

## MINIMUM CRITERIA DETERMINATION CHECKLIST

**TIP Project No.**            B-4767  
**W.B.S. Project No.**    38539.1.1 (17BP.12.R.83)

**Project Location:** Bridge No. 14 over Weathers Creek on SR 2382 in Iredell County

**Project Description:** The purpose of this project is to replace Iredell County Bridge No. 14 on SR 2382 (Brawley Road) over Weathers Creek. Bridge No. 14 is a triple-span, 91-foot long, two-lane bridge with a clear roadway width of 24 feet. The replacement structure will be a bridge approximately 110 feet long at approximately the same grade and elevation. The new bridge will include two 11-foot lanes, variable-width shoulders, and a barrier rail (see Fig. 2). The variable shoulder widths are due to having a curved horizontal alignment on a tangent bridge. The bridge length is based on preliminary design information and is set by hydraulic requirements.

The proposed approach roadway will extend approximately 225 feet southeast and 165 feet northwest from the new bridge. The approaches will include two 11-foot travel lanes with 3-foot shoulders (up to 6 feet with guardrail). The roadway will be designed with Sub-Regional Tier Guidelines with a 50-mile per hour (mph) design speed. Project design plans are shown in Fig. 3.

Traffic will be detoured off-site during construction using Ostwalt Amity Road (SR 1001), Weathers Creek Road (SR 2379), and Shinnville Road (SR 2383). The off-site detour is approximately 2.5 to 7.5 miles long, depending on the origin/destination of travel (see Fig. 1).

The project is included in the NCDOT 2017 Bridge Program as WBS Project No. 17BP.12.R.83. Right of Way (ROW) acquisition and construction are currently scheduled for fiscal years 2019 and 2020, respectively.

**Purpose and Need:** NCDOT Bridge Management Unit records indicate Bridge No. 14 has a sufficiency rating of 38 out of a possible 100 for a new structure. It is currently considered to be in fair condition.

The bridge is considered functionally obsolete due to the structural evaluation rating of 3 and deck geometry rating of 4 (both out of 9 possible points), according to Federal Highway Administration (FHWA) standards.

Bridge No. 14 was built in 1968 and is in need of replacement. The bridge superstructure has precast, prestressed concrete channels. The substructure has end and interior bents with concrete caps on timber piles with timber bulkheads. The concrete and timber components 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.

Based on the February 11, 2016 inspection date, the posted weight limit for the bridge is 21 tons for single vehicles and 24 tons for tractor-trailer semi-trucks.

**Anticipated Permit or Consultation Requirements:** A Nationwide permit 23 (33 CFR 330.5(a) 23)) will likely be required for impacts to “Waters of the United States” resulting from this project. Other permits that may apply include a NWP No. 33 for temporary construction activities such as stream dewatering, work bridges, or temporary causeways that are often used during bridge demolition.

In addition, the 404 permit will likely be applicable. An NCDWQ Section 401 Water Quality General Permit may be required prior to the issuance of a Section 404 Permit. Other required 401 certifications may

include a GC 3366 for temporary construction access and dewatering. The USACE holds the final discretion as to what permit will be required to authorize project construction.

**Special Project Information:**

**Environmental Commitments:** Green Sheet Commitments are located at the end of the checklist.

**Estimated Costs:**

The estimated costs, based on 2016 prices, are as follows:

|                     |                  |
|---------------------|------------------|
| Utility relocation: | \$ 0             |
| R/W:                | \$ 41,000        |
| Construction:       | <u>\$950,000</u> |
| Total:              | \$991,000        |

**Estimated Traffic:**

|                |           |
|----------------|-----------|
| Current (2015) | 900 vpd   |
| Year 2040      | 1,600 vpd |
| TTST           | 1%        |
| Dual           | 4%        |

**Accidents:** Traffic Safety Systems Management Unit has evaluated a recent ten-year period and found 18 accidents occurring in the vicinity of the project. Six of the 18 were adjacent to Bridge No. 14. Of these adjacent accidents, all six involved striking fixed objects (such as ditches or embankments), and two of those six involved drugs/alcohol. None of the crashes were fatal. A Bridge and Approach Investigation Checklist was performed on March 30, 2015 that determined 45 mph is a comfortable passenger car speed across the existing alignment. Sight distance is limited on the southern approach due to existing trees and a horizontal curve immediately south of the bridge.

