



STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION

ROY COOPER  
GOVERNOR

JAMES H. TROGDON, III  
SECRETARY

September 28, 2018

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

ATTN: Steve Kichefski  
NCDOT Coordinator

Subject: **Application for Section 404 Nationwide Permits 13 and 33 and Section 401 Water Quality Certification** for the Proposed Replacement of Bridge 59 on US 21 Business (N. Main Street) over Jonesville Creek in Yadkin County, Division 11, TIP No. B-4979, WBS 39899.1.1

Dear Sir:

The North Carolina Department of Transportation (NCDOT) proposes to replace bridge number 59 on US 21 Business (N Main Street) with a 2 span (2@60') prestressed concrete box beam bridge. An off-site detour will be implemented to manage traffic during construction.

As a result of replacing the existing bridge, there will be 89 linear feet of permanent stream impacts consisting of stream bank stabilization. Bridge demolition, dewatering, and causeway use during construction will contribute to 60 linear feet of temporary impacts to the stream

Please see enclosed copies of the Pre-Construction Notification (PCN), Stormwater Management Plan, Permit Drawings, Roadway Plan Sheets, and the NLEB memo.

This project is not located in a trout watershed, therefore comments from the NCWRC will not be required prior to authorization by the Corps of Engineers.

This project calls for a letting date of March 19, 2019 and a review date of January 29, 2019; however, the let date may advance as additional funding becomes available.

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.  
Natural Environment Section Head

Cc:  
NCDOT Permit Application Standard Distribution List



## Pre-Construction Notification (PCN) Form

For Nationwide Permits and Regional General Permits

(along with corresponding Water Quality Certifications)

January 31, 2018 Ver 2.3

*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: \***

Yadkin

**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-4979

**WBS #**

39899.1.1

(for NCDOT use only)

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

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

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

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

☒ Nationwide Permit (NWP)

☐ Regional General Permit (RGP)

☐ Standard (IP)

This form may be Corps to initiate the standard/individual permit process. Please contact your Corps representative for submittal of standard permits.

All required items that are not provided in the E-PCN and be added to the miscellaneous upload located at the bottom of this form.

**Nationwide Permit (NWP) Number:**

**13 - Bank Stabilization**

**Nationwide Permit (NWP) Number:**

**33 - Temporary Construction**

**NWP Number Other:**

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

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

check all that apply

- ☒ 401 Water Quality Certification - Regular  
☐ Non-404 Jurisdictional General Permit  
☐ Individual Permit

- ☐ 401 Water Quality Certification - Express  
☐ Riparian Buffer Authorization

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

**For the record only for DWR 401 Certification:**

☐ Yes ☒ No

**For the record only for Corps Permit:**

☐ Yes ☒ No

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

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

☐ Yes ☒ No

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

☐ Yes ☒ No

**1h. 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? \***

Erin Cheely

**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) ☐ Agent/Consultant  
(Check all that apply)

## 2. Owner Information

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

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

**2c. Responsible party:**

(for Corporations)

**2d. Address**

Street Address

Address Line 2

City

State / Province / Region

Postal / Zip Code

Country

**2e. Telephone Number:**

(xxx)xxx-xxxx

**2f. Fax Number:**

(xxx)xxx-xxxx

**2g. Email Address: \***

ekcheely@ncdot.gov

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**3. Applicant Information (if different from owner)**

**3a. Applicant is:**

☐ Agent

☐ Other

If other please specify.

**3b. Name:**

**3c. Business Name:**

(if applicable)

**3d. Address**

Street Address

Address Line 2

City

State / Province / Region

Postal / Zip Code

Country

**3e. Telephone Number:**

(xxx)xxx-xxxx

**3f. Fax Number:**

(xxx)xxx-xxxx

**3g. Email Address: \***

ekcheely@ncdot.gov

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## C. Project Information and Prior Project History

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### 1. Project Information

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

B-4979

**1b. Subdivision name:**

(if appropriate)

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

Jonesville, NC

**1d. Driving directions \***

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

See GPS instructions

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### 2. Project Identification

**2a. Property Identification Number:**

(tax PIN or parcel ID)

**2b. Property size:**

(in acres)

## 2c. Project Address

Street Address

Address Line 2

City

State / Province / Region

Postal / Zip Code

Country

## 2d. Site coordinates in decimal degrees

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

**Latitude:** \*

**36.22979**

ex: 34.208504

**Longitude:** \*

**-80.83932**

-77.796371

## 3. Surface Waters

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

Jonesville Creek

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

C

[Surface Water Lookup](#)

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

Yadkin-PeeDee

[River Basin Lookup](#)

## 4. Project Description

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

Rural, Farmland, light urban development

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

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

File type must be pdf

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

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

File type must be pdf

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

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

(intermittent and perennial)

140 linear ft

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

REPLACE BRIDGE 59 OVER JONESVILLE CREEK ON US 21 BUSINESS

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

Existing 2 span (2@32') bridge on US21BUS spans Jonesville Creek. The existing bridge consists of a reinforced deck girders on solid concrete bent and concrete vertical abutments. The existing bridge was constructed in 1922 and reconstructed and widened in 1940. Various components of the superstructure and substructure have deteriorated to a point where maintenance activities cannot extend the life of the structure. The bridge is considered functionally obsolete due to substandard geometrics and has a deck geometry appraisal of 3 out of 9 possible points. Deck surface and joints are in critical need of repairs. The bridge is approaching the end of its useful life. Replacement of the bridge will result in safer traffic operations. The proposed bridge is a 2 span (2@60') prestressed concrete box beam bridge with sloping abutment at end bent 1, and a vertical / sloping abutment at end bent 2. The proposed bridge will not have deck drains, eliminating discharge directly into the creek. Runoff leaving the bridge deck is collected by inlets at the west end and conveyed to the floodplain where the flow diffuses before entering Jonesville Creek downstream of the bridge. Roadway drainage from the beginning of the project to the bridge is allowed to sheetflow off the roadway. On the left side, runoff diffuses into the floodplain of Jonesville Creek. On the right side, runoff diffuses down the fill slope and eventually enters an unnamed tributary of Jonesville creek, which parallels the existing road. Roadway drainage from the east end of the bridge to the end of the project is collected along the both sides of the roadway in a curb and gutter sections with a single storm drain network, which discharges onto a rip-rap pad on the bank of the creek at the bridge. Due to the land use of the adjacent properties at the bridge, with businesses fronting the street, eliminate the possibility of treatment of runoff in ditches. The discharge point will be lined with rip rap to diffuse flow before entering the creek. The existing drainage patterns are left unchanged. Construction of the bridge will occur while the road is closed, using a detour route. Streambank stabilization will be installed under and adjacent to the bridge on the east end.

