Transportation

PAT McCRORY
Governor

NICHOLAS J. TENNYSON
Secretary

July 11, 2016

Brad Shaver, NCDOT Coordinator
Wilmington Regulatory Field Office
US Army Corps of Engineers
69 Darlington Avenue
Wilmington, NC 28403

Subject: Application for Section 404 Nationwide Permit 3 for proposed pipe replacement on Hoover Road (SR 1569) in Pender County. WBS # 3B.207111

Dear Mr. Shaver:

The North Carolina Department of Transportation (NCDOT) is proposing to replace an existing pipe on Hoover Road (SR 1569) in Pender County. The pipe is located 1.7 miles north of the intersection of Hoover Rd and US 117 and serves as a conveyance of an unnamed tributary to Godfrey Creek which is classified as C;Sw waters.

Please find enclosed the preliminary jurisdictional determination (PJD) request, pre-construction notification application (PCN) and permit drawings for the above referenced project that was prepared for NCDOT by SEPI Engineering. Formal notice under NW 3 is required to the US Army Corps of Engineers (USACE) for this project because rip rap is required to backfill a scour hole on the outlet of the existing perched pipe. By submittal of this application, NCDOT is also requesting a waiver from the use of filter fabric beneath the rip rap bank stabilization proposed along the ditch line at the four corners of the pipe.

Regulatory Approvals

Section 404 Permit: This is a state funded project and NCDOT is requesting that the project is authorized by the USACE under Nationwide Permit 3.

Section 401 Permit: We anticipate 401 General Certification 3883 will apply to this project. Written concurrence from the Division of Water Resources (DWR) is not required for this project. NCDOT will abide by all conditions listed in WQC 3883 and include a copy of the certification in the permit package and/or contract.

If you have any questions or need additional information, please feel free to contact me.

Sincerely,

Mason Herndon

Mason Herndon
NCDOT Division 3
Environmental Program Supervisor

ec: Joanne Steenhuis, Division of Water Quality

Enclosures

Nothing Compares℠

State of North Carolina | Department of Transportation | Division of Highways
5501 Barbados Boulevard | Castle Hayne, NC 28429-5647
910-341-2000 T

Celebrating 15 Years

SEPI ENGINEERING & CONSTRUCTION

June 29, 2016

Brad Shaver
US Army Corps of Engineers
Wilmington Regulatory Field Office
69 Darlington Avenue
Wilmington, NC 28403

Joanne Steenhuis
NCDEQ - DWR
Fayetteville Regional Office
225 Green Street, Suite 714
Fayetteville, NC 28301-5095

Subject: Pre-Construction Notification and Preliminary JD Request
Hoover Road (SR 1569) Site 2 Pipe Replacement
Pender County, NC.

Dear Brad and Joanne,

On behalf of the North Carolina Department of Transportation (NCDOT) Division 3 environmental officer, Mr. Mason Herndon, this submittal servers as a preliminary jurisdictional determination (PJD) request as well as a pre-construction notification (PCN) application requesting written concurrence from the US Army Corps of Engineers (USACE) that the activities proposed below may proceed under Nationwide Permit 3. NCDOT is also notifying the NC Division of Water Resources (NCDWR) for record only of use of General Water Quality Certification (GC) 3883.

Project Purpose and Need

The Hoover Road (SR 1569) Site 2 Pipe Replacement project (Project) proposes to replace the existing two 71″ x 47″ Corrugated Metal Pipe Arches (CMPAs) @ 50′ long on an 89-degree skew with two 72″ corrugated metal pipes (CMPs) @ 50′ long on a 94-degree skew with 36′ headwalls on inlet and outlet with 4.5′ wing walls on a 15-degree skew for an overall structure length of 50.5′. The existing CMPAs are undersized and have deteriorated presenting a safety concern. The proposed replacement will provide adequate flow to prevent damming and address the existing safety concerns, while also allowing for aquatic life passage.

Project Location

SR 1569 (Hoover Road Site 2) intersects with US 17 at a point north of the Town of Hampstead in Pender County, NC (Figure 1). The Project area consists of approximately 0.72 acres located 1.7 miles north of the intersection of Hoover Road and US 17.

Jurisdictional Features

A delineation and evaluation of jurisdictional features within the defined project limits was conducted by SEPI on July 7, 2015. The evaluation identified one Perennial Stream (SA) and one jurisdictional wetland area (WA), as shown in Figure 4. USGS Topographic imagery of the site is shown in Figure 5. LiDAR imagery of the site is shown in Figure 6. Photos 1-6 of the jurisdictional features are also included.

1025 Wade Avenue | Raleigh, NC | 27605 | Phone: 919.789.9977 | Fax: 919.789.9591
sepiengineering.com | @SEPIengineers

SEPI

Proposed Impacts

There are a total of 23 LF of proposed permanent stream impacts resulting from the pipe replacement for inlet headwall and rip rap and the outlet headwall and rip rap. A total of 21 LF of temporary stream impacts are proposed for de-watering on both inlet and outlet sides of the project. There are < 0.01 acres (9 sqft) of proposed hand clearing in wetlands associated with this project.

To accommodate the designed flow capacity required by the NCDOT hydraulics unit two larger pipes are proposed to replace the two existing pipes. To avoid widening the stream channel or reducing the depth of the stream in connection with this construction activity, the first pipe will be aligned with the stream channel and serve as the main flow pipe (Permit Drawing 1 of 5). The second pipe will serve as an overflow during high flow events (Permit Drawing 2 of 5). Both pipes will be buried approximately 1 foot below the natural stream bed elevation as determined from upstream and downstream elevations away from the scour holes associated with the current pipes. The high flow pipe will have a sill installed 2 feet inside the inlet and will match the adjacent floodplain elevation. Rip rap placement around the outlet will be done in a manner that creates a natural stream channel cross section and flood plain bench (Permit Drawing 5 of 5). A filter fabric waiver is requested for this site.

This site is not within a CAMA AEC and does not require a CAMA permit (e-mail attached). NCWRC and NCDMF do not have any concerns about this project and no construction moratoriums will be required (e-mail attached).

PROJECT SUMMARY

Project Name	Hoover Road Site 2 Pipe Replacement
Project Type	Pipe Replacement
Owner / Applicant	NCDOT; Attn: Stonewall Mathis
County	Pender
Nearest Town	Hampstead
Waterbody Name	Godfrey Creek
Index Number	18-74-49-1
Class	C;Sw
USGS Cataloging Unit	03030005

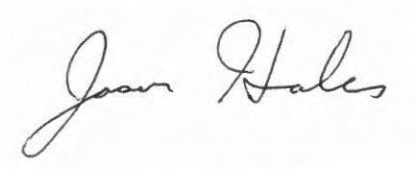
SEPI

IMPACT SUMMARY

Temporary Stream Impact (linear feet)	21
Permanent Stream Impact (linear feet)	23
Total Impact to Waters of the US acres (sqft)	<0.02 (646)
Total Stream Impact (linear feet)	44

We appreciate the opportunity to work with you. Please contact us if you have any questions regarding the information we have provided.

Sincerely,



Jason Hales
Environmental Project Manager
5030 New Centre Drive, Suite B
Wilmington, NC 28403
Office: 910-523-5715
Cell: 910-633-6921

Attachments:

1) Pre-construction notification form
2) GIS figures including: vicinity, aerial imagery, USDA soil survey, USGS topographic mapping, and LiDAR
3) Site photos
4) Impact Table and Figures
5) Stream survey Table
6) Preliminary jurisdiction determination form
7) JD Tables
8) USACE Wetland Data form
9) NCDWR's stream assessment form
10) Threatened and endangered species survey summary
11) Cultural resources reviews
    a. Archaeological No Survey required
    b. Historic Structures Nothing Affected (field survey)
12) NCDCM correspondence e-mail (No CAMA)
13) NCDMF correspondence e-mail (No DMF)
14) NCWRC correspondence e-mail (No WRC)

Office Use Only:
Corps action ID no. _____
DWQ project no. _____
Form Version 1.3 Dec 10 2008

Pre-Construction Notification (PCN) Form

A. Applicant Information

1. Processing

1a. Type(s) of approval sought from the Corps:	☒ Section 404 Permit	☐ Section 10 Permit
1b. Specify Nationwide Permit (NWP) number: 3	or General Permit (GP) number:	
1c. Has the NWP or GP number been verified by the Corps?	☒ Yes	☐ No

1d. Type(s) of approval sought from the DWQ (check all that apply):

☒ 401 Water Quality Certification – Regular ☐ Non-404 Jurisdictional General Permit

☐ 401 Water Quality Certification – Express ☐ 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: ☒ Yes ☐ No	For the record only for Corps Permit: ☐ Yes ☒ 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.		☐ Yes ☒ No
1g. Is the project located in any of NC's twenty coastal counties. If yes, answer 1h below.		☒ Yes ☐ No
1h. Is the project located within a NC DCM Area of Environmental Concern (AEC)?		☐ Yes ☒ No

2. Project Information

2a. Name of project:	Hoover Road (SR 1535) Site 2 Pipe Replacement
2b. County:	Pender
2c. Nearest municipality / town:	Hampstead
2d. Subdivision name:	NA
2e. NCDOT only, T.I.P. or state project no:	WBS 3B.207111

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):	Karen E. Collette, P.E.
3d. Street address:	Hwy Division 3
3e. City, state, zip:	5501 Barbados Blvd
3f. Telephone no.:	Castle Hayne, NC 28429
3g. Fax no.:	910-341-2000
3h. Email address:	910-675-0143

4. Applicant Information (if different from owner)	
4a. Applicant is:	☒ Agent ☐ Other, specify: Division Engineer
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:	Jason Hales
5b. Business name (if applicable):	SEPI Engineering and Construction
5c. Street address:	5030 New Centre Drive, Suite B
5d. City, state, zip:	Wilmington, NC, 28403
5e. Telephone no.:	910-633-6921
5f. Fax no.:	910-523-5716
5g. Email address:	jhales@sepiengineering.com

B. Project Information and Prior Project History	
1. Property Identification	
1a. Property identification no. (tax PIN or parcel ID):	NA
1b. Site coordinates (in decimal degrees):	Latitude: 34.393708 N (DD.DDDDDD) Longitude: 77.709809 W (-DD.DDDDDD)
1c. Property size:	0.72 acres
2. Surface Waters	
2a. Name of nearest body of water (stream, river, etc.) to proposed project:	Godfrey Creek. NC SID: 18-74-49-1.
2b. Water Quality Classification of nearest receiving water:	C;Sw
2c. River basin:	Cape Fear
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 site consists of a two lane section of a paved state road. Land use in the vicinity of the project is primarily residential and forested.	
3b. List the total estimated acreage of all existing wetlands on the property: 0.43	
3c. List the total estimated linear feet of all existing streams (intermittent and perennial) on the property: 188	
3d. Explain the purpose of the proposed project: To preserve the safety and mobility of the travelling public by replacing the existing deteriorated pipe structure.	
3e. Describe the overall project in detail, including the type of equipment to be used: NCDOT plans to replace the existing two 71" x 47" Corrugated Metal Pipe Arches (CMPAs) @ 50' long on an 90-degree skew with two 72" CMPs @ 50' long on a 94-degree skew with 36' headwalls on inlet and outlet with 4.5' wing walls on a 15-degree skew for an overall structure length of 50.5'. The bank on the inlet left overflow pipe will be cut down to an elevation of 94' to match the elevation of the 2' sill being placed inside the overflow pipe. Class B Rip rap will be added to the banks and channel for stabilization. Proposed impact figures are attached. Standard road construction and pipe replacement equipment such as cranes, excavators, dump trucks, and similar vehicles would be used for the project. Proper erosion and sedimentation control measures would be employed throughout the project. Once the pipe is replaced, the roadway area disturbance would be repaved.	
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:	☒ Yes ☐ No ☐ Unknown
4b. If the Corps made the jurisdictional determination, what type of determination was made?	☒ Preliminary ☐ Final
4c. If yes, who delineated the jurisdictional areas? Name (if known): Chris Dustin	Agency/Consultant Company: SEPI Engineering Other:
4d. If yes, list the dates of the Corps jurisdictional determinations or State determinations and attach documentation. 07/07/15 delineation conducted, Preliminary JD request attached.	
5. Project History	
5a. Have permits or certifications been requested or obtained for this project (including all prior phases) in the past?	☐ Yes ☐ No ☒ Unknown
5b. If yes, explain in detail according to "help file" instructions.	

