

Type I and II Ground Disturbing Categorical Exclusion Action Classification Form

TIP Project No.	17BP.11.R.153
WBS Element	17BP.11.R.153
Federal Project No.	N/A

A. Project Description:

The North Carolina Department of Transportation (NCDOT) proposes to replace Bridge No. 419 on Red Top Road (S.R. 1148) over Naked Creek in Wilkes County. The bridge will be replaced on the existing alignment while detouring traffic offsite during construction. (See attached figures.)

Bridge No. 419 was built in 1962. The existing structure is 41 feet long with a deck width of 25 feet. The structure is a timber deck on I-Beams with timber substructure. NCDOT proposes to construct a 69 foot long single span structure with a deck width of 30 feet. The new structure will include 10-foot lanes and variable width shoulders that average 3-feet, 11-inches. The length of the overall improvement project is 300 feet. The project is scheduled for Right of Way (ROW) in January 2020 and Let in July 2020.

B. Description of Need and Purpose:

The purpose of the proposed project is to replace a structurally deficient bridge. NCDOT Structure Management Unit (SMU) records indicate Bridge No. 419 has a sufficiency rating of 37.92 out of a possible 100 for a new structure. The bridge is considered structurally deficient due to a structural evaluation of 3 out of 9, according to Federal Highway Administration standards.

The replacement of Bridge No. 419 is part of the *Growing Rural Economy and Agriculture through Transportation and Technology Enhancement or Replacement in North Carolina (GREATER-NC)* Project under the United States Department of Transportation's 2018 Better Utilizing Investments to Leverage Development (BUILD) Grant program. The purpose of the grant and this bridge replacement project is to provide transportation infrastructure to support economic development and improve physical and digital connectivity in rural communities in North Carolina. The posted weight restriction (14 tons for a single vehicle and 17 tons for a truck/tractor/semitrailer) on Bridge No. 419 prohibits large or heavy vehicles, typically used in transporting agricultural and manufactured products, from using the bridge. Vehicles above the posted weight must detour 6 miles to avoid the bridge. Replacing the existing bridge will eliminate posted weight limits by providing a safe crossing for all legal loads and will make accommodations for broadband installation in order to support economic competitiveness.

C. Categorical Exclusion Action Classification:



TYPE I A

D. Proposed Improvements:

- 28. Bridge rehabilitation, reconstruction, or replacement or the construction of grade separation to replace existing at-grade railroad crossings, if the actions meet the constraints in 23 CFR 771.117(e)(1-6).

E. Special Project Information:

Offsite Detour:

The proposed 6-mile detour for this project follows Red Top Road (S.R. 1148), Dragway Road (S.R. 1151), U.S. 421, W. Wilkes Medical Center Road, and Champion Mt. Pleasant Road (S.R. 1154) as shown on the Detour Map.

Wilkes County Emergency Services indicated a low impact to response services if the bridge were closed for up to a year. Wilkes County Schools staff indicated a high impact on overall school transportation if the bridge were closed for up to a year.

NCDOT should coordinate with Wilkes County Emergency Services (Mr. Timothy Pennington, 336.651.7363) and with Wilkes County Public Schools (Mr. Eric Barker, 336.667.1126) at least one month prior to construction. This is noted in the green sheet / project commitments.

Cost:

The estimated costs of the proposed project are as follows:

Right of Way:	\$	10,000
Utilities:	\$	46,894
<u>Construction:</u>	\$	<u>520,000</u>
Total:	\$	576,894

Design:

Design Standards: Sub-regional Tier

Design Speed: 25 miles per hour (mph)

Design Exceptions: Design speed of 25 mph and horizontal stopping sight distance for 20 mph.

Construction Type: Replace in-place

Estimated Traffic:

Average Daily Traffic 2020: 50 vehicles per day

Average Daily Traffic 2045: 100 vehicles per day

Alternatives Discussion:

No Build – The no build alternative would result in eventually closing the road, which is unacceptable given the volume of traffic served by Red Top Road (S.R. 1148).

Rehabilitation – The bridge was originally constructed in 1962. 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.

Replace In-Place with Onsite Detour – An onsite detour was not evaluated due to the presence of an acceptable offsite detour. A temporary onsite detour would unnecessarily increase temporary project impacts to Naked Creek.

Replace In-Place using Staged Construction – Staged construction was not considered because of the availability of an acceptable offsite detour.

Replace on New Alignment – Given that the alignment for Red Top Road is acceptable, and a new alignment would unnecessarily increase project impacts (especially to Naked Creek), replacing the bridge on new alignment was not considered as an alternative.

Replace In-Place with Offsite Detour (Preferred) – Bridge No. 419 will be replaced on the existing alignment. Traffic will be detoured offsite (see attached Detour Map) during the construction period. The offsite detour for this project (approximately 6 miles in length) would include Red Top Road (S.R. 1148), Dragstrip Road (S.R. 1151), U.S 421, W. Wilkes Medical Center Road, and Champion Mt. Pleasant Road (S.R. 1154).

Bicycle and Pedestrian Accommodations:

This portion of Red Top Road is not designated as a bicycle route. No specific accommodations will be included in the project.

Human Environment:

Cultural Resources

Under NCDOT’s programmatic agreement with the NC State Historic Preservation Office (SHPO) for bridge replacement projects, NCDOT reviewed the study area to determine the potential for historic architectural and archeological resources. The reviews concluded no survey required for historic architecture and archeological resources.

Environmental Justice

While census data indicates low-income populations are present in the Demographic Study Area (DSA), no notably adverse community impacts are anticipated with this project; thus impacts to minority or low-income populations do not appear to be disproportionately high and adverse. Benefits and burdens resulting from the project are anticipated to be equitably distributed throughout the community. No disparate impacts are anticipated under Title VI and related statutes.

Natural Environment:

Water Resources

Water resources within the project study area include Naked Creek. The best usage classification for Naked Creek is C.

The project is located in the Yadkin – Pee Dee River Basin and is not subject to NCDEQ regulated riparian buffer rules.

There is one potential jurisdictional stream and two potential jurisdictional wetlands in the study area.

The floodplain associated with Naked Creek at the project site is identified as Zone AE.

Threatened and Endangered Species

As summarized in the September 2019 Natural Resources Technical Report (NRTR), and subsequent memorandums, NCDOT anticipates to have no effects on any federally-protected species.

Anticipated Permit or Consultation Requirements:

Since the completion of the NRTR, the gray bat (*Myotis grisescens*) has been added to the threatened and endangered species list for Wilkes County by the US Fish and Wildlife Service (USFWS) as of 11/13/2019. NCDOT's Biological Surveys Group will survey the project study area as appropriate for this species. Construction authorization will not be provided, and work on the Project will not start until consultation with the USFWS is complete. NCDOT's Environmental Analysis Unit (EAU) will coordinate as appropriate with the USFWS under Section 7 until concurrence is obtained. This commitment is noted in the green sheet / project commitments.