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

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

B-4979 FINAL Permit Drawings 9\_27\_18.pdf

2.38MB

B4979\_RDY\_100Percent 9\_27\_18.pdf

5.86MB

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:**

Single perennial stream crossing

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

☐ Preliminary

☐ Approved

☐ Unknown

☒ N/A

**Corps AID Number:**

Example: SAW-2017-99999

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

**Name (if known):**

**Agency/Consultant Company:**

**Other:**

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

**5d1. Jurisdictional determination upload**

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

File type must be PDF

## 6. Project History

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

☐ Yes

☒ No

☐ Unknown

## 7. Future Project Plans

7a. Is this a phased project? \*

☐ Yes

☒ No

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

## 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.

	3a. Reason for impact *	3b. Impact type *	3c. Type of impact *	3d. Stream name *	3e. Stream Type *	3f. Type of Jurisdiction *	3g. Stream width *	3h. Impact length *
S1	Bridge 59 Map label (e.g. Road Crossing 1)	T Permanent (P) or Temporary (T)	Other	Jonesville Creek	Perennial Perennial (PER) or intermittent (INT)	Corps	40 Average (feet)	60 (linear feet)
S2	Bridge 59 Map label (e.g. Road Crossing 1)	P Permanent (P) or Temporary (T)	Bank Stabilization	Jonesville Creek	Perennial Perennial (PER) or intermittent (INT)	Corps	40 Average (feet)	89 (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:

89

3i. Total temporary stream impacts:

60

3i. Total stream and tributary impacts:

149

3j. Comments:

Temporary stream impacts from bridge demolition/dewatering/causeway

## 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 proposed bridge will not have deck drains, eliminating discharge directly into the creek. Runoff leaving the bridge deck is collected by inlets

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

Streambank stabilization will be installed under and adjacent to the bridge on the east end.

## 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:

Bank stabilization is not considered loss of waters

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:

### 2. Stormwater Management Plan

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

☒ Yes ☐ No

## G. Supplementary Information

### 1. Environmental Documentation

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

☒ Yes ☐ No

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

☒ Yes ☐ No

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

☒ Yes ☐ No

#### NEPA or SEPA Final Approval Letter

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

FILE TYPE MUST BE PDF

## 2. Violations (DWR Requirement)

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

☐ Yes ☒ No

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

☐ Yes ☒ No

## 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

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](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?** \*

NFWS Endangered and Threatened Species and Species of Concern by County for North Carolina

NHP Database

## 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?** \*

NFWS Endangered and Threatened Species and Species of Concern by County for North Carolina

## 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?** \*

National Register of Historic Places

### 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

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

FEMA Floodplain Map

## Miscellaneous

### Miscellaneous attachments not previously requested.

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

B-4979 Cover Letter (003)signature.pdf

51.47KB

B-4979 NLEB SLOPES Yadkin.pdf

106.36KB

B-4979 NLEB Yadkin.pdf

77.94KB

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**

A rectangular box containing a handwritten signature in black ink that reads "Carla Dagnino".

**Date**

9/28/2018

		<div>North Carolina Department of Transportation</div> <div>Highway Stormwater Program</div> <div>STORMWATER MANAGEMENT PLAN</div> <div>FOR NCDOT PROJECTS</div>									
(Version 2.07; Released October 2016)											
WBS Element: 39899.1.1		TIP No.: B-4979		County(ies): Yadkin			Page 1 of 1				
General Project Information											
WBS Element:		39899.1.1		TIP Number:		B-4979		Project Type: Bridge Replacement		Date: 3/21/2018	
NCDOT Contact:		Heath Slaughter				Contractor / Designer:		MI Engineering / Andrew Nottingham, PE			
		Address: NCDOT Division 11 801 Statesville Rd North Wilkesboro NC 28659						Address: 1011 Schaub Drive Suite 100 Raleigh, NC 27606			
		Phone: 336-903-9202						Phone: 919-851-6606			
		Email: <a href="mailto:hslaughter@ncdot.gov">hslaughter@ncdot.gov</a>						Email: <a href="mailto:anottingham@mi-engineers.com">anottingham@mi-engineers.com</a>			
City/Town:		Jonesville, NC				County(ies):		Yadkin			
River Basin(s):		Yadkin-Pee Dee				CAMA County?		No			
Wetlands within Project Limits?		No									
Project Description											
Project Length (lin. miles or feet):		.189 MI		Surrounding Land Use:		Rural, Farmland, light urban development					
		Proposed Project				Existing Site					
Project Built-Up Area (ac.)		1.06 ac.				1.01 ac.					
Typical Cross Section Description:		2 lane undivided highway with 12' lanes at normal crown and up to 8' paved shoulders				2 lane undivided highway with 11' lanes, normal crown and up to 6' paved shoulders					
Annual Avg Daily Traffic (veh/hr/day):		Design/Future: 4600		Year: 2040		Existing: 4000		Year: 2020			
General Project Narrative: (Description of Minimization of Water Quality Impacts)		Existing 2 span (2@32') bridge on US21BUS spans Jonesville Creek. The existing bridge consists of a reinforced deck girders on solid concrete bent and concrete vertical abutments. The existing bridge was constructed in 1922 and reconstructed and widened in 1940. Various components of the superstructure and substructure have deteriorated to a point where maintenance activities cannot extend the life of the structure. The bridge is considered functionally obsolete due to substandard geometrics and has a deck geometry appraisal of 3 out of 9 possible points. Deck surface and joints are in critical need of repairs. The bridge is approaching the end of its useful life. Replacement of the bridge will result in safer traffic operations. The proposed bridge is a 2 span (2@60') prestressed concrete box beam bridge with sloping abutment at end bent 1, and a vertical / sloping abutment at end bent 2. The proposed bridge will not have deck drains, eliminating discharge directly into the creek. Runoff leaving the bridge deck is collected by inlets at the west end and conveyed to the floodplain where the flow diffuses before entering Jonesville Creek downstream of the bridge. Roadway drainage from the beginning of the project to the bridge is allowed to sheetflow off the roadway. On the left side, runoff diffuses into the floodplain of Jonesville Creek. On the right side, runoff diffuses down the fill slope and eventually enters an unnamed tributary of Jonesville creek, which parallels the existing road. Roadway drainage from the east end of the bridge to the end of the project is collected along the both sides of the roadway in a curb and gutter sections with a single storm drain network, which discharges onto a rip-rap pad on the bank of the creek at the bridge. Due to the land use of the adjacent properties at the bridge, with businesses fronting the street, eliminate the possibility of treatment of runoff in ditches. The discharge point will be lined with rip rap to diffuse flow before entering the creek. The existing drainage patterns are left unchanged. Construction of the bridge will occur while the road is closed, using a detour route. Streambank stabilization will be installed under and adjacent to the bridge on the east end.									
Waterbody Information											
Surface Water Body (1):		Jonesville Creek				NCDWR Stream Index No.:		12-55-1			
NCDWR Surface Water Classification for Water Body				Primary Classification:		Class C					
				Supplemental Classification:							
Other Stream Classification:		None									
Impairments:		None									
Aquatic T&E Species?		No		Comments:							
NRTR Stream ID:								Buffer Rules in Effect:		N/A	
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)									

09/28/19

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

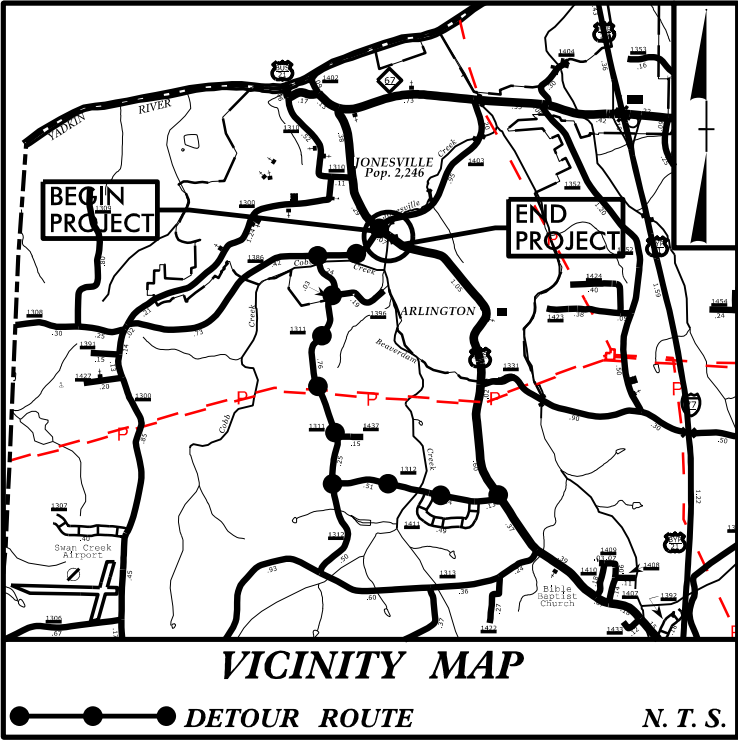
STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