6. Future Project Plans	
6a. Is this a phased project?	☐ Yes ☒ 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): ☒ Wetlands ☒ Streams - tributaries ☐ Buffers ☐ Open Waters ☐ 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)
W1 ☐ P ☒ T	Hand Clearing	PFO1C	☒ Yes ☐ No	☒ Corps ☐ DWQ	< 0.01
W2 ☐ P ☐ T			☐ Yes ☐ No	☐ Corps ☐ DWQ	
W3 ☐ P ☐ T			☐ Yes ☐ No	☐ Corps ☐ DWQ	
W4 ☐ P ☐ T			☐ Yes ☐ No	☐ Corps ☐ DWQ	
W5 ☐ P ☐ T			☐ Yes ☐ No	☐ Corps ☐ DWQ	
W6 ☐ P ☐ T			☐ Yes ☐ No	☐ Corps ☐ DWQ	
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)
S1 ☐ P ☒ T	Dewatering	SA	☒ PER ☐ INT	☒ Corps ☒ DWQ	10	12
S2 ☒ P ☐ T	Rip rap/Fill	SA	☒ PER ☐ INT	☒ Corps ☒ DWQ	10	15
S3 ☐ P ☒ T	Dewatering	SA	☒ PER ☐ INT	☒ Corps ☒ DWQ	13	9
S4 ☒ P ☐ T	Rip rap/Fill	SA	☒ PER ☐ INT	☒ Corps ☒ DWQ	13	8
S5 ☐ P ☐ T			☐ PER ☐ INT	☐ Corps ☐ DWQ		
S6 ☐ P ☐ T			☐ PER ☐ INT	☐ Corps ☐ DWQ		
3h. **Total stream and tributary impacts**						44

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 ☐ P ☐ T				
O2 ☐ P ☐ T				
O3 ☐ P ☐ T				
O4 ☐ P ☐ 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?	☐ Neuse ☐ Tar-Pamlico ☐ Other: ☐ Catawba ☐ 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 ☐ P ☐ T			☐ Yes ☐ No		
B2 ☐ P ☐ T			☐ Yes ☐ No		
B3 ☐ P ☐ T			☐ Yes ☐ 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.
To avoid widening the stream channel or reducing the depth of the stream in connection with this construction activity one pipe will be aligned with the stream channel and serve as the low flow pipe (Permit Drawing 1 of 5). The other pipe will serve as an overflow during high flows (Permit Drawing 2 of 5). Both pipes will be buried approximately 1 foot below the natural stream bed elevation as determined from upstream and downstream elevations away from the scour holes associated with the current pipe. The high flow pipe will have a sill installed 2 feet inside the inlet. The sill in the overflow pipe will match the adjacent floodplain elevation. Rip rap placement around the outlet will be done in a manner that creates a natural stream channel cross section and flood plain bench. NCDOT design is minimum requirements for State standards.

1b. Specifically describe measures taken to avoid or minimize the proposed impacts through construction techniques.
Work in the dry to minimize aquatic impacts. Sediment fencing around limits of disturbance.

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?	☐ Yes ☒ No
2b. If yes, mitigation is required by (check all that apply):	☐ DWQ ☐ Corps
2c. If yes, which mitigation option will be used for this project?	☐ Mitigation bank ☐ Payment to in-lieu fee program ☐ 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.	☐ Yes
4b. Stream mitigation requested:	linear feet
4c. If using stream mitigation, stream temperature:	☐ warm ☐ cool ☐ cold
4d. Buffer mitigation requested (DWQ only):	square feet
4e. Riparian wetland mitigation requested:	acres
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

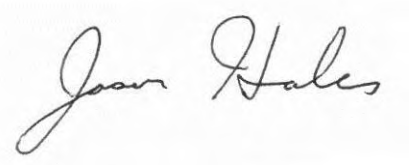
5a. If using a permittee responsible mitigation plan, provide a description of the proposed mitigation plan.

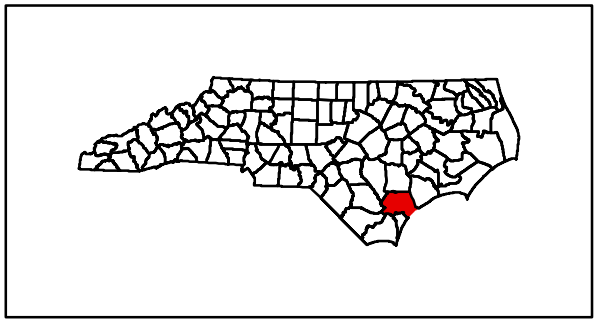
6. Buffer Mitigation (State Regulated Riparian Buffer Rules) – required by DWQ				
6a. Will the project result in an impact within a protected riparian buffer that requires buffer mitigation?			☐ Yes	☒ No
6b. If yes, then identify the square feet of impact to each zone of the riparian buffer that requires 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?	☐ Yes ☒ No
1b. If yes, then is a diffuse flow plan included? If no, explain why. Comments:	☐ Yes ☐ 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?	☒ Yes ☐ 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: The project will be completed in accordance with the NCDOT BMP manual to the maximum extent practicable. Construction stormwater management will comply with NCS 000250.	
2e. Who will be responsible for the review of the Stormwater Management Plan?	☐ Certified Local Government ☐ DWQ Stormwater Program ☒ DWQ 401 Unit
3. Certified Local Government Stormwater Review	
3a. In which local government's jurisdiction is this project?	Pender County
3b. Which of the following locally-implemented stormwater management programs apply (check all that apply):	☐ Phase II ☐ NSW ☐ USMP ☐ Water Supply Watershed ☐ Other:
3c. Has the approved Stormwater Management Plan with proof of approval been attached?	☐ Yes ☒ No
4. DWQ Stormwater Program Review	
4a. Which of the following state-implemented stormwater management programs apply (check all that apply):	☐ Coastal counties ☐ HQW ☐ ORW ☐ Session Law 2006-246 ☒ Other: NPDES
4b. Has the approved Stormwater Management Plan with proof of approval been attached?	☐ Yes ☒ No
5. DWQ 401 Unit Stormwater Review	
5a. Does the Stormwater Management Plan meet the appropriate requirements?	☐ Yes ☐ No
5b. Have all of the 401 Unit submittal requirements been met?	☐ Yes ☐ No

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?	☒ Yes	☐ 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)?	☐ Yes	☒ 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: A Minimum Criteria Rule Compliance/MC Checklist was prepared by the NCDOT.	☐ Yes	☐ 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)?	☐ Yes	☒ No
2b. Is this an after-the-fact permit application?	☐ Yes	☒ 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?	☐ Yes	☒ 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. Due to the minimal transportation impact resulting from this road paving, this project will neither influence nearby land uses nor stimulate growth. Therefore, a detailed indirect of cumulative effects study will not be necessary.		
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. N/A		

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?	☐ Yes	☒ No
5b. Have you checked with the USFWS concerning Endangered Species Act impacts?	☐ Yes	☒ No
5c. If yes, indicate the USFWS Field Office you have contacted.	☐ Raleigh ☐ Asheville	
5d. What data sources did you use to determine whether your site would impact Endangered Species or Designated Critical Habitat? Review of the NCNHP web-based GIS mapping tool did indicate current observances of American alligator (T(S/A)) within one mile of the project corridor. Due to the close proximity of the Northeast Cape Fear River and its tributaries the American alligator could inhabit the adjacent wetlands and streams. A field survey of the project site was conducted on July 7, 2015 and no federally listed T&E species in Pender County were present within the project area and a finding of No Effect was made. A summary memo is attached.		
6. Essential Fish Habitat (Corps Requirement)		
6a. Will this project occur in or near an area designated as essential fish habitat?	☐ Yes	☒ No
6b. What data sources did you use to determine whether your site would impact Essential Fish Habitat? NOAA Essential Fish Habitat Mapper v3.0, consultation with NCDMF (e-mail attached).		
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)?	☐ Yes	☒ No
7b. What data sources did you use to determine whether your site would impact historic or archeological resources? An Archaeology - No Survey Required Form was completed by NCDOT Cultural Resources Specialist (attached). A Historic- No Structures Affected Form was completed by NCDOT Cultural Resources Specialist (attached).		
8. Flood Zone Designation (Corps Requirement)		
8a. Will this project occur in a FEMA-designated 100-year floodplain?	☒ Yes	☐ No
8b. If yes, explain how project meets FEMA requirements: NCDOT Hydraulics coordination with FEMA.		
8c. What source(s) did you use to make the floodplain determination? FEMA GIS Layer		

Jason Hales Applicant/Agent's Printed Name	 Applicant/Agent's Signature (Agent's signature is valid only if an authorization letter from the applicant is provided.)	6/29/16 Date



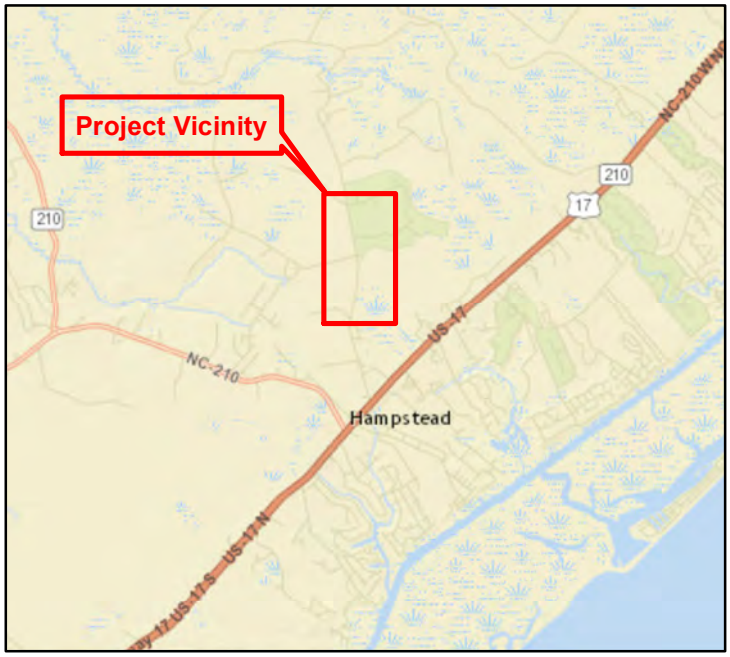


Figure 1 -
Project Vicinity

SR 1569 Hoover Road
Pipe Replacement (Site 2)

Pender County, North Carolina
May 2016

This Exhibit is for planning purposes only and shown herein does not meet NC 47-30 Requirements and therefore is not for design, construction, or recording or transfer of title. The Exhibit was compiled from available information obtained from the sources listed below.

Sources:
NCDOT, ESRI, Pender County USDA Soil Survey, LIDAR

May 2016

1 inch = 400 feet

GRAPHIC SCALE

0 200 400 800 Feet

Figure 2 - Aerial Photography

Hoover Road (SR 1569) Site 2 Pipe Replacement

NC Transportation

SEPI ENGINEERING & CONSTRUCTION

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May 2016

1 inch = 200 feet

GRAPHIC SCALE

0 100 200 400

Feet

Figure 3 - USDA Soils

Hoover Road (SR 1569) Site 2 Pipe Replacement

NC Transportation

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Legend

- Hoover Road Site 2 Project Study Area
- Upland Sample Point
- Wetland Sample Point
- Perennial Stream
- Wetland Line

WA

WA

SA

SA

WA

WA

Hoover

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May 2016

1 inch = 75 feet

GRAPHIC SCALE

0 37.5 75 150

Feet

Figure 4 - Jurisdictional Features

Hoover Road (SR 1569) Site 2 Pipe Replacement

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May 2016

1 inch = 200 feet

GRAPHIC SCALE

0 100 200 400

Feet

Figure 5 - USGS Topo

Hoover Road (SR 1569) Site 2 Pipe Replacement

NC Transportation

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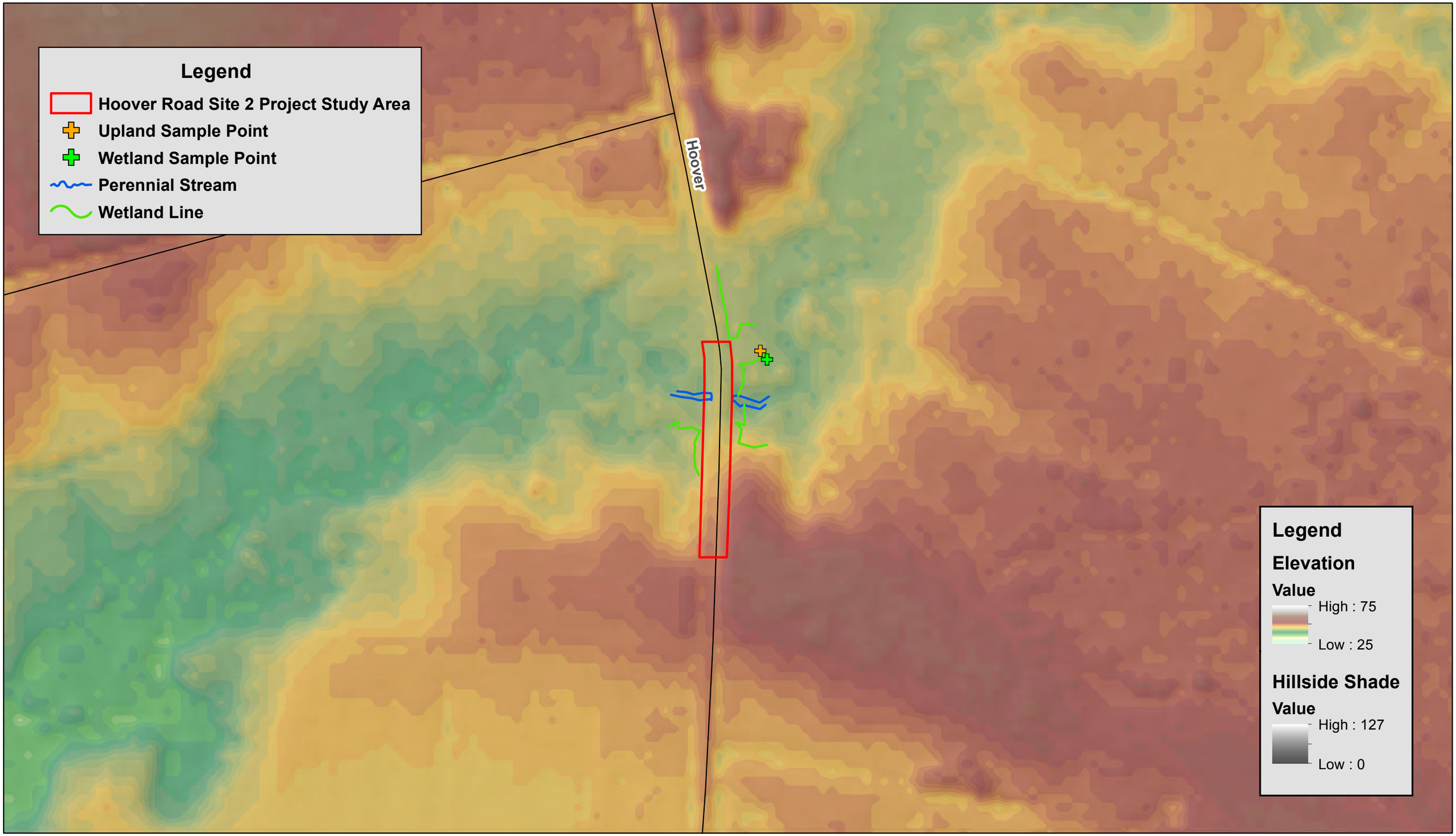

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NCDOT, ESRI, Pender County USDA Soil Survey, LIDAR

May 2016

1 inch = 200 feet

GRAPHIC SCALE

0 100 200 400 Feet

Figure 6 - LiDAR

Hoover Road (SR 1569) Site 2 Pipe Replacement

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Photo 1. Hoover Road Site 2 Stream SA (looking upstream at outlet).

