ROY COOPER
Governor
MICHAEL L. HOLDER
Acting Secretary

January 13, 2017

Washington Regulatory Field Office
U. S. Army Corps of Engineers
2407 West 5th Street
Washington, North Carolina 27889

ATTN: Mr. Tom Steffens
NCDOT Coordinator

N.C. Dept. of Environmental Quality
Division of Coastal Management
400 Commerce Avenue
Morehead City, NC 28557

ATTN: Mr. Stephen Lane
NCDOT Coordinator

Subject: **Application for Section 10 Permit, Nationwide Permits 12, 23, & 33, Section 401 Water Quality Certification, Buffer Authorization, and CAMA Major Development Permit** for the Proposed Replacement of Bridge No. 16 over Mason Creek on SR 1324 (Florence Rd) in Pamlico County, North Carolina; TIP No. B-4598; Federal Aid Project No. BRZ-1324(5); Debit $475 from WBS No. 38426.1.2

Dear Sirs,

The North Carolina Department of Transportation (NCDOT) proposes to replace the existing 61-foot bridge no. 16 with a 110-foot, on the existing alignment. Traffic will be maintained on an offsite detour during construction. Permanent impacts to coastal wetlands total 0.09 acre.

Please see enclosed copies of the Pre-Construction Notification (PCN), Division of Coastal Management Major Permit Forms 1 and 5, permit/buffer drawings, USCG Advance Approval Letter, stormwater management plan, utility drawings, and design plans for the above referenced project. The Division of Mitigation Services Acceptance Letter is attached. The Programmatic Categorical Exclusion (PCE) was completed in April 2016, and was distributed shortly after. Additional copies are available at the NCDOT website:
http://207.4.62.65/PDEA/EnvironmentalDocs/

This project calls for a letting date of June 20, 2017 and a review date of May 2, 2017.

Regulatory Approvals

Section 10 Permit: Application is hereby made for a Section 10 Permit as required for the above-described activities in accordance with Section 10 of the Rivers and Harbors Act of March 3, 1899 (33 U.S.C. 403)

Section 404 Permit: We anticipate that the bridge replacement, including all approach work will be authorized under a Section 404 Nationwide Permit (NWP) 23 (Categorical Exclusions), the temporary work pad under a NWP 33, and utility relocations under a NWP 12 in accordance with Section 404 of the Clean Water Act (33 U.S.C. 1344).

Section 401 Permit: We anticipate 401 General Certification numbers 3891, 3893, and 3884 will apply to this project. NCDOT is requesting written concurrence from the North Carolina Department of Environmental Quality, Division of Water Resources.

Neuse Riparian Buffer Authorization: NCDOT is requesting a Neuse Riparian Buffer Authorization from the North Carolina Department of Environmental Quality, Division of Water Resources.

CAMA Major Development Permit: NCDOT requests that the proposed work be authorized under a Coastal Area Management Act Major Permit. Adjacent riparian landowner certified mail receipts have been provided. Authorization to debit the $475 Permit Application Fee from WBS Element 38426.1.2 is hereby given.

A copy of this permit application and its distribution list will be posted at the NCDOT Website at https://connect.ncdot.gov/resources/Environmental. Should you have any questions regarding this information, please contact Tyler Stanton at (919) 707-6156 or tstanton@ncdot.gov.

Sincerely,

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

cc: NCDOT Permit Application Standard Distribution List

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

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: 12, 23,33	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:	B-4598 - PROPOSED REPLACMENT OF BRIDGE 16 OVER MASON CREEK ON SR 1324
2b. County:	Pamlico
2c. Nearest municipality / town:	Merritt
2d. Subdivision name:	n/a
2e. NCDOT only, T.I.P. or state project no:	B-4598

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.:	919-707-6156
3g. Fax no.:	919-212-5785
3h. Email address:	tstanton@ncdot.gov

4. Applicant Information (if different from owner)	
4a. Applicant is:	☐ Agent ☐ 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):			
1b. Site coordinates (in decimal degrees):	Latitude: 35.1319 (DD.DDDDDD)	Longitude: - 76.6845 (-DD.DDDDDD)	
1c. Property size:	Approximately 30 acres		
2. Surface Waters			
2a. Name of nearest body of water (stream, river, etc.) to proposed project:	Mason Creek		
2b. Water Quality Classification of nearest receiving water:	SC; Sw, NSW, HQW		
2c. River basin:	Neuse		
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: swamp, marsh, forest, cropland, some rural residential			
3b. List the total estimated acreage of all existing wetlands on the property: Approximately 4.5 acre			
3c. List the total estimated linear feet of all existing streams (intermittent and perennial) on the property: 315'			
3d. Explain the purpose of the proposed project: Replace a functionally obsolete and structurally deficient bridge that is approaching the end of its useful life. Replacement of the bridge will result in safer traffic operations.			
3e. Describe the overall project in detail, including the type of equipment to be used: The proposed project will replace Pamlico County Bridge No. 16 on SR 1324 (Florence Road) over Mason Creek. Currently, bridge No. 16 is 61 feet long. The replacement structure will be a bridge approximately 110 feet long providing a minimum of 33.5 feet of clear deck width. Grading, paving, clearing, utility relocation, excavation and fill associated with the roadway and bridge work. Cranes, pile driving equipment, grading equipment, bull dozers, excavators, offroad trucks, and boring machines 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:	☒ 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): NCDOT	Agency/Consultant Company: Other:		
4d. If yes, list the dates of the Corps jurisdictional determinations or State determinations and attach documentation. A JD Request was sent on 6/25/12			
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. Please see attached cover letter.			

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	bridge approach fill	coastal marsh	☐ Yes ☒ No	☒ Corps ☐ DWQ	0.09
W2 ☒ P ☐ T	excavation	coastal marsh	☐ Yes ☒ No	☒ Corps ☐ DWQ	< 0.01
W3 ☐ P ☐ T			☒ Yes ☐ No	☒ Corps ☐ DWQ	
W4 ☐ 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	
W7 ☐ P ☐ T			☐ Yes ☒ No	☒ Corps ☐ DWQ	
2g. **Total wetland impacts**					0.09

2h. Comments: There will be 0.07 ac of handclearing due to road construction. Additionally there will be 0.01 ac of temporary fill in handclearing areas due to erosion control measures.

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			☐ PER ☐ INT	☐ Corps ☐ DWQ		
S2 ☐ P ☐ T			☐ PER ☐ INT	☐ Corps ☐ DWQ		
S3 ☐ P ☐ T			☐ PER ☐ INT	☐ Corps ☐ DWQ		
S4 ☐ P ☐ T			☐ PER ☐ INT	☐ Corps ☐ DWQ		
S5 ☐ P ☐ T			☐ PER ☐ INT	☐ Corps ☐ DWQ		
S6 ☐ P ☐ T			☐ PER ☐ INT	☐ Corps ☐ DWQ		
3h. **Total stream and tributary impacts**						

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	Mason Creek	Temporary Workpad	Stream	0.02
O1 ☒ P ☐ T	Mason Creek	Excavation	Stream	< 0.01
O3 ☐ P ☐ T				
O4 ☐ P ☐ T				
4f. Total open water impacts				0.02

4g. Comments: There will be <0.01 acres of Permanent SW impacts for interior bent at 16+43

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	O/H Power	Mason Creek	☐ Yes ☒ No	2157	837
B2 ☒ P ☐ T	O/H Power	Mason Creek	☐ Yes ☒ No	358	218
B3 ☐ P ☐ T			☐ Yes ☐ No		
		6h. **Total buffer impacts**		2515	1055

6i. Comments: Bridge replacement will not impact buffers

D. Impact Justification and Mitigation

1. Avoidance and Minimization

1a. Specifically describe measures taken to avoid or minimize the proposed impacts in designing project.
A maximum of 3:1 fill slopes will be constructed in jurisdictional areas will be used. The proposed bridge will have no direct discharge into the water as no deck drains will be installed.

1b. Specifically describe measures taken to avoid or minimize the proposed impacts through construction techniques.
An in-water work moratorium for the Primary Nursery Area between April 1 and September 30 will be strictly enforced during construction. The majority of stormwater runoff from the proposed bridge is to flow to two proposed drop inlets, located at the approach on each side of the bridge. Stormwater runoff will be discharged at minimum practicable slopes, yielding minimum velocities and diffused with riprap pads at pipe outlets, which the existing drainage does not benefit from. All proposed stormwater runoff is discharged as far away from the stream and at lowest velocities as practicable. NCDOT will implement "Guidelines for Avoiding Impacts to the West Indian Manatee, Precautionary Measures for Construction Activities in North Carolina Waters," during work for this project. Design Standards in Sensitive Watersheds will be implemented during construction.

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:	0 linear feet
4c. If using stream mitigation, stream temperature:	☐ warm ☐ cool ☐ cold
4d. Buffer mitigation requested (DWQ only):	0 square feet
4e. Riparian wetland mitigation requested:	0 acres
4f. Non-riparian wetland mitigation requested:	0 acres
4g. Coastal (tidal) wetland mitigation requested:	0.09 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: See attached permit drawings and stormwater management plan.	
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?	N/A
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:
4b. Has the approved Stormwater Management Plan with proof of approval been attached?	☐ Yes ☐ No N/A
5. DWQ 401 Unit Stormwater Review	
5a. Does the Stormwater Management Plan meet the appropriate requirements?	☐ Yes ☐ No N/A
5b. Have all of the 401 Unit submittal requirements been met?	☐ Yes ☐ 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?	☒ 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: NEPA PCE for TIP B-4598	☒ 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 bridge replacement, this project will neither influence nearby land uses nor stimulate growth. Therefore, a detailed indirect or 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. 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?	☒ 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? USFWS & NOAA Fisheries websites and agency consultations		
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? NMFS county index		
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? NEPA documentation		
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:		
8c. What source(s) did you use to make the floodplain determination? approved NEPA documents		

Philip S. Harris III, P.E., C.P.M Applicant/Agent's Printed Name	Applicant/Agent's Signature (Agent's signature is valid only if an authorization letter from the applicant is provided.)	1/5/2017 Date

DCM MP-1

APPLICATION for Major Development Permit

(last revised 12/27/06)

North Carolina DIVISION OF COASTAL MANAGEMENT

1. Primary Applicant/ Landowner Information

Business Name North Carolina Department of Transportation		Project Name (if applicable) B-4598 Bridge Replacement over Mason Creek		
Applicant 1: First Name Phil	MI S.	Last Name Harris		
Applicant 2: First Name	MI	Last Name		
If additional applicants, please attach an additional page(s) with names listed.				
Mailing Address 1598 Mail Service Center		PO Box	City Raleigh	State NC
ZIP 27699 1598	Country USA	Phone No. 919 - 707 - 6156 ext.	FAX No. - -	
Street Address *(if different from above)*		City	State	ZIP -
Email tstanton@ncdot.gov				

2. Agent/Contractor Information

Business Name				
Agent/ Contractor 1: First Name	MI	Last Name		
Agent/ Contractor 2: First Name	MI	Last Name		
Mailing Address		PO Box	City	State
ZIP		Phone No. 1 - - ext.	Phone No. 2 - - ext.	
FAX No.		Contractor #		
Street Address *(if different from above)*		City	State	ZIP -
Email				

<Form continues on back>

3. Project Location

County (can be multiple)	Street Address		State Rd. #
Pamlico	Florence Rd		SR 1324
Subdivision Name	City	State	Zip
	Merritt	NC	28556 -

Phone No.	Lot No.(s) *(if many, attach additional page with list)*
- - ext.	, , , ,

a. In which NC river basin is the project located?	b. Name of body of water nearest to proposed project
Neuse	Mason Creek
c. Is the water body identified in (b) above, natural or manmade? ☒Natural ☐Manmade ☐Unknown	d. Name the closest major water body to the proposed project site. Bay River / Pamlico Sound
e. Is proposed work within city limits or planning jurisdiction? ☒Yes ☐No	f. If applicable, list the planning jurisdiction or city limit the proposed work falls within. Town of Merritt, NC

4. Site Description

a. Total length of shoreline on the tract (ft.)	b. Size of entire tract (sq.ft.)
275'	43705 sq. ft.
c. Size of individual lot(s) NA, , , *(If many lot sizes, please attach additional page with a list)*	d. Approximate elevation of tract above NHW *(normal high water)* or NWL *(normal water level)* 0.0' ☒NHW or ☐NWL

e. Vegetation on tract
Marsh, maintained-disturbed, forested

f. Man-made features and uses now on tract
Roadway, bridge, utility structures

g. Identify and describe the existing land uses <u>adjacent</u> to the proposed project site.
Cropland, woods, rural residential.

h. How does local government zone the tract?	i. Is the proposed project consistent with the applicable zoning? (Attach zoning compliance certificate, if applicable) ☐Yes ☐No ☒NA
Rural	

j. Is the proposed activity part of an urban waterfront redevelopment proposal? ☐Yes ☒No

k. Has a professional archaeological assessment been done for the tract? If yes, attach a copy. ☐Yes ☒No ☐NA

If yes, by whom?

l. Is the proposed project located in a National Registered Historic District or does it involve a National Register listed or eligible property? ☐Yes ☒No ☐NA

<Form continues on next page>

m. (i) Are there wetlands on the site?	☒Yes ☐No
(ii) Are there coastal wetlands on the site?	☒Yes ☐No
(iii) If yes to either (i) or (ii) above, has a delineation been conducted? *(Attach documentation, if available)*	☒Yes ☐No

n. Describe existing wastewater treatment facilities.

N/A

o. Describe existing drinking water supply source.

N/A

p. Describe existing storm water management or treatment systems.

Stormwater runoff on the existing bridge discharges directly into the water through deck drains along the full length of the bridge.

5. Activities and Impacts

a. Will the project be for commercial, public, or private use? ☐Commercial ☒Public/Government ☐Private/Community

b. Give a brief description of purpose, use, and daily operations of the project when complete.

B-4598 is the planned replacement of bridge 16 in Pamlico County. The project lies within a CAMA county and CAMA wetlands are involved. The existing structure over Mason Creek was built in 1966 and is a dual span bridge on prestressed concrete channels with a total length of 61'. The proposed structure will be a dual span 21" Cored Slab structure with an overall length of 110'. The final proposed structure does not require deck drains.

c. Describe the proposed construction methodology, types of construction equipment to be used during construction, the number of each type of equipment and where it is to be stored.

Cranes, pile driving equipment, grading equipment, bull dozers, excavators, offroad trucks, and boring machines.

d. List all development activities you propose.

Removal of the existing bridge. Installation of the new bridge. Grading, paving, clearing, utility relocation, excavation and fill associated with the roadway and bridge work.

e. Are the proposed activities maintenance of an existing project, new work, or both? New Work

f. What is the approximate total disturbed land area resulting from the proposed project? 1.0 ☐Sq.Ft or ☒Acres

g. Will the proposed project encroach on any public easement, public accessway or other area that the public has established use of? ☒Yes ☐No ☐NA

h. Describe location and type of existing and proposed discharges to waters of the state.

Stormwater runoff on the existing bridge discharges directly into the water through deck drains along the full length of the bridge. However, the proposed bridge will have no direct discharge into the water as no deck drains will be installed. The majority of stormwater runoff from the proposed bridge is to flow to two (2) proposed drop inlets, located at the approach on each side of the bridge. Stormwater runoff will be discharged at minimum practicable slopes, yielding minimum velocities and diffused with riprap pads at pipe outlets, which the existing drainage does not benefit from. All proposed stormwater runoff is discharged as far away from the stream and at lowest velocities as practicable.

i. Will wastewater or stormwater be discharged into a wetland?	☒Yes ☐No ☐NA
If yes, will this discharged water be of the same salinity as the receiving water?	☐Yes ☒No ☐NA
j. Is there any mitigation proposed?	☒Yes ☐No ☐NA

If yes, attach a mitigation proposal.

