Project Submittal Interim Form

Updated September 4, 2020

*Please note: fields marked with a red asterisk * below are required. You will not be able to submit the form until all mandatory questions are answered.*

Project Type: *

- ( ) For the Record Only (Courtesy Copy)
- ( ) New Project
- ( ) Modification/New Project with Existing ID
- ( ) More Information Response
- ( ) Other Agency Comments
- ( ) Pre-Application Submittal
- (•) Re-Issuance\Renewal Request
- ( ) Stream or Buffer Appeal

Pre-Filing Meeting Date Request was submitted on:

4/29/2022

Project Contact Information

Name: Jeffrey Hemphill NCDOT - ECAP

Who is submitting the information?

Email Address: * jhemphill@ncdot.gov

Project Information

Existing ID #: *

201801859

20170001 (no dashes)

Existing Version: *

1

1

Project Name: * The Replacement of Bridge 780168 on NC 14/87 over the Smith River

Is this a public transportation project? *

- (•) Yes
- ( ) No

Is this a DOT project? *

- (•) Yes
- ( ) No

Is the project located within a NC DCM Area of Environmental Concern (AEC)? *

( ) Yes (•) No ( ) Unknown

TIP#: BR-0044

WBS#: 67044.1.1

(Applies to DOT projects only)

County (ies) *

Rockingham

Please upload all files that need to be submited.

Click the upload button or drag and drop files here to attach document

BR-0044 Reverification Request November 2022.pdf 18.16MB

Only pdf or kmz files are accepted.

Describe the attachments or add comments:

NCDOT requests the renewal of the 404 and 401 permits issued November 19, 2019 and November 20, 2019, respectively for BR-0044 in Rockingham County. There have been no design changes to the project and the original permit drawings from the October 30, 2019 Permit Application submittal are still valid.

Informal Concurrence for Roanoke logperch (MANLTAA) issued October 31, 2019 is still valid (James River spinymussel has been dropped from the project area - IPAC November 8, 2022).

*The project is currently 5% complete. The original Let was delayed due to funding.

Due to a funding change, the WBS Element changed from 67044.1.1 to 49077.1.1

Tribal coordination with Catawba and Monacan (included) occurred on November 25 and December 16 2019, respectively.

NCDOT requests a RGP 50 for this renewal.

* ☑ By checking the box and signing box below, I certify that:

- I, the project proponent, hereby certifies that all information contained herein is true, accurate, and complete to the best of my knowledge and belief.
- I, the project proponent, hereby requests that the certifying authority review and take action on this CWA 401 certification request within the applicable reasonable period of time.
- I agree that submission of this online form is a “transaction” subject to Chapter 66, Article 40 of the NC General Statutes (the “Uniform Electronic Transactions Act”);
- I agree to conduct this transaction by electronic means pursuant to Chapter 66, Article 40 of the NC General Statutes (the “Uniform Electronic Transactions Act”);
- I understand that an electronic signature has the same legal effect and can be enforced in the same way as a written signature; AND
- I intend to electronically sign and submit the online form.

Signature: *

Submittal Date:

Tribal Coordination

Catawba Indian Nation
Tribal Historic Preservation Office
1536 Tom Steven Road
Rock Hill, South Carolina 29730

Office 803-328-2427
Fax 803-328-5791

December 20, 2019

Attention: David Stutts
NC Department of Transportation
Structures Management Unit 1581
Raleigh, NC 27699

Re. THPO #	TIP #	Project Description
2020-193-47	BR-0044	Replacement of Bridge No. 168 on NC 14/NC 87 over Smith River in Rockingham Co.

Dear Mr. Stutts,

The Catawba have no immediate concerns with regard to traditional cultural properties, sacred sites or Native American archaeological sites within the boundaries of the proposed project areas. **However, the Catawba are to be notified if Native American artifacts and / or human remains are located during the ground disturbance phase of this project.**

If you have questions please contact Caitlin Rogers at 803-328-2427 ext. 226, or e-mail caitlinh@ccppcrafts.com.

Sincerely,

Caitlin Rogers for

Wenonah G. Haire
Tribal Historic Preservation Officer

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

ROY COOPER
GOVERNOR

JAMES H. TROGDON, III
SECRETARY

December 16, 2019

Kaleigh Pollak
Monacan Indian Nation Tribal Office
357 S. Main Street
Amherst, VA 24521

Dear Ms. Pollak,

The North Carolina Department of Transportation has started the project development, environmental, and engineering work for the replacement of Bridge No. 168 on NC 14/NC 87 over Smith River in Rockingham County as project BR-0044.

The US Army Corps of Engineers (USACE) is the lead federal agency and a permit is anticipated under the Section 404 process with the USACE.

A project vicinity map is attached. The coordinates of this project are approximately 36.527974, -79.767857.

This project was reviewed/surveyed for cultural resources by NCDOT under the terms of the 2015 Amended Programmatic Agreement Among the Federal Highway Administration, the Advisory Council on Historic Preservation and the North Carolina State Historic Preservation Office for Minor Transportation Projects in North Carolina (PA). The results of that review/survey are attached. The environmental document for this undertaking was completed on February 27, 2019.

Please find attached Archaeology Survey Reports. No Archaeological Survey was required for this project.

Please respond by January 17, 2020 so that your comments can be used in the scoping of this project. If you have any questions concerning this project, or would like any additional information, please contact me at dstutts@ncdot.gov or (919) 707-6442.

Thank you,

DocuSigned by:
David Stutts
A4A2999A8BC64F2...

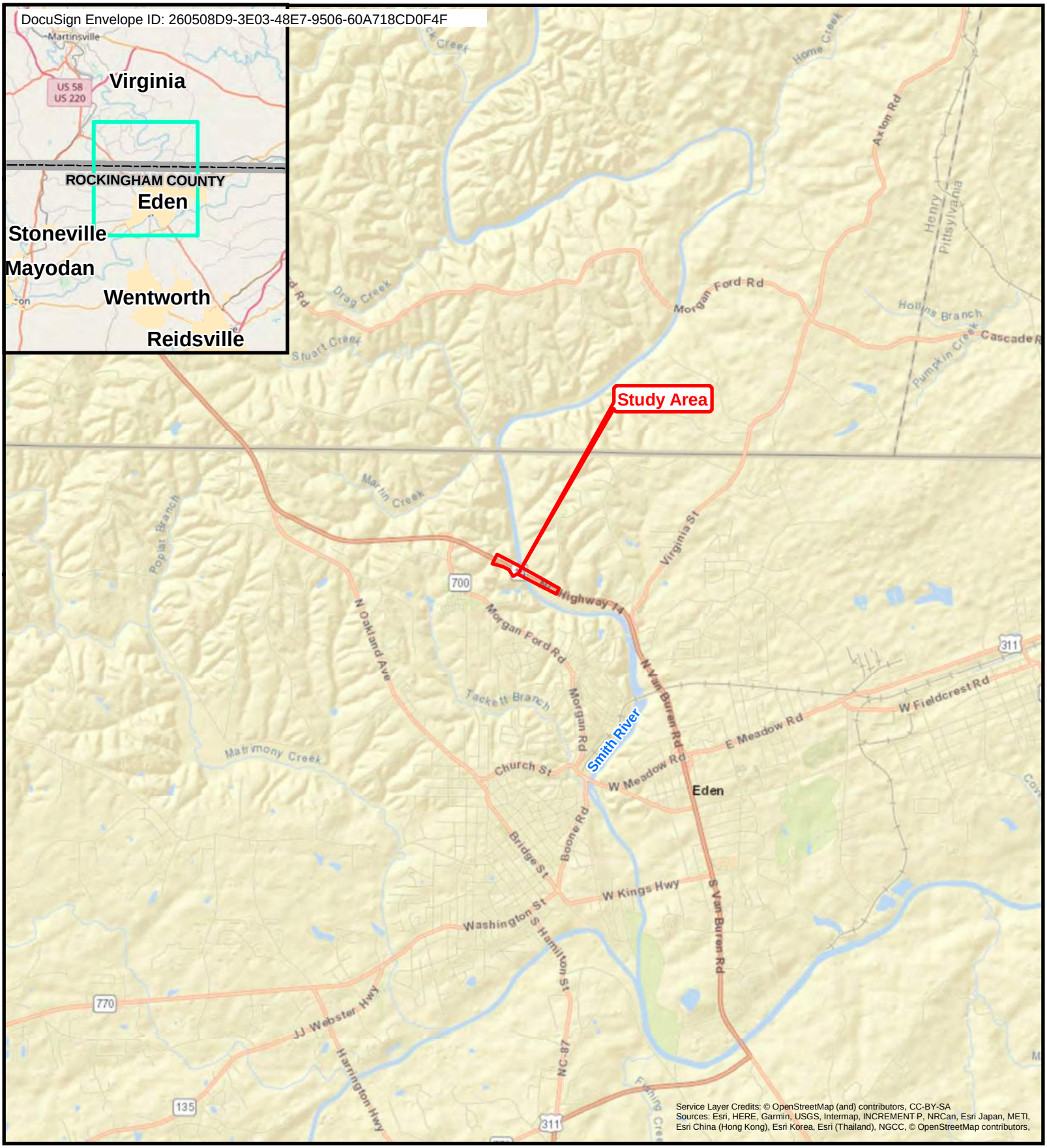
David Stutts, P.E.
NCDOT Project Engineer – PEF/Program Management

cc: Matt Wilkerson, NCDOT Archaeology Team Leader
David Bailey, Div 7 - USACE

Mailing Address:
NC DEPARTMENT OF TRANSPORTATION
STRUCTURES MANAGEMENT UNIT
1581 MAIL SERVICE CENTER
RALEIGH NC 27699

Telephone: (919) 707-6400
Customer Service: 1-877-368-4968
Website: www.ncdot.gov

Location:
1000 BIRCH RIDGE DRIVE
RALEIGH NC 27610

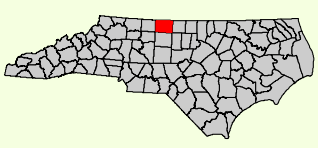


NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

VICINITY MAP - Figure 1
Replace Bridge 780168 on NC 14/87 over the Smith River
Rockingham County, North Carolina

TIP Project BR-0044

Miles
0 1



November 2018
NAD83 NC StatePlane
This map is for reference only.

Project Tracking No.:

18-08-0022

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-0044**	*County:*	**Rockingham**
WBS No:	**67044.1.1**	*Document:*	**MCC**
F.A. No:	**na**	*Funding:*	☒ State ☐ Federal

Federal Permit Required? ☒ Yes ☐ No *Permit Type:* **?**

Project Description: The North Carolina Department of Transportation (NCDOT) Division 7 intends to replace Bridge No. 168 on NC 14/NC 18, over the Smith River north of Spray in Rockingham County. An original study area that measured 2,584 feet (nearly 787.63 meters) long, 300 feet (approximately 91.44 meters) wide, and was estimated to encompass 17.8 acres (slightly over 7.2 hectares) was proposed in late 2017. Recently, a revised request for archaeological review was submitted that expands the study area to roughly 3000 feet (914.4 meters) in length and varying in width between approximately 260-500 feet (roughly 79-152 meters). For the purposes of this revised review of the project, this new study area with be considered to be the archaeological area of potential effects (APE). Thus, the proposed APE encompasses an area of approximately 23.3 acres (about 9.43 hectares).

SUMMARY OF CULTURAL RESOURCES REVIEW

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

The original review of the site maps and files archived at the North Carolina Office of State Archaeology was conducted on March 7, 2016. No previously recorded archaeological resources were located within the proposed APE at that time. However, a number of archaeologically significant sites along the Smith River to the north and along the Dan River to the south of the project area. In particular, a fish weir (31RK91) is located a little over .5 kilometer north of the bridge. This fish weir as well as other sites were reported to researchers with the Research Laboratories of Archaeology at the University of North Carolina at Chapel Hill (RLA) in 1985-1986 by local residents as part of the initial stages of archaeological research into Native American settlement patterns in the northern North Carolina Piedmont. Along the Smith River, two sites were reported by a local informant, Pete Adkins: a rock shelter overlooking the Smith River in Virginia, designated by the RLA as "PA2"; and the aforementioned weir, designated "PA1" (Simpkins and Petherick 1986: 124). In their notes, Simpkins and Petherick suggest that the weir at PA1 is either very well preserved or is the result of the natural hydrology of the river at that point. Aerial photographs of the Smith River clear show riffles and nick-points upstream from Bridge No. 168. But, Google Earth images of the location of PA1 over time frequently show a distinct "V"-shaped structure during periods of low water. Those images even suggest that the weir may, in fact be a double "V", though this is less clear in the images. Simpkins and Petherick also record that Adkins reported (about PA2) that the "entire area is full of rock shelters" that were very well known to local collectors. Ward and Davis (1993: 5-9) report late prehistoric sites and protohistoric sites along the Dan River drainage basin (including the Smith River) as a part of their broader examination of Siouan settlement patters in the region. The Lower Saratown Site (31RK1) and the Powerplant Site (31RK5) are both located within 4 miles of the current APE. While these sites are located on broader alluvial landforms than at Bridge No. 168, mapped soil type and river hydrology are similar to those located within the current project area.

An examination of the data presented on the North Carolina State Historic Preservation Office HPOWEB GIS Service (http://gis.ncdcr.gov/hpoweb/) reveals that no historic properties are recorded within .5-mile of Bridge No. 168. However, there are six (6) cemeteries that have been documented in upland settings within that same radius.

The paucity of recorded historic properties notwithstanding, an "archaeological investigation of the APE, including subsurface testing" was recommended in advance of the proposed project, on January 24, 2018. This archaeological survey was undertaken by archaeologists with Environmental Corporation of America (ECA) on July 8-9, 2018. A visual inspection of the entire APE was conducted, followed by subsurface testing with shovel tests on two transects at 30-meter intervals. Steep slopes, modern landscape alterations, and low/wet areas within the APE limited subsurface testing to a degree. Nevertheless, three Native American ceramic sherds (two sherds were identified as Dan River ceramics, while the third remained unidentified) were recovered from a single shovel test pit to the southeast of Bridge No. 168. This site was recorded as 31RK250 but was not considered to be archaeologically significant due to the very limited number of artifacts recovered from a very small area. A No National Register of Historic Places, Eligible or Listed Archaeological Sites Present Form was produced on August 14, 2018.

A request to screen the expanded APE (referenced above) was received on November 14, 2018 prompting consultation with the ECA principal investigator for the archaeological survey, Matt Beazley. According to Beazley (email dated November 26, 2018), areas along the western bank of the Smith River were dominated by steep slopes, while areas east of the river tended to be low and wet where they were not severely disturbed by modern landscape alterations. The subsurface testing and visual inspection methodology produced results that could be considered to be reasonably representative of the general vicinity.

No further archaeological investigations are required for the project within the area 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 project, work should cease in that area and the NCDOT Archaeology Group should be notified immediately.

Brief Explanation of why the available information provides a reliable basis for reasonably predicting that there are no unidentified historic properties in the APE:
As stated above, the subsurface testing and visual inspection methodology produced results that could be considered to be reasonably representative of the general vicinity. It is clear that a high degree of prehistoric behavior was centered on the Dan River drainage (including the Smith River), particularly during the Late Woodland Period. Site 31RK250 provides evidence that even in the vicinity of Bridge No. 168, Siouan people were utilizing the landscape. But, results from the earlier archaeological investigations, including site 31RK250, strongly imply that local physiography and modern landscape development have impacted the potential for intact archaeological deposits in the immediate vicinity of the existing bridge. While any further expansion of the project footprint should undergo additional assessment, the currently proposed APE is unlikely to include archaeological resources that would be considered eligible for the National Register of Historic Places.

References Cited:

Simpkins, D. L. and G. L. Petherick
1986 *Second Phase Investigations of Late Aboriginal Settlement Systems in the Eno, Haw, and Dan River Drainages, North Carolina*. Research Report No. 6, Research Laboratories of Archaeology, University of North Carolina at Chapel Hill.

Ward, H. T. and R. P. S. Davis Jr.
1993 *Indian Communities on the North Carolina Piedmont, A.D. 1000 to 1700*. Monograph No. 2, Research Laboratories of Archaeology, University of North Carolina at Chapel Hill.

SUPPORT DOCUMENTATION

See attached: ☒ Map(s) ☒ Previous Survey Info ☐ Photos ☐ Correspondence
☒ Other: soil map

FINDING BY NCDOT ARCHAEOLOGIST

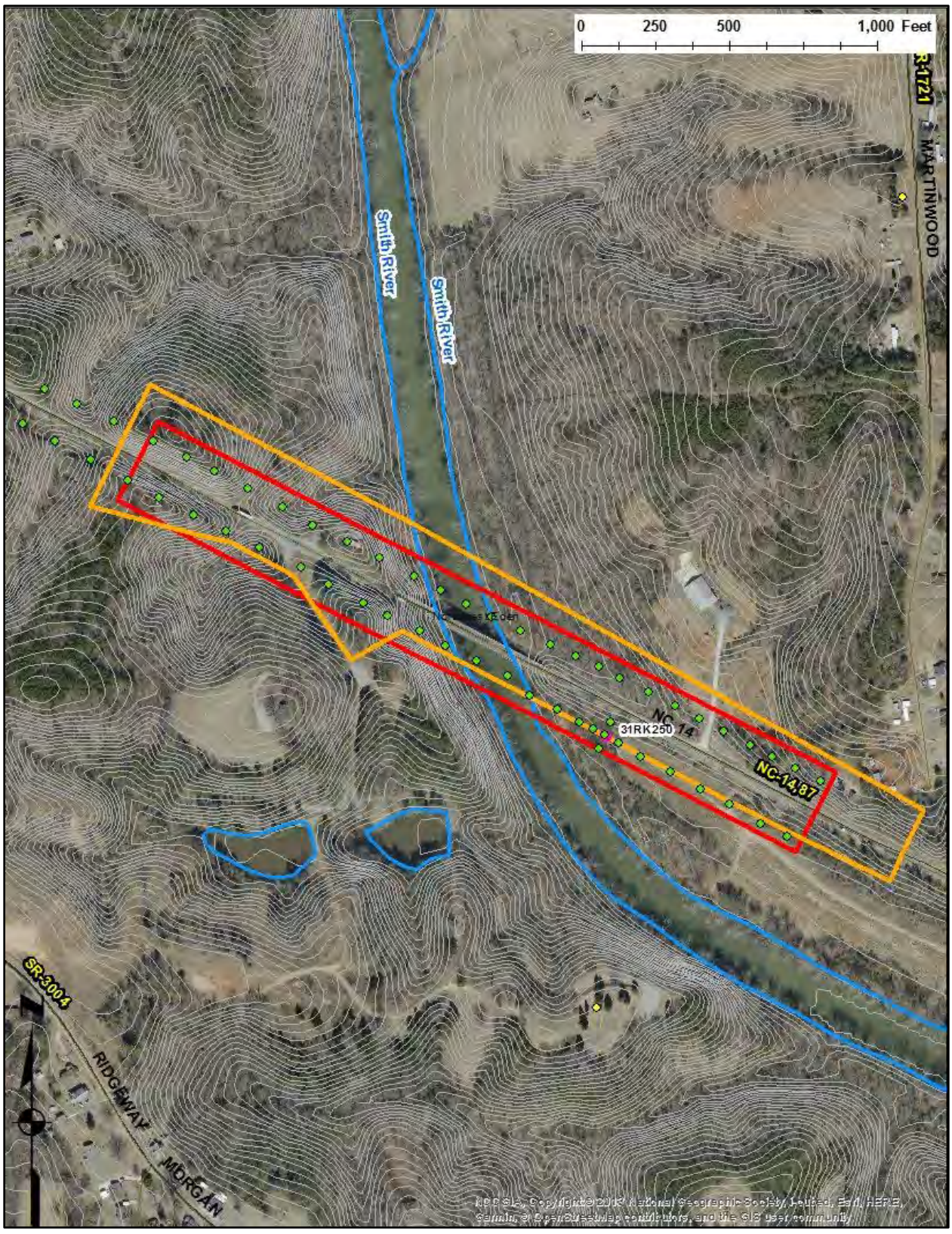
NO ARCHAEOLOGY SURVEY REQUIRED

November 26, 2018

NCDOT ARCHAEOLOGIST Date

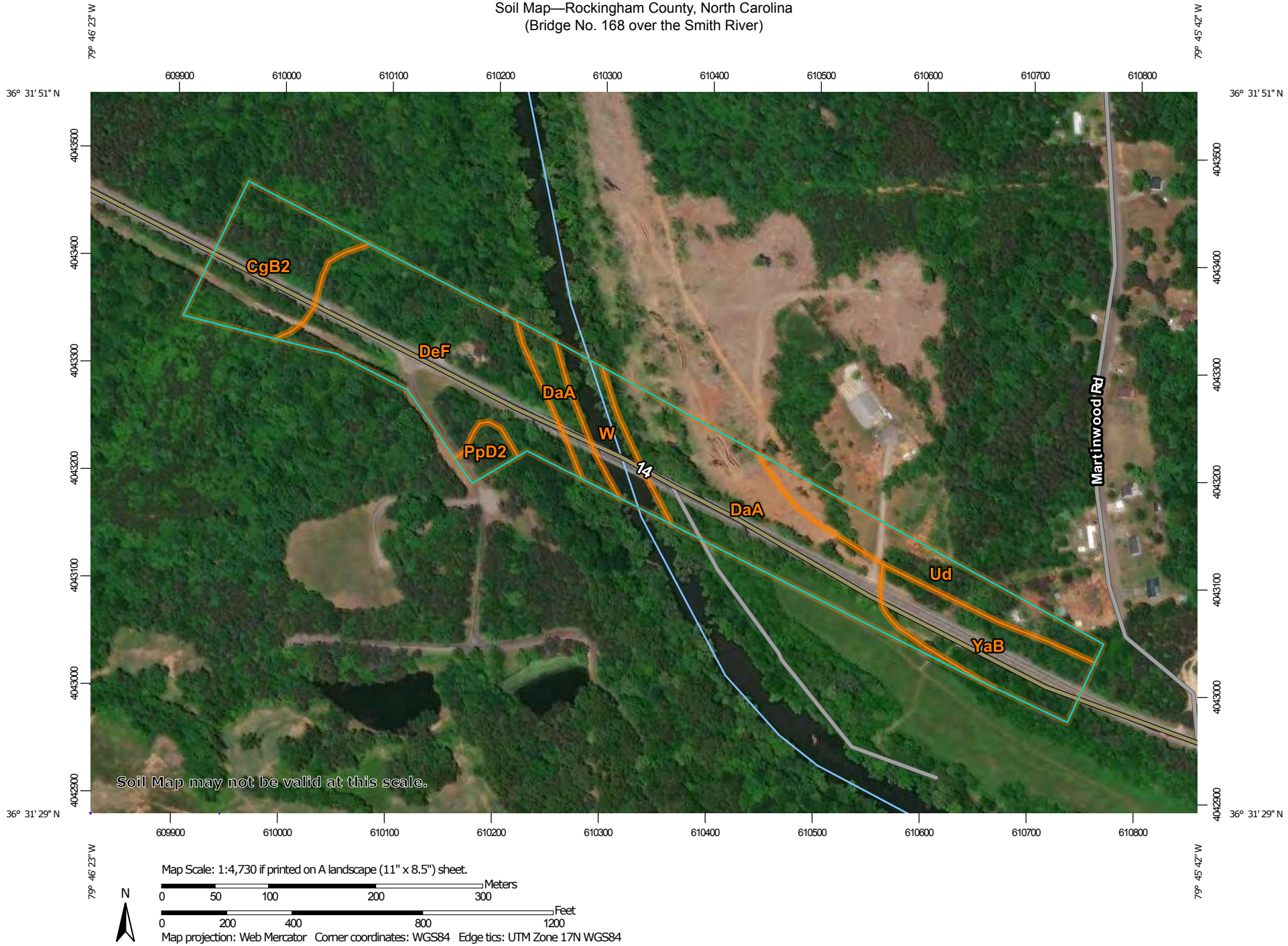
Project Tracking No.:

18-08-0022



Aerial photograph with 2-contours of the location for the expanded APE (orange lines) for the proposed replacement of Bridge No. 168 on NC 14/18; note the location of the original APE (red lines), shovel test pit locations (green dots); site 31RK250 (pink lines), and known cemetery locations (yellow dots).

Soil Map—Rockingham County, North Carolina
(Bridge No. 168 over the Smith River)



Map Scale: 1:4,730 if printed on A landscape (11" x 8.5") sheet.

N

Meters: 0 50 100 200 300

Feet: 0 200 400 800 1200

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

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:
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 19, Sep 10, 2018

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

Date(s) aerial images were photographed: Mar 27, 2015—Oct 16, 2017

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

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
CgB2	Clifford sandy clay loam, 2 to 8 percent slopes, moderately eroded	3.3	14.2%
DaA	Dan River loam, 0 to 2 percent slopes, frequently flooded	6.4	27.7%
DeF	Devotion fine sandy loam, 15 to 45 percent slopes	6.5	27.8%
PpD2	Poplar Forest sandy clay loam, 8 to 15 percent slopes, moderately eroded	0.5	2.0%
Ud	Udorthents, loamy	2.5	10.6%
W	Water	1.3	5.7%
YaB	Yadkin loam, 2 to 8 percent slopes	2.8	12.1%
Totals for Area of Interest		**23.3**	**100.0%**

Project Tracking No.:

17-12-0024

NO NATIONAL REGISTER OF HISTORIC PLACES ELIGIBLE OR LISTED ARCHAEOLOGICAL SITES PRESENT 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-0044**	*County:*	**Rockingham**
WBS No:	**67044.1.1**	*Document:*	**MCC**
F.A. No:	**NA**	*Funding:*	☒ State ☐ Federal

Federal Permit Required? ☒ Yes ☐ No *Permit Type:* **NWP**

Project Description:

The North Carolina Department of Transportation (NCDOT) Division 7 intends to replace Bridge No. 168 on NC 14/18 over the Smith River north of Spray in Rockingham County. No preliminary designs were available at the time of the archaeological review but a study area of 300 feet (approximately 91.44 meters) wide and 2,584 feet (nearly 787.60 meters) long was provided for the archaeological review. For the purposes of that review this study area will be considered to be the area of potential effects (APE). Thus, the APE is estimated to encompass 17.8 acres (slightly over 7.2 hectares).

SUMMARY OF ARCHAEOLOGICAL FINDINGS

Prior to commencement of the field survey, Environmental Corporation of America (ECA) conducted a background literature review to identify previously recorded cultural resources, including archaeological sites, features, or historic structures within the APE of Bridge No. 168. Sources reviewed included the files at the North Carolina Office of State Archaeology (OSA), the National Register of Historic Places (NRHP), the North Carolina Historic Preservation Office (NC SHPO) GIS service, the *Northwest Eden*, *NC-VA* (1965, photorevised 1978) topographic map, and historic aerial photographs and historic maps. No previously identified historic structures or archaeological sites were identified within the APE of Bridge No. 168. However, several significant prehistoric archaeological sites have been previously identified in the region along the Smith River including rock shelters and a fish weir (31RK91) located approximately 0.5 kilometer north of the bridge.

Geologically, the project area is located within the Piedmont physiographic region of North Carolina. The APE is characterized by a grass-covered right-of-way (ROW), wooded areas, paved and gravel driveways, a modern residence, an agricultural field, a city park entrance, and steep slopes ranging between 20 and 50 percent in some places (especially west of the Smith River). According to the USDA Web Soil Survey, soils located within the APE consist of Clifford sandy clay loam, 2-8 percent slopes, moderately eroded (CgB2), Dan River loam, 0-2 percent slopes, frequently flooded (DaA), Devotion fine sandy loam, 15 to 45 percent slopes (DeF), Poplar Forest sandy clay loam, 8 to 15 percent slopes, moderately eroded (PpD2), Udorthents, loamy (Ud), and Yadkin loam, 2 to 8 percent slopes (YaB).

On July 8th and 9th, 2018, ECA completed an intensive archaeological survey within the APE, located along Bridge No. 168 on NC 14/18. A pedestrian survey was conducted by visual inspection of exposed

ground surfaces throughout the project APE in conjunction with systematic shovel testing. Ground surface visibility was approximately zero percent throughout the majority of the project area due to dense vegetation and paved/gravel surfaces with additional areas of approximately 20 to 50 percent visibility where thin patches of vegetation exist. Shovel testing was completed at 100-foot (30-meter) intervals in areas of low ground surface visibility to survey for potential archaeological resources within the project APE. Bridge No. 168 is aligned in a general northwest/southeast orientation. The intensive archaeological survey consisted of two transects, each located on either side of the existing road and offset approximately 50-80 feet (15-24 meters) from the edge of the roadway in order to sample landforms that were conducive to shovel testing. Transect A was positioned on the northeast side of NC 14/18. Transect B was positioned on the southwest side of NC 14/18. See Figures 1 through 30 for photographs and maps.

Based on the dimensions of the ROW, ECA planned to excavate 52 shovel test pits within the APE. However, during our field work, numerous shovel test pits were omitted due to the presence of the Smith River, steep slope 20% and greater, impenetrable paved/gravel surfaces, or gullied areas exhibiting extreme erosion.

All shovel tests measured approximately 16 inches by 16 inches (41 cm by 41 cm) and were excavated into known sterile subsoils for the project area. All soils were screened through a six-millimeter wire mesh archaeology screen to isolate any cultural artifacts. All shovel tests were backfilled.

Transect A:

A total of twenty-eight shovel test pits were planned for Transect A. However, during ECA's site visit, only thirteen shovel test pits were excavated as fifteen shovel tests were omitted due to the presence of slopes greater than 20 percent, the presence of the Smith River, or the presence of a modern residence. There is a steep slope (~20% to 25%) across most of western half of Transect A (west side of Smith River). Also, some land clearing and logging activity has historically occurred east of the Smith River north of Hwy 14/18. All excavated shovel test pits were negative for cultural material. In addition, no cultural material was identified during the pedestrian survey.

Transect B:

A total of twenty-six shovel test pits were planned for Transect B. However, during ECA's site visit, eleven shovel test pits were omitted along Transect B due to steep slope greater than 20 percent and the presence of the Smith River. An overhead utility corridor also exists within the northwest side of Transect B. Shovel testing within this utility corridor showed a complete absence of topsoil. A portion of the southeast side of Transect B followed an existing access road through the wooded area adjacent to the Smith River. Although there were areas of surface exposure, subsurface observations did not show any signs of disturbance or topsoil loss. In addition, one shovel test pit (B-20) excavated within the existing access road was positive for prehistoric artifacts (three pottery sherds) and necessitated four additional shovel test pits in an effort to delineate the identified archaeological site (see Figures 16, 17, 27, and 29). The positive shovel test pit is located on a gentle rise two to three feet (0.6 to 0.9 meters) above the floodplain. Delineation shovel test pits were conducted in cardinal directions at 50-foot (16 meter) intervals from B-20. All other shovel test pits excavated along Transect B were negative for cultural material. Additional shovel test pits to the northeast were terminated after B-24 due to the presence of a wide steeply-sloped man-made roadbed associated with Hwy 14/18. Additional shovel test pits to the southwest were terminated after B-23 as the ground surface dipped down into the floodplain and into an inundated area and small stream bed. The identified site appears to be confined to a very small area bounded by Hwy 14/18 to the north, a small stream and inundated area to the south, a small rise out of the floodplain to the west, and an active agricultural field to the east. Although the artifacts were recovered from what appears to be an undisturbed context, there were only three artifacts recovered from an

approximate 200-foot by 100-foot area (20,000 square feet or 1,858 square-meters). Two pottery sherds are decorated and appear to be from the Dan River Phase (AD 1000 – AD 1450). The remaining pottery sherd is undecorated (see Table 2 for artifact descriptions). See Figure 27 and 29 for shovel test pit locations and approximate archaeological site boundary. The small size of the identified site and very low artifact density would suggest a lack of research potential and significance for this archaeological site. As a result, we do not believe this archaeological site is eligible for inclusion to the NRHP. The North Carolina OSA has issued an official trinomial number of 31RK250 for the identified site.

Recommendations:

ECA does not believe the prehistoric site (31RK250) identified within the project APE is eligible for inclusion to the NRHP due to a lack of significance and research potential. Under National Register Criteria D the identified site has not yielded information important in prehistory nor do we believe it likely to yield important information in prehistory. More specifically, there are numerous known Prehistoric Woodland Period sites in the region that have significant undisturbed cultural deposits that exhibit a much higher potential for research than the site identified during this subsurface investigation. In addition, only three pottery sherds were recovered from seven shovel tests over an approximate 20,000 square-foot (1,858 square-meter) area. As a result, due to the low artifact density and typical nature of the recovered artifacts, we believe this identified archaeological site would not significantly advance our understanding of settlement patterns along the Smith River in this area. In summary, considerable research of prehistoric sites have been conducted within the region and any additional effort expended in this region may be best suited at a more promising site. We do not believe site 31RK250 warrants additional testing or would be eligible for inclusion to the NRHP. No additional work is currently recommended for the replacement of Bridge 168 over the Smith River in Rockingham County.

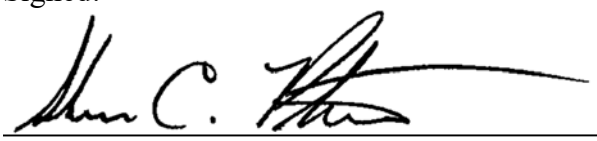
***The North Carolina Department of Transportation (NCDOT) Archaeology Group reviewed the subject project and determined**:*

☒ There are no National Register listed or eligible ARCHAEOLOGICAL SITES present within the project's area of potential effects. (Attach any notes or documents as needed)
☐ No subsurface archaeological investigations were required for this project.
☐ Subsurface investigations did not reveal the presence of any archaeological resources.
☒ Subsurface investigations did not reveal the presence of any archaeological resources considered eligible for the National Register.
☒ All identified archaeological sites located within the APE have been considered and all compliance for archaeological resources with Section 106 of the National Historic Preservation Act and GS 121-12(a) has been completed for this project.

