

## MINIMUM CRITERIA DETERMINATION CHECKLIST

**STIP Project No.**        B-5525  
**W.B.S. Project No.**    55025.1.1

**Project Location:** Bridge No. 436 over East Prong Roaring River on SR 1943 (Brewer Mill Road) in Wilkes County

**Project Description:** The proposed project will replace Bridge No. 436 on SR 1943 (Brewer Mill Road) over East Prong Roaring River in Wilkes County. The proposed project is included in the 2016-2025 North Carolina State Transportation Improvement Program (STIP). Right of way acquisition and construction are scheduled for state fiscal years 2019 and 2020, respectively, in the draft 2017-2027 STIP.

The replacement structure will be a bridge approximately 120 feet long providing a minimum 27-foot ten-inch clear roadway width. The bridge will include two nine-foot lanes and four-foot 11-inch 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.

Project construction will extend approximately 140 feet from the southwest end of the new bridge and 184 feet from the northeast end of the new bridge. The approaches will be widened to 18 feet of pavement with two nine-foot lanes. Two-foot grass shoulders will be provided on each side (five-foot shoulders where guardrail is included). The roadway will be designed as a Rural Local Route using Sub-Regional Tier Guidelines with a 40 mile per hour design speed.

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

**Purpose and Need:** The purpose of the proposed project is to replace a deficient bridge.

NCDOT Bridge Management Unit records indicate Bridge No. 436 has a sufficiency rating of 56.29 out of a possible 100 for a new structure.

Bridge No. 436 was built in 1964. The bridge is 81 feet long with an approximately 19-foot clear roadway width.

The superstructure and substructure of Bridge No. 436 have timber elements that are fifty-three years old. Timber components have a typical life expectancy between 40 to 50 years due to the natural deterioration rate of wood. Rehabilitation of a timber structure is generally practical only when a few elements are damaged or prematurely deteriorated. However, past a certain degree of deterioration, most timber elements become impractical to maintain and upon eligibility are programmed for replacement. Timber components of Bridge No. 436 are experiencing an increasing degree of deterioration that can no longer be addressed by reasonable maintenance activities, therefore the bridge is approaching the end of its useful life.

Bridge No. 436 is expected to carry 220 vehicles per day (2020) with 440 vehicles per day projected for the future (2040). The substandard deck width is becoming increasingly unacceptable and replacement of the bridge will result in safer traffic operations.

The posted weight limit on the bridge is 16 tons for single vehicles and 19 tons for truck-tractor semi-trailers.

**Anticipated Permit or Consultation Requirements:**

A Nationwide Permit (NWP) 3 (maintenance) and NC Water Quality Certification No. 3883 will likely be required for impacts resulting from this project. Other permits that may apply include an NWP No. 6 (survey activities), NWP No. 33, and NC Certification 3893 (due to temporary construction activities). If a Section 404 permit is required, then a Section 401 Water Quality Certification from the NC Division of Water Resources will also be required. Pre-construction notification should be provided to the US Army Corps of Engineers and NC Division of Water Resources. The United States Army Corp of Engineers holds the final discretion as to what permit will be required to authorize project construction.

**Special Project Information:**

**Environmental Commitments:** The list of project commitments is located at the end of the checklist.

**Estimated Costs:**

The estimated costs, based on 2017 prices, are as follows:

Utility: \$ 0  
R/W: \$ 36,365  
Const: \$ 975,000  
Total: \$ 1,011,365

**Accidents:** During a recent ten-year period (January 1, 2005 through December 31, 2014) one accident occurred in the vicinity of the project. No one was killed or injured in this crash, and it was not 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 1943 (Brewer Mill Road) is not a part of a designated bicycle route nor is a bicycle or pedestrian project on SR 1943 listed in the STIP. No permanent or temporary bicycle or pedestrian accommodations are required for this project.

**Bridge Demolition:** Bridge No. 436 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 bridge as its condition continues to deteriorate.

**Rehabilitation** – The bridge was constructed in 1964 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.

**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 1943 (Brewer Mill Road) is acceptable, a new alignment was not considered as an alternative. The proposed design matches the existing design speed of 40 miles per hour.

