STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

ROY COOPER
GOVERNOR

JAMES H. TROGDON, III
SECRETARY

April 17, 2019

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

ATTN: Ms. Nicholle Braspennickx
NCDOT Coordinator

Subject: **Application for Section 404 Nationwide Permit 13, 33, and Section 401 Water Quality Certification** for the Proposed Replacement of Bridge 7 on NC 182 over Indian Creek in Lincoln County, Division 12, TIP No. B-4571, Debit $240 from WBS 38414.1.2.

Dear Madam:

The North Carolina Department of Transportation (NCDOT) proposes to replace bridge number 7 on NC 182 with a new bridge on the existing alignment. Traffic will be detoured off-site during construction.

As a result of replacing the existing bridge and stabilization at a new ditch outlet, there will be 91 linear feet of stream bank stabilization and <0.01 acre of temporary stream impacts.

Please see enclosed copies of the Pre-Construction Notification (PCN), Stormwater Management Plan, Permit Drawings, Roadway Plan Sheets, and northern long-eared bat memos. A Categorical Exclusion (CE) was completed in June 2017 and distributed shortly thereafter. Additional copies are available upon request.

This project calls for a letting date of October 15, 2019 and a review date of August 27, 2019.

A copy of this permit application and its distribution list will be posted on the NCDOT Website at: http://connect.ncdot.gov/resources/Environmental. If you have any questions or need additional information, please call Erin Cheely at (919) 707-6108.

Sincerely,

Carla Dagnino

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

Cc: NCDOT Permit Application Standard Distribution List

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

Telephone: (919) 707-6000
Fax: (919) 250-4224
Customer Service: 1-877-368-4968
Website: www.ncdot.gov

Location:
1000 BIRCH RIDGE DRIVE
RALEIGH NC 27610

Pre-Construction Notification (PCN) Form

For Nationwide Permits and Regional General Permits

(along with corresponding Water Quality Certifications)

September 29, 2018 Ver 3

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

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

Below is a link to the online help file.

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

A. Processing Information

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

Lincoln

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-4571

WBS #*

38414.1.2

(for NCDOT use only)

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

- [x] Section 404 Permit (wetlands, streams and waters, Clean Water Act)
- [ ] Section 10 Permit (navigable waters, tidal waters, Rivers and Harbors Act)

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

- [x] Nationwide Permit (NWP)
- [ ] Regional General Permit (RGP)
- [ ] Standard (IP)

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

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

( ) Yes (•) No

Nationwide Permit (NWP) Number: 13 - Bank Stabilization

Nationwide Permit (NWP) Number: 33 - Temporary Construction

NWP Numbers (for multiple NWPS):

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

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

check all that apply

- [x] 401 Water Quality Certification - Regular
- [ ] 401 Water Quality Certification - Express
- [ ] Non-404 Jurisdictional General Permit
- [ ] Riparian Buffer Authorization
- [ ] Individual Permit

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:*

ekcheely@ncdot.gov

1c. Primary Contact Phone:*

(xxx)xxx-xxxx

(919)707-6108

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:*

NC Department of Transportation

2b. Deed book and page no.:

2c. Responsible party:

(for Corporations)

2d. Address*

Street Address

1598 Mail Service Center

Address Line 2

City

Raleigh

State / Province / Region

NC

Postal / Zip Code

27699

Country

USA

2e. Telephone Number:*

(xxx)xxx-xxxx

(919)707-6108

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 7 on NC 182 over Indian Creek

1b. Subdivision name:

(if appropriate)

1c. Nearest municipality / town:*

Lincolnton

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: *

35.441683

ex: 34.208504

Longitude: *

-81.378634

-77.796371

3. Surface Waters

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

Indian Creek

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

WS-II, HQW

Surface Water Lookup

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

Catawba

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

030501020502

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: *

Surrounding land use is undeveloped woodlands (50%) and pastureland/farmland (50%)

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

○ Yes ◉ No ○ Unknown

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

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

File type must be pdf

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

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

File type must be pdf

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

0

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

(intermittent and perennial)

240

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

NCDOT Bridge Management Unit records indicate Bridge No. 7 has a sufficiency rating of 20.42 out of a possible 100 for a new structure. The bridge is considered functionally obsolete due to a structural evaluation rating of 3 out of 9 according to Federal Highway Administration (FHWA) standards. Bridge No. 7 has a sixty-six year old timber substructure which has a typical life expectancy between 40 to 50 years due to the natural deterioration rate of wood. Rehabilitation of a timber structure is generally practical only when a few members are damaged or prematurely deteriorated. However, past a certain degree of deterioration, timber structures become impractical to maintain and upon eligibility are programmed for replacement. Bridge No. 7 is approaching the end of its useful life.

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

This project replaces Lincoln County Bridge No. 7 along NC 182 over Indian Creek. Bridge No. 7 is 189 feet long. The replacement structure will be a bridge approximately 200 feet long providing a minimum 34-foot clear deck width. The bridge will include two 11-foot lanes with 6-foot offsets. The approach roadway will extend approximately 340 feet from the west end and 535 feet from the east end of the new bridge. The approaches will be constructed to include a 32-foot pavement width providing two 11- foot lanes with 5-foot wide full-depth paved shoulders. The roadway will be designed as a rural major collector using Subregional Tier guidelines with a 60 mile per hour design speed. Traffic will be detoured off-site during construction. Standard road building equipment, such as trucks, dozers, and cranes will be used.

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

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

B-4571 Permit Drawings.pdf 1.99MB

B-4571 Roadway Plans.pdf 2.04MB

File type must be pdf

5. Jurisdictional Determinations

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

(•) Yes ( ) No ( ) Unknown

Comments:

No wetlands and one perennial stream, Indian Creek was identified

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): Amber Coleman

Agency/Consultant Company: Stantec

Other:

5d1. Jurisdictional determination upload

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

File type must be PDF

6. Future Project Plans

6a. Is this a phased project? *

( ) Yes (•) No

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

No.

D. Proposed Impacts Inventory

1. Impacts Summary

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

[ ] Wetlands [x] 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	1-Bank Stabilization	Permanent	Bank Stabilization	Indian Creek	Perennial	Both	30 Average (feet)	75 (linear feet)
S2	1-Temporary Causeway	Temporary	Workpad/Causeway	Indian Creek	Perennial	Both	30 Average (feet)	60 (linear feet)
S3	2-Bank Stabilization	Permanent	Bank Stabilization	Indian Creek	Perennial	Both	30 Average (feet)	16 (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:

91

3i. Total temporary stream impacts:

60

3i. Total stream and ditch impacts:

151

3j. Comments:

E. Impact Justification and Mitigation

1. Avoidance and Minimization

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

The bridge will be replaced on the existing alignment. An offsite detour will be used to maintain traffic during construction. No bents will be located within the stream banks. Deck drains will not be used. Drainage has been designed to maintain existing drainage patterns and have as little environmental and surface water impacts as possible. Class II riprap on the exiting banks has been specified to stabilize the eroding banks under the proposed bridge.

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

Design Standards for Sensitive Watersheds will be implemented during project construction. The superstructure consists of a concrete deck with an asphalt surface. The substructure consists of timber end and interior bents with concrete caps. It should be possible to remove the structure with no resulting debris in the water based on standard demolition practices.

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

2b. If this project DOES NOT require Compensatory Mitigation, explain why:

The NCDOT does not propose mitigation for the bank stabilization and temporary causeway impacts related to this project. These impacts do not require permanent fill in the stream bed and, therefore, under Section 404 of the Clean Water Act, do not constitute Loss of Waters of the U.S. and are not subject to compensatory mitigation.

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

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:

Outside any buffered basin and not on the main stem Catawba.

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

NEPA or SEPA Final Approval Letter

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

FILE TYPE MUST BE PDF

2. Violations (DWR Requirement)

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

○ Yes ◉ No

3. Cumulative Impacts (DWR Requirement)

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

○ Yes ◉ No

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

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

4. Sewage Disposal (DWR Requirement)

4a. 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

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

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

If yes, please provide details to include type of percussive activity, purpose, duration, and specific location of this activity on the property.

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

File must be PDF

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

As of June 27, 2018 the USFWS lists three protected species for Lincoln County - northern long-eared bat, dwarf-flowered heartleaf and Michaux's sumac. Please see the attached SLOPES memo dated December 3, 2018 for northern long-eared bat - no evidence of bat use was observed at the bridge. (This project was previously federally funded and a 4(d) memo was sent to USFWS on September 19, 2017, so that memo is also attached just FYI). Dwarf-flowered heartleaf and Michaux's sumac habitat is present within the project area, however, surveys of suitable habitat in May 2015 did not find any populations or plants of either species. A sumac resurvey was conducted in October 2017 and no populations or plants were identified.

Consultation Documentation Upload

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

B-4571 NLEB Lincoln.pdf	110.58KB
B-4571 NLEB SLOPES Lincoln.pdf	178.7KB

File type must be PDF

6. Essential Fish Habitat (Corps Requirement)

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

○ Yes ◉ No

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

NMFS County Index

7. Historic or Prehistoric Cultural Resources (Corps Requirement)

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

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

○ Yes ◉ No

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

Environmental Documentation (CE)

7c. Historic or Prehistoric Information Upload

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

File must be PDF

8. Flood Zone Designation (Corps Requirement)

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

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

◉ Yes ○ No

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

NCDOT Hydraulics Unit coordination with FEMA

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

FEMA Maps

Miscellaneous

Comments

There will be 0.4 acre of tree clearing on this project.