YADKIN COUNTY

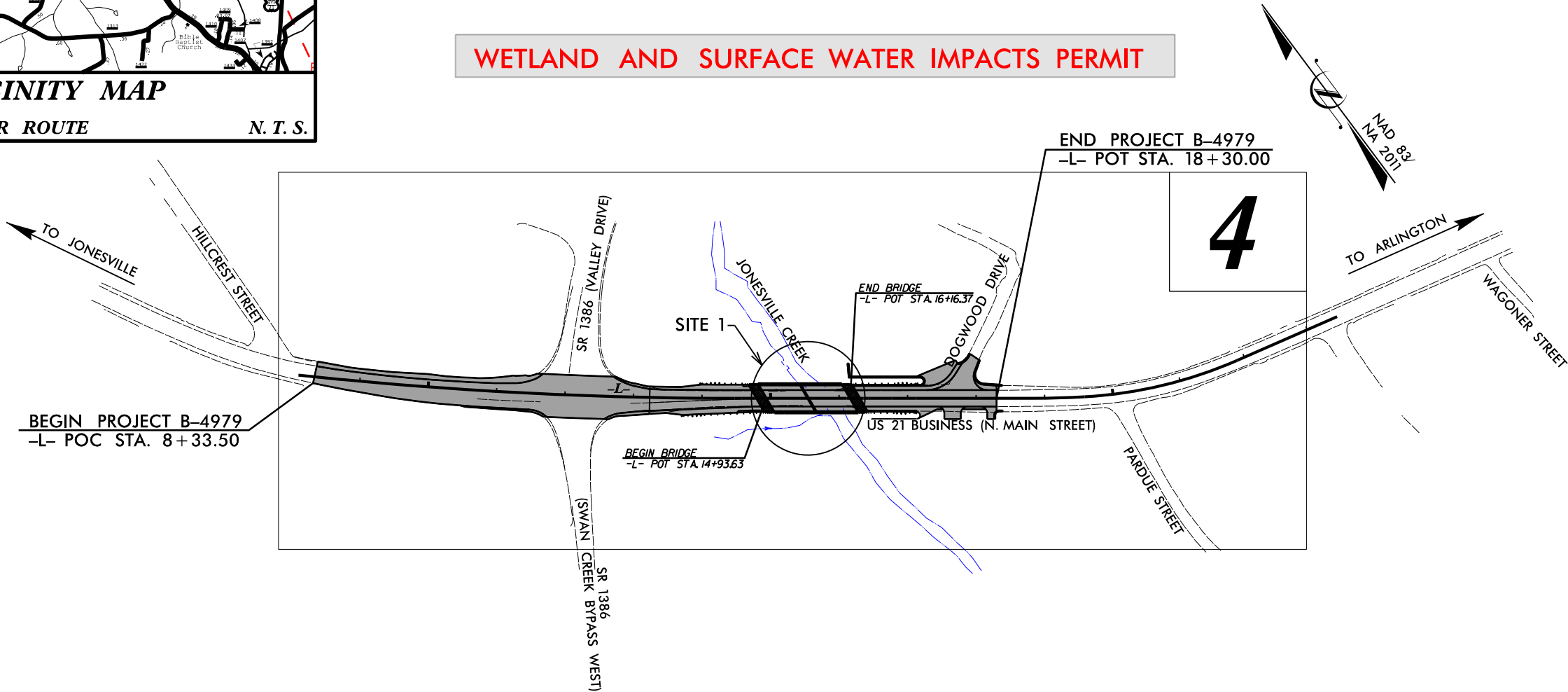
LOCATION: REPLACE BRIDGE 59 OVER JONESVILLE CREEK  
ON US 21 BUSINESS (N. MAIN STREET)  
IN JONESVILLE  
TYPE OF WORK: GRADING, DRAINAGE, PAVING AND STRUCTURE

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-4979	1	
STATE PROJ. NO.	P.A. PROJ. NO.	DESCRIPTION	
39899.1.1	N/A	P. E.	
39899.2.1	N/A	R/W & UTIL.	

PERMIT DRAWING  
SHEET 1 OF 6



WETLAND AND SURFACE WATER IMPACTS PERMIT

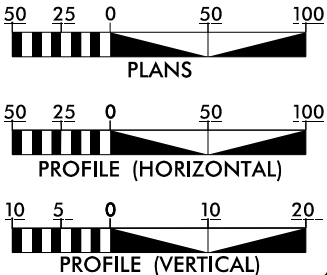


THIS PROJECT IS WITHIN THE CITY LIMITS OF JONESVILLE.

CLEARING ON THIS PROJECT SHALL BE PERFORMED  
TO THE LIMITS ESTABLISHED BY METHOD III.

DOCUMENT NOT CONSIDERED FINAL  
UNLESS ALL SIGNATURES COMPLETED

GRAPHIC SCALES



DESIGN DATA

ADT 2020 = 4000 VPD  
ADT 2040 = 4600 VPD  
K = 2 %  
D = 55 %  
T = 3 % \*  
V = 40 MPH  
\* TTST = 1% DUAL 2%  
FUNC CLASS =  
MINOR ARTERIAL  
REGIONAL TIER

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT B-4979 = 0.166 MILES  
LENGTH BRIDGE TIP PROJECT B-4979 = 0.023 MILES  
TOTAL LENGTH TIP PROJECT B-4979 = 0.189 MILES

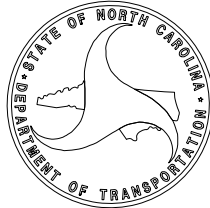
Prepared In the Office of:  
**CDM Smith**  
FOR THE NORTH CAROLINA DEPT. OF TRANSPORTATION  
2018 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:  
OCTOBER 15, 2018  
LETTING DATE:  
MARCH 19, 2019

