



STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION

ROY COOPER  
GOVERNOR

J. ERIC BOYETTE  
SECRETARY

October 3, 2022

U. S. Army Corps of Engineers  
Regulatory Field Office  
151 Patton Avenue, Room 208  
Asheville, NC 28801-5006

NC Division of Water Resources  
Transportation Permitting Branch  
1617 Mail Service Center  
Raleigh NC 27699-1617

ATTN: Ms. Lori Beckwith  
NCDOT Coordinator

Mr. Dave Wanucha  
NCDOT Coordinator

Subject: **Application for Section 404 Regional General Permit 50, and 401 Water Quality Certification** for the proposed Replacement of Bridge No. 29 on US Highway 21 Business over US Interstate 77 in Yadkin County, North Carolina, Division 13, Federal Aid Project No. NHP-0021(023); TIP No. B-5833. Debit \$570 from WBS Element No. 45786.1.2

Dear Madam and Sir:

The North Carolina Department of Transportation (NCDOT) proposes to replace structurally deficient and bridge number 29 on US Highway 21 Business over I-77 in Yadkin County with a proposed 252' long by 43' wide two-span bridge.

Due to need to change the bridge elevation to accommodate a taller structure, the exit ramps will need to be re-aligned which also extends the approach work for the project.

Impacts to Waters of the U.S.

There are six impact sites associated with the approach work for this project:

**Site 1** (UT to Sandyberry Creek, "SC") is the replacement of a single 4' x 6' RCBC with a single barrel 7'x7' RCBC to accommodate the wider roadway on US 21 Business.

This replacement will result in the following impacts:

**46 lf of permanent loss of water impacts to accommodate for the larger culvert**

75 lf of permanent impacts by bank stabilization at the entrance and exit of the culvert,

87 lf of temporary dewatering impacts for culvert construction

Avoidance and Minimization:

The new reinforced concrete box culvert will match the natural gradient of the stream, and sills and baffles are proposed to ensure that native bed material will be retained in the structure.

**Site 2** (UT to Sandyberry Creek, "SC") is a precautionary temporary impact of < 0.01 acre (19 lf) for the installation of overhead utilities.

**Site 3** (UT to Sandyberry Creek “SA”)? The removal of an existing 36” corrugated metal pipe will result in < 0.01 acre or 19 lf of temporary impact.

**Site 4** (UT to Sandyberry Creek “SA”) An existing undersized 36” corrugated metal pipe will be replaced with a 60” reinforced concrete pipe. This will result in the following impacts:

**30 lf of permanent loss of waters due to the longer pipe.**

99 lf of temporary impact for the removal and installation of the new pipe.

Avoidance and Minimization

The existing undersized pipe will be replaced and will be buried 1.0 ft to enable aquatic passage.

**Site 5** (UT to Sandyberry Creek “SB - Intermittent” and Wetland “WA”) To accommodate the shifted ramps, this parallel UT and wetland will result in the following impacts:

**0.02 acre of permanent loss of water by way of roadway fill.**

**23 feet of permanent loss of water impacts by way of roadway fill.**

59 lf of temporary impacts to construct the wider roadway and adjacent dissipater pad.

Avoidance and Minimization

Fill slopes were steeped to the fullest extent possible to reduce impacts.

**Site 6** (UT to Sandyberry Creek “SC”)

An existing 54” reinforced concrete pipe will be extended due to the shifted ramps.

In addition, a scour hole is present at this location due to the high velocities that flow into from the existing interstate and ramp drainage system.

To prevent new scour hole development at the exit of the 54” pipe extension, as well as to reduce velocities and prevent downstream erosion, a dissipator pool will be constructed at the exit of the 54” pipe extension.

This will result in the following impacts:

**127 lf of loss of waters due to the 54” pipe extension.**

63 lf of permanent impact due to the dissipater pool.

15 lf of temporary impacts for the installation of the 54” pipe extension and construction of the dissipator pool.

Avoidance and Minimization

Fill slopes were steepened to the fullest extent possible to reduce the length of the 54” reinforced concrete pipe.

In addition, the energy dissipater pool will help attenuate flows and prevent downstream degradation.

**Total Impacts:**

**Permanent (loss of water) impacts to wetlands: 0.02 acre**

**Permanent (loss of water) impacts to streams: 226**

Permanent impacts (bank stabilization and dissipater pool) to streams: 138 lf

Temporary impacts to streams: 300 lf

**Proposed Mitigation:**

NCDOT proposes mitigation for the loss of water impacts (**bolded text**) by way of two mitigation sites with available credits:

Fisher Road for wetland impacts and Idols Road Extension for stream impacts.

Additional information regarding these sources is included as part of this permit application package.

**Protected Species/Section 7**

As of the date of this application, the USFWS IPaC lists Schweinitz's sunflower for this project area. As habitat exists in the project area, surveys were conducted on 10/21/2021 and in 2016. No Schweinitz's sunflowers were found.

The following documents are also included as part of this permit application package:

Pre-Construction Notification (PCN),  
Permit drawings and Stormwater Management Plan,  
Mitigation Site Information,  
Archeology and Historic Architecture and Landscapes letters,  
Tribal Coordination, and the  
NEPA Document.

A copy of this permit application can be found on the NCDOT Website at:

<https://xfer.services.ncdot.gov/pdea/PermApps/>. If you have any questions or need additional information, please contact Jeff Hemphill at (919) 219-8581.

Sincerely,

A handwritten signature in black ink that reads "Michael Turchy". The signature is written in a cursive style with a prominent flourish at the end.

Michael Turchy  
Environmental Coordination and Permitting Group Leader

ec:  
NCDOT Permit Application Standard Distribution List

# Pre-Construction Notification



## Pre-Construction Notification (PCN) Form

For Nationwide Permits and Regional General Permits  
(along with corresponding Water Quality Certifications)

April 13, 2022 Ver 4.3

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

#### Pre-Filing Meeting Date Request was submitted on: \*

4/29/2022

If this is a courtesy copy, please fill in this with the submission date.

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

Yadkin

#### Is this a NCDMS Project? \*

Yes  No

Click Yes, only if NCDMS is the applicant or co-applicant.

#### 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:

B-5833

#### WBS # \*

45786.1.2

(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)

#### Has this PCN previously been submitted? \*

Yes  
 No

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

- Nationwide Permit (NWP)  
 Regional General Permit (RGP)  
 Standard (IP)

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

Yes  No

Regional General Permit (RGP) Number:

201902350 - Work associated with bridge construction, widening, replacement, and interchanges

#### RGP Numbers (for multiple RGPs):

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

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

check all that apply

- 401 Water Quality Certification - Regular  
 Non-404 Jurisdictional General Permit  
 Individual 401 Water Quality Certification  
 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 - Jeffrey Hemphill

1c. Primary Contact Phone: \*

(xxx)xxx-xxxx

(919)707-6126

1b. Primary Contact Email: \*

jhemphill@ncdot.gov

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

Owner

(Check all that apply)

Applicant (other than owner)

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. Contact Person:

(for Corporations)

2d. Address \*

Street Address

1598 Mail Service Center

Address Line 2

City

Raleigh

Postal / Zip Code

27699

State / Province / Region

NC

Country

US

2e. Telephone Number: \*

(xxx)xxx-xxxx

(919)707-6126

2f. Fax Number:

(xxx)xxx-xxxx

2g. Email Address: \*

maturchy@ncdot.gov

3. Applicant Information (if different from owner)

3a. Name: \*

NCDOT

**3b. Business Name:**

(if applicable)

**3c. Address \***

Street Address

1598 Mail Service Center

Address Line 2

City

Raleigh

Postal / Zip Code

27699

State / Province / Region

NC

Country

US

**3d. Telephone Number: \***

(919)707-6126

(xxx)xxx-xxxx

**3e. Fax Number:**

(xxx)xxx-xxxx

**3f. Email Address: \***

jhemphill@ncdot.gov

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## C. Project Information and Prior Project History

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### 1. Project Information

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**1a. Name of project: \***

Replacement of Bridge No. 29 on US Highway 21 Business over US Interstate 77 in Yadkin County

**1b. Subdivision name:**

(if appropriate)

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

Rena

### 2. Project Identification

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**2a. Property Identification Number:**

(tax PIN or parcel ID)

**2b. Property size:**

(in acres)

**2c. Project Address**

Street Address

Address Line 2

City

Postal / Zip Code

State / Province / Region

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: \***

36.19895

ex: 34.208504

**Longitude: \***

-80.82976

-77.796371

### 3. Surface Waters

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

Sandyberry Creek

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

C

[Surface Water Lookup](#)

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

Yadkin-PeeDee

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

03040101

[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: \***

A 400' long by 33' wide six-span bridge and an existing 1 @ 4' x 6' RCBC. Land use is a rural interchange surrounded by residential property, cultivated land and undeveloped woodland.

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

Yes  No  Unknown

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

0.03 Ac

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

(intermittent and perennial)

2,679'

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

The purpose of the proposed project is to replace a structurally deficient bridge. NCDOT records indicates Bridge 980029 has a sufficiency rating of 50.21 out of a possible 100 for a new structure in 2016. The bridge is considered structurally deficient due to a substructure appraisal of 4 out of 9 according to Federal Highway Administration standards.

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

B-5833 involves the replacement of bridge No. 980029 on US 21 Bus over I-77 in Yadkin County, NC. The proposed 252' long by 43' wide two-span bridge would replace the existing 400' long by 33' wide six-span bridge. The project will also involve replacing an existing 1 @ 4' x 6' RCBC with a proposed 1@7'x7' RCBC (buried 1') on US 21 Bus. Standard road and bridge building equipment will be used, such as trucks, dozers, and cranes.

## 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  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): Ron Johnson

Agency/Consultant Company: AECOM

Other:

## 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

## 2. Wetland Impacts

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

"W." will be used in the table below to represent the word "wetland".

2a. Site #* (?)	2a1 Reason* (?)	2b. Impact type* (?)	2c. Type of W.*	2d. W. name*	2e. Forested*	2f. Type of Jurisdiction* (?)	2g. Impact area* (acres)
Permit Site 5	Roadway Fill	P	Headwater Forest	WA	Yes	Both	0.020 (acres)

**2g. Total Temporary Wetland Impact**

0.000

**2g. Total Permanent Wetland Impact**

0.020

2g. Total Wetland Impact

0.020

2i. Comments:

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".

Table with 9 columns: ID, 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. Rows S1-S13.

\*\* 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:

364

3i. Total temporary stream impacts:

300

3i. Total stream and ditch impacts:

664

3j. Comments:

Mitigation is provided from two mitigation sites: Fisher Road for wetland impacts - 0.02 @ 2:1 = 0.04ac Idols road Extension for stream impacts - 368' @ 2:1

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: \*

Please see attached Cover Letter

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

Best management practices will be adhered to.

## 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

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

## 5. Complete if Using a Permittee Responsible Mitigation Plan

5a. If using a permittee responsible mitigation plan, provide a description of the proposed mitigation plan including mitigation credits generated.

## 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

## 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

### 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.**

Due to the minimal transportation impact resulting from this bridge replacement, this project will not stimulate growth but may influence nearby land use.

A CIA was conducted in 2016 with this notification:

The Marian G. Welborn Family Limited Partnership (DB 574 page 156) located in the northeast quadrant of the project study area is a VAD property. The proposed project has anticipated impacts of 0.61 acre for Right-of-Way and 0.08 acre for an easement. The Yadkin County VAD allows NCDOT minor right of way takes. The North Carolina Cooperative Extension -Yadkin County Center on June 2, 2020 stated that "they have no issues with NCDOT requiring ROW and easements for the B-5833 bridge replacement."

Should right-of-way need to be acquired from the VAD through eminent domain, the Yadkin County Voluntary Agricultural District Ordinance requires [that the Agricultural Board hold a public hearing on the proposed condemnation before condemnation may be initiated, or other specific provision of that county's enabling ordinance.] Any VAD/EVAD lands converted to non-agricultural use as part of a temporary construction easement must be returned to farmable condition by the project'

## 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.**

Asheville

**5d. Is another Federal agency involved? \***

Yes  No  Unknown

**What Federal Agency is involved?**

FHWA

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

Yes  No

**5f. Will you cut any trees in order to conduct the work in waters of the U.S.? \***

Yes  No

**5g. Does this project involve bridge maintenance or removal? \***

Yes  No

**5g(1). If yes, have you inspected the bridge for signs of bat use such as staining, guano, bats, etc.? Representative photos of signs of bat use can be found in the NLEB SLOPES, Appendix F, pages 3-7.**

Yes  No

Link to the NLEB SLOPES document: [http://saw-reg.usace.army.mil/NLEB/1-30-17-signed\\_NLEB-SLOPES&apps.pdf](http://saw-reg.usace.army.mil/NLEB/1-30-17-signed_NLEB-SLOPES&apps.pdf)

**If you answered "Yes" to 5g(1), did you discover any signs of bat use? \***

Yes  No  Unknown

\*\*\* If yes, please show the location of the bridge on the permit drawings/project plans.

**5h. Does this project involve the construction/installation of a wind turbine(s)? \***

Yes  No

**5i. Does this project involve (1) blasting, and/or (2) other percussive activities that will be conducted by machines, such as jackhammers, mechanized pile drivers, etc.? \***

Yes  No

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

IPAC - An October 2021 survey for Schweinitz sunflower found no plants - No Effect; with habitat. A bat survey on July 30, 2022 found no evidence of bats on the bridge or in any of the culverts. Habitat is present in potential roost trees and crevices on the bridge. As of September 26, 2022, USFWS no longer lists NLEB for the project study area; however, USFWS has noted the Tricolored Bat (*Perimyotis subflavus*) as "Proposed Endangered" and may be listed for the project study area. Should this species become listed then Section 7 will have been satisfied by the bat survey in July finding no evidence of bats for the project.

## 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? \***

Review of on-line mapping sources

## 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? \***

CE, State Historic Preservation Office Memo, CIA and Archaeology Memo are attached and the Tribal coordination Letter is in the CE.

## 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

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

FEMA Floodmaps

## Miscellaneous

### Comments

There will be 100 sq. ft. of temporary Utility impacts from an open cut installation of a 12" water line at the inlet side of the culvert replacement at Permit Site 1. These temporary Utility impacts are encompassed within the temporary impacts of the culvert replacement.

There will be approximately 1 acre of trees cut for this project.

**Please use the space below to attach all required documentation or any additional information you feel is helpful for application review. Documents should be combined into one file when possible, with a Cover Letter, Table of Contents, and a Cover Sheet for each Section preferred.**

[Click the upload button or drag and drop files here to attach document](#)

B-5833 Yadkin October 3 2022.pdf

10.9MB

[File must be PDF or KMZ](#)

## Signature

\*

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

- The project proponent hereby certifies that all information contained herein is true, accurate, and complete to the best of my knowledge and belief; and
- 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 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 \***



**Date**

10/1/2022

# Permit Drawings



(Version 3.00; Released August 2021)

FOR NCDOT PROJECTS

WBS Element: 45786.1.1      TIP/Proj No: B-5833      County(ies): Yadkin      Page 1 of 3

General Project Information

WBS Element:	45786.1.1	TIP Number:	B-5833	Project Type:	Bridge Replacement	Date:	9/28/2021
NCDOT Contact:	David Stutts, PE			Contractor / Designer:	TGS Engineers (Ben Henegar, PE)		
	Address:	NCDOT - Structures Management Unit 1000 Birch Ridge Drive Raleigh, NC 27610			Address:	706 Hillsborough Street Suite 200 Raleigh, NC 27603	
	Phone:	(919) 707-6442			Phone:	(919) 773-8887 ext. 123	
	Email:	<a href="mailto:dstutts@ncdot.gov">dstutts@ncdot.gov</a>			Email:	<a href="mailto:bhenegar@tgsengineers.com">bhenegar@tgsengineers.com</a>	
City/Town:	Jonesville, NC			County(ies):	Yadkin		
River Basin(s):	Yadkin-Pee Dee			CAMA County?	No		
Wetlands within Project Limits?	Yes						

Project Description

Project Length (lin. miles or feet):	0.58 miles	Surrounding Land Use:	Rural Residential, Agricultural, & Highway Business					
Project Built-Up Area (ac.)	Proposed Project			Existing Site				
	2.3	ac.		1.5	ac.			
Typical Cross Section Description:	Two 12' wide paved travel lanes, two 5' paved shoulders, 3' grassed shoulders, and grassed side slopes ranging from 6(H):1(V) to 2(H):1(V).			Two 11' wide paved travel lanes with 2' to 4' grassed shoulders and grassed side slopes ranging from 6(H):1(V) to 2(H):1(V).				
Annual Avg Daily Traffic (veh/hr/day):	Design/Future:	4550	Year:	2041	Existing:	4100	Year:	2021

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

B-5833 involves the replacement of bridge No. 980029 on US 21 Bus over I-77 in Yadkin County, NC. The proposed 252' long by 43' wide two-span bridge would replace the existing 400' long by 33' wide six-span bridge. The project will also involve replacing an existing 1 @ 4' x 6' RCBC with a proposed 1@7'x7' RCBC (buried 1') US 21 Bus. An energy dissipator basin is proposed at Str.# 0521 (54" RCP, -RAMPD- 12+92 RT) at the outlet into a jurisdictional stream. This energy dissipator basin is proposed because of the scour hole that was observed at the outlet of the existing 54" RCP (the proposed dimensions of the basin are similar to what was naturally formed).

