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: *

Nash

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-5670

WBS # *

45625.3.1

(for NCDOT use only)

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

☑ Section 404 Permit (wetlands, streams and waters, Clean Water Act)

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

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

1b. Primary Contact Email: *

driffey@ncdot.gov

1c. Primary Contact Phone: *

(xxx)xxx-xxxx

(919)707-6151

1d. Who is applying for the permit? *

☑ Owner ☐ Applicant (other than owner)

(Check all that apply)

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

○ Yes ◉ No

2. Owner Information

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

Multiple Properties

2b. Deed book and page no.:

2c. Contact Person:

(for Corporations)

2d. Address *

Street Address

1598 Mail Service Center

Address Line 2

City

Raleigh

State / Province / Region

NC

Postal / Zip Code

27699-1598

Country

USA

2e. Telephone Number: *

(xxx)xxx-xxxx

(919)707-6000

2f. Fax Number:

(xxx)xxx-xxxx

2g. Email Address: *

pharris@ncdot.gov

C. Project Information and Prior Project History

1. Project Information

1a. Name of project: *

Replacement of Bridge #29 on US 64 Alternate over the Tar River

1b. Subdivision name:

(if appropriate)

1c. Nearest municipality / town: *

Spring Hope

2. Project Identification

2a. Property Identification Number:

(tax PIN or parcel ID)

2b. Property size:

(in acres)

2c. Project Address

Street Address

Address Line 2

City

State / Province / Region

Postal / Zip Code

Country

2d. Site coordinates in decimal degrees

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

Latitude: *

35.928165

ex: 34.208504

Longitude: *

-78.148131

-77.796371

3. Surface Waters

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

Tar River

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

WS-V; NSW

Surface Water Lookup

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

Tar-Pamlico

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

030201010603

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: *

Bridge 29 was built in 1952. Bridge 29 is approximately 315 feet in length with 7 spans.

Land use in the project study area is a combination of undeveloped areas, residential, and agricultural areas. The project study area is rural and predominantly undeveloped with maintained/mowed road right- of-way, two streams, and scattered residential homes.

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:

0.04

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

(intermittent and perennial)

1,204

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

Bridge 29 is considered structurally deficient due to the superstructure and substructure conditions.

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

The proposed replacement of Bridges No. 29 over the Tar River will be on existing alignment. Traffic will be detoured offsite during construction.

Proposed replacement Bridge 29 will have two 12-foot lanes and 4-foot paved shoulders on both sides of the bridge with 4 spans.

The replacement Bridge 29 will be approximately 325 feet long. Temporary causeways will be installed to provide access for the contractor to remove the timber piles and concrete footings and construct the bridge. The removal of existing timber piles will be conducted using approved Design Standards in Sensitive Watersheds.

Standard road building equipment, such as trucks, dozers, and cranes will be used.

5. Jurisdictional Determinations

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

○ Yes ◉ No ○ Unknown

Comments:

See USACE PJD determination request submitted 7/18/2022

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): Beth Reed & Ross Sullivan

Agency/Consultant Company: Kimley-Horn

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.

No

D. Proposed Impacts Inventory

1. Impacts Summary

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

☐ Wetlands ☑ Streams-tributaries ☑ Buffers
☐ Open Waters ☐ Pond Construction

3. Stream Impacts

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

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

	3a. Reason for impact * (?)	3b.Impact type *	3c. Type of impact *	3d. S. name *	3e. Stream Type * (?)	3f. Type of Jurisdiction *	3g. S. width *	3h. Impact length *
S1	Bridge	Temporary	Workpad/Causeway	Tar River	Perennial	Both	110 Average (feet)	68 (linear feet)
S2	Bridge	Temporary	Workpad/Causeway	Tar River	Perennial	Both	110 Average (feet)	34 (linear feet)
S3	SB - Tie in to Tar River	Permanent	Bank Stabilization	UT Tar River	Perennial	Both	6 Average (feet)	140 (linear feet)

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

3i. Total jurisdictional ditch impact in square feet:

0

3i. Total permanent stream impacts:

140

3i. Total temporary stream impacts:

102

3i. Total stream and ditch impacts:

242

3j. Comments:

6. Buffer Impacts (for DWR)

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

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

Check all that apply.

- [ ] Neuse
- [ ] Catawba
- [ ] Goose Creek
- [ ] Other
- [x] Tar-Pamlico
- [ ] Randleman
- [ ] Jordan Lake

6b. Impact Type * (?)	6c. Per or Temp * (?)	6d. Stream name *	6e. Buffer mitigation required? *	6f. Zone 1 impact *	6g. Zone 2 impact *
Bridge - Allowable	P	Tar River	No	8,208 (square feet)	5,371 (square feet)
Parallel - Allowable w/mitigation	P	Tar River	Yes	4,324 (square feet)	1,039 (square feet)

6h. Total buffer impacts:

	Zone 1	Zone 2
Total Temporary impacts:	0.00	0.00

	Zone 1	Zone 2
Total Permanent impacts:	12,532.00	6,410.00

	Zone 1	Zone 2
Total combined buffer impacts:	12,532.00	6,410.00

6i. Comments:

E. Impact Justification and Mitigation

1. Avoidance and Minimization

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

Traffic will be routed to an offsite detour during construction.

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

Stormwater outfalls will be placed outside of the buffer zones and will have rip-rap pads to help dissipate energy and reduce velocity. Design Standards in Sensitive Watersheds will be incorporated. The causeway will be constructed in two phases such that no more than 50% of the main channel flow area may be blocked during any phase for construction and removal of the new and old bridge. A ditch is proposed in the buffer zone to stabilize the flow area and not change existing flow patterns.

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):

- [x] DWR
- [ ] Corps

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

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

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

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

- (●) Yes
- ( ) No

4b. Stream mitigation requested:

(linear feet)

0

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

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

4d. Buffer mitigation requested (DWR only):

(square feet)

5,363

4e. Riparian wetland mitigation requested:

(acres)

0

4f. Non-riparian wetland mitigation requested:

(acres)

4g. Coastal (tidal) wetland mitigation requested:

(acres)

0

4h. Comments

6. Buffer mitigation (State Regulated Riparian Buffer Rules) - required by DWR

6a. Will the project result in an impact within a protected riparian buffer that requires buffer mitigation? If yes, you must fill out this entire form - please contact DWR for more information.

◉ Yes ○ No

6b. If yes, then identify the square feet of impact to each zone of the riparian buffer that requires mitigation calculate the amount of mitigation required in the table below.

	6c. Reason for impact	6d. Total impact (square feet)	Multiplier	6e. Required mitigation (square feet)	
Zone 1	Parallel Roadway Impacts	4,324	3	12,972	
Zone 2	Parallel Roadway Impacts	1,039	1.5	1,559	

6f. Total buffer mitigation required

14531

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

◉ Yes ○ No

6j. Comments:

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

1b. All buffer impacts and high ground impacts require diffuse flow or other form of stormwater treatment. If the project is subject to a state implemented riparian buffer protection program, include a plan that fully documents how diffuse flow will be maintained.

All Stormwater Control Measures (SCM)s must be designed in accordance with the NC Stormwater Design Manual. Associated supplement forms and other documentation shall be provided.

What type of SCM are you providing?

- ☐ Level Spreader
- ☑ Vegetated Conveyance (lower SHWT)
- ☐ Wetland Swale (higher SHWT)
- ☐ Other SCM that removes minimum 30% nitrogen
- ☐ Proposed project will not create concentrated stormwater flow through the buffer

(check all that apply)

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

2. Stormwater Management Plan

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

◉ Yes ○ No

Comments:

G. Supplementary Information

1. Environmental Documentation

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

(•) Yes ( ) No

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

(•) Yes ( ) No

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

( ) Yes (•) No

Comments: *

MCDC do not require approval from the State Clearing House.

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 existing bridge being replaced, this project will neither influence nearby land uses nor stimulate growth.

