MINIMUM CRITERIA DETERMINATION CHECKLIST

Project No. **B-4593**
W.B.S. Project No. **42328.1.1**

Project Location:

Bridge No. 38 on NC 55 over Trent Creek in Pamlico County.

Project Description:

The proposed project involves replacing Bridge No. 38 on NC 55 over Trent Creek in Pamlico County. NC 55 runs east-west through Pamlico County and serves as the primary Hurricane Evacuation Route in the area, connecting the coastal Town of Oriental with destinations inland. The proposed project is funded through the North Carolina Highway Fund Bridge Replacement Program. Right of way acquisition and construction are scheduled for state fiscal years 2019 and 2020, respectively.

The replacement structure will be a bridge approximately 160 feet long providing a minimum of 32-foot five-inch clear deck width. The bridge will include two 12-foot lanes with four-foot offsets on each side. The bridge length is based on preliminary design information and is set by hydraulic requirements. The roadway grade of the new structure will be approximately the same as the existing structure.

Project construction will extend approximately 410 feet from the west end of the new bridge and 430 feet from the east end of the new bridge. The approaches will be widened to include a 32-foot pavement width providing two 12-foot lanes and four-foot paved shoulders on both sides. The roadway will be designed as a Rural Major Collector using American Association of State Highway and Transportation Officials (AASHTO) guidelines with a 60 mile per hour design speed.

The new bridge will be constructed on the current alignment with minimal changes to the approaching roadway. A temporary on-site detour, on the south side, will be utilized to maintain traffic during construction. The temporary on-site detour will be approximately 1450 feet long (including a 140 foot long temporary bridge) and will provide two 11-foot lanes, with four-foot shoulders.

Current cost estimates for the project are as follows:

Right of Way Acquisition: $34,160
Utilities: $43,191
Construction: $3,550,000
Total: $3,627,351

Purpose and Need:

The purpose of the proposed project is to replace a deficient bridge.

Bridge No. 38 is 145 feet long with a clear roadway width of 32 feet. The bridge has an asphalt wearing surface over a reinforced concrete floor on steel I-beams. The substructure consists of reinforced concrete caps and precast prestressed concrete (PPC) piles.

NCDOT Bridge Management Unit records indicate Bridge No. 38 has a sufficiency rating of 37.89 (per the Bridge Inspection Report dated September 5, 2017) out of a possible 100 for a new structure. Bridge No. 38 is considered structurally deficient due to a substructure condition rating of 4 out of 9. The bridge does not have a posted weight limit.

Anticipated Permit or Consultation Requirements:

Clean Water Act Permits
It is anticipated that Nationwide Permit (NWP) No. 23 will be applicable to this project. NWP No. 33 may also apply for temporary construction activities such as stream dewatering, work bridges, or temporary causeways that are often used during bridge construction or rehabilitation. The United States Army Corps of Engineers (USACE) holds the final discretion as to what permit will be required to authorize project construction. If a Section 404 permit is required then a Section 401 Water Quality Certification (WQC) from the North Carolina Division of Water Resources (NCDWR) will be needed.

Coastal Area Management Act Areas of Environmental Concern
Two Coastal Area Management Act (CAMA) Areas of Environmental Concern (AEC) were identified in the study area. Trent Creek is a designated Public Trust Water, and CAMA coastal marsh is present at wetland sites WA and WB (Figure 2). A CAMA permit from the North Carolina Division of Coastal Management (NCDCM) will be required for all impacts to designated AECs within the Study area.

US Coast Guard Permit
The proposed project received Advanced Approval from the United States Coast Guard in a letter dated August 10, 2017. A copy of the Advanced Approval letter can be found in Appendix A.

Special Project Information:

Environmental Commitments:
The list of project commitments (green sheets) is located at the end of the checklist.

Traffic Data:
Current (2017) ADT: 5288 vpd
Design (2040) ADT: 8600 vpd
TTST: 2%
Duals: 7%

Pedestrian and Bicycle Accommodations:
The proposed project is located along an existing Regional Bicycle Route (Around Pamlico Sound loop route) identified in both the Pamlico Comprehensive Transportation Plan and the Croatan Regional Bicycle and Trails Plan. The NCDOT Division of Bicycle and Pedestrian Transportation recommends minimum five-foot offsets on both sides of the bridge, continuing as paved shoulders for at least 100 feet on either side of the bridge, as well as 54 inch bicycle safe railings.