**Design Exceptions:** There is one design exception for this project that involves the minimum horizontal curve radius. The roadway includes a curve to the south of Bridge No. 14 with a radius of 390 feet and super elevation of 6 percent, yielding a 35 mph design speed. Sub-Regional Tier Guidelines allow an existing curve to be retained without a design exception if it is within 10 mph of the design speed. A design exception will be needed for this curve unless the radius can be improved to meet a minimum of 40 mph during final design.

**Pedestrian and Bicycle Accommodations:** SR 2382 is not part of a designated bicycle route, nor is it listed in the State Transportation Improvement Program (STIP) as a bicycle project. There are no sidewalks or pedestrian paths located along the existing roadway. No recommendations are being made for bicycle and pedestrian facilities on the bridge.

**Bridge Demolition:** Bridge No. 14 is constructed of timber and concrete, and it should be possible to remove it 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 adjacent residences and the volume of traffic served by SR 2382 (Brawley Road).

**Rehabilitation** – The Bridge was constructed in 1968 with timber and concrete components. Continual rehabilitation would require replacing the components, which would constitute effectively replacing the bridge.

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

**New Alignment** – Use of a new alignment for SR 2382 would increase the amount of property acquired for the project and therefore increase impacts and cost.

**Replace in Place with Offsite Detour (Alternative 1)** – Bridge No. 14 will be replaced on the existing alignment. Traffic will be routed along an off-site detour while the new bridge is being constructed. The Division 12 office has indicated that the condition of all roads, bridges and intersections on the off-site detour are acceptable without improvement and concurs with use of this detour. **This alternative is the Preferred Alternative.**

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 off-site detour. Traffic will be detoured off-site during construction using Ostwalt Amity Road (SR 1001), Weathers Creek Road (SR 2379), and Shinnville Road (SR 2383). The off-site detour is approximately 2.5 to 7.5 miles long, depending on the origin/destination of travel. A six-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. The replacement of the bridge is not expected to affect traffic demands on the detour route. Furthermore, there are no projects in the STIP that will affect the traffic on the detour route. NCDOT will share construction schedules with the Iredell County Emergency Services Director and School Transportation Coordinator to minimize potential impacts to their services.

**Replace in Place with On-site Detour (Alternative 2)** – Alternative 2 replaces the bridge on a new alignment approximately 50 feet southwest of the existing location. Traffic would be maintained on the existing roadway while the new bridge is being constructed. This alternative is not the preferred alternative because costs and impacts would be more than with Alternative 1. This alternative was eliminated from further study.

**Replace in Place with On-site Detour (Alternative 3)** – Alternative 3 replaces the bridge on a new alignment approximately 50 feet northeast of the existing location. Traffic would be maintained on the existing roadway while the new bridge is being constructed. This alternative is not the preferred alternative because it widens the curve on SR 2382 and pushes the roadway further from the existing bridge. This alternative would cost more and have more impacts than Alternative 1. This alternative was eliminated from further study.

#### **Other Agency Comments:**

The Community Impact Assessment (January 2015) documents coordination with the **Iredell County Planning Department** and the **Iredell County Schools Transportation Coordinator**. The Iredell County planner noted that there would be a low impact if the bridge were closed up to one year for this project. The

school transportation coordinator noted that four school buses cross the bridge four times a day and that there would be a moderate impact to the school system's transportation services if the bridge were closed up to a year. There were no concerns about the potential detour route other than the additional time of travel.

**Response:** NCDOT will share the construction schedule with the Iredell County School Transportation Coordinator to minimize potential impacts to their services.

No comments or concerns were received from the US Environmental Protection Agency (USEPA), US Army Corps of Engineers (USACE), US Fish and Wildlife Service (USFWS), US Department of Agriculture, Federal Highway Administration (FHWA), NC Division of Water Resources (NCDWR), or NC Division of Parks and Recreation.

**Public Involvement:**

In December 2014, property owner notification letters were mailed out to residents in the direct study area to inform them of possible natural systems surveys on their properties. No comments were received after distribution of the notification letters. In November 2016, project newsletters were mailed to residents adjacent to the project and along the off-site detour route to inform them about the proposed project, the Preferred Alternative, the proposed off-site detour route, and the schedule for right of way acquisition and construction. Three residents called to ask questions following the distribution of the newsletters:

- One resident owning property adjacent to the bridge inquired about the proposed right of way acquisition and impacts to her property. The property owner was e-mailed the preliminary design plan sheet after discussing the project.
- A resident living two miles from the project noted concern about noise impacts and pavement damage from logging trucks and other heavy vehicles. He expressed concern about the poor pavement quality on Ostwalt Amity Road and it being used as part of the off-site detour route. Resurfacing is currently scheduled for Ostwalt Amity Road prior to project construction starting in FY 2020.
- A property owner, located along the detour route, called to inquire if her property would be impacted by the project. There are no right of way acquisitions or temporary easements near her property.