Miscellaneous attachments not previously requested.

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

B-4571 Cover Letter.pdf 181.52KB

File must be PDF or KMZ

Signature

*

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

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

Full Name: *

Carla Dagnino

Signature

Date

4/17/2019

North Carolina Department of Transportation

Highway Stormwater Program

STORMWATER MANAGEMENT PLAN

FOR NCDOT PROJECTS

(Version 2.07; Released October 2016)

WBS Element: 38414.1.2 **TIP No.:** B-4571 **County(ies):** Lincoln

General Project Information

WBS Element:	38414.1.2	**TIP Number:**	B-4571	**Project Type:**	Bridge Replacement	**Date:**	7/11/2018
NCDOT Contact:	Tierre Peterson, PE			**Contractor / Designer:**	Joshua G. Dalton, PE, CPESC		
Address:	Structures Management Unit 1581 Mail Service Center Raleigh, NC 27610			**Address:**	Sungate Design Group 905 Jones Franklin Road Raleigh, NC 27606		
Phone:	(919) 707-6488			**Phone:**	(919) 859-2243		
Email:	trpeterson@ncdot.gov			**Email:**	jdalton@sungatedesign.com		
City/Town:	Lincolnton			**County(ies):**	Lincoln		
River Basin(s):	Catawba			**CAMA County?**	No		
Wetlands within Project Limits?	No						

Project Description

Project Length (lin. miles or feet):	0.21 miles	**Surrounding Land Use:**	Rural residential

	Proposed Project	**Existing Site**
Project Built-Upon Area (ac.)	0.9 ac.	0.6 ac.
Typical Cross Section Description:	Two 11' wide paved lanes with 5' paved shoulders and grass shoulder section.	Two 10' wide paved lanes with grass shoulder section.
Annual Avg Daily Traffic (veh/hr/day):	Design/Future: 1400 Year: 2040	Existing: 1100 Year: 2015
General Project Narrative: (Description of Minimization of Water Quality Impacts)	The North Carolina Department of Transportation (NCDOT) proposes to replace Bridge No. 007 over Indian Creek on NC 182 southwest of Lincolnton, NC. The proposed bridge consists of 3 spans (1 @ 55', 1 @ 90', 1 @ 55') with spans 1 and 3 consisting of 21" cored slabs and span 2 consisting of 33" box beams. No bents will be located within the stream banks. Drainage has been designed to maintain existing drainage patterns and have as little environmental and surface water impacts as possible. Deck drains will not be required on the bridge. Class II rip rap on the stream banks has been specified to stabilize the eroding banks under the proposed bridge.	

Waterbody Information

Surface Water Body (1):	Indian Creek		**NCDWR Stream Index No.:**	11-129-8-(1)	
NCDWR Surface Water Classification for Water Body		**Primary Classification:**	Water Supply II (WS-II)		
		Supplemental Classification:	High Quality Waters (HQW)		
Other Stream Classification:	None				
Impairments:	None				
Aquatic T&E Species?	No	Comments:			
NRTR Stream ID:				**Buffer Rules in Effect:**	N/A
Project Includes Bridge Spanning Water Body?	Yes	**Deck Drains Discharge Over Buffer?**	N/A	**Dissipator Pads Provided in Buffer?**	N/A
Deck Drains Discharge Over Water Body?	No	(If yes, provide justification in the General Project Narrative)		(If yes, describe in the General Project Narrative; if no, justify in the General Project Narrative)	
(If yes, provide justification in the General Project Narrative)					

09/08/99

TIP PROJECT: B-4571

CONTRACT:

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

LINCOLN COUNTY

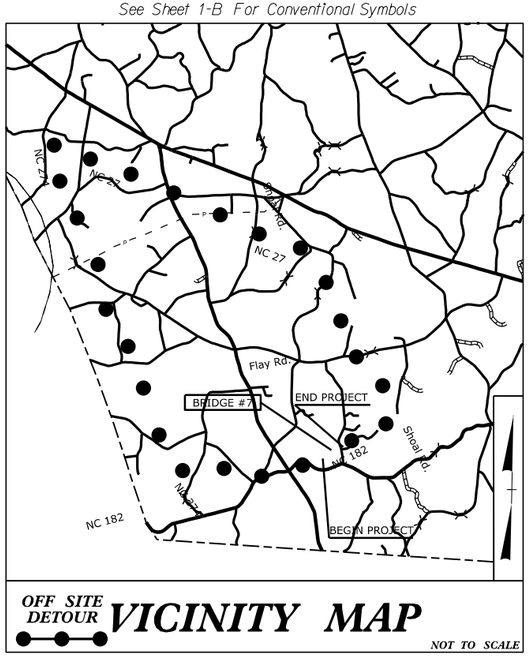
PERMIT DRAWING SHEET 1 OF 6

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-4571	1	
STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION	
38414.1.2	N/A	PE	

LOCATION: BRIDGE NO. 7 OVER INDIAN CREEK ON NC 182

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

WETLAND AND SURFACE WATER IMPACTS PERMIT

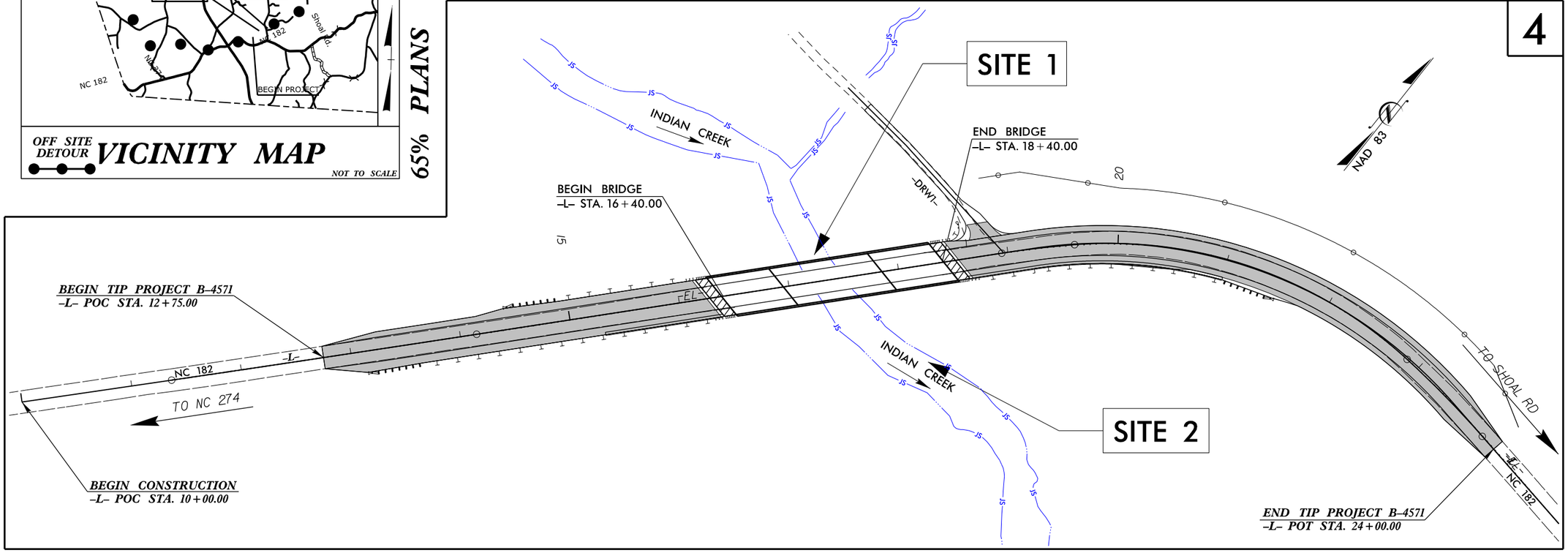


OFF SITE DETOUR **VICINITY MAP**

NOT TO SCALE

65% PLANS

4



**DESIGN EXCEPTION NEEDED FOR DESIGN SPEED.
THIS PROJECT IS NOT WITHIN A MUNICIPAL BOUNDARY.
THIS IS NOT A CONTROL OF ACCESS PROJECT.
CLEARING ON THIS PROJECT SHALL BE IN ACCORDANCE WITH METHOD ___.

