED FEATURES:

Proposed Permanent Easement with Iron Pin and Cap Marker	◆
Existing Edge of Pavement	-----
Existing Curb	-----
Proposed Slope Stakes Cut	----- C
Proposed Slope Stakes Fill	----- F
Proposed Curb Ramp	----- CR
Existing Metal Guardrail	-----
Proposed Guardrail	-----
Existing Cable Guiderail	-----
Proposed Cable Guiderail	-----
Equality Symbol	⊕
Pavement Removal	-----

VEGETATION:

Single Tree	☼
Single Shrub	☼
Hedge	-----
Woods Line	-----

Orchard	☼ ☼ ☼ ☼
Vineyard	□ Vineyard

EXISTING STRUCTURES:

MAJOR:	
Bridge, Tunnel or Box Culvert	----- CONC
Bridge Wing Wall, Head Wall and End Wall	----- CONC WW
MINOR:	
Head and End Wall	----- CONC HW
Pipe Culvert	-----
Footbridge	-----
Drainage Box: Catch Basin, DI or JB	□ CB
Paved Ditch Gutter	-----
Storm Sewer Manhole	○ S
Storm Sewer	----- S

UTILITIES:

POWER:	
Existing Power Pole	●
Proposed Power Pole	○
Existing Joint Use Pole	●
Proposed Joint Use Pole	○
Power Manhole	⊕
Power Line Tower	⊠
Power Transformer	⊠
U/G Power Cable Hand Hole	○
H-Frame Pole	●
U/G Power Line LOS B (S.U.E.*)	----- P
U/G Power Line LOS C (S.U.E.*)	----- P
U/G Power Line LOS D (S.U.E.*)	----- P

TELEPHONE:

Existing Telephone Pole	●
Proposed Telephone Pole	○
Telephone Manhole	⊕
Telephone Pedestal	⊠
Telephone Cell Tower	⊠
U/G Telephone Cable Hand Hole	○
U/G Telephone Cable LOS B (S.U.E.*)	----- T
U/G Telephone Cable LOS C (S.U.E.*)	----- T
U/G Telephone Cable LOS D (S.U.E.*)	----- T
U/G Telephone Conduit LOS B (S.U.E.*)	----- TC
U/G Telephone Conduit LOS C (S.U.E.*)	----- TC
U/G Telephone Conduit LOS D (S.U.E.*)	----- TC
U/G Fiber Optics Cable LOS B (S.U.E.*)	----- T FO
U/G Fiber Optics Cable LOS C (S.U.E.*)	----- T FO
U/G Fiber Optics Cable LOS D (S.U.E.*)	----- T FO

WATER:

Water Manhole	⊕
Water Meter	○
Water Valve	⊗
Water Hydrant	⊕
U/G Water Line LOS B (S.U.E.*)	----- W
U/G Water Line LOS C (S.U.E.*)	----- W
U/G Water Line LOS D (S.U.E.*)	----- W
Above Ground Water Line	----- A/G Water

TV:

TV Pedestal	⊠
TV Tower	⊗
U/G TV Cable Hand Hole	⊠
U/G TV Cable LOS B (S.U.E.*)	----- TV
U/G TV Cable LOS C (S.U.E.*)	----- TV
U/G TV Cable LOS D (S.U.E.*)	----- TV
U/G Fiber Optic Cable LOS B (S.U.E.*)	----- TV FO
U/G Fiber Optic Cable LOS C (S.U.E.*)	----- TV FO
U/G Fiber Optic Cable LOS D (S.U.E.*)	----- TV FO

GAS:

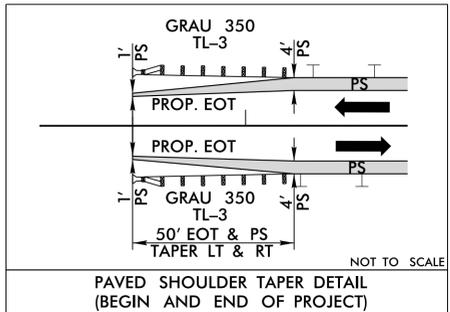
Gas Valve	◇
Gas Meter	⊕
U/G Gas Line LOS B (S.U.E.*)	----- G
U/G Gas Line LOS C (S.U.E.*)	----- G
U/G Gas Line LOS D (S.U.E.*)	----- G
Above Ground Gas Line	----- A/G Gas

SANITARY SEWER:

Sanitary Sewer Manhole	⊕
Sanitary Sewer Cleanout	⊕
U/G Sanitary Sewer Line	----- SS
Above Ground Sanitary Sewer	----- A/G Sanitary Sewer
SS Forced Main Line LOS B (S.U.E.*)	----- FSS
SS Forced Main Line LOS C (S.U.E.*)	----- FSS
SS Forced Main Line LOS D (S.U.E.*)	----- FSS

