



STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION

MICHAEL F. EASLEY  
GOVERNOR

LYNDO TIPPETT  
SECRETARY

July 21, 2008

MEMORANDUM TO: Mr. Jay Swain, Jr., PE  
Division Thirteen Engineer

FROM: Philip S. Harris, III, P.E., Unit Head *E. L. Furr*  
Natural Environment Unit  
Project Development and Environmental Analysis Branch

SUBJECT: Mitchell & Yancey Counties, Replace Bridge No.143 on  
SR 1304 over the North Toe River; T.I.P. Number B-2848;  
Federal Aid Project No. BRZ-1304(4); State Project  
8.2880401

Attached are the modifications to the U.S. Army Corps of Engineers Section 404  
Nationwide Permit Numbers 23 & 33 for the above referenced project. All  
environmental permits have been received for the construction of this project.

PSH/gyb

Attachment

Cc:

Mr. Majed Alghandour, P. E., Programming and TIP  
Mr. Jay Bennett, P.E., Roadway Design  
Dr. David Chang, P.E., Hydraulics  
Mr. Randy Garris, P.E. State Contract Officer  
Mr. Art McMillan, P.E., Highway Design  
Mr. Greg Perfetti, P.E., Structure Design  
Mr. Mark Staley, Roadside Environmental  
Mr. John F. Sullivan, FHWA  
Ms. Beth Harmon, EEP  
Ms. Teresa Hart, P.E., PDEA Western Region Unit Head  
Mr. Roger Bryan, Division Environmental Officer

## PROJECT COMMITMENTS

Mitchell & Yancey Counties  
Bridge No. 143 on SR 1304 over the North Toe River  
Federal-aid Project No. BRZ-1304(4),  
State Project No. 8.2880401  
WBS 32728.1.1  
T.I.P. No. B-2848

In addition to the Nationwide Permit 23 and 33 Conditions, the General Nationwide Permit Conditions, Section 404 Only Conditions, Regional Conditions, State Consistency Conditions, NCDOT's Guidelines for Best Management Practices for Bridge Demolition and Removal, Design Standards in Sensitive Watersheds, NCDOT's Best Management Practices for Protection of Surface Waters, General Certification Conditions, and Section 401 Conditions of Certification, the following special commitments have been agreed to by NCDOT:

### **COMMITMENTS DEVELOPED THROUGH PROJECT DEVELOPMENT**

#### **Highway Division 13, Hydraulics Unit, Structure Design Unit**

In order to avoid and minimize environmental impacts associated with the replacement of Bridge No. 143, all standard procedures and measures, including NCDOT's Best Management Practices for Protection of Surface Waters and the Tennessee Valley Authority's (TVA) Water Management Standard Conditions will be strictly enforced during the construction stage of the project. Provisions to preclude contamination by toxic substances during the construction interval will also be strictly enforced.

1. In addition to NC DOT Best Management Practices, the contractor must submit a bridge demolition plan for approval by the Resident Engineer and the Bridge Construction Engineer prior to beginning bridge removal. Since some bridge debris may enter the water, the contractor must submit a work plan sealed by a PE registered in North Carolina and that *follows the guidelines provided in the Plan for Removal of Existing Structures that is included in the Biological Assessment for this project, attached to this Consultation*. The contractor's work plan will detail the maximum amount of the bridge that can be safely removed dropping minimal portions into the water. Also, this plan will not allow the use of explosives and will detail the methods to be used to retrieve and dispose of any components of the existing bridge dropped into the water. The volume of structural material to be retrieved from the existing bridge will be approximately 150 cubic yards (114.61 cubic meters).
2. Construction will be accomplished so wet concrete does not contact water entering or flowing in the river. Demolition of the existing structure will be completed such that minimal debris from the existing deck enters the river. Any debris or construction material that falls into the river will be removed immediately.
3. No deck drainage will be allowed to enter into the water, and every effort will be made to minimize the overall footprint of bents, any scour problems, and any debris accumulation associated with the project.

**Roadway Design Unit, Project Development and Environmental Analysis Branch, Roadside Environmental Unit, Highway Division 13, Structure Design Unit**

1. Upon completion of the project the existing approach fill will be removed to natural grade and the area will be planted with native grasses and tree species such as Bluegrass or as recommended by Roadside Environmental landscape plans. Should the contract for such plantings expire during the summer, landscaping should extend into the planting season, which continues through December.
2. Activities in the flood plain will be limited to those needed to construct the proposed bridge and remove the existing bridge. Areas used for borrow or construction by-products will not be located in floodplains.
3. Work pads in the flood plain will be minimized.

**Highway Division 13, Hydraulics, PD&EA, Structure Design Unit**

1. NCDOT will coordinate with the U.S. Fish and Wildlife Service to incorporate sufficient measures and monitoring, as required, in addition to those listed below, to avoid impacts to the endangered Appalachian Elktoe mussel (*Alasmidonta raveneliana*).
2. All Elktoe mussel species found during the relocation may be removed prior to construction with approval from the US Fish and Wildlife Service. In water construction may be subject to a moratorium. A Consultation in compliance with **Section (7a)** of the Endangered Species Act of 1973 will be completed and reviewed according to US Fish and Wildlife policy prior to beginning construction activities.
3. The NCDOT Project Development and Environmental Analysis Branch and the U.S. Fish and Wildlife Service will be invited to the pre-construction conference to discuss with the contractor the provisions of the Endangered Species Act of 1973 and penalties for violation of the Act.
4. Stringent erosion control measures included in the Division of Water Quality's High Quality Waters Erosion Control Guidelines will be implemented during all construction activities.
5. Riparian vegetation will be maintained wherever possible, especially large trees.
6. If riparian areas are disturbed, they will be revegetated with native species as soon as possible after construction.
7. Prior to construction the contractor will be required to give notification of the construction initiation date to the U.S. Fish and Wildlife Service, N.C. Wildlife Resources Commissioner, and the Tennessee Valley Authority.
8. Pre-let surveys will be performed at the bridge for occurrence of the Appalachian Elktoe (*Alasmidonta raveneliana*).
9. The North Toe River contains a significant small mouth bass fishery in the area of the project; North Carolina regulations entitled Design Standards in Sensitive Watersheds shall be implemented during the design and construction of this project, as applicable. A letter of notification, with reference to impacts to small mouth bass water habitat, will be provided to

the U.S. Army Corps of Engineers - Asheville Regulatory Field Office and the N.C. Wildlife Resources Commission (WRC) office prior to construction of the project. An in water work moratorium will be enforced from May 1<sup>st</sup> to June 1<sup>st</sup> in order to protect this small mouth bass fishery.