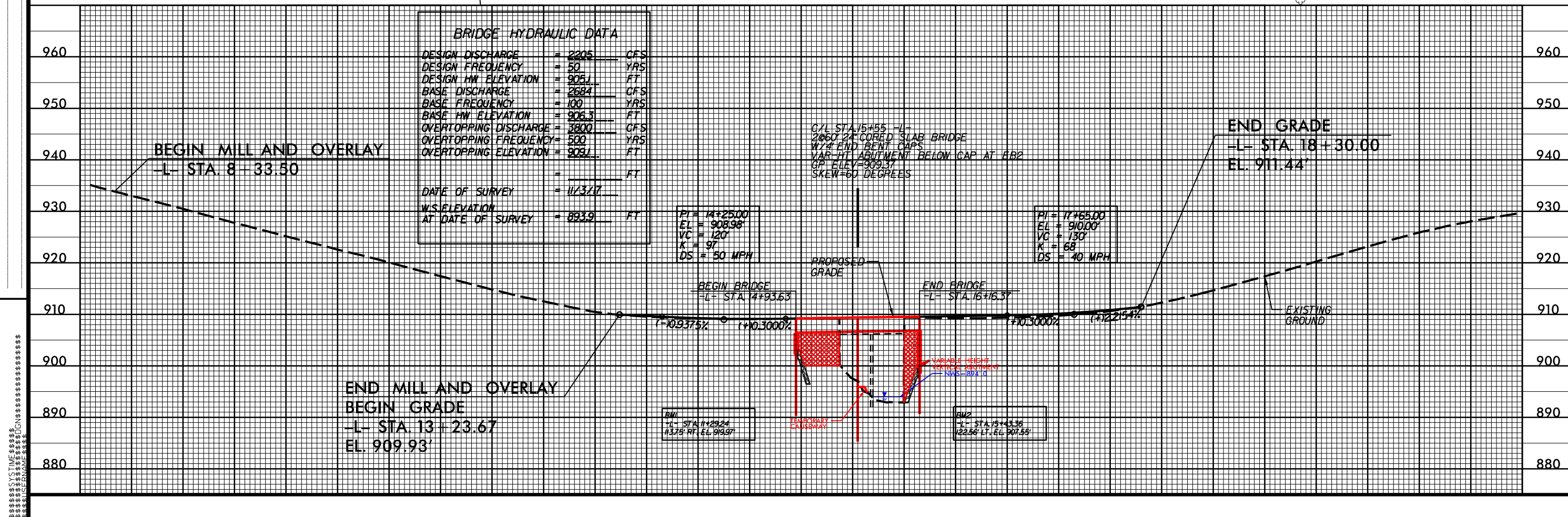
DAVID J. CLODGO, P. E.  
PROJECT ENGINEER  
KIT A. PERSIANI, P. E.  
PROJECT DESIGN ENGINEER  
DAVID STUTTS, P. E.  
NCDOT CONTACT

HYDRAULICS ENGINEER

SIGNATURE: P.E.  
ROADWAY DESIGN  
ENGINEER  
SIGNATURE: P.E.







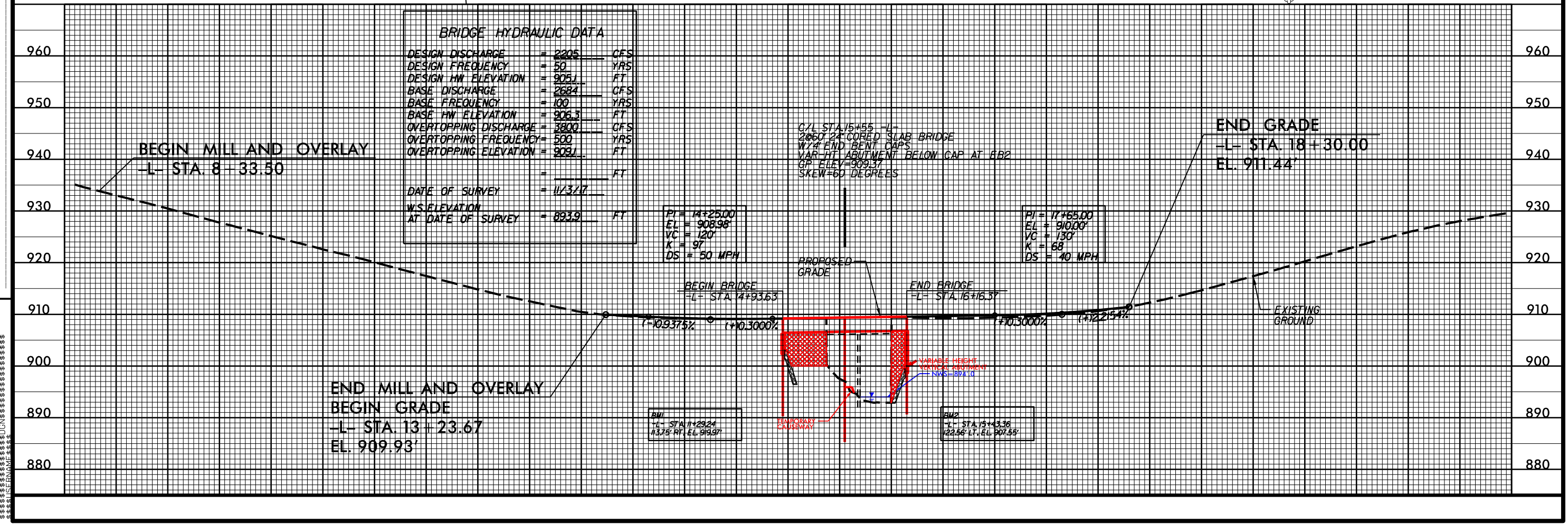
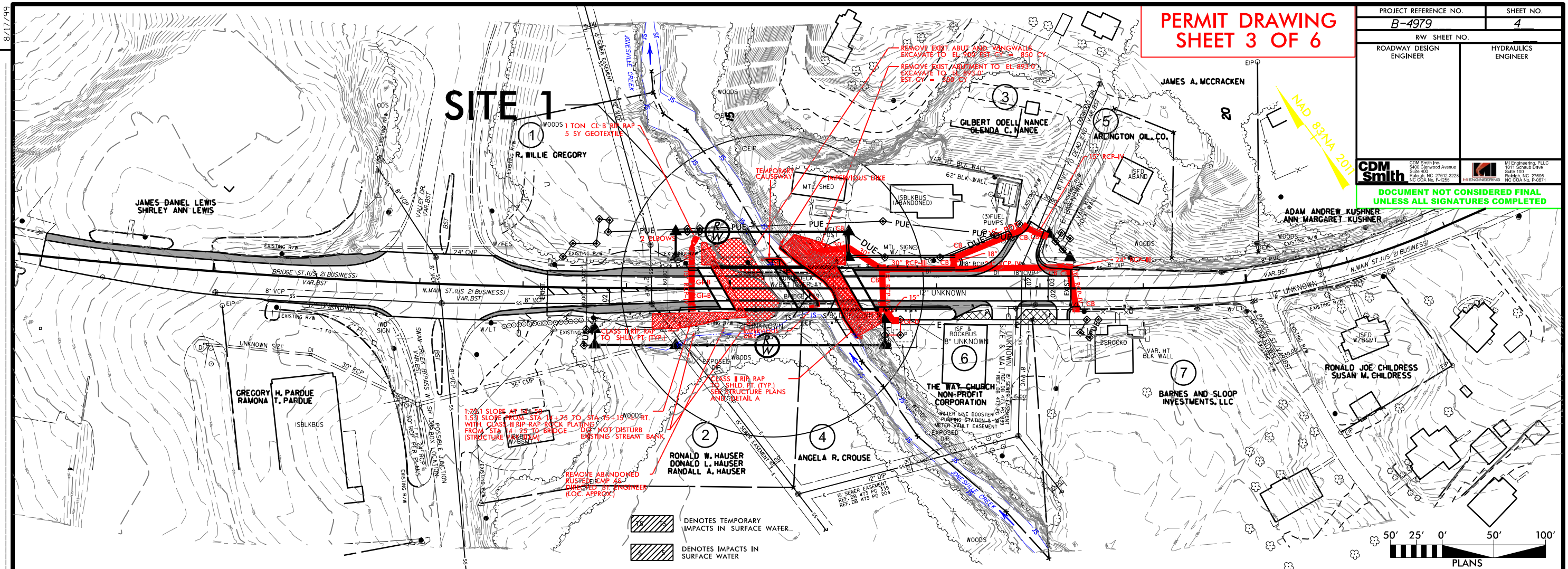