4. Sewage Disposal (DWR Requirement)

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

( ) Yes (•) No ( ) N/A

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

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

(•) Yes ( ) No

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

(•) Yes ( ) No

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

Raleigh

5d. Is another Federal agency involved? *

( ) Yes (•) No ( ) Unknown

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

(•) Yes ( ) No

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

NC Natural Heritage Program database, USFWS Raleigh Field Office and IPaC (Information for Planning and Consultation) website, and NOAA National Marine Fisheries.

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? *

NOAA EFH Fish Mapper.

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? *

MCDC Document: Historic Architecture and Landscapes No Survey Required Form (1/8/2016) and No National Register of Historic Places Eligible or Listed Archaeological Sites Present Form (5/17/16).

8. Flood Zone Designation (Corps Requirement)

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

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

(●) Yes ( ) No

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

NCDOT Hydraulics Unit coordination with FEMA.

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

Flood Insurance Rate Mapper (FIRM)

Miscellaneous

Comments

The Tar River is designated as Critical Habitat for the Atlantic sturgeon, however the project is above the Rocky Mount Dam and will not have an effect on the Atlantic sturgeon. A Programmatic Biological Opinion (PBO) will be used for Atlantic pigtoe, Dwarf wedgemussel, Tar spinymussel, and Yellow lance for biological conclusions of May Affect, Likely to Adversely Affect. B-5670 is located in an Identified Stream Reach (ISR) for Tar spinymussel and Atlantic pigtoe. The PBO will be used for Carolina madtom and Neuse River waterdog for biological conclusions of May Affect, Likely to Adversely Affect and location in an ISR. The PBO will be used for the Northern long-eared bat.

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-5670 General Nash July 22 2022.pdf 7.06MB

File must be PDF or KMZ

Signature

*

[x] 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: *

Mack Christopher Rivenbark, III

Signature *

Mack C. Rivenbark, III

Date

7/22/2022

ROY COOPER
Governor
ELIZABETH S. BISER
Secretary
MARC RECKTENWALD
Director

NORTH CAROLINA
Environmental Quality

April 6, 2022

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

Dear Mr. Harris:

Subject: Mitigation Acceptance Letter:

B-5670, Replace Bridge 29 over the Tar River on US 64 Alternative, Nash County

The purpose of this letter is to notify you that the North Carolina Department of Environmental Quality – Division of Mitigation Services (NCDEQ-DMS) will provide the buffer mitigation for the subject project. Based on the information received from you on April 5, 2022, the impacts are located in CU 03020101 of the Tar-Pamlico River basin in the Northern Inner Coastal Plain (NICP) Eco-Region, and are as follows:

Tar-Pamlico 03020103	Stream			Wetlands			Buffer (Sq. Ft.)	
	Cold	Cool	Warm	Riparian	Non-Riparian	Coastal Marsh	Zone 1	Zone 2
Impacts (feet/acres)	0	0	0	0	0	0	4,324.000	1,039.000

All buffer mitigation requests and approvals are administrated through the Riparian Restoration Buffer Fund. The NCDOT will be responsible to ensure that appropriate compensation for the buffer mitigation will be provided in the agreed upon method of fund transfer. Upon receipt of the NCDWR's Buffer Authorization Certification, DMS will transfer funds from the NCDOT 2984 Fund into the Riparian Restoration Buffer Fund. Upon completion of the transfer payment, NCDOT will have complete its riparian buffer mitigation responsibility for TIP B-5670 in Nash County.

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

Sincerely,

Elizabeth Harmon

for James B. Stanfill
DMS Asset Management Supervisor

cc: Mr. Monte Matthews, USACE – Raleigh
Ms. Amy Chapman, NCDWR
Mr. Brad Chilton, NCDOT – EAU File:
B-5670

Submitted 7/22/2022

North Carolina Department of Transportation

Highway Stormwater Program

STORMWATER MANAGEMENT PLAN

(Version 3.00; Released August 2021) FOR NCDOT PROJECTS

WBS Element:	45625.1.1	TIP/Proj No:	B-5670	County(ies):	Nash	Page	1	of	4

General Project Information

WBS Element:	45625.1.1	TIP Number:	B-5670	Project Type:	Bridge Replacement	Date:	1/28/2022
NCDOT Contact:	Kristy Alford	Contractor / Designer:	Leah Young, PE				
Address:	1000 Birch Ridge Dr Raleigh, NC 27610	Address:	4505 Falls of Neuse Road Suite 400 Raleigh, NC 27609				
Phone:	(919) 707-6488	Phone:	(919) 783-9214				
Email:	kalford@ncdot.gov	Email:	Leah.Young@kci.com				
City/Town:	None	County(ies):	Nash				
River Basin(s):	Tar-Pamlico	CAMA County?	No				
Wetlands within Project Limits?	No						

Project Description

Project Length (lin. miles or feet):	0.22	Surrounding Land Use:	Woods/rural residential

	Proposed Project		Existing Site	
Project Built-Upon Area (ac.)	1.0	ac.	0.8	ac.
Typical Cross Section Description:	12' TRAVEL LANES WITH 6' PAVED SHOULDER AT BRIDGE; 39.25' OUT TO OUT		APPROXIMATE 12' TRAVEL LANES WITH 2' PAVED SHOULDER	

Annual Avg Daily Traffic (veh/hr/day):	Design/Future:	3200	Year: 2040	Existing:	2591	Year:	2020

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

This project will replace Nash County Bridge #0029 and its approaches. The proposed replacement is 325' long with a clear roadway width of 36'. This structure provides 2-12' travel lanes with a 6' paved shoulder. The proposed bridge will have 1.5:1 sloping riprap abutments and 4' caps at the end bents. Placement and construction of the proposed bridge, end bents, caps, and associated roadway fill will not result in any permanent jurisdictional stream or similar environmental impacts, although there will 0.24 ac and 34 LF of temporary stream impact for temporary causeway construction. There will be no permanent channel changes due to the bent removal and causeway construction. There will be 0.03 ac and 140 LF of permanent stream impacts due to bank stabilization. There are no wetlands present within the proposed limits of construction.

The temporary causeway shall be constructed by others. Allowable stream impacts shown in the plans assume a temporary rock causeway using 2:1 side slopes to achieve an elevation of 145.0' for the line-back side of the bridge (labeled as phase I) and an elevation of 145.0' for the line-ahead side of the bridge (labeled as phase II). This results a 30 LF workpad to facilitate existing bridge removal and proposed bridge installation. Phase I allows for removal of existing bents #1, 2, 3, & 4 and the installation of proposed bents #1 & 2. Phase II allows for the remocal of existing bents #5, 6, 7, & 8 and the installation of proposed bents #3, 4, & 5. No more than 50% of the main channel flow area may be blocked during any phase.

There are 30' and 50' buffer zones present outside the existing stream. There are no wetland impacts within buffer zones. There is a proposed ditch within buffer zone 1 due to existing erosion and instability. Sheet flow was not feasible at this location. The proposed ditch stabilizies the flow area and does not change existing flow patterns. Please refer to the "Swales" tab for more information.

STORMWATER CONTROLS: The proposed bridge does not require deck drains. The runoff from the bridge discharges through pipe/inlet systems on the eastern quadrant of the bridge outside of the jurisdictional stream at non-erosive velocities. In all bridge quadrants, roadway runoff is treated via vegetated roadway shoulders and existing/proposed vegetated/riprap swales prior to entering the stream. Dissipator pads were used outside buffer zones when possible to promote sheet flow to buffer zones.