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

SUPPORT DOCUMENTATION

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



August 14, 2018

NCDOT ARCHAEOLOGIST **Date**

Table 1. Shovel Test Pit Results

Shovel Test Pit (STP)	STP Width/Length	Munsell Color/Texture	Average Depths Between	
			Inches	cm
A-1	16"x16" (41cm x 41cm)	7.5YR 6/6 (reddish yellow) sandy loam containing many rocks	0-10	0-25
A-2	16"x16" (41cm x 41cm)	7.5YR 5/4 (brown) sandy loam	0-7	0-18
		2.5YR 5/6 (red) sandy loam	7-10	18-25
A-3	16"x16" (41cm x 41cm)	2.5YR 5/6 (red) sandy loam	0-3	0-8
A-4	-	Subsoil on surface	-	-
A-5	-	Steep 40-50% slope with exposed subsoil on surface	-	-
A-6	-	Steep 40-50% slope with exposed subsoil on surface	-	-
A-7	-	Subsoil on surface	-	-
A-8	-	Steep 40-50% slope with exposed subsoil on surface	-	-
A-9	-	Steep 40-50% slope with exposed subsoil on surface	-	-
A-10	-	Subsoil on surface in front yard of modern house	-	-
A-11	-	Steep 40-50% slope with exposed subsoil on surface	-	-
A-12	-	Steep 40-50% slope with exposed subsoil on surface	-	-
A-13	-	Steep 40-50% slope with exposed subsoil on surface	-	-
A-14	-	Smith River	-	-
A-15	-	Smith River	-	-
A-16	16"x16" (41cm x 41cm)	10YR 4/4 (dark yellowish brown) loam *shovel test pit terminated upon encountering very compact soils	0-24	0-61
A-17	16"x16" (41cm x 41cm)	10YR 4/4 (dark yellowish brown) loam	0-36	0-91
A-18	16"x16" (41cm x 41cm)	10YR 4/4 (dark yellowish brown) loam *shovel test pit terminated upon encountering very compact soils	0-24	0-61
A-19	16"x16" (41cm x 41cm)	10YR 4/4 (dark yellowish brown) loam *shovel test pit terminated upon encountering very compact soils	0-23	0-58
A-20	16"x16" (41cm x 41cm)	10YR 4/4 (dark yellowish brown) loam *shovel test pit terminated upon encountering very compact soils	0-24	0-61
A-21	16"x16" (41cm x 41cm)	10YR 4/4 (dark yellowish brown) loam *shovel test pit terminated upon encountering very compact soils	0-23	0-58
A-22	16"x16" (41cm x 41cm)	10YR 4/4 (dark yellowish brown) loam *shovel test pit terminated upon encountering very compact soils	0-25	0-64
A-23	16"x16" (41cm x 41cm)	10YR 4/4 (dark yellowish brown) loam *shovel test pit terminated upon encountering very compact soils	0-23	0-58
A-24	16"x16" (41cm x 41cm)	10YR 4/4 (dark yellowish brown) loam *shovel test pit terminated upon encountering very compact soils	0-21	0-53
A-25	16"x16" (41cm x 41cm)	10YR 4/4 (dark yellowish brown) loam *shovel test pit terminated upon encountering very compact soils	0-26	0-66
A-26	-	Steep 20-30% slope	-	-
A-27	-	Steep 20-30% slope	-	-
A-28	-	Steep 20-30% slope	-	-

Shovel Test Pit (STP)	STP Width/Length	Munsell Color/Texture	Average Depths Between	
			Inches	cm
B-1	-	Steep 30-40% slope with exposed subsoil on surface	-	-
B-2	-	Steep 30-40% slope with exposed subsoil on surface	-	-
B-3	16"x16" (41cm x 41cm)	7.5YR 4/6 (strong brown) fine sandy loam	0-8	0-20
B-4	16"x16" (41cm x 41cm)	7.5YR 4/6 (strong brown) fine sandy loam	0-7	0-18
B-5	-	Steep 40-50% slope with exposed subsoil on surface	-	-
B-6	-	Steep 40-50% slope with exposed subsoil on surface	-	-
B-7	-	Steep 30-40% slope	-	-
B-8	-	Steep 30-40% slope	-	-
B-9	16"x16" (41cm x 41cm)	7.5YR 4/6 (strong brown) fine sandy loam	0-7	0-18
B-10	16"x16" (41cm x 41cm)	7.5YR 4/6 (strong brown) fine sandy loam	0-9	0-23
B-11	16"x16" (41cm x 41cm)	10YR 3/4 (dark yellowish brown) fine sandy loam	0-7	0-18
		7.5YR 4/6 (strong brown) fine sandy loam	7-11	18-28
B-12	-	Steep 40-50% slope	-	-
B-13	-	Steep 40-50% slope	-	-
B-14	-	Steep 40-50% slope	-	-
B-15	-	Smith River	-	-
B-16	-	Smith River	-	-
B-17	16"x16" (41cm x 41cm)	10YR 4/4 (dark yellowish brown) loam	0-36	0-91
B-18	16"x16" (41cm x 41cm)	10YR 4/4 (dark yellowish brown) loam	0-36	0-91
B-19	16"x16" (41cm x 41cm)	10YR 4/4 (dark yellowish brown) loam	0-36	0-91
B-20	16"x16" (41cm x 41cm)	10YR 4/4 (dark yellowish brown) loam ***Three prehistoric pottery sherds recovered from a 12 to 20-inch depth (30 to 51cm)**	0-36	0-91
B-21	16"x16" (41cm x 41cm)	10YR 4/4 (dark yellowish brown) loam	0-36	0-91
B-22	16"x16" (41cm x 41cm)	10YR 4/4 (dark yellowish brown) loam	0-36	0-91
B-23	16"x16" (41cm x 41cm)	10YR 4/4 (dark yellowish brown) loam	0-36	0-91
B-24	16"x16" (41cm x 41cm)	10YR 4/4 (dark yellowish brown) loam	0-36	0-91
B-25	16"x16" (41cm x 41cm)	10YR 4/4 (dark yellowish brown) loam	0-36	0-91
B-26	16"x16" (41cm x 41cm)	10YR 4/4 (dark yellowish brown) loam	0-36	0-91
B-27	16"x16" (41cm x 41cm)	10YR 4/4 (dark yellowish brown) loam *shovel test pit terminated upon encountering very compact soils	0-21	0-53
B-28	16"x16" (41cm x 41cm)	10YR 4/4 (dark yellowish brown) loam *shovel test pit terminated upon encountering very compact soils	0-24	0-61
B-29	16"x16" (41cm x 41cm)	10YR 4/4 (dark yellowish brown) loam *shovel test pit terminated upon encountering very compact soils	0-23	0-58
B-30	16"x16" (41cm x 41cm)	10YR 4/4 (dark yellowish brown) loam *shovel test pit terminated upon encountering very compact soils	0-24	0-61

Table 2: Artifacts Recovered During Subsurface Investigations

Artifact Location	Artifact Type	Artifact Amount	Date Range	Depth of Recovery
B-20	Dan River Phase pottery sherd (Fabric-impressed exterior / Burnished Interior / Notched Rim decoration / quartz temper)	1	~AD 1000 – AD 1450	12-20 inches (30-51cm)
B-20	Dan River Phase pottery sherd (Fabric-impressed exterior / Burnished Interior / fine sand temper)	1	~AD 1000 – AD 1450	12-20 inches (30-51cm)
B-20	Woodland Period pottery sherd (Plain exterior / Plain Interior / quartz temper)	1	~AD 1000 – AD 1450	12-20 inches (30-51cm)

Figure 1: Southeasterly View of Bridge 168

Figure 2: Northwesterly View of Bridge 168

Figure 3: Southeasterly View of Transect A

Figure 4: Northwesterly View of Transect A

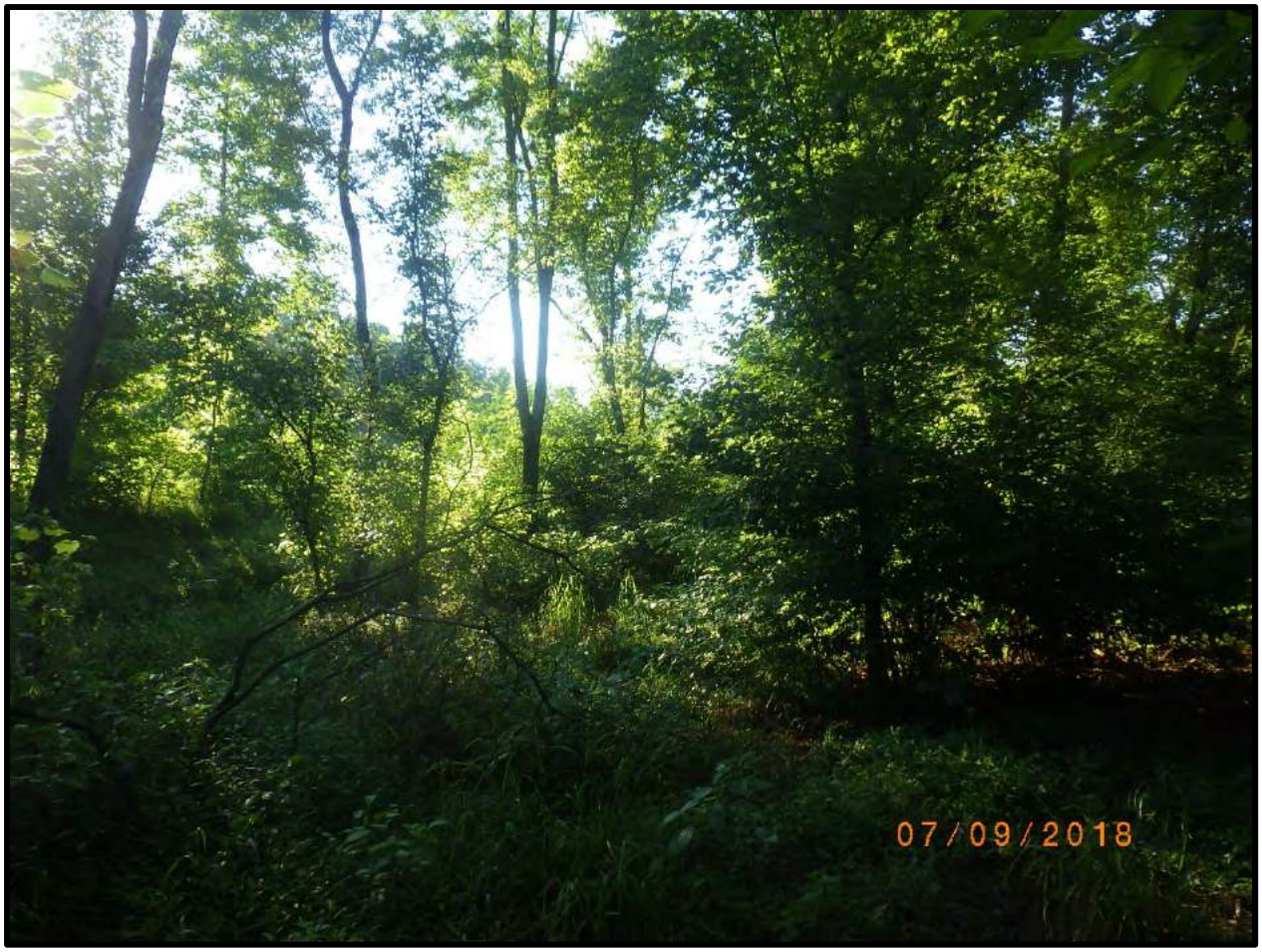


Figure 5: Northwesterly View of Transect A

Figure 6: Southeasterly View of Transect A

Figure 7: Northwesterly View of Transect A

Figure 8: Southeasterly View of Transect B

Figure 9: Southeasterly View of Transect B

Figure 10: Southeasterly View of Transect B

Figure 11: Southeasterly View Depicting Steep Slope on Western Side of Smith River Within Transect B

Figure 12: Southeasterly View of Transect B

Figure 13: Southeasterly View of Transect B and Positive Shovel Test Pit Location (loose earth in center of photograph)

Figure 14: Southeasterly View of Transect B

Figure 15: Southeasterly View of Transect B

Figure 16: Artifacts Collected from Shovel Test Pit B-20 (exterior surfaces)

Figure 17: Artifacts Collected from Shovel Test Pit B-20 (interior surfaces)

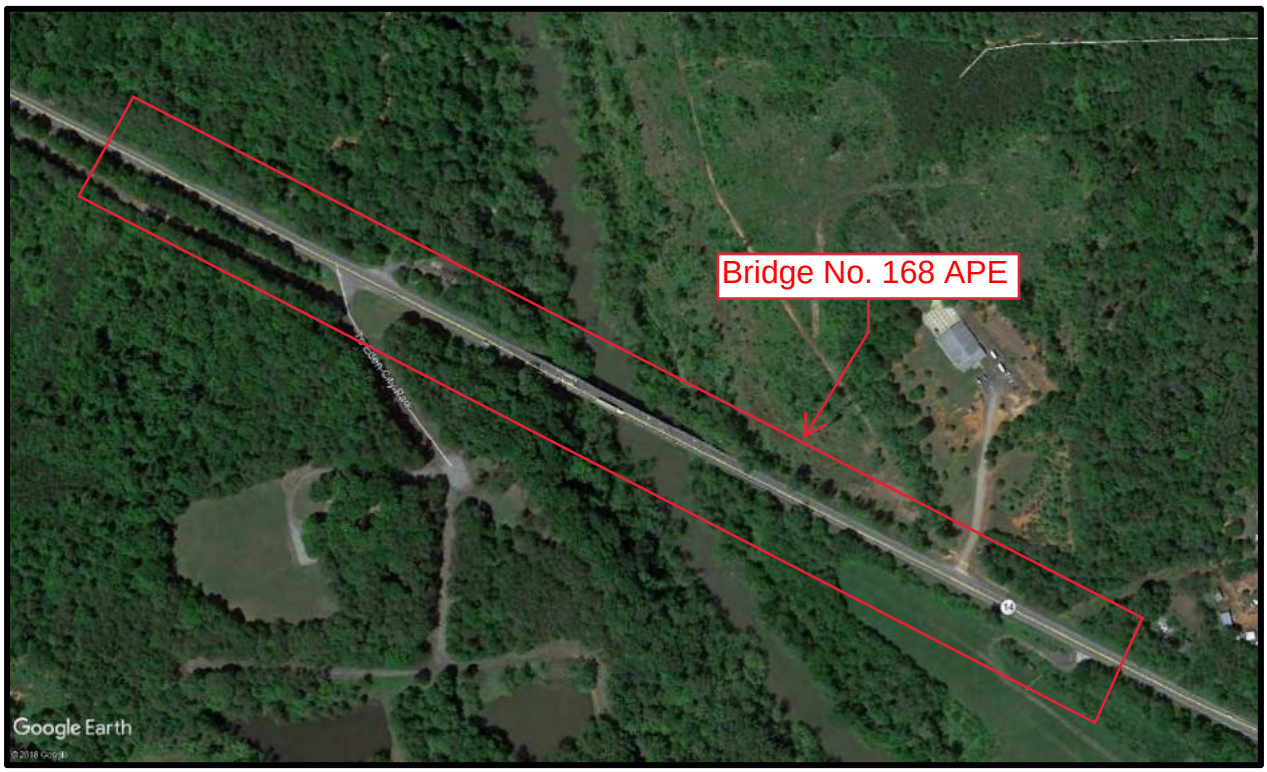


Figure 18: 2017 Google Earth Aerial Photograph of project APE

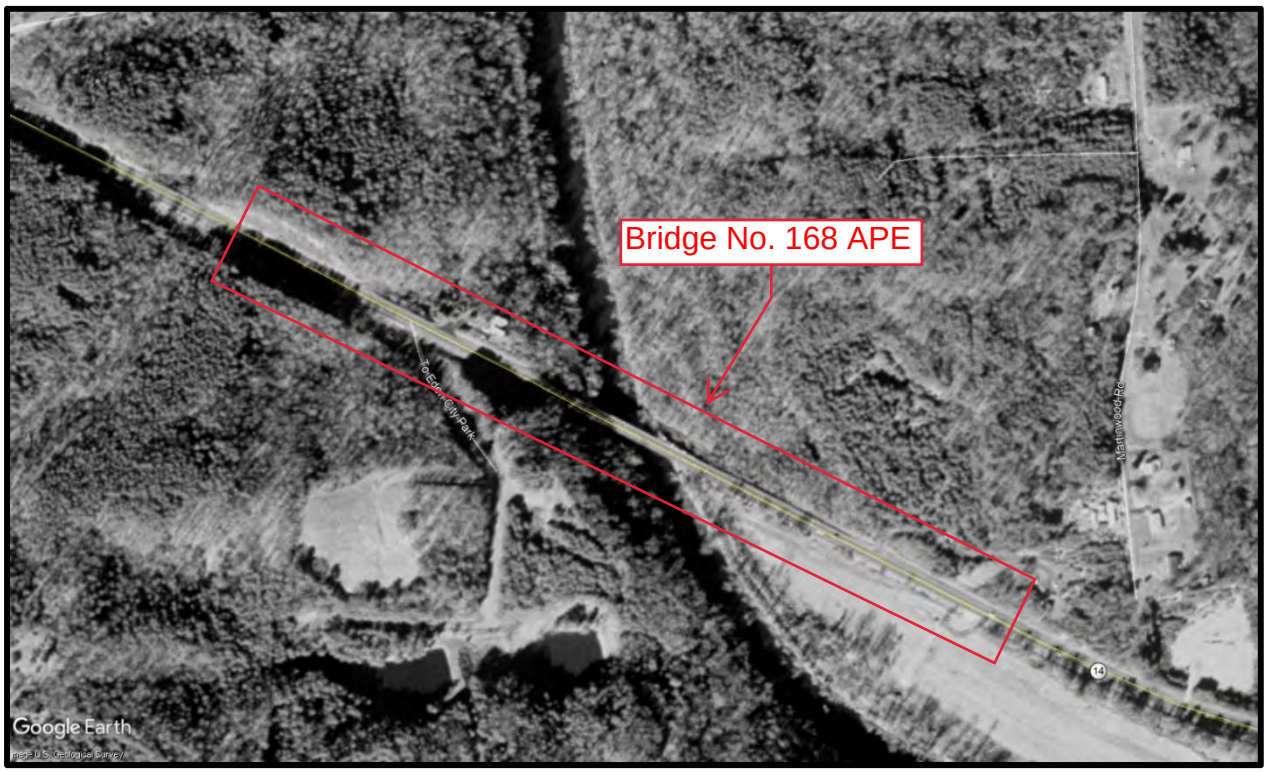


Figure 19: 1999 Google Earth Aerial Photograph of project APE

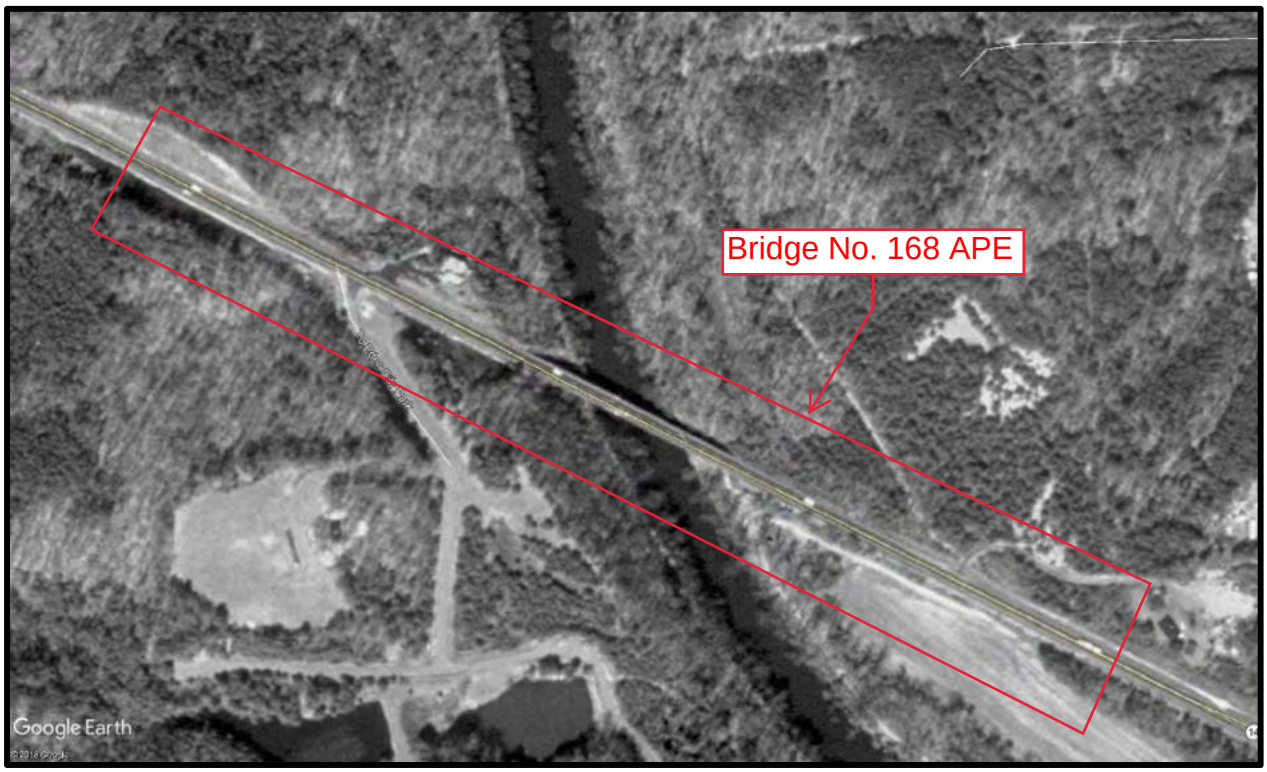


Figure 20: 1994 Google Earth Aerial Photograph of project APE

Figure 21: 1977 Earth Explorer Aerial Photograph of project APE

Figure 22: 1963 Earth Explorer Aerial Photograph of project APE

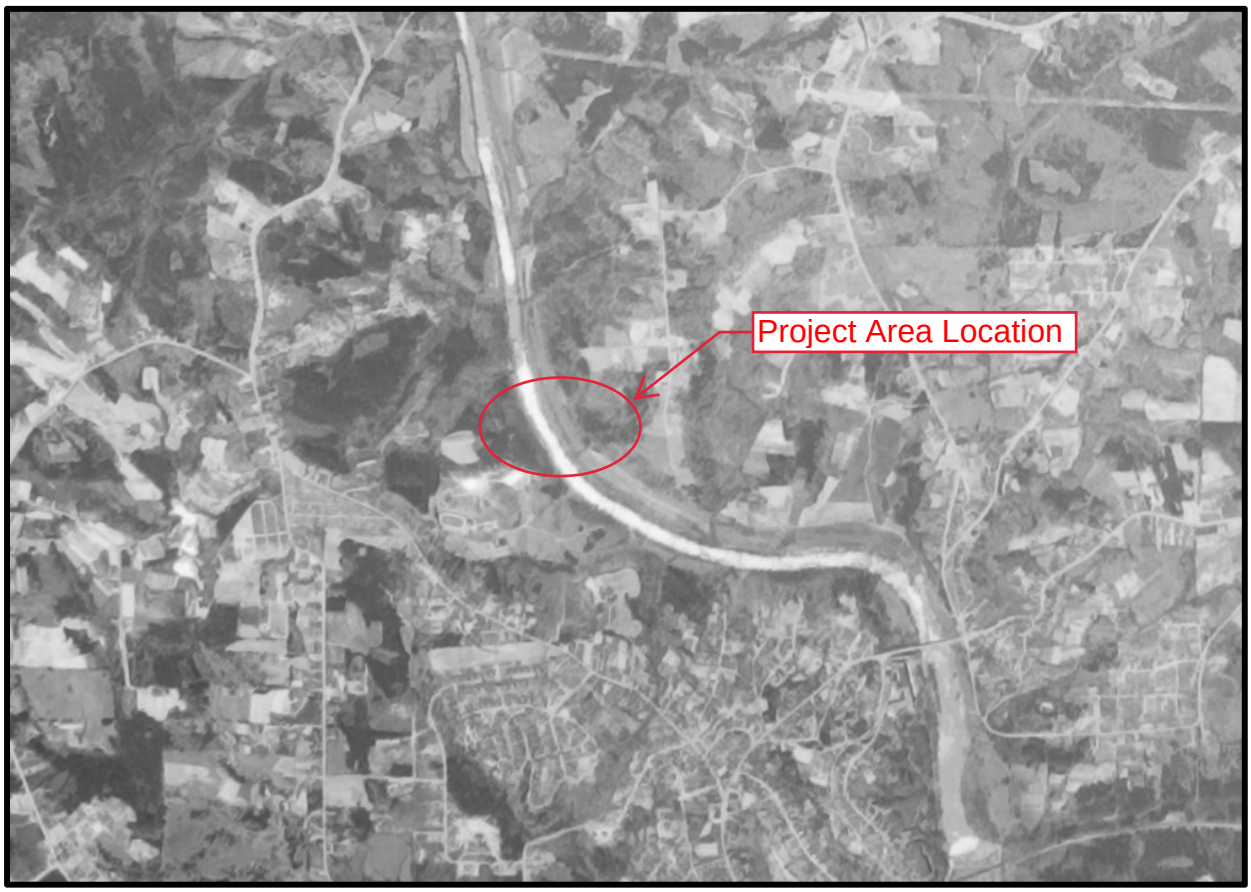


Figure 23: 1950 Earth Explorer Aerial Photograph of project APE

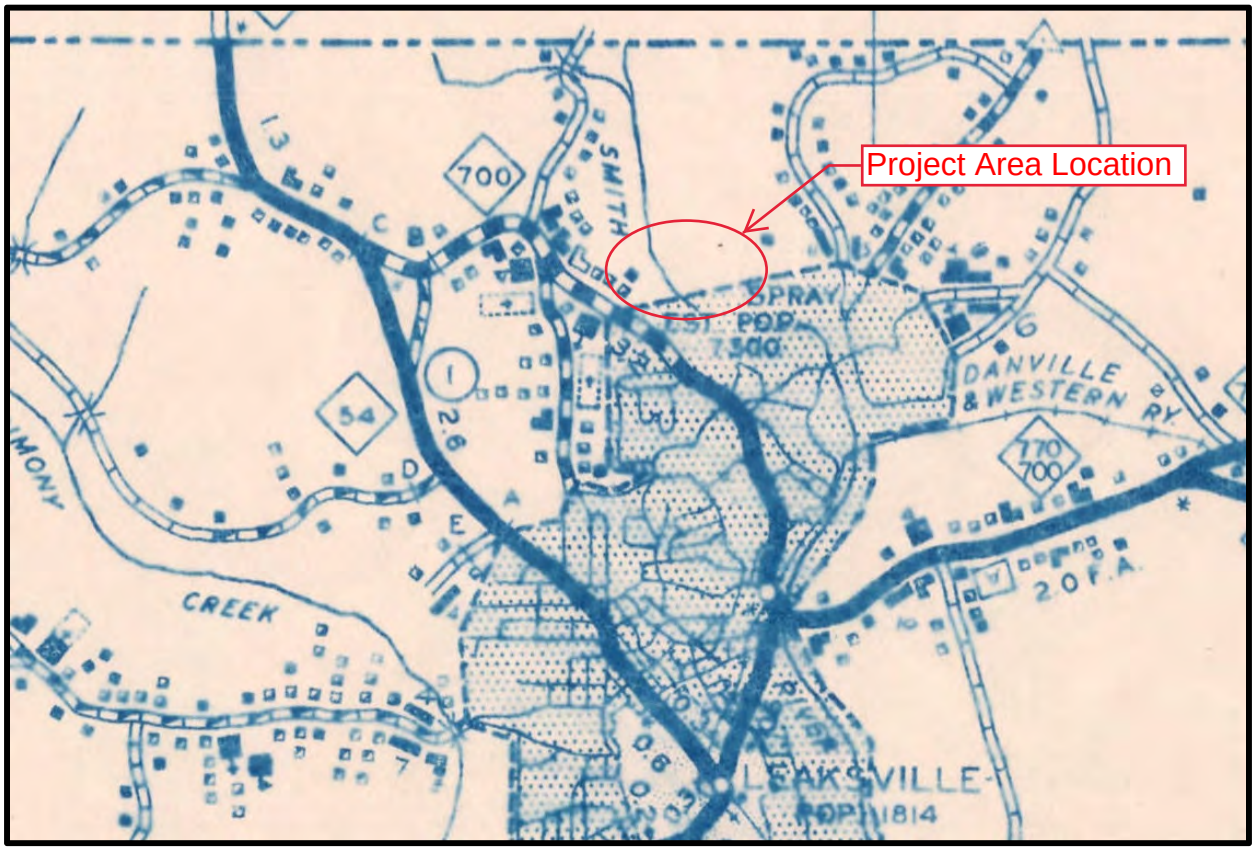


Figure 24: 1938 County Hwy Map of project APE

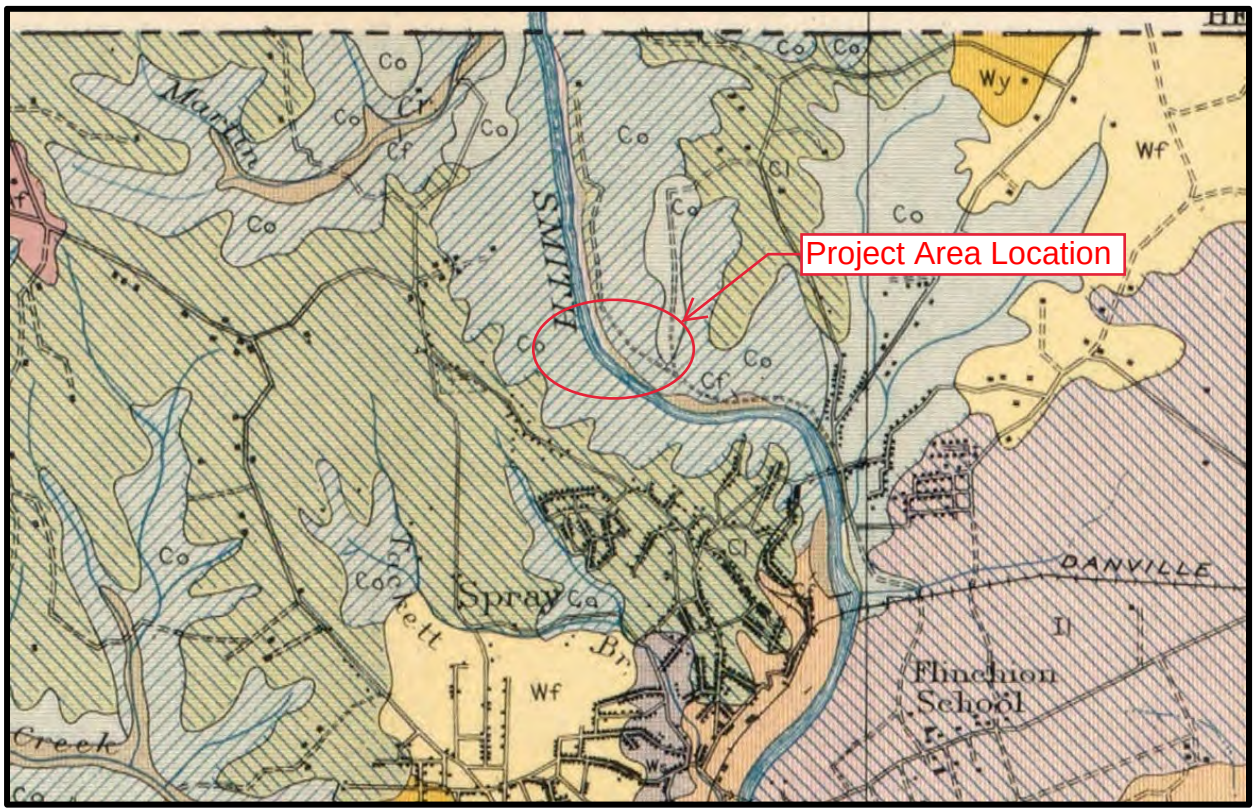


Figure 25: 1926 Rockingham County Soil Map of project APE

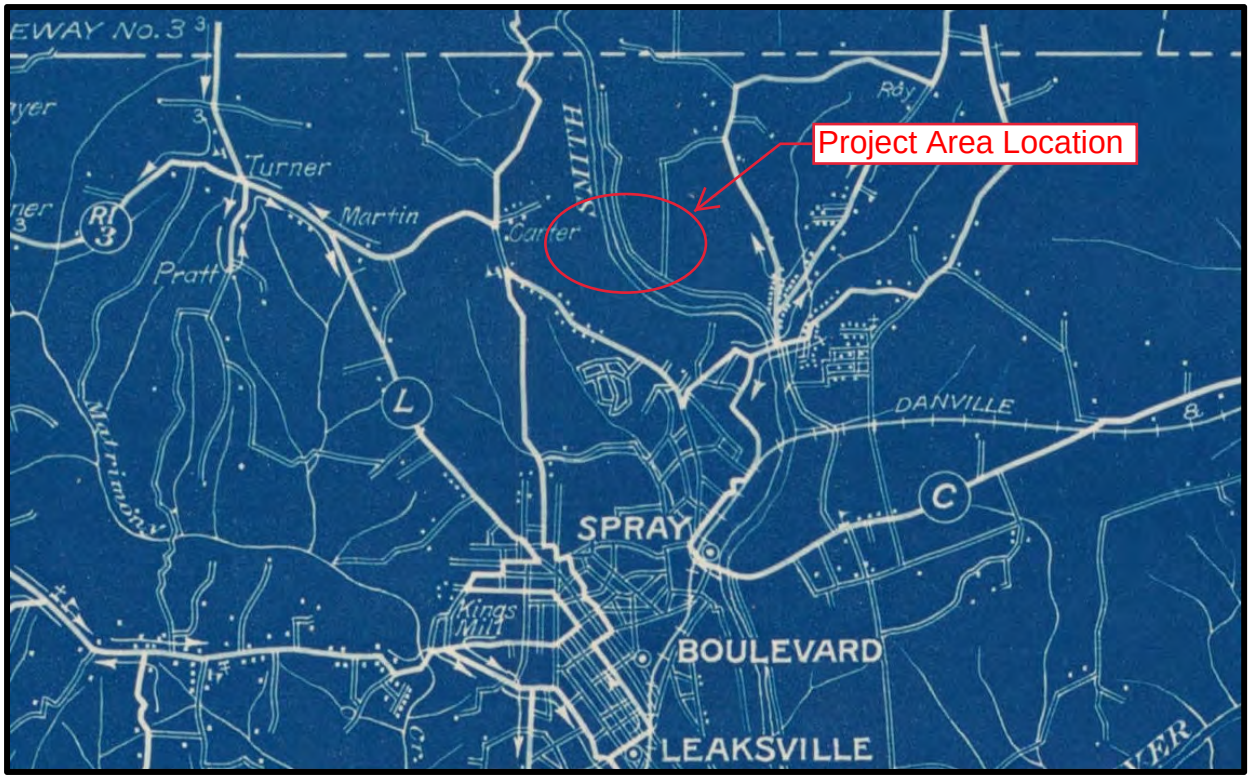


Figure 26: 1926 Rockingham County Soil Map of project APE

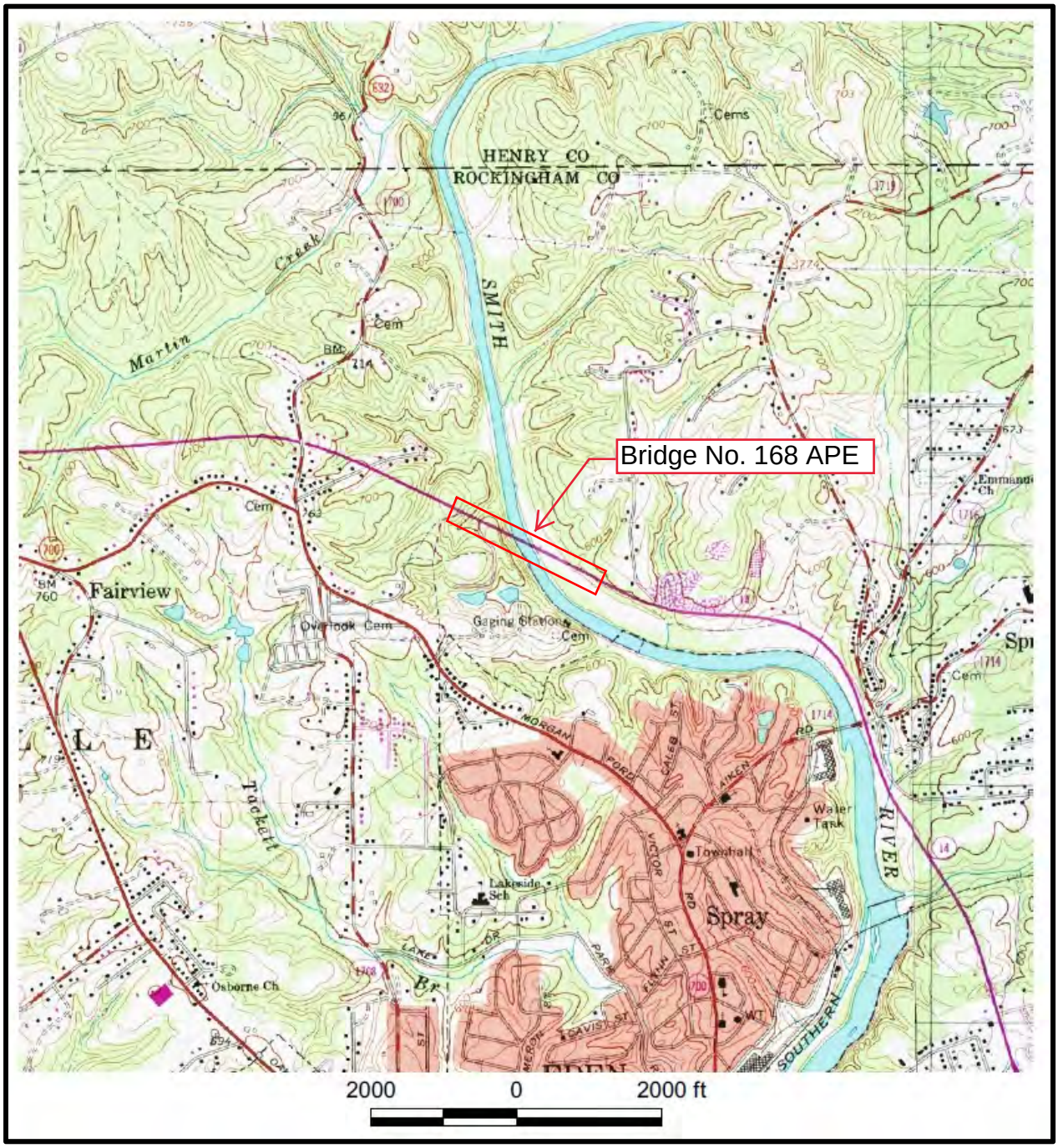
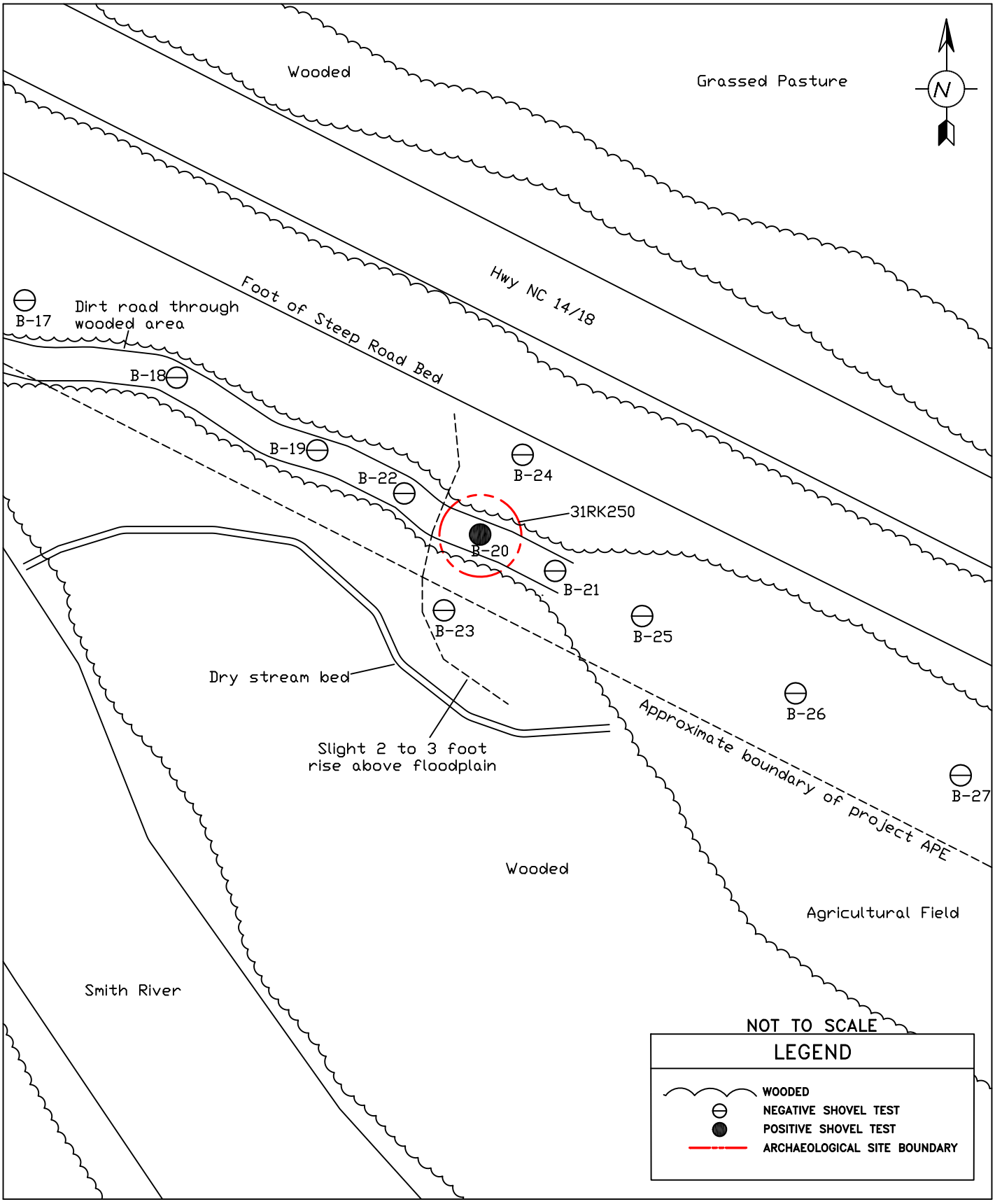


Figure 27: Northwest Eden, NC-VA (1965, photorevised 1978) USGS Topographic Map



BR-0044 (Bridge 168)