Photo 2. Hoover Road Site 2 Stream SA (looking downstream from outlet).

Photo 3. Hoover Road Site 2 Stream SA (looking upstream from pipe inlet).

Photo 4. Hoover Road Site 2 Stream SA (looking downstream at inlet).

Photo 5. Hoover Road Site 2 (looking downstream at inlet headwall).

Photo 6. Hoover Road Site 2 wetland vegetation.

WETLAND PERMIT IMPACT SUMMARY - May 23, 2016

			WETLAND IMPACTS					SURFACE WATER IMPACTS				
Site No.	Station (From/To)	Structure Size / Type	Permanent Fill In Wetlands (ac)	Temp. Fill In Wetlands (ac)	Excavation in Wetlands (ac)	Mechanized Clearing in Wetlands (ac)	Hand Clearing in Wetlands (ac)	Permanent SW impacts (ac)	Temp. SW impacts (ac)	Existing Channel Impacts Permanent (ft)	Existing Channel Impacts Temp. (ft)	Natural Stream Design (ft)
W1	12' to 15' Upstream of Proposed Pipe Inlet	Hand Clearing					<0.01					
S1	13' to 25' Downstream of Proposed Pipe Outlet	Dewatering							<0.01		12	
S2	2' Upstream to 13' Downstream of Proposed Pipe Outlet	Rip Rap/Headwall Fill						<0.01		15		
S3	6' to 15' Upstream of Proposed Pipe Inlet	Dewatering							<0.01		9	
S4	2' Downstream to 6' Upstream of Proposed Pipe Inlet	Rip Rap/Headwall Fill						<0.01		8		
TOTALS:							<0.01	< 0.01	< 0.01	23	21	

Notes:

W1 - 9 SQFT

S1 - 190 SQFT

S2 - 205 SQFT

S3 - 241 SQFT

S4 - 17 SQFT

NC DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

PENDER COUNTY
HOOVER ROAD (SR 1569) SITE 2 PIPE PROJECT
23-May-16

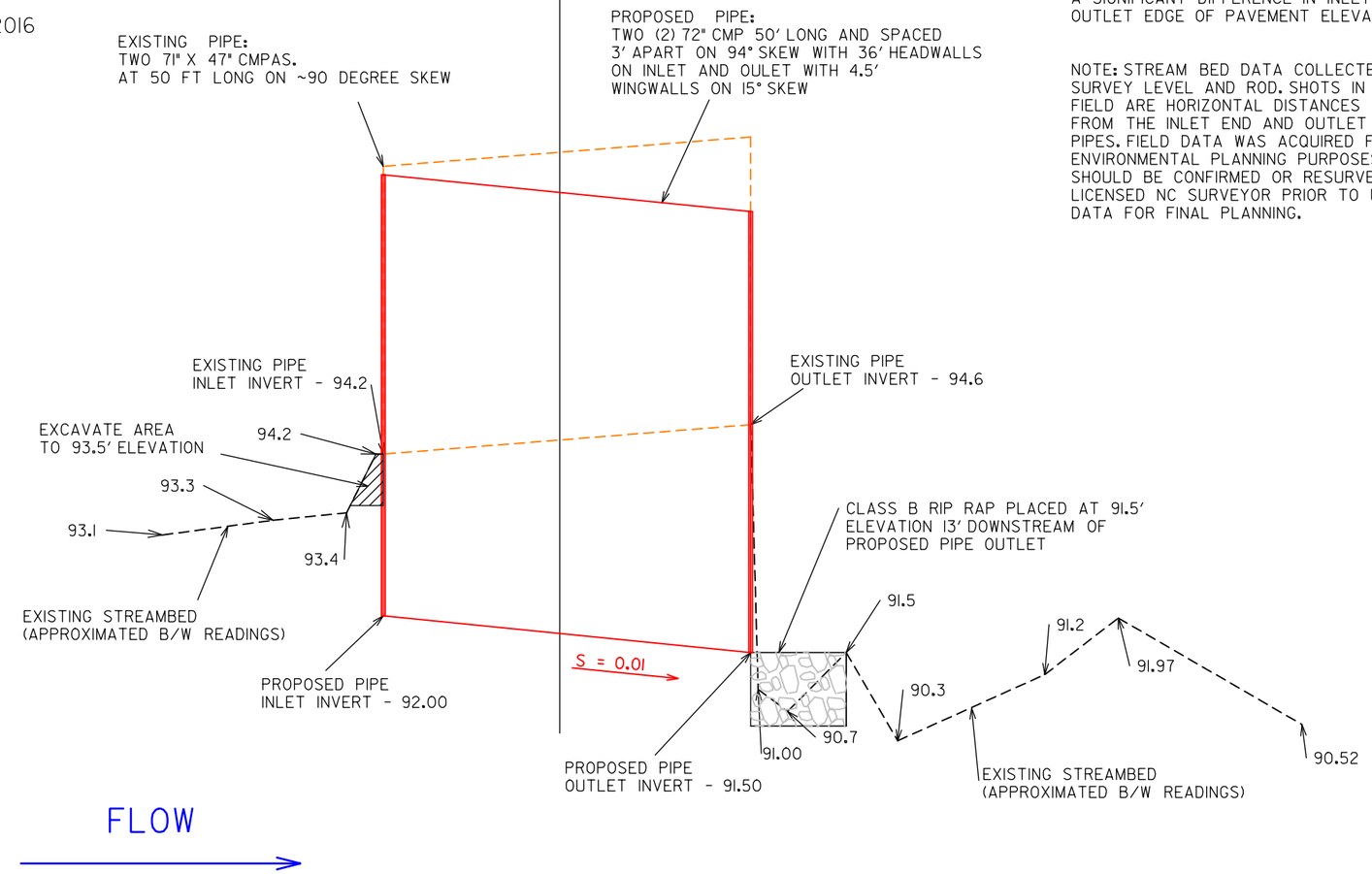
PENDER COUNTY - NORTH OF HAMPSTEAD
SR 1569 (HOOVER RD SITE 2) 1.7 MILES N OF US 17 - MAIN FLOW PIPE STREAM PROFILE

DATA COLLECTED: 03/29/2016

SCALE
1"=2' VERTICAL
1"=20' HORIZONTAL

NOTE: ELEVATIONS ARE RELATIVE TO THE INLET SIDE EDGE OF PAVEMENT WHICH HAS AN ASSUMED ELEVATION OF 100.0. THE INLET SIDE ELEVATION IS KEY AS THERE IS A SIGNIFICANT DIFFERENCE IN INLET VS. OUTLET EDGE OF PAVEMENT ELEVATION.

NOTE: STREAM BED DATA COLLECTED WITH SURVEY LEVEL AND ROD. SHOTS IN THE FIELD ARE HORIZONTAL DISTANCES FROM THE INLET END AND OUTLET END OF PIPES. FIELD DATA WAS ACQUIRED FOR ENVIRONMENTAL PLANNING PURPOSES. DATA SHOULD BE CONFIRMED OR RESURVEYED BY A LICENSED NC SURVEYOR PRIOR TO USING DATA FOR FINAL PLANNING.



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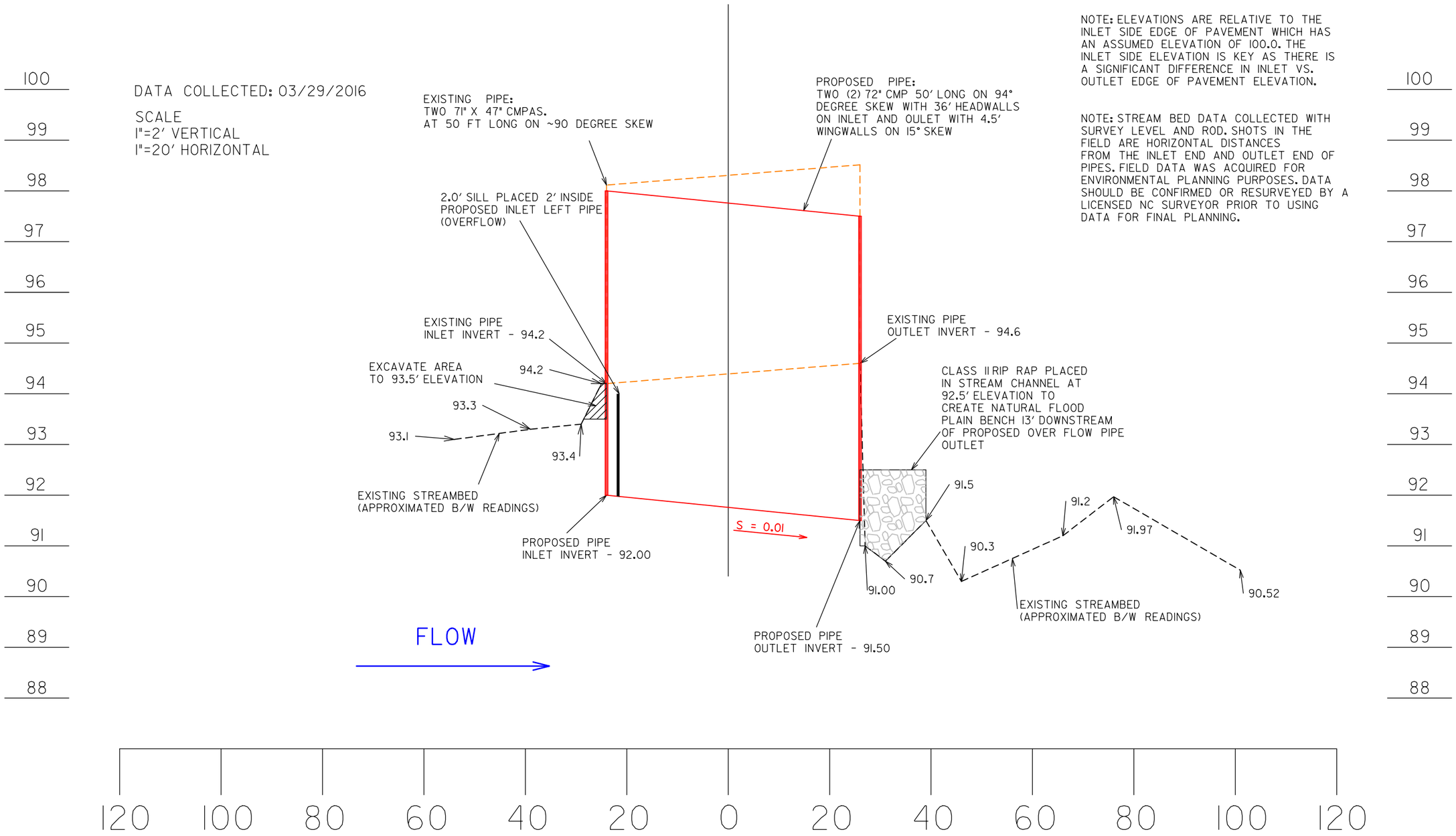
DRAWN BY:	CHECKED BY:	DATE	SHEET
C. DUSTIN	J. HALES	06/30/2016	STREAM PROFILE 1 of 5

PENDER COUNTY - NORTH OF HAMPSTEAD
SR 1569 (HOOVER RD SITE 2) 1.7 MILES N OF US 17 - OVER FLOW PIPE STREAM PROFILE

DATA COLLECTED: 03/29/2016

SCALE
1"=2' VERTICAL
1"=20' HORIZONTAL



NOTE: ELEVATIONS ARE RELATIVE TO THE INLET SIDE EDGE OF PAVEMENT WHICH HAS AN ASSUMED ELEVATION OF 100.0. THE INLET SIDE ELEVATION IS KEY AS THERE IS A SIGNIFICANT DIFFERENCE IN INLET VS. OUTLET EDGE OF PAVEMENT ELEVATION.

NOTE: STREAM BED DATA COLLECTED WITH SURVEY LEVEL AND ROD. SHOTS IN THE FIELD ARE HORIZONTAL DISTANCES FROM THE INLET END AND OUTLET END OF PIPES. FIELD DATA WAS ACQUIRED FOR ENVIRONMENTAL PLANNING PURPOSES. DATA SHOULD BE CONFIRMED OR RESURVEYED BY A LICENSED NC SURVEYOR PRIOR TO USING DATA FOR FINAL PLANNING.

