

CATEGORICAL EXCLUSION ACTION CLASSIFICATION FORM

TIP Project No.	<u>B-5546</u>
W.B.S. No.	<u>45538.1.1</u>
Federal Project No.	<u>BRZ-2481 (1)</u>

A. Project Description:

The purpose of this project is to replace Randolph County Bridge No. 307 on SR 2481 (Low Bridge Rd.) over Mount Pleasant Creek. Bridge No. 307 is 45 feet long. The replacement structure will be a bridge approximately 80 feet long providing a minimum 27'-10" clear deck width. The bridge will include two 10-foot lanes and 3'11" offsets. 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.

The approach roadway will extend approximately 190 feet from the northwest end of the new bridge and 325 feet from the southeast end of the new bridge. The approaches will be widened to include a 20-foot pavement width providing two 10-foot lanes. Three-foot grass shoulders will be provided on each side (6-foot shoulders where guardrail is included). The roadway will be designed as a Rural Local Route using Sub-Regional Tier Guidelines with a 40 mile per hour design speed.

Traffic will be detoured off-site during construction (see Figure 1).

B. Purpose and Need:

NCDOT Bridge Management Unit records indicate Bridge No. 307 has a sufficiency rating of 21.38 out of a possible 100 for a new structure.

The bridge is considered structurally deficient due to a structural evaluation 3 out of 9 according to Federal Highway Administration (FHWA) standards. The bridge also meets the criteria for functionally obsolete due to a deck geometry appraisal of 2 out of 9.

The superstructure and substructure of Bridge No. 307 have timber elements that are fifty-three years old. Timber components have a typical life expectancy between 40 to 50 years due to the natural deterioration rate of wood. Rehabilitation of a timber structure is generally practical only when a few elements are damaged or prematurely deteriorated. However, past a certain degree of deterioration, most timber elements become impractical to maintain and upon eligibility are programmed for replacement. Timber components of Bridge No. 307 are experiencing an increasing degree of deterioration that can no longer be addressed by reasonable maintenance activities; therefore the bridge is approaching the end of its useful life.

Bridge No. 307 carries 400 vehicles per day with 700 vehicles per day projected for the year 2040. The posted weight limit on the bridge is down to 27 tons for single vehicles and 32 tons for truck-tractor semi-trailers. The substandard deck width is becoming increasingly unacceptable and replacement of the bridge will result in safer traffic operations.

C. Proposed Improvements:

Circle one or more of the following Type II improvements which apply to the project:

1. Modernization of a highway by resurfacing, restoration, rehabilitation, reconstruction, adding shoulders, or adding auxiliary lanes (e.g., parking, weaving, turning, climbing).
 - a. Restoring, Resurfacing, Rehabilitating, and Reconstructing pavement (3R and 4R improvements)
 - b. Widening roadway and shoulders without adding through lanes
 - c. Modernizing gore treatments
 - d. Constructing lane improvements (merge, auxiliary, and turn lanes)
 - e. Adding shoulder drains
 - f. Replacing and rehabilitating culverts, inlets, and drainage pipes, including safety treatments
 - g. Providing driveway pipes
 - h. Performing minor bridge widening (less than one through lane)
 - i. Slide Stabilization
 - j. Structural BMP's for water quality improvement
2. Highway safety or traffic operations improvement projects including the installation of ramp metering control devices and lighting.
 - a. Installing ramp metering devices
 - b. Installing lights
 - c. Adding or upgrading guardrail
 - d. Installing safety barriers including Jersey type barriers and pier protection
 - e. Installing or replacing impact attenuators
 - f. Upgrading medians including adding or upgrading median barriers
 - g. Improving intersections including relocation and/or realignment
 - h. Making minor roadway realignment
 - i. Channelizing traffic
 - j. Performing clear zone safety improvements including removing hazards and flattening slopes
 - k. Implementing traffic aid systems, signals, and motorist aid
 - l. Installing bridge safety hardware including bridge rail retrofit
3. Bridge rehabilitation, reconstruction, or replacement or the construction of grade separation to replace existing at-grade railroad crossings.
 - a. Rehabilitating, reconstructing, or replacing bridge approach slabs
 - b. Rehabilitating or replacing bridge decks

- c. Rehabilitating bridges including painting (no red lead paint), scour repair, fender systems, and minor structural improvements
 - d. Replacing a bridge (structure and/or fill)
4. Transportation corridor fringe parking facilities.
 5. Construction of new truck weigh stations or rest areas.
 6. Approvals for disposal of excess right-of-way or for joint or limited use of right-of-way, where the proposed use does not have significant adverse impacts.
 7. Approvals for changes in access control.
 8. Construction of new bus storage and maintenance facilities in areas used predominantly for industrial or transportation purposes where such construction is not inconsistent with existing zoning and located on or near a street with adequate capacity to handle anticipated bus and support vehicle traffic.
 9. Rehabilitation or reconstruction of existing rail and bus buildings and ancillary facilities where only minor amounts of additional land are required and there is not a substantial increase in the number of users.
 10. Construction of bus transfer facilities (an open area consisting of passenger shelters, boarding areas, kiosks and related street improvements) when located in a commercial area or other high activity center in which there is adequate street capacity for projected bus traffic.
 11. Construction of rail storage and maintenance facilities in areas used predominantly for industrial or transportation purposes where such construction is not inconsistent with existing zoning and where there is no significant noise impact on the surrounding community.
 12. Acquisition of land for hardship or protective purposes, advance land acquisition loans under section 3(b) of the UMT Act. Hardship and protective buying will be permitted only for a particular parcel or a limited number of parcels. These types of land acquisition qualify for a CE only where the acquisition will not limit the evaluation of alternatives, including shifts in alignment for planned construction projects, which may be required in the NEPA process. No project development on such land may proceed until the NEPA process has been completed.
 13. Acquisition and construction of wetland, stream and endangered species mitigation sites.
 14. Remedial activities involving the removal, treatment or monitoring of soil or groundwater contamination pursuant to state or federal remediation guidelines.