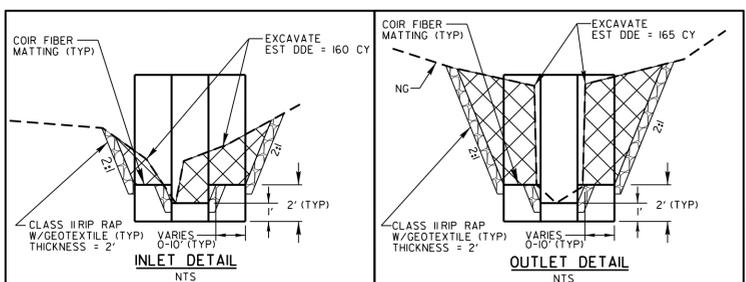
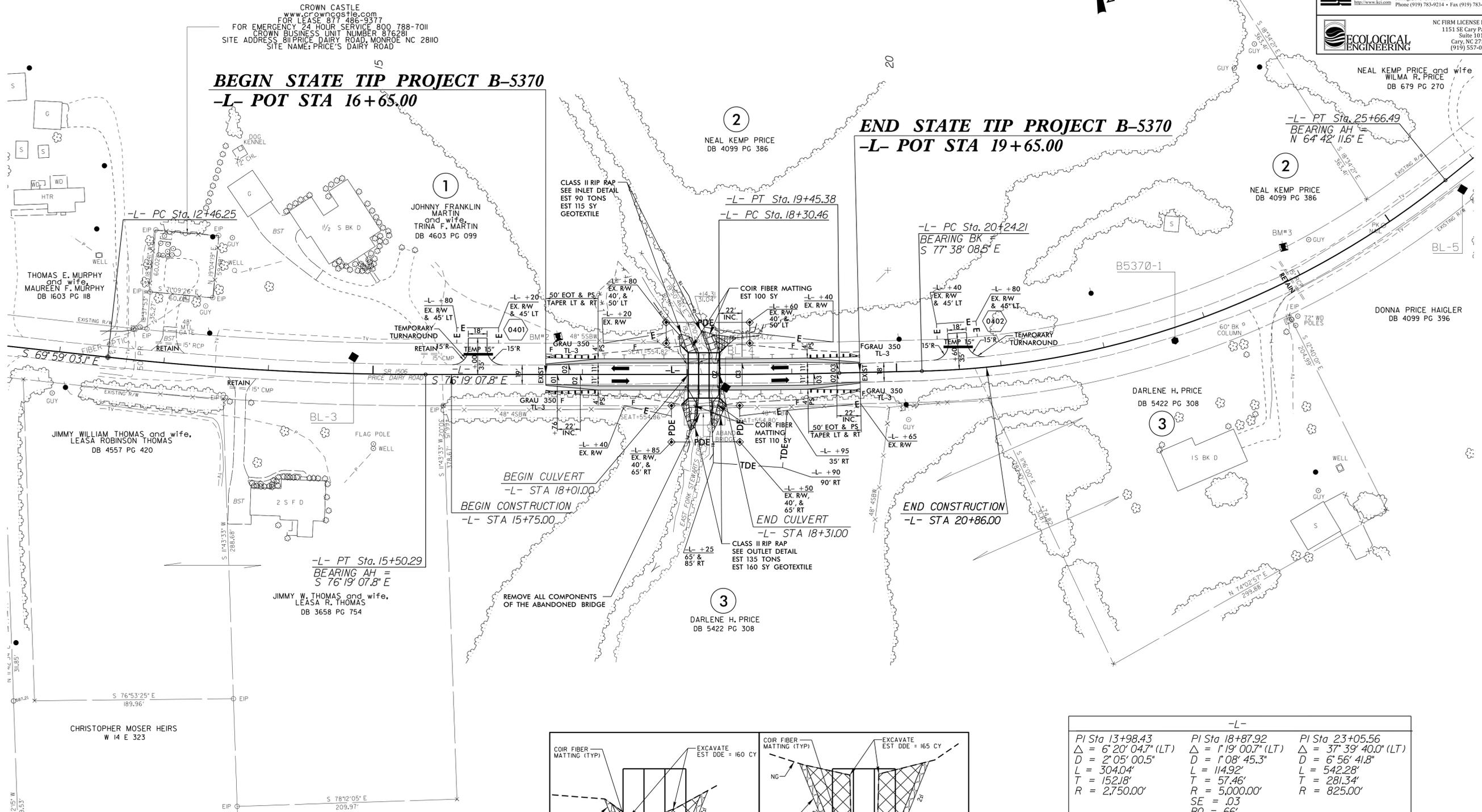
MISCELLANEOUS:

Utility Pole	●
Utility Pole with Base	□
Utility Located Object	○
Utility Traffic Signal Box	⊠
Utility Unknown U/G Line LOS B (S.U.E.*)	----- ?UTL
U/G Tank; Water, Gas, Oil	□
Underground Storage Tank, Approx. Loc.	⊠ UST
A/G Tank; Water, Gas, Oil	□
Geoenvironmental Boring	⊕
U/G Test Hole LOS A (S.U.E.*)	⊕
Abandoned According to Utility Records	AATUR
End of Information	E.O.I.



BEGIN STATE TIP PROJECT B-5370
-L- POT STA 16+65.00

END STATE TIP PROJECT B-5370
-L- POT STA 19+65.00



-L-		
<i>PI Sta 13+98.43</i>	<i>PI Sta 18+87.92</i>	<i>PI Sta 23+05.56</i>
$\Delta = 6' 20' 04.7''$ (LT)	$\Delta = 1' 19' 00.7''$ (LT)	$\Delta = 37' 39' 40.0''$ (LT)
$D = 2' 05' 00.5''$	$D = 1' 08' 45.3''$	$D = 6' 56' 41.8''$
$L = 304.04'$	$L = 114.92'$	$L = 542.28'$
$T = 152.18'$	$T = 57.46'$	$T = 281.34'$
$R = 2,750.00'$	$R = 5,000.00'$	$R = 825.00'$
	$SE = .03$	
	$RO = 66'$	
	$DS = 50$ MPH	

FOR -L- PROFILE, SEE SHEET 5
 FOR CULVERT PLANS, SEE SHEETS C-1 THRU C-?

6/12/99
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ATTACHMENT

PRELIMINARY JURISDICTIONAL DETERMINATION FORM

BACKGROUND INFORMATION

A. REPORT COMPLETION DATE FOR PRELIMINARY JURISDICTIONAL DETERMINATION (JD):

B. NAME AND ADDRESS OF PERSON REQUESTING PRELIMINARY JD:

Jessica Tisdale, HDR Engineering of the Carolinas
3733 National Drive, Suite 207
Raleigh, NC 27612-4845
for
Michael Turchy
NCDOT – NCDOT Natural Environment Section

C. DISTRICT OFFICE, FILE NAME, AND NUMBER:

**D. PROJECT LOCATION(S) AND BACKGROUND INFORMATION:
(USE THE ATTACHED TABLE TO DOCUMENT MULTIPLE WATERBODIES AT DIFFERENT SITES)**

State: NC County/parish/borough: Union City: Monroe
Center coordinates of site (lat/long in degree decimal format):
Lat. 35 2.604° Long. -80 33.124°

Universal Transverse Mercator:

Name of nearest waterbody: **East Fork Stewarts Creek**

Identify (estimate) amount of waters in the review area:

Non-wetland waters:
SA (210' L, 15-20' W), SB (144' L, 2-6' W)
Cowardin Class: **Riverine**
Stream Flow: **Perennial**
Wetlands: **0.02 acres**
Cowardin Class: **PFO**

Name of any water bodies on the site that have been identified as Section 10 waters:

Tidal:

Non-Tidal:

E. REVIEW PERFORMED FOR SITE EVALUATION (CHECK ALL THAT APPLY):

Office (Desk) Determination. Date:

Field Determination. Date(s):

1. The Corps of Engineers believes that there may be jurisdictional waters of the United States on the subject site, and the permit applicant or other affected party who requested this preliminary JD is hereby advised of his or her option to request and obtain an approved jurisdictional determination (JD) for that site. Nevertheless, the permit applicant or other person who requested this preliminary JD has declined to exercise the option to obtain an approved JD in this instance and at this time.