NC 14/18
Spray, Rockingham County, North Carolina

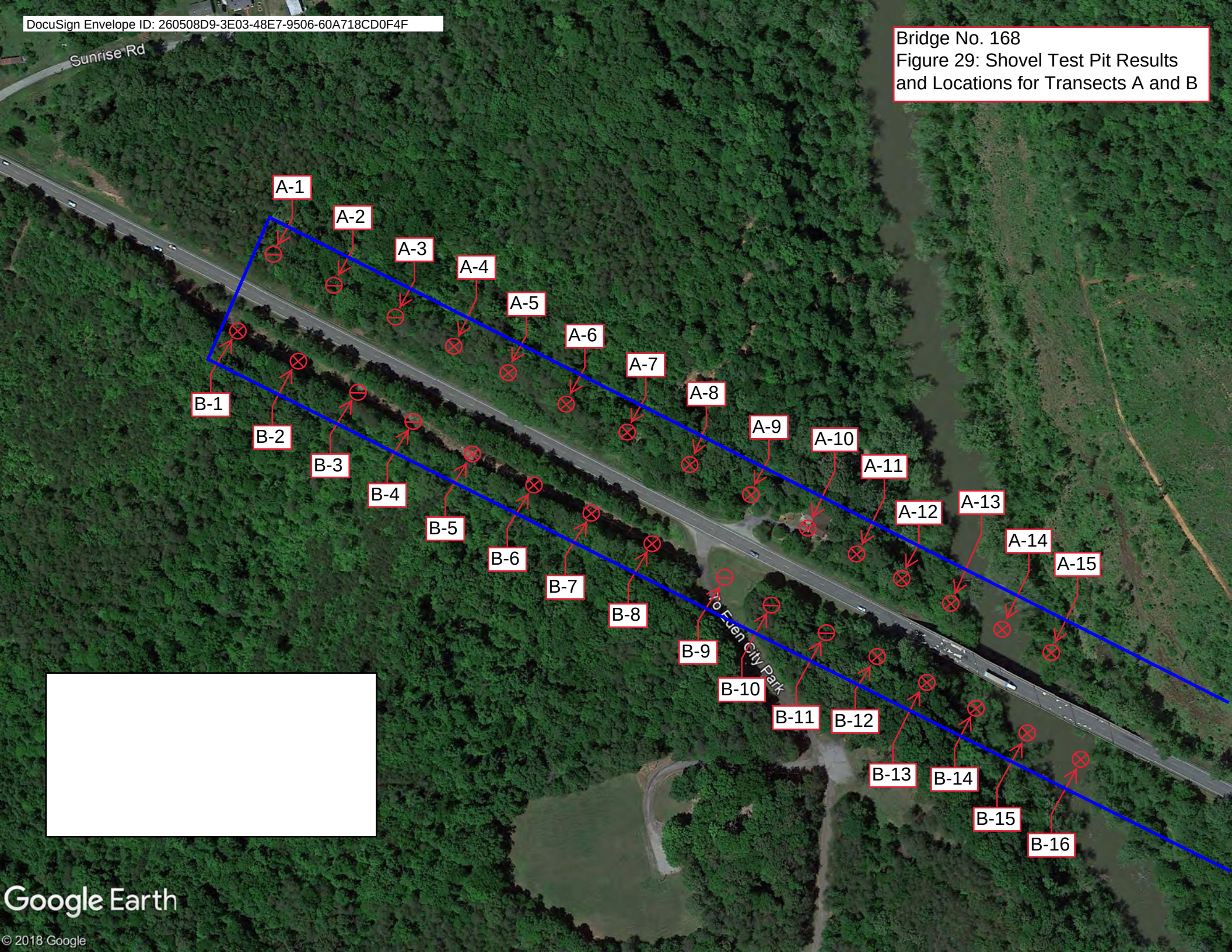
Figure 28: Archaeological Site Map

SOURCE: ECA Site Visit & 2017 Google Earth Image

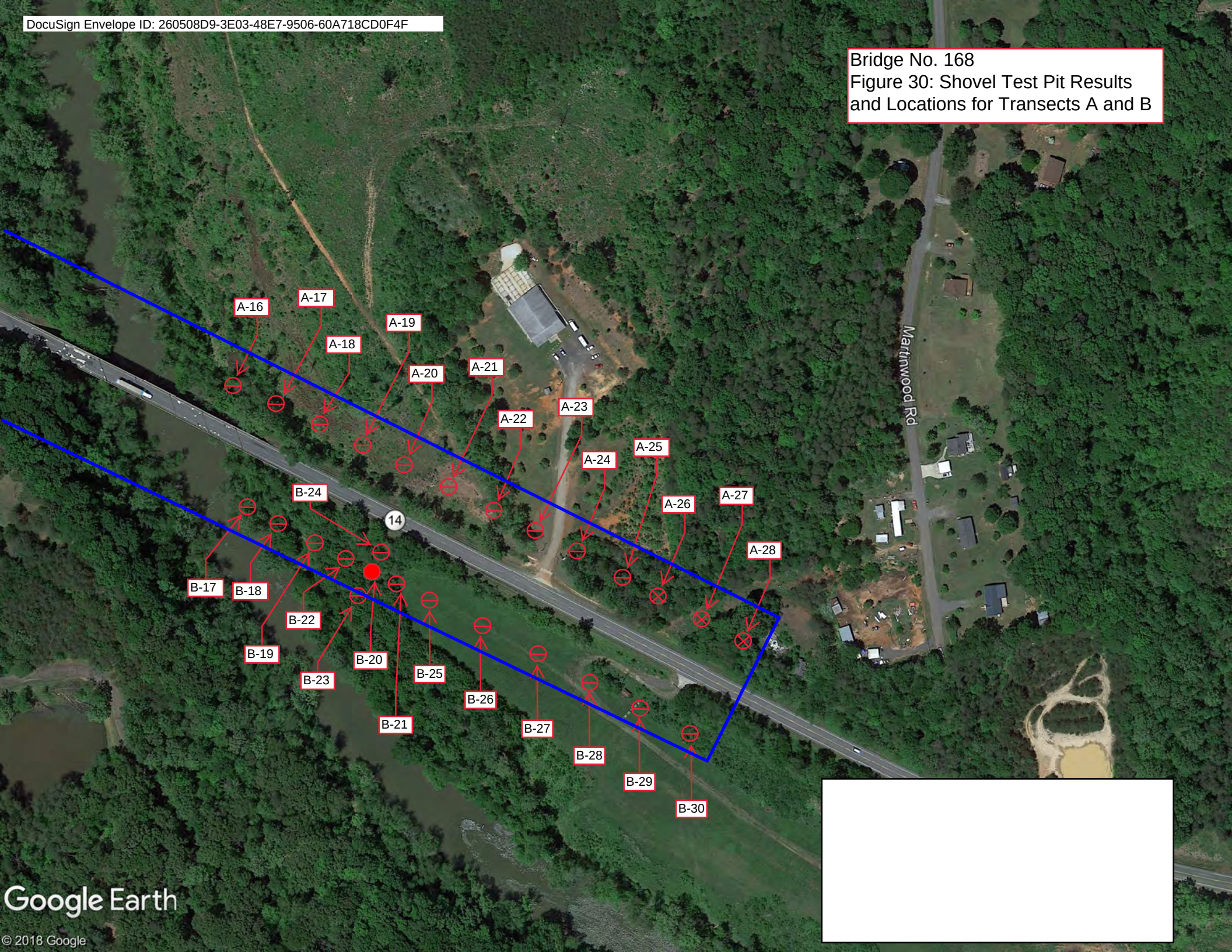
DRAWN BY: MTB DATE: 7/20/2018
FILE NAME: F:\%\U2279.dwg

ECA Project #: U2279

Bridge No. 168
Figure 29: Shovel Test Pit Results and Locations for Transects A and B



Bridge No. 168
Figure 30: Shovel Test Pit Results and Locations for Transects A and B



Permit Application

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

ROY COOPER
GOVERNOR

JAMES H. TROGDON, III
SECRETARY

October 29, 2019

U.S. Army Corps of Engineers
Raleigh Regulatory Field Office
3331 Heritage Trade Drive, Suite 105
Raleigh, NC 27587

ATTN: Mr. David Bailey, NCDOT Regulatory Coordinator

Subject: **Application for Section 404 Nationwide Permit 14, Section 401 Water Quality Certification** for the Proposed Replacement of Bridge No. 168 on NC14/87 over the Smith River in Rockingham County; TIP BR-0044, Division 7, Debit $570 from WBS Element 67044.1.1

Dear Mr. Bailey:

The North Carolina Department of Transportation (NCDOT) proposes to replace bridge number 168 on NC 14/87 over the Smith River in Rockingham County with a five span, 520 feet long bridge to the north of the current alignment with the existing bridge being utilized as an onsite detour during construction.
This action will result in the following impacts: 80 linear feet of permanent stream impact, 10 linear feet of permanent impacts from bank stabilization, 0.47 acre of temporary impacts to surface waters for causeways for bridge construction/removal, and 10 linear feet temporary impacts.

Please see enclosed copies of the Pre-Construction Notification (PCN), DMS Acceptance Letter, Stormwater Management Plan, and Permit Drawings. A Minimum Criteria Determination Checklist (MCDC) was completed in February 2019 and distributed shortly thereafter. Additional copies are available upon request.

This project calls for a letting date of April 21, 2020 and a review date of March 2, 2020.

A copy of this permit application and its distribution list will be posted on the NCDOT Website at: http://connect.ncdot.gov/resources/Environmental. If you have any questions or need additional information, please call Jeff Hemphill at (919) 707-6126.

Sincerely,

for Philip S. Harris III, P.E., C.P.M.
Environmental Analysis Unit Head

cc:
NCDOT Permit Application Standard Distribution List

Mailing Address:
NC DEPARTMENT OF TRANSPORTATION
ENVIRONMENTAL ANALYSIS UNIT
1598 MAIL SERVICE CENTER
RALEIGH NC 27699-1598

Telephone: (919) 707-6000
Customer Service: 1-877-368-4968
Website: www.ncdot.gov

Location:
1000 BIRCH RIDGE DRIVE
RALEIGH NC 27610

Pre-Construction Notification (PCN) Form

For Nationwide Permits and Regional General Permits

(along with corresponding Water Quality Certifications)

September 29, 2018 Ver 3

*Please note: fields marked with a red asterisk * below are required. You will not be able to submit the form until all mandatory questions are answered.*

Also, if at any point you wish to print a copy of the E-PCN, all you need to do is right-click on the document and you can print a copy of the form.

Below is a link to the online help file.

https://edocs.deq.nc.gov/WaterResources/0/edoc/624704/PCN%20Help%20File%202018-1-30.pdf

A. Processing Information

County (or Counties) where the project is located:*

Rockingham

Is this project a public transportation project?*

(•) Yes ( ) No

This is any publicly funded by municipal,state or federal funds road, rail, airport transportation project.

Is this a NCDOT Project?*

(•) Yes ( ) No

(NCDOT only) T.I.P. or state project number:

BR-0044

WBS #*

67044.1.1

(for NCDOT use only)

1a. Type(s) of approval sought from the Corps:*

[x] Section 404 Permit (wetlands, streams and waters, Clean Water Act)

[ ] Section 10 Permit (navigable waters, tidal waters, Rivers and Harbors Act)

1b. What type(s) of permit(s) do you wish to seek authorization?*

[x] Nationwide Permit (NWP)

[ ] Regional General Permit (RGP)

[ ] Standard (IP)

This form may be used to initiate the standard/individual permit process with the Corps. Please contact your Corps representative concerning submittals for standard permits. All required items that are not provided in the E-PCN can be added to the miscellaneous upload area located at the bottom of this form.

1c. Has the NWP or GP number been verified by the Corps?*

( ) Yes (•) No

Nationwide Permit (NWP) Number: 14 - Linear transportation

NWP Numbers (for multiple NWPS):

List all NW numbers you are applying for not on the drop dow n list.

1d. Type(s) of approval sought from the DWR:*

check all that apply

[x] 401 Water Quality Certification - Regular

[ ] Non-404 Jurisdictional General Permit

[ ] Individual Permit

[ ] 401 Water Quality Certification - Express

[ ] Riparian Buffer Authorization

1e. Is this notification solely for the record because written approval is not required?

*

For the record only for DWR 401 Certification: ( ) Yes (•) No

For the record only for Corps Permit: ( ) Yes (•) No

1f. Is this an after-the-fact permit application?*

( ) Yes (•) No

1g. Is payment into a mitigation bank or in-lieu fee program proposed for mitigation of impacts?

If so, attach the acceptance letter from mitigation bank or in-lieu fee program.

(•) Yes ( ) No

Acceptance Letter Attachment

Click the upload button or drag and drop files here to attach document

FILE TYPE MUST BE PDF

1h. Is the project located in any of NC's twenty coastal counties?*

( ) Yes (•) No

1j. Is the project located in a designated trout watershed?*

( ) Yes (•) No

Link to trout information: http://www.saw.usace.army.mil/Missions/Regulatory-Permit-Program/Agency-Coordination/Trout.aspx

B. Applicant Information

1a. Who is the Primary Contact?*

NCDOT

1b. Primary Contact Email:*

jhemphill@ncdot.gov

1c. Primary Contact Phone:*

(xxx)xxx-xxxx

(919)707-6126

1d. Who is applying for the permit?*

[x] Owner [ ] Applicant (other than owner)

(Check all that apply)

1e. Is there an Agent/Consultant for this project?*

( ) Yes (•) No

2. Owner Information

2a. Name(s) on recorded deed:*

N/A

2b. Deed book and page no.:

2c. Responsible party:

(for Corporations)

2d. Address*

Street Address

1598 Mail Service Center

Address Line 2

City

Raleigh

State / Province / Region

NC

Postal / Zip Code

27699-1598

Country

US

2e. Telephone Number:*

(xxx)xxx-xxxx

(919)707-6126

2f. Fax Number:

(xxx)xxx-xxxx

2g. Email Address:*

pharris@ncdot.gov

C. Project Information and Prior Project History

1. Project Information

1a. Name of project:*

Replace bridge 780168 on NC 14/87 over the Smith River

1b. Subdivision name:

(if appropriate)

1c. Nearest municipality / town:*

Eden

2. Project Identification

2a. Property Identification Number:

(tax PIN or parcel ID)

2b. Property size:

(in acres)

2c. Project Address

Street Address

Address Line 2

City

State / Province / Region

Postal / Zip Code

Country

2d. Site coordinates in decimal degrees

Please collect site coordinates in decimal degrees. Use between 4-6 digits (unless you are using a survey-grade GPS device) after the decimal place as appropriate, based on how the location was determined. (For example, most mobile phones with GPS provide locational precision in decimal degrees to map coordinates to 5 or 6 digits after the decimal place.)

Latitude: *

36.528054

ex: 34.208504

Longitude: *

-79.767988

-77.796371

3. Surface Waters

3a. Name of the nearest body of water to proposed project: *

Smith River

3b. Water Resources Classification of nearest receiving water: *

WS-IV

Surface Water Lookup

3c. What river basin(s) is your project located in? *

Roanoke

3d. Please provide the 12-digit HUC in which the project is located. *

030101030807

River Basin Lookup

4. Project Description and History

4a. Describe the existing conditions on the site and the general land use in the vicinity of the project at the time of this application: *

Undeveloped woodlands, pastureland, and some residences. A private park is on the west side of the river south of the highway.

4b. Have Corps permits or DWR certifications been obtained for this project (including all prior phases) in the past? *

○ Yes ◉ No ○ Unknown

4d. Attach an 8 1/2 X 11 excerpt from the most recent version of the USGS topographic map indicating the location of the project site. (for DWR)

Click the upload button or drag and drop files here to attach document

File type must be pdf

4e. Attach an 8 1/2 X 11 excerpt from the most recent version of the published County NRCS Soil Survey map depicting the project site. (for DWR)

Click the upload button or drag and drop files here to attach document

File type must be pdf

4f. List the total estimated acreage of all existing wetlands on the property:

0.02

4g. List the total estimated linear feet of all existing streams on the property:

(intermittent and perennial)

785

4h. Explain the purpose of the proposed project: *

The purpose of the proposed project is to replace a deficient bridge. Bridge No. 168 is considered structurally deficient with a sufficiency rating of 69.08 out of 100. Being structurally deficient does not mean that the bridge is unsafe, but does mean the bridge is in need of repair or replacement. As a bridge ages, the cost of repairs and continued maintenance eventually necessitate the need for replacement. The current bridge was constructed in 1966 and is reaching the end of its useful life.

4i. Describe the overall project in detail, including indirect impacts and the type of equipment to be used: *

A new bridge will be constructed to the north of the existing bridge, and traffic will be maintained on the existing bridge during construction. Following construction of the new bridge, the existing bridge would be removed. The proposed replacement bridge would be constructed approximately 10 feet north of the existing bridge and will be approximately 520 feet in length with two, 12-foot lanes and 4-foot paved shoulders. Project construction will extend approximately 1,000 feet to the west and 1,000 feet to the east from the replacement bridge along NC 14/87. Typical road building equipment such as trucks, dozers, and cranes will be used to construct the bridge.

4j. Please upload project drawings for the proposed project.

Click the upload button or drag and drop files here to attach document

BR-0044_Permit Drawings.pdf	6.61MB
BR-0044 DMS Mitigation Letter.pdf	68.46KB
BR-0044 Cover Letter.pdf	183.03KB

File type must be pdf

5. Jurisdictional Determinations

5a. Have the wetlands or streams been delineated on the property or proposed impact areas? *

(•) Yes ( ) No ( ) Unknown

Comments:

Fieldwork by NCDOT consultant: April 19 and June 6, 2018.

5b. If the Corps made a jurisdictional determination, what type of determination was made? *

( ) Preliminary ( ) Approved (•) Not Verified ( ) Unknown ( ) N/A

Corps AID Number:

Example: SAW-2017-99999

5c. If 5a is yes, who delineated the jurisdictional areas?

Name (if known): Chris Inscore, Paul Masten

Agency/Consultant Company: AECOM

Other:

5d1. Jurisdictional determination upload

Click the upload button or drag and drop files here to attach document

File type must be PDF

6. Future Project Plans

6a. Is this a phased project? *

( ) Yes (•) No

Are any other NWP(s), regional general permit(s), or individual permits(s) used, or intended to be used, to authorize any part of the proposed project or related activity? This includes other separate and distant crossing for linear projects that require Department of the Army authorization but don't require pre-construction notification.

D. Proposed Impacts Inventory

1. Impacts Summary

1a. Where are the impacts associated with your project? (check all that apply):

☐ Wetlands ☑ Streams-tributaries ☐ Buffers

☐ Open Waters ☐ Pond Construction

3. Stream Impacts

If there are perennial or intermittent stream impacts (including temporary impacts) proposed on the site, then complete this question for all stream sites impacted.

"S." will be used in the table below to represent the word "stream".

	3a. Reason for impact * (?)	3b.Impact type *	3c. Type of impact *	3d. S. name *	3e. Stream Type * (?)	3f. Type of Jurisdiction *	3g. S. width *	3h. Impact length *
S1	Pipe Extension	Permanent	Relocation	SA - UT to Smith River	Perennial	Both	3 Average (feet)	80 (linear feet)
S2	Pipe Extension	Temporary	Dewatering	SA - UT to Smith River	Perennial	Both	3 Average (feet)	10 (linear feet)
S3	Stream Bank Stabilization	Permanent	Bank Stabilization	SA - UT to Smith River	Perennial	Both	3 Average (feet)	10 (linear feet)
S4	Bridge Construction	Temporary	Workpad/Causeway	Smith River	Perennial	Both	150 Average (feet)	280 (linear feet)

** All Perennial or Intermittent streams must be verified by DWR or delegated local government.

3i. Total jurisdictional ditch impact in square feet:

0

3i. Total permanent stream impacts:

90

3i. Total temporary stream impacts:

290

3i. Total stream and ditch impacts:

380

3j. Comments:

E. Impact Justification and Mitigation

1. Avoidance and Minimization

1a. Specifically describe measures taken to avoid or minimize the proposed impacts in designing the project:*

Impacts to a small wetland was avoided in the design process. The proposed bridge deck drainage is collected by 6" diameter deck drains @ 12' spacings over the floodplain.No deck drains discharge directly over Smith River. Roadway drainage on the east and west sides of the bridge is collected by a system of grated inlets discharging into a riprap pad, which then dissipates into Smith River floodplain. Away from the bridge, surface runoff is collected in grass and rip-rap lined ditches and conveyed to natural outfalls. NCDOT will adhere to Design Standards in Sensitive Watersheds.

1b. Specifically describe measures taken to avoid or minimize the proposed impacts through construction techniques:*

Best Management Practices will be adhered to. Temporary work pads will be used for construction and demolition but will not impede more than 50% of the Smith River.

Proposed Conservation Measures from the BA to avoid and minimize impacts to the Smith River:• Clearing and Grubbing
• Clearing and Grubbing
In areas identified as Environmentally Sensitive Areas, the Contractor may perform clearing operations, but not grubbing operations until immediately prior to beginning grading operations as described in Article 200-1 of the Standard Specifications. Only clearing operations (not grubbing) shall be allowed in this buffer zone until immediately prior to beginning grading operations. Erosion control devices shall be installed immediately following the clearing operation.

• Grading
Once grading operations begin in identified Environmentally Sensitive Areas, work shall progress in a continuous manner until complete. All construction within these areas shall progress in a continuous manner such that each phase is complete and areas are permanently stabilized prior to beginning of next phase. Failure on the part of the contractor to complete any phase of construction in a continuous manner in Environmentally Sensitive Areas will be just cause for the Engineer to direct the suspension of work in accordance with Article 108-7 of the Standard Specifications.

• Seeding and Mulching
Seeding and mulching shall be performed in accordance with Section 1660 of the Standard Specifications and vegetative cover sufficient to restrain erosion shall be installed immediately following grade establishment. Seeding and mulching shall be performed on the areas disturbed by construction immediately following final grade establishment. No appreciable time shall lapse into the contract time without stabilization of slopes, ditches and other areas within the Environmentally Sensitive Areas.

• Stage Seeding
The work covered by this section shall consist of the establishment of a vegetative cover on cut and fill slopes as grading progresses. Seeding and mulching shall be done in stages on cut and fill slopes that are greater than 20 feet in height measured along the slope, or greater than 2 acres in area. Each stage shall not exceed the limits stated above.

2. Compensatory Mitigation for Impacts to Waters of the U.S. or Waters of the State

2a. Does the project require Compensatory Mitigation for impacts to Waters of the U.S. or Waters of the State?

(•) Yes ( ) No

2c. If yes, mitigation is required by (check all that apply):

[ ] DWR [x] Corps

2d. If yes, which mitigation option(s) will be used for this project?

[ ] Mitigation bank [x] Payment to in-lieu fee program [ ] Permittee Responsible Mitigation

4. Complete if Making a Payment to In-lieu Fee Program

4a. Approval letter from in-lieu fee program is attached.

(•) Yes ( ) No

4b. Stream mitigation requested:

(linear feet)

80

4c. If using stream mitigation, what is the stream temperature:

warm

NC Stream Temperature Classification Maps can be found under the Mitigation Concepts tab on the Wilmington District's RIBITS website.

4d. Buffer mitigation requested (DWR only):

(square feet)

4e. Riparian wetland mitigation requested:

(acres)

4f. Non-riparian wetland mitigation requested:

(acres)

4g. Coastal (tidal) wetland mitigation requested:

(acres)

4h. Comments

The 10' of bank stabilization does not require mitigation therefore 80' of mitigation is requested

F. Stormwater Management and Diffuse Flow Plan (required by DWR)

*** Recent changes to the stormwater rules have required updates to this section .***

1. Diffuse Flow Plan

1a. Does the project include or is it adjacent to protected riparian buffers identified within one of the NC Riparian Buffer Protection Rules?

○ Yes ◉ No

For a list of options to meet the diffuse flow requirements, click here.

If no, explain why:

2. Stormwater Management Plan

2a. Is this a NCDOT project subject to compliance with NCDOT's Individual NPDES permit NCS000250? *

◉ Yes ○ No

Comments:

G. Supplementary Information

1. Environmental Documentation

1a. Does the project involve an expenditure of public (federal/state/local) funds or the use of public (federal/state) land? *

◉ Yes ○ No

1b. If you answered "yes" to the above, does the project require preparation of an environmental document pursuant to the requirements of the National or State (North Carolina) Environmental Policy Act (NEPA/SEPA)? *

◉ Yes ○ No

1c. If you answered "yes" to the above, has the document review been finalized by the State Clearing House? (If so, attach a copy of the NEPA or SEPA final approval letter.) *

○ Yes ◉ No

Comments: *

.

2. Violations (DWR Requirement)

2a. Is the site in violation of DWR Water Quality Certification Rules (15A NCAC 2H .0500), Isolated Wetland Rules (15A NCAC 2H .1300), or DWR Surface Water or Wetland Standards or Riparian Buffer Rules (15A NCAC 2B .0200)? *

○ Yes ◉ No

3. Cumulative Impacts (DWR Requirement)

3a. Will this project (based on past and reasonably anticipated future impacts) result in additional development, which could impact nearby downstream water quality? *

○ Yes ◉ No

3b. If you answered "no," provide a short narrative description.

4. Sewage Disposal (DWR Requirement)

4a. Is sewage disposal required by DWR for this project? *

○ Yes ◉ No ○ N/A

5. Endangered Species and Designated Critical Habitat (Corps Requirement)

5a. Will this project occur in or near an area with federally protected species or habitat? *

◉ Yes ○ No

5b. Have you checked with the USFWS concerning Endangered Species Act impacts? *

◉ Yes ○ No

5c. If yes, indicate the USFWS Field Office you have contacted.

Raleigh

5d. Is another Federal agency involved? *

○ Yes ◉ No ○ Unknown

5e. Is this a DOT project located within Division's 1-8? *

◉ Yes ○ No

5j. What data sources did you use to determine whether your site would impact Endangered Species or Designated Critical Habitat? *

As of February 22, 2019 the USFWS lists three protected species for Rockingham County - Roanoke logperch, James spinymussel and smooth coneflower. Smooth coneflower habitat is present within the project area, however, surveys of suitable habitat in June 2018 did not find any populations or plants. Informal Concurrence was submitted to the USFWS on 10/29/2019.

Consultation Documentation Upload

Click the upload button or drag and drop files here to attach document

BR-0044 Section 7 Concurrence Request.pdf 3.1MB

File type must be PDF

6. Essential Fish Habitat (Corps Requirement)

6a. Will this project occur in or near an area designated as an Essential Fish Habitat? *

○ Yes ◉ No

6b. What data sources did you use to determine whether your site would impact an Essential Fish Habitat? *

NMFS County Index

7. Historic or Prehistoric Cultural Resources (Corps Requirement)

Link to the State Historic Preservation Office Historic Properties Map (does not include archaeological data: http://gis.ncdcr.gov/hpoweb/

7a. Will this project occur in or near an area that the state, federal or tribal governments have designated as having historic or cultural preservation status (e.g., National Historic Trust designation or properties significant in North Carolina history and archaeology)? *

○ Yes ◉ No

7b. What data sources did you use to determine whether your site would impact historic or archeological resources? *

See attached BR-0044 MCDC

7c. Historic or Prehistoric Information Upload

Click the upload button or drag and drop files here to attach document

2018-01-16 Historic Architecture No Survey Required.pdf 2.05MB

2018-01-24 Archaeology Survey Required Form.pdf 1.99MB

2018-08-14 Archaeology No Sites Present Form.pdf 7.15MB

2018-11-15 Historic Architecture No Survey Required - Expanded Area.pdf 2.94MB

2018-11-26 Archaeology No Survey - Expanded Study Area.pdf 8.1MB

File must be PDF

8. Flood Zone Designation (Corps Requirement)

Link to the FEMA Floodplain Maps: https://msc.fema.gov/portal/search

8a. Will this project occur in a FEMA-designated 100-year floodplain? *

◉ Yes ○ No

8b. If yes, explain how project meets FEMA requirements:

8c. What source(s) did you use to make the floodplain determination? *

FEMA Flood maps

Miscellaneous

Comments

Miscellaneous attachments not previously requested.

Click the upload button or drag and drop files here to attach document

BR-0044 MCDC.pdf 5.11MB

File must be PDF or KMZ

Signature

*

☑ By checking the box and signing below, I certify that:

- I have given true, accurate, and complete information on this form;
- I agree that submission of this PCN form is a “transaction” subject to Chapter 66, Article 40 of the NC General Statutes (the “Uniform Electronic Transactions Act”);
- I agree to conduct this transaction by electronic means pursuant to Chapter 66, Article 40 of the NC General Statutes (the “Uniform Electronic Transactions Act”);
- I understand that an electronic signature has the same legal effect and can be enforced in the same way as a written signature; AND
- I intend to electronically sign and submit the PCN form.

Full Name: *

Michael Turchy

Signature

Michael Turchy

Date

10/29/2019

ROY COOPER
Governor
MICHAEL S. REGAN
Secretary
TIM BAUMGARTNER
Director

NORTH CAROLINA
Environmental Quality

September 4, 2019

Mr. Philip S. Harris, III, P.E.
Environmental Analysis Unit
North Carolina Department of Transportation
1598 Mail Service Center
Raleigh, North Carolina 27699-1598

Dear Mr. Harris:

Subject: Mitigation Acceptance Letter:

BR-0044, Replace Bridge 780168 over the Smith River on NC 14 / NC 87, Rockingham County

The purpose of this letter is to notify you that the Division of Mitigation Services (DMS) will provide the compensatory stream mitigation for the subject project. Based on the information supplied by you on September 4, 2019, the impacts are located in CU 03010103 of the Roanoke River basin in the Central Piedmont (CP) Eco-Region, and are as follows:

Roanoke 03010103 CP	Stream			Wetlands			Buffer (Sq. Ft.)	
	Cold	Cool	Warm	Riparian	Non-Riparian	Coastal Marsh	Zone 1	Zone 2
Impacts (feet/acres)	0	0	80.0	0	0	0	0	0

*Some of the stream and/or wetland impacts may be proposed to be mitigated at a 1:1 mitigation ratio. See permit application for details.

The impacts and associated mitigation needs were under projected by the NCDOT in the 2019 impact data. DMS will commit to implement sufficient compensatory stream mitigation credits to offset the impacts associated with this project as determined by the regulatory agencies using the delivery timeline listed in Section F.3.c.iii of the In-Lieu Fee Instrument dated July 28, 2010. If the above referenced impact amounts are revised, then this mitigation acceptance letter will no longer be valid and a new mitigation acceptance letter will be required from DMS.

If you have any questions or need additional information, please contact Beth Harmon at 919-707-8420.

Sincerely,

James B. Stanfill
DMS Asset Management Supervisor

cc: Mr. Monte Matthews, USACE – Raleigh Regulatory Field Office
Ms. Amy Chapman, NCDWR
File: BR-0044

North Carolina Department of Transportation

Highway Stormwater Program

STORMWATER MANAGEMENT PLAN

FOR NCDOT PROJECTS

(Version 2.08; Released April 2018)

WBS Element: 67044.1.1 **TIP No.:** BR-0044 **County(ies):** Rockingham

General Project Information

WBS Element:	67044.1.1	**TIP Number:**	BR-0044	**Project Type:** Bridge Replacement	**Date:** 6/14/2019
NCDOT Contact:	David Stutts, PE (Structures Mgmt Unit)	**Contractor / Designer:**		AECOM/Gregory Cols, PE	
Address:	NCDOT Century Center 1000 Birch Ridge Dr Raleigh NC 27610	**Address:**		701 Corporate Center Drive Raleigh, NC 27607 Suite 475	
Phone:	919-707-6442	**Phone:**		9198546200	
Email:	dstutts@ncdot.gov	**Email:**		gregory.cols@aecom.com	
City/Town:	Eden	**County(ies):**	Rockingham		
River Basin(s):	Roanoke	**CAMA County?**	No		
Wetlands within Project Limits?	Yes				

Project Description

Project Length (lin. miles or feet):	0.427 mi	**Surrounding Land Use:**	Wooded, Rural

	Proposed Project	**Existing Site**
Project Built-Upon Area (ac.)	1.7 ac.	1.7 ac.
Typical Cross Section Description:	2 lanes of undivided highway with 12' lanes. Shoulder Berm Gutter with storm systems and roadside ditches.	2 lanes of undivided highway with 12' lanes. All shoulder section. Roadside ditches.
Annual Avg Daily Traffic (veh/hr/day):	Design/Future: 8400 Year: 2040	Existing: 8080 Year: 2020

General Project Narrative: (Description of Minimization of Water Quality Impacts)

The existing 7 span (7@75') bridge on N Van Buren rd (NC 14/87) spans Smith River. The existing bridge was constructed in 1966 and consists of a reinforced concrete deck on steel I-beams. Several of the existing beams have considerable section loss as well as overall deterioration of various components of the bridge. The status of the bridge is observed to be structurally deficient with a sufficiency rating of 69.06/100. The replacement bridge to be constructed slightly more north, is a 5 span (1@106', 3@113', 1@75') prestressed concrete girder bridge with 4' deep end bent caps. The proposed bridge deck drainage is collected by 6" diameter deck drains @ 12' spacings over the floodplain. No deck drains discharge directly over Smith River. Roadway drainage on the east and west sides of the bridge is collected by a system of TB 2GI's discharging into a riprap pad, which then dissipates into Smith River floodplain. Away from the bridge, surface runoff is collected in grass and rip-rap lined ditches and conveyed to natural outfalls. Construction of the bridge will be accomplished using causeways, as no other practical option exists to minimize disturbance to the river. Causeways will be constructed in phases to minimize the total concurrent impact to the river and limit total blockage of channel to 50% maximum. A shallow rockline precludes the use of temporary work bridges.

One unnamed tributary to the Smith River crosses the project to the west of the bridge. This UT is currently piped under the existing roadway. The pipe will be extended to accomodate the relocated roadway with wider shoulders. Maximum steepest slopes are proposed to limit the amount of fill.

Wetlands exist within the project limits but are not disturbed by construction activities.

Waterbody Information

Surface Water Body (1):	Smith River		**NCDWR Stream Index No.:**	22-40-(1)	
NCDWR Surface Water Classification for Water Body		**Primary Classification:**	Water Supply IV (WS-IV)		
		Supplemental Classification:	None		
Other Stream Classification:					
Impairments:	Benthos				
Aquatic T&E Species?	Yes	Comments: Roanoke logperch is an endangered freshwater fish found in the Smith River within the study area			
NRTR Stream ID:	Smith River			**Buffer Rules in Effect:**	N/A
Project Includes Bridge Spanning Water Body?	Yes	**Deck Drains Discharge Over Buffer?**	N/A	**Dissipator Pads Provided in Buffer?**	N/A
Deck Drains Discharge Over Water Body?	No	(If yes, provide justification in the General Project Narrative)		(If yes, describe in the General Project Narrative; if no, justify in the General Project Narrative)	
(If yes, provide justification in the General Project Narrative)					

North Carolina Department of Transportation

Highway Stormwater Program

STORMWATER MANAGEMENT PLAN

FOR NCDOT PROJECTS

(Version 2.08; Released April 2018)

WBS Element:	67044.1.1	**TIP No.:**	BR-0044	**County(ies):**	Rockingham	**Page**	**2**	**of**	**2**

Additional Waterbody Information

Surface Water Body (2):	UT to Smith River		**NCDWR Stream Index No.:**	22-40-(1)		
NCDWR Surface Water Classification for Water Body		**Primary Classification:**	Water Supply IV (WS-IV)			
		Supplemental Classification:	None			
Other Stream Classification:						
Impairments:	Benthos					
Aquatic T&E Species?	Yes	Comments: Roanoke logperch is an endangered freshwater fish found in the Smith River within the study area				
NRTR Stream ID:	SA			**Buffer Rules in Effect:**	N/A	
Project Includes Bridge Spanning Water Body?	Yes	**Deck Drains Discharge Over Buffer?**	N/A	**Dissipator Pads Provided in Buffer?**	N/A	
Deck Drains Discharge Over Water Body?	Yes	(If yes, provide justification in the General Project Narrative)		(If yes, describe in the General Project Narrative; if no, justify in the General Project Narrative)		
(If yes, provide justification in the General Project Narrative)						

09/08/59

TIP PROJECT: BR-0044

CONTRACT: C204393

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

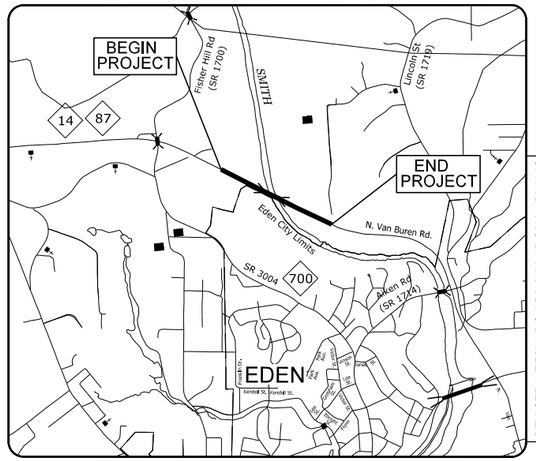
ROCKINGHAM COUNTY

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	BR-0044	1	
STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION	
67044.1.1		PE	

PERMIT DRAWING
SHEET 01 OF 15

LOCATION: BRIDGE NO. 168 ON NC 14/NC 87 (N. VAN BUREN RD) OVER SMITH RIVER

TYPE OF WORK: GRADING, DRAINAGE, PAVING, AND STRUCTURE



VICINITY MAP

See Sheet 1A For Index of Sheets
See Sheet 1B For Conventional Symbols

NAD 83 NA 2011

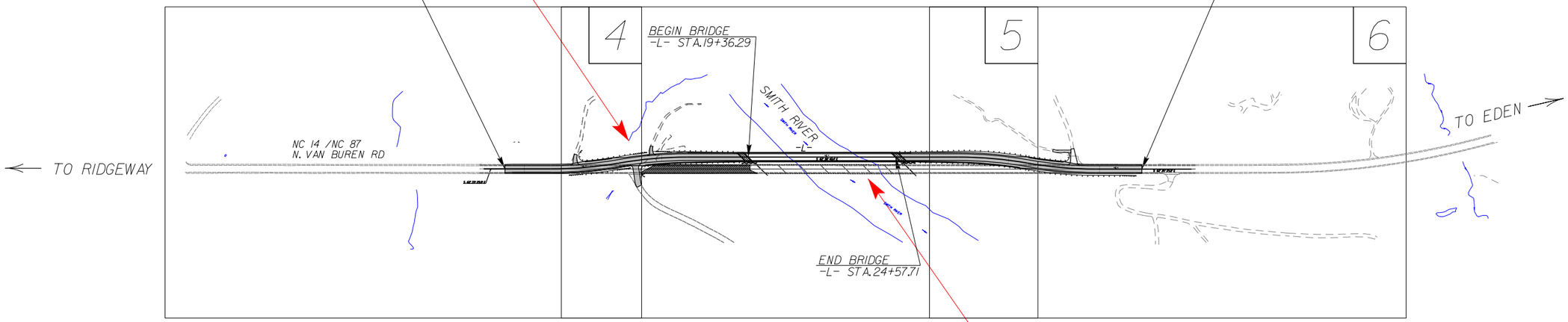
WETLAND AND SURFACE WATER IMPACTS PERMIT

JUNE 2019

SITE 1

BEGIN TIP PROJECT BR-0044
-L- STA.10+75.00

END TIP PROJECT BR-0044
-L- STA.33+30.00



SITE 2

THERE IS NO CONTROL OF ACCESS ON THIS PROJECT.