Project minimum measures include:

- >Maximizing Shoulder Section.
- >Minimizing Roadway Side Slopes.
- >Providing Adequate Ground Cover.
- >Stabilizing Embankments and Drainage Ditches.
- >Providing Adequate Energy Dissipation.
- >Utilizing Natural Features and Drainage Pathways - Existing drainage pathways were utilized to the maximum extent practicable.



North Carolina Department of Transportation

Highway Stormwater Program  
STORMWATER MANAGEMENT PLAN  
FOR NCDOT PROJECTS



(Version 3.00; Released August 2021)

WBS Element: 45786.1.1      TIP/Proj No.: B-5833      County(ies): Yadkin      Page 2 of 3

General Project Information

Waterbody Information

Surface Water Body (1):	UT to Sandyberry Creek		NCDWR Stream Index No.:	12-55	
NCDWR Surface Water Classification for Water Body	Primary Classification:		Class C		
	Supplemental Classification:				
Other Stream Classification:	None				
Impairments:	None				
Aquatic T&E Species?	No	Comments:			
NRTR Stream ID:	SA		Buffer Rules in Effect:	N/A	
Project Includes Bridge Spanning Water Body?	No	Deck Drains Discharge Over Buffer?	N/A	Dissipator Pads Provided in Buffer?	
Deck Drains Discharge Over Water Body?	N/A	(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)				
Surface Water Body (2):	UT to Sandyberry Creek		NCDWR Stream Index No.:	12-55	
NCDWR Surface Water Classification for Water Body	Primary Classification:		Class C		
	Supplemental Classification:		None		
Other Stream Classification:	None				
Impairments:	None				
Aquatic T&E Species?	No	Comments:			
NRTR Stream ID:	SB		Buffer Rules in Effect:	N/A	
Project Includes Bridge Spanning Water Body?	No	Deck Drains Discharge Over Buffer?	N/A	Dissipator Pads Provided in Buffer?	
Deck Drains Discharge Over Water Body?	N/A	(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)				
Surface Water Body (3):	UT to Sandyberry Creek		NCDWR Stream Index No.:	12-55	
NCDWR Surface Water Classification for Water Body	Primary Classification:		Class C		
	Supplemental Classification:		None		
Other Stream Classification:	None				
Impairments:	None				
Aquatic T&E Species?	No	Comments:			
NRTR Stream ID:	SC		Buffer Rules in Effect:	N/A	
Project Includes Bridge Spanning Water Body?	No	Deck Drains Discharge Over Buffer?	N/A	Dissipator Pads Provided in Buffer?	
Deck Drains Discharge Over Water Body?	N/A	(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)				



09/28/2021

X:\NCDOT\B-5833\Hydraulics\PERMITS\_Environmental\Drawings\PSH\B5833\_hyd\_prm\_t.sh.dgn  
User: bhenegar

**TIP PROJECT: B-5833**

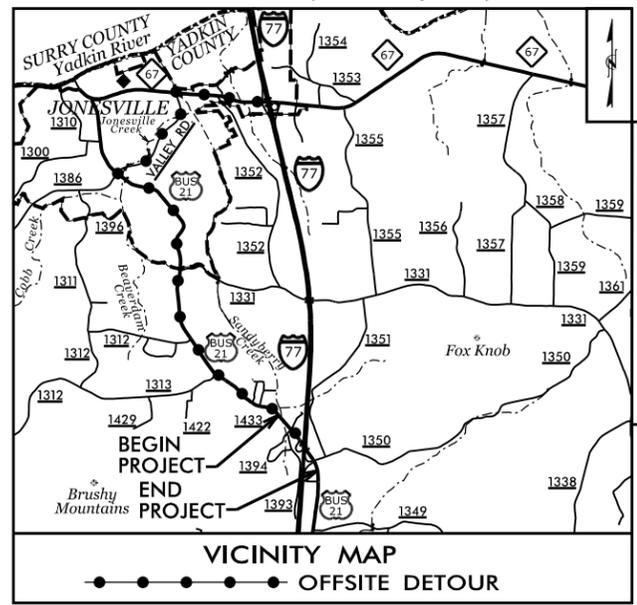
See Sheet 1A For Index of Sheets  
See Sheet 1B For Conventional Plan Sheet Symbols  
See Sheet RW01 thru RW04 For Survey Control & Right-of-Way Sheets

# STATE OF NORTH CAROLINA DIVISION OF HIGHWAYS

## YADKIN COUNTY

**LOCATION: REPLACE BRIDGE NO. 29 OVER I-77 ON US 21 BUS**  
**TYPE OF WORK: GRADING, DRAINAGE, PAVING, RETAINING WALLS, AND STRUCTURE**

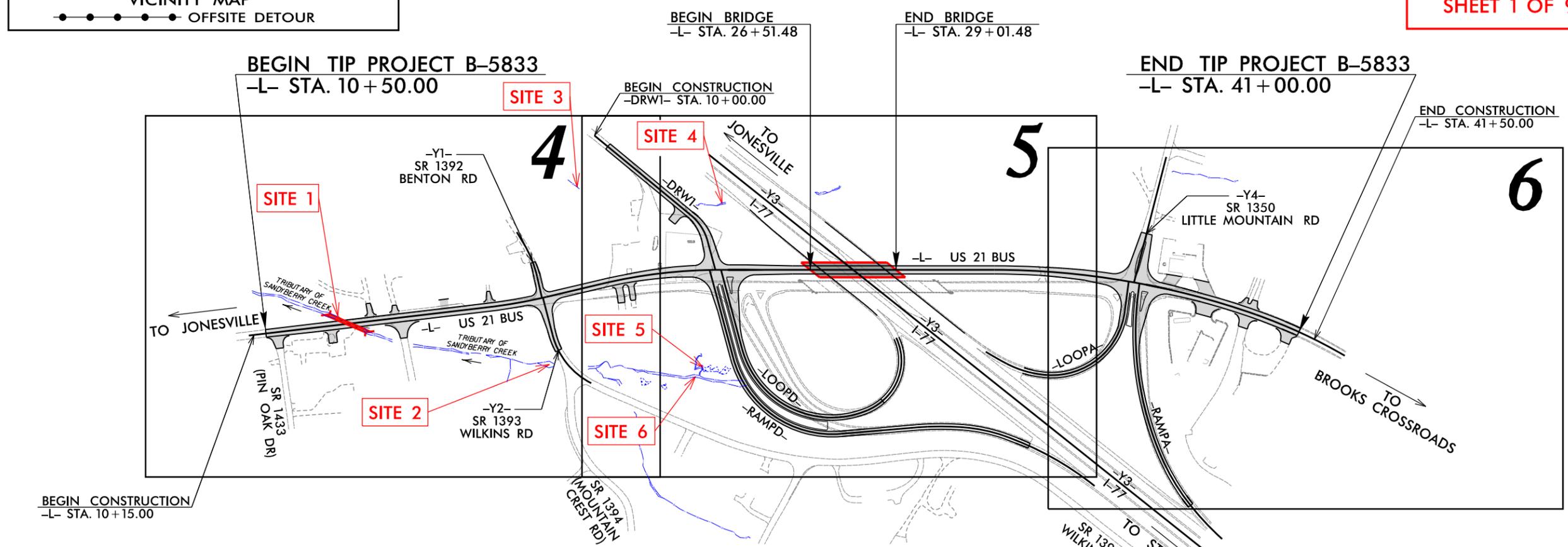
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-5833	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
45786.1.2	N/A	PE	
45786.2.1	N/A	RW, UTIL	
45786.3.1	NHP-0021(023)	CONST.	



### WETLAND AND SURFACE WATER IMPACTS



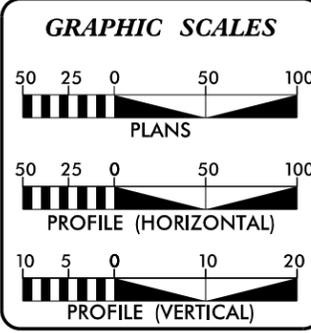
**PERMIT DRAWING  
SHEET 1 OF 9**



CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD II.  
THIS PROJECT IS NOT WITHIN ANY MUNICIPAL BOUNDARIES.  
THIS IS A PARTIAL CONTROLLED-ACCESS PROJECT WITH ACCESS BEING LIMITED TO POINTS AS SHOWN ON THE PLANS.

DOCUMENT NOT CONSIDERED FINAL  
UNLESS ALL SIGNATURES COMPLETED

**CONTRACT:**



**DESIGN DATA**

ADT 2022 =	4150
ADT 2042 =	4550
K =	11 %
D =	65 %
T =	5 % *
V =	50 MPH

\* (TTST 1% + DUAL 4%)

FUNC CLASS = MAJOR COLLECTOR  
STATEWIDE TIER DESIGN

**PROJECT LENGTH**

LENGTH ROADWAY TIP PROJECT B-5833	=	0.531 mile
LENGTH STRUCTURES TIP PROJECT B-5833	=	0.047 mile
TOTAL LENGTH TIP PROJECT B-5833	=	0.578 mile

Prepared For:  
**DIVISION OF HIGHWAYS**  
1000 Birch Ridge Dr., Raleigh NC, 27610

By:  
TGS ENGINEERS  
706 HILLSBOROUGH ST.  
SUITE 200  
RALEIGH, NC 27603

PH (919) 773-8887  
CORP. LICENSE NO.: C-0275

2018 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:  
AUGUST 17, 2021

LETTING DATE:  
AUGUST 16, 2022

V. MARCUS LOWERY, P.E.  
PROJECT ENGINEER

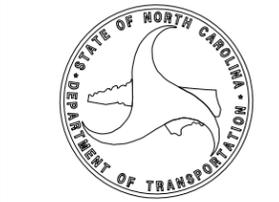
DAVID STUTTS, P.E.  
NCDOT CONTACT

HYDRAULICS ENGINEER

SIGNATURE: \_\_\_\_\_ P.E.

ROADWAY DESIGN ENGINEER

SIGNATURE: \_\_\_\_\_ P.E.



SEE SHEET 2B-1  
FOR INTERSECTION DETAILS

SEE SHEET 07 FOR -L- PROFILE  
SEE SHEET 08 FOR -Y1- & -Y2- PROFILES

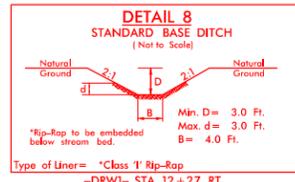
DRIVE RADII ARE 10' UNLESS OTHERWISE NOTED  
CHANNELIZATION RADII ARE 3' UNLESS OTHERWISE NOTED  
RADII DIMENSIONS ARE TO FACE OF CURB (F/C) UNLESS OTHERWISE NOTED

-L-

PI Sta 17+87.66 Δ = 6° 34' 02.4" (LT) D = 3' 47' 39.9" L = 173.08' T = 86.63' R = 1,510.00' SE = 0.05 Lr = 125'	PI Sta 22+16.73 Δ = 13° 17' 34.0" (RT) D = 3' 47' 39.9" L = 350.32' T = 175.95' R = 1,510.00' SE = 0.05 Lr = 125'
--	--

-Y1-	-Y2-
PI Sta 10+91.08 Δ = 18° 34' 00.0" (RT) D = 17' 37' 46.1" L = 105.32' T = 53.12' R = 325.00'	PI Sta 12+09.78 Δ = 48° 13' 26.2" (LT) D = 25' 48' 32.1" L = 186.85' T = 99.36' R = 222.00'

① = -L- POC Sta. 18+61.28 =  
-Y1- POT Sta. 12+06.74  
② = -L- POC Sta. 18+64.39 =  
-Y2- POT Sta. 10+00.00  
③ = -L- PT Sta. 18+74.11



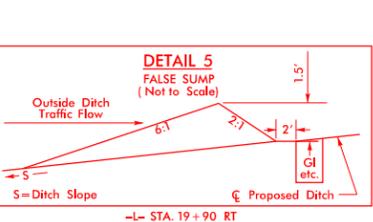
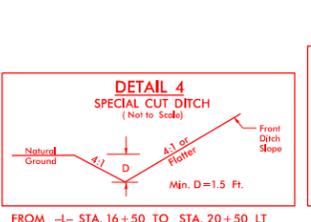
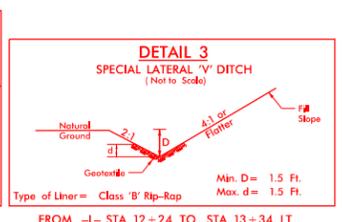
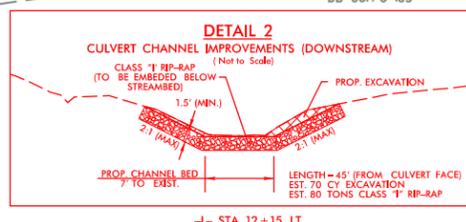
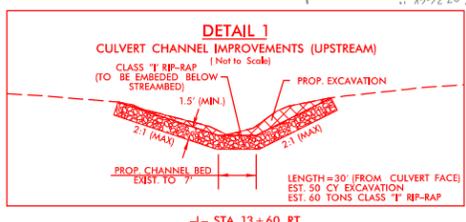
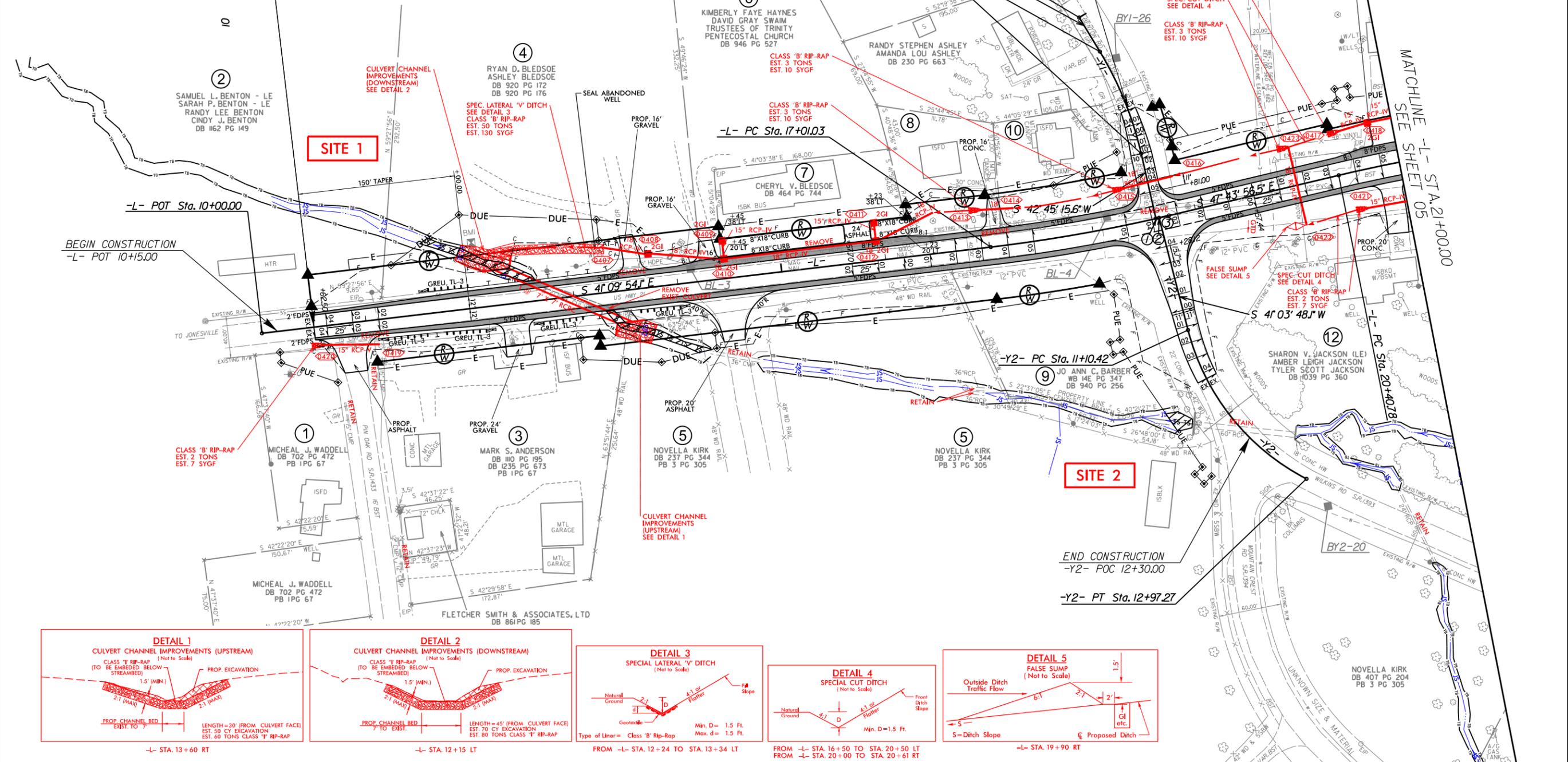
⑧ RYAN D. BLEDSOE  
ASHLEY BLEDSOE  
DB 158 PG 131