Bridge Demolition:
Bridge No. 38 includes a substructure composed of PPC piles with reinforced concrete caps and a superstructure composed of an asphalt wearing surface over a reinforced concrete floor on steel I-beams. All remnant piles from the existing bridge or previous bridges will be removed from Trent Creek during construction of this project. In the event that a pile cannot be removed completely, the pile shall be cutoff at the mud line. Removal of the current bridge should be possible with no resulting debris in the water based on standard demolition practices.

Design Exceptions:
There are no anticipated design exceptions for this project.

Alternatives Considered:

No Build – The no build alternative would eventually necessitate closure of the bridge and NC 55. This is unacceptable given that NC 55 is a primary Hurricane Evacuation Route for the area and given the volume of traffic served by this route.

Off-site Detour – An off-site detour alternative is not feasible given that NC 55 is a primary Hurricane Evacuation Route for the area, traffic volume served by the route, and limited connectivity to other major routes in the project vicinity. The Pamlico County EMS Director stated that there would be a high impact if the bridge was closed and an on-site detour was not provided due to concerns of its effect on fire, medical, and law enforcement response. An off-site detour would also be an impact to business, industry traffic, and to school transportation operations in the area. An off-site detour would require an additional 18.7 miles of travel per trip (an estimated travel time of 14 minutes).

Replace on New Location – New location alignments were eliminated from consideration due to anticipated impacts to the surrounding wetland systems. A new alignment alternative would also introduce an undesirable geometric alignment in to an otherwise straight section of NC 55.

Public Involvement:
On February 3, 2015, landowner notification letters were sent to all property owners affected directly by this project. Property owners were invited to comment. No comments have been received to date.

PART A: MINIMUM CRITERIA

		YES	NO
1.	Will the proposed project involve land disturbing activity of more than ten acres that will result in substantial, permanent changes in the natural cover or topography of those lands?	☐	☒
2.	Will the proposed project require the expenditure of more than ten million dollars in public funds?	☐	☒
3.	Is the proposed project listed as a type and class of activity which would qualify as a Non-Major Action under the Minimum Criteria rules?	☒	☐

If "yes", under which category? **Category #9 & #26**

If "yes" is selected for either Question 1 or 2 and "no" is selected for Question 3, then the project does not qualify as a Non-Major Action. A state environmental impact statement (SEIS) or state environmental assessment (SEA) will be required.

PART B: MINIMUM CRITERIA EXCEPTIONS

		YES	NO
4.	Does the proposed activity have a significant adverse effect on wetlands; surface waters such as rivers, streams, and estuaries; parklands; prime or unique agricultural lands; or areas of recognized scenic, recreational, archaeological, or historical value?	☐	☒
5.	Will the proposed activity endanger the existence of a species on the Department of Interior's threatened and endangered species list?	☐	☒
6.	Would the proposed activity cause significant changes in land use concentrations that would be expected to create adverse air quality impacts?	☐	☒
7.	Would the proposed activity cause significant changes in land use concentrations that would be expected to create adverse water quality or groundwater impacts?	☐	☒
8.	Is the proposed activity expected to have a significant adverse effect on long-term recreational benefits?	☐	☒
9.	Is the proposed activity expected to have a significant adverse effect on shellfish, finfish, wildlife, or their natural habitats?	☐	☒
10.	Will the proposed activity have secondary impacts or cumulative impacts that may result in a significant adverse impact to human health or the environment?	☐	☒
11.	Is the proposed activity of such an unusual nature or does the proposed activity has such widespread implications, that an uncommon concern for its environmental effects has been expressed to the NCDOT?	☐	☒

Note: If any of Questions 4 through 11 in part B is answered "YES", the proposed project does not qualify as a Non-Major Action. A SEIS or SEA will be required.