Comments have been addressed from all three residents. A Public Meeting was not requested by the public and was determined not to be needed at this time.

**PART A: MINIMUM CRITERIA**

YES NO

1. Is the proposed project listed as a type and class of activity which would qualify as a Non-Major Action under the Minimum Criteria rules?

If “yes”, under which category?

**Category # 9**

(Note: If either Category #8 or #15 is used, complete Part D of this checklist.)

If “no”, then the project does not qualify as a Non-Major Action. A state environmental impact statement (EIS) or environmental assessment (EA) will be required.

**PART B: MINIMUM CRITERIA EXCEPTIONS**

YES NO

2. Would the proposed activity cause significant changes in land use concentrations that would be expected to create adverse air quality impacts?
3. Will the proposed activity have secondary impacts or cumulative impacts that may result in a significant adverse impact to human health or the environment?
4. Is the proposed activity of such an unusual nature or does the proposed activity has such widespread implications, that an uncommon concern for its environmental effects has been expressed to the NCDOT?
5. Does the proposed activity have a significant adverse effect on wetlands; surface waters such as rivers, streams, and estuaries; parklands; prime or unique agricultural lands; or areas of recognized scenic, recreational, archaeological, or historical value?
6. Will the proposed activity endanger the existence of a species on the Department of Interior’s threatened and endangered species list?
7. Would the proposed activity cause significant changes in land use concentrations that would be expected to create adverse water quality or groundwater impacts?
8. Is the proposed activity expected to have a significant adverse effect on long-term recreational benefits of shellfish, finfish, wildlife, or their natural habitats?

- |     |  |                          |                                     |
|-----|--|--------------------------|-------------------------------------|
| 9.  | Is the proposed project likely to precipitate significant, foreseeable alterations in land use, planned growth, or development patterns? | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 10. | Does the proposed action divide or disrupt an established community?   | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 11. | Does the proposed action bypass an existing community?   | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 12. | Is the proposed action likely to have a significant detrimental impact on ambient noise levels for adjoining areas?                      | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 13. | Is the proposed action likely to have a significant impact on travel patterns or traffic volumes?  | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 14. | Does the proposed action require the relocation of significant numbers of people?  | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

Note: If any of Questions 2 through 14 in part B are answered “YES”, the proposed project does not qualify as a Non-Major Action. A state EIS or EA will be required.

**PART C: COMPLIANCE WITH STATE AND FEDERAL REGULATIONS**

- |                           |  | YES                                 | NO                                  |
|---------------------------|--|-------------------------------------|-------------------------------------|
| <u>Ecological Impacts</u> |  |                                     |                                     |
| 15.                       | Is a federally protected threatened or endangered species, or its habitat, likely to be impacted by the proposed action? <b>(The NLEB is unresolved at this time. Information will be sent to the USACE for coordination with USFWS. The USACE will be using the SLOPES (Standard Local Operating Procedures for Endangered Species)).</b> | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |
| 16.                       | Does the action require the placement of fill in waters of the United States?  | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |
| 17.                       | Does the project require the placement of a significant amount of fill in high quality or relatively rare wetland ecosystems, such as mountain bogs or pine savannahs?   | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |
| 18.                       | Does the project require stream relocation or channel changes?   | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |
| 19.                       | Is the proposed action located in an Area of Environmental Concern, as defined in the Coastal Area Management Act?   | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |
| <u>Cultural Resources</u> |  |                                     |                                     |
| 20.                       | Will the project have an “effect” on a property or site listed on the National Register of Historic Places?  | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |

21. Will the proposed action require acquisition of additional right of way from publicly owned parkland or recreational areas?

Questions in PART C are designed to assist the Engineer in determining whether a permit or consultation with a state or federal resource agency may be required. If any question in PART C is answered "YES", refer to the Environmental Guidance section of this document and contact the appropriate individual for assistance.