D. Special Project Information:

The estimated costs, based on 2014 prices, are as follows:

Structure	\$ 240,000
Roadway Approaches	133,000
Structure Removal	18,000
Misc. & Mob.	164,000
Eng. & Contingencies	95,000
Total Construction Cost	\$ 650,000
Right-of-way Costs	21,000
Right-of-way Utility Costs	0
Total Project Cost	\$ 671,000

Estimated Traffic:

Current	-	400 vpd
Year 2040	-	700 vpd
TTST	-	1%
Dual	-	8%

Accidents: Traffic Engineering has evaluated a recent three year period and found that there were no accidents occurring in the vicinity of the project.

Design Exceptions: There are design exceptions for design speed, sag vertical curve K factor and nighttime stopping site distance.

Pedestrian and Bicycle Accommodations: This portion of SR 2481 is not a part of a designated bicycle route nor is it listed in the Transportation Improvement Program (TIP) as a bicycle project. Neither permanent nor temporary bicycle nor pedestrian accommodations are required for this project.

Bridge Demolition: Bridge No. 307 is constructed entirely of timber and steel and should be possible to remove with no resulting debris in the water based on standard demolition practices.

Alternatives Discussion:

No Build – The no build alternative would result in eventually closing the road which is unacceptable given the volume of traffic served by SR 2481.

Rehabilitation – The bridge was constructed in 1961 and the timber materials within the bridge are reaching the end of their useful life. Rehabilitation would require replacing the timber components which would constitute effectively replacing the bridge.

Offsite Detour – Bridge No. 307 will be replaced on the existing alignment. Traffic will be detoured offsite (see Figure 1) during the construction period. NCDOT Guidelines for Evaluation of Offsite Detours for Bridge Replacement Projects considers multiple project variables

beginning with the additional time traveled by the average road user resulting from the offsite detour. The offsite detour for this project would include SR 2455 (Hardin Ellison Rd.), SR 2495 (Academy St.), SR 2491 (Patterson Grove Rd.), and SR 2442 (Ramseur Julian Rd.) The majority of traffic on the road is through traffic. The detour for the average road user would result in 1 minute additional travel time (.6 miles additional travel). Up to 12-month duration of construction is expected on this project.

Based on the Guidelines, the criteria above indicate that on the basis of delay alone, the detour is acceptable. Randolph County Emergency Services along with Randolph County Schools Transportation have also indicated that the detour is acceptable. NCDOT Division 8 has indicated the condition of all roads, bridges and intersections on the offsite detour are acceptable without improvement and concurs with the use of the detour.

Onsite Detour – An onsite detour was not evaluated due to the presence of an acceptable offsite detour.

Staged Construction – Staged construction was not considered because of the availability of an acceptable offsite detour.

New Alignment – Given that the alignment for SR 2481 is acceptable, a new alignment was not considered as an alternative.

Other Agency Comments:

The **N.C. Wildlife Resource Commission** and **U.S. Fish & Wildlife Service** in standardized letters provided a request that they prefer any replacement structure to be a spanning structure.

Response: NCDOT will be replacing the existing bridge with a new bridge.

The **N.C. Division of Water Quality** and the **Army Corps of Engineers** had no special concerns for this project.

Public Involvement:

A newsletter has been sent to all those living along SR 2481. No comments have been received to date.

Based on the lack of responses to the newsletter, a Public Meeting was determined unnecessary.

E. Threshold Criteria

The following evaluation of threshold criteria must be completed for Type II actions

<u>ECOLOGICAL</u>	<u>YES</u>	<u>NO</u>
(1) Will the project have a substantial impact on any unique or important natural resource?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
(2) Does the project involve habitat where federally listed endangered or threatened species may occur?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
(3) Will the project affect anadromous fish?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
(4) If the project involves wetlands, is the amount of permanent and/or temporary wetland taking less than one-tenth (1/10) of an acre and have all practicable measures to avoid and minimize wetland takings been evaluated?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
(5) Will the project require the use of U. S. Forest Service lands?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
(6) Will the quality of adjacent water resources be adversely impacted by proposed construction activities?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
(7) Does the project involve waters classified as Outstanding Resources Waters (ORW) and/or High Quality Waters (HQW)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
(8) Will the project require fill in waters of the United States in any of the designated mountain trout counties?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
(9) Does the project involve any known underground storage tanks (UST's) or hazardous materials sites?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<u>PERMITS AND COORDINATION</u>	<u>YES</u>	<u>NO</u>
(10) If the project is located within a CAMA county, will the project significantly affect the coastal zone and/or any "Area of Environmental Concern" (AEC)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
(11) Does the project involve Coastal Barrier Resources Act resources?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
(12) Will a U. S. Coast Guard permit be required?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
(13) Could the project result in the modification of any existing regulatory floodway?	<input checked="" type="checkbox"/>	<input type="checkbox"/>