A Nationwide Permit (NWP) will likely be required for impacts to "Waters of the United States" resulting from this project.

In addition, an NCDWR Section 401 Water Quality General Certification (GC) may be required prior to the issuance of a Section 404 Permit. The USACE holds the final discretion as to what permit will be required to authorize project construction.

Public Outreach:

A newsletter was distributed in the mail to notify the public of the proposed project and proposed detour during the construction period. The newsletter provided contact information for the public if they had any questions or comments. The public comment period was open from December 17, 2019 to January 10, 2020. No comments have been received to date.

Tribal coordination letters were distributed on December 16, 2019 to the Eastern Band of Cherokee Indians (EBCI), the Catawba Indian Nation, the Cherokee Nation, and the United Keetoowah Band of Cherokee. Comments on the proposed project were requested by January 17, 2020. No comments have been received to date.

F. Project Impact Criteria Checklists:

<u>Type I & II - Ground Disturbing Actions</u>			
<u>FHWA APPROVAL ACTIVITIES THRESHOLD CRITERIA</u>			
If any of questions 1-7 are marked "yes" then the CE will require FHWA approval.		Yes	No
1	Does the project require formal consultation with U.S. Fish and Wildlife Service (USFWS) or National Marine Fisheries Service (NMFS)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2	Does the project result in impacts subject to the conditions of the Bald and Golden Eagle Protection Act (BGPA)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
3	Does the project generate substantial controversy or public opposition, for any reason, following appropriate public involvement?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
4	Does the project cause disproportionately high and adverse impacts relative to low-income and/or minority populations?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
5	Does the project involve a residential or commercial displacement, or a substantial amount of right of way acquisition?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
6	Does the project require an Individual Section 4(f) approval?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
7	Does the project include adverse effects that cannot be resolved with a Memorandum of Agreement (MOA) under Section 106 of the National Historic Preservation Act (NHPA) or have an adverse effect on a National Historic Landmark (NHL)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
If any of questions 8 through 31 are marked "yes" then additional information will be required for those questions in Section G.			
<u>Other Considerations</u>		Yes	No
8	Does the project result in a finding of "may affect not likely to adversely affect" for listed species, or designated critical habitat under Section 7 of the Endangered Species Act (ESA)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
9	Is the project located in anadromous fish spawning waters?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
10	Does the project impact waters classified as Outstanding Resource Water (ORW), High Quality Water (HQW), Water Supply Watershed Critical Areas, 303(d) listed impaired water bodies, buffer rules, or Submerged Aquatic Vegetation (SAV)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
11	Does the project impact waters of the United States in any of the designated mountain trout streams?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
12	Does the project require a U.S. Army Corps of Engineers (USACE) Individual Section 404 Permit?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
13	Will the project require an easement from a Federal Energy Regulatory Commission (FERC) licensed facility?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
14	Does the project include a Section 106 of the NHPA effects determination other than a no effect, including archaeological remains?	<input type="checkbox"/>	<input checked="" type="checkbox"/>

<u>Other Considerations (continued)</u>		Yes	No
15	Does the project involve hazardous materials and/or landfills?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
16	Does the project require work encroaching and adversely affecting a regulatory floodway or work affecting the base floodplain (100-year flood) elevations of a water course or lake, pursuant to Executive Order 11988 and 23 CFR 650 subpart A?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
17	Is the project in a Coastal Area Management Act (CAMA) county and substantially affects the coastal zone and/or any Area of Environmental Concern (AEC)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
18	Does the project require a U.S. Coast Guard (USCG) permit?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
19	Does the project involve construction activities in, across, or adjacent to a designated Wild and Scenic River present within the project area?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
20	Does the project involve Coastal Barrier Resources Act (CBRA) resources?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
21	Does the project impact federal lands (e.g. U.S. Forest Service (USFS), USFWS, etc.) or Tribal Lands?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
22	Does the project involve any changes in access control?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
23	Does the project have a permanent adverse effect on local traffic patterns or community cohesiveness?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
24	Will maintenance of traffic cause substantial disruption?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
25	Is the project inconsistent with the STIP or the Metropolitan Planning Organization's (MPO's) Transportation Improvement Program (TIP) (where applicable)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
26	Does the project require the acquisition of lands under the protection of Section 6(f) of the Land and Water Conservation Act, the Federal Aid in Fish Restoration Act, the Federal Aid in Wildlife Restoration Act, Tennessee Valley Authority (TVA), or other unique areas or special lands that were acquired in fee or easement with public-use money and have deed restrictions or covenants on the property?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
27	Does the project involve Federal Emergency Management Agency (FEMA) buyout properties under the Hazard Mitigation Grant Program (HMGP)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
28	Does the project include a <i>de minimis</i> or programmatic Section 4(f)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
29	Is the project considered a Type I under the NCDOT's Noise Policy?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
30	Is there prime or important farmland soil impacted by this project as defined by the Farmland Protection Policy Act (FPPA)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
31	Are there other issues that arose during the project development process that affected the project decision?	<input type="checkbox"/>	<input checked="" type="checkbox"/>

G. Additional Documentation as Required from Section F

Response to Question 8: A Natural Resources Technical Report (NRTR) was completed in September 2019 for this project and provided a biological conclusion of "Unresolved" for the Northern long-eared bat (NLEB). A review of the July 2019 NCNHP dataset indicates no known occurrences of NLEB within 1.0 mile of the study area. Additional information for this species will be provided by the NCDOT – Biological Surveys Group (BSG). This is noted in the greensheet/project commitments.

Since completion of the NRTR, the gray bat (*Myotis grisescens*) has been added to the threatened and endangered species list for Wilkes County by the US Fish and Wildlife Service (USFWS) as of 11/13/19. NCDOT's Biological Surveys Group will survey the project study area as appropriate for this species. Construction authorization will not be provided, and work on the Project will not start, until consultation with the USFWS is complete. The NCDOT EAU will coordinate with the USFWS under Section 7 until concurrence is obtained. This commitment is noted in the green sheet / project commitments.

Response to Question 16: 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. This is noted in the green sheet / project commitments.

The Hydraulics Unit will coordinate with the NC Floodplain Mapping Program (FMP) to determine status of the 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).

H. Project Commitments

Wilkes County
Replace Bridge 419 on Red Top Road (S.R. 1148) over Naked Creek.
WBS No. 17BP.11.R.153
TIP No. 17BP.11.R.153

NCDOT Environmental Analysis Unit (EAU) / Biological Surveys Group (BSG)

Unresolved Biological Conclusion

Additional information for this Northern long-eared bat will be provided by the NCDOT – Biological Surveys Group prior to project construction.