2. In any circumstance where a permit applicant obtains an individual permit, or a Nationwide General Permit (NWP) or other general permit verification requiring "pre-construction notification" (PCN), or requests verification for a non-reporting NWP or other general permit, and the permit applicant has not requested an approved JD for the activity, the permit applicant is hereby made aware of the following: (1) the permit applicant has elected to seek a permit authorization based on a preliminary JD, which does not make an official determination of jurisdictional waters; (2) that the applicant has the option to request an approved JD before accepting the terms and conditions of the permit authorization, and that basing a permit authorization on an approved JD could possibly result in less compensatory mitigation being required or different special conditions; (3) that the applicant has the right to request an individual permit rather than accepting the terms and conditions of the NWP or other general permit authorization; (4) that the applicant can accept a permit authorization and thereby agree to comply with all the terms and conditions of that permit, including whatever mitigation requirements the Corps has determined to be necessary; (5) that undertaking any activity in reliance upon the subject permit authorization without requesting an approved JD constitutes the applicant's acceptance of the use of the preliminary JD, but that either form of JD will be processed as soon as is practicable; (6) accepting a permit authorization (e.g., signing a proffered individual permit) or undertaking any activity in reliance on any form of Corps permit authorization based on a preliminary JD constitutes agreement that all wetlands and other water bodies on the site affected in any way by that activity are jurisdictional waters of the United States, and precludes any challenge to such jurisdiction in any administrative or judicial compliance or enforcement action, or in any administrative appeal or in any Federal court; and (7) whether the applicant elects to use either an approved JD or a preliminary JD, that JD will be processed as soon as is practicable. Further, an approved JD, a proffered individual permit (and all terms and conditions contained therein), or individual permit denial can be administratively appealed pursuant to 33 C.F.R. Part 331, and that in any administrative appeal, jurisdictional issues can be raised (see 33 C.F.R. 331.5(a)(2)). If, during that administrative appeal, it becomes necessary to make an official determination whether CWA jurisdiction exists over a site, or to provide an official delineation of jurisdictional waters on the site, the Corps will provide an approved JD to accomplish that result, as soon as is practicable. This preliminary JD finds that there "may be" waters of the United States on the subject project site, and identifies all aquatic features on the site that could be affected by the proposed activity, based on the following information:

SUPPORTING DATA. Data reviewed for preliminary JD (check all that apply

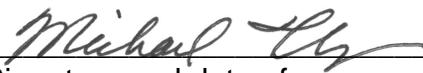
- checked items should be included in case file and, where checked and requested, appropriately reference sources below):

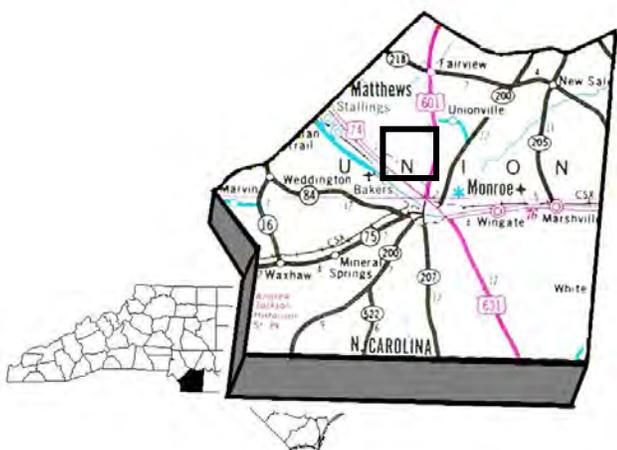
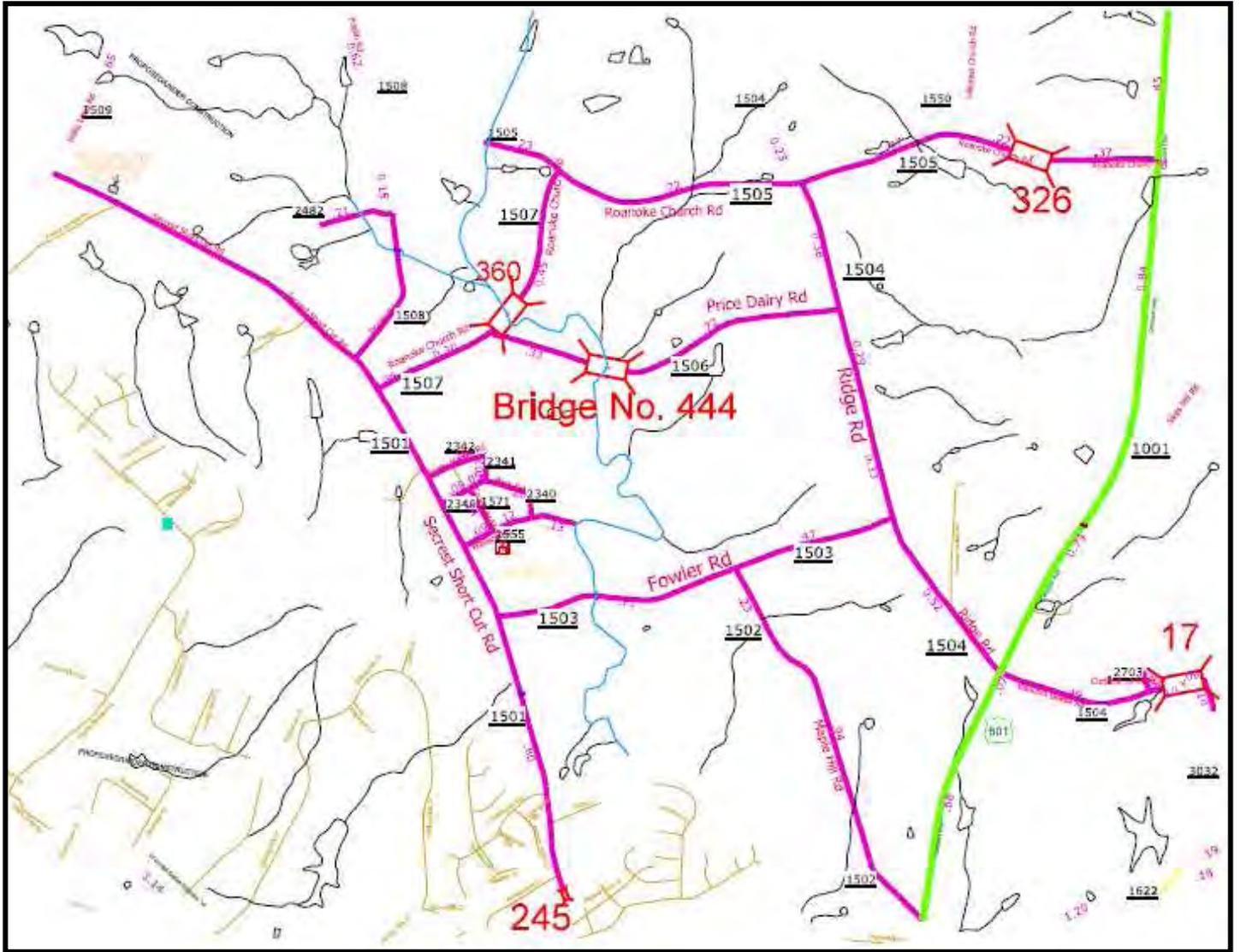
Maps, plans, plots or plat submitted by or on behalf of the applicant/consultant: Figure 3: Water Features (delineation map).

