



STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION

ROY COOPER  
GOVERNOR

JAMES H. TROGDON, III  
SECRETARY

September 6, 2017

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

ATTN: Mr. David Bailey  
NCDOT Division 7 Project Coordinator

SUBJECT: **Application for Section 404 Nationwide Permit Nos. 13, 23, and 33, Section 401 Water Quality Certification, and Jordan Lake Riparian Buffer Certification** for the replacement of Bridge No. 170 over a Prong of Big Alamance Creek (Alamance Creek) on SR 1145 (Pond Road), Division 7, Alamance County, North Carolina. Federal Aid Project No. BRZ – 1145 (8), TIP Project No. B-5347.

Debit \$240.00 from WBS 46061.1.1

Dear Sir:

The North Carolina Department of Transportation (NCDOT) proposes to replace Bridge No. 170 over a Prong of Big Alamance Creek (Alamance Creek) on SR 1145 (Pond Road) in Alamance County. The project will consist of replacing the existing one-span, 36-foot structure with a 13-foot by 7-foot single-barrel Reinforced Concrete Box Culvert (RCBC) on roughly the existing alignment. An on-site detour will be employed.

Along the L-line, proposed Site 1 impacts include 101 linear feet (ft.) of permanent fill associated with the installation of the RCBC and rip rap at the inlet and outlet of the culvert; 117 linear feet of temporary stream impacts; and 88 linear ft. of bank stabilization (the bank stabilization runs concurrent with temporary impacts). Site 2 impacts include 8 linear ft. of bank stabilization and 50 linear ft. of temporary stream impact.

Proposed buffer impacts include mitigable Road Crossing impacts along the Prong of Big Alamance Creek (Site 1) totaling 7,678 square ft. in Zone 1 and 2,381 square ft. in Zone 2 and mitigable Impacts Other Than Road Crossings along Big Alamance Creek (Site 2) totaling 3,997 square ft. in Zone 1 and 4,028 square ft. in Zone 2. Additionally, there will be allowable Aerial/Perpendicular utility buffer impacts totaling 823 square ft. in Zone 1 and 1,233 square ft. in Zone 2 along the Prong of Big Alamance Creek.

*Mailing Address:*  
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](http://www.ncdot.gov)

*Location:*  
1020 BIRCH RIDGE DRIVE  
RALEIGH NC 27610

Please find enclosed the Pre-Construction Notification; Preliminary Jurisdictional Determinations; N.C. Division of Mitigation Services (DMS) mitigation acceptance letter; Stormwater Management Plan; permit drawings; buffer drawings; and roadway plans for the subject project. A Categorical Exclusion (CE) was completed for this project in July 2016.

The proposed let date for this project is November 21, 2017, with a let review date of October 3, 2017. However, the let date may advance as additional funds become available.

A copy of this permit application will be posted on the NCDOT Website at <https://connect.ncdot.gov/resources/Environmental/Pages/default.aspx>, under *Quick Links > Permit Applications*. A copy of the CE is also available at the above website address under *Quick Links > Environmental Documents*. Thank you for your assistance with this project. If you have any questions or need additional information, please contact Jim Mason at either [jsmason@ncdot.gov](mailto:jsmason@ncdot.gov) or (919) 707-6136.

Sincerely,



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

cc:

NCDOT Permit Application Standard Distribution List



## Pre-Construction Notification (PCN) Form

For Nationwide Permits and Regional General Permits

(along with corresponding Water Quality Certifications)

June 28, 2017 Ver 1.8

*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.*

Below is a link to the DRAFT online help file.

<http://edocs.deq.nc.gov/WaterResources/0/doc/549884/Page1.aspx>

### A. Processing Information

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

Alamance

**Is this project a public transportation project?\***

Yes  No

**Is this a NCDOT Project?\***

Yes  No

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

B-5347 (Bridge 170 over a Prong of Big Alamance Creek [Alamance Creek]  
on SR 1145 [Pond Road])

**WBS #**

46061.1.1

(for NCDOT use only)

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

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?\***

Nationwide Permit (NWP)  
 Regional General Permit (RGP)

**Nationwide Permit (NWP) Number:** 13 - Bank Stabilization

**Nationwide Permit (NWP) Number:** 23 - Categorical Exclusions

**Nationwide Permit (NWP) Number:** 33 - Temporary Construction

**NWP Number Other:**

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

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

check all that apply

401 Water Quality Certification - Regular  
 Non-404 Jurisdictional General Permit

401 Water Quality Certification - Express  
 Riparian Buffer Authorization

**1d. 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

**1e. 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

B-5347 - STR - Buffer - CF 02 (Haw).pdf 101.45KB

FILE TYPE MUST BE PDF

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

Yes  No

## B. Applicant Information

**1a. Who is the Primary Contact? \***

NCDOT

**1b. Primary Contact Email: \***

jsmason@ncdot.gov

**1c. Primary Contact Phone: \***

(xxx)xxx-xxxx

(919)707-6136

**1d. Who is applying for the permit?**

Owner  Applicant (other than owner)  Agent/Consultant  
(Check all that apply)

## 2. Owner Information

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

**2b. Deed book and page no.:**

**2c. Responsible party:**

(for Corporations)

**2d. Address**

Street Address

Address Line 2

City

State / Province / Region

Postal / Zip Code

Country

**2e. Telephone Number:**

(xxx)xxx-xxxx

**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:\***

B-5347 (Bridge 170 over a Prong of Big Alamance Creek [Alamance Creek] on SR 1145 [Pond Road])

**1b. Subdivision name:**

(if appropriate)

**1c. Nearest municipality / town:\***

Alamance

**1d. Driving directions\***

If it is a new project and can not easily be found in a GPS mapping system. Please provide directions.

Lat: 36.03566, Long: -79.489986; From Raleigh, take I-40 W to Exit 143 (NC 62/Alamance Rd); Go south on NC 62 to Pond Rd, take right (approx 2.5 miles from Exit); 1st bridge on Pond Road.

### 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:\***

36.03566

ex: 34.208504

**Longitude:\***

-79.489986

-77.796371

### 3. Surface Waters

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

Big Alamance Creek (Alamance Creek)

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

WS-V, NSW

## Surface Water Lookup

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

Cape Fear

[River Basin Lookup](#)

## 4. Project Description

### 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:\*

Pond Road is classified as a Local Road in the Statewide Functional Classification System and is not a National Highway System Route. Land use within the vicinity primarily consists of forested land, agriculture, and low- to medium-density residential.

### 4b. 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

### 4c. 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

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

0.00

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

(intermittent and perennial)

428 (314 Prong of Big Alamance Cr, 114 Big Alamance Cr)

### 4f. Explain the purpose of the proposed project:

To replace a structurally deficient bridge.

### 4g. Describe the overall project in detail, including the type of equipment to be used:

The project will consist of replacing the existing one-span, 36-foot structure with a 13-foot by 7-foot single-barrel Reinforced Concrete Box Culvert (RCBC) on roughly the existing alignment. An on-site detour will be employed. Standard road building equipment, such as trucks, dozers, and cranes will be used.

### 4h. Please upload project drawings for the proposed project.

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

B-5347 Permit Package\_20170404\_revised by Jim\_FINAL.pdf 4.81MB

B-5347 Roadway\_Full 11x17.pdf 2.28MB

B-5347\_Utilities\_Buffer Drawings\_FINAL.pdf 711.62KB

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:

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

Preliminary

Approved

Unknown

Corps AID Number:

Example: SAW-2017-99999

SAW-2013-01042

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

Name (if known):

Beth Reed and Jason Hartshorn

Agency/Consultant Company:

Kimley-Horn

Other:

**5d. If yes, list the dates of the Corps jurisdictional determinations or State determinations and attach documentation.**

6/6/2013 (USACE); 6/24/2013 (DWQ)

**5d1. Jurisdictional determination upload**

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

B-5347 Prelim JD\_USACE.pdf 8.2MB

B5347\_DWQ Stream Call letter.pdf 509.17KB

File type must be PDF

## 6. Project History

**6a. Have permits or certifications been requested or obtained for this project (including all prior phases) in the past? \***

Yes  No  Unknown

## 7. Future Project Plans

**7a. 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.

No

## 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

### 2. Wetland Impacts

If there are wetland impacts proposed on the site, then complete this question for each wetland area impacted.

### 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.

3a. Site # - Reason for impact	3b. Impact type	3c. Type of impact	3d. Stream name	3e. Stream Type	3f. Jurisdiction	3g. Stream width	3h. Impact length
1-RCBC Map label (e.g. Road Crossing 1)	P Permanent (P) or Temporary (T)	Fill	Prong of Big Alamance Creek	Perennial (PER) or intermittent (INT)	Corps	Average 30 (feet)	101 (linear feet)

3a. Site # - Reason for impact	3b. Impact type	3c. Type of impact	3d. Stream name	3e. Stream Type	3f. Jurisdiction	3g. Stream width	3h. Impact length
<b>1-Bank Stabilization</b> Map label (e.g. Road Crossing 1)	<b>P</b> Permanent (P) or Temporary (T)	<b>Bank Stabilization</b>	<b>Prong of Big Alamance Creek</b>	<b>Perennial</b> Perennial (PER) or intermittent (INT)	<b>Corps</b>	Average <b>30</b> (feet)	<b>88</b> (linear feet)
<b>1-Temporary Fill</b> Map label (e.g. Road Crossing 1)	<b>T</b> Permanent (P) or Temporary (T)	<b>Fill</b>	<b>Prong of Big Alamance Creek</b>	<b>Perennial</b> Perennial (PER) or intermittent (INT)	<b>Corps</b>	Average <b>30</b> (feet)	<b>117</b> (linear feet)
<b>2-Bank Stabilization</b> Map label (e.g. Road Crossing 1)	<b>P</b> Permanent (P) or Temporary (T)	<b>Bank Stabilization</b>	<b>Big Alamance Creek</b>	<b>Perennial</b> Perennial (PER) or intermittent (INT)	<b>Corps</b>	Average <b>90</b> (feet)	<b>8</b> (linear feet)
<b>2-Temporary Fill</b> Map label (e.g. Road Crossing 1)	<b>T</b> Permanent (P) or Temporary (T)	<b>Fill</b>	<b>Big Alamance Creek</b>	<b>Perennial</b> Perennial (PER) or intermittent (INT)	<b>Corps</b>	Average <b>90</b> (feet)	<b>50</b> (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:

197

### 3i. Total temporary stream impacts:

167

### 3i. Total stream and tributary impacts:

364

### 3j. Comments:

No impacts are directly attributed to the temporary on-site detour. Site 1: 88 linear ft. of Bank Stabilization is concurrent with 88 linear ft. of the 117 linear ft. of temporary impact at site.

## 4. Open Water Impacts

If there are proposed impacts to lakes, ponds, estuaries, tributaries, sounds, the Atlantic Ocean, or any other open water of the U.S. then individually list all open water impacts below.

## 5. Pond or Lake Construction

If pond or lake construction is proposed, then complete the chart below.

## 6. Buffer Impacts (for DWR)

If project will impact a protected riparian buffer, then complete the chart below. Individually list all buffer impacts below.

### 6a. Project is in which protect basin(s)?\*

Check all that apply.

- Neuse
- Catawba
- Goose Creek
- Other

- Tar-Pamlico
- Randleman
- Jordan Lake

6b. Impact Type	6c. Per or Temp	6d. Stream name	6e. Buffer mitigation required?	6f. Zone 1 impact	6g. Zone 2 impact
<b>Site 1- Road Crossing</b> Location and Exempt, Allowable, allowable w/ mitigation	P Permanent (P) or Temporary (T)	<b>Prong of Big Alamance Creek</b>	Yes	<b>7,678</b> (square feet)	<b>2,381</b> (square feet)
<b>Site 2- Impacts Other Than Road Crossing</b> Location and Exempt, Allowable, allowable w/ mitigation	P Permanent (P) or Temporary (T)	<b>Big Alamance Creek</b>	Yes	<b>3,997</b> (square feet)	<b>4,028</b> (square feet)
<b>Utility Site 1- Utility, Electric, Aerial, Perpendicular Crossings</b> Location and Exempt, Allowable, allowable w/ mitigation	P Permanent (P) or Temporary (T)	<b>Prong of Big Alamance Creek</b>	No	<b>823</b> (square feet)	<b>1,234</b> (square feet)

#### 6h. Total buffer impacts:

	Zone 1	Zone 2
<b>Temporary impacts:</b>	<b>0.00</b>	<b>0.00</b>
<b>Permanent impacts:</b>	<b>12,498.00</b>	<b>7,643.00</b>
<b>Total buffer impacts:</b>	<b>12,498.00</b>	<b>7,643.00</b>

#### 6i. Comments:

##### Supporting Documentation - i.e. Impact Maps, Plan Sheet, etc.

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

File must be PDF

## 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:\*

One existing ditch will be impacted, located to the south-east of the bridge. The existing ditch has a steep slope with head-cutting present at the outlet. The proposed ditch reduced the slope and widens the ditch base allowing a vegetative liner to be retained. This ditch meets the criteria for a grass swale. Existing drainage patterns are maintained. 2:1 roadway fill slopes are used to minimize stream impacts and the culvert is buried 1 foot to maintain natural bed material through completed culvert. Additional impacts are minimized by the use of 3-foot grassed shoulders (6-foot where guardrail is present). The impacts due to the temporary on-site detour are by the use of a single lane detour.

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

Due to the project's location within the Jordan Lake Watershed, Design Standards in Sensitive Watersheds will be employed; NCDOT Best Management Practices for Construction and Maintenance Activities and Best Management Practices for the Protection of Surface Waters will be employed.

### 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 Corps**2d. If yes, which mitigation option(s) will be used for this project?** Mitigation bank 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**4b. Stream mitigation requested:**

(linear feet)

101 @ 2:1 = 202 linear feet

**4c. If using stream mitigation, stream temperature:**

warm

**4d. Buffer mitigation requested (DWR only):**

(square feet)

35,025 square feet Zone 1, 9,614 square feet Zone 2

**4e. Riparian wetland mitigation requested:**

(acres)

0

**4f. Non-riparian wetland mitigation requested:**

(acres)

0

**4g. Coastal (tidal) wetland mitigation requested:**

(acres)

0

**4h. Comments**

Payment to in-lieu fee fund (DMS).

**6. Buffer mitigation (State Regulated Riparian Buffer Rules) - required by DWR****6a. Will the project result in an impact within a protected riparian buffer that requires buffer mitigation? If yes, you must fill out this entire form - please contact DWR for more information.** Yes No**6b. If yes, then identify the square feet of impact to each zone of the riparian buffer that requires mitigation calculate the amount of mitigation required in the table below.**

	<b>6c. Reason for impact</b>	<b>6d. Total impact (square feet)</b>	<b>Multiplier</b>	<b>6e. Required mitigation (square feet)</b>
Zone 1	Road Crossing/ Impacts Other Than Road Crossings	11,675	3	35,025
Zone 2	Road Crossing/ Impacts Other Than Road Crossings	6,409	1.5	9,614

**6f. Total buffer mitigation required**

44,639

**6g. If buffer mitigation is required, is payment to a mitigation bank or NC Division of Mitigation Services proposed?**

Yes  No

**6h. Attach the acceptance letter from the mitigation bank or NC Division of Mitigation Services.**

(PDF only)

**6i. If no, then discuss what type of mitigation is proposed.**

**6j. Comments:**

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

**1a. Does this project require a Stormwater Management Plan?**

Yes  No

**1b. If this project DOES require a Stormwater Management Plan, then provide a brief, narrative description of the plan:**

Please see attached permit drawings.

**1c. What is the overall percent imperviousness of this project?**

%

**1d. Who will be responsible for the review of the Stormwater Management Plan?\***

Certified Local Government  DEMLR Stormwater Review  
 DWR 401 & Buffer Permitting Branch  DWR Transportation Permitting Branch

## 2. Diffuse Flow Plan

**2a. Does the project include or is it adjacent to protected riparian buffers identified within one of the NC Riparian Buffer Protection Rules?**

Yes  No

**2b. All buffer impacts and high ground impacts require diffuse flow or other form of stormwater treatment. Include a plan that fully documents how diffuse flow will be maintained.**

If, due to site constraints, a BMP other than a level spreader is proposed, please provide a plan for stormwater treatment as outlined in Chapter 8 of the [NC Stormwater BMP Manual](#) and attach a BMP Supplement Form

**What documentation are you providing?**

Level Spreader  
 Other BMP  
(check all that apply)

**Diffused Flow Documentation**

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

File type must be PDF

## 5. DWR 401 Stormwater Review

**5a. Is the Stormwater Management Plan (including BMP Supplemental Forms and Operation and Maintenance Agreements) attached?**

Yes  No

**Stormwater Management Plan Upload**

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

file type must be pdf

## 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

**NEPA or SEPA Final Approval Letter**

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

FILE TYPE MUST BE PDF

## 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

**2b. Is this an after-the-fact permit application?\***

Yes  No

**2c. If you answered "yes" to one or both of the above questions, provide an explanation of the violation(s):**

## 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.**

Due to the minimal transportation impact resulting from this bridge replacement, this project will neither influence nearby land uses nor stimulate growth. Therefore, a detailed indirect or cumulative effects study will not be necessary.

## 4. Sewage Disposal (DWR Requirement)

**4a. Describe, in detail, the treatment methods and dispositions (non-discharge or discharge) of wastewater generated from the proposed project. If the wastewater will be treated at a treatment plant, list the capacity available at that plant.**

## 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 this a DOT project located within Division's 1-8?\***

Yes  
 No

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

NC Natural Heritage Program data, USFWS website, NCDOT/Consultant field surveys; No nesting habitat, nests, or individuals present for bald eagle; the northern long-eared bat (NLEB) is covered by the Programmatic Biological Opinion for Divisions 1 through 8.