<Form continues on back>

6. Additional Information

In addition to this completed application form, (MP-1) the following items below, if applicable, must be submitted in order for the application package to be complete. Items (a) – (f) are always applicable to any major development application. Please consult the application instruction booklet on how to properly prepare the required items below.

a. A project narrative.

b. An accurate, dated work plat (including plan view and cross-sectional drawings) drawn to scale. Please give the present status of the proposed project. Is any portion already complete? If previously authorized work, clearly indicate on maps, plats, drawings to distinguish between work completed and proposed.

c. A site or location map that is sufficiently detailed to guide agency personnel unfamiliar with the area to the site.

d. A copy of the deed (with state application only) or other instrument under which the applicant claims title to the affected properties.

e. The appropriate application fee. Check or money order made payable to DENR.

f. A list of the names and complete addresses of the adjacent waterfront (riparian) landowners and signed return receipts as proof that such owners have received a copy of the application and plats by certified mail. Such landowners must be advised that they have 30 days in which to submit comments on the proposed project to the Division of Coastal Management.

Name See attached list	Phone No.
Address	
Name	Phone No.
Address	
Name	Phone No.
Address	

g. A list of previous state or federal permits issued for work on the project tract. Include permit numbers, permittee, and issuing dates.

_____

_____

h. Signed consultant or agent authorization form, if applicable.

i. Wetland delineation, if necessary.

j. A signed AEC hazard notice for projects in oceanfront and inlet areas. *(Must be signed by property owner)*

k. A statement of compliance with the N.C. Environmental Policy Act (N.C.G.S. 113A 1-10), if necessary. If the project involves expenditure of public funds or use of public lands, attach a statement documenting compliance with the North Carolina Environmental Policy Act.

7. Certification and Permission to Enter on Land

I understand that any permit issued in response to this application will allow only the development described in the application. The project will be subject to the conditions and restrictions contained in the permit.

I certify that I am authorized to grant, and do in fact grant permission to representatives of state and federal review agencies to enter on the aforementioned lands in connection with evaluating information related to this permit application and follow-up monitoring of the project.

I further certify that the information provided in this application is truthful to the best of my knowledge.

Date 1/5/2017 Print Name Philip S. Harris III

Signature

Please indicate application attachments pertaining to your proposed project.

☐DCM MP-2 Excavation and Fill Information ☒DCM MP-5 Bridges and Culverts

☐DCM MP-3 Upland Development

☐DCM MP-4 Structures Information

Form DCM MP-5

BRIDGES and CULVERTS

Attach this form to Joint Application for CAMA Major Permit, Form DCM MP-1. Be sure to complete all other sections of the Joint Application that relate to this proposed project. Please include all supplemental information.

1. BRIDGES

☐ *This section not applicable*

a. Is the proposed bridge:
☐Commercial ☒Public/Government ☐Private/Community

b. Water body to be crossed by bridge:
Mason Creek

c. Type of bridge (construction material):
The proposed bridge is a two span 21" cored slab bridge

d. Water depth at the proposed crossing at NLW or NWL:
4.5' at MTL (Mean Tide Level)

e. (i) Will proposed bridge replace an existing bridge? ☒Yes ☐No
If yes,
(ii) Length of existing bridge: 61'
(iii) Width of existing bridge: 26'
(iv) Navigation clearance underneath existing bridge: 3.0'
(v) Will all, or a part of, the existing bridge be removed?
(Explain) All of the existing bridge and abandoned piers are proposed to be removed.

f. (i) Will proposed bridge replace an existing culvert? ☐Yes ☒No
If yes,
(ii) Length of existing culvert: _____
(iii) Width of existing culvert: _____
(iv) Height of the top of the existing culvert above the NHW or NWL: _____
(v) Will all, or a part of, the existing culvert be removed?
(Explain)

g. Length of proposed bridge: 110'

h. Width of proposed bridge: 36'

i. Will the proposed bridge affect existing water flow? ☐Yes ☒No
If yes, explain: Flooding source controlled by Pamlico Sound tidal surge.

j. Will the proposed bridge affect navigation by reducing or increasing the existing navigable opening? ☒Yes ☐No
If yes, explain: The existing bridge has a navigational clearance of 3.0' but the proposed bridge will have a navigational clearance of 3.3'.

k. Navigation clearance underneath proposed bridge: 3.3'

l. Have you contacted the U.S. Coast Guard concerning their approval? ☒Yes ☐No
If yes, explain: An Advance Approval Letter was issued (see attached).

m. Will the proposed bridge cross wetlands containing no navigable waters? ☐Yes ☒No
If yes, explain:

n. Height of proposed bridge above wetlands: 1' to 3'

2. CULVERTS

☒ *This section not applicable*

a. Number of culverts proposed: _____

b. Water body in which the culvert is to be placed:

< Form continues on back>

c. Type of culvert (construction material):

d. (i) Will proposed culvert replace an existing bridge? ☐Yes ☐No

If yes,

(ii) Length of existing bridge: _____

(iii) Width of existing bridge: _____

(iv) Navigation clearance underneath existing bridge: _____

(v) Will all, or a part of, the existing bridge be removed? (Explain)

e. (i) Will proposed culvert replace an existing culvert? ☐Yes ☐No

If yes,

(ii) Length of existing culvert(s): _____

(iii) Width of existing culvert(s): _____

(iv) Height of the top of the existing culvert above the NHW or NWL: _____

(v) Will all, or a part of, the existing culvert be removed? (Explain)

f. Length of proposed culvert: _____

g. Width of proposed culvert: _____

h. Height of the top of the proposed culvert above the NHW or NWL. _____

i. Depth of culvert to be buried below existing bottom contour. _____

j. Will the proposed culvert affect navigation by reducing or increasing the existing navigable opening? ☐Yes ☐No

If yes, explain:

k. Will the proposed culvert affect existing water flow? ☐Yes ☐No

If yes, explain:

3. EXCAVATION and FILL

☐*This section not applicable*

a. (i) Will the placement of the proposed bridge or culvert require any excavation below the NHW or NWL? ☐Yes ☒No

If yes,

(ii) Avg. length of area to be excavated: _____

(iii) Avg. width of area to be excavated: _____

(iv) Avg. depth of area to be excavated: _____

(v) Amount of material to be excavated in cubic yards: _____

b. (i) Will the placement of the proposed bridge or culvert require any excavation within coastal wetlands/marsh (CW), submerged aquatic vegetation (SAV), shell bottom (SB), or other wetlands (WL)? If any boxes are checked, provide the number of square feet affected.

☒CW 259 s.f. ☐SAV _____ ☐SB _____

☐WL _____ ☐None

(ii) Describe the purpose of the excavation in these areas:

Excavation was recquired for the spill through abutment.

c. (i) Will the placement of the proposed bridge or culvert require any high-ground excavation? ☒Yes ☐No

If yes,

(ii) Avg. length of area to be excavated: 45 ft

(iii) Avg. width of area to be excavated: 28 ft

(iv) Avg. depth of area to be excavated: 3ft

(v) Amount of material to be excavated in cubic yards: 170 cy

d. If the placement of the bridge or culvert involves any excavation, please complete the following:

(i) Location of the spoil disposal area: TBD by contractor; however, excavated soil will likely be stored under proposed roadbed and used for roadbed fill or removed for off-site storage on high ground.

(ii) Dimensions of the spoil disposal area: N/A

(iii) Do you claim title to the disposal area? ☒Yes ☐No (*If no, attach a letter granting permission from the owner.)*

(iv) Will the disposal area be available for future maintenance? ☐Yes ☒No

(v) Does the disposal area include any coastal wetlands/marsh (CW), submerged aquatic vegetation (SAVs), other wetlands (WL), or shell bottom (SB)?

☐CW ☐SAV ☐WL ☐SB ☒None

If any boxes are checked, give dimensions if different from (ii) above.

(vi) Does the disposal area include any area below the NHW or NWL? ? ☐Yes ☒No

If yes, give dimensions if different from (ii) above.

e. (i) Will the placement of the proposed bridge or culvert result in any fill (other than excavated material described in Item **d** above) to be placed below NHW or NWL? ☒Yes ☐No

If yes,

(ii) Avg. length of area to be filled: _____

(iii) Avg. width of area to be filled: _____

(iv) Purpose of fill: There are fourteen proposed 12" x 12" concrete piles at interior bent.

f. (i) Will the placement of the proposed bridge or culvert result in any fill (other than excavated material described in Item **d** above) to be placed within coastal wetlands/marsh (CW), submerged aquatic vegetation (SAV), shell bottom (SB), or other wetlands (WL)? If any boxes are checked, provide the number of square feet affected.

☒CW 4125 s.f. ☐SAV _____ ☐SB _____

☐WL _____ ☐None

(ii) Describe the purpose of the excavation in these areas:

To construct roadway embankment.

g. (i) Will the placement of the proposed bridge or culvert result in any fill (other than excavated material described in Item **d** above) to be placed on high-ground? ☒Yes ☐No

If yes,

(ii) Avg. length of area to be filled: 465 ft

(iii) Avg. width of area to be filled: 45 ft

(iv) Purpose of fill: To construct roadway embankment.

4. GENERAL

a. Will the proposed project require the relocation of any existing utility lines? ☒Yes ☐No

If yes, explain: Water line, power line, fiber optic, copper (telephone). See attached Utility Plans

If this portion of the proposed project has already received approval from local authorities, please attach a copy of the approval or certification.

b. Will the proposed project require the construction of any temporary detour structures? ☐Yes ☒No

If yes, explain:

< Form continues on back>

c. Will the proposed project require any work channels?

☐Yes ☒No

If yes, complete Form DCM-MP-2.

d. How will excavated or fill material be kept on site and erosion controlled?

NCDOT Design Standards in Sensitive Watersheds will be implemented during project construction

e. What type of construction equipment will be used (for example, dragline, backhoe, or hydraulic dredge)?

Cranes, pile driving equipment, grading equipment, bull dozers, excavators, offroad trucks, and boring machines.

f. Will wetlands be crossed in transporting equipment to project site?

☒Yes ☐No

If yes, explain steps that will be taken to avoid or minimize environmental impacts.

Crane Mats used to reach temporary power lines.

g. Will the placement of the proposed bridge or culvert require any shoreline stabilization? ☐Yes ☒No

If yes, complete form MP-2, Section 3 for Shoreline Stabilization only.

1/5/2017

Date

B-4598

Project Name

NC Department of Transportation

Applicant Name

Applicant Signature

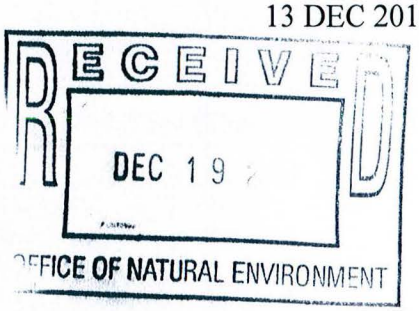
U.S. Department of Homeland Security

United States Coast Guard

Commander
United States Coast Guard
Fifth Coast Guard District

431 Crawford Street
Portsmouth, VA 23704-5004
Staff Symbol: (dpb)
Phone: (757) 398-6587
Fax: (757) 398-6334
Email: Mickey.D.Sanders2@uscg.mil
Or CGDFiveBridges@uscg.mil

16590
13 DEC 2016



Mr. Phil S. Harris, III, P.E.
North Carolina Department of Transportation
Natural Environment Section
1598 Mail Service Center
Raleigh, NC 27699-1598

Dear Mr. Harris:

Coast Guard review of your proposed project as provided in your email dated November 17, 2016, is complete.

Based on the documentation provided and our research, it is determined that a Coast Guard bridge permit will not be required for the proposed new bridge construction on S.R. 1324 (Florence Road) across Mason Creek, at Pamlico, NC.

The project will be placed in our Advance Approval category as per Title 33 Code of Federal Regulations Part 115.70. This Advance Approval determination is for the location and structure described above and **is valid for five years from the date of this letter**. If the construction project does not commence within this time period, you must contact this office for reaffirmation of this authorization. Future bridge projects along the same waterway will have to be independently evaluated before they may be considered for placement in the Advance Approval category.

The fact that a Coast Guard bridge permit is not required does not relieve you of the responsibility for compliance with the requirements of any other Federal, State, or local agency who may have jurisdiction over any aspect of the project. Although the project will not require a bridge permit, other areas of Coast Guard jurisdiction apply. The following must be met:

a. You or your contractor must notify this office at least 30 days in advance of the start of construction and any other work which may be an obstruction to navigation, so we may issue and update the information in our Local Notice to Mariners and monitor the project.

b. At no time during the project will the waterway be closed to navigation without the prior notification and approval of the Coast Guard.

c. The lowest portion of the superstructure of the bridge across the waterway should clear the 100-year flood height elevation, if feasible.

d. In addition, the requirement to display navigational lighting at the aforementioned bridge is hereby waived, as per Title 33 Code of Federal Regulations, Part 118.40(b). This waiver may be rescinded at anytime in the future should nighttime navigation through the proposed bridge be increased to a level determined by the District Commander to warrant lighting.

16590
13 DEC 2016

The National Ocean Service (NOS) of the National Oceanic and Atmosphere Administration (NOAA) is responsible for maintaining the charts of U.S. waters; therefore, they must be notified of this proposed work. You must notify our office and the NOS at the address below upon completion of the activity approved in this letter. Your notification of project completion must include as-built drawings or certification of the following:

a. Bridge name
b. Action type (new construction, modification, relocation, conversion (fixed/draw), etc.)
c. Dates (commenced and completed)
d. Location (latitude and longitude at bridge center and centerline of channel, statute miles above mouth of waterway, and bridge or causeway orientation or geographic positions of approaches)
e. Type of bridge (fixed, vertical lift, bascule, suspension, swing, trestle, pontoon, etc.)
f. Navigation clearances (vertical at mean high water and horizontal)
(Moveable – vertical at mean high water in open and closed positions)
g. Whether or not the bridge is fitted with clearance gauges
h. Whether or not the bridge has pier protection and/or fender system.
i. Type of land traffic (highway, railroad, pedestrian, pipeline, etc.)

Mr. Chris Libeau
National Ocean Service
N/CS26, Room 7317
1315 East-West Highway
Silver Spring, MD 20910-3282

If you have any further questions, please contact Mr. Mickey Sanders at the above listed address or telephone number.

Sincerely,

HAL R. PITTS
Bridge Program Manager
By direction of the Commander
Fifth Coast Guard District

Copy: Chris Libeau, NOS
CG Sector North Carolina, Waterways Management
U. S. Army Corps of Engineers, Wilmington District

Environmental Quality

ROY COOPER
Governor

January 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:

TIP B-4598, Replace Bridge 16 on SR 1324 over Mason Creek, Pamlico County

The purpose of this letter is to notify you that the Division of Mitigation Services (DMS) will provide the compensatory wetland mitigation for the subject project. Based on the information supplied by you on January 5, 2017, the impacts are located in CU 03020204 of the Neuse River basin in the Southern Outer Coastal Plain (SOCP) Eco-Region, and are as follows:

Neuse 03020204 SOCP	Stream			Wetlands			Buffer (Sq. Ft.)	
	Cold	Cool	Warm	Riparian	Non-Riparian	Coastal Marsh	Zone 1	Zone 2
Impacts (feet/acres)	0	0	0	0	0	0.09	0	0

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

This impact and associated mitigation need were under projected by the NCDOT in the 2016 impact data. **DMS currently does not have sufficient coastal marsh wetland mitigation credits in Neuse 03020204 and request to utilize coastal marsh credits from White Oak 03030001 (Sturgeon City or Sturgeon City II).** DMS will commit to implement sufficient compensatory coastal marsh wetland 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. Tom Steffens, USACE – Washington Regulatory Field Office
Ms. Amy Chapman, NCDWR
File: B-4598

North Carolina Department of Transportation

Highway Stormwater Program

STORMWATER MANAGEMENT PLAN

FOR NCDOT PROJECTS

(Version 2.06; Released June 2016)

WBS Element:	38426.1.2	TIP No.:	B-4598	County(ies):	Pamlico	Page	1	of	1

General Project Information

WBS Element:	38426.1.2	**TIP Number:**	B-4598	**Project Type:**	Bridge Replacement	**Date:**	7/21/2016
NCDOT Contact:	Paul Atkinson, PE			**Contractor / Designer:**	TGS Engineers (David B. Petty, PE)		
Address:	1590 Mail Service Center Raleigh, NC 27699-1590			**Address:**	706 Hillsborough Street Suite 200 Raleigh, NC 27603		
Phone:	919-707-6707			**Phone:**	919-773-8887 (Ext. 104)		
Email:	patkinson@ncdot.gov			**Email:**	dpetty@tgsengineers.com		
City/Town:	Merritt			**County(ies):**	Pamlico		
River Basin(s):	Neuse			**CAMA County?**	Yes		
Wetlands within Project Limits?	Yes						

Project Description

Project Length (lin. miles or feet):	575 feet	**Surrounding Land Use:**	swamp, marsh, forest, cropland, some rural residential

	Proposed Project	**Existing Site**
Project Built-Upon Area (ac.)	0.4 ac.	0.3 ac.
Typical Cross Section Description:	Two 12' wide paved travel lanes w/ pavement to face of guardrail, 0 to 2' paved shoulders and 1' to 3' grassed shoulders and 3(H):1(V) grassed side slopes.	Two 9' paved travel lanes w/ 2' to 5' wide grassed shoulders, w/ grassed side slopes ranging from about 3(H):1(V) to 4(H):1(V).
Annual Avg Daily Traffic (veh/hr/day):	Design/Future: 1326 Year: 2037	Existing: 1065 Year: 2017

General Project Narrative: (Description of Minimization of Water Quality Impacts)

Replacement of Bridge No. 680016 on SR 1324 (Florence Rd.) over Mason Creek (a tributary to Bay River/Pamlico Sound) in Pamlico County northeast of Merritt, NC. Proposed 110' long (2@55') by 36' wide double-span bridge to replace existing 61' long (2@30.5') by 26' wide double-span bridge. The proposed grade across the bridge exceeds existing by about 1' to maintain navigable clearance. Stormwater runoff on the existing bridge discharges directly into the water through deck drains along the full length of the bridge. However, the proposed bridge will have no direct discharge into the water as no deck drains will be installed. The majority of stormwater runoff from the proposed bridge is to flow to two proposed drop inlets, located at the approach on each side of the bridge. Stormwater runoff will be discharged at minimum practicable slopes, yielding minimum velocities and diffused with riprap pads at pipe outlets, which the existing drainage does not benefit from. All proposed stormwater runoff is discharged as far away from the stream and at lowest velocities as practicable.