- Data sheets prepared/submitted by or on behalf of the applicant/consultant.
 - Office concurs with data sheets/delineation report.
 - Office does not concur with data sheets/delineation report.
- Data sheets prepared by the Corps: _____ .
- Corps navigable waters' study: _____ .
- U.S. Geological Survey Hydrologic Atlas: _____ .
 - USGS NHD data.
 - USGS 8 and 12 digit HUC maps.
- U.S. Geological Survey map(s). Cite scale & quad name: Bakers: 1:24,000.
- USDA Natural Resources Conservation Service Soil Survey. Citation: _____ .
- National wetlands inventory map(s). Cite name: _____ .
- State/Local wetland inventory map(s): _____ .
- FEMA/FIRM maps: _____ .
- 100-year Floodplain Elevation is: _____ (National Geodetic Vertical Datum of 1929)
- Photographs: Aerial (Name & Date): _____ .
or Other (Name & Date): _____ .
- Previous determination(s). File no. and date of response letter: _____ .
- Other information (please specify): _____ .

IMPORTANT NOTE: The information recorded on this form has not necessarily been verified by the Corps and should not be relied upon for later jurisdictional determinations.

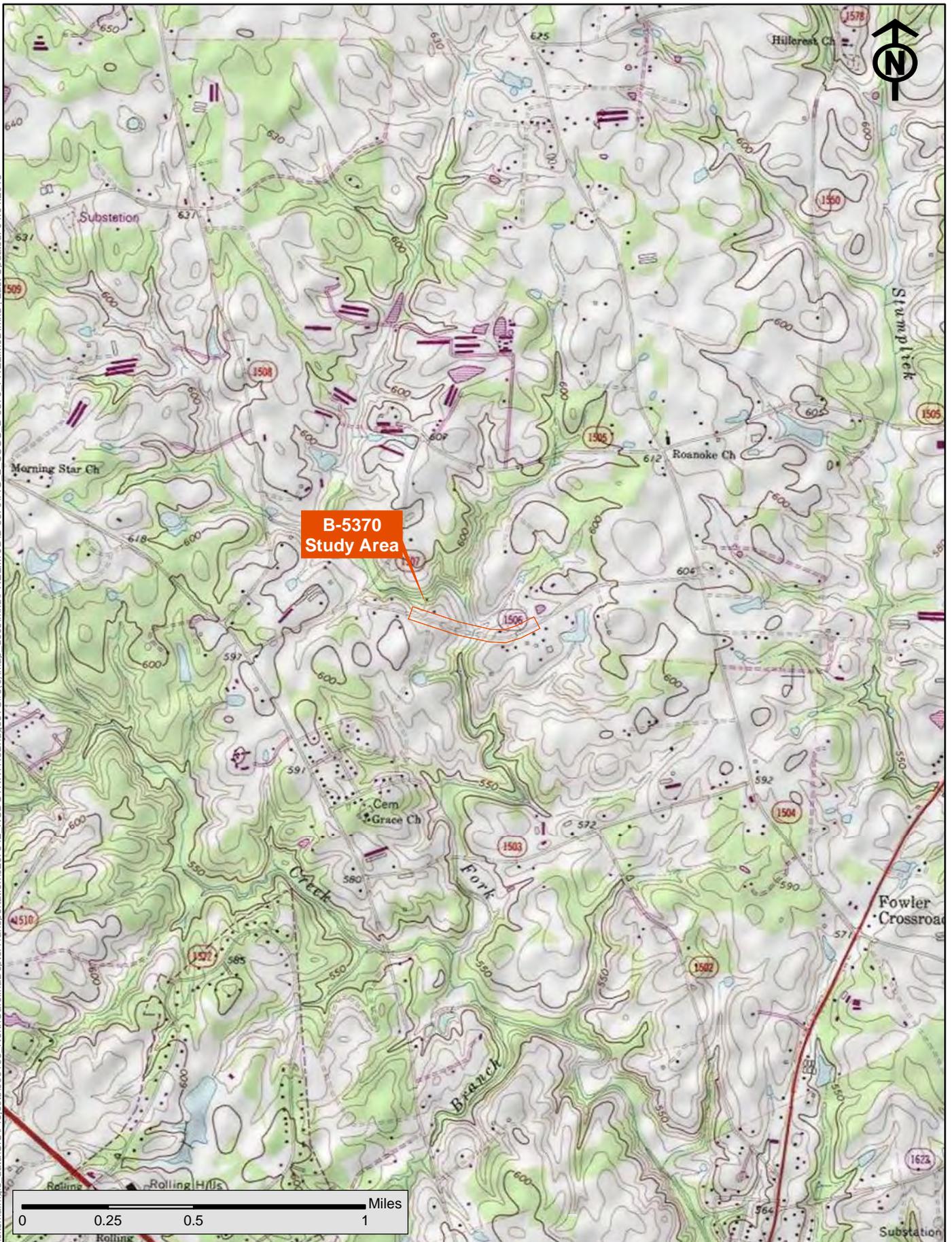
Signature and date of
Regulatory Project Manager
(REQUIRED)

 12/7/2017
Signature and date of
person requesting preliminary JD
(REQUIRED, unless obtaining
the signature is impracticable)



	<p>NORTH CAROLINA DEPARTMENT OF TRANSPORTATION DIVISION OF HIGHWAYS PROJECT DEVELOPMENT & ENVIRONMENTAL ANALYSIS UNIT</p>
<p style="text-align: center;">UNION COUNTY Replace Bridge No. 444 on SR 1506 OVER EAST FORK STEWARTS CREEK B-5370</p>	
<p style="text-align: right;">Figure 1</p>	

\\cismain\gis_data\GIS\Projects\000166_NorthCarolinaDeptofTransportation\0207342_NCDOT\NTR\Bridges\TO#6\G\map_docs\mxd\PRELIM_JDIB-5370\FIG 2_USGS_B-5370_PRELIM_JDIB-5370\FIG 2_USGS_B-5370_PRELIM_JDIB-5370.mxd | Last Updated: 04.04.2013





WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont

Project/Site: B-5370 WA City/County: _____ Union _____ Sampling Date: 2/27/2013
 Applicant/Owner: NCDOT State: NC Sampling Point: WA (B-5370)
 Investigator(s): S. Easterly J. Tisdale Section, Township, Range S T Monro R
 Landform (hillslope, terrace, etc.): Depression Local Relief (concave, convex, none): Concave Slope(%) 1
 Subregion (LRR or MLRA): P Lat: 474454.72 Long: 1533700.002 Datum: NAD 83
 Soil Map Unit Name: Chewacla (Cha) fine loamy NWI Classification: PFO
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks)
 Are Vegetation _____, Soil _____, or Hydrology _____, significantly disturbed? Are "Normal Circumstances" present? Yes X No _____
 Are Vegetation _____, Soil _____, or Hydrology _____, naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach a site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <u>X</u> No _____ Hydric Soil Present? Yes <u>X</u> No _____ Wetland Hydrology Present? Yes <u>X</u> No _____	Is the Sampled Area within a Wetland? Yes <u>X</u> No _____
Remarks:	

HYDROLOGY

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Field Observations: Surface Water Present? Yes _____ No <u>X</u> Depth (inches): _____ Water Table Present? Yes <u>X</u> No _____ Depth (inches): <u>2</u> Saturation Present? Yes <u>X</u> No _____ Depth (inches): <u>0</u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u>X</u> No _____
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants.

