

Type I and II Ground Disturbing Categorical Exclusion Action Classification Form

TIP Project No.	BR-0107
WBS Element	67107.1.1
Federal Project No.	N/A

A. Project Description:

The North Carolina Department of Transportation (NCDOT) proposes to replace Bridge No. 131 on Pisgah Ridge Circle (S.R. 1577) over an unnamed tributary to Snow Creek in Iredell County. The bridge will be replaced on the existing alignment while detouring traffic offsite during construction. (See attached figures.)

Bridge No. 131 was built in 1960. The existing structure is 26 feet long with a deck width of 20.25 feet. The structure is a timber deck on I-Beams with timber substructure. NCDOT proposes to construct a 65 foot long structure with a deck width of 30 feet. The new structure will include 10-foot lanes and 3-foot, 11-inch shoulders. The length of the overall improvement project, including roadway approaches, is 485 feet. The project is scheduled for Right of Way (ROW) in December 2019 and Let in April 2020.

B. Description of Need and Purpose:

The purpose of the proposed project is to replace a deficient bridge. NCDOT Structure Management Unit (SMU) records indicate Bridge No. 131 has a sufficiency rating of 44.25 out of a possible 100 for a new structure. The bridge is considered structurally deficient due to a deck geometry appraisal of 4 out of 9.

The replacement of Bridge No. 131 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 19 tons for a truck/tractor/semitrailer) on Bridge No. 131 prohibits large or heavy vehicles, typically used in transporting agricultural and manufactured products, from using the bridge. Vehicles above the posted weight must detour 1.8 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 1.85 offsite detour for this project is on Pisgah Ridge Circle as shown on the Detour Map.

Iredell County Emergency Services indicated a low impact to response services if the bridge were closed for up to a year. The bridge is not used by Iredell County Schools for any existing routes and will not affect school bus services.

NCDOT should coordinate with Iredell County Emergency Services (Ms. Blair Richey, 704.878.3025) and the Trinity Volunteer Fire Station (Captain Michael Johnson, 704.876.3646) at least one month prior to construction.

Cost:

The estimated costs of the proposed project are as follows:

Right of Way:	\$	5,000
Utilities:	\$	25,000
Construction:	\$	800,000
Total:	\$	830,000

Design:

Design Standards: Sub-regional Tier

Design Speed: 55 mph

Design Exceptions: Design exception for Max Grade, Sag Vertical Curve K value and Nighttime Vertical SSD.

Construction Type: Replace in-place

Estimated Traffic:

Average Daily Traffic 2020: 110 vehicles per day

Average Daily Traffic 2045: 220 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 Pisgah Ridge Circle (S.R. 1577).

Rehabilitation – The bridge was originally constructed in 1960. 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 the unnamed tributary to Snow 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 Pisgah Ridge Circle is acceptable, and a new alignment would unnecessarily increase project impacts (especially to the unnamed tributary to Snow Creek), replacing the bridge on new alignment was not considered as an alternative.

Replace In-Place with Offsite Detour (Preferred) – Bridge No. 131 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 1.8 miles in length) would include Pisgah Ridge Circle.

Bicycle and Pedestrian Accommodations:

This portion of Pisgah Ridge Circle 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 archeological resources and no historic properties present or affected for historic architectural resources.

Environmental Justice

Census data does not indicate a notable presence of populations meeting the criteria for Environmental Justice within the Demographic Study Area (DSA), nor were minority, low-income, or non-EJ Title VI communities observed within the Direct Community Impact Area (DCIA) during the field visit or were noted by local planners.

Voluntary Agricultural District (VAD) and Prime Farmlands

See responses to questions 26 and 30 in Section G.

Natural Environment:

Water Resources

Water resources within the project study area include two unnamed tributaries to Snow Creek. The best usage classification for both resources is WS-IV.

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

There are two potential jurisdictional streams and one potential jurisdictional wetland in the study area.

Threatened and Endangered Species

As summarized in the June 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:

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 November 20, 2019 to December 6, 2019. No comments were received.

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 type="checkbox"/>	<input checked="" 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 checked="" type="checkbox"/>	<input 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 checked="" type="checkbox"/>	<input 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 26 – Voluntary Agricultural District (VAD) Property

One farm (the William Melvin and Martha Sue Johnson parcel) within the project study area participates in the Iredell County Voluntary Agricultural District (VAD) program. This farm property is located immediately to the east of the project site; the current design shows only easement during construction needing to be acquired from the owner.

If right-of-way will need to be acquired from the VAD property owner through eminent domain, the Iredell County Enhanced Farmland Preservation Ordinance requires that the Farmland Preservation Board hold a public hearing on the proposed condemnation before condemnation may be initiated. Additionally, any VAD lands converted to nonagricultural use as part of a temporary construction easement must be returned to farmable condition by the project's completion.

The area required for the easement is not an active farm use. It is a wooded floodplain adjacent to the bridge.

Response to Question 30 – Prime and Important Farmlands

Prime and Important Farmland Soils as defined by the Farmland Protection Policy Act (FPPA) are located within the project footprint.

A preliminary screening of farmland conversion impacts in the project area has been completed (NRCS Form AD-1006 for point projects) and a total score of 84 out of 160 points was calculated for the BR-0107 project site (See Appendix D of BR-0107 Community Impact Assessment, November 2019)). Since the total site assessment score exceeds the 60-point threshold established by NRCS, notable project impacts to eligible soils are anticipated.

Given that notable project impacts to eligible soils may be anticipated, the NCDOT Project Manager should coordinate completion of the NRCS farmland conversion form post-design and submission to NRCS for further evaluation.

The form is available at:

https://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/stelprdb1045394.pdf

H. Project Commitments

Iredell County
Replace Bridge 131 on Pisgah Ridge Circle (S.R. 1577) over UT to Snow Creek.
WBS No. 67107.1.1
TIP No. BR-0107

NCDOT Structures Management Unit
Prime and Important Farmlands

Given that notable project impacts to eligible soils may be anticipated, the NCDOT Project Manager should coordinate completion of the NRCS farmland conversion form post-design and submission to NRCS for further evaluation.

NCDOT - Division 12

Voluntary Agricultural District (VAD) Property

If right-of-way will need to be acquired from the VAD property owner through eminent domain, the Iredell County Enhanced Farmland Preservation Ordinance requires that the Farmland Preservation Board hold a public hearing on the proposed condemnation before condemnation may be initiated. Additionally, any VAD lands converted to nonagricultural use as part of a temporary construction easement must be returned to farmable condition by the project's completion.

NCDOT Division 12

Continued Coordination Emergency Services

NCDOT should coordinate with Iredell County Emergency Services (Ms. Blair Richey, 704.878.3025) and the Trinity Volunteer Fire Station (Captain Michael Johnson, 704.876.3646) at least one month prior to construction.

I. Categorical Exclusion Approval

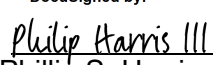
TIP Project No.	<u>BR-0107</u>
WBS Element	<u>67107.1.1</u>
Federal Project No.	<u>N/A</u>

Prepared By:

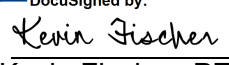
<u>12/10/19</u>	<u></u>
Date	Darren Even, AICP, Senior Planner Dewberry Engineers Inc.