All wetland impacts occur within CAMA wetlands. A temporary workpad has been proposed under the second span to facilitate removal of existing piles and installation of fourteen 12"x12" prestressed concrete piles.

Waterbody Information

Surface Water Body (1):	Mason Creek		**NCDWR Stream Index No.:**	27-150-9	
NCDWR Surface Water Classification for Water Body		**Primary Classification:**	Class SC		
		Supplemental Classification:	Swamp Waters (Sw)	(HQW)	(NSW)
Other Stream Classification:	Primary Nursery Areas	Areas of Environmental Concern			
Impairments:	None				
Aquatic T&E Species?	Yes	Comments:	Construction activities to adhere to Guidelines for Avoiding Impacts to the West Indian Manatee		
NRTR Stream ID:	Mason Creek			**Buffer Rules in Effect:**	Neuse
Project Includes Bridge Spanning Water Body?	Yes	**Deck Drains Discharge Over Buffer?**	No	**Dissipator Pads Provided in Buffer?**	No
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)					

09/08/99

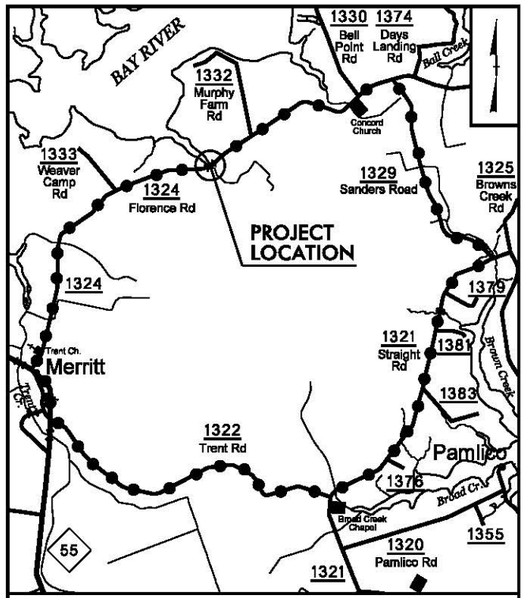
B-4598_Hyd_prm_wet_tsh.dgn

7/21/2016
X:\NCDOT\B-4598\Hydraulics\PERMITS_Environmental\Drawings\Permit Package(Roadway)_20160721\B-4598_H
User:smelvin

CONTRACT:

TIP PROJECT: B-4598

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



STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

PAMLICO COUNTY

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-4598	1	

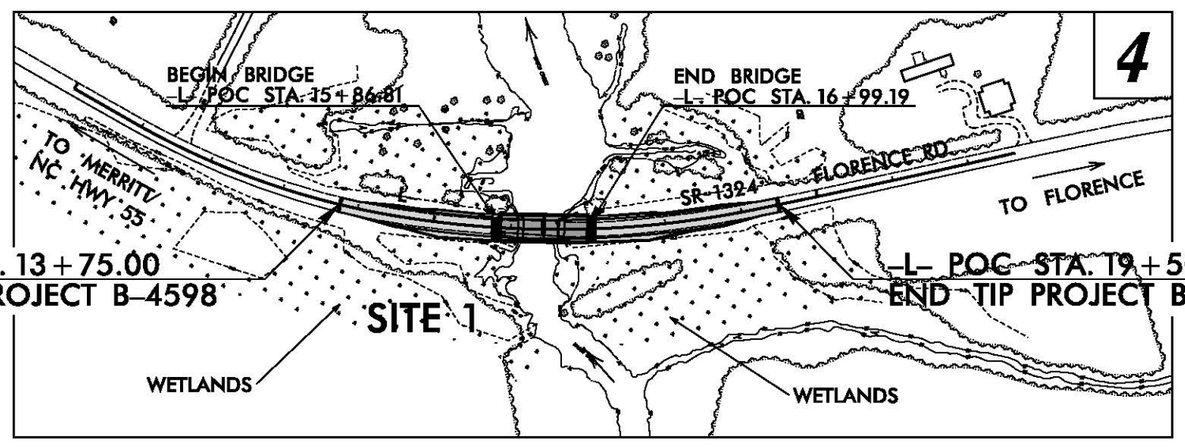
STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION
38426.1.2	BRZ-1324(5)	PE
38426.2.1		R/W, UTL.

LOCATION: REPLACE BRIDGE 16 OVER MASON CREEK ON SR 1324 (FLORENCE RD.)

TYPE OF WORK: GRADING, DRAINAGE, STRUCTURE AND PAVING

PERMIT DRAWINGS
STREAM AND WETLAND IMPACTS
DUE TO ROADWAY/BRIDGE
JULY 21, 2016

NAD 83/95



PERMIT DRAWING
SHEET 1 OF 7

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

DESIGN EXCEPTIONS

-L-
Horizontal SSD, Sta. 13+75 to Sta. 19+50
Superelevation, Sta. 13+75 to Sta. 19+50

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

THIS PROJECT IS NOT WITHIN ANY MUNICIPAL BOUNDARIES.

GRAPHIC SCALES

PLANS: 50 25 0 50 100
PROFILE (HORIZONTAL): 50 25 0 50 100
PROFILE (VERTICAL): 10 5 0 10 20

DESIGN DATA

ADT 2017 = 1065
ADT 2037 = 1326
DHV = 10 %
D = 55 %
T = 10 % *
V = 60 MPH
* (TTST 1% + DUAL 9%)
FUNCT CLASS = RURAL LOCAL
SUB-REGIONAL TIER DESIGN

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT B-4598	=	*0.088 miles*
LENGTH STRUCTURES TIP PROJECT B-4598	=	*0.021 miles*
TOTAL LENGTH TIP PROJECT B-4598	=	*0.109 miles*

Prepared For:
DIVISION OF HIGHWAYS
1000 Birch Ridge Dr., Raleigh NC, 27610
By:

TGS ENGINEERS
TGS ENGINEERS 804-C N. LAFAYETTE ST SHELBY, NC 28150
PH (704) 476-0003 CORP. LICENSE NO.: C-0275

2012 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
MAY 16, 2016

LETTING DATE:
JUNE 20, 2017

JIMMY TERRY, P.E.
PROJECT ENGINEER

BURKE EVANS, P.E.
PROJECT DESIGN ENGINEER

GARY LOVERING, PE
PROJECT ENGINEER NCDOT ROADWAY DESIGN

HYDRAULICS ENGINEER

SIGNATURE: *P.E.*

ROADWAY DESIGN ENGINEER

SIGNATURE: *P.E.*

STATE OF NORTH CAROLINA · DEPARTMENT OF TRANSPORTATION

PROJECT REFERENCE NO.	SHEET NO.
B-4598	4
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

TGS ENGINEERS
706 HILLSBOROUGH ST
SUITE 200
RALEIGH, NC 27603
PH (919) 773-8887

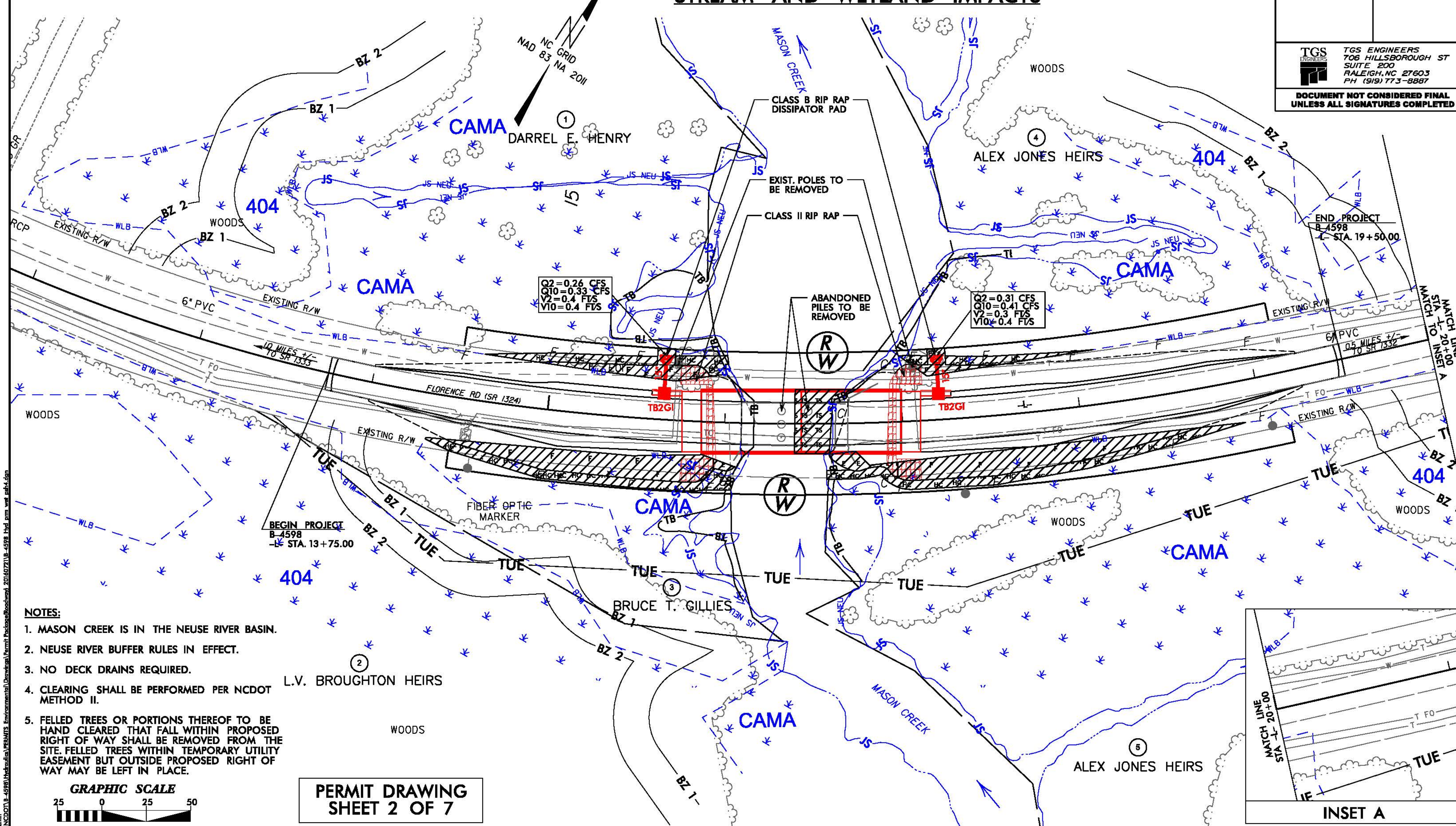
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PERMIT DRAWINGS FOR B-4598 PAMLICO COUNTY BRIDGE #680016

STREAM AND WETLAND IMPACTS

WETLAND IMPACTS		
Excavation in Wetlands	Permanent Fill in Wetlands	Hand Clearing in Wetlands

EXISTING BRIDGE DIMENSIONS 60'X26' (DOUBLE-SPAN), 90 DEG. SKEW
PROPOSED BRIDGE DIMENSIONS 110'X36' (DOUBLE-SPAN), 90 DEG. SKEW
TOTAL PROJECT LENGTH - 575'



NOTES:

1. MASON CREEK IS IN THE NEUSE RIVER BASIN.
2. NEUSE RIVER BUFFER RULES IN EFFECT.
3. NO DECK DRAINS REQUIRED.
4. CLEARING SHALL BE PERFORMED PER NCDOT METHOD II.
5. FELLED TREES OR PORTIONS THEREOF TO BE HAND CLEARED THAT FALL WITHIN PROPOSED RIGHT OF WAY SHALL BE REMOVED FROM THE SITE. FELLED TREES WITHIN TEMPORARY UTILITY EASEMENT BUT OUTSIDE PROPOSED RIGHT OF WAY MAY BE LEFT IN PLACE.

GRAPHIC SCALE
25 0 25 50

PERMIT DRAWING SHEET 2 OF 7

7/21/2016

PERMIT DRAWINGS FOR B-4598 PAMLICO COUNTY BRIDGE #680016

PROJECT REFERENCE NO.	SHEET NO.
B-4598	4
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

TGS ENGINEERS
706 HILLSBOROUGH ST
SUITE 200
RALEIGH, NC 27603
PH (919) 773-8887

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

WETLAND IMPACTS		
Excavation in Wetlands	Permanent Fill in Wetlands	Hand Clearing in Wetlands

EXISTING BRIDGE DIMENSIONS 60'X26' (DOUBLE-SPAN), 90 DEG. SKEW
PROPOSED BRIDGE DIMENSIONS 110'X36' (DOUBLE-SPAN), 90 DEG. SKEW
TOTAL PROJECT LENGTH - 575'

STREAM AND WETLAND IMPACTS

NC GRID NAD 83 NA 2011

MASON CREEK

CLASS B RIP RAP DISSIPATOR PAD

EXIST. POLES TO BE REMOVED

CLASS II RIP RAP

ABANDONED PILES TO BE REMOVED

Q2 = 0.26 CFS
Q10 = 0.33 CFS
V2 = 0.4 FT/S
V10 = 0.4 FT/S

Q2 = 0.31 CFS
Q10 = 0.41 CFS
V2 = 0.3 FT/S
V10 = 0.4 FT/S

BEGIN PROJECT
B-4598
-L- STA. 13+75.00

END PROJECT
B-4598
-L- STA. 19+50.00

MATCH LINE STA -L- 20+00 TO INSET A

FIBER OPTIC MARKER

1 DARREL E. HENRY
2 L.V. BROUGHTON HEIRS
3 BRUCE T. GILLIES
4 ALEX JONES HEIRS
5 ALEX JONES HEIRS

WOODS
CAMA
404
BZ 1
BZ 2
TUE
WLB
JS
JS NEU
SF
TB
TB2GI
RW
EXISTING R/W
FLORENCE RD (SR 1324)
10 MILES +/- TO SR 1333
.05 MILES +/- TO SR 1332
6" PVC
6"PVC
RCP