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

22. Project length:  
23. Right of Way width:  
24. Total Acres of Disturbed Ground Surface:  
25. Total Acres of Wetland Impacts:  
26. Total Linear Feet of Stream Impacts:  
27. Project Purpose:

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Reviewed by:

11-7-17  
Date

  
Wilson Stroud, CPM, Project Manager  
Central Project Management Unit  
North Carolina Department of Transportation

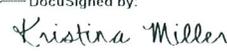
11/13/17  
Date

  
Beverly G. Robinson, CPM, Senior Project Manager  
Central Project Management Unit  
North Carolina Department of Transportation

11/14/17  
Date

  
Laura Sutton, PE, Team Lead  
Central Project Management Unit  
North Carolina Department of Transportation

11/6/2017  
Date

DocuSigned by:  
  
Kristina Miller, PE - Consultant Project Manager  
Rummel, Klepper and Kahl, LLP. (RK&K)

**PROJECT COMMITMENTS:**

**Iredell County  
Bridge No. 14 on SR 2382 (Brawley Road)  
Over Weathers Creek  
W.B.S. No. 38539.1.1 (17BP.12R.83)  
T.I.P. No. B-4767**

Hydraulics Unit – FEMA Coordination

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

Division 12 Construction – FEMA Coordination

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

Division 12 Construction, Resident Engineer's Office – Off-site Detour

NCDOT will share the construction schedule with the Iredell County Emergency Services Director and School Transportation Coordinator to minimize potential impacts to their services.

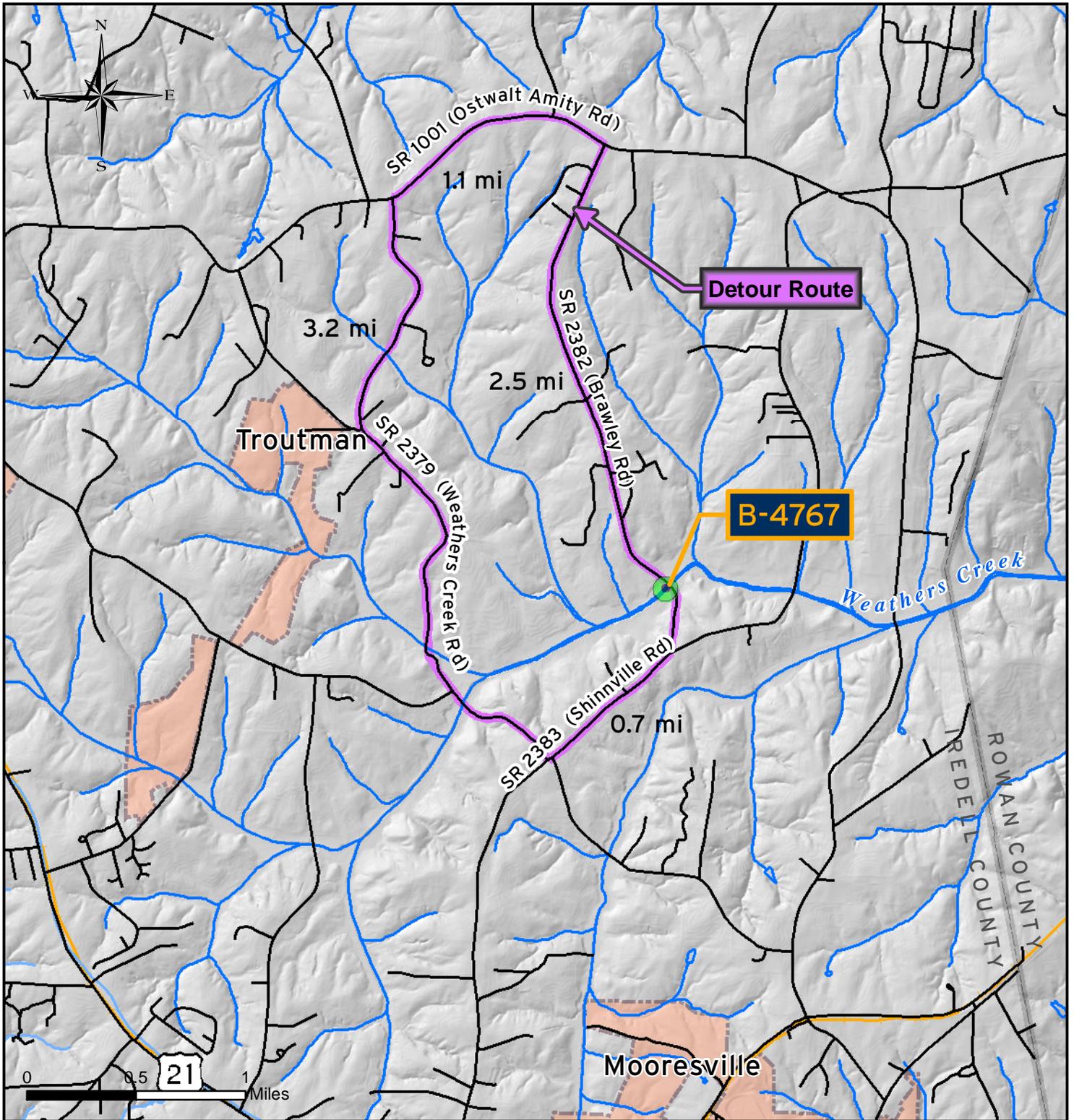
Structures Management Unit and Division 12 Construction – Bridge and Tree Clearing