10. Due to the presence of the migratory birds in the vicinity of the existing bridge, construction should be planned to occur after the nesting season. Alternatively, netting to prevent swallows from nesting prior to the beginning of construction activities may be utilized in accordance with the Migratory Bird Treaty Act and after PDEA/ONE coordination with the US Fish and Wildlife Service.
11. The NCDOT will provide or contract with biologists with experience in mussel relocation techniques to remove Appalachian elktoe from the impact site and relocate them to the approved relocation site on the North Toe River between Penland and Boonford at about River Mile 25.5, according to the procedures on the approved relocation plan within the B.A. The plan details appropriate collection methods, tagging and recapture, handling and transportation of individuals, and monitoring protocols, which includes the monitoring of the relocation sites for recovery, survival (of recovered mussels) movement and growth of mussels for a period of 5 years.
12. The NCDOT shall monitor the river channel and banks at sites upstream, at the construction sites and downstream to determine changes in habitat resulting from activities at these sites. If any problems with regards to stream stability are detected during the monitoring, the NCDOT will attempt to correct the problems.
13. NCDOT will protect and/or restore 100 foot riparian buffers for at least 3,000 linear feet of stream within the action area.
14. NCDOT will ensure that contractor understands and follows the measures listed in the section of the greensheets, and included in the Biological Opinion issued for the project by the (US Fish and Wildlife) Service.
15. Containment systems shall be developed for particular stages of the demolition and construction of the bridges to minimize impacts to the Appalachian elktoe and its habitat.
16. Demolition activities and the relocation of mussels will be conducted during time periods that reduce impacts to the Appalachian elktoe.
17. The NCDOT will send the Service, Asheville field office, copies of the monitoring reports for the relocated mussels every year for the 5 year monitoring time period.
18. During the relocation of mussels the Service may alter, if needed methods and plans for moving mussels.
19. The NCDOT will notify the Service if their monitoring of the river channel and river banks reveals changes in habitat resulting from project activities.
20. All appropriate NCDOT BMP's for bridge maintenance, construction, and demolition will be followed or exceeded for these projects and any additional BMP's listed in these greensheets shall be followed.

21. A Service biologist will be notified of and present at the preconstruction meeting to cover permit conditions and discuss any questions the contractor has regarding implementation of this project. After the contractor submits plans for various stages of the projects a Service biologist will review and provide comments on the plans, as well as, attend any meetings to discuss implementation of the plans.
22. The NCDOT will ensure that a qualified aquatic biologist is present at critical times to monitor certain phases of construction, including but not limited to, initial clearing for construction, at the time causeways are installed, when demolition begins, and when causeways are removed. The individual will be present to ensure that the procedures listed in the "Conservation Measures" section of the US FWS Biological Opinion, the reasonable and prudent measures, and terms and conditions are being implemented and that all project plans are being implemented in a manner to ensure that the conditions of the Biological Opinion are met.
23. Due to the severely deteriorated condition of the bridge decks, a containment system shall be installed prior to the removal of the concrete deck for bridge B-2843. This system may be supported from the existing girders or substructure (such as tarps) or could be independent of the existing bridge, such as floating devices that catch any debris that may fall during deck removal. The containment system will only be used to catch debris that inadvertently falls due to the condition of the deck.
24. A containment system shall be developed and installed prior to the removal of the piers. The conservation measures proposed by the NCDOT recommend placing turbidity curtains, if the water depth is sufficient, around each of the bents. The USFWS recommends that the design include a system that uses a containment system such as Jersey barriers around each bent.
25. When constructing the drilled shafts a containment system will be developed so that material does not enter the river. Any material by-product will be pumped out of the shaft and onto uplands and to an off-site disposal area or will be treated through a proper stilling basin or silt bag.
26. The NCDOT will not relocate mussels between May 1 and June 30, the time at which the Appalachian elktoe are releasing glochidia. The NCDOT will relocate the mussels during low flow, low turbidity, and relatively cool weather, the most appropriate time to accomplish these factors will be the fall.
27. Bridge demolition will occur during low flow (typically late summer) to reduce the likelihood that sediment will leave the project area and potentially impact downstream resources.
28. NCDOT proposed in the BA to relocate all native mussels, including the Appalachian elktoe, from the project footprints, extending downstream 80 meters and upstream 20 meters of the two bridge replacements. Representatives of the Service, Asheville field office, may determine during the relocation of the mussels to reduce the area that the mussels are moved from.
29. A Service biologist will review and provide comments on plans proposed to correct problems that may be revealed in the monitoring of the river channel and banks within the project area.
30. The erosion control plan will be in place prior to any ground disturbance.

31. Any work pads that must be placed within the floodplain to complete the project construction will be constructed by placing down fabric matting prior to placing the stone work pad. All of the stone and matting will be removed and disposed off-site after project completion.
32. Unconsolidated material will not be placed on the causeways given that the material could be washed off of the causeways or settle into the causeways and enter the river. If unconsolidated material must be placed on the causeways, a solid barrier will be placed on the causeway prior to the placement of the material. The barrier and unconsolidated material will be removed at the end of each work day or anytime through out a work day that the water level rises to a point that could wash the material off of the causeway. Any consolidated material or equipment that is placed on the causeways will also be removed at the end of each work day or anytime through out a work day that the water level rises to a point where the material or equipment could be flooded.
33. All construction equipment should be refueled outside the 100 year floodplain or at least 200 feet from all water bodies (whichever distance is greater) and be protected with secondary containment. Hazardous materials, fuel, lubricating oils, or other chemicals will be stored outside the 100 year floodplain or at least 200 feet from all water bodies (whichever distance is greater), preferably at an upland site. Areas used for borrow or construction by-products will not be located in wetlands or the 100-year floodplain.
34. Where opportunities exist, NCDOT will work with landowners, the general public, and other agencies to promote education and information about the Appalachian elktoe and their conservation.
35. NCDOT will pursue additional buffers and conservation opportunities along the main stem of the Cane River, North Toe River and Toe Rivers tributaries, either individually or in concert with other conservation programs.
36. NCDOT will explore opportunities to work with local and state water quality officials in order to minimize or eliminate wastewater and storm-water discharges into the Cane River, North Toe River and Toe Rivers.
37. NCDOT will consult with the US FWS on projects affecting aquatic habitat in the Toe River drainage, regardless of funding source, to ensure compliance with all provisions of the Act.
38. NCDOT will notify the USFWS of the implementation of any of the above stated conservation recommendations.