(14) Will the project require any stream relocations or channel changes? x

SOCIAL, ECONOMIC, AND CULTURAL RESOURCES

YES NO

(15) Will the project induce substantial impacts to planned growth or land use for the area? x

(16) Will the project require the relocation of any family or business? x

(17) Will the project have a disproportionately high and adverse human health and environmental effect on any minority or low-income population? x

(18) If the project involves the acquisition of right of way, is the amount of right of way acquisition considered minor? x

(19) Will the project involve any changes in access control? x

(20) Will the project substantially alter the usefulness and/or land use of adjacent property? x

(21) Will the project have an adverse effect on permanent local traffic patterns or community cohesiveness? x

(22) Is the project included in an approved thoroughfare plan and/or Transportation Improvement Program (and is, therefore, in conformance with the Clean Air Act of 1990)? x

(23) Is the project anticipated to cause an increase in traffic volumes? x

(24) Will traffic be maintained during construction using existing roads, staged construction, or on-site detours? x

(25) If the project is a bridge replacement project, will the bridge be replaced at its existing location (along the existing facility) and will all construction proposed in association with the bridge replacement project be contained on the existing facility? x

(26) Is there substantial controversy on social, economic, or environmental grounds concerning the project? x

(27) Is the project consistent with all Federal, State, and local laws relating to the environmental aspects of the project? x

(28) Will the project have an "effect" on structures/properties eligible for or listed on the National Register of Historic Places? x

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|------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|--------------|
| (29) | Will the project affect any archaeological remains which are important to history or pre-history? | <input type="checkbox"/> | <u> x </u> |
| (30) | Will the project require the use of Section 4(f) resources (public parks, recreation lands, wildlife and waterfowl refuges, historic sites, or historic bridges, as defined in Section 4(f) of the U. S. Department of Transportation Act of 1966)? | <input type="checkbox"/> | <u> x </u> |
| (31) | Will the project result in any conversion of assisted public recreation sites or facilities to non-recreation uses, as defined by Section 6(f) of the Land and Water Conservation Act of 1965, as amended? | <input type="checkbox"/> | <u> x </u> |
| (32) | Will the project involve construction in, across, or adjacent to a river designated as a component of or proposed for inclusion in the National System of Wild and Scenic Rivers? | <input type="checkbox"/> | <u> x </u> |

F. Additional Documentation Required for Unfavorable Responses in Part E

Response to Question 2: Suitable habitat for the Schweinitz's sunflower is present in the project study area along the roadside right-of-ways, maintained lawns, and edges of the fallow agricultural fields. A survey was completed September 12, 2013 by NCDOT biologists and no known occurrence was within 1 mile of the study area. Therefore a biological conclusion of No Effect was determined.

The Cape Fear shiner is known only from the Cape Fear River watershed. A survey was conducted on April 19, 2012 by NCDOT biologists. No known species were present in the project area therefore a biological conclusion of No Effect was determined.

A US Fish and Wildlife Service proposal for listing the Northern Long-eared Bat (*Myotis septentrionalis*) as an endangered species was published in the Federal Register in October 2013. The listing will become effective on or before April, 2015. This species is not included in USFWS's current list of protected species for Randolph County. NCDOT is working closely with the USFWS to understand how this proposed listing may impact NCDOT projects. NCDOT will continue to coordinate appropriately with USFWS to determine if this project will incur potential effects to the Northern long-eared bat, and how to address these potential effects, if necessary.

Response to Question 13: Randolph County is a participant in the National Flood Insurance Regular Program. Mount Pleasant Creek is included in a **detailed flood study, having a regulated 100-year floodway**. The Hydraulic Unit will coordinate with the Federal Emergency Management Agency (FEMA) to determine if a Conditional Letter of Map Revision (CLOMR) and a subsequent final Letter of Map Revision (LOMR) are required for the project. If required, the Division will submit sealed as-

built construction plans to the Hydraulics Unit upon project completion certifying the project was built as shown on construction plans.

G. CE Approval

TIP Project No.	<u>B-5546</u>
W.B.S. No.	<u>45538.1.1</u>
Federal Project No.	<u>BRZ-2481(1)</u>

Project Description:

The purpose of this project is to replace Randolph County Bridge No. 307 on SR 2481 (Low Bridge Rd.) over Mount Pleasant Creek. Bridge No. 307 is 45 feet long. The replacement structure will be a bridge approximately 80 feet long providing a minimum 27'-10" clear deck width. The bridge will include two 10-foot lanes and 3'11" offsets. 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.


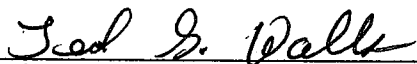

The approach roadway will extend approximately 190 feet from the northwest end of the new bridge and 325 feet from the southeast end of the new bridge. The approaches will be widened to include a 20-foot pavement width providing two 10-foot lanes. Three-foot grass shoulders will be provided on each side (6-foot shoulders where guardrail is included). The roadway will be designed as a Rural Local Route using Sub-Regional Tier Guidelines with a 40 mile per hour design speed.