## 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?\***

NEPA Documentation

**7c. Historic or Prehistoric Information Upload**

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

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:**

NCDOT Hydraulics Unit coordination with FEMA

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

FEMA Maps

**Miscellaneous attachments not previously requested.**

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

B-5347\_Cover Letter.doc.pdf

446.3KB

File must be PDF

## 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:**\*  
Colin Mellor

**Signature**



Colin Mellor



ROY COOPER  
Governor

Environmental  
Quality

August 31, 2017

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

Dear Mr. Harris:

Subject: EEP Mitigation Acceptance Letter:

**B-5347, Replace Bridge 170 on SR 1212 (Pond Road) over a Prong of Alamance Creek, Alamance County**

The purpose of this letter is to notify you that the Division of Mitigation Services (DMS) will provide the stream and buffer mitigation for the subject project. Based on the information supplied by you on August 31, 2017, the stream and buffer impacts are located in CU 03030002 of the Cape Fear River basin in the Central Piedmont (CP) Eco-Region, and are as follows:

Stream and Wetlands	River Basin	CU Location	Eco-Region	Stream			Wetlands		
				Cold	Cool	Warm	Riparian	Non-Riparian	Coastal Marsh
Impacts	Cape Fear	03030002	CP	0	0	101.0	0	0	0

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

All buffer mitigation requests and approvals are administrated through the Riparian Restoration Buffer Fund. The NCDOT will be responsible to ensure that appropriate compensation for the buffer mitigation will be provided in the agreed upon method of fund transfer. Upon receipt of the NCDWR's Buffer Authorization Certification, DMS will transfer funds from the NCDOT 2984 Fund into the Riparian Restoration Buffer Fund. Upon completion of transfer payment, NCDOT will have completed its riparian buffer mitigation responsibility for TIP Number B-5347. Subsequently, DMS will conduct a review of current NCDOT ILF Program mitigation projects in the river basin to determine if available buffer mitigation credits exist. If there are buffer mitigation credits available, then the Riparian Restoration Buffer Fund will purchase the appropriate amount of buffer mitigation credits from NCDOT ILF Program.

 Nothing Compares

State of North Carolina | Environmental Quality  
217 West Jones Street | 1601 Mail Service Center | Raleigh, North Carolina 27699-1601  
919 707 8600

Mr. Harris  
August 31, 2017  
Page Two  
NCDOT TIP B-5347

Buffer	River Basin	CU	Eco-Region	Buffer Impacts		
				Zone 1	Zone 2	TOTAL
Impacts	Cape Fear (Haw Arm)	03030002	CP	11,675.0	6,409.0	18,084.0

This impact and associated mitigation need were under projected by the NCDOT in the 2017 impact data. DMS will commit to implement sufficient stream and riparian buffer 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 Ms. Beth Harmon at 919-707-8420.

Sincerely,



James B. Stanfill  
DMS Credit Management Supervisor

Cc: Mr. David Bailey, USACE – Raleigh Regulatory Field Office  
Ms. Amy Chapman, NC Division of Water Resources  
File: B-5347



State of North Carolina | Environmental Quality  
217 West Jones Street | 1601 Mail Service Center | Raleigh, North Carolina 27699-1601  
919 707 8600

JUN 17 2013

**U.S. ARMY CORPS OF ENGINEERS**  
**WILMINGTON DISTRICT**

Action Id. SAW-2013-01042 County: Alamance U.S.G.S. Quad: NC-BURLINGTON

**NOTIFICATION OF JURISDICTIONAL DETERMINATION**

Property Owner: NCDOT  
Jim Mason  
Address: 1598 Mail Service Center  
  
Raleigh, NC 27699-1598

Telephone Number:

Size (acres)	NA	Nearest Town	<b>Alamance</b>
Nearest Waterway	<u>Big Alamance Creek</u>	River Basin	<u>Haw, North Carolina.</u>
USGS HUC	<u>3030002</u>	Coordinates	Latitude: <u>36.0356937138797</u> Longitude: <u>-79.4900661844548</u>

Location description: The site is located on NCDOT Bridge 170 at SR1212 over an unnamed tributary to Big Alamance Creek. The site is identified as TIP B-5347.

**Indicate Which of the Following Apply:**

**A. Preliminary Determination**

Based on preliminary information, there may be waters of the U.S. including wetlands on the above described project area. We strongly suggest you have this property inspected to determine the extent of Department of the Army (DA) jurisdiction. To be considered final, a jurisdictional determination must be verified by the Corps. This preliminary determination is not an appealable action under the Regulatory Program Administrative Appeal Process (Reference 33 CFR Part 331). If you wish, you may request an approved JD (which may be appealed), by contacting the Corps district for further instruction. Also, you may provide new information for further consideration by the Corps to reevaluate the JD.

**B. Approved Determination**

- There are Navigable Waters of the United States within the above described property subject to the permit requirements of Section 10 of the Rivers and Harbors Act and Section 404 of the Clean Water Act. 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.
- There are waters of the U.S. including wetlands on the above described property 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.
  - We strongly suggest you have the wetlands on your property delineated. Due to the size of your property and/or our present workload, the Corps may not be able to accomplish this wetland delineation in a timely manner. For a more timely delineation, you may wish to obtain a consultant. To be considered final, any delineation must be verified by the Corps.
  - The waters of the U.S. including wetlands on your project area have been delineated and the delineation has been verified by the Corps. We strongly suggest you have this delineation surveyed. Upon completion, this survey should be reviewed and verified by the Corps. Once verified, this survey will provide an accurate depiction of all areas subject to CWA jurisdiction on your property which, provided there is no change in the law or our published regulations, may be relied upon for a period not to exceed five years.
  - The waters of the U.S. including wetlands have been delineated and surveyed and are accurately depicted on the plat signed by the Corps Regulatory Official identified below on \_\_\_\_\_. 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.
- There are no waters of the U.S., to include wetlands, present on the above described project area which are subject to the permit requirements of Section 404 of the Clean Water Act (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.

- The property is located in one of the 20 Coastal Counties subject to regulation under the Coastal Area Management Act (CAMA). You should contact the Division of Coastal Management in Morehead City, NC, at (252) 808-2808 to determine their requirements.

Placement of dredged or fill material within waters of the US and/or wetlands without a Department of the Army permit may constitute a violation of Section 301 of the Clean Water Act (33 USC § 1311). If you have any questions regarding this determination and/or the Corps regulatory program, please contact Andrew Williams at **919-554-4884 x26** or [Andrew.E.Williams2@usace.army.mil](mailto:Andrew.E.Williams2@usace.army.mil).

**C. Basis For Determination:** Stream SC (Big Alamance Creek) is a relatively permanent water (RPW) and a traditionally navigable water (TNW), in the lower reaches. Big Alamance Creek is a tributary to the Haw River, a TNW. The Haw River is a tributary to the Cape Fear River, a navigable water of the United States. Streams SA and SB are unnamed tributaries to Big Alamance Creek. The Ordinary High Water Marks (OHWMs) of the three (3) streams were indicated by the following physical characteristics: clear natural line impressed on the bank, shelving, and the destruction of terrestrial vegetation. The wetlands meet the hydrophytic vegetation, wetland hydrology, and hydric soil criteria of the 1987 Corps of Engineers Wetland Delineation Manual and the Eastern Mountains and Piedmont Regional Supplement and are adjacent to Big Alamance Creek. The Pond labelled PA is an impoundment of Stream SB.

**D. Remarks:** Based on 5 June 2013 site visit. Stream SB appeared to be intermittent and a determination was made that compensatory mitigation would be required at a 1:1 ratio on the portion located south of SR1212 and no compensatory mitigation would be required for the portion located north of SR1212, based on the USACE stream quality assessment worksheet score SB south=42 and SB north =31).

## **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 jurisdictional determinations as indicated in B. above)**

This correspondence constitutes an approved jurisdictional 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: Jason Steele, Review Officer  
60 Forsyth Street SW, Room 10M15  
Atlanta, Georgia 30303-8801

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 \_\_\_\_\_.

\*\*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: Andrew Williams

Date: June 6, 2013

Expiration Date: June 6, 2018

*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 attached customer Satisfaction Survey or visit <http://per2.nwp.usace.army.mil/survey.html> to complete the survey online.*

Copy furnished:

Beth Reed  
Kimley-Horn & Associates, Inc.  
3001 Weston Parkway  
Cary  
North Carolina  
27513

Amy Euliss  
NC DENR Winston-Salem Regional Office  
Division of Water Quality  
585 Waughtown Street  
Winston-Salem, NC 27107

**NOTIFICATION OF ADMINISTRATIVE APPEAL OPTIONS AND PROCESS AND  
REQUEST FOR APPEAL**

Applicant: **Kimley-Horn & Associates, Inc.**  
**Beth Reed**

File Number: **SAW-2013-01042**

Date: **June 6, 2013**

Attached is:	See Section below
<input type="checkbox"/> INITIAL PROFFERED PERMIT (Standard Permit or Letter of permission)	A
<input type="checkbox"/> PROFFERED PERMIT (Standard Permit or Letter of permission)	B
<input type="checkbox"/> PERMIT DENIAL	C
<input type="checkbox"/> APPROVED JURISDICTIONAL DETERMINATION	D
<input checked="" type="checkbox"/> PRELIMINARY JURISDICTIONAL DETERMINATION	E

**SECTION I** - The following identifies your rights and options regarding an administrative appeal of the above decision. Additional information may be found at <http://www.usace.army.mil/inet/functions/cw/cecw0/reg> or Corps regulations at 33 CFR Part 331.

**A: INITIAL PROFFERED PERMIT: You may accept or object to the permit.**

- **ACCEPT:** If you received a Standard Permit, you may sign the permit document and return it to the district engineer for final authorization. If you received a Letter of Permission (LOP), you may accept the LOP and your work is authorized. Your signature on the Standard Permit or acceptance of the LOP means that you accept the permit in its entirety, and waive all rights to appeal the permit, including its terms and conditions, and approved jurisdictional determinations associated with the permit.
- **OBJECT:** If you object to the permit (Standard or LOP) because of certain terms and conditions therein, you may request that the permit be modified accordingly. You must complete Section II of this form and return the form to the district engineer. Your objections must be received by the district engineer within 60 days of the date of this notice, or you will forfeit your right to appeal the permit in the future. Upon receipt of your letter, the district engineer will evaluate your objections and may: (a) modify the permit to address all of your concerns, (b) modify the permit to address some of your objections, or (c) not modify the permit having determined that the permit should be issued as previously written. After evaluating your objections, the district engineer will send you a proffered permit for your reconsideration, as indicated in Section B below.

**B: PROFFERED PERMIT: You may accept or appeal the permit**

- **ACCEPT:** If you received a Standard Permit, you may sign the permit document and return it to the district engineer for final authorization. If you received a Letter of Permission (LOP), you may accept the LOP and your work is authorized. Your signature on the Standard Permit or acceptance of the LOP means that you accept the permit in its entirety, and waive all rights to appeal the permit, including its terms and conditions, and approved jurisdictional determinations associated with the permit.
- **APPEAL:** If you choose to decline the proffered permit (Standard or LOP) because of certain terms and conditions therein, you may appeal the declined permit under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division engineer. This form must be received by the division engineer within 60 days of the date of this notice.

**C: PERMIT DENIAL: You may appeal the denial of a permit under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division engineer. This form must be received by the division engineer within 60 days of the date of this notice.**

**D: APPROVED JURISDICTIONAL DETERMINATION: You may accept or appeal the approved JD or provide new information.**

- **ACCEPT:** You do not need to notify the Corps to accept an approved JD. Failure to notify the Corps within 60 days of the date of this notice, means that you accept the approved JD in its entirety, and waive all rights to appeal the approved JD.
- **APPEAL:** If you disagree with the approved JD, you may appeal the approved JD under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the district engineer. This form must be received by the division engineer within 60 days of the date of this notice.

**E: PRELIMINARY JURISDICTIONAL DETERMINATION:** You do not need to respond to the Corps regarding the preliminary JD. The Preliminary JD is not appealable. If you wish, you may request an approved JD (which may be appealed), by contacting the Corps district for further instruction. Also you may provide new information for further consideration by the Corps to reevaluate the JD.

## SECTION II - REQUEST FOR APPEAL or OBJECTIONS TO AN INITIAL PROFFERED PERMIT

**REASONS FOR APPEAL OR OBJECTIONS:** (Describe your reasons for appealing the decision or your objections to an initial proffered permit in clear concise statements. You may attach additional information to this form to clarify where your reasons or objections are addressed in the administrative record.)

**ADDITIONAL INFORMATION:** The appeal is limited to a review of the administrative record, the Corps memorandum for the record of the appeal conference or meeting, and any supplemental information that the review officer has determined is needed to clarify the administrative record. Neither the appellant nor the Corps may add new information or analyses to the record. However, you may provide additional information to clarify the location of information that is already in the administrative record.

## POINT OF CONTACT FOR QUESTIONS OR INFORMATION:

If you have questions regarding this decision and/or the appeal process you may contact:

**District Engineer, Wilmington Regulatory Division,  
Attn: Andrew Williams  
3331 Heritage Trade Drive, Suite 105  
Wake Forest, North Carolina 27587**

If you only have questions regarding the appeal process you may also contact:

Mr. Jason Steele, Administrative Appeal Review Officer  
CESAD-PDO  
U.S. Army Corps of Engineers, South Atlantic Division  
60 Forsyth Street, Room 10M15  
Atlanta, Georgia 30303-8801  
Phone: (404) 562-5137

**RIGHT OF ENTRY:** Your signature below grants the right of entry to Corps of Engineers personnel, and any government consultants, to conduct investigations of the project site during the course of the appeal process. You will be provided a 15 day notice of any site investigation, and will have the opportunity to participate in all site investigations.

Date:

Telephone number:

\_\_\_\_\_  
Signature of appellant or agent.

**For Permit denials, Proffered Permits and approved Jurisdictional Determinations send this form to:**

**Division Engineer, Commander, U.S. Army Engineer Division, South Atlantic, Attn: Mr. Jason Steele,  
Administrative Appeal Officer, CESAD-PDO, 60 Forsyth Street, Room 10M15, Atlanta, Georgia 30303-8801  
Phone: (404) 562-5137**

## ATTACHMENT

## PRELIMINARY JURISDICTIONAL DETERMINATION FORM

BACKGROUND INFORMATIONA. REPORT COMPLETION DATE FOR PRELIMINARY JURISDICTIONAL DETERMINATION (JD): *06 Jun 2013*

## B. NAME AND ADDRESS OF PERSON REQUESTING PRELIMINARY JD:

NCDOT – Natural Environment Section  
 ATTN: James Mason  
 1598 Mail Service Center  
 Raleigh, North Carolina 27699-1598

C. DISTRICT OFFICE, FILE NAME, AND NUMBER: *SAW-RG-R; NCDOT/B5347/SR1212*  
*Bridge 170/Div. 5*D. PROJECT LOCATION(S) AND BACKGROUND INFORMATION: *The site is located on NCDOT Bridge 170 @ SR 1212*  
 (USE THE ATTACHED TABLE TO DOCUMENT MULTIPLE WATERBODIES AT DIFFERENT SITES)

State: NC County/parish/borough: Alamance City: Burlington

Center coordinates of site (lat/long in degree decimal format):

Lat. 36.035700° N, Long. 79.490000° W.

Universal Transverse Mercator: 17

Name of nearest waterbody: Alamance Creek

Identify (estimate) amount of waters in the review area:

Non-wetland waters: 906 linear feet: 3-80 width (ft)

Ponds: 0.03 acre (PA)

Cowardin Class: Riverine

Stream Flow:

- Intermittent (SB); Perennial (SA,SC)

Wetlands: 0.01 acres.