PART C: COMPLIANCE WITH STATE AND FEDERAL REGULATIONS

		YES	NO
	Ecological Impacts		
12.	Is a federally protected threatened or endangered species, or its habitat, likely to be impacted by the proposed action?	☒	☐
13.	Does the action require the placement of fill in waters of the United States?	☒	☐
14.	Does the project require the placement of a significant amount of fill in high quality or relatively rare wetland ecosystems, such as mountain bogs or pine savannahs?	☐	☒
15.	Does the project require stream relocation or channel changes?	☐	☒
16.	Is the proposed action located in an Area of Environmental Concern, as defined in the Coastal Area Management Act?	☒	☐
	Cultural Resources		
17.	Will the project have an "effect" on a property or site listed on the National Register of Historic Places?	☐	☒
18.	Will the proposed action require acquisition of additional right of way from publicly owned parkland or recreational areas?	☐	☒

Response to Question 12: The US Fish and Wildlife Service has developed a programmatic biological opinion (PBO) in conjunction with the Federal Highway Administration (FHWA), the USACE and NCDOT for the northern long-eared bat (NLEB) (*Myotis septentrionalis*) in eastern North Carolina. The PBO covers the entire NCDOT program in Divisions 1-8, including all NCDOT projects and activities. The programmatic determination for NLEB for the NCDOT program is **May Affect, Likely to Adversely Affect**. The PBO provides incidental take coverage for NLEB and will ensure compliance with Section 7 of the Endangered Species Act for five years for all NCDOT projects with a federal nexus in Divisions 1-8, which includes Pamlico County.

Of the eight federally protected species listed for Pamlico County, the NRTR prepared for the project found that only the West Indian manatee (*Trichechus manatus*) may inhabit Trent Creek. Trent Creek within the study area is a large, brackish creek which flows into the Bay River. A review of North Carolina Natural Heritage Program records dated January 2015 show that West Indian manatees have been documented within 1 mile of the study area. The NC Department of Transportation will adhere to recommendations listed in the USFWS publication *Guidelines for Avoiding Impacts to the West Indian Manatee –Precautionary Measures for Construction Activities in North Carolina Waters* (USFWS 2003) during construction. Adherence to these recommendations will minimize the likelihood of adverse effects to this species. For this reason, project implementation is not likely to adversely affect this species.

Response to Question 13: One jurisdictional stream was identified in the study area (Figure 2). Jurisdictional characteristics of the water resource and estimated impacts are shown in Table 1.

Table 1. Jurisdictional characteristics and estimated impact to water resources

Map ID	Classification	Compensatory Mitigation Required	Neuse River Buffer Impacts* (ac.)			Stream Impacts* (ft.)	
			Zone	PERM	TEMP	PERM	TEMP
Trent Creek	Perennial	Yes	Zone 1	0.18	0.09	118	47
			Zone 2	0.13	0.06		

*Impacts are based on construction limits plus a 25-foot buffer

Three jurisdictional wetlands were identified within the study area. Wetland classification, quality rating data and anticipated impacts are presented in Table 2. The locations of these wetlands are shown in Figure 2. All wetlands in the study area are within the Neuse River basin (USGS Hydrologic Unit 03020204). Additional description of these wetlands can be found in the NRTR.

Table 2. Jurisdictional characteristics and estimated impact to wetlands

Map ID	NCWAM Classification	Hydrologic Classification	NCDWR Wetland Rating	Impacts*(ac.)	
				PERM	TEMP
WA	Brackish Marsh	Riparian	62	0.49	0
WB	Brackish Marsh	Riparian	62	0.37	0.71
WC	Non-tidal Freshwater Marsh	Riparian	35	0	0
			Total	**0.86**	**0.71**

*Impacts are based on construction limits plus a 25-foot buffer

Exact impact acreages, including required extent of fill placement, will be determined during final design. The amount of water resources and wetlands within the project study area, described above, represents the maximum extent of potential fill in Waters of the United States.

Response to Question 16: Two Coastal Area Management Act (CAMA) Areas of Environmental Concern (AEC) were identified in the study area. Trent Creek is a designated Public Trust Water, and CAMA coastal marsh is present at wetland sites WA and WB (Figure 2). A CAMA permit from the North Carolina Division of Coastal Management (NCDCM) will be required for all impacts to designated AECs within the study area. Placement of the temporary on-site detour route on the south side of the existing alignment will minimize impacts to these designated AECs.

PART D: (To be completed when either category #8 or #15 of the rules is used.)

