

MINIMUM CRITERIA DETERMINATION CHECKLIST

TIP Project No.: B-5737

State Project No.: 45693.1.1

Project Location: Rockingham County, North Carolina

Project Description: STIP Project B-5737 includes replacing Bridge No. 108 located on US 311/NC 700 crossing US 311/NC 14/NC 87/NC 770 in the City of Eden.

Existing Conditions – The bridge was built in 1957. The current bridge is a reinforced concrete deck on steel I-beams and three spans: one at 44’, one at 71’, and the other at 44’ totaling 159’ in length. The posted speed limit is 35 MPH. US 311/NC 700 through the project is a four-lane undivided roadway with curb and gutter. To the west of the interchange, this drops to a two-lane facility with shoulders. Under the interchange US 311/NC 14/NC 87/NC 770 has two through lanes and two loop ramps (total of four lanes). The bridge lies within the City of Eden and is surrounded by both residential and commercial properties. To the west are mostly residential properties and to the east is the Eden Mall, a middle and high school, and also numerous service establishments. See vicinity, project study area, and environmental features maps below for reference.

Proposed Conditions – Bridge No. 108 will be replaced in place while maintaining traffic during construction via an onsite detour, which will be located to the south of the existing bridge. The replacement bridge includes four 12-foot lanes and 2-foot shoulders, providing a clear roadway width of 52 feet. The bridge will provide 5'-6" sidewalks on either side and will be approximately 360 feet in length, but totalling 700' in roadway work. The design speed will be 40 MPH. Five foot sidewalks and 10’ berms will be included on both sides of the roadway.

Anticipated Permit or Consultation Requirements: None.

Special Project Information

Purpose and Need: The purpose of the proposed project is to remove a structurally deficient bridge and replace in place with a bridge that meets standards and can accommodate future projected traffic volumes. The bridge is considered structurally deficient due to a substructure condition appraisal of 4 out of 9 according to Federal Highway Administration standards. NCDOT Bridge Management Unit records indicate Bridge No. 108 currently has a sufficiency rating of 48 out of a possible 100.

Estimated Traffic:

Current Year (2024) 11,500 vpd

Future Year (2044) 12,300 vpd

TTST 12%
Dual 2%
Truck Percentage 14%
Roadway Classification: Minor Arterial

Hazardous Materials:

One (1) site of concern was identified within the project study area as documented in the August 23, 2016 GeoEnvironmental Planning Report (refer to locations of this site in Figure 3). NCDOT's GeoEnvironmental Unit will conduct a Phase II GeoEnvironmental investigation for the sites of concern anticipated to be impacted by the project. Following the completion of the Phase II investigations, NCDOT GeoEnvironmental will prepare a Right of Way Acquisition Recommendations summary prior to new right of way being acquired. Contaminated soil, underground fuel storage tanks, and ground water monitoring wells in conflict with the project will be removed prior to construction or addressed in a Project Special Provision.

Pedestrian and Bicycle Accommodations:

Currently, sidewalk exists on US 311/NC 700 on the bridge, and sidewalks overgrown with grass exist leading to the bridge. The Rockingham County Comprehensive Transportation Plan recommends sidewalk for the west side of the street at the bridge location. Sidewalk exists from the next intersection east of the bridge. The City of Eden Comprehensive Pedestrian Transportation Plan (<http://www.ptrc.org/modules/showdocument.aspx?documentid=1053>) confirms the proposed sidewalk.

Accordingly, it is recommended that the existing sidewalk on the bridge be replaced, continuing for the 100 feet leading to the bridge if possible. It is also recommended the use of 42 inches high pedestrian-safe railing on the bridge. Another recommendation is working with the City of Eden to determine if the sidewalk in-fill surrounding the bridge can be completed as part of this bridge replacement project.

Bridge construction could temporarily impact access to pedestrians on sidewalks located within the study area. The NCDOT Project Planning Engineer will coordinate with the NCDOT WZTC and the City of Eden to evaluate the necessary level of bicycle/pedestrian access accommodation during construction.

Alternatives Evaluation:

No Build – The no build alternative would result in eventually closing the road, which is unacceptable given the high volume of traffic served by US 311/NC 700 and US 311/NC 14/NC 87/NC 770.

Rehabilitation – The bridge was constructed in 1957 and is reaching the end of its useful life. Rehabilitation would only provide a temporary solution to the functional obsolescence of the bridge.

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

Offsite Detour - An offsite detour was considered, but ultimately not chosen as the preferred alternative due to the detour route being located on non-state maintained roads, and because this route serves a high number of truck and school bus traffic. In addition, US 311/NC 700 serves as one of only three crossings over the Smith River in the Town of Eden.

Preferred Alternative: Onsite Detour - Bridge No. 108 will be replaced in-place while maintaining traffic during construction via an onsite detour, which will be located to the south of the existing bridge. This alternative was chosen based on the cost and the availability of an acceptable onsite detour.

Public Involvement:

Landowner notification letters were sent to property owners on February 16, 2016. No comments have been received to date.

Cost Estimates:

Alternate	Construction Cost	ROW Cost	Utility Cost	Total
Alt 1. On-Site Detour	\$ 3,950,000.00	\$ 80,000.00	\$ 235,688.00	\$ 4,265,688.00

Source: M&N Estimates Submittals and NCDOT STIP.

PART A: MINIMUM CRITERIA

Item 1 to be completed by the Engineer.

- 1. Is the proposed project listed as a type and class of activity allowed under the Minimum Criteria Rule in which environmental documentation is not required?

YES

NO

If the answer to number 1 is “no”, then the project does not qualify as a minimum criteria project. A state environmental assessment is required.

If yes, under which category? 9

If either category #8, #12(i) or #15 is used complete Part D of this checklist.

PART B: MINIMUM CRITERIA EXCEPTIONS

Items 2 – 4 to be completed by the Engineer.

- 2. Could the proposed activity cause significant changes in land use concentrations that would be expected to create adverse air quality impacts?
- 3. Will the proposed activity have secondary impacts or cumulative impacts that may result in a significant adverse impact to human health or the environment?
- 4. Is the proposed activity of such an unusual nature or does the proposed activity have such widespread implications, that an uncommon concern for its environmental effects has been expressed to the Department?

YES

NO

Item 5-8 to be completed by Division Environmental Officer.

- 5. Does the proposed activity have a significant adverse effect on wetlands; surface waters such as rivers, streams, and estuaries; parklands; prime or unique agricultural lands; or areas of recognized scenic, recreational, archaeological, or historical value?
- 6. Will the proposed activity endanger the existence of a species on the Department of Interior's threatened and endangered species list?
- 7. Could the proposed activity cause significant changes in land use concentrations that would be expected to create adverse water quality or ground water impacts?