Cowardin Class: Palustrine

Name of any water bodies on the site that have been identified as Section 10 waters:

Tidal: n/a

Non-Tidal: n/a

## E. REVIEW PERFORMED FOR SITE EVALUATION (CHECK ALL THAT APPLY):

Office (Desk) Determination. Date: *Jun 6, 2013*

Field Determination. Date(s): *Jun 5, 2013*

1. The Corps of Engineers believes that there may be jurisdictional waters of the United States on the subject site, and the permit applicant or other affected party who requested this preliminary JD is hereby advised of his or her option to request and obtain an approved jurisdictional determination (JD) for that site. Nevertheless, the permit applicant or other person who requested this preliminary JD has declined to exercise the option to obtain an approved JD in this instance and at this time.
2. In any circumstance where a permit applicant obtains an individual permit, or a Nationwide General Permit (NWP) or other general permit verification requiring "pre-construction notification" (PCN), or requests verification for a non-reporting NWP or other general permit, and the permit applicant has not requested an approved JD for the activity, the permit applicant is hereby made aware of the following: (1) the permit applicant has elected to seek a permit authorization based on a preliminary JD, which does not make an official determination of jurisdictional waters; (2) that the applicant has the option to request an approved JD before accepting the terms and conditions of the permit authorization, and that basing a permit authorization on an approved JD could possibly result in less compensatory mitigation being required or different special conditions; (3) that the applicant has the right to request an individual permit rather than accepting the terms and conditions of the NWP or other general permit authorization; (4) that the applicant can accept a permit authorization and thereby agree to comply with all the terms and conditions of that permit, including whatever mitigation requirements the Corps has determined to be necessary; (5) that undertaking any activity in reliance upon the subject permit authorization without requesting an approved JD constitutes the applicant's acceptance of the use of the preliminary JD, but that either form of JD will be processed as soon as is practicable; (6) accepting a permit authorization (e.g., signing a proffered individual permit) or undertaking any activity in reliance on any form of Corps permit authorization based on a preliminary JD constitutes agreement that all wetlands and other water bodies on the site affected in any way by that activity are jurisdictional waters of the United States, and precludes any challenge to such jurisdiction in any administrative or judicial compliance or enforcement action, or in any administrative appeal or in any Federal court; and (7) whether the applicant elects to use either an approved JD or a preliminary JD, that JD will be processed as soon as is practicable. Further, an approved JD, a proffered individual permit (and all terms and conditions contained therein), or individual permit denial can be administratively appealed pursuant to 33 C.F.R. Part 331, and that in any administrative appeal, jurisdictional issues can be raised (see 33 C.F.R. 331.5(a)(2)). If, during that administrative appeal, it becomes necessary to make an official determination whether CWA jurisdiction exists over a site, or to provide an official delineation of jurisdictional waters on the site, the Corps will provide an approved JD to accomplish that result, as soon as is practicable. This preliminary JD finds that there "may be" waters of the United States on the subject project site, and identifies all aquatic features on the site that could be affected by the proposed activity, based on the following information:

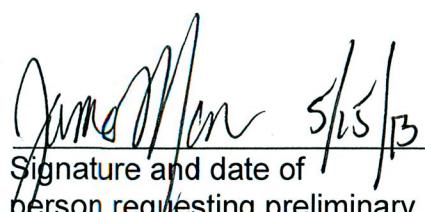
**SUPPORTING DATA. Data reviewed for preliminary JD (check all that apply)**

- checked items should be included in case file and, where checked and requested, appropriately reference sources below):

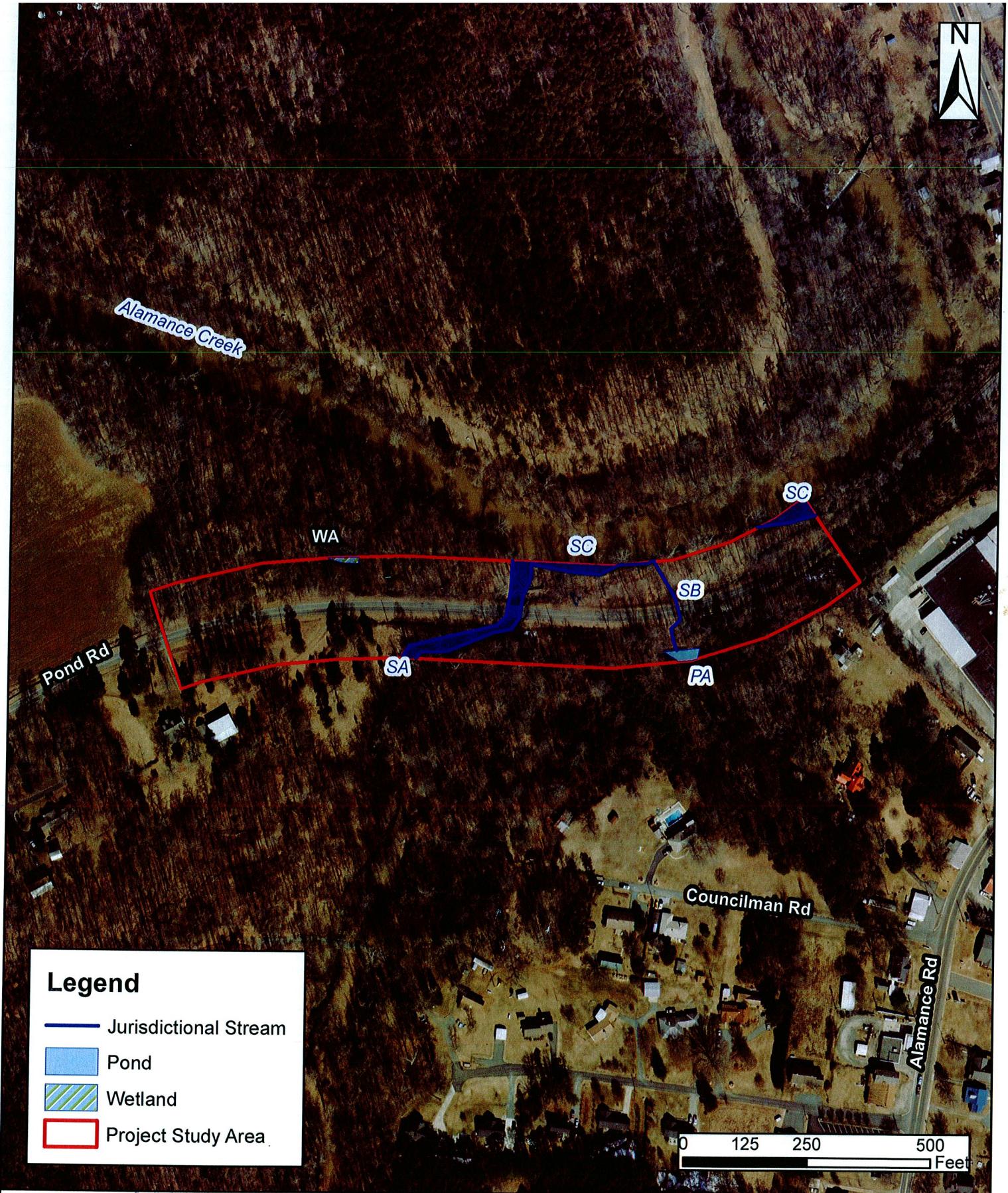
- Maps, plans, plots or plat submitted by or on behalf of the applicant/consultant:
- Data sheets prepared/submitted by or on behalf of the applicant/consultant.
- ACW*  Office concurs with data sheets/delineation report.
- Office does not concur with data sheets/delineation report.
- Data sheets prepared by the Corps:
- Corps navigable waters' study:
- U.S. Geological Survey Hydrologic Atlas:
  - USGS NHD data.
  - USGS 8 and 12 digit HUC maps.
- U.S. Geological Survey map(s). Cite scale & quad name: 1:24,000 –Burlington.
- USDA Natural Resources Conservation Service Soil Survey. Citation: Alamance County (1960).
- National wetlands inventory map(s). Cite name:
- State/Local wetland inventory map(s):
- FEMA/FIRM maps:
- 100-year Floodplain Elevation is: (National Geodetic Vertical Datum of 1929)
- Photographs:  Aerial (Name & Date): NC Orthoimagery Program - 2010.  
or  Other (Name & Date):
- Previous determination(s). File no. and date of response letter:
- Other information (please specify):

**IMPORTANT NOTE: The information recorded on this form has not necessarily been verified by the Corps and should not be relied upon for later jurisdictional determinations.**

  
 Signature and date of  
 Regulatory Project Manager  
 (REQUIRED)

 5/15/13  
 Signature and date of  
 person requesting preliminary JD  
 (REQUIRED, unless obtaining  
 the signature is impracticable)

Site number	Latitude	Longitude	Cowardin Class	Estimated amount of aquatic resource in review area	Class of aquatic resource
SA	36.0355	-79.4902	Riverine	340 linear feet	non-section 10 – non-tidal/non-wetland
SB	36.0357	-79.4889	Riverine	198 linear feet	non-section 10 – non-tidal/non-wetland
SC	36.0359	-79.4895	Riverine	368 linear feet	non-section 10 – non-tidal/non-wetland
PA	36.0354	-79.4888	Lacustrine	0.03 acre	non-section 10 – non-tidal
WA	36.0359	-79.4911	Palustrine	0.01 acre	non-section 10 – wetland



RECEIVED

MAY 17 2013

RALEIGH REGULATORY  
FIELD OFFICE

**Figure 3: Jurisdiction Features Map**  
TIP Project: B-5347  
Bridge #170 on SR1212 over Prong of Alamance Creek



(Version 2.07; Released October 2016)

## North Carolina Department of Transportation

Highway Stormwater Program  
STORMWATER MANAGEMENT PLAN  
FOR NCDOT PROJECTS

WBS Element: 46061.1.1	TIP No.: B-5347	County(ies): Alamance	Page 1 of 3
General Project Information			
WBS Element:	46061.1.1	TIP Number:	B-5347
NCDOT Contact:	PAUL ATKINSON, PE	Contractor / Designer:	MICHELLE BERRY
Address:	1020 BIRCH RIDGE DRIVE RALEIGH, NC 27610	Address:	1020 BIRCH RIDGE DRIVE RALEIGH, NC 27610
	Phone: 919-707-6707		Phone: 919-707-6719
Email:	patkinson@ncdot.gov	Email:	mgberry@ncdot.gov
City/Town:	BURLINGTON	County(ies):	Alamance
River Basin(s):	Cape Fear	CAMA County?	No
Wetlands within Project Limits?	No	Project Description	
Project Length (lin. miles or feet):	0.11	Surrounding Land Use:	Rural, Agricultural, Residential
Proposed Project		Existing Site	
Project Built-Upon Area (ac.)	0.2 ac.	0.2 ac.	
Typical Cross Section Description:	2@ 10' Lanes, 3' Grassed shoulders (6' with guardrail)	approximately 2@9.5' Lanes, Variable Grassed shoulder width 3'+	
Annual Avg Daily Traffic (veh/hr/day):	Design/Future: 700 vpd	Year: 2035	Existing: 455 Year: 2017
General Project Narrative: (Description of Minimization of Water Quality Impacts)	Project will replace existing bridge with a 13'x7' RCBC. An on-site detour will be used. One existing ditch will be impacted, located to the south-east of the bridge. The existing ditch has a steep slope with head-cutting present at the outlet. The proposed ditch reduced the slope and widens the ditch base allowing a vegetative liner to be retained. This ditch meets the criteria for a grass swale. Existing drainage patterns are maintained. 2:1 roadway fill slopes are used to minimize stream impacts and the culvert is buried 1' to maintain natural bed material through completed culvert. Additional impacts are minimized by the use of 3' grassed shoulders (6' where guardrail is present). The impacts due to the temporary on-site detour are by the use of a single lane detour.  This project is under the Jordan Lake Riparian Buffer Rules.		
Waterbody Information			
Surface Water Body (1):	Prong of Alamance Creek	NCDWR Stream Index No.:	16-19-(4.5)a
NCDWR Surface Water Classification for Water Body		Primary Classification:	Water Supply V (WS-V)
		Supplemental Classification:	Nutrient Sensitive Waters (NSW)
Other Stream Classification:	None		
Impairments:	None		
Aquatic T&E Species?	No	Comments:	
NRTR Stream ID:	SA	Buffer Rules in Effect:	Jordan Lake
Project Includes Bridge Spanning Water Body?	No	Deck Drains Discharge Over Buffer?	N/A
Deck Drains Discharge Over Water Body?	N/A	(If yes, provide justification in the General Project Narrative)	
(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)	



North Carolina Department of Transportation  
Highway Stormwater Program  
**STORMWATER MANAGEMENT PLAN**  
FOR NCDOT PROJECTS



(Version 2.07; Released October 2016)

WBS Element: 46061.1.1 TIP No.: B-5347

**County(ies):** Alamance

Page 2 of 3

## Swales

### Additional Comments

The majority of the ditch is existing and will not be impacted during the construction of the proposed culvert. The average ditch side slope is 4.5:1.



## North Carolina Department of Transportation

Highway Stormwater Program  
STORMWATER MANAGEMENT PLAN  
FOR NCDOT PROJECTS

(Version 2.07; Released October 2016)

WBS Element: 46061.1.1 TIP No.: B-5347 County(ies): Alamance Page 3 of 3

## Bridge to Culvert Avoidance and Minimization

## Proposed Structure Summary

Sheet No. & Station	Sheet No.:	4 Station: 14+14	Number of Barrels:	1
Drainage Area (ac or sq mi):		310 Acres	Barrel Width/Diameter (ft):	13
Surface Water Body:		(1) Prong of Alamance Creek	Barrel Height (ft):	7
Culvert Type:		RCBC	Culvert Length (ft)	86'

**Avoidance and Minimization Efforts: (Bridge to Culvert)** Culvert is buried 1'. 2:1 roadway fill slopes were used to minimize the length of the culvert. Culvert width is similar to the existing stream width to maintain normal low flow through the proposed culvert. Selection of the culvert was based in part on the construction constraints with the proximity of Big Alamance Creek and the need to maintain traffic onsite due to this road being dead-end.

## Stream Slope

Existing Average Stream Slope (%):	0.26%	Existing Low Flow Channel Dimensions in the Stream:	14'
Proposed Culvert Slope (%):	0.47%		

## Culvert Burial

Proposed Culvert Burial Depth (ft):	1'	Proposed Low Flow Dimensions Through the Culvert:	13'
Existing Streambed Material:	Sand, Cobbles, Gravel		

Proposed Sills/Baffles:	N/A	Existing Low Flow Velocities in the Stream (ft/s):	1.8**
		Proposed Low Flow Velocities Through the Culvert (ft/s):	3.0**
		Alternating Low Flow Sills/Baffles:	N/A

## Culvert/Stream Alignment

Stream Patterns Upstream and Downstream of the Culvert that Could Affect Fish Passage and Bank Stability:	The stream makes two sharp bends. First is located 200' upstream of Ex. Bridge and second located at the culvert (approx. 15' upstream from existing bridge face). 20 degree bend is included in the culvert geometry. The increase in the slope with the culvert is caused by the shortening of the flowlength due to the position of the culvert and reduction in bend angle of the stream as it passes through the culvert.		
Bed Forms Impacted by Culvert (riffles, pools, glides, etc.):			

Low Flow Floodplain Bench Required? (provide justification)	No	Existing conditions do not have floodplain benches and proposed culvert width is similar to existing low-flow widths.	
Bends at Inlet/Outlet? (describe culvert alignment with stream)	Yes	Existing stream alignment has moderate bend @ upstream end of proposed culvert. Proposed Culvert has 20 degree bend and is positioned to align with natural topography while minimizing culvert bend angle to help avoid trapping debris in culvert.	

Stream Realignment Necessary? (provide justification)	No		
Bank Stabilization:	Lay back side slopes to 2:1 from toe of bank to top of bank and lined with CI I rip rap bank stabilization.		

## Outlet Velocities

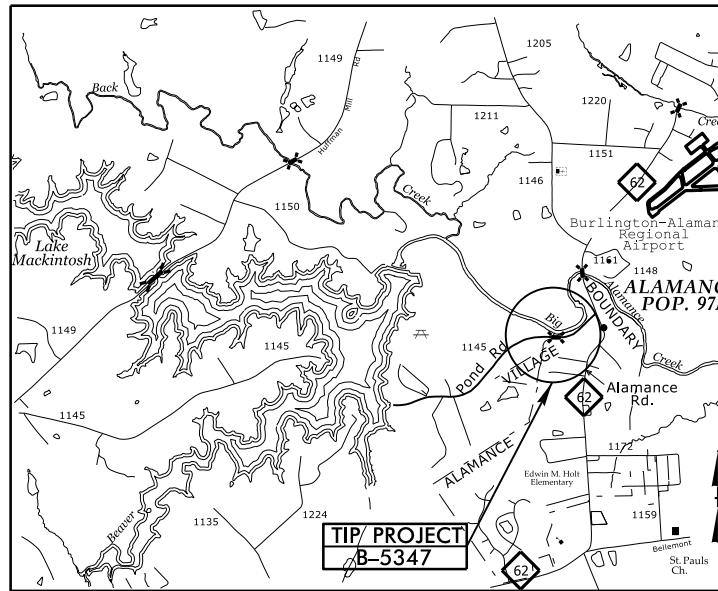
Natural Stream Channel 2-yr Velocity (ft/s):	7.88	Natural Stream Channel 10-yr Velocity (ft/s):	8.78
Proposed Culvert 2-yr Outlet Velocity (ft/s):	6.8	Proposed Culvert 10-yr Outlet Velocity (ft/s):	8.13

## Roadway Geometric Considerations

**Evaluate/Describe Roadway Geometric Constraints:** There are several roadway geometric constraints such as the height of the existing fill, the existing curves in the roadway east and west of the project area, and the proximity of the roadway to Big Alamance Creek. Additionally, maintaining traffic during construction (with on-site detour) was a constraint due to Pond Rd being a dead end road.

\*\*The actual velocities in low flows are expected to be lower due to the effects of the backwater from Big Alamance Creek.