**Offsite Detour** – Bridge No. 436 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 1002 (Traphill Road), and SR 1941 (Roundhill Church Road). The majority of traffic on the road is through traffic. The detour for the average road user would result in seven minutes of additional travel time (approximately four miles of 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. Wilkes County Emergency Services along with Wilkes County Schools Transportation have also indicated that the detour is acceptable. NCDOT Division 11 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.

## **Other Agency Comments:**

A start of study letter was sent to federal, state and local agencies on January 23, 2016. No substantive comments were received regarding the project.

## **Public Involvement:**

A landowner notification letter was sent to all property owners affected directly by this project, on December 11, 2014. Property owners were invited to comment. No comments have been received to date. A Public Meeting was determined unnecessary.

**PART A: MINIMUM CRITERIA**

- |  | YES                                 | NO                                  |
|--|-------------------------------------|-------------------------------------|
| 1. Will the proposed project involve land disturbing activity of more than ten acres that will result in substantial, permanent changes in the natural cover or topography of those lands? | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |
| 2. Will the proposed project require the expenditure of more than ten million dollars in public funds?   | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |
| 3. Is the proposed project listed as a type and class of activity which would qualify as a Non-Major Action under the Minimum Criteria rules?  | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |
| If “yes”, under which category?<br>(Note: If either Category #8 or #15 is used, complete Part D of this checklist.)  | Category # 9                        |                                     |

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

**PART B: MINIMUM CRITERIA EXCEPTIONS**

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

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

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

|  | YES                                 | NO                                  |
|--|-------------------------------------|-------------------------------------|
| <u>Ecological Impacts</u>  |                                     |                                     |
| 12. Is a federally protected threatened or endangered species, or its habitat, likely to be impacted by the proposed action?   | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |
| 13. Does the action require the placement of fill in waters of the United States?  | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |
| 14. Does the project require the placement of a significant amount of fill in high quality or relatively rare wetland ecosystems, such as mountain bogs or pine savannahs? | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |
| 15. Does the project require stream relocation or channel changes?   | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |
| 16. 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>  |                                     |                                     |
| 17. 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"/> |
| 18. Will the proposed action require acquisition of additional right of way from publicly owned parkland or recreational areas?  | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |

**Response to Question 12:** Habitat for the northern long-eared bat (NLEB) exists in the project area. Construction activities for this project will not take place until Endangered Species Act Section 7 compliance is satisfied for the NLEB. The NCDOT Environmental Analysis Unit will be responsible for review of the NLEB and subsequent Biological Conclusion.

**Response to Question 13:** No wetlands were identified within the project area. Seventy-three feet of impacts are expected to Stream SA and 92 feet are expected to Stream SB.

**PART D: N/A**

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Reviewed by:

7/6/2017

Date

DocuSigned by:

*Angela Sanderson*

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Angela Sanderson  
Project Planning Engineer  
Project Development & Environmental Analysis Unit

7/6/2017

Date

DocuSigned by:

*James McInnis, Jr.*

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James McInnis, Jr., PE  
Project Engineer  
Project Development & Environmental Analysis Unit

## **Project Commitments**

**Wilkes County  
Bridge No. 436 on SR 1943 (Brewer Mill Road)  
Over East Prong Roaring River  
WBS No. 55025.1.1  
TIP Project B-5525**

### **Division Eleven Construction**

In order to have time to adequately reroute school buses, Wilkes County Schools will be contacted at (336) 667-1121 at least one month prior to road closure.

Wilkes County Emergency Services will be contacted at (336) 651-7365 at least one month prior to road closure to make the necessary temporary reassignments to primary response units.