19.	Project length:	NA
20.	Right of Way width:	NA
21.	Total Acres of Disturbed Ground Surface:	NA
22.	Total Acres of Wetland Impacts:	NA
23.	Total Linear Feet of Stream Impacts:	NA
24.	Project Purpose:	NA

Reviewed by:

2/7/2018 — Matthew W. Potts, P.E.
Date — Consultant Project Manager

2/28/18 — [signature]
Date — Project Development Engineer
Project Delivery Team

2-28-18 — [signature]
Date — Team Lead
Project Delivery Team

PROJECT COMMITMENTS:

Pamlico County
Bridge No. 38 on NC 55
Over Trent Creek
W.B.S. No. 42328.1.1
T.I.P. No. B-4593

All Design Groups, Division 2 Resident Construction Engineer
Trent Creek has been identified by the NC Wildlife Resource Commission (NCWRC) as anadromous fish habitat. As a result, a construction moratorium will be in effect from February 15 to June 30 of any given year.

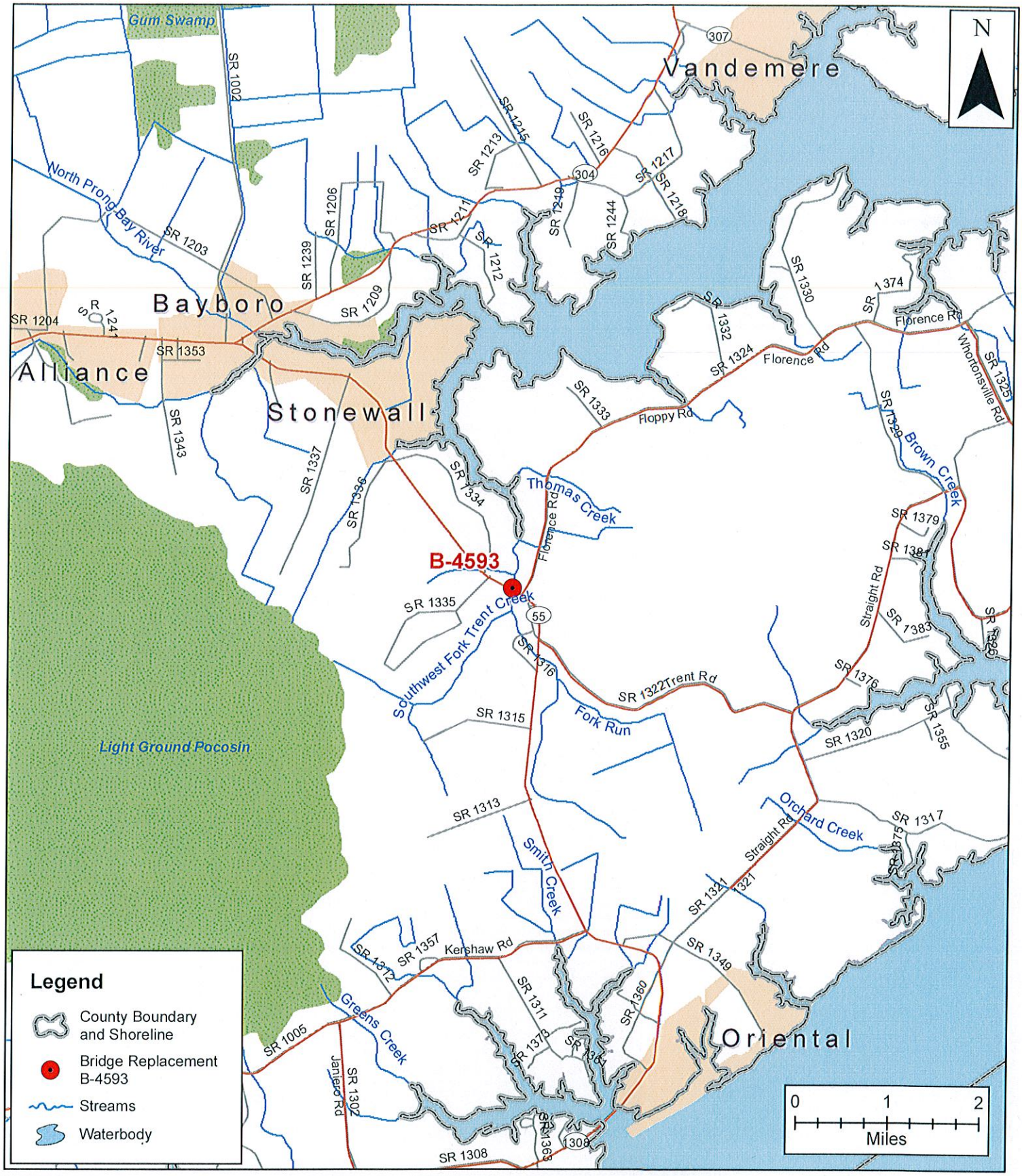
Roadway Design Unit, Structures Management Unit, Bicycle and Pedestrian Division
The proposed project is located along an existing Regional Bicycle Route (Around Pamlico Sound loop route) identified in both the Pamlico Comprehensive Transportation Plan 2012 and the Croatan Regional Bicycle and Trails Plan. The proposed project includes four foot eight and a half inch offset, between the outside of the travel lane and the bridge rail parapet, on the bridge structure. A variable width (four to 8 foot) paved shoulder, which extends approximately 410 feet from the west end of the bridge and 430 feet from the east end of the bridge, also can accommodate bicycles. The structure will provide 2 bar metal railing, as appropriate for bicycle use.