See Sheet 1A For Index of Sheets  
See Sheet 1B For Conventional Symbols  
See Sheet 1C-1 For Survey Control Shee



STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

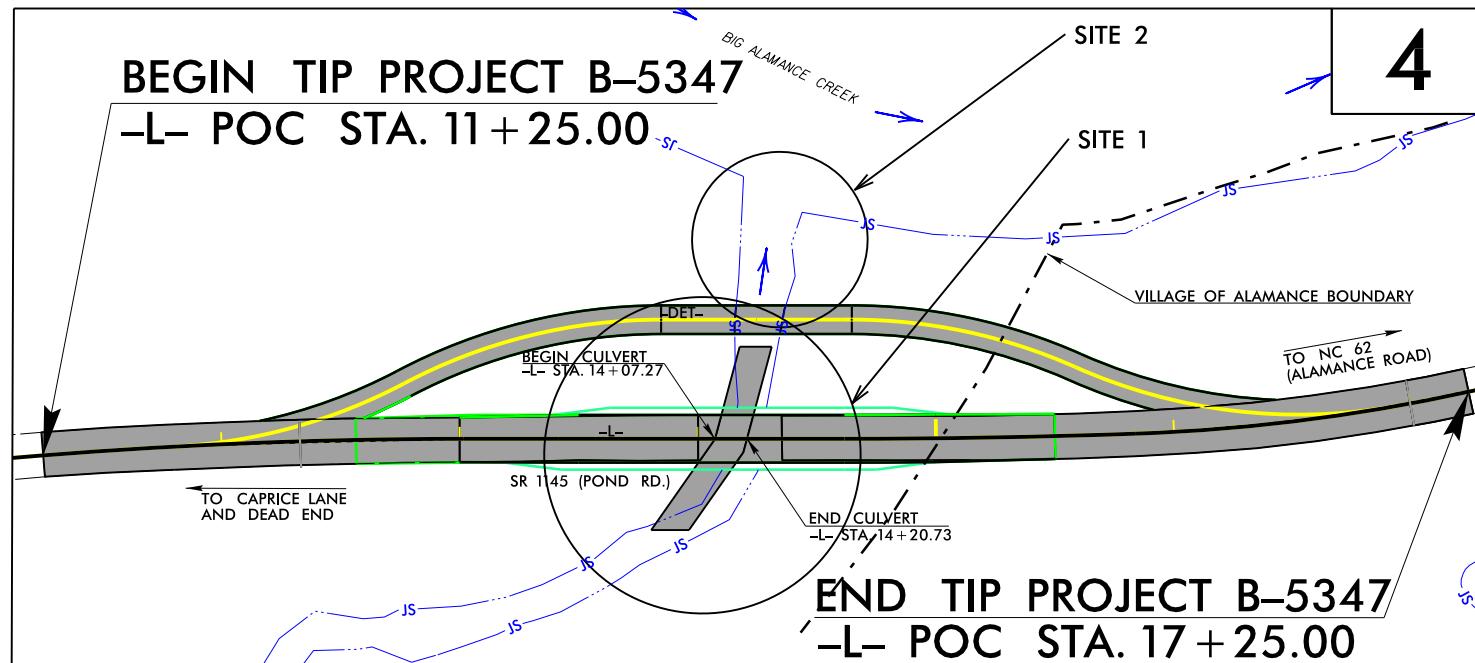
# *ALAMANCE COUNTY*

**LOCATION: BRIDGE NO. 170 OVER A PRONG OF BIG ALAMANCE CREEK ON SR 1145 (POND RD.**

**TYPE OF WORK: GRADING, DRAINAGE, PAVING, AND CULVERT**

# WETLAND AND SURFACE WATER IMPACTS PERMIT

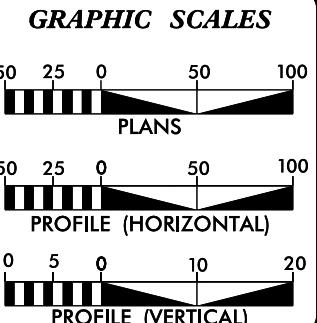
卷八 83/201



**PERMIT DRAWING  
SHEET 1 OF 7**

THIS PROJECT IS PARTIALLY WITHIN THE VILLAGE OF ALAMANCE MUNICIPAL BOUNDARY.  
CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD II

**DOCUMENT NOT CONSIDERED FINAL  
UNLESS ALL SIGNATURES COMPLETED**



**DESIGN DATA**

ADT 2017 =	455
ADT 2035 =	700
K =	12 %
D =	60 %
T =	7 %
V =	45 M
* TTST =	2%
DUAL =	5%
FUNC CLASS =	Lo
SUB-REGIONAL TIE	

### **PROJECT LENGTH**

LENGTH ROADWAY TIP PROJECT B-5347 = 0.114 MILE  
TOTAL LENGTH TIP PROJECT B-5347 = 0.114 MILES

*Prepared In the Office of:*  
**DIVISION OF HIGHWAYS**  
1000 Birch Ridge Dr., Raleigh NC, 27610

2012 STANDARD SPECIFICATIONS

### **RIGHT OF WAY DA**

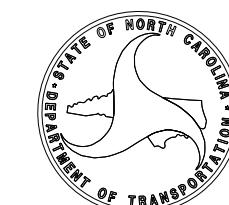
**LETTING DATE:**  
**NOVEMBER 21, 201**

**HYDRAULICS ENGINEER**

**SIGNATURE:**

## **ROADWAY DESIGN ENGINEER**

**P.E.**



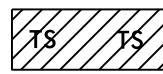
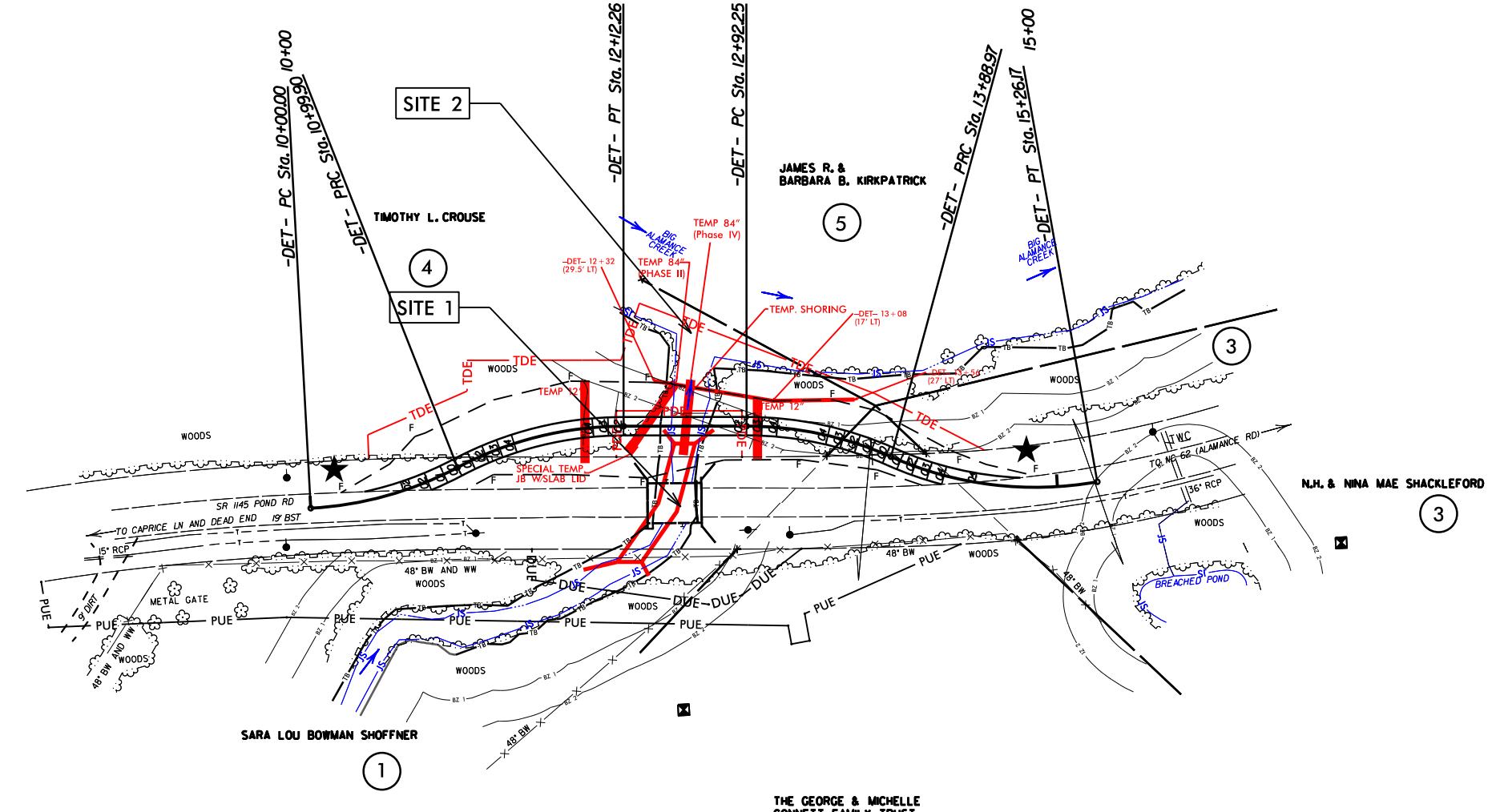
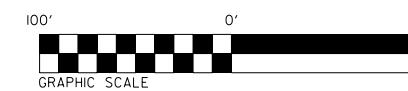


# WETLAND AND SURFACE WATER IMPACTS PERMIT

## TEMPORARY DETOUR

NAD 83/2011

REVISIONS

DENOTES TEMPORARY  
IMPACTS IN SURFACE WATERDENOTES IMPACTS IN  
SURFACE WATER

GRAPHIC SCALE

PROPOSED SIGNALIZED  
ONE LANE - 2 WAY DETOUR

★ DENOTES TEMPORARY SIGNALS

SEE EROSION CONTROL PLANS FOR  
CULVERT CONSTRUCTION SEQUENCE PLANSEE SHEET 4 FOR MAINLINE (-L-)  
SEE SHEET 5 FOR PROFILE

# WETLAND AND SURFACE WATER IMPACTS PERMIT

# TEMPORARY DETOUR

83/2011

PROJECT REFERENCE NO.	SHEET NO.
<b>B-5347</b>	<b>2B-1</b>
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PERMIT DRAWING  
SHEET 3 OF 7

**DOCUMENT NOT CONSIDERED FINAL  
UNLESS ALL SIGNATURES COMPLETED**

## REVISIONS

TS TS

## DENOTES TEMPORARY IMPACTS IN SURFACE WATER

5 5

DENOTES IMPACTS IN  
SURFACE WATER

A graphic scale bar consisting of a black horizontal line with a white checkered pattern on its left side. The pattern is composed of alternating black and white squares. The text "100'" is positioned above the left end of the line, and "0'" is positioned above the right end. Below the line, the word "GRAPHIC" is written in capital letters, followed by a short horizontal line and the word "SCALE".

**PROPOSED SIGNALIZED  
ONE LANE – 2 WAY DETOUR**

★ DENOTES TEMPORARY SIGNALS

**SEE EROSION CONTROL PLANS FOR  
CULVERT CONSTRUCTION SEQUENCE PLAN**

SEE SHEET 4 FOR MAINLINE (-L-)  
SEE SHEET 5 FOR PROFILE



DOCUMENT NOT CONSIDERED FINAL  
 UNLESS ALL SIGNATURES COMPLETED

PERMIT DRAWING  
 SHEET 5 OF 7



# WETLAND AND SURFACE WATER IMPACTS PERMIT

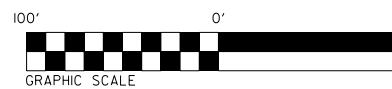
020617 - RW REVISIONS: ADDED TDE, REMOVED PUE, AND CONVERTED PUE TO DUE ON PARCELS 1 AND 2 - TLW



DENOTES TEMPORARY  
 IMPACTS IN SURFACE WATER



DENOTES IMPACTS IN  
 SURFACE WATER



100'

0'

100'

EXISTING GRASS SWALE DATA  
 TOTAL DA= 0.94ac c=0.22  
 Imp= 0.02ac (c=0.5)  
 Gross= 0.02ac (c=0.5)  
 VLS= 0.012 ac (c=0.2)  
 SLOPE= 0.012 ft/ft  
 SS= 2:1 (LT) 7:1 (RT)  
 L PRO= 150'  
 Q2= 0.92cfs Q10= 1.68cfs  
 V2= 1.255k<sup>3</sup> V10= 1.45k<sup>3</sup>  
 D2= 0.43HD10= 0.54H

NC GRID  
 NAD 83 NA 20II

-L- STA. 14 + 83 to 16 + 35 (RT)

100'

0'

100'

IMPACTS IN SURFACE WATER  
 TIMOTHY L. CROUSE

4

SITE 1

TEMP. IMPACTS IN SURFACE WATER  
 JAMES R. & BARBARA B. KIRKPATRICK

5

BANK STABILIZATION  
 SEE DETAIL B

IMPACTS IN SURFACE WATER  
 TIMOTHY L. CROUSE

4

SITE 1

TEMP. IMPACTS IN SURFACE WATER  
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BANK STABILIZATION  
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SITE 1

TEMP. IMPACTS IN SURFACE WATER  
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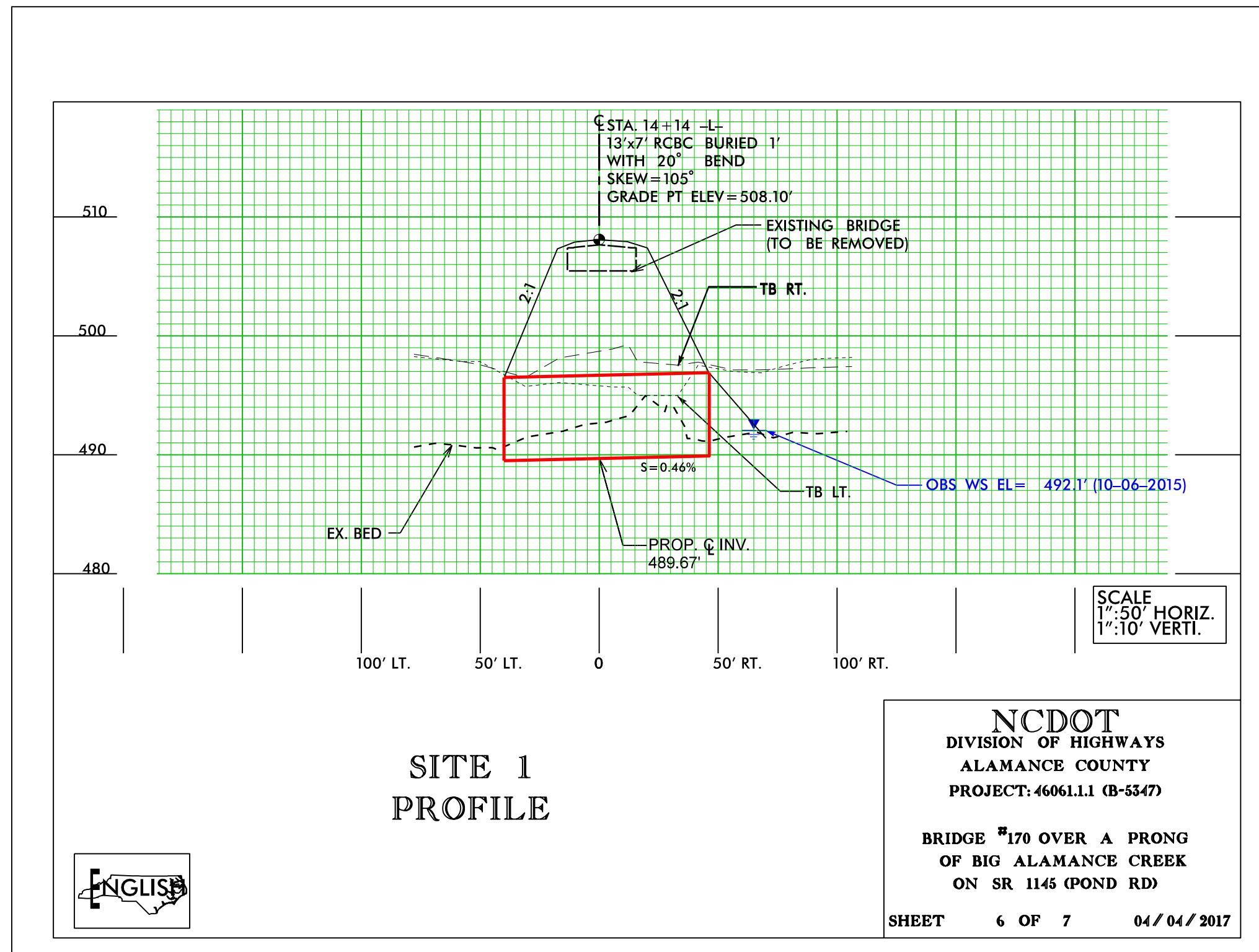
5

BANK STABILIZATION  
 SEE DETAIL B

IMPACTS IN SURFACE WATER  
 TIMOTHY L. CROUSE

4

SITE 1



WETLAND PERMIT IMPACT SUMMARY												
Site No.	Station (From/To)	Structure Size / Type	WETLAND IMPACTS					SURFACE WATER IMPACTS				
			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)	Temp. SW impacts (ac)	Existing Channel Impacts Permanent (ft)	Existing Channel Impacts Temp. (ft)	Natural Stream Design (ft)
1	-L- 13+59 TO 14+53	13'X8' RCBC WITH RIPRAP IN CHANNEL						0.04	0.03	101	117	
1	-L- 13+11 to 14+57	BANK STABILIZATION						< 0.01		88		
2	-L- 14+03 to 14+59	BANK STABILIZATION WITH IN BIG ALAMANCE CREEK						< 0.01	< 0.01	8	50	
TOTALS*:								0.05	0.04	197	167	0

\*Rounded totals are sum of actual impacts

## NOTES:

Site 1: 88' of Bank Stabilization is concurrent with 88' of the 117' of temporary impact at site.