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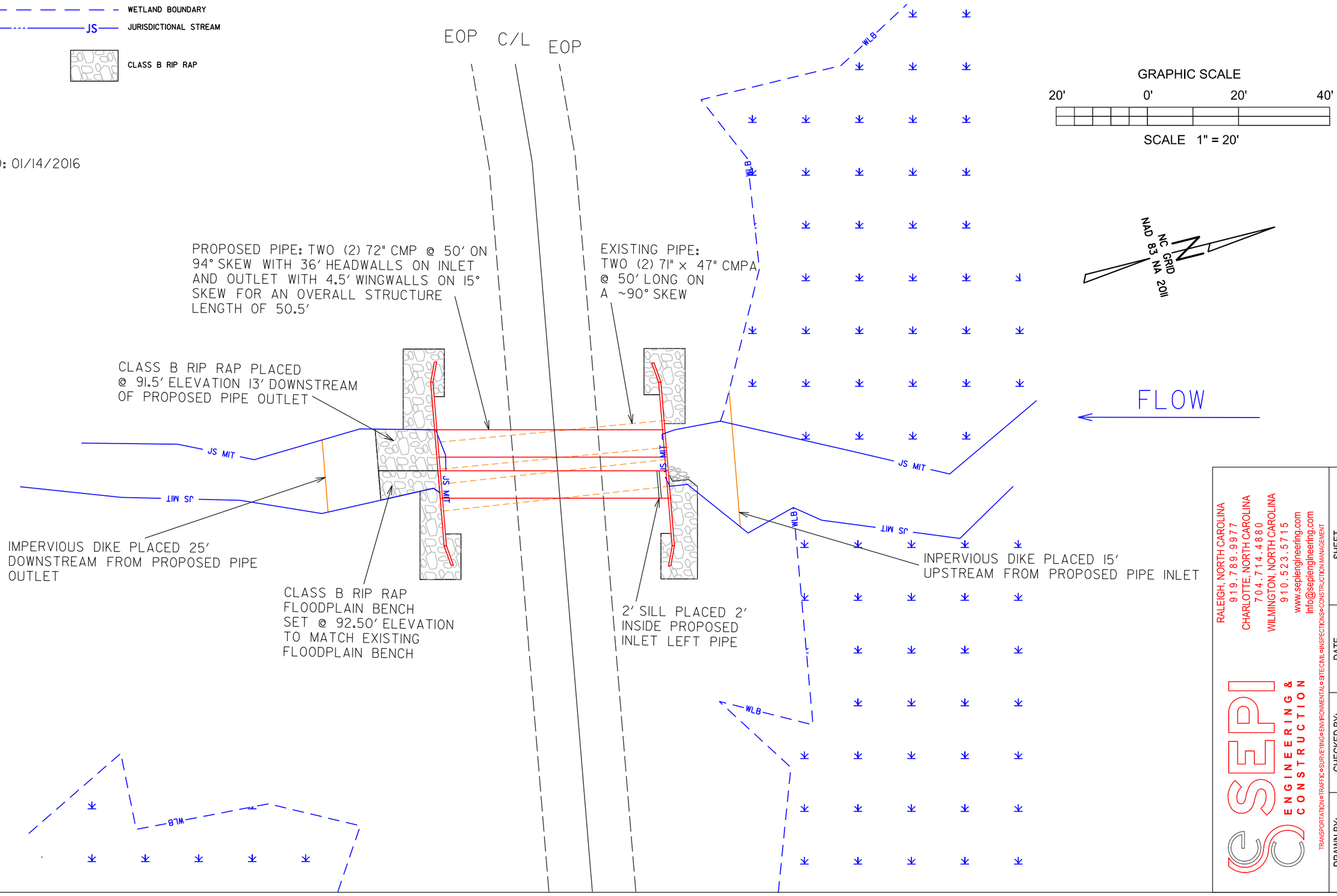
DRAWN BY:	CHECKED BY:	DATE	SHEET
C. DUSTIN	J. HALES	06/30/2016	STREAM PROFILE 2 of 5

PENDER COUNTY - NORTH OF HAMPSTEAD
SR 1569 (HOOVER RD SITE 2) 1.7 MILES N OF US 17 - PLAN VIEW IMPACTS

LEGEND

- EXISTING ROAD EOP (PER GIS)
- IMPERVIOUS DIKE
- WETLAND BOUNDARY
- JS — JURISDICTIONAL STREAM
- CLASS B RIP RAP

DATA COLLECTED: 01/14/2016



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C. DUSTIN	J. HALES	06/30/2016	PLAN VIEW DESIGN 3 OF 5

PENDER COUNTY - NORTH OF HAMPSTEAD
SR 1569 (HOOVER RD SITE 2) 1.7 MILES N OF US 17 - PLAN VIEW DESIGN

LEGEND

- EXISTING ROAD EOP (PER GIS)
- IMPERVIOUS DIKE
- WETLAND BOUNDARY
- JS — JURISDICTIONAL STREAM
- TEMPORARY STREAM IMPACTS; DEWATERING
- TEMPORARY WETLAND IMPACTS; HAND CLEARING
- PERMANENT STREAM IMPACTS; FILL

DATA COLLECTED: 01/14/2016

GRAPHIC SCALE
20' 0' 20' 40'
SCALE 1" = 20'

NC GRID NAD 83 NA 2011

EOP C/L EOP

PROPOSED PIPE: TWO (2) 72" CMP @ 50' ON 94° SKEW WITH 36' HEADWALLS ON INLET AND OUTLET WITH 4.5' WINGWALLS ON 15° SKEW FOR AN OVERALL STRUCTURE LENGTH OF 50.5'

PERMANENT STREAM IMPACT (S4)

HAND CLEARING LIMITS IN WETLAND (WI)

TEMPORARY STREAM IMPACT (SI)

TEMPORARY STREAM IMPACT (S3)

IMPERVIOUS DIKE PLACED 25' DOWNSTREAM FROM PROPOSED PIPE OUTLET

PERMANENT STREAM IMPACT (S2)

EXISTING PIPE: TWO (2) 71" x 47" CMPA @ 50' LONG ON A ~89° SKEW

2' SILL PLACED 2' INSIDE PROPOSED INLET LEFT PIPE

IMPERVIOUS DIKE PLACED 15' UPSTREAM FROM PROPOSED PIPE INLET

FLOW

JS MIT

WLB

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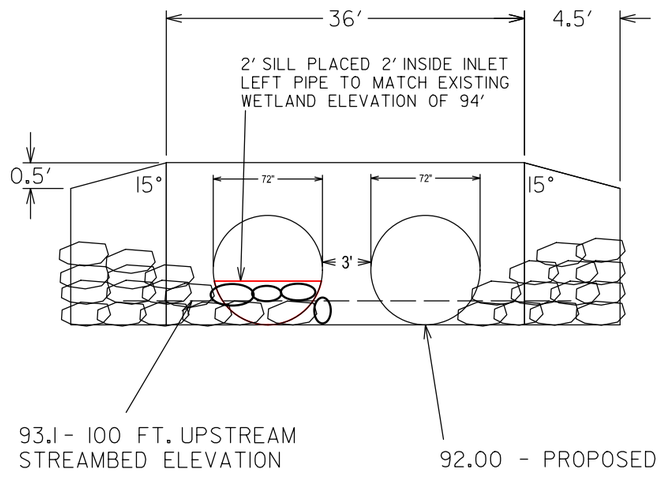
DRAWN BY:	CHECKED BY:	DATE	SHEET
C. DUSTIN	J. HALES	06/30/2016	PLAN VIEW IMPACTS 4 OF 5

PENDER COUNTY: HOOVER ROAD SITE 2 (SR 1569)
SITE AT 1.7 MILES N OF JCT OF US 17:
PIPE REPLACEMENT PROJECT-CROSS SECTION VIEW

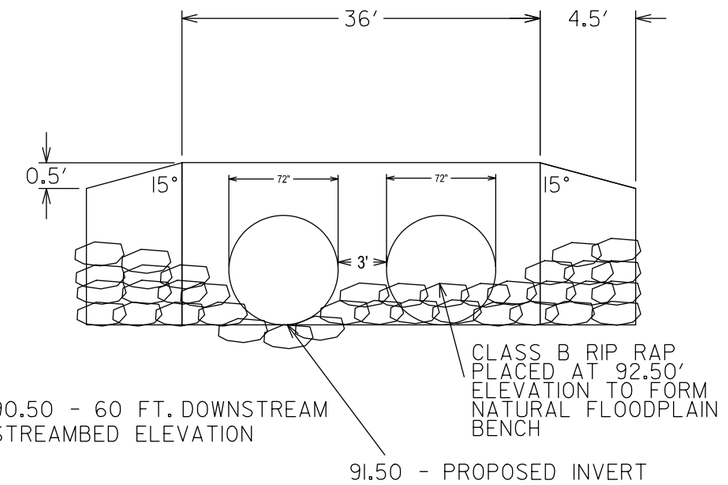
NOT TO SCALE

DATA COLLECTED:
03/25/2016

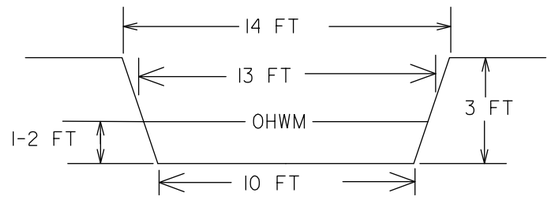
INLET



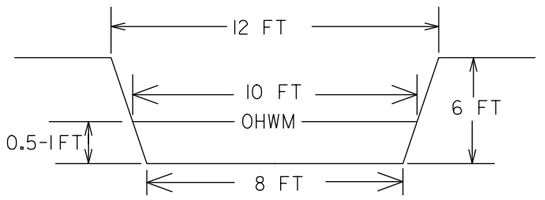
OUTLET



STREAM CROSS SECTION - 70 FEET
UPSTREAM OF EXISTING INLET



STREAM CROSS SECTION - 50 FEET
DOWNSTREAM OF EXISTING OUTLET



NOT TO SCALE

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DRAWN BY:	CHECKED BY:	DATE	SHEET
C. DUSTIN	J. HALES	06/30/2016	CROSS SECTION 5 of 5

Hoover Road Site 2 - Stream Survey Shots								
	Low EOP		**100**					
	Station (FT.)	**tance from Center Line (**	**Rod Shots**	**WD**	**Low EOP Rod Shot**	**(Rod Shots - Low EOP Rod Shot)**	**Reference Elevation**	
UPSTREAM	30	54	11	1.7	4.1	6.9	93.1	93.1
	15	39	10.8	1.5	4.1	6.7	93.3	93.3
	5	29	10.7	1.4	4.1	6.6	93.4	93.4
	1	25	9.9	0.6	4.1	5.8	94.2	94.2
	INLET	24	9.9		4.1	5.8	94.2	94.2
	EOP		4.1		4.1	0	100	100
	EOP				4.1	-4.1	104.1	104.1
	OUTLET	26	9.5		4.1	5.4	94.6	94.6
DOWNSTREAM	1	27	13.1	0.9	4.1	9	91	91
	5	31	13.4	1.3	4.1	9.3	90.7	90.7
	13	39	12.6	0.1	4.1	8.5	91.5	91.5
	20	46	13.8	1	4.1	9.7	90.3	90.3
	40	66	12.9	0.5	4.1	8.8	91.2	91.2

ATTACHMENT A

PRELIMINARY JURISDICTIONAL DETERMINATION FORM

BACKGROUND INFORMATION

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

B. NAME AND ADDRESS OF PERSON REQUESTING PRELIMINARY JD:

Christopher Dustin - SEPI Engineering

5030 New Centre Drive, Suite B, Wilmington NC, 28403

C. DISTRICT OFFICE, FILE NAME, AND NUMBER:

_____

D. PROJECT LOCATION(S) AND BACKGROUND INFORMATION:

Hoover Road Site 2, Hampstead NC, Pender County

(USE THE ATTACHED TABLE TO DOCUMENT MULTIPLE WATERBODIES AT DIFFERENT SITES)

State: NC County/parish/borough: Pender City: Hampstead

Center coordinates of site (lat/long in degree decimal format):
Lat. 34.393708 °N; Long. 77.709809 °W.

Universal Transverse Mercator: GCS_North_American_1983_NAD_1983_StatePlane_North_Carolina_FIPS_3200_Feet

Name of nearest waterbody: Godfrey Creek

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

Non-wetland waters:

188 linear feet: _____ width (ft) and/or _____ acres.

Cowardin Class: R2SB4

Stream Flow: Perennial

Wetlands: 0.43 acres.

Cowardin Class: PFO1C

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

Tidal: N/A

Non-Tidal: N/A

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

☐ Office (Desk) Determination. Date: _____

☑ Field Determination. Date(s): March 15, 2016

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: _____

☑ 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: 1:24,000 Topsail, NC

☑ USDA Natural Resources Conservation Service Soil Survey. Citation: 1986. Soil Survey of Pender County, North Carolina.