CLEARING ON THE PROJECT SHALL BE TO THE LIMITS ESTABLISHED USING METHOD II

THIS PROJECT IS NOT WITHIN ANY MUNICIPAL BOUNDARIES

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

GRAPHIC SCALES

50 25 0 50 100
PLANS

50 25 0 50 100
PROFILE (HORIZONTAL)

10 5 0 10 20
PROFILE (VERTICAL)

DESIGN DATA

ADT 2020 = 8,080
ADT 2040 = 8,400
K = 9 %
D = 55 %
T = 12 % *
V = 60 MPH
* (TTST 10% + DUAL 2%)
FUNC CLASS = PRINCIPAL ARTERIAL
REGIONAL TIER

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT BR-0044 = 0.328 MI
LENGTH STRUCTURE TIP PROJECT BR-0044 = 0.099 MI
TOTAL LENGTH TIP PROJECT BR-0044 = 0.427 MI

AECOM
NC FIRM LICENSE No: F-0342
701 Corporate Center Drive, Suite 475
Raleigh, NC 27607
(919) 854-6200 - (919) 854-6259(FAX)

2018 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
JUNE 14, 2019

LETTING DATE:
JANUARY 21, 2020

NEIL J. DEAN, P.E.
PROJECT ENGINEER

RADHA ATTALURI, P.E.
PROJECT DESIGN ENGINEER

DAVID STUTTS, P.E.
NCDOT PROJECT MANAGER

HYDRAULICS ENGINEER

SIGNATURE: *P.E.*

ROADWAY DESIGN ENGINEER

SIGNATURE: *P.E.*

STATE OF NORTH CAROLINA • DEPARTMENT OF TRANSPORTATION •

6/27/2019
R:\Hydraulics\PERMITS_Environmental\Drawings\BR-0044_Hyd_prm_wet_TSH.dgn
caterm

PROJECT REFERENCE NO.	SHEET NO.
BR-0044	4

R/W SHEET NO.

ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER

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Raleigh, NC 27607
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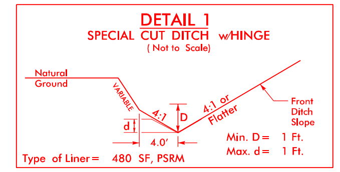
PERMIT DRAWING SHEET 02 OF 15

REVISIONS

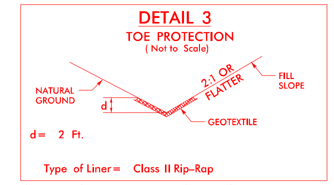
5/14/99

-L-

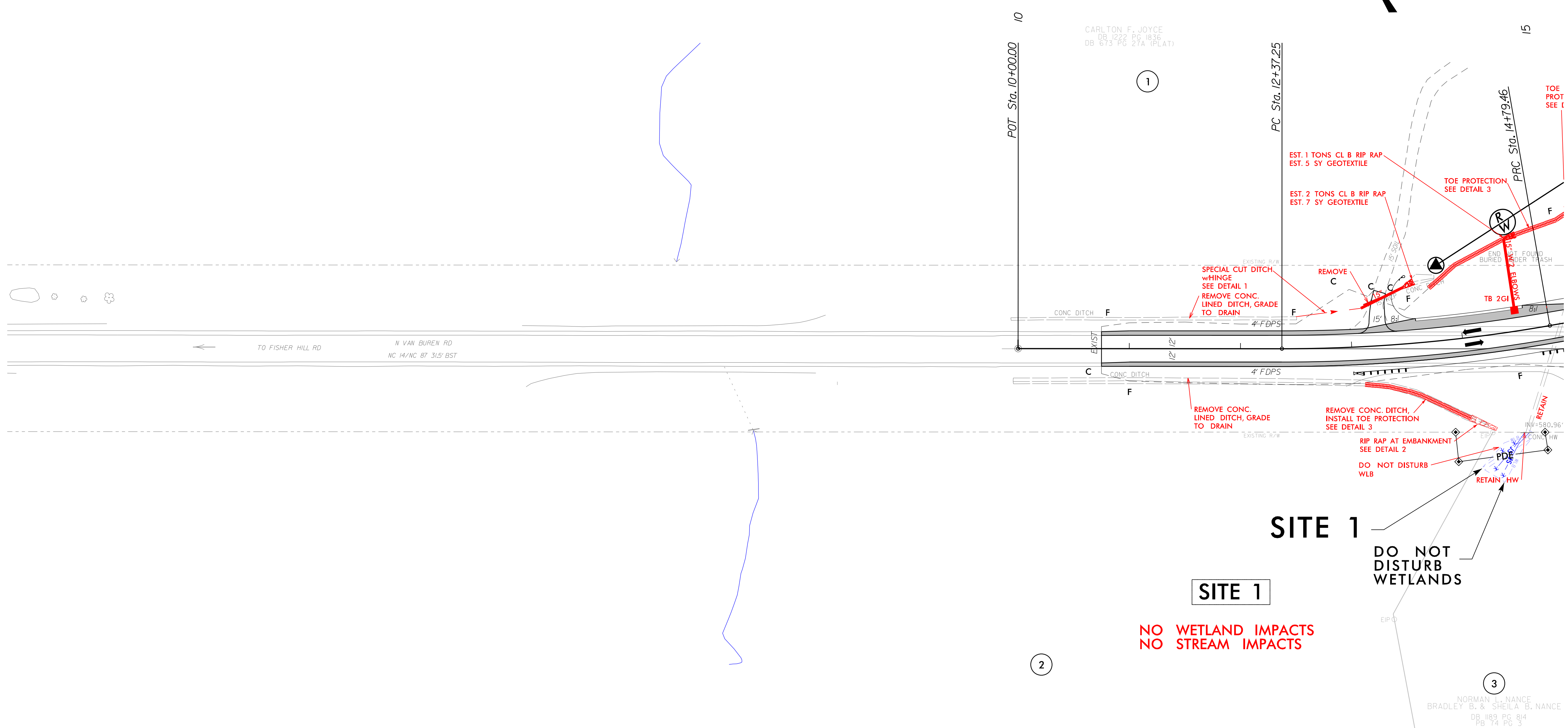
PI Sta 13+58.66	PI Sta 16+00.61
Δ = 9° 54′ 44.5″ (LT)	Δ = 9° 53′ 29.9″ (RT)
D = 4° 05′ 33.2″	D = 4° 05′ 33.2″
L = 242.20′	L = 241.70′
T = 121.41′	T = 121.15′
R = 1,400.00′	R = 1,400.00′
e = 0.06 FT/FT	e = 0.06 FT/FT
R.O. = 162.00′	R.O. = 162.00′

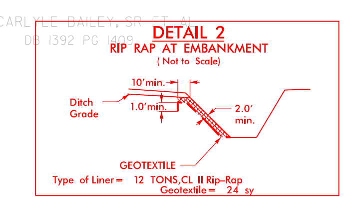


FROM -L- STA. 12+50 LT TO -L- STA. 13+10 LT



FROM -L- STA. 13+75 LT TO -L- STA. 15+50 LT
105 TONS CL II RIP RAP, 195 SY GEOTEXTILE
FROM -L- STA. 13+10 RT TO -L- STA. 13+98 RT
60 TONS CL II RIP RAP, 110 SY GEOTEXTILE





FROM -L- STA. 13+98 TO -L- STA. 14+19 RT

100′ 0′ 100′
GRAPHIC SCALE

6/27/2019
RMITS_Environmental\Drawings\BR-0044_Hyd_prm_wet_Site 1_psh4.dgn
paterm

PROJECT REFERENCE NO.	SHEET NO.
BR-0044	4
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
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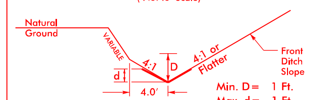
NC FIRM LICENSE No: F-0342
701 Corporate Center Drive, Suite 475
Raleigh, NC 27607
(919) 854-6200 - (919) 854-6259(FAX)

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PERMIT DRAWING SHEET 03 OF 15

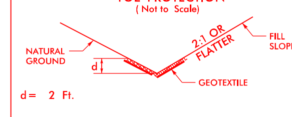
DETAIL 1
SPECIAL CUT DITCH w/HINGE
(Not to Scale)



Min. D= 1 Ft.
Max. d= 1 Ft.
Type of Liner= 480 SF, PSRM

FROM -L- STA. 12+50 LT TO -L- STA. 13+10 LT

DETAIL 3
TOE PROTECTION
(Not to Scale)

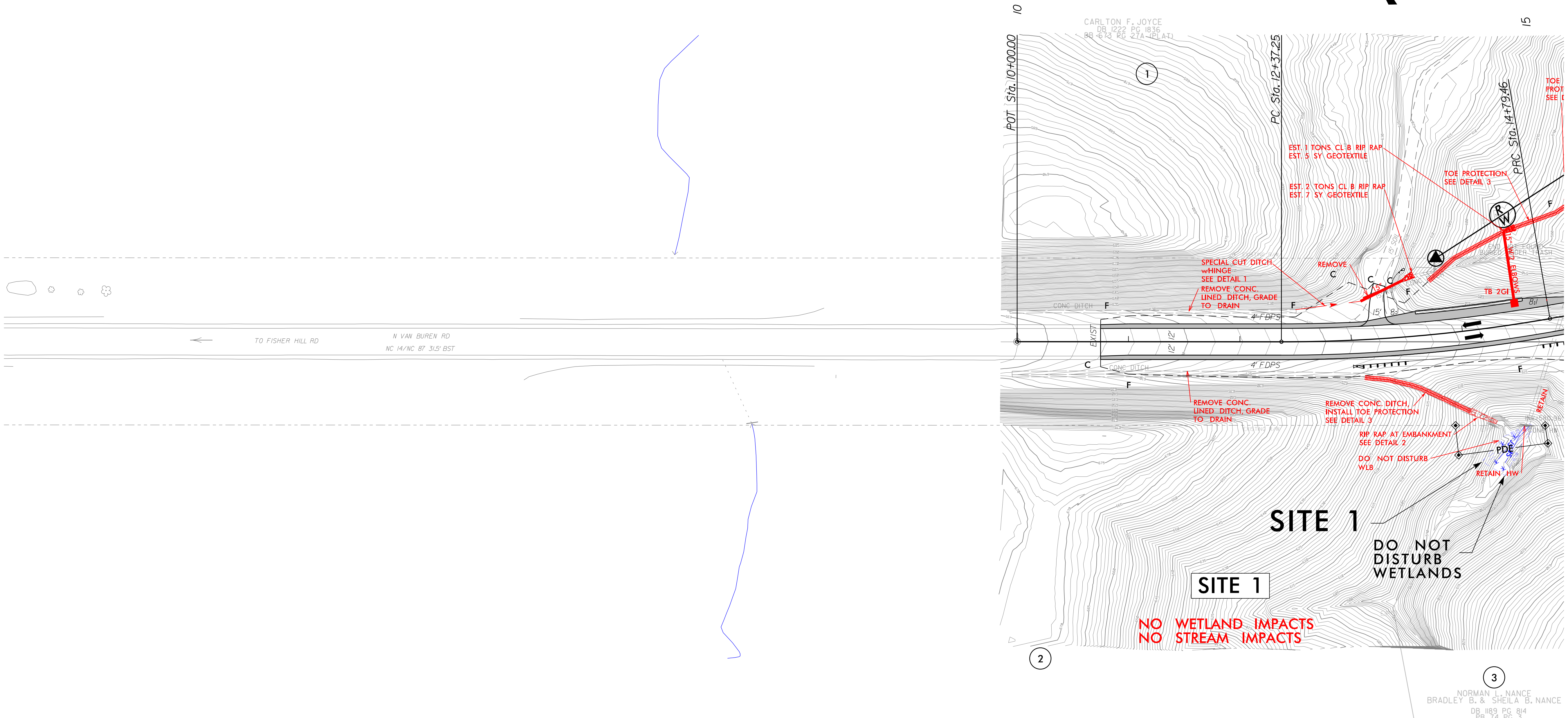


d= 2 Ft.
Type of Liner= Class II Rip-Rap

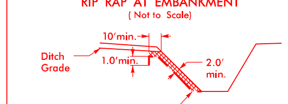
FROM -L- STA. 13+75 LT TO -L- STA. 15+50 LT
105 TONS CL II RIP RAP, 195 SY GEOTEXTILE
FROM -L- STA. 13+10 RT TO -L- STA 13+98 RT
60 TONS CL II RIP RAP, 110 SY GEOTEXTILE

-L-

PI Sta 13+58.66	PI Sta 16+00.61
Δ = 9° 54′ 44.5″ (LT)	Δ = 9° 53′ 29.9″ (RT)
D = 4° 05′ 33.2″	D = 4° 05′ 33.2″
L = 242.20′	L = 241.70′
T = 121.41′	T = 121.15′
R = 1,400.00′	R = 1,400.00′
e = 0.06 FT/FT	e = 0.06 FT/FT
R.O. = 162.00′	R.O. = 162.00′



DETAIL 2
RIP RAP AT EMBANKMENT
(Not to Scale)



Type of Liner= 12 TONS, CL II Rip-Rap
Geotextile= 24 sy

FROM -L- STA. 13+98 TO -L- STA. 14+19 RT

100′ 0′ 100′
GRAPHIC SCALE

REVISIONS

5/14/99

6/27/2019
...S_Environmental\Drawings\BR-0044_Hyd_prm_wet_Site 1_psh4_contour.dgn
...pdterm

PERMIT DRAWING
SHEET 04 OF 15

Revised 11/18/2019

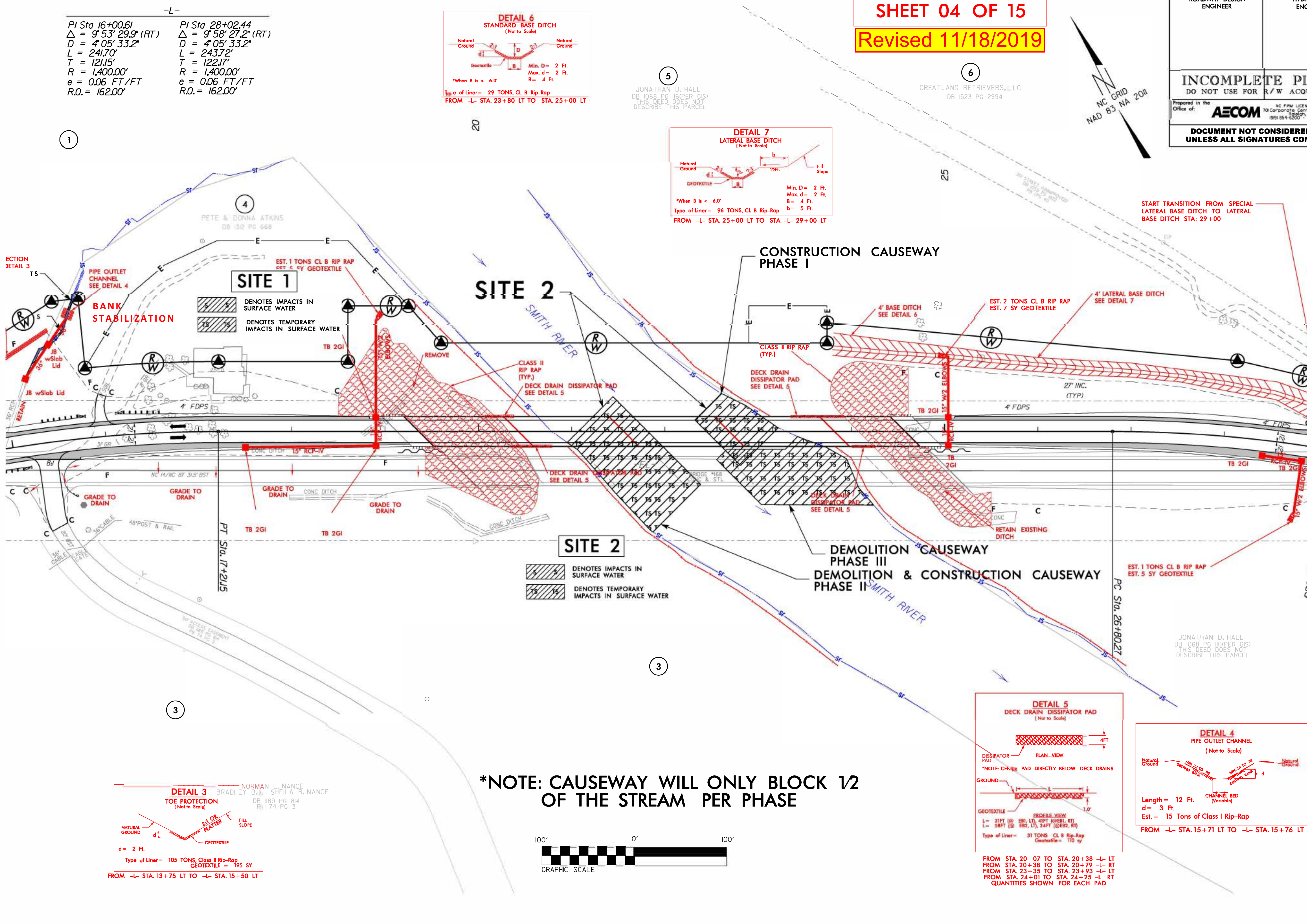
PROJECT REFERENCE NO.	SHEET NO.
BR-0044	5

R/W SHEET NO.

ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



-L-
PI Sta 16+00.61
Δ = 9° 53' 29.9" (RT)
D = 4° 05' 33.2"
L = 241.70'
T = 121.15'
R = 1,400.00'
e = 0.06 FT/FT
R.O. = 162.00'
PI Sta 28+02.44
Δ = 9° 58' 27.2" (RT)
D = 4° 05' 33.2"
L = 243.72'
T = 122.17'
R = 1,400.00'
e = 0.06 FT/FT
R.O. = 162.00'
DETAIL 6
STANDARD BASE DITCH
(Not to Scale)
Type of Liner= 29 TONS, CL B Rip-Rap
FROM -L- STA. 23+80 LT TO STA. 25+00 LT
DETAIL 7
LATERAL BASE DITCH
(Not to Scale)
Type of Liner= 96 TONS, CL B Rip-Rap
FROM -L- STA. 25+00 LT TO STA. -L- 29+00 LT
NC GRID NAD 83 NA 2011
JONATHAN D. HALL
DB 1068 PG 116(PER GIS)
THIS DEED DOES NOT DESCRIBE THIS PARCEL
GREATLAND RETRIEVERS, LLC
DB 1523 PG 2994
PETE & DONNA ATKINS
DB 1312 PG 668
SITE 1
DENOTES IMPACTS IN SURFACE WATER
DENOTES TEMPORARY IMPACTS IN SURFACE WATER
BANK STABILIZATION
PIPE OUTLET CHANNEL SEE DETAIL 4
EST. 1 TONS CL B RIP RAP
EST. 5 SY GEOTEXTILE
SITE 2
CONSTRUCTION CAUSEWAY PHASE I
DEMOLITION CAUSEWAY PHASE III
DEMOLITION & CONSTRUCTION CAUSEWAY PHASE II
SMITH RIVER
4' BASE DITCH SEE DETAIL 6
EST. 2 TONS CL B RIP RAP
EST. 7 SY GEOTEXTILE
4' LATERAL BASE DITCH SEE DETAIL 7
START TRANSITION FROM SPECIAL LATERAL BASE DITCH TO LATERAL BASE DITCH STA: 29+00
CLASS II RIP RAP (TYP.)
DECK DRAIN DISSIPATOR PAD SEE DETAIL 5
RETAIN EXISTING DITCH
GRADE TO DRAIN
PT Sta. 17+21.15
PC Sta. 26+80.27
*NOTE: CAUSEWAY WILL ONLY BLOCK 1/2 OF THE STREAM PER PHASE
GRAPHIC SCALE
DETAIL 3
TOE PROTECTION
(Not to Scale)
d= 2 Ft.
Type of Liner= 105 TONS, Class II Rip-Rap
GEOTEXTILE = 195 SY
FROM -L- STA. 13+75 LT TO -L- STA. 15+50 LT
NORMAN L. NANCE
BRADLEY B.J. SHEILA B. NANCE
DB 1189 PG 814
PB 74 PG 3
DETAIL 5
DECK DRAIN DISSIPATOR PAD
(Not to Scale)
*NOTE: CENTER PAD DIRECTLY BELOW DECK DRAINS
Type of Liner= 31 TONS CL B Rip-Rap
Geotextile= 110 sy
FROM STA. 20+07 TO STA. 20+38 -L- LT
FROM STA. 20+38 TO STA. 20+79 -L- RT
FROM STA. 23+35 TO STA. 23+93 -L- LT
FROM STA. 24+01 TO STA. 24+25 -L- RT
QUANTITIES SHOWN FOR EACH PAD
DETAIL 4
PIPE OUTLET CHANNEL
(Not to Scale)
Length= 12 Ft.
d= 3 Ft.
Est.= 15 Tons of Class I Rip-Rap
FROM -L- STA. 15+71 LT TO -L- STA. 15+76 LT

REVISIONS

6/27/2019
Environmental\Drawings\BR-0044_Hyd_prm_wet_Site 1 and 2-All Phases.dgn

PROJECT REFERENCE NO.	SHEET NO.
BR-0044	5

R/W SHEET NO.

ROADWAY DESIGN ENGINEER — HYDRAULICS ENGINEER

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PERMIT DRAWING SHEET 05 OF 15

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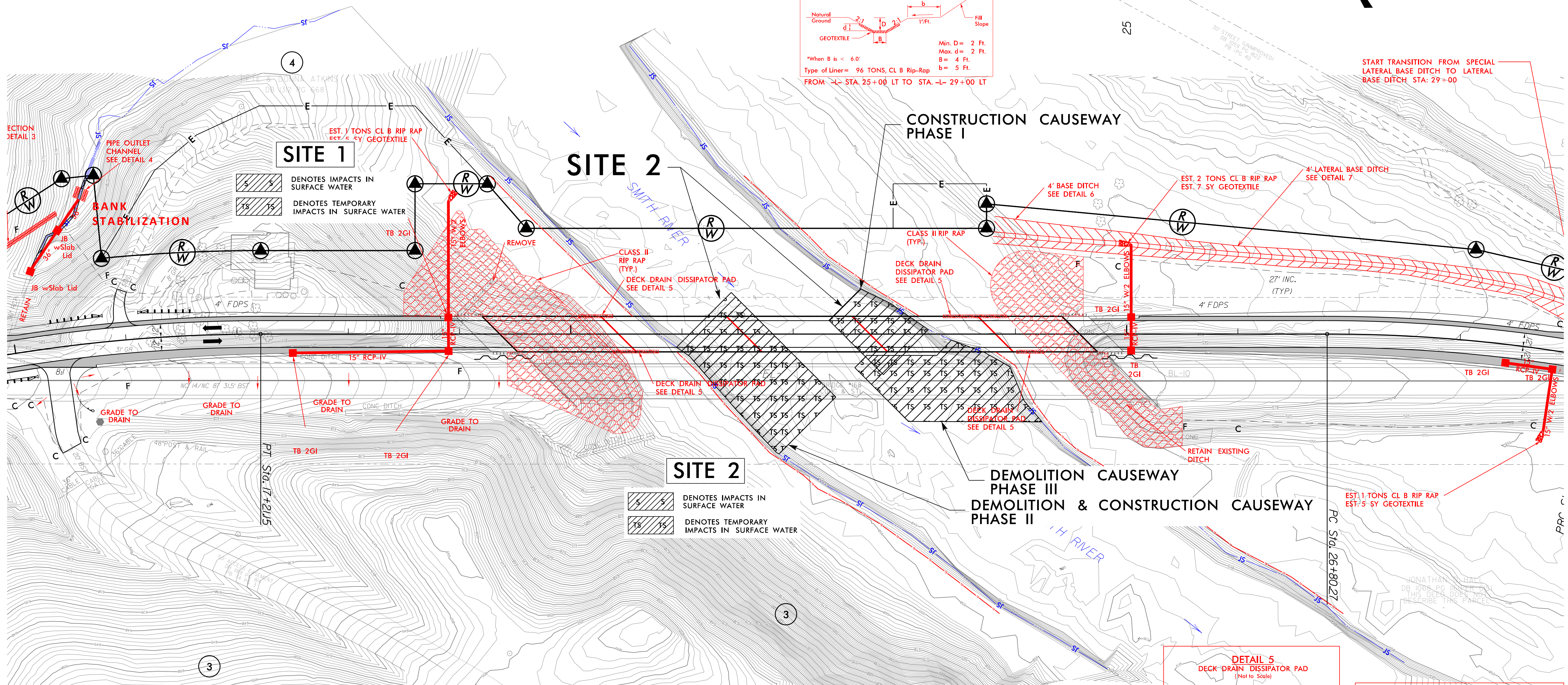
-L-

PI Sta 16+00.61	PI Sta 28+02.44
△ = 9° 53' 29.9" (RT)	△ = 9° 58' 27.2" (RT)
D = 4° 05' 33.2"	D = 4° 05' 33.2"
L = 241.70'	L = 243.72'
T = 121.15'	T = 122.17'
R = 1,400.00'	R = 1,400.00'
e = 0.06 FT/FT	e = 0.06 FT/FT
R.O. = 162.00'	R.O. = 162.00'

NC GRID NAD 83 NA 2011



DETAIL 6
STANDARD BASE DITCH (Not to Scale)

Min. D = 2 Ft. Max. d = 2 Ft. B = 4 Ft.

Type of Liner = 29 TONS, CL B Rip-Rap

FROM -L- STA. 23+80 LT TO STA. 25+00 LT

DETAIL 7
LATERAL BASE DITCH (Not to Scale)

Min. D = 2 Ft. Max. d = 2 Ft. B = 4 Ft. b = 5 Ft.

Type of Liner = 96 TONS, CL B Rip-Rap

FROM -L- STA. 25+00 LT TO STA. -L- 29+00 LT

*NOTE: CAUSEWAY WILL ONLY BLOCK 1/2 OF THE STREAM PER PHASE

GRAPHIC SCALE 100' 0' 100'

DETAIL 3
TOE PROTECTION (Not to Scale)

d = 2 Ft.

Type of Liner = 105 TONS, Class II Rip-Rap; GEOTEXTILE = 195 SY

FROM -L- STA. 13+75 LT TO -L- STA. 15+50 LT

DETAIL 5
DECK DRAIN DISSIPATOR PAD (Not to Scale)

*NOTE: CENTER PAD DIRECTLY BELOW DECK DRAINS

Type of Liner = 31 TONS CL B Rip-Rap; Geotextile = 110 sy

FROM STA. 20+07 TO STA. 20+38 -L- LT
FROM STA. 20+38 TO STA. 20+79 -L- RT
FROM STA. 23+35 TO STA. 23+93 -L- LT
FROM STA. 24+01 TO STA. 24+25 -L- RT
QUANTITIES SHOWN FOR EACH PAD

DETAIL 4
PIPE OUTLET CHANNEL (Not to Scale)

Length = 12 Ft.
d = 3 Ft.
Est. = 15 Tons of Class I Rip-Rap

FROM -L- STA. 15+71 LT TO -L- STA. 15+76 LT

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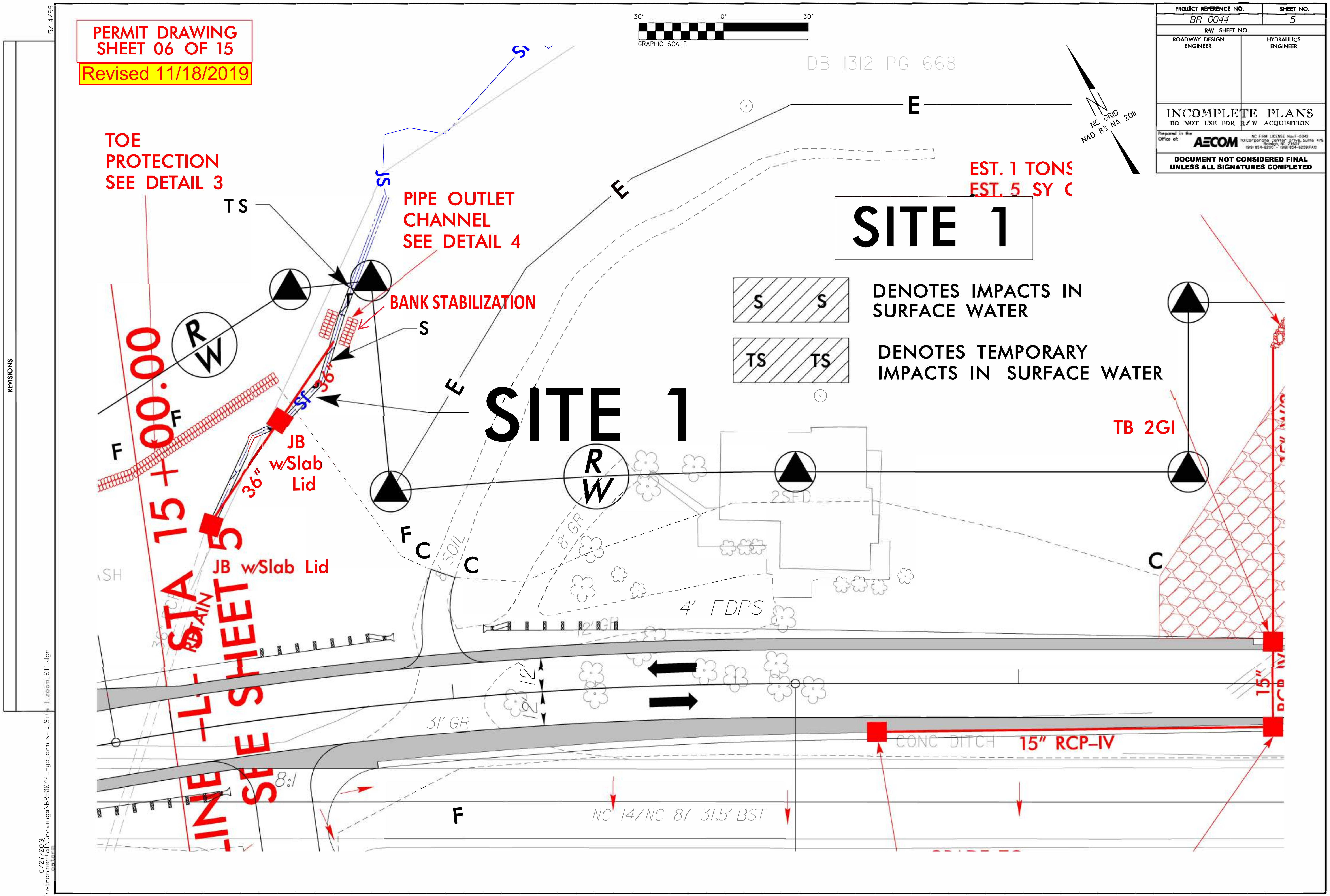
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SHEET 06 OF 15
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PROJECT REFERENCE NO.
BR-0044
SHEET NO.
5
R/W SHEET NO.
ROADWAY DESIGN ENGINEER
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GRAPHIC SCALE
DB 1312 PG 668
NC GRID NAD 83 NA 2011
TOE PROTECTION SEE DETAIL 3
PIPE OUTLET CHANNEL SEE DETAIL 4
BANK STABILIZATION
SITE 1
SITE 1
EST. 1 TONS
EST. 5 SY
DENOTES IMPACTS IN SURFACE WATER
DENOTES TEMPORARY IMPACTS IN SURFACE WATER
JB w/Slab Lid
JB w/Slab Lid
36"
36"
TB 2GI
15" RCP-IV
CONC DITCH
4' FDPS
2 SFD
31' GR
8' GR
NC 14/NC 87 31.5' BST
STA 15+00.00
-L-
SEE SHEET 5
REVISIONS
5/14/99
6/27/2019

PERMIT DRAWING
SHEET 07 OF 15
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PROJECT REFERENCE NO.	SHEET NO.
BR-0044	5

R/W SHEET NO.

ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER

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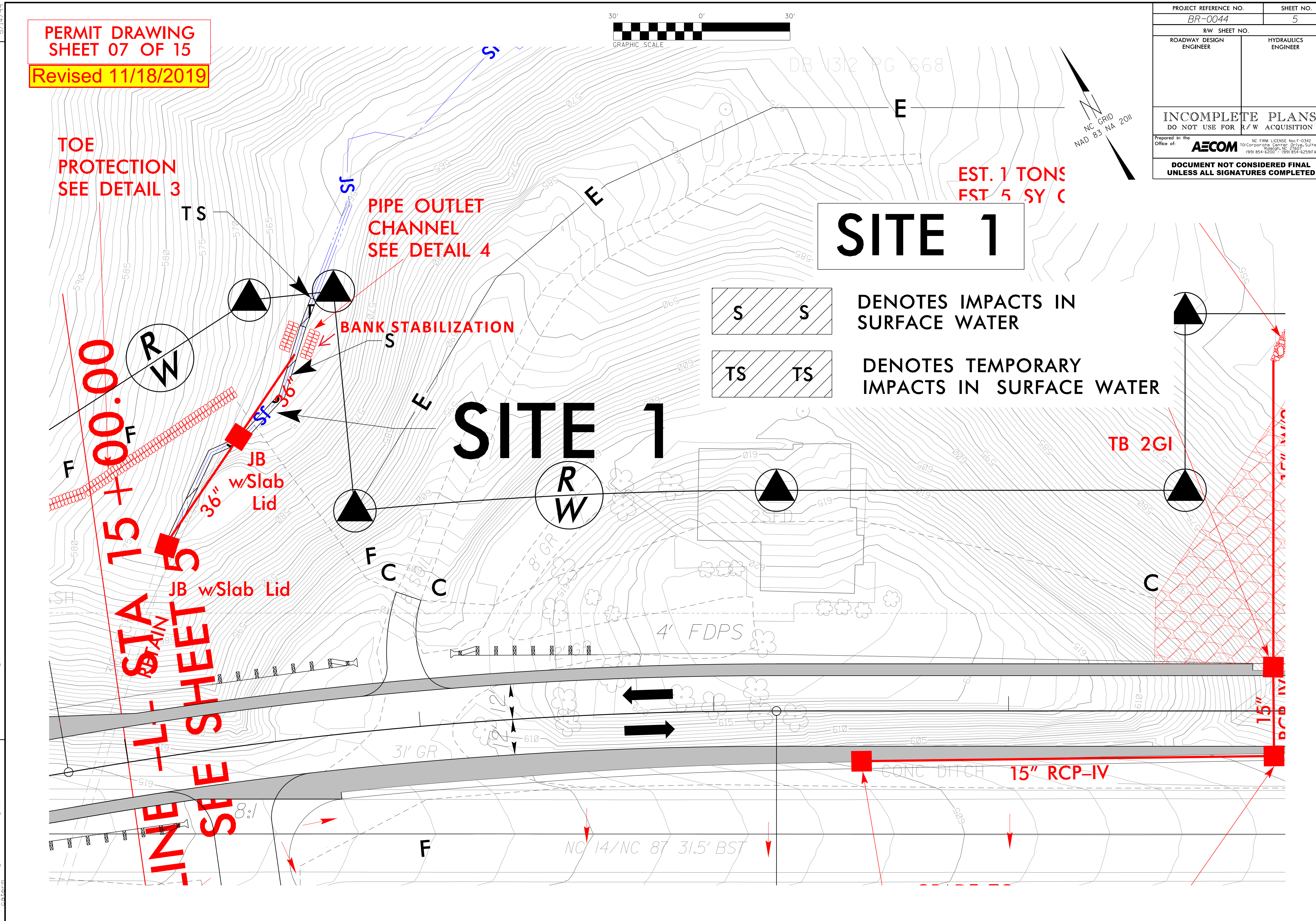

PROJECT REFERENCE NO.	SHEET NO.
BR-0044	5

R/W SHEET NO.

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HYDRAULICS ENGINEER

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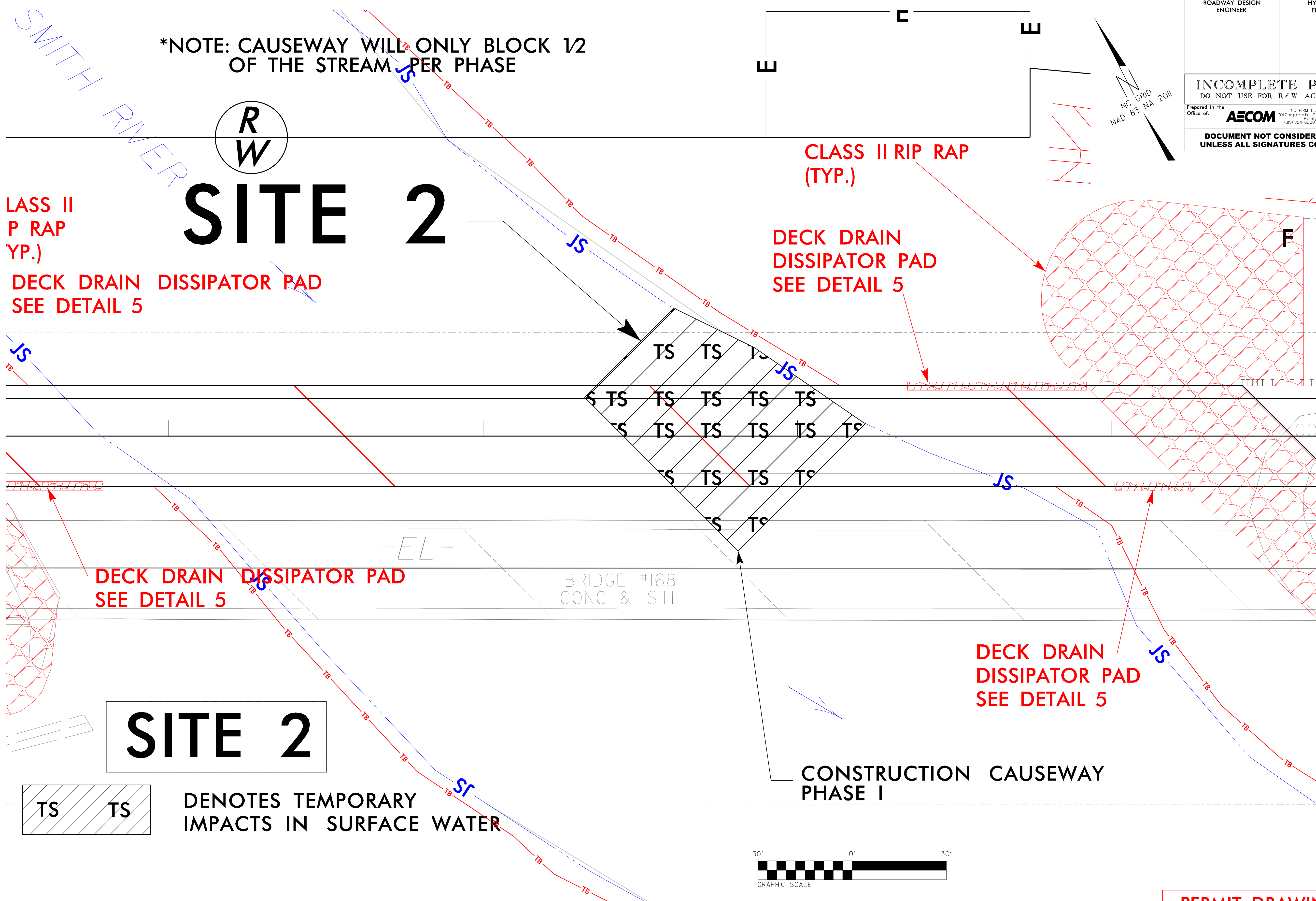

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SHEET 08 OF 15

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caterm

PROJECT REFERENCE NO.	SHEET NO.
BR-0044	5
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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*NOTE: CAUSEWAY WILL ONLY BLOCK 1/2 OF THE STREAM PER PHASE

SMITH RIVER

R/W

SITE 2

LASS II
P RAP
YP.)

