

CATEGORICAL EXCLUSION ACTION CLASSIFICATION FORM

TIP Project No.	<u>B-4748</u>
W.B.S. No.	<u>38520.1.1</u>
Federal Project No.	<u>BRZ-1147(10)</u>

A. Project Description:

The purpose of this project is to replace Franklin County Bridge No. 2 on SR 1147 over Horse Creek. Bridge No. 2 is 41 feet long. The replacement structure will be a bridge approximately 100 feet long providing a minimum 32 feet clear deck width. The bridge will include two 12-foot lanes and 4-foot 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 310 feet from the west end of the new bridge and 280 feet from the east end of the new bridge. The approaches will be widened to include a 24-foot pavement width providing two 12-foot lanes. Six-foot shoulders will be provided on each side (9-foot shoulders where guardrail is included). Four feet of the shoulders will be full depth paved shoulders. The roadway will be designed using Sub Regional Tier guidelines with a 50 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. 2 has a sufficiency rating of 21.6 out of a possible 100 for a new structure.

The bridge is considered structurally deficient due to a structural evaluation appraisal of 2 out of 9 according to Federal Highway Administration (FHWA) standards and therefore eligible for FHWA's Highway Bridge Program. 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. 2 have timber elements that are sixty-two 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. 2 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.

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 2012 prices, are as follows:

Structure & Approach Slabs	\$ 254,000
Roadway Approaches	\$ 282,000
Detour Structure and Approaches	- 0 -
Structure Removal	\$ 20,000
Misc. & Mob.	\$ 133,000
Eng. & Contingencies	\$ 110,000
Total Construction Cost	\$ 799,000
Right-of-way Costs	\$ 50,000
Utility Costs	\$ 76,000
Total Project Cost	\$ 925,000

Estimated Traffic:

Current (2012)-	4,900 vpd
Year 2035 -	10,000 vpd
TTST -	3%
Dual -	2%

Accidents: Traffic Engineering has evaluated a recent ten year period and found two accidents occurring in the vicinity of the project. Neither was associated with the geometry of the bridge or its approach roadways.

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

Pedestrian and Bicycle Accommodations: This portion of SR 1147 is designated as State Bicycle Route No. 2 (Mountains to Sea Bicycle Route) and bicycle accommodations will be provided. NCDOT will provide 4-foot offsets on both sides of the bridge along with bicycle safe railing. Four feet of the shoulder width on the approaches will be paved, as well, to accommodate bicycle traffic. Sidewalks do not exist on the existing bridge and there is no indication of pedestrian usage on or near the bridge. Temporary bicycle or pedestrian accommodations are not required for this project.

Bridge Demolition: Bridge No. 2 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 1147.

Rehabilitation – The bridge was constructed in 1950 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. 2 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 1139, SR 1138, and US 1. The majority of traffic on the road is through traffic. The detour for the average road user would result in 4 minutes additional travel time (1.6 miles additional travel). Up to a 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. Franklin County Emergency Services along with Franklin County Schools Transportation have also indicated that the detour is acceptable. NCDOT Division 5 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 1147 is acceptable, a new alignment was not considered as an alternative.

Other Agency Comments:

The N.C. Division of Water Quality, in a letter dated May 5, 2009, recommends that highly protective sediment and erosion control Best Management Practices be implemented to reduce the risk of nutrient runoff into Horse Creek. DWQ also states that the project is in the Neuse River Basin and that buffer rules should apply.

Response: NCDOT will adhere to Design Standards in Sensitive Watersheds for sediment and erosion control, and will adhere to Neuse River Riparian Buffer Rules.

The N.C. Wildlife Resource Commission standardized letters recommended replacing the existing bridge with a bridge.

Response: See discussion on the project description in Section A.

Public Involvement:

A letter was sent by the Location & Surveys Unit to all property owners affected directly by this project. Property owners were invited to comment. No comments have been received to date.