- | | YES | NO |
|---|--------------------------|-------------------------------------|
| 8. Is the proposed activity expected to have a significant adverse effect on long-term recreational benefits or shellfish, finfish, wildlife, or their natural habitats | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

PART C: COMPLIANCE WITH STATE AND FEDERAL REGULATIONS

Items 9- 12 to be completed by Division Environmental Officer.

- | | YES | NO |
|--|-------------------------------------|-------------------------------------|
| 9. 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"/> |
| 10. Does the action require the placement of temporary or permanent fill in waters of the United States? | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 11. 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"/> |
| 12. 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"/> |

Items 13 – 15 to be completed by the Engineer.

- | | | |
|--|--------------------------|-------------------------------------|
| 13. Does the project require stream relocation or channel changes? | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
|--|--------------------------|-------------------------------------|

Cultural Resources

- | | | |
|---|--------------------------|-------------------------------------|
| 14. 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"/> |
| 15. 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 9:

Smooth coneflower

Suitable habitat for smooth coneflower is present in the study area along roadside shoulders. A survey was conducted throughout the areas of suitable habitat on June 29, 2016. No individuals of smooth coneflower were observed. A review of the NCNHP records, updated June 2016, indicates no known occurrences within 1.0 mile of the study area.

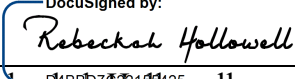
Northern long-eared bat

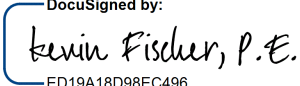
The USFWS has developed a programmatic biological opinion (PBO) in conjunction with the Federal Highway Administration (FHWA), the USACE, and NCDOT for the northern long-eared bat (NLEB) in eastern North Carolina. The PBO covers the entire NCDOT program in Divisions 1-8, including all NCDOT projects and activities. The programmatic determination for NLEB for the NCDOT program is “May Affect, Likely to Adversely Affect”. The PBO provides incidental take coverage for NLEB and will ensure compliance with Section 7 of the Endangered Species Act for five years for all NCDOT projects with a federal nexus in Divisions 1-8, which includes Rockingham County, where TIP B-5737 is located. Therefore, the biological conclusion for this species is No Effect.

PART D:(To be completed when either category #8, 12(i) or #15 of the rules are used.)

Items 16- 22 to be completed by Division Environmental Officer.

- 16. Project length: _____
- 17. Right of Way width: _____
- 18. Project completion date: _____
- 19. Total acres of newly disturbed ground surface: _____
- 20. Total acres of wetland impacts: _____
- 21. Total linear feet of stream impacts: _____
- 22. Project purpose: _____

Prepared by:  _____ Date: 12/19/2019
DocuSigned by: Rebeckah Hollowell
Rebeckah Hollowell
Environmental Scientist
Moffatt & Nichol

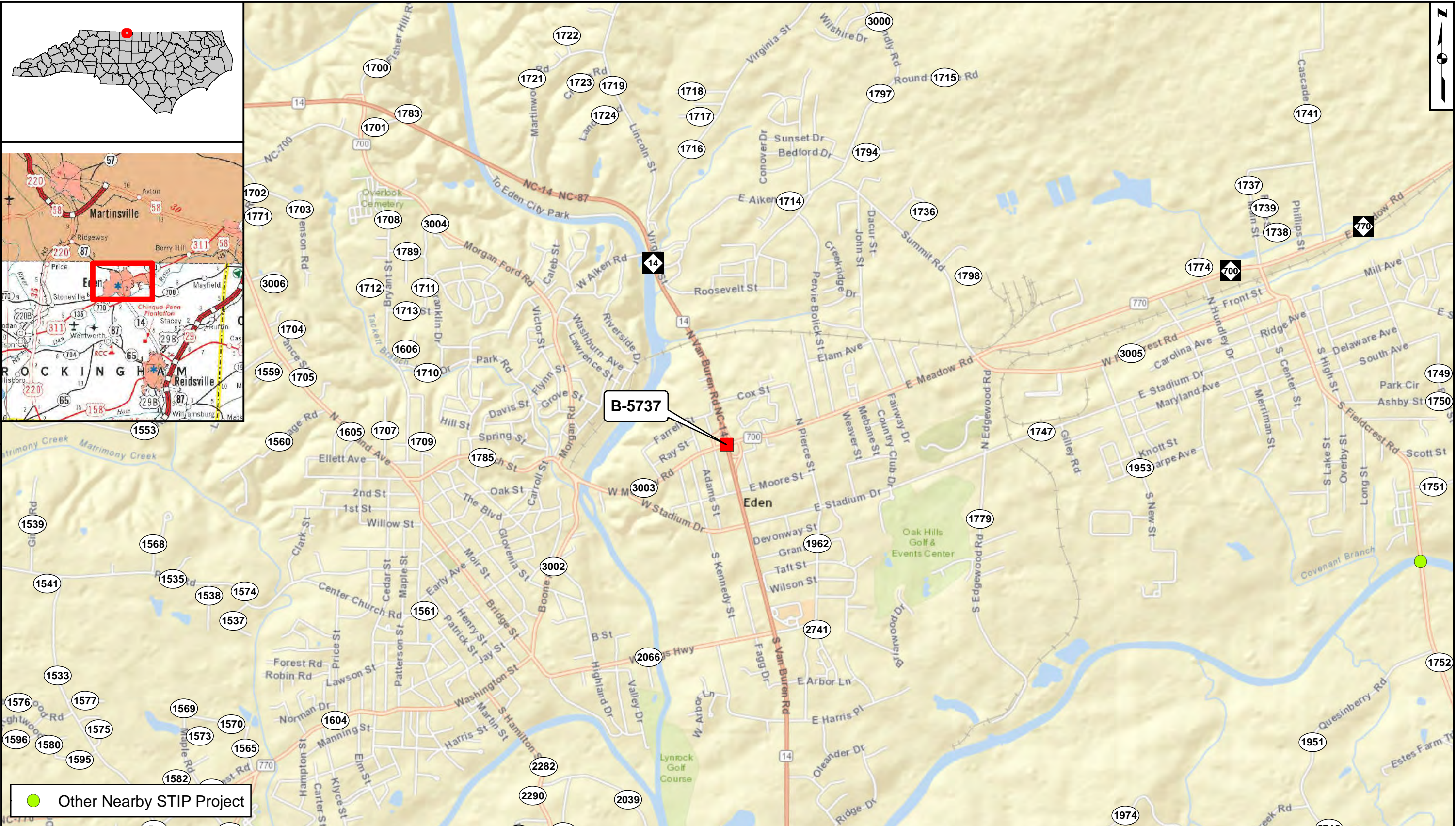
Approved by:  _____ Date: 12/19/2019
DocuSigned by: Kevin Fischer, P.E.
Kevin Fischer, P.E.
Structures Management Unit
North Carolina Department of
Transportation