Submitted 7/22/2022

North Carolina Department of Transportation

Highway Stormwater Program
STORMWATER MANAGEMENT PLAN
FOR NCDOT PROJECTS

(Version 3.00; Released August 2021)

WBS Element: 45625.1.1 **TIP/Proj No.:** B-5670 **County(ies):** Nash

General Project Information

Waterbody Information

Surface Water Body (1):	Tar River		**NCDWR Stream Index No.:**	28-(24.7)b		
NCDWR Surface Water Classification for Water Body		**Primary Classification:**	Water Supply V (WS-V)			
		Supplemental Classification:	Nutrient Sensitive Waters (NSW)			
Other Stream Classification:	None					
Impairments:	None					
Aquatic T&E Species?	No	Comments:				
NRTR Stream ID:	N/A			**Buffer Rules in Effect:**	Tar-Pamlico	
Project Includes Bridge Spanning Water Body?	Yes	**Deck Drains Discharge Over Buffer?**	No	**Dissipator Pads Provided in Buffer?**	N/A	
Deck Drains Discharge Over Water Body?	No	(If yes, provide justification in the General Project Narrative)		(If yes, describe in the General Project Narrative; if no, justify in the General Project Narrative)		
(If yes, provide justification in the General Project Narrative)						

Surface Water Body (2):			**NCDWR Stream Index No.:**			
NCDWR Surface Water Classification for Water Body		**Primary Classification:**				
		Supplemental Classification:				
Other Stream Classification:						
Impairments:						
Aquatic T&E Species?		Comments:				
NRTR Stream ID:				**Buffer Rules in Effect:**		
Project Includes Bridge Spanning Water Body?		**Deck Drains Discharge Over Buffer?**		**Dissipator Pads Provided in Buffer?**		
Deck Drains Discharge Over Water Body?		(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):			**NCDWR Stream Index No.:**			
NCDWR Surface Water Classification for Water Body		**Primary Classification:**				
		Supplemental Classification:				
Other Stream Classification:						
Impairments:						
Aquatic T&E Species?		Comments:				
NRTR Stream ID:				**Buffer Rules in Effect:**		
Project Includes Bridge Spanning Water Body?		**Deck Drains Discharge Over Buffer?**		**Dissipator Pads Provided in Buffer?**		
Deck Drains Discharge Over Water Body?		(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)						

Submitted 7/22/2022

North Carolina Department of Transportation

Highway Stormwater Program

STORMWATER MANAGEMENT PLAN

FOR NCDOT PROJECTS

(Version 3.00; Released August 2021)

WBS Element: 45625.1.1 **TIP/Proj No.:** B-5670 **County(ies):** Nash

Swale

Sheet No.	Line	Station	Location (LT,RT,CL)	Latitude	Longitude	Surface Water Body	Base Width (ft)	Front Slope (H:1)	Back Slope (H:1)	Drainage Area (ac)	Recommended Treatm't Length (ft)	Actual Length (ft)	Longitudinal Slope (%)	Q2 (cfs)	V2 (fps)	Q10 (cfs)	V10 (fps)	Rock Checks Used	BMP Associated w/ Buffer Rules?
4	-L-	16+14.2	RT	35.925673	-78.145887	(1)Tar River	7.0	1.5	1.5	4.0	400	64	1.00%	7.4	1.8	9.7	2.0	Yes	Yes

Additional Comments

Submitted 7/22/2022

(Version 3.00; Released August 2021)

North Carolina Department of Transportation

Highway Stormwater Program

STORMWATER MANAGEMENT PLAN

FOR NCDOT PROJECTS

WBS Element: **TIP/Proj No.:** B-5670 **County(ies):** Nash

Preformed Scour Holes and Energy Dissipators

Sheet No.	Line	Station	Location (LT,RT,CL)	Latitude	Longitude	Surface Water Body	Energy Dissipator Type	Riprap Type	Drainage Area (ac)	Conveyance Structure	Pipe (in) / Structure Dimensions (ft)	Q10 (cfs)	V10 (fps)	BMP Associated w/ Buffer Rules?
4	-L-	18+85	LT	35.926611	-78.14552	(1)Tar River	Riprap Pad at Outlet	Class 'B'	0.2	Pipe	15	0.8	1.8	Yes
4	-L-	18+85	RT	35.926122	-78.145025	(1)Tar River	Riprap Pad at Outlet	Class 'B'	0.2	Pipe	15	0.8	1.8	Yes

Additional Comments

Both riprap pads are outside of buffer zone 2. Dissipator pad promotes sheet flow into buffer zones.

* Refer to the NCDOT Best Management Practices Toolbox (2014), NCDOT Standards, the Federal Highway Administration (FHWA) Hydraulic Engineering Circular No. 14 (HEC-14), Third Edition, Hydraulic Design of Energy Dissipators for Culverts and Channels (July 2006), as applicable, for design guidance and criteria.

Submitted 7/22/2022

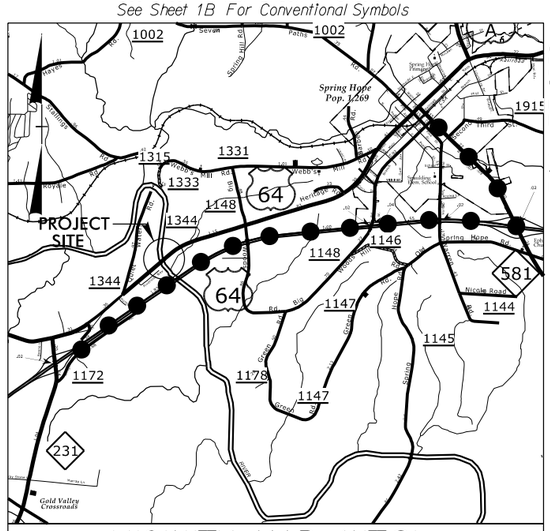
09/08/99

TIP PROJECT: B-5670

CONTRACT:

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

75% PLANS



VICINITY MAP (NTS)

DETOUR ROUTE

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

NASH COUNTY

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-5670	1	

STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION
45625.1.1		P.E.
45625.2.1		ROW/UTIL

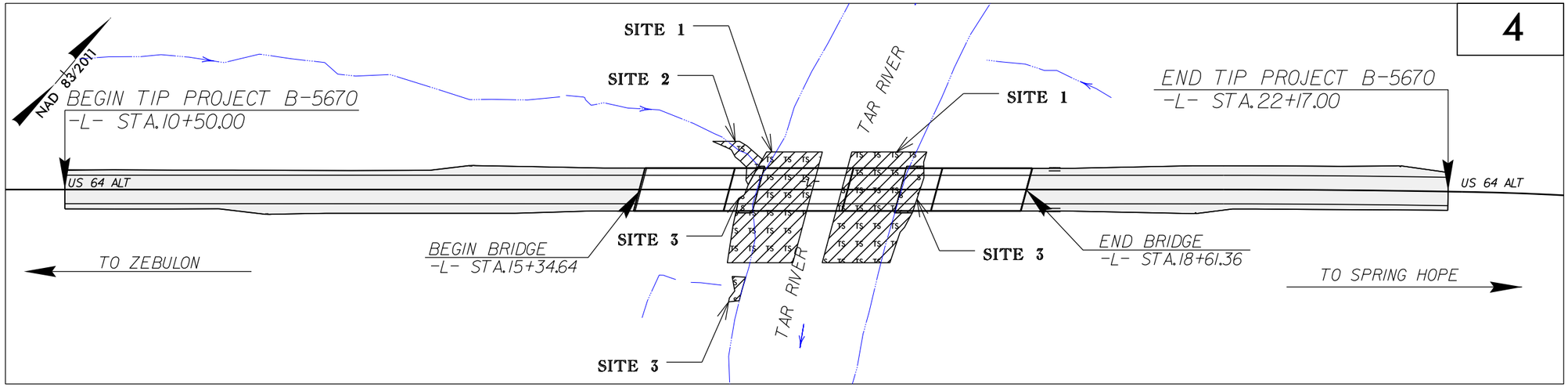
PERMIT DRAWING
SHEET 1 OF 6

LOCATION: REPLACE BRIDGE NO. 29 OVER TAR RIVER ON US 64 ALT

TYPE OF WORK: GRADING, DRAINAGE, PAVING AND STRUCTURE

WETLAND AND STREAM IMPACTS

4



A DESIGN EXCEPTION WILL BE REQUIRED FOR MAXIMUM GRADE, SAG VERTICAL CURVE AND VERTICAL STOPPING SIGHT DISTANCE.
THIS PROJECT IS NOT WITHIN MUNICIPAL BOUNDARIES.
CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD III.