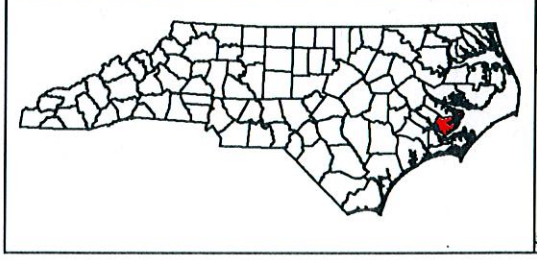
Natural Environment Section
Two Coastal Area Management Act (CAMA) Areas of Environmental Concern (AEC) were identified in the study area. Trent Creek is a designated Public Trust Water, and CAMA coastal marsh is present at wetland sites WA and WB. A CAMA permit from the North Carolina Division of Coastal Management (NCDCM) will be required for all impacts to designated AECs within the study area. A CAMA major development permit will be acquired prior to construction.

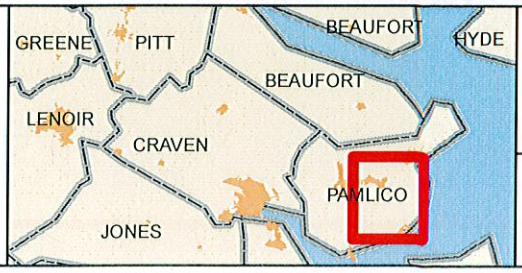
Natural Environment Section
Suitable habitat for West Indian manatee exists in the study area. A review of NCNHP records, updated January 2015, indicates there are known West Indian manatee occurrences within 1.0 miles of the study area. Construction activities will adhere to the recommendations outlined in ***Guidelines for Avoiding Impacts to the West Indian Manatee****: Precautionary Measures for Construction Activities in North Carolina Waters (2003 USFWS).*

Roadway Design Unit, Division 2
All remnant piles from the existing bridge or any previous bridges will be removed from Trent Creek during construction of this project. In the event that a pile cannot be removed completely, the pile will be cutoff at the mud line.

Hydraulics Unit, Natural Environment Section
The Neuse River Basin Rule applies to this project.