Project Commitments

**Rockingham County
Replace Bridge No. 108 on US 311/NC 700
over US 311/NC 14/NC 87/NC 770 in the City of Eden
WBS No. 45693.1.1
Project No. B-5737**

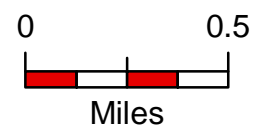
Phase II GeoEnvironmental Investigation (NCDOT Division 7 Right of Way)

- One (1) site of concern were identified within the project study area as documented in the August 23, 2016 GeoEnvironmental Planning Report (refer to locations of these sites in Figure 3). NCDOT's GeoEnvironmental Unit will conduct a Phase II GeoEnvironmental investigation for the sites of concern anticipated to be impacted by the project. Following the completion of the Phase II investigations, NCDOT GeoEnvironmental will prepare a Right of Way Acquisition Recommendations summary prior to new right of way being acquired. Contaminated soil, underground fuel storage tanks, and ground water monitoring wells in conflict with the project will be removed prior to construction or addressed in a Project Special Provision.



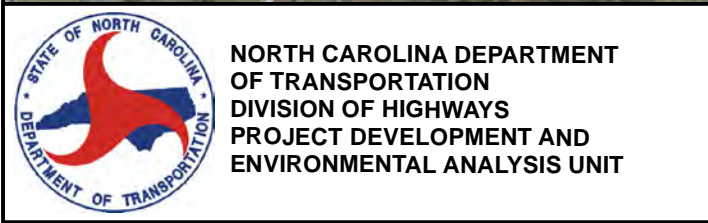
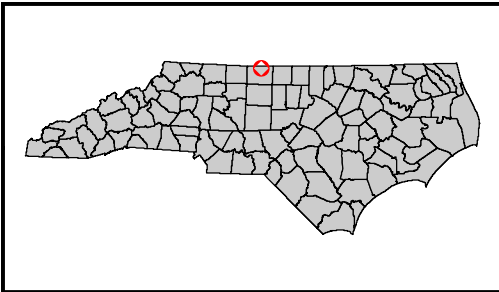
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
PROJECT DEVELOPMENT AND ENVIRONMENTAL ANALYSIS UNIT

VICINITY MAP
Replace Bridge No. 108 on US 311 & NC 700
over NC 14-87-770/US 311 in Rockingham County
TIP Project B-5737



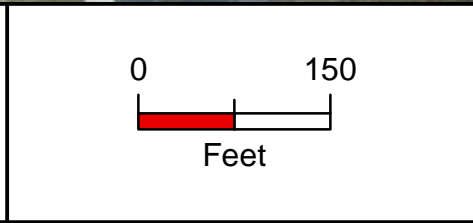
Div: 7	TIP# B-5737
Date: DECEMBER 2015	

Figure
1



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

STUDY AREA MAP
Replace Bridge No. 108 on US 311 & NC 700
over NC 14-87-770/US 311 in Rockingham County
TIP Project B-5737