Prepared For: NCDOT Structures Management Unit

Reviewed By:

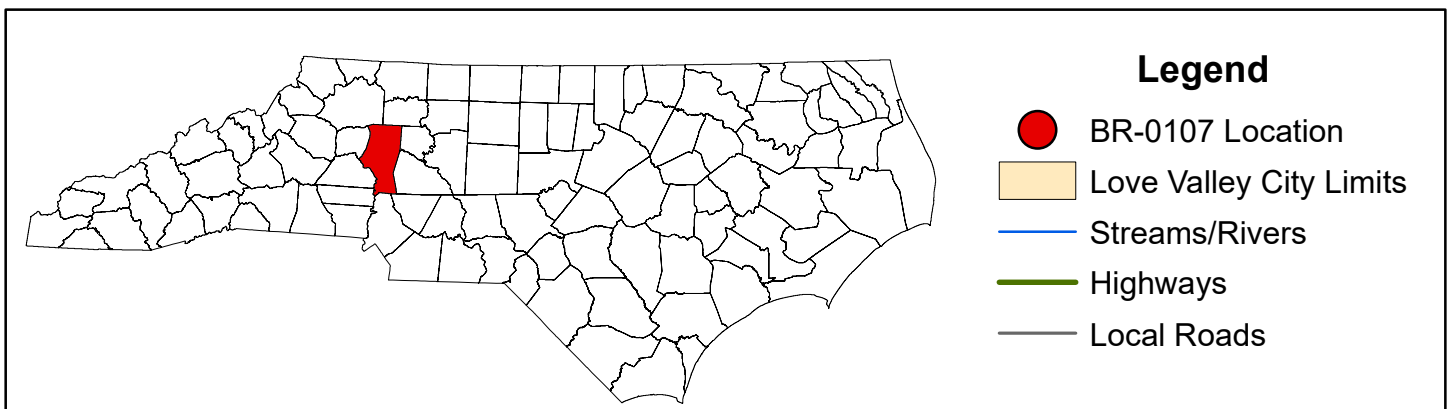
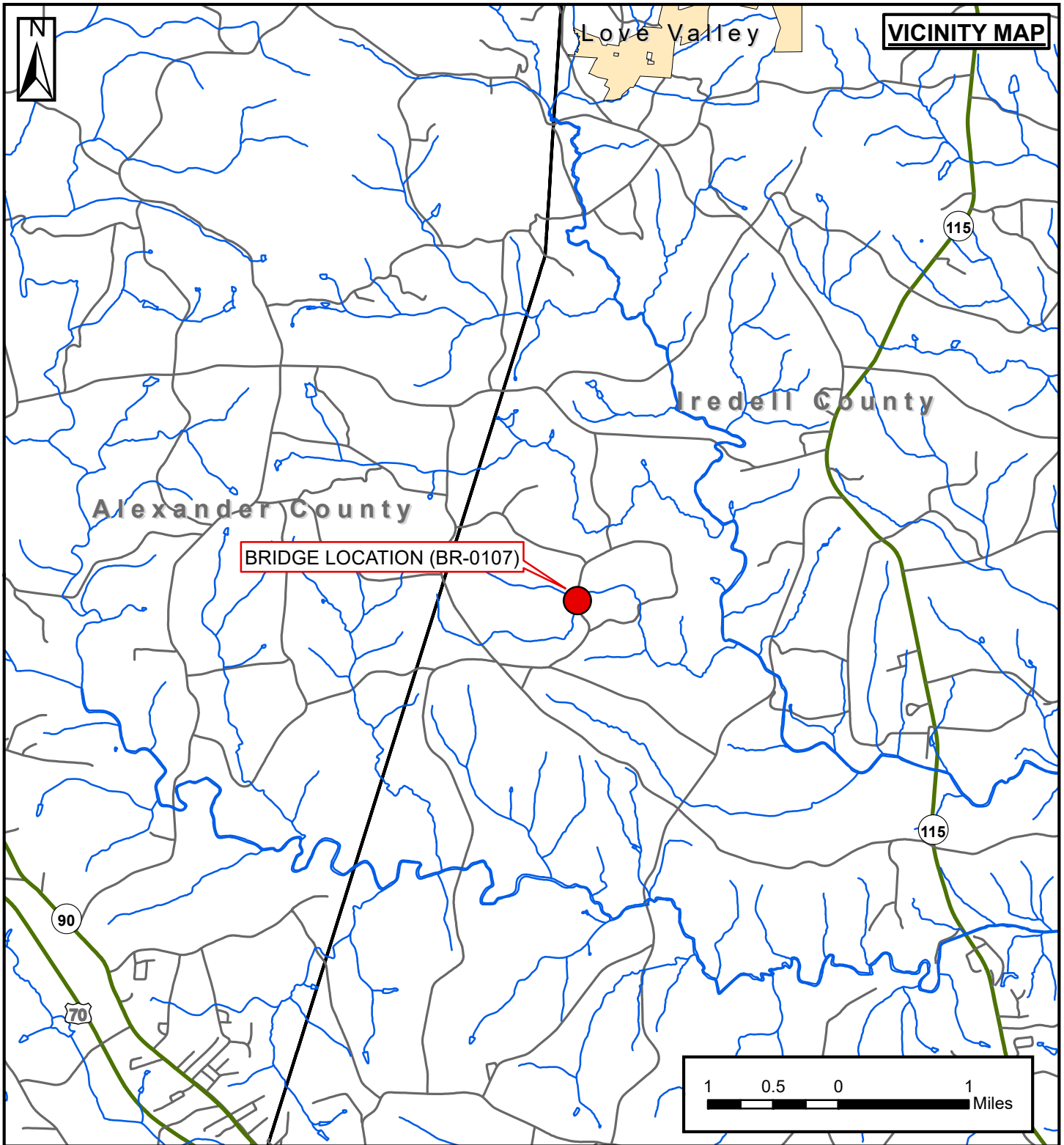
<u>12/11/2019</u>	<u></u>
Date	Philip S. Harris, III, PE, Environmental Analysis Unit North Carolina Department of Transportation

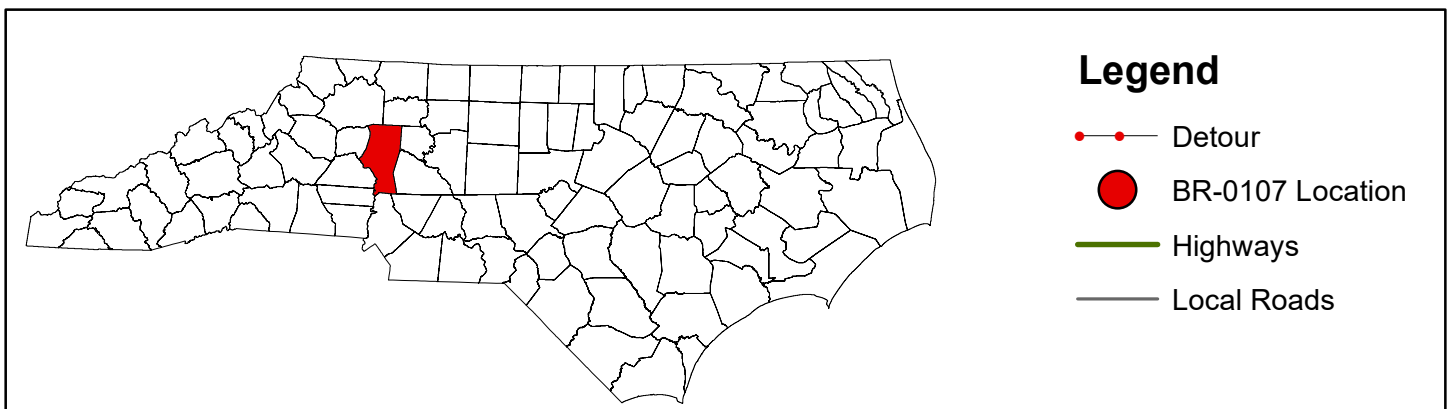
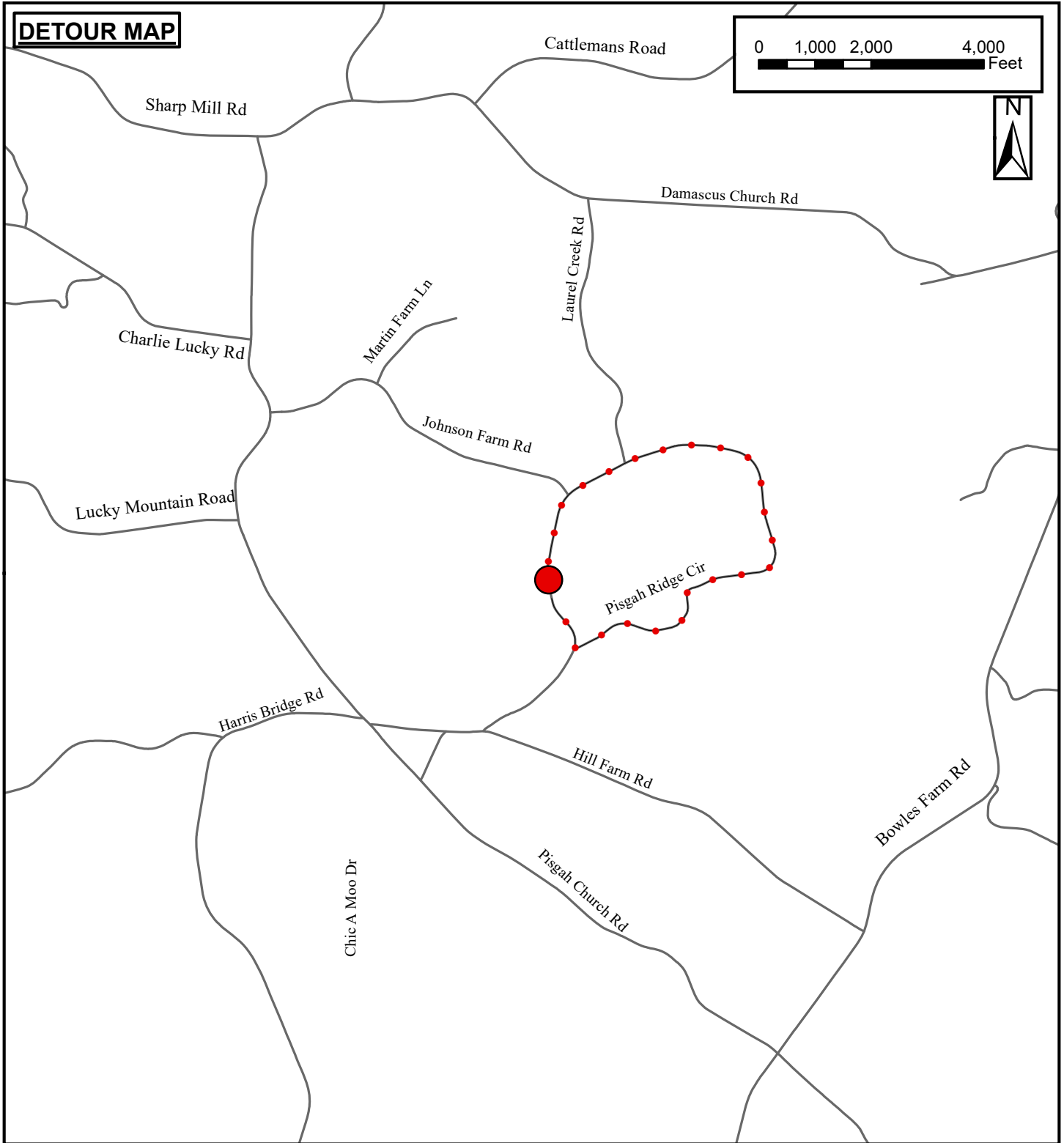
- Approved** If all of the threshold questions (1 through 7) of Section F are answered "no," NCDOT approves this Categorical Exclusion.
- Certified** If any of the threshold questions (1 through 7) of Section F are answered "yes," NCDOT certifies this Categorical Exclusion.