Traffic will be detoured off-site during construction (see Figure 1).


Categorical Exclusion Action Classification:

<u> </u>	TYPE II(A)
<u> x </u>	TYPE II(B)

Approved:

<u>12-19-14</u> Date	<u></u> Project Development Engineer Project Development & Environmental Analysis Unit
<u>12-19-14</u> Date	<u></u> Project Engineer Project Development & Environmental Analysis Unit
<u>12-19-14</u> Date	<u></u> Project Planning Engineer Project Development & Environmental Analysis Unit

For Type II(B) projects only:

<u>12-29-14</u> Date	<u></u> John F. Sullivan, III, PE, Division Administrator Federal Highway Administration
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PROJECT COMMITMENTS:

**Randolph County
Bridge No. 307 on SR 2481
Over Mount Pleasant Creek
Federal Aid Project No. BRZ-2481 (1)
W.B.S. No. 46638.1.1
T.I.P. No. B-5546**

Division Eight Construction, Resident Engineer's Office – Offsite Detour

In order to have time to adequately reroute school busses, Randolph County Schools will be contacted at (336) 318-6100 at least one month prior to road closure.

Randolph County Emergency Services will be contacted at (336) 318-6911 at least one month prior to road closure to make the necessary temporary reassignments to primary response units.

Hydraulic Unit – FEMA Coordination

The Hydraulics Unit will coordinate with the NC Floodplain Mapping Program (FMP), to determine status of project with regard to applicability of NCDOT'S Memorandum of Agreement, or approval of a Conditional Letter of Map Revision (CLOMR) and subsequent final Letter of Map Revision (LOMR).

Division Construction-FEMA

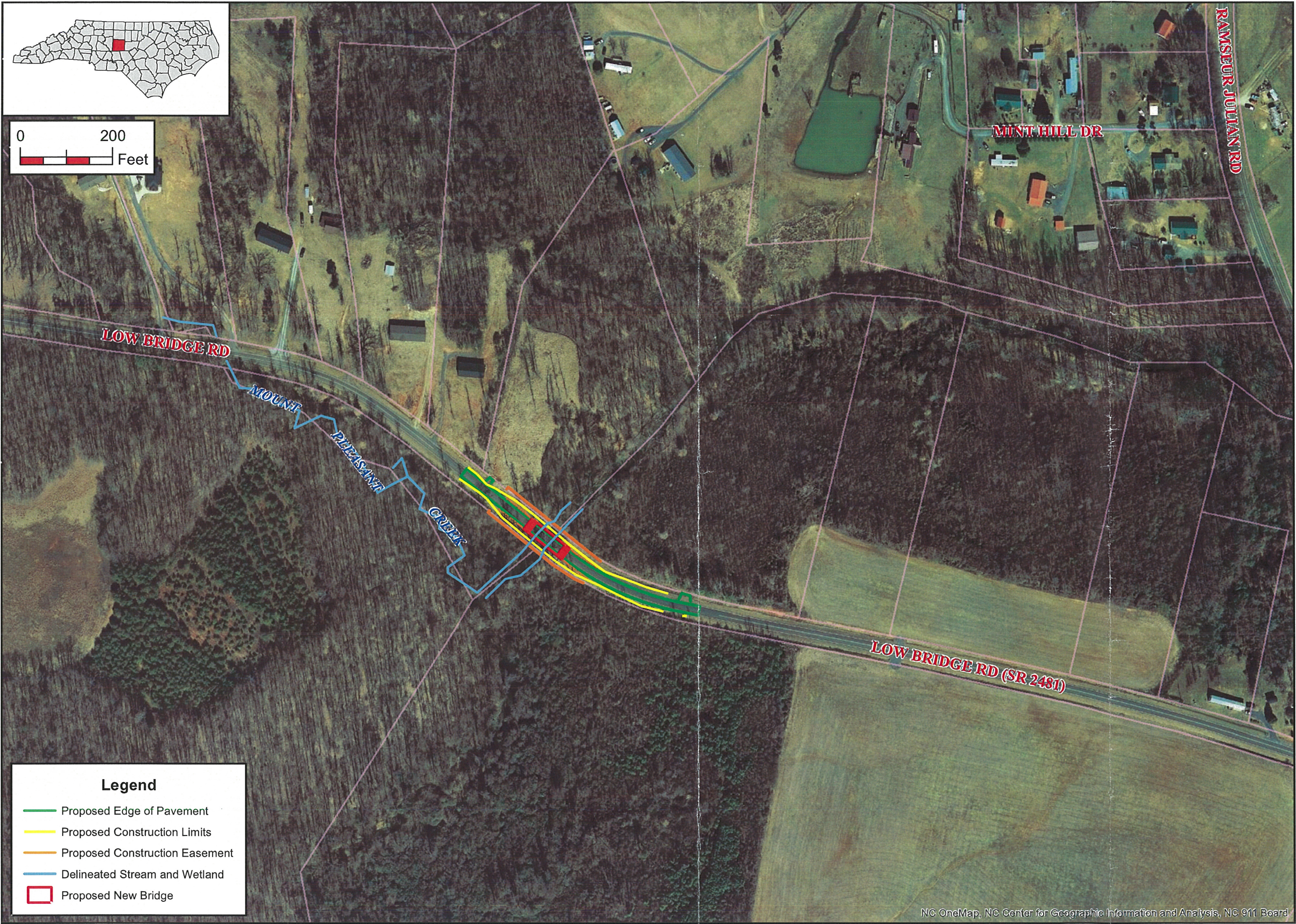
This project involves construction activities on or adjacent to FEMA-regulated stream(s). Therefore, the Division shall submit sealed as-built construction plans to the Hydraulics Unit upon completion of project construction, certifying that the drainage structure(s) and roadway embankment that are located within the 100-year floodplain were built as shown in the construction plans, both horizontally and vertically.