Sampling Point: WA (B-5370)

	<u>Absolute % Cover</u>	<u>Dominant Species</u>	<u>Indicator Status</u>	
Tree Stratum (Plot size: <u>30 Ft</u>)				<p>Dominance Test Worksheet:</p> <p>Number of Dominant Species That Are OBL, FACW, or FAC: <u>3</u> (A)</p> <p>Total Number of Dominant Species Across all Strata: <u>5</u> (B)</p> <p>Percent of Dominant Species That Are OBL, FACW, or FAC: <u>60.0%</u> (A/B)</p> <p>Prevalence Index Worksheet:</p> <p>Total % Cover of: _____ Multiply by: _____</p> <p>OBL species _____ x 1 = _____</p> <p>FACW species _____ x 2 = _____</p> <p>FAC species _____ x 3 = _____</p> <p>FACU species _____ x 4 = _____</p> <p>UPL species _____ x 5 = _____</p> <p>Column Totals: <u>0</u> (A) <u>0</u> (B)</p> <p style="text-align:right;"><i>Prevalence Index = B/A=</i> _____</p> <p>Hydrophytic Vegetation Indicators:</p> <p><u> </u> 1 - Rapid Test for Hydrophytic Vegetation</p> <p><u>X</u> 2 - Dominance Test > 50%</p> <p><u> </u> 3 - Prevalence Index ≤ 3.0</p> <p><u> </u> Morphological Adaptations (Provide supporting data in Remarks or on a separate sheet)</p> <p><u>X</u> Problematic Hydrophytic Vegetation (Explain)</p> <p>Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.</p> <p>Definitions of Vegetation Strata:</p> <p>Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.</p> <p>Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.</p> <p>Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.</p> <p>Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.</p> <p>Woody vine – All woody vines greater than 3.28 ft in height.</p> <p style="text-align:center;">Hydrophytic Vegetation Present? Yes <u> </u> X <u> </u> No <u> </u></p>
Acer rubrum	10	Y	FAC	
Liquidambar styraciflua	10	Y	FAC	
	20	=Total Cover		
Shrub Stratum (Plot size: <u>30 Ft</u>)				
Juniperus virginiana	5	Y	FACU	
	5	=Total Cover		
Herb Stratum (Plot size: <u>6 Ft</u>)				
Rubus argutus	40	Y	FACU	
Lonicera japonica	15	Y	FAC	
	55	=Total Cover		
Vine Stratum				

Remarks: (Include photo numbers here or on a separate sheet.)

Ligustrum sinense (shrub, 10%) was dropped from the vegetative list as the problematic hydrophytic vegetative 5a. section describes this as a used method when certain FACU species commonly dominate wetlands.

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix			Redox Features				Texture	Remarks
	Color (moist)		%	Color (moist)	%	Type ¹	Loc ²		
0 to 6	10YR	4 / 3	100					SILTY CLAY	
6 to 12	10YR	4 / 2	90	10 YR 3/6	10	C	M	SILTY CLAY	

¹Type: C=Concentration, D=Depletion, RM=Reduced Martix, CS=Covered or Coated Sand Grains.

²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5)
- 2 cm Muck (A10) (LRR N)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1) (LRR N, MLRA 147, 148)
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)
- Dark Surface (S7)
- Polyvalue Below Surface (S8) (MLRA 147, 148)
- Thin Dark Surface (S9) (MLRA 147, 148)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Iron-Manganese Masses (F12) (LRR N, MLRA 136)
- Umbric Surface (F13) (MLRA 136, 122)
- Piedmont Floodplain Soils (F19) (MLRA 148)
- Red Parent Material (F21) (MLRA 127, 147)

Indicators for Problematic Hydric Soils: ³

- 2 cm Muck (A10) (MLRA 147)
- Coast Prairie Redox (A16) (MLRA 147, 148)
- Piedmont Floodplain Soils (F19) (LRR P, S, T) (MLRA 147, 148)
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

³ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):
 Type: _____
 Depth (inches): _____

Hydric Soil Present? Yes X No _____

Remarks:

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont

Project/Site: B-5370 WB City/County: _____ Union _____ Sampling Date: 2/27/2013
 Applicant/Owner: NCDOT State: NC Sampling Point: WB (B-5370)
 Investigator(s): S. Easterly J. Tisdale Section, Township, Range S T Monro R
 Landform (hillslope, terrace, etc.): Toe of Slope Local Relief (concave, convex, none): Concave Slope(%) 1
 Subregion (LRR or MLRA): P Lat: 474454.72 Long: 1533700.002 Datum: NAD 83
 Soil Map Unit Name: Chewacla (Cha) fine loam NWI Classification: PFO
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks)
 Are Vegetation _____, Soil _____, or Hydrology _____, significantly disturbed? Are "Normal Circumstances" present? Yes X No _____
 Are Vegetation _____, Soil _____, or Hydrology _____, naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach a site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <u>X</u> No _____ Hydric Soil Present? Yes <u>X</u> No _____ Wetland Hydrology Present? Yes <u>X</u> No _____	Is the Sampled Area within a Wetland? Yes <u>X</u> No _____
Remarks: Wetland is located adjacent to the stream on the NW quadrant.	