Complete Section 7 Consultation

NCDOT's Biological Surveys Group will survey the project study area as appropriate for the gray bat (*Myotis grisescens*). Construction authorization will not be provided, and work on the Project will not start, until consultation with the USFWS under Section 7 is complete. EAU will continue to survey and coordinate with the USFWS and/or USACE until concurrence is obtained.

NCDOT Division 11

Continued Coordination Emergency Services

NCDOT should coordinate with Wilkes County Emergency Services (Mr. Timothy Pennington, 336.651.7363) at least one month prior to construction.

NCDOT Division 11

Continued Coordination School Transportation Services

NCDOT should coordinate with Wilkes County Public Schools (Mr. Eric Barker, 336.667.1126) at least one month prior to construction.

FEMA Floodplains and Floodways (Division 11 Construction, NCDOT SMU)

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.

Floodplain Mapping Coordination (NCDOT Hydraulic Design 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).

I. Categorical Exclusion Approval

TIP Project No.	<u>17BP.11.R.153</u>
WBS Element	<u>17BP.11.R.153</u>
Federal Project No.	<u>N/A</u>

Prepared By:

1/22/2020
Date

Darren Even

Darren Even, AICP, Senior Planner
Dewberry Engineers Inc.

Prepared For:

NCDOT Structures Management Unit

Reviewed By:

1/23/2020
Date

DocuSigned by:

Philip S. Harris, PE

Philip S. Harris, III, PE, Environmental Analysis Unit
North Carolina Department of Transportation



Approved

If all of the threshold questions (1 through 7) of Section F are answered "no," NCDOT approves this Categorical Exclusion.



Certified

If any of the threshold questions (1 through 7) of Section F are answered "yes," NCDOT certifies this Categorical Exclusion.

1/23/2020
Date

DocuSigned by:

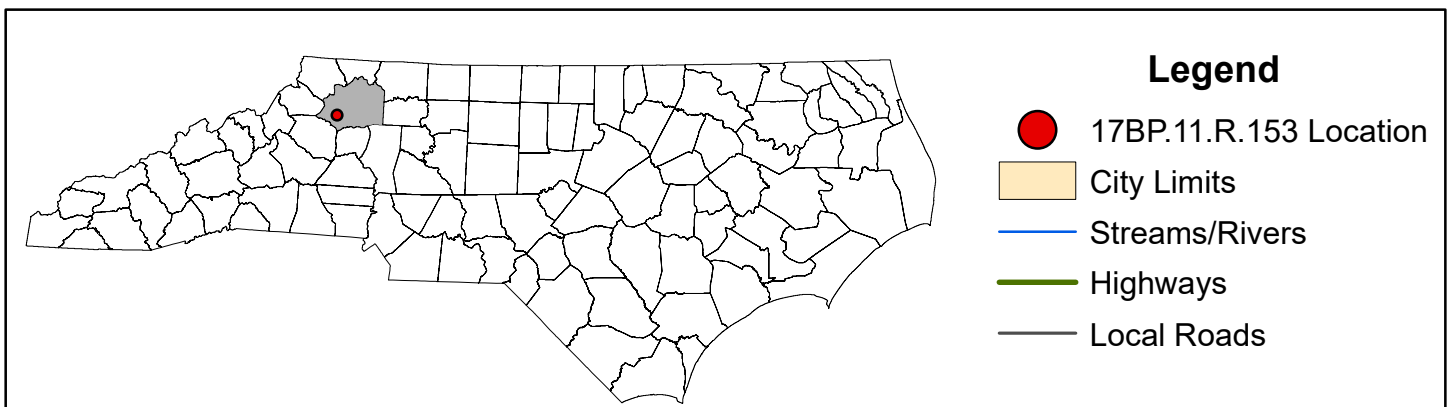
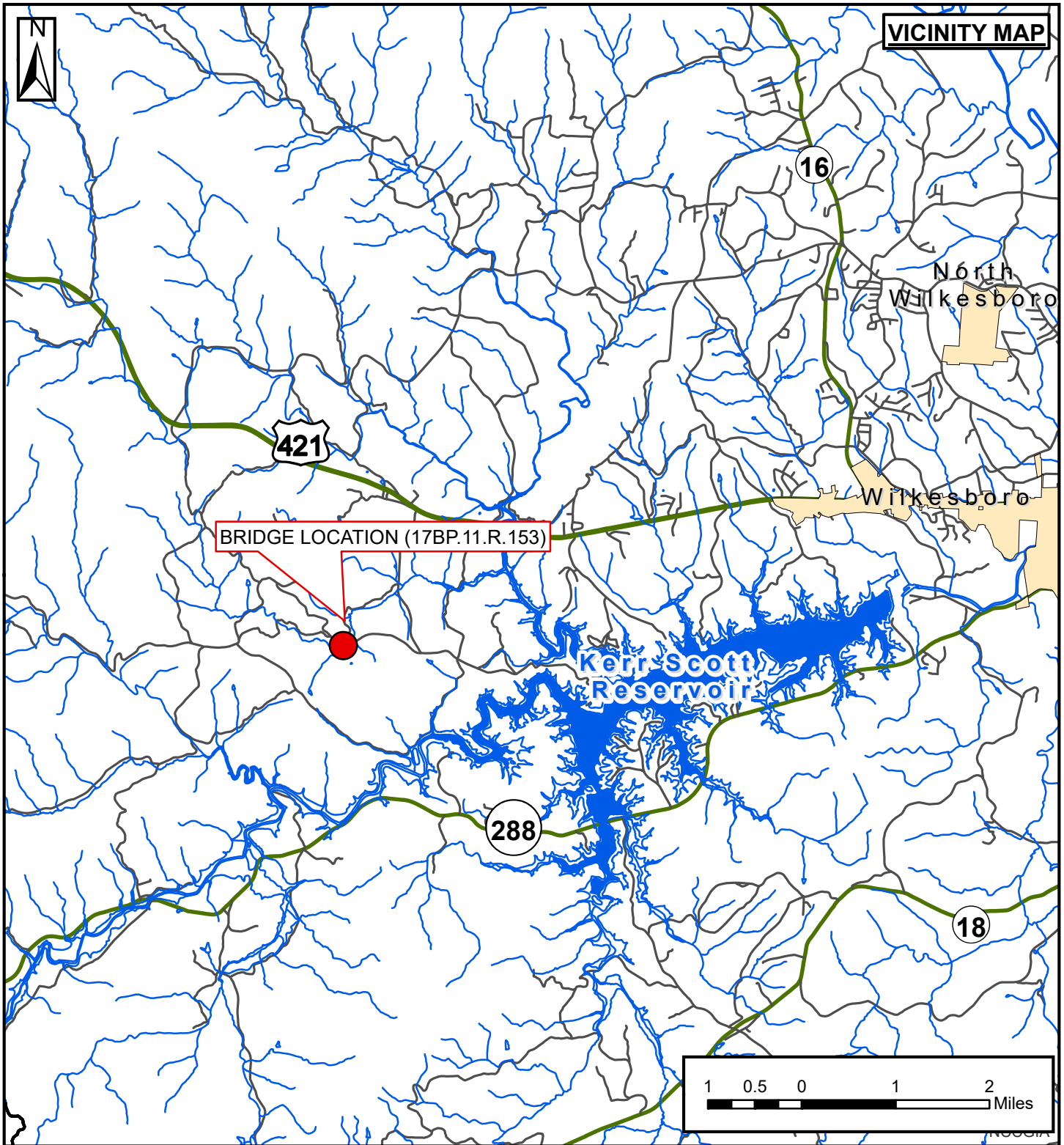
Kevin Fischer