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

GRAPHIC SCALES

PLANS: 50 25 0 50 100

PROFILE (HORIZONTAL): 50 25 0 50 100

PROFILE (VERTICAL): 5 2.5 0 10 20

DESIGN DATA

ADT 2015 = 1100
ADT 2040 = 1400
K = 12%
D = 75%
T = 6%*
**V = 30 MPH
*(TTST 2% + DUALS 4%)

FUNC CLASS = RURAL MAJOR COLLECTOR
SUB-REGIONAL TIER

PROJECT LENGTH

LENGTH OF ROADWAY T.I.P. PROJECT B-4571	=	0.175 MI.
LENGTH OF STRUCTURE T.I.P. PROJECT B-4571	=	0.038 MI
TOTAL LENGTH OF T.I.P. PROJECT B-4571	=	0.213 MI

NCDOT CONTACT: TIERRE PETERSON, PE & DAVID STUTTS, PE
STRUCTURES MANAGEMENT UNIT

PREPARED IN THE OFFICE OF:

Stantec
STANTEC CONSULTING
901 Jones Franklin Road |Suite 300
Raleigh, NC 27606
Tel. (919) 851-6666 | Fax. (919) 851-7024
www.stantec.com
License No. F-0672

SUNGATE DESIGN GROUP, P.A.
920 JONES FRANKLIN ROAD
RALEIGH, NORTH CAROLINA 27606
NC COA No. C-0890

FOR THE NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

2018 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE: 12/01/2018

LETTING DATE: 10/15/2019

MICHAEL D. LINDGREN, PE
PROJECT ENGINEER

MICHAEL B. LITTLEFIELD, PE
PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

P.E.
SIGNATURE:

ROADWAY DESIGN ENGINEER

P.E.
SIGNATURE:

STATE OF NORTH CAROLINA • DEPARTMENT OF TRANSPORTATION •

2/25/2019
B4571_Hyd_prm_wet_psh_01.dgn
jharvey

8/17/99

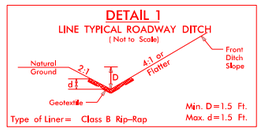
PROJECT REFERENCE NO.	SHEET NO.
B-4571	2A
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PERMIT DRAWING SHEET 2 OF 6

DETAIL 1
LINE TYPICAL ROADWAY DITCH
(Not to Scale)

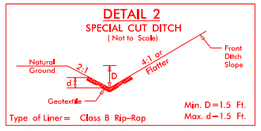


Min. D=1.5 Ft.
Max. d=1.5 Ft.

Type of Liner= Class B Rip-Rap

FROM STA. 20+50 TO STA. 23+50 -L- LT

DETAIL 2
SPECIAL CUT DITCH
(Not to Scale)

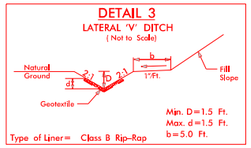


Min. D=1.5 Ft.
Max. d=1.5 Ft.

Type of Liner= Class B Rip-Rap

FROM STA. 19+20 TO STA. 20+50 -L- LT
FROM STA. 20+50 TO STA. 22+50 -L- RT

DETAIL 3
LATERAL 'V' DITCH
(Not to Scale)

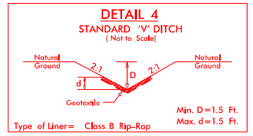


Min. D=1.5 Ft.
Max. d=1.5 Ft.
b=5.0 Ft.

Type of Liner= Class B Rip-Rap

FROM STA. 18+50 TO STA. 20+50 -L- RT

DETAIL 4
STANDARD 'V' DITCH
(Not to Scale)

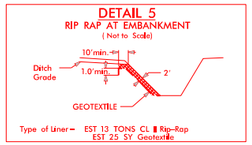


Min. D=1.5 Ft.
Max. d=1.5 Ft.

Type of Liner= Class B Rip-Rap

FROM STA. 18+15 TO STA. 18+50 -L- RT

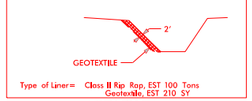
DETAIL 5
RIP RAP AT EMBANKMENT
(Not to Scale)



Type of Liner= EST. 13 TONS CL II Rip-Rap
EST. 25 SY Geotextile

STA. 18+10 -L- RT

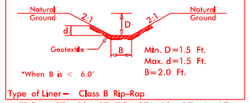
DETAIL 7
STREAMBANK STABILIZATION
(Not to Scale)



Type of Liner= Class II Rip Rap, EST 100 Tons
Geotextile, EST 210 SY

STA. 17+15 -L-
STA. 17+60 -L-

DETAIL 6
STANDARD BASE DITCH
(Not to Scale)



Min. D=1.5 Ft.
Max. d=1.5 Ft.
B=2.0 Ft.

*When B is < 6.0'

Type of Liner= Class B Rip-Rap

FROM STA. 18+87 TO STA. 19+27 -L- LT

2/25/2019
B457_std_prm_wet_psh_02a.dgn
barney

PERMIT DRAWING
SHEET 3 OF 6

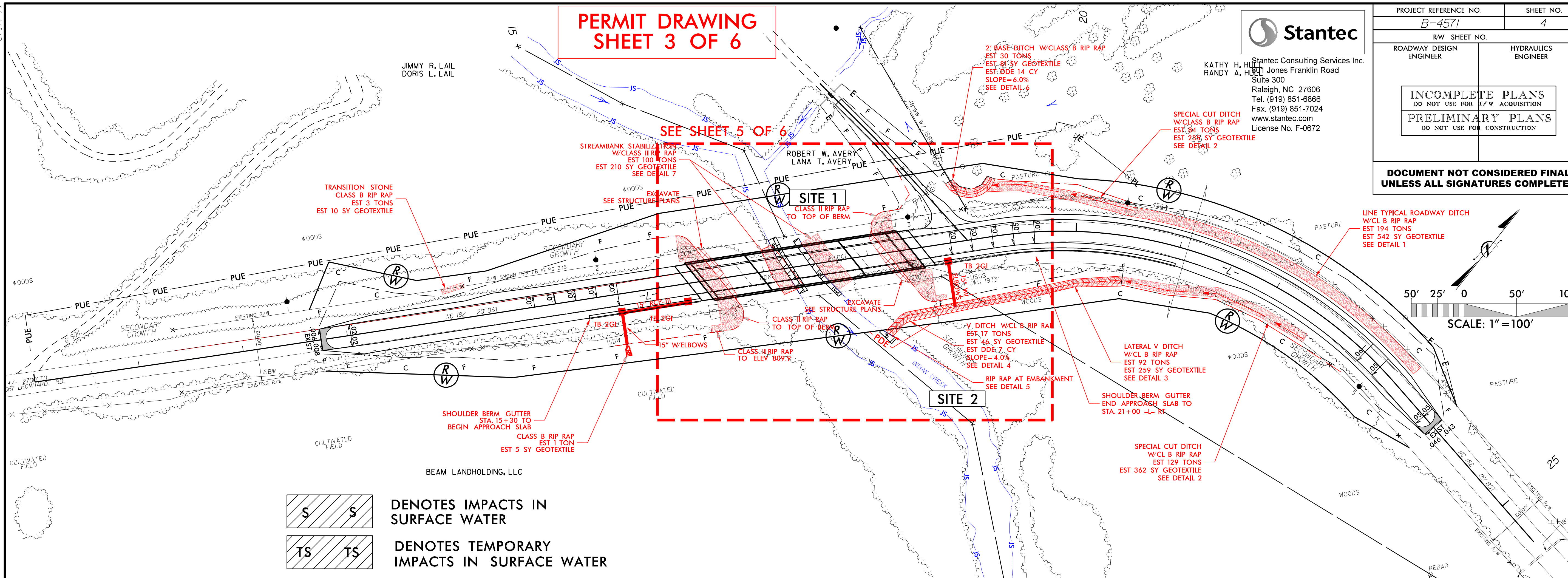
Stantec
Stantec Consulting Services Inc.
801 Jones Franklin Road
Suite 300
Raleigh, NC 27606
Tel. (919) 851-6866
Fax. (919) 851-7024
www.stantec.com
License No. F-0672

PROJECT REFERENCE NO.	SHEET NO.
B-4571	4
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

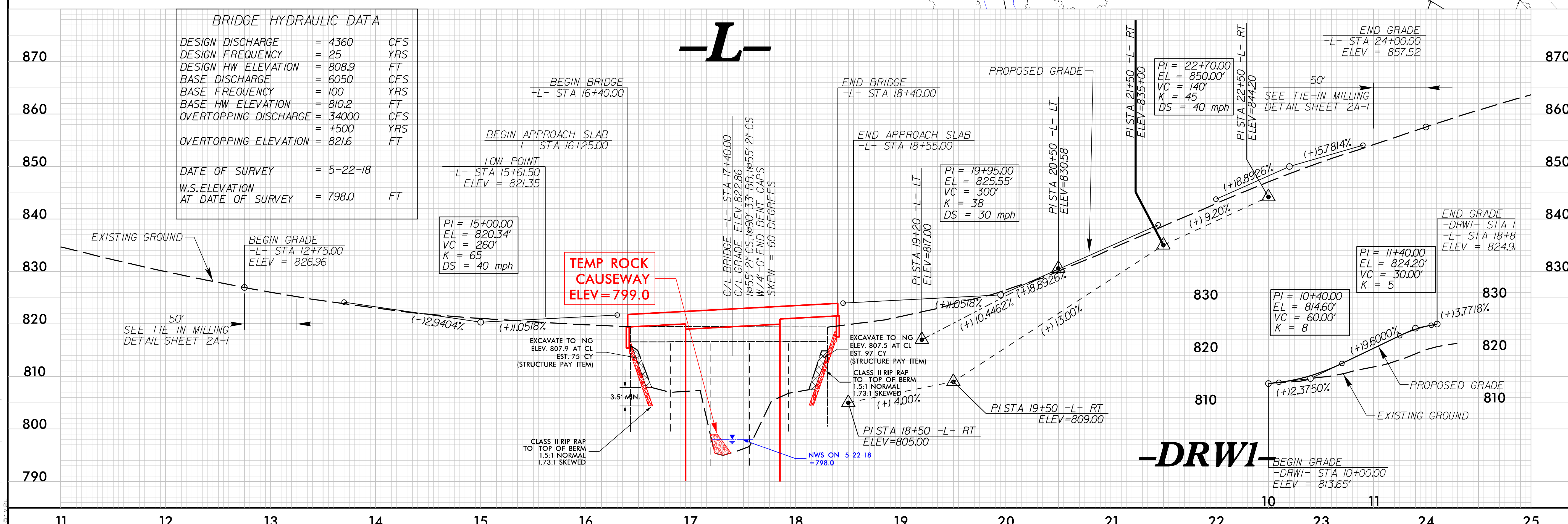
INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