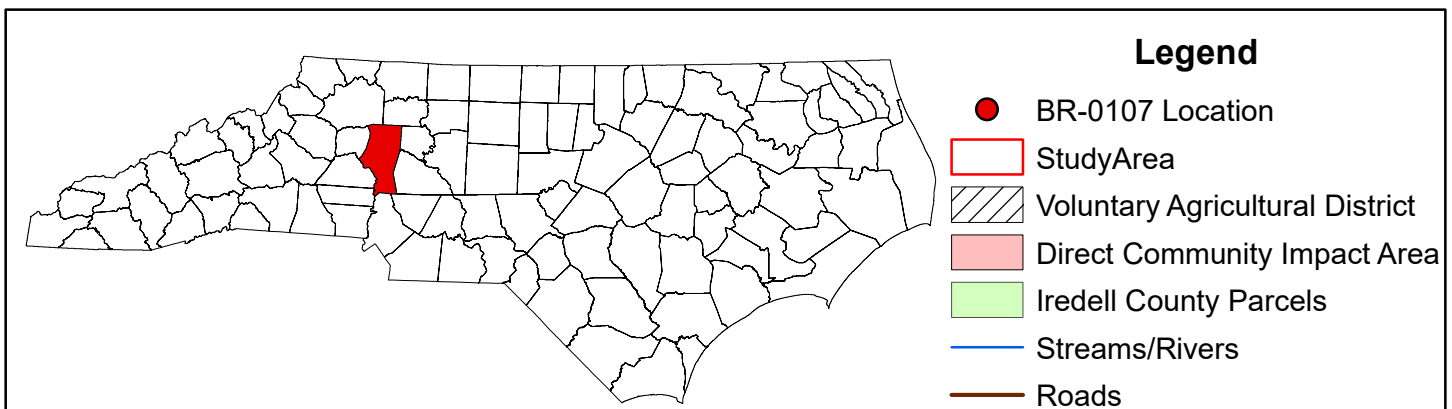
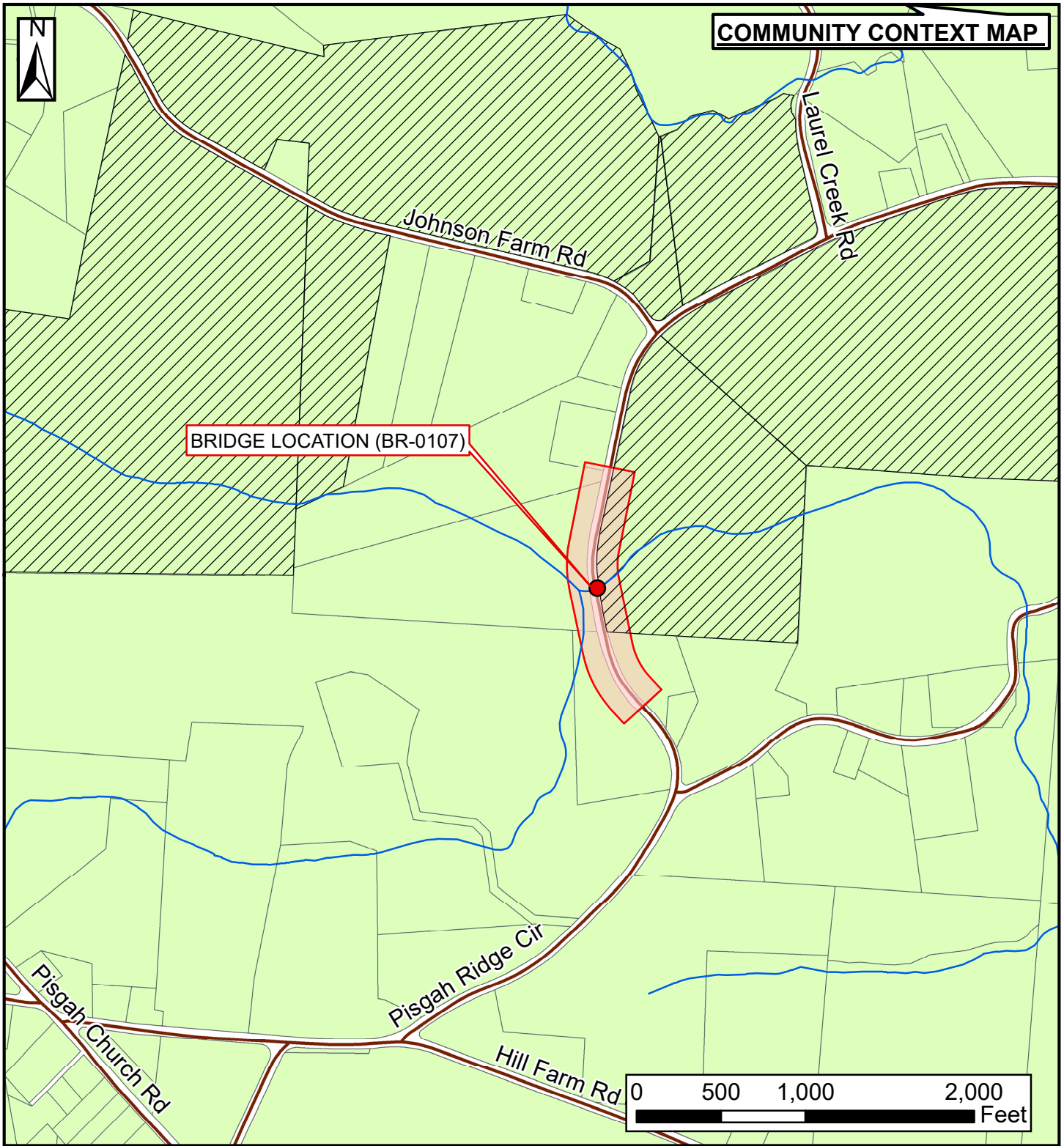
<u>12/11/2019</u>	<u></u>
Date	Kevin Fischer, PE, Assistant State Structures Engineer Structures Management Unit North Carolina Department of Transportation

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

<u>N/A</u>	<u>John F. Sullivan, III, PE, Division Administrator</u>
Date	Federal Highway Administration







19-08-0010



HISTORIC ARCHITECTURE AND LANDSCAPES NO HISTORIC PROPERTIES PRESENT OR AFFECTED 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:	BR-0107	County:	Iredell
WBS No.:	67107.1.1	Document Type:	Federal 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):	USACE
<u>Project Description:</u> Replace Bridge No. 480131 on SR 1577 (Pisgah Ridge Cir) over Creek.			