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"/>	<u>X</u>
(2) Does the project involve habitat where federally listed endangered or threatened species may occur?	<input checked="" type="checkbox"/>	<u> </u>
(3) Will the project affect anadromous fish?	<input type="checkbox"/>	<u>X</u>
(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?	<u>X</u>	<input type="checkbox"/>
(5) Will the project require the use of U. S. Forest Service lands?	<input type="checkbox"/>	<u>X</u>
(6) Will the quality of adjacent water resources be adversely impacted by proposed construction activities?	<input type="checkbox"/>	<u>X</u>
(7) Does the project involve waters classified as Outstanding Resources Waters (ORW) and/or High Quality Waters (HQW)?	<input type="checkbox"/>	<u>X</u>
(8) Will the project require fill in waters of the United States in any of the designated mountain trout counties?	<input type="checkbox"/>	<u>X</u>
(9) Does the project involve any known underground storage tanks (UST's) or hazardous materials sites?	<input type="checkbox"/>	<u>X</u>
 <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"/>	<u>X</u>
(11) Does the project involve Coastal Barrier Resources Act resources?	<input type="checkbox"/>	<u>X</u>

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|------|---|-------------------------------------|---------------|
| (12) | Will a U. S. Coast Guard permit be required? | <input type="checkbox"/> | <u> X </u> |
| (13) | Could the project result in the modification of any existing regulatory floodway? | <input checked="" type="checkbox"/> | <u> </u> |
| (14) | Will the project require any stream relocations or channel changes? | <input type="checkbox"/> | <u> X </u> |

YES NO

SOCIAL, ECONOMIC, AND CULTURAL RESOURCES

- | | | | |
|------|---|--------------------------|--------------------------|
| (15) | Will the project induce substantial impacts to planned growth or land use for the area? | <input type="checkbox"/> | <u> X </u> |
| (16) | Will the project require the relocation of any family or business? | <input type="checkbox"/> | <u> X </u> |
| (17) | Will the project have a disproportionately high and adverse human health and environmental effect on any minority or low-income population? | <input type="checkbox"/> | <u> X </u> |
| (18) | If the project involves the acquisition of right of way, is the amount of right of way acquisition considered minor? | <u> X </u> | <input type="checkbox"/> |
| (19) | Will the project involve any changes in access control? | <input type="checkbox"/> | <u> X </u> |
| (20) | Will the project substantially alter the usefulness and/or land use of adjacent property? | <input type="checkbox"/> | <u> X </u> |
| (21) | Will the project have an adverse effect on permanent local traffic patterns or community cohesiveness? | <input type="checkbox"/> | <u> X </u> |
| (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)? | <u> X </u> | <input type="checkbox"/> |
| (23) | Is the project anticipated to cause an increase in traffic volumes? | <input type="checkbox"/> | <u> X </u> |
| (24) | Will traffic be maintained during construction using existing roads, staged construction, or on-site detours? | <u> X </u> | <input type="checkbox"/> |
| (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? | <u> X </u> | <input type="checkbox"/> |
| (26) | Is there substantial controversy on social, economic, or environmental grounds concerning the project? | <input type="checkbox"/> | <u> X </u> |

- | | | | |
|------|---|--------------------------|--------------------------|
| (27) | Is the project consistent with all Federal, State, and local laws relating to the environmental aspects of the project? | <u> X </u> | <input type="checkbox"/> |
| (28) | Will the project have an "effect" on structures/properties eligible for or listed on the National Register of Historic Places? | <input type="checkbox"/> | <u> X </u> |
| (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 Michaux's sumac is present in the study area along roadside shoulders and pasture. Surveys were conducted by NCDOT biologists throughout areas of suitable habitat on June 1, 2009 and resurveys were completed on September 9, 2011. No individuals of Michaux's sumac were observed. A review of NCNHP records, (updated January 5, 2012) indicates no known occurrences within 1.0 mile of the study area. The biological conclusion remains "No Effect".

Biologists from the NCDOT Biological Surveys Group performed a survey for Tar River spiny mussel (*Elliptio steinstansana*, TSM) and dwarf wedgemussel (*Alasmidonta heterodon*, DWM) at Franklin Co. SR 1147 crossing of Horse Creek (TIP B-4748) on June 1, 2009. Visual survey methods were utilized over approximately 500 m of stream; 400 m downstream and 100 upstream of the bridge crossing. Due to a demonstrated lack of mussel fauna and the unsuitable nature of the habitat this project will have no effect on either listed mussel species. Thus the biological conclusion for both mussel species is "No Effect".

Response to Question 13: Franklin County is a participant in the Federal Flood Insurance Program, administered by the Federal Emergency Management Agency (FEMA). The project is within a Flood Hazard Zone, designated as Zone AE, for which the 100-year base flood elevations and corresponding regulatory floodway have been established. The Hydraulic Unit will coordinate with FEMA to determine if a Conditional Letter of Map Revision (CLOMR) and a subsequent final Letter of Map Revision (LOMR) are required for this project. If required, the Division will submit sealed as-built construction plans to the Hydraulic Unit upon project completion certifying the project was built as shown on the construction plans.