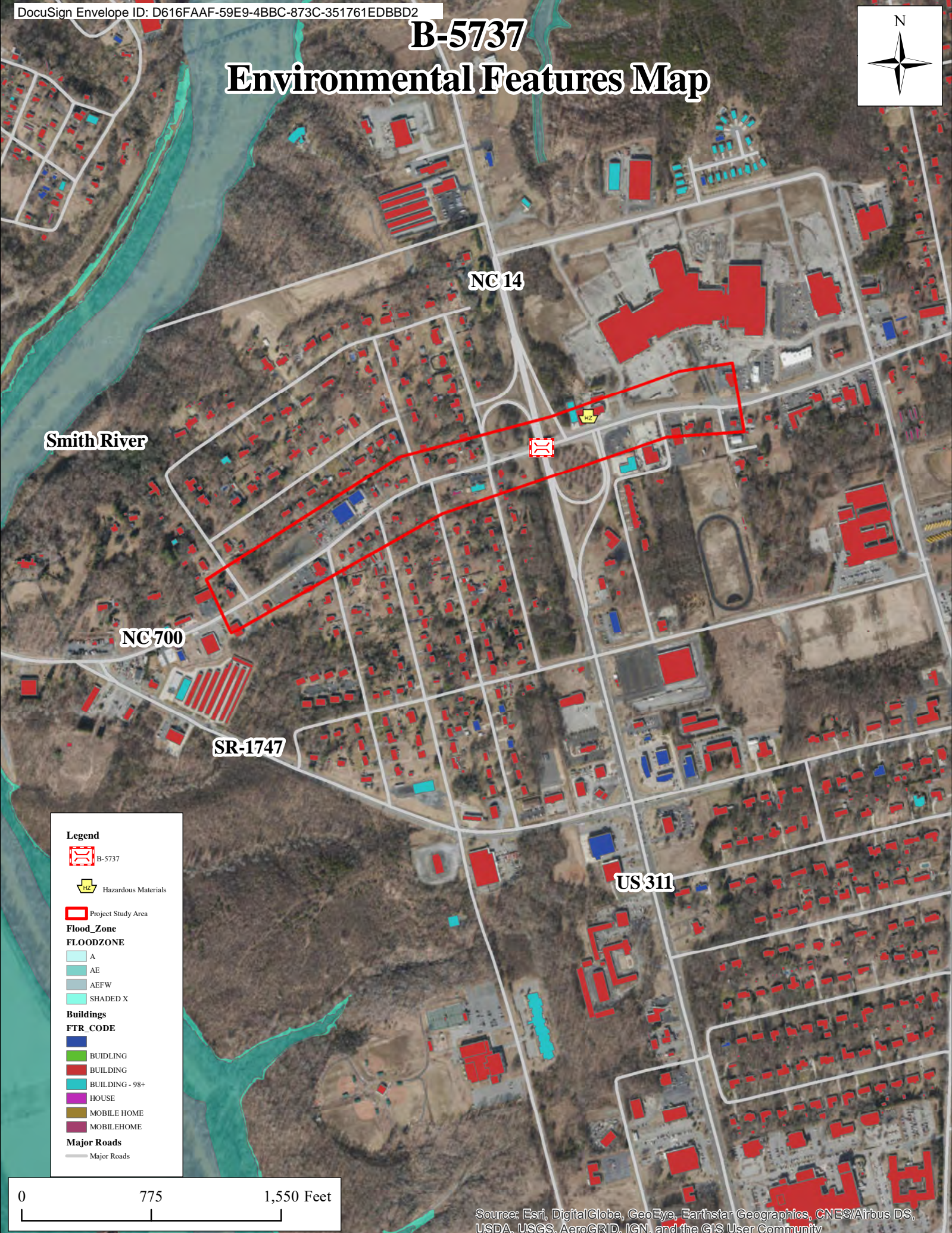


Div: 7	TIP# B-5737
Date: DECEMBER 2015	






Figure
2

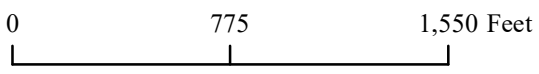
B-5737

Environmental Features Map



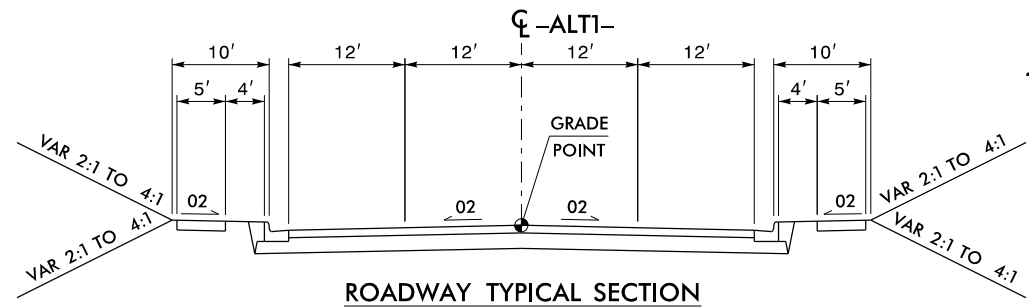
Legend

-  B-5737
-  Hazardous Materials
-  Project Study Area
- Flood_Zone**
- FLOODZONE**
-  A
-  AE
-  AEFW
-  SHADED X
- Buildings**
- FTR_CODE**
-  BUILDING
-  BUILDING
-  BUILDING - 98+
-  HOUSE
-  MOBILE HOME
-  MOBILEHOME
- Major Roads**
-  Major Roads



ROCKINGHAM COUNTY B-5737 ALTERNATE 1 REPLACE IN PLACE (ON-SITE DETOUR)

PROJECT REFERENCE NO. B-5737	SHEET NO. 4
R/W SHEET NO.	HYDRAULICS ENGINEER
ROADWAY DESIGN ENGINEER	
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	