INSET A

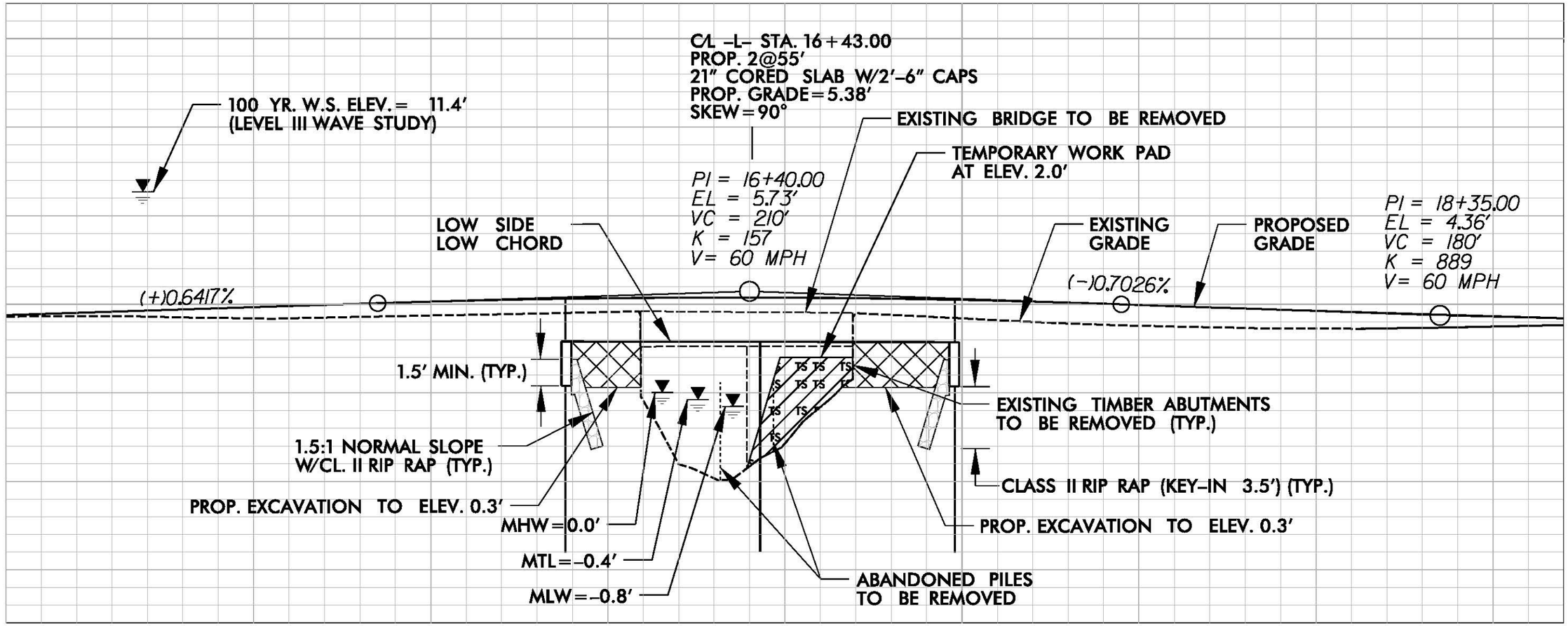
NOTES:

1. MASON CREEK IS IN THE NEUSE RIVER BASIN.
2. NEUSE RIVER BUFFER RULES IN EFFECT.
3. NO DECK DRAINS REQUIRED.
4. CLEARING SHALL BE PERFORMED PER NCDOT METHOD II.
5. FELLED TREES OR PORTIONS THEREOF TO BE HAND CLEARED THAT FALL WITHIN PROPOSED RIGHT OF WAY SHALL BE REMOVED FROM THE SITE. FELLED TREES WITHIN TEMPORARY UTILITY EASEMENT BUT OUTSIDE PROPOSED RIGHT OF WAY MAY BE LEFT IN PLACE.

GRAPHIC SCALE
25 0 25 50

PERMIT DRAWING SHEET 3 OF 7

7/12/2016
X:\NCDOT\B-4598\Hydraulics\PERMITS Environmental\Drawings\Permit Package\Roadway\ 20160721\B-4598_Hyd_pmt_wet_pak4.dgn



PROFILE

PERMIT DRAWING SHEET 4 OF 7

STRUCTURE HYDRAULIC DATA

DESIGN DISCHARGE	= ---	CFS
DESIGN FREQUENCY	= <5*	YRS
DESIGN HW ELEVATION	= ---	FT
BASE DISCHARGE	= ---	CFS
BASE FREQUENCY	= 100	YRS
BASE HW ELEVATION	= 11.4**	FT
OVERTOPPING DISCHARGE	= 5,800	CFS
OVERTOPPING FREQUENCY	= <5	YRS
OVERTOPPING ELEVATION	= 3.7***	FT

* DESIGN MAINTAINS EXISTING LEVEL OF SERVICE. NOT PRACTICABLE TO SERVICE 25-YR EVENT.
** 100-YR WSE (NAVD 88) FROM LEVEL III WAVE STUDY
*** OVERTOPPING ELEVATION REPRESENTS LOWEST HIGH POINT ON DECK/ROADWAY, WHICH OCCURS AT RIGHT EDGE OF PAVEMENT @ -L- STA. 11+03

PERMIT DRAWINGS FOR B–4598 PAMLICO COUNTY BRIDGE #680016

NCDOT
DIVISION OF HIGHWAYS
PAMLICO COUNTY
PROJECT: 38426.1.2 (B-4598)
REPLACEMENT OF BRIDGE NO. 680016
ON SR 1324 (FLORENCE RD)
OVER MASON CREEK

7/21/2016
smelvin
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150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

END BRIDGE
-L- STA. 16+99.19

10
0

0.025 0.025

-2.87

16+50.00

WETLANDS

WETLANDS

10
0

0.025 0.025

4.56

16+00.00

BEGIN BRIDGE
-L- STA. 15+86.81

WETLANDS

WETLANDS

10
0

3:1 0.025 0.025 3:1

4.36

15+50.00

WETLANDS

WETLANDS

WETLANDS

10
0

3:1 0.025 0.025 3:1

4.20

15+00.00

WETLANDS

WETLANDS

WETLANDS

10
0

3.84:1 0.027 0.023 3:1

4.32

14+50.00

WETLANDS

WETLANDS

10
0

0.045 0.009

4.19

14+00.00

BEGIN CONSTRUCTION
-L- STA. 13+75.00

WETLANDS

WETLANDS

10
0

4.08

13+75.00

10
0

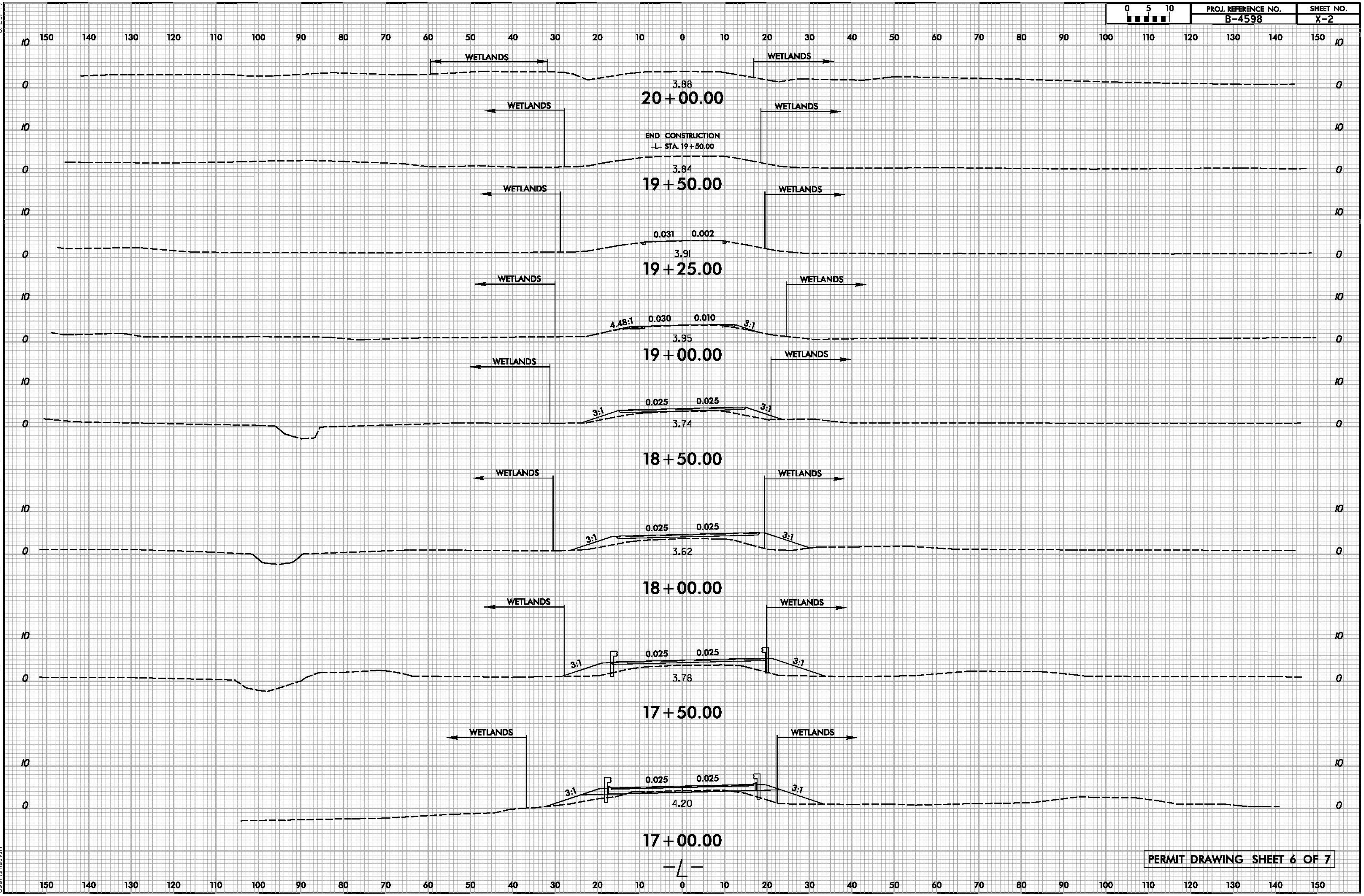
3.96

13+50.00

-L-

PERMIT DRAWING SHEET 5 OF 7

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


PROJ. REFERENCE NO.
B-4598
SHEET NO.
X-2
0 5 10
WETLANDS
3.88
20+00.00
END CONSTRUCTION
-L- STA. 19+50.00
3.84
19+50.00
0.031 0.002
3.91
19+25.00
4.48:1 0.030 0.010 3:1
3.95
19+00.00
3:1 0.025 0.025 3:1
3.74
18+50.00
3.62
18+00.00
3.78
17+50.00
4.20
17+00.00
-L-
PERMIT DRAWING SHEET 6 OF 7

WETLAND PERMIT IMPACT SUMMARY

			WETLAND IMPACTS					SURFACE WATER IMPACTS				
Site No.	Station (From/To)	Structure Size / Type	Permanent Fill In Wetlands (ac)	Temp. Fill In Wetlands (ac)	Excavation in Wetlands (ac)	Mechanized Clearing in Wetlands (ac)	Hand Clearing in Wetlands (ac)	Permanent SW impacts (ac)	Temp. SW impacts (ac)	Existing Channel Impacts Permanent (ft)	Existing Channel Impacts Temp. (ft)	Natural Stream Design (ft)
1	14+46 to 18+64	Roadway/Bridge	0.09									
1	15+94 RT to 16+96 RT	Roadway/Bridge			< 0.01							
1	14+35 to 18+90	Roadway/Bridge					0.07					
1	16+39 to 16+74	Temp. Work Pad							0.02			
1	16+10 RT,16+76 LT	Excavation						< 0.01				
TOTALS*:			0.09		< 0.01		0.07	< 0.01	0.02	0	0	0

*Rounded totals are sum of actual impacts

NOTES:
Wetland impacts listed in table above are all in CAMA Wetlands.
0.01 acres of Temporary Fill in Wetlands in the Hand Clearing areas for erosion control measures.
<0.01 acres of Permanent SW impacts for interior bent at 16+43.

NC DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
7/21/2016
PAMLICO
PROJECT: 38426.1.2 (B-4598)

Revised 2013 10 24

Power

Tideland EMC- John Marsh stated there are two poles on the east side of the bridge that will be moved back 15' to accommodate crane clearance. In addition one pole to the north of these poles will be moved to eliminate pull and the need for a side guy. A 15' wide TUE will be needed from the center of the poles on each side. It is recommended that the trees cut for clearing be left where they fall as there will be no other work in this area by any other contractors. This would leave a minimum impact on the wetland areas. All clearing will be with non-mechanized means. The existing poles will be left in place. At the completion of the bridge replacement the lines can be transferred back to the existing poles, as the proposed poles will be unreachable by a pole truck should an outage or maintenance be required.
All pole placement inside the wetland areas will be accomplished with the use of matts. There will be minimum impact to environmentally sensitive areas due to the non-mechanized clearing and the use of matts.

Telephone
Century Link/Embarq- Mitch Averitte, stated that Century Link/Embarq has facilities in conflict. Relocation of the telephone facilities will be accomplished with a 4" directional drill. The proposed cables will be placed inside of the 4" plastic pipe pulled back with the directional drill.
There are (2) buried copper cables on the right side of SR1324 (Florence Road) and (1) buried copper on the left side of SR1324 (Florence Road). This one buried copper crosses -L- at station 15+75 and transitions to an aerial crossing. This aerial crossing and all buried cables inside of the project limits will be replaced with (2) copper and (1) fiber optic cable. The relocated cables will be placed/relocated by directional drill. The bore entry will begin at station 13+75 RT-L to 19+50 RT-L. As outlined in the bore profile the bore will be a minimum of 15' below the stream bottom of Mason Creek.
There will be no impact to environmentally sensitive areas due to the buried cable relocation because all trenching will take place in the roadway fill. All telephone lines constructed in wetlands, streams, and buffer zones will be by directional drill.

Water
Pamlico County Water- Al Gerard-, it has been determined there will be a conflict with the water line. Pamlico County Water requested the NCDOT handle the design, specifications, surveying, construction, inspection, ie., and all permitting required to relocate the existing water main located at the waterway crossing on Florence Road in Pamlico County.
An existing 6” water line on the left side of SR1324 (Florence Road) will be replaced in kind by a new section of 6” water line. The relocated water line will be constructed by directional drill. The directional drill will begin approximately 25’ after the start of the project in the roadway fill and end approximately 25’ before the end of the project in the roadway fill. This bore will be a minimum of 10' below the stream bottom of Mason's Creek.
There will be no impact to environmentally sensitive areas due to the water line because all trenching will take place in the roadway fill. All water line constructed in wetlands, streams, and buffer zones will be by directional drill. Cutoff valves will be provided on each side of the stream.

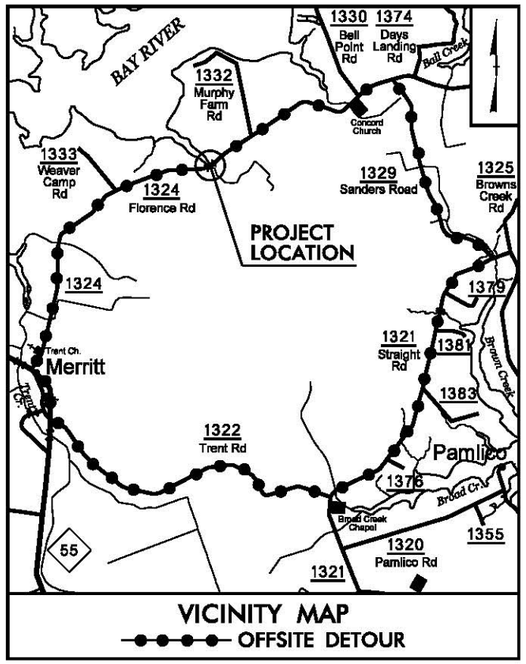
Summary of Environmental Impacts
Based on the preliminary relocation plans provided by the power and telephone companies, there appears to be minimum impacts. The proposed directional bores will enter and exit as such with minimum impacts. Silt fence and all proper erosion control measures will be required and implemented. Any proposed telephone splice pits will be outside of the wetland boundaries. Hand clearing is typically expected in the wetlands and required for most buffer impacts. In addition mats can be placed as well to further minimize impacts.