NC DEPARTMENT OF TRANSPORTATION

## DIVISION OF HIGHWAYS

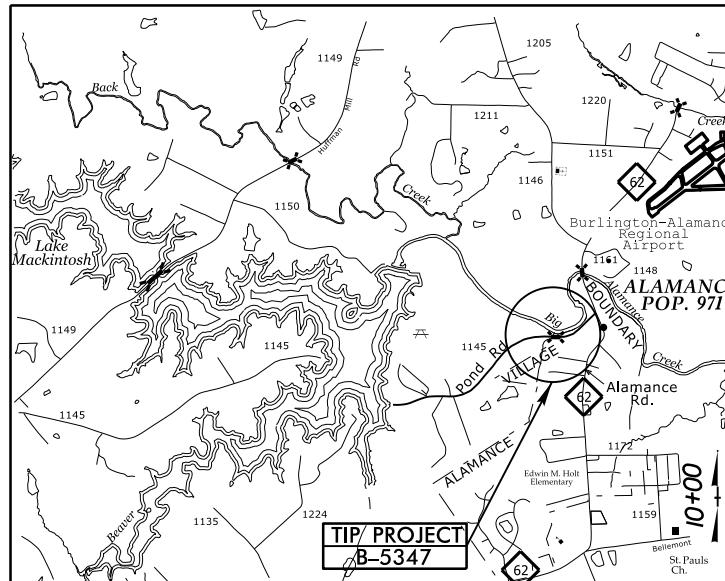
04-04-2017

## AMANCE COUNTY

B-5347

46061.1.1

See Sheet 1A For Index of Sheets  
See Sheet 1B For Conventional Symbols  
See Sheet 1C-1 For Survey Control Sheet



STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

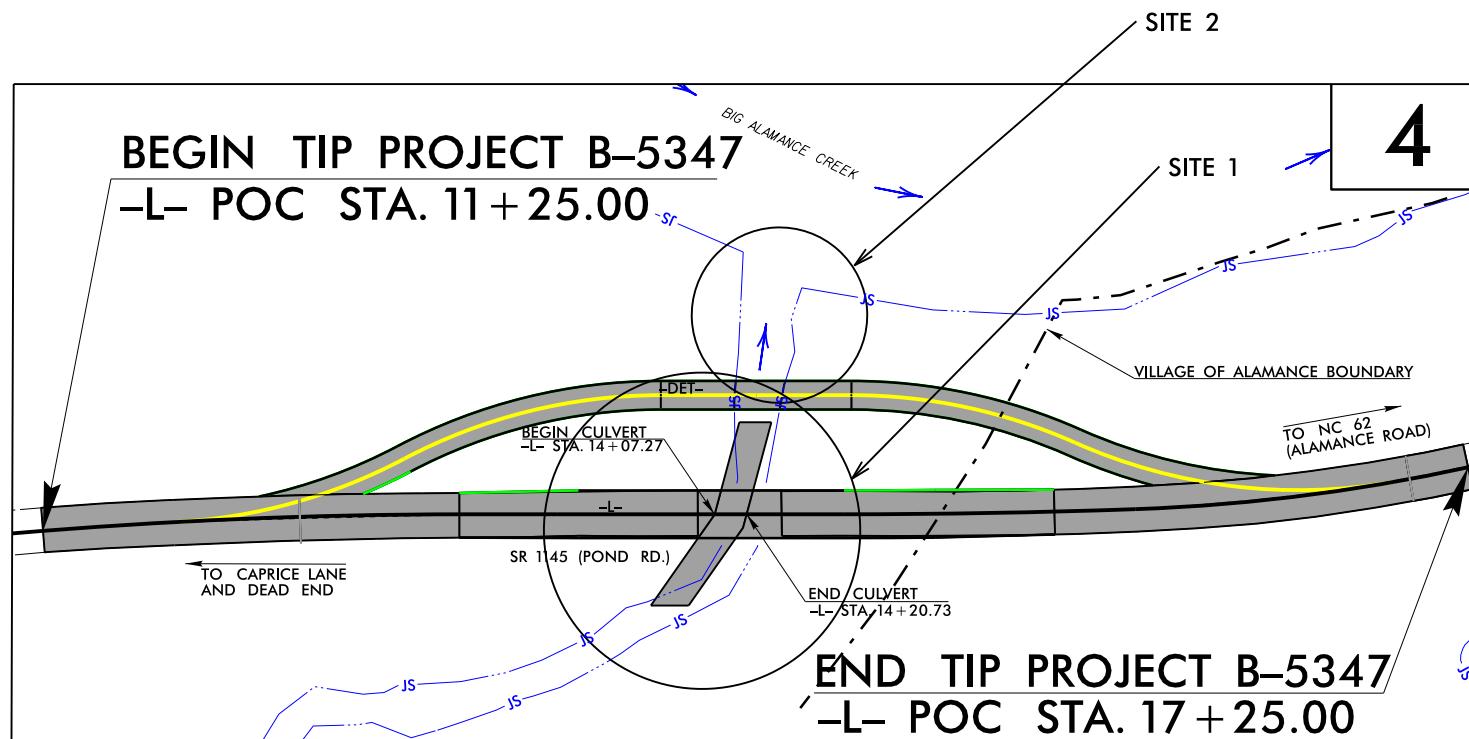
# *ALAMANCE COUNTY*

**LOCATION: BRIDGE NO. 170 OVER A PRONG OF BIG ALAMANCE CREEK ON SR 1145 (POND RD.)**

**TYPE OF WORK: GRADING, DRAINAGE, PAVING, AND CULVERT**

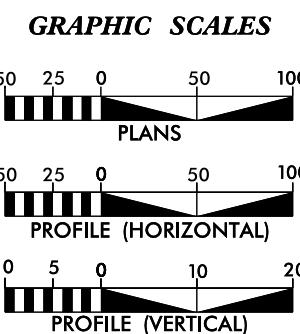
# BUFFER IMPACTS PERMIT

ED 93301



THIS PROJECT IS PARTIALLY WITHIN THE VILLAGE OF ALAMANCE MUNICIPAL BOUNDARY.  
CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD II

DOCUMENT NOT CONSIDERED FINAL



**DESIGN DATA**

ADT 2017 =	455
ADT 2035 =	700
K =	12 %
D =	60 %
T =	7 %
V =	45 M
* TTST =	2%
DUAL =	5%
FUNC CLASS =	Lo
SUB-REGIONAL TIE	

### **PROJECT LENGTH**

LENGTH ROADWAY TIP PROJECT B-5347 = 0.114 MILES  
TOTAL LENGTH TIP PROJECT B-5347 = 0.114 MILES

*Prepared in the Office of:*  
**DIVISION OF HIGHWAYS**  
*1000 Birch Ridge Dr., Raleigh NC 27610*

---

2012 STANDARD SPECIFICATION

***RIGHT OF WAY DA***  
**NOVEMBER 28, 20**

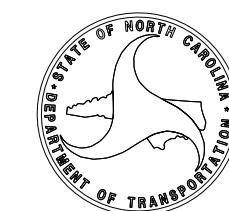
***LETTING DATE:***  
**NOVEMBER 21, 20**

HYDRAULICS ENGINEER

**P.E.**

**ROADWAY DESIGN  
ENGINEER**

11. *What is the primary purpose of the following statement?*



**DOCUMENT NOT CONSIDERED FINAL  
UNLESS ALL SIGNATURES COMPLETED**

**BUFFER DRAWING  
SHEET 2 OF 5**



REVISIONS

REVISIONS

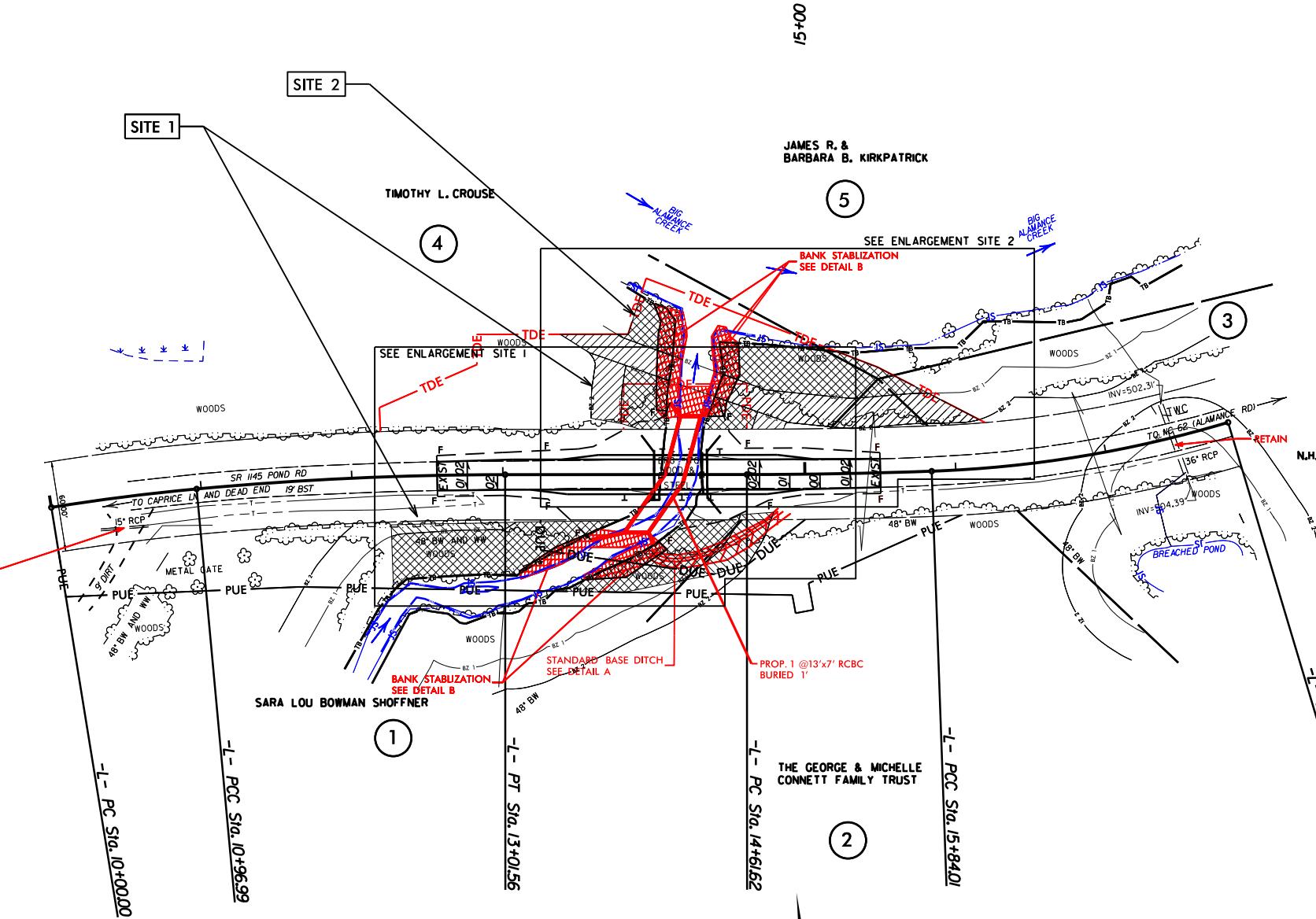
## MITIGABLE IMPACTS ZONE

## MITIGABLE IMPACTS ZONE

EXISTING RAW INPUT DATA	
TOTAL DA =	0.94oc
Imp =	0.02oc (c=0.9)
Gross =	0.02oc [c=0.5]
Woods =	0.07oc (c=0.2)
SLOPE =	0.004 H/P
SS =	2.1 (LT) 7.1 (RT)
L REQ =	94
L PRO =	150
Q2 =	0.92fc
V2 =	1.25fh
D2 =	0.43fD10 - 0.54f

1.68cfs

A graphic scale bar consisting of a series of black and white squares. The text "100'" is at the far left, and "0'" is at the far right. Below the scale bar, the text "GRAPHIC SCALE" is centered.



**DETAIL SHEET 2B-1 FOR DETOUR  
SHEET 5 FOR PROFILE**

**DETAIL A**  
**STANDARD BASE DITCH**  
 (Not to Scale)

When  $B < 6.0'$

Natural Ground

$B$

$D$

$d$

Min.  $D = 1\text{FT.}$

Max.  $d = 0.5\text{FT.}$

$B = 2\text{FT.}$

Natural Ground

**DETAIL B**  
RIP RAP AT CULVERT  
(Not to Scale)

RIP RAP AT PIPE OUTLET  
(STD. NO. 870.02)

1 @ 13'X7' RCBC

8'IP RAP TO TB

US LENGTH: 10'  
DS LENGTH: 20'

ADDITIONAL BANK STABILIZATION  
(SEE PLAN VIEW FOR LIMITS)

EXCAVATION

TOE OF SLOPE

GEOTEXTILE

NATURAL GROUND

PROP.

BURIED 1'

CHANNEL BED (Variable)

1 @ 13'X7' RCBC

8'IP RAP TO TB

US LENGTH: 10'  
DS LENGTH: 20'

ADDITIONAL BANK STABILIZATION  
(SEE PLAN VIEW FOR LIMITS)

EXCAVATION

NATURAL GROUND

1.0 min

1.0 min

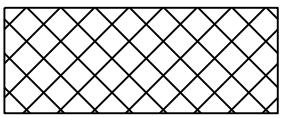
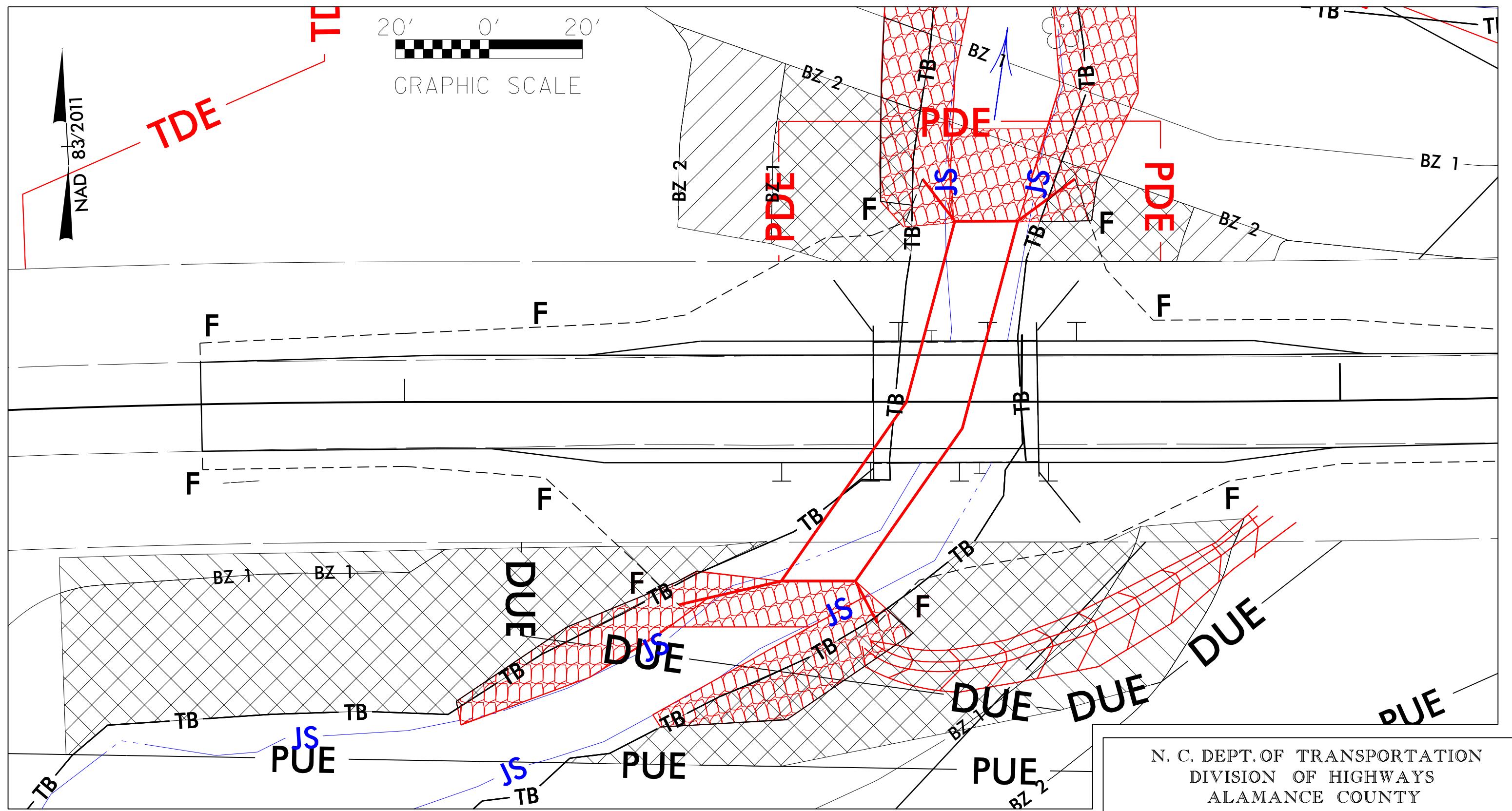
1.5'

GEOTEXTILE

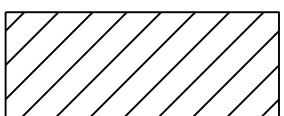
TOE OF SLOPE

Est. = 390 C.Y. of EXCAVATION  
Est. = 350 Ton of Class I Rip-Rap  
Est. = 510 S.Y. of GEOTEXTILE

-L- STA. 13-11 TO STA. 14-04 (RT)  
-L- STA. 14-01 TO STA. 14-67 (LT)



## MITIGABLE IMPACTS ZONE 1



## MITIGABLE IMPACTS ZONE 2

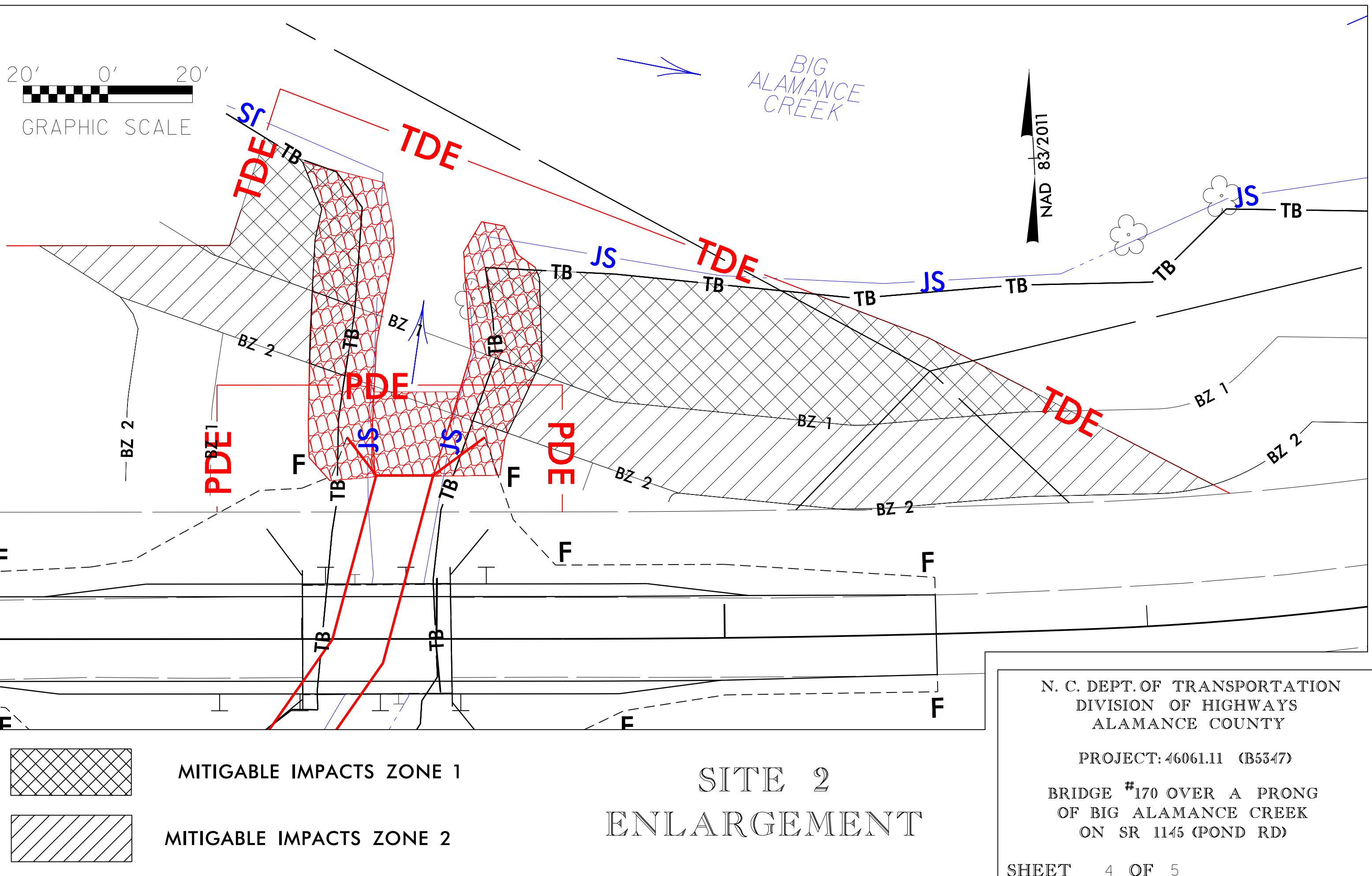
# SITE 1

## ENLARGEMENT

N. C. DEPT. OF TRANSPORTATION  
DIVISION OF HIGHWAYS  
ALAMANCE COUNTY

PROJECT: 46061.11 (B5347)