⑩ KENNETH WARD CARTER  
JESSE CONNIE CARTER  
WB 08E PG 121  
DB 384 PG 790

INDIGO HOSPITALITY ONE, LLC  
DB 1222 PG 88

ADD-ON VENTURE PROPERTIES, LLC  
DB 995 PG 568

**BEGIN TIP PROJECT B-5833**  
-L- POT Sta. 10+50.00



PROJECT REFERENCE NO. B-5833	SHEET NO. 04
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
<b>DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED</b>	
TGS ENGINEERS 706 HILLSBOROUGH ST., SUITE 200 RALEIGH, NC 27603 PH (919) 773-8887 CORP. LICENSE NO.: C-0275	

PERMIT DRAWING  
SHEET 2 OF 9

Denotes Impacts in Surface Water

Denotes Temporary Impacts in Surface Water

8.17.19  
 I:\R\2021\B-5833\Hydraulics\PERMITS\Environmental\Drawings\PSH\B5833\_hyd\_perm\_psh\_04.dgn  
 User: jshanson

SEE SHEET 2B-1 FOR INTERSECTION DETAILS

SEE SHEET 07 FOR -L- PROFILE  
SEE SHEET 08 FOR -Y1- & -Y2- PROFILES

DRIVE RADII ARE 10' UNLESS OTHERWISE NOTED  
CHANNELIZATION RADII ARE 3' UNLESS OTHERWISE NOTED  
RADII DIMENSIONS ARE TO FACE OF CURB (F/C) UNLESS OTHERWISE NOTED

**-L-**

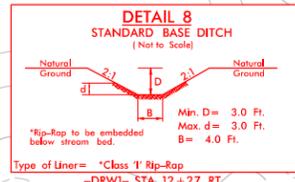
PI Sta 17+87.66 Δ = 6' 34" 02.4" (LT) D = 3' 47" 39.9" L = 173.08' T = 86.63' R = 1,510.00' SE = 0.05 Lr = 125'	PI Sta 22+16.73 Δ = 13' 17" 34.0" (RT) D = 3' 47" 39.9" L = 350.32' T = 175.95' R = 1,510.00' SE = 0.05 Lr = 125'
--	--

<b>-Y1-</b>	<b>-Y2-</b>
PI Sta 10+91.08 Δ = 18' 34" 00.1" (RT) D = 17' 37" 46.1" L = 105.32' T = 53.12' R = 325.00'	PI Sta 12+09.78 Δ = 48' 13' 26.2" (LT) D = 25' 48' 32.1" L = 186.85' T = 99.36' R = 222.00'

① = -L- POC Sta. 18+61.28 =  
-Y1- POT Sta. 12+06.74

② = -L- POC Sta. 18+64.39 =  
-Y2- POT Sta. 10+00.00

③ = -L- PT Sta. 18+74.11



PROJECT REFERENCE NO. B-5833	SHEET NO. 04
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
<b>DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED</b>	
TGS ENGINEERS 706 HILLSBOROUGH ST., SUITE 200 RALEIGH, NC 27603 PH (919) 773-8887 CORP. LICENSE NO.: C-0275	

PERMIT DRAWING SHEET 3 OF 9

DENOTES IMPACTS IN SURFACE WATER

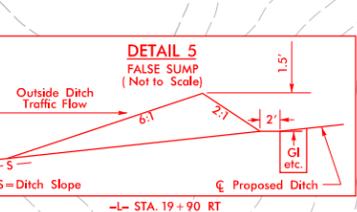
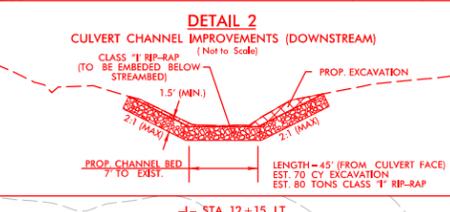
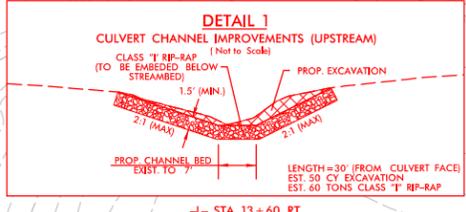
DENOTES TEMPORARY IMPACTS IN SURFACE WATER

**BEGIN TIP PROJECT B-5833**  
-L- POT Sta. 10+50.00

BEGIN CONSTRUCTION  
-L- POT 10+15.00

BEGIN CONSTRUCTION  
-Y1- POC 11+00.00

END CONSTRUCTION  
-Y2- POC 12+30.00

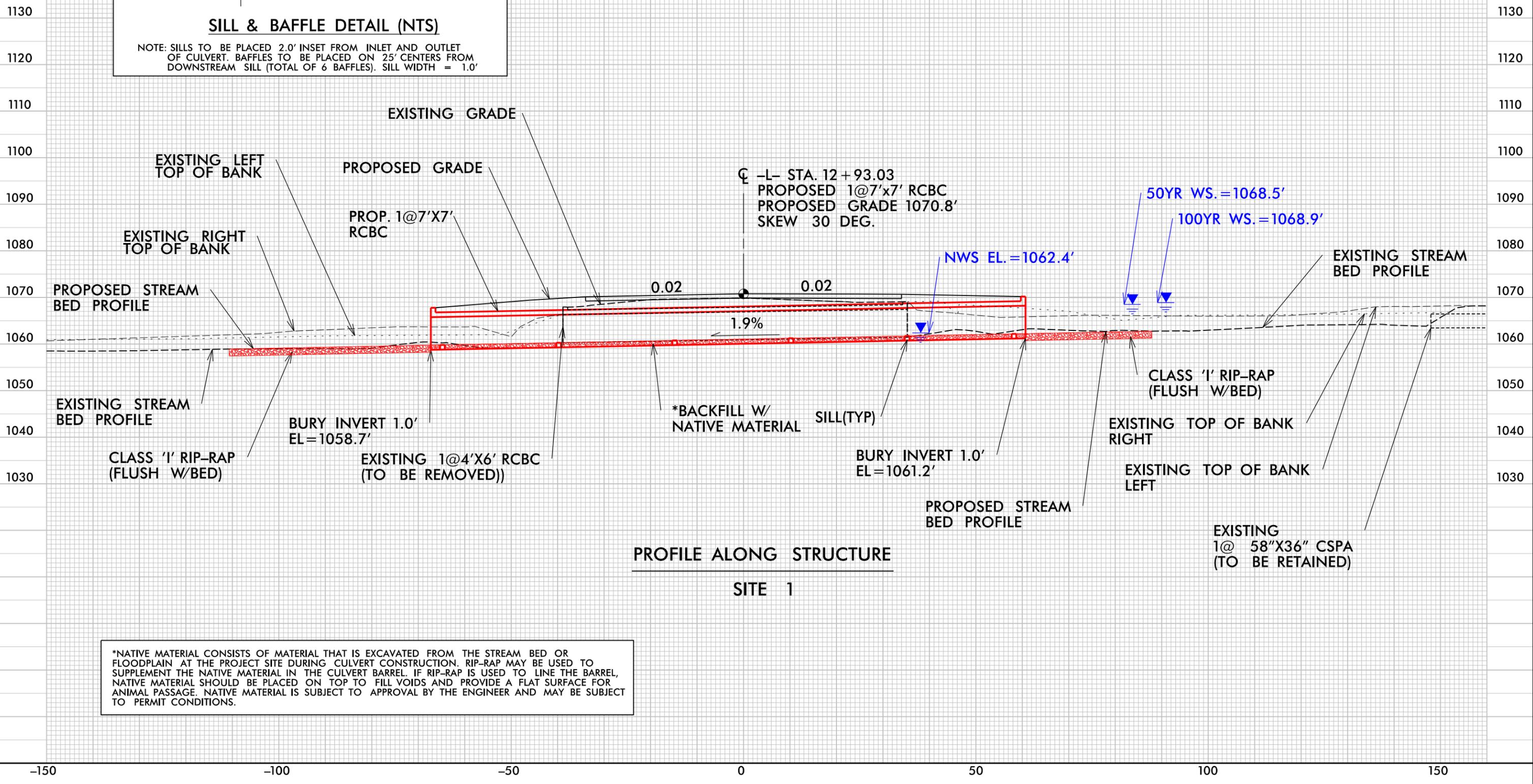
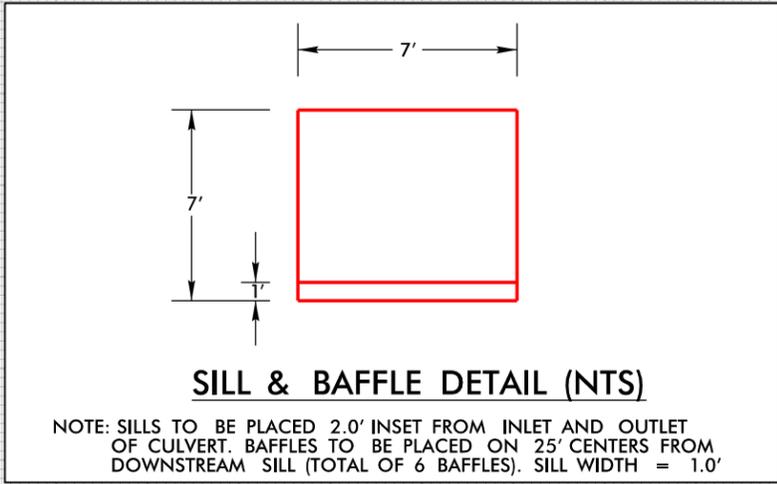


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MICHAEL J. WADDELL  
DB 702 PG 472  
PB 1 PG 67

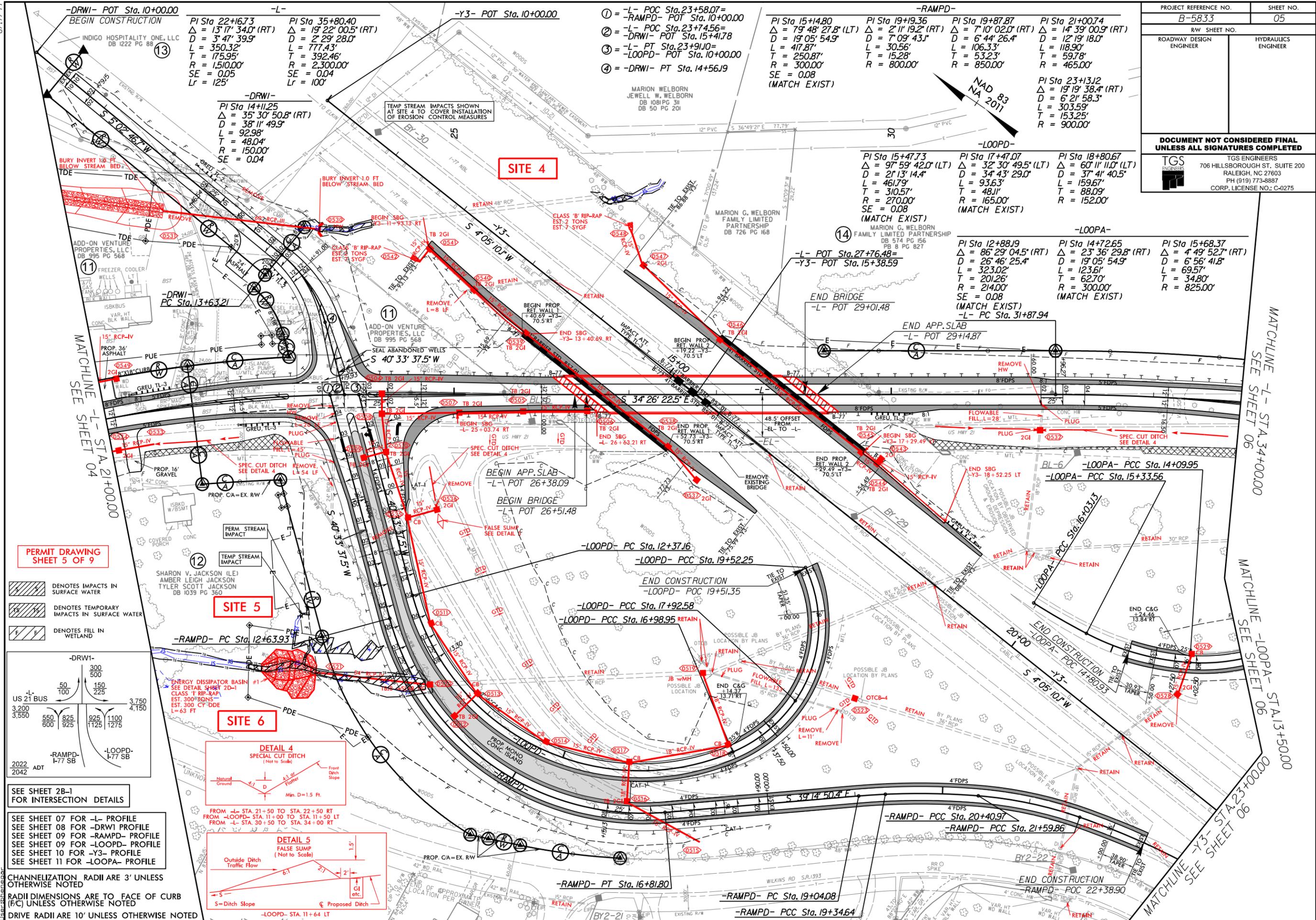
PERMIT DRAWING  
SHEET 4 OF 9

SCALE  
1" = 20' HORIZONTAL  
1" = 20' VERTICAL

-L-  
US 21



\*NATIVE MATERIAL CONSISTS OF MATERIAL THAT IS EXCAVATED FROM THE STREAM BED OR FLOODPLAIN AT THE PROJECT SITE DURING CULVERT CONSTRUCTION. RIP-RAP MAY BE USED TO SUPPLEMENT THE NATIVE MATERIAL IN THE CULVERT BARREL. IF RIP-RAP IS USED TO LINE THE BARREL, NATIVE MATERIAL SHOULD BE PLACED ON TOP TO FILL VOIDS AND PROVIDE A FLAT SURFACE FOR ANIMAL PASSAGE. NATIVE MATERIAL IS SUBJECT TO APPROVAL BY THE ENGINEER AND MAY BE SUBJECT TO PERMIT CONDITIONS.



**-DRWI- POT Sta. 10+00.00**  
 BEGIN CONSTRUCTION  
 INDIGO HOSPITALITY ONE, LLC  
 DB 1222 PG 88

PI Sta 22+16.73  
 $\Delta = 13' 17'' 34.0''$  (RT)  
 $D = 3' 47'' 39.9''$   
 $L = 350.32'$   
 $T = 175.95'$   
 $R = 1510.00'$   
 $SE = 0.05$   
 $Lr = 125'$

**-L-**

PI Sta 35+80.40  
 $\Delta = 19' 22'' 00.5''$  (RT)  
 $D = 2' 29'' 28.0''$   
 $L = 777.43'$   
 $T = 392.46'$   
 $R = 2300.00'$   
 $SE = 0.04$   
 $Lr = 100'$

**-Y3- POT Sta. 10+00.00**

TEMP STREAM IMPACTS SHOWN AT SITE 4 TO COVER INSTALLATION OF EROSION CONTROL MEASURES

① = -L- POC Sta. 23+58.07 = -RAMPD- POT Sta. 10+00.00  
 ② = -L- POC Sta. 23+74.56 = -DRWI- POT Sta. 15+41.78  
 ③ = -L- PT Sta. 23+91.0 = -LOOPD- POT Sta. 10+00.00  
 ④ = -DRWI- PT Sta. 14+56.19

PI Sta 15+14.80  
 $\Delta = 79' 48'' 27.8''$  (LT)  
 $D = 19' 05'' 54.9''$   
 $L = 417.87'$   
 $T = 250.87'$   
 $R = 3000.00'$   
 $SE = 0.08$   
 (MATCH EXIST)

PI Sta 19+19.36  
 $\Delta = 2' 11'' 19.2''$  (RT)  
 $D = 7' 09'' 43.1''$   
 $L = 30.56'$   
 $T = 15.28'$   
 $R = 800.00'$

PI Sta 19+87.87  
 $\Delta = 7' 10'' 02.0''$  (RT)  
 $D = 6' 44'' 26.4''$   
 $L = 106.33'$   
 $T = 53.23'$   
 $R = 850.00'$

PI Sta 21+00.74  
 $\Delta = 14' 39'' 00.9''$  (RT)  
 $D = 12' 19'' 18.0''$   
 $L = 118.90'$   
 $T = 59.78'$   
 $R = 465.00'$

PI Sta 15+47.73  
 $\Delta = 97' 59'' 42.0''$  (LT)  
 $D = 2' 13'' 14.4''$   
 $L = 461.79'$   
 $T = 310.57'$   
 $R = 2700.00'$   
 $SE = 0.08$   
 (MATCH EXIST)

PI Sta 17+47.07  
 $\Delta = 32' 30'' 49.5''$  (LT)  
 $D = 34' 43'' 29.0''$   
 $L = 93.63'$   
 $T = 48.11'$   
 $R = 165.00'$   
 (MATCH EXIST)