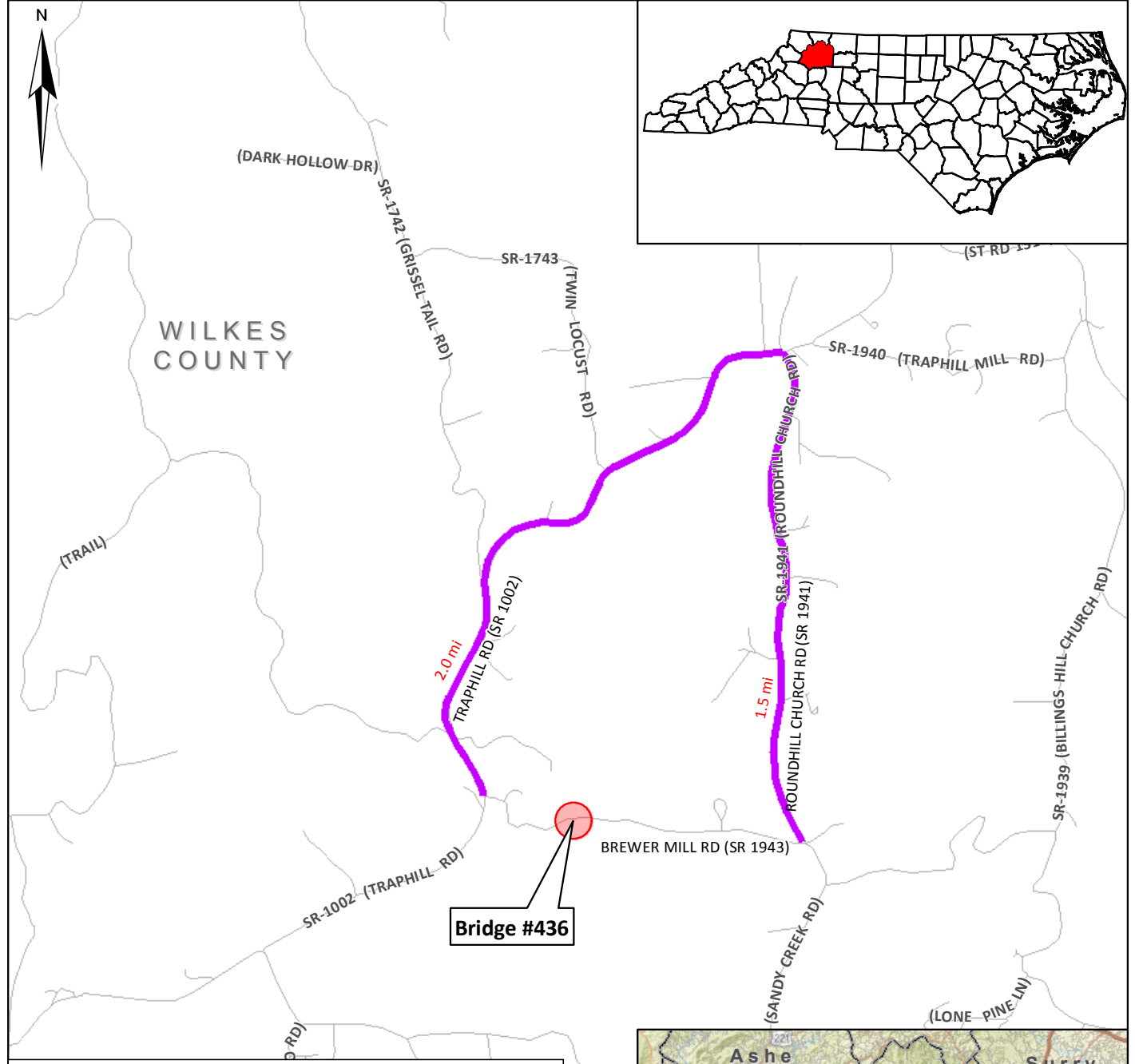
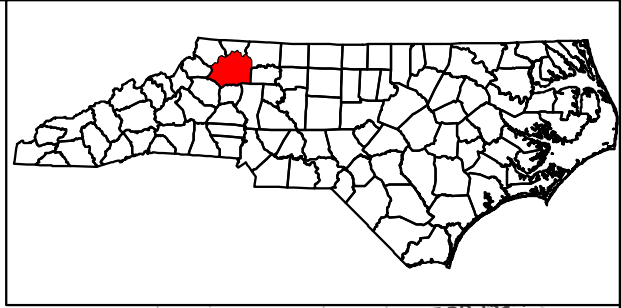
This project involves construction activities on or adjacent to FEMA-regulated stream(s). Therefore, the Division shall submit sealed as-built construction plans to the Hydraulics Unit upon completion of project construction, certifying that the drainage structure(s) and roadway embankment that are located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

### **Hydraulics Unit**

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).