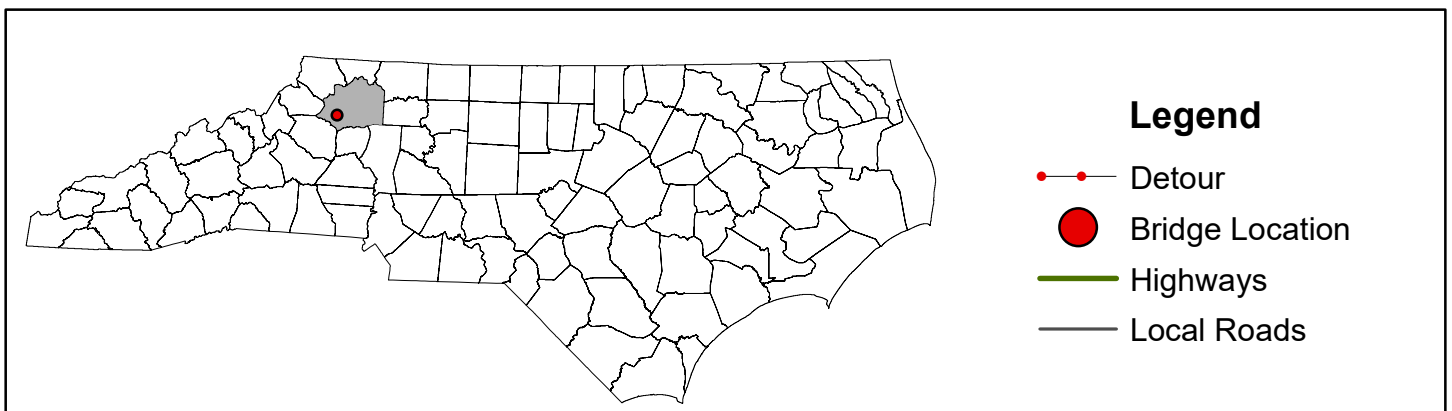
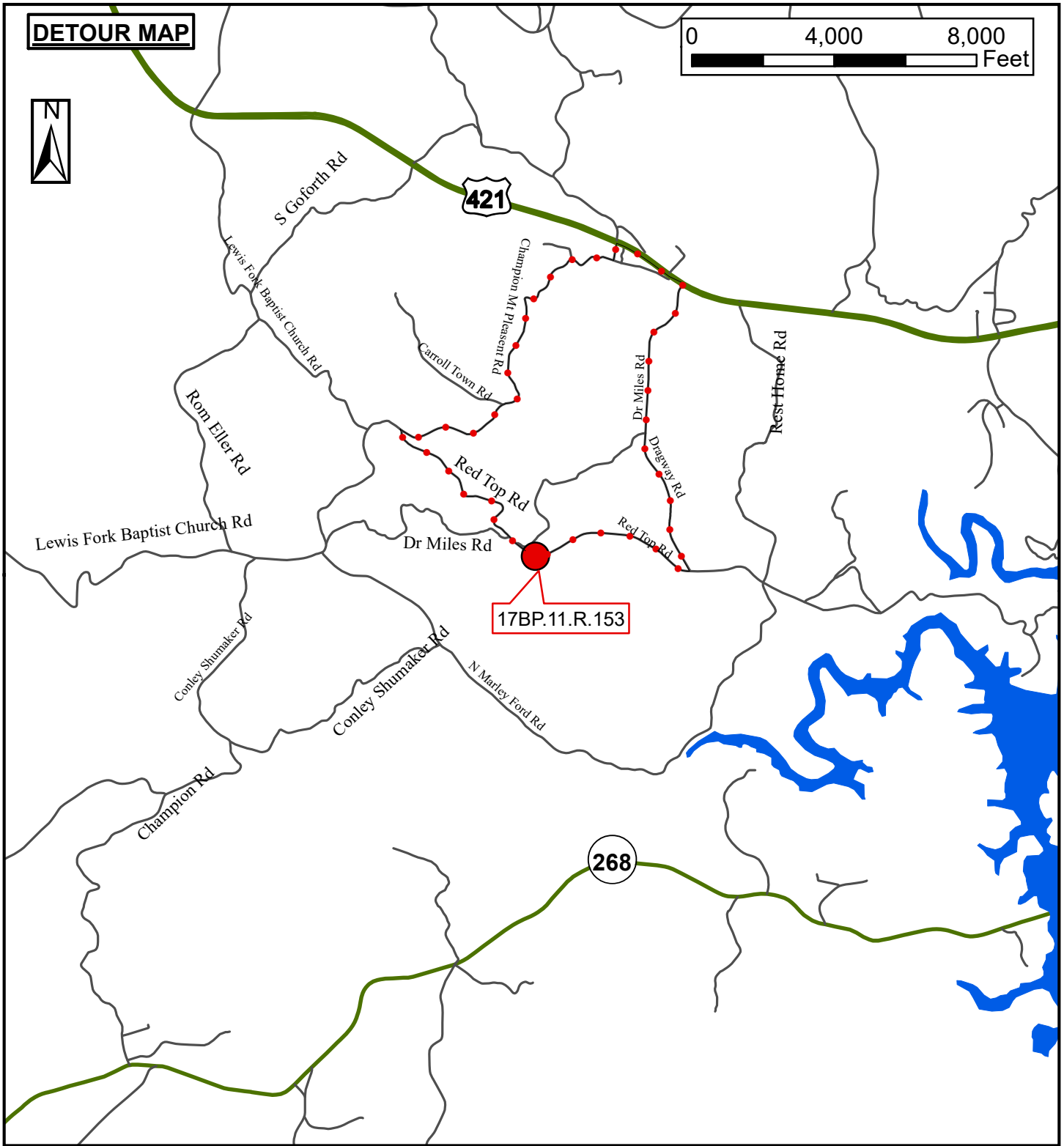
Kevin Fischer, PE, Assistant State Structures Engineer
Structures Management Unit
North Carolina Department of Transportation

FHWA Approved: For Projects Certified by NCDOT (above), FHWA signature required.