PI Sta 18+80.67  
 $\Delta = 60' 11'' 11.0''$  (LT)  
 $D = 37' 41'' 40.5''$   
 $L = 159.67'$   
 $T = 88.09'$   
 $R = 152.00'$

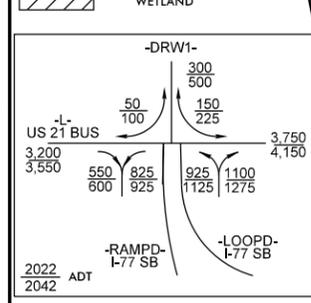
PI Sta 12+88.19  
 $\Delta = 86' 29'' 04.5''$  (RT)  
 $D = 26' 46'' 25.4''$   
 $L = 323.02'$   
 $T = 201.26'$   
 $R = 214.00'$   
 $SE = 0.08$   
 (MATCH EXIST)

PI Sta 14+72.65  
 $\Delta = 23' 36'' 29.8''$  (RT)  
 $D = 19' 05'' 54.9''$   
 $L = 123.61'$   
 $T = 62.70'$   
 $R = 300.00'$   
 (MATCH EXIST)

PI Sta 15+68.37  
 $\Delta = 4' 49'' 52.7''$  (RT)  
 $D = 6' 56'' 41.8''$   
 $L = 69.57'$   
 $T = 34.80'$   
 $R = 825.00'$

**PERMIT DRAWING SHEET 5 OF 9**

-  DENOTES IMPACTS IN SURFACE WATER
-  DENOTES TEMPORARY IMPACTS IN SURFACE WATER
-  DENOTES FILL IN WETLAND



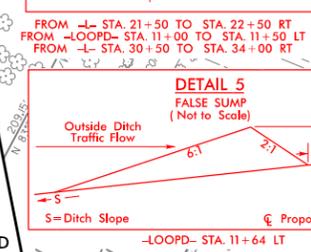
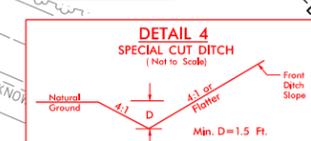
SEE SHEET 2B-1 FOR INTERSECTION DETAILS

SEE SHEET 07 FOR -L- PROFILE  
 SEE SHEET 08 FOR -DRWI- PROFILE  
 SEE SHEET 09 FOR -RAMPD- PROFILE  
 SEE SHEET 09 FOR -LOOPD- PROFILE  
 SEE SHEET 10 FOR -Y3- PROFILE  
 SEE SHEET 11 FOR -LOOPA- PROFILE

CHANNELIZATION RADII ARE 3' UNLESS OTHERWISE NOTED  
 RADII DIMENSIONS ARE TO FACE OF CURB (FC) UNLESS OTHERWISE NOTED  
 DRIVE RADII ARE 10' UNLESS OTHERWISE NOTED

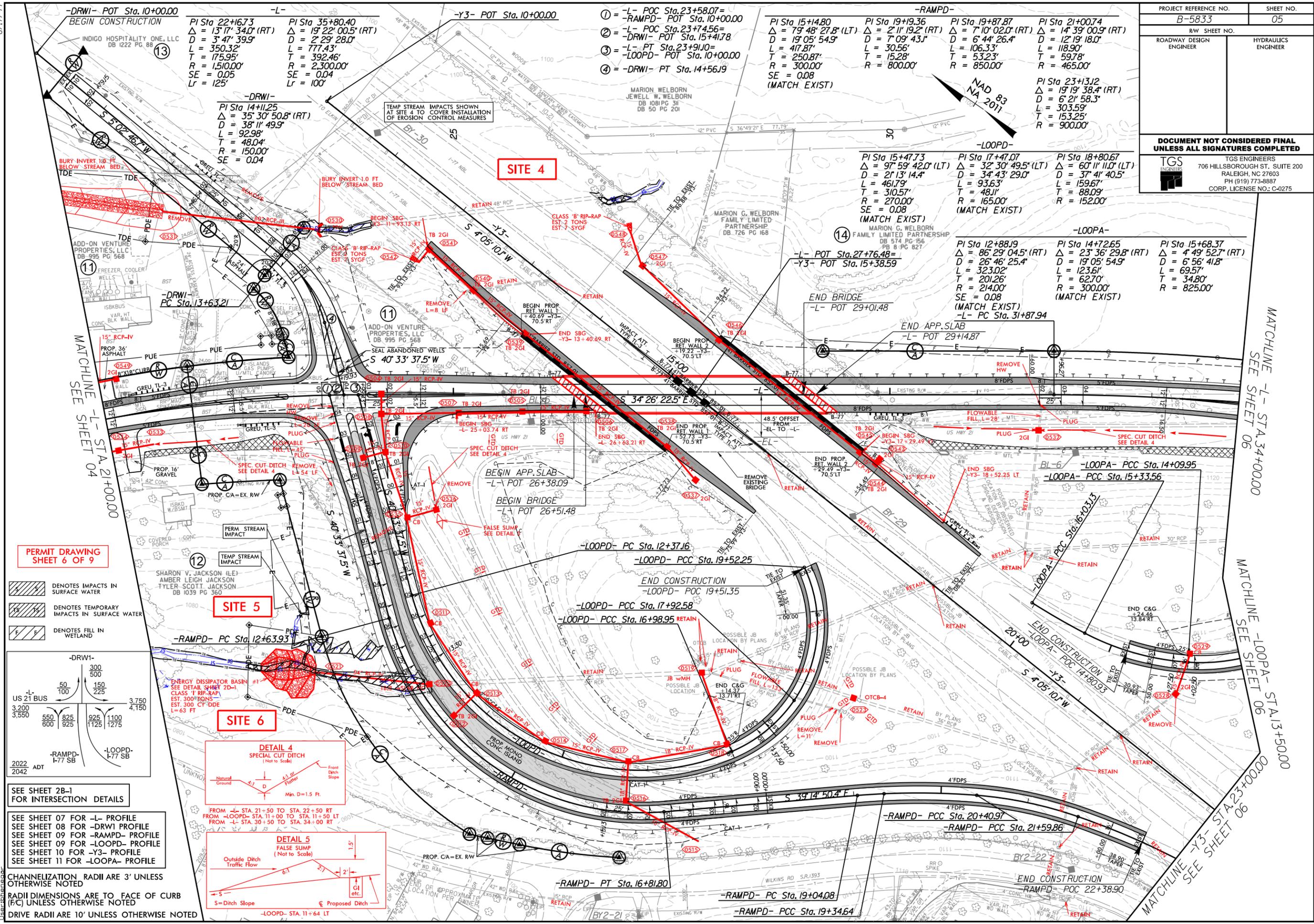
**SITE 5**

**SITE 6**



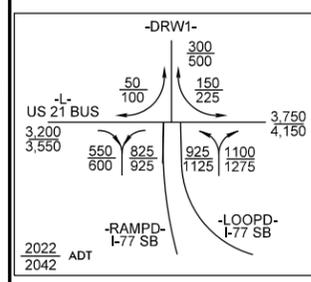
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 8/28/2021

PROJECT REFERENCE NO.	SHEET NO.
B-5833	05
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
<b>DOCUMENT NOT CONSIDERED FINAL</b> <b>UNLESS ALL SIGNATURES COMPLETED</b>	
 <b>TGS ENGINEERS</b> 706 HILLSBOROUGH ST., SUITE 200 RALEIGH, NC 27603 PH (919) 773-8887 CORP. LICENSE NO.: C-0275	



**PERMIT DRAWING SHEET 6 OF 9**

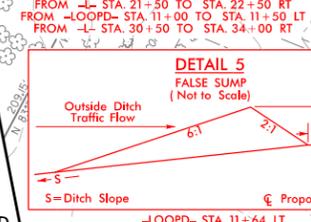
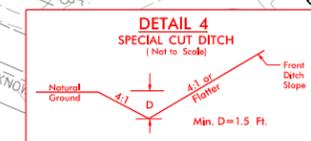
-  DENOTES IMPACTS IN SURFACE WATER
-  DENOTES TEMPORARY IMPACTS IN SURFACE WATER
-  DENOTES FILL IN WETLAND



SEE SHEET 2B-1 FOR INTERSECTION DETAILS

SEE SHEET 07 FOR -L- PROFILE  
 SEE SHEET 08 FOR -DRWI- PROFILE  
 SEE SHEET 09 FOR -RAMPD- PROFILE  
 SEE SHEET 09 FOR -LOOPD- PROFILE  
 SEE SHEET 10 FOR -Y3- PROFILE  
 SEE SHEET 11 FOR -LOOPA- PROFILE

CHANNELIZATION RADII ARE 3' UNLESS OTHERWISE NOTED  
 RADII DIMENSIONS ARE TO FACE OF CURB (FC) UNLESS OTHERWISE NOTED  
 DRIVE RADII ARE 10' UNLESS OTHERWISE NOTED



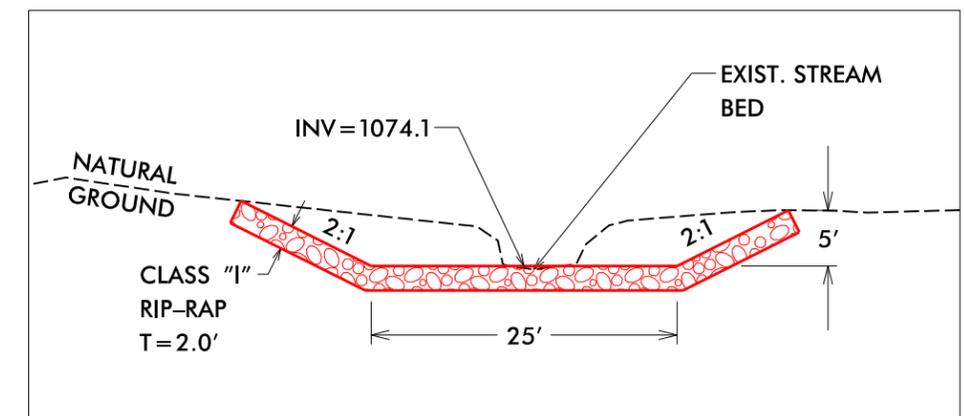
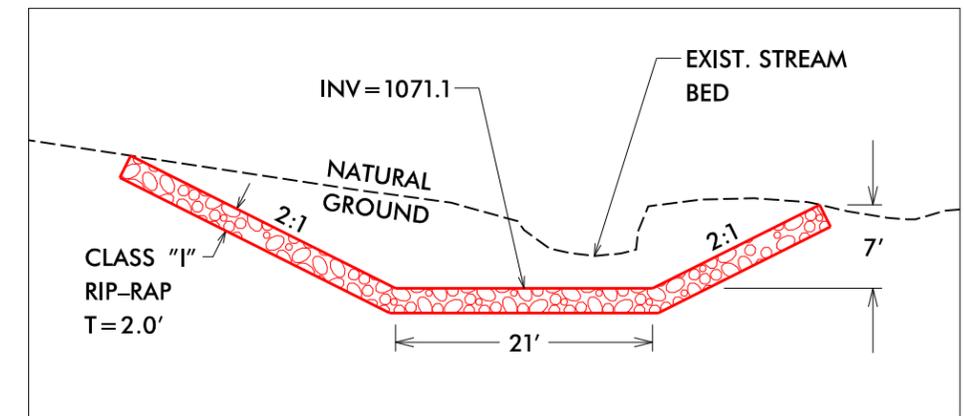
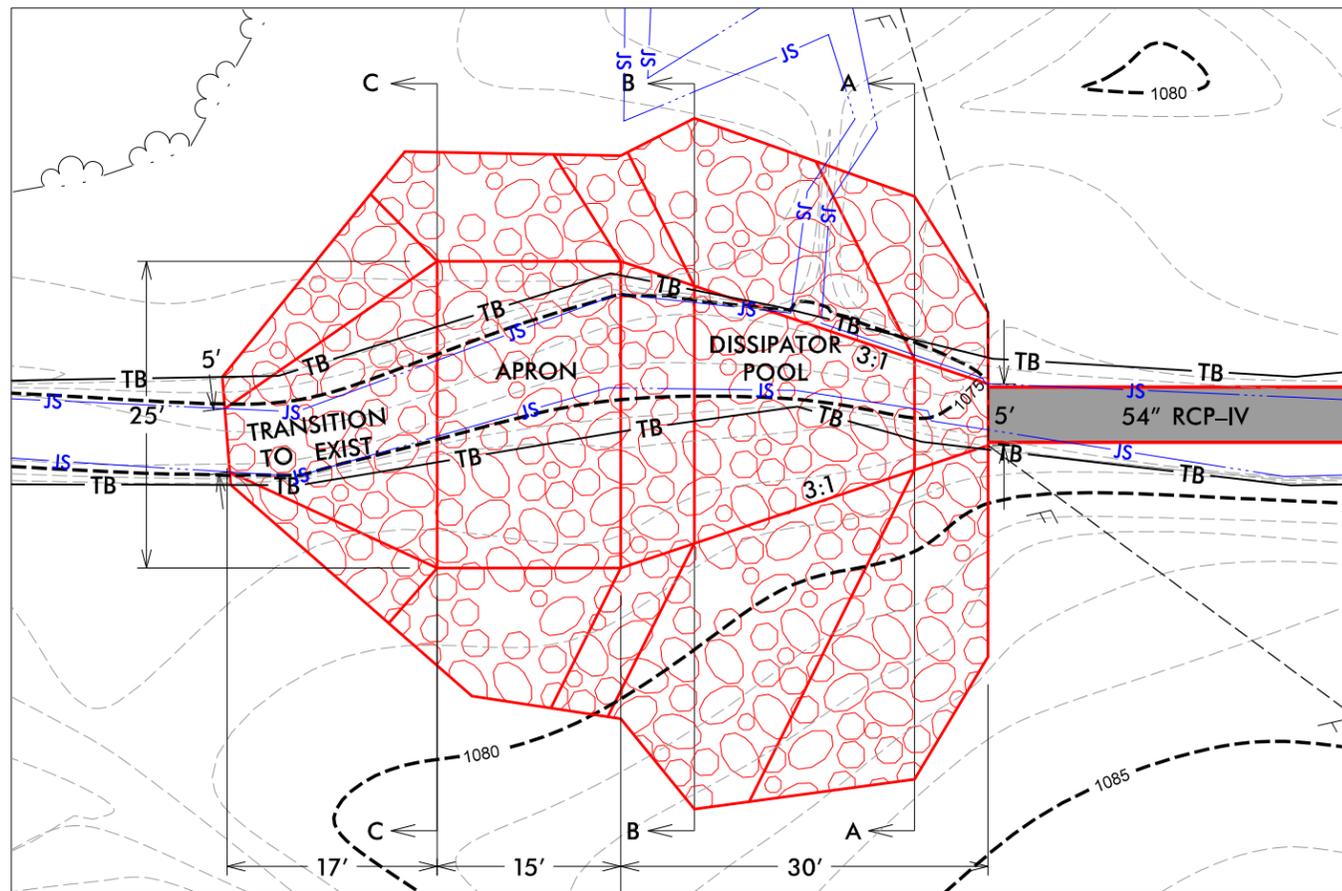
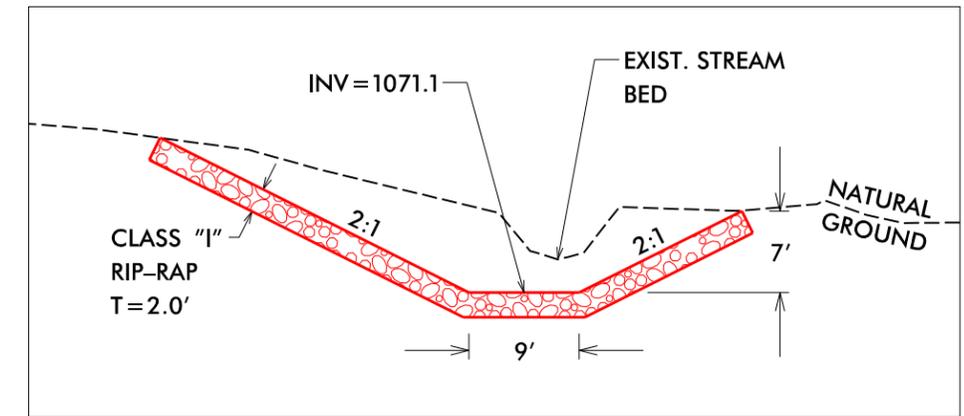
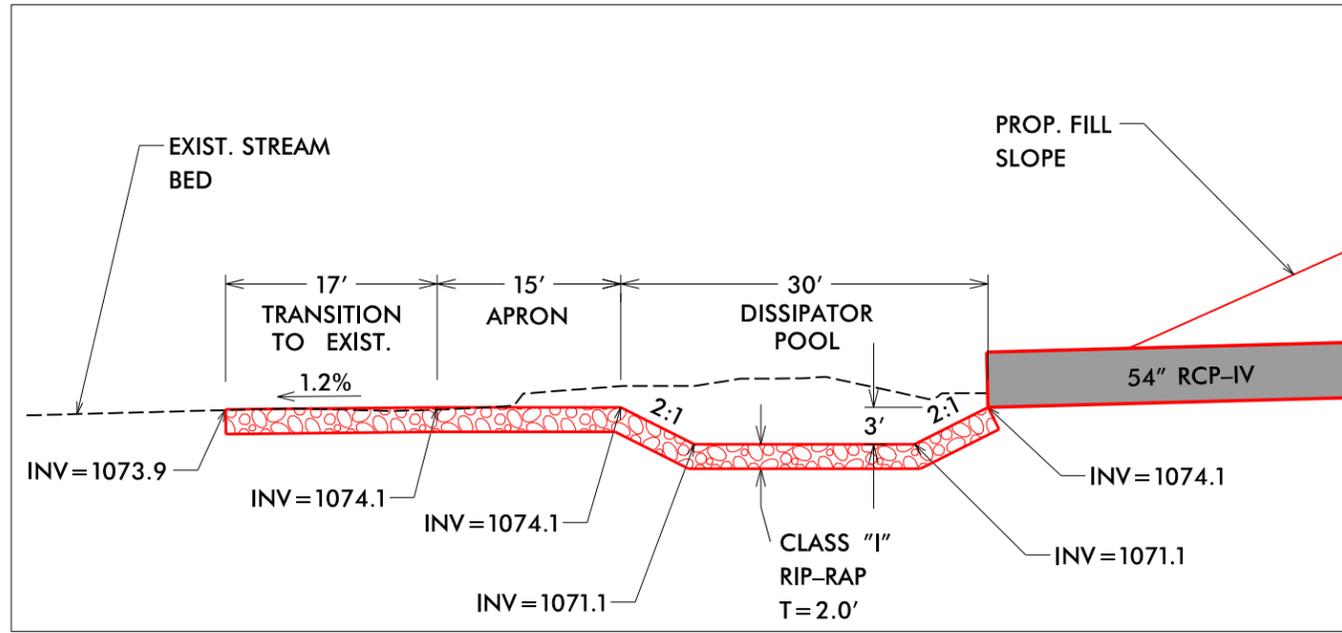
8/17/99  
 9/28/2007 B-5833-Hydraulics-Environmental\Drawings\PSH\B5833\_hyd.prm.psh\_05\_con.dgn  
 User: jhanson