### **Environmental Analysis Unit**

Construction activities for this project will not take place until Endangered Species Act Section 7 compliance is satisfied for the Northern long-eared bat (NLEB).

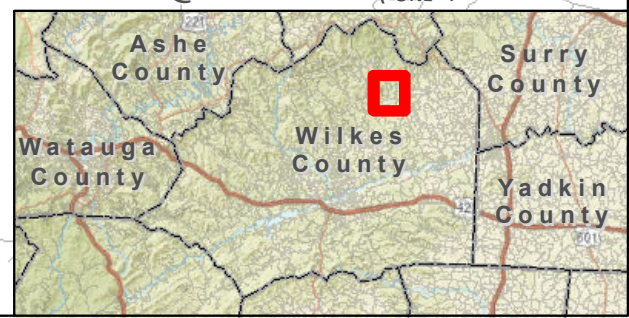


**Bridge #436**

**LEGEND**

 Studied Detour Route

1 inch = 0.5 miles



NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

DIVISION OF HIGHWAYS  
PROJECT DEVELOPMENT AND ENVIRONMENTAL ANALYSIS UNIT

**VICINITY MAP**

B-5525  
Replace Bridge #436  
on Brewer Mill Road (SR 1943)  
Over East Prong Roaring River

|                       |               |
|-----------------------|---------------|
| County: <b>WILKES</b> |               |
| Div: <b>11</b>        | <b>B-5525</b> |
| WBS: <b>55025.1.1</b> |               |
| <b>MAY 2017</b>       |               |
| <b>Figure 1</b>       |               |