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

GRAPHIC SCALES

50 25 0 50 100
PLANS

50 25 0 50 100
PROFILE (HORIZONTAL)

10 5 0 10 20
PROFILE (VERTICAL)

DESIGN DATA

ADT 2022 = 2652
ADT 2042 = 3261
K = 8 %
D = 55 %
T = 6 % *
V = 60 MPH
* TTST =2% DUAL= 4%
MAJOR COLLECTOR

REGIONAL TIER

PROJECT LENGTH

LENGTH OF ROADWAY TIP PROJECT B-5670 = .159 MILES
LENGTH OF STRUCTURE TIP PROJECT B-5670 = .062 MILES

TOTAL LENGTH OF TIP PROJECT B-5670 = .221 MILES

Prepared In the Office of:
KCI Associates of N.C., P.A.
4505 Falls of Neuse Road, Suite 400
Raleigh, NC 27609
Phone (919) 783-9214
Fax (919) 783-9266

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

2018 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
DEC. 21, 2021

LETTING DATE:
NOV. 15, 2022

NCDOT CONTACT:

DEWAYNE L. SYKES, P.E.
PROJECT ENGINEER

BRYAN E. HOUGH, P.E.
PROJECT DESIGN ENGINEER

KRISTY ALFORD, P.E.
STRUCTURES MANAGEMENT UNIT

HYDRAULICS ENGINEER

SIGNATURE: *P.E.*

ROADWAY DESIGN ENGINEER

SIGNATURE: *P.E.*

STATE OF NORTH CAROLINA · DEPARTMENT OF TRANSPORTATION ·

2/21/2022
M:\2018\25180945.23 B-5670\Hydraulics\PERMITS_Environmental\Wetland Impacts\Drawings\B-5670_prm_tsh.dgn
Sawyer.Walters

Submitted 7/22/2022

PROJECT REFERENCE NO.	SHEET NO.
B-5670	PRM-2
R/W SHEET NO.	4
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
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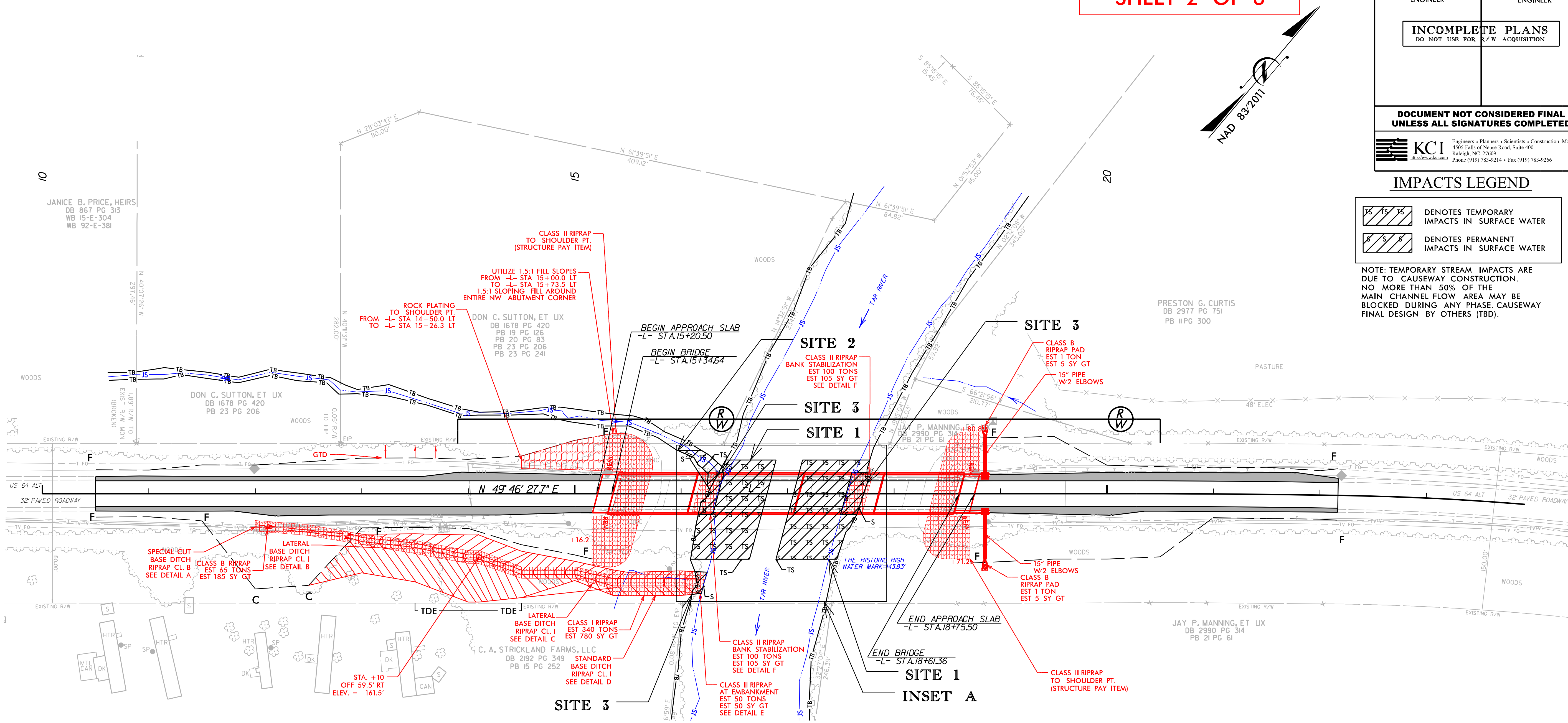
PERMIT DRAWING
SHEET 2 OF 6

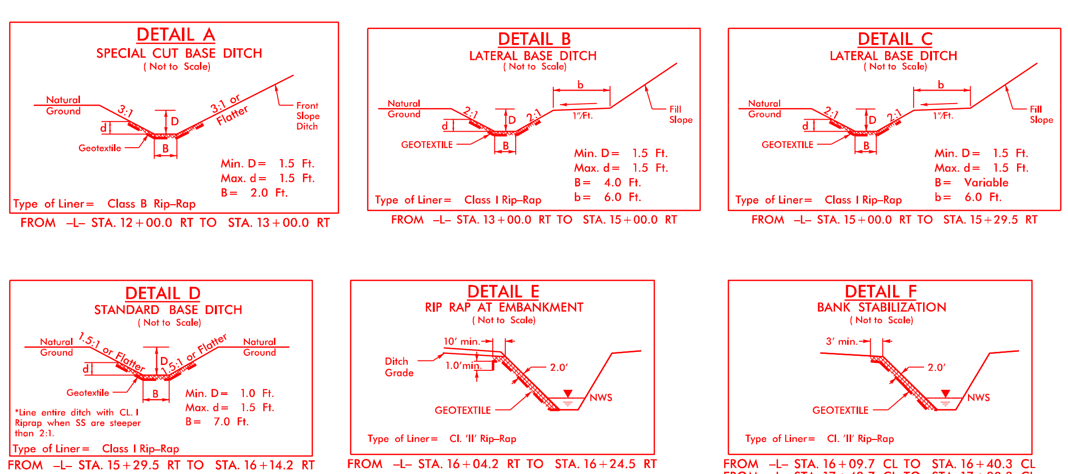
IMPACTS LEGEND

TS TS TS	DENOTES TEMPORARY IMPACTS IN SURFACE WATER
S S S	DENOTES PERMANENT IMPACTS IN SURFACE WATER

NOTE: TEMPORARY STREAM IMPACTS ARE DUE TO CAUSEWAY CONSTRUCTION. NO MORE THAN 50% OF THE MAIN CHANNEL FLOW AREA MAY BE BLOCKED DURING ANY PHASE. CAUSEWAY FINAL DESIGN BY OTHERS (TBD).