8/17/99

REVISIONS

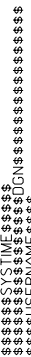
PERMIT DRAWING  
SHEET 3 OF 6

PROJECT REFERENCE NO. B-4979		SHEET NO. 4	
RW SHEET NO.		HYDRAULICS ENGINEER	
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
CDM Smith 4401 Glenwood Avenue Suite 400 Raleigh, NC 27612-3229 NC CDA No. E-12205		M. Engineering, PLLC 1011 S. Main Drive Suite 100 Raleigh, NC 27606 NC CDA No. F-0871	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED			







## REVISIONS

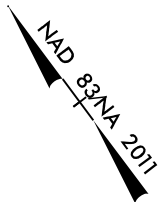




PERMIT DRAWING  
SHEET 4 OF 6

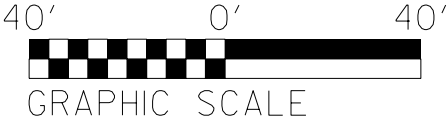
 DENOTES TEMPORARY IMPACTS IN SURFACE WATER

 DENOTES IMPACTS IN SURFACE WATER

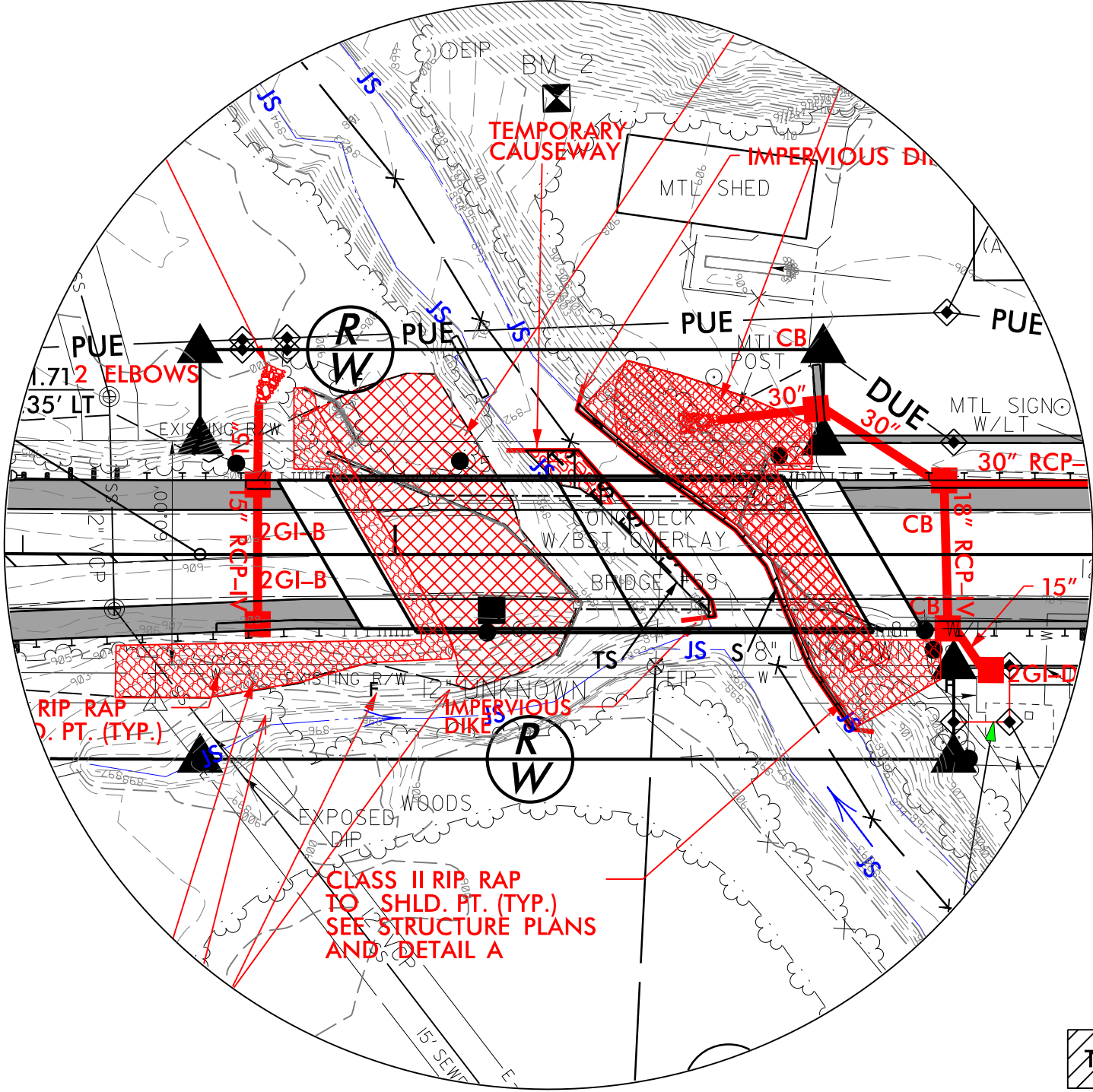
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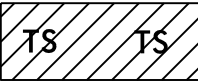
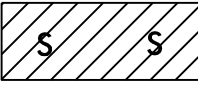


PROJECT REFERENCE NO. B-4979		SHEET NO. 4
RW SHEET NO.		
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER
 CDM Smith Inc. 3401 Germann Avenue Suite 400 Raleigh, NC 27612-3225 NC CDA No. E-1225		 M Engineering, PLLC 10111 Schaub Drive Suite 100 Raleigh, NC 27606 NC CDA No. F-0871
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED		



PERMIT DRAWING  
SHEET 5 OF 6



-  DENOTES TEMPORARY IMPACTS IN SURFACE WATER
-  DENOTES IMPACTS IN SURFACE WATER

REVISIONS

8/17/99

SYSTEMATIC \$\$\$\$  
DRAWING \$\$\$\$  
USER NAME \$\$\$\$

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	15+41/15+86 -L-	Bridge Demolition /Dewatering/Causeway							< 0.01		60	
1	15+51/16+22 -L-	Bank Stabilization (1)						< 0.01		89		
TOTALS*:								< 0.01	< 0.01	89	60	0

NOTES:

(1) Bank stabilization linear foot impact does not include bank hardening along existing channel