8/17/99

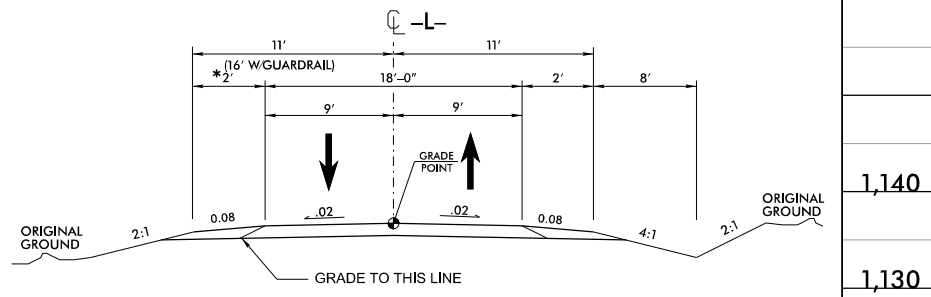
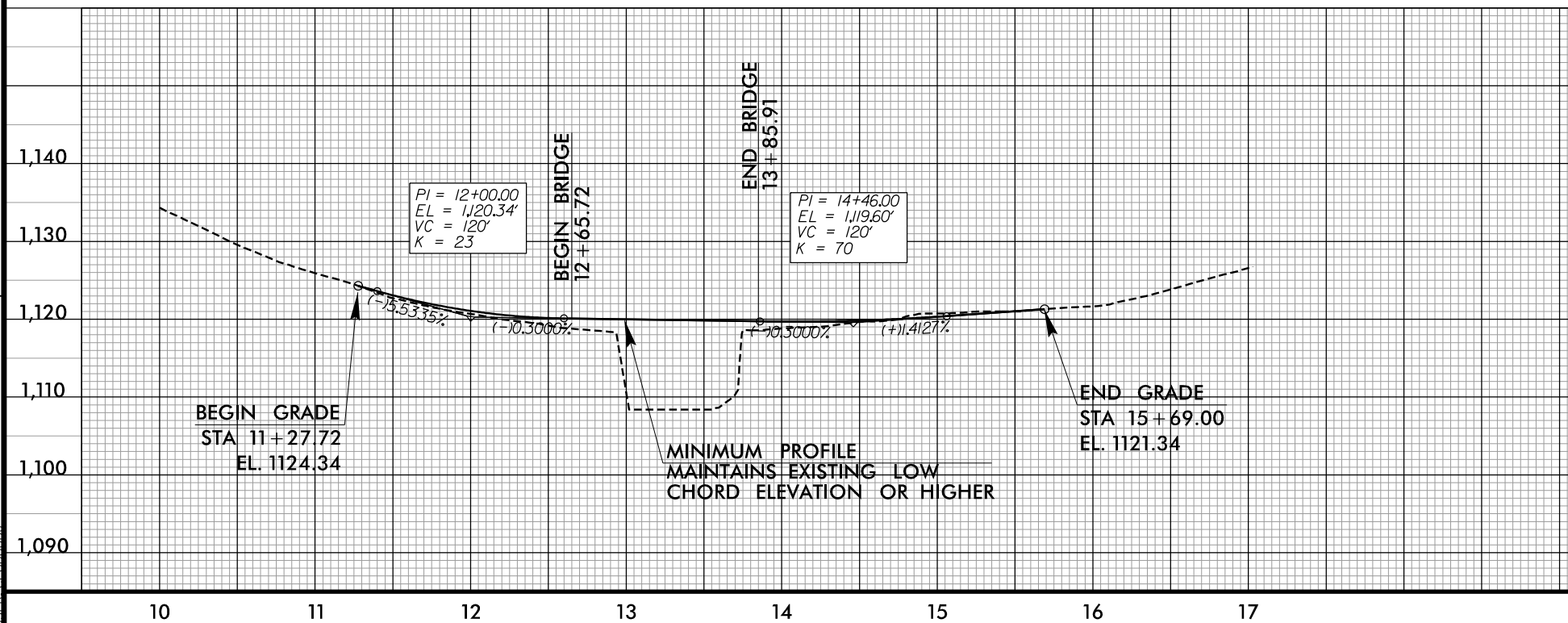
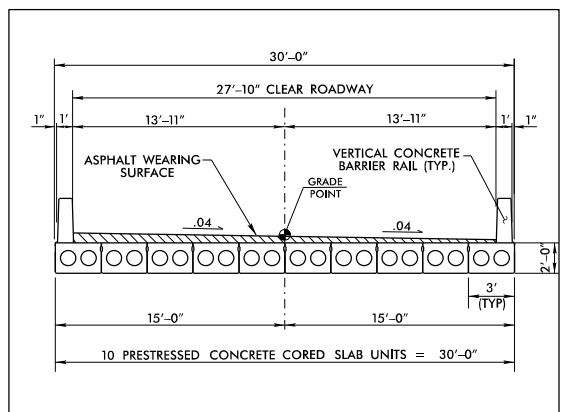
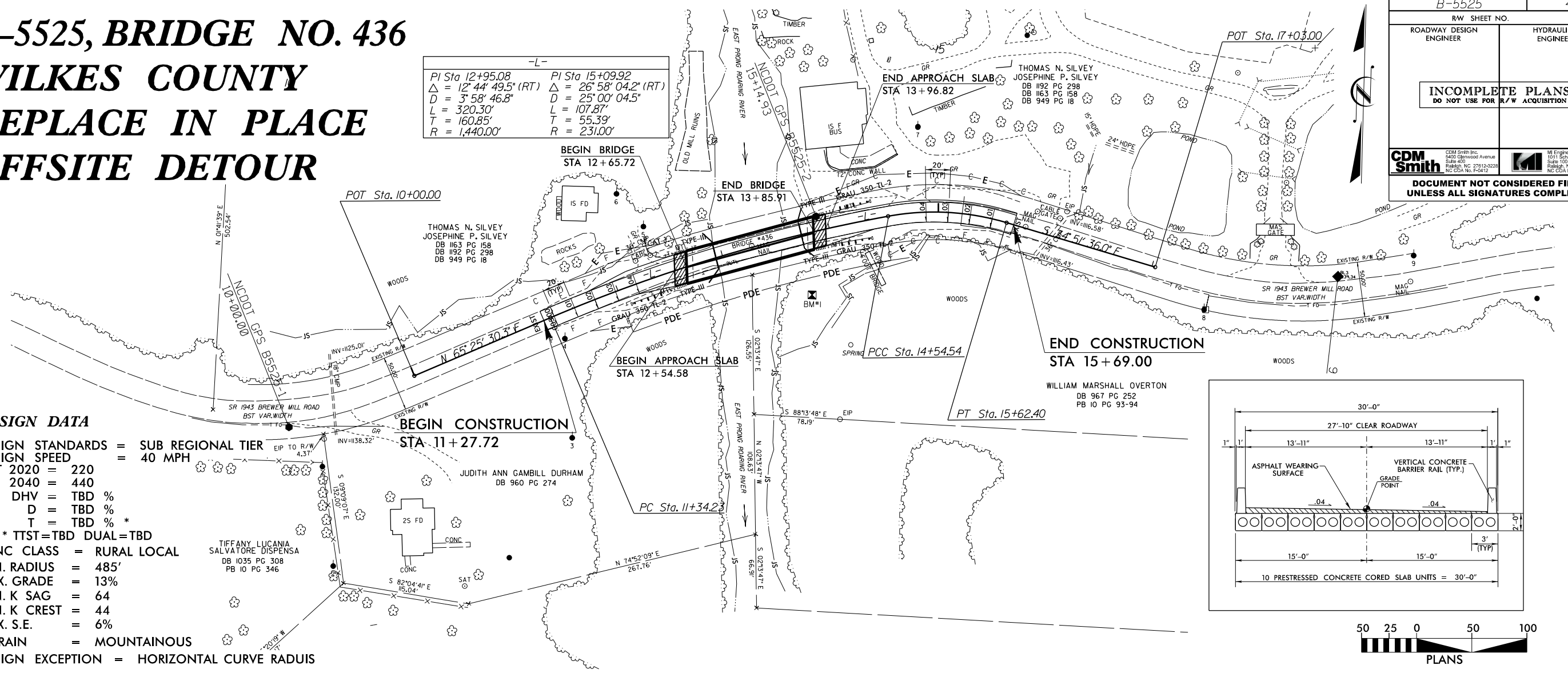
# B-5525, BRIDGE NO. 436 WILKES COUNTY REPLACE IN PLACE OFFSITE DETOUR