☐ National wetlands inventory map(s). Cite name: _____

☐ State/Local wetland inventory map(s): _____

☐ FEMA/FIRM maps: _____

☐ 100-year Floodplain Elevation is: _____ (National Geodectic Vertical Datum of 1929)

☑ Photographs: ☑ Aerial (Name & Date): NC OneMap 2012 or ☑ Other (Name & Date): Site Photos

☐ Previous determination(s). File no. and date of response letter: _____

☑ Other information (please specify): LiDAR

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:

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)

05/10/16

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

STREAM DELINEATIONS

Section	Map ID	Linear (ft)	NCDWQ Score	Cowardin Code	HGM Code	Waters Type	Classification	Local Waterway	On Topo Map	On Soils Map	Latitude	Longitude	Comments	JD Review Date	Reviewer
Hoover Road (SR 1569) Site 2	SA	188	42.75	R2-RIVERINE, LOWER PERENNIAL	RIVERINE	RPW	PERENNIAL	Godfrey Creek	YES	YES	34.777638 N	77.99994 W		3/15/2016	M. Herndon

WETLAND DELINEATIONS - COASTAL

Section	Map ID	Acres	Cowardin Code	HGM Code	Waters Type	NCWAM Classification	Local Waterway	Latitude	Longitude	Comments	JD Review Date	Reviewers
Hoover Road Site 2 (SR 1569)	WA	0.43	PFO1-PALUSTRINE, FORESTED, BLD	RIVERINE	RPWWD	BOTTOMLAND HARDWOOD FOREST	Godfrey Creek	34.394267 N	77.709413 W		3/15/2016	M. Herndon

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: Hoover Site 2 **City/County:** Pender **Sampling Date:** 07-Jul-15

Applicant/Owner: NCDOT Division 3 **State:** NC **Sampling Point:** WA UP

Investigator(s): Casey Burns **Section, Township, Range:** S T R

Landform (hillslope, terrace, etc.): Hillside **Local relief (concave, convex, none):** flat **Slope:** 0.0 % / 0.0°

Subregion (LRR or MLRA): LRR T **Lat.:** 34.394324 N **Long.:** 77.709465 W **Datum:** NAD83

Soil Map Unit Name: Mk - Muckalee loam, frequently flooded **NWI classification:** UPLAND

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ◉ No ○ **(If no, explain in Remarks.)**

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ◉ No ○

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **naturally problematic?** **(If needed, explain any answers in Remarks.)**

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

Hydrophytic Vegetation Present?	Yes ◉	No ○	**Is the Sampled Area within a Wetland?** Yes ○ No ◉
Hydric Soil Present?	Yes ○	No ◉	
Wetland Hydrology Present?	Yes ○	No ◉	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15) (LRR U)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of 2 required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☑ FAC-Neutral Test (D5)
- ☐ Sphagnum moss (D8) (LRR T, U)

Field Observations:

Surface Water Present?	Yes ○	No ◉	Depth (inches):
Water Table Present?	Yes ○	No ◉	Depth (inches):
Saturation Present? (includes capillary fringe)	Yes ○	No ◉	Depth (inches):

Wetland Hydrology Present? Yes ○ No ◉

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Five/Four Strata) - Use scientific names of plants.

Sampling Point: WA UP

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Rel.Strat. Cover	Indicator Status
1. Acer rubrum	20	☑	33.3%	FAC
2. Nyssa sylvatica	10	☐	16.7%	FAC
3. Liquidambar styraciflua	20	☑	33.3%	FAC
4. Ilex opaca	10	☐	16.7%	FAC
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
50% of Total Cover: 30	20% of Total Cover: 12	60	= Total Cover	

Sapling or Sapling/Shrub Stratum (Plot size: 30')				
1. Acer rubrum	30	☑	40.0%	FAC
2. Liquidambar styraciflua	30	☑	40.0%	FAC
3. Gordonia lasianthus	15	☑	20.0%	FACW
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
50% of Total Cover: 37.5	20% of Total Cover: 15	75	= Total Cover	

Shrub Stratum (Plot size: 30')				
1. Ligustrum sinense	30	☑	75.0%	FAC
2. Magnolia virginiana	10	☑	25.0%	FACW
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
50% of Total Cover: 20	20% of Total Cover: 8	40	= Total Cover	

Herb Stratum (Plot size: 30')				
1. Woodwardia areolata	10	☑	50.0%	OBL
2. Arundinaria gigantea	5	☑	25.0%	FACW
3. Osmunda cinnamomea	5	☑	25.0%	FACW
4. Carex abscondita	0	☐	0.0%	FACW
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
9.	0	☐	0.0%	
10.	0	☐	0.0%	
11.	0	☐	0.0%	
12.	0	☐	0.0%	
50% of Total Cover: 10	20% of Total Cover: 4	20	= Total Cover	

Woody Vine Stratum (Plot size: 30')				
1. Vitis rotundifolia	30	☑	100.0%	FAC
2. Gelsemium sempervirens	0	☐	0.0%	FAC
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
50% of Total Cover: 15	20% of Total Cover: 6	30	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 11 (A)

Total Number of Dominant Species Across All Strata: 11 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	10	x 1 =	10
FACW species	35	x 2 =	70
FAC species	180	x 3 =	540
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	225 (A)		620 (B)

Prevalence Index = B/A = 2.756

Hydrophytic Vegetation Indicators:

- ☐ **1 - Rapid Test for Hydrophytic Vegetation**
- ☑ **2 - Dominance Test is > 50%**
- ☑ **3 - Prevalence Index is ≤3.0** [1]
- ☐ **Problematic Hydrophytic Vegetation** [1] **(Explain)**

[1] **Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.**

Definition of Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

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 3.28 ft (1m) tall.

Shrub - Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb - All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine - All woody vines, regardless of height.

Hydrophytic Vegetation Present? Yes ◉ No ○

Remarks: (If observed, list morphological adaptations below).

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

SOIL

Sampling Point: WA UP

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type [1]	Loc[2]	Texture	Remarks
0-10	10YR 3/1						Sandy Clay Loam	15% Uncoated
10-12	10YR 4/1						Sandy Clay Loam	10% Uncoated

[1] Type: C=Concentration. D=Depletion. RM=Reduced Matrix, 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)
- ☐ Organic Bodies (A6) (LRR P, T, U)
- ☐ 5 cm Mucky Mineral (A7) (LRR P, T, U)
- ☐ Muck Presence (A8) (LRR U)
- ☐ 1 cm Muck (A9) (LRR P, T)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) (MLRA 150A)
- ☐ Sandy Muck Mineral (S1) (LRR O, S)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR P, S, T, U)
- ☐ Polyvalue Below Surface (S8) (LRR S, T, U)
- ☐ Thin Dark Surface (S9) (LRR S, T, U)
- ☐ Loamy Mucky Mineral (F1) (LRR O)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) (LRR U)
- ☐ Depleted Ochric (F11) (MLRA 151)
- ☐ Iron-Manganese Masses (F12) (LRR O, P, T)
- ☐ Umbric Surface (F13) (LRR P, T, U)
- ☐ Delta Ochric (F17) (MLRA 151)
- ☐ Reduced Vertic (F18) (MLRA 150A, 150B)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149A)
- ☐ Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)

Indicators for Problematic Hydric Soils [3]:

- ☐ 1 cm Muck (A9) (LRR O)
- ☐ 2 cm Muck (A10) (LRR S)
- ☐ Reduced Vertic (F18) (outside MLRA 150A,B)
- ☐ Piedmont Floodplain Soils (F19) (LRR P, S, T)
- ☐ Anomalous Bright Loamy Soils (F20) (MLRA 153B)
- ☐ Red Parent Material (TF2)
- ☐ 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 ◉

Remarks:

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: Hoover Site 2 **City/County:** Pender **Sampling Date:** 07-Jul-15

Applicant/Owner: NCDOT Division 3 **State:** NC **Sampling Point:** WA WET

Investigator(s): Casey Burns **Section, Township, Range:** S T R

Landform (hillslope, terrace, etc.): Floodplain **Local relief (concave, convex, none):** concave **Slope:** 0.0 % / 0.0°

Subregion (LRR or MLRA): LRR T **Lat.:** 34.394267 N **Long.:** 77.709413 W **Datum:** NAD83

Soil Map Unit Name: Mk - Muckalee loam, frequently flooded **NWI classification:** PFO

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ◉ No ○ **(If no, explain in Remarks.)**

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ◉ No ○

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **naturally problematic?** **(If needed, explain any answers in Remarks.)**

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

Hydrophytic Vegetation Present?	Yes ◉ No ○	**Is the Sampled Area within a Wetland?** Yes ◉ No ○
Hydric Soil Present?	Yes ◉ No ○	
Wetland Hydrology Present?	Yes ◉ No ○	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☑ Surface Water (A1)
- ☑ High Water Table (A2)
- ☑ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15) (LRR U)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of 2 required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☑ FAC-Neutral Test (D5)
- ☐ Sphagnum moss (D8) (LRR T, U)

Field Observations:

Surface Water Present?	Yes ◉ No ○	Depth (inches):	0
Water Table Present?	Yes ◉ No ○	Depth (inches):	2
Saturation Present? (includes capillary fringe)	Yes ◉ No ○	Depth (inches):	0

Wetland Hydrology Present? Yes ◉ No ○

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Five/Four Strata) - Use scientific names of plants.

Sampling Point: WA WET

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Rel.Strat. Cover	Indicator Status
1. Acer rubrum	40	☑	50.0%	FAC
2. Nyssa sylvatica	40	☑	50.0%	FAC
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
50% of Total Cover: 40	20% of Total Cover: 16	80	= Total Cover	

Sapling or Sapling/Shrub Stratum (Plot size: 30')				
1. Liquidambar styraciflua	20	☑	33.3%	FAC
2. Acer rubrum	20	☑	33.3%	FAC
3. Ilex opaca	10	☐	16.7%	FAC
4. Gordonia lasianthus	10	☐	16.7%	FACW
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
50% of Total Cover: 30	20% of Total Cover: 12	60	= Total Cover	

Shrub Stratum (Plot size: 30')				
1. Ligustrum sinense	30	☑	50.0%	FAC
2. Viburnum nudum var. cassinoides	10	☐	16.7%	FACW
3. Magnolia virginiana	20	☑	33.3%	FACW
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
50% of Total Cover: 30	20% of Total Cover: 12	60	= Total Cover	

Herb Stratum (Plot size: 30')				
1. Woodwardia areolata	30	☑	46.2%	OBL
2. Osmunda cinnamomea	15	☑	23.1%	FACW
3. Carex abscondita	10	☐	15.4%	FACW
4. Arundinaria gigantea	10	☐	15.4%	FACW
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
9.	0	☐	0.0%	
10.	0	☐	0.0%	
11.	0	☐	0.0%	
12.	0	☐	0.0%	
50% of Total Cover: 32.5	20% of Total Cover: 13	65	= Total Cover	

Woody Vine Stratum (Plot size: 30')				
1. Vitis rotundifolia	20	☑	50.0%	FAC
2. Smilax laurifolia	15	☑	37.5%	FACW
3. Gelsemium sempervirens	5	☐	12.5%	FAC
4.	0	☐	0.0%	
5.	0	☐	0.0%	
50% of Total Cover: 20	20% of Total Cover: 8	40	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 10 (A)

Total Number of Dominant Species Across All Strata: 10 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

	Total % Cover of:		Multiply by:	
OBL species	30	x 1 =	30	
FACW species	90	x 2 =	180	
FAC species	185	x 3 =	555	
FACU species	0	x 4 =	0	
UPL species	0	x 5 =	0	
Column Totals:	305	(A)	765	(B)

Prevalence Index = B/A = 2.508

Hydrophytic Vegetation Indicators:

- ☐ **1 - Rapid Test for Hydrophytic Vegetation**
- ☑ **2 - Dominance Test is > 50%**
- ☑ **3 - Prevalence Index is ≤3.0** [1]
- ☐ **Problematic Hydrophytic Vegetation** [1] **(Explain)**

[1] **Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.**

Definition of Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

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 3.28 ft (1m) tall.

Shrub - Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb - All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine - All woody vines, regardless of height.

Hydrophytic Vegetation Present? Yes ◉ No ○

Remarks: (If observed, list morphological adaptations below).

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

SOIL

Sampling Point: WA WET

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type [1]	Loc [2]	Texture	Remarks
0-12	10YR 2/1	80	10YR 3/6	20	C	M	Mucky Loam	

[1] Type: C=Concentration. D=Depletion. RM=Reduced Matrix, 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)
- ☐ Organic Bodies (A6) (LRR P, T, U)
- ☐ 5 cm Mucky Mineral (A7) (LRR P, T, U)
- ☐ Muck Presence (A8) (LRR U)
- ☐ 1 cm Muck (A9) (LRR P, T)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) (MLRA 150A)
- ☐ Sandy Muck Mineral (S1) (LRR O, S)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR P, S, T, U)
- ☐ Polyvalue Below Surface (S8) (LRR S, T, U)
- ☐ Thin Dark Surface (S9) (LRR S, T, U)
- ☐ Loamy Mucky Mineral (F1) (LRR O)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☑ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) (LRR U)
- ☐ Depleted Ochric (F11) (MLRA 151)
- ☐ Iron-Manganese Masses (F12) (LRR O, P, T)
- ☐ Umbric Surface (F13) (LRR P, T, U)
- ☐ Delta Ochric (F17) (MLRA 151)
- ☐ Reduced Vertic (F18) (MLRA 150A, 150B)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149A)
- ☐ Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)

Indicators for Problematic Hydric Soils [3]:

- ☐ 1 cm Muck (A9) (LRR O)
- ☐ 2 cm Muck (A10) (LRR S)
- ☐ Reduced Vertic (F18) (outside MLRA 150A,B)
- ☐ Piedmont Floodplain Soils (F19) (LRR P, S, T)
- ☐ Anomalous Bright Loamy Soils (F20) (MLRA 153B)
- ☐ Red Parent Material (TF2)
- ☐ 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 ○

Remarks:

NC DWQ Stream Identification Form Version 4.11

SA

Date: Jul 7, 2015	**Project/Site:** Hoover Rd Site 2	**Latitude:** 34.777638
Evaluator: Casey Burns	**County:** Pender	**Longitude:** -77.99994
Total Points: 42.75 Stream is at least intermittent if ≥19 or perennial if ≥30	**Stream Determination:** Perennial	**Other:** Topsail *e.g. Quad Name*:

A. Geomorphology (Subtotal = 23)	Absent	Weak	Moderate	Strong	SCORE
1[a]. Continuous bed and bank	0	1	2	3	3
2. Sinuosity of channel along thalweg	0	1	2	3	3
3. In-Channel structure: ex. riffle-pool, step-pool, ripple-pool sequence	0	1	2	3	2
4. Particle size of stream substrate	0	1	2	3	2
5. Active/relic floodplain	0	1	2	3	3
6. Depositional bars or benches	0	1	2	3	3
7. Recent alluvial deposits	0	1	2	3	2
8. Headcuts	0	1	2	3	0
9. Grade controls	0	0.5	1	1.5	0.5
10. Natural valley	0	0.5	1	1.5	1.5
11. Second or greater order channel	No = 0		Yes = 3		3

[a] artificial ditches are not rated; see discussions in manual.