09/08/99

TIP PROJECT: B-4598

CONTRACT:

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



STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

PAMLICO COUNTY

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-4598	1	

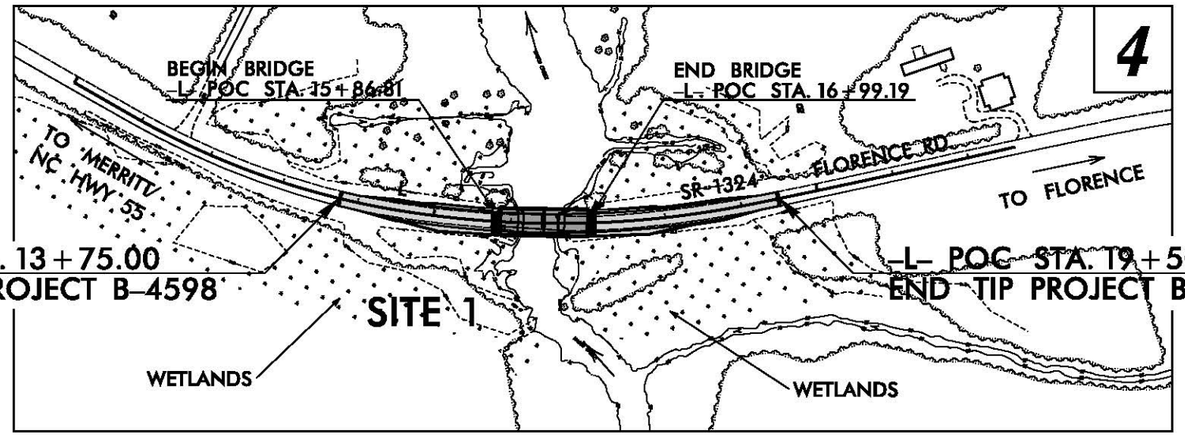
STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION
38426.1.2	BRZ-1324(5)	PE
38426.2.1		R/W, UTL.

LOCATION: REPLACE BRIDGE 16 OVER MASON CREEK ON SR 1324 (FLORENCE RD.)

TYPE OF WORK: GRADING, DRAINAGE, STRUCTURE AND PAVING

PERMIT DRAWINGS
STREAM AND WETLAND IMPACTS
DUE TO UTILITY RELOCATION
JULY 21, 2016

NAD 83/95



DESIGN EXCEPTIONS

-L-
Horizontal SSD, Sta. 13+75 to Sta. 19+50
Superelevation, Sta. 13+75 to Sta. 19+50

CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD II.
THIS PROJECT IS NOT WITHIN ANY MUNICIPAL BOUNDARIES.

PERMIT DRAWING SHEET 1 OF 7

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

GRAPHIC SCALES

50 25 0 50 100
PLANS

50 25 0 50 100
PROFILE (HORIZONTAL)

10 5 0 10 20
PROFILE (VERTICAL)

DESIGN DATA

ADT 2017 = 1065
ADT 2037 = 1326
DHV = 10 %
D = 55 %
T = 10 % *
V = 60 MPH
* (TTST 1% + DUAL 9%)
FUNCT CLASS = RURAL LOCAL
SUB-REGIONAL TIER DESIGN

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT B-4598	=	*0.088 miles*
LENGTH STRUCTURES TIP PROJECT B-4598	=	*0.021 miles*
TOTAL LENGTH TIP PROJECT B-4598	=	*0.109 miles*

Prepared For:
DIVISION OF HIGHWAYS
1000 Birch Ridge Dr., Raleigh NC, 27610
By:

TGS ENGINEERS
864-C N. LAFAYETTE ST
SHELBY, NC 28150
PH (704) 476-0003
CORP. LICENSE NO.: C-0275

2012 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
MAY 16, 2016

LETTING DATE:
JUNE 20, 2017

JIMMY TERRY, P.E.
PROJECT ENGINEER
BURKE EVANS, P.E.
PROJECT DESIGN ENGINEER
GARY LOVERING, PE
PROJECT ENGINEER
NCDOT ROADWAY DESIGN

HYDRAULICS ENGINEER

SIGNATURE: *P.E.*

ROADWAY DESIGN ENGINEER

SIGNATURE: *P.E.*

STATE OF NORTH CAROLINA · DEPARTMENT OF TRANSPORTATION

7/21/2016
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User:smelvin

WETLAND IMPACTS
Hand Clearing in Wetlands
HC HC HC HC HC

EXISTING BRIDGE DIMENSIONS 60'X26' (DOUBLE-SPAN), 90 DEG. SKEW
PROPOSED BRIDGE DIMENSIONS 110'X36' (DOUBLE-SPAN), 90 DEG. SKEW
TOTAL PROJECT LENGTH - 575'

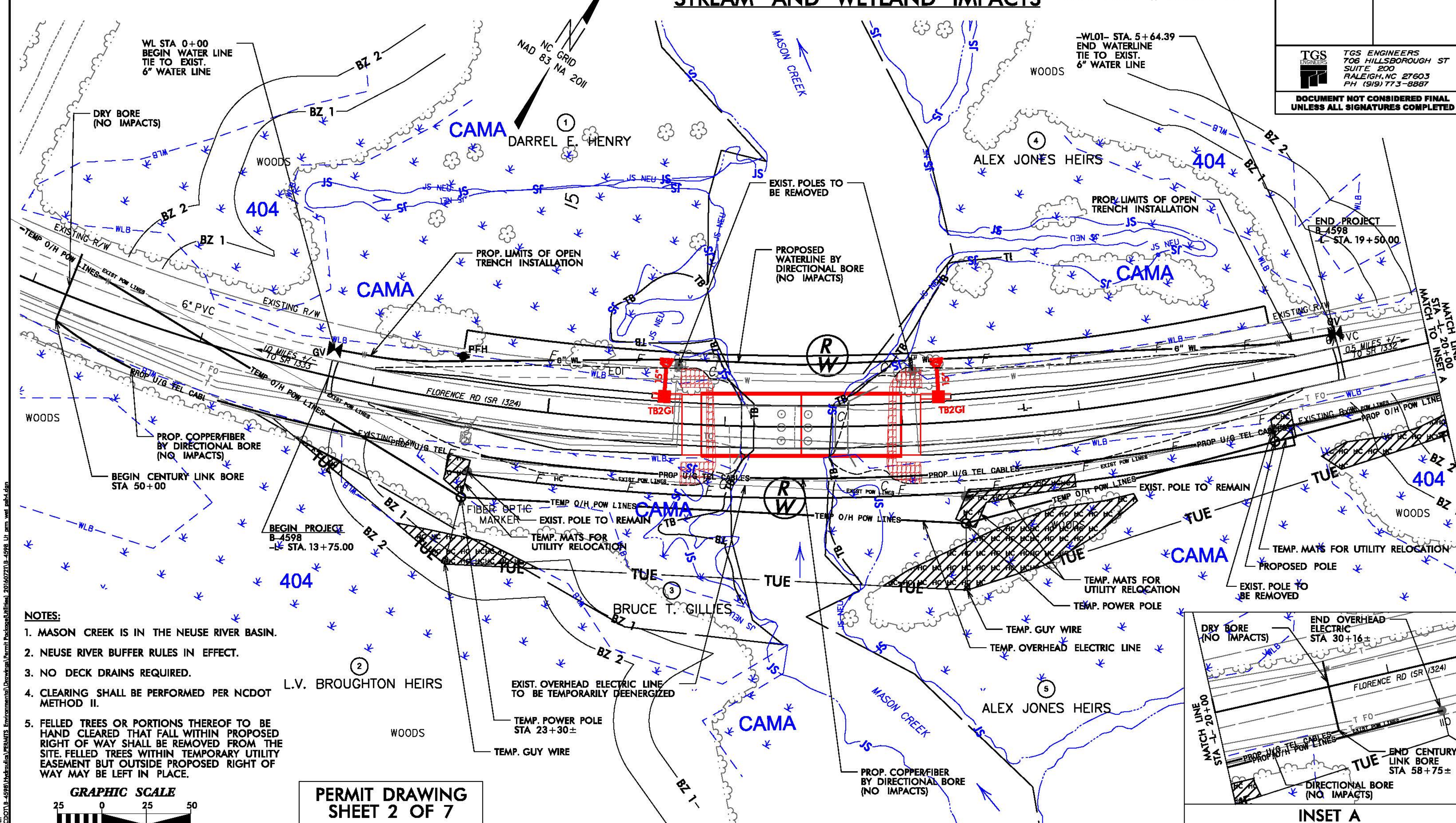
PERMIT DRAWINGS FOR B-4598 PAMLICO COUNTY BRIDGE #680016

STREAM AND WETLAND IMPACTS

PROJECT REFERENCE NO.	SHEET NO.
B-4598	4
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

TGS ENGINEERS
TGS ENGINEERS 706 HILLSBOROUGH ST SUITE 200 RALEIGH, NC 27603 PH (919) 773-8887

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



NC GRID NAD 83 NA 2011
WL STA 0+00 BEGIN WATER LINE TIE TO EXIST. 6" WATER LINE
DRY BORE (NO IMPACTS)
BZ 2
BZ 1
CAMA
404
WOODS
DARREL E. HENRY
ALEX JONES HEIRS
BRUCE T. GILLIES
L.V. BROUGHTON HEIRS
MASON CREEK
EXIST. POLES TO BE REMOVED
PROPOSED WATERLINE BY DIRECTIONAL BORE (NO IMPACTS)
PROP. LIMITS OF OPEN TRENCH INSTALLATION
-WL01- STA. 5+64.39 END WATERLINE TIE TO EXIST. 6" WATER LINE
END PROJECT B-4598 -L- STA. 19+50.00
MATCH LINE STA -L- 20+00 MATCH TO INSET A
EXISTING R/W
TEMP O/H POW LINES
EXIST POW LINES
6" PVC
10 MILES +/- TO SR 1333
0.5 MILES +/- TO SR 1332
FLORENCE RD (SR 1324)
PROP U/G TEL CABLES
PROP O/H POW LINES
PFH
GV
TB2GI
PROP. COPPER/FIBER BY DIRECTIONAL BORE (NO IMPACTS)
BEGIN CENTURY LINK BORE STA 50+00
BEGIN PROJECT B-4598 -L- STA. 13+75.00
FIBER OPTIC MARKER
EXIST. POLE TO REMAIN
TEMP. MATS FOR UTILITY RELOCATION
TUE
EXIST. OVERHEAD ELECTRIC LINE TO BE TEMPORARILY DEENERGIZED
TEMP. POWER POLE STA 23+30±
TEMP. GUY WIRE
PROP. COPPER/FIBER BY DIRECTIONAL BORE (NO IMPACTS)
TEMP. POWER POLE
TEMP. OVERHEAD ELECTRIC LINE
PROPOSED POLE
EXIST. POLE TO BE REMOVED
DRY BORE (NO IMPACTS)
END OVERHEAD ELECTRIC STA 30+16±
MATCH LINE STA -L- 20+00
END CENTURY LINK BORE STA 58+75±
DIRECTIONAL BORE (NO IMPACTS)
INSET A

NOTES:

1. MASON CREEK IS IN THE NEUSE RIVER BASIN.
2. NEUSE RIVER BUFFER RULES IN EFFECT.
3. NO DECK DRAINS REQUIRED.
4. CLEARING SHALL BE PERFORMED PER NCDOT METHOD II.
5. FELLED TREES OR PORTIONS THEREOF TO BE HAND CLEARED THAT FALL WITHIN PROPOSED RIGHT OF WAY SHALL BE REMOVED FROM THE SITE. FELLED TREES WITHIN TEMPORARY UTILITY EASEMENT BUT OUTSIDE PROPOSED RIGHT OF WAY MAY BE LEFT IN PLACE.

GRAPHIC SCALE

25 0 25 50

PERMIT DRAWING SHEET 2 OF 7

7/21/2016

PROJECT REFERENCE NO.	SHEET NO.
B-4598	4

RW SHEET NO.

ROADWAY DESIGN ENGINEER — HYDRAULICS ENGINEER

PERMIT DRAWINGS FOR B-4598 PAMLICO COUNTY BRIDGE #680016

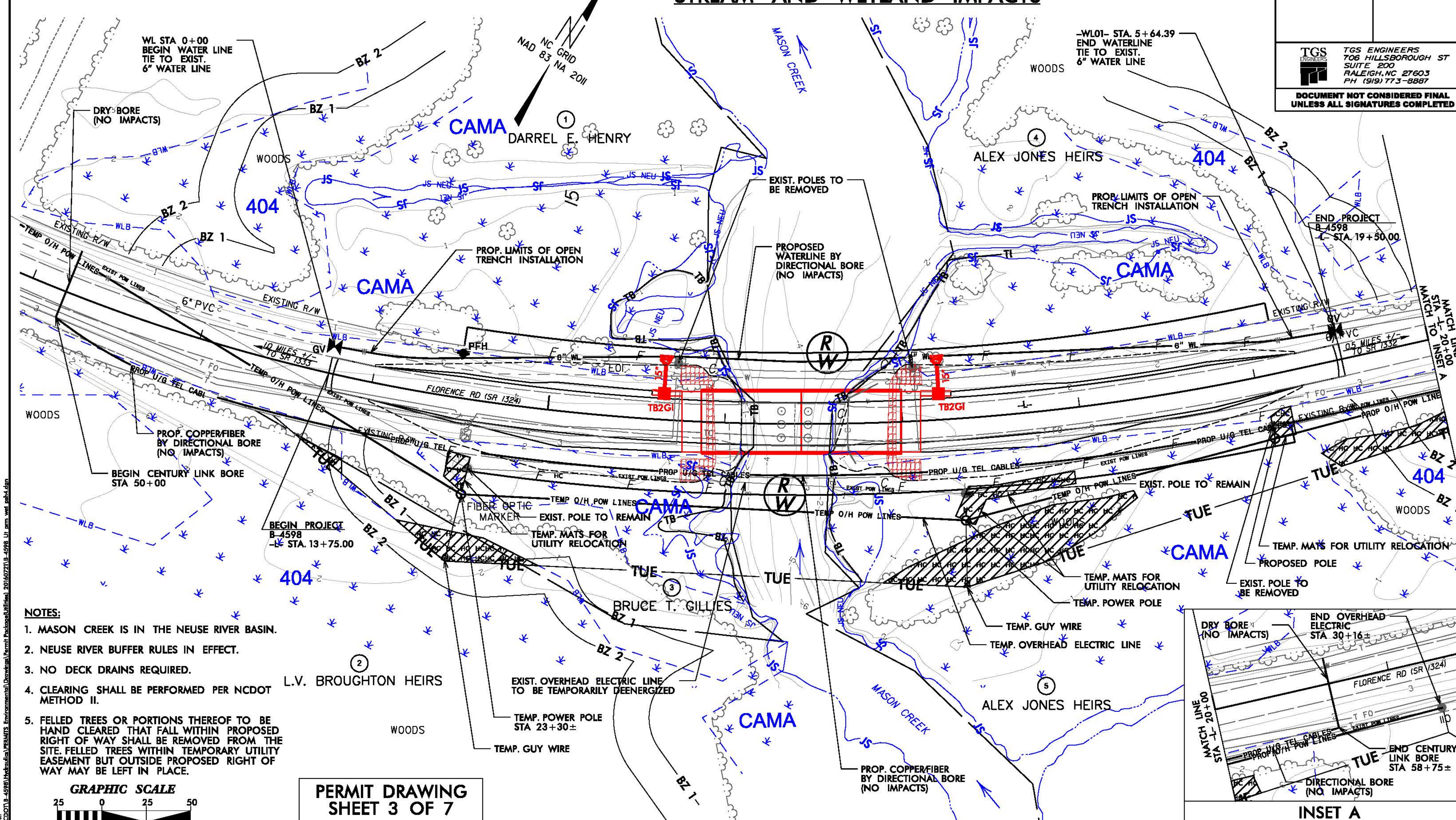
TGS ENGINEERS
706 HILLSBOROUGH ST
SUITE 200
RALEIGH, NC 27603
PH (919) 773-8887

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

STREAM AND WETLAND IMPACTS

WETLAND IMPACTS
Hand Clearing in Wetlands

EXISTING BRIDGE DIMENSIONS 60'X26' (DOUBLE-SPAN), 90 DEG. SKEW
PROPOSED BRIDGE DIMENSIONS 110'X36' (DOUBLE-SPAN), 90 DEG. SKEW
TOTAL PROJECT LENGTH - 575'