G. CE Approval

TIP Project No.	<u>B-4748</u>
W.B.S. No.	<u>38520.1.1</u>
Federal Project No.	<u>BRZ-1147(10)</u>

Project Description:

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The approach roadway will extend approximately 310 feet from the west end of the new bridge and 280 feet from the east end of the new bridge. The approaches will be widened to include a 24-foot pavement width providing two 12-foot lanes. Six-foot shoulders will be provided on each side (9-foot shoulders where guardrail is included). Four feet of the shoulders will be full depth paved shoulders. The roadway will be designed as Sub Regional Tier guidelines with a 50 mile per hour design speed.

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

Categorical Exclusion Action Classification:

 TYPE II(A)
 X TYPE II(B)

Approved:

11-13-12
Date
Gregory M. Blabney
Project Planning Engineer
Project Development & Environmental Analysis Unit

11-13-12
Date
Bryan D. Ke
Project Engineer
Project Development & Environmental Analysis Unit

11/13/12
Date
William J. Goodwin
Bridge Project Development Engineer
Project Development & Environmental Analysis Unit

For Type II(B) projects only:

11/13/12
Date
John F. Sullivan, III
John F. Sullivan, III, PE, Division Administrator
Federal Highway Administration

PROJECT COMMITMENTS:

Franklin County
Bridge No. 2 on SR 1147 over Horse Creek
Federal Aid Project No. BRZ-1147(10)
W.B.S. No. 38520.1.1
T.I.P. No. B-4748

All standard procedures and measures, including NCDOT's Best Management Practices for Protection of Surface Waters, Guidelines for Best Management Practices for Bridge Demolition and Removal, will be implemented, as applicable, to avoid or minimize environmental impacts. The following special commitments have been agreed to by NCDOT:

Division 5 Construction:

In order to allow Emergency Management Services (EMS) time to prepare for road closure, the NCDOT Resident Engineer will notify the Director of the Franklin County EMS at (919) 496-2511 of the bridge removal 30 days prior to road closure.

In order to allow Franklin County Schools to prepare for road closure, the NCDOT Resident Engineer will notify the Transportation Director at (919) 496-3859 of the bridge removal 30 days prior to road closure.

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.

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).

Hydraulic Design Unit, Natural Environment Section, Roadside Environmental Unit:

This project is subject to NC Division of Water Quality Riparian Buffer Rules for the Neuse River Basin. Sedimentation and erosion control measures shall adhere to Design Standards in Sensitive Watersheds.



North Carolina Department of Environment and Natural Resources

Division of Water Quality

Coleen H. Sullins

Director

Dee Freeman

Secretary

Beverly Eaves Perdue
Governor

RECEIVED

Division of Highways

MAY - 8 2009

May 5, 2009

Preconstruction
Project Development and
Environmental Analysis Branch

MEMORANDUM

TO: Gregory Blakeney, NCDOT PDEA Bridge Project Development Unit

FROM: Rob Ridings, NC DWQ Transportation Permitting Unit *RR*

SUBJECT: **Scoping Review of NCDOT's Division 5 Proposed Bridge Replacement Projects: B-4748, B-4749 (Franklin County), B-5121, B-5113 & B-5140 (Wake County).**

In reply to your correspondence dated April 30, 2009 in which you requested comments for the above referenced projects, the NC Division of Water Quality offers the following comments:

Project-Specific Comments

B-5113, Bridge 157 over Smith Creek (Wake Forest Reservoir) [27-23-(1.5)], Wake County

1. Smith Creek is class WS-II; CA; HQW; NSW waters of the State. DWQ is very concerned with sediment and erosion impacts that could result from this project. DWQ recommends that highly protective sediment and erosion control BMPs be implemented to reduce the risk of nutrient runoff to Smith Creek. DWQ requests that road design plans provide treatment of the storm water runoff through best management practices as detailed in the most recent version of NC DWQ *Stormwater Best Management Practices*.

2. Review of this project reveals the presence of surface waters classified as Water Supply Critical Area in the project study areas. Given the potential for impacts to this resource during the project implementation, the DWQ requests that DOT strictly adhere to North Carolina regulations entitled "Design Standards in Sensitive Watersheds" (15A NCAC 04B .0124) throughout design and construction of the project. This would apply for any area that drains to streams having WS CA (Water Supply Critical Area) classifications.

Should the bridge project be located within the Critical Area of a Water Supply the NCDOT will be required to design, construct, and maintain hazardous spill catch basins in the project area. The number of catch basins installed shall be determined by the design of the bridge, so that runoff would enter said basin(s) rather than flowing directly into the stream, and in consultation with the DWQ.