HYDROLOGY

Wetland Hydrology Indicators: Primary Indicators (minimum of one is required; check all that apply) <table style="width: 100%; border: none;"> <tr> <td style="width: 50%; border: none;"><input checked="" type="checkbox"/> Surface Water (A1)</td> <td style="width: 50%; border: none;"><input type="checkbox"/> True Aquatic Plants (B14)</td> </tr> <tr> <td style="border: none;"><input type="checkbox"/> High Water Table (A2)</td> <td style="border: none;"><input type="checkbox"/> Hydrogen Sulfide Odor (C1)</td> </tr> <tr> <td style="border: none;"><input type="checkbox"/> Saturation (A3)</td> <td style="border: none;"><input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)</td> </tr> <tr> <td style="border: none;"><input type="checkbox"/> Water Marks (B1)</td> <td style="border: none;"><input type="checkbox"/> Presence of Reduced Iron (C4)</td> </tr> <tr> <td style="border: none;"><input type="checkbox"/> Sediment Deposits (B2)</td> <td style="border: none;"><input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)</td> </tr> <tr> <td style="border: none;"><input checked="" type="checkbox"/> Drift Deposits (B3)</td> <td style="border: none;"><input type="checkbox"/> Thin Muck Surface (C7)</td> </tr> <tr> <td style="border: none;"><input type="checkbox"/> Algal Mat or Crust (B4)</td> <td style="border: none;"><input type="checkbox"/> Other (Explain in Remarks)</td> </tr> <tr> <td style="border: none;"><input type="checkbox"/> Iron Deposits (B5)</td> <td></td> </tr> <tr> <td style="border: none;"><input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)</td> <td></td> </tr> <tr> <td style="border: none;"><input checked="" type="checkbox"/> Water-Stained Leaves (B9)</td> <td></td> </tr> <tr> <td style="border: none;"><input type="checkbox"/> Aquatic Fauna (B13)</td> <td></td> </tr> </table>	<input checked="" type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> True Aquatic Plants (B14)	<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)	<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input checked="" type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Iron Deposits (B5)		<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)		<input checked="" type="checkbox"/> Water-Stained Leaves (B9)		<input type="checkbox"/> Aquatic Fauna (B13)		Secondary Indicators (minimum of two required) <table style="width: 100%; border: none;"> <tr><td style="border: none;"><input type="checkbox"/> Surface Soil Cracks (B6)</td></tr> <tr><td style="border: none;"><input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)</td></tr> <tr><td style="border: none;"><input checked="" type="checkbox"/> Drainage Patterns (B10)</td></tr> <tr><td style="border: none;"><input type="checkbox"/> Moss Trim Lines (B16)</td></tr> <tr><td style="border: none;"><input type="checkbox"/> Dry-Season Water Table (C2)</td></tr> <tr><td style="border: none;"><input type="checkbox"/> Crayfish Burrows (C8)</td></tr> <tr><td style="border: none;"><input type="checkbox"/> Saturation Visible on Aerial Imag.(C9)</td></tr> <tr><td style="border: none;"><input type="checkbox"/> Stunted or Stressed Plants (D1)</td></tr> <tr><td style="border: none;"><input type="checkbox"/> Geomorphic Position (D2)</td></tr> <tr><td style="border: none;"><input type="checkbox"/> Shallow Aquitard (D3)</td></tr> <tr><td style="border: none;"><input checked="" type="checkbox"/> Microtopographic Relief (D4)</td></tr> <tr><td style="border: none;"><input type="checkbox"/> FAC-Neutral Test (D5)</td></tr> </table>	<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input checked="" type="checkbox"/> Drainage Patterns (B10)	<input type="checkbox"/> Moss Trim Lines (B16)	<input type="checkbox"/> Dry-Season Water Table (C2)	<input type="checkbox"/> Crayfish Burrows (C8)	<input type="checkbox"/> Saturation Visible on Aerial Imag.(C9)	<input type="checkbox"/> Stunted or Stressed Plants (D1)	<input type="checkbox"/> Geomorphic Position (D2)	<input type="checkbox"/> Shallow Aquitard (D3)	<input checked="" type="checkbox"/> Microtopographic Relief (D4)	<input type="checkbox"/> FAC-Neutral Test (D5)
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<input type="checkbox"/> Surface Soil Cracks (B6)																																			
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)																																			
<input checked="" type="checkbox"/> Drainage Patterns (B10)																																			
<input type="checkbox"/> Moss Trim Lines (B16)																																			
<input type="checkbox"/> Dry-Season Water Table (C2)																																			
<input type="checkbox"/> Crayfish Burrows (C8)																																			
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<input type="checkbox"/> Stunted or Stressed Plants (D1)																																			
<input type="checkbox"/> Geomorphic Position (D2)																																			
<input type="checkbox"/> Shallow Aquitard (D3)																																			
<input checked="" type="checkbox"/> Microtopographic Relief (D4)																																			
<input type="checkbox"/> FAC-Neutral Test (D5)																																			

Field Observations: Surface Water Present? Yes <u>X</u> No _____ Depth (inches): <u>0</u> Water Table Present? Yes <u>X</u> No _____ Depth (inches): <u>0</u> Saturation Present? Yes <u>X</u> No _____ Depth (inches): <u>0</u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u>X</u> No _____
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants.

Sampling Point: WB (B-5370)

	<u>Absolute % Cover</u>	<u>Dominant Species</u>	<u>Indicator Status</u>																																																	
Tree Stratum (Plot size: <u>30 Ft</u>)																																																				
Acer rubrum	20	Y	FAC	Dominance Test Worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>4</u> (A) Total Number of Dominant Species Across all Strata: <u>7</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>57.1%</u> (A/B)																																																
	20	=Total Cover																																																		
Shrub Stratum (Plot size: <u>30 Ft</u>)																																																				
Ligustrum sinense	40	Y	FACU	Prevalence Index Worksheet: <table style="width:100%; border:none;"> <tr> <td style="text-align:right;">Total % Cover of:</td> <td style="text-align:center;"><u>0</u></td> <td style="text-align:right;">Multiply by:</td> <td style="text-align:center;"><u>1</u></td> <td style="text-align:center;">=</td> <td style="text-align:center;"><u>0</u></td> </tr> <tr> <td>OBL species</td> <td></td> <td>x</td> <td></td> <td>=</td> <td></td> </tr> <tr> <td>FACW species</td> <td style="text-align:center;"><u>15</u></td> <td>x</td> <td><u>2</u></td> <td>=</td> <td style="text-align:center;"><u>30</u></td> </tr> <tr> <td>FAC species</td> <td style="text-align:center;"><u>50</u></td> <td>x</td> <td><u>3</u></td> <td>=</td> <td style="text-align:center;"><u>150</u></td> </tr> <tr> <td>FACU species</td> <td style="text-align:center;"><u>75</u></td> <td>x</td> <td><u>4</u></td> <td>=</td> <td style="text-align:center;"><u>300</u></td> </tr> <tr> <td>UPL species</td> <td style="text-align:center;"><u>0</u></td> <td>x</td> <td><u>5</u></td> <td>=</td> <td style="text-align:center;"><u>0</u></td> </tr> <tr> <td>Column Totals:</td> <td style="text-align:center;"><u>140</u></td> <td></td> <td>(A)</td> <td></td> <td style="text-align:center;"><u>480</u></td> </tr> <tr> <td colspan="2"></td> <td colspan="2" style="text-align:center;"><i>Prevalence Index = B/A=</i></td> <td></td> <td style="text-align:center;"><u>3.43</u></td> </tr> </table>	Total % Cover of:	<u>0</u>	Multiply by:	<u>1</u>	=	<u>0</u>	OBL species		x		=		FACW species	<u>15</u>	x	<u>2</u>	=	<u>30</u>	FAC species	<u>50</u>	x	<u>3</u>	=	<u>150</u>	FACU species	<u>75</u>	x	<u>4</u>	=	<u>300</u>	UPL species	<u>0</u>	x	<u>5</u>	=	<u>0</u>	Column Totals:	<u>140</u>		(A)		<u>480</u>			<i>Prevalence Index = B/A=</i>			<u>3.43</u>
Total % Cover of:	<u>0</u>	Multiply by:	<u>1</u>		=	<u>0</u>																																														
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FACU species	<u>75</u>	x	<u>4</u>	=	<u>300</u>																																															
UPL species	<u>0</u>	x	<u>5</u>	=	<u>0</u>																																															
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		<i>Prevalence Index = B/A=</i>			<u>3.43</u>																																															
Juniperus virginiana	15	Y	FACU																																																	
Acer rubrum	10	Y	FAC																																																	
	65	=Total Cover																																																		
Herb Stratum (Plot size: <u>6 Ft</u>)																																																				
Lonicera japonica	20	Y	FAC	Hydrophytic Vegetation Indicators: <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test > 50% <input type="checkbox"/> 3 - Prevalence Index ≤ 3.0 Morphological Adaptations (Provide supporting data in Remarks or on a separate sheet) Problematic Hydrophytic Vegetation (Explain) Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																																																
Rubus argutus	20	Y	FACU																																																	
Juncus effusus	15	Y	FACW																																																	
	55	=Total Cover																																																		
Vine Stratum																																																				
Definitions of Vegetation Strata: Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH. Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall. Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vine – All woody vines greater than 3.28 ft in height.																																																				
Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>																																																				