### **COMMITMENTS DEVELOPED THROUGH PERMITTING**

#### **Division 13 Construction, NEU, and REU**

1. All work must be performed in strict compliance with the plans received by this office, which is a part of this permit. Any modification to the permit plans must be approved by the USACE prior to implementation.
2. Failure to institute and carry out the details of these special conditions will result in a directive to cease all ongoing and permitted work within waters and/or wetlands associated with the permitted project, or such other remedies and/or fines as the District Engineer or his authorized representatives may seek.

3. The permittee shall require its contractors and/or agents to comply with the terms and conditions of this permit in the construction and maintenance of this project, and shall provide each of its contractors and/or agents associated with the construction or maintenance of this project with a copy of this permit, and any authorized modifications. A copy of this permit, and any authorized modifications, including all conditions, shall be available at the project site during construction and maintenance of this project.
4. This permit does not authorize temporary placement or double handling of excavated or fill material within waters or wetlands outside the permitted area.
5. All Conditions of the attached North Carolina Wildlife Resources Commission letter of October 13, 2006 are hereby incorporated as special condition of this permit.
6. The permittee will report any violation of these conditions or violations of Section 2020 Clean Water Act or Section 10 of the Rivers and Harbors Act in writing to the Wilmington District, U.S. Army Corps of Engineers, within 24 hours of the permittee's discovery of the violation.
7. All Reasonable and Prudent Measures and Terms and Conditions contained in the July 6, 2006 US Fish and Wildlife Service's Biological Opinion on the effects of the subject bridge demolition and replacement on the federally endangered Appalachian elktoe and its Designated Critical Habitat are hereby incorporated as conditions of this permit. Your authorization under this Corps permit is conditional upon your compliance with all of the mandatory Reasonable and Prudent Measures and Terms and Conditions in the Biological Opinion.

#### Reasonable and Prudent Measures from USFWS Biological Opinion

1. The NCDOT will ensure that the contractor understands and follows the measures listed in the "Conservation Measures," "Reasonable and Prudent Measures," and "Terms and Conditions" sections of this Opinion.
2. Containment systems will be developed for particular stages of the demolition and construction of the bridges to minimize impacts to the Appalachian elktoe and its habitat.
3. Demolition activities and the relocation of mussels will be conducted during time periods that will result in fewer impacts to the Appalachian elktoe.
4. The NCDOT will send copies of the monitoring reports for the relocated mussels to the Service's Asheville Field Office every year for the 5-year monitoring time period.
5. During the relocation of mussels, the Service may alter, if needed, methods and plans for moving the mussels.
6. The NCDOT will notify the Service if their monitoring of the river channel and riverbanks reveals changes in habitat resulting from project activities.
7. All appropriate NCDOT BMP for bridge maintenance, construction, and demolition will be followed or exceeded for these projects, and any additional BMP listed in the "Terms and Conditions" section of this Opinion will be followed.

## Terms and Conditions from USFWS Biological Opinion

1. A Service biologist will be present at the pre-construction meeting to cover permit conditions and discuss any questions the contractor has regarding implementation of these projects. After the contractor submits plans for various stages of the project, a Service biologist will review and provide comments on the plans and will attend any meetings to discuss implementation of the plans.
2. The NCDOT will ensure that a qualified aquatic biologist is present at critical times to monitor certain phases of construction, including, but not limited to, initial clearing for construction, when the causeways are installed, when demolition begins, and when the causeways are removed. The individual will be present to ensure that the procedures listed in the "Conservation Measures," "Reasonable and Prudent Measures," and "Terms and Conditions" sections of the Biological Opinion are being implemented and that all project plans are being implemented in a manner to ensure that the conditions of the Opinion are met.
3. A containment system shall be developed and installed prior to the removal of the piers. The conservation measures proposed by the NCDOT recommend placing turbidity curtains, if the water depth is sufficient, around each of the bents. We are concerned that turbidity curtains will not be of sufficient strength to capture material that may enter the river; therefore, we recommend that the design include a containment system such as the Jersey barriers (with fabric) around each bent.
4. When constructing the drilled shafts a containment system will be developed so that material does not enter the river. Any material by-product will be pumped out of the shaft and onto uplands and to an off-site disposal area or will be treated through a proper stilling basin or silt bag.
5. The conservation measures proposed by the NCDOT state that the saw slurry used during the demolition process will be contained by approved vacuum methods. Given that a wet saw will be used, the vacuum methods should include a provision for pumping and treating the saw slurry outside the project area.
6. The NCDOT will not relocate mussels between May 1 and June 30, the time at which Appalachian elktoes release glochidia. The NCDOT will relocate the mussels during low flow, low turbidity, and relatively cool weather; the most appropriate time to accomplish this would be in the fall.
7. Demolition of the bridge substructure will occur during low flow in order to reduce the likelihood that sediment will leave the project area and potentially impact downstream resources.
8. In the BA, the NCDOT proposed to relocate all native mussels, including the Appalachian elktoe, from the project "footprints," extending downstream 262 ft (80 m) and upstream 66 ft (20 m) of the two bridge replacements. Representatives of the Service's Asheville Field Office may determine during relocation of the mussels that the area the mussels are moved from should be reduced.
9. A Service biologist will review and provide comments on plans proposed to correct problems that may be revealed in the monitoring of the river channel and banks within the project area.

10. The erosion-control plan will be in place prior to any ground disturbance. When needed, combinations of erosion-control measures (such as silt bags in combination with a stilling basin) will be used to ensure that the most protective measures are being implemented.
11. Activities in the floodplain will be limited to those needed to construct the proposed bridge and remove the existing bridge.
12. Work pads will be used when equipment must be staged in the floodplain to complete the project construction. The work pads will be constructed by placing fabric matting down prior to placing the stone work pad. All of the stone and matting will be removed and disposed of off-site or the stone can be used in areas that require permanent stone protection after project completion.
13. Access roads and construction staging areas will be minimized to the maximum extent practicable. The access roads and construction staging areas should be established from the start of the project and designed with erosion-control measures. The placement of the access roads and staging areas will be discussed with the Service and determined at the pre-construction meetings.
14. Riparian vegetation, especially large trees, will be maintained wherever possible. If riparian areas are disturbed, they will be re-vegetated with native species as soon as possible after construction.
15. Upon completion of the project the existing approach fills will be removed to natural grade, and the area will be planted with native grasses and tree species.
16. Construction will be accomplished in a manner that prevents wet concrete from coming into contact with water entering or flowing in the river.
17. Unconsolidated material (such as sand and dirt) will not be placed directly on the causeways since the material could be washed off of the causeways or settle into the causeways and enter the river. If unconsolidated material must be placed on the causeways, a solid barrier will be placed on the causeways prior to the placement of the material. The barrier and unconsolidated material will be removed anytime throughout a work day when the water level rises to a point, or is expected to rise over night to a point, where material could wash off the causeway or during periods of inactivity (two or more consecutive days). Any equipment that is placed on the causeways will also be removed anytime throughout a work day when the water level rises to a point, or is expected to rise over night to a point, where the equipment could be flooded or during periods of inactivity (two or more consecutive days). The only exception to this measure is that the drill rig may be left in place for periods of inactivity; however, it must also be removed if the water rises or is expected to rise to a point where the drill rig could be flooded.
18. All construction equipment should be refueled outside the 100-year floodplain or at least 200 ft from all water bodies (whichever distance is greater) and be protected with secondary containment. During crucial periods of construction and demolition when the drill rig and crane cannot be moved, the drill rig and crane can be refueled while inside the 100-year floodplain provided that spill response materials (such as spill blankets and fueling diapers) are used during the refueling. Hazardous materials, fuel, lubricating oils, or other chemicals will be stored outside the 100-year floodplain or at least 200 ft from all water bodies.