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



BRIDGE HYDRAULIC DATA

DESIGN DISCHARGE	=	4360	CFS
DESIGN FREQUENCY	=	25	YRS
DESIGN HW ELEVATION	=	808.9	FT
BASE DISCHARGE	=	6050	CFS
BASE FREQUENCY	=	100	YRS
BASE HW ELEVATION	=	810.2	FT
OVERTOPPING DISCHARGE	=	34000	CFS
	=	+500	YRS
OVERTOPPING ELEVATION	=	821.6	FT
DATE OF SURVEY	=	5-22-18	
W.S.ELEVATION AT DATE OF SURVEY	=	798.0	FT

8/17/99
2/25/2019
B4571_Hyd_prm_wet_psh_04.dgn

8/17/99

PERMIT DRAWING
SHEET 4 OF 6

PROJECT REFERENCE NO.	SHEET NO.
B-4571	4
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

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SEE SHEET 5 OF 6

SITE 1

SITE 2

JIMMY R. LAIL
DORIS L. LAIL

ROBERT W. AVERY
LANA T. AVERY

KATHY H. HILL
RANDY A. HILL

BEAM LANDHOLDING, LLC

STREAMBANK STABILIZATION W/CLASS II RIP RAP EST 100 TONS EST 210 SY GEOTEXTILE SEE DETAIL 7

TRANSITION STONE CLASS B RIP RAP EST 3 TONS EST 10 SY GEOTEXTILE

EXCAVATE SEE STRUCTURE PLANS

CLASS II RIP RAP TO TOP OF BERM

2' BASE DITCH W/CLASS B RIP RAP EST 30 TONS EST 85 SY GEOTEXTILE EST DDE 14 CY SLOPE = 6.0% SEE DETAIL 6

SPECIAL CUT DITCH W/CLASS B RIP RAP EST 94 TONS EST 269 SY GEOTEXTILE SEE DETAIL 2

LINE TYPICAL ROADWAY DITCH W/CL B RIP RAP EST 194 TONS EST 542 SY GEOTEXTILE SEE DETAIL 1

V DITCH W/CL B RIP RAP EST 17 TONS EST 66 SY GEOTEXTILE EST DDE 7 CY SLOPE = 4.0% SEE DETAIL 4

RIP RAP AT EMBANKMENT SEE DETAIL 5

LATERAL V DITCH W/CL B RIP RAP EST 92 TONS EST 259 SY GEOTEXTILE SEE DETAIL 3

SHOULDER BERM GUTTER END APPROACH SLAB TO STA 21+00 -L- RT

SPECIAL CUT DITCH W/CL B RIP RAP EST 329 TONS EST 362 SY GEOTEXTILE SEE DETAIL 2

SHOULDER BERM GUTTER STA 15+30 TO BEGIN APPROACH SLAB

CLASS B RIP RAP EST 1 TON EST 5 SY GEOTEXTILE

CLASS AI RIP RAP TO FLEV 804.6

S S DENOTES IMPACTS IN SURFACE WATER

TS TS DENOTES TEMPORARY IMPACTS IN SURFACE WATER

SCALE: 1" = 100'

BRIDGE HYDRAULIC DATA

DESIGN DISCHARGE	= 4360	CFS
DESIGN FREQUENCY	= 25	YRS
DESIGN HW ELEVATION	= 808.9	FT
BASE DISCHARGE	= 6050	CFS
BASE FREQUENCY	= 100	YRS
BASE HW ELEVATION	= 810.2	FT
OVERTOPPING DISCHARGE	= 34000	CFS
	= +500	YRS
OVERTOPPING ELEVATION	= 821.6	FT
DATE OF SURVEY	= 5-22-18	
W.S. ELEVATION AT DATE OF SURVEY	= 798.0	FT

-L-

BEGIN BRIDGE -L- STA 16+40.00

END BRIDGE -L- STA 18+40.00

BEGIN APPROACH SLAB -L- STA 16+25.00

END APPROACH SLAB -L- STA 18+55.00

LOW POINT -L- STA 15+61.50 ELEV = 821.35

C/L BRIDGE -L- STA 17+40.00
C/L GRADE ELEV. 822.86
1@55'-2" CS, @90° 33' BB, 1@55'-2" CS
W/4'-0" END BENT CAPS
SKEW = 60 DEGREES

PROPOSED GRADE

PI = 15+00.00
EL = 820.34'
VC = 260'
K = 65
DS = 40 mph

PI = 19+95.00
EL = 825.55'
VC = 300'
K = 38
DS = 30 mph

PI = 22+70.00
EL = 850.00'
VC = 140'
K = 45
DS = 40 mph

PI = 11+40.00
EL = 824.20'
VC = 30.00'
K = 5

PI = 10+40.00
EL = 814.60'
VC = 60.00'
K = 8

PI STA 19+20 -L- LT ELEV=817.00

PI STA 20+50 -L- LT ELEV=830.58

PI STA 21+50 -L- RT ELEV=835+00

PI STA 22+50 -L- RT ELEV=844.20

PI STA 19+50 -L- RT ELEV=809.00

PI STA 18+50 -L- RT ELEV=805.00

END GRADE -L- STA 24+00.00 ELEV = 857.52

50' SEE TIE-IN MILLING DETAIL SHEET 2A-1

50' SEE TIE IN MILLING DETAIL SHEET 2A-1

EXISTING GROUND

BEGIN GRADE -L- STA 12+75.00 ELEV = 826.96

(-)12.9404%

(+)1.0518%

(+)18.8926%

(+)9.20%

(+)5.7814%

(+)11.0518%

(+)10.4462%

(+)13.00%

(+)4.00%

(+)19.6000%

(+)2.3750%

(+)3.7718%

TEMP ROCK CAUSEWAY ELEV=799.0

EXCAVATE TO NG ELEV. 807.9 AT CL EST. 75 CY (STRUCTURE PAY ITEM)

EXCAVATE TO NG ELEV. 807.5 AT CL EST. 97 CY (STRUCTURE PAY ITEM)

CLASS II RIP RAP TO TOP OF BERM 1.5:1 NORMAL 1.73:1 SKEWED

3.5' MIN.

NWS ON 5-22-18 =798.0

PROPOSED GRADE

EXISTING GROUND

-DRW1-

END GRADE -DRW1- STA 1 -L- STA 18+8 ELEV = 824.9

BEGIN GRADE -DRW1- STA 10+00.00 ELEV = 813.65'

870 860 850 840 830 820 810 800 790

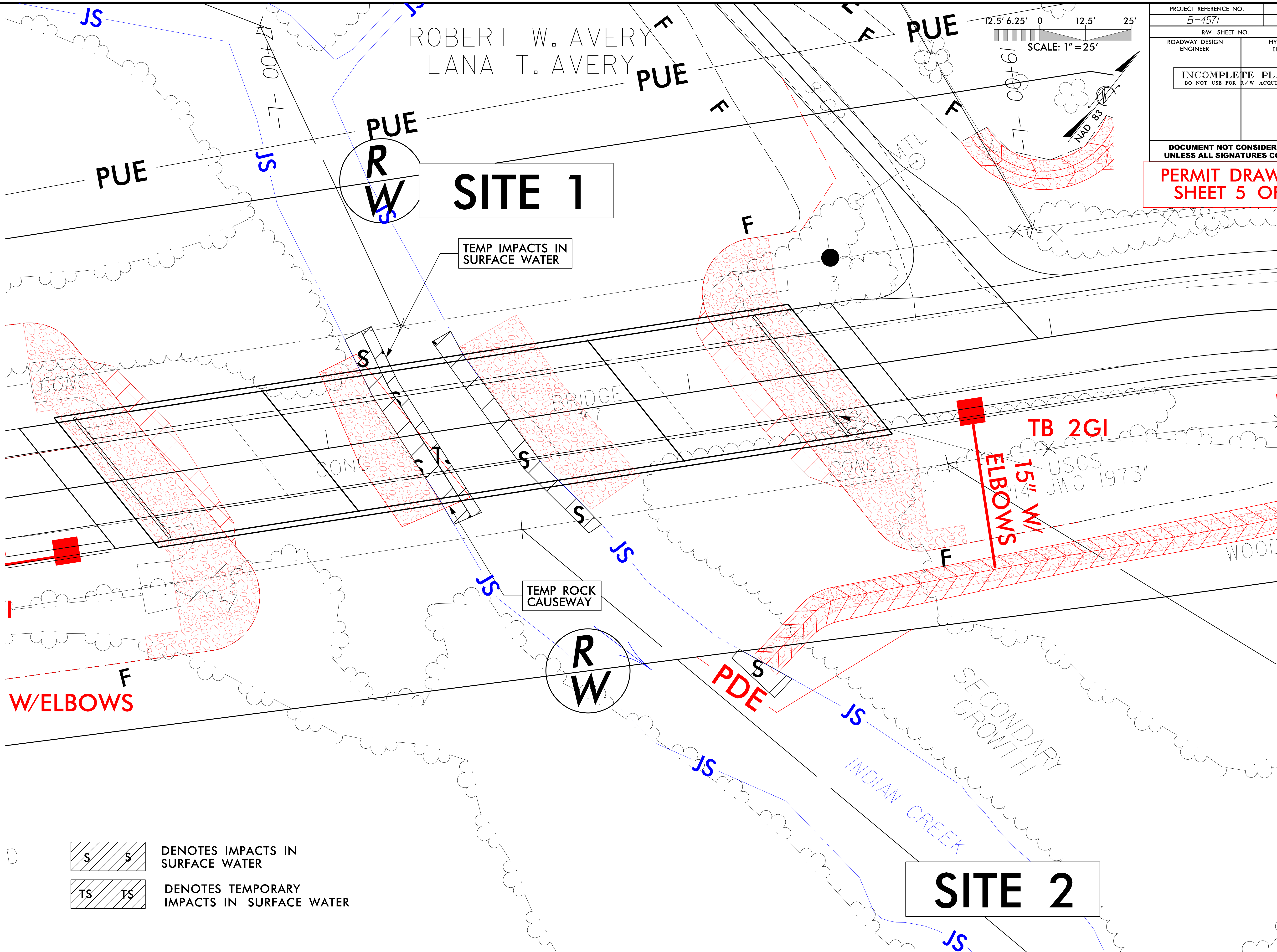
10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25