SUMMARY OF HISTORIC ARCHITECTURE AND LANDSCAPES REVIEW

- There are no National Register-listed or Study Listed properties within the project's area of potential effects.
- There are no properties less than fifty years old which are considered to meet Criteria Consideration G within the project's area of potential effects.
- There are no properties within the project's area of potential effects.
- There are properties over fifty years old within the area of potential effects, but they do not meet the criteria for listing on the National Register.
- There are no historic properties present or affected by this project. (Attach any notes or documents as needed.)

Date of field visit: September 19, 2019

Description of review activities, results, and conclusions:

Review of HPO quad maps, HPO GIS information, historic designations roster, and indexes was undertaken on August 21, 2019. Based on this review, there are undocumented properties over fifty years of age within the Area of Potential Effects, which follows the boundary of the Study Area. An Historic Architecture Survey was required and performed 9/19/2019. All properties over fifty years of age are unremarkable and do not warrant further evaluation. Bridge No. 131 is not eligible for NR listing based on the NCDOT Bridge Inventory. There are no National Register listed or eligible properties. If design plans change, additional review will be required.

SUPPORT DOCUMENTATION

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

FINDING BY NCDOT ARCHITECTURAL HISTORIAN

Historic Architecture and Landscapes – **NO HISTORIC PROPERTIES PRESENT OR AFFECTED**

Kate Hubbel

9/24/2019

NCDOT Architectural Historian

Date

19-08-0010



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: **BR-0107** County: **Iredell**
 WBS No: **67107.1.1** Document: **Federal CE**
 F.A. No: Funding: State Federal

Federal Permit Required? Yes No Permit Type: **USACE**

Project Description: Replacement of Bridge 131 on SR 1577 (Pisgah Ridge Road) over an unnamed tributary to Snow Creek in Iredell County, North Carolina. The archaeological Area of Potential Effects (APE) encompasses the entire project study area as depicted on the attached ARC-GIS mapping. It measures 1,000ft in length (500ft from each bridge end-point) and 150ft in width (75ft from the SR 1577 center-line).

SUMMARY OF CULTURAL RESOURCES REVIEW

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

Permitting and funding information was reviewed for determining the level of archaeological input required by state and federal laws. Based on the submitted "request for cultural resources review" form, the project is federally-funded with federal permit interaction. As such, Section 106 of the National Historic Preservation Act will apply and the United States Army Corps of Engineers (USACE) will serve as the lead federal agency. Next, construction design and other data was examined (when applicable) to define the character and extent of potential impacts to the ground surfaces embracing the project locale. The APE was primarily designed to capture any federal permit areas or areas of potential ground disturbing activity.

Once an APE was outlined, a map review and site file search was conducted at the Office of State Archaeology (OSA) on Wednesday, September 11, 2019. No NRHP eligible archaeological sites or any other previously documented archaeological sites are located within the APE or proximal.

Examination of National Register of Historic Places (NRHP), State Study Listed (SL), Locally Designated (LD), Determined Eligible (DE), and Surveyed Site (SS) properties employing resources available on the NCSHPO website is important in establishing the location of noteworthy historic occupations related to a perspective construction impact area. A cross-check of these mapped resources concluded that no meaningful historic properties with possible contributing archaeological elements were located inward of the archaeological APE margins. In addition, historic maps of Iredell County were appraised to identify former structure locations, land use patterns, or other confirmation of historic occupation in the project vicinity. Archaeological/historical reference materials were inspected as well. In general, the cultural background review established that no NRHP listed properties or cemeteries are located within the APE. Based on cultural-historical factors, the APE is considered to have a low potential for the documentation of archaeological resources.

Further, topographic, geologic, flood boundary, and NRCS soil survey maps were referenced to evaluate pedological, geomorphological, hydrological, and other environmental determinants that may have resulted in past occupation at this location. Aerial and on-ground photographs (NCDOT Spatial Data Viewer) and the Google Street View map application (when amenable) were also examined/utilized for additional assessment of disturbances, both natural and human induced, which compromise the integrity of archaeological sites. Environmental/impact factors do not suggest a heightened potential for archaeological resource recovery.

19-08-0010

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

Soil data illustrates that the majority of ground surfaces within the APE are eroded. Further, the two northern project quadrants contain several residential disturbances. Environmental and cultural-historical factors do not suggest a heightened potential for archaeological resource recovery in the APE. Intact NRHP eligible archaeological sites are unlikely to be present or preserved within the currently defined APE. No further consultation is advocated. A finding of "no archaeological survey required" is considered appropriate.

This project falls within a North Carolina County in which the Catawba Indian Nation has expressed an interest: Iredell County. It is recommended that you contact each federal agency involved with your project to determine their Section 106 Tribal consultation requirements.