N/A
Date

John F. Sullivan, III, PE, Division Administrator
Federal Highway Administration





19-08-0012



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

Project No:		County:	Wilkes
WBS No.:	17BP.11.R.153	Document Type:	CE
Fed. Aid No:		Funding:	<input checked="" type="checkbox"/> State <input type="checkbox"/> Federal
Federal Permit(s):	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Permit Type(s):	
<u>Project Description:</u> Replace Bridge No. 419 on SR 1148 (Red Top Rd) over Naked Creek			

SUMMARY OF HISTORIC ARCHITECTURE AND LANDSCAPES REVIEW

Description of review activities, results, and conclusions:

Review of HPO quad maps, relevant background reports, historic designations roster, and indexes was undertaken on August 28, 2019. Based on this review there are no NR, DE, LL, SL or SS in the Area of Potential Effects (APE). There are no structures over 50 years of age in the APE. No Survey is required at this time.

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:

Using HPO GIS website and county tax data provides reliable information regarding the structures in the APE. These combined utilities are considered valid for the purposes of determining the likelihood of historic resources being present.

SUPPORT DOCUMENTATION

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

FINDING BY NCDOT ARCHITECTURAL HISTORIAN

Historic Architecture and Landscapes -- NO SURVEY REQUIRED

Shelby Reap

NCDOT Architectural Historian

Aug 28, 2019

Date



NO ARCHAEOLOGICAL SURVEY REQUIRED 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.



PROJECT INFORMATION

Project No: _____ *County:* Wilkes
WBS No: 17BP.11.R.153 *Document:* Federal Categorical Exclusion
Federal Aid No: _____ *Funding:* State Federal
Federal Permit Required? Yes No *Permit Type:* USACE

Project Description:

Replace Bridge 419 on SR 1148 (Red Top Rd.) over Naked Creek in Wilkes County. The Area of Potential Effects (A.P.E.) is approximately 91 meters (152 ft.) long and 15 meters (50 ft.) wide. (Design plans have been provided.) The project is State-funded and will require Federal permits. No easements will be required. This is a Federal undertaking (USACE permit required) and is subject to Section 106 of the National Historic Preservation Act.

NOTE: An archaeological survey was previously recommended for this project on 9/24/2019. The study area submitted with the cultural resources review request was a large one. The "25% design plans" (see below) submitted in November 2019 show a much smaller A.P.E. that doesn't include any landforms with potential for archaeological sites.

This project falls within a North Carolina County in which the following federally recognized Tribes have expressed an interest: Cherokee Nation of Oklahoma, Eastern Band of Cherokee Indians, and the United Keetoowah Band of Cherokee Indians. It is recommended that you contact each federal agency involved with your project to determine their Section 106 Tribal consultation requirements.

SUMMARY OF CULTURAL RESOURCES REVIEW

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

The review included an examination of a topographic map, the Wilkes County web soil survey, an aerial photograph, and records about previously recorded sites, previous archaeological surveys, and previous environmental reviews at the North Carolina Office of State Archaeology (OSA) in Raleigh. The bridge is oriented approximately east-west. Design plans show that the bridge will be replaced in place with an off-site detour. No new right of way will be needed for the project.

The topographic maps (Purlear/ Boomer) show the A.P.E. is located in a wide creek valley. The A.P.E. includes a narrow strip of floodplain along each side of SR 1148 and on each side of the bridge. The floodplain is depicted as cleared, indicating that it may be suitable for agriculture (well-drained). Floodplains with well-drained soils have a moderate to high potential for archaeological sites.

The Wilkes County soil survey shows the soil in the A.P.E. is Codorous loam (0-2% slopes), frequently-flooded. Codorous loam is a somewhat poorly-drained soil found on floodplains.

The aerial photograph shows the land use in the study area is a mix of wooded and cleared. The A.P.E. is wooded.

There are no previously recorded archaeological sites within or adjacent to the study area. The study area has not been included in any previous archaeological surveys. The study area is not within the boundaries of any projects that have been reviewed by the State Historic Preservation Office (HPO).

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

The A.P.E. for the project does not include any land outside of the existing road and bridge right of way. This land has been disturbed by construction and maintenance of the existing road and bridge. Also, the soil in the A.P.E. is poorly-drained.

SUPPORT DOCUMENTATION

See attached: Map(s) Previous Survey Info Photos Correspondence
 Photocopy of County Survey Notes Other:

FINDING BY NCDOT ARCHAEOLOGIST

NO ARCHAEOLOGY SURVEY REQUIRED

Caleb Smith

11/14/2019

NCDOT ARCHAEOLOGIST II

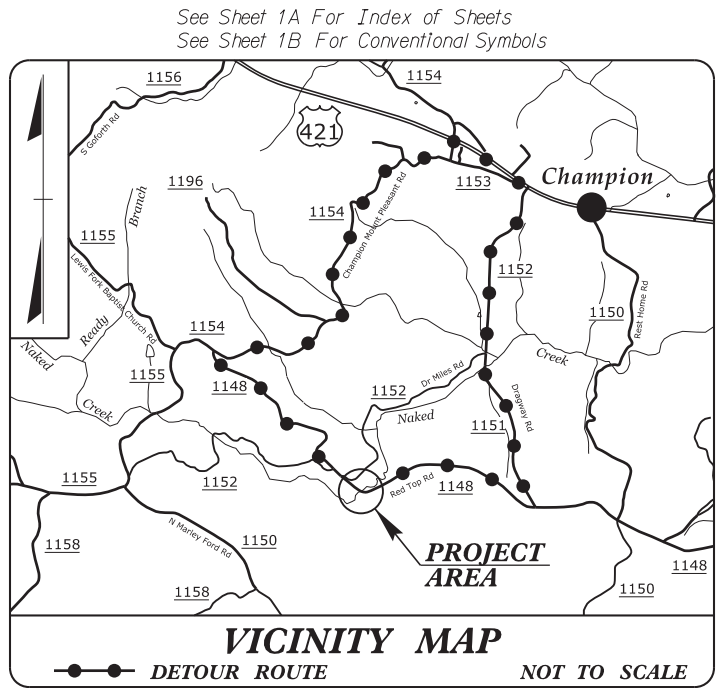
Date

09/28/20

30-OCT-2019 15:01
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 \$\$\$SERVNAME\$\$\$

TIP PROJECT: 17BP.11.R.153

CONTRACT:

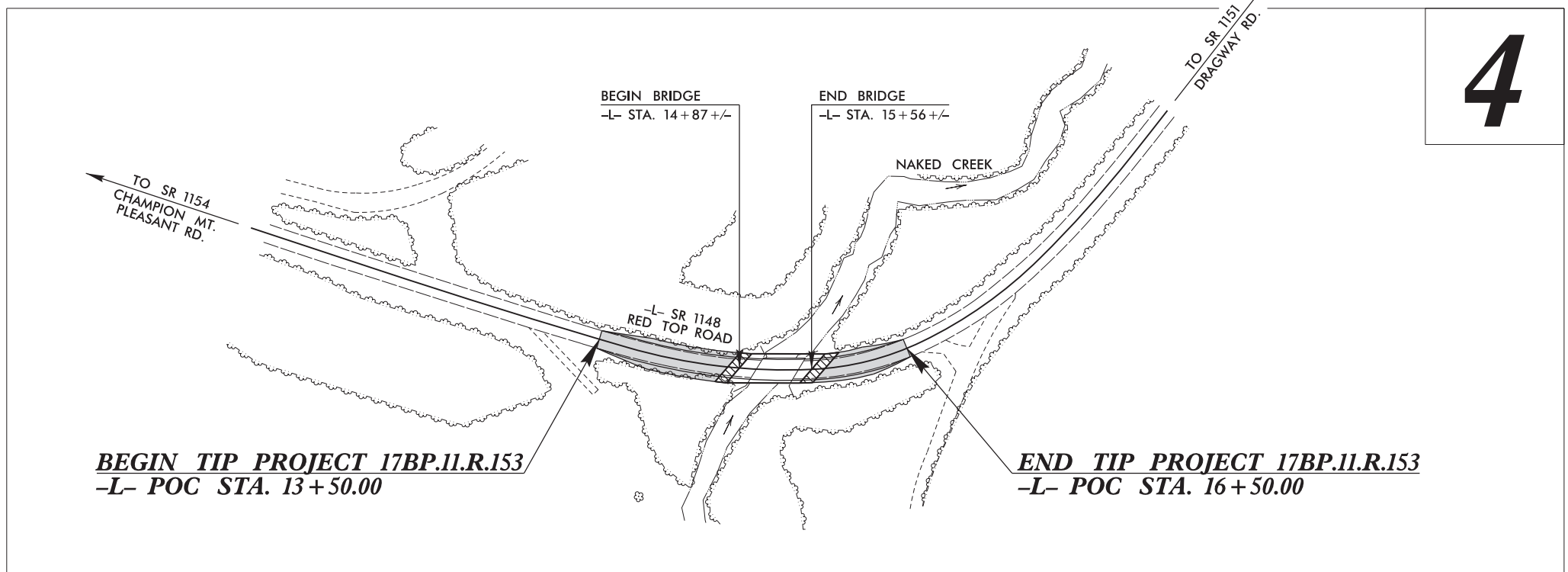


STATE OF NORTH CAROLINA
 DIVISION OF HIGHWAYS
WILKES COUNTY

**LOCATION: REPLACE BRIDGE NO. 419 ON SR 1148
 (RED TOP ROAD) OVER NAKED CREEK**
TYPE OF WORK: GRADING, DRAINAGE, PAVING, AND STRUCTURE

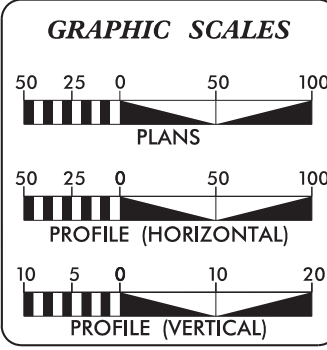
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	17BP.11.R.153	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
17BP.11.R.153		PE	

25% PLANS



THIS PROJECT IS NOT WITHIN ANY MUNICIPAL BOUNDARIES.
 CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD ____.
 DESIGN EXCEPTION FOR DESIGN SPEED OF 25 MPH AND HORIZONTAL STOPPING SIGHT DISTANCE FOR 20 MPH.

INCOMPLETE PLANS
 DO NOT USE FOR R/W ACQUISITION
 DOCUMENT NOT CONSIDERED FINAL
 UNLESS ALL SIGNATURES COMPLETED



DESIGN DATA

ADT 2020 = 50
 ADT 2045 = 100

V = 25 MPH

FUNC CLASS =
 LOCAL
 SUBREGIONAL TIER

PROJECT LENGTH

LENGTH ROADWAY PROJECT 17BP.11.R.153 = 0.044 MILES
 LENGTH STRUCTURE PROJECT 17BP.11.R.153 = 0.013 MILES
 TOTAL LENGTH PROJECT 17BP.11.R.153 = 0.057 MILES

Plans Prepared By:
 ms consultants, inc.
 920 Main Campus Drive
 Suite 430
 Raleigh, NC 27606
 NC License Number - C-3239

2018 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
 JANUARY 17, 2020

LETTING DATE:
 JULY 21, 2020

Plans Prepared For:
 NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 DIVISION OF HIGHWAYS
 1000 BIRCH RIDGE DRIVE
 RALEIGH, NC 27610

DAVID STUTTS, PE
 NCDOT PROJECT ENGINEER

M. TRAVIS POTTS, PE
 PROJECT ENGINEER

NYA BOAYUE, PE
 PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

SIGNATURE: _____ P.E.

ROADWAY DESIGN ENGINEER

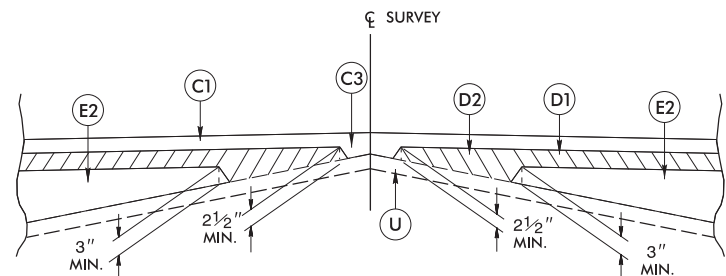
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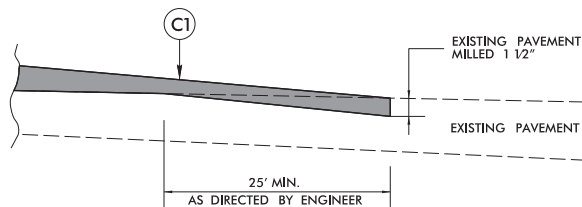
6/2/09

PAVEMENT SCHEDULE *TO BE UPDATED WHEN DESIGN RECEIVED	
C1	PROP. APPROX. 1½" ASPHALT CONCRETE SURFACE COURSE, TYPE ???, AT AN AVERAGE RATE OF ??? LBS. PER SQ. YD.
C2	PROP. APPROX. 2½" ASPHALT CONCRETE SURFACE COURSE, TYPE ???, AT AN AVERAGE RATE OF ??? LBS. PER SQ. YD.
C3	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE ???, AT AN AVERAGE RATE OF ??? LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT LESS THAN 1½" OR GREATER THAN 2" IN DEPTH.
D1	PROP. APPROX. 3" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE ???, AT AN AVERAGE RATE OF ??? LBS. PER SQ. YD.
D2	PROP. VAR. DEPTH ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE ???, AT AN AVERAGE RATE OF ??? LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT LESS THAN 2½" OR GREATER THAN 4" IN DEPTH.
E1	PROP. APPROX. 4" ASPHALT CONCRETE BASE COURSE, TYPE ???, AT AN AVERAGE RATE OF ??? LBS. PER SQ. YD.
E2	PROP. VAR. DEPTH ASPHALT CONCRETE BASE COURSE, TYPE ???, AT AN AVERAGE RATE OF ??? LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT LESS THAN 3" OR GREATER THAN 5½" IN DEPTH.
T	EARTH MATERIAL.
U	EXISTING PAVEMENT.
W	VARIABLE DEPTH ASPHALT PAVEMENT (SEE DETAIL SHOWING METHOD OF WEDGING).