(whichever distance is greater), preferably at an upland site. Areas used for borrow or construction by-products will not be located in wetlands or the 100-year floodplain.

Conditions from NCWRC letter dated November 27, 2006

1. Sediment and erosion control measures should, at a minimum, adhere to the design standards for sensitive watersheds and be strictly maintained until project completion to avoid impacts to downstream aquatic resources.
2. Temporary or permanent herbaceous vegetation should be planted on all bare soil as soon as possible and within 10 calendar days of ground disturbing activities to provide long-term erosion control.
3. Tall fescue should not be used in riparian areas. We encourage NCDOT to utilize onsite vegetation and materials for riverbank stabilization when practicable. Erosion control matting should be used in riparian areas, instead of straw mulch and well anchored with 12" staples or 12" wooden survey stakes.
4. Only clean, sediment-free rock should be used as temporary fill (causeways), and should be removed without excessive disturbance of the natural stream bottom when construction is completed.
5. Discharge of materials into the river from demolition of the old bridge should be avoided as much as practicable. Any materials that inadvertently reach the water should be removed.
6. The natural dimension, pattern, and profile of the river above and below the crossing should not be modified by widening the channel or changing the depth of the river.
7. Removal of vegetation in riparian areas should be minimized. Native trees and shrubs should be planted along the banks to reestablish the riparian zone and to provide long-term erosion control.
8. Grading and backfilling should be minimized, and tree and shrub growth should be retained if possible to ensure long term availability of shoreline cover for fish and wildlife. Backfill materials should be obtained from upland sites.
9. Riprap placed for bank stabilization should be limited to the riverbank below the high water mark, and vegetation should be used for stabilization above the high water elevation.
10. Stormwater, including deck drainage, should be directed to buffer areas or retention basins and should not be routed directly into the river.
11. If concrete will be used during construction, work must be accomplished so that wet (uncured) concrete does not contact surface waters. This will lessen the chance of altering the water chemistry and causing a fish kill.
12. Discharging hydroseeding mixtures and washing out hydroseeders and other equipment in or adjacent to surface waters is strictly prohibited.
13. Heavy equipment should be operated from the bank rather than in the river channel whenever possible in order to minimize sedimentation and reduce the likelihood of introducing other

pollutants into the stream. All mechanized equipment operated near surface waters should be inspected and maintained regularly to prevent contamination of surface waters from fuels, lubricants, hydraulic fluids or other toxic materials.

14. The existing roadway that is to be eliminated should be removed back to original ground elevations and the natural floodplain elevations and functions should be restored. Disturbed areas should be seeded or mulched to stabilize the soil and native tree species should be planted with a spacing of not more than 10'x10'.

#### **COMMITMENTS DEVELOPED DURING PERMIT MODIFICATION**

No additional commitments were developed during modification of permit.

**U.S. ARMY CORPS OF ENGINEERS**  
**WILMINGTON DISTRICT**

Action ID: SAW-2006-41203-300-MODIFICATION  
USGS Quad: Hunt Dale

County: Mitchell and Yancey

**GENERAL PERMIT (REGIONAL AND NATIONWIDE) VERIFICATION**

Property Owner / Authorized Agent: NCDOT, Gregory J. Thorpe, Ph.D, Environmental Management Director  
Address: 1598 Mail Service Center  
Raleigh, NC 27699-1598  
Telephone No.: 919-733-3141

Size and location of property (water body, road name/number, town, etc.): Bridge Number 143 on SR 1304 (Tipton Hill Road/Ray Road) over the North Toe River near Burnsville in Mitchell and Yancey Counties, NC. (TIP B-2848).

Description of projects area and activity: to replace Bridge No. 143 on SR 1304 over the North Toe River. The new bridge will be on new alignment northwest, approximately 50-feet downstream, of the existing bridge. Temporary rock causeways, using pipes to maintain the linear flow of the river, will be required for the new bridge construction. A 10-foot square temporary bent, to assemble the beams for the new bridge structure, will be constructed in the center of the channel using precast concrete barrier walls. One new pier will be located within the river channel to support the new structure. The project will result in less than 0.01 acre of permanent impact. Changes in the footprints of the two phased temporary causeways for the demolition of the old bridge will result in 0.36 acre of temporary impacts to the North Toe River. The fill areas for the causeways shall not restrict/cover more than 50% of the river at one time. Two work bridges have been incorporated into the design of each phase of the causeways, replacing the corrugated steel pipes detailed in the original application.

Applicable Law:  Section 404 (Clean Water Act, 33 USC 1344)  
 Section 10 (Rivers and Harbors Act, 33 USC 403)  
Authorization: Regional General Permit Number:  
Nationalwide Permit Number: 23 and 33

**Special Conditions**

1. All work must be performed in strict compliance with the original plans received by this office on October 6, 2006 and revised plans received on July 11, 2008, which are a part of this permit. Any further modification to the permit plans must be approved by the USACE prior to implementation
2. Failure to institute and carry out the details of these special conditions will result in a directive to cease all ongoing and permitted work within waters and/or wetlands associated with the permitted project, or such other remedies and/or fines as the District Engineer or his authorized representatives may seek.
3. The permittee shall require its contractors and/or agents to comply with the terms and conditions of this permit in the construction and maintenance of this project, and shall provide each of its contractors and/or agents associated with the construction or maintenance of this project with a copy of this permit, and any authorized modifications. A copy of this permit, and any authorized modifications, including all conditions, shall be available at the project site during construction and maintenance of this project.
4. This permit does not authorize temporary placement or double handling of excavated or fill material within waters or wetlands outside the permitted areas.
5. All conditions of the attached North Carolina Wildlife Resources Commission letter of November 27, 2006 remain incorporated as special conditions of this permit.
6. The permittee will report any violation of these conditions or violations of Section 404 of the Clean Water Act or Section 10 of the Rivers and Harbors Act in writing to the Wilmington District, U. S Army Corps of Engineers, within 24 hours of the permittee's discovery of the violation.
7. All Reasonable and Prudent Measures and Terms and Conditions contained in the July 6, 2006 US Fish and Wildlife Service's Biological Opinion on the effects of the subject bridge demolition and replacement on the federally endangered Appalachian elktoe and it's Designated Critical Habitat remain incorporated as conditions of this permit.