SUPPORT DOCUMENTATION

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

FINDING BY NCDOT ARCHAEOLOGIST

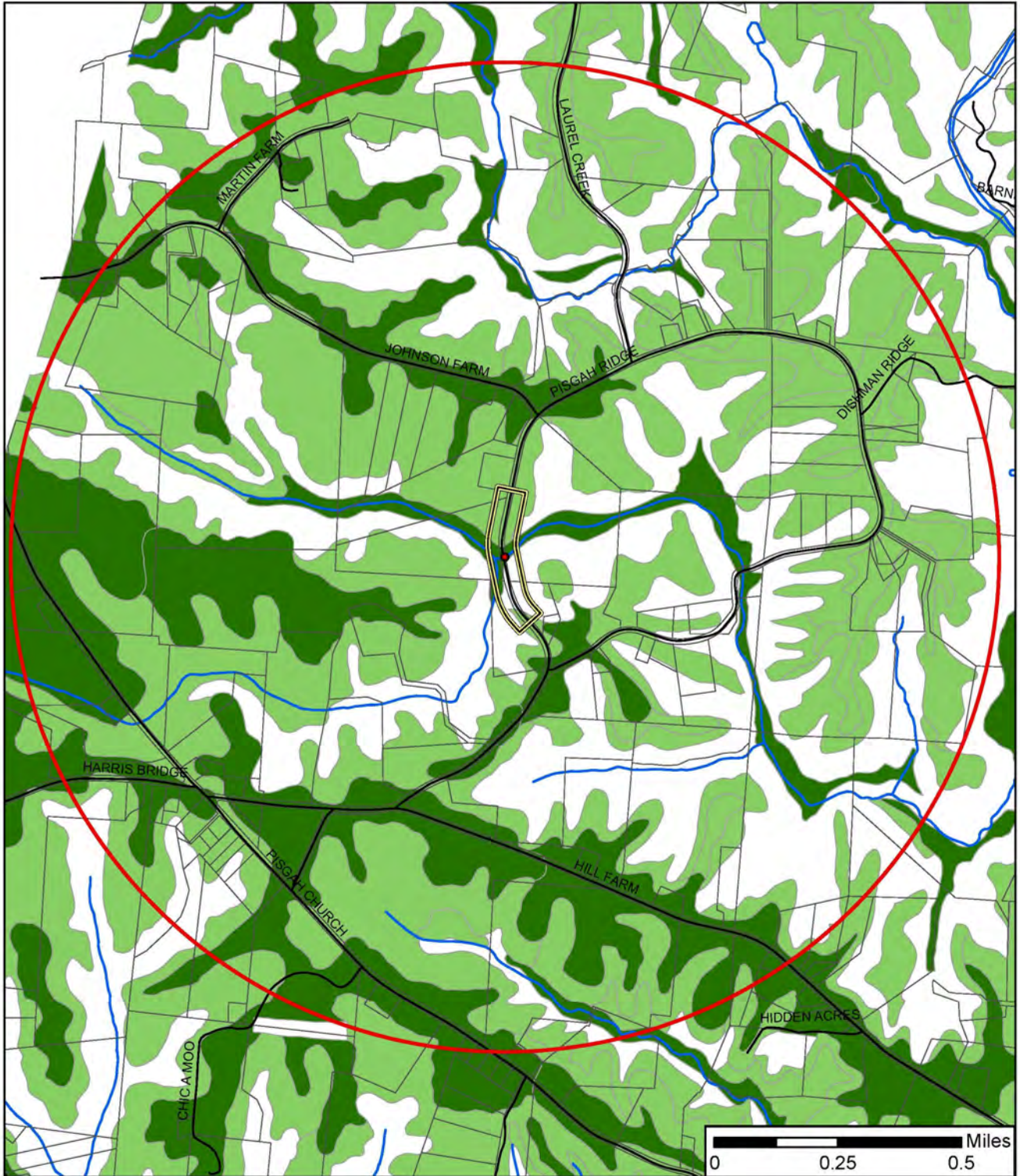
NO ARCHAEOLOGY SURVEY REQUIRED








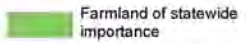
Scott Eric Helverson

NCDOT

11-3-2019

APPENDIX D: PRELIMINARY SCREENING OF FARMLAND CONVERSION IMPACTS



	NRCS Farmland Figure BR-0107 Iredell County, NC		 Project Study	 Streams
			 1 Mile Buffer	 Prime Farmland
			 Roads	 Farmland of statewide importance



PRELIMINARY SCREENING OF FARMLAND CONVERSION IMPACTS – POINT PROJECT

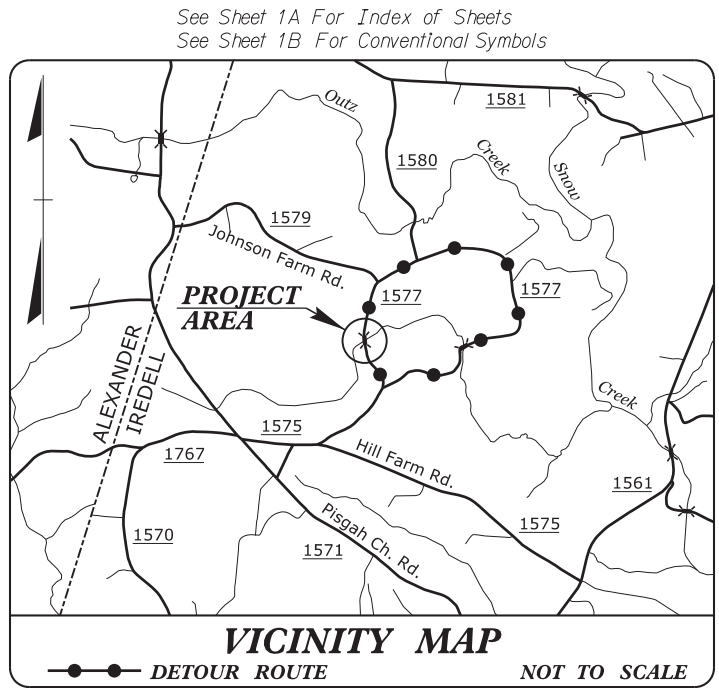
- 1. Area in non-urban use. Points awarded = 15 out of 15**
Approximately 90 percent or greater of land within 1-mile of the project site is a non-urban land use.
- 2. Perimeter in non-urban use. Points awarded = 10 out of 10**
Approximately 90 percent or greater of land in the immediate perimeter of the project site is a non-urban land use.
- 3. Percent of site being farmed. Points awarded = 12 out of 20**
Approximately 60 percent of land within 1-mile of the project site is being farmed.
- 4. Protection provided by state and local government. Points awarded = 20 out of 20**
A Voluntary Agricultural District (VAD) is located immediately to the east of the project site.
- 5. Distance from urban built-up area. Points awarded = 15 out of 15**
The project site is more than 10,560 feet from an urban built-up area.
- 6. Distance to urban support services. Points awarded = 10 out of 15**
Some services exist more than 1 mile but less than 3 miles from the site.
- 7. Size of present farm unit compared to average. Points awarded = 2 out of 10**
The 2012 average farm unit size for Iredell County is 127 acres. Farm units near the project site range from 30 to 70 percent of the average farm unit size.
- 8. Creation of non-farmable farmland. Points awarded = 0 out of 10**
No land will become non-farmable as a result of this project.
- 9. Availability of farm support services. Points awarded = 0 out of 5**
There are no farm support services at the project site.
- 10. On-farm investments. Points awarded = 0 out of 20**
There are no on-farm investments at the project site.
- 11. Effects of conversion on farm support services. Points awarded = 0 out of 10**
This project will not convert any farmland to non-agricultural use.
- 12. Compatibility with existing agricultural use. Points awarded = 0 out of 10**
The replacement of the existing Pisgah Ridge Circle bridge over Snow Creek is compatible with existing agricultural uses of surrounding farmland.

Conclusion: Total Points = 84 out of 160

NCDOT has completed a screening of farmland in the project area and calculated the total number of points for the site per Part VI of the NRCS AD-1006 Farmland Conversion Impact Rating Form.



TIP PROJECT: BR-0107

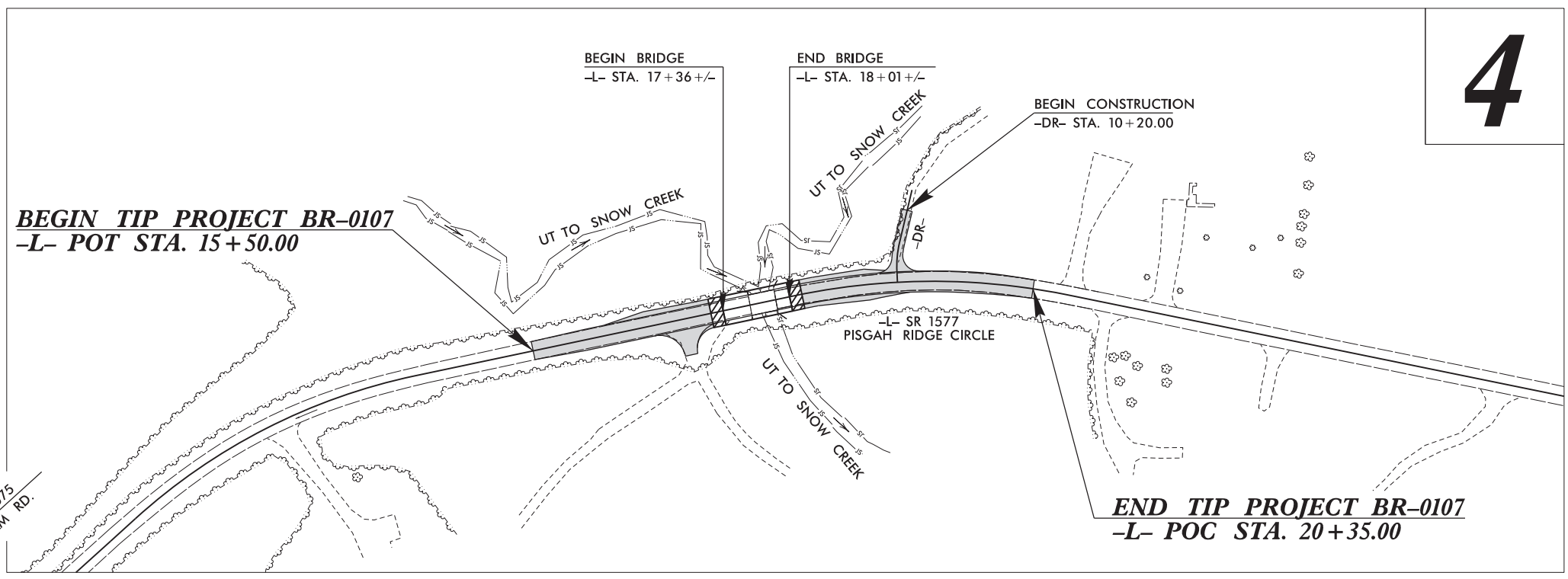


STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS
IREDELL COUNTY

**LOCATION: REPLACE BRIDGE NO.131 ON SR 1577
(PISGAH RIDGE CIRCLE) OVER UT TO SNOW CREEK**
TYPE OF WORK: GRADING, DRAINAGE, PAVING, AND STRUCTURE

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	BR-0107	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
67107.1.1		PE	

25% PLANS

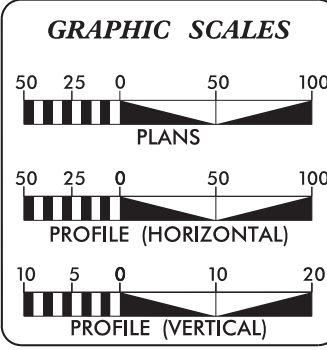


4

THIS PROJECT IS NOT WITHIN ANY MUNICIPAL BOUNDARIES.
CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD . DESIGN EXCEPTION FOR MAX GRADE, SAG VERTICAL CURVE K VALUE AND NIGHTTIME VERTICAL SSD.