BRIDGE #170 OVER A PRONG  
OF BIG ALAMANCE CREEK  
ON SR 1145 (POND RD)



## MITIGABLE IMPACTS ZONE 1

## MITIGABLE IMPACTS ZONE 2

# SITE 2

## ENLARGEMENT

N. C. DEPT. OF TRANSPORTATION  
DIVISION OF HIGHWAYS  
ALAMANCE COUNTY

PROJECT: 46061.11 (B5347)

BRIDGE #170 OVER A PRONG  
OF BIG ALAMANCE CREEK  
ON SR 1145 (POND RD)

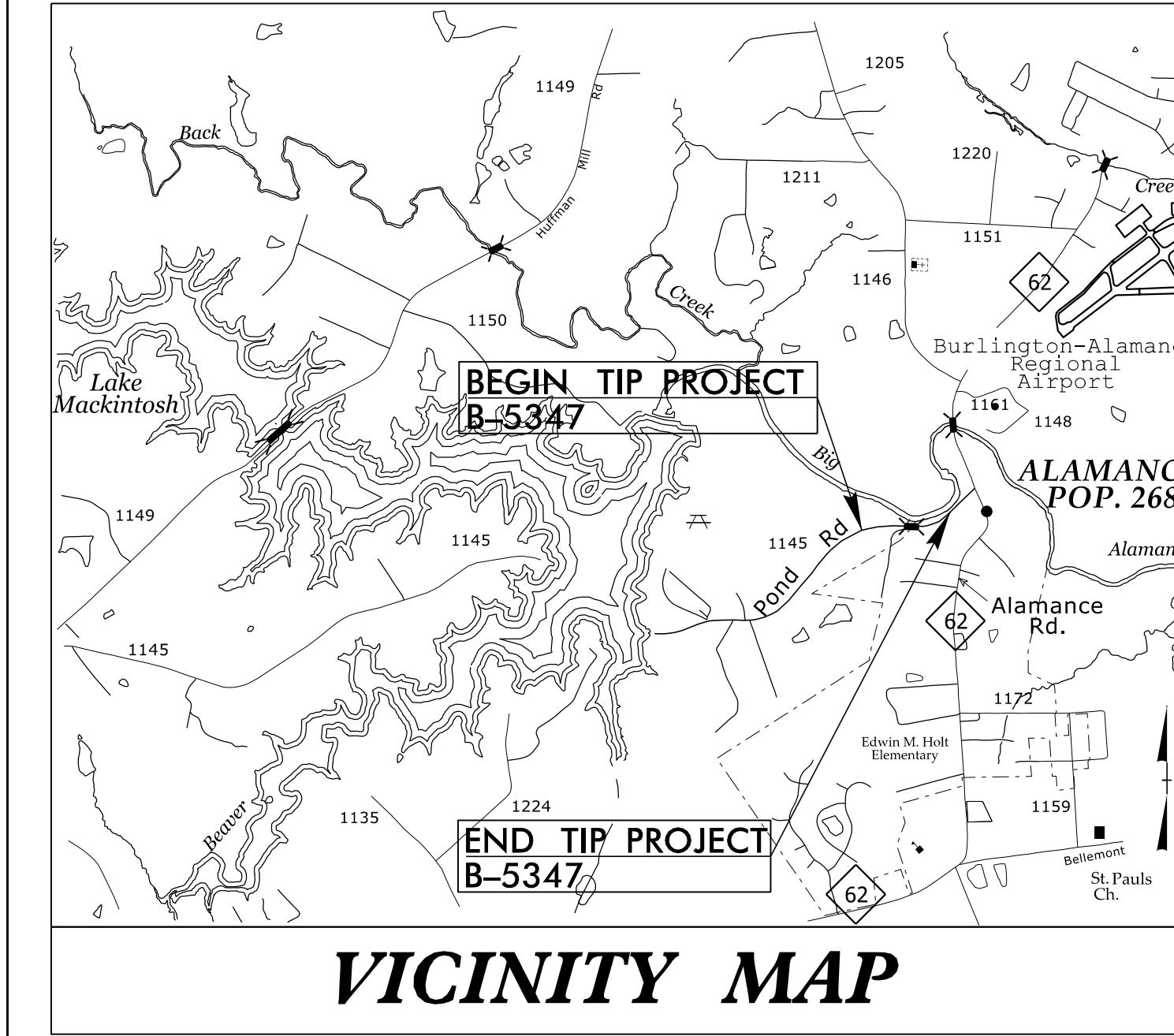
SHEET 4 OF 5

RIPARIAN BUFFER IMPACTS SUMMARY													
			IMPACT								BUFFER REPLACEMENT		
SITE NO.	STRUCTURE SIZE / TYPE	STATION (FROM/TO)	TYPE			ALLOWABLE			MITIGABLE				
			ROAD CROSSING	BRIDGE	PARALLEL IMPACT	ZONE 1 (ft <sup>2</sup> )	ZONE 2 (ft <sup>2</sup> )	TOTAL (ft <sup>2</sup> )	ZONE 1 (ft <sup>2</sup> )	ZONE 2 (ft <sup>2</sup> )	TOTAL (ft <sup>2</sup> )	ZONE 1 (ft <sup>2</sup> )	ZONE 2 (ft <sup>2</sup> )
1	13'x7' RCBC	-L- 12+25 to 14+89	X						6926	2381	9307		
1	Bank Stabilization	-L- 13+11 to 14+04 RT	X						752		752		
2	Bank Stabilization	-L- 14+00 to 14+57 LT			X				568	309	877		
2	13' x 7' RCBC, impacts to Big Alamance Creek	-L- 13+38 Lt to 16+18 Lt			X				3429	3719	7148		
<b>TOTAL:</b>						0	0	0	11675	6409	18084	0.0	0.0

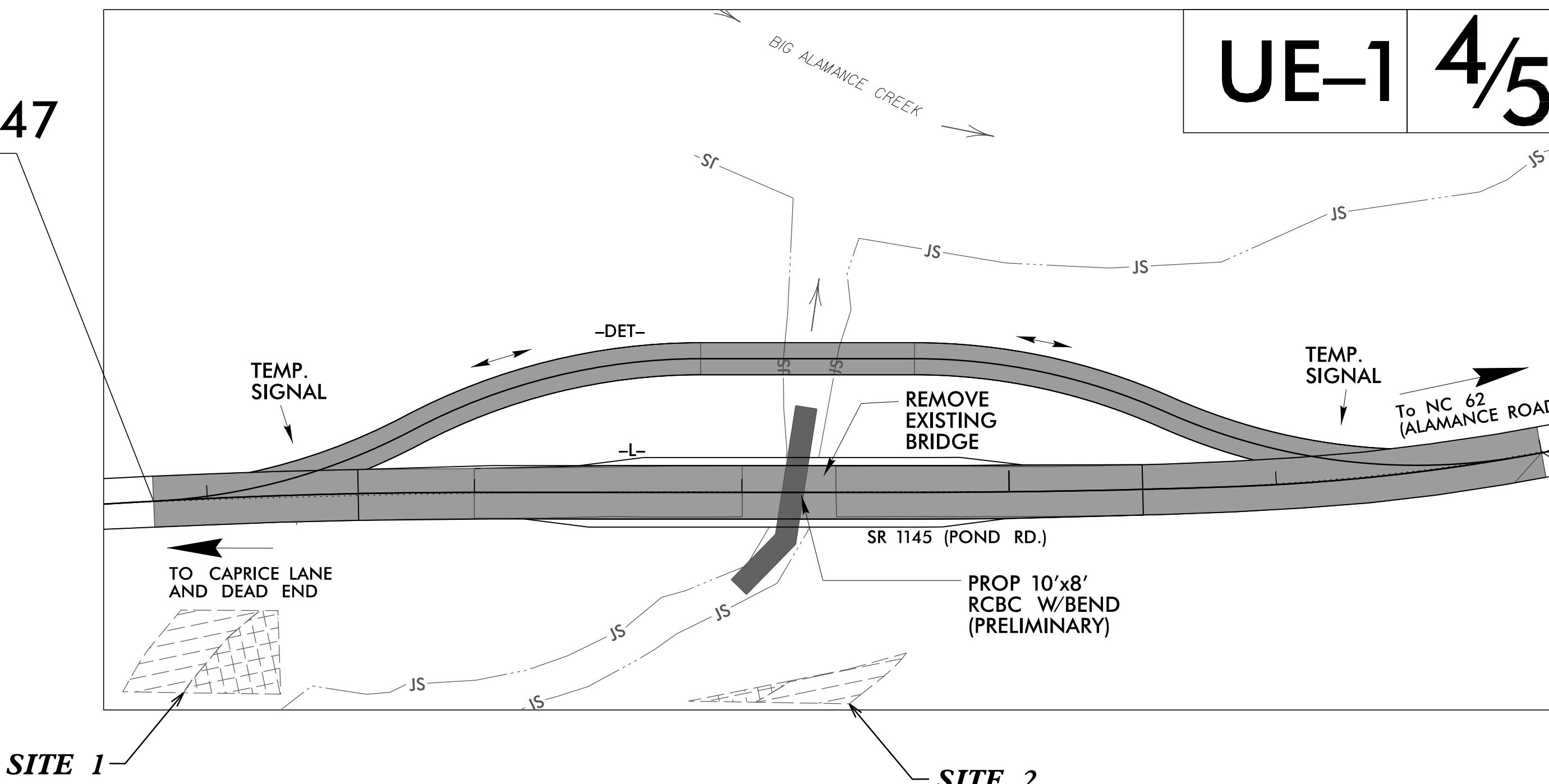
N.C. DEPT. OF TRANSPORTATION  
DIVISION OF HIGHWAYS

ALAMANCE COUNTY  
PROJECT: 46061.1.1 (B-5347)

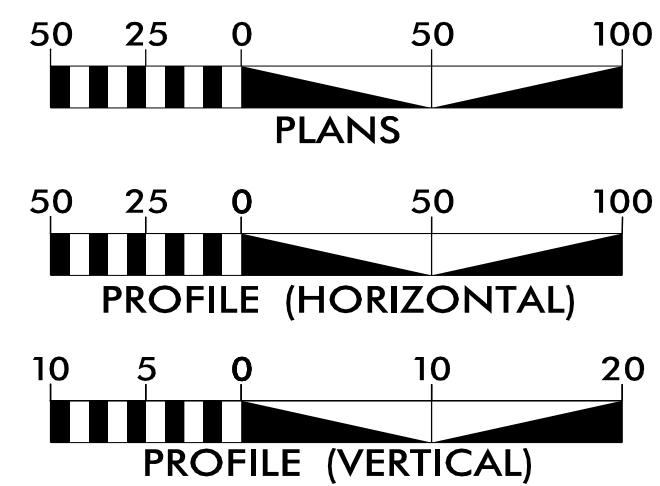
DATE 04/4/2017  
SHEET 5 OF 5

**TIP PROJECT:B-5347****VICINITY MAP**

**BEGIN TIP PROJECT B-5347**  
**-L- STA. 11 + 80.00**



**END TIP PROJECT B-5347**  
**-L- STA. 17 + 00.00**

**GRAPHIC SCALES****INDEX OF SHEETS****SHEET NO.:**

UE-1

UE-2

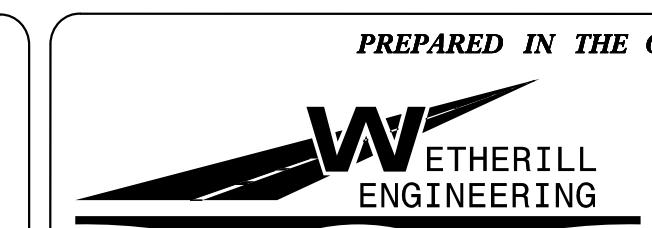
**DESCRIPTION:**

TITLE SHEET

UTILITY BUFFER IMPACTS

**UTILITY OWNERS WITH CONFLICTS**

- (A) POWER - DUKE ENERGY
- (B) TELEPHONE - AT&T
- (C) CATV - TIME WARNER CABLE



TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN  
 CIVIL/SITE DESIGN - GIS/GPS - CONSTRUCTION OBSERVATION

John D. Schriner, PLS PROJECT UTILITY COORDINATOR

PREPARED IN THE OFFICE OF:  
 1223 Jones Franklin Road  
 Raleigh, N.C. 27606  
 License No. F-0377  
 Bus: 919 851 8077  
 Fax: 919 851 8107



DIVISION OF HIGHWAYS  
 UTILITIES UNIT  
 1555 MAIL SERVICES CENTER  
 RALEIGH NC 27699-1555  
 PHONE (919) 707-6690  
 FAX (919) 250-4151

Donna Jackson, PE	UTILITIES REGIONAL ENGINEER
Don Proper, PE	UTILITIES ENGINEER
Ed Reams	UTILITIES AREA COORDINATOR
Tanya Sampson	UTILITIES COORDINATOR

# UTILITY BUFFER IMPACTS

**PERMIT DRAWING  
SHEET 2 OF 3**

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**UTILITIES**

 ALLOWABLE IMPACTS ZONE 1  
(UTILITIES)

 ALLOWABLE IMPACTS ZONE 2  
(UTILITIES)

MECHANIZED CLEARING ON ALL  
UTILITY IMPACTS

NAD 83/2011

## REVISIONS

28 August 2017 – Revised utility buffer impacts to coordinate with revised hydro buffer impacts.

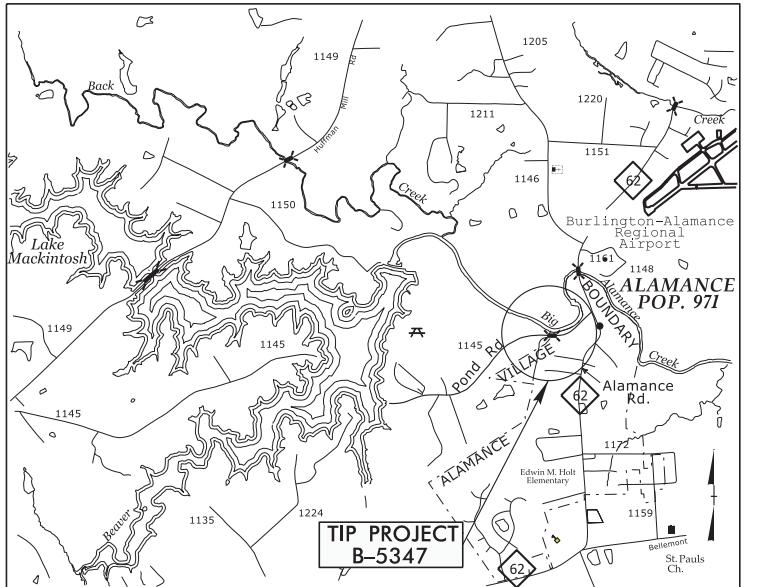
## **BUFFER IMPACTS SUMMARY**

N.C. DEPT. OF TRANSPORTATION  
DIVISION OF HIGHWAYS

ALAMANCE COUNTY  
PROJECT: B-5347

08-28-2017  
SHEET 3 OF 3

See Sheet 1A For Index of Sheets  
See Sheet 1B For Conventional Symbols  
See Sheet 1C-1 For Survey Control Sheet

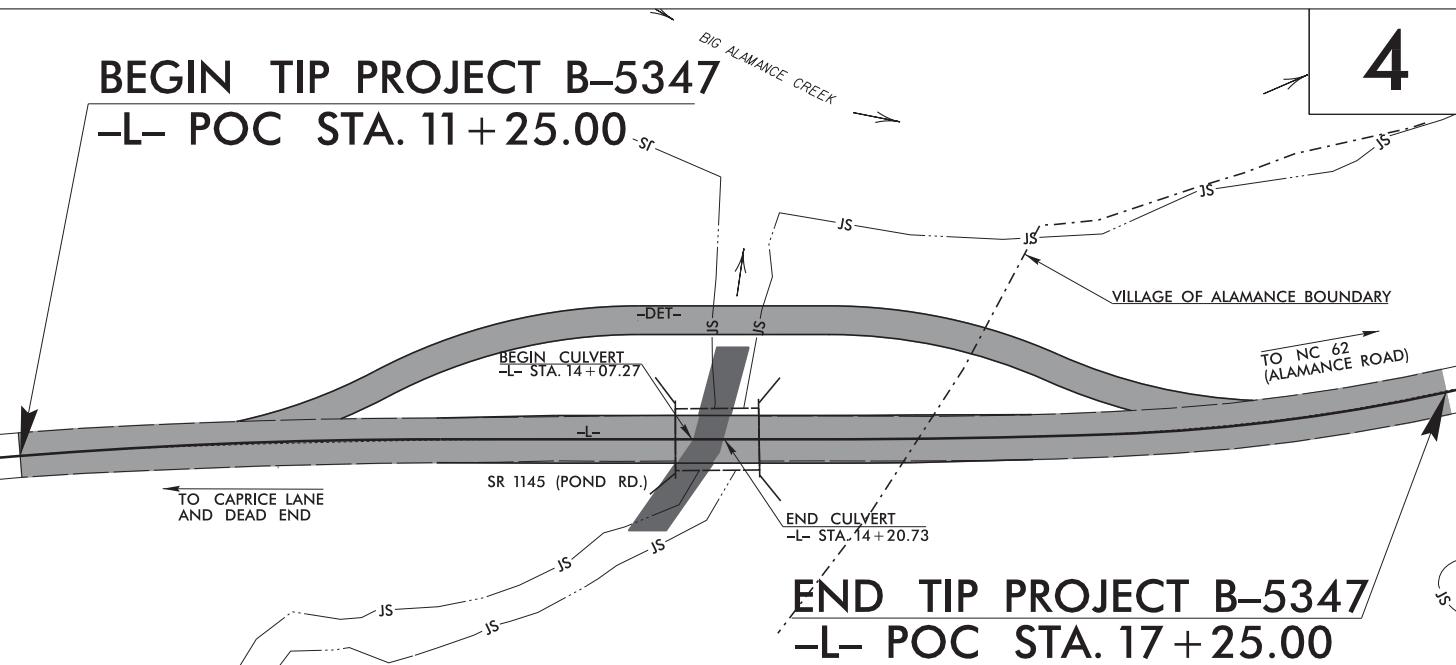


STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

# *ALAMANCE COUNTY*

LOCATION: BRIDGE NO. 170 OVER A PRONG OF BIG ALAMANCE CREEK ON SR 1145 (POND RD.)