# ENERGY DISSIPATOR BASIN #1 -RAMPD- 12+92 RT - SITES 5 & 6

(NOT TO SCALE)

PERMIT DRAWING  
SHEET 7 OF 9

PROJECT REFERENCE NO. B-5833	SHEET NO. 2D-1
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
<b>DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED</b>	
 TGS ENGINEERS 706 HILLSBOROUGH ST., SUITE 200 RALEIGH, NC 27603 PH (919) 773-8887 CORP. LICENSE NO.: G-0275	



8/17/99

9/28/2021  
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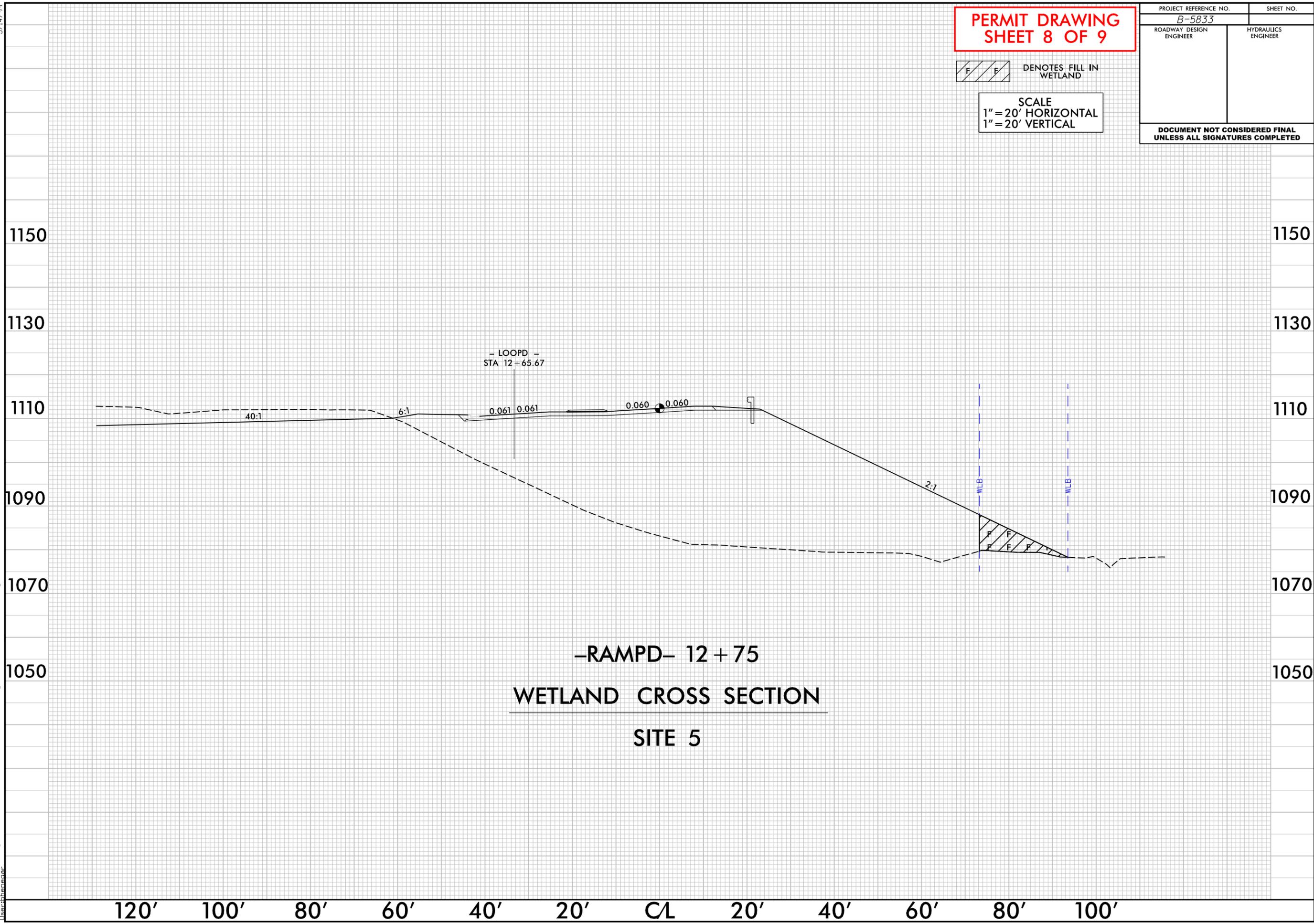
5/14/99  
9/17/2021  
X:\PROJECTS\B-5833\Hydraulics\PERMITS\Environmental\Drawings\XSC\RAMPD.XSC.12+75.dgn  
User: jhane

**PERMIT DRAWING  
SHEET 8 OF 9**

PROJECT REFERENCE NO. <i>B-5833</i>	SHEET NO.
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
<b>DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED</b>	

 DENOTES FILL IN WETLAND

SCALE  
1" = 20' HORIZONTAL  
1" = 20' VERTICAL





# Mitigation

Fisher River Mitigation Site  
ONEID 086-001

The Fisher River Site is located in Surry County within the USGS hydrologic unit 03040101 of the Yadkin River. Table 1 shows the final mitigation quantities approved for the site. The site was transferred to EEP for long term management. Table 2 indicates all mitigation debits that have occurred per regulatory agency approval.

In order to offset unavoidable impacts associated with B-5833, NCDOT will be debiting 0.02 acres of wetland impacts at a 2:1 ratio totaling 0.04 acres of mitigation from Fisher River Mitigation site.

Table 1. Mitigation Quantities Approved

HUC	Mitigation Type	Starting Amount	Additional Notes
3040101	Riparian Wetland Creation	9.05	8.1 credits transferred to EEP
3040101	Riparian Wetland Enhancement	0.91	Credits transferred to EEP
3040101	Riparian Wetland Restoration	25.87	25.5 credits transferred to EEP
3040101	Stream Restoration	4752	Credits transferred to EEP

Table 2. Mitigation Debts – Riparian Wetland Creation

Mitigation Type	Debit Amount	Status	SITE TIP	Action ID#	Notes
Riparian Wetland Creation	8.1	Close Out	EEP		Credits transferred to EEP

Table 3. Mitigation Debts – Riparian Wetland Restoration

Mitigation Type	Debit Amount	Status	SITE TIP	Action ID#	Notes
Riparian Wetland Restoration	25.5	Close Out	EEP		Credits transferred to EEP
Riparian Wetland Restoration	0.04	Closeout	B-5833		0.02 impacts at 2:1

Idols Road Extension Mitigation Site  
ONEID 034-003

The Idols Road Extension Site is located in Forsyth County within the USGS hydrologic unit 03040101 of the Yadkin River. NCDOT acquired the site to mitigate for unavoidable, jurisdictional impacts associated with TIP U-2707. Table 1 shows the final mitigation quantities approved for the site. Table 2 indicates all mitigation debits that have occurred per regulatory agency approval.

In order to offset unavoidable 368ft of unavoidable impacts associate with B-5833, NCDOT will be debiting the Idols Road Ext site at a 2:1 ratio, totaling 728 linear feet of stream mitigation. All debits associated with this mitigation site are listed below.

Table 1. Mitigation Quantities Approved

HUC	Mitigation Type	Starting Amount	Additional Notes
3040101	Stream Restoration	1800	Restoration (1:1) of 1800 lf of streams S-JH-A (Reach 1)
3040101	Stream Enhancement	153	Enhancement (2:1) of 153 lf for stream S-JH-B (Reach 2) generating 76.5 stream mitigation credits.

Table 2. Mitigation Debits – Stream Restoration

Mitigation Type	Debit Amount	Status	SITE TIP	Action ID#	Notes
Stream Restoration	892	Monitoring	U-2707	1998-20439	
Stream Restoration	728	Monitoring	B-5833		368 ft impacts at 2:1 ratio

# Archaeology



## NO ARCHAEOLOGICAL SURVEY REQUIRED FORM

This form only pertains to ARCHAEOLOGICAL RESOURCES for this project. It is not valid for Historic Architecture and Landscapes. You must consult separately with the Historic Architecture and Landscapes Group.



### PROJECT INFORMATION

Project No: B-5833 County: Yadkin  
 WBS No: 45786.1.1 Document: Categorical Exclusion  
 Federal Aid No: NHP- Funding:  State  Federal  
 0021(023)

Federal Permit Required?  Yes  No Permit Type: N/A

**Project Description:** Replace Bridge 29 on US 21 Business over Interstate 77 in Yadkin County. Area of Potential Effects (A.P.E.) is approximately 595 meters (1,950 ft.) long and 92 meters (300 ft.) wide. No design plans were provided.

### SUMMARY OF CULTURAL RESOURCES REVIEW

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

The review included an examination of a topographic map, an aerial photograph, and listings of previously recorded sites, previous archaeological surveys, and previous environmental reviews at the Office of State Archaeology (O.S.A.). The bridge is oriented northwest to southeast, but is considered north-south for this review.

The topographic map (Elkin South, N.C.) shows the A.P.E. is located on a level ridge toe. The bridge does not cross any streams. There is a seasonal drainage located near the north end of the A.P.E. Level ridge toes have a low to moderate potential for archaeological sites. Much of the A.P.E. on the west side of US 21 is occupied by the interchange at I-77.

The aerial photograph shows that most of the A.P.E. is developed. The west side of US 21 is disturbed by structures, parking lots, and two entrance/exit ramps for I-77. The southeast quadrant has some undeveloped land between SR 1350 and I-77. The northeast quadrant is occupied by a structure and parking lot (gas station?).

A review of information at the O.S.A. shows there are no previously recorded sites within or adjacent to the A.P.E. The A.P.E. has not been previously surveyed for archaeological sites. A project along US 21 (ER 98-8509) has been reviewed by the State Historic Preservation Office (HPO). No survey was recommended. A project along I-77 (ER 03-1643) has also been reviewed.

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

The landform within the A.P.E. has a low to moderate potential for archaeological sites. Most of the A.P.E. is disturbed by development and by the entrance/exit ramps for I-77. There are no previously recorded sites within the A.P.E.

**SUPPORT DOCUMENTATION**

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

**FINDING BY NCDOT ARCHAEOLOGIST**

*NO ARCHAEOLOGY SURVEY REQUIRED*

Caleb Smith

3/9/2016

---

NCDOT ARCHAEOLOGIST II

Date

# Historic Architecture and Landscapes

16-01-0079



## HISTORIC ARCHITECTURE AND LANDSCAPES NO HISTORIC PROPERTIES PRESENT OR AFFECTED FORM

This form only pertains to Historic Architecture and Landscapes for this project. It is not valid for Archaeological Resources. You must consult separately with the Archaeology Group.

### PROJECT INFORMATION

<b>Project No:</b>	B-5833	<b>County:</b>	Yadkin
<b>WBS No.:</b>	45786.1.1	<b>Document Type:</b>	CE
<b>Fed. Aid No:</b>	NHP-0021(023)	<b>Funding:</b>	<input type="checkbox"/> State <input checked="" type="checkbox"/> Federal
<b>Federal Permit(s):</b>	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<b>Permit Type(s):</b>	none
<b><u>Project Description:</u></b>			
Replace Bridge No. 29 on US 21 Business over I-77.			

### SUMMARY OF HISTORIC ARCHITECTURE AND LANDSCAPES REVIEW

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

**Date of field visit:** n/a

#### **Description of review activities, results, and conclusions:**

Review of HPOGIS web service was undertaken on February 4, 2016. Based on this review, there are no existing NR, DE, LL, SL or SS properties in the project area. One house constructed in 1957 is within the Area of Potential Effects; however it is a common period cottage that lacks the architectural significance to meet the criteria for National Register listing either individually or as a historic district. The bridge itself, Yadkin County Bridge No. 29, was built in 1964. The structure does not exemplify any distinctive engineering or aesthetic type and is not eligible for the National Register of Historic Places. No historic properties will be affected by this project.

**SUPPORT DOCUMENTATION**

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

**FINDING BY NCDOT ARCHITECTURAL HISTORIAN**

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

*Shelby Reap*

NCDOT Architectural Historian

*Feb 5, 2014*

Date

# Tribal Coordination



No  
response  
received.

STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION

ROY COOPER  
GOVERNOR

J. Eric Boyette  
SECRETARY

June 25, 2020

Dr. Wenonah Haire  
Tribal Historic Preservation Officer  
Catawba Indian Nation  
1536 Tom Steven Road  
Rock Hill SC, 29730

Dear Dr. Haire,

The North Carolina Department of Transportation has started the project development, environmental, and engineering work for the replacement of Bridge No. 29 over I-77 on U.S. 21 Business in Yadkin County, NC as project B-5833.

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

The project vicinity map is attached. The coordinates of this project are approximately 36.197598, -80.811420.

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 is currently under development.

Please respond by July 27th so that your comments can be used to evaluate potential environmental impacts during the design phase of this project. If you have any questions concerning this project, or would like additional information, please contact me at (919) 707-6442 or email [dstutts@ncdot.gov](mailto:dstutts@ncdot.gov).

Thank You,

DocuSigned by:  
  
A4A2999A8BC64F2...

David Stutts, PE

Structures Management Unit Project Engineer, NCDOT

cc: Matt Wilkerson, NCDOT Archaeology Team Lead

Lori Beckwith, USACE Division 11

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

*Telephone:* (919) 707-6442

*Fax:* (919) 250-4082

*Website:* [www.ncdot.gov](http://www.ncdot.gov)

*Location:*  
1000 BIRCH RIDGE DRIVE  
RALEIGH, NC 27610

# NEPA/SEPA Document

## Type I or II Categorical Exclusion Action Classification Form

<b>STIP No.:</b>	<b>B-5833</b>
<b>WBS Element:</b>	<b>45786.1.2</b>
<b>Federal Aid No.:</b>	<b>NHP-0021(023)</b>

### A. Project Description:

Replace Bridge No. 29 on US 21 Business over I-77, Yadkin County.

The replacement structure will use 2-span continuous plate girders approximately 249-feet long providing a clear roadway width of 40-feet. The new structure will be realigned to the northeast. The bridge will include two 12-foot lanes and 8-foot offsets. The bridge length is based on preliminary design information and is set by minimum vertical and horizontal requirements. The project is shown in Figure 1.

The intersection of Loop D (from southbound I-77 to US 21 Business) and Ramp D (from US 21 Business to southbound I-77) will be shifted westward and realigned and extended to intersect with US 21 Business. The intersection of Loop A (from US 21 Business to I-77 northbound) and Ramp A (from I-77 northbound to US 21 Business) will be realigned and extended to intersect with US 21 Business.

The 4'X6' culvert on US 21 Business over an unnamed tributary to Sandyberry Creek will be replaced with a single 7'X7' reinforced box culvert (RCBC). The proposed single 7'X7' RCBC will match the natural gradient of the stream and be buried a minimum of one-foot. Due to the steepness of the natural gradient of the stream, sills and baffles are proposed to ensure that native bed material will be retained in the new RCBC.