To improve safety and to increase horizontal sight distance, NCDOT will provide a wider bridge and additional tree clearing on the west side of Brawley Road, which will require the acquisition of additional right of way.

Division 12 Construction – NLEB Coordination

The NLEB is unresolved at this time. Information will be sent to the USACE for coordination with USFWS. The USACE will be using the SLOPES (Standard Local Operating Procedures for Endangered Species).

# **Appendix**

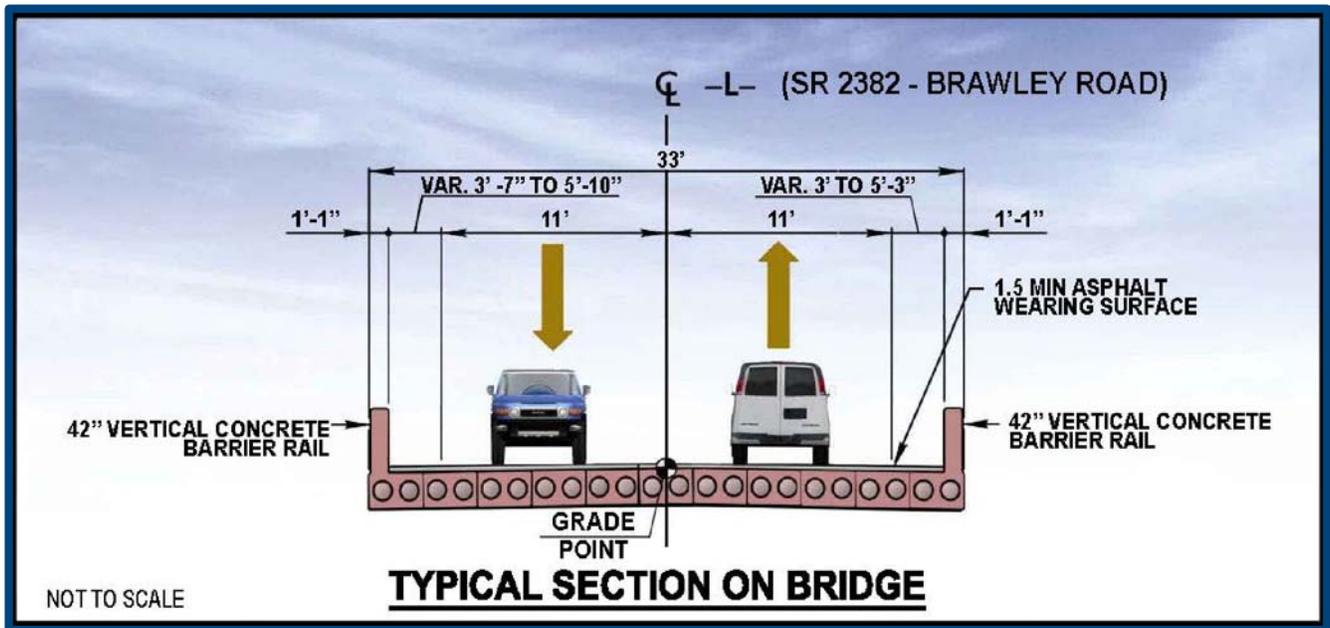
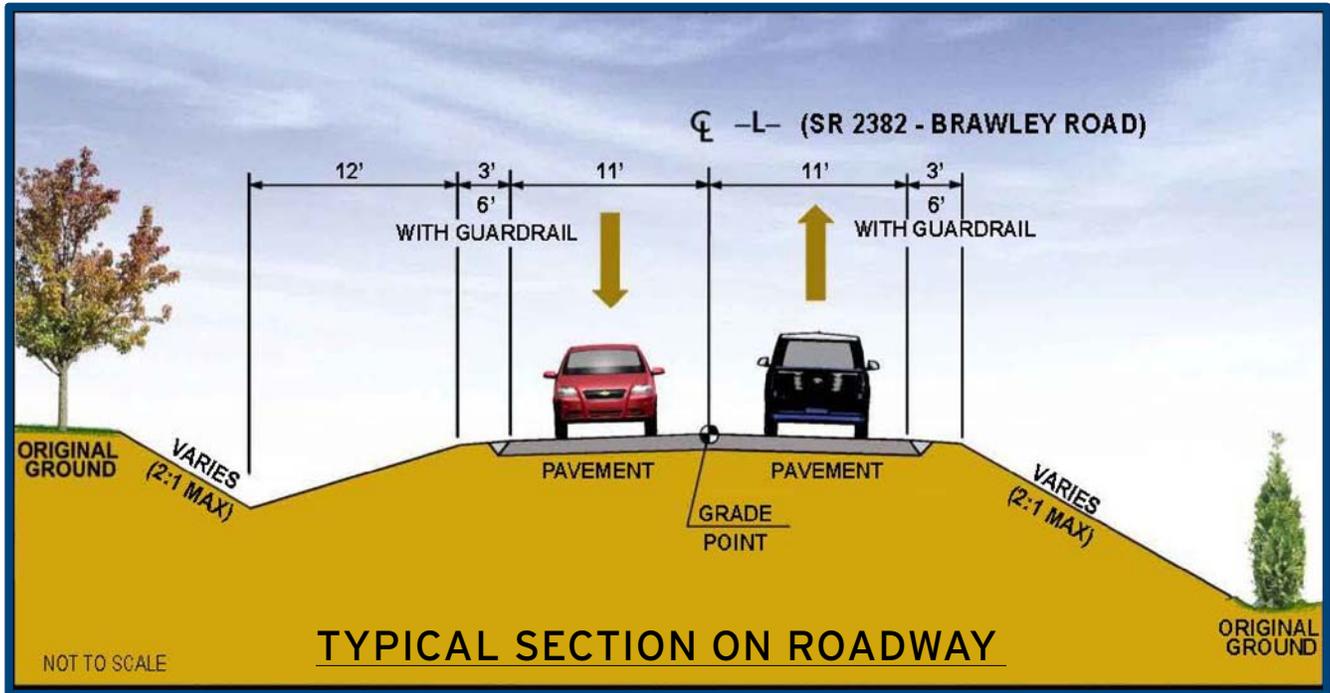