NC GRID NAD 83 NA 2011
WL STA 0+00 BEGIN WATER LINE TIE TO EXIST. 6" WATER LINE
DRY BORE (NO IMPACTS)
CAMA
DARREL E. HENRY
WOODS
404
BZ 1
BZ 2
PROP. LIMITS OF OPEN TRENCH INSTALLATION
EXISTING R/W
TEMP O/H POW LINES
EXIST POW LINES
6" PVC
10 MILES +/- TO SR 1333
GV
PFH
FLORENCE RD (SR 1324)
PROP U/G TEL CABL
PROP. COPPER/FIBER BY DIRECTIONAL BORE (NO IMPACTS)
BEGIN CENTURY LINK BORE STA 50+00
BEGIN PROJECT B-4598 -L- STA. 13+75.00
FIBER OPTIC MARKER
EXIST. POLE TO REMAIN
TEMP. MATS FOR UTILITY RELOCATION
MASON CREEK
EXIST. POLES TO BE REMOVED
PROPOSED WATERLINE BY DIRECTIONAL BORE (NO IMPACTS)
ALEX JONES HEIRS
-WL01- STA. 5+64.39 END WATERLINE TIE TO EXIST. 6" WATER LINE
PROP. LIMITS OF OPEN TRENCH INSTALLATION
END PROJECT B-4598 -L- STA. 19+50.00
MATCH LINE STA -L- 20+00 MATCH TO INSET A
0.5 MILES +/- TO SR 1332
TB2GI
PROP U/G TEL CABLES
TEMP O/H POW LINES
EXIST. POLE TO REMAIN
TUE
TEMP. MATS FOR UTILITY RELOCATION
PROPOSED POLE
EXIST. POLE TO BE REMOVED
TEMP. POWER POLE
TEMP. GUY WIRE
TEMP. OVERHEAD ELECTRIC LINE
BRUCE T. GILLIES
L.V. BROUGHTON HEIRS
EXIST. OVERHEAD ELECTRIC LINE TO BE TEMPORARILY DEENERGIZED
TEMP. POWER POLE STA 23+30±
TEMP. GUY WIRE
PROP. COPPER/FIBER BY DIRECTIONAL BORE (NO IMPACTS)
DRY BORE (NO IMPACTS)
END OVERHEAD ELECTRIC STA 30+16±
FLORENCE RD (SR 1324)
MATCH LINE STA -L- 20+00
END CENTURY LINK BORE STA 58+75±
DIRECTIONAL BORE (NO IMPACTS)
INSET A

NOTES:

1. MASON CREEK IS IN THE NEUSE RIVER BASIN.
2. NEUSE RIVER BUFFER RULES IN EFFECT.
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GRAPHIC SCALE

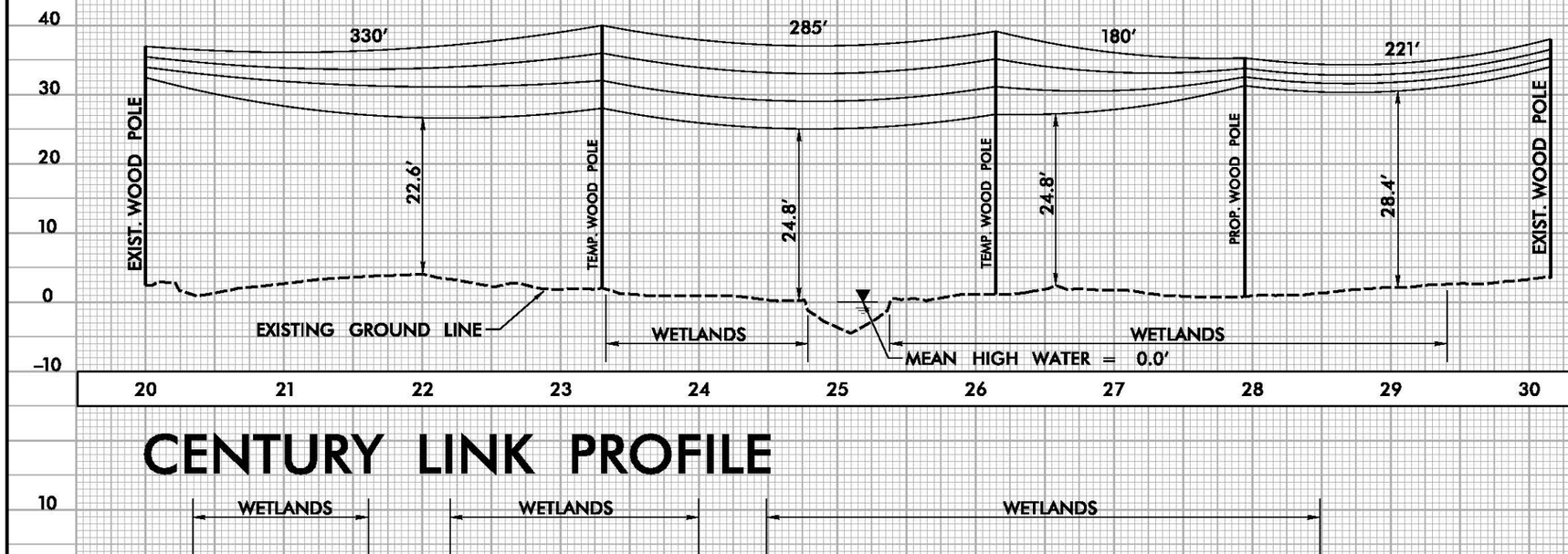
25 0 25 50

PERMIT DRAWING SHEET 3 OF 7

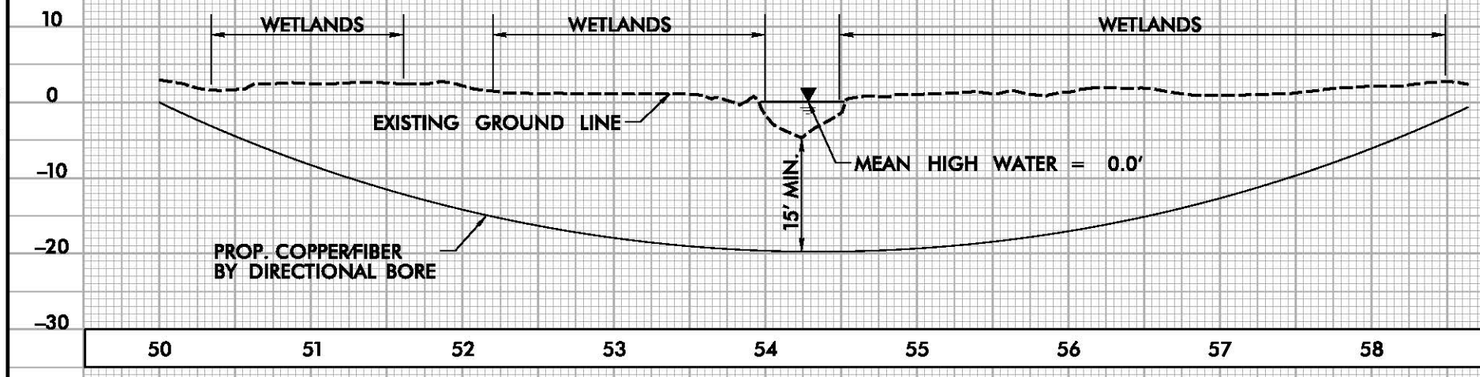
PROJECT REFERENCE NO.	SHEET NO.
B-4598	5
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

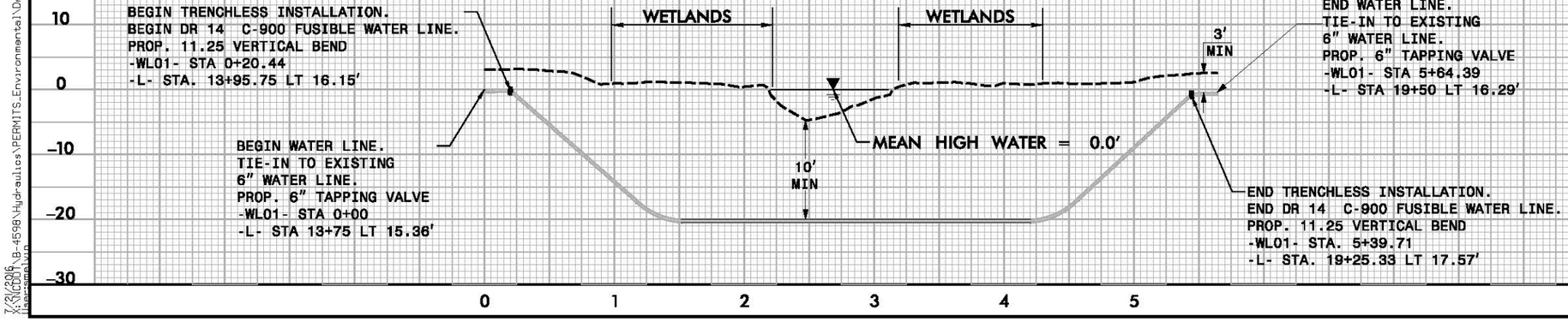
TEMC OVERHEAD ELECTRIC PROFILE



CENTURY LINK PROFILE



WATER LINE PROFILE



PERMIT DRAWING SHEET 4 OF 7

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END BRIDGE
-L- STA. 16+99.19

10
0

0.025 0.025

-2.87

16+50.00

WETLANDS WETLANDS

0.025 0.025

4.56

16+00.00

BEGIN BRIDGE
-L- STA. 15+86.81

WETLANDS WETLANDS

3:1 0.025 0.025 3:1

4.36

15+50.00

WETLANDS WETLANDS WETLANDS

3:1 0.025 0.025 3:1

4.20

15+00.00

WETLANDS WETLANDS WETLANDS

3.84:1 0.027 0.023 3:1

4.32

14+50.00

WETLANDS WETLANDS

0.045 0.009

4.19

14+00.00

BEGIN CONSTRUCTION
-L- STA. 13+75.00

WETLANDS WETLANDS

4.08

13+75.00

3.96

13+50.00

-L-

PERMIT DRAWING SHEET 5 OF 7

8/23/99

7/21/2016
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0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	B-4598	X-2

WETLANDS WETLANDS

3.88

20+00.00

WETLANDS WETLANDS

END CONSTRUCTION
-L- STA. 19+50.00

3.84

19+50.00

WETLANDS WETLANDS

0.031 0.002

3.91

19+25.00

WETLANDS WETLANDS

4.48:1 0.030 0.010 3:1

3.95

19+00.00

WETLANDS WETLANDS

3:1 0.025 0.025 3:1

3.74

18+50.00

WETLANDS WETLANDS

3:1 0.025 0.025 3:1

3.62

18+00.00

WETLANDS WETLANDS

3:1 0.025 0.025 3:1

3.78

17+50.00

WETLANDS WETLANDS

3:1 0.025 0.025 3:1

4.20

17+00.00

-L-

PERMIT DRAWING SHEET 6 OF 7

8/23/99

7/21/2016
X:\NCDOT\B-4598\Hydraulics\PERMITS_Environmental\Drawings\Permit Package\Utilities_20160721\B-4598_Ut_prm_xpl.dgn
User:smelvin

WETLAND PERMIT IMPACT SUMMARY

			WETLAND IMPACTS					SURFACE WATER IMPACTS				
Site No.	Station (From/To)	Structure Size / Type	Permanent Fill In Wetlands (ac)	Temp. Fill In Wetlands (ac)	Excavation in Wetlands (ac)	Mechanized Clearing in Wetlands (ac)	Hand Clearing in Wetlands (ac)	Permanent SW impacts (ac)	Temp. SW impacts (ac)	Existing Channel Impacts Permanent (ft)	Existing Channel Impacts Temp. (ft)	Natural Stream Design (ft)
1	L 13+68 to 20+15	Overhead Power Line					0.13					
TOTALS*:							0.13			0	0	0

*Rounded totals are sum of actual impacts

NOTES:
Wetland Impacts listed in table above are total quantities for both CAMA & 404 Wetlands.
0.09 acres of Hand Clearing are in CAMA Wetlands.

NC DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
7/21/2016
PAMLICO
PROJECT: 38426.1.2 (B-4598)

Revised 2013 10 24

BUFFER IMPACTS SUMMARY

			IMPACT									BUFFER REPLACEMENT	
			TYPE			ALLOWABLE			MITIGABLE				
SITE NO.	STRUCTURE SIZE / TYPE	STATION (FROM/TO)	ROAD CROSSING	BRIDGE	PARALLEL IMPACT	ZONE 1 (ft^2)	ZONE 2 (ft^2)	TOTAL (ft^2)	ZONE 1 (ft^2)	ZONE 2 (ft^2)	TOTAL (ft^2)	ZONE 1 (ft^2)	ZONE 2 (ft^2)
1	Overhead Power Line	L 13+84 to 15+55	X			2157	837	2994					
2	Overhead Power Line	L 19+04 to 19+84	X			358	218	576					
TOTAL:						2515.0	1055.0	3570.0	0.0	0.0	0.0		

NOTES:
All Zone 1 and Zone 2 impacts are due to overhead power line relocations which are exempt impacts.

N.C. DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS

PAMLICO COUNTY
PROJECT: 38426.1.2 (B-4598)

7/21/2016
SHEET 1 OF 2

WETLANDS IN BUFFER IMPACTS SUMMARY

SITE NO.	STATION (FROM/TO)		WETLANDS IN BUFFERS ZONE 1 (ft^2)	WETLANDS IN BUFFERS ZONE 2 (ft^2)
1	L 13+84 to 15+04		488	368
2	L 19+12 to 19+84		355	218
TOTAL:			843	586

NOTES:
All Zone 1 and Zone 2 impacts are due to overhead power line relocations which are exempt impacts.

N.C. DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS

PAMLICO COUNTY
PROJECT: 38426.1.2 (B-4598)

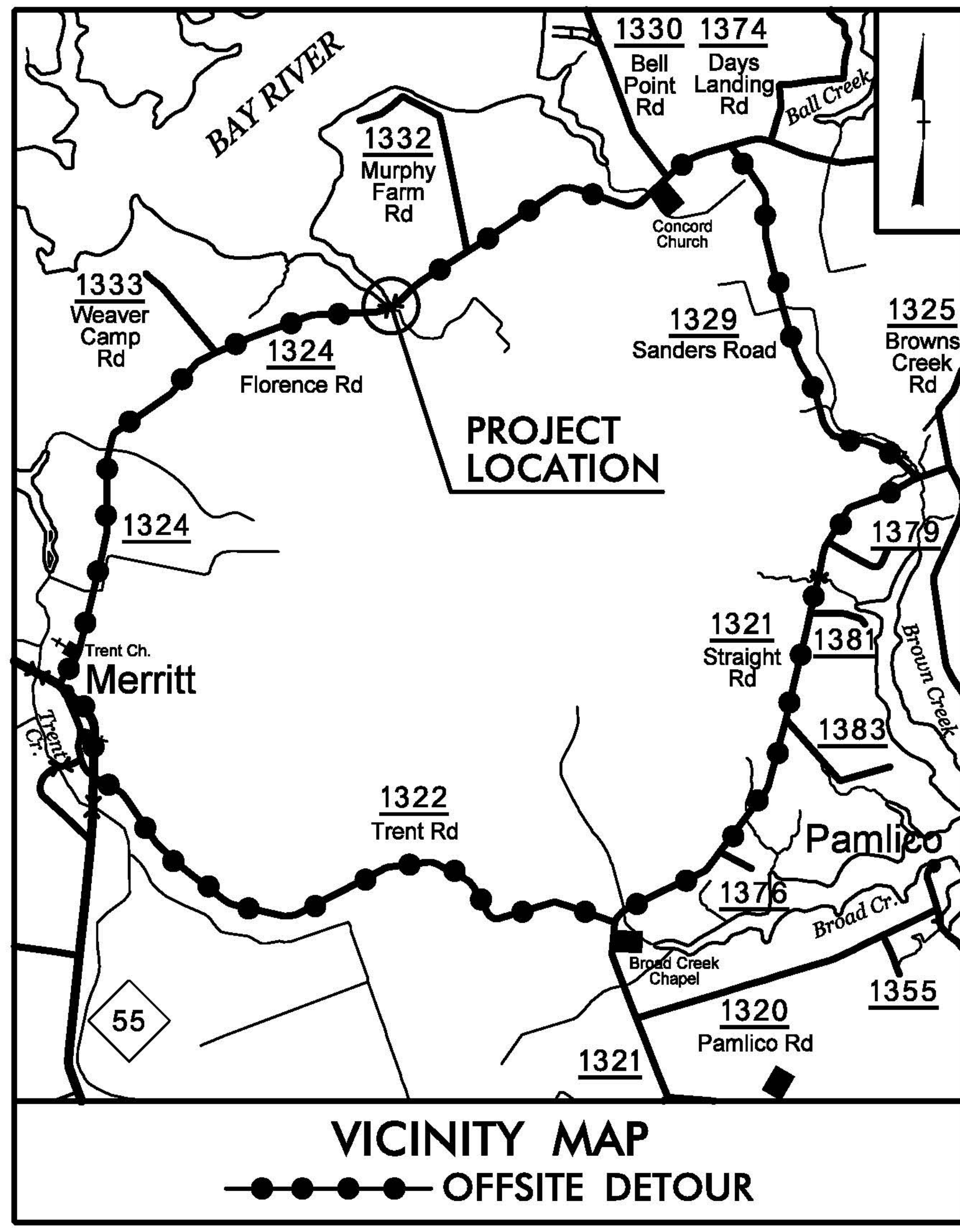
7/21/2016
SHEET 2 OF 2

Rev. Jan 2009

09/08/99

TIP PROJECT: B-4598

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



R/W PLANS SUBMITTAL

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

PAMLICO COUNTY

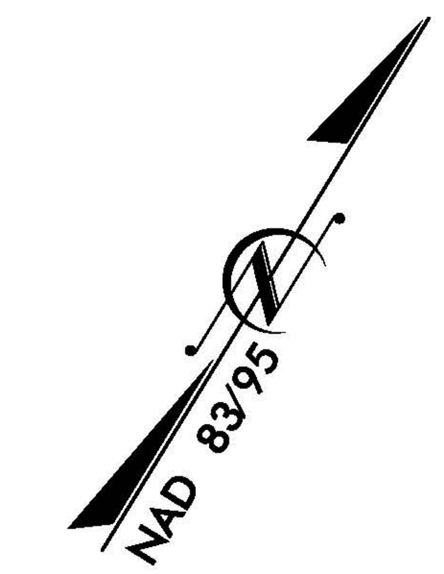
LOCATION: REPLACE BRIDGE 16 OVER MASON CREEK ON SR 1324 (FLORENCE RD.)