Project construction on US 21 Business will extend approximately 1600-feet from the western end of the new bridge and 1200-feet from the eastern end of the new bridge. The approaches will be widened to provide two 12-foot travel lanes with 8-foot shoulders (11-feet with guardrail) including 5-foot paved.

Traffic will be maintained on-site; however, an off-site detour is planned during some of the construction period. The off-site detour will utilize US 21 Business and NC 67. The detour is shown in Figure 2.

### B. Description of Need and Purpose:

The purpose of the proposed project is to replace a structurally deficient bridge. NCDOT records indicate Bridge 980029 has a sufficiency rating of 50.21 out of a possible 100 for a new structure in 2016. The bridge is considered structurally deficient due to a substructure appraisal of 4 out of 9 according to Federal Highway Administration standards.

### C. Categorical Exclusion Action Classification:

**Type I(B) - Ground Disturbing Action**

### D. Proposed Improvements:

23 CFR 771.117 (c)

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

E. Special Project Information:**Design:**

- Functional classification: Major Collector
- Statewide Tier Guidelines
- Project length: 0.578 mile
- Design Speed: 50 mph
- Posted Speed: 45 mph
- 2041 Design Year ADT = 4,550 vpd
- Design Exception: not required

**Alternatives Considered:**

The No-Build alternative would result in eventually closing the road which is unacceptable given the traffic service provided by US 21 Business.

Alternate 1 would construct Bridge No. 29 on an arch over I-77 on new alignment to the northeast.

Alternate 2 (Recommended) would construct Bridge No. 29 on constant grade over I-77 on new alignment to the northeast. Traffic will be maintained on-site; however, an off-site detour is planned during some of the construction period. The off-site detour will utilize US 21 Business and NC 67. The project detour shown in Figure 2 is for temporary construction closures.

Alignments to the southwest were determined not to be feasible due to anticipated impacts to existing ramps, and high number of residential and business relocations.

Rehabilitation of the old bridge is not practical due to its age and being structurally deficient. The extent of deterioration and the numerous locations of areas of disrepair on the bridge make rehabilitation inefficient, ineffective, and costly beyond reasonable limits.

**Estimated Costs:** The estimated construction costs are based on 2017 prices.

ITEM	Alternative 1	Alternative 2 (Recommended)
Construction Costs	\$4,400,000	\$4,600,000
Right-of-Way Costs*	\$300,000	\$300,000
Total Estimated Cost	\$4,700,000	\$4,900,000

\*Cost from 2020-2029 Draft STIP

**Relocations:** One relocation is anticipated with the proposed project. The BP Gas Station and convenience store (Thruway Food Mart) will be impacted due to the realignment of US 21 Business.

**Pedestrian and Bicycle Accommodations:** The Yadkin County Comprehensive Transportation Plan identifies US 21 Business as an existing bicycle route. NCDOT Division of Bicycle and Pedestrian Transportation recommends that the replacement bridge include minimum 4-foot paved shoulders (5-foot preferred), with bicycle-safe railing. The railing should be at least 42 inches high, with heights of 48 and 54 inches recommended.

A Complete Streets Project Sheet was approved by NCDOT in May 2020.

**Public Involvement:** A landowner notification letter was sent to all property owners affected by this project in February 2016. Property owners were invited to comment. No comments have been received to date.

Start of Study letters were sent to local officials, and environmental permit and resource agencies with jurisdiction in the proposed project area in December 2015. All comments have been addressed within this document.

In accordance with the NCDOT Tribal Protocol, the following Tribal Partners were notified on June 15, 2020 of the proposed project: Cherokee Nation, Eastern Band of Cherokee Indians, and United Keetoowah Band of Cherokee Indians in Oklahoma. Comments received will be addressed during final design.

**Bridge Demolition:** Bridge No. 29 is constructed of concrete and steel and should be possible to remove with no resulting debris based on standard demolition practices.

**GeoEnvironmental:** Three properties with geoenvironmental concerns were identified within the study area. One site, The Thruway Food Mart, is an anticipated relocation. This site has five registered USTs, all were installed in 1985.

F. Project Impact Criteria Checklists:

<b>F2. Ground Disturbing Actions – Type I (Appendix A) &amp; Type II (Appendix B)</b>				
<p>Proposed improvement(s) that fit Type I Actions (NCDOT-FHWA CE Programmatic Agreement, Appendix A) including 2, 3, 6, 7, 9, 12, 18, 21, 22 (ground disturbing), 23, 24, 25, 26, 27, 28, &amp;/or 30; &amp;/or Type II Actions (NCDOT-FHWA CE Programmatic Agreement, Appendix B) answer the project impact threshold questions (below) and questions 8 – 31.</p> <ul style="list-style-type: none"> <li>• <i>If any question 1-7 is checked “Yes” then NCDOT certification for FHWA approval is required.</i></li> <li>• <i>If any question 8-31 is checked “Yes” then additional information will be required for those questions in Section G.</i></li> </ul>				
<u>PROJECT IMPACT THRESHOLDS</u> (FHWA signature required if any of the questions 1-7 are marked “Yes”.)			Yes	No
1	Does the project require formal consultation with U.S. Fish and Wildlife Service (USFWS) or National Marine Fisheries Service (NMFS)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
2	Does the project result in impacts subject to the conditions of the Bald and Golden Eagle Protection Act (BGEPA)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
3	Does the project generate substantial controversy or public opposition, for any reason, following appropriate public involvement?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
4	Does the project cause disproportionately high and adverse impacts relative to low-income and/or minority populations?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
5	Does the project involve a residential or commercial displacement, or a substantial amount of right of way acquisition?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
6	Does the project require an Individual Section 4(f) approval?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
7	Does the project include adverse effects that cannot be resolved with a Memorandum of Agreement (MOA) under Section 106 of the National Historic Preservation Act (NHPA) or have an adverse effect on a National Historic Landmark (NHL)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
If any question 8-31 is checked “Yes” then additional information will be required for those questions in Section G.				
<u>Other Considerations</u>			Yes	No
8	Is an Endangered Species Act (ESA) determination unresolved or is the project covered by a Programmatic Agreement under Section 7?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
9	Is the project located in anadromous fish spawning waters?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
10	Does the project impact waters classified as Outstanding Resource Water (ORW), High Quality Water (HQW), Water Supply Watershed Critical Areas, 303(d) listed impaired water bodies, buffer rules, or Submerged Aquatic Vegetation (SAV)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
11	Does the project impact Waters of the United States in any of the designated mountain trout streams?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
12	Does the project require a U.S. Army Corps of Engineers (USACE) Individual Section 404 Permit?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
13	Will the project require an easement from a Federal Energy Regulatory Commission (FERC) licensed facility?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	

<u>Other Considerations for Type I and II Ground Disturbing Actions (continued)</u>		Yes	No
14	Does the project include a Section 106 of the National Historic Preservation Act (NHPA) effects determination other than a No Effect, including archaeological remains?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
15	Does the project involve GeoEnvironmental Sites of Concerns such as gas stations, dry cleaners, landfills, etc.?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
16	Does the project require work encroaching and adversely affecting a regulatory floodway or work affecting the base floodplain (100-year flood) elevations of a water course or lake, pursuant to Executive Order 11988 and 23 CFR 650 subpart A?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
17	Is the project in a Coastal Area Management Act (CAMA) county and substantially affects the coastal zone and/or any Area of Environmental Concern (AEC)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
18	Does the project require a U.S. Coast Guard (USCG) permit?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
19	Does the project involve construction activities in, across, or adjacent to a designated Wild and Scenic River present within the project area?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
20	Does the project involve Coastal Barrier Resources Act (CBRA) resources?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
21	Does the project impact federal lands (e.g. U.S. Forest Service (USFS), USFWS, etc.) or Tribal Lands?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
22	Does the project involve any changes in access control or the modification or construction of an interchange on an interstate?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
23	Does the project have a permanent adverse effect on local traffic patterns or community cohesiveness?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
24	Will maintenance of traffic cause substantial disruption?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
25	Is the project inconsistent with the STIP, and where applicable, the Metropolitan Planning Organization's (MPO's) Transportation Improvement Program (TIP)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
26	Does the project require the acquisition of lands under the protection of Section 6(f) of the Land and Water Conservation Act, the Federal Aid in Fish Restoration Act, the Federal Aid in Wildlife Restoration Act, Tennessee Valley Authority (TVA), Tribal Lands, or other unique areas or special lands that were acquired in fee or easement with public-use money and have deed restrictions or covenants on the property?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
27	Does the project involve Federal Emergency Management Agency (FEMA) buyout properties under the Hazard Mitigation Grant Program (HMGP)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
28	Does the project include a <i>de minimis</i> or programmatic Section 4(f)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
29	Is the project considered a Type I under the NCDOT Noise Policy?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
30	Is there prime or important farmland soil impacted by this project as defined by the Farmland Protection Policy Act (FPPA)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
31	Are there other issues that arose during the project development process that affected the project decision?	<input type="checkbox"/>	<input checked="" type="checkbox"/>

G. Additional Documentation as Required from Section F:

**Question 5: Relocations**

The proposed project may result in the displacement of one business. The relocation program for the proposed project will be conducted in accordance with 49 CFR 24, The Uniform Relocation and Real Property Acquisition Act of 1970, as Amended. The program is designed to provide assistance to displaced persons in relocating to a replacement site in which to live or do business.

**Question 8: Federally Protected Species**

Northern long-eared bat (NLEB): A review of NCNHP records, updated January 2020, indicates no known occurrences of federally protected species within 1.0-mile of the project study area. The nearest known Northern long-eared bat hibernaculum is approximately 56-miles southwest of the project and no known NLEB roost trees occur within 150-feet of the project area. NCDOT has determined that the proposed action does not require separate consultation on the grounds that the proposed action is consistent with the final Section 4(d) Rule, codified at 50 CFR § 17.40 (o) and effective February 16, 2016. NCDOT may presume its determination is informed by best available information and consider Section 7 responsibilities fulfilled for NLEB.

**Question 30: Farmland Protection Policy / Voluntary Agricultural District (VAD)**

The Marian G. Welborn Family Limited Partnership (DB 574 page 156) located in the northeast quadrant of the project study area is a VAD property. The proposed project has anticipated impacts of 0.61 acre for Right-of-Way and 0.08 acre for an easement. The Yadkin County VAD allows NCDOT minor right of way takes. The North Carolina Cooperative Extension -Yadkin County Center on June 2, 2020 stated that “they have no issues with NCDOT requiring ROW and easements for the B-5833 bridge replacement.”

Should right-of-way need to be acquired from the VAD through eminent domain, the Yadkin County Voluntary Agricultural District Ordinance requires [that the Agricultural Board hold a public hearing on the proposed condemnation before condemnation may be initiated, or other specific provision of that county’s enabling ordinance.] Any VAD/EVAD lands converted to non-agricultural use as part of a temporary construction easement must be returned to farmable condition by the project’s completion.

H. Project Commitments (attach as Green Sheet to CE Form):

## **NCDOT PROJECT COMMITMENTS**

Replace Bridge No. 29 on US 21 Business over I-77  
Yadkin County  
**STIP No. B-5833**

### **Division 11 - Offsite Detour**

Yadkin County School Transportation will be contacted at least one month prior to road closure to make sure the necessary plans to adequately reroute school busses at (336) 679-2233.

Yadkin County Emergency Medical Services will be contacted at least one month prior to road closure to make the necessary plans to adequately reroute school busses at (336) 849-7722.

### **Division 11 – Voluntary Agricultural District**

Should right-of-way need to be acquired from the VAD through eminent domain, the Yadkin County Voluntary Agricultural District Ordinance requires [that the Agricultural Board hold a public hearing on the proposed condemnation before condemnation may be initiated, or other specific provision of that county's enabling ordinance.] Any VAD/EVAD lands converted to non-agricultural use as part of a temporary construction easement must be returned to farmable condition by the project's completion.

Categorical Exclusion Approval:

STIP No:	<u>B-5833</u>
WBS No.:	<u>45786.1.1</u>
Federal Aid No.:	<u>NHP-0021(023)</u>

**Prepared By:**

7/24/2020 | 6:55 AM PDT DocuSigned by:  
Stacy Oberhausen  
 \_\_\_\_\_  
 Date Stacy B. Oberhausen, PE, CPM  
 TGS Engineers

**Prepared For:**

Structures Management Unit  
 North Carolina Department of Transportation  
 \_\_\_\_\_

**Reviewed By:**

7/30/2020 | 11:18 AM EDT DocuSigned by:  
Philip S. Harris, III, PE  
 \_\_\_\_\_  
 Date Philip S. Harris, III, PE  
 NCDOT, Environmental Analysis Unit Head

- Approved**
  - If NO grey boxes are checked in Section F (pages 2 and 3), NCDOT approves the Type I or Type II Categorical Exclusion.
- Certified**
  - If ANY grey boxes are checked in Section F (pages 2 and 3), NCDOT certifies the Type I or Type II Categorical Exclusion for FHWA approval.
  - If classified as Type III Categorical Exclusion.

7/30/2020 | 11:10 AM EDT DocuSigned by:  
Kevin Fischer, PE  
 \_\_\_\_\_  
 Date Kevin Fischer, PE, Assistant State Structures Engineer  
 NCDOT, Structures Management Unit

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

7/30/2020 | 10:02 AM PDT DocuSigned by:  
Janet W Bauer  
 \_\_\_\_\_  
 Date for John F. Sullivan, III, PE, Division Administrator  
 Federal Highway Administration

*Note: Prior to ROW or Construction authorization, a consultation may be required (please see Section VII of the NCDOT-FHWA CE Programmatic Agreement for more details).*



STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION

ROY COOPER  
GOVERNOR

J. Eric Boyette  
SECRETARY

June 25, 2020

Dr. Wenonah Haire  
Tribal Historic Preservation Officer  
Catawba Indian Nation  
1536 Tom Steven Road  
Rock Hill SC, 29730

Dear Dr. Haire,

The North Carolina Department of Transportation has started the project development, environmental, and engineering work for the replacement of Bridge No. 29 over I-77 on U.S. 21 Business in Yadkin County, NC as project B-5833.

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

The project vicinity map is attached. The coordinates of this project are approximately 36.197598, -80.811420.

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 is currently under development.

Please respond by July 27th so that your comments can be used to evaluate potential environmental impacts during the design phase of this project. If you have any questions concerning this project, or would like additional information, please contact me at (919) 707-6442 or email [dstutts@ncdot.gov](mailto:dstutts@ncdot.gov).

Thank You,

DocuSigned by:  
  
A4A2999A8BC64F2...

David Stutts, PE

Structures Management Unit Project Engineer, NCDOT

cc: Matt Wilkerson, NCDOT Archaeology Team Lead

Lori Beckwith, USACE Division 11

*Mailing Address:*  
NC DEPARTMENT OF TRANSPORTATION  
STRUCTURES MANAGEMENT UNIT  
1581 MAIL SERVICE CENTER  
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*Fax:* (919) 250-4082  
*Website:* [www.ncdot.gov](http://www.ncdot.gov)

*Location:*  
1000 BIRCH RIDGE DRIVE  
RALEIGH, NC 27610



PAT McCRORY  
Governor

NICHOLAS J. TENNYSON  
Secretary

February 16, 2016

Dear Landowner:

The North Carolina Department of Transportation (Department) is constantly working to provide better and safer transportation facilities for public uses in North Carolina. The effects that these proposed facilities have on the human and natural environment are of great concern to the Department and must be adequately described in environmental documents, such as Environmental Assessments or Environmental Impact Statements. As part of this process, the Department is obligated to identify and document environmental resources so that they can be avoided or impacts reduced. Streams and wetlands are two of the resources that must be identified during the review process. The Department has begun planning studies for the proposed replacement of bridge No. 29 on US 21 BUS, over I-77, Yadkin County, TIP Project B-5833.

Over the next several weeks, representatives of the Department, as well as the US Army Corps of Engineers, Wilmington District, Regulatory Division, may be present on your property for the purposes of conducting or verifying the limits of waters and wetlands pursuant to Section 404 of the Clean Water Act and/or Section 10 of the Rivers and Harbors Act of 1899. These representatives will be wearing orange safety vests, have picture ID badges, and will be hanging pink and black flagging, or ribbons, on trees and shrubs to identify the limits of streams and wetlands, if present, on the property. This flagging does not indicate the location of a proposed transportation project, but it is very important in our environmental review process. Please do not disturb this flagging.

Please note that if the U.S. Army Corps of Engineers has already issued a Jurisdictional Determination on your property confirming the presence of streams and/or wetlands, or if you have general questions or comments about the project, contact the NCDOT Planning Engineer Jonathan Carr, by phone (919) 707-6014, or via email at [jecarr@ncdot.gov](mailto:jecarr@ncdot.gov). If you call, please mention NCDOT project number **B-5833**.

Thank you for your cooperation.

Sincerely,

A handwritten signature in black ink, appearing to read 'Richard W. Hancock', written over a white background.