3. Review of the project reveals the presence of surface waters classified as High Quality Waters (HQW) of the State in the project study area. This is one of the highest classifications for water quality. Pursuant to 15A NCAC 2H .1006 and 15A NCAC 2B .0224, NC DOT will be required to obtain a State Stormwater Permit prior to construction.

Transportation and Permitting Unit
1650 Mail Service Center, Raleigh, North Carolina 27699-1650
Location: 2321 Crabtree Blvd., Raleigh, North Carolina 27604
Phone: 919-733-1786 \ FAX: 919-733-6893
Internet: <http://h2o.enr.state.nc.us/ncwellands/>



4. Smith Creek is within the Neuse River Basin. Riparian buffer impacts shall be avoided and minimized to the greatest extent possible pursuant to 15A NCAC 2B.0233.

B-5121, Bridge 227 near Pigeon House Branch [27-33-18], Wake County

1. Pigeon House Branch is class C; NSW, 303(d) waters of the State. Pigeon House Branch is on the 303(d) list for impaired use for aquatic life due to runoff. DWQ is very concerned with sediment and erosion impacts that could result from this project. DWQ recommends that the most protective sediment and erosion control BMPs be implemented to reduce the risk of nutrient runoff to Pigeon House Branch. DWQ requests that road design plans provide treatment of the storm water runoff through best management practices as detailed in the most recent version of NC DWQ *Stormwater Best Management Practices*.

2. Pigeon House Branch is within the Neuse River Basin. Riparian buffer impacts shall be avoided and minimized to the greatest extent possible pursuant to 15A NCAC 2B.0233.

B-5140, Bridge 195 over Mocassin Creek [27-86-2], Wake County

B-4749, Bridge 27 over Middle Creek [28-15], Franklin County

B-4748, Bridge 2 over Horse Creek [27-17-(0.7)], Franklin County

1. Horse Creek is class WS-IV; NSW waters of the State. Middle Creek and Moccasin Creek are class C; NSW waters of the State. DWQ is very concerned with sediment and erosion impacts that could result from these projects. DWQ recommends that highly protective sediment and erosion control BMPs be implemented to reduce the risk of nutrient runoff to these waters. DWQ requests that road design plans provide treatment of the storm water runoff through best management practices as detailed in the most recent version of NC DWQ *Stormwater Best Management Practices*.

2. Moccasin Creek and Horse Creek are within the Neuse River Basin. Middle Creek is within the Tar-Pamlico River Basin. Riparian buffer impacts shall be avoided and minimized to the greatest extent possible pursuant to 15A NCAC 2B.0233 and 15A NCAC 2B.0259, respectively.

General Comments Regarding Bridge Replacement Projects

1. DWQ is very concerned with sediment and erosion impacts that could result from these projects. NC DOT shall address these concerns by describing the potential impacts that may occur to the aquatic environments and any mitigating factors that would reduce the impacts.
2. If foundation test borings are necessary; it shall be noted in the document. Geotechnical work is approved under General 401 Certification Number 3687/Nationwide Permit No. 6 for Survey Activities.
3. If a bridge is being replaced with a hydraulic conveyance other than another bridge, DWQ believes the use of a Nationwide Permit may be required. Please contact the US Army Corp of Engineers to determine the required permit(s).
4. If the old bridge is removed, no discharge of bridge material into surface waters is allowed unless otherwise authorized by the US ACOE. Strict adherence to the Corps of Engineers guidelines for bridge demolition will be a condition of the 401 Water Quality Certification.
5. Whenever possible, the DWQ prefers spanning structures. Spanning structures usually do not require work within the stream or grubbing of the stream banks and do not require stream channel realignment. The horizontal and vertical clearances provided by bridges allow for human and wildlife passage beneath the structure, do not block fish passage and do not block navigation by canoeists and boaters.
6. Bridge deck drains shall not discharge directly into the stream. Stormwater shall be directed across the bridge and pre-treated through site-appropriate means (grassed swales, pre-formed scour holes, vegetated buffers, etc.) before entering the stream. Please refer to the most current version of NC DWQ *Stormwater Best Management Practices*.