Remarks: (Include photo numbers here or on a separate sheet.)

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix			Redox Features				Texture	Remarks
	Color (moist)		%	Color (moist)		%	Type ¹		
0 to 12	10YR	5 / 2	80	2.5Y 3/6	20	C	M	Silt Clay	

¹Type: C=Concentration, D=Depletion, RM=Reduced Martix, CS=Covered or Coated Sand Grains.

² Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5)
- 2 cm Muck (A10) (LRR N)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1) (LRR N, MLRA 147, 148)
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)
- Dark Surface (S7)
- Polyvalue Below Surface (S8) (MLRA 147, 148)
- Thin Dark Surface (S9) (MLRA 147, 148)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Iron-Manganese Masses (F12) (LRR N, MLRA 136)
- Umbric Surface (F13) (MLRA 136, 122)
- Piedmont Floodplain Soils (F19) (MLRA 148)
- Red Parent Material (F21) (MLRA 127, 147)

Indicators for Problematic Hydric Soils: ³

- 2 cm Muck (A10) (MLRA 147)
- Coast Prairie Redox (A16) (MLRA 147, 148)
- Piedmont Floodplain Soils (F19) (LRR P, S, T) (MLRA 147, 148)
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

³ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____
Depth (inches): _____

Hydric Soil Present? Yes X No _____

Remarks:

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont

Project/Site: B-5370WAWBU City/County: _____ Union _____ Sampling Date: 2/27/2013
 Applicant/Owner: NC DOT State: NC Sampling Point: WAWBU(B-537)
 Investigator(s): S. Easterly J. Tisdale Section, Township, Range S T Monro R
 Landform (hillslope, terrace, etc.): Top of Slope Local Relief (concave, convex, none): None Slope(%) 1
 Subregion (LRR or MLRA): P Lat: 529339.9 Long: 1543144.55 Datum: NAD 83
 Soil Map Unit Name: Chewacla (Cha) fine loam NWI Classification: NA
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks)
 Are Vegetation _____, Soil _____, or Hydrology _____, significantly disturbed? Are "Normal Circumstances" present? Yes _____ No X
 Are Vegetation _____, Soil _____, or Hydrology _____, naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach a site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes _____ No <u>X</u> Hydric Soil Present? Yes _____ No <u>X</u> Wetland Hydrology Present? Yes _____ No <u>X</u>	Is the Sampled Area within a Wetland? Yes _____ No <u>X</u>
Remarks: _____ _____ _____	

HYDROLOGY

Wetland Hydrology Indicators: Primary Indicators (minimum of one is required; check all that apply) <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13)	Secondary Indicators (minimum of two required) <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imag.(C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-Neutral Test (D5)
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Field Observations: Surface Water Present? Yes _____ No <u>X</u> Depth (inches): _____ Water Table Present? Yes _____ No <u>X</u> Depth (inches): _____ Saturation Present? Yes _____ No <u>X</u> Depth (inches): _____ (includes capillary fringe)	Wetland Hydrology Present? Yes _____ No <u>X</u>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants.

Sampling Point: WAWBUp(B-5370)

	<u>Absolute % Cover</u>	<u>Dominant Species</u>	<u>Indicator Status</u>																	
Tree Stratum (Plot size: <u>30 Ft</u>)																				
<u>Carya glabra</u>	10		FACU	Dominance Test Worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A) Total Number of Dominant Species Across all Strata: <u>0</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0.0%</u> (A/B)																
	10																			
=Total Cover																				
Shrub Stratum																				
Herb Stratum (Plot size: <u>6 Ft</u>)																				
<u>Festuca pratensis</u>	10		FACU	Prevalence Index Worksheet: <table style="width:100%; border:none;"> <tr> <td style="width:50%; text-align:right;">Total % Cover of:</td> <td style="width:50%; text-align:left;">Multiply by:</td> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>0</u></td> <td>x 2 = <u>0</u></td> </tr> <tr> <td>FAC species <u>10</u></td> <td>x 3 = <u>30</u></td> </tr> <tr> <td>FACU species <u>30</u></td> <td>x 4 = <u>120</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>40</u> (A)</td> <td><u>150</u> (B)</td> </tr> <tr> <td colspan="2" style="text-align:center;"><i>Prevalence Index = B/A=</i> <u>3.75</u></td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>0</u>	x 2 = <u>0</u>	FAC species <u>10</u>	x 3 = <u>30</u>	FACU species <u>30</u>	x 4 = <u>120</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>40</u> (A)	<u>150</u> (B)	<i>Prevalence Index = B/A=</i> <u>3.75</u>	
Total % Cover of:	Multiply by:																			
OBL species <u>0</u>	x 1 = <u>0</u>																			
FACW species <u>0</u>	x 2 = <u>0</u>																			
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UPL species <u>0</u>	x 5 = <u>0</u>																			
Column Totals: <u>40</u> (A)	<u>150</u> (B)																			
<i>Prevalence Index = B/A=</i> <u>3.75</u>																				
<u>Geranium maculatum</u>	10		FACU																	
<u>Lonicera japonica</u>	10		FAC																	
	30																			
=Total Cover																				
Vine Stratum																				
Hydrophytic Vegetation Indicators: <u>1</u> - Rapid Test for Hydrophytic Vegetation <u>2</u> - Dominance Test > 50% <u>3</u> - Prevalence Index ≤ 3.0 Morphological Adaptations (Provide supporting data in Remarks or on a separate sheet) Problematic Hydrophytic Vegetation (Explain) Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																				
Definitions of Vegetation Strata: Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH. Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall. Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vine – All woody vines greater than 3.28 ft in height.																				
Hydrophytic Vegetation Present? Yes <u> </u> No <u> X </u>																				

Remarks: (Include photo numbers here or on a separate sheet.)