FOR -L- PROFILE SEE SHEET 5



REVISIONS

Submitted 7/22/2022

PROJECT REFERENCE NO.	SHEET NO.
B-5670	PRM-3
R/W SHEET NO.	4
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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PERMIT DRAWING SHEET 3 OF 6

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- S — DENOTES PERMANENT IMPACTS IN SURFACE WATER

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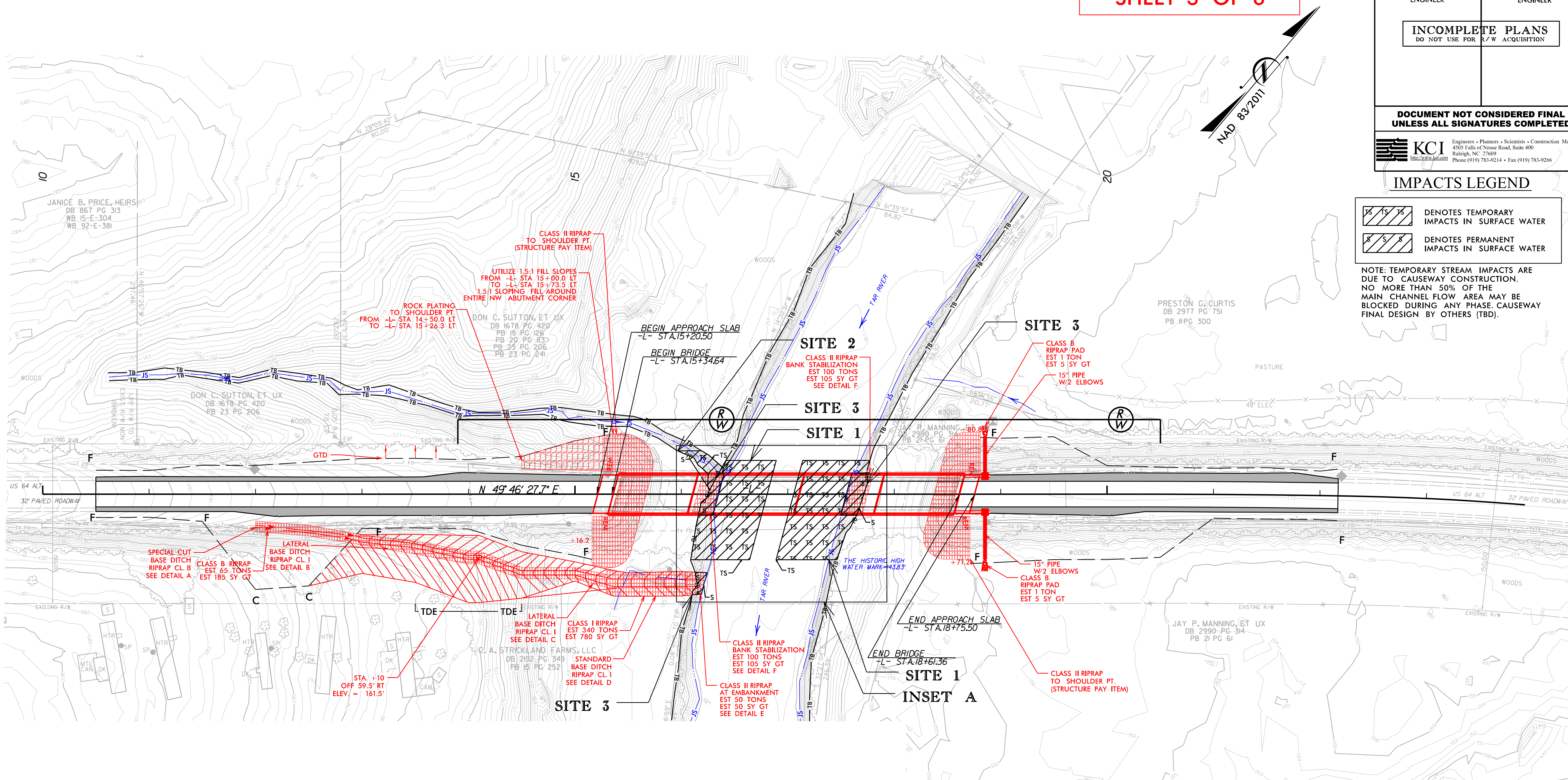
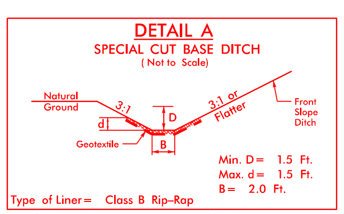
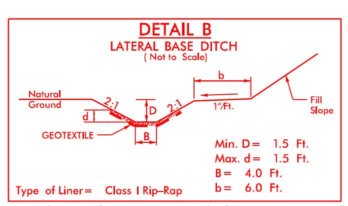

NAD 83/2011
JANICE B. PRICE, HEIRS
DB 867 PG 313
WB 15-E-304
WB 92-E-381
DON C. SUTTON, ET UX
DB 1678 PG 420
PB 19 PG 126
PB 20 PG 83
PB 23 PG 206
PB 23 PG 241
DON C. SUTTON, ET UX
DB 1678 PG 420
PB 23 PG 206
CLASS II RIPRAP TO SHOULDER PT. (STRUCTURE PAY ITEM)
UTILIZE 1.5:1 FILL SLOPES FROM -L- STA 15+00.0 LT TO -L- STA 15+73.5 LT
1.5:1 SLOPING FILL AROUND ENTIRE NW ABUTMENT CORNER
ROCK PLATING TO SHOULDER PT. FROM -L- STA 14+50.0 LT TO -L- STA 15+26.3 LT
BEGIN APPROACH SLAB -L- STA.15+20.50
BEGIN BRIDGE -L- STA.15+34.64
SITE 2
CLASS II RIPRAP BANK STABILIZATION EST 100 TONS EST 105 SY GT SEE DETAIL F
SITE 3
SITE 1
SITE 3
CLASS B RIPRAP PAD EST 1 TON EST 5 SY GT
15" PIPE W/2 ELBOWS
TAR RIVER
PRESTON G. CURTIS
DB 2977 PG 751
PB 11 PG 300
PASTURE
WOODS
JAY P. MANNING, ET UX
DB 2990 PG 314
PB 21 PG 61
N 49° 46' 27.7" E
US 64 ALT
32' PAVED ROADWAY
GTD
SPECIAL CUT BASE DITCH RIPRAP CL. B SEE DETAIL A
CLASS B RIPRAP EST 65 TONS EST 185 SY GT
LATERAL BASE DITCH RIPRAP CL. I SEE DETAIL B
LATERAL BASE DITCH RIPRAP CL. I SEE DETAIL C
CLASS I RIPRAP EST 340 TONS EST 780 SY GT
STANDARD BASE DITCH RIPRAP CL. I SEE DETAIL D
STA. +10 OFF 59.5' RT ELEV. = 161.5'
C. A. STRICKLAND FARMS, LLC
DB 2192 PG 349
PB 15 PG 252
CLASS II RIPRAP BANK STABILIZATION EST 100 TONS EST 105 SY GT SEE DETAIL F
CLASS II RIPRAP AT EMBANKMENT EST 50 TONS EST 50 SY GT SEE DETAIL E
THE HISTORIC HIGH WATER MARK=143.83'
END APPROACH SLAB -L- STA.18+75.50
END BRIDGE -L- STA.18+61.36
SITE 1
INSET A
15" PIPE W/2 ELBOWS
CLASS B RIPRAP PAD EST 1 TON EST 5 SY GT
CLASS II RIPRAP TO SHOULDER PT. (STRUCTURE PAY ITEM)
SITE 3

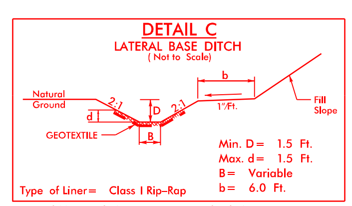
FOR -L- PROFILE SEE SHEET 5



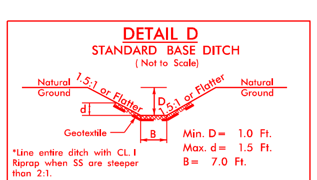
FROM -L- STA. 12+00.0 RT TO STA. 13+00.0 RT



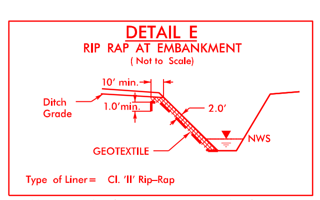
FROM -L- STA. 13+00.0 RT TO STA. 15+00.0 RT



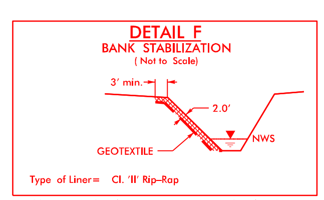
FROM -L- STA. 15+00.0 RT TO STA. 15+29.5 RT