DECK DRAIN DISSIPATOR PAD
SEE DETAIL 5

CLASS II RIP RAP
(TYP.)

DECK DRAIN
DISSIPATOR PAD
SEE DETAIL 5

DECK DRAIN DISSIPATOR PAD
SEE DETAIL 5

DECK DRAIN
DISSIPATOR PAD
SEE DETAIL 5

CONSTRUCTION CAUSEWAY
PHASE I

BRIDGE #168
CONC & STL

NC GRID
NAD 83 NA 2011

GRAPHIC SCALE 30' 0' 30'

SITE 2

TS TS DENOTES TEMPORARY IMPACTS IN SURFACE WATER

PERMIT DRAWING
SHEET 09 OF 15

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6/7/2019
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PROJECT REFERENCE NO.	SHEET NO.
BR-0044	5
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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NC GRID
NAD 83 NA 2011

*NOTE: CAUSEWAY WILL ONLY BLOCK 1/2 OF THE STREAM PER PHASE

SMITH RIVER

R/W

SITE 2

LASS II
P RAP
YP.)

DECK DRAIN DISSIPATOR PAD
SEE DETAIL 5

CLASS II RIP RAP
(TYP.)

DECK DRAIN
DISSIPATOR PAD
SEE DETAIL 5

DECK DRAIN DISSIPATOR PAD
SEE DETAIL 5

DECK DRAIN
DISSIPATOR PAD
SEE DETAIL 5

BRIDGE #168
CONC & STL

DEMOLITION & CONSTRUCTION CAUSEWAY
PHASE II

SITE 2

TS TS — DENOTES TEMPORARY IMPACTS IN SURFACE WATER

30' 0' 30'
GRAPHIC SCALE

PERMIT DRAWING
SHEET 10 OF 15

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REVISIONS 5/14/99

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cstern

PROJECT REFERENCE NO.	SHEET NO.
BR-0044	5
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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*NOTE: CAUSEWAY WILL ONLY BLOCK 1/2 OF THE STREAM PER PHASE

SMITH RIVER

R/W

DEMOLITION & CONSTRUCTION CAUSEWAY PHASE II

CLASS II RIP RAP (TYP.)

LASS II
P RAP
YP.)

DECK DRAIN DISSIPATOR PAD
SEE DETAIL 5

DECK DRAIN DISSIPATOR PAD
SEE DETAIL 5

DECK DRAIN DISSIPATOR PAD
SEE DETAIL 5

DECK DRAIN DISSIPATOR PAD
SEE DETAIL 5

E

E

F

F

NC GRID
NAD 83 NA 2011

BRIDGE #168
CONC & STL

SITE 2

SITE 2

TS TS

DENOTES TEMPORARY IMPACTS IN SURFACE WATER

30' 0' 30'
GRAPHIC SCALE

PERMIT DRAWING
SHEET 11 OF 15

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cstern

PROJECT REFERENCE NO.	SHEET NO.
BR-0044	5
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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NC GRID
NAD 83 NA 2011

*NOTE: CAUSEWAY WILL ONLY BLOCK 1/2 OF THE STREAM PER PHASE

SMITH RIVER

R/W

SITE 2

LASS II
P RAP
'YP.)

DECK DRAIN DISSIPATOR PAD
SEE DETAIL 5

CLASS II RIP RAP
(TYP.)

DECK DRAIN
DISSIPATOR PAD
SEE DETAIL 5

DECK DRAIN DISSIPATOR PAD
SEE DETAIL 5

-EL-

BRIDGE #168
CONC & STL

DEMOLITION CAUSEWAY
PHASE III

E

E

F

JS

TB

TS

SITE 2

TS TS DENOTES TEMPORARY IMPACTS IN SURFACE WATER

30' 0' 30'
GRAPHIC SCALE

PERMIT DRAWING
SHEET 12 OF 15

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...ITS_Environmental\Drawings\BR-0044_Hyd_prm_wet_Site 2_zoom_ST3.dgn
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PROJECT REFERENCE NO.	SHEET NO.
BR-0044	5
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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REVISIONS

*NOTE: CAUSEWAY WILL ONLY BLOCK 1/2 OF THE STREAM PER PHASE

SMITH RIVER

R/W

SITE 2

LASS II
P RAP
YP.)

DECK DRAIN DISSIPATOR PAD
SEE DETAIL 5

CLASS II RIP RAP
(TYP.)

DECK DRAIN
DISSIPATOR PAD
SEE DETAIL 5

DECK DRAIN DISSIPATOR PAD
SEE DETAIL 5

DEMOLITION CAUSEWAY
PHASE III

BRIDGE #168
CONC & STL

NC GRID
NAD 83 NA 2011

30' 0' 30'
GRAPHIC SCALE

SITE 2

TS TS

DENOTES TEMPORARY
IMPACTS IN SURFACE WATER

PERMIT DRAWING
SHEET 13 OF 15

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6/27/2019
Environmental Drawings\BR-0044_Hyd_prm_wet_Site 2_zoom_contour_ST3.dgn
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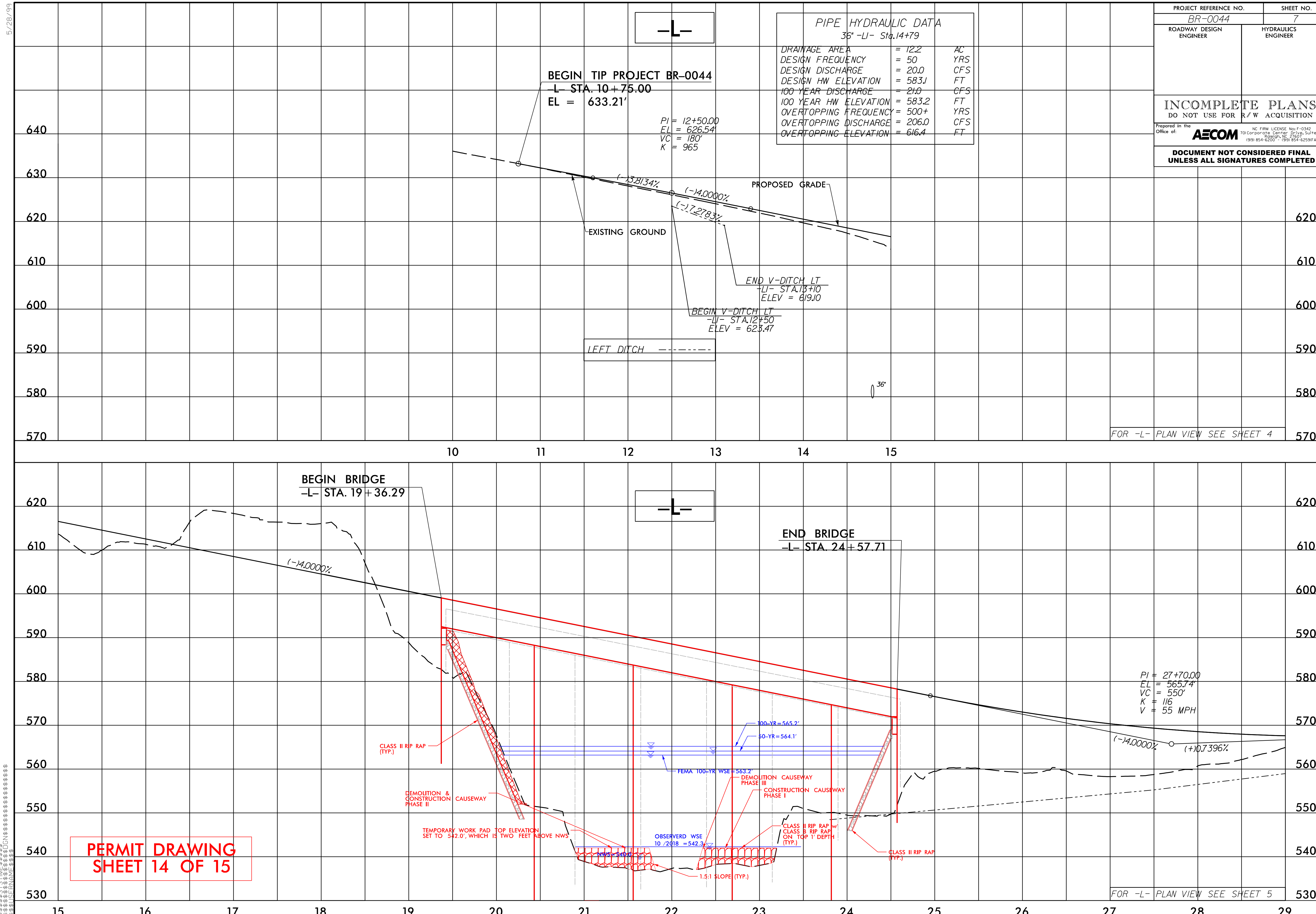
PROJECT REFERENCE NO.
BR-0044
SHEET NO.
7
ROADWAY DESIGN ENGINEER
HYDRAULICS ENGINEER
INCOMPLETE PLANS
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UNLESS ALL SIGNATURES COMPLETED
5/28/99
-L-
PIPE HYDRAULIC DATA
36" -L1- Sta.14+79
DRAINAGE AREA = 12.2 AC
DESIGN FREQUENCY = 50 YRS
DESIGN DISCHARGE = 20.0 CFS
DESIGN HW ELEVATION = 583.1 FT
100 YEAR DISCHARGE = 21.0 CFS
100 YEAR HW ELEVATION = 583.2 FT
OVERTOPPING FREQUENCY = 500+ YRS
OVERTOPPING DISCHARGE = 206.0 CFS
OVERTOPPING ELEVATION = 616.4 FT
BEGIN TIP PROJECT BR-0044
-L- STA. 10+75.00
EL = 633.21'
PI = 12+50.00
EL = 626.54'
VC = 180'
K = 965
(-)13.8134%
(-)4.0000%
(-)7.2783%
PROPOSED GRADE
EXISTING GROUND
END V-DITCH LT
-L1- STA.13+10
ELEV = 619.10
BEGIN V-DITCH LT
-L1- STA.12+50
ELEV = 623.47
LEFT DITCH
36"
FOR -L- PLAN VIEW SEE SHEET 4
640
630
620
610
600
590
580
570
10
11
12
13
14
15
BEGIN BRIDGE
-L- STA. 19+36.29
-L-
END BRIDGE
-L- STA. 24+57.71
(-)4.0000%
CLASS II RIP RAP (TYP.)
100-YR = 565.2'
50-YR = 564.1'
FEMA 100-YR WSE = 563.2'
DEMOLITION CAUSEWAY PHASE III
CONSTRUCTION CAUSEWAY PHASE I
DEMOLITION & CONSTRUCTION CAUSEWAY PHASE II
TEMPORARY WORK PAD TOP ELEVATION SET TO 542.0', WHICH IS TWO FEET ABOVE NWS
OBSERVERD WSE 10 /2018 = 542.3
NWS = 540.0
CLASS II RIP RAP w/ CLASS B RIP RAP ON TOP 1' DEPTH (TYP.)
1.5:1 SLOPE (TYP.)
CLASS II RIP RAP (TYP.)
PI = 27+70.00
EL = 565.74'
VC = 550'
K = 116
V = 55 MPH
(-)4.0000%
(+)0.7396%
PERMIT DRAWING
SHEET 14 OF 15
FOR -L- PLAN VIEW SEE SHEET 5
620
610
600
590
580
570
560
550
540
530
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29

WETLAND AND SURACE WATER IMPACTS SUMMARY

			WETLAND IMPACTS					SURFACE WATER IMPACTS						
Site No.	Station (From/To)	Structure Size / Type	Permanent Fill In Wetlands (ac)	Temp. Fill In Wetlands (ac)	Excavation in Wetlands (ac)	Mechanized Clearing in Wetlands (ac)	Hand Clearing in Wetlands (ac)	Permanent SW impacts (ac)	Stabilization Channel Impacts (ac)	Temp. SW impacts (ac)	Existing Channel Impacts Permanent (ft)	Existing Channel Impacts Stabilization (ft)	Existing Channel Impacts Temp. (ft)	Natural Stream Design (ft)
1	-L- 15+24 to 15+73	36" ALT Pipe						< 0.01		< 0.01	80		10	
1	-L- 15+73 to 15+80	Bank Stabilization							< 0.01			10		
2	-L- 20+93 to 24+00	Bridge (all phases)								0.47			280	
TOTALS*:								< 0.01	< 0.01	0.47	80	10	290	0

*Rounded totals are sum of actual impacts

NOTES:
Stream Temporary impacts due to causeways are the net total when all 3 phases are considered together.

Bridge Pier Permanent Impact Area (Not included in above quantities) = 118sf (Three 60" dia piers x 2 bents)

NC DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
6/14/2019
ROCKINGHAM COUNTY
BR-0044
67044.1.1

Revised 11/18/2019

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

ROY COOPER
GOVERNOR

JAMES H. TROGDON, III
SECRETARY

October 29, 2019

Mr. Pete Benjamin
Field Supervisor
US Fish and Wildlife Service
Post Office Box 33726
Raleigh, North Carolina 27636-3726

Subject: Section 7 Concurrence Request for the Proposed Bridge Replacement of Bridge No. 168 on NC 14/87 over the Smith River in Rockingham County, Division 7; TIP: BR-0044; WBS No. 67044.1.1.

REFERENCE: Biological Assessment for BR-0044, dated September 27, 2019 (attached).

Mr. Benjamin,

The purpose of this letter is to request concurrence from the U.S. Fish and Wildlife Service (USFWS) pursuant to Section 7 of the Endangered Species Act, as amended (16 U.S.C. 1531 et seq.) (ESA).

The North Carolina Department of Transportation (NCDOT) proposes to replace Bridge 168 on NC 14/87 over the Smith River in Rockingham County with a five span, 520 feet long bridge to the north of the current alignment with the existing bridge being utilized as an onsite detour during construction. This action will result in the following impacts: 80 linear feet of permanent stream impact, 10 linear feet of permanent impacts from bank stabilization, 0.47 acre of temporary impacts to surface waters for causeways for bridge construction/removal, and 10 linear feet temporary impacts for bank stabilization. The project is slated to Let in April 2020.

As of June 27, 2019, the USFWS lists three (3) federally protected species for Rockingham County

Common Name	Scientific Name	Status	Habitat Presence	Biological Conclusion
Roanoke logperch	*Percina rex*	E	Yes	MANLTAA
Smooth coneflower	*Echinacea laevigata*	E	Yes	No Effect
James spinymussel	*Parvaspina collina*	E	Yes	MANLTAA**

**MAY AFFECT, NOT LIKELY TO ADVERSELY AFFECT
E-Endangered

Roanoke logperch - The Roanoke logperch has been documented in in the past from the Smith River above the Martinsville Dam in Virginia (Roberts et al 2013), upstream from the project location, and from the Smith River in North Carolina slightly over one stream mile downstream of the project location. However,

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NC DEPARTMENT OF TRANSPORTATION
ENVIRONMENTAL ANALYSIS UNIT
1598 MAIL SERVICE CENTER
RALEIGH NC 27699-1598

Telephone: (919) 707-6000
Fax: (919) 212-5785
Customer Service: 1-877-368-4968
Website: www.ncdot.gov

Location:
1000 BIRCH RIDGE DRIVE
RALEIGH NC 27610

due to the highly regulated flow conditions within the Smith River in the Action Area as outlined in Section 3.0 of the attached assessment, and the isolation of the Action Area from downstream populations by a dam, it is not reasonably certain that the species occurs within the Action Area. Given that the species is not reasonably certain to occur within the Action Area combined with the implementation of the conservation measures outlined in Section 4.2, potential project related effects to the Roanoke logperch will be discountable.
BIOLOGICAL CONCLUSION: MAY AFFECT, NOT LIKELY TO ADVERSELY AFFECT

Smooth coneflower A visual survey conducted for smooth oneflower on June 6, 2018 did not observe the species in the project study area. A review of the NCNHP records on April 16, 2018 indicated no known occurrences within 1.0 miles of the Action Area. Completion of this project will not affect Smooth Coneflower.
BIOLOGICAL CONCLUSION: NO EFFECT

James spinymussel – A mussel survey on November 14, 2001 indicated that instream habitat for the species was present in the project Action Area. However, no evidence of any species of freshwater mussels was observed. In addition, the highly variable and controlled flow pattern of the Smith River through the project creates an inhospitable (as detailed in Section 3.0) setting for native mussel species. Although the presence of the species in the Action Area cannot be completely ruled out, the distances to current, known records for the species and the highly variable flow conditions in the Smith River within the Action Area, suggest the likelihood of the species presence in the Action Area is very low, and therefore the potential effects to the species are discountable.
BIOLOGICAL CONCLUSION: MAY AFFECT, NOT LIKELY TO ADVERSELY AFFECT

No Proposed Project Commitments

Based on the information presented and, in the attachments, NCDOT believes that the requirements of Section 7(a)(2) of the ESA have been satisfied and hereby request your concurrence. If you have any questions, please contact Jeff Hemphill at jhemphill@ncdot.gov.

Sincerely,

for Philip S. Harris III, P.E., C.P.M.
Environmental Analysis Unit Head
North Carolina Department of Transportation

Enclosures: Biological Assessment for BR-0044, dated September 27, 2019

Cc: Gary Jordan, USFWS
Marissa Cox, NCDOT BSG-EAU
David Bailey, USACOE
Kevin Fischer, NCDOT Structures
File: BR-0044

Biological Assessment
For
Replacement of Bridge No. 168 on NC 14/87
Over the Smith River
Rockingham County, North Carolina
TIP number BR-0044
WBS Element # 67044.1.1

Prepared For:

NC Department of Transportation
Raleigh, North Carolina

Contact Person:

Matt Haney
Biological Surveys Group
North Carolina Department of Transportation
mmhaney@ncdot.gov
1598 Mail Service Center
Raleigh NC 27699-1598

September 27, 2019

Prepared by:

900 Ridgefield Drive, Suite 350
Raleigh, NC 27609

Contact Person:

Neil Medlin
Manager, Natural Resources
nmedlin@rkk.com
919-878-9560

Table of Contents

1.0 Project Overview

1.1 Federal Nexus

The North Carolina Department of Transportation (NCDOT) proposes to replace Bridge No. 168 on NC 14/87 over the Smith River in Rockingham County (Appendix A, Figure 1). This project is funded by the state of North Carolina and will require a United States Army Corps of Engineers (USACE) permit. USACE will serve as the lead federal agency. NCDOT derives their statutory authority via North Carolina General Statutes (NCGS) 143B – 345 and 346. USACE derives their statutory authority via Section 10 of the Rivers and Harbors Act of 1899 (33 USC 403) and Section 404 of the Clean Water Act (33 USC 1344).

1.2 Project Description

The action proposed by NCDOT is to replace Bridge No. 168 on NC 14/87 over the Smith River. The bridge has a general northwest to southeast orientation. The action includes all activities required for the bridge replacement project. Demolition of the existing bridge, construction of the new bridge, approach work, etc. are described later in Section 4.1.

1.3 Project Area and Setting

This project is located in the EPA Piedmont Ecoregion in central North Carolina. The project area is generally rural and is located adjacent to the north side of the town of Eden. The Smith River flows approximately 44 miles through Virginia and North Carolina. It begins in Henry County, Virginia at Philpott Lake and crosses into Rockingham County in North Carolina. It eventually ends at its confluence with the Dan River near the town of Eden. The proposed bridge replacement project on the Smith River is located in the Roanoke River Basin (HUC# 03010103). From the project area, the Smith River flows approximately 4 river miles to the Dan River.

1.4 Project Action Area

The project Action Area is defined as all areas to be affected directly or indirectly by the federal action and not merely the immediate area involved in the action [50 CFR §402.02]. The Action Area for this project includes not only the footprint of the fill in waters of the U.S., but also those areas of the waters downstream of the proposed fill that might reasonably be affected by the placement of that fill, as well as those segments of the proposed road whose alignment is dictated by the proposed fill, and those segments of the road that would have no independent utility apart from the proposed fill. As such, the ESA Action Area for this project is within the footprint of the regulated activities in the delineated waters, in uplands immediately adjacent to those waters that would be affected due to the authorized work in waters of the U.S., in waters downstream that would be expected to be affected by the proposed activities in waters of the U.S. and the uplands noted above.

For this bridge replacement, the limits of the effects are considered to include the limits of construction of the approaches (approximately 862 feet from the northwest end of the bridge and

approximately 848 feet from the southeast end of the bridge), and any areas receiving the runoff from the construction activity including the Smith River extending 400 m (1,314 ft.) downstream and 100 m (328 ft.) upstream of the structure. The stream bank stabilization activities would be included within this stream segment.

1.5 Consultation History

The preparation of this Biological Assessment is the beginning the of the consultation for this project.

2.0 Federally Proposed and Listed Species and Designated Critical Habitat

As of August 30, 2019, the U.S. Fish and Wildlife Service (USFWS) indicated three federally listed species for Rockingham County (Table 1). No proposed species were noted for Rockingham County.

Table 1. Federally Listed Species for Rockingham County, North Carolina

Common Name	Scientific Name	Status
Roanoke Logperch	*Percina rex*	Endangered
James Spinymussel	*Parvaspina collina*	Endangered
Smooth Coneflower	*Echinacea laevigata*	Endangered

The primary focus of this Biological Assessment is on the Roanoke Logperch and James Spinymussel. The Smooth Coneflower is not discussed further until Section 6.0.

No Critical Habitat has been designated for any of these species.

3.0 Environmental Baseline

The Smith River at the project site is a highly regulated stream with extreme ranges in flows (Figures 2 and 3). Philpott dam was constructed on the Smith River in 1953 and is used to control flooding and provide peak power generation. Fluctuating releases generated by Philpott dam have substantially altered the downstream ecosystem, impacts include highly modified flows, coldwater thermal regime, modified or altered aquatic community, and reduced productivity (Orth 2004). In addition to the Martinsville and Philpott dams above the reach of the river where the project is located, the project reach itself is above another dam separating it from the lower portions of the Smith River as well as the Dan River.

There are no NPDES permitted dischargers in North Carolina at locations that could affect water quality at the project site (Figure 4). Dischargers downstream on the Dan River could potentially affect the Dan River downstream of the confluence with the Smith River, potentially affecting aquatic species recruitment to the lower Smith River. There are no permitted dischargers in Virginia within 7 stream miles of the project location.

The Smith River in the project area is on the North Carolina Department of Environmental Quality (NCDEQ) - Division of Water Resources 2018 303(d) list of impaired streams (Figure 4). The stream is on the list for exceeding the criteria for a Fair benthic macroinvertebrate rating.

A review of NC Natural Heritage Program (NCNHP) records, last accessed August 30, 2019, indicated there is an element occurrence (EO) for one of the target species within a 5-mile buffer of the project bridge (Figure 5). This occurrence is for the Roanoke Logperch (EO ID 25404) and begins approximately 1.3 stream miles downstream from Bridge No. 168. This occurrence was first observed on July 24, 2007 and last observed on July 28, 2016. The closest occurrence for the James Spinymussel (EO ID 37056) approximately 9 stream miles downstream from the project bridge, is on the Dan River. The only observation date for this EO was November 18, 2016. There is no recent survey information for either of these species within the project reach of the Smith River. This is largely due to the flow ranges referenced above being unpredictable and presenting significant challenges to safely accessing the river to conduct effective aquatic surveys.

Although the Roanoke Logperch has not been documented from the project reach, the species has been documented above and below the project location. The species was first detected in the Smith River in North Carolina in September 2007. A genetics study of the species indicated that the Smith River population, including those individuals from above and below the project reach, was genetically similar (Roberts et. al 2013). This suggests the source of the first Roanoke Logperch individuals collected in North Carolina was likely to have been the Smith River. For this to be the case, the species would have to had passed through the project reach as larvae or adults sometime in the past. However, in the Smith River in Virginia, the Roanoke Logperch population downstream of Philpot dam has been considered limited due to cold summer temperatures, fluctuating flows during spawning, and excessive silt and sand in pool habitats (Orth 2004). In addition, Roanoke Logperch populations have been estimated to be more robust when flows are moderate and constant, not highly variable discharges which are presumed to displace or kill individuals (Anderson et al 2013). Although the presence of Roanoke Logperch at the project location at any given time cannot be ruled out, it is not reasonably certain that the species occurs within the Action Area given the highly regulated conditions.

No mussels have been collected within the project reach. A survey on November 14, 2001 at the project location reported no mussels detected.

4.0 Project Details

4.1 Construction

Bridge No. 168 is currently a 525-foot long structure, with a reinforced concrete deck on steel beams, and a reinforced concrete substructure. The bridge has 7, 75-foot spans, with 4 bents in the Smith River channel. NCDOT Bridge Management Unit records indicate Bridge No. 168 has a sufficiency rating of 69.08 out of a possible 100 for a new structure. The bridge was constructed in 1966 and is considered structurally deficient according to the latest NCDOT bridge inspection report. Existing interior bents catch large amounts of debris, including logs, during significant rain events.

The current bridge will remain in place to carry traffic until the new bridge is constructed. When the new bridge is complete, traffic will be shifted onto it and the old bridge will be taken down. The superstructure of the current bridge will be removed by cutting it up and lifting out the pieces by crane. The substructure will be cut and removed by crane. The current bridge has 4 bents in the Smith River channel. Bridge removal work will progress from a causeway. Demolition will occur after construction of the new bridge is complete. Rock causeways will be used during demolition. It is anticipated these causeways will be in place for two months since there are three bents that will need to be removed using the causeways to position the equipment. The fourth bent in the Smith River channel should be able to be removed from land. Partial removal of rip rap associated with the current bridge may be needed.

The new bridge will have 5 spans, with 1 at 105 feet, 3 at 115 feet, and 1 at 85 feet. This arrangement calls for 2 bents to be placed in the waters of the Smith River. Causeways are anticipated to be installed for 6 weeks for each bent that is in the water during construction. This timeframe includes construction of the causeways. Causeways will be installed to block no more than 50 % of the channel. Rip rap will be used along both banks for stabilization. Earthwork will be required at each end of the bridge to achieve the desired road grade. This work will generally consist of excavation at the northwest end of the bridge and fill at the southeast end. The 100-year Water Surface Elevation will be approximately 18 feet above the causeway.

The staging area for equipment and materials used during project construction will likely be in the northeast quadrant of the Action Area.

4.2 Conservation Measures

The conservation measures outlined below will be incorporated into the design and construction of this structure. These measures will help to avoid and minimize effects to the Smith River and the Roanoke Logperch and James Spinymussel.

NCDOT will adhere to Design Standards in Sensitive Watersheds described in 15A NCAC 04B.0124.

Special procedures will also be used for clearing and grubbing, grading operations, seeding and mulching, and staged seeding within the project.

- Clearing and Grubbing
  In areas identified as Environmentally Sensitive Areas, the Contractor may perform clearing operations, but not grubbing operations until immediately prior to beginning grading operations as described in Article 200-1 of the Standard Specifications. Only clearing operations (not grubbing) shall be allowed in this buffer zone until immediately prior to beginning grading operations. Erosion control devices shall be installed immediately following the clearing operation.

- Grading
  Once grading operations begin in identified Environmentally Sensitive Areas, work shall progress in a continuous manner until complete. All construction within these areas shall progress in a continuous manner such that each phase is complete and areas are permanently stabilized prior to beginning of next phase. Failure on the part of the contractor to complete any phase of construction in a continuous manner in Environmentally Sensitive Areas will be just cause for the Engineer to direct the suspension of work in accordance with Article 108-7 of the Standard Specifications.

- Seeding and Mulching
  Seeding and mulching shall be performed in accordance with Section 1660 of the Standard Specifications and vegetative cover sufficient to restrain erosion shall be installed immediately following grade establishment. Seeding and mulching shall be performed on the areas disturbed by construction immediately following final grade establishment. No appreciable time shall lapse into the contract time without stabilization of slopes, ditches and other areas within the Environmentally Sensitive Areas.

- Stage Seeding
  The work covered by this section shall consist of the establishment of a vegetative cover on cut and fill slopes as grading progresses. Seeding and mulching shall be done in stages on cut and fill slopes that are greater than 20 feet in height measured along the slope, or greater than 2 acres in area. Each stage shall not exceed the limits stated above.

All applicable practices from the following documents will be used during project design and construction: Erosion and Sediment Control Design and Construction Manual (NCDOT 2015); Stormwater Best Management Practices Toolbox (NCDOT 2014); and Best Management Practices for Construction and Maintenance Activities (NCDOT 2003).

No direct discharge of deck drains over water will be allowed. Discharge from the deck drains will be directed to dissipator pads located between the toe of the rip rap stabilization and the water's edge.

Project design calls for a reduction in the number of bents within the Smith River channel to be reduced from 4 to 2 bents.

5.0 Effects Analysis

Project-related threats to the Roanoke Logperch and James Spinymussel can be separated into direct, indirect, and cumulative effects. Direct effects refer to consequences that are directly attributed to the construction of the project, such as land clearing, stream channelization, and erosion. Indirect effects are those effects that are caused by, or will result from, the proposed action and are later in time, but are still reasonably certain to occur. Cumulative effects are those effects of future State or private activities, not involving federal activities, that are reasonably certain to occur within the action area of the federal action subject to consultation [50 CFR

§402.02]. Potential direct, indirect, and cumulative effects to the Roanoke Logperch and James Spinymussel which may result from the project are discussed here.

Project construction such as bridge replacement can also result in beneficial species effects. Removal of existing instream bents and concrete slope protection can stabilize and improve habitats that were previously unsuitable.

5.1 Direct Effects

While instream surveys have not documented the presence of Roanoke Logperch or James Spinymussels at the project location, their presence at the project site cannot be ruled out. Direct effects on the Roanoke Logperch may be caused by increased sedimentation due to erosion during and immediately after construction. Increased sedimentation can affect the species by clogging gills, interfering with feeding, and burying eggs. However, implementation of the conservation measures outlined in Section 4.2 will significantly decrease the potential for sedimentation and its potential effects on the Roanoke Logperch. Proper installation and maintenance of the erosion control measures will reduce the potential sedimentation effects to an insignificant level.

The placement of rock causeways in the Smith River and the placement of rip rap along the stream banks for bank stabilization has the potential to crush Roanoke Logperch individuals, crush eggs of the species, and bury prey items such as aquatic insects. Due to the high mobility of individuals, the potential for an individual Roanoke Logperch to be crushed by construction related activities is very low and therefore discountable.

The sources of potential direct effects on the James Spinymussel are the same as those discussed above for the Roanoke Logperch. Increased sedimentation can clog mussel siphons and completely bury individuals if enough sediment accumulation occurs. Individual mussels lack the mobility of fish and are at greater risk of being crushed by the installation of rock causeways or rip rap if they are present at the time of these activities. In addition to the potential direct effects on the mussels themselves, the increased sedimentation and rock placement may have an effect on the host fish of James Spinymussel in the same manner as described for the Roanoke Logperch. Based on stream flow conditions, a 2001 mussel survey, and distances to known James Spinymussel records, the potential for this species to be present in the project construction area is very low. Therefore, the likelihood of any direct effect on the James Spinymussel is discountable.

5.2 Indirect Effects

Indirect effects of the bridge replacement are likely to be minor and temporary. Flow patterns may be altered during construction and could cause a change in erosion and sedimentation levels in the Smith River. However, given the already highly regulated flow conditions in the Action Area, any minor alterations in flow patterns would be insignificant.

The reduction of the number of bridge bents currently in the Smith River will have a long-term beneficial effect on the Roanoke Logperch and James Spinymussel. By reducing the number of

bents in the stream, the potential for the bridge to collect debris is reduced. Debris accumulation can cause disruptions in flow patterns which have the potential to redirect flow onto stream banks resulting in bank erosion and increased sedimentation. The size and amount of debris accumulation may necessitate the use of heavy equipment to remove it and depending on where the equipment is operated from, there is potential for erosion and runoff from the equipment location. Decreasing debris accumulation reduces the need for and the frequency of such removal activities.

5.3 Cumulative Effects

NCDOT is not aware of any other projects planned in the action area. There should be no cumulative effects of this project.

6.0 Effect Determinations

6.1 Effect Determination for Listed Species

6.1.1 No Effect Determinations for Listed Species

A visual survey conducted for Smooth Coneflower on June 6, 2018 did not detect the species in the project Action Area. A review of the NCNHP records on April 16, 2018 indicated no known occurrences within 1.0 miles of the Action Area. Completion of this project will not affect Smooth Coneflower.

6.1.2 May Affect; Not Likely to Adversely Affect Determinations for Listed Species

Records for the James Spinymussel in North Carolina exist from the Smith River approximately 9 stream miles downstream of the Action Area in the Dan River. A mussel survey on November 14, 2001 indicated that instream habitat for the species was present in the project Action Area. However, no evidence of any species of freshwater mussels was observed. In addition, the highly variable and controlled flow pattern of the Smith River through the Action Area creates an inhospitable (as detailed in Section 3.0) setting for native mussel species. Although the presence of the species in the Action Area cannot be completely ruled out, the distances to current, known records for the species and the highly variable flow conditions in the Smith River within the Action Area, suggest the likelihood of the species presence in the Action Area is very low, and therefore the potential effects to the species are discountable.

The Roanoke Logperch has been documented in in the past from the Smith River above the Martinsville Dam in Virginia (Roberts et al 2013), upstream from the project location, and from the Smith River in North Carolina slightly over one stream mile downstream of the project location. However, due to the highly regulated flow conditions within the Smith River in the Action Area as outlined in Section 3.0 of this assessment, and the isolation of the Action Area from downstream populations by a dam, it is not reasonably certain that the species occurs within the Action Area. Given that the species is not reasonably certain to occur within the Action Area combined with the implementation of the conservation measures outlined in Section 4.2, potential project related effects to the Roanoke Logperch will be discountable.

6.2 Effect Determination for Critical Habitat

The project location is not within Critical Habitat for the Roanoke Logperch, James Spinymussel, or Smooth Coneflower. Therefore, Critical Habitat will not be affected by completion of the proposed project.

7.0 References

Anderson, G.B., J.H. Roberts, P.L. Angermeier. 2013. Monitoring of Endangered Roanoke Logperch in Smith River Upstream of Philpott Reservoir. Project report to U.S. Army Corps of Engineers, Wilmington, NC.

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Orth, Donald. 2004. Influences of Fluctuating Releases on Stream Fishes and Habitat in the Smith River, below Philpott Dam. Final Report. Virginia Department of Game and Inland Fisheries, Richmond, VA.