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0 to 12	5YR	4 / 4	100				CLAY LOAM	some gravel

¹Type: C=Concentration, D=Depletion, RM=Reduced Martix, CS=Covered or Coated Sand Grains.

² Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5)
- 2 cm Muck (A10) (LRR N)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1) (LRR N, MLRA 147, 148)
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)
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- Loamy Gleyed Matrix (F2)
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- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Iron-Manganese Masses (F12) (LRR N, MLRA 136)
- Umbric Surface (F13) (MLRA 136, 122)
- Piedmont Floodplain Soils (F19) (MLRA 148)
- Red Parent Material (F21) (MLRA 127, 147)

Indicators for Problematic Hydric Soils: ³

- 2 cm Muck (A10) (MLRA 147)
- Coast Prairie Redox (A16) (MLRA 147, 148)
- Piedmont Floodplain Soils (F19) (LRR P, S, T) (MLRA 147, 148)
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

³ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____
Depth (inches): _____

Hydric Soil Present? Yes _____ No X

Remarks:

WETLAND RATING WORKSHEET Fourth Version

Project Name B-5370 WA Nearest Road Price Dairy Rd
 County Union Wetland area 0.01 acres Wetland width _____ feet
 Name of evaluator J. Tisdale, S. Easterly Date 2/27/13

Wetland location

- on pond or lake
 on perennial stream
 on intermittent stream
 within interstream divide
 other: _____

Adjacent land use

- (within 1/2 mile upstream, upslope, or radius)
- forested/natural vegetation _____ %
 agriculture, urban/suburban 95 %
 impervious surface 5 %

Soil series: Chewacla Fine loam

- predominantly organic - humus, muck, or peat
 predominantly mineral - non-sandy
 predominantly sandy

Dominant vegetation

- (1) Acer rubrum
 (2) Rubus argutus
 (3) Lonicera japonica

Hydraulic factors

- steep topography
 ditched or channelized
 total wetland width \geq 100 feet

Flooding and wetness

- semipermanently to permanently flooded or inundated
 seasonally flooded or inundated
 intermittently flooded or temporary surface water
 no evidence of flooding or surface water

Wetland type (select one)*

- | | |
|--|--|
| <input checked="" type="checkbox"/> Bottomland hardwood forest
<input type="checkbox"/> Headwater forest
<input type="checkbox"/> Swamp forest
<input type="checkbox"/> Wet flat
<input type="checkbox"/> Pocosin
<input type="checkbox"/> Bog forest | <input type="checkbox"/> Pine savanna
<input type="checkbox"/> Freshwater marsh
<input type="checkbox"/> Bog/fen
<input type="checkbox"/> Ephemeral wetland
<input type="checkbox"/> Carolina bay
<input type="checkbox"/> Other: _____ |
|--|--|

* The rating system cannot be applied to salt or brackish marshes or stream channels

R	Water storage	2	x 4.00 =	8.00	Wetland rating <div style="border: 1px solid black; padding: 10px; font-size: 2em; font-weight: bold; margin: 10px auto;">28</div>
A	Bank/Shoreline stabilization	1	x 4.00 =	4.00	
T	Pollutant removal	1	** x 5.00 =	5.00	
I	Wildlife habitat	1	x 2.00 =	2.00	
N	Aquatic life value	2	x 4.00 =	8.00	
G	Recreation/Education	1	x 1.00 =	1.00	

** Add 1 point if in sensitive watershed and >10% nonpoint source disturbance within 1/2 mile upstream, upslope, or radius

WETLAND RATING WORKSHEET Fourth Version

Project Name B. 5370 WB Nearest Road Price Dairy Rd
 County Union Wetland area 0.01 acres Wetland width _____ feet
 Name of evaluator J. Tisdale, S. Easterly Date 2/27/13

Wetland location

- on pond or lake
- on perennial stream
- on intermittent stream
- within interstream divide
- other: _____

Adjacent land use
(within 1/2 mile upstream, upslope, or radius)

- forested/natural vegetation _____ %
- agriculture, urban/suburban 95 %
- impervious surface 5 %

Soil series: Chewacla Fine Loam

- predominantly organic - humus, muck, or peat
- predominantly mineral - non-sandy
- predominantly sandy

Dominant vegetation

- (1) Juncus effusus
- (2) Ligustrum sinense
- (3) Acer rubrum

Hydraulic factors

- steep topography
- ditched or channelized
- total wetland width \geq 100 feet

Flooding and wetness

- semipermanently to permanently flooded or inundated
- seasonally flooded or inundated
- intermittently flooded or temporary surface water
- no evidence of flooding or surface water

Wetland type (select one)*

- | | |
|--|--|
| <ul style="list-style-type: none"> <input checked="" type="checkbox"/> Bottomland hardwood forest <input type="checkbox"/> Headwater forest <input type="checkbox"/> Swamp forest <input type="checkbox"/> Wet flat <input type="checkbox"/> Pocosin <input type="checkbox"/> Bog forest | <ul style="list-style-type: none"> <input type="checkbox"/> Pine savanna <input type="checkbox"/> Freshwater marsh <input type="checkbox"/> Bog/fen <input type="checkbox"/> Ephemeral wetland <input type="checkbox"/> Carolina bay <input type="checkbox"/> Other: _____ |
|--|--|

* The rating system cannot be applied to salt or brackish marshes or stream channels

R	Water storage	1	x 4.00 =	4.00	Wetland rating <div style="border: 1px solid black; padding: 10px; width: 60px; margin: 0 auto; text-align: center; font-size: 2em;">20</div>
A	Bank/Shoreline stabilization	1	x 4.00 =	4.00	
T	Pollutant removal	1	x 5.00 =	5.00	
I	Wildlife habitat	1	x 2.00 =	2.00	
N	Aquatic life value	1	x 4.00 =	4.00	
G	Recreation/Education	1	x 1.00 =	1.00	
** Add 1 point if in sensitive watershed and >10% nonpoint source disturbance within 1/2 mile upstream, upslope, or radius					