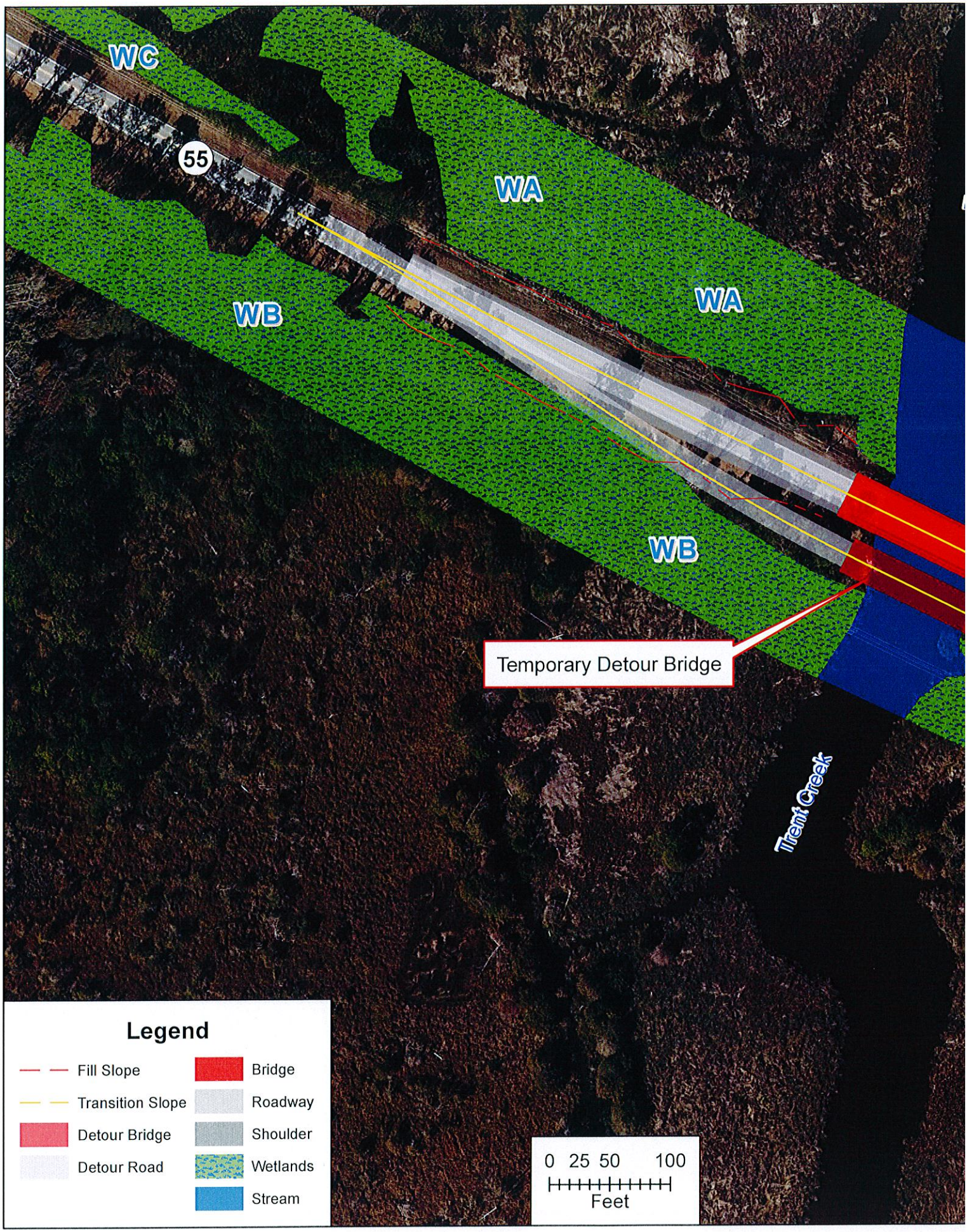




Vicinity Map
B-4593
Replace Bridge No. 38 on NC 55
over Trent Creek
Pamlico County

North Carolina Department of Transportation, Project Development & Environmental Analysis Unit

FIGURE 1


WC
55
WA
WA
WB
WB
Temporary Detour Bridge
Trent Creek
Legend
Fill Slope
Transition Slope
Detour Bridge
Detour Road
Bridge
Roadway
Shoulder
Wetlands
Stream
0 25 50 100
Feet

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

16591
16 AUG 2017

Mr. David Stutts, P.E.
Transportation Engineer Supervisor
NCDOT Structures Management Unit
1581 Mail Service Center
Raleigh, NC 27699-1581

Dear Mr. Stutts:

Coast Guard review of your proposed project as provided in your email dated July 14, 2017, 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 Bridge across Trent Creek, at position (35° 38.63N, 76° 48.16W), at Pamlico County, 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. The notice should include details of the project; dates and hours of operation; and vessels, barges and equipment to be used during 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. The bridge owner or contractor is required to maintain close and regular contact with Coast Guard Sector North Carolina at (910) 772-2230 to keep them informed of activities on the waterway.

c. The lowest portion of the superstructure of the bridge across the waterway should clear the l00-year flood height elevation, if feasible.

Project Tracking No. (Internal Use)

15-02-0036

HISTORIC ARCHITECTURE AND LANDSCAPES NO SURVEY REQUIRED 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:	B-4593	***County***:	Pamlico
WBS No.:	38422.1.2	***Document Type:***	
Fed. Aid No:	BRSTP-55(34)	***Funding***:	State X Federal
Federal Permit(s):	X Yes No	***Permit Type(s)***:	Not specified in review request
Project Description: Replace Bridge No. 38 on NC 55 over Trent Creek (no off-site detour planned).			