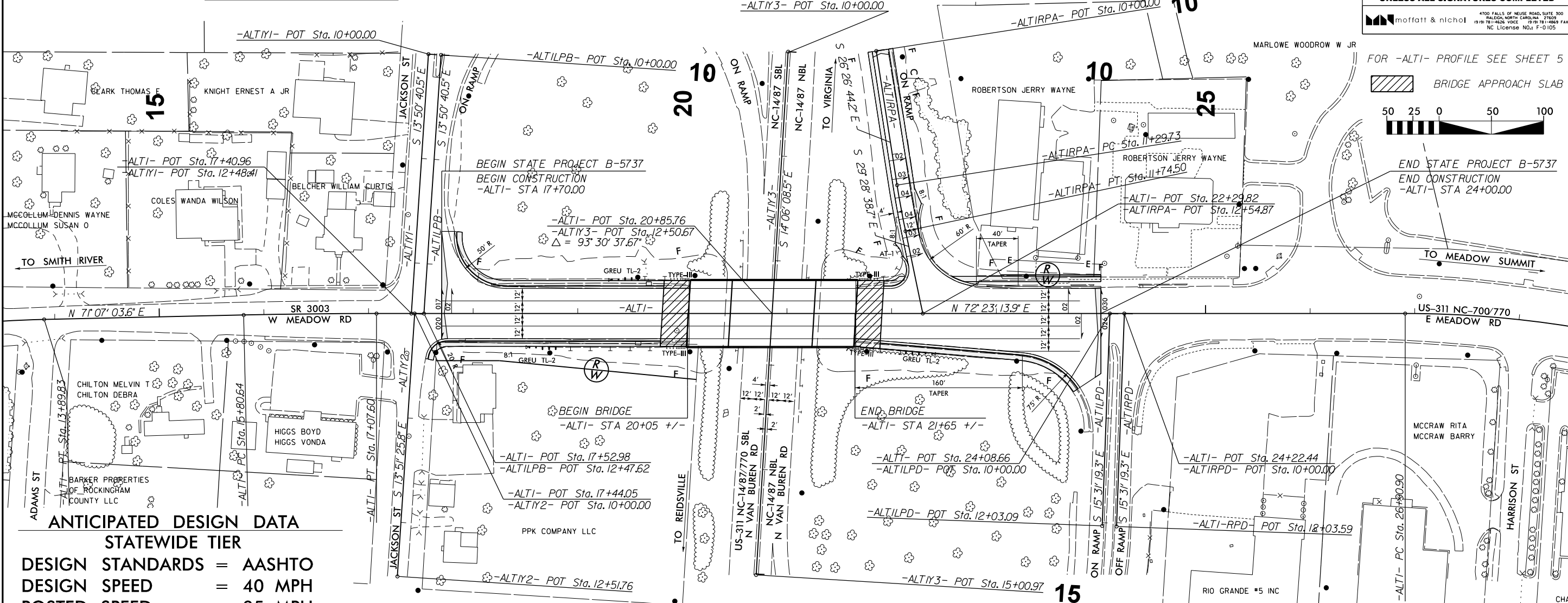
ROADWAY TYPICAL SECTION

FOR -ALTI- PROFILE SEE SHEET 5

BRIDGE APPROACH SLAB

50 25 0 50 100

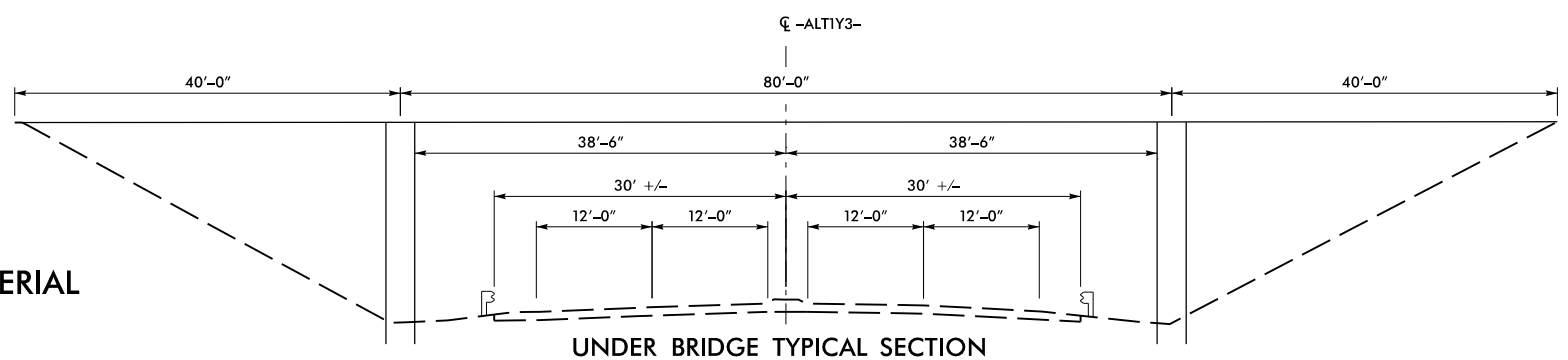
END STATE PROJECT B-5737
END CONSTRUCTION
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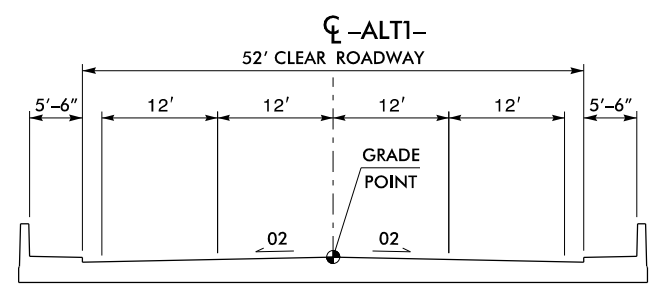
ANTICIPATED DESIGN DATA

STATEWIDE TIER	
DESIGN STANDARDS	= AASHTO
DESIGN SPEED	= 40 MPH
POSTED SPEED	= 35 MPH
ADT 2024	= 11,500
ADT 2044	= 12,300
K	= 8%
D	= 55%
DUAL	= 2%
TTST	= 12%
MIN. RADIUS	= 533'
MAX. GRADE	= 6%
K sag	= 64
K crest	= 44
SE MAX.	= 0.04
CLASSIFICATION	= MINOR ARTERIAL
TERRAIN	= ROLLING
DESIGN EXCEPTION	= NA

-ALTI-		-ALTIY3-	
PI Sta 12+68.81	PI Sta 16+44.12	PI Sta 28+34.03	PI Sta 11+52.12
$\Delta = 13^{\circ}56'13.3"$ (RT)	$\Delta = 1^{\circ}16'10.3"$ (RT)	$\Delta = 15^{\circ}58'32.8"$ (RT)	$\Delta = 3^{\circ}01'54.2"$ (LT)
D = 5'43'46.5"	D = 0'59'59.7"	D = 5'37'02.0"	D = 6'46'21.2"
L = 243.25'	L = 126.96'	L = 284.41'	L = 44.77'
T = 122.23'	T = 63.48'	T = 143.13'	T = 22.39'
R = 1,000.00'	R = 5,730.00'	R = 1,020.00'	R = 846.00'
SE = NC	SE = NC	SE = NC	SE = .04
RO = 0'	RO = 0'	RO = 0'	RO = 69'



UNDER BRIDGE TYPICAL SECTION



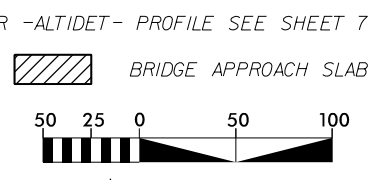
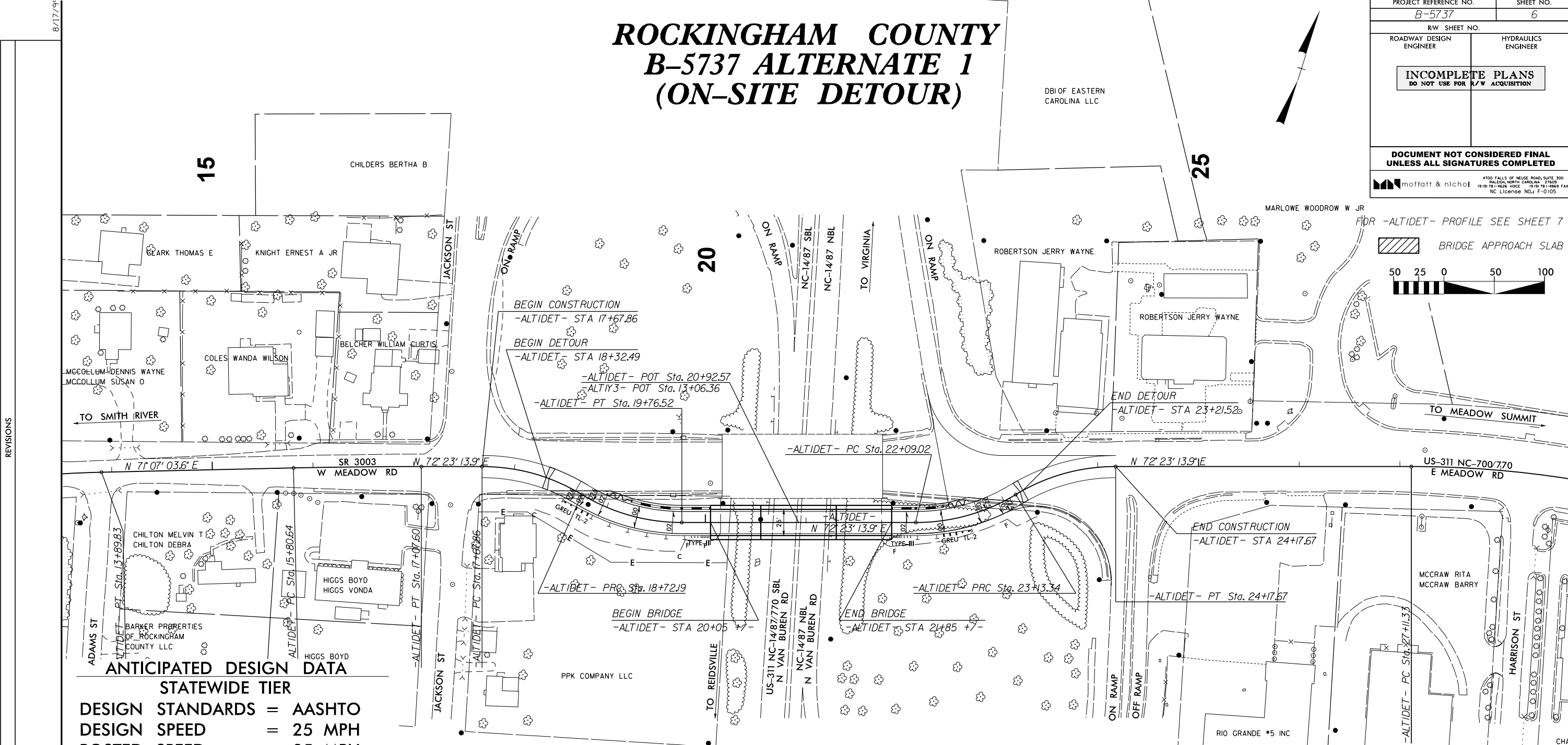
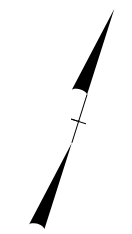
BRIDGE TYPICAL SECTION