|   |   |
|---|---|
| PROJECT REFERENCE NO.<br>B-5525   | SHEET NO.<br>4  |
| RW SHEET NO.<br>ROADWAY DESIGN ENGINEER   | HYDRAULICS ENGINEER   |
| <b>INCOMPLETE PLANS<br/>DO NOT USE FOR R/W ACQUISITION</b>                                    |   |
| CDM Smith<br>4400 Glenwood Avenue<br>Suite 400<br>Raleigh, NC 27612-2328<br>NC CDA No. P-2412 | MJ Engineering, PLLC<br>101 S. Graham Drive<br>Suite 100<br>Raleigh, NC 27606<br>NC CDA No. |
| <b>DOCUMENT NOT CONSIDERED FINAL<br/>UNLESS ALL SIGNATURES COMPLETED</b>                      |   |

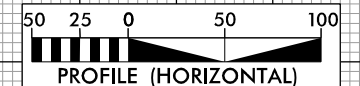
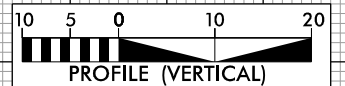
|  |  |
|--|--|
| -L-  |  |
| PI Sta 12+95.08<br>Δ = 12° 44' 49.5" (RT)<br>D = 3° 58' 46.8"<br>L = 320.30'<br>T = 160.85'<br>R = 1,440.00' | PI Sta 15+09.92<br>Δ = 26° 58' 04.2" (RT)<br>D = 25° 00' 04.5"<br>L = 107.87'<br>T = 55.39'<br>R = 231.00' |

### DESIGN DATA

DESIGN STANDARDS = SUB REGIONAL TIER  
 DESIGN SPEED = 40 MPH  
 ADT 2020 = 220  
 2040 = 440  
 DHV = TBD %  
 D = TBD %  
 T = TBD %  
 \* TTST=TBD DUAL=TBD  
 FUNC CLASS = RURAL LOCAL  
 MIN. RADIUS = 485'  
 MAX. GRADE = 13%  
 MIN. K SAG = 64  
 MIN. K CREST = 44  
 MAX. S.E. = 6%  
 TERRAIN = MOUNTAINOUS  
 DESIGN EXCEPTION = HORIZONTAL CURVE RADUIS



TYPICAL SECTION NO. 1  
\*7' W/GUARDRAIL (4' TO FACE, 3' BEHIND)



REVISIONS

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