SUMMARY OF HISTORIC ARCHITECTURE AND LANDSCAPES REVIEW

DESCRIPTION OF REVIEW ACTIVITIES, RESULTS, AND CONCLUSIONS: HPOWeb reviewed on 13 March 2015 and yielded no NR, SL, DE, LD or SS properties in the Area of Potential Effects (APE). Pamlico County current GIS mapping, aerial photography, and tax information indicated a mostly wooded APE with several parcels containing resources dating from the 1990s (viewed 13 March 2015). Two houses dating from the early 1960s, one each at the extreme eastern and western ends of the APE, are unexceptional, modified examples of their types. Constructed in 1960, Bridge No. 26 is not eligible for the National Register according to the NCDOT Historic Bridge Survey as it is not representative of any distinctive engineering or aesthetic type. Google Maps "Street View" confirmed the absence of critical historic architectural and landscape resources, including the previously surveyed W. C. Keel House and Store (PM0072), in the APE (viewed 13 March 2015).

No architectural survey is required for the project as currently defined.

***WHY THE AVAILABLE INFORMATION PROVIDES A RELIABLE BASIS FOR REASONABLY PREDICTING THAT THERE ARE NO UNIDENTIFIED SIGNIFICANT HISTORIC ARCHITECTURAL OR LANDSCAPE RESOURCES IN THE PROJECT AREA*:** APE extends 1200 feet from the either end of the existing bridge (SE-NW) and 200 feet to either side of the NC 55 centerline (NE-SW) to encompass proposed construction activities. The comprehensive county architectural survey and related publication, as well as later investigations, recorded no properties in the APE (Angela Barnett, *Pamlico County Imagery – An Architectural Survey* ([Bayboro]: The Pamlico County Historical Association, 1980)). County GIS/tax materials and other visuals support the absence of significant architectural and landscape resources. No National Register-listed or –eligible properties are located within the APE.

Should any aspect of the project design change, please notify NCDOT Historic Architecture as additional review may be necessary.

SUPPORT DOCUMENTATION

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

FINDING BY NCDOT ARCHITECTURAL HISTORIAN

Historic Architecture and Landscapes -- **NO SURVEY REQUIRED**

Vanessa C. Patrick — 13 March 2015

NCDOT Architectural Historian — Date

Ballahack fine sandy loam (Ba). The Ballahack series is described as nearly level, very poorly drained and subject to occasional flooding. Significant resources along this series are unlikely due to persistent wetness as well. The Charleston series is also nearly level but moderately well drained. It does have the potential of producing intact and significant deposits, since it is typically dry and minimal disturbed.

A review of the site files suggest that B-4593 might have been previously reviewed by OSA, but no Environmental Review (ER) number associated with the project could be found. Very few investigations have been conducted in the area with all known sites being reported over a mile away. Overall, more work is needed in the area to better understand site placement and prediction in this portion of the county.

Lastly, a historic map review was conducted. Most early maps provide only general details concerning the region illustrating just major roads, settlements, and drainages. The MacRae and Tanner's *New Map of the State of North Carolina* from 1833 is typical of the 18th and 19th centuries (Figure 3). This map depicts a road in the vicinity of NC 55 crossing over Trent Creek, but the exact route is not clear. In addition, no structures are shown. By the early 20th century, maps in which the project area can be accurately determined are more common. The 1934 Soil Survey map for the county illustrates a road with a similar layout as NC 55 with a bridge over Trent Creek at or near the current bridge (Figure 4). This map also plots a structure at the location of the W.C. Keel House and Store. All other structures are well away from the project limits.

A preliminary background investigation suggests that additional work is needed within the proposed project area. Moderately well drained soils along the terraces could potential yield archaeological sites, which might be significant to the region's history. In addition, remains of the W.C. Keel House and Store at the southeastern end of the APE could provide important information on the historic settlement of the county. Additional work in the form of a reconnaissance and subsurface testing on the terraces is recommended in order to record possible significant archaeological sites that might be impacted by the proposed replacement of Bridge No. 38 in Pamlico County.