7. If concrete is used during construction, a dry work area shall be maintained to prevent direct contact between curing concrete and stream water. Water that inadvertently contacts uncured concrete shall not be discharged to surface waters due to the potential for elevated pH and possible aquatic life and fish kills.
8. Bridge supports (bents) shall not be placed in the stream when possible.
9. If temporary access roads or detours are constructed, the site shall be graded to its preconstruction contours and elevations. Disturbed areas shall be seeded or mulched to stabilize the soil and appropriate native woody species shall be planted. When using temporary structures the area shall be cleared but not grubbed. Clearing the area with chain saws, mowers, bush-hogs, or other mechanized equipment and leaving the stumps and root mat intact allows the area to re-vegetate naturally and minimizes soil disturbance.
10. Sediment and erosion control measures sufficient to protect water resources must be implemented and maintained in accordance with the most recent version of North Carolina Sediment and Erosion Control Planning and Design Manual and the most recent version of NCS000250.
11. All work in or adjacent to stream waters shall be conducted in a dry work area unless otherwise approved by NC DWQ. Approved BMP measures from the most current version of NCDOT Construction and Maintenance Activities manual such as sandbags, rock berms, cofferdams and other diversion structures shall be used to prevent excavation in flowing water.
12. Heavy equipment shall be operated from the bank rather than in stream channels in order to minimize sedimentation and reduce the likelihood of introducing other pollutants into streams. This equipment shall be inspected daily and maintained to prevent contamination of surface waters from leaking fuels, lubricants, hydraulic fluids, or other toxic materials.
13. In most cases, the DWQ prefers the replacement of the existing structure at the same location with road closure. If road closure is not feasible, a temporary detour shall be designed and located to avoid wetland impacts, minimize the need for clearing and to avoid destabilizing stream banks. If the structure will be on a new alignment, the old structure shall be removed and the approach fills removed from the 100-year floodplain. Approach fills shall be removed and restored to the natural ground elevation. The area shall be stabilized with grass and planted with native tree species. Tall fescue shall not be used in riparian areas.
14. Any anticipated dewatering or access structures necessary for construction of bridges should be addressed in the CE. It is understood that final designs are not determined at the time the CE is developed. However, the CE should discuss the potential for dewatering and access measures necessary due to bridge construction.

General Comments if Replacing the Bridge with a Culvert

1. Placement of culverts and other structures in waters, streams, and wetlands shall be below the elevation of the streambed by one foot for all culverts with a diameter greater than 48 inches, and 20 percent of the culvert diameter for culverts having a diameter less than 48 inches, to allow low flow passage of water and aquatic life. Design and placement of culverts and other structures including temporary erosion control measures shall not be conducted in a manner that may result in dis-equilibrium of wetlands or streambeds or banks, adjacent to or upstream and down stream of the above structures. The applicant is required to provide evidence that the equilibrium is being maintained if requested in writing by DWQ. If this condition is unable to be met due to bedrock or other limiting features encountered during construction, please contact the NC DWQ for guidance on how to proceed and to determine whether or not a permit modification will be required.
2. If multiple pipes or barrels are required, they shall be designed to mimic natural stream cross section as closely as possible including pipes or barrels at flood plain elevation and/or sills where appropriate. Widening the stream channel shall be avoided. Stream channel widening at the inlet or outlet end of structures typically decreases water velocity causing sediment deposition that requires increased maintenance and disrupts aquatic life passage.

3. Riprap shall not be placed in the active thalweg channel or placed in the streambed in a manner that precludes aquatic life passage. Bioengineering boulders or structures shall be properly designed, sized and installed.
4. Any anticipated bank stabilization associated with culvert installations or extensions should be addressed in the Categorical Exclusion (CE) document and permit applications. It is understood that final designs are not determined at the time the CE is developed. However, the CE should discuss the potential for bank stabilization necessary due to culvert installation. An adequate bank stabilization amount should also be applied for in the permit application, to prevent the need of a later permit modification.

Thank you for requesting our input at this time. The DOT is reminded that issuance of a 401 Water Quality Certification requires that appropriate measures be instituted to ensure that water quality standards are met and designated uses are not degraded or lost. If you have any questions or require additional information, please contact Rob Ridings at 919-733-9817.

cc: Eric Alsmeyer, US Army Corps of Engineers, Raleigh Field Office
Chris Murray, Division 5 Environmental Officer
File Copy

NCDOT Bridge Construction CFY 2013-2014

SHPO Number	TIP	Project	County	Division	Project Engineer	Archaeological Survey	Architectural Survey
ER 08-2599	B-4748	Bridge 2 on SR 1147 over Horse Creek	Franklin	5	G. Blakeney	No	No
ER 08-2600	B-4749	Bridge 27 on SR 1200 over Middle Creek	Franklin	5	G. Blakeney	No	No

A- *MD* *resub* 12/2/08

S- *(NC)* 11/10/08
CES

12/31/08

Peter B Sandbrook
11/27/08

NOV 14 2008