REVISIONS

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ROCKINGHAM COUNTY B-5737 ALTERNATE 1 (ON-SITE DETOUR)

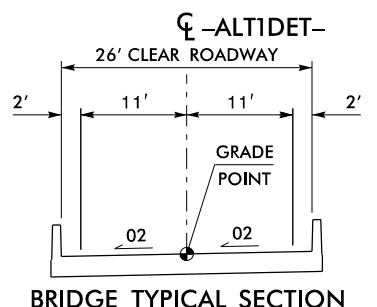
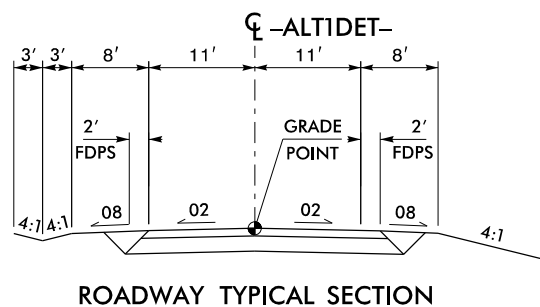
PROJECT REFERENCE NO. B-5737	SHEET NO. 6
R/W SHEET NO.	HYDRAULICS ENGINEER
ROADWAY DESIGN ENGINEER	
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	



ANTICIPATED DESIGN DATA

STATEWIDE TIER	
DESIGN STANDARDS	= AASHTO
DESIGN SPEED	= 25 MPH
POSTED SPEED	= 35 MPH
ADT 2013	= 11,500
ADT 2040	= 12,300
K	= 8%
D	= 55%
DUAL	= 2%
TTST	= 12%
MIN. RADIUS	= 154'
MAX. GRADE	= 15%
K sag	= 26
K crest	= 12
SE MAX.	= 0.04
CLASSIFICATION	= MINOR ARTERIAL
TERRAIN	= ROLLING
DESIGN EXCEPTION	= N/A


PI Sta 12+68.81 Δ = 13° 56' 13.3" (RT) D = 5' 43' 46.5" L = 243.25' T = 122.23' R = 1,000.00'	PI Sta 16+44.12 Δ = 1° 16' 10.3" (RT) D = 0' 59' 59.7" L = 126.96' T = 63.48' R = 5,730.00'	PI Sta 18+21.36 Δ = 31° 17' 46.2" (RT) D = 29° 59' 52.0" L = 104.33' T = 53.50' R = 191.00' SE = .03 RO = 5'	PI Sta 19+25.69 Δ = 31° 17' 46.2" (LT) D = 29° 59' 52.0" L = 104.33' T = 53.50' R = 191.00' SE = .02 RO = 34'	PI Sta 22+62.52 Δ = 31° 17' 46.2" (LT) D = 29° 59' 52.0" L = 104.33' T = 53.50' R = 191.00' SE = .02 RO = 34'	PI Sta 23+66.84 Δ = 31° 17' 46.2" (RT) D = 29° 59' 52.0" L = 104.33' T = 53.50' R = 191.00' SE = .03 RO = 5'	PI Sta 28+54.46 Δ = 15° 58' 30.2" (RT) D = 5' 37' 02.0" L = 284.39' T = 143.13' R = 1,020.00'
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REVISIONS

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 8/17/09

5/14/99

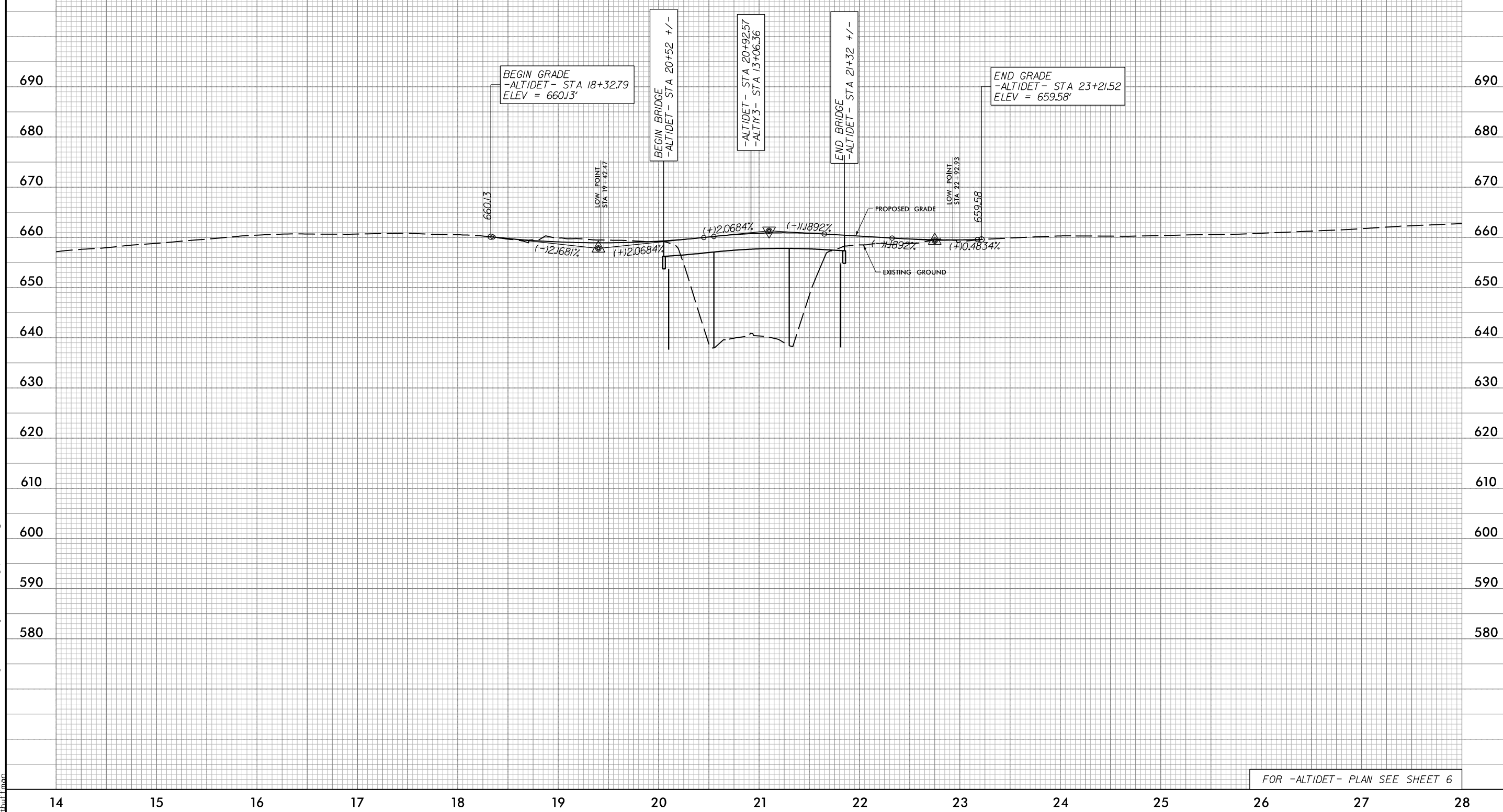
PROJECT REFERENCE NO. B-5737	SHEET NO. 7
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	
 <small>4700 FALLS OF HOUSE ROAD, SUITE 300 MELBOURNE, NORTH CAROLINA 27551 (919) 781-4200 FAX (919) 781-4205 NC License No. F-0105</small>	