PROJECT REFERENCE NO.	SHEET NO.
B-4571	
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PERMIT DRAWING
SHEET 5 OF 6



DENOTES IMPACTS IN SURFACE WATER

DENOTES TEMPORARY IMPACTS IN SURFACE WATER

2/25/2019
B4571_Hyd_prm_wet_psh_04b_ViewIn.dgn

WETLAND AND SURACE WATER IMPACTS SUMMARY

			WETLAND IMPACTS					SURFACE WATER IMPACTS				
Site No.	Station (From/To)	Structure Size / Type	Permanent Fill In Wetlands (ac)	Temp. Fill In Wetlands (ac)	Excavation in Wetlands (ac)	Mechanized Clearing in Wetlands (ac)	Hand Clearing in Wetlands (ac)	Permanent SW impacts (ac)	Temp. SW impacts (ac)	Existing Channel Impacts Permanent (ft)	Existing Channel Impacts Temp. (ft)	Natural Stream Design (ft)
1	17+09 to 17+71-L-	BANK STABILIZATION						0.01		75		
		TEMP ROCK CAUSEWAY							< 0.01			
2	18+00 to 18+16-L-RT	RIP RAP EMBANKMENT						< 0.01		16		
TOTALS*:								0.02	< 0.01	91	0	0

*Rounded totals are sum of actual impacts

NOTES:
Tempoary Impacts in Surface Water caused by temporary rock causeway 0.004 ac.

NC DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
February 25, 2019
LINCOLN COUNTY
B-4571
38414.1.2
SHEET 6 OF 6

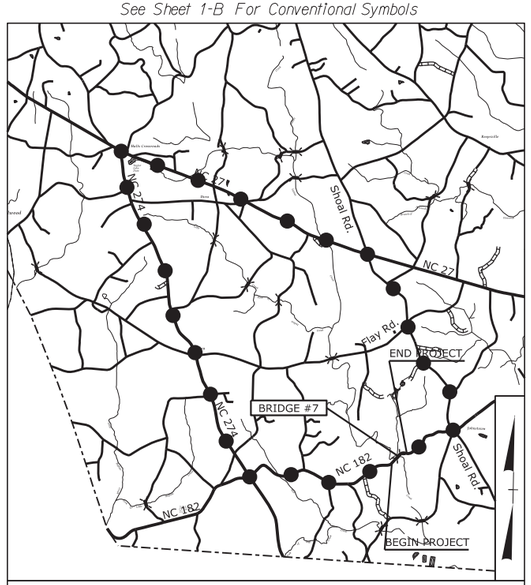
Revised 2018 Feb

09/08/99

TIP PROJECT: B-4571

CONTRACT:

See Sheet 1-B For Conventional Symbols



OFF SITE DETOUR **VICINITY MAP**

NOT TO SCALE

75% PLANS

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

LINCOLN COUNTY

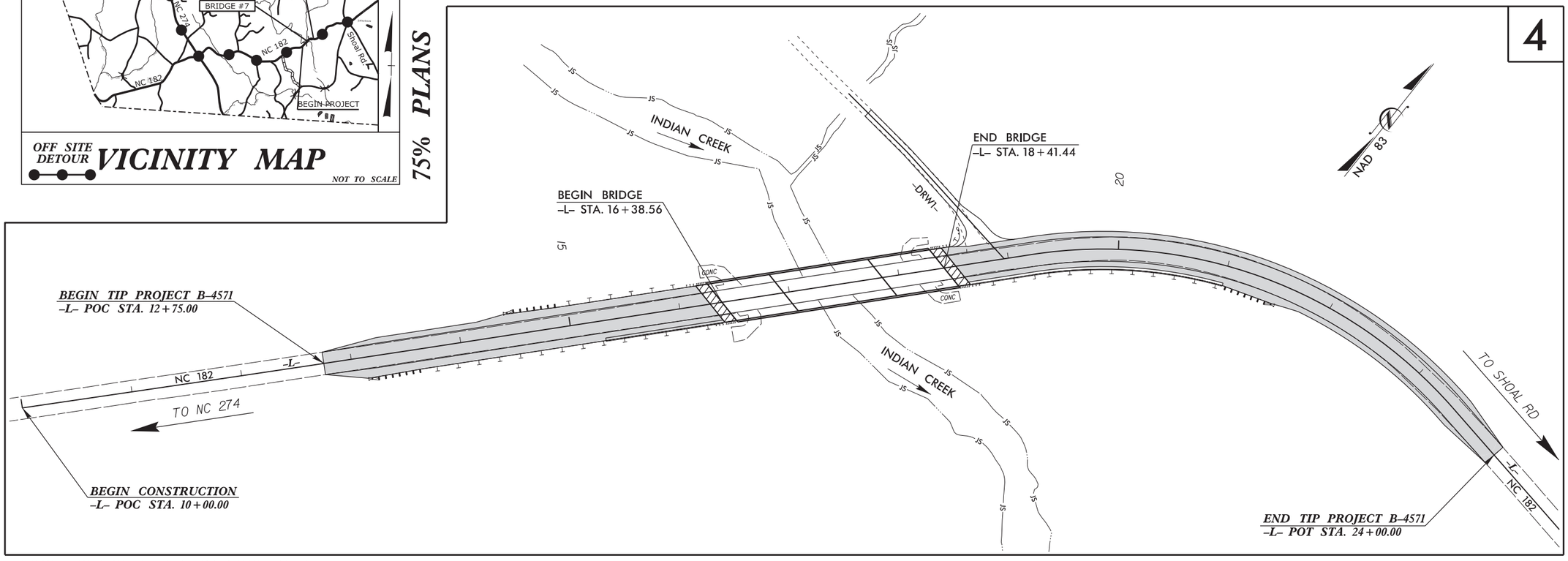
LOCATION: BRIDGE NO. 7 OVER INDIAN CREEK ON NC 182

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

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-4571	1	

STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION
38414.1.2	N/A	PE
38414.2.1	N/A	R/W /UTIL.
38414.3.1	N/A	CONST.

4



**DESIGN EXCEPTION NEEDED FOR DESIGN SPEED.
THIS PROJECT IS NOT WITHIN A MUNICIPAL BOUNDARY.
THIS IS NOT A CONTROL OF ACCESS PROJECT.
CLEARING ON THIS PROJECT SHALL BE IN ACCORDANCE WITH METHOD III

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

GRAPHIC SCALES

PLANS: 50 25 0 50 100

PROFILE (HORIZONTAL): 50 25 0 50 100

PROFILE (VERTICAL): 5 2.5 0 10 20

DESIGN DATA

ADT 2015 = 1100
ADT 2040 = 1400
K = 12%
D = 75%
T = 6%*
**V = 30 MPH
*(TTST 2%+DUALS 4%)

FUNC CLASS = RURAL MAJOR COLLECTOR
SUB-REGIONAL TIER

PROJECT LENGTH

LENGTH OF ROADWAY T.I.P. PROJECT B-4571	=	0.175 MI.
LENGTH OF STRUCTURE T.I.P. PROJECT B-4571	=	0.038 MI
TOTAL LENGTH OF T.I.P. PROJECT B-4571	=	0.213 MI

NCDOT CONTACT: DAVID STUTTS, PE
STRUCTURES MANAGEMENT UNIT

Stantec
PREPARED IN THE OFFICE OF:
STANTEC CONSULTING
801 Jones Franklin Road |Suite 300
Raleigh, NC 27606
Tel. (919) 851-6866 | Fax. (919) 851-7024
www.stantec.com
License No. F-0672
SUNGATE DESIGN GROUP, P.A.
920 JONES FRANKLIN ROAD
RALEIGH, NORTH CAROLINA 27606
NC COA No. C-0890

FOR THE NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

2018 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE: 1/4/2019

LETTING DATE: 10/15/2019

H. ROY CURRIN, PE
PROJECT ENGINEER

MICHAEL B. LITTLEFIELD, PE
PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

P.E.
SIGNATURE:

ROADWAY DESIGN ENGINEER

P.E.
SIGNATURE:

STATE OF NORTH CAROLINA • DEPARTMENT OF TRANSPORTATION •

12/9/2018
L:\Roadway\Proj\B-4571_Rdy_tsh.dgn
mlittlefield

04/06/15

PROJECT REFERENCE NO.	SHEET NO.
B-4571	1-B

STATE OF NORTH CAROLINA, DIVISION OF HIGHWAYS

CONVENTIONAL PLAN SHEET SYMBOLS

Note: Not to Scale **S.U.E. = Subsurface Utility Engineering*

BOUNDARIES AND PROPERTY:

- State Line
- County Line
- Township Line
- City Line
- Reservation Line
- Property Line
- Existing Iron Pin — EIP
- Property Corner
- Property Monument — ECM
- Parcel/Sequence Number — 123
- Existing Fence Line
- Proposed Woven Wire Fence
- Proposed Chain Link Fence
- Proposed Barbed Wire Fence
- Existing Wetland Boundary — WLB
- Proposed Wetland Boundary — WLB
- Existing Endangered Animal Boundary — EAB
- Existing Endangered Plant Boundary — EPB
- Existing Historic Property Boundary — HPB
- Known Contamination Area: Soil
- Potential Contamination Area: Soil
- Known Contamination Area: Water
- Potential Contamination Area: Water
- Contaminated Site: Known or Potential

BUILDINGS AND OTHER CULTURE:

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

HYDROLOGY:

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

RAILROADS:

- Standard Gauge — CSX TRANSPORTATION
- RR Signal Milepost — MILEPOST 35
- Switch — SWITCH
- RR Abandoned
- RR Dismantled

RIGHT OF WAY:

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

ROADS AND RELATED FEATURES:

- Existing Edge of Pavement
- Existing Curb
- Proposed Slope Stakes Cut — C
- Proposed Slope Stakes Fill — F
- Proposed Curb Ramp — CR
- Existing Metal Guardrail
- Proposed Guardrail
- Existing Cable Guiderail
- Proposed Cable Guiderail
- Equality Symbol
- Pavement Removal

VEGETATION:

- Single Tree
- Single Shrub
- Hedge
- Woods Line
- Orchard
- Vineyard — Vineyard

EXISTING STRUCTURES:

MAJOR:

- Bridge, Tunnel or Box Culvert — CONC
- Bridge Wing Wall, Head Wall and End Wall — CONC WW

MINOR:

- Head and End Wall — CONC HW
- Pipe Culvert
- Footbridge
- Drainage Box: Catch Basin, DI or JB — CB
- Paved Ditch Gutter
- Storm Sewer Manhole — S
- Storm Sewer — S

UTILITIES:

POWER:

- Existing Power Pole
- Proposed Power Pole
- Existing Joint Use Pole
- Proposed Joint Use Pole
- Power Manhole — P
- Power Line Tower
- Power Transformer
- U/G Power Cable Hand Hole
- H-Frame Pole
- U/G Power Line LOS B (S.U.E.*) — P
- U/G Power Line LOS C (S.U.E.*) — P
- U/G Power Line LOS D (S.U.E.*) — P

TELEPHONE:

- Existing Telephone Pole
- Proposed Telephone Pole
- Telephone Manhole — T
- Telephone Pedestal — T
- Telephone Cell Tower
- U/G Telephone Cable Hand Hole — HH
- U/G Telephone Cable LOS B (S.U.E.*) — T
- U/G Telephone Cable LOS C (S.U.E.*) — T
- U/G Telephone Cable LOS D (S.U.E.*) — T
- U/G Telephone Conduit LOS B (S.U.E.*) — TC
- U/G Telephone Conduit LOS C (S.U.E.*) — TC
- U/G Telephone Conduit LOS D (S.U.E.*) — TC
- U/G Fiber Optics Cable LOS B (S.U.E.*) — T FO
- U/G Fiber Optics Cable LOS C (S.U.E.*) — T FO
- U/G Fiber Optics Cable LOS D (S.U.E.*) — T FO

WATER:

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

TV:

- TV Pedestal — C
- TV Tower
- U/G TV Cable Hand Hole — HH
- U/G TV Cable LOS B (S.U.E.*) — TV
- U/G TV Cable LOS C (S.U.E.*) — TV
- U/G TV Cable LOS D (S.U.E.*) — TV
- U/G Fiber Optic Cable LOS B (S.U.E.*) — TV FO
- U/G Fiber Optic Cable LOS C (S.U.E.*) — TV FO
- U/G Fiber Optic Cable LOS D (S.U.E.*) — TV FO

GAS:

- Gas Valve
- Gas Meter
- U/G Gas Line LOS B (S.U.E.*) — G
- U/G Gas Line LOS C (S.U.E.*) — G
- U/G Gas Line LOS D (S.U.E.*) — G
- Above Ground Gas Line — A/G Gas

SANITARY SEWER:

- Sanitary Sewer Manhole
- Sanitary Sewer Cleanout
- U/G Sanitary Sewer Line — SS
- Above Ground Sanitary Sewer — A/G Sanitary Sewer
- SS Forced Main Line LOS B (S.U.E.*) — FSS
- SS Forced Main Line LOS C (S.U.E.*) — FSS
- SS Forced Main Line LOS D (S.U.E.*) — FSS

MISCELLANEOUS:

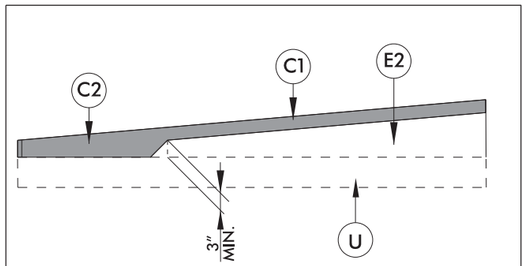
- Utility Pole
- Utility Pole with Base
- Utility Located Object
- Utility Traffic Signal Box — S
- Utility Unknown U/G Line LOS B (S.U.E.*) — ?UTL
- U/G Tank; Water, Gas, Oil
- Underground Storage Tank, Approx. Loc. — UST
- A/G Tank; Water, Gas, Oil
- Geoenvironmental Boring
- U/G Test Hole LOS A (S.U.E.*)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

6/2/99

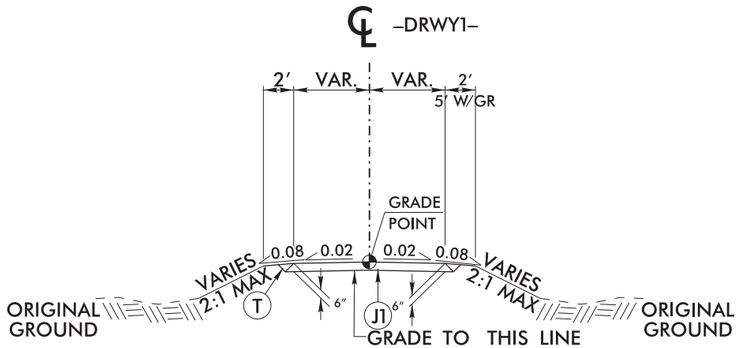
PAVEMENT SCHEDULE
FINAL PAVEMENT DESIGN

C1	PROP. APPROX. 3", ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.
C2	PROP. VAR. DEPTH, ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD. PER 1" DEPTH, TO BE PLACED IN LAYERS NOT TO EXCEED 1.5" IN DEPTH.
E1	PROP. APPROX. 4.5" ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 513 LBS. PER SQ. YD.
E2	PROP. VAR. DEPTH ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 513 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT LESS THAN 3" IN DEPTH OR GREATER THAN 5.5" IN DEPTH.
J1	PROP. APPROX. 6" ABC
R	SHOULDER BERM GUTTER
T	EARTH MATERIAL
U	EXISTING PAVEMENT
W	WEDGING (SEE DETAIL THIS SHEET)

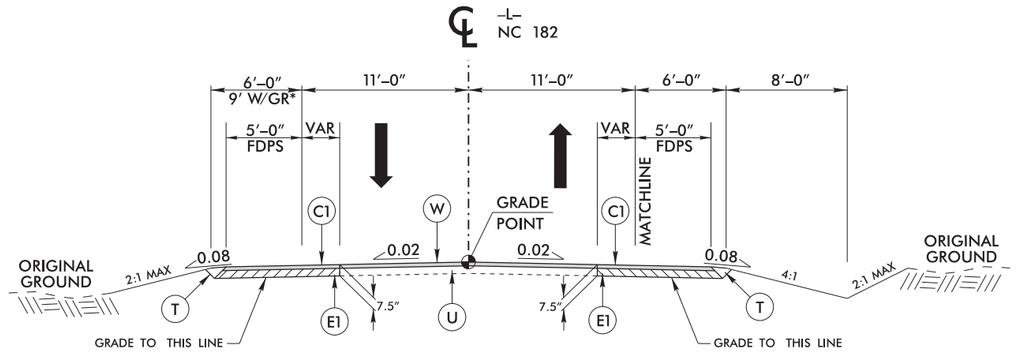
NOTE: PAVEMENT EDGE SLOPES ARE 1:1 UNLESS SHOWN OTHERWISE.