Your authorization under this Corps permit is conditional upon your compliance with all of the mandatory Reasonable and Prudent Measures and Terms and Conditions contained in the Biological Opinion.

This verification will remain valid until the expiration date identified below unless the nationwide authorization is modified, suspended or revoked. If, prior to the expiration date identified below, the nationwide permit authorization is reissued and/or modified, this verification will remain valid until the expiration date identified below, provided it complies with all requirements of the modified nationwide permit. If the nationwide permit authorization expires or is suspended, revoked, or is modified, such that the activity would no longer comply with the terms and conditions of the nationwide permit, activities which have commenced (i.e., are under construction) or are under contract to commence in reliance upon the nationwide permit, will remain authorized provided the activity is completed within twelve months of the date of the nationwide permit's expiration, modification or revocation, unless discretionary authority has been exercised on a case-by-case basis to modify, suspend or revoke the authorization.

Activities subject to Section 404 (as indicated above) may also require an individual Section 401 Water Quality Certification. You should contact the NC Division of Water Quality (telephone (919) 733-1786) to determine Section 401 requirements.

For activities occurring within the twenty coastal counties subject to regulation under the Coastal Area Management Act (CAMA), prior to beginning work you must contact the N.C. Division of Coastal Management.

This Department of the Army verification does not relieve the permittee of the responsibility to obtain any other required Federal, State or local approvals/permits.

If there are any questions regarding this verification, any of the conditions of the Permit, or the Corps of Engineers regulatory program, please contact David Baker at 828-271-7980.

Corps Regulatory Official David Baker Date: **July 17, 2008**

Expiration Date of Verification: **December 19, 2009**

The Wilmington District is committed to providing the highest level of support to the public. To help us ensure we continue to do so, please complete the attached customer Satisfaction Survey or visit <http://regulatory.usacesurvey.com/> to complete the survey online.

# DEMOLITION SEQUENCE

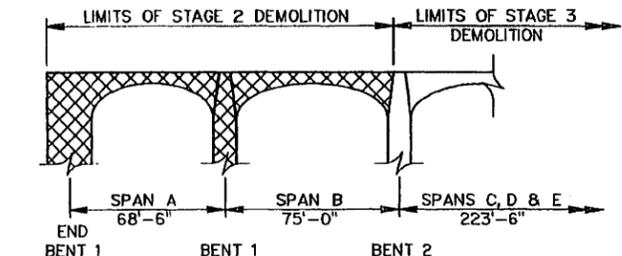
(SEE DRAWING 2 OF 2 FOR NOTES)

## STAGE 1

1. CONTRACTOR SHALL ESTABLISH CAUSEWAY LIMITS AS SHOWN IN DRAWING NO. 1 OF 2 FOR THE REMOVAL OF SPANS A AND B. THE BOUNDARIES OF THE CAUSEWAY FOR THIS STAGE ARE TO ALLOW FOR THE REMOVAL OF THE EXISTING BRIDGE CONCRETE OF SPANS A AND B WITHOUT ALLOWING DEBRIS TO ENTER THE NORTH TOE RIVER. BUILD THE CAUSEWAY WITH CLASS II RIPRAP TOPPED BY A LAYER OF CLASS A RIPRAP. IN ADDITION TO THE CONTRACT REQUIREMENTS, THE CONTRACTOR SHALL PLACE FILTER FABRIC ACROSS THE TOP LAYER OF THE CAUSEWAY TO CONTAIN FINES AND PREVENT SMALLER DEBRIS FROM ENTERING THE RIVER. TEMPORARY CONCRETE BARRIER RAIL SECTIONS SHALL BE USED TO CONTAIN THE TEMPORARY ROCK CAUSEWAY AS SHOWN IN THE CONTRACT DOCUMENTS. INSTALL WORK BRIDGES AS SHOWN. (WORK BRIDGES WILL NOT DISTURB THE RIVER BOTTOM COMPARED TO THE ALTERNATIVE OF USING CORRUGATED STEEL PIPES).
2. THE CONTRACTOR SHALL UNIFORMLY REMOVE THE ASPHALT DRIVING SURFACE AND THE EARTH FILL MATERIAL BETWEEN THE SPANDREL WALLS ALONG THE ENTIRE LENGTH OF THE BRIDGE. THIS WORK IS TO BE DONE USING EQUIPMENT PLACED ON BRIDGE STRUCTURE (FOR EXAMPLE A MINI-EXCAVATOR). THE CONTRACTOR SHALL REMOVE THIS MATERIAL IN A MANNER THAT WILL PREVENT IT FROM ENTERING THE NORTH TOE RIVER.
3. DURING THE REMOVAL PROCESS OF THE ASPHALT DRIVING SURFACE AND THE EARTH FILL MATERIAL BETWEEN THE SPANDREL WALLS THE ENGINEER SHALL VISIT THE SITE. THE SITE VISIT BY THE ENGINEER IS TO OCCUR PRIOR TO THE REMOVAL OF THE OVERHANG, SUPPORTING OVERHANG RIBS, SPANDREL WALLS AND SUPPORTING ARCH AND PRIOR TO BEGINNING STAGE 2 OF THE DEMOLITION SEQUENCE. THE DEMOLITION PLAN MAY BE REVISED AT THE DISCRETION OF THE ENGINEER BASED ON THE INFORMATION GATHERED DURING THE SITE VISIT. A REPRESENTATIVE FROM THE U.S. FISH AND WILDLIFE SERVICE SHALL BE INVITED TO ATTEND THE SITE VISIT.