NOTE: PAVEMENT EDGE SLOPES ARE 1:1 UNLESS SHOWN OTHERWISE.



Detail Showing Method of Wedging

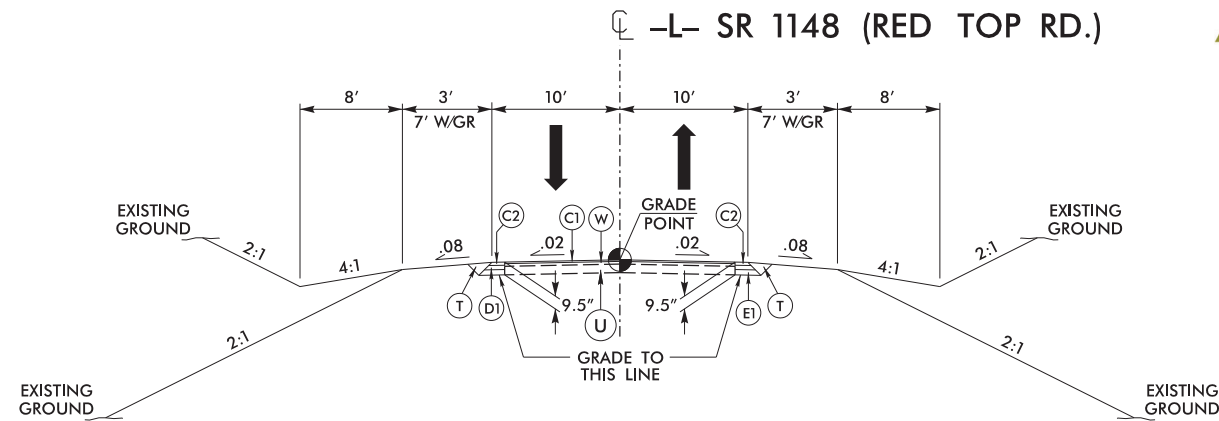


Incidental Milling Existing Pavement



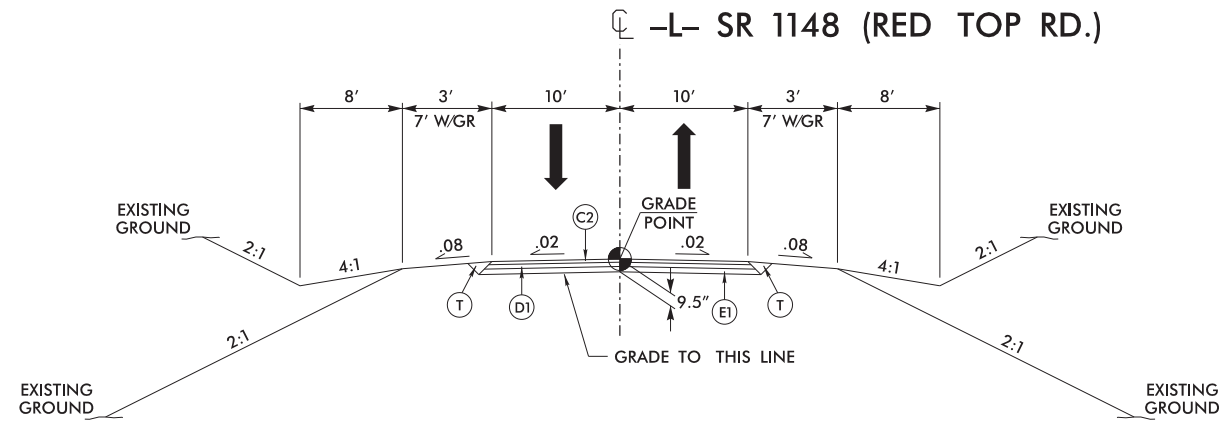
ms consultants, inc.
920 Mair Campus Drive
Suite 430
Raleigh, NC 27606
NC License Number : C-3239

PROJECT REFERENCE NO. 17BP.11.R.153	SHEET NO. 2A-1
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	