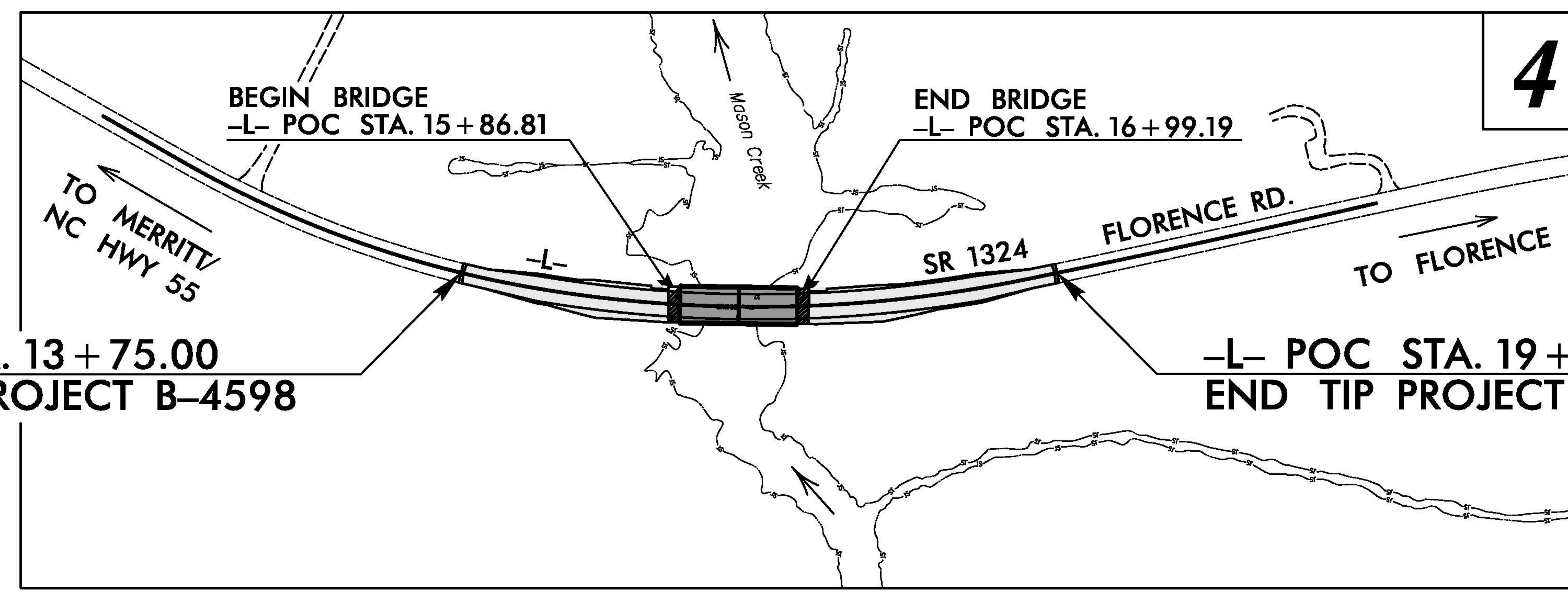
TYPE OF WORK: GRADING, DRAINAGE, STRUCTURE AND PAVING

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-4598	1	

STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION
38426.1.2	BRZ-1324(5)	PE
38426.2.1		R/W, UTL.

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED





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

THIS PROJECT IS NOT WITHIN ANY MUNICIPAL BOUNDARIES.

DESIGN EXCEPTIONS

-L-
Horizontal SSD, Sta. 13+75 to Sta. 19+50
Superelevation, Sta. 13+75 to Sta. 19+50

GRAPHIC SCALES

50 25 0 50 100 — PLANS
50 25 0 50 100 — PROFILE (HORIZONTAL)
10 5 0 10 20 — PROFILE (VERTICAL)

DESIGN DATA

ADT 2017 = 1065
ADT 2037 = 1326
DHV = 10 %
D = 55 %
T = 10 % *
V = 60 MPH
* (TTST 1% + DUAL 9%)
FUNCT CLASS = RURAL LOCAL
SUB-REGIONAL TIER DESIGN

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT B-4598	=	0.088 miles
LENGTH STRUCTURES TIP PROJECT B-4598	=	0.021 miles
TOTAL LENGTH TIP PROJECT B-4598	=	0.109 miles

Prepared For:

DIVISION OF HIGHWAYS
1000 Birch Ridge Dr., Raleigh NC, 27610

By:

TGS ENGINEERS
804-C N. LAFAYETTE ST
SHELBY, NC 28150
PH (704) 476-0003
CORP. LICENSE NO.: C-0275

2012 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
MAY 16, 2016

LETTING DATE:
JUNE 20, 2017

JIMMY TERRY, P.E.
PROJECT ENGINEER

BURKE EVANS, P.E.
PROJECT DESIGN ENGINEER

GARY LOVERING, PE
PROJECT ENGINEER
NCDOT ROADWAY DESIGN

HYDRAULICS ENGINEER

SIGNATURE: P.E.

ROADWAY DESIGN ENGINEER

SIGNATURE: P.E.

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

CONTRACT:

$$$$SYSTIME$$$$
$$$$USERNAME$$$$
$$$$$$$$$$$$$$DGN$$$$$$$$$$$$$$$$$$$$

04/06/15

PROJECT REFERENCE NO.	SHEET NO.
B-4598	1B

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 — ECM
- Parcel/Sequence Number — 123
- Existing Fence Line
- 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 — CSX TRANSPORTATION
- RR Signal Milepost — 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 C/A 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:

- 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 — P
- 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 — T
- Telephone Pedestal — T
- Telephone Cell Tower
- U/G Telephone Cable Hand Hole — HH
- 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 — W
- 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 — C
- TV Tower
- U/G TV Cable Hand Hole — HH
- 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 — G
- 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 — S
- 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.

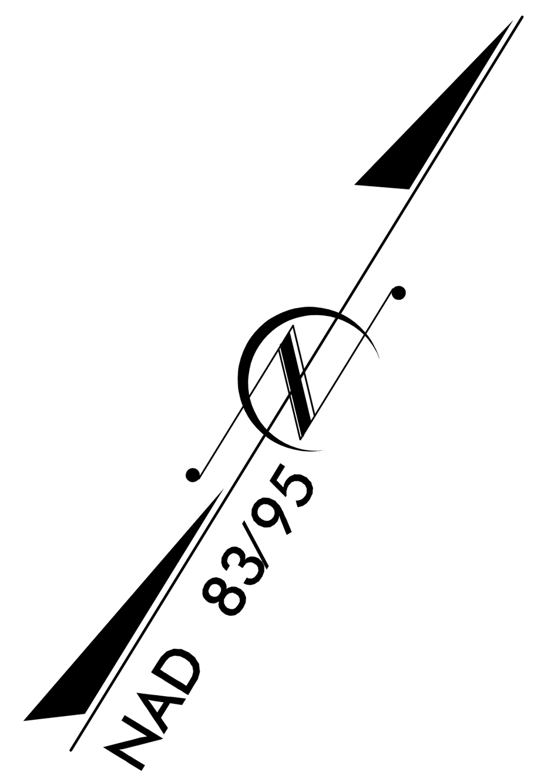
SURVEY CONTROL SHEET B-4598

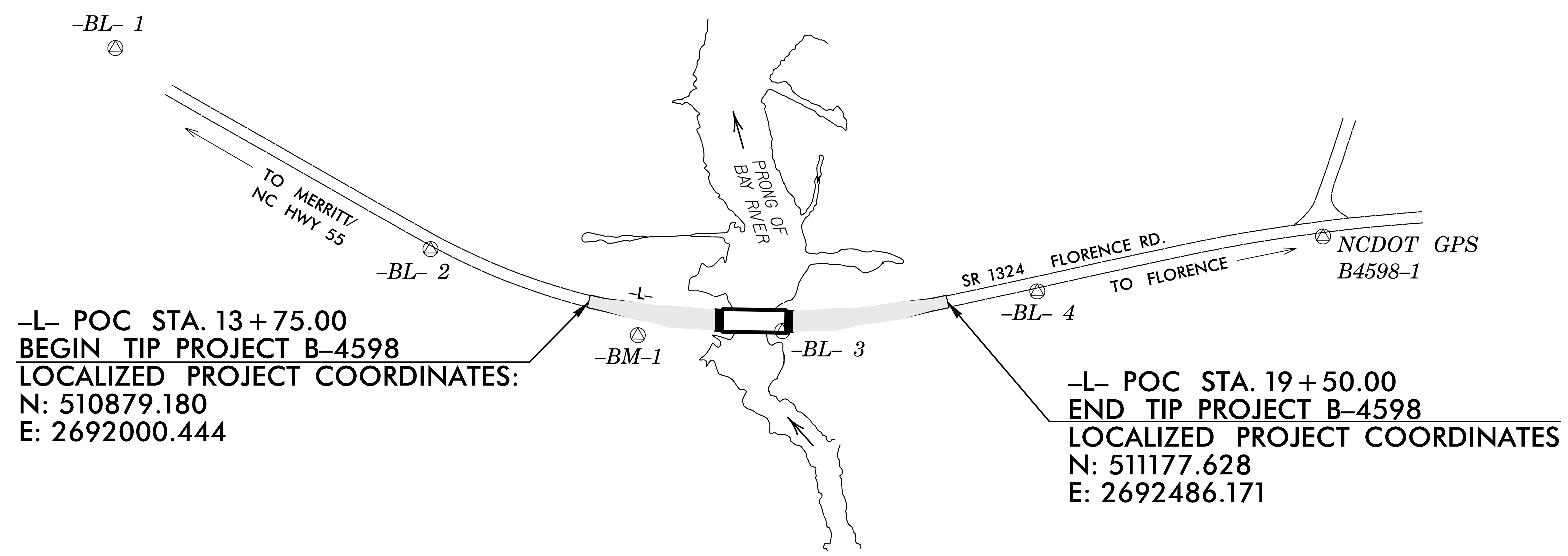
BASELINES

BL POINT	DESC.	NORTH	EAST	ELEVATION	L STATION	OFFSET
1	BL-1	510827.5970	2691145.1150	3.08	OUTSIDE PROJECT LIMITS	
2	BL-2	510817.3170	2691740.9710	2.76	11+09.63	13.73 RT
3	BL-3	510999.9990	2692287.5200	3.30	16+85.05	15.16 RT
4	BL-4	511266.7730	2692600.5720	2.77	20+94.26	14.12 RT
GPS1	B4598-1	511580.0040	2692942.5800	3.19	OUTSIDE PROJECT LIMITS	

BENCHMARKS

BM1 ELEVATION = 2.33
N 510874 E 2692095
L STATION 14+60.00 38 RIGHT
R/R SPIKE SET IN POWER POLE #57965





DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCDOT FOR MONUMENT "B4598-1"
WITH NAD 83/95 STATE PLANE GRID COORDINATES OF
NORTHING: 511580.0040(ft) EASTING: 2692942.580(ft)
ELEVATION: 3.19(ft)
THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.99988041
THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "B4598-1" TO -L- STATION 13+75.00 IS S 53° 21' 20.4" W 1174.21'
ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES
VERTICAL DATUM USED IS NAVD 88

ROW & EASEMENTS

ROW MARKER IRON PIN AND CAP-E

ALIGN	STATION	OFFSET	NORTH	EAST
L	14+48.22	40.00	510867.0669	2692084.2377
L	14+48.22	-40.00	510941.2445	2692054.2762
L	14+48.22	-29.38	510931.3996	2692058.2527
L	14+48.22	30.62	510875.7660	2692080.7240
L	19+14.38	-40.00	511182.5268	2692432.8701
L	19+14.38	40.00	511124.0424	2692487.4556
L	19+14.38	-30.00	511175.2162	2692439.6933
L	19+14.38	30.00	511131.3529	2692480.6324

DESIGN ALIGNMENTS

L

TYPE	STATION	NORTH	EAST
POT	10+00.00	510827.2539	2691630.6694
PC	10+87.84	510830.0898	2691718.4663
PCC	14+48.22	510904.1557	2692069.2569
PCC	19+14.38	511153.2846	2692460.1628
PT	22+62.28	511394.1385	2692711.1949

NOTES:

1. THE CONTROL DATA FOR THIS PROJECT CAN BE FOUND ELECTRONICALLY BY SELECTING PROJECT CONTROL DATA AT:
HTTPS://CONNECT.NCDOT.GOV/RESOURCES/LOCATION/

THE FILES TO BE FOUND ARE AS FOLLOWS:
B-4598_LS_CONTROL.TXT

SITE CALIBRATION INFORMATION HAS NOT BEEN PROVIDED FOR THIS PROJECT. IF FURTHER INFORMATION IS NEEDED, PLEASE CONTACT THE LOCATION AND SURVEYS UNIT.

◎ INDICATES GEODETIC CONTROL MONUMENTS USED OR SET FOR HORIZONTAL PROJECT CONTROL BY THE NCDOT LOCATION AND SURVEYS UNIT.
PROJECT CONTROL ESTABLISHED USING GLOBAL POSITIONING SYSTEM.
NETWORK ESTABLISHED FROM NGS ONLINE POSITIONING SERVICE (OPUS)

NOTE: DRAWING NOT TO SCALE

8/2/99

PROJECT REFERENCE NO.	SHEET NO.
B-4598	2A-1
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER

TGS ENGINEERS
804-C N. LAFAYETTE ST
SHELBY, NC 28150
PH (704) 476-0003
CORP. LICENSE NO.: C-0275

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PAVEMENT SCHEDULE

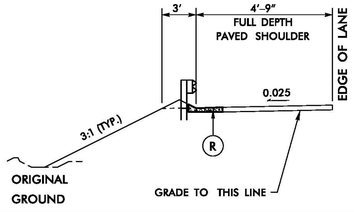
FINAL PAVEMENT DESIGN: SEPTEMBER 6, 2012

C1	PROP. APPROX. 2.5" ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 137.5 Lbs PER SQUARE YARD IN EACH OF TWO LAYERS.
C2	PROP. VARIABLE DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 110 Lbs PER SQUARE YARD PER 1" DEPTH, TO BE PLACED IN LAYERS NOT LESS THAN 1.0" OR GREATER THAN 1.5" IN DEPTH.
E1	PROP. APPROX. 4.5" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 513 Lbs PER SQUARE YARD.
E2	PROP. VARIABLE DEPTH ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 114 Lbs PER SQUARE YARD PER 1" DEPTH, TO BE PLACED IN LAYERS NOT LESS THAN 4.0" OR GREATER THAN 5.5" IN DEPTH.
R	CONCRETE SHOULDER BERM GUTTER
T	EARTH MATERIAL
U	EXISTING PAVEMENT
V	INCIDENTAL MILLING
W	VARIABLE DEPTH ASPHALT PAVEMENT (SEE STANDARD WEDGING DETAIL THIS SHEET)

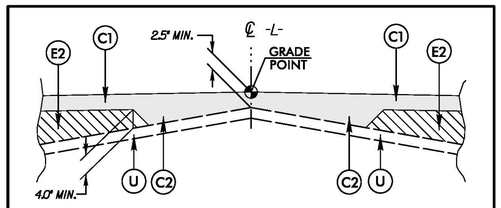
PAVEMENT EDGE SLOPES AND TRENCH SLOPES ARE 1:1 UNLESS SHOWN OTHERWISE.