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

CONTRACT:



DESIGN DATA

ADT 2020 =	110
ADT 2045 =	220
V =	55 MPH
FUNC CLASS =	LOCAL
SUBREGIONAL TIER	

PROJECT LENGTH

LENGTH ROADWAY PROJECT BR-0107	=	0.083 MILES
LENGTH STRUCTURE PROJECT BR-0107	=	0.009 MILES
TOTAL LENGTH PROJECT BR-0107	=	0.092 MILES

Plans Prepared By:
ms consultants, inc.
1920 Main Campus Drive
Suite 430
Raleigh, NC 27606
NC License Number - C-9239

2018 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
NOVEMBER 15, 2019

LETTING DATE:
APRIL 21, 2020

Plans Prepared For:
NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
DIVISION 12
1710 E. MARRON ST.
(U.S. 74 BUSINESS)
SHELBY, NC 28151

DAVID STUTTS, PE
NCDOT PROJECT ENGINEER

M. TRAVIS POTTS, PE
PROJECT ENGINEER

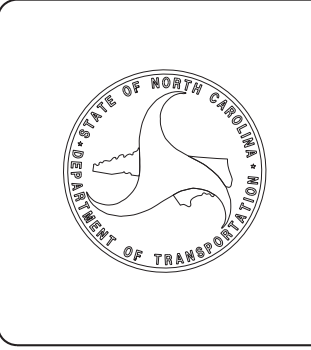
DAVE JANOSKO, PE
PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

SIGNATURE: _____ P.E.

ROADWAY DESIGN ENGINEER

SIGNATURE: _____ P.E.



23-SEP-2019 17:02
N:\DOCS\08339-03 BR-0107 NCDOT IREDELL I310\VER UT SNOW CREEK\Roadway\Proj\BR-0107_rdy_tsh.dgn
\$\$\$\$\$SERVNAME\$\$\$\$\$

STATE OF NORTH CAROLINA, DIVISION OF HIGHWAYS CONVENTIONAL PLAN SHEET SYMBOLS

BOUNDARIES AND PROPERTY:

State Line	-----
County Line	-----
Township Line	-----
City Line	-----
Reservation Line	-----
Property Line	-----
Existing Iron Pin	○ EP
Computed Property Corner	-----
Property Monument	□ ECM
Parcel/Sequence Number	①23
Existing Fence Line	-x-x-x-
Proposed Woven Wire Fence	○
Proposed Chain Link Fence	□
Proposed Barbed Wire Fence	◇
Existing Wetland Boundary	---WLB---
Proposed Wetland Boundary	WLB
Existing Endangered Animal Boundary	---EAB---
Existing Endangered Plant Boundary	---EPB---
Existing Historic Property Boundary	---HPB---
Known Contamination Area: Soil	☠-S-☠
Potential Contamination Area: Soil	☠-S-☠
Known Contamination Area: Water	☠-W-☠
Potential Contamination Area: Water	☠-W-☠
Contaminated Site: Known or Potential	☠☠

BUILDINGS AND OTHER CULTURE:

Gas Pump Vent or U/G Tank Cap	○
Sign	○ S
Well	○ W
Small Mine	⊗
Foundation	□
Area Outline	□
Cemetery	□
Building	□
School	□
Church	□
Dam	□

HYDROLOGY:

Stream or Body of Water	-----
Hydro, Pool or Reservoir	-----
Jurisdictional Stream	---JS---
Buffer Zone 1	---BZ 1---
Buffer Zone 2	---BZ 2---
Flow Arrow	←
Disappearing Stream	→
Spring	○
Wetland	↓
Proposed Lateral, Tail, Head Ditch	-----
False Sump	▽

RAILROADS:

Standard Gauge	-----
RR Signal Milepost	○ MILEPOST 35
Switch	□ SWITCH
RR Abandoned	-----
RR Dismantled	-----

RIGHT OF WAY & PROJECT CONTROL:

Secondary Horiz and Vert Control Point	◇
Primary Horiz Control Point	○
Primary Horiz and Vert Control Point	◇
Exist Permanent Easement Pin and Cap	◇
New Permanent Easement Pin and Cap	◇
Vertical Benchmark	⊗
Existing Right of Way Marker	△
Existing Right of Way Line	-----
New Right of Way Line	○ RW
New Right of Way Line with Pin and Cap	○ RW ▲
New Right of Way Line with Concrete or Granite RW Marker	▲ RW
New Control of Access Line with Concrete C/A Marker	△ CA
Existing Control of Access	△ CA
New Control of Access	△ CA
Existing Easement Line	---E---
New Temporary Construction Easement	---E---
New Temporary Drainage Easement	---TDE---
New Permanent Drainage Easement	---PDE---
New Permanent Drainage / Utility Easement	---DUE---
New Permanent Utility Easement	---PUE---
New Temporary Utility Easement	---TUE---
New Aerial Utility Easement	---AUE---

ROADS AND RELATED FEATURES:

Existing Edge of Pavement	-----
Existing Curb	-----
Proposed Slope Stakes Cut	---C---
Proposed Slope Stakes Fill	---F---
Proposed Curb Ramp	---CR---
Existing Metal Guardrail	-----
Proposed Guardrail	-----
Existing Cable Guiderail	-----
Proposed Cable Guiderail	-----
Equality Symbol	⊕
Pavement Removal	⊗

VEGETATION:

Single Tree	☼
Single Shrub	☼

Note: Not to Scale

*S.U.E. = Subsurface Utility Engineering

Hedge	-----
Woods Line	-----
Orchard	☼ ☼ ☼ ☼
Vineyard	□ Vineyard

EXISTING STRUCTURES:

MAJOR:	
Bridge, Tunnel or Box Culvert	CONC
Bridge Wing Wall, Head Wall and End Wall	CONC WW
MINOR:	
Head and End Wall	CONC HW
Pipe Culvert	-----
Footbridge	-----
Drainage Box: Catch Basin, DI or JB	□ CB
Paved Ditch Gutter	-----
Storm Sewer Manhole	○ S
Storm Sewer	---S---

UTILITIES:

POWER:	
Existing Power Pole	●
Proposed Power Pole	○
Existing Joint Use Pole	●
Proposed Joint Use Pole	○
Power Manhole	⊕
Power Line Tower	⊗
Power Transformer	⊗
U/G Power Cable Hand Hole	○
H-Frame Pole	●●
U/G Power Line LOS B (S.U.E.*)	---P---
U/G Power Line LOS C (S.U.E.*)	---P---
U/G Power Line LOS D (S.U.E.*)	---P---

TELEPHONE:

Existing Telephone Pole	●
Proposed Telephone Pole	○
Telephone Manhole	⊕
Telephone Pedestal	⊕
Telephone Cell Tower	⊗
U/G Telephone Cable Hand Hole	○
U/G Telephone Cable LOS B (S.U.E.*)	---T---
U/G Telephone Cable LOS C (S.U.E.*)	---T---
U/G Telephone Cable LOS D (S.U.E.*)	---T---
U/G Telephone Conduit LOS B (S.U.E.*)	---TC---
U/G Telephone Conduit LOS C (S.U.E.*)	---TC---
U/G Telephone Conduit LOS D (S.U.E.*)	---TC---
U/G Fiber Optics Cable LOS B (S.U.E.*)	---T FO---
U/G Fiber Optics Cable LOS C (S.U.E.*)	---T FO---
U/G Fiber Optics Cable LOS D (S.U.E.*)	---T FO---

WATER:

Water Manhole	⊕
Water Meter	○
Water Valve	⊗
Water Hydrant	⊕
U/G Water Line LOS B (S.U.E.*)	---W---
U/G Water Line LOS C (S.U.E.*)	---W---
U/G Water Line LOS D (S.U.E.*)	---W---
Above Ground Water Line	---A/G Water---