FROM -L- STA. 15+29.5 RT TO STA. 16+14.2 RT



FROM -L- STA. 16+04.2 RT TO STA. 16+24.5 RT



FROM -L- STA. 16+09.7 CL TO STA. 16+40.3 CL
FROM -L- STA. 17+49.7 CL TO STA. 17+80.3 CL

REVISIONS

8/17/99
2/21/2022
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Submitted 7/22/2022

8/17/99

PROJECT REFERENCE NO.	SHEET NO.
B-5670	PRM-4

PERMIT DRAWING
SHEET 4 OF 6

ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

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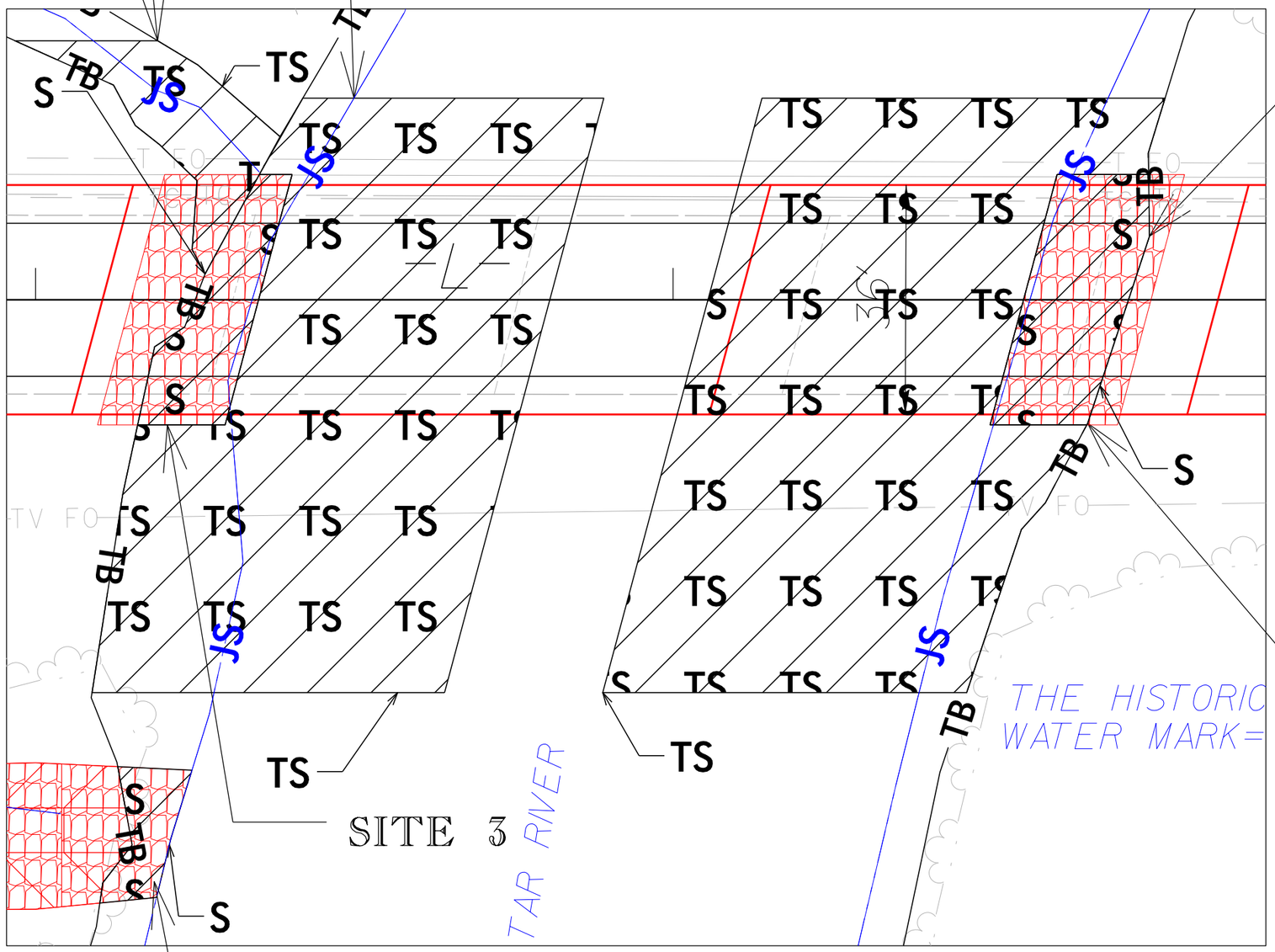
INSET A



10′ 0′ 10′ 20′
5′

IMPACTS LEGEND

TS TS TS — DENOTES TEMPORARY IMPACTS IN SURFACE WATER

S S S — DENOTES PERMANENT IMPACTS IN SURFACE WATER

NOTE: TEMPORARY STREAM IMPACTS ARE DUE TO CAUSEWAY CONSTRUCTION. NO MORE THAN 50% OF THE MAIN CHANNEL FLOW AREA MAY BE BLOCKED DURING ANY PHASE. CAUSEWAY FINAL DESIGN BY OTHERS (TBD).

2/2/2022
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Sawyer Walters

5/14/99

PROJECT REFERENCE NO.	SHEET NO.
B-5670	PRM-5
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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PERMIT DRAWING SHEET 5 OF 6

-L-

TBM #2 - RR SPIKE IN BASE OF 30" PINE
-L- STA. 18+92.75, 68.36' LT
EL = 158.60'

NOTE: NO MORE THAN 50% OF THE MAIN CHANNEL FLOW AREA MAY BE BLOCKED DURING ANY PHASE. CAUSEWAY FINAL DESIGN BY OTHERS (TBD).

BEGIN GRADE -L- STA 10+50.00
ELEV. 189.20'

END GRADE -L- STA 22+17.00
ELEV. 172.17'

PI = 12+94.00
EL = 176.28'
VC = 462'
K = 96
DS = 50 MPH

PI = 19+60.00
EL = 172.95'
VC = 180'
K = 916
DS = 60 MPH

BEGIN SP.CUT BASE DITCH +00.0 RT EL=179.0

(-)5.2938%

(-)5.90%

(-)10.5000%

END SP.CUT BASE DITCH BEGIN LATERAL BASE DITCH +00.0 RT EL=173.1

(-)10.40%

+00.0 RT EL=162.7

END LATERAL BASE DITCH BEGIN STD. BASE DITCH +29.5 RT EL=147.5

(-)11.74%

(-)8.78%

(-)1.09%

(-)10.5000%

(-)10.3035%

C/L STA 16+98
C/L ELEV. 174.25'
SKEW = 105 DEG
1@75'; 1@100'; 2@75'
54" GIRDER
(36' CLEAR ROADWAY WIDTH)

TEMPORARY CAUSEWAY PHASE I ELEV.=145.0' BY OTHERS

TEMPORARY CAUSEWAY PHASE II ELEV.=145.0' BY OTHERS

LOW CHORD @ C/L

LOWEST LOW CHORD

4'-0" CAPS (3'-3" WIDE)

LOWEST LOW CHORD

4'-0" CAPS (3'-3" WIDE)

100YR WS ELEV. = 166.1'

50YR WS ELEV. = 164.8'

S

TS

EXCAVATION ELEVATION=152.4'

2.0' THICK CLASS II RIP RAP @1.55:1 (1.5:1 NORMAL)

MIN. DEPTH OF RIPRAP=3.5'

BANK STABILIZATION - 2.0' THICK CLASS II RIP RAP

EXCAVATION ELEVATION=149.5'

+50.0 RT EL=145.7

2.0' THICK CLASS II RIPRAP @1.55:1 (1.5:1 NORMAL)

MIN. DEPTH OF RIPRAP=3.5'

BANK STABILIZATION - 2.0' THICK CLASS II RIP RAP

END STD. BASE DITCH +14.2 RT EL=145.0

NWS ELEV. = 141.2'

RIGHT DITCH - - - - - -

BRIDGE HYDRAULIC DATA

DESIGN DISCHARGE	= 22,000	CFS
DESIGN FREQUENCY	= 50	YRS
DESIGN HW ELEVATION	= 164.8	FT
BASE DISCHARGE	= 25,000	CFS
BASE FREQUENCY	= 100	YRS
BASE HW ELEVATION	= 166.1	FT
OVERTOPPING DISCHARGE	= 42,000	CFS
OVERTOPPING FREQUENCY	= >500	YRS
OVERTOPPING ELEVATION	= 172.5	FT
DATE OF SURVEY	= 03/09/2018	
W.S.ELEV.AT DATE OF SURVEY (NWS ELEV.)	= 141.2	FT

A DESIGN EXCEPTION WILL BE REQUIRED FOR MAXIMUM GRADE, SAG VERTICAL CURVE AND VERTICAL STOPPING SIGHT DISTANCE.