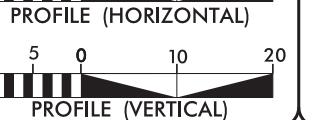
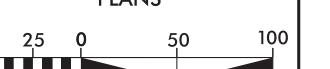
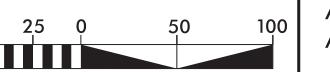
**TYPE OF WORK: GRADING, DRAINAGE, PAVING, AND CULVERT**



THIS PROJECT IS PARTIALLY WITHIN THE VILLAGE OF ALAMANCE MUNICIPAL BOUNDARY.  
CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD II.

**DOCUMENT NOT CONSIDERED FINAL  
UNLESS ALL SIGNATURES COMPLETED**

## **GRAPHIC SCALES**



## *DESIGN DATA*

ADT 2017 = 455 vpd  
 ADT 2035 = 700 vpd  
 K = 12 %  
 D = 60 %  
 T = 7 % \*  
 V = 45 MPH  
 \* TTST = 2%  
 DUAL = 5%  
 FUNC CLASS = Local  
 SUB-REGIONAL TIER

### **PROJECT LENGTH**

LENGTH ROADWAY TIP PROJECT B-5347 = 0.114 MILES  
TOTAL LENGTH TIP PROJECT B-5347 = 0.114 MILES

*Prepared in the Office of:*  
**DIVISION OF HIGHWAYS**  
1000 Birch Ridge Dr., Raleigh, NC 27616

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2012 STANDARD SPECIFICATIONS

**RIGHT OF WAY DATE:**  
NOVEMBER 28, 2016

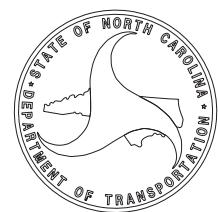
***LETTING DATE:***  
**NOVEMBER 21, 2017**

## HYDRAULICS ENGINEER

P.E.

## *ROADWAY DESIGN ENGINEER*

**P.E.**



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

Note: Not to Scale

\*S.U.E. = Subsurface Utility Engineering

**BOUNDARIES AND PROPERTY:**

State Line \_\_\_\_\_  
 County Line \_\_\_\_\_  
 Township Line \_\_\_\_\_  
 City Line \_\_\_\_\_  
 Reservation Line \_\_\_\_\_  
 Property Line \_\_\_\_\_  
 Existing Iron Pin   
 Property Corner \_\_\_\_\_  
 Property Monument  ECM  
 Parcel/Sequence Number  (123)

Existing Fence Line  x x x x  
 Proposed Woven Wire Fence   
 Proposed Chain Link Fence   
 Proposed Barbed Wire Fence   
 Existing Wetland Boundary  WLB  
 Proposed Wetland Boundary  WLB  
 Existing Endangered Animal Boundary  EAB  
 Existing Endangered Plant Boundary  EPB  
 Existing Historic Property Boundary  HPB  
 Known Contamination Area: Soil  ☠ ☠  
 Potential Contamination Area: Soil  ☠ ☠  
 Known Contamination Area: Water  ☠ ☠  
 Potential Contamination Area: Water  ☠ ☠  
 Contaminated Site: Known or Potential  ☠ ☠ ?

**BUILDINGS AND OTHER CULTURE:**

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

**HYDROLOGY:**

Stream or Body of Water \_\_\_\_\_  
 Hydro, Pool or Reservoir   
 Jurisdictional Stream JS \_\_\_\_\_  
 Buffer Zone 1 BZ 1 \_\_\_\_\_  
 Buffer Zone 2 BZ 2 \_\_\_\_\_  
 Flow Arrow   
 Disappearing Stream   
 Spring   
 Wetland   
 Proposed Lateral, Tail, Head Ditch   
 False Sump 

**RAILROADS:**

Standard Gauge \_\_\_\_\_  
 RR Signal Milepost   
 Switch \_\_\_\_\_  
 RR Abandoned \_\_\_\_\_  
 RR Dismantled \_\_\_\_\_

**RIGHT OF WAY:**

Baseline Control Point   
 Existing Right of Way Marker   
 Existing Right of Way Line \_\_\_\_\_  
 Proposed Right of Way Line   
 Proposed Right of Way Line with Iron Pin and Cap Marker   
 Proposed Right of Way Line with Concrete or Granite RW Marker   
 Proposed Control of Access Line with Concrete C/A Marker   
 Existing Control of Access   
 Proposed Control of Access   
 Existing Easement Line   
 Proposed Temporary Construction Easement E \_\_\_\_\_  
 Proposed Temporary Drainage Easement TDE \_\_\_\_\_  
 Proposed Permanent Drainage Easement PDE \_\_\_\_\_  
 Proposed Permanent Drainage / Utility Easement DUE \_\_\_\_\_  
 Proposed Permanent Utility Easement PUE \_\_\_\_\_  
 Proposed Temporary Utility Easement TUE \_\_\_\_\_  
 Proposed Aerial Utility Easement AUE \_\_\_\_\_  
 Proposed Permanent Easement with Iron Pin and Cap Marker 

**ROADS AND RELATED FEATURES:**

Existing Edge of Pavement \_\_\_\_\_  
 Existing Curb \_\_\_\_\_  
 Proposed Slope Stakes Cut   
 Proposed Slope Stakes Fill   
 Proposed Curb Ramp   
 Existing Metal Guardrail \_\_\_\_\_  
 Proposed Guardrail   
 Existing Cable Guiderail \_\_\_\_\_  
 Proposed Cable Guiderail \_\_\_\_\_  
 Equality Symbol 

**VEGETATION:**

Single Tree   
 Single Shrub   
 Hedge   
 Woods Line 

Orchard \_\_\_\_\_   
 Vineyard \_\_\_\_\_ 

**EXISTING STRUCTURES:**

MAJOR:  
 Bridge, Tunnel or Box Culvert   
 Bridge Wing Wall, Head Wall and End Wall   
 MINOR:  
 Head and End Wall   
 Pipe Culvert \_\_\_\_\_  
 Footbridge   
 Drainage Box: Catch Basin, DI or JB   
 Paved Ditch Gutter \_\_\_\_\_  
 Storm Sewer Manhole   
 Storm Sewer 

**UTILITIES:**

POWER:  
 Existing Power Pole   
 Proposed Power Pole   
 Existing Joint Use Pole   
 Proposed Joint Use Pole   
 Power Manhole   
 Power Line Tower   
 Power Transformer   
 U/G Power Cable Hand Hole   
 H-Frame Pole   
 U/G Power Line LOS B (S.U.E.\*).  
 U/G Power Line LOS C (S.U.E.\*).  
 U/G Power Line LOS D (S.U.E.\*).  
 TELEPHONE:  
 Existing Telephone Pole   
 Proposed Telephone Pole   
 Telephone Manhole   
 Telephone Pedestal   
 Telephone Cell Tower   
 U/G Telephone Cable Hand Hole   
 U/G Telephone Cable LOS B (S.U.E.\*).  
 U/G Telephone Cable LOS C (S.U.E.\*).  
 U/G Telephone Cable LOS D (S.U.E.\*).  
 U/G Telephone Conduit LOS B (S.U.E.\*).  
 U/G Telephone Conduit LOS C (S.U.E.\*).  
 U/G Telephone Conduit LOS D (S.U.E.\*).  
 MISCELLANEOUS:  
 Utility Pole   
 Utility Pole with Base   
 Utility Located Object   
 Utility Traffic Signal Box   
 Utility Unknown U/G Line LOS B (S.U.E.\*).  
 U/G Tank; Water, Gas, Oil   
 Underground Storage Tank, Approx. Loc.   
 A/G Tank; Water, Gas, Oil   
 Geoenvironmental Boring   
 U/G Test Hole LOS A (S.U.E.\*).  
 Abandoned According to Utility Records   
 End of Information 

**WATER:**

Water Manhole   
 Water Meter   
 Water Valve   
 Water Hydrant   
 U/G Water Line LOS B (S.U.E.\*).  
 U/G Water Line LOS C (S.U.E.\*).  
 U/G Water Line LOS D (S.U.E.\*).  
 Above Ground Water Line 

**TV:**

TV Pedestal   
 TV Tower   
 U/G TV Cable Hand Hole   
 U/G TV Cable LOS B (S.U.E.\*).  
 U/G TV Cable LOS C (S.U.E.\*).  
 U/G TV Cable LOS D (S.U.E.\*).  
 U/G Fiber Optic Cable LOS B (S.U.E.\*).  
 U/G Fiber Optic Cable LOS C (S.U.E.\*).  
 U/G Fiber Optic Cable LOS D (S.U.E.\*).  
 UTILITIES:

GAS:  
 Gas Valve   
 Gas Meter   
 U/G Gas Line LOS B (S.U.E.\*).  
 U/G Gas Line LOS C (S.U.E.\*).  
 U/G Gas Line LOS D (S.U.E.\*).  
 Above Ground Gas Line 

**SANITARY SEWER:**

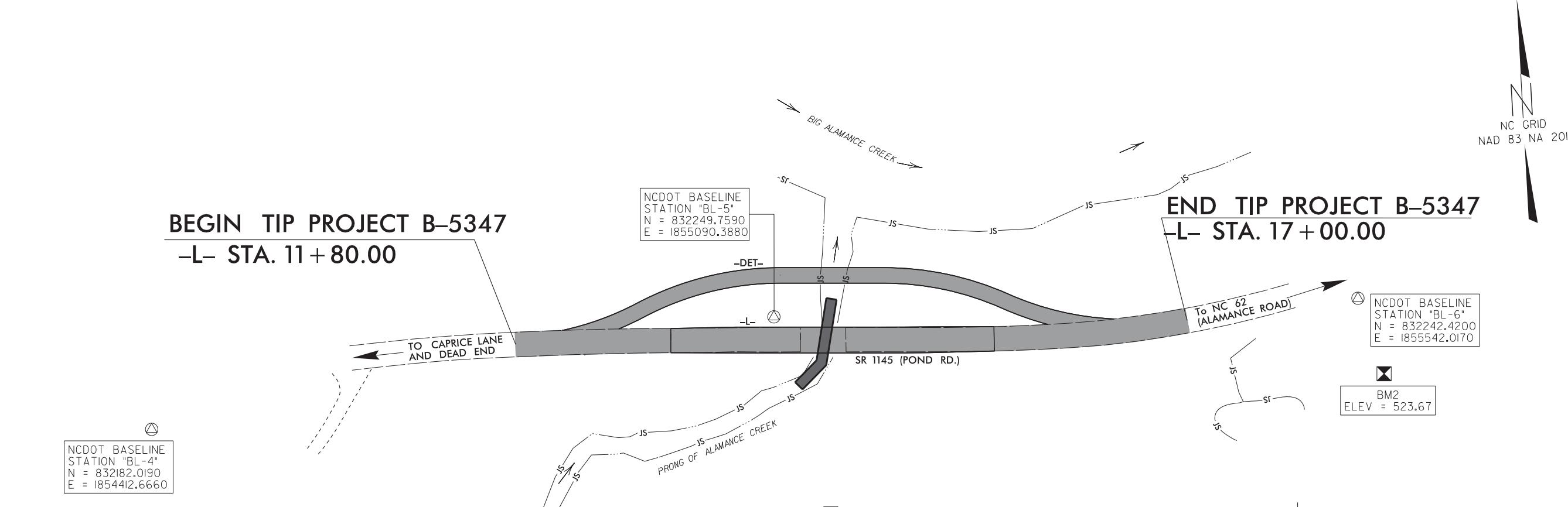
Sanitary Sewer Manhole   
 Sanitary Sewer Cleanout   
 U/G Sanitary Sewer Line   
 Above Ground Sanitary Sewer   
 SS Forced Main Line LOS B (S.U.E.\*).  
 SS Forced Main Line LOS C (S.U.E.\*).  
 SS Forced Main Line LOS D (S.U.E.\*).  
 MISCELLANEOUS:

Utility Pole   
 Utility Pole with Base   
 Utility Located Object   
 Utility Traffic Signal Box   
 Utility Unknown U/G Line LOS B (S.U.E.\*).  
 U/G Tank; Water, Gas, Oil   
 Underground Storage Tank, Approx. Loc.   
 A/G Tank; Water, Gas, Oil   
 Geoenvironmental Boring   
 U/G Test Hole LOS A (S.U.E.\*).  
 Abandoned According to Utility Records   
 End of Information 

E.O.I.

## B-5347 SURVEY CONTROL SHEET

PROJECT REFERENCE NO.	SHEET NO.
B-5347	1C-1
Location and Surveys	



-L- NEW PRELIMINARY PERMANENT DRAINAGE EASEMENTS				
ALIGN	STATION	OFFSET	NORTH	EAST
L	13+80.00	-60.00	832294.6915	1855092.9961
L	13+80.00	-30.00	832264.7362	1855091.3584
L	14+61.71	-30.00	832260.2760	1855172.9441
L	14+61.62	-60.00	832290.2360	1855174.4944
L	13+25.00	30.00	832207.8280	1855033.1651
L	13+25.00	50.00	832187.8579	1855032.0734
L	14+40.00	66.00	832165.6041	1855146.0285
L	14+61.62	60.00	832170.4149	1855167.9438
L	15+00.00	30.00	832198.4703	1855208.2455

## NOTES

- THE CONTROL DATA FOR THIS PROJECT CAN BE FOUND ELECTRONICALLY BY SELECTING PROJECT CONTROL DATA AT:  
[HTTP://WWW.DOH.DOT.STATE.NC.USPRECONSTRUCT/HIGHWAY/LOCATION/PROJECT/](http://WWW.DOH.DOT.STATE.NC.USPRECONSTRUCT/HIGHWAY/LOCATION/PROJECT/)

THE FILES TO BE FOUND ARE AS FOLLOWS:

b5347\_ls\_control.txt

SITE CALIBRATION INFORMATION HAS NOT BEEN PROVIDED FOR THIS PROJECT. IF FURTHER INFORMATION IS NEEDED, PLEASE CONTACT THE LOCATION AND SURVEYS UNIT.

Ⓐ INDICATES GEODETIC CONTROL MONUMENTS USED OR SET FOR HORIZONTAL PROJECT CONTROL BY THE NCDOT LOCATION AND SURVEYS UNIT.

PROJECT CONTROL ESTABLISHED USING GLOBAL POSITIONING SYSTEM.

## DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCDOT FOR MONUMENT "B5347-2" WITH NAD 83/NA 2011 STATE PLANE GRID COORDINATES OF NORTHING: 831354.5510(ft) EASTING: 1853493.6660(ft) ELEVATION: 596.00'(ft) THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.9999417698 THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "B5347-2" TO -L- STATION 11+80.00 IS N 57°32'54" E 1.654.61' ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES VERTICAL DATUM USED IS NAVD 88

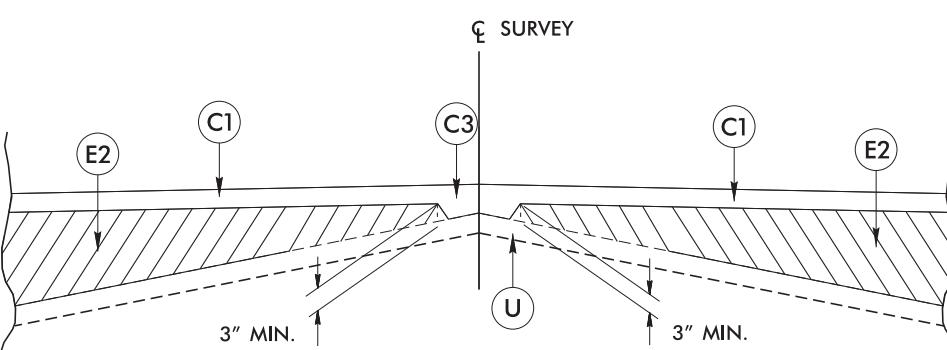
## BENCHMARK DATA

BM1 ELEVATION = 515.66  
N 832098 E 1855126  
BL STATION 31+82.00 151 RIGHT  
RR SPIKE IN BASE OF 27' RED OAK  
\*\*\*\*\*  
BM2 ELEVATION = 523.67  
N 832183 E 1855559  
BL STATION 5+00.00  
N 61°56'47.76" E DIST 2875.36  
RR SPIKE IN BASE OF 18' PINE  
\*\*\*\*\*

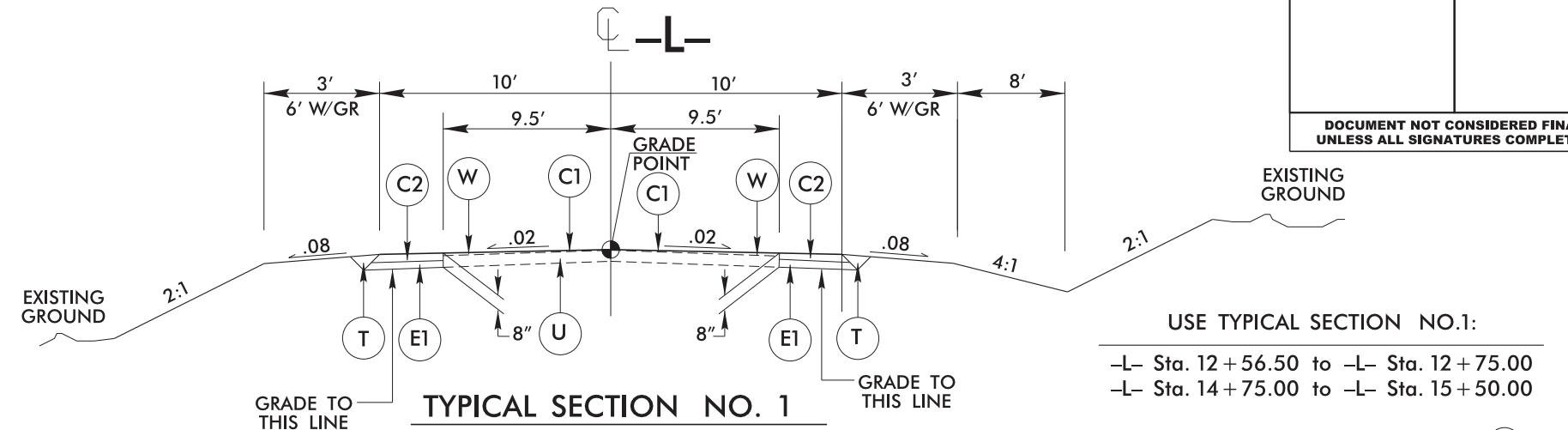
NOTE: DRAWING NOT TO SCALE

PAVEMENT SCHEDULE	
C1	PROP. APPROX. 1 $\frac{1}{4}$ " ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 137.5 LBS. PER SQ. YD.
C2	PROP. APPROX. 2 $\frac{1}{2}$ " ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 137.5 LBS. PER SQ. YD. IN EACH OF TWO LAYERS
C3	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 110 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT TO EXCEED 1 $\frac{1}{2}$ " IN DEPTH.
E1	PROP. APPROX. 5 $\frac{1}{2}$ " ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 627 LBS. PER SQ. YD.
E2	PROP. VAR. DEPTH ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT LESS THAN 3" IN DEPTH OR GREATER THAN 5 $\frac{1}{2}$ " IN DEPTH.
J	PROP. 8" AGGREGATE BASE COURSE.
P	PRIME COAT AT THE RATE OF .35 GAL. PER SQ. YD.
T	EARTH MATERIAL.
U	EXISTING PAVEMENT.
W	VARIABLE DEPTH ASPHALT PAVEMENT. (SEE WEDGING DETAIL BELOW)

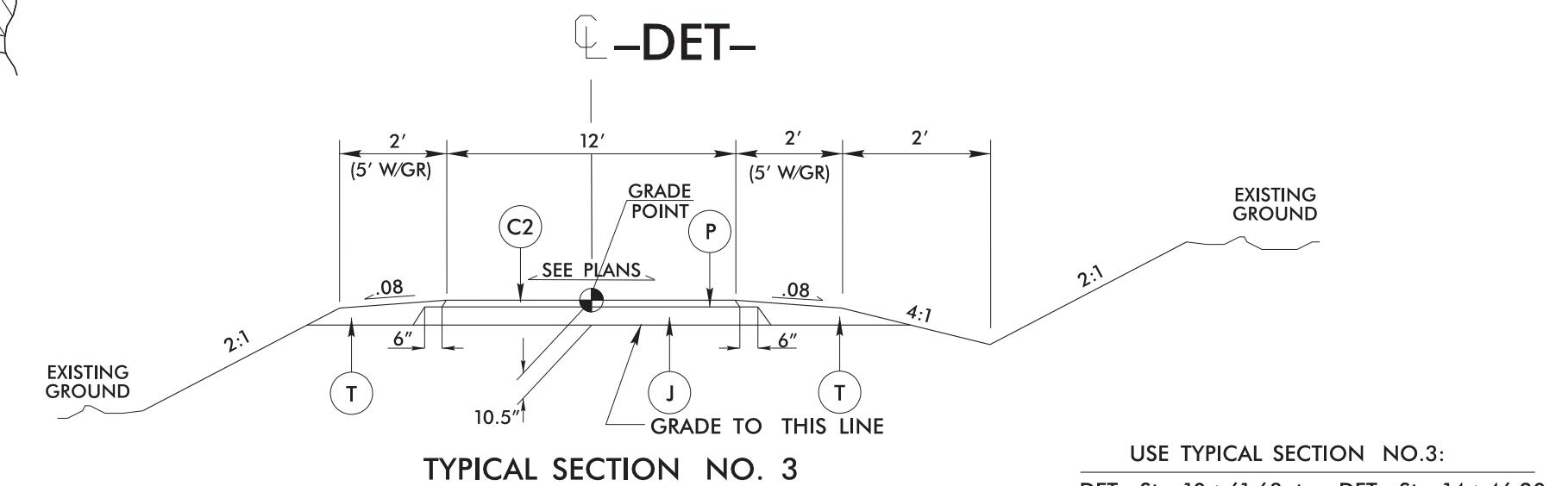
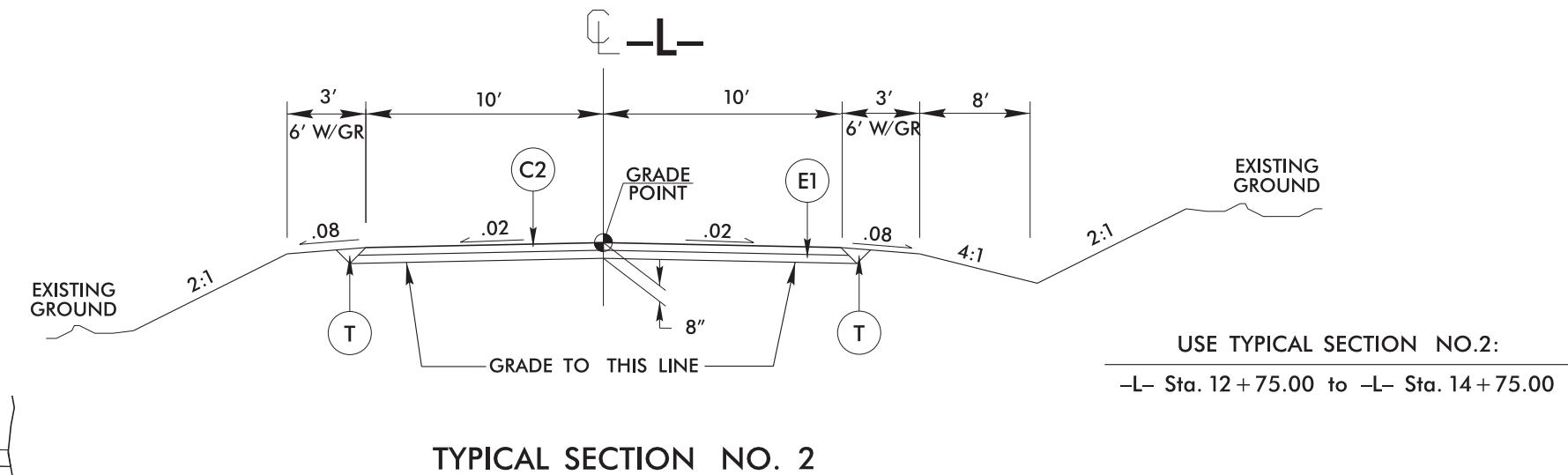
NOTE: PAVEMENT EDGE SLOPES ARE 1:1 UNLESS SHOWN OTHERWISE



## DETAIL SHOWING METHOD OF WEDGING



NOTE: OVERLAY EXISTING ROAD WITH C1 FROM  
-L- Sta. 11+25.00 to -L- Sta. 12+56.50  
-L- Sta. 15+50.00 to -L- Sta. 17+25.00



USE TYPICAL SECTION NO.3:

---

## DETAIL FOR ONSITE DETOUR

PROJECT REFERENCE NO.	SHEET NO.
B-5347	2B-1
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

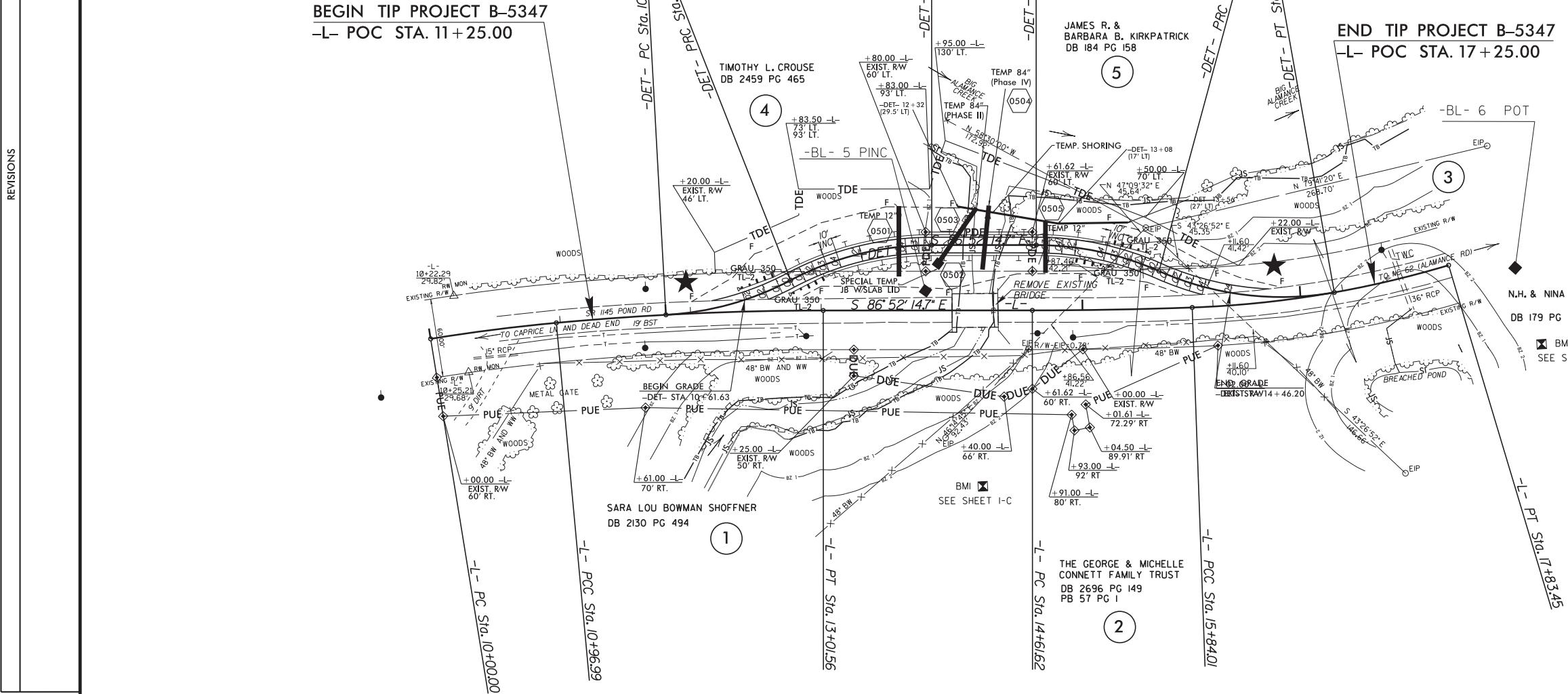
DOCUMENT NOT CONSIDERED FINAL  
UNLESS ALL SIGNATURES COMPLETED

NAD 83/2011

-DET- VDET - 25 MPH

PI Sta 10+50.74 △ = 24° 46' 42.9" (LT) D = 24° 48' 12.1" L = 99.90' T = 50.74' R = 231.00' SE = 4% RO = 40'	PI Sta 11+57.21 △ = 27° 52' 08.7" (RT) D = 24° 48' 12.1" L = 112.36' T = 57.31' R = 231.00' SE = 4% RO = 40'	PI Sta 13+41.33 △ = 23° 59' 18.3" (RT) D = 24° 48' 12.1" L = 96.71' T = 49.08' R = 231.00' SE = 4% RO = 40'	PI Sta 14+59.66 △ = 34° 0' 52.7" (LT) D = 24° 48' 12.1" L = 137.20' T = 70.69' R = 231.00' SE = 4% RO = 40'
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REVISIONS

SEE EROSION CONTROL PLANS FOR  
CULVERT CONSTRUCTION SEQUENCE PLAN

PROPOSED SIGNALIZED  
ONE LANE - 2 WAY DETOUR  
★ DENOTES TEMPORARY SIGNALS

SEE SHEET 4 FOR MAINLINE (-L-)  
SEE SHEET 5 FOR PROFILE

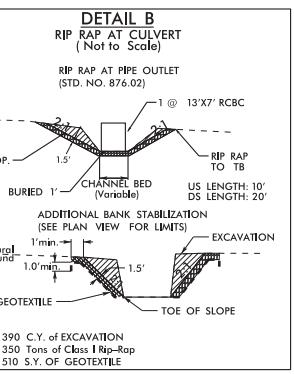
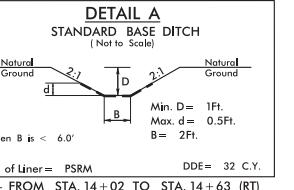
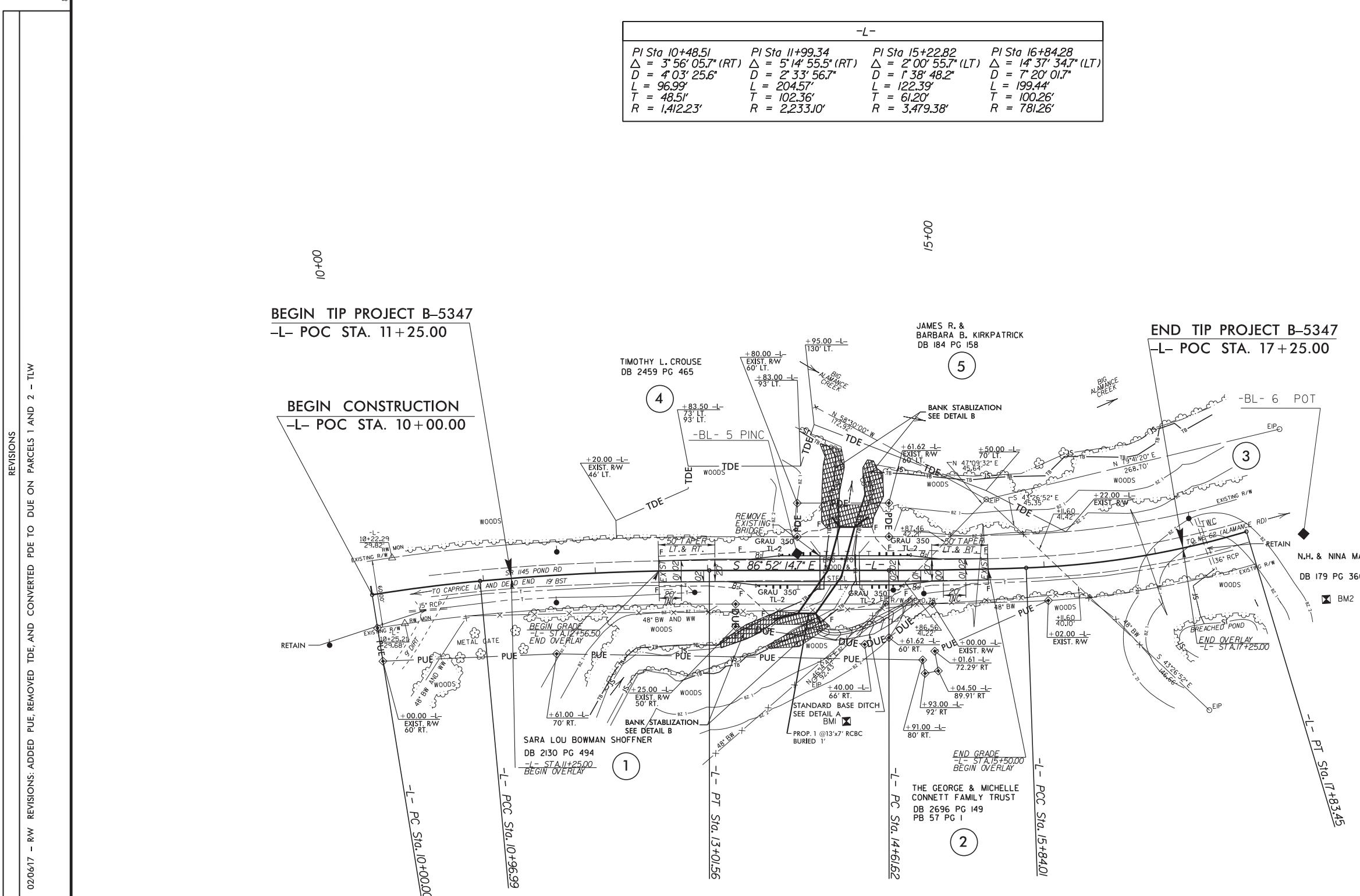
PROJECT REFERENCE NO.		SHEET NO.
B-5347		4
R/W SHEET NO.		
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER	

DOCUMENT NOT CONSIDERED FINAL  
UNLESS ALL SIGNATURES COMPLETED

NAD 83/2011

REVISIONS

02/06/17 - R/W REVISIONS: ADDED PUE, REMOVED TDE, AND CONVERTED PDE TO DUE ON PARCELS 1 AND 2 - TLW



SEE DETAIL SHEET 2B-1 FOR DETOUR  
SEE SHEET 5 FOR PROFILE