TV:

TV Pedestal	⊕
TV Tower	⊗
U/G TV Cable Hand Hole	○
U/G TV Cable LOS B (S.U.E.*)	---TV---
U/G TV Cable LOS C (S.U.E.*)	---TV---
U/G TV Cable LOS D (S.U.E.*)	---TV---
U/G Fiber Optic Cable LOS B (S.U.E.*)	---TV FO---
U/G Fiber Optic Cable LOS C (S.U.E.*)	---TV FO---
U/G Fiber Optic Cable LOS D (S.U.E.*)	---TV FO---

GAS:

Gas Valve	◇
Gas Meter	⊕
U/G Gas Line LOS B (S.U.E.*)	---G---
U/G Gas Line LOS C (S.U.E.*)	---G---
U/G Gas Line LOS D (S.U.E.*)	---G---
Above Ground Gas Line	---A/G Gas---

SANITARY SEWER:

Sanitary Sewer Manhole	⊕
Sanitary Sewer Cleanout	⊕
U/G Sanitary Sewer Line	---SS---
Above Ground Sanitary Sewer	---A/G Sanitary Sewer---
SS Forced Main Line LOS B (S.U.E.*)	---FSS---
SS Forced Main Line LOS C (S.U.E.*)	---FSS---
SS Forced Main Line LOS D (S.U.E.*)	---FSS---

MISCELLANEOUS:

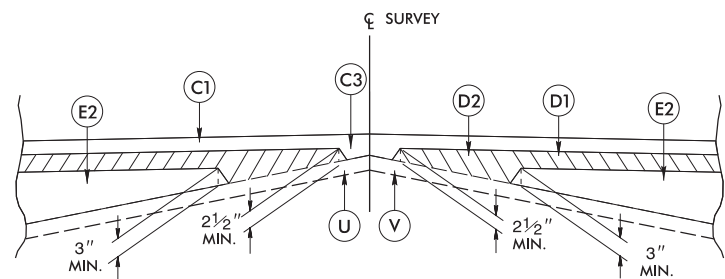
Utility Pole	●
Utility Pole with Base	□
Utility Located Object	○
Utility Traffic Signal Box	⊕
Utility Unknown U/G Line LOS B (S.U.E.*)	---ZUTL---
U/G Tank; Water, Gas, Oil	□
Underground Storage Tank, Approx. Loc.	UST
A/G Tank; Water, Gas, Oil	□
Geoenvironmental Boring	⊗
U/G Test Hole LOS A (S.U.E.*)	⊕
Abandoned According to Utility Records	AATUR
End of Information	E.O.I.

12/2/2016

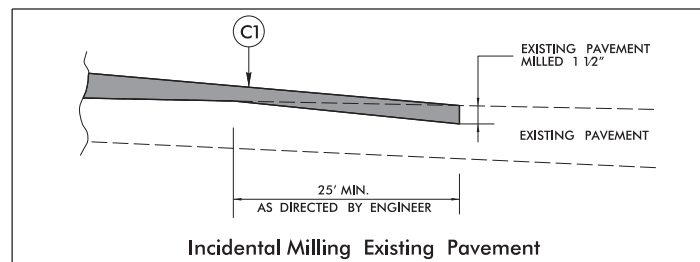
6/2/09

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.
J	8" AGGREGATE BASE COURSE
T	EARTH MATERIAL.
U	EXISTING PAVEMENT.
V	MILLING, 0" TO 1½"
W	VARIABLE DEPTH ASPHALT PAVEMENT (SEE DETAIL SHOWING METHOD OF WEDGING).

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



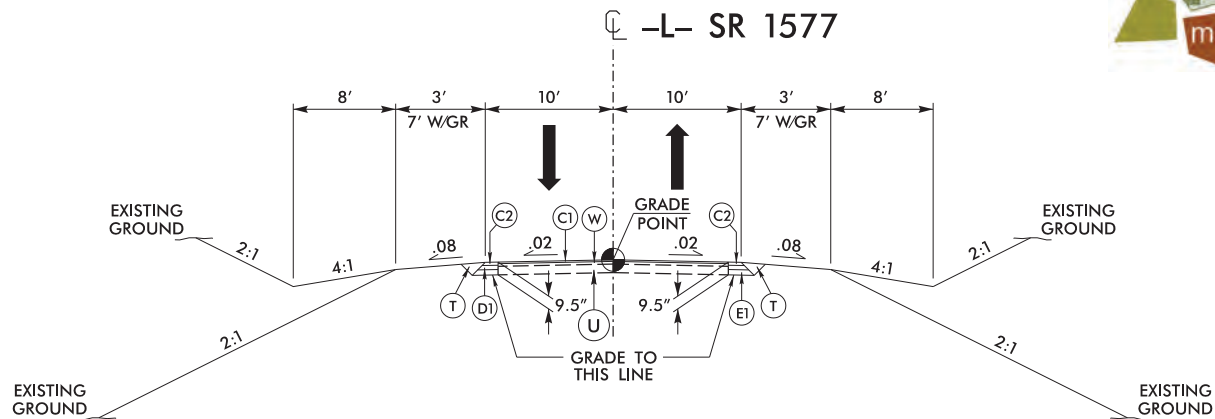
Detail Showing Method of Wedging



Incidental Milling Existing Pavement

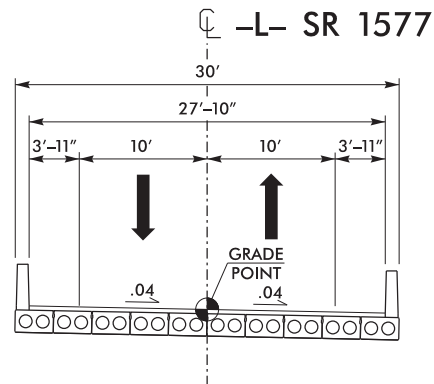


PROJECT REFERENCE NO. BR-0107	SHEET NO. 2A-1
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	



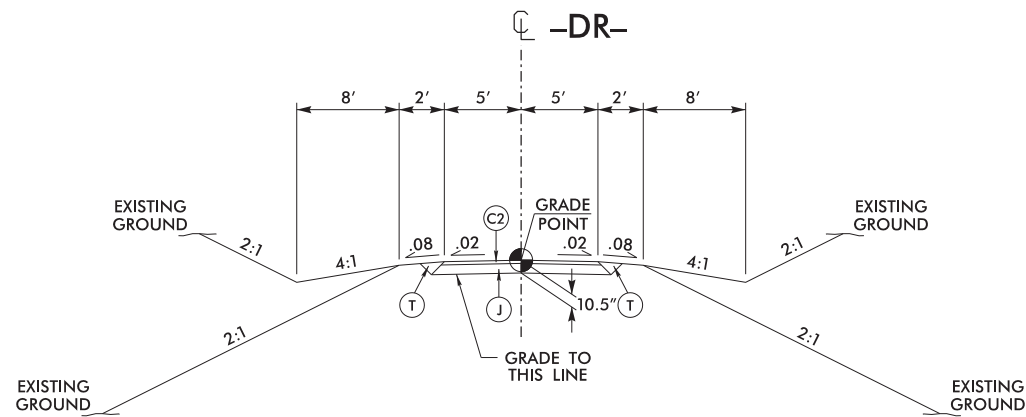
TYPICAL SECTION NO. 1

-L- STA. 15+50.00 TO -L- STA. 17+36 +/- (BEGIN BRIDGE)
-L- STA. 18+01 +/- (END BRIDGE) TO -L- STA. 20+35.00



TYPICAL SECTION NO. 2

-L- STA. 17+36 +/- (BEGIN BRIDGE) TO -L- STA. 18+01 +/- (END BRIDGE)



TYPICAL SECTION NO. 3

-DR- STA. 10+20.00 TO -DR- STA. 10+80.00

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STATE OF NORTH CAROLINA
 DIVISION OF HIGHWAYS

SUMMARY OF EARTHWORK
VOLUME IN CUBIC YARDS

STATION	STATION	UNCL. EXCAV.	EMBANK. +15%	BORROW	WASTE
-L- 15+50.00	-L- 17+36 +/- (BEGIN BRIDGE)	24	47	23	
SUBTOTALS:		24	47	23	
-L- 18+01 +/- (END BRIDGE)	-L- 20+35.00	10	68	58	
SUBTOTALS:		10	108	98	
PROJECT TOTALS:		34	155	121	
EST. 5% TO REPLACE TOP SOIL ON BORROW PIT				6	
GRAND TOTALS:		34	155	127	
SAY:		40	180	140	

Earthwork quantities are calculated by ms consultants. These earthwork quantities are based in part on subsurface data provided by the Geotechnical Engineering Unit.