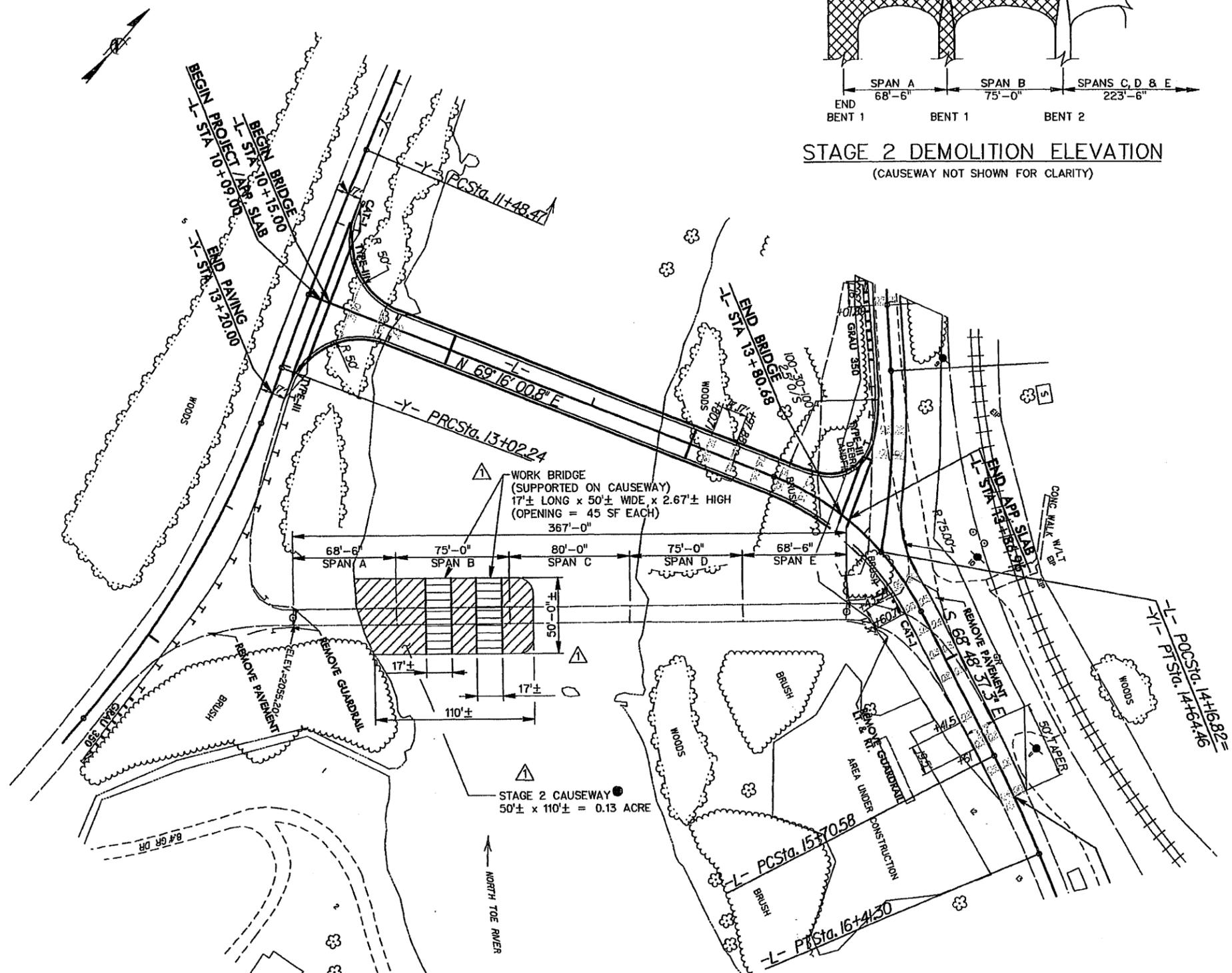
## STAGE 2 (REMOVAL OF SPANS A AND B)

1. THE CONTRACTOR SHALL REMOVE THE GUARDRAIL, GUARDRAIL POSTS, OVERHANG, SUPPORTING OVERHANG RIBS AND SPANDREL WALLS OF SPANS A AND B TO THE APPROXIMATE LOCATION ON THE SPAN B SIDE OF BENT 2 AS SHOWN IN THE "STAGE 2 DEMOLITION ELEVATION." THE CONTRACTOR SHALL DELINEATE AND PREVENT ACCESS TO SPANS C, D AND E OF THE STRUCTURE.
2. USING CONCRETE SHEARS, THE CONTRACTOR SHALL BEGIN REMOVING THE ARCH RIB AT END BENT 1 WORKING IN A SIDE TO SIDE MANNER IN AN ATTEMPT TO CAUSE THE ARCH OF SPAN A TO FAIL IN SHEAR. THE PLAN IS TO DEVELOP A SHEAR PLANE THAT ALLOWS THE SPAN A ARCH TO SEPARATE FROM END BENT 1 AND BE SUPPORTED AT THE BASE ON THE GROUND. A DEMOLITION BALL SHALL BE USED ON THE VERY LAST PORTION OF THE ARCH TO ALLOW FOR A SAFE DISTANCE TO BE MAINTAINED BETWEEN WORKERS/EQUIPMENT AND THE STRUCTURE.
3. THE CONTRACTOR SHALL THEN CONTINUE THE DEMOLITION OF THE ARCH RIB MOVING FROM END BENT 1 TOWARDS THE APPROXIMATE LOCATION ON THE SPAN B SIDE OF BENT 2 AS SHOWN IN THE "STAGE 2 DEMOLITION ELEVATION."
4. THE CONTRACTOR SHALL THEN REMOVE END BENT 1 AND BENT 1. THE CONCRETE SUBSTRUCTURE SHALL BE REMOVED BY ACCESSING FROM THE CAUSEWAY SHOWN ON THE PLANS. CARE SHALL BE TAKEN TO ENSURE THE SUBSTRUCTURE MATERIAL IS DROPPED ONTO THE CAUSEWAY AND NOT ALLOWED TO FALL INTO THE RIVER. THE EXISTING FOOTING BELOW THE RIVER BOTTOM WILL BE LEFT IN PLACE. THE CONTRACTOR SHALL NOTIFY A U.S. FISH AND WILDLIFE SERVICE REPRESENTATIVE REGARDING THE AMOUNT OF REMOVAL OF THE SUBSTRUCTURE. THE INTENT IS TO PROVIDE DOCUMENTATION TO THE U.S. FISH AND WILDLIFE SERVICE REPRESENTATIVE EXPLAINING WHAT PORTIONS OF THE SUBSTRUCTURE FOOTINGS ARE REMOVED (OR REMAIN) DURING THE DEMOLITION PROCESS.