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Appendix A

Figures

USGS 7.5 Minute Quadrangle, NORTHWEST EDEN, NC

Prepared By: RK&K	Prepared For: STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION	BRIDGE # 168 ON NC14, NC 87 OVER SMITH RIVER BR-0044 ROCKINGHAM COUNTY	Date: September 2019 Scale 0 200 Feet Job No. BR-0044 Drawn by: GSM KNM	**Figure 1**

Checked by:

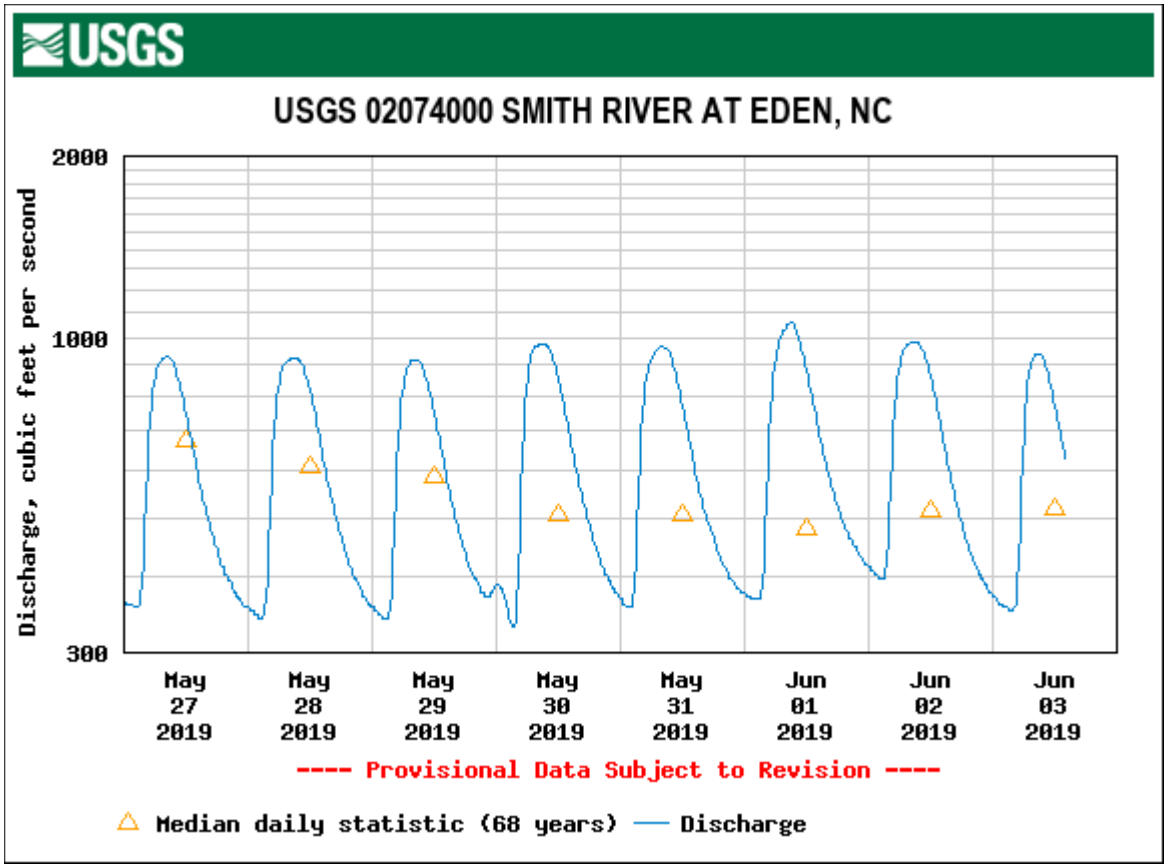

USGS
USGS 02074000 SMITH RIVER AT EDEN, NC
Discharge, cubic feet per second
2000
1000
300
May 27 2019
May 28 2019
May 29 2019
May 30 2019
May 31 2019
Jun 01 2019
Jun 02 2019
Jun 03 2019
---- Provisional Data Subject to Revision ----
Median daily statistic (68 years)
Discharge

Figure 2

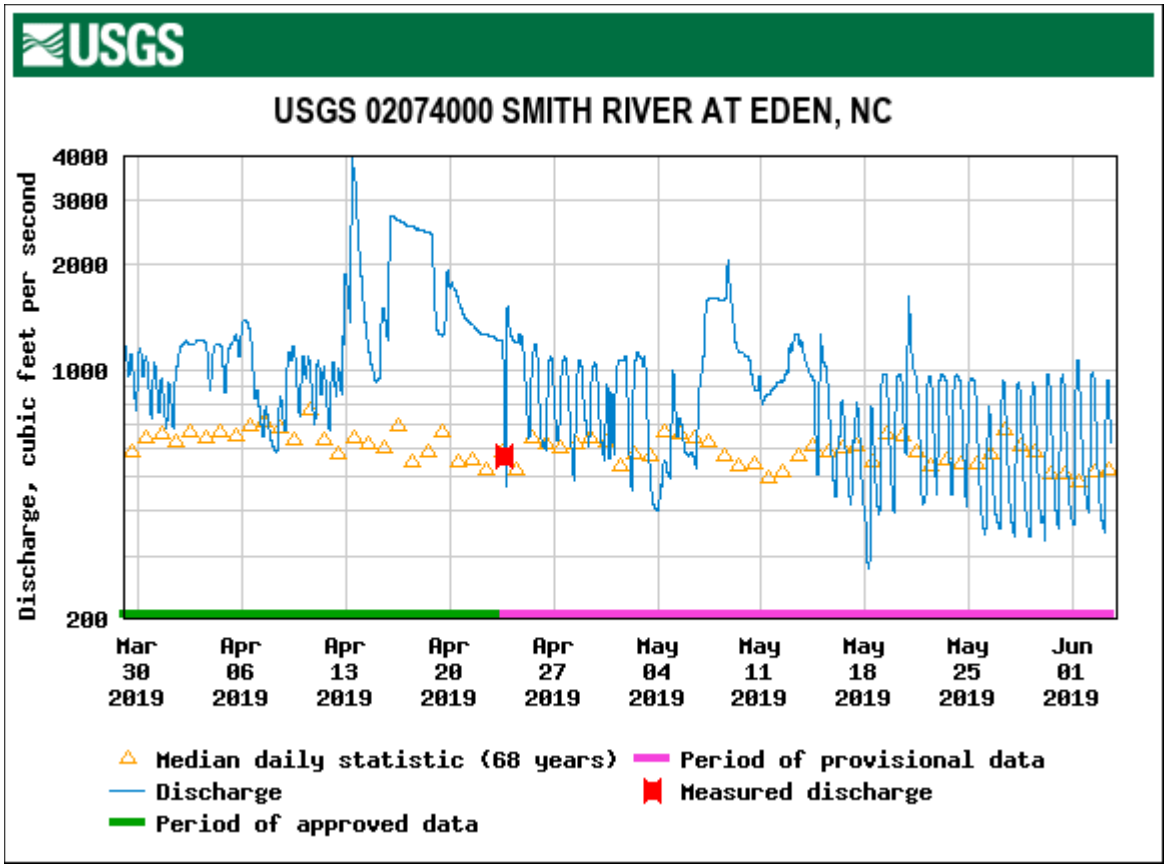
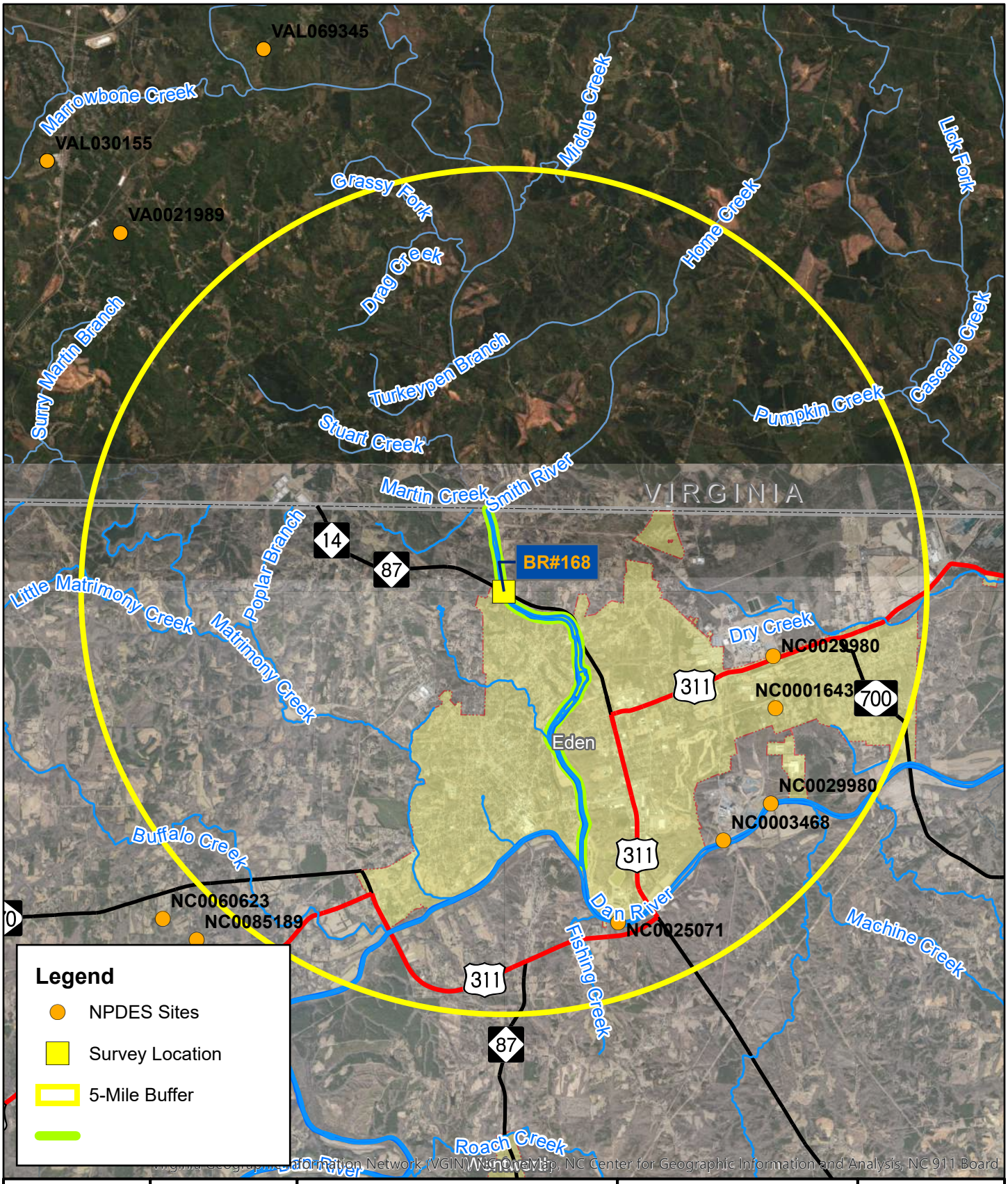

USGS
USGS 02074000 SMITH RIVER AT EDEN, NC
Discharge, cubic feet per second
4000
3000
2000
1000
200
Mar 30 2019
Apr 06 2019
Apr 13 2019
Apr 20 2019
Apr 27 2019
May 04 2019
May 11 2019
May 18 2019
May 25 2019
Jun 01 2019
Median daily statistic (68 years)
Discharge
Period of approved data
Period of provisional data
Measured discharge

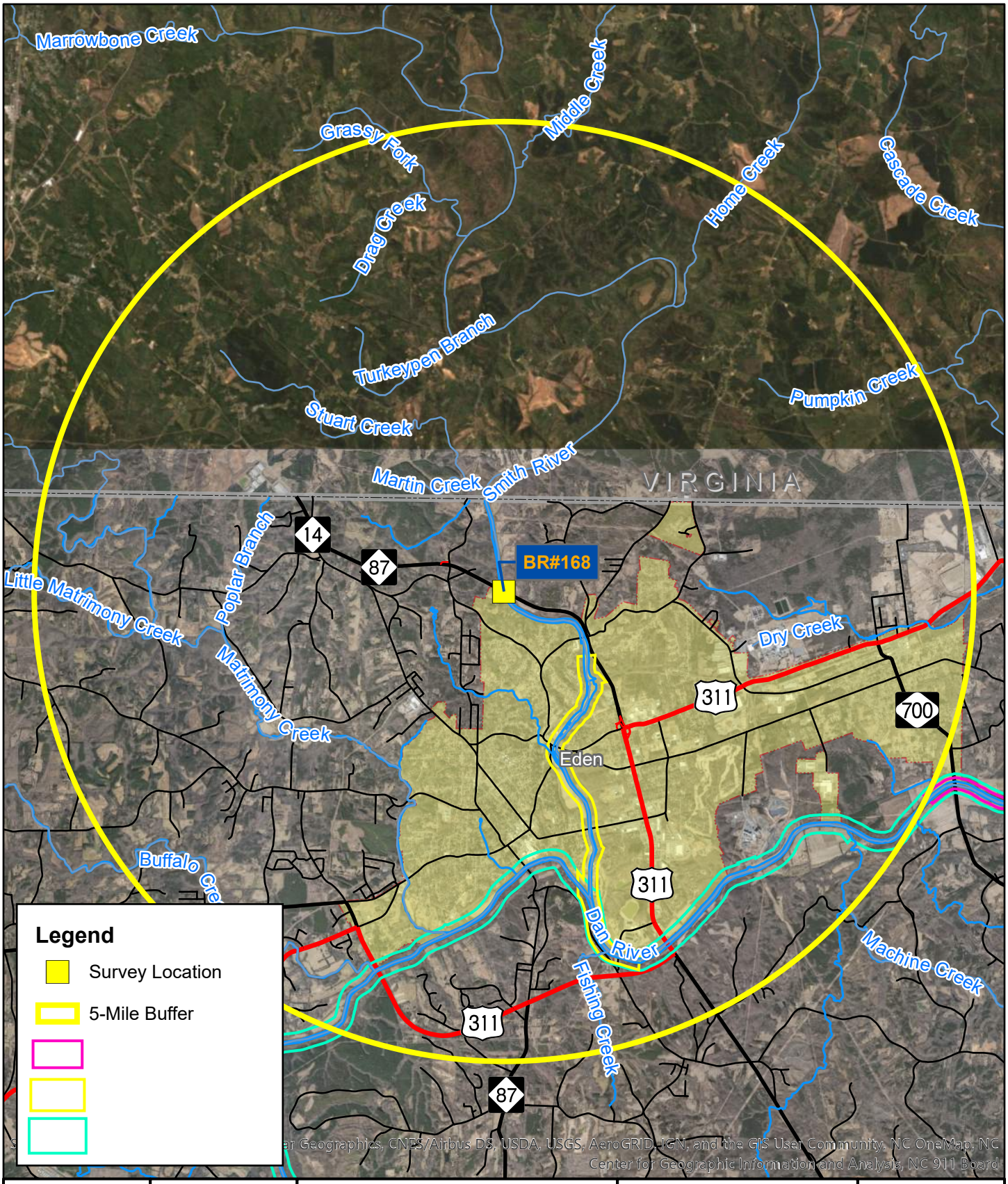
Figure 3



Virginia Geographic Information Network (VGIN), NCOneMap, NC Center for Geographic Information and Analysis, NC 911 Board

Prepared By: RK&K	Prepared For: NC Department of Transportation	**NPDES Dischargers and 303(d) Listed Streams** BRIDGE # 168 ON NC14, NC 87 OVER SMITH RIVER BR-0044 ROCKINGHAM COUNTY	Date: September 2019 Scale 0 1 Miles Job No. BR-0044 Drawn by: GSM KNM	**Figure 4**

Checked by:



Prepared By: RK&K	Prepared For: State of North Carolina Department of Transportation	**NC NHP Element Occurrence** BRIDGE # 168 ON NC14, NC 87 OVER SMITH RIVER BR-0044 ROCKINGHAM COUNTY	Date: September 2019 Scale 0 1 Miles Job No. BR-0044 Drawn by: GSM KNM	**Figure 5**

Checked by:

Appendix B

Design Plans

Appendix B: Plan Sheet 1

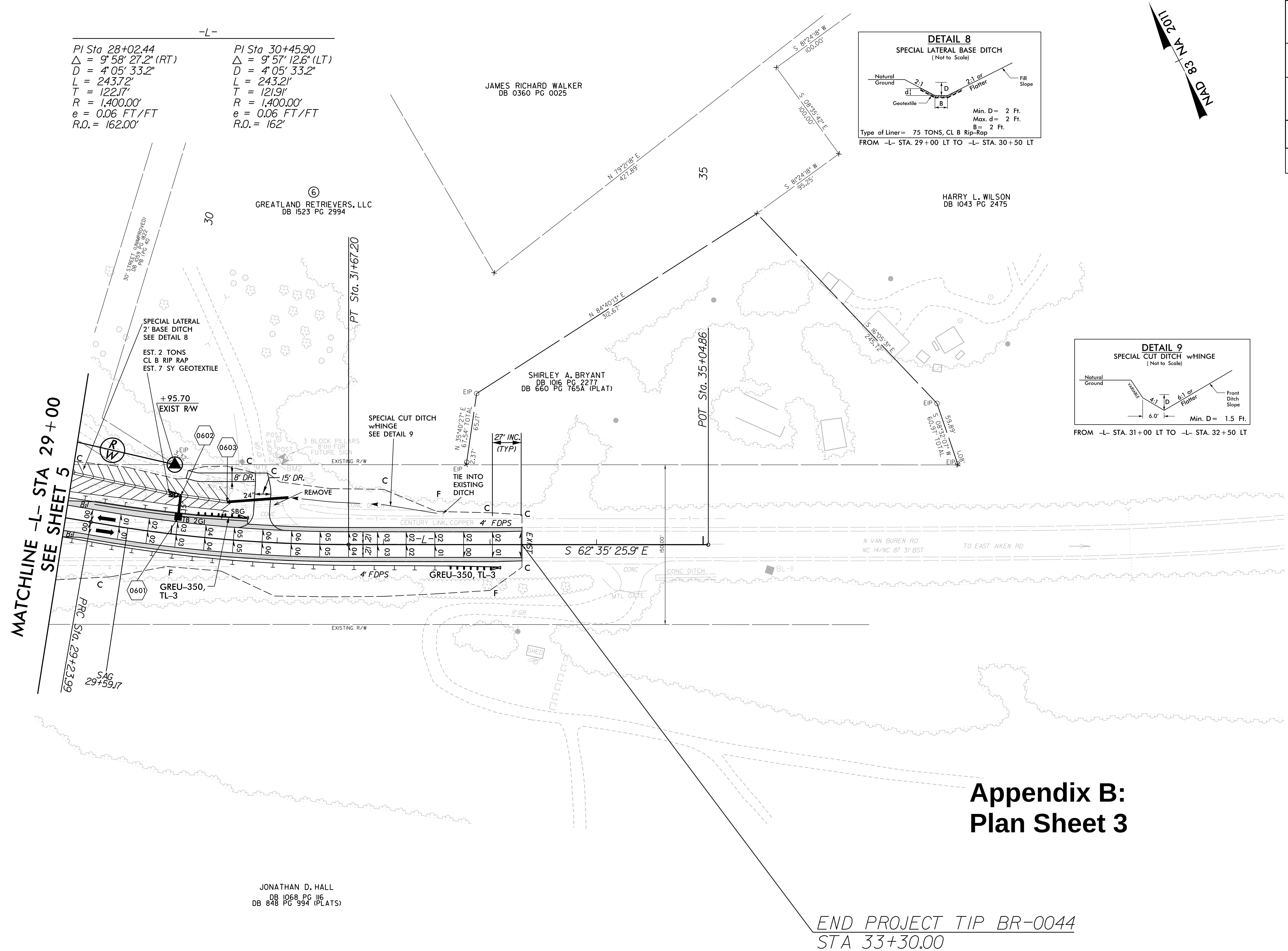
Appendix B: Plan Sheet 2

PROJECT REFERENCE NO.	SHEET NO.
BR-0044	6
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

Prepared in the Office of: AECOM
NC FIRM LICENSE No. F-0342
701 Corporate Center Drive, Suite 475
Raleigh, NC 27607
(919) 854-6200 · (919) 854-6259 (FAX)

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



Appendix B: Plan Sheet 3

FOR -L- PROFILE SEE SHEET 8

REVISIONS

5/14/99

4/15/2019
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Appendix C

Detailed Species Information

Detailed Listed Species Information for BR-0044; The Replacement of Bridge 168 over the Smith River in Rockingham County, North Carolina

1.0 Roanoke Logperch (*Percina rex*)

1.1 Characteristics

The Roanoke Logperch is a large darter, growing to a maximum length of 165 mm. The lateral portions of the fish are covered with vertically elongate blotches (8-11) and dark vermiculations are interspersed between dorsal saddles. Its' snout is elongate and conical. The fins are strongly speckled, and the first dorsal fin contains an orange band, particularly vivid in males. Spawning occurs during April-May in deep runs underlain by gravel. As with other *Percina* species, larval drift probably represents an essential dispersal and recolonization mechanism. This species matures at 2-3 years old and has a lifespan of approximately 6.5 years.

1.2 Distribution and Habitat Requirements

The Roanoke Logperch is found in the Roanoke River Basin: Rockingham County (Dan River, Mayo River, Smith River, and Big Beaver Island Creek) and potentially portions of the Dan River and tributaries within Stokes, Caswell, and Forsyth Counties. Adult Roanoke Logperch typically inhabit medium to large sized, warm, clear streams and occupy riffles, runs, and pools containing sand, gravel, or boulder. Young-of-year congregate in mixed-species schools in shallow, margin habitat underlain by sand and gravel. Roanoke Logperch utilize their snout to overturn gravel to forage on benthic aquatic macroinvertebrates.

1.3 Threats to Roanoke Logperch

Roanoke Logperch populations are threatened by dams and reservoirs, stream channelization, woody debris loss, non-point source pollution caused by urbanization, agricultural, and silvicultural activities, toxic spills and toxic point source discharges, and water withdrawals. These threats are present throughout the historic range of the species.

Construction of large impoundments in the Roanoke River Basin in the 1950's and 1960's (Roanoke Rapids, Gaston, Kerr, Leesville, Smith Mountain, and Philpott Reservoirs) may have been the cause of significant declines of Roanoke Logperch due to the massive habitat loss for the species associated with the construction of these reservoirs. These impoundments disrupted the fish's ability to move within its historic range resulting in smaller, isolated (physically and genetically) populations. Small, isolated populations are more at risk of being eliminated by single events. These events could be natural, such as flooding or drought, or anthropogenically influenced such as toxic spills. One such toxic spill occurred in Virginia in 2009 in Cascade Creek less than one mile from the North Carolina state line. Approximately 10,000 fish were killed including 2 Roanoke Logperch.

Non-point sources of pollution and siltation can impact aquatic species, including the Roanoke Logperch. Stormwater runoff from lawns, parking lots, streets and other impervious surfaces

carry nutrients, oil, metals, and other pollutants into the upper Roanoke River Basin (USFWS 1992a). Siltation is a threat to the species throughout its historic range. Heavy silt deposition reduces habitat heterogeneity and primary productivity and increases egg and larval mortality. It may also impact the macrobenthic communities upon which the Roanoke Logperch rely. Excessive siltation triggered by poor agricultural and logging practices has been problematic in the Nottoway River watershed in the past (USFWS 1992).

2.0 James Spinymussel (*Parvaspina collina*)

2.1 Characteristics

The James Spinymussel was first described in 1837. This species is a small freshwater mussel that is slightly less than three inches in length. Young mussels can have three spines found on their shells and are shinny and yellow in color. The shells of young mussels are subrhomboid with an obliquely subtruncated posterior. Older mussels are dark brown, and exhibit pronounced growth rings and the spines are typically absent or reduced to small bumps. As the shell grows, it also becomes more elliptical in shape, and develops a rounded posterior. The left valve has two thick pseudocardinal and two thin lateral teeth where the right valve contains one of each. Shells have a thicker anterior end and thin toward the posterior. The foot and mantle of adults are noticeably orange, and nacre is peach to salmon colored towards the anterior end.

2.2 Distribution and Habitat Requirements

It was once found throughout the main stem of the James River and all of its major tributaries upstream of Richmond, Virginia. The species has experienced a precipitous decline over the past two decades and now exists only in small, headwater tributaries of the upper James River Basin in Virginia and West Virginia and the upper Roanoke River drainage of Virginia and North Carolina. These sites include the Craig Creek drainage - Craig Creek, Johns Creek, Dicks Creek and Patterson Creek in Craig and Botetourt Counties, VA. The other sites are Potts Creek - Monroe County, WV and Craig and Alleghany Counties, VA, Pedlar River - Amherst County, VA, Mechums River - Albemarle County, VA, Moormans River - Albemarle County, VA, Rocky Run (Moormans River) - Albemarle County, VA, and Catawba Creek - Botetourt County, VA.

The James Spinymussel is found in waters with slow to moderate current and relatively hard water on sand and mixed sand-gravel substrates that are free from silt. Current stream width at these sites varies from 10 to 75 feet with a water depth of 0.5 to three feet. Historic sites on the James River were much wider, up to 165 feet across.

2.3 Threats to James Spinymussel

The primary reason for its decline is habitat loss and modification. Threats to this species include siltation, invasion of the non-native Asian Clam (*Corbicula fluminea*), impoundment of waterways, water pollution, stream channelization, sewage discharge, agricultural runoff

including pesticides and fertilizers, poor logging and road/bridge construction practices, and discharge of chlorine.

Siltation from agricultural and forestry operations and road construction is significant in contributing to water quality problems. Since mussels are sedentary, they are unable to move long distances to more suitable areas in response to heavy siltation. Human activities often create excessively heavy silt loads that can have severe effects on mussels. Suspended sediment can also clog the gills of filter feeding mussels and suffocate them—therefore mussels respond by closing their valves. Overall, siltation can severely stress mussels and lead to chronic effects.

The invasion of the Asian Clam also poses a serious threat to James Spinymussels. The Asian Clam, which can achieve high densities and expand rapidly, can increase competition with James Spinymussels and decrease food supply for native bivalves. Disturbance of watersheds also plays a role in the expansion of the Asian Clam. Since the Asian Clam is hermaphroditic, requires no fish host, and spawns twice a year, it may be competitively superior to native mussels in disturbed habitats.

Impoundments on rivers in the Southeast have also been responsible for the decline of many mussel populations. Closure of dams changes habitat—depth increases, flow decreases, and silt accumulates on the bottom. Fish communities exchange and host fish species may be eliminated. Mussel communities also change as species requiring clean gravel and sand substrate are replaced by silt-tolerant species.

Pollution of inland waters also affects the James Spinymussel. Municipal, industrial, and agricultural pollution have all contributed to reducing various mussel populations in several locations in the Southeast. Some populations have even been extirpated by pollutants including effluent from chlor-alkali plants, fly ash and sulfuric acid spills, acid mine drainage, and organic wastes. It was found that insecticides also have significant effects on mussels and chlorinated effluent from sewage treatment plants can affect the diversity and abundance of mollusks. Acid rain may also pose a threat to Atlantic drainage mussel populations, especially those inhabiting poorly buffered systems.

3.0 Smooth Coneflower

3.1 Characteristics

Smooth Coneflower is a perennial herb that grows up to 1.5 meters tall from a vertical root stock. The stems are typically smooth, with few leaves. The basal leaves are the largest, reaching 20 cm long and are elliptical to broadly lanceolate shaped. The flower heads are typically solitary, roughly 5 to 8 cm long, drooping, with light pink to purplish ray flowers. Disk flowers are approximately 5 mm long and have tubular purple corollas with generally erect short, triangular teeth. Flowering occurs from May through July.

3.2 Distribution and Habitat Requirements

Smooth Coneflower is endemic to the Piedmont or Mountain physiographic provinces. It is typically found in meadows, open woodlands, the ecotonal regions between meadows and woodlands, cedar barrens, dry limestone bluffs, clear cuts, and roadside and utility rights-of-way (ROW). In North Carolina, the species normally grows in magnesium- and calcium- rich soils associated with gabbro and diabase parent material, and typically occurs in Iredell, Misenheimer, and Picture soil series. It grows best where there is abundant sunlight, little competition in the herbaceous layer, and periodic disturbances (e.g., regular fire regime, well-timed mowing, careful clearing) that prevents encroachment of shade-producing woody shrubs and trees.

3.3 Threats to Species

Smooth Coneflower is threatened throughout its range by the suppression of fire and by the ecological succession that occurs in areas not burned on a regular basis. Additional threats include timber operations, intensive utility ROW maintenance, and residential, commercial, and industrial development.

References

North Carolina Department of Transportation (NCDOT). Connect NCDOT - Guidance and Procedures_T&E Animal Habitat Descriptions Mar_6_2015. https://connect.ncdot.gov/resources/Environmental/Compliance%20Guides%20and%20Procedures/TE%20Animal%20Habitat%20Descriptions%20Mar_6_2015.pdf

North Carolina Wildlife Resources Commission. 2019. https://www.ncwildlife.org/Learning/Species/Fish/Roanoke-Logperch (May 2019)

Roberts, J. H., P. L. Angermeier, E. M. Hallerman. 2014. Extensive dispersal of Roanoke Logperch (*Percina rex*) inferred from genetic marker data. Ecology of Freshwater Fish 25:1-16.

U.S. Fish and Wildlife Service. 1990. James Spinymussel (*Pleurobema collina*) Recovery Plan. Newton Corner, MA.

U.S. Fish and Wildlife Service. 1992. Roanoke Logperch (*Percina rex*) Recovery Plan. Newton Corner, MA.

U.S. Fish and Wildlife Service. 1995. Smooth Coneflower Recovery Plan. Atlanta, GA. 31 pp.

U.S. Fish and Wildlife Service. 2003. James Spinymussel fact sheet. Gloucester, VA.

U.S. Fish and Wildlife Service. 2010(a). Roanoke Logperch (*Percina rex*) Species Profile. Available: https://www.fws.gov/northeast/pdf/RoanokeLogperch.pdf. (March 2019)

U.S. Fish and Wildlife Service. 2010(b). Smooth Coneflower (*Echinacea laevigata*). 5-year Review: Summary and Evaluation. Raleigh, NC.

U.S. Fish and Wildlife Service. 2019. James Spinymussel (*Pleurobema collina*) Species Profile, Environmental Online System (ECOS). Available: https://ecos.fws.gov/ecp0/profile/speciesProfile?sId=2212. (March 2019).

Permit Package

U.S. ARMY CORPS OF ENGINEERS
WILMINGTON DISTRICT

Action Id. **SAW-2018-01859** County: **Rockingham** U.S.G.S. Quad: **NC-Northwest Eden**

GENERAL PERMIT (REGIONAL AND NATIONWIDE) VERIFICATION

Permittee: **NCDOT Environmental Analysis Unit**
Attn: Michael Turchy
Address: **1598 Mail Service Center**
Raleigh, NC 27699-1598

Size (acres) **~7** Nearest Town **Eden**
Nearest Waterway **Smith River** River Basin **Roanoke**
USGS HUC **03010103** Coordinates **36.528038, -79.767915**
Location description: **The BR-0044 project site is located on NC Highway 14/87 over the Smith River at NCDOT Bridge 168 near Eden, Rockingham County, North Carolina**

Description of projects area and activity: **This verification authorizes the discharge of clean fill material associated with replacing an existing bridge, known as BR-0044. The project includes permanent impacts to 80 linear feet (0.01 acre) of stream channel for a culvert extension, 10 linear feet (0.01 acre) of stream channel for rip rap bank stabilization, and an additional 0.003 acre of stream impacts for bridge piers, as well as temporary impacts to a total of 290 linear feet (0.48 acre) of stream channel for construction access including workpad/causeways and dewatering**

Applicable Law(s): ☒ Section 404 (Clean Water Act, 33 USC 1344)
☐ Section 10 (Rivers and Harbors Act, 33 USC 403)

Authorization: **NWP 14. Linear Transportation Projects**

SEE ATTACHED NWP GENERAL, REGIONAL, AND/OR SPECIAL CONDITIONS

Your work is authorized by the above referenced permit provided it is accomplished in strict accordance with the enclosed Conditions, your application signed and dated 10/29/2019, and additional information submitted via email on 11/18/2019, and the enclosed plans Permit Drawing Sheets 1 through 3 and Permit Drawing Sheets 4 through 15 (Revised 11/18/2019). Any violation of the attached conditions or deviation from your submitted plans may subject the permittee to a stop work order, a restoration order, a Class I administrative penalty, and/or appropriate legal action.

This verification will remain valid until the expiration date identified below unless the nationwide authorization is modified, suspended or revoked. If, prior to the expiration date identified below, the nationwide permit authorization is reissued and/or modified, this verification will remain valid until the expiration date identified below, provided it complies with all requirements of the modified nationwide permit. If the nationwide permit authorization expires or is suspended, revoked, or is modified, such that the activity would no longer comply with the terms and conditions of the nationwide permit, activities which have commenced (i.e., are under construction) or are under contract to commence in reliance upon the nationwide permit, will remain authorized provided the activity is completed within twelve months of the date of the nationwide permit's expiration, modification or revocation, unless discretionary authority has been exercised on a case-by-case basis to modify, suspend or revoke the authorization.

Activities subject to Section 404 (as indicated above) may also require an individual Section 401 Water Quality Certification. You should contact the NC Division of Water Resources (telephone 919-807-6300) to determine Section 401 requirements.

For activities occurring within the twenty coastal counties subject to regulation under the Coastal Area Management Act (CAMA), prior to beginning work you must contact the N.C. Division of Coastal Management.

This Department of the Army verification does not relieve the permittee of the responsibility to obtain any other required Federal, State or local approvals/permits.

If there are any questions regarding this verification, any of the conditions of the Permit, or the Corps of Engineers regulatory program, please contact **David E. Bailey at (919) 554-4884, Ext. 30or David.E.Bailey2@usace.army.mil**.

Corps Regulatory Official: _____ Date: 2019.11.19 15:15:52 -05'00' Date: **11/19/2019**

Expiration Date of Verification: **03/18/2022**

SPECIAL CONDITIONS

1. **In order to compensate for impacts associated with this permit, mitigation shall be provided in accordance with the provisions outlined on the most recent version of the attached Compensatory Mitigation Responsibility Transfer Form. The requirements of this form, including any special conditions listed on this form, are hereby incorporated as special conditions of this permit authorization.**

2. **This USACE permit does not authorize you to take a threatened or endangered species, in particular, the Northern Long-eared Bat (NLEB) (*Myotis septentrionalis*). In order to legally take a listed species, you must have separate authorization under the Endangered Species Act (ESA) (e.g., a Biological Opinion (BO) under the ESA, Section 7, with "incidental take" provisions with which you must comply). The U.S. Fish and Wildlife Service's (USFWS's) Programmatic BO titled "Northern Long-eared Bat (NLEB) Programmatic Biological Opinion for North Carolina Department of Transportation (NCDOT) Activities in Eastern North Carolina (Divisions 1-8)," dated March 25, 2015, and adopted on May 4, 2015, contains mandatory terms and conditions to implement the reasonable and prudent measures that are associated with "incidental take" that are specified in the BO. Your authorization under this USACE permit is conditioned upon your compliance with all the mandatory terms and conditions (incorporated by reference into this permit) associated with incidental take of the BO. Failure to comply with the terms and conditions associated with incidental take of the BO, where a take of the listed species occurs, would constitute an unauthorized take, and would also constitute non-compliance with your USACE permit. The USFWS is the appropriate authority to determine compliance with the terms and conditions of its BO and with the ESA.**

3. **Per the "Conservation Measures" proposed in the "Biological Assessment For Replacement of Bridge No. 168 on NC 14/87 Over the Smith River, Rockingham County, North Carolina", dated 9/27/2019, NCDOT shall adhere to the following conditions:**

    a. **Clearing and Grubbing: In areas identified as Environmentally Sensitive Areas, the Contractor may perform clearing operations, but not grubbing operations until immediately prior to beginning grading operations as described in Article 200-1 of the Standard Specifications. Only clearing operations (not grubbing) shall be allowed in this buffer zone until immediately prior to beginning grading operations. Erosion control devices shall be installed immediately following the clearing operation;**

    b. **Grading: Once grading operations begin in identified Environmentally Sensitive Areas, work shall progress in a continuous manner until complete. All construction within these areas shall progress in a continuous manner such that each phase is complete and areas are permanently stabilized prior to beginning of next phase. Failure on the part of the contractor to complete any phase of construction in a continuous manner in Environmentally Sensitive Areas will be just cause for the Engineer to direct the suspension of work in accordance with Article 108-7 of the Standard Specifications;**

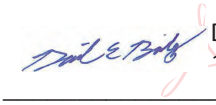
    c. **Seeding and Mulching: Seeding and mulching shall be performed in accordance with Section 1660 of the Standard Specifications and vegetative cover sufficient to restrain erosion shall be installed immediately following grade establishment. Seeding and mulching shall be performed on the areas disturbed by construction**

immediately following final grade establishment. No appreciable time shall lapse into the contract time without stabilization of slopes, ditches and other areas within the Environmentally Sensitive Areas;

d. Stage Seeding: The work covered by this section shall consist of the establishment of a vegetative cover on cut and fill slopes as grading progresses. Seeding and mulching shall be done in stages on cut and fill slopes that are greater than 20 feet in height measured along the slope, or greater than 2 acres in area. Each stage shall not exceed the limits stated above;

e. All applicable practices from the following documents will be used during project design and construction: Erosion and Sediment Control Design and Construction Manual (NCDOT 2015); Stormwater Best Management Practices Toolbox (NCDOT 2014); and Best Management Practices for Construction and Maintenance Activities (NCDOT 2003);

f. No direct discharge of deck drains over water will be allowed. Discharge from the deck drains will be directed to dissipator pads located between the toe of the rip rap stabilization and the water's edge.

Corps Regulatory Official:  Date: 2019.11.19 15:15:35 -05'00' Date: **11/19/2019**

Expiration Date of Verification: **3/18/2022**

The Wilmington District is committed to providing the highest level of support to the public. To help us ensure we continue to do so, please complete the Customer Satisfaction Survey located at http://corpsmapu.usace.army.mil/cm_apex/f?p=136:4:0.

Copy furnished:
April Norton, NCDEQ-DWR, 1617 Mail Service Center, Raleigh, NC 27699

Compensatory Mitigation Responsibility Transfer Form

Permittee: NCDOT Environmental Analysis Unit (Attn: Michael Turchy) **Action ID: SAW-2018-01859**
Project Name: NCDOT / BR-0044 / Bridge 168 / NC 14/87 / Eden / Rockingham County / transportation **County: Rockingham**

Instructions to Permittee: The Permittee must provide a copy of this form to the Mitigation Sponsor, either an approved Mitigation Bank or the North Carolina Division of Mitigation Services (NCDMS), who will then sign the form to verify the transfer of the mitigation responsibility. Once the Sponsor has signed this form, it is the Permittee's responsibility to ensure that to the U.S. Army Corps of Engineers (USACE) Project Manager identified on page two is in receipt of a signed copy of this form before conducting authorized impacts, unless otherwise specified below. If more than one mitigation Sponsor will be used to provide the mitigation associated with the permit, or if the impacts and/or the mitigation will occur in more than one 8-digit Hydrologic Unit Code (HUC), multiple forms will be attached to the permit, and the separate forms for each Sponsor and/or HUC must be provided to the appropriate mitigation Sponsors.

Instructions to Sponsor: The Sponsor must verify that the mitigation requirements (credits) shown below are available at the identified site. By signing below, the Sponsor is accepting full responsibility for the identified mitigation, regardless of whether or not they have received payment from the Permittee. Once the form is signed, the Sponsor must update the bank ledger and provide a copy of the signed form and the updated bank ledger to the Permittee, the USACE Project Manager, and the Wilmington District Mitigation Office (see contact information on page 2). The Sponsor must also comply with all reporting requirements established in their authorizing instrument.

Permitted Impacts and Compensatory Mitigation Requirements:

Permitted Impacts Requiring Mitigation* **8-digit HUC and Basin:** 03010103, Roanoke River Basin

Stream Impacts (linear feet)			Wetland Impacts (acres)			
Warm	Cool	Cold	Riparian Riverine	Riparian Non-Riverine	Non-Riparian	Coastal
80						

*If more than one mitigation sponsor will be used for the permit, only include impacts to be mitigated by this sponsor.

Compensatory Mitigation Requirements: **8-digit HUC and Basin:** 03010103, Roanoke River Basin

Stream Mitigation (credits)			Wetland Mitigation (credits)			
Warm	Cool	Cold	Riparian Riverine	Riparian Non-Riverine	Non-Riparian	Coastal
160						

Mitigation Site Debited: NCDMS
(List the name of the bank to be debited. For umbrella banks, also list the specific site. For NCDMS, list NCDMS. If the NCDMS acceptance letter identifies a specific site, also list the specific site to be debited).

Section to be completed by the Mitigation Sponsor

Statement of Mitigation Liability Acceptance: I, the undersigned, verify that I am authorized to approve mitigation transactions for the Mitigation Sponsor shown below, and I certify that the Sponsor agrees to accept full responsibility for providing the mitigation identified in this document (see the table above), associated with the USACE Permittee and Action ID number shown. I also verify that released credits (and/or advance credits for NCDMS), as approved by the USACE, are currently available at the mitigation site identified above. Further, I understand that if the Sponsor fails to provide the required compensatory mitigation, the USACE Wilmington District Engineer may pursue measures against the Sponsor to ensure compliance associated with the mitigation requirements.

Mitigation Sponsor Name: NCDEQ DMS

Name of Sponsor's Authorized Representative: Beth Harmon

Beth Harmon — 11/19/2019

Signature of Sponsor's Authorized Representative **Date of Signature**

Conditions for Transfer of Compensatory Mitigation Credit:

- Once this document has been signed by the Mitigation Sponsor and the USACE is in receipt of the signed form, the Permittee is no longer responsible for providing the mitigation identified in this form, though the Permittee remains responsible for any other mitigation requirements stated in the permit conditions.
- Construction within jurisdictional areas authorized by the permit identified on page one of this form can begin only after the USACE is in receipt of a copy of this document signed by the Sponsor, confirming that the Sponsor has accepted responsibility for providing the mitigation requirements listed herein. For authorized impacts conducted by the North Carolina Department of Transportation (NCDOT), construction within jurisdictional areas may proceed upon permit issuance; however, a copy of this form signed by the Sponsor must be provided to the USACE within 30 days of permit issuance. NCDOT remains fully responsible for the mitigation until the USACE has received this form, confirming that the Sponsor has accepted responsibility for providing the mitigation requirements listed herein.
- Signed copies of this document must be retained by the Permittee, Mitigation Sponsor, and in the USACE administrative records for both the permit and the Bank/ILF Instrument. It is the Permittee's responsibility to ensure that the USACE Project Manager (address below) is provided with a signed copy of this form.
- If changes are proposed to the type, amount, or location of mitigation after this form has been signed and returned to the USACE, the Sponsor must obtain case-by-case approval from the USACE Project Manager and/or North Carolina Interagency Review Team (NCIRT). If approved, higher mitigation ratios may be applied, as per current District guidance and a new version of this form must be completed and included in the USACE administrative records for both the permit and the Bank/ILF Instrument.