Contracts Unit - Length of Construction

B-5360 and B-5546 are on the same contract. TIP B-5360 Bridge No. 374 on SR 2481 over Sandy Creek will need to be replaced first then B-5546 will be replaced after to accommodate schools.

Right of Way Branch, Project Development – Voluntary Agricultural District (VAD)

This project is located within Randolph County VAD. If any property holders refuse settlement, before pursuing condemnation, the Right of Way Branch must contact Project Development in order to pursue a public meeting with the Randolph County VAD. This does not mean that the Department cannot condemn but is a procedural requirement prior to condemnation.



By: J.TORTORELLA



NORTH CAROLINA DEPARTMENT
OF TRANSPORTATION
DIVISION OF HIGHWAYS
PROJECT DEVELOPMENT AND
ENVIRONMENTAL ANALYSIS UNIT

ALTERNATE 1 (PREFERRED):
REPLACE IN PLACE
REPLACE BRIDGE No. 307 ON
SR 2481 (LOW BRIDGE ROAD)
OVER MOUNT PLEASANT CREEK

RANDOLPH COUNTY
TIP PROJECT B-5546



County:
RANDOLPH

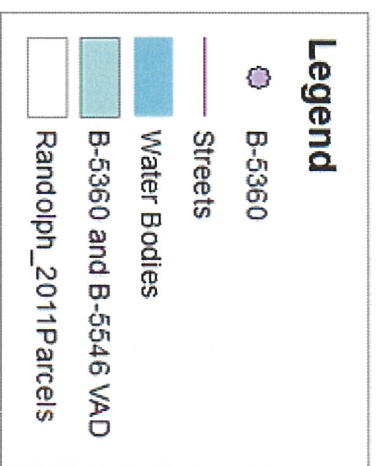
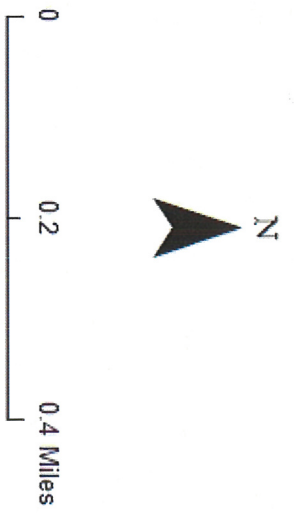
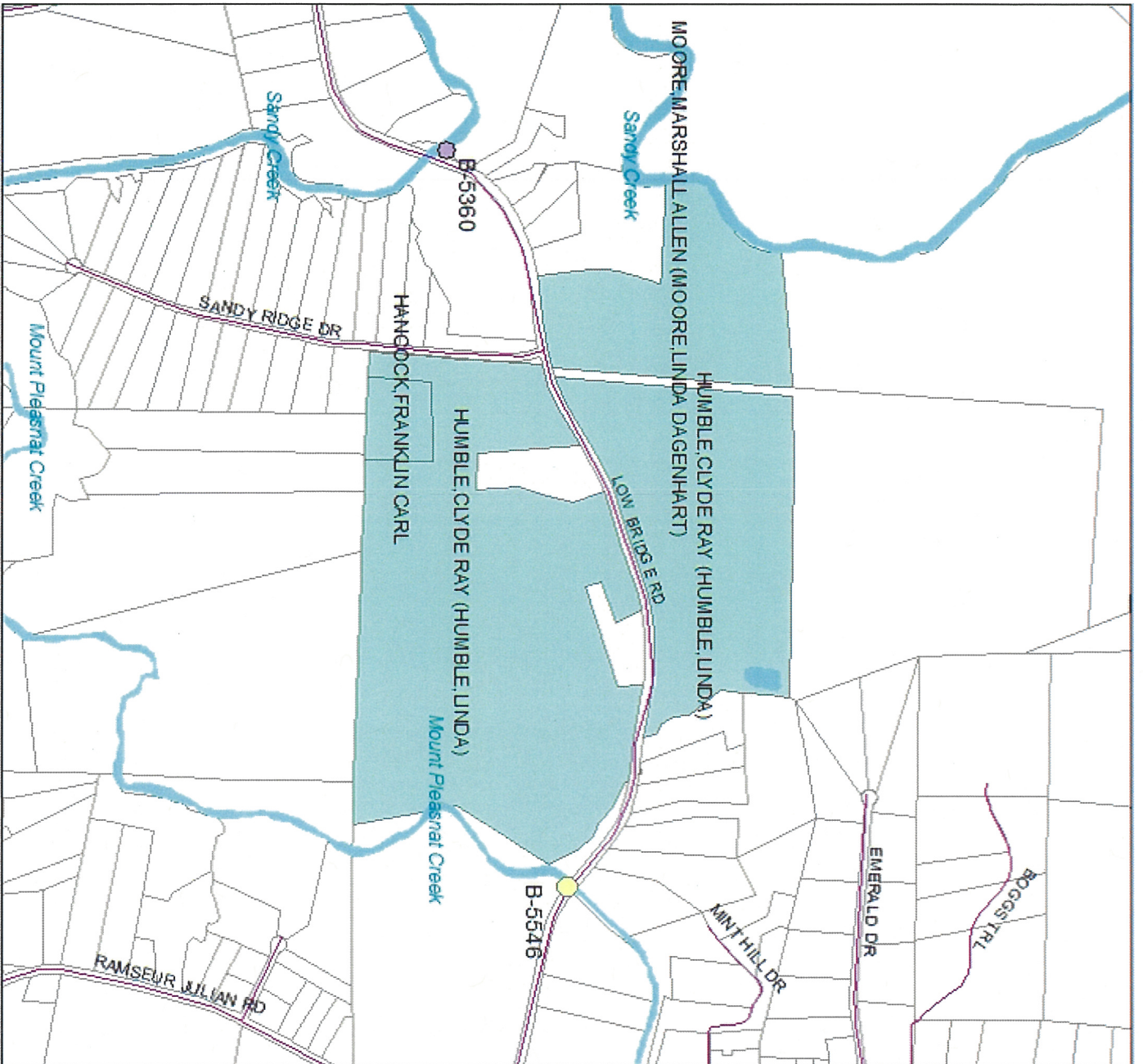
Div: 8	TIP# B-5546
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WBS:
46638.1.1