-ALT1DET-

PI = 19+40.00
EL = 657.81'
VC = 210'
K = 50
DS = 35 MPH

PI = 21+10.00
EL = 661.32'
VC = 110'
K = 34
DS = 37 MPH

PI = 22+75.00
EL = 659.36'
VC = 85'
K = 51
DS = 36 MPH



FOR -ALTIDET- PLAN SEE SHEET 6

6:\2008\437\CADD\B5737\Roadway\Func\Proj\B5737_rdy_psh_07.dgn

16-01-0090



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:	B-5737	County:	Rockingham
WBS No.:	45693.1.1	Document Type:	
Fed. Aid No:		Funding:	X State Federal
Federal Permit(s):	X Yes No	Permit Type(s):	NWP
Project Description: Replace Bridge No. 108 on US 311 and NC 700 (Meadow Road) over US 311, NC 14, NC 87, and NC 770 (Van Buren Road) (no off-site detour planned).			

SUMMARY OF HISTORIC ARCHITECTURE AND LANDSCAPES REVIEW

DESCRIPTION OF REVIEW ACTIVITIES, RESULTS, AND CONCLUSIONS: HPOWeb reviewed on 18 February 2016 and yielded no NR, SL, LD, SS, or DE properties in the Area of Potential Effects (APE). Rockingham County current GIS mapping, aerial photography, and tax information indicated a developed APE with residential and commercial resources dating from the 1930s to the 2000s (viewed 18 February 2016). The pre-1960s resources are unexceptional examples of their types and many are altered. Bridge No. 108, built in 1957, is not eligible for the National Register according to the NCDOT Historic Bridge Survey as it is not representative of any distinctive engineering or aesthetic type. Google Maps "Street View" confirmed the relative placement of the various resources and the absence of critical historic buildings and structures and landscapes in the APE (viewed 18 February 2016).

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

WHY THE AVAILABLE INFORMATION PROVIDES A RELIABLE BASIS FOR REASONABLY PREDICTING THAT THERE ARE NO UNIDENTIFIED SIGNIFICANT HISTORIC ARCHITECTURAL OR LANDSCAPE RESOURCES IN THE PROJECT AREA: APE extends 1000 feet from each end of the existing bridge (E-W) and 150 feet to either side of the existing NC 700 center line (N-S) to encompass proposed construction. The comprehensive county architectural survey (2001-2003) is recent and reliable and includes no properties in the APE. County GIS/tax materials and other visuals support the absence of significant architectural and landscape resources in the APE. No National Register-listed or -eligible properties are located within the APE.

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

SUPPORT DOCUMENTATION

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

FINDING BY NCDOT ARCHITECTURAL HISTORIAN

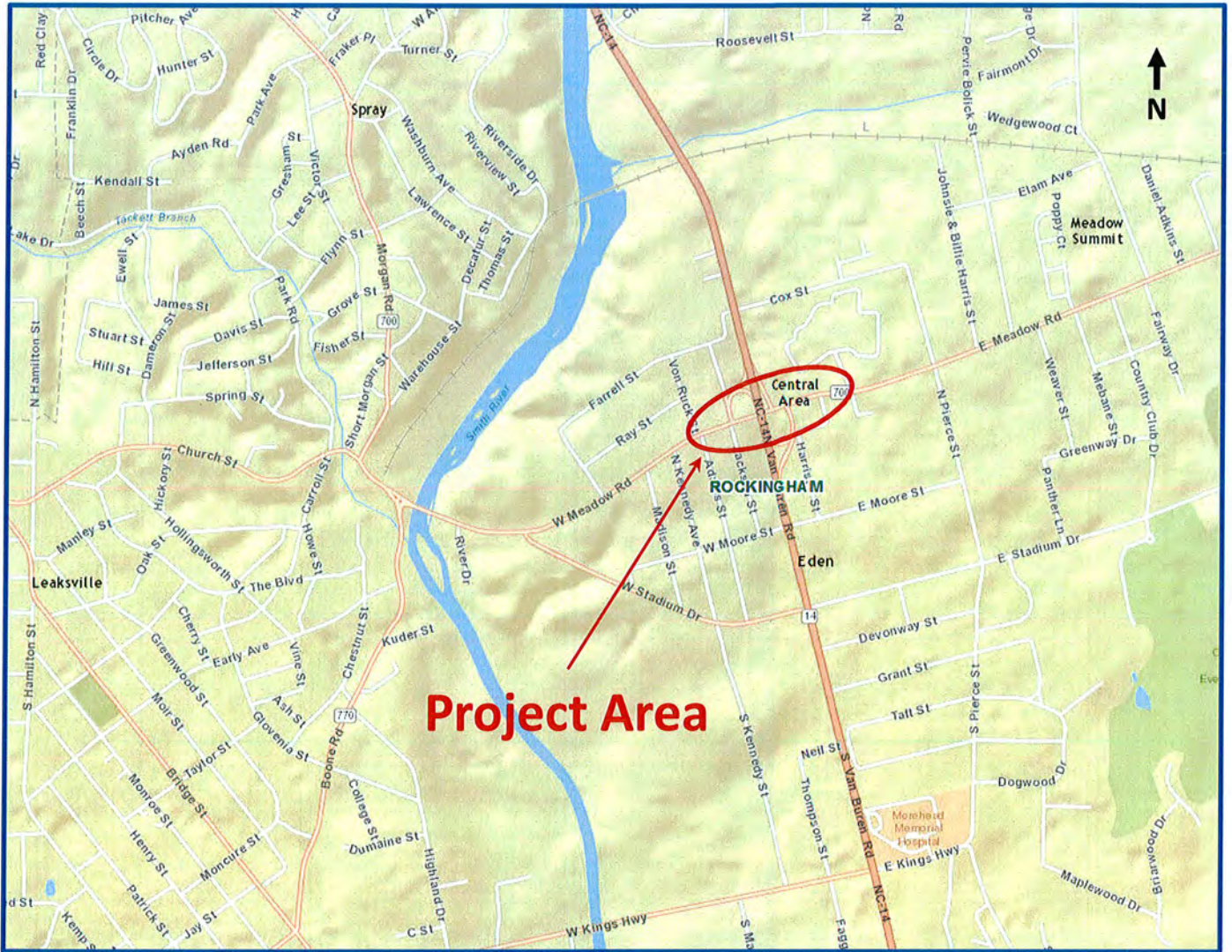
Historic Architecture and Landscapes -- NO SURVEY REQUIRED