W: WEDGING DETAIL

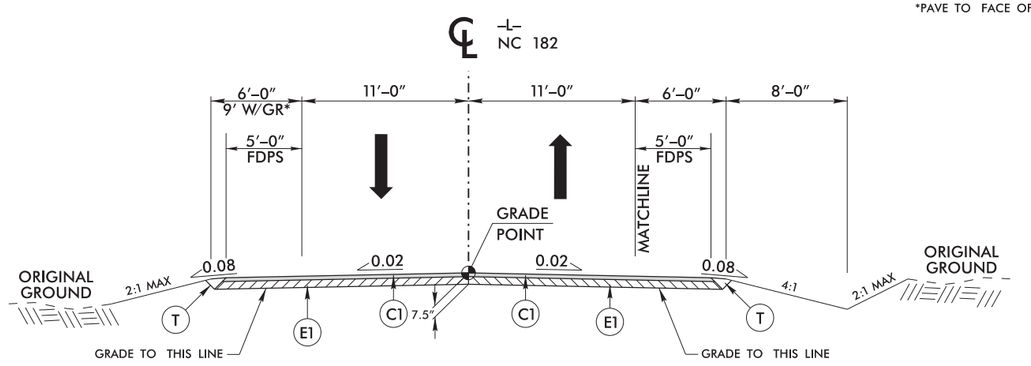


TYPICAL SECTION NO. 4
–DRW1– STA. 10+00.00 TO STA. 11+60.70

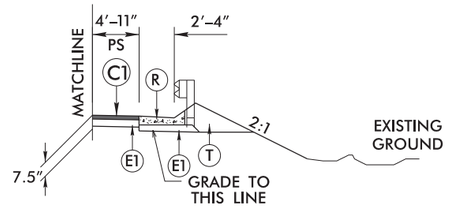


TYPICAL SECTION NO. 1
–L– STA. 12+75.00 TO STA. 16+38.56 (BEGIN BRIDGE)
–L– STA. 20+30.00 TO STA. 24+00.00

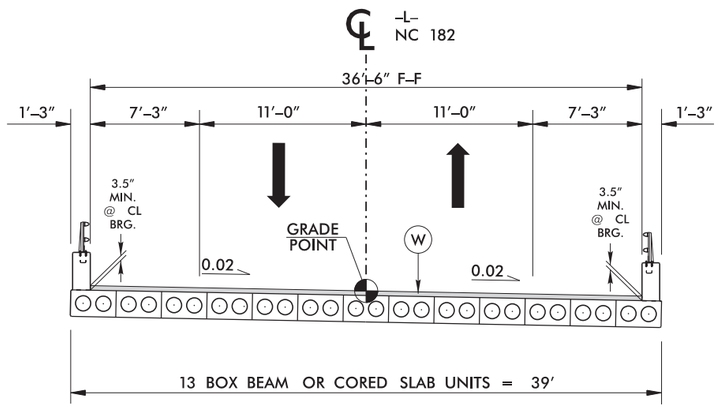
*PAVE TO FACE OF GUARDRAIL



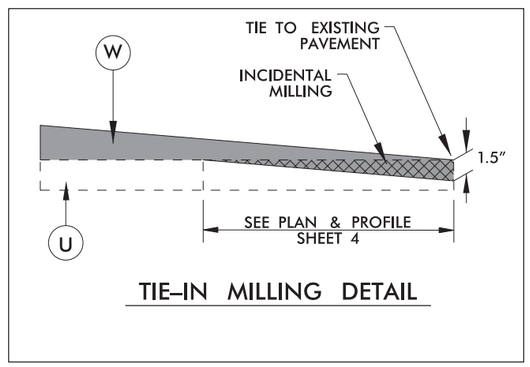
TYPICAL SECTION NO. 2
–L– STA. 18+41.44 (END BRIDGE) TO STA. 20+30.00



PARTIAL TYPICAL SECTION NO. 1A /2A
USE PARTIAL TYPICAL SECTION IN CONJUNCTION WITH TYPICAL SECTION NO. 1 & 2 AS FOLLOWS:
–L– STA. 15+30.00 TO STA. 16+37.04 RT.
–L– STA. 18+61.31 TO STA. 21+00.00 RT.



TYPICAL SECTION NO. 3
–L– STA. 16+38.56 TO STA. 18+41.44
NC 182 AT THIS LOCATION IS PART OF THE SOUTHERN HIGHLANDS STATE BICYCLE ROUTE (NC BIKE ROUTE 8)



TIE–IN MILLING DETAIL

Stantec
Stantec Consulting Services Inc.
801 Jones Franklin Road
Suite 300
Raleigh, NC 27606
Tel. (919) 851-6866
Fax. (919) 851-7024
www.stantec.com
License No. F-0672

PROJECT REFERENCE NO.	SHEET NO.
B-4571	2A-1
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

12/19/2018
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mitterfield

8/17/99

SUNGATE DESIGN GROUP, P.A.
505 JONES FRANKLIN ROAD
RALEIGH, NORTH CAROLINA 27606
NC COA No. C-0890

Stantec

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801 Jones Franklin Road
Suite 300
Raleigh, NC 27606
Tel. (919) 851-6866
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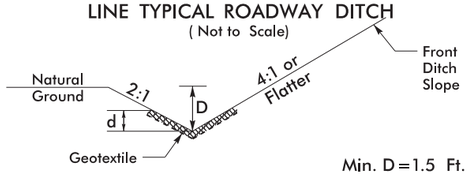
PROJECT REFERENCE NO.	SHEET NO.
B-4571	2D-1
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

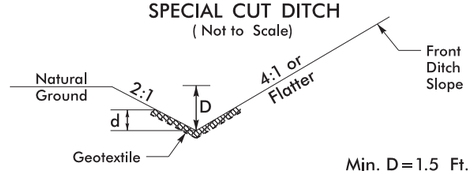
DETAIL 1
LINE TYPICAL ROADWAY DITCH
(Not to Scale)



Type of Liner = Class B Rip–Rap
Min. D = 1.5 Ft.
Max. d = 1.5 Ft.

FROM STA. 20 + 50 TO STA. 23 + 50 –L– LT

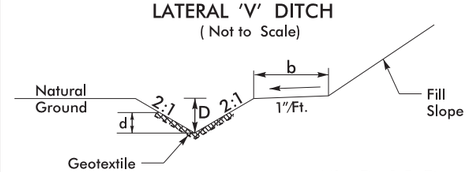
DETAIL 2
SPECIAL CUT DITCH
(Not to Scale)



Type of Liner = Class B Rip–Rap
Min. D = 1.5 Ft.
Max. d = 1.5 Ft.

FROM STA. 19 + 20 TO STA. 20 + 50 –L– LT
FROM STA. 20 + 50 TO STA. 22 + 50 –L– RT

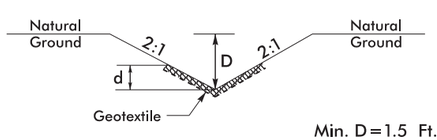
DETAIL 3
LATERAL 'V' DITCH
(Not to Scale)



Type of Liner = Class B Rip–Rap
Min. D = 1.5 Ft.
Max. d = 1.5 Ft.
b = 5.0 Ft.

FROM STA. 18 + 50 TO STA. 20 + 50 –L– RT

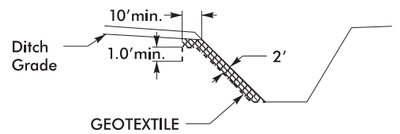
DETAIL 4
STANDARD 'V' DITCH
(Not to Scale)



Type of Liner = Class B Rip–Rap
Min. D = 1.5 Ft.
Max. d = 1.5 Ft.

FROM STA. 18 + 15 TO STA. 18 + 50 –L– RT

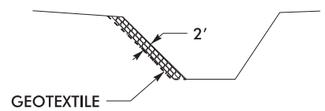
DETAIL 5
RIP RAP AT EMBANKMENT
(Not to Scale)



Type of Liner = EST 13 TONS CL II Rip–Rap
EST 25 SY Geotextile

STA. 18 + 10 –L– RT

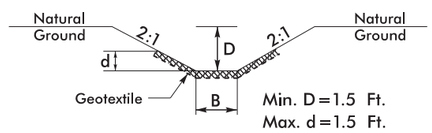
DETAIL 7
STREAMBANK STABILIZATION
(Not to Scale)



Type of Liner = Class II Rip Rap, EST 100 Tons
Geotextile, EST 210 SY

STA. 17 + 15 –L–
STA. 17 + 60 –L–

DETAIL 6
STANDARD BASE DITCH
(Not to Scale)



*When B is < 6.0'
Min. D = 1.5 Ft.
Max. d = 1.5 Ft.
B = 2.0 Ft.

Type of Liner = Class B Rip–Rap

FROM STA. 18 + 87 TO STA. 19 + 27 –L– LT

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PROJECT REFERENCE NO.	SHEET NO.
B-4571	4

R/W SHEET NO.

ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

SUNGATE DESIGN GROUP, P.A.
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NC COA No. C-0890

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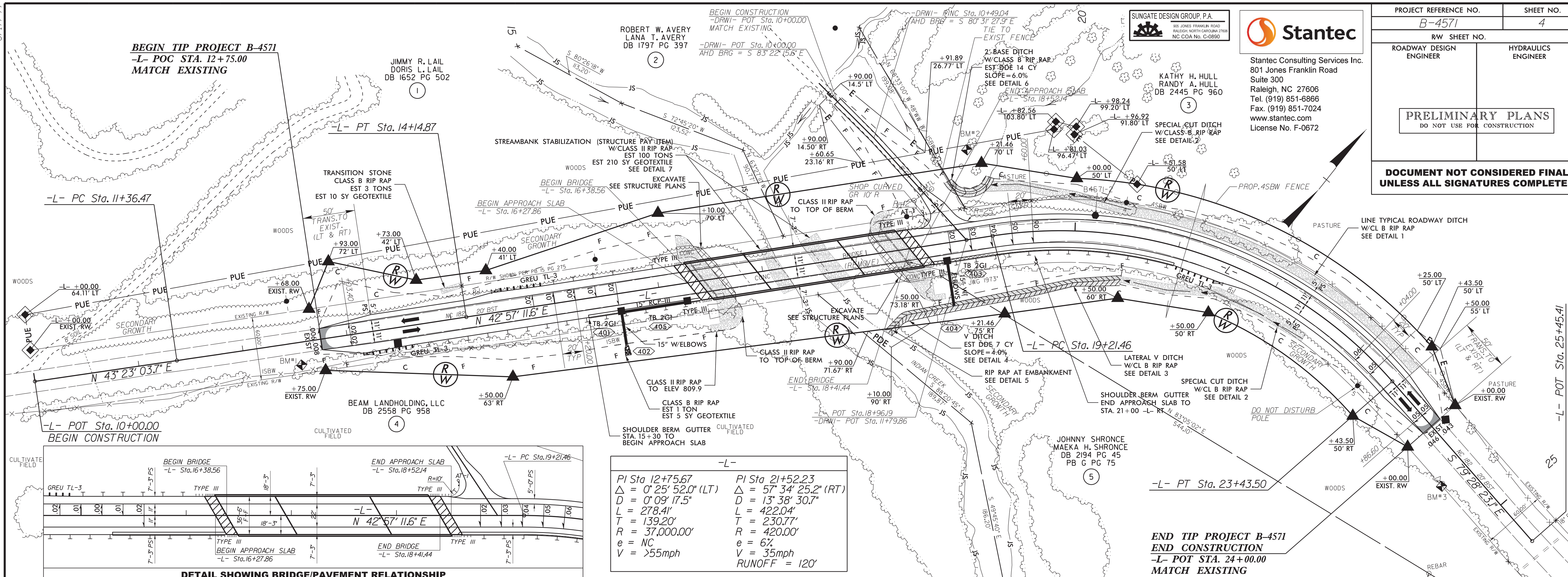
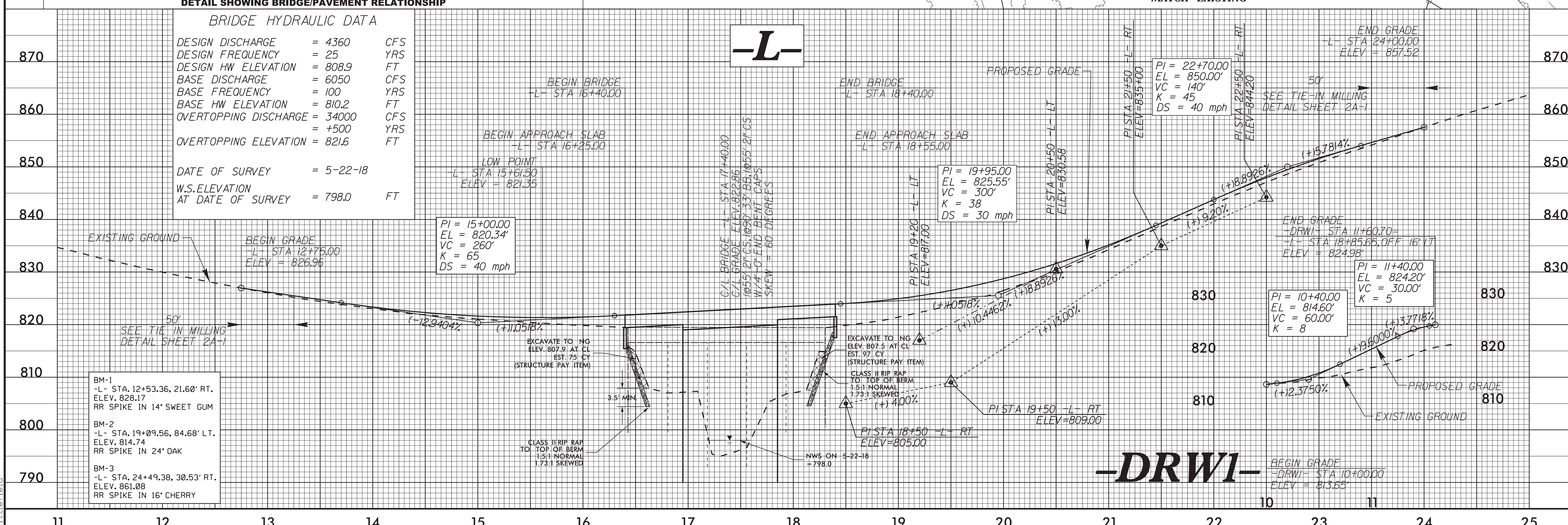

BEGIN TIP PROJECT B-4571
-L- POC STA. 12+75.00
MATCH EXISTING
-L- PT Sta. 14+14.87
-L- PC Sta. 11+36.47
-L- POT Sta. 10+00.00
BEGIN CONSTRUCTION
N 43° 23' 03.7" E
N 42° 57' 11.6" E
JIMMY R. LAIL
DORIS L. LAIL
DB 1652 PG 502
ROBERT W. AVERY
LANA T. AVERY
DB 1797 PG 397
KATHY H. HULL
RANDY A. HULL
DB 2445 PG 960
BEAM LANDHOLDING, LLC
DB 2558 PG 958
JOHNNY SHRONCE
MAEKA H. SHRONCE
DB 2194 PG 45
PB G PG 75
STREAMBANK STABILIZATION (STRUCTURE PAY ITEM)
TRANSITION STONE
BEGIN BRIDGE
BEGIN APPROACH SLAB
SHOP CURVED GR 10' R
-L- PC Sta. 19+21.46
-L- PT Sta. 23+43.50
-L- POT Sta. 25+45.41
S 79° 28' 23.1" E
LINE TYPICAL ROADWAY DITCH W/CL B RIP RAP SEE DETAIL 1
SPECIAL CUT DITCH W/CL B RIP RAP SEE DETAIL 2
LATERAL V DITCH W/CL B RIP RAP SEE DETAIL 3
SHOULDER BERM GUTTER END APPROACH SLAB TO STA. 21+00 -L- RT
DO NOT DISTURB POLE
END TIP PROJECT B-4571
END CONSTRUCTION
-L- POT STA. 24+00.00
MATCH EXISTING
DETAIL SHOWING BRIDGE/PAVEMENT RELATIONSHIP

-L-	
PI Sta 12+75.67	PI Sta 21+52.23
Δ = 0° 25' 52.0" (LT)	Δ = 57° 34' 25.2" (RT)
D = 0° 09' 17.5"	D = 13° 38' 30.7"
L = 278.41'	L = 422.04'
T = 139.20'	T = 230.77'
R = 37,000.00'	R = 420.00'
e = NC	e = 6%
V = >55mph	V = 35mph
	RUNOFF = 120'

BRIDGE HYDRAULIC DATA

DESIGN DISCHARGE	=	4360	CFS
DESIGN FREQUENCY	=	25	YRS
DESIGN HW ELEVATION	=	808.9	FT
BASE DISCHARGE	=	6050	CFS
BASE FREQUENCY	=	100	YRS
BASE HW ELEVATION	=	810.2	FT
OVERTOPPING DISCHARGE	=	34000	CFS
	=	+500	YRS
OVERTOPPING ELEVATION	=	821.6	FT
DATE OF SURVEY	=	5-22-18	
W.S. ELEVATION AT DATE OF SURVEY	=	798.0	FT


-L-
BEGIN BRIDGE -L- STA 16+40.00
END BRIDGE -L- STA 18+40.00
BEGIN APPROACH SLAB -L- STA 16+25.00
END APPROACH SLAB -L- STA 18+55.00
LOW POINT -L- STA 15+61.50 ELEV = 821.35
PROPOSED GRADE
EXISTING GROUND
BEGIN GRADE -L- STA 12+75.00 ELEV = 826.96
END GRADE -L- STA 24+00.00 ELEV = 857.52
PI = 15+00.00 EL = 820.34' VC = 260' K = 65 DS = 40 mph
PI = 19+95.00 EL = 825.55' VC = 300' K = 38 DS = 30 mph
PI = 22+70.00 EL = 850.00' VC = 140' K = 45 DS = 40 mph
SEE TIE-IN MILLING DETAIL SHEET 2A-1
-DRW1-
BEGIN GRADE -DRW1- STA 10+00.00 ELEV = 813.65'
END GRADE -DRW1- STA 11+60.70 -L- STA 18+85.65, OFF 16' LT ELEV = 824.98'
PI = 10+40.00 EL = 814.60' VC = 60.00' K = 8
PI = 11+40.00 EL = 824.20' VC = 30.00' K = 5
NWS ON 5-22-18 =798.0

BM-1
-L- STA. 12+53.36, 21.60' RT.
ELEV. 828.17
RR SPIKE IN 14" SWEET GUM

BM-2
-L- STA. 19+09.56, 84.68' LT.
ELEV. 814.74
RR SPIKE IN 24" OAK

BM-3
-L- STA. 24+49.38, 30.53' RT.
ELEV. 861.08
RR SPIKE IN 16" CHERRY

8/17/99
12/19/2018
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