"N" = DISTANCE FROM EDGE OF LANE TO FACE OF GUARDRAIL.
 TOTAL SHOULDER WIDTH = DISTANCE FROM EDGE OF TRAVEL LANE TO SHOULDER BREAK POINT.
 FLARE LENGTH = DISTANCE FROM LAST SECTION OF PARALLEL GUARDRAIL TO END OF GUARDRAIL.
 W = TOTAL WIDTH OF FLARE FROM BEGINNING OF TAPER TO END OF GUARDRAIL.
 G = GATING IMPACT ATTENUATOR TYPE 350
 NG = NON-GATING IMPACT ATTENUATOR TYPE 350

GUARDRAIL SUMMARY

SURVEY LINE	BEG. STA.	END STA.	LOCATION	LENGTH			WARRANT POINT		"N" DIST. FROM E.O.L.	TOTAL SHOULDER WIDTH	FLARE LENGTH		W		ANCHORS				IMPACT ATTENUATOR TYPE 350			REMOVE EXISTING GUARDRAIL	REMOVE AND RESET EXISTING GUARDRAIL	REMARKS		
				STRAIGHT	SHOP CURVED	DOUBLE FACED	APPROACH END	TRAILING END			APPROACH END	TRAILING END	APPROACH END	TRAILING END	GREU TL-3	TYPE III	TYPE III SHOP CURVED	AT-1	EA	G	NG					
-L-	16+61	17+36	LT	81.25				17+36	4	7																
-L-	17+04	17+36	RT		75.00			17+36	4	7																
-L-	18+01	18+74	LT	81.25				18+01	4	7	50		1													
-L-	18+01	18+77	RT	81.25				18+01	4	7			1													
SUBTOTAL				243.75	75.00																					
ANCHOR DEDUCTIONS																										
GREU TL-3 3 @ 50																										
TYPE III 3 @ 18.75																										
TYPE III SC 1 @ 18.75																										
AT-1 1 @ 6.25																										
PROJECT TOTAL				37.50	50.00																					
SAY				50.00	62.50																					
EXTRA GUARDRAIL POSTS = 5 EA																										

27 SEP 2010 15:24
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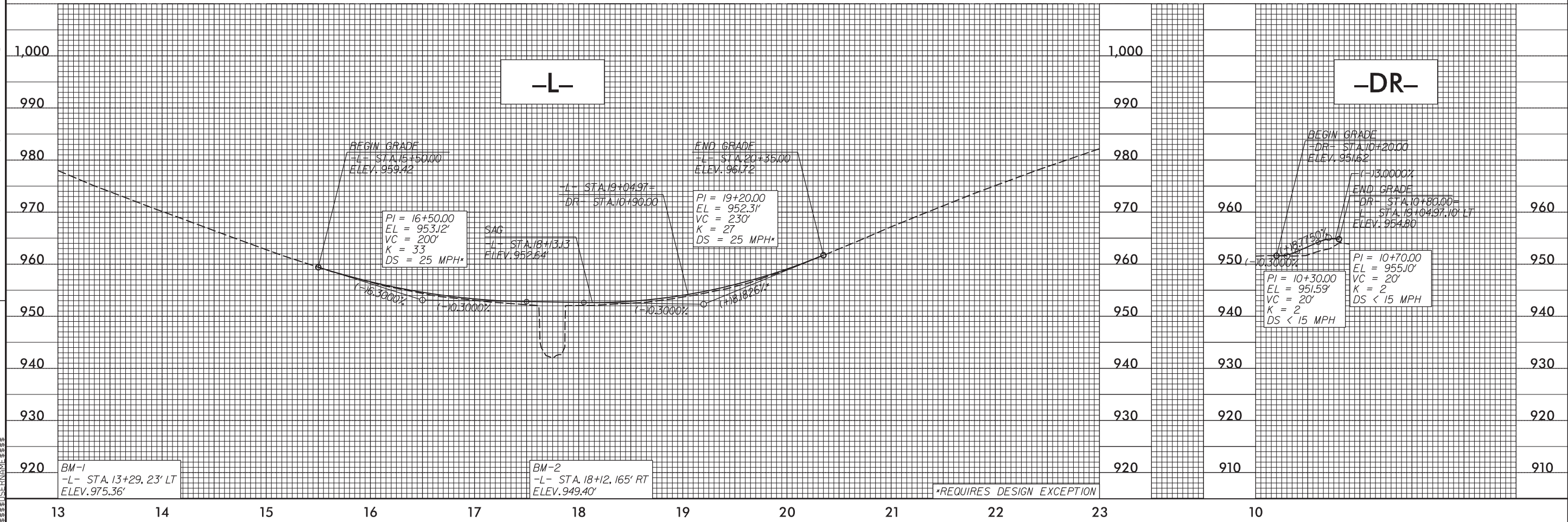
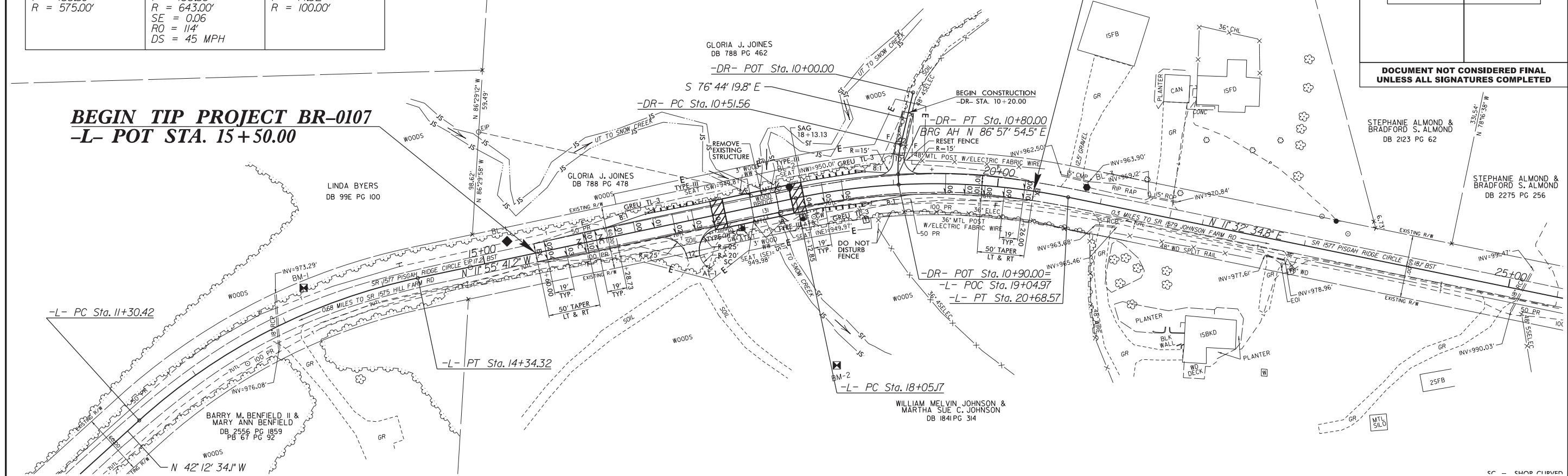
-L-	-DR-	-DR-
PI Sta 12+86.01 Δ = 30° 16' 53.0" (RT) D = 9° 57' 52.1" L = 303.89' T = 155.59' R = 575.00'	PI Sta 19+38.74 Δ = 23° 28' 16.0" (RT) D = 8° 54' 38.5" L = 263.40' T = 133.58' R = 643.00' SE = 0.06 RO = 114' DS = 45 MPH	PI Sta 10+65.88 Δ = 16° 17' 45.7" (LT) D = 57° 17' 44.8" L = 28.44' T = 14.32' R = 100.00'



END TIP PROJECT BR-0107
-L- POC STA. 20+35.00

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

PROJECT REFERENCE NO. <i>BR-0107</i>	SHEET NO. 4
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	



REVISIONS

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