Comments/Additional Conditions: A letter from **NCDMS**, confirming they are willing and able to accept the applicant's compensatory mitigation responsibility, dated **9/4/2019** was included with the preconstruction notification.

This form is not valid unless signed below by the USACE Project Manager and by the Mitigation Sponsor on Page 1. ***Once signed, the Sponsor should provide copies of this form along with an updated bank ledger to: 1) the Permittee, 2) the USACE Project Manager at the address below, and 3) the Wilmington District Mitigation Office, Attn: Todd Tugwell, 3331 Heritage Trade Drive, Suite 105, Wake Forest, NC 27587 (email: todd.tugwell@usace.army.mil).*** Questions regarding this form or any of the permit conditions may be directed to the USACE Project Manager below.

USACE Project Manager: David E. Bailey
USACE Field Office: Raleigh Regulatory Office
US Army Corps of Engineers
3331 Heritage Trade Drive, Suite 105
Wake Forest, North Carolina 27587
Email: David.E.Bailey2@usace.army.mil

David E Bailey Date: 2019.11.19 15:15:20 -05'00'

USACE Project Manager Signature

11/19/2019

Date of Signature

Current Wilmington District mitigation guidance, including information on mitigation ratios, functional assessments, and mitigation bank location and availability, and credit classifications (including stream temperature and wetland groupings) is available at http://ribits.usace.army.mil

Determination of Jurisdiction:

A. ☒ **There are waters, including wetlands on the above described project area that may be subject to Section 404 of the Clean Water Act (CWA) (33 USC § 1344) and/or Section 10 of the Rivers and Harbors Act (RHA) (33 USC § 403). This preliminary determination is not an appealable action under the Regulatory Program Administrative Appeal Process (Reference 33 CFR Part 331). However, you may request an approved JD, which is an appealable action, by contacting the Corps district for further instruction. Please note, if work is authorized by either a general or nationwide permit, and you wish to request an appeal of an approved JD, the appeal must be received by the Corps and the appeal process concluded prior to the commencement of any work in waters of the United States and prior to any work that could alter the hydrology of waters of the United States.**

B. ☐ There are Navigable Waters of the United States within the above described project area subject to the permit requirements of Section 10 of the Rivers and Harbors Act (RHA) (33 USC § 403) and Section 404 of the Clean Water Act (CWA) (33 USC § 1344). Unless there is a change in the law or our published regulations, this determination may be relied upon for a period not to exceed five years from the date of this notification.

C. ☐ There are waters, including wetlands within the above described project area that are subject to the permit requirements of Section 404 of the Clean Water Act (CWA) (33 USC § 1344). Unless there is a change in the law or our published regulations, this determination may be relied upon for a period not to exceed five years from the date of this notification.

D. ☐ The jurisdictional areas within the above described project area have been identified under a previous action. Please reference jurisdictional determination issued __. Action ID: __.

Basis For Determination: <u>See the Preliminary Jurisdictional Determination form dated 11/19/2019.</u>

Remarks: None.

E. Attention USDA Program Participants

This delineation/determination has been conducted to identify the limits of Corps' Clean Water Act jurisdiction for the particular site identified in this request. The delineation/determination may not be valid for the wetland conservation provisions of the Food Security Act of 1985. If you or your tenant are USDA Program participants, or anticipate participation in USDA programs, you should request a certified wetland determination from the local office of the Natural Resources Conservation Service, prior to starting work.

F. Appeals Information (This information applies only to approved jurisdiction determinations as indicated in B and C above).

This correspondence constitutes an approved jurisdiction determination for the above described site. If you object to this determination, you may request an administrative appeal under Corps regulations at 33 CFR Part 331. Enclosed you will find a Notification of Appeal Process (NAP) fact sheet and request for appeal (RFA) form. If you request to appeal this determination you must submit a completed RFA form to the following address:

US Army Corps of Engineers
South Atlantic Division
Attn: Phillip Shannin, Review Officer
60 Forsyth Street SW, Room 10M15
Atlanta, Georgia 30303-8801
Phone: (404) 562-5137

In order for an RFA to be accepted by the Corps, the Corps must determine that it is complete, that it meets the criteria for appeal under 33 CFR part 331.5, and that it has been received by the Division Office within 60 days of the date of the NAP. Should you decide to submit an RFA form, it must be received at the above address by **<u>Not applicable</u>**.
It is not necessary to submit an RFA form to the Division Office if you do not object to the determination in this correspondence.

Corps Regulatory Official: _____ Date: 2019.11.19 15:14:32 -05'00'

<u>David E. Bailey</u>

Date of JD: **<u>11/19/2019</u>** Expiration Date of JD: **<u>Not applicable</u>**

ROY COOPER
Governor
MICHAEL S. REGAN
Secretary
LINDA CULPEPPER
Director

NORTH CAROLINA
Environmental Quality

November 20, 2019
Rockingham County
NCDWR Project No. 20191466
Replace Bridge No.168 on NC14/87
T.I.P. BR-0044
WBS # 67044.1.1

Mr. Phillip Harris
Environmental Analysis Unit
North Carolina Department of Transportation
1598 Mail Service Center
Raleigh, North Carolina, 27699-1598

APPROVAL of 401 WATER QUALITY CERTIFICATION with ADDITIONAL CONDITIONS

Dear Mr. Harris:

Approval is granted, in accordance with the conditions listed below, for the following impacts to replace Bridge No. 168 on NC 14/87 over Smith River in Rockingham County.

Stream Impacts in the Roanoke River Basin

Site	Temporary Impacts in Perennial Stream Due to Dewatering (linear feet)	Temporary Fill in Perennial Stream Due to Workpad/Causeway (linear feet)	Permanent Fill in Perennial Stream Due to Pipe (linear feet)	Permanent Fill in Perennial Stream Due to Bank Stabilization (linear feet)	Total Stream Impacts (linear feet)
S1	10	--	80	10	100
S2	--	280	--	--	280
Totals	**10**	**280**	**80**	**10**	**380**

Total Stream Impacts for Project: 380 linear feet

The project shall be constructed in accordance with your application dated and received October 29, 2019, with subsequent information received on November 19, 2019. After reviewing your application, it has been determined that these impacts are covered by General Water Quality Certification Number 4135. This certification corresponds to Nationwide Permit 14 issued by the Corps of Engineers.

Additionally, you should acquire any other federal, state or local permits before you proceed with your project including (but not limited to) Sediment and Erosion Control, Non-Discharge and Water Supply Watershed regulations. This approval will expire with the accompanying 404 permit.

This approval is valid solely for the purpose and design described in your application (unless modified below). Should your project change, you must notify the NCDWR and submit a new application. If the property is sold, the new owner must be given a copy of this Certification and approval letter and is thereby responsible for complying with all the conditions. If total wetland fills for this project (now or in the future) exceed one acre, or of total impacts to streams (now or in the future) exceed 300 linear feet, compensatory mitigation may be required as described in 15A NCAC 2H .0506 (h) (6) and (7). For this approval to remain valid, you must adhere to the conditions listed in the certification and any additional conditions listed below.

Conditions of Certification:
General Conditions

1. As a condition of this 401 Water Quality Certification, if bridge demolition occurs now or in the future, the bridge demolition must be accomplished in strict compliance with the most recent version of NCDOT's Best Management Practices for Construction and Maintenance Activities. [15A NCAC 02H .0507(d)(2) and 15A NCAC 02H .0506(b)(5)]

2. Riprap shall not be placed in the active thalweg channel or placed in the streambed in a manner that precludes aquatic life passage. Bioengineering boulders or structures should be properly designed, sized and installed. [15A NCAC 02H.0506(b)(2)]

3. The stream channel shall be excavated no deeper than the natural bed material of the stream, to the maximum extent practicable. Efforts must be made to minimize impacts to the stream banks, as well as to vegetation responsible for maintaining the stream bank stability. Any applicable riparian buffer impact for access to stream channel shall be temporary and be revegetated with native riparian species. [15A NCAC 02H.0506(b)(2)]

4. If concrete is used during construction, a dry work area shall be maintained to prevent direct contact between curing concrete and stream water. Water that inadvertently contacts uncured concrete shall not be discharged to surface waters due to the potential for elevated pH and possible aquatic life and fish kills. [15A NCAC 02B.0200]

5. During the construction of the project, no staging of equipment of any kind is permitted in waters of the U.S. or protected riparian buffers. [15A NCAC 02H.0506(b)(2)]

6. The dimension, pattern and profile of the stream above and below the crossing shall not be modified. Disturbed floodplains and streams shall be restored to natural geomorphic conditions. [15A NCAC 02H.0506(b)(2)]

7. The use of riprap above the Normal High-Water Mark shall be minimized. Any riprap placed for stream stabilization shall be placed in stream channels in such a manner that it does not impede aquatic life passage. [15A NCAC 02H.0506(b)(2)]

8. The Permittee shall ensure that the final design drawings adhere to the permit and to the permit drawings submitted for approval. [15A NCAC 02H .0507 (c) and 15A NCAC 02H .0506 (b)(2) and (c)(2)]

9. All work in or adjacent to stream waters shall be conducted in a dry work area. Approved BMP measures from the most current version of NCDOT Construction and Maintenance Activities manual such as sandbags, rock berms, cofferdams and other diversion structures shall be used to prevent excavation in flowing water. [15A NCAC 02H.0506(b)(3) and (c)(3)]

10. Heavy equipment shall be operated from the banks rather than in the stream channel to minimize sedimentation and reduce the introduction of other pollutants into the stream. [15A NCAC 02H.0506(b)(3)]

11. All mechanized equipment operated near surface waters must be regularly inspected and maintained to prevent contamination of stream waters from fuels, lubricants, hydraulic fluids, or other toxic materials. [15A NCAC 02H.0506(b)(3)]
12. No rock, sand or other materials shall be dredged from the stream channel except where authorized by this certification. [15A NCAC 02H.0506(b)(3)]

13. Discharging hydroseed mixtures and washing out hydroseeders and other equipment in or adjacent to surface waters is prohibited. [15A NCAC 02H.0506(b)(3)]

14. The Permittee and its authorized agents shall conduct its activities in a manner consistent with State water quality standards (including any requirements resulting from compliance with §303(d) of the Clean Water Act) and any other appropriate requirements of State and Federal law. If the NCDWR determines that such standards or laws are not being met (including the failure to sustain a designated or achieved use) or that State or federal law is being violated, or that further conditions are necessary to assure compliance, the NCDWR may reevaluate and modify this certification. [15A NCAC 02B.0200]

15. All fill slopes located in jurisdictional wetlands shall be placed at slopes no flatter than 3:1, unless otherwise authorized by this certification. [15A NCAC 02H.0506(b)(2)]

16. A copy of this Water Quality Certification shall be maintained on the construction site always. In addition, the Water Quality Certification and all subsequent modifications, if any, shall be maintained with the Division Engineer and the on-site project manager. [15A NCAC 02H .0507(c) and 15A NCAC 02H .0506 (b)(2) and (c)(2)]

17. The outside buffer, wetland or water boundary located within the construction corridor approved by this authorization, including all non-commercial borrow and waste sites associated with the project, shall be clearly marked by highly visible fencing prior to any land disturbing activities. Impacts to areas within the fencing are prohibited unless otherwise authorized by this certification. [15A NCAC 02H.0501 and .0502]

18. The issuance of this certification does not exempt the Permittee from complying with all statutes, rules, regulations, or ordinances that may be imposed by other government agencies (i.e. local, state, and federal) having jurisdiction, including but not limited to applicable buffer rules, stormwater management rules, soil erosion and sedimentation control requirements, etc.

19. The Permittee shall report any violations of this certification to the Division of Water Resources within 24 hours of discovery. [15A NCAC 02B.0506(b)(2)]

20. Upon completion of the project (including any impacts at associated borrow or waste sites), the NCDOT Division Engineer (or whomever is the authorized agent if a non-NCDOT project) shall complete and return the enclosed "Certification of Completion Form" to notify the NCDWR when all work included in the 401 Certification has been completed. [15A NCAC 02H.0502(f)]

21. Native riparian vegetation (i.e., trees and shrubs native to your geographic region) must be reestablished in the riparian areas within the construction limits of the project by the end of the growing season following completion of construction. [15A NCAC 02B.0506(b)(2)]

22. There shall be no excavation from, or waste disposal into, jurisdictional wetlands or waters associated with this permit without appropriate modification. Should waste or borrow sites, or access roads to waste or borrow sites, be in wetlands or streams, compensatory mitigation will be required since that is a direct impact from road construction activities. [15A NCAC 02H.0506(b)(3) and (c)(3)]

23. Erosion and sediment control practices must be in full compliance with all specifications governing the proper design, installation and operation and maintenance of such Best Management Practices to protect surface waters standards [15A NCAC 02H.0506(b)(3) and (c)(3)]

    a. The erosion and sediment control measures for the project must be designed, installed, operated, and maintained in accordance with the most recent version of the *North Carolina Sediment and Erosion Control Planning and Design Manual*.

b. The design, installation, operation, and maintenance of the sediment and erosion control measures must be such that they equal, or exceed, the requirements specified in the most recent version of the *North Carolina Sediment and Erosion Control Manual*. The devices shall be maintained on all construction sites, borrow sites, and waste pile (spoil) projects, including contractor-owned or leased borrow pits associated with the project.

c. For borrow pit sites, the erosion and sediment control measures must be designed, installed, operated, and maintained in accordance with the most recent version of the *North Carolina Surface Mining Manual*.

d. The reclamation measures and implementation must comply with the reclamation in accordance with the requirements of the Sedimentation Pollution Control Act.

24. Sediment and erosion control measures shall not be placed in wetlands or waters unless otherwise approved by this Certification. [15A NCAC 02H.0506(b)(3) and (c)(3)]

25. All sediment and erosion control devices shall be removed, and the natural grade restored within two (2) months of the date that the Division of Energy, Mining and Land Resources (DEMLR) or locally delegated program has released the specific area within the project. [15A NCAC 02H.0506(b)(3) and (c)(3)]

If you wish to contest any statement in the attached Certification you must file a petition for an administrative hearing. You may obtain the petition form from the office of Administrative hearings. You must file the petition with the office of Administrative Hearings within sixty (60) days of receipt of this notice. A petition is considered filed when it is received in the office of Administrative Hearings during normal office hours. The Office of Administrative Hearings accepts filings Monday through Friday between the hours of 8:00am and 5:00pm, except for official state holidays. The original and one (1) copy of the petition must be filed with the Office of Administrative Hearings.

The petition may be faxed, providing the original and one copy of the document is received by the Office of Administrative Hearings within five (5) business days following the faxed transmission.
The mailing address for the Office of Administrative Hearings is:

Office of Administrative Hearings
6714 Mail Service Center
Raleigh, NC 27699-6714
Telephone: (919) 431-3000, Facsimile: (919) 431-3100

A copy of the petition must also be served on DEQ as follows:

Mr. Bill F. Lane, General Counsel
Department of Environmental Quality
1601 Mail Service Center

This letter completes the review of the Division of Water Resources under Section 401 of the Clean Water Act. If you have any questions, please contact April Norton at 919-707-9111 or April.Norton@ncdenr.gov.

Sincerely,

DocuSigned by:
Amy Chapman

Linda Culpepper, Director
Division of Water Resources

Electronic copy only distribution:
David Bailey, Corps, Raleigh Regulatory Office
Michael Turchy, NCDOT, EAU
Jeffrey Hemphill, NCDOT, EAU
Jerry Parker, NCDOT, Division 7
April Norton, NCDWR, Central Office

North Carolina Department of Transportation

Highway Stormwater Program

STORMWATER MANAGEMENT PLAN

FOR NCDOT PROJECTS

(Version 2.08; Released April 2018)

General Project Information

WBS Element:	67044.1.1	**TIP Number:**	BR-0044	**Project Type:**	Bridge Replacement	**Date:**	6/14/2019
NCDOT Contact:	David Stutts, PE (Structures Mgmt Unit)			**Contractor / Designer:**	AECOM/Gregory Cols, PE		
Address:	NCDOT Century Center 1000 Birch Ridge Dr Raleigh NC 27610			**Address:**	701 Corporate Center Drive Raleigh, NC 27607 Suite 475		
Phone:	919-707-6442			**Phone:**	9198546200		
Email:	dstutts@ncdot.gov			**Email:**	gregory.cols@aecom.com		
City/Town:	Eden			**County(ies):**	Rockingham		
River Basin(s):	Roanoke			**CAMA County?**	No		
Wetlands within Project Limits?	Yes						

Project Description

Project Length (lin. miles or feet):	0.427 mi	**Surrounding Land Use:**	Wooded, Rural

	Proposed Project	**Existing Site**
Project Built-Upon Area (ac.)	1.7 ac.	1.7 ac.
Typical Cross Section Description:	2 lanes of undivided highway with 12' lanes. Shoulder Berm Gutter with storm systems and roadside ditches.	2 lanes of undivided highway with 12' lanes. All shoulder section. Roadside ditches.
Annual Avg Daily Traffic (veh/hr/day):	Design/Future: 8400 Year: 2040	Existing: 8080 Year: 2020

General Project Narrative: (Description of Minimization of Water Quality Impacts)

The existing 7 span (7@75') bridge on N Van Buren rd (NC 14/87) spans Smith River. The existing bridge was constructed in 1966 and consists of a reinforced concrete deck on steel I-beams. Several of the existing beams have considerable section loss as well as overall deterioration of various components of the bridge. The status of the bridge is observed to be structurally deficient with a sufficiency rating of 69.06/100. The replacement bridge to be constructed slightly more north, is a 5 span (1@106', 3@113', 1@75') prestressed concrete girder bridge with 4' deep end bent caps. The proposed bridge deck drainage is collected by 6" diameter deck drains @ 12' spacings over the floodplain. No deck drains discharge directly over Smith River. Roadway drainage on the east and west sides of the bridge is collected by a system of TB 2GI's discharging into a riprap pad, which then dissipates into Smith River floodplain. Away from the bridge, surface runoff is collected in grass and rip-rap lined ditches and conveyed to natural outfalls. Construction of the bridge will be accomplished using causeways, as no other practical option exists to minimize disturbance to the river. Causeways will be constructed in phases to minimize the total concurrent impact to the river and limit total blockage of channel to 50% maximum. A shallow rockline precludes the use of temporary work bridges.

One unnamed tributary to the Smith River crosses the project to the west of the bridge. This UT is currently piped under the existing roadway. The pipe will be extended to accomodate the relocated roadway with wider shoulders. Maximum steepest slopes are proposed to limit the amount of fill.

Wetlands exist within the project limits but are not disturbed by construction activities.

Waterbody Information

Surface Water Body (1):	Smith River		**NCDWR Stream Index No.:**	22-40-(1)	
NCDWR Surface Water Classification for Water Body		**Primary Classification:**	Water Supply IV (WS-IV)		
		Supplemental Classification:	None		
Other Stream Classification:					
Impairments:	Benthos				
Aquatic T&E Species?	Yes	Comments: Roanoke logperch is an endangered freshwater fish found in the Smith River within the study area			
NRTR Stream ID:	Smith River			**Buffer Rules in Effect:**	N/A
Project Includes Bridge Spanning Water Body?	Yes	**Deck Drains Discharge Over Buffer?**	N/A	**Dissipator Pads Provided in Buffer?**	N/A
Deck Drains Discharge Over Water Body?	No	(If yes, provide justification in the General Project Narrative)		(If yes, describe in the General Project Narrative; if no, justify in the General Project Narrative)	
(If yes, provide justification in the General Project Narrative)					

North Carolina Department of Transportation

Highway Stormwater Program

STORMWATER MANAGEMENT PLAN

FOR NCDOT PROJECTS

(Version 2.08; Released April 2018)

WBS Element:	67044.1.1	**TIP No.:**	BR-0044	**County(ies):**	Rockingham	**Page**	**2**	**of**	**2**

Additional Waterbody Information

Surface Water Body (2):	UT to Smith River		**NCDWR Stream Index No.:**	22-40-(1)		
NCDWR Surface Water Classification for Water Body		**Primary Classification:**	Water Supply IV (WS-IV)			
		Supplemental Classification:	None			
Other Stream Classification:						
Impairments:	Benthos					
Aquatic T&E Species?	Yes	Comments: Roanoke logperch is an endangered freshwater fish found in the Smith River within the study area				
NRTR Stream ID:	SA			**Buffer Rules in Effect:**	N/A	
Project Includes Bridge Spanning Water Body?	Yes	**Deck Drains Discharge Over Buffer?**	N/A	**Dissipator Pads Provided in Buffer?**	N/A	
Deck Drains Discharge Over Water Body?	Yes	(If yes, provide justification in the General Project Narrative)		(If yes, describe in the General Project Narrative; if no, justify in the General Project Narrative)		
(If yes, provide justification in the General Project Narrative)						

09/08/59

TIP PROJECT: BR-0044

CONTRACT: C204393

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

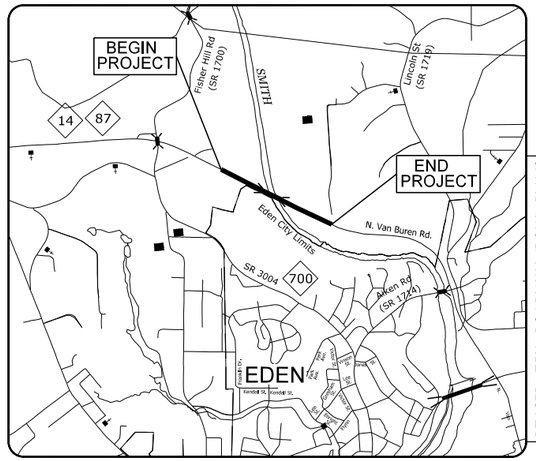
ROCKINGHAM COUNTY

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	BR-0044	1	
STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION	
67044.1.1		PE	

PERMIT DRAWING
SHEET 01 OF 15

LOCATION: BRIDGE NO. 168 ON NC 14/NC 87 (N. VAN BUREN RD) OVER SMITH RIVER

TYPE OF WORK: GRADING, DRAINAGE, PAVING, AND STRUCTURE



VICINITY MAP

See Sheet 1A For Index of Sheets
See Sheet 1B For Conventional Symbols

NAD 83 NA 2011

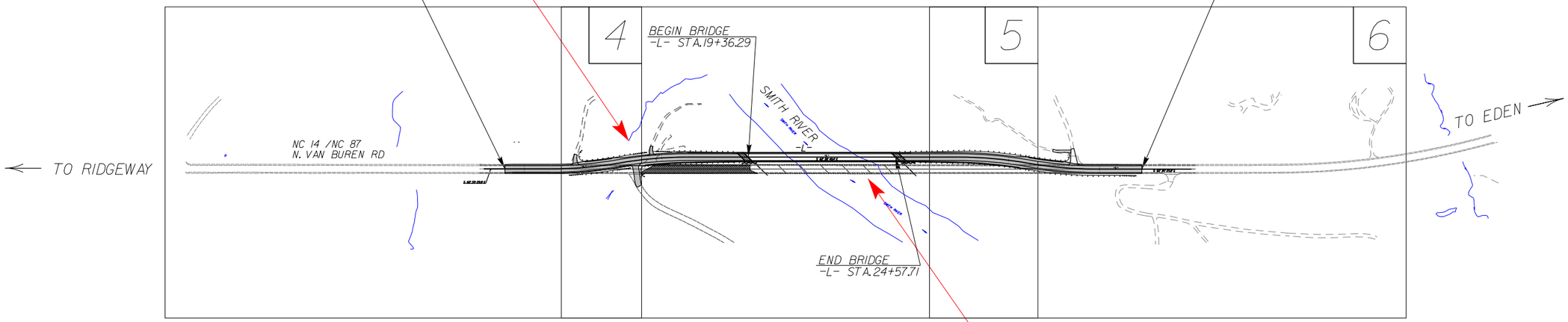
WETLAND AND SURFACE WATER IMPACTS PERMIT

JUNE 2019

SITE 1

BEGIN TIP PROJECT BR-0044
-L- STA.10+75.00

END TIP PROJECT BR-0044
-L- STA.33+30.00



SITE 2

THERE IS NO CONTROL OF ACCESS ON THIS PROJECT.

CLEARING ON THE PROJECT SHALL BE TO THE LIMITS ESTABLISHED USING METHOD II

THIS PROJECT IS NOT WITHIN ANY MUNICIPAL BOUNDARIES

INCOMPLETE PLANS
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GRAPHIC SCALES

50 25 0 50 100
PLANS

50 25 0 50 100
PROFILE (HORIZONTAL)

10 5 0 10 20
PROFILE (VERTICAL)

DESIGN DATA

ADT 2020 = 8,080
ADT 2040 = 8,400
K = 9 %
D = 55 %
T = 12 % *
V = 60 MPH
* (TTST 10% + DUAL 2%)
FUNC CLASS = PRINCIPAL ARTERIAL
REGIONAL TIER

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT BR-0044 = 0.328 MI
LENGTH STRUCTURE TIP PROJECT BR-0044 = 0.099 MI
TOTAL LENGTH TIP PROJECT BR-0044 = 0.427 MI

AECOM
NC FIRM LICENSE No: F-0342
701 Corporate Center Drive, Suite 475
Raleigh, NC 27607
(919) 854-6200 - (919) 854-6259(FAX)

2018 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
JUNE 14, 2019

LETTING DATE:
JANUARY 21, 2020

NEIL J. DEAN, P.E.
PROJECT ENGINEER

RADHA ATTALURI, P.E.
PROJECT DESIGN ENGINEER

DAVID STUTTS, P.E.
NCDOT PROJECT MANAGER

HYDRAULICS ENGINEER

SIGNATURE: *P.E.*

ROADWAY DESIGN ENGINEER

SIGNATURE: *P.E.*

STATE OF NORTH CAROLINA • DEPARTMENT OF TRANSPORTATION •

6/27/2019
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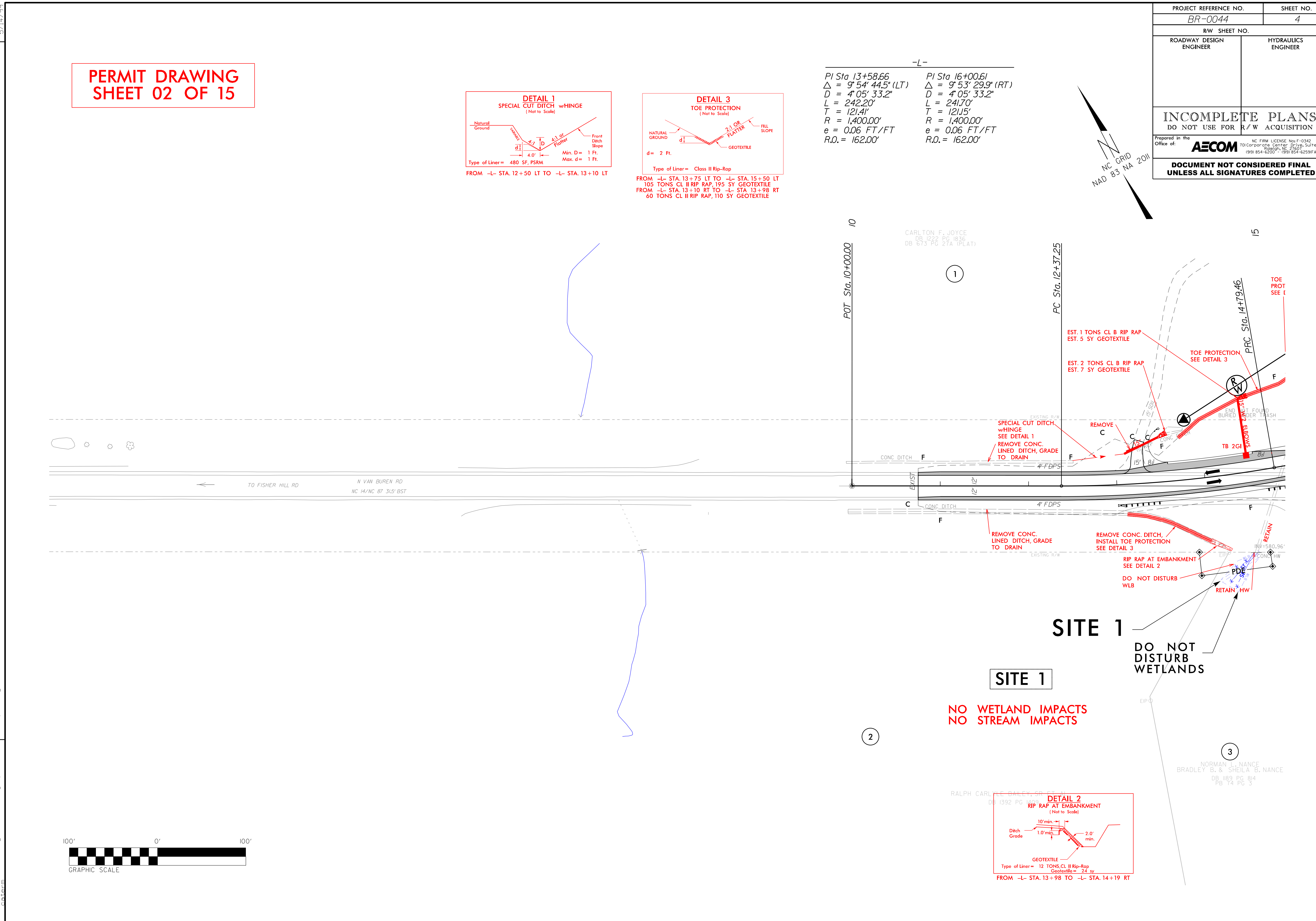

REVISIONS
5/14/99
6/27/2019

PROJECT REFERENCE NO.	SHEET NO.
BR-0044	4
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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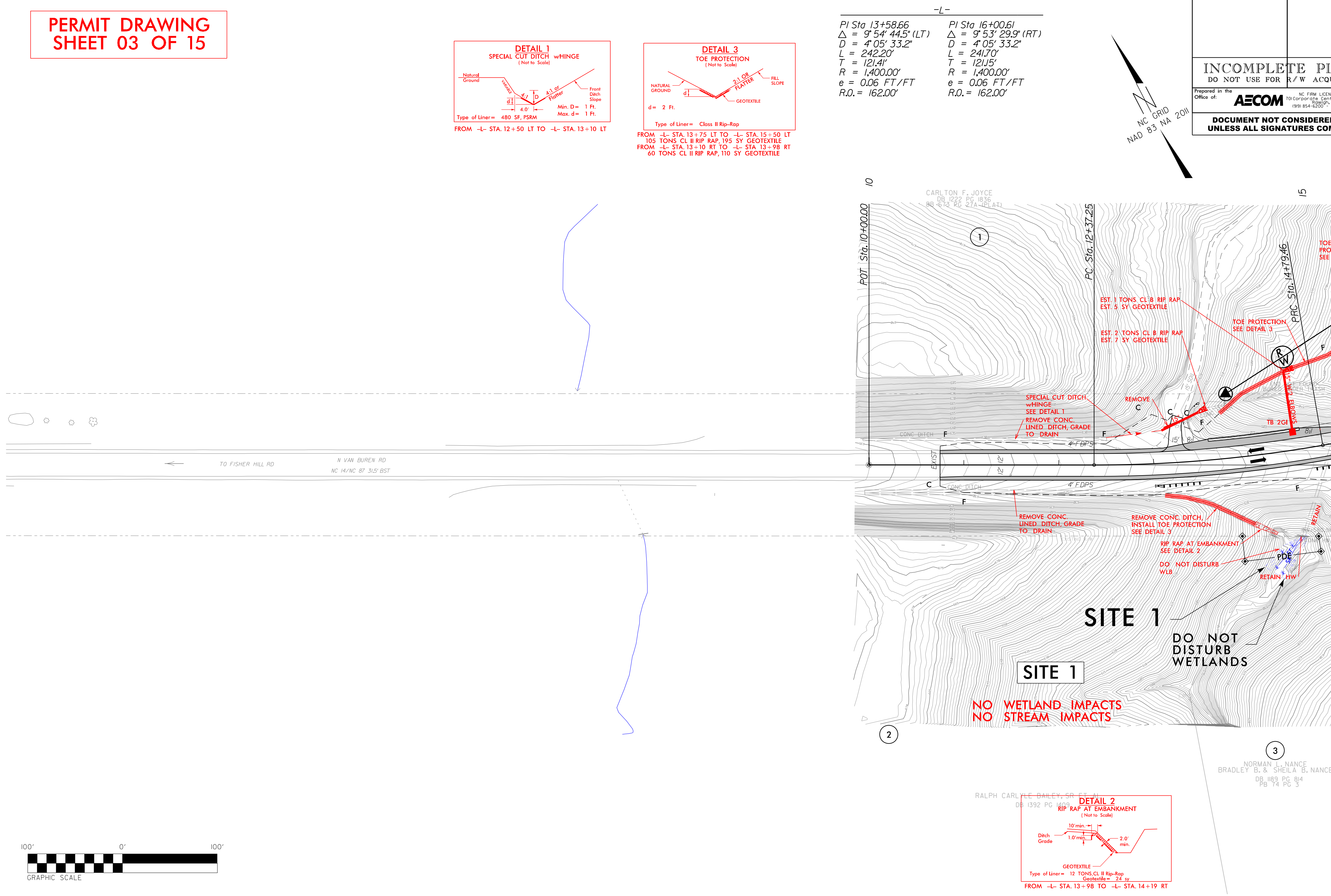
PERMIT DRAWING
SHEET 03 OF 15

DETAIL 1
SPECIAL CUT DITCH w/HINGE
(Not to Scale)
Natural Ground · 4:1 · D · d · 4.0' · 4:1 or Flatter · Front Ditch Slope
Min. D= 1 Ft.
Max. d= 1 Ft.
Type of Liner= 480 SF, PSRM
FROM -L- STA. 12+50 LT TO -L- STA. 13+10 LT

DETAIL 3
TOE PROTECTION
(Not to Scale)
NATURAL GROUND · 2:1 OR FLATTER · FILL SLOPE · GEOTEXTILE
d= 2 Ft.
Type of Liner= Class II Rip-Rap
FROM -L- STA. 13+75 LT TO -L- STA. 15+50 LT
105 TONS CL II RIP RAP, 195 SY GEOTEXTILE
FROM -L- STA. 13+10 RT TO -L- STA 13+98 RT
60 TONS CL II RIP RAP, 110 SY GEOTEXTILE

-L-

PI Sta 13+58.66	PI Sta 16+00.61
Δ = 9° 54' 44.5" (LT)	Δ = 9° 53' 29.9" (RT)
D = 4° 05' 33.2"	D = 4° 05' 33.2"
L = 242.20'	L = 241.70'
T = 121.41'	T = 121.15'
R = 1,400.00'	R = 1,400.00'
e = 0.06 FT/FT	e = 0.06 FT/FT
R.O. = 162.00'	R.O. = 162.00'



DETAIL 2
RIP RAP AT EMBANKMENT
(Not to Scale)
Ditch Grade · 10' min. · 1.0' min. · 2.0' min. · GEOTEXTILE
Type of Liner= 12 TONS CL II Rip-Rap
Geotextile= 24 sy
FROM -L- STA. 13+98 TO -L- STA. 14+19 RT

REVISIONS

5/14/99

6/27/2019
S:_Environmental\Drawings\BR-0044_Hyd_prm_wet_Site 1_psh4_contour.dgn

PROJECT REFERENCE NO. BR-0044
SHEET NO. 5
R/W SHEET NO.
ROADWAY DESIGN ENGINEER
HYDRAULICS ENGINEER

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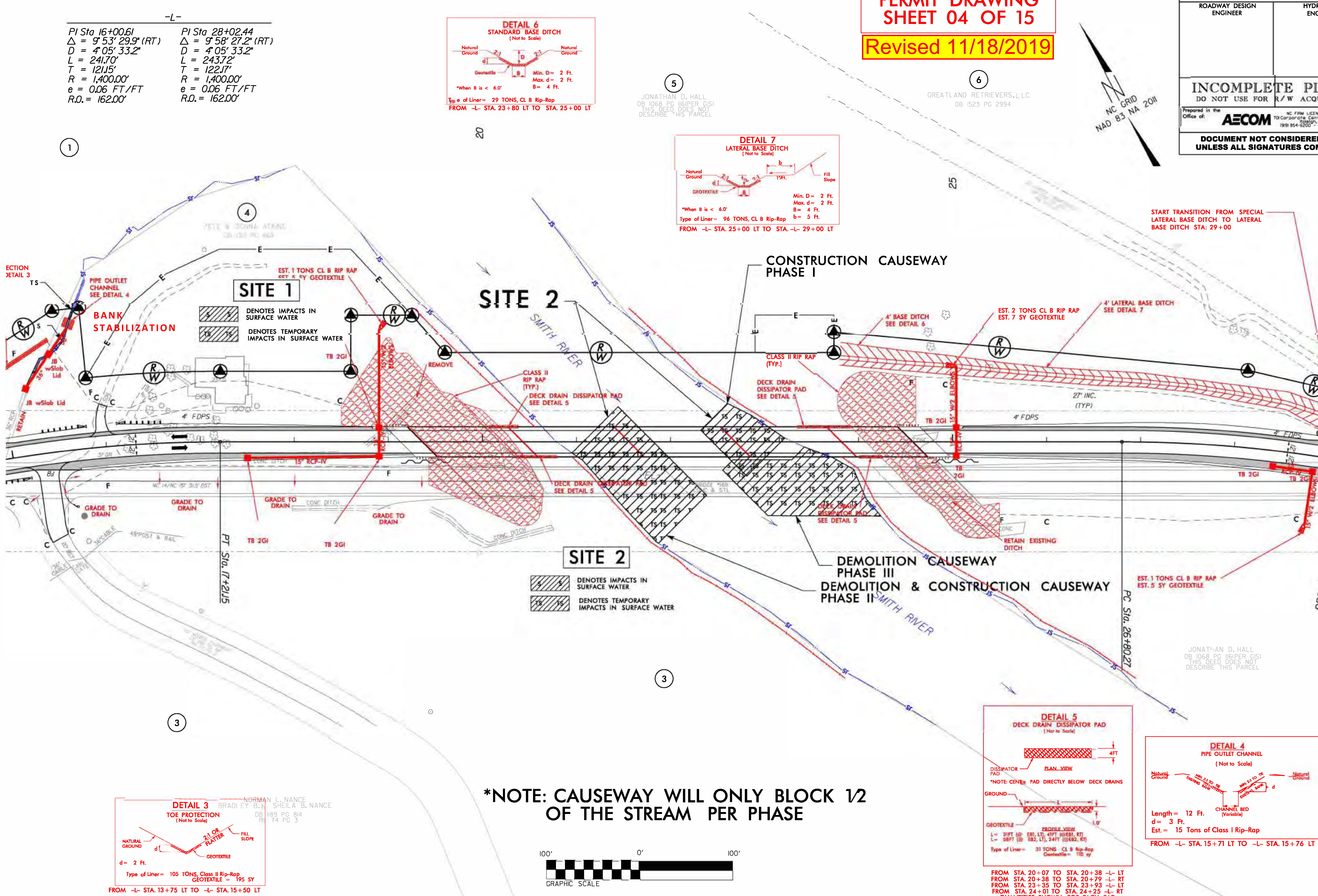