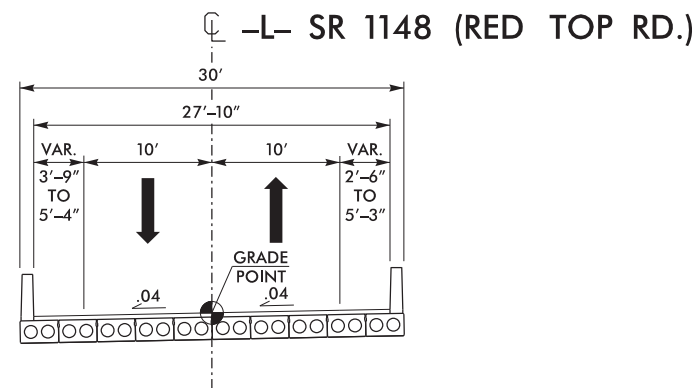
TYPICAL SECTION NO. 1

-L- STA. 13+50.00 TO -L- STA. 14+25.00



TYPICAL SECTION NO. 2

-L- STA. 14+25.00 TO -L- STA. 14+87 +/- (BEGIN BRIDGE)
-L- STA. 15+56 +/- (END BRIDGE) TO -L- STA. 16+50.00



TYPICAL SECTION NO. 3

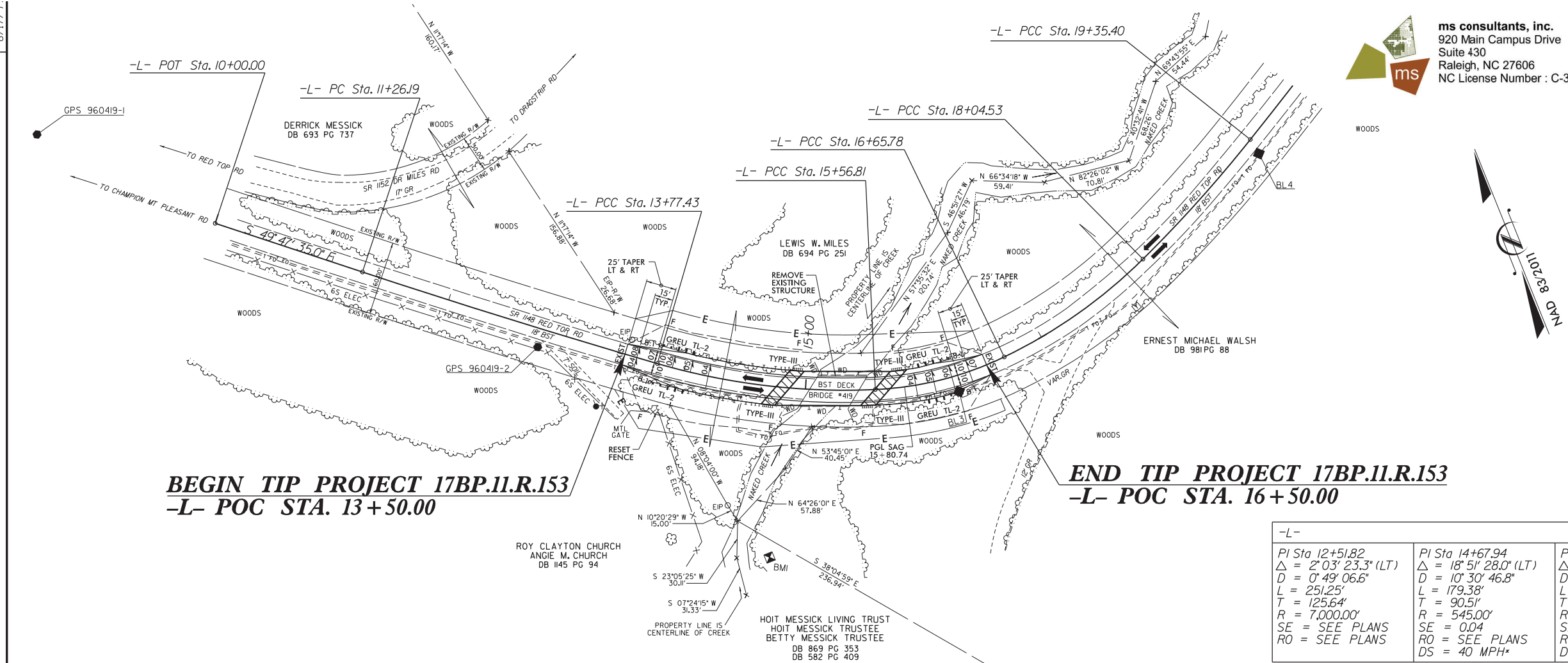
-L- STA. 14+87 +/- (BEGIN BRIDGE) TO -L- STA. 15+56 +/- (END BRIDGE)

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 \$\$\$\$USERNAME\$\$\$\$
 \$\$\$\$DATE\$\$\$\$

PROJECT REFERENCE NO.	SHEET NO.
17BP.II.R.153	4
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

ms consultants, inc.
920 Main Campus Drive
Suite 430
Raleigh, NC 27606
NC License Number : C-3239

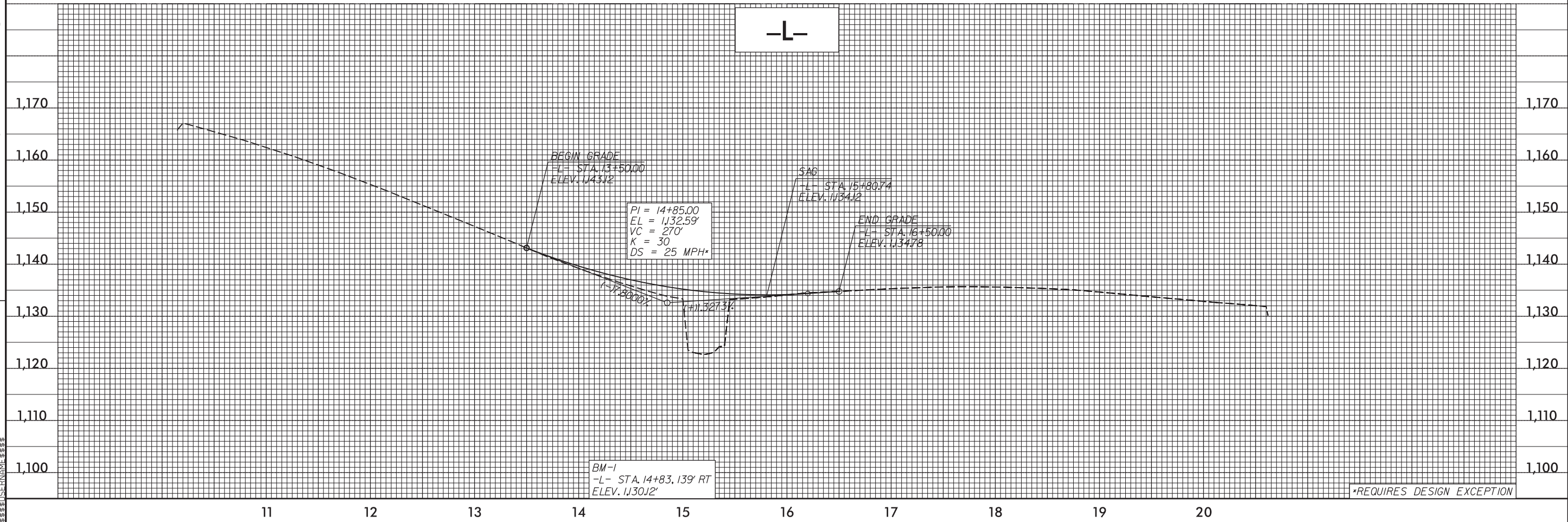
REVISIONS



BEGIN TIP PROJECT 17BP.II.R.153
-L- POC STA. 13+50.00

END TIP PROJECT 17BP.II.R.153
-L- POC STA. 16+50.00

-L-			
PI Sta 12+51.82 Δ = 2° 03' 23.3" (LT) D = 0° 49' 06.6" L = 251.25' T = 125.64' R = 7,000.00' SE = SEE PLANS RO = SEE PLANS	PI Sta 14+67.94 Δ = 18° 51' 28.0" (LT) D = 10° 30' 46.8" L = 179.38' T = 90.51' R = 545.00' SE = 0.04 RO = SEE PLANS DS = 40 MPH*	PI Sta 16+12.05 Δ = 23° 07' 26.6" (LT) D = 21° 13' 14.4" L = 108.97' T = 55.24' R = 270.00' SE = 0.04 RO = SEE PLANS DS = 30 MPH*	PI Sta 17+35.80 Δ = 18° 55' 43.6" (LT) D = 13° 38' 30.7" L = 138.76' T = 70.02' R = 420.00'



30-OCT-2018 15:01:50
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