Date:
NOVEMBER 2014

Figure
2

B-5360 & B-5546 Randolph Voluntary Agriculture Districts



11-12-0037

NO SURVEY REQUIRED FORM**PROJECT INFORMATION**

Project No: B-5546 County: Randolph
 WBS No: 45538.1.1 Document: CE/PCE
 F.A. No: BRZ-2481(1) Funding: State Federal

Federal (USACE) Permit Required? Yes No Permit Type:

Project Description: Replace Bridge No. 307 over Mount Pleasant Creek on SR 2481.

SUMMARY OF CULTURAL RESOURCES REVIEW*Brief description of review activities, results of review, and conclusions:*

Review of HPO quad maps, HPO GIS information, historic designations roster, and indexes was undertaken on January 6, 2012. Based on this review, there are no existing NR, SL, LD, DE, or SS properties in the Area of Potential Effects. Google Maps aerial Imagery and Bing Maps "Birds Eye View" show that there are several structures within the APE. Randolph County GIS/Tax information and photos indicate that the houses within the APE were built within the past six years (2005-2008). There are no historic resources present and no survey is required. In addition, Bridge No. 307 is not NR eligible based on the NCDOT Historic Bridge Inventory. If design plans change or additional APE is needed, additional review will be required.

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

HPO quad maps and GIS information recording NR, SL, LD, DE, and SS properties for the Randolph County survey, Randolph County GIS and tax information, Bing Maps "Birds Eye View" and Google Maps are considered valid for the purposes of determining the likelihood of historic resources being present. There are no historic resources present and no survey is required.

SUPPORT DOCUMENTATION

See attached: Map, tax card information and pictures.

FINDING BY NCDOT CULTURAL RESOURCES PROFESSIONAL NO SURVEY REQUIRED

ARCHAEOLOGY

HISTORIC ARCHITECTURE

(CIRCLE ONE)

Katherine L. Husband
 NCDOT Cultural Resources Specialist

January 6, 2012
 Date

11-12-0037

NO PREHISTORIC OR HISTORIC PROPERTIES PRESENT/AFFECTED FORM

PROJECT INFORMATION

Project No: **B-5546** County: **Randolph**
 WBS No: **45538.1.1** Document: **CE/PCE**
 F.A. No: **BRZ-2481(1)** Funding: State Federal
 Federal (USACE) Permit Required? Yes No Permit Type: Information not known as of yet

Project Description:

The project calls for the replacement of Bridge No. 307 on SR 2481 (Low Bridge Road) over Mount Pleasant Creek. The archaeological Area of Potential Effects (APE) for the project is defined as a 2,000-foot (609.60 m) long corridor running 1,000 feet (304.80 m) northwest and 1,000 feet (304.80 m) southeast along SR 2481 from the center of Bridge No. 307. The corridor is approximately 200 feet (60.96 m) wide extending 100 feet (30.48 m) on either side of SR 2481 from its present center.

SUMMARY OF FINDINGS

The North Carolina Department of Transportation (NCDOT) reviewed the subject project and determined:

Archaeology

- There are no National Register-listed or Study Listed properties within the project's area of potential effects.
- No subsurface archaeological investigations are required for this project.
- Subsurface investigations did not reveal the presence of any archaeological resources.
- Subsurface investigations did not reveal the presence of any archaeological resources considered eligible for the National Register.
- All identified Archaeological sites located within the APE have been considered and all compliance for archaeological resources with Section 106 of the National Historic Preservation Act and GS 121-12(a) has been completed for this project.
- There are no historic properties present or affected by this project. (Attach any notes or documents as needed)

SUMMARY OF CULTURAL RESOURCES REVIEW

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

Bridge No. 307 is west of Whites Chapel, north of Ramseur, and east of Sandy Creek within the northeast portion of Randolph County, North Carolina. The project area is plotted in the southeastern corner of the Grays Chapel USGS 7.5' topographic quadrangle (Figure 1).