Vanessa C. Patrick

NCDOT Architectural Historian

18 February 2016

Date



B-5737 Bridge No. 108 Replacement
WBS No. 45693.1.1

Rockingham County
Base map: HPOWeb, nts

16-01-0090



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: B-5737 **County:** Rockingham
WBS No: 45693.1.1 **Document:** CE
F.A. No: na **Funding:** State Federal
Federal Permit Required? Yes No **Permit Type:** na

Project Description: NCDOT intends to replace Bridge No. 108 on US 311/NC 700 over US 311/NC 14/NC 87, in Eden. No description of the project or of a proposed study area was submitted with the Request for Cultural Resources Review form. Based on mapping that was submitted with the request an area of potential effects (APE) measuring 2000 feet (609.6 meters) long and 300 feet (91.44 meters) wide was established for the purposes of the archaeological review. Thus, the proposed APE encompasses an area of approximately 13.77 acres (5.57 hectares).

SUMMARY OF CULTURAL RESOURCES REVIEW

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

A review of the site maps and files archived at the North Carolina Office of State Archaeology was conducted on February 4, 2016. No archaeological sites are recorded within a half-mile radius of Bridge No. 108. Additionally, a review of the information provided by the North Carolina State Historic Preservation Office HPOWEB GIS Service reveals no historic properties in the immediate vicinity of the proposed APE (although the surveyed Eggleston Building, RK0402, is located within a half-mile radius of Bridge No. 108).

A review of aerial photography for the proposed project area, coupled with soil mapping for the associated portion of Rockingham County reveals that the APE compasses land that has been significantly modified. Mapping provided by the National Cooperative Soil Survey, Web Soil Survey classifies soils found within the APE as Clover-Urban land complex, 2 to 10 percent slopes (CpC). This soil type reflects a mixture of Clover Sandy clay loams and urban disturbed soils in proportions too small to be mapped accurately by the survey.

No further archaeological investigations are required for the project within the 300-foot corridor established as the current APE. Should the project change to include a larger footprint than covered by the current APE, further consultation will be necessary. In the unlikely event that archaeological remains are encountered during the bridge replacement, work should cease in that area and the NCDOT Archaeology Group should be notified immediately.

16-01-0090

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

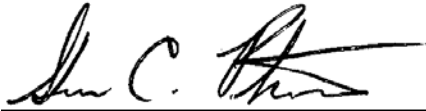
The proposed project falls within a portion of the Town of Eden that exhibits significantly altered landscapes as a result of commercial, transportation, and residential development. Intact, National Register-eligible archaeological resources are very unlikely in this context.

SUPPORT DOCUMENTATION

See attached: Map(s) Previous Survey Info Photos Correspondence
 Other: <http://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx>

FINDING BY NCDOT ARCHAEOLOGIST

NO ARCHAEOLOGY SURVEY REQUIRED



NCDOT ARCHAEOLOGIST

February 23, 2016

Date

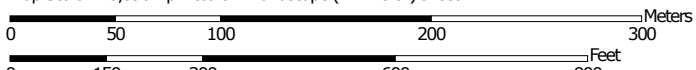


Aerial photograph with 2-foot contours illustrating the location of the proposed APE (red lines) for the replacement of Bridge No. 108 on US 311/NC 700.

Soil Map—Rockingham County, North Carolina
(Bridge No. 108 on US 311/NC 700)



Map Scale: 1:3,590 if printed on A landscape (11" x 8.5") sheet.




Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 17N WGS84



Soil Map—Rockingham County, North Carolina
(Bridge No. 108 on US 311/NC 700)


MAP LEGEND

Area of Interest (AOI)

 Area of Interest (AOI)

Soils

 Soil Map Unit Polygons

 Soil Map Unit Lines

 Soil Map Unit Points

Special Point Features



Blowout



Borrow Pit



Clay Spot



Closed Depression



Gravel Pit



Gravelly Spot



Landfill



Lava Flow



Marsh or swamp



Mine or Quarry



Miscellaneous Water



Perennial Water



Rock Outcrop



Saline Spot



Sandy Spot



Severely Eroded Spot



Sinkhole



Slide or Slip



Sodic Spot



Spoil Area



Stony Spot



Very Stony Spot



Wet Spot



Other



Special Line Features

Water Features



Streams and Canals

Transportation



Rails



Interstate Highways



US Routes



Major Roads



Local Roads

Background



Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL: <http://websoilsurvey.nrcs.usda.gov>
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Rockingham County, North Carolina
Survey Area Data: Version 16, Sep 16, 2015

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: May 10, 2010—Apr 30, 2011

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Rockingham County, North Carolina (NC157)			
Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
CmB	Clover sandy loam, 2 to 8 percent slopes	0.2	0.4%
CmD	Clover sandy loam, 8 to 15 percent slopes	1.4	2.7%
CpC	Clover-Urban land complex, 2 to 10 percent slopes	44.5	83.6%
LeB	Leaksville silt loam, 0 to 4 percent slopes	6.6	12.5%
SuB	Spray-Urban land complex, 0 to 5 percent slopes	0.5	0.9%
Totals for Area of Interest		53.2	100.0%