B. Hydrology (Subtotal = 8)	Absent	Weak	Moderate	Strong	SCORE
12. Presence of Baseflow	0	1	2	3	2
13. Iron oxidizing bacteria	0	1	2	3	0
14. Leaflitter	1.5	1	0.5	0	0.5
15. Sediment on plants or debris	0	0.5	1	1.5	1
16. Organic debris lines or piles	0	0.5	1	1.5	1.5
17. Soil-based evidence of high water table?	No = 0		Yes = 3		3

C. Biology (Subtotal = 11)	Absent	Weak	Moderate	Strong	SCORE
18. Fibrous roots in streambed	3	2	1	0	2
19. Rooted upland plants in streambed	3	2	1	0	3
20. Macrobenthos (note diversity and abundance)	0	1	2	3	2
21. Aquatic Mollusks	0	1	2	3	0
22. Fish	0	0.5	1	1.5	1
23. Crayfish	0	0.5	1	1.5	1.5
24. Amphibians	0	0.5	1	1.5	1
25. Algae	0	0.5	1	1.5	0.5
26. Wetland plants in streambed	FACW=0.75; OBL=1.5 Other=0				0.75

*perennial stream may also be identified using other methods. See p.35 of manual.

Notes:		
	Bank Height (feet)	5.0
	Bankfull Width (feet)	13.0
	Water Depth (inches)	1.5
	Channel Substrate	Sand
	Velocity:	Slow
	Clarity:	Slightly Turbid

Sketch:

Celebrating 15 Years

SEPI ENGINEERING & CONSTRUCTION

May 10, 2016

To: Stonewall Mathis
NCDOT
Highway Division 3
5501 Barbados Blvd.
Castle Hayne, NC 28429

From: Jason Hales
Environmental Project Manager
SEPI Engineering & Construction
5030 New Centre Drive, Suite B
Wilmington, NC 28403

Re: Evaluation of Natural Communities and Threatened and Endangered Species.
NCDOT Pipe Replacement on SR 1569 (Hoover Rd 2), Pender County, NC.

An evaluation of natural communities and threatened and endangered (T&E) species for the NCDOT Pipe Replacement located 1.7 miles north of the junction of SR 1569 (Hoover Rd) and US 17, Pender County included GIS based review of aerial imagery, USDA soil survey mapping, USGS topographic mapping and LiDAR imagery; a wetland and stream delineation; review of the North Carolina Natural Heritage Program (NCNHP) web-based mapping tool; and a field survey by qualified environmental scientists.

Fifteen federally threatened and endangered species are listed in Pender County by the US Fish & Wildlife Service (USFWS), including American alligator (T), Bald Eagle (BGPA), Green sea turtle (T), Hawksbill sea turtle (E), Kemp's ridley sea turtle (E), Leatherback sea turtle (E), Loggerhead sea turtle (T), Piping plover (T), Red-cockaded wood pecker (E), Red knot (T), West Indian manatee (E), American chaffseed (E), Cooley's meadowrue (E), Golden sedge (E), Rough-leaved loosestrife (E) and Seabeach amaranth (T).

Biological Conclusion: ***No Effect***

Review of the NCNHP web-based GIS mapping tool did indicate current observances of American alligator (T(S/A)) within one mile of the project corridor. Due to the close proximity of the Northeast Cape Fear River and its tributaries the American alligator could inhabit the adjacent wetlands and streams. A field survey of the project site was conducted on July 7, 2015 and no federally listed T&E species in Pender County were present within the project area.

SEPI

SEPI Engineering & Construction

Jason Hales
Environmental Project Manager
SEPI Engineering & Construction
5030 New Centre Drive, Suite B
Wilmington, NC 28403
910-633-6921

HISTORIC ARCHICTECTURE AND LANDSCAPES NO HISTORIC PROPERTIES PRESENT OR AFFECTED FORM

This form only pertains to Historic Architecture and Landscapes for this project. It is not valid for Archaeological Resources. You must consult separately with the Archaeology Group.

PROJECT INFORMATION

Project No:		***County***:	Pender
WBS No.:	3B.20711	***Document Type***:	MCDC
Fed. Aid No:		***Funding***:	☒ State ☐ Federal
Federal Permit(s):	☒ Yes ☐ No	***Permit Type(s)***:	NWP 3
Project Description: Replace two 71" x 47" pipe with two 72" pipes and 1-foot headwall on SR 1569 (Hoover Rd).			

SUMMARY OF HISTORIC ARCHICTECTURE AND LANDSCAPES REVIEW

☐ There are no National Register-listed or Study Listed properties within the project's area of potential effects.

☒ There are no properties less than fifty years old which are considered to meet Criteria Consideration G within the project's area of potential effects.

☐ There are no properties within the project's area of potential effects.

☐ There are properties over fifty years old within the area of potential effects, but they do not meet the criteria for listing on the National Register.

☒ There are no historic properties present or affected by this project. (Attach any notes or documents as needed.)

Date of field visit: December 2, 2015

Description of review activities, results, and conclusions:
Review of HPO quad maps, relevant background reports, historic designations roster, and indexes was undertaken on October 26, 2015. Based on this review there are no NR, DE, LL, SS, or SL in the project area. Pender County GIS maps provided no information on the construction dates for the structures present in the aerial photographs of the project area. A site visit was conducted on December 2, 2015. The only structures within the APE of the project are mobile homes. No historic properties will be affected by this project.

SUPPORT DOCUMENTATION

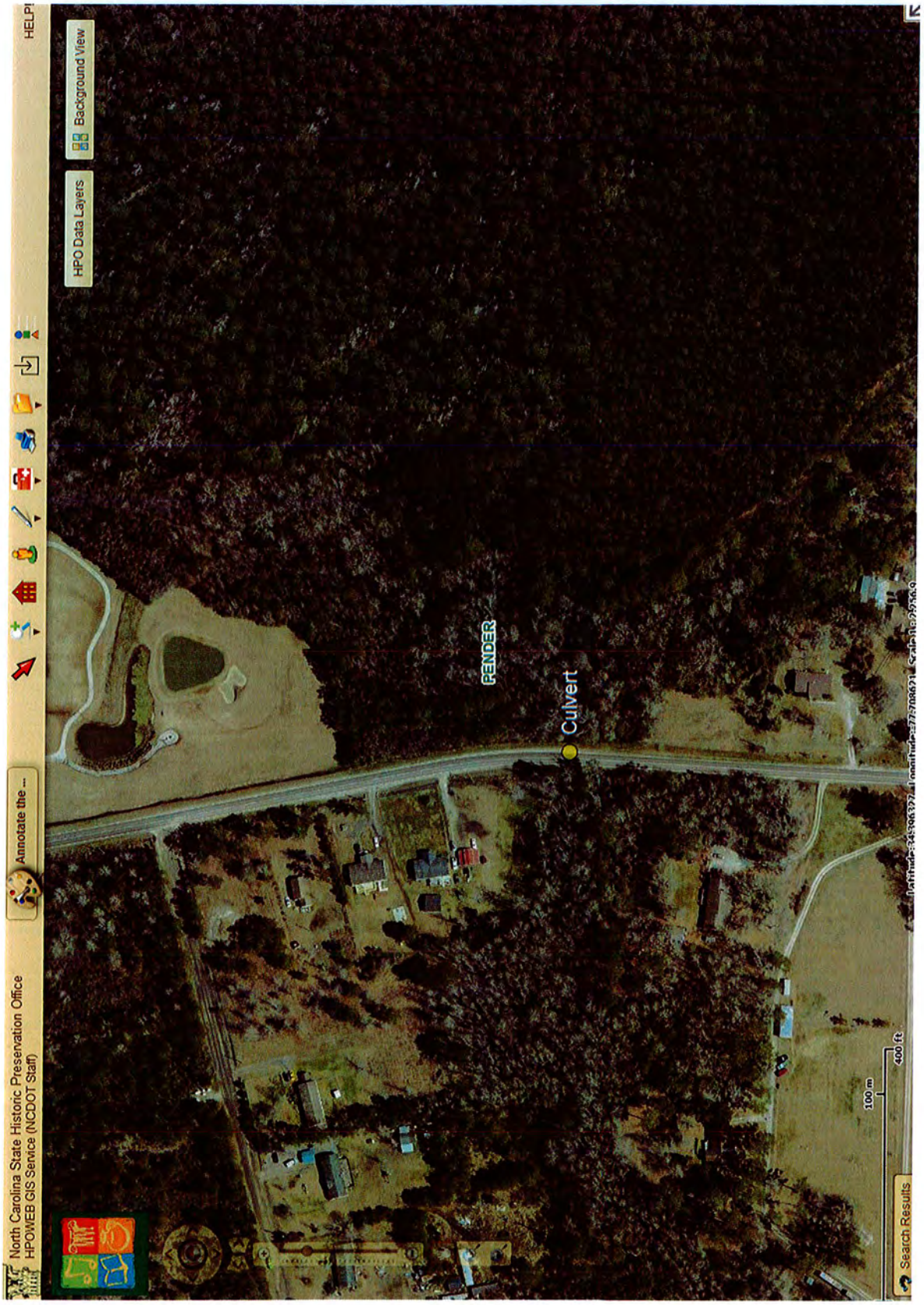
☒Map(s) ☐Previous Survey Info. ☒Photos ☐Correspondence ☐Design Plans

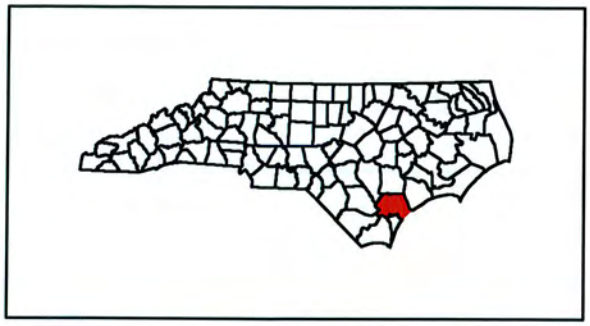
FINDING BY NCDOT ARCHITECTURAL HISTORIAN

Historic Architecture and Landscapes – **NO HISTORIC PROPERTIES PRESENT OF AFFECTED**

Shelby Reap — Dec 3, 2015

NCDOT Architectural Historian — Date


North Carolina State Historic Preservation Office
HPOWEB GIS Service (NCDOT Staff)
Annotate the ...
HELP!
HPO Data Layers
Background View
RENDER
Culvert
100 m
400 ft
Search Results



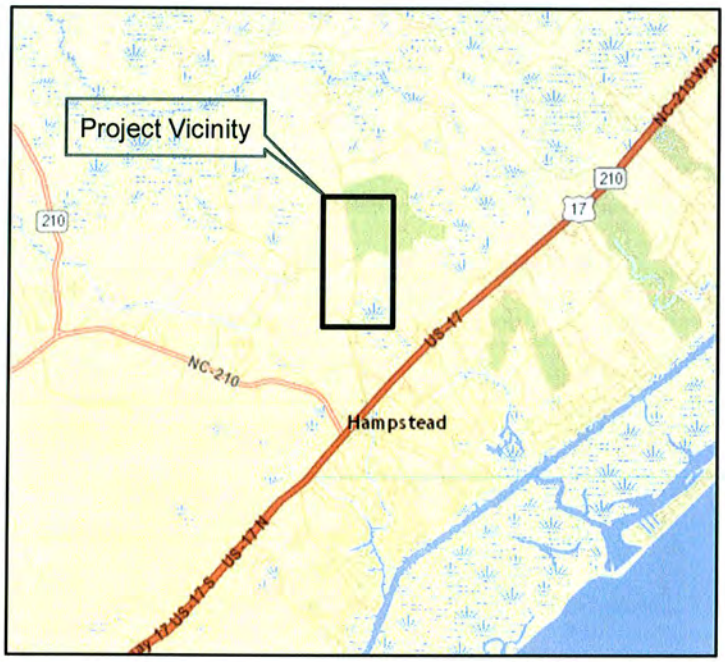
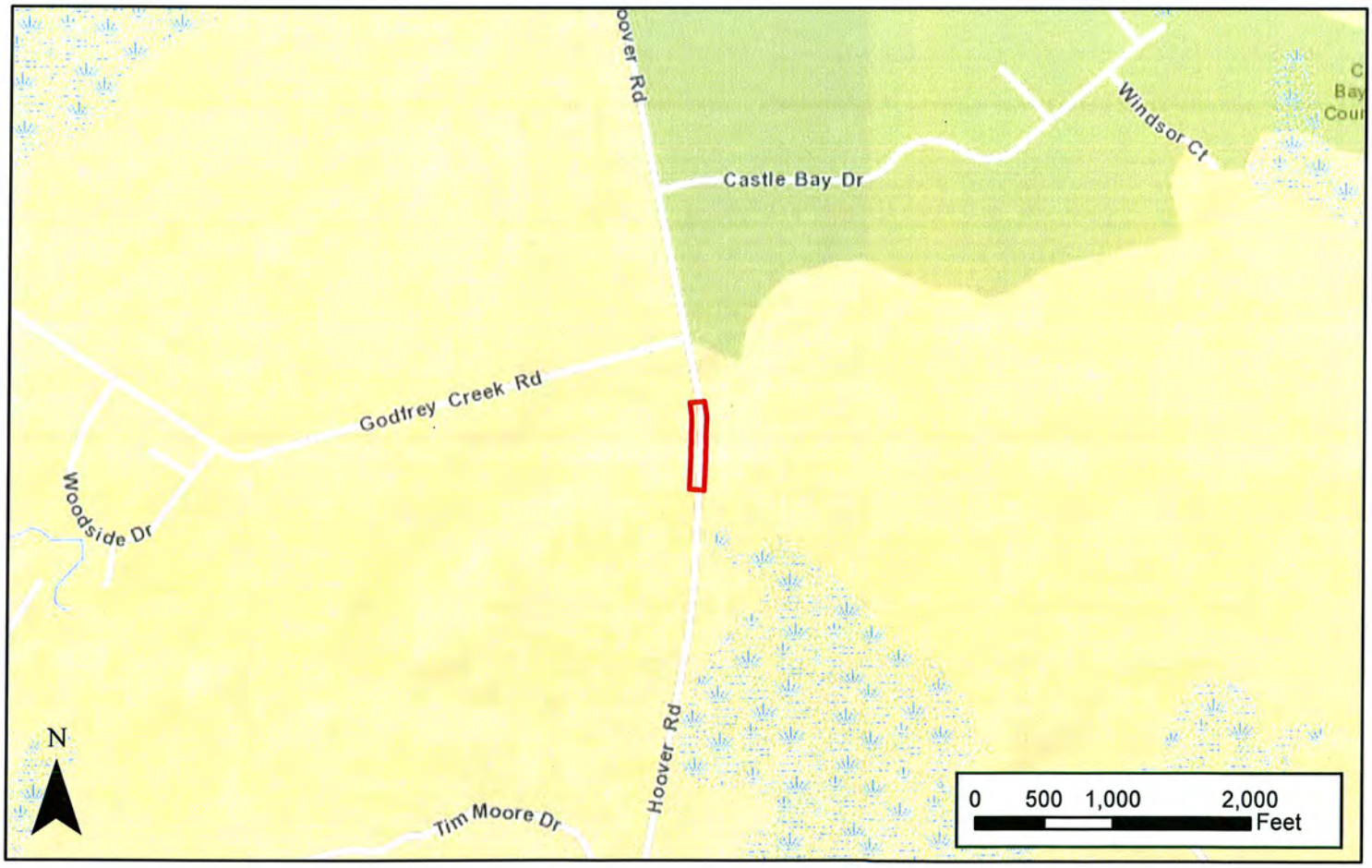