Richard W. Hancock, PE, Unit Head  
Project Development and Environmental Analysis Unit

Nothing Compares<sup>SM</sup>



Transportation

PAT McCrory  
Governor

NICHOLAS J. TENNYSON  
Secretary

Febrero 16, 2016

Estimado propietario

El Departamento de Transporte de Carolina del Norte (Departamento) trabaja constantemente para ofrecer mejores y más seguras instalaciones de transporte para el uso público en Carolina del Norte. Los efectos que estas instalaciones propuestas tienen sobre el medio ambiente representan una gran preocupación para el Departamento y deben ser descritas adecuadamente en documentos ambientales, tales como Exclusiones Categóricas, Evaluaciones Ambientales o Declaraciones de Impacto Ambiental. Como parte de este proceso, el Departamento está obligado a identificar y documentar recursos ambientales con el fin de evitar o reducir los impactos. Los arroyos y los humedales son dos de los recursos que deben ser identificados durante el proceso de revisión. El Departamento ha iniciado los estudios de planeación relacionados con la propuesta reemplazo de la puente número 29 de US 21 BUS, encima de I-77, en el condado Yadkin, Proyecto TIP B-5833.

Durante los próximos meses, es posible que representantes del Departamento, así como del Cuerpo de Ingenieros del Ejército de los Estados Unidos del distrito de Wilmington, pertenecientes a la División Regulatoria, se presenten en su propiedad con el propósito de conducir o verificar los límites de aguas y humedales de conformidad con la Sección 404 del Acta de Agua Limpia y/o la Sección 10 del Acta de Ríos y Puertos de 1899. Estos representantes vestirán chalecos de seguridad de color naranja, llevarán credenciales de identificación con fotografía y estarán colgando banderines de color rosa y negro, o listones, en árboles y arbustos para identificar los límites de arroyos y humedales que existan en la propiedad. Este mapeo no significa que en la zona se contemple un proyecto de transportación propuesto, pero es muy importante en nuestro proceso de revisión ambiental. Por favor no retire tales banderines o listones.

Por favor tome en cuenta que si el Cuerpo de Ingenieros del Ejército de los EE.UU. ha emitido una Determinación Jurisdiccional en su propiedad confirmando la presencia de arroyos y/o humedales, o si tiene preguntas o comentarios relacionados con el proyecto, por favor contacte la Línea Directa en Español del NCDOT llamando al 1-800-481-6494 o envíe su correspondencia a Jonathan Carr [jecarr@ncdot.gov](mailto:jecarr@ncdot.gov). Cuando llame, por favor mencione el Proyecto TIP B-5833 del NCDOT.

Gracias por su cooperación.

Atentamente,

Richard W. Hancock, PE, Unit Head  
Unidad de Desarrollo de Proyectos y Análisis Ambientales

Nothing Compares™

16-01-0079



## HISTORIC ARCHITECTURE AND LANDSCAPES NO HISTORIC PROPERTIES PRESENT OR AFFECTED FORM

This form only pertains to Historic Architecture and Landscapes for this project. It is not valid for Archaeological Resources. You must consult separately with the Archaeology Group.

### PROJECT INFORMATION

<b>Project No:</b>	B-5833	<b>County:</b>	Yadkin
<b>WBS No.:</b>	45786.1.1	<b>Document Type:</b>	CE
<b>Fed. Aid No:</b>	NHP-0021(023)	<b>Funding:</b>	<input type="checkbox"/> State <input checked="" type="checkbox"/> Federal
<b>Federal Permit(s):</b>	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<b>Permit Type(s):</b>	none
<b><u>Project Description:</u></b>			
Replace Bridge No. 29 on US 21 Business over I-77.			

### SUMMARY OF HISTORIC ARCHITECTURE AND LANDSCAPES REVIEW

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

**Date of field visit:** n/a

#### **Description of review activities, results, and conclusions:**

Review of HPOGIS web service was undertaken on February 4, 2016. Based on this review, there are no existing NR, DE, LL, SL or SS properties in the project area. One house constructed in 1957 is within the Area of Potential Effects; however it is a common period cottage that lacks the architectural significance to meet the criteria for National Register listing either individually or as a historic district. The bridge itself, Yadkin County Bridge No. 29, was built in 1964. The structure does not exemplify any distinctive engineering or aesthetic type and is not eligible for the National Register of Historic Places. No historic properties will be affected by this project.

**SUPPORT DOCUMENTATION**

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

**FINDING BY NCDOT ARCHITECTURAL HISTORIAN**

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

*Shelby Reap*

NCDOT Architectural Historian

*Feb 5, 2014*

Date



## NO ARCHAEOLOGICAL SURVEY REQUIRED FORM

This form only pertains to ARCHAEOLOGICAL RESOURCES for this project. It is not valid for Historic Architecture and Landscapes. You must consult separately with the Historic Architecture and Landscapes Group.



### PROJECT INFORMATION

Project No: B-5833 County: Yadkin  
 WBS No: 45786.1.1 Document: Categorical Exclusion  
 Federal Aid No: NHP- Funding:  State  Federal  
 0021(023)

Federal Permit Required?  Yes  No Permit Type: N/A

**Project Description:** Replace Bridge 29 on US 21 Business over Interstate 77 in Yadkin County. Area of Potential Effects (A.P.E.) is approximately 595 meters (1,950 ft.) long and 92 meters (300 ft.) wide. No design plans were provided.

### SUMMARY OF CULTURAL RESOURCES REVIEW

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

The review included an examination of a topographic map, an aerial photograph, and listings of previously recorded sites, previous archaeological surveys, and previous environmental reviews at the Office of State Archaeology (O.S.A.). The bridge is oriented northwest to southeast, but is considered north-south for this review.

The topographic map (Elkin South, N.C.) shows the A.P.E. is located on a level ridge toe. The bridge does not cross any streams. There is a seasonal drainage located near the north end of the A.P.E. Level ridge toes have a low to moderate potential for archaeological sites. Much of the A.P.E. on the west side of US 21 is occupied by the interchange at I-77.

The aerial photograph shows that most of the A.P.E. is developed. The west side of US 21 is disturbed by structures, parking lots, and two entrance/exit ramps for I-77. The southeast quadrant has some undeveloped land between SR 1350 and I-77. The northeast quadrant is occupied by a structure and parking lot (gas station?).

A review of information at the O.S.A. shows there are no previously recorded sites within or adjacent to the A.P.E. The A.P.E. has not been previously surveyed for archaeological sites. A project along US 21 (ER 98-8509) has been reviewed by the State Historic Preservation Office (HPO). No survey was recommended. A project along I-77 (ER 03-1643) has also been reviewed.

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

The landform within the A.P.E. has a low to moderate potential for archaeological sites. Most of the A.P.E. is disturbed by development and by the entrance/exit ramps for I-77. There are no previously recorded sites within the A.P.E.

**SUPPORT DOCUMENTATION**

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

**FINDING BY NCDOT ARCHAEOLOGIST**

*NO ARCHAEOLOGY SURVEY REQUIRED*

Caleb Smith

3/9/2016

---

NCDOT ARCHAEOLOGIST II

Date

**PRELIMINARY SCREENING OF FARMLAND CONVERSION IMPACTS – CORRIDOR PROJECT**

---

1. **Area in non-urban use. Points awarded = 10 out of 15**
  
2. **Perimeter in non-urban use. Points awarded = 10 out of 10**
  
3. **Percent of site being farmed. Points awarded = 0 out of 20**
  
4. **Protection provided by state and local government. Points awarded = 20 out of 20**
  
5. **Size of present farm unit compared to average. Points awarded = 0 out of 10**
  
6. **Creation of non-farmable farmland. Points awarded = 5 out of 25**
  
7. **Availability of farm support services. Points awarded = 3 out of 5**
  
8. **On-farm investments. Points awarded = 0 out of 20**
  
9. **Effects of conversion on farm support services. Points awarded = 0 out of 25**
  
10. **Compatibility with existing agricultural use. Points awarded = 2 out of 10**

**Conclusion: Total Points = 50 out of 160**

NCDOT has completed a screening of farmland in the project area and calculated the total number of points for the site per Part VI of the NRCS CPA-106 Farmland Conversion Impact Rating Form.



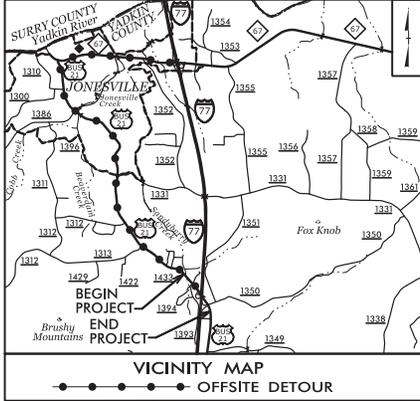
# APPENDIX D: PRELIMINARY SCREENING OF FARMLAND CONVERSION IMPACTS



02/08/19

**TIP PROJECT: B-5833**

See Sheet 1A For Index of Streets  
See Sheet 1B For Conventional Plan Sheet Symbols  
See Sheet RW01 thru RW04 For Survey Control & Right-of-Way Streets



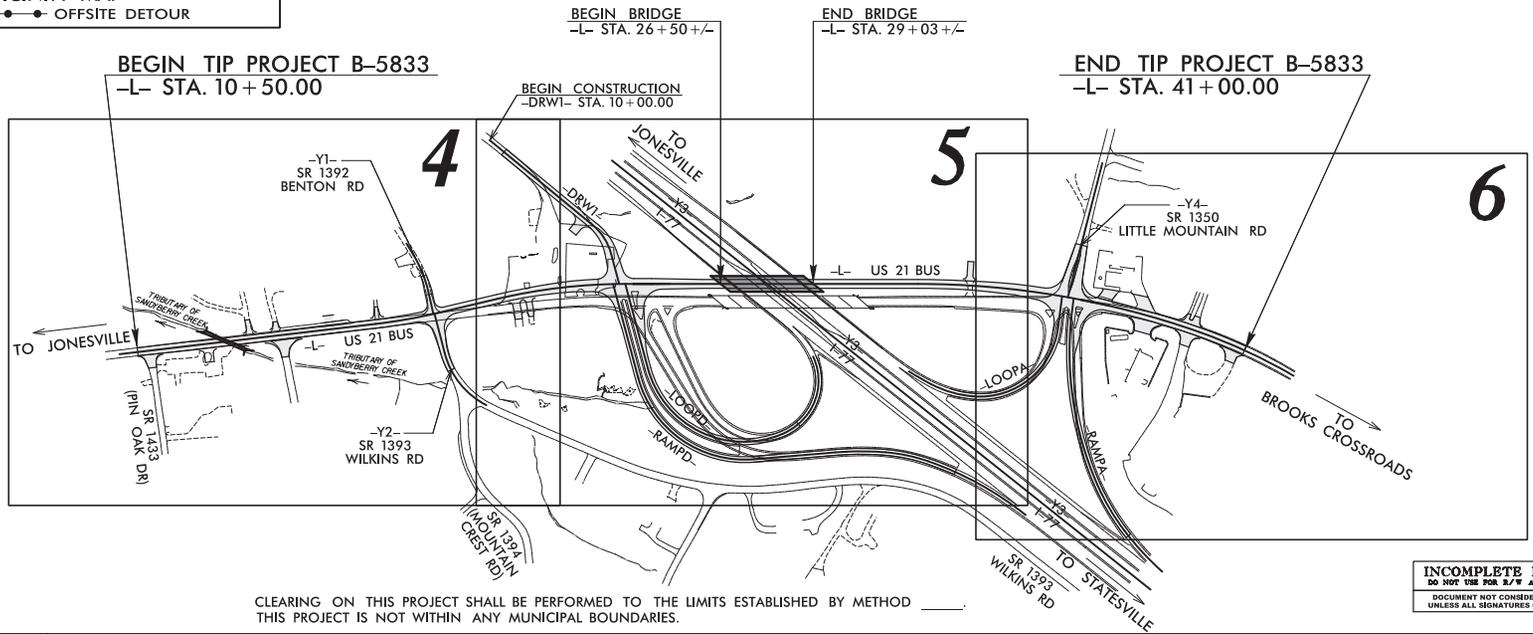
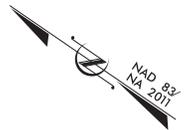
2.5% APPROVED PLANS

STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

**YADKIN COUNTY**

**LOCATION: REPLACE BRIDGE NO. 29 OVER I-77 ON US 21 BUS**  
**TYPE OF WORK: GRADING, DRAINAGE, PAVING, RETAINING WALLS, AND STRUCTURE**

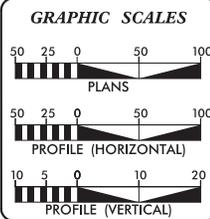
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-5833	1	
FED. PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
45786.1.1	NHP-0021(023)	PE	



CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD \_\_\_\_.  
THIS PROJECT IS NOT WITHIN ANY MUNICIPAL BOUNDARIES.

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

**CONTRACT:**



**DESIGN DATA**

ADT 2021 =	4100
ADT 2041 =	4550
K =	11 %
D =	65 %
T =	5 % *
V =	50 MPH
* (TTST 1% + DUAL 4%)	
FUNC. CLASS =	MAJOR COLLECTOR
STATEWIDE TIER DESIGN	

**PROJECT LENGTH**

LENGTH ROADWAY TIP PROJECT B-5833	=	0.530 mile
LENGTH STRUCTURES TIP PROJECT B-5833	=	0.048 mile
TOTAL LENGTH TIP PROJECT B-5833	=	0.578 mile

Prepared For:  
**DIVISION OF HIGHWAYS**  
1000 Birch Ridge Dr., Raleigh NC, 27610

TGS ENGINEERS  
706 HILLSBOROUGH ST.  
SUITE 200  
RALEIGH, NC 27603

By: PH (919) 733-8887  
CORP. LICENSE NO.: G-0275

2018 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:  
OCTOBER 16, 2020

LETTING DATE:  
OCTOBER 19, 2021

V. MARCUS LOWERY, P.E.  
PROJECT ENGINEER

DAVID STUITS, P.E.  
NC DOT CONTACT

HYDRAULICS ENGINEER

SIGNATURE: \_\_\_\_\_ P.E.

ROADWAY DESIGN ENGINEER

SIGNATURE: \_\_\_\_\_ P.E.



3/26/2020  
X:\NCDOT\B-5833\Roadway\Proj\B5833\_rdy\_1.tsh.dgn  
User:mlowery

SECOND PUBLISHED 01/2019 BY 01/2019

8/17/09

**-L-**

PI Sta 17+87.66	PI Sta 22+16.73
$\Delta = 6' 34" 02.4$ (LT)	$\Delta = 13' 17" 34.0$ (RT)
D = 3' 47" 39.9"	D = 3' 47" 39.9"
L = 173.08'	L = 350.32'
T = 86.63'	T = 175.95'
R = 1,510.00'	R = 1,510.00'
SE = 0.05	SE = 0.05
LR = 125'	LR = 125'

**-Y1-**

PI Sta 10+91.08	PI Sta 12+09.78
$\Delta = 16' 34" 00.1$ (RT)	$\Delta = 48' 13" 26.2$ (LT)
D = 17' 37" 46.1"	D = 25' 48" 32.1"
L = 105.32'	L = 186.85'
T = 53.21'	T = 99.36'
R = 325.00'	R = 222.00'

**-Y2-**

PI Sta 12+09.78	PI Sta 17+87.66
$\Delta = 48' 13" 26.2$ (LT)	$\Delta = 13' 17" 34.0$ (RT)
D = 25' 48" 32.1"	D = 3' 47" 39.9"
L = 186.85'	L = 173.08'
T = 99.36'	T = 86.63'
R = 222.00'	R = 1,510.00'

PROJECT REFERENCE NO. <b>B-5833</b>	SHEET NO. <b>04</b>
BW SHEET NO.	HYDRAULICS ENGINEER
ROADWAY DESIGN ENGINEER	

**INCOMPLETE PLANS**  
DO NOT USE FOR CONSTRUCTION

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

TGS ENGINEERS  
706 HILLSBOROUGH ST., SUITE 200  
RALEIGH, NC 27603  
PH 919.773.8887  
CORR. LICENSE NO.: C-4275

**BEGIN TIP PROJECT B-5833**  
**-L- POT Sta. 10+50.00**

**BEGIN CONSTRUCTION**  
**-Y1- POC Sta. 11+00.00**

**-L- POC Sta. 18+16.28 =**  
**-Y1- POT Sta. 12+06.74**  
**-L- POC Sta. 18+64.39 =**  
**-Y2- POT Sta. 10+00.00**  
**-L- PT Sta. 18+74.11**