STAGE 2 DEMOLITION ELEVATION

(CAUSEWAY NOT SHOWN FOR CLARITY)



- ▲ STAGE 2 CAUSEWAY
- DEMOLITION REMOVAL
- ▲ WORK BRIDGE

▲	7-08	BAC	CONTRACTOR'S COMMENTS
▲	7-08	BAC	CONTRACTOR'S COMMENTS

MARK	DATE	BY	DESCRIPTION
REVISIONS			
<b>TAYLOR &amp; MURPHY</b>			

**STV / Ralph Whitehead Associates, Inc.**  
 P.O. BOX 35624  
 CHARLOTTE, NORTH CAROLINA 28235



	CAUSEWAY AREA	WORK BRIDGE AREA ▲	CAUSEWAY AREA LESS WORK BRIDGES
▲ STAGE 2 CAUSEWAY	0.13 ACRE	2 EA. x 0.02 ACRE = 0.04 ACRE	0.09 ACRE
▲ STAGE 3 CAUSEWAY	0.08 ACRE	2 EA. x 0.02 ACRE = 0.04 ACRE	0.04 ACRE
TOTAL	0.21 ACRE		0.13 ACRE

▲ EACH WORK BRIDGE  
 17'± x 50'± = 0.02 ACRE

▲ USE MATERIAL FROM STAGE 2 CAUSEWAY TO CONSTRUCT THE STAGE 3 CAUSEWAY. ONLY THE PORTION SHOWN OF THE STAGE 2 CAUSEWAY IN DRAWING NO. 2 OF 2 TO REMAIN AS PART OF THE STAGE 3 CAUSEWAY. ONLY THE CAUSEWAY LIMITS SHOWN ARE TO BE IN THE RIVER AT ONE TIME.

## DEMOLITION PLAN

BRIDGE NO. 143 ON SR 1304 OVER THE NORTH TOE RIVER

JOB NO. 2513892				SCALE: NTS	
DES. BAC	MFR	06-08	DR. ECU	BAC	06-08
BY	CHK.	DATE	DWG. NO. 1 OF 2		

7-11-2008

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7/1/2008

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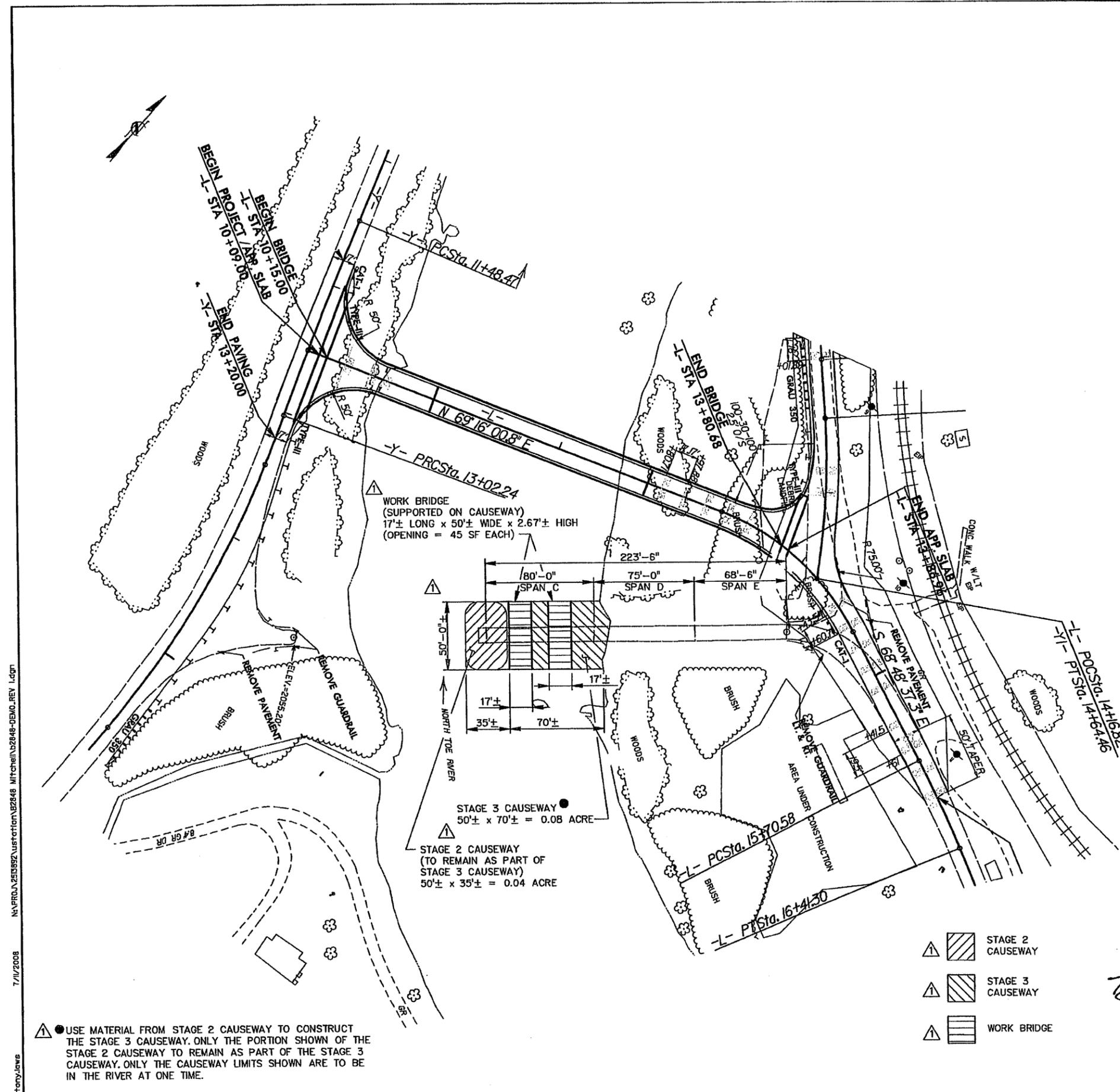
# DEMOLITION SEQUENCE