SUPPORT DOCUMENTATION

See attached: ☒ Map(s) ☐ Previous Survey Info ☐ Photos ☐ Correspondence
☐ Photocopy of County Survey Notes Other: **Images from historic maps**

FINDING BY NCDOT ARCHAEOLOGIST – *SURVEY REQUIRED*

C. Damon Jones 3/5/15

C. Damon Jones Date
NCDOT ARCHAEOLOGIST II

5/22/15

Proposed fieldwork completion date

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

Bridge No. 38 is located just north of Merritt and south of Stonewall in Pamlico County, North Carolina. The project area is plotted in the northwest corner of the Oriental USGS 7.5' topographic quadrangle (Figure 1).

A map review and site file search was conducted at the Office of State Archaeology (OSA) on February 19, 2015. No previously recorded archaeological sites are reported within the APE or a mile of the bridge. According to the North Carolina State Historic Preservation Office online data base (HPOWEB 2015), surveyed resources, the W.C. Keel House and Store (PM 72), fall within the northeastern quadrant of the APE (Figure 2). These structures are no longer standing. Topographic maps, USDA soil survey maps, aerial photographs (NC One Map), historic maps (North Carolina maps website), and Google Street View application were examined for information on environmental and cultural variables that may have contributed to prehistoric or historic settlement within the project limits and to assess the level of ground disturbance. An archaeological field investigation was carried out on March 25, 2015, to evaluate the project area.

Bridge No. 38 and NC 55 cross Trent Creek from the northwest to southeast. The stream drains to the north and into the Bay River. These waterways are part of the Neuse drainage basin. The APE contains a floodplain or marsh with a stream terrace to the southeast (see Figure 2; Figures 3–6). Although it was originally thought that the stream terrace to the northwest fell within the APE, it is actually just outside the project limits. The marsh rises slightly to the northwest to allow for the growth of large pines, but the soil is still poorly drained with standing water. Artificial terraces have been built alongside the road at the ends of the bridge. These areas consist of fill and recent alluvial soils. Overall, ground disturbance is minimal. Properties consist mostly of wetland vegetation and wooded lots, but a residential property is in the southeast corner of the APE.

The APE is composed of three soil types according to the USDA soil survey map (see Figure 2). The floodplain or marsh is made up of Lafitte muck (LF). The series is nearly level, very poorly drained, and frequently flooded. It is unlikely to yield any significant cultural resources associated with early settlement activities due to being persistently wet. The stream terraces are reported to consist of Charleston loamy fine sand (Cs) or Ballahack fine sandy loam (Ba). The Ballahack series is described as nearly level, very poorly drained and subject to occasional flooding. Significant resources along this series are unlikely due to persistent wetness as well. The Charleston series is also nearly level but moderately well drained. It does have the potential of producing intact and significant deposits, since it is typically dry and minimal disturbed. However, the field investigation revealed that the reported Charleston series to the northwest is not actually situated on a terrace but still in the floodplain or marsh. The soils are poorly drained with standing water and are more likely the Ballahack or Lafitte series with the Charleston series located outside of the APE.

A review of the site files suggest that B-4593 might have been previously reviewed by OSA, but no Environmental Review (ER) number associated with the project could be found. Very few investigations have been conducted in the area with all known sites being reported over a mile away. Overall, more work is needed in the area to better understand site placement and prediction in this portion of the county.

Lastly prior to fieldwork, a historic map review was conducted. Most early maps provide only general details concerning the region illustrating just major roads, settlements, and drainages. The MacRae and Tanner's *New Map of the State of North Carolina* from 1833 is typical of the 18th and 19th centuries (Figure 7). This map depicts a road in the vicinity of NC 55 crossing over Trent Creek, but the exact route is not clear. In addition, no structures are shown. By the early 20th century, maps in which the project area can be accurately determined are more common. The 1934 Soil Survey map for the county illustrates a road with a similar layout as NC 55 with a bridge over Trent Creek at or near the current

Project Tracking No.:

15-02-0036

SUPPORT DOCUMENTATION

See attached: ☒ Map(s) ☐ Previous Survey Info ☒ Photos ☐ Correspondence

Other: **images of historic maps consulted**

Signed:

C. Damon Jones — 4/1/15

C. Damon Jones — **Date**

NCDOT ARCHAEOLOGIST