NORTH CAROLINA DEPARTMENT OF  
TRANSPORTATION  
DIVISION OF HIGHWAYS  
PROJECT DEVELOPMENT &  
ENVIRONMENTAL ANALYSIS UNIT

**B-4767**  
**REPLACE BRIDGE NO. 14 ON SR 2382**  
**OVER WEATHERS CREEK**  
**IREDELL COUNTY**

VICINITY MAP

FIGURE 1



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

B-4767  
REPLACE BRIDGE NO. 14  
ON SR 2382 (BRAWLEY ROAD)  
OVER WEATHERS CREEK  
IREDELL COUNTY

Typical Sections

Figure 2



14-12-0005



## HISTORIC ARCHITECTURE AND LANDSCAPES NO SURVEY REQUIRED FORM

This form only pertains to Historic Architecture and Landscapes for this project. It is not valid for Archaeological Resources. You must consult separately with the Archaeology Group.

### PROJECT INFORMATION

|  |             |                        |                                 |
|--|-------------|------------------------|---------------------------------|
| <b>Project No:</b>   | B-4767      | <b>County:</b>         | Iredell                         |
| <b>WBS No.:</b>  | 38539.1.1   | <b>Document Type:</b>  |                                 |
| <b>Fed. Aid No.:</b>   |             | <b>Funding:</b>        | X State    Federal              |
| <b>Federal Permit(s):</b>  | X Yes    No | <b>Permit Type(s):</b> | Not specified in review request |
| <b>Project Description:</b> Replace Bridge No. 14 on SR 2382 (Brawley Road) over Weathers Creek (off-site detour planned). |             |                        |                                 |

### SUMMARY OF HISTORIC ARCHITECTURE AND LANDSCAPES REVIEW

**DESCRIPTION OF REVIEW ACTIVITIES, RESULTS, AND CONCLUSIONS:** HPOWeb reviewed on 22 December 2014 and yielded no NR, SL, DE, SS, or LD properties in the Area of Potential Effects (APE). Iredell County current GIS mapping, aerial photography, and tax information indicated an APE of woodland and cultivated fields with several cleared residential parcels containing resources dating from the 1980s to the 2000s (viewed 22 December 2014). Bridge No. 14, constructed in 1968, is neither represented in the NCDOT Historic Bridge Survey nor representative of any distinctive engineering or aesthetic type. Google Maps "Street View" confirmed the absence of critical historic architectural and landscape resources in the APE (viewed 22 December 2014).

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

**WHY THE AVAILABLE INFORMATION PROVIDES A RELIABLE BASIS FOR REASONABLY PREDICTING THAT THERE ARE NO UNIDENTIFIED SIGNIFICANT HISTORIC ARCHITECTURAL OR LANDSCAPE RESOURCES IN THE PROJECT AREA:** APE extends 900 feet to either end of the existing bridge (NW-SE, S) and 200 feet to either side of the SR 2382 (Brawley Road) centerline (SW, W-NE, E) to encompass proposed construction activities. While the comprehensive historic architectural survey of Iredell County is not recent (1976-1977), its findings and later additions to the state survey, as well as county GIS and other visuals illustrate that no critical architectural or landscape resources are present in the APE. No National Register-listed properties are located within the APE or along the proposed off-site detour route.

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

### SUPPORT DOCUMENTATION

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

### FINDING BY NCDOT ARCHITECTURAL HISTORIAN

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

*Vanessa E. Patrick*

NCDOT Architectural Historian

*22 December 2014*

Date

14-12-0005



**NO NATIONAL REGISTER OF HISTORIC PLACES  
ELIGIBLE OR LISTED ARCHAEOLOGICAL SITES  
PRESENT OR AFFECTED FORM**



This form only pertains to ARCHAEOLOGICAL RESOURCES for this project. It is not valid for Historic Architecture and Landscapes. You must consult separately with the Historic Architecture and Landscapes Group.

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**PROJECT INFORMATION**

Project No: **B-4767** County: **Iredell**  
 WBS No: **38539.1.1** Document: **MCS**  
 F.A. No: **n/a** Funding:  State  Federal

Federal Permit Required?  Yes  No Permit Type: **Nationwide 3/14**

*Project Description:* This project is for an intensive archaeological survey and evaluation for the replacement of Bridge No. 14 on SR 2382 (Brawley Rd) over Weathers Creek (Bridge No. 14; WBS No. 38539.1.1) in Iredell County, North Carolina. As specified by the NCDOT, the survey corridor (Area of Potential Effects [APE]) for archaeology is centered upon the bridge structure and measures 1400 feet in length (700 feet from each bridge end-point) and 300 feet in width (150 feet laterally from each side of the SR 2382 center-line).

**SUMMARY OF ARCHAEOLOGICAL FINDINGS**

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

- There are no National Register listed ARCHAEOLOGICAL SITES 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 National Register Eligible or Listed ARCHAEOLOGICAL SITES present or affected by this project. *(Attach any notes or documents as needed)*

14-12-0005

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

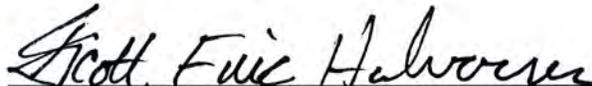
An archaeological survey and evaluation for replacement of Bridge No. 14 on SR 2382 over Weathers Creek in Iredell County was conducted on March 17, 18, and 19, 2015 by Melissa McKay and John Kesler of TRC Environmental Corporation (TRC). During the course of the survey, one previously unidentified archaeological site, 31ID361, was located within the project APE. The archaeological resource is recommended not eligible for the NRHP, and no further archaeological investigations are needed for this project.

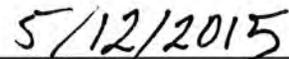
**SUPPORT DOCUMENTATION**

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

Other: **Cultural Review**

Signed

  
NCDOT ARCHAEOLOGIST

  
Date