**-Y1- POT Sta. 10+00.00**  
**S 24' 11" 15.5' W**  
**-Y1- PC Sta. 10+37.96**  
**-Y1- PT Sta. 11+43.27**

**-L- PC Sta. 17+01.03**

**BEGIN CONSTRUCTION**  
**-Y2- POC Sta. 11+00.00**

**END CONSTRUCTION**  
**-Y2- POC Sta. 11+60.00**

**-Y2- PT Sta. 12+97.27**

MATCHLINE -L- STA. 21+00.00  
SEE SHEET 05

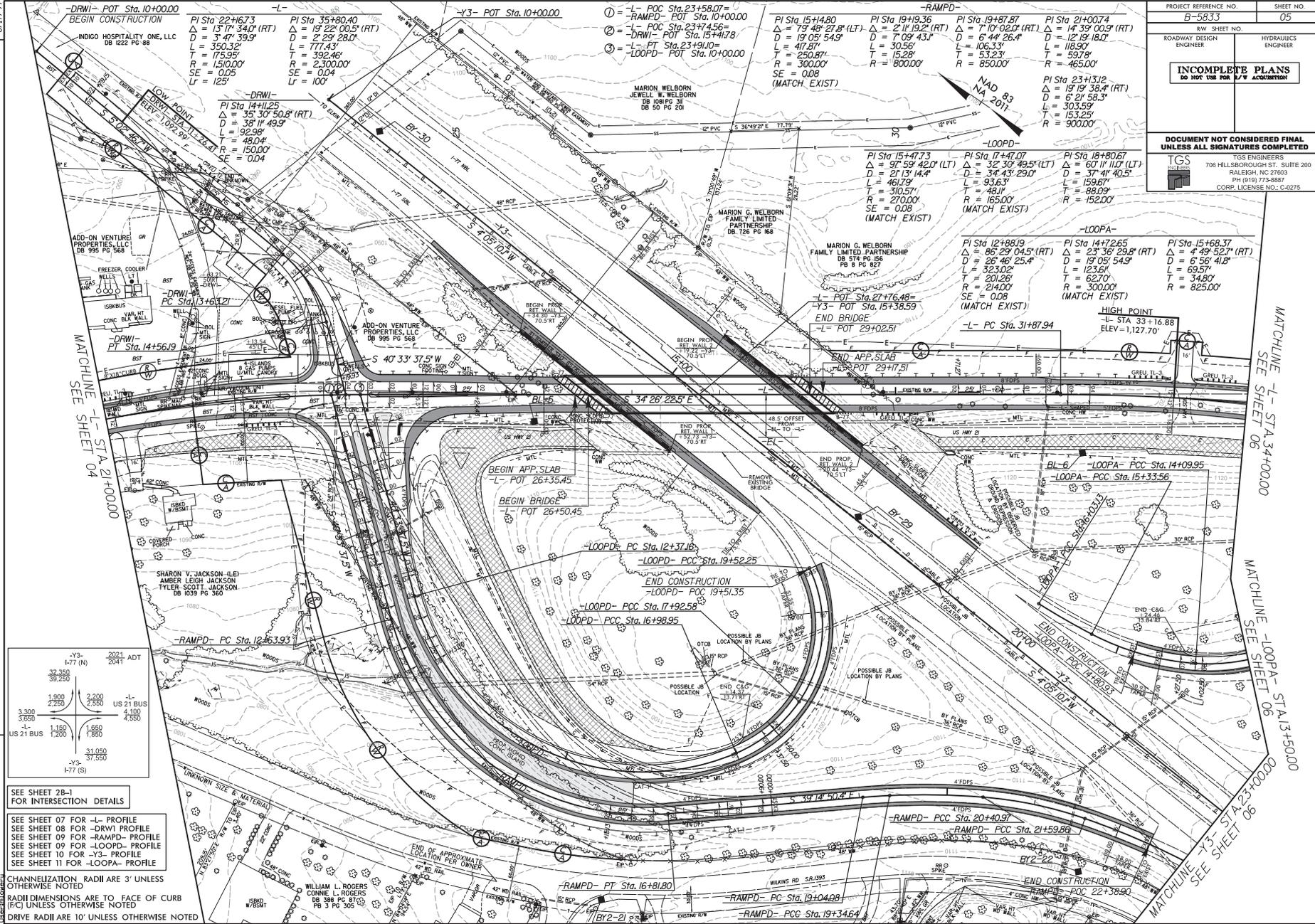
SEE SHEET 2B-1 FOR INTERSECTION DETAILS

SEE SHEET 07 FOR -L- PROFILE  
SEE SHEET 08 FOR -Y1- & -Y2- PROFILES

DRIVE RADII ARE 10' UNLESS OTHERWISE NOTED  
CHANNELIZATION RADII ARE 3' UNLESS OTHERWISE NOTED  
RADII DIMENSIONS ARE TO FACE OF CURB (FC) UNLESS OTHERWISE NOTED

C:\projects\B-5833\Roadway\Proj\B5833-rd.dwg, psh, 8/17/09

8/17/09



-DRWI- POT Sta. 10+00.00  
 BEGIN CONSTRUCTION  
 INDIGO HOSPITALITY ONE, LLC  
 DB 1222 PG 68  
 PI Sta 22+167.3  
 $\Delta = 13' 17'' 34.0''$  (RT)  
 $D = 3' 47'' 39.9''$   
 $L = 350.32'$   
 $T = 175.95'$   
 $R = 1510.00'$   
 $SE = 0.05$   
 $LT = 125'$

-L- POT Sta. 23+58.07=  
 -RAMPD- POT Sta. 10+00.00  
 -DRWI- POT Sta. 23+74.56=  
 -L- POT Sta. 23+91.10=  
 -LOOPD- POT Sta. 10+00.00  
 PI Sta 35+80.40  
 $\Delta = 19' 22'' 00.5''$  (RT)  
 $D = 2' 29'' 28.0''$   
 $L = 777.43'$   
 $T = 392.46'$   
 $R = 2300.00'$   
 $SE = 0.04$   
 $LT = 100'$

-RAMPD- POT Sta. 19+87.87  
 PI Sta 19+19.36  
 $\Delta = 7' 10'' 02.0''$  (RT)  
 $D = 6' 44'' 26.4''$   
 $L = 106.33'$   
 $T = 53.23'$   
 $R = 465.00'$

PROJECT REFERENCE NO. B-5833  
 SHEET NO. 05  
 RW SHEET NO. HYDRAULICS ENGINEER  
 INCOMPLETE PLANS  
 DO NOT USE FOR ANY ACCURACY  
 DOCUMENT NOT CONSIDERED FINAL  
 UNLESS ALL SIGNATURES COMPLETED  
 TGS ENGINEERS  
 706 HILLSBOROUGH ST., SUITE 200  
 RALEIGH, NC 27603  
 PH 919.773-2687  
 CORP. LICENSE NO.: C-29275

-DRWI- POT Sta. 14+11.25  
 $\Delta = 35' 30'' 50.8''$  (RT)  
 $D = 38' 11'' 49.9''$   
 $L = 92.98'$   
 $T = 48.04'$   
 $R = 1500.00'$   
 $SE = 0.04$

-L- POT Sta. 17+47.07  
 $\Delta = 32' 30'' 49.5''$  (LT)  
 $D = 3' 43'' 29.0''$   
 $L = 93.63'$   
 $T = 48.11'$   
 $R = 1650.00'$   
 (MATCH EXIST)

-LOOPD- POT Sta. 18+80.67  
 $\Delta = 60' 11'' 11.0''$  (LT)  
 $D = 37' 41'' 40.5''$   
 $L = 159.67'$   
 $T = 88.09'$   
 $R = 152.00'$   
 (MATCH EXIST)

-LOOPA- POT Sta. 15+168.37  
 $\Delta = 4' 49'' 52.7''$  (RT)  
 $D = 6' 56'' 41.8''$   
 $L = 69.57'$   
 $T = 34.80'$   
 $R = 825.00'$   
 (MATCH EXIST)

-DRWI- POT Sta. 14+56.19  
 $\Delta = 34' 33'' 37.5''$  W  
 $S 40' 33'' 37.5''$  W  
 ADD-ON VENTURE PROPERTIES, LLC  
 DB 995 PG 568

-L- POT Sta. 27+76.48=  
 -L- POT Sta. 15+38.59  
 END BRIDGE  
 -L- POT Sta. 29+02.51  
 END APP. SLAB  
 -L- POT Sta. 29+17.51

-L- POT Sta. 31+87.94  
 HIGH POINT  
 -L- STA 33+16.88  
 ELEV = 1,127.70'

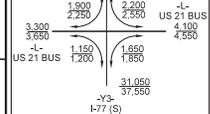
-LOOPA- PCC Sta. 14+09.95  
 -LOOPA- PCC Sta. 15+33.56  
 -L- POT Sta. 14+09.95  
 -L- POT Sta. 15+33.56

-RAMPD- PCC Sta. 12+63.93  
 -L- POT Sta. 26+35.45  
 -L- POT Sta. 26+50.45  
 BEGIN APP. SLAB  
 BEGIN BRIDGE

-LOOPD- PCC Sta. 12+37.16  
 -LOOPD- PCC Sta. 19+52.25  
 END CONSTRUCTION  
 -LOOPD- PCC Sta. 19+51.35  
 -LOOPD- PCC Sta. 17+92.58  
 -LOOPD- PCC Sta. 16+98.95

-RAMPD- PCC Sta. 20+40.97  
 -RAMPD- PCC Sta. 21+59.86  
 -RAMPD- PCC Sta. 19+104.08  
 -RAMPD- PCC Sta. 19+34.64

-L- STA 34+00.00  
 -L- STA 13+50.00  
 -L- STA 23+15.00  
 -L- STA 15+00.00



SEE SHEET 28-1 FOR INTERSECTION DETAILS

SEE SHEET 07 FOR -L- PROFILE  
SEE SHEET 08 FOR -DRWI- PROFILE  
SEE SHEET 09 FOR -RAMPD- PROFILE  
SEE SHEET 09 FOR -LOOPD- PROFILE  
SEE SHEET 10 FOR -Y3- PROFILE  
SEE SHEET 11 FOR -LOOPA- PROFILE

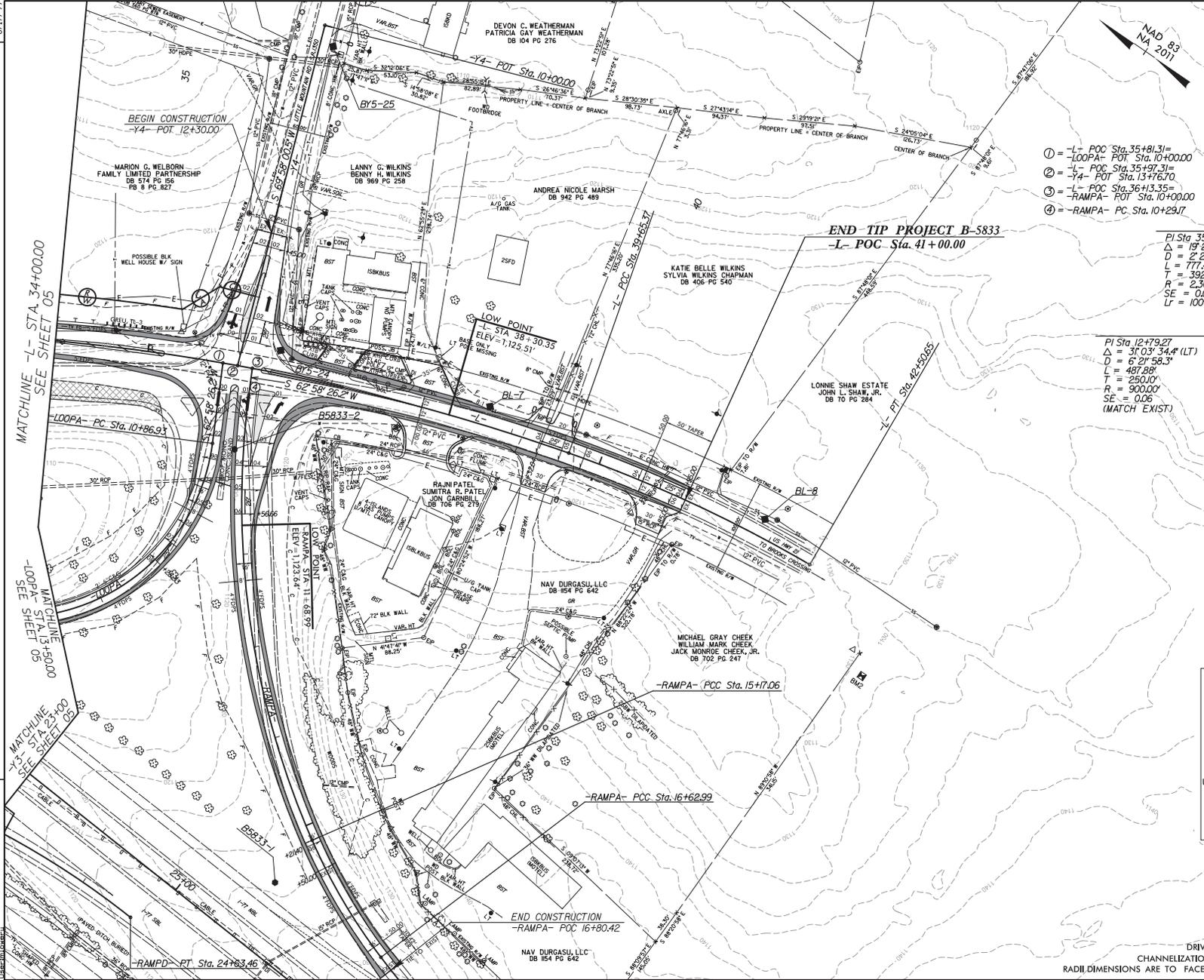
CHANNELIZATION RADII ARE 3' UNLESS OTHERWISE NOTED  
RADII DIMENSIONS ARE TO FACE OF CURB (FC) UNLESS OTHERWISE NOTED  
DRIVE RADII ARE 10' UNLESS OTHERWISE NOTED

MATCHLINE -L- STA 34+00.00  
SEE SHEET 06  
MATCHLINE -L- STA 13+50.00  
SEE SHEET 06  
MATCHLINE -Y3- STA 23+15.00  
SEE SHEET 06  
MATCHLINE -L- STA 15+00.00  
SEE SHEET 06

REVISIONS

9/17/09

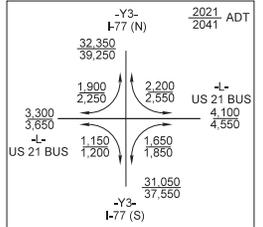
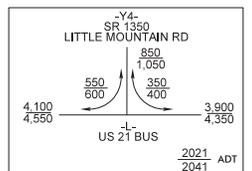
REVISIONS



PROJECT REFERENCE NO. <b>B-5833</b>	SHEET NO. <b>06</b>
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
<b>INCOMPLETE PLANS</b> DO NOT USE FOR ANY ACCURACY	
<b>DOCUMENT NOT CONSIDERED FINAL</b> UNLESS ALL SIGNATURES COMPLETED	
TGS ENGINEERS 706 HILLSBOROUGH ST., SUITE 200 RALEIGH, NC 27603 PH 919.773.8897 CORP. LICENSE NO. C-4275	

- ① -L- POC Sta. 35+81.31=
- ② -L- POC Sta. 35+97.31=
- ③ -L- POC Sta. 36+13.35=
- ④ -RAMP- POC Sta. 10+29.17

PI Sta 35+80.40 $\Delta = 19' 22'' 00.5''$ (RT) $D = 2' 29'' 28.0''$ $L = 777.43'$ $T = 392.46'$ $R = 2,500.00'$ $SE = 0.04$ $Lr = 100'$	PI Sta 41+08.44 $\Delta = 10' 53'' 48.1''$ (RT) $D = 3' 49'' 11.0''$ $L = 285.27'$ $T = 143.07'$ $R = 1,500.00'$ $SE = EXIST.$
-RAMP-	
PI Sta 12+79.27 $\Delta = 3' 03'' 34.4''$ (LT) $D = 6' 21'' 58.3''$ $L = 487.88'$ $T = 250.00'$ $R = 900.00'$ $SE = 0.06$ (MATCH EXIST)	PI Sta 15+90.37 $\Delta = 13' 37'' 04.8''$ (LT) $D = 9' 19'' 53.6''$ $L = 145.31'$ $T = 73.31'$ $R = 614.00'$ (MATCH EXIST)
-LOOPA-	
PI Sta 12+88.19 $\Delta = 96' 29'' 04.5''$ (RT) $D = 26' 46'' 25.4''$ $L = 323.02'$ $T = 201.26'$ $R = 241.00'$ $SE = 0.08$ (MATCH EXIST)	PI Sta 17+39.05 $\Delta = 10' 53'' 48.1''$ (RT) $D = 7' 09'' 43.1''$ $L = 151.62'$ $T = 76.06'$ $R = 800.00'$ (MATCH EXIST)



SEE SHEET 28-1 FOR INTERSECTION DETAILS

SEE SHEETS 07 & 08 FOR -L- PROFILE  
 SEE SHEET 10 FOR -Y3- PROFILE  
 SEE SHEET 10 FOR -Y4- PROFILE  
 SEE SHEET 11 FOR -LOOPA- PROFILE  
 SEE SHEET 11 FOR -RAMP- PROFILE

DRIVE RADII ARE 10' UNLESS OTHERWISE NOTED  
 CHANNELIZATION RADII ARE 3' UNLESS OTHERWISE NOTED  
 RADII DIMENSIONS ARE TO FACE OF CURB (FC) UNLESS OTHERWISE NOTED

C:\Users\jgibson\Documents\Projects\B5833\Roadway\Pre\B5833-1.dwg, psh, 86.dgn  
 9/17/09