A map review and site file search was conducted at the Office of State Archaeology (OSA) on January 9, 2012. No previously known archaeological sites have been recorded within or adjacent to the APE, but five sites (31RD1092–31RD1094, 31RD1314, and 31RD1316) have been identified within a mile radius of the project area. In addition, no existing National Register of Historic Places (NRHP), State Study Listed (SL), Locally Designated (LD), Determined Eligible (DE), or Surveyed Site (SS) properties are within or adjacent to the APE. Topographic maps, USDA soil survey maps, aerial photographs (Google and NCDOT), and historic maps (North Carolina maps website) were utilized to gauge environmental factors that may have contributed to historic or prehistoric settlement within the project limits, and to assess the level of modern, residential, hydrological, and other erosive type disturbances within the surrounding archaeological APE. An archaeological field survey of the project area was conducted on February 1, 2012, to assess the project area.

Bridge No. 307 crosses Mount Pleasant Creek northwest to southeast. The stream drains towards the southwest into Sandy Creek. These waterways are part of the Cape Fear drainage basin. The project area is situated within the Mount Pleasant Creek floodplain, along gentle hill slopes, and on a ridge toe to the east (Figure 2). The aerial photograph shows forest primarily along the hill slopes and in the floodplain. However after a visual inspection of the project area, the hill slope and floodplain in the northeastern quadrant have been cleared of vegetation, graded, and converted to residential properties. In the northwest quadrant, soil erosion is severe from previous landscaping to accommodate residential homes. Properties on the southside of SR 2481 remain as they appear on the aerial photograph. A cultivated field is still present at the southeastern end of the APE, but erosion is again severe. An old road trace and ford were also found in the floodplain south of the bridge (Figures 3 and 4). Overall, disturbance is minimal in the floodplain on the southside of SR 2481 and moderate to the north. On the hill slopes and the ridge toe, disturbance is heavy from erosion and development.

A review of the USDA soil survey map indicates four soil types within the APE (Figure 5). The floodplain is composed of Riverview sandy loam (RvA). This is a well drained soil found on slopes of 0 to 2 percent. It is subject to frequently flooding for short periods, but the typical high water table is fairly deep. Due to being well drained, level, and close to fresh water, this soil series has the potential to yield significant archaeological sites. The hill slope to the west of the bridge is made-up of Mecklenburg clay loam (MeC2), while Cecil sandy loam (CcC) composes the hill slope to the east. Although these soil series are well drained with slope of 8 to 15 percent, they are described as moderately eroded. But due to surface exposure, these areas are actually severely eroded. The ridge toe at the eastern end of the APE is situated on Cecil sandy clay loam (CeB2). This soil type is well drained with slope of 2 to 8 percent, but it too has also experienced severe soil erosion. Typically, all three soil types have the potential to yield archaeological deposits since slope is below 15 percent. However, erosion is a major hindrance in the significance of any site found on these soils.

Few previous archaeological investigations have been conducted in this general area of the county. A total of five archaeological sites (31RD1092–31RD1094, 31RD1314, and 31RD1316) have been identified within a mile of the project. Three sites (31RD1092–31RD1094) were recorded by local a collector and are found southwest of the bridge. Site 31RD1092 appears to date to the Archaic periods. It is situated on a ridge toe overlooking Mount Pleasant Creek. The soil is identified as Cecil sandy clay loam (CeB2). Likewise, site 31RD1093 is on a ridge toe made-up of Cecil sandy clay loam (CeB2).

However, this is historic site that dates to an unknown period. Site 31RD1094 is found on a ridge with Mecklenburg clay loam (MeB2). It too yielded artifacts dating to the Archaic periods. The NRHP eligibility for the three sites has not been assessed. The final two sites, 31RD1314 and 31RD1316, are found in the Mount Pleasant Creek floodplain on Riverview sandy loam. They were recorded by Catawba College during a survey for the Sandy Creek Reservoir in 1975. Site 31RD1314 contains a lithic component from an unknown period, while site 31RD1316 yielded lithic artifacts and pottery fragments that date to the Archaic and Woodland periods. Although both sites appear to contain buried components, they were determined ineligible for the NRHP due to a low density of artifacts. From this review, it appears likely that additional sites could possibly be present within the APE since the soils and landforms at known sites are similar to the project area.

Most early maps prior to the 20th century show only general views of the surrounding region with few details concerning the project area. Such is the case with J.W. Bean's circa 1873 Map of Randolph County, which shows Mount Pleasant Creek but no roads or structures within the vicinity of the project (Figure 6). The subsequent L. Johnson and Son's 1884 Map of Randolph County is one of the few maps prior to the 20th century to actually illustrate details near the APE (Figure 7). This map shows a road with a similar layout as SR 2481 and a crossing over Mount Pleasant Creek. However, all historic structures are plotted well away from the crossing. Early 20th century maps show no real changes to the project area. The 1915 soil map for the county depicts the same road and crossing with a single structure plotted in the northwest quadrant (Figure 8). It appears that this structure is located well north of the current APE. In general, it appears that no significant former structures are within the APE, and it is not likely for any historic deposits to be encountered.