Figure 1 -
Project Vicinity

SR 1569 Hoover Road
Pipe Replacement (Site 2)

Pender County, North Carolina
October 2015



Project Tracking No.:

15-10-0037

NO ARCHAEOLOGICAL SURVEY REQUIRED FORM

This form only pertains to ARCHAEOLOGICAL RESOURCES for this project. It is not valid for Historic Architecture and Landscapes. You must consult separately with the Historic Architecture and Landscapes Group.

PROJECT INFORMATION

Project No:	**SR1569 (pipe 2)**	*County:*	**Pender**
WBS No:	**3B.207111**	*Document:*	**MCDC**
F.A. No:		*Funding:*	☒ State ☐ Federal

Federal Permit Required? ☒ Yes ☐ No *Permit Type:* **NWP3**

Project Description: **Removal of one 60" CMP and replacement with one 66" aluminum CMP buried one foot with headwalls on SR1569 (Hoover Road) in Pender County, North Carolina. The project area is approximately 1.5 acres in size and lies 1.7 miles north of the intersection of Hoover Road and US 17. The archaeological Area of Potential Effects (APE) measures 600ft in length (300ft from the pipe location) and subsumes the 60ft wide existing right-of-way.**

SUMMARY OF CULTURAL RESOURCES REVIEW

Brief description of review activities, results of review, and conclusions:

First, permitting and funding information was reviewed for determining the level of archaeological input required by state and federal laws. Section 106 of the National Historic Preservation Act will apply because a United States Army Corp of Engineers (USACE) permit acquisition will be necessary. Next, construction design and other data was examined (when applicable) to define the character and extent of potential impacts to the ground surfaces embracing the improvement work.

Once an APE was defined, a map review and site file search was conducted at the Office of State Archaeology (OSA) on Thursday, November 12, 2015. No previously documented archaeological sites are located within the APE. Examination of National Register of Historic Places (NRHP), State Study Listed (SL), Locally Designated (LD), Determined Eligible (DE), and Surveyed Site (SS) properties employing resources available on the NCSHPO website is crucial in establishing the location of noteworthy historic occupations related to a perspective construction impact area. A cross-check of these mapped resources concluded that no meaningful historic properties with possible contributing archaeological elements were located inward of the archaeological APE margins. In addition, historic maps of Pender County and the project area were appraised for evidence of former structure locations, land use patterns, or other confirmation of historic occupation at this locale and archaeological/historical reference materials were inspected as well.

Further, the APE was referenced on topographic, geologic and NRCS soil survey maps (Mk, BaB) for the evaluation of environmental, geomorphological, hydrological, and other correlatives that may have resulted in past occupation in the project corridor. Finally, aerial photographs (NCDOT Spatial Data Viewer & other on-line sources) were examined and the Google Street View map application was utilized (when amenable) for gaining a virtual, first-hand perspective of the overall study area and for assessing disturbances, both natural and human induced, which compromise the integrity of archaeological sites/deposits.

Project Tracking No.:

15-10-0037

Brief Explanation of why the available information provides a reliable basis for reasonably predicting that there are no unidentified historic properties in the APE:

The project APE is absent of NRHP listed historic properties, previously documented archaeological sites, and cemeteries. The proposed improvement work is unlikely to affect areas outside the margins of the largely impacted existing right-of-way. In addition, large portions of the APE are distinguished by very poorly drained soils which hold little potential for the presence of archaeological resources. No further archaeological input or work will be necessary for this state-funded NCDOT project. A finding of "no archaeological survey required" is considered appropriate.

SUPPORT DOCUMENTATION

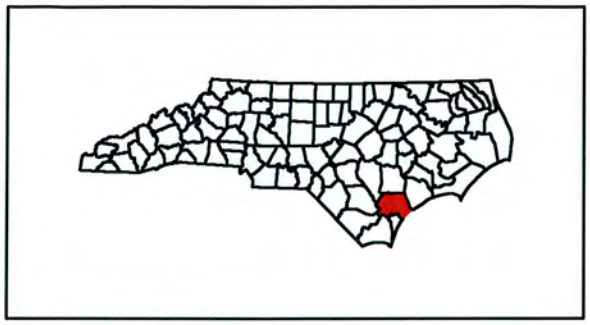
See attached: ☐ Map(s) ☐ Previous Survey Info ☐ Photos ☐ Correspondence
☐ Photocopy of County Survey Notes Other:

FINDING BY NCDOT ARCHAEOLOGIST

NO ARCHAEOLOGY SURVEY REQUIRED

Scott Eric Holmes 11/13/15

NCDOT



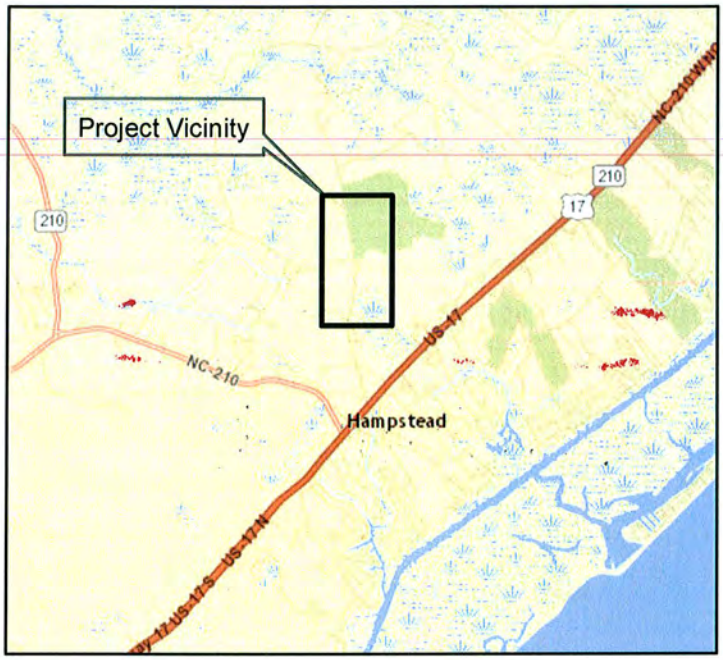
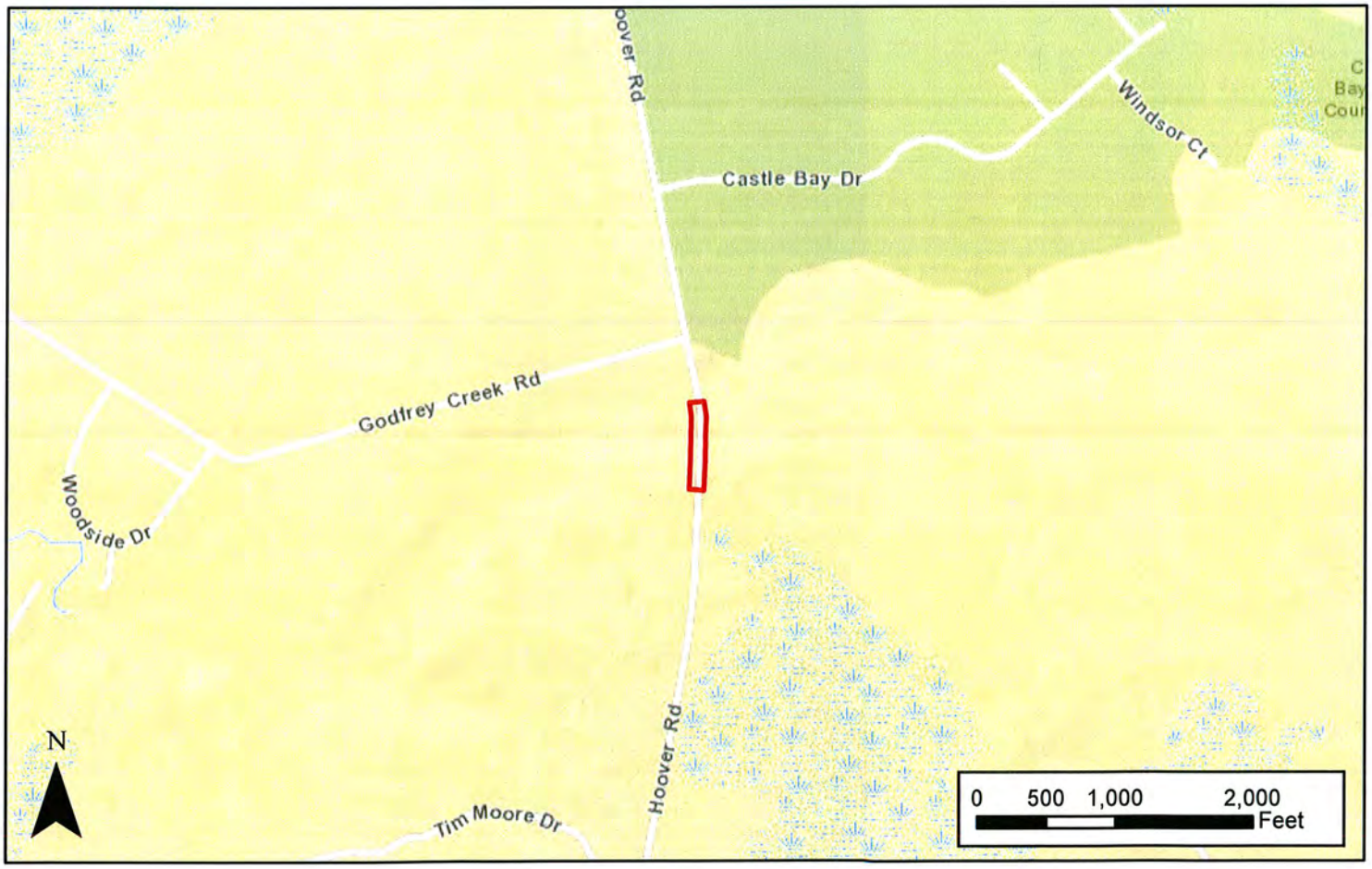


Figure 1 -
Project Vicinity

SR 1569 Hoover Road
Pipe Replacement (Site 2)

Pender County, North Carolina
October 2015



BaB—Baymeade fine sand, 1 to 4 percent slopes

Map Unit Setting

- *National map unit symbol:* 3ww1
- *Elevation:* 20 to 160 feet
- *Mean annual precipitation:* 40 to 55 inches
- *Mean annual air temperature:* 59 to 70 degrees F
- *Frost-free period:* 200 to 280 days
- *Farmland classification:* Farmland of statewide importance

Map Unit Composition

- *Baymeade and similar soils:* 90 percent
- *Minor components:* 8 percent
- *Estimates are based on observations, descriptions, and transects of the mapunit.*

Description of Baymeade

Setting

- *Landform:* Ridges on marine terraces
- *Landform position (two-dimensional):* Shoulder, summit
- *Landform position (three-dimensional):* Crest
- *Down-slope shape:* Convex

- *Across-slope shape:* Convex
- *Parent material:* Loamy and sandy marine deposits

Typical profile

- *A - 0 to 2 inches:* fine sand
- *E/Bh - 2 to 30 inches:* fine sand
- *Bt - 30 to 40 inches:* fine sandy loam
- *C - 40 to 80 inches:* loamy fine sand