## STAGE 3 (REMOVAL OF SPANS C, D, AND E)

- CONTRACTOR SHALL ESTABLISH CAUSEWAY LIMITS AS SHOWN IN DRAWING NO. 2 OF 2 FOR THE REMOVAL OF SPANS C, D, AND E. THE INTENT IS TO REMOVE THE CAUSEWAY MATERIAL FROM SPANS A AND B (AND RETURN THE ENTIRE CAUSEWAY FOOTPRINT TO THE ORIGINAL CONTOURS) AND USE THIS MATERIAL FOR THE CAUSEWAY MATERIAL FOR SPANS C, D, AND E. THE BOUNDARIES OF THE CAUSEWAY FOR THIS STAGE ARE TO ALLOW FOR THE REMOVAL OF THE EXISTING BRIDGE CONCRETE OF SPANS C, D, AND E WITHOUT ALLOWING DEBRIS TO ENTER THE NORTH TOE RIVER. BUILD THE CAUSEWAY AS DESCRIBED IN STEP 1 OF STAGE 1.
- THE CONTRACTOR SHALL REMOVE THE GUARDRAIL, GUARDRAIL POSTS, OVERHANG, SUPPORTING OVERHANG RIBS AND SPANDREL WALLS OF SPANS C, D, AND E.
- USING CONCRETE SHEARS, THE CONTRACTOR SHALL BEGIN REMOVING THE ARCH RIB AT END BENT 2 WORKING IN A SIDE TO SIDE MANNER IN AN ATTEMPT TO CAUSE THE ARCH OF SPAN E TO FAIL IN SHEAR. THE PLAN IS TO DEVELOP A SHEAR PLANE THAT ALLOWS THE SPAN E ARCH TO SEPARATE FROM END BENT 2 AND BE SUPPORTED AT THE BASE ON THE GROUND. A DEMOLITION BALL SHALL BE USED ON THE VERY LAST PORTION OF THE ARCH TO ALLOW FOR A SAFE DISTANCE TO BE MAINTAINED BETWEEN WORKERS/EQUIPMENT AND THE STRUCTURE.
- THE CONTRACTOR SHALL THEN CONTINUE THE DEMOLITION OF THE ARCH RIB MOVING FROM END BENT 2 TOWARDS THE REMAINING PORTION OF THE BRIDGE AT BENT 2.
- THE CONTRACTOR SHALL THEN REMOVE BENT 2, BENT 3, BENT 4, AND END BENT 2. THE CONCRETE SUBSTRUCTURE SHALL BE REMOVED AS DESCRIBED IN STEP 4 OF STAGE 2. THE CONTRACTOR SHALL NOTIFY A U.S. FISH AND WILDLIFE SERVICE REPRESENTATIVE REGARDING THE AMOUNT OF REMOVAL OF THE SUBSTRUCTURE. THE INTENT IS TO PROVIDE DOCUMENTATION TO THE U.S. FISH AND WILDLIFE SERVICE REPRESENTATIVE EXPLAINING WHAT PORTIONS OF THE SUBSTRUCTURE FOOTINGS ARE REMOVED (OR REMAIN) DURING THE DEMOLITION PROCESS.
- THE CONTRACTOR SHALL REMOVE THE CAUSEWAY MATERIAL FROM SPANS C, D, AND E, INCLUDING PIPES AND RETURN THE ENTIRE CAUSEWAY FOOTPRINT TO THE ORIGINAL CONTOURS.

### NOTES

- THE INTENT OF THIS DEMOLITION PROCEDURE IS TO PROVIDE A MEANS TO SAFELY REMOVE THE EXISTING BRIDGE, BUT IT IS IMPORTANT TO UNDERSTAND BRIDGE NO. 143 ON SR 1304 OVER THE NORTH TOE RIVER REPRESENTS A SEVERELY DETERIORATED STRUCTURE. EXTREME CAUTION SHALL BE EXERCISED DURING ALL PHASES OF THE DEMOLITION PROCEDURE, AND RECOGNIZE THAT THE DEMOLITION OF THIS BRIDGE REPRESENTS A DANGEROUS SITUATION.
- THE CONTRACTOR SHALL DELINEATE AN AREA SUCH THAT THE SAFETY OF THE PUBLIC, WORKERS AND EQUIPMENT CAN BE MAINTAINED DURING THE DEMOLITION PROCESS.
- ONCE A PORTION OF THE BRIDGE SPANDREL WALL OR SUPPORTING ARCH HAS BEEN REMOVED THE POSSIBILITY OF A TOTAL COLLAPSE OF THE BRIDGE EXISTS. THEREFORE, THE CONTRACTOR SHALL EXERCISE EXTREME CAUTION DURING ALL STAGES OF THE DEMOLITION PROCEDURE. NO EQUIPMENT OR WORKERS SHALL BE ALLOWED ON THE BRIDGE ONCE A PORTION OF THE OVERHANG, SUPPORTING OVERHANG RIBS, SPANDREL WALLS OR SUPPORTING ARCH HAS BEEN REMOVED.
- CARE SHALL BE TAKEN TO ENSURE THAT THE DEMOLITION DOES NOT DAMAGE THE ADJACENT NEWLY CONSTRUCTED BRIDGE.
- REMOVAL OF THE EXISTING STRUCTURE SHALL BE IN ACCORDANCE WITH SECTION 402 OF THE STANDARD SPECIFICATIONS AND THE REQUIREMENTS OF THE PROJECT SPECIAL PROVISIONS.
- THE CONTRACTOR SHALL EXERCISE CARE TO ENSURE THE CONCRETE DEBRIS FALLS ON THE CAUSEWAY AND NOT INTO THE NORTH TOE RIVER. IF ANY CONCRETE DEBRIS INADVERTENTLY FALLS INTO THE RIVER THE MATERIAL SHALL BE REMOVED BY ACCESSING FROM THE CAUSEWAY SHOWN IN THE PLANS OR BY LIFTING OUT WITH A CRANE.
- EXPLOSIVES SHALL NOT BE USED DURING ANY PORTION OF THE DEMOLITION PROCEDURE.



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7/11/2008

tony.lowe

● USE MATERIAL FROM STAGE 2 CAUSEWAY TO CONSTRUCT THE STAGE 3 CAUSEWAY. ONLY THE PORTION SHOWN OF THE STAGE 2 CAUSEWAY TO REMAIN AS PART OF THE STAGE 3 CAUSEWAY. ONLY THE CAUSEWAY LIMITS SHOWN ARE TO BE IN THE RIVER AT ONE TIME.



7-11-2008

7-08	BAC	CONTRACTOR'S COMMENTS
7-08	BAC	CONTRACTOR'S COMMENTS
REVISIONS		
<b>STV / Ralph Whitehead Associates, Inc.</b>		
P.O. BOX 35624 CHARLOTTE, NORTH CAROLINA 28235		
DEMOLITION PLAN		
BRIDGE NO. 143 ON SR 1304 OVER THE NORTH TOE RIVER		
TIP: B-284B		MITCHELL COUNTY, NC
DES. BAC	MFR 06-08	JOB NO.
DR. ECU	BAC 06-08	SCALE: NTS
BY	CHK. DATE	2513892
		DWG. NO. 2 OF 2