-L-
PI Sta 16+00.61
Δ = 9° 53' 29.9" (RT)
D = 4° 05' 33.2"
L = 241.70'
T = 121.15'
R = 1,400.00'
e = 0.06 FT/FT
R.O. = 162.00'
PI Sta 28+02.44
Δ = 9° 58' 27.2" (RT)
D = 4° 05' 33.2"
L = 243.72'
T = 122.17'
R = 1,400.00'
e = 0.06 FT/FT
R.O. = 162.00'
DETAIL 6
STANDARD BASE DITCH
FROM -L- STA. 23+80 LT TO STA. 25+00 LT
DETAIL 7
LATERAL BASE DITCH
FROM -L- STA. 25+00 LT TO STA. -L- 29+00 LT
NC GRID NAD 83 NA 2011
SITE 1
DENOTES IMPACTS IN SURFACE WATER
DENOTES TEMPORARY IMPACTS IN SURFACE WATER
SITE 2
BANK STABILIZATION
PIPE OUTLET CHANNEL SEE DETAIL 4
CONSTRUCTION CAUSEWAY PHASE I
DEMOLITION CAUSEWAY PHASE III
DEMOLITION & CONSTRUCTION CAUSEWAY PHASE II
SMITH RIVER
START TRANSITION FROM SPECIAL LATERAL BASE DITCH TO LATERAL BASE DITCH STA: 29+00
4' BASE DITCH SEE DETAIL 6
4' LATERAL BASE DITCH SEE DETAIL 7
EST. 2 TONS CL B RIP RAP
EST. 7 SY GEOTEXTILE
EST. 1 TONS CL B RIP RAP
EST. 5 SY GEOTEXTILE
DECK DRAIN DISSIPATOR PAD SEE DETAIL 5
CLASS II RIP RAP (TYP.)
GRADE TO DRAIN
RETAIN EXISTING DITCH
PT Sta. 17+21.15
PC Sta. 26+80.27
JONATHAN D. HALL
GREATLAND RETRIEVERS, LLC
DETAIL 3
TOE PROTECTION
Type of Liner = 105 TONS, Class II Rip-Rap
GEOTEXTILE = 195 SY
FROM -L- STA. 13+75 LT TO -L- STA. 15+50 LT
*NOTE: CAUSEWAY WILL ONLY BLOCK 1/2 OF THE STREAM PER PHASE
GRAPHIC SCALE
DETAIL 5
DECK DRAIN DISSIPATOR PAD
FROM STA. 20+07 TO STA. 20+38 -L- LT
FROM STA. 20+38 TO STA. 20+79 -L- RT
FROM STA. 23+35 TO STA. 23+93 -L- LT
FROM STA. 24+01 TO STA. 24+25 -L- RT
QUANTITIES SHOWN FOR EACH PAD
DETAIL 4
PIPE OUTLET CHANNEL
Length = 12 Ft.
d = 3 Ft.
Est. = 15 Tons of Class I Rip-Rap
FROM -L- STA. 15+71 LT TO -L- STA. 15+76 LT

REVISIONS

5/14/99

6/27/2019

PROJECT REFERENCE NO.	SHEET NO.
BR-0044	5
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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PERMIT DRAWING SHEET 05 OF 15

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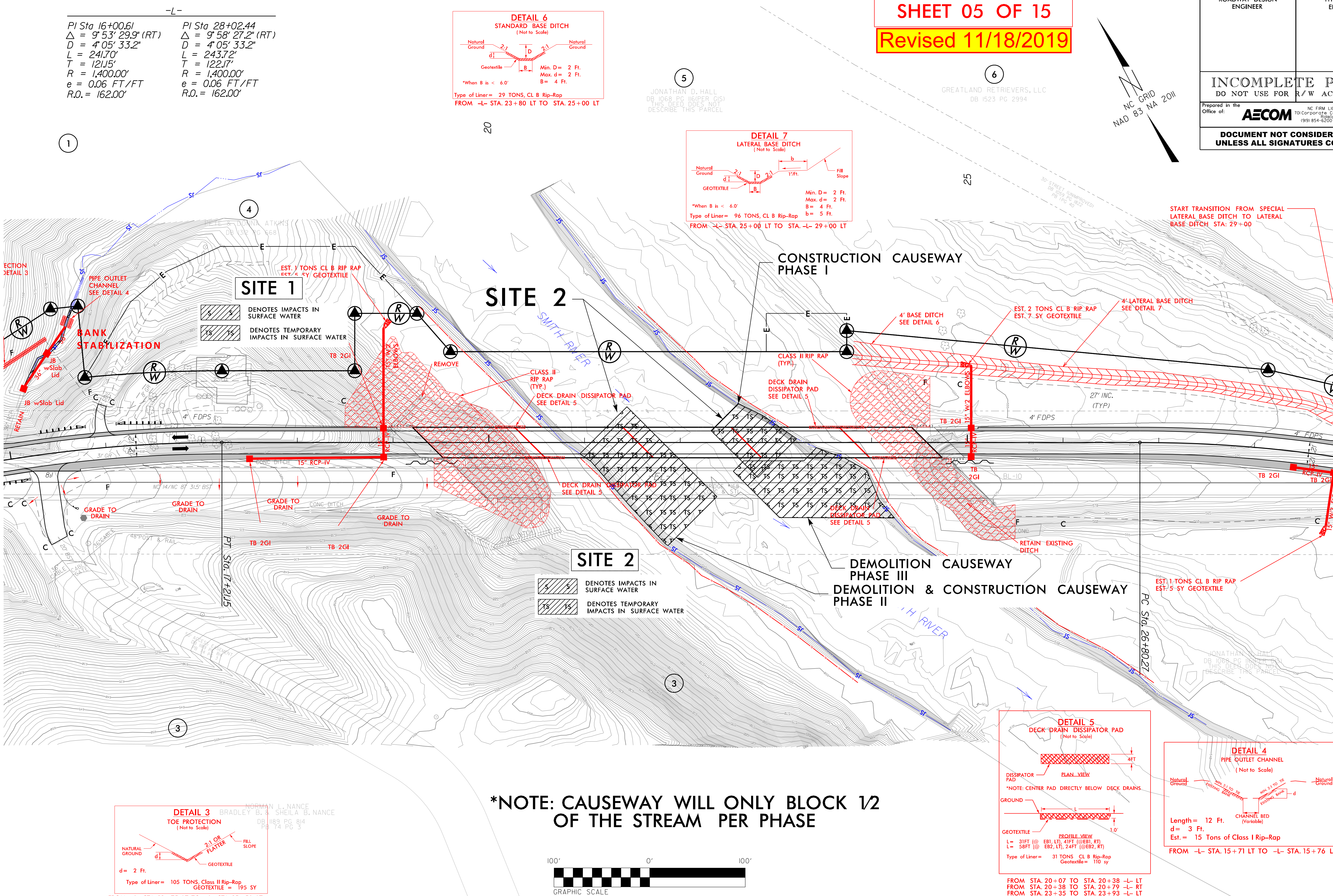
-L-

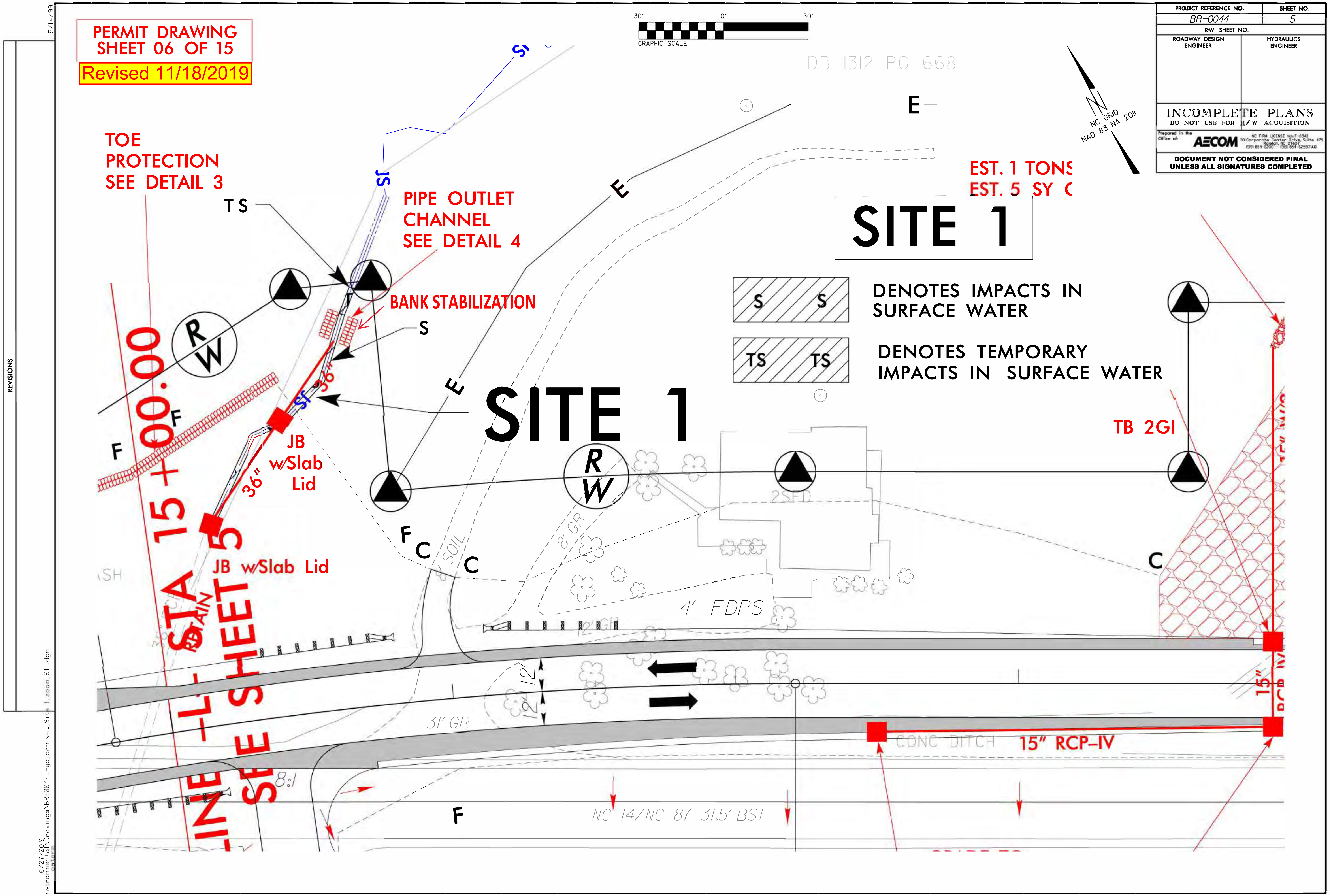
PI Sta 16+00.61	PI Sta 28+02.44
Δ = 9° 53' 29.9" (RT)	Δ = 9° 58' 27.2" (RT)
D = 4° 05' 33.2"	D = 4° 05' 33.2"
L = 241.70'	L = 243.72'
T = 121.15'	T = 122.17'
R = 1,400.00'	R = 1,400.00'
e = 0.06 FT/FT	e = 0.06 FT/FT
R.O. = 162.00'	R.O. = 162.00'



DETAIL 6
STANDARD BASE DITCH
Type of Liner= 29 TONS, CL B Rip-Rap
FROM -L- STA. 23+80 LT TO STA. 25+00 LT
DETAIL 7
LATERAL BASE DITCH
Type of Liner= 96 TONS, CL B Rip-Rap
FROM -L- STA. 25+00 LT TO STA. -L- 29+00 LT
NC GRID NAD 83 NA 2011
SITE 1
DENOTES IMPACTS IN SURFACE WATER
DENOTES TEMPORARY IMPACTS IN SURFACE WATER
SITE 2
CONSTRUCTION CAUSEWAY PHASE I
DEMOLITION CAUSEWAY PHASE III
DEMOLITION & CONSTRUCTION CAUSEWAY PHASE II
BANK STABILIZATION
SMITH RIVER
START TRANSITION FROM SPECIAL LATERAL BASE DITCH TO LATERAL BASE DITCH STA: 29+00
4' LATERAL BASE DITCH SEE DETAIL 7
4' BASE DITCH SEE DETAIL 6
EST. 2 TONS CL B RIP RAP
EST. 7 SY GEOTEXTILE
DECK DRAIN DISSIPATOR PAD SEE DETAIL 5
RETAIN EXISTING DITCH
EST. 1 TONS CL B RIP RAP
EST. 5 SY GEOTEXTILE
PI Sta. 17+21.15
PC Sta. 26+80.27
DETAIL 3
TOE PROTECTION
d= 2 Ft.
Type of Liner= 105 TONS, Class II Rip-Rap
GEOTEXTILE = 195 SY
FROM -L- STA. 13+75 LT TO -L- STA. 15+50 LT
DETAIL 5
DECK DRAIN DISSIPATOR PAD
*NOTE: CENTER PAD DIRECTLY BELOW DECK DRAINS
Type of Liner= 31 TONS CL B Rip-Rap
Geotextile= 110 sy
FROM STA. 20+07 TO STA. 20+38 -L- LT
FROM STA. 20+38 TO STA. 20+79 -L- RT
FROM STA. 23+35 TO STA. 23+93 -L- LT
FROM STA. 24+01 TO STA. 24+25 -L- RT
QUANTITIES SHOWN FOR EACH PAD
DETAIL 4
PIPE OUTLET CHANNEL
Length= 12 Ft.
d= 3 Ft.
Est.= 15 Tons of Class I Rip-Rap
FROM -L- STA. 15+71 LT TO -L- STA. 15+76 LT
GRAPHIC SCALE

*NOTE: CAUSEWAY WILL ONLY BLOCK 1/2 OF THE STREAM PER PHASE

6/27/2019
R:\Environmental\Drawings\BR-0044_Hyd_prm_wet_Site 1 and 2_All Phases_contour.dgn
5/14/99
REVISIONS



PERMIT DRAWING
SHEET 06 OF 15
Revised 11/18/2019
PROJECT REFERENCE NO.
BR-0044
SHEET NO.
5
R/W SHEET NO.
ROADWAY DESIGN ENGINEER
HYDRAULICS ENGINEER
INCOMPLETE PLANS
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GRAPHIC SCALE
DB 1312 PG 668
NC GRID NAD 83 NA 2011
TOE PROTECTION SEE DETAIL 3
PIPE OUTLET CHANNEL SEE DETAIL 4
BANK STABILIZATION
EST. 1 TONS
EST. 5 SY
SITE 1
DENOTES IMPACTS IN SURFACE WATER
DENOTES TEMPORARY IMPACTS IN SURFACE WATER
JB w/Slab Lid
JB w/Slab Lid
TB 2GI
-L- STA 15+00.00
SEE SHEET 5
4' FDPS
2SFD
31' GR
8' GR
CONC DITCH
15" RCP-IV
NC 14/NC 87 31.5' BST
36"
36"
REVISIONS
5/14/99
6/27/2019

PERMIT DRAWING
SHEET 07 OF 15
Revised 11/18/2019

PROJECT REFERENCE NO.	SHEET NO.
BR-0044	5
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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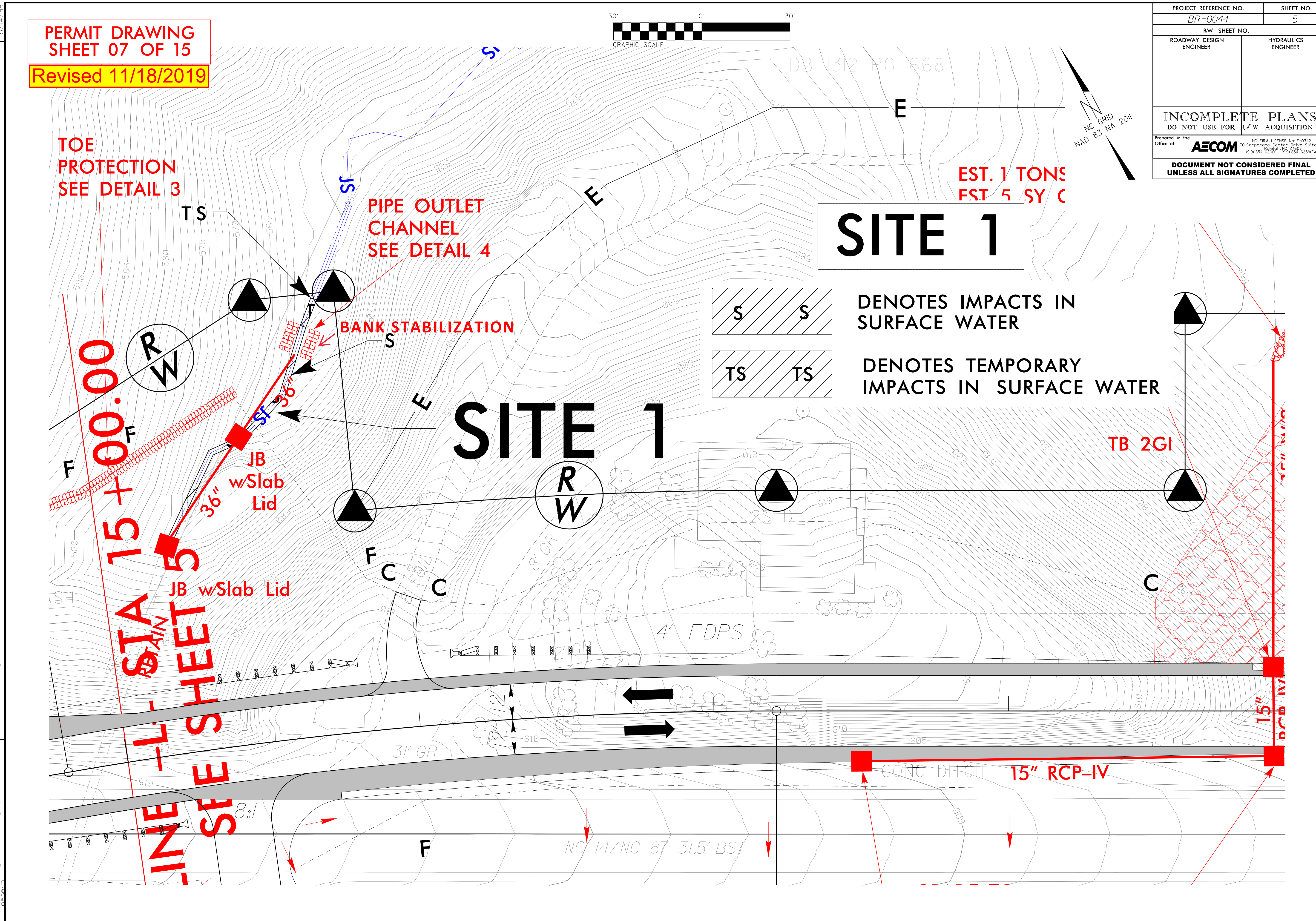

REVISIONS

6/27/2019

PROJECT REFERENCE NO.	SHEET NO.
BR-0044	5
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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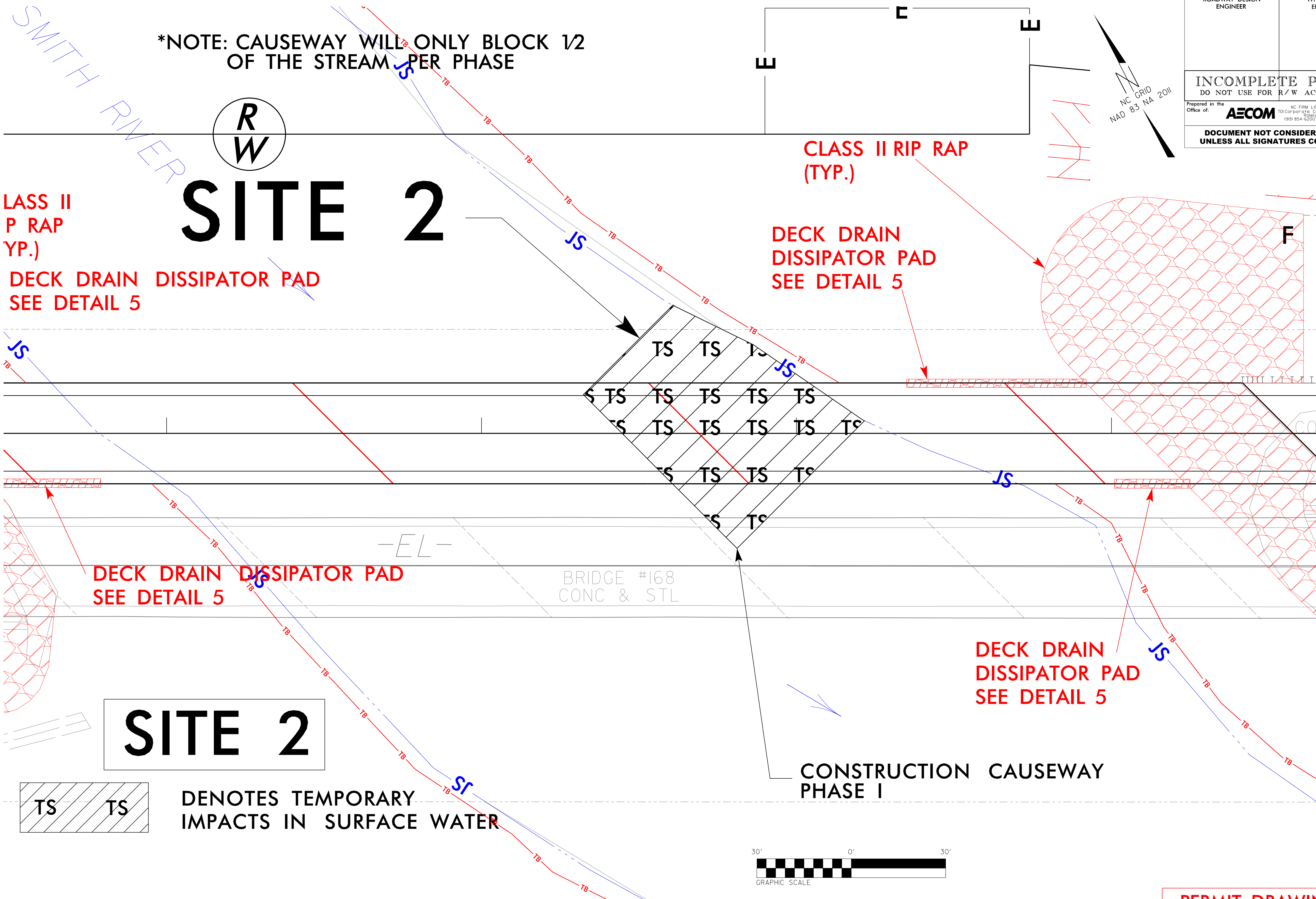

PERMIT DRAWING
SHEET 08 OF 15
Revised 11/18/2019

REVISIONS

5/14/99

6/27/2019
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PROJECT REFERENCE NO.	SHEET NO.
BR-0044	5
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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701 Corporate Center Drive, Suite 475
Raleigh, NC 27607
(919) 854-6200 - (919) 854-6259 (FAX)

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

5/14/99

REVISIONS

*NOTE: CAUSEWAY WILL ONLY BLOCK 1/2 OF THE STREAM PER PHASE

SMITH RIVER

R/W

SITE 2

LASS II
P RAP
YP.)

DECK DRAIN DISSIPATOR PAD
SEE DETAIL 5

CLASS II RIP RAP
(TYP.)

DECK DRAIN
DISSIPATOR PAD
SEE DETAIL 5

DECK DRAIN DISSIPATOR PAD
SEE DETAIL 5

DECK DRAIN
DISSIPATOR PAD
SEE DETAIL 5

CONSTRUCTION CAUSEWAY
PHASE I

BRIDGE #168
CONC & STL

NC GRID
NAD 83 NA 2011

GRAPHIC SCALE 30' 0' 30'

SITE 2

TS TS DENOTES TEMPORARY IMPACTS IN SURFACE WATER

PERMIT DRAWING
SHEET 09 OF 15

Revised 11/18/2019

6/7/2019
Environmental Drawings\BR-0044_Hyd_prm_wet_Ste 2_topo_contour_STI.dgn
caterm

PROJECT REFERENCE NO.	SHEET NO.
BR-0044	5
R/W SHEET NO.	
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NC GRID
NAD 83 NA 2011

*NOTE: CAUSEWAY WILL ONLY BLOCK 1/2 OF THE STREAM PER PHASE

SMITH RIVER

R/W

SITE 2

LASS II
P RAP
YP.)

DECK DRAIN DISSIPATOR PAD
SEE DETAIL 5

CLASS II RIP RAP
(TYP.)

DECK DRAIN
DISSIPATOR PAD
SEE DETAIL 5

DECK DRAIN DISSIPATOR PAD
SEE DETAIL 5

DECK DRAIN
DISSIPATOR PAD
SEE DETAIL 5

BRIDGE #168
CONC & STL

DEMOLITION & CONSTRUCTION CAUSEWAY
PHASE II

SITE 2

TS TS — DENOTES TEMPORARY IMPACTS IN SURFACE WATER

30' 0' 30'
GRAPHIC SCALE

PERMIT DRAWING
SHEET 10 OF 15

Revised 11/18/2019

REVISIONS 5/14/99

6/27/2019
...\Environmental\Drawings\BR-0044_Hyd_prm_wet_Site 2_zoom_ST2.dgn
cstern

PROJECT REFERENCE NO.	SHEET NO.
BR-0044	5
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

Prepared in the Office of: AECOM
NC FIRM LICENSE No: F-0342
701 Corporate Center Drive, Suite 475
Raleigh, NC 27607
(919) 854-6200 - (919) 854-6259 (FAX)

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

REVISIONS 5/14/99

*NOTE: CAUSEWAY WILL ONLY BLOCK 1/2 OF THE STREAM PER PHASE

SMITH RIVER

R/W

DEMOLITION & CONSTRUCTION CAUSEWAY PHASE II

CLASS II RIP RAP (TYP.)

LASS II
P RAP
YP.)

DECK DRAIN DISSIPATOR PAD
SEE DETAIL 5

DECK DRAIN DISSIPATOR PAD
SEE DETAIL 5

DECK DRAIN DISSIPATOR PAD
SEE DETAIL 5

DECK DRAIN DISSIPATOR PAD
SEE DETAIL 5

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F

F

NC GRID
NAD 83 NA 2011

BRIDGE #168
CONC & STL

SITE 2

SITE 2

TS TS

DENOTES TEMPORARY IMPACTS IN SURFACE WATER

30' 0' 30'
GRAPHIC SCALE

PERMIT DRAWING
SHEET 11 OF 15

Revised 11/18/2019

6/17/2019
Environmental Drawings\BR-0044_Hyd_prm_wet_Site 2_loom_contour_ST2.dgn
cstern

PROJECT REFERENCE NO.	SHEET NO.
BR-0044	5
R/W SHEET NO.	
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NC GRID
NAD 83 NA 2011

*NOTE: CAUSEWAY WILL ONLY BLOCK 1/2 OF THE STREAM PER PHASE

SMITH RIVER

R/W

SITE 2

LASS II
P RAP
'YP.)

DECK DRAIN DISSIPATOR PAD
SEE DETAIL 5

CLASS II RIP RAP
(TYP.)

DECK DRAIN
DISSIPATOR PAD
SEE DETAIL 5

DECK DRAIN DISSIPATOR PAD
SEE DETAIL 5

-EL-

BRIDGE #168
CONC & STL

DEMOLITION CAUSEWAY
PHASE III

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E

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JS

TB

TS

SITE 2

TS TS DENOTES TEMPORARY IMPACTS IN SURFACE WATER

30' 0' 30'
GRAPHIC SCALE

PERMIT DRAWING
SHEET 12 OF 15

Revised 11/18/2019

REVISIONS

5/14/99

6/27/2008
...ITS_Environmental\Drawings\BR-0044_Hyd_prm_wet_Site 2_zoom_ST3.dgn
cgaterm

PROJECT REFERENCE NO.	SHEET NO.
BR-0044	5
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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5/14/99

REVISIONS

*NOTE: CAUSEWAY WILL ONLY BLOCK 1/2 OF THE STREAM PER PHASE

SMITH RIVER

R/W

SITE 2

LASS II
P RAP
YP.)

DECK DRAIN DISSIPATOR PAD
SEE DETAIL 5

CLASS II RIP RAP
(TYP.)

DECK DRAIN
DISSIPATOR PAD
SEE DETAIL 5

DECK DRAIN DISSIPATOR PAD
SEE DETAIL 5

DEMOLITION CAUSEWAY
PHASE III

BRIDGE #168
CONC & STL

NC GRID
NAD 83 NA 2011

30' 0' 30'
GRAPHIC SCALE

SITE 2

TS TS

DENOTES TEMPORARY
IMPACTS IN SURFACE WATER

PERMIT DRAWING
SHEET 13 OF 15

Revised 11/18/2019

6/27/2019
Environmental Drawings\BR-0044_Hyd_prm_wet_Site 2_zoom_contour_ST3.dgn
cateem

PROJECT REFERENCE NO.	SHEET NO.
BR-0044	7

ROADWAY DESIGN ENGINEER

HYDRAULICS ENGINEER

INCOMPLETE PLANS
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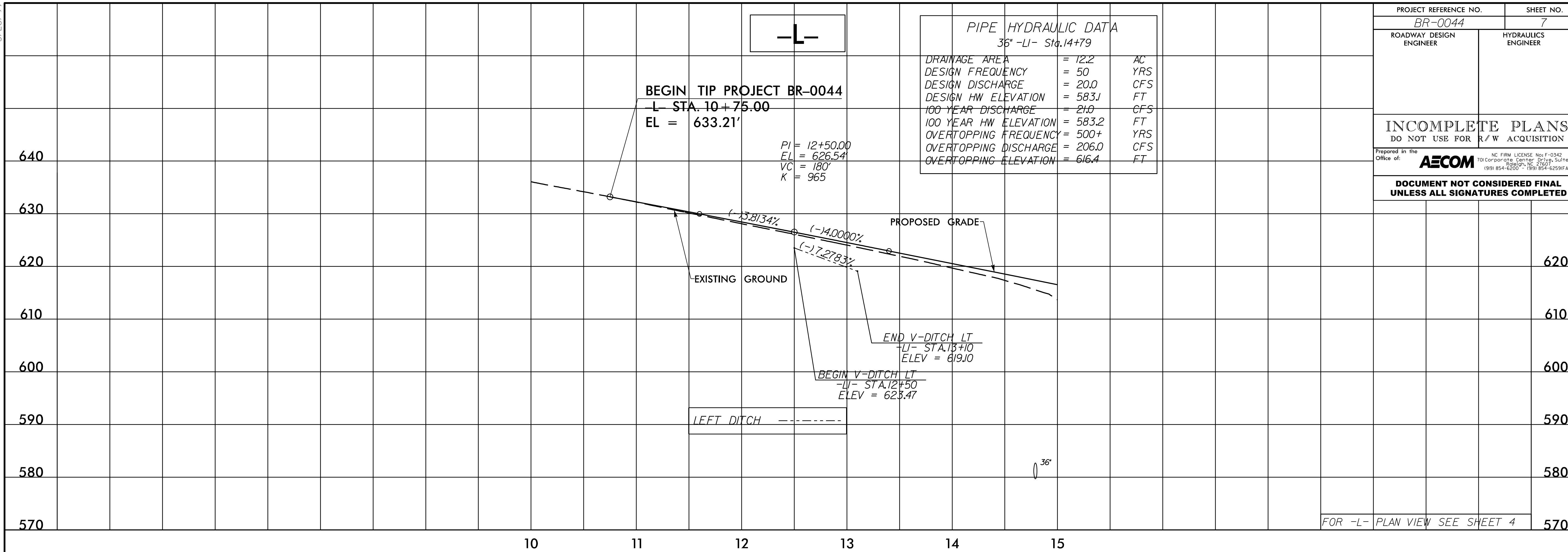
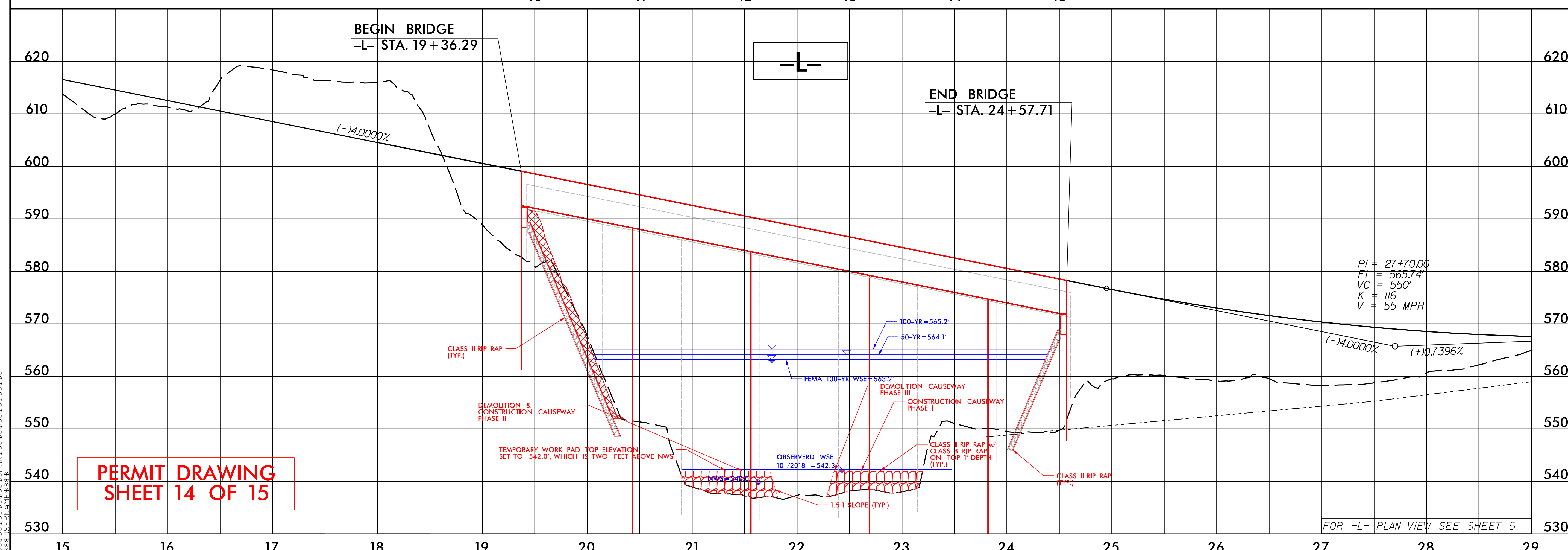
PIPE HYDRAULIC DATA
36" -LI- Sta.14+79

DRAINAGE AREA	= 12.2	AC
DESIGN FREQUENCY	= 50	YRS
DESIGN DISCHARGE	= 20.0	CFS
DESIGN HW ELEVATION	= 583.1	FT
100 YEAR DISCHARGE	= 21.0	CFS
100 YEAR HW ELEVATION	= 583.2	FT
OVERTOPPING FREQUENCY	= 500+	YRS
OVERTOPPING DISCHARGE	= 206.0	CFS
OVERTOPPING ELEVATION	= 616.4	FT





5/28/99

$$$$$$SYSTIME$$$$$ $$$$$$$$$DGN$$$$$$$$$$$$$$$$$$ $$$$$$USERNAME$$$$$

WETLAND AND SURACE WATER IMPACTS SUMMARY

			WETLAND IMPACTS					SURFACE WATER IMPACTS						
Site No.	Station (From/To)	Structure Size / Type	Permanent Fill In Wetlands (ac)	Temp. Fill In Wetlands (ac)	Excavation in Wetlands (ac)	Mechanized Clearing in Wetlands (ac)	Hand Clearing in Wetlands (ac)	Permanent SW impacts (ac)	Stabilization Channel Impacts (ac)	Temp. SW impacts (ac)	Existing Channel Impacts Permanent (ft)	Existing Channel Impacts Stabilization (ft)	Existing Channel Impacts Temp. (ft)	Natural Stream Design (ft)
1	-L- 15+24 to 15+73	36" ALT Pipe						< 0.01		< 0.01	80		10	
1	-L- 15+73 to 15+80	Bank Stabilization							< 0.01			10		
2	-L- 20+93 to 24+00	Bridge (all phases)								0.47			280	
TOTALS*:								< 0.01	< 0.01	0.47	80	10	290	0

*Rounded totals are sum of actual impacts

NOTES:
Stream Temporary impacts due to causeways are the net total when all 3 phases are considered together.

Bridge Pier Permanent Impact Area (Not included in above quantities) = 118sf (Three 60" dia piers x 2 bents)

NC DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
6/14/2019
ROCKINGHAM COUNTY
BR-0044
67044.1.1

Revised 11/18/2019

IPaC **U.S. Fish & Wildlife Service**

IPaC resource list

This report is an automatically generated list of species and other resources such as critical habitat (collectively referred to as *trust resources*) under the U.S. Fish and Wildlife Service's (USFWS) jurisdiction that are known or expected to be on or near the project area referenced below. The list may also include trust resources that occur outside of the project area, but that could potentially be directly or indirectly affected by activities in the project area. However, determining the likelihood and extent of effects a project may have on trust resources typically requires gathering additional site-specific (e.g., vegetation/species surveys) and project-specific (e.g., magnitude and timing of proposed activities) information.

Below is a summary of the project information you provided and contact information for the USFWS office(s) with jurisdiction in the defined project area. Please read the introduction to each section that follows (Endangered Species, Migratory Birds, USFWS Facilities, and NWI Wetlands) for additional information applicable to the trust resources addressed in that section.

Location

Rockingham County, North Carolina

Local office

Raleigh Ecological Services Field Office

(919) 856-4520
(919) 856-4556

2. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

The following species are potentially affected by activities in this location:

Fishes

NAME	STATUS
Roanoke Logperch Percina rex Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/1134	Endangered

Insects

NAME	STATUS
Monarch Butterfly Danaus plexippus Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/9743	Candidate

Critical habitats

Potential effects to critical habitat(s) in this location must be analyzed along with the endangered species themselves.

There are no critical habitats at this location.

Migratory birds

Certain birds are protected under the Migratory Bird Treaty Act[1] and the Bald and Golden Eagle Protection Act[2].

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats should follow appropriate regulations and consider implementing appropriate conservation measures, as described below.

1. The Migratory Birds Treaty Act of 1918.
2. The Bald and Golden Eagle Protection Act of 1940.