DETAIL FOR SHOULDER BERM GUTTER

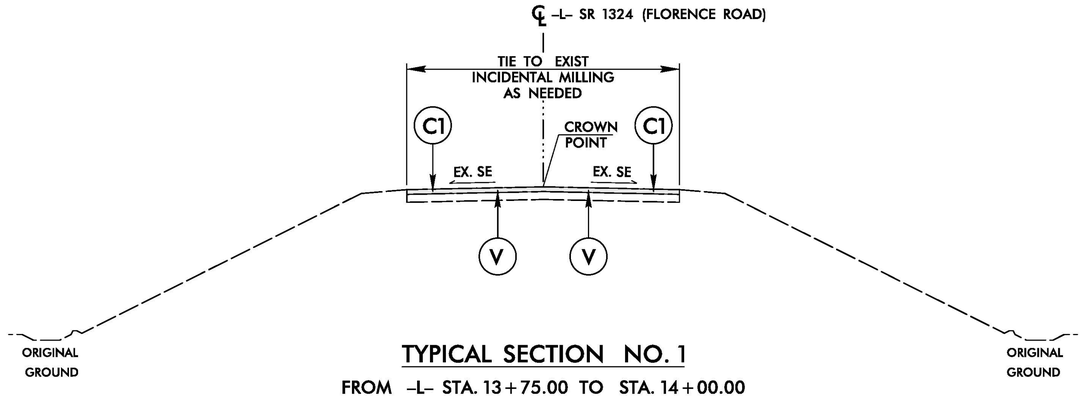
SEE CORRESPONDING TYPICAL SECTION FOR PAVEMENT DESIGN.
SEE TYPICAL SECTIONS AND PLANS FOR ACTUAL DIMENSIONS.



LINE	STATIONS
–L–	15+58.00 to 15+75.06 LT
–L–	17+10.94 to 17+28.00 LT

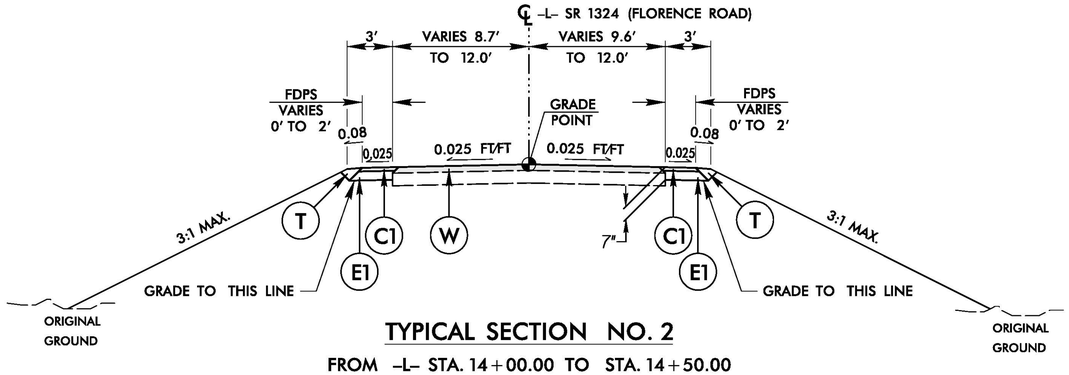


DETAIL SHOWING METHOD OF WEDGING (W)



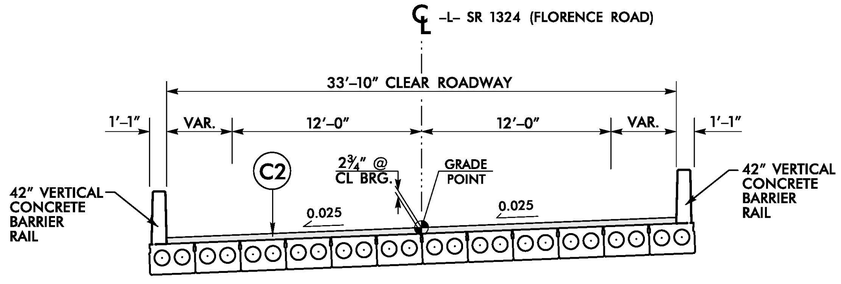
TYPICAL SECTION NO. 1

FROM –L– STA. 13+75.00 TO STA. 14+00.00
FROM –L– STA. 19+25.00 TO STA. 19+50.00



TYPICAL SECTION NO. 2

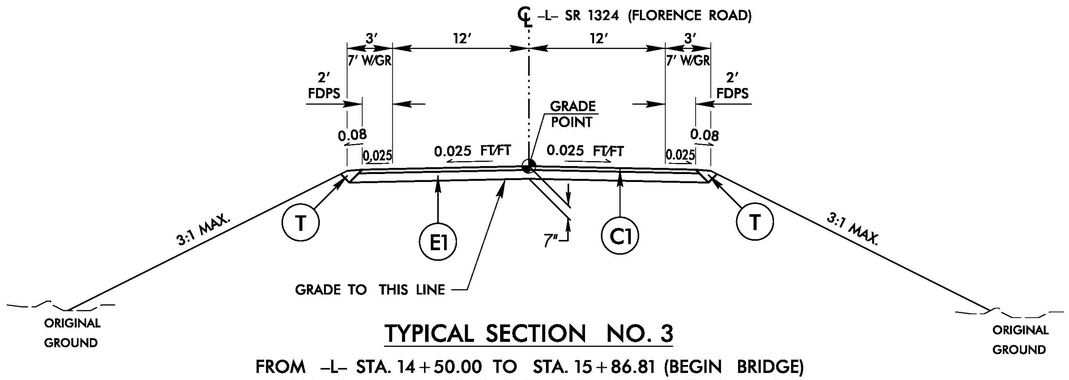
FROM –L– STA. 14+00.00 TO STA. 14+50.00
FROM –L– STA. 18+75.00 TO STA. 19+25.00



TYPICAL SECTION ON STRUCTURE

FROM –L– STA. 15+86.81 TO STA. 16+99.19

(SEE STRUCTURE PLANS FOR BRIDGE CONSTRUCTION DETAIL AND DIMENSIONING AS WELL AS DETAILS OF BRIDGE RAIL AND ASPHALT OVERLAY.)



TYPICAL SECTION NO. 3

FROM –L– STA. 14+50.00 TO STA. 15+86.81 (BEGIN BRIDGE)
FROM –L– STA. 16+99.19 (END BRIDGE) TO STA. 18+75.00

NOTE: PAVE TO THE FACE OF GUARDRAIL

PROJECT REFERENCE NO.	SHEET NO.
B-4598	4
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

TGS ENGINEERS
804-C N. LAFAYETTE ST
SHELBY, NC 28150
PH (704) 476-0003
CORP. LICENSE NO.: C-0275

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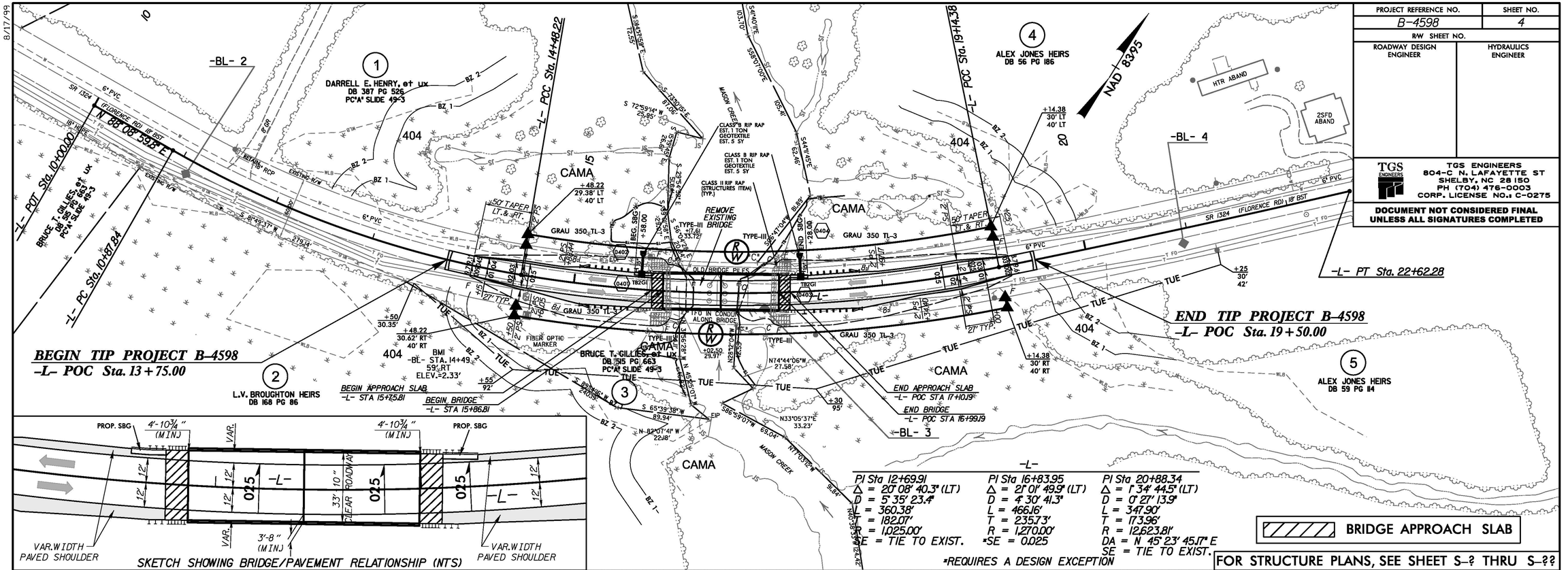
8/17/99



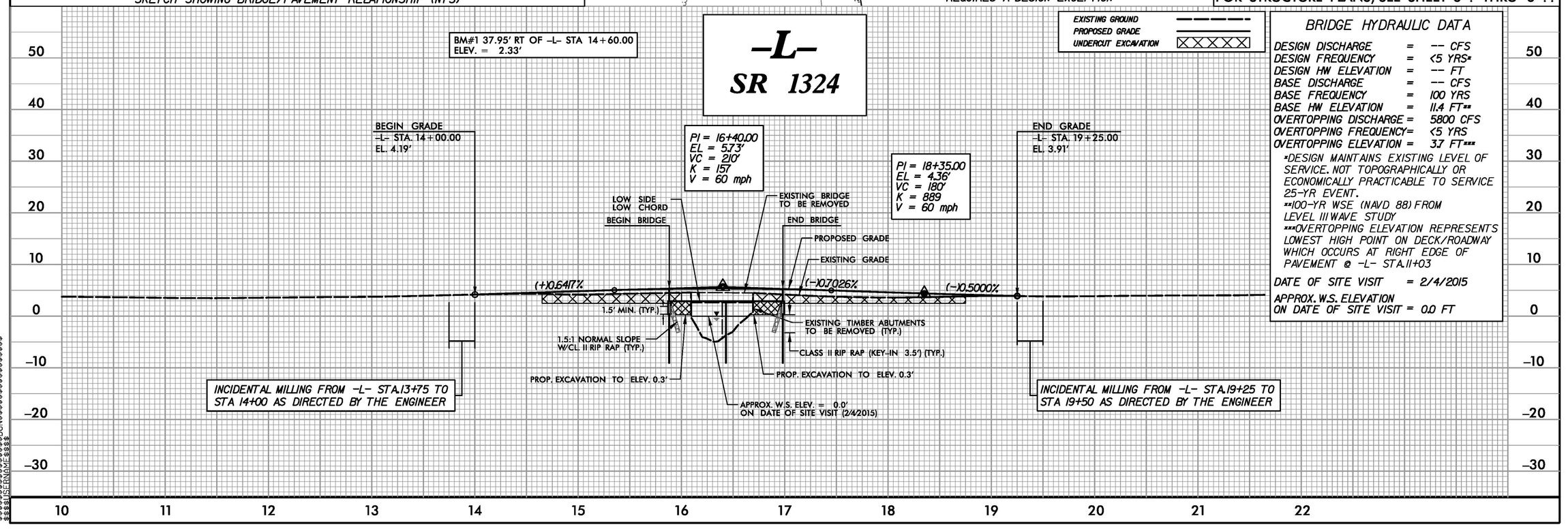
-L-

PI Sta 12+69.91	PI Sta 16+83.95	PI Sta 20+88.34
Δ = 20°08' 40.3" (LT)	Δ = 21°01' 49.9" (LT)	Δ = 1°34' 44.5" (LT)
D = 5°35' 23.4"	D = 4°30' 41.3"	D = 0°27' 13.9"
L = 360.38'	L = 466.16'	L = 347.90'
T = 182.07'	T = 235.73'	T = 173.96'
R = 1,025.00'	R = 1,270.00'	R = 12,623.81'
SE = TIE TO EXIST.	*SE = 0.025	DA = N 45°23' 45.17" E
		SE = TIE TO EXIST.

*REQUIRES A DESIGN EXCEPTION

▨ BRIDGE APPROACH SLAB

FOR STRUCTURE PLANS, SEE SHEET S-? THRU S-??



-L-
SR 1324

BM#1 37.95' RT OF -L- STA 14+60.00
ELEV. = 2.33'

EXISTING GROUND	— — — —
PROPOSED GRADE	——
UNDERCUT EXCAVATION	☒☒☒☒☒

INCIDENTAL MILLING FROM -L- STA.13+75 TO STA 14+00 AS DIRECTED BY THE ENGINEER

INCIDENTAL MILLING FROM -L- STA.19+25 TO STA 19+50 AS DIRECTED BY THE ENGINEER

BRIDGE HYDRAULIC DATA

DESIGN DISCHARGE = -- CFS
DESIGN FREQUENCY = <5 YRS*
DESIGN HW ELEVATION = -- FT
BASE DISCHARGE = -- CFS
BASE FREQUENCY = 100 YRS
BASE HW ELEVATION = 11.4 FT**
OVERTOPPING DISCHARGE = 5800 CFS
OVERTOPPING FREQUENCY = <5 YRS
OVERTOPPING ELEVATION = 3.7 FT***

*DESIGN MAINTAINS EXISTING LEVEL OF SERVICE. NOT TOPOGRAPHICALLY OR ECONOMICALLY PRACTICABLE TO SERVICE 25-YR EVENT.

**100-YR WSE (NAVD 88) FROM LEVEL III WAVE STUDY

***OVERTOPPING ELEVATION REPRESENTS LOWEST HIGH POINT ON DECK/ROADWAY WHICH OCCURS AT RIGHT EDGE OF PAVEMENT @ -L- STA.11+03

DATE OF SITE VISIT = 2/4/2015

APPROX. W.S. ELEVATION ON DATE OF SITE VISIT = 0.0 FT

$$$$SYSTIME$$$$
$$$$$$$$$$$$$$$$$DGN$$$$$$$$$$$$$$$$$$$$$$$
$$$$USERNAME$$$$

8/23/99

PROJ. REFERENCE NO.	SHEET NO.
B-4598	X-1

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	B-4598	X-2

$$$$$$SYSTIME$$$$$$
$$$$$$$$$$$$DGN$$$$$$$$$$$$$$$$$$$$
$$$$USERNAME$$$$