Properties and qualities

- *Slope:* 0 to 6 percent
- *Depth to restrictive feature:* More than 80 inches
- *Natural drainage class:* Well drained
- *Runoff class:* Very low
- *Capacity of the most limiting layer to transmit water (Ksat):* High (1.98 to 5.95 in/hr)
- *Depth to water table:* About 48 to 60 inches
- *Frequency of flooding:* None
- *Frequency of ponding:* None
- *Available water storage in profile:* Low (about 3.6 inches)

Interpretive groups

- *Land capability classification (irrigated):* None specified
- *Land capability classification (nonirrigated):* 3s
- *Hydrologic Soil Group:* A

Minor Components

Leon

- *Percent of map unit:* 2 percent
- *Landform:* Flats on marine terraces
- *Down-slope shape:* Linear
- *Across-slope shape:* Concave

Lynn haven, undrained

- *Percent of map unit:* 2 percent
- *Landform:* Flats on marine terraces
- *Down-slope shape:* Linear
- *Across-slope shape:* Linear

Murville, undrained

- *Percent of map unit:* 2 percent
- *Landform:* Depressions on marine terraces, flats on marine terraces
- *Down-slope shape:* Concave
- *Across-slope shape:* Concave

Torhunta, undrained

- *Percent of map unit:* 2 percent
- *Landform:* Flats on marine terraces, carolina bays on marine terraces, depressions on stream terraces
- *Down-slope shape:* Linear
- *Across-slope shape:* Linear

Mk—Muckalee loam, frequently flooded

Map Unit Setting

- *National map unit symbol:* 3wws
- *Elevation:* 20 to 160 feet
- *Mean annual precipitation:* 40 to 55 inches
- *Mean annual air temperature:* 59 to 70 degrees F
- *Frost-free period:* 200 to 280 days
- *Farmland classification:* Not prime farmland

Map Unit Composition

- *Muckalee, undrained, and similar soils:* 80 percent
- *Estimates are based on observations, descriptions, and transects of the mapunit.*

Description of Muckalee, Undrained

Setting

- *Landform:* Flood plains
- *Down-slope shape:* Concave
- *Across-slope shape:* Linear
- *Parent material:* Sandy and loamy alluvium

Typical profile

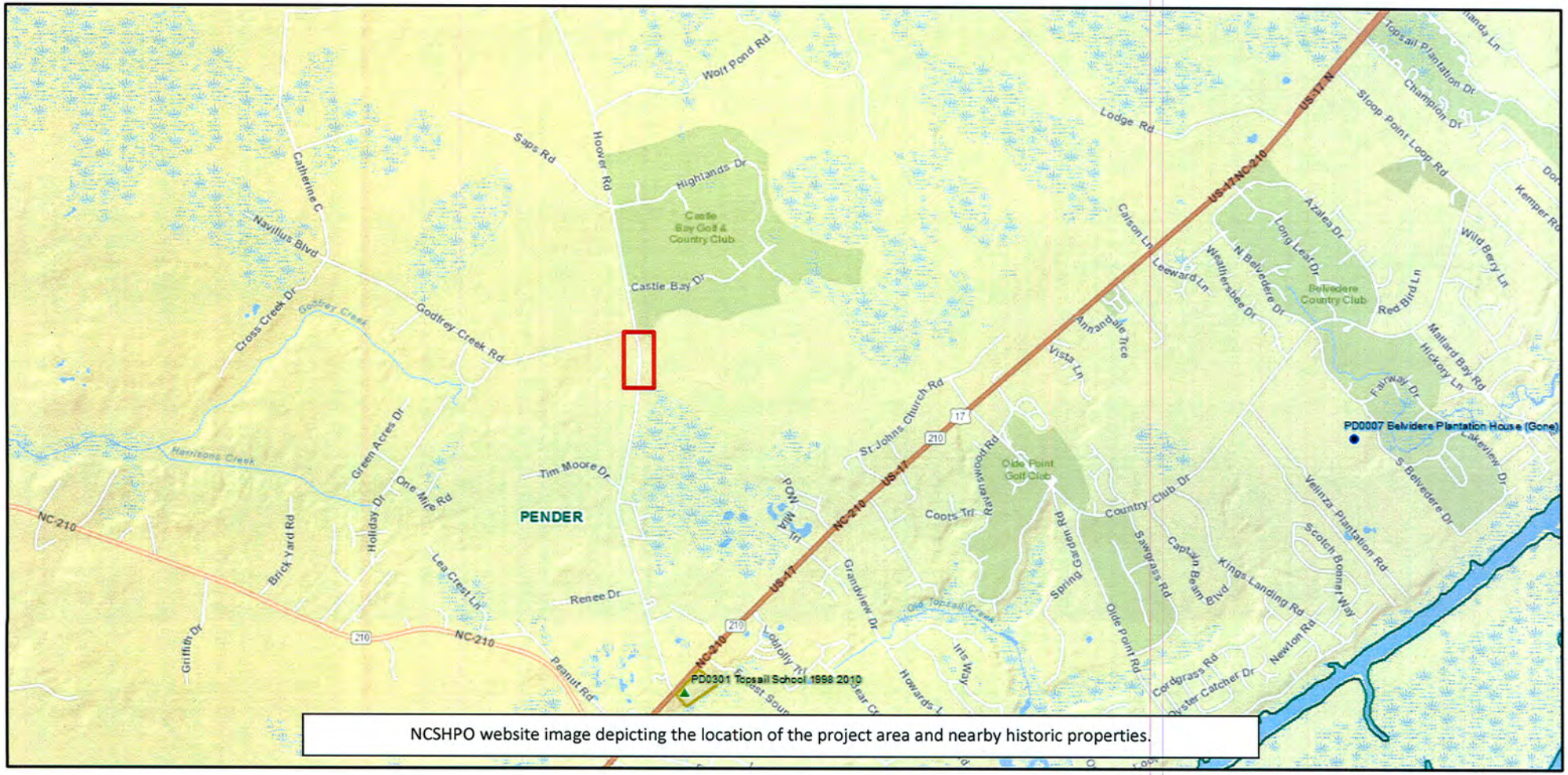
- *A - 0 to 24 inches:* loam
- *Cg - 24 to 80 inches:* sandy loam

Properties and qualities

- *Slope:* 0 to 2 percent
- *Depth to restrictive feature:* More than 80 inches
- *Natural drainage class:* Poorly drained
- *Runoff class:* Negligible
- *Capacity of the most limiting layer to transmit water (Ksat):* Moderately high to high (0.57 to 1.98 in/hr)
- *Depth to water table:* About 0 to 12 inches
- *Frequency of flooding:* Frequent
- *Frequency of ponding:* None
- *Available water storage in profile:* Moderate (about 6.5 inches)

Interpretive groups

- *Land capability classification (irrigated):* None specified
- *Land capability classification (nonirrigated):* 5w
- *Hydrologic Soil Group:* B/D



NCSHPO website image depicting the location of the project area and nearby historic properties.

Project Tracking No. (Internal Use)

15-10-0037

REQUEST FOR CULTURAL RESOURCES REVIEW FORM

MEMORANDUM TO: Drew Joyner, Human Environment Section
1598 Mail Service Center, Raleigh, NC 27699-1598
Send Electronic Submittals to: **PAtracker@ncdot.gov**

ENTERED OCT 27 2015

ATTENTION: Matt Wilkerson, Archaeology Supervisor
Mary Pope Furr, Historic Architecture & Landscapes Supervisor

RECEIVED
OCT 19 2015

FROM: **STONEWALL MATHIS**
DIVISION ENVIRONMENTAL OFFICER

DATE: **10/19/2015**

PROJECT INFORMATION

Project No:	N/A	***County***:	Pender
WBS No**:	WBS 3B.207111	***Document Type***:	MCDC
Fed. Aid No:	N/A	***Funding***:	☒ State ☐ Federal
USGS Quad Name:	Topsail, NC (2013)	***Project Schedule***:	Please respond within 30 days

Project Description:
SR 1569 (Hoover Road) is located off US 17 north of Hampstead in Pender County, NC (Figure 1). The project area is approximately 1.5 acres (Figure 2) and lies approximately 1.7 miles north of the intersection of Hoover Road and US 17. The project intends to remove two 71" x 47" CMPAs and replace them with two 72" aluminum CMP buried 1' with headwalls.

SITE 2

** Work cannot begin until a charge number is provided that can be billed to by staff in the Human Environment Section.

DESIGN INFORMATION

Project Length:	600`	***Detour Route***:	On-site
Existing ROW:	60 ft	***Proposed ROW***:	60 ft
Existing X-section:	N/A	***Proposed X-section***:	N/A
Structure to be Replaced:	2 - 71" x 47" CMPA	***Structure Build Date***:	Unknown

Additional Design Information:
Please consider the area as shown by the project area in the attached figures for cultural resources review.

From: Lane, Stephen <stephen.lane@ncdenr.gov>
Sent: Friday, April 22, 2016 4:39 PM
To: Alex Craig
Cc: Jason Hales
Subject: RE: Pender CAMA Determination Request

Hi Alex,

I was able to review the following project sites in Pender County and made the following jurisdictional determinations:

Hoover Road (SR 1569) at Site 1 at 3.2 miles north of US 17 over a UT to Trumpeter Swamp – No CAMA AECs

Hoover Road (SR 1569) at Site 2 at 1.7 miles north of US 17 over a UT to Godfrey Creek – No CAMA AECs

Watts Landing Road (SR 1560) at 0.9 miles south of NC 210 over a UT to Virginia Creek - No CAMA AECs.

Please let me know if I may be of any further assistance.

Sincerely,

Stephen Lane
Coastal Management Representative

From: Alex Craig [mailto:ACraig@sepiengineering.com]
Sent: Monday, April 04, 2016 12:04 PM
To: Lane, Stephen <stephen.lane@ncdenr.gov>
Cc: Jason Hales <jhales@sepiengineering.com>
Subject: Pender CAMA Determination Request

Stephen,

Please take a look at the Pender County pipe replacement project areas. Could you verify if any are in a CAMA AEC.

Thank you,

Alex

Celebrating 15 Years
SEPI
ENGINEERING & CONSTRUCTION

Alex Craig | Environmental Scientist
SEPI Engineering & Construction

5030 New Centre Drive, Suite B | Wilmington, NC 28403
Direct: 919.747.5856 | Cell: 910.620.5273 | **sepiengineering.com**
Connect with us: LinkedIn | Twitter | Facebook

Jason Hales

From: Wilson, Travis W. <travis.wilson@ncwildlife.org>
Sent: Thursday, May 12, 2016 2:55 PM
To: Alex Craig
Cc: Bodnar, Gregg
Subject: RE: Pender County Sites

I have reviewed these sites and WRC does not have any specific concerns with the proposed projects.

Travis W. Wilson
Eastern Region Highway Project Coordinator
Habitat Conservation Program

NC Wildlife Resources Commission
1718 Hwy 56 West
Creedmoor, NC 27522
Phone: 919-707-0370
Fax: 919-528-2524
Travis.Wilson@ncwildlife.org

ncwildlife.org

From: Alex Craig [mailto:ACraig@sepiengineering.com]
Sent: Monday, April 25, 2016 10:55 AM
To: gregg.bodner@ncdenr.gov; Wilson, Travis W. <travis.wilson@ncwildlife.org>
Subject: Pender County Sites

Good Morning Gregg and Travis,

Attached are Vicinity, Aerial and Topo Maps for NCDOT pipe replacement projects in Pender County. Please advise on any PNA and anadromous fish construction moratoriums and any other concerns from your ends.

Thanks,

Alex

Hoover Road (SR 1569) at Site 1 at 3.2 miles north of US 17 over a UT to Trumpeter Swamp

Hoover Road (SR 1569) at Site 2 at 1.7 miles north of US 17 over a UT to Godfrey Creek

Watts Landing Road (SR 1560) at 0.9 miles south of NC 210 over a UT to Virginia Creek

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Alex Craig | Environmental Scientist
SEPI Engineering & Construction
5030 New Centre Drive, Suite B | Wilmington, NC 28403
Direct: 919.747.5856 | Cell: 910.620.5273 | **sepiengineering.com**
Connect with us: LinkedIn | Twitter | Facebook

Jason Hales

To: Bodnar, Gregg
Subject: RE: Recent Projects

Sorry Alex I forgot to list the projects.

Watts Landing (SR 1560)
Hoover Rd 1 and 2 (SR 1569)
Rhodestown Rd (SR 1316)
Dolph Everett Rd (SR 1535)
Padgett Rd (SR 1104)
Stone Chimney Rd (SR 1115)

Gregg

Celebrating 15 Years
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ENGINEERING & CONSTRUCTION

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5030 New Centre Drive, Suite B | Wilmington, NC 28403
Direct: 919.747.5856 | Cell: 910.620.5273 | **sepiengineering.com**
Connect with us: LinkedIn | Twitter | Facebook

From: Bodnar, Gregg [mailto:gregg.bodnar@ncdenr.gov]
Sent: Thursday, May 12, 2016 4:23 PM
To: Alex Craig <ACraig@sepiengineering.com>
Cc: Lane, Stephen <stephen.lane@ncdenr.gov>
Subject: Recent Projects

Afternoon Alex,

I spoke to Stephen Lane and he told me he has already discussed these with you so we are all good.

Thanks,
Gregg

Gregg Bodnar
Fisheries Resource Specialist
Division of Coastal Management
Department of Environmental Quality

252 808 2808 ext 213 office
Gregg.Bodnar@ncdenr.gov

400 Commerce Ave
Morehead City, NC 28557