FOR -L- ALIGNMENT SEE SHEET 4

200 190 180 170 160 150 140 130 120 110 100 90

10 11 12 13 14 15 16 17 18 19 20 21 22 23

2/24/2022
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Sawyer, Walters

Submitted 7/22/2022

WETLAND PERMIT IMPACT SUMMARY

Site No.	Station (From/To)	Structure Size / Type	WETLAND IMPACTS: Permanent Fill In Wetlands (ac)	Temp. Fill In Wetlands (ac)	Excavation in Wetlands (ac)	Mechanized Clearing in Wetlands (ac)	Hand Clearing in Wetlands (ac)	SURFACE WATER IMPACTS: Permanent SW impacts (ac)	Temp. SW impacts (ac)	Existing Channel Impacts Permanent (ft)	Existing Channel Impacts Temp. (ft)	Natural Stream Design (ft)
1	-L- 16+09	TEMPORARY CAUSEWAY							0.23		68	
	TO 17+75	CONSTRUCTION										
2	-L- 15+96 LT	TEMPORARY CAUSEWAY							0.01		34	
	TO 16+38 LT	CONSTRUCTION										
3	-L- 16+16	BANK						0.03		140		
	TO 17+75 &	STABILIZATION										
	-L- 16+10 RT											
	TO- 16+23 RT											
TOTALS*:								0.03	0.24	140	102	0

*Rounded totals are sum of actual impacts

NOTES:

NC DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
February 2022
Nash
B-5670
45625.1.1
SHEET 6 OF 6

Revised September 2014

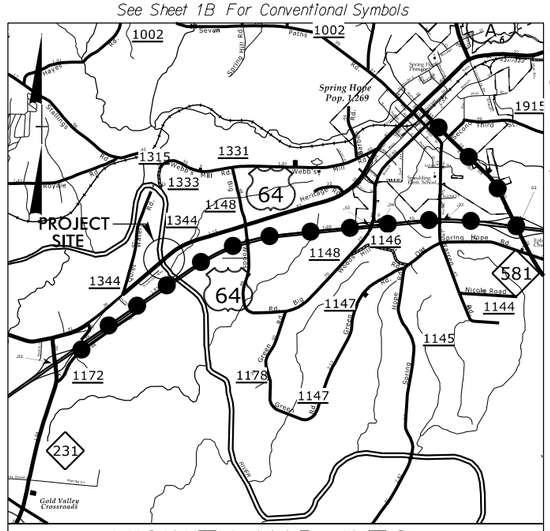
Submitted 7/22/2022

09/08/99

TIP PROJECT: B-5670

CONTRACT:

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



VICINITY MAP (NTS)

DETOUR ROUTE

75% PLANS

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DIVISION OF HIGHWAYS

NASH COUNTY

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STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION
45625.1.1		P.E.
45625.2.1		ROW/UTIL

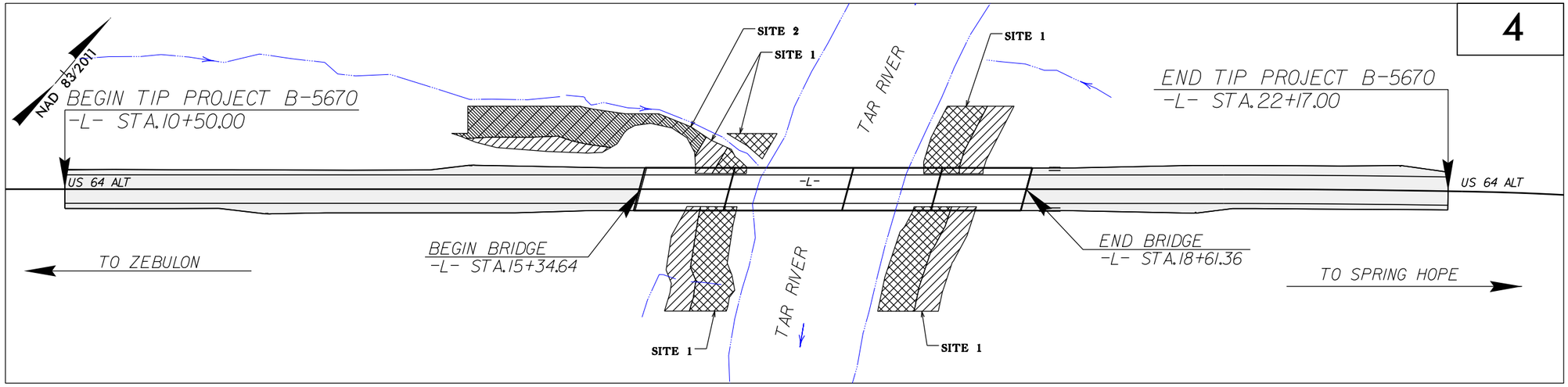
BUFFER DRAWING
SHEET 1 OF 3

LOCATION: REPLACE BRIDGE NO. 29 OVER TAR RIVER ON US 64 ALT

TYPE OF WORK: GRADING, DRAINAGE, PAVING AND STRUCTURE

BUFFER IMPACT PERMITS

4



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GRAPHIC SCALES

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PROFILE (HORIZONTAL): 50 25 0 50 100

PROFILE (VERTICAL): 10 5 0 10 20

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K = 8 %
D = 55 %
T = 6 % *
V = 60 MPH
* TTST =2% DUAL= 4%
MAJOR COLLECTOR

REGIONAL TIER

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LENGTH OF STRUCTURE TIP PROJECT B-5670 = .062 MILES

TOTAL LENGTH OF TIP PROJECT B-5670 = .221 MILES

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DIVISION OF HIGHWAYS
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Raleigh NC, 27610