(2) Total tree clearing area = 0.11 ac

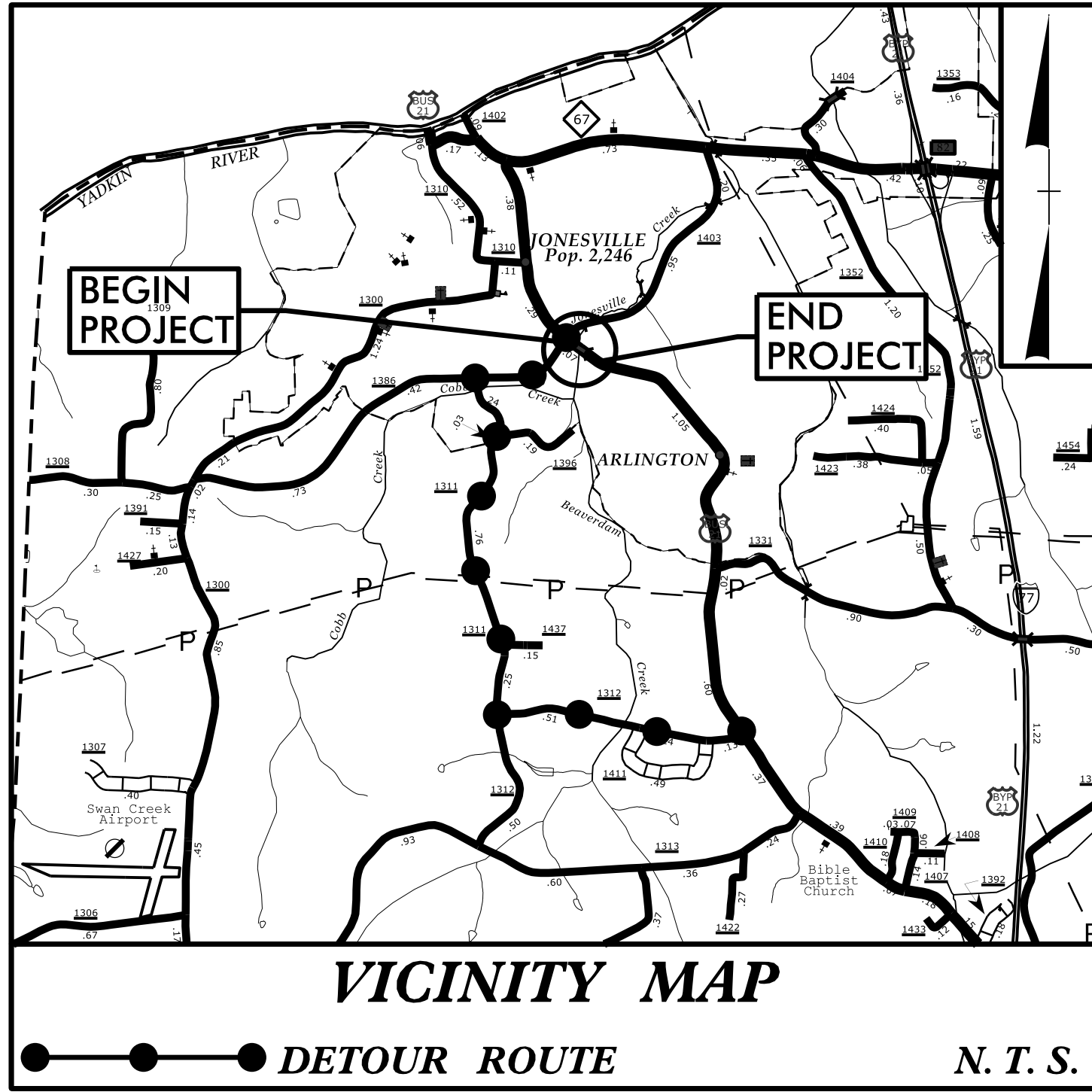
NC DEPARTMENT OF TRANSPORTATION  
DIVISION OF HIGHWAYS  
08/15/2018  
YADKIN COUNTY  
B-4979  
39899.1.1  
SHEET 6 OF 6

09/08/99

TIP PROJECT: B-4979

CONTRACT: C204180

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



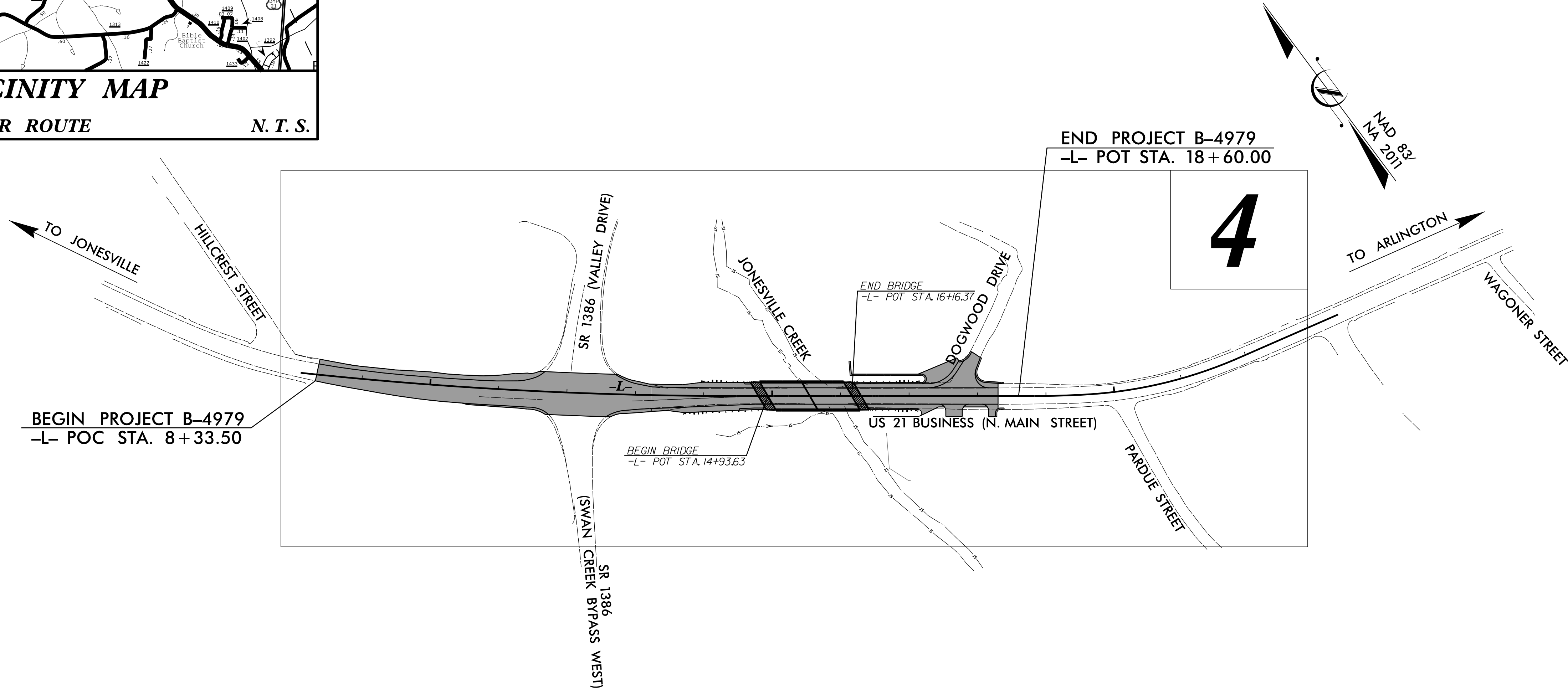
STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

YADKIN COUNTY

LOCATION: REPLACE BRIDGE 59 OVER JONESVILLE CREEK  
ON US 21 BUSINESS (N. MAIN STREET)  
IN JONESVILLE

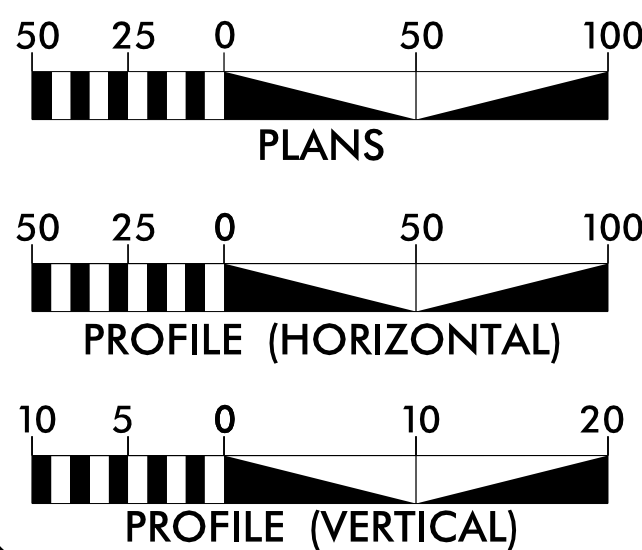
TYPE OF WORK: GRADING, DRAINAGE, PAVING AND STRUCTURE

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-4979	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
39899.1.1	N/A	P. E.	
39899.2.1	N/A	RW & UTIL.	
39899.3.1	N/A	CONST.	