The current archaeological survey consisted of 27 shovel test placements (STPs) (see Figures 2 and 5). All of them measured at least 35 cm (14 in) in diameter and were excavated to sterile subsoil or until rocks prevented further excavation. Typically, STPs were initially excavated at 30-m intervals when possible. No STPs were excavated on slope 15 percent or greater or on any landform exhibiting evidence of severe prior disturbance. Additional STPs were excavated at 15-m intervals to surround any STPs that yielded cultural materials within the APE. Also, the entire project area was visually inspected with a walk-over to ensure that no unusual site types were present. STPs 1–11 are in the northeast quadrant, STPs 12–15 are in the northwest quadrant, STPs 16–25 are in the southeast, and STPs 26 and 27 are in the southwest quadrant.

The soil stratigraphy within the project area varied depending on the landform. STPs on the eastern ridge toe displayed two soil layers. The upper layer is a strong brown (7.5YR 4/6) clay loam that is 5 to 10 cm (2 to 4 in) thick. The bottom layer is a yellowish red (5YR 4/6) clay that extends at least 20 cm (8 in) below the surface. Gravel in both layers is considered heavy. Soils along the hill slopes also usually consist of two layers, but occasionally only subsoil is encountered. If present, the top layer is a dark brown (7.5YR 3/4) clay loam approximately 5 to 10 cm thick (2 to 4 in). In some cases this layer is replaced by recently deposited mulch. The subsoil is a red (2.5YR 4/6) clay that reaches a depth of at least 30 cm (12 in) below the surface. Stratigraphy at the base of the hill slopes are composed of three layers. Again, the top layer is red clay loam about 5 cm (2 in) thick and is followed by a 10 cm (4 in) layer of red clay. However, a third layer is found beneath the red clay. This is a layer of dark reddish brown (2.5YR 3/4) loamy clay that extends at least 30 cm (12 in) below the surface. All of these STPs except for STP 9 were negative for cultural artifacts. Soil stratigraphy for STPs within the floodplain is greatly different from the surrounding stratigraphy. The first stratum is a 10 to 15 cm (4 to 6 in) thick dark yellowish brown (10YR 3/4) sandy loam. The second stratum is a yellowish brown (10YR 5/6) loamy sandy that extends 50 to 65 cm (20 to 25 in) below the surface. A layer of large rocks were encountered in STPs at the southern edge of the APE within the floodplain. This prevented further excavation. More common, a third stratum is present. This is a strong brown (7.5YR 5/8) silt loam that reaches a depth of at least 80 cm (31 in) below the surface. STPs 6, 21, 22, and 24 were positive for prehistoric material in this area.

Newly identified 31RD1477 is a prehistoric site consisting entirely of lithic material. It could not be dated since no diagnostic artifacts were encountered. The site is situated in the floodplain and extends from the base of the hill slope to the edge of Mount Pleasant Creek (Figures 9–11). Boundaries were determined by negative STPs and slope of 15 percent to the southeast and Mount Pleasant Creek to the northwest. Boundaries to the northeast and southwest were not determined, since the site extends outside of project limits. Thus, the site measures at least 95 × 45 m (29 × 14 ft) within the APE. A surface inspection of the clearing to the northeast revealed no additional artifacts in this direction. The soil series is mapped as Riverview sandy loam. In all, five out of 14 STPs within the site boundaries were positive for prehistoric material. Artifact density is considered low, but at least two STPs (21 and 22) produced four lithic artifacts each. The higher concentration of artifacts is to the south of SR 2481 with 10 items found compared with two to the north. The artifact assemblage includes one quartz flake, 10 meta-volcanic flakes, and one meta-volcanic utilized flake (Table 1). Eleven flakes were found in the second stratum between 20 and 50 cm (8 and 20 in) below the surface, while only one was taken from the first stratum. Impacts to the site consist of SR 2481, an old road trace that runs through the southern portion, and landscape clear cutting and grading to the north. Although the site appears to have a possible buried component, no evidence for intact features was identified and artifact density is low. For these reasons, it is unlikely that this portion of the site could provide new and significant information towards the prehistoric settlement of the region. The portion of the site within the APE is recommended as ineligible for the NRHP.

The archaeological investigations for the proposed replacement of Bridge No. 307 consisted of a total of 27 STPs excavated in all four quadrants. Five STPs were positive for cultural materials and one prehistoric site (31RD1477) was identified. In areas that were systematically surveyed, STPs were initially plotted at 30-m intervals with additional STPs at 15-m intervals to delineate site 31RD1477. Areas within the APE with prior ground disturbance or slope of 15 percent or greater were not systematically surveyed. However, these areas were visually inspected during a walk-over. Site 31RD1477 is located on the eastside of the bridge and dates to an unknown prehistoric period. From the results of this investigation, site 31RD1477 is ineligible for the NRHP, and it appears unlikely for any additional archaeological sites to be within the project area. No further archaeological work is recommended within the APE. If the project expands and impacts subsurface areas beyond the defined APE, further archaeological consultations will be necessary.

SUPPORT DOCUMENTATION

See attached: Map(s), Previous Survey Info, Photos, Correspondence, Photocopy of notes from survey.

Signed:



C. Damon Jones
Cultural Resources Specialist, NCDOT

02/13/12

Date