2018 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE: DEC. 21, 2021

LETTING DATE: NOV. 15, 2022

NCDOT CONTACT: KRISTY ALFORD, P.E.
STRUCTURES MANAGEMENT UNIT

DEWAYNE L. SYKES, P.E.
PROJECT ENGINEER

BRYAN E. HOUGH, P.E.
PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

SIGNATURE: *P.E.*

ROADWAY DESIGN ENGINEER

SIGNATURE: *P.E.*

STATE OF NORTH CAROLINA · DEPARTMENT OF TRANSPORTATION

2/21/2022
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Sawyer.Walters

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PROJECT REFERENCE NO.	SHEET NO.
B-5670	BUF-2
R/W SHEET NO.	4
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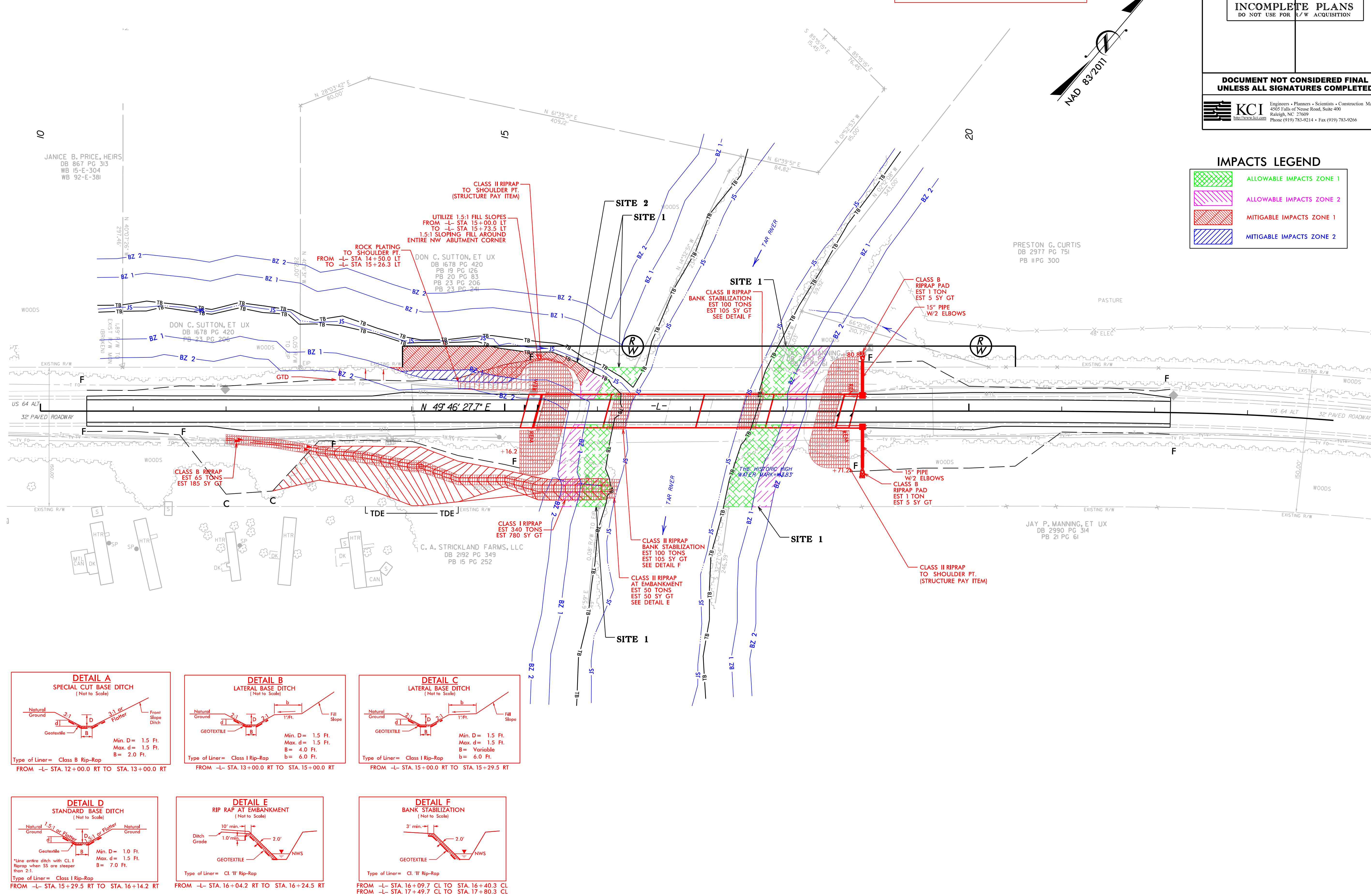
BUFFER DRAWING
SHEET 2 OF 3



NAD 83/2011
IMPACTS LEGEND
ALLOWABLE IMPACTS ZONE 1
ALLOWABLE IMPACTS ZONE 2
MITIGABLE IMPACTS ZONE 1
MITIGABLE IMPACTS ZONE 2
SITE 2
SITE 1
JANICE B. PRICE, HEIRS
DB 867 PG 313
WB 15-E-304
WB 92-E-381
DON C. SUTTON, ET UX
DB 1678 PG 420
PRESTON G. CURTIS
DB 2977 PG 751
PB 11 PG 300
C. A. STRICKLAND FARMS, LLC
DB 2192 PG 349
PB 15 PG 252
JAY P. MANNING, ET UX
DB 2990 PG 314
PB 21 PG 61
TAR RIVER
US 64 ALT
32' PAVED ROADWAY
N 49° 46' 27.7" E
-L-
WOODS
PASTURE
CLASS II RIPRAP
TO SHOULDER PT.
(STRUCTURE PAY ITEM)
UTILIZE 1.5:1 FILL SLOPES
FROM -L- STA 15+00.0 LT
TO -L- STA 15+73.5 LT
1.5:1 SLOPING FILL AROUND
ENTIRE NW ABUTMENT CORNER
ROCK PLATING
TO SHOULDER PT.
FROM -L- STA 14+50.0 LT
TO -L- STA 15+26.3 LT
CLASS II RIPRAP
BANK STABILIZATION
EST 100 TONS
EST 105 SY GT
SEE DETAIL F
CLASS B
RIPRAP PAD
EST 1 TON
EST 5 SY GT
15" PIPE
W/2 ELBOWS
CLASS B RIPRAP
EST 65 TONS
EST 185 SY GT
CLASS I RIPRAP
EST 340 TONS
EST 780 SY GT
CLASS II RIPRAP
AT EMBANKMENT
EST 50 TONS
EST 50 SY GT
SEE DETAIL E
THE HISTORIC HIGH WATER MARK=43.83'
TDE
GTD
DETAIL A
SPECIAL CUT BASE DITCH
(Not to Scale)
Min. D= 1.5 Ft.
Max. d= 1.5 Ft.
B= 2.0 Ft.
Type of Liner= Class B Rip-Rap
FROM -L- STA. 12+00.0 RT TO STA. 13+00.0 RT
DETAIL B
LATERAL BASE DITCH
(Not to Scale)
Min. D= 1.5 Ft.
Max. d= 1.5 Ft.
B= 4.0 Ft.
b= 6.0 Ft.
Type of Liner= Class I Rip-Rap
FROM -L- STA. 13+00.0 RT TO STA. 15+00.0 RT
DETAIL C
LATERAL BASE DITCH
(Not to Scale)
Min. D= 1.5 Ft.
Max. d= 1.5 Ft.
B= Variable
b= 6.0 Ft.
Type of Liner= Class I Rip-Rap
FROM -L- STA. 15+00.0 RT TO STA. 15+29.5 RT
DETAIL D
STANDARD BASE DITCH
(Not to Scale)
Min. D= 1.0 Ft.
Max. d= 1.5 Ft.
B= 7.0 Ft.
*Line entire ditch with CL. I Riprap when SS are steeper than 2:1.
Type of Liner= Class I Rip-Rap
FROM -L- STA. 15+29.5 RT TO STA. 16+14.2 RT
DETAIL E
RIP RAP AT EMBANKMENT
(Not to Scale)
Type of Liner= Cl. 'II' Rip-Rap
FROM -L- STA. 16+04.2 RT TO STA. 16+24.5 RT
DETAIL F
BANK STABILIZATION
(Not to Scale)
Type of Liner= Cl. 'II' Rip-Rap
FROM -L- STA. 16+09.7 CL TO STA. 16+40.3 CL
FROM -L- STA. 17+49.7 CL TO STA. 17+80.3 CL

REVISIONS

8/17/99

2/21/2022
M:\2018\25180945.23 B-5670\Hydraulics\PERMITS_Environmental\Buffer Impacts\Drawings\B-5670_buf_psh.dgn

Submitted 7/22/2022

BUFFER IMPACTS SUMMARY

			IMPACT									BUFFER REPLACEMENT	
			TYPE			ALLOWABLE			MITIGABLE				
SITE NO.	STRUCTURE SIZE / TYPE	STATION (FROM/TO)	ROAD CROSSING	BRIDGE	PARALLEL IMPACT	ZONE 1 (ft^2)	ZONE 2 (ft^2)	TOTAL (ft^2)	ZONE 1 (ft^2)	ZONE 2 (ft^2)	TOTAL (ft^2)	ZONE 1 (ft^2)	ZONE 2 (ft^2)
1	BRIDGE	15+57 TO 18+51		X		8208.0	5371.0	13579.0	0.0	0.0	0.0		
2	PARALLEL	13+77 TO 15+91 LT			X	0.0	0.0	0.0	4324.0	1039.0	5363.0		
TOTAL:						8208.0	5371.0	13579.0	4324.0	1039.0	5363.0		

N.C. DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS

NASH COUNTY
PROJECT: B-5670

February 2022
SHEET 3 OF 3

Rev. May 2006