DOCUMENT NOT CONSIDERED FINAL  
UNLESS ALL SIGNATURES COMPLETED

GRAPHIC SCALES



DESIGN DATA

ADT 2020 = 4000 VPD  
ADT 2040 = 4600 VPD  
K = 9 %  
D = 55 %  
T = 3 % \*  
V = 40 MPH  
\* TTST =1% DUAL 2%  
FUNC CLASS =  
MINOR ARTERIAL  
REGIONAL TIER

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT B-4979 = 0.171 MILES  
LENGTH BRIDGE TIP PROJECT B-4979 = 0.023 MILES  
TOTAL LENGTH TIP PROJECT B-4979 = 0.194 MILES

CDM  
Smith

FOR THE NORTH CAROLINA DEPT. OF TRANSPORTATION  
2018 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:  
JULY 20, 2018

LETTING DATE:  
MARCH 19, 2019

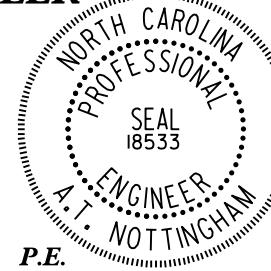
Prepared in the Office of:  
CDM Smith Inc.  
5400 Glenwood Avenue  
Suite 400  
Raleigh, NC 27612-3228  
NC CDA No. F-1255

DAVID J. CLODGO, P. E.  
PROJECT ENGINEER

KIT A. PERSIANI, P. E.  
PROJECT DESIGN ENGINEER

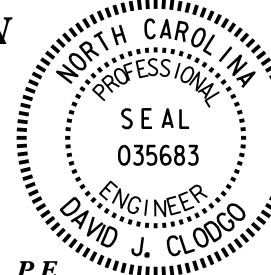
DAVID STUTTS, P. E.  
NCDOT CONTACT

HYDRAULICS ENGINEER

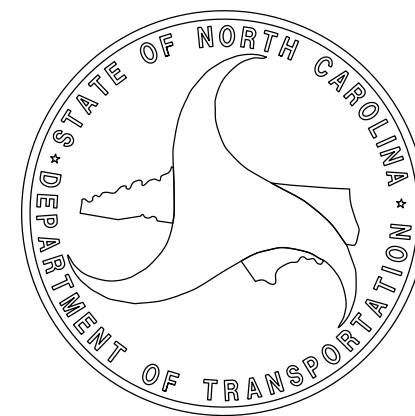


SIGNATURE:

ROADWAY DESIGN  
ENGINEER



SIGNATURE:



PROJECT REFERENCE NO.	SHEET NO.
B-4979	1A
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

ROADWAY DESIGN  
ENGINEER





CDM Smith Inc.  
2401 Glenwood Avenue  
Suite 400  
Raleigh, NC 27612-3225  
NC CDA No. F-1255



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

BOUNDARIES AND PROPERTY:

State Line	
County Line	
Township Line	
City Line	
Reservation Line	
Property Line	
Existing Iron Pin	
Computed Property Corner	
Property Monument	
Parcel/Sequence Number	
Existing Fence Line	
Proposed Woven Wire Fence	
Proposed Chain Link Fence	
Proposed Barbed Wire Fence	
Existing Wetland Boundary	
Proposed Wetland Boundary	
Existing Endangered Animal Boundary	
Existing Endangered Plant Boundary	
Existing Historic Property Boundary	
Known Contamination Area: Soil	
Potential Contamination Area: Soil	
Known Contamination Area: Water	
Potential Contamination Area: Water	
Contaminated Site: Known or Potential	

BUILDINGS AND OTHER CULTURE:

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

HYDROLOGY:

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

RAILROADS:

Standard Gauge	
RR Signal Milepost	
Switch	
RR Abandoned	
RR Dismantled	

RIGHT OF WAY & PROJECT CONTROL:

Secondary Horiz and Vert Control Point	
Primary Horiz Control Point	
Primary Horiz and Vert Control Point	
Exist Permanent Easement Pin and Cap	
New Permanent Easement Pin and Cap	
Vertical Benchmark	
Existing Right of Way Marker	
Existing Right of Way Line	
New Right of Way Line	
New Right of Way Line with Pin and Cap	
New Right of Way Line with Concrete or Granite RW Marker	
New Control of Access Line with Concrete C/A Marker	
Existing Control of Access	
New Control of Access	
Existing Easement Line	
New Temporary Construction Easement	
New Temporary Drainage Easement	
New Permanent Drainage Easement	
New Permanent Drainage /Utility Easement	
New Permanent Utility Easement	
New Temporary Utility Easement	
New Aerial Utility Easement	

ROADS AND RELATED FEATURES:

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

VEGETATION:

Single Tree	
Single Shrub	

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

Hedge	
Woods Line	
Orchard	
Vineyard	

EXISTING STRUCTURES:

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

UTILITIES:

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

TELEPHONE:

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

WATER:

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

TV:

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

GAS:

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

SANITARY SEWER:

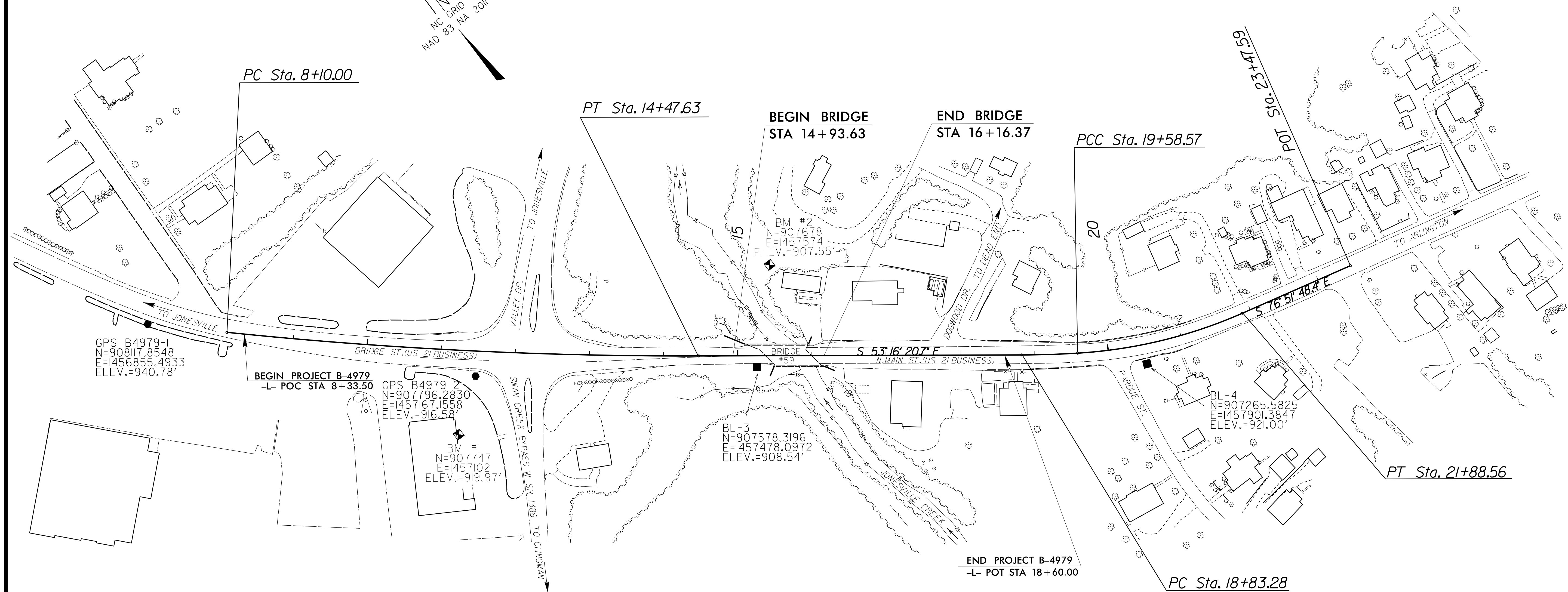
Sanitary Sewer Manhole	
Sanitary Sewer Cleanout	
U/G Sanitary Sewer Line	
Above Ground Sanitary Sewer	
SS Forced Main Line LOS B (S.U.E.*)	
SS Forced Main Line LOS C (S.U.E.*)	
SS Forced Main Line LOS D (S.U.E.*)	

MISCELLANEOUS:

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

# ***SURVEY CONTROL SHEET***

***B-4979***



DATUM	DESCRIPTION
01-01-2020	Initial setup and data collection.
02-01-2020	Data analysis and model fitting.
03-01-2020	Model validation and parameter estimation.
04-01-2020	Final results and conclusions.

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT  
IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY  
NCDOT FOR MONUMENT "B4979-2"  
WITH NAD 83/NA 2011 STATE PLANE GRID COORDINATES OF  
NORTHING: 907796.2830(++) EASTING: 1457167.1558(++)  
ELEVATION: 916.58' (++)  
THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT  
(GROUND TO GRID) IS: 0.9999798962  
THE N.C. LAMBERT GRID BEARING AND  
LOCALIZED HORIZONTAL GROUND DISTANCE FROM  
"B4979-2" TO -L- STATION 8+10.00 IS  
N 43°06'04.79" 340.51'  
ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES  
VERTICAL DATUM USED IS NAVD 88

BL	POINT	DESC.	NORTH	EAST	ELEVATION	L STATION	OFFSET
GPS-1		B4979-1	908117.8548	1456855.4933	940.78	OUTSIDE PROJECT LIMITS	
GPS-2		B4979-2	907796.2830	1457167.1558	916.58	11+47.92	33.81 RT
BL-3		BL-3	907578.3196	1457478.0972	908.54	15+25.92	15.03 RT
BL-4		BL-4	907265.5825	1457901.3847	921.00	20+47.88	26.51 RT

```

*****
BM#1          ELEVATION = 919.97'
N 907747      E 1457102
L STATION 11+29.00 114' RIGHT
CHISELED "SQUARE" IN CONCRETE PAD
*****
*****
BM#2          ELEVATION = 907.55'
N 907678      E 1457574
L STATION 15+43.00 123' LEFT
RAILROAD SPIKE IN 36" OAK TREE
*****
*****

```

NOTES:

1. PROJECT CONTROL WAS ESTABLISHED USING GNSS, THE GLOBAL NAVIGATION SATELLITE SYSTEM.
2. THE SURVEY CONTROL DATA FOR THIS PROJECT HAS BEEN COMPILED FROM VARIOUS SOURCES. IF FURTHER INFORMATION REGARDING PROJECT CONTROL IS NEEDED, PLEASE CONTACT THE LOCATION AND SURVEYS UNIT.

6/2/99

PROJECT REFERENCE NO.	SHEET NO.
B-4979	1C-2
Location and Surveys	

# SURVEY CONTROL SHEET

B-4979

L			
TYPE	STATION	NORTH	EAST
PC	8+10.00	908044.9074	1456934.4864
PT	14+47.63	907637.1867	1457424.3339
PC	18+83.28	907376.6624	1457773.5032
PCC	19+58.57	907333.4094	1457835.1182
PT	21+88.56	907243.0128	1458045.2906
POT	23+47.59	907206.8689	1458200.1620

ROW MARKER IRON PIN AND CAP-E				
ALIGN	STATION	OFFSET	NORTH	EAST
L	13+70.00	40.06	907652.2153	1457338.0485
L	13+70.00	55.00	907640.3576	1457328.9600
L	14+47.63	55.00	907593.1036	1457391.4451
L	14+47.63	-30.50	907661.6321	1457442.5733
L	14+47.63	-55.00	907681.2673	1457457.2263
L	16+15.00	-30.18	907561.2852	1457576.5287
L	16+15.00	-55.00	907581.1782	1457591.3713
L	16+50.00	29.88	907492.2175	1457568.6642
L	16+50.00	55.00	907472.0841	1457553.6421
L	18+09.00	-52.65	907463.2805	1457745.4546
L	18+29.00	-29.79	907432.9983	1457747.8138

ROW MARKER PERMANENT EASEMENT-E				
ALIGN	STATION	OFFSET	NORTH	EAST
L	13+38.04	-29.70	907726.9990	1457355.2977
L	13+47.44	-42.73	907731.5885	1457370.6596
L	13+59.73	55.26	907646.4634	1457320.5811
L	13+61.72	40.12	907657.2429	1457331.3998
L	13+70.37	-43.07	907717.9708	1457388.9105
L	13+72.87	-66.79	907735.2945	1457405.3015
L	13+81.71	-54.35	907720.0969	1457404.6977
L	13+82.93	-65.74	907728.4184	1457412.5681
L	14+59.00	-55.00	907674.4679	1457466.3392
L	14+59.00	-57.69	907676.6239	1457467.9478
L	14+71.00	-55.00	907667.2918	1457475.9570
L	14+71.00	-58.15	907669.8165	1457477.8408
L	16+48.15	-65.04	907569.4010	1457623.9446
L	16+50.00	-30.12	907540.3068	1457604.5449
L	16+50.00	45.00	907480.0990	1457559.6223
L	16+65.00	29.91	907483.2233	1457580.6686
L	16+65.00	45.00	907471.1288	1457571.6446
L	17+03.42	-30.02	907508.2809	1457647.3005
L	17+55.31	-51.80	907494.7065	1457701.9144
L	17+73.61	-49.54	907481.9515	1457715.2301
L	17+80.19	-62.25	907488.2035	1457728.1046
L	18+15.29	-45.46	907453.7563	1457746.1963
L	18+20.80	-53.76	907457.1137	1457755.5760
L	18+22.12	-37.65	907443.4123	1457747.0000
L	18+29.20	-48.33	907447.7383	1457759.0613
L	18+39.05	42.69	907368.8965	1457712.5249
L	18+45.45	30.24	907375.0477	1457725.0997
L	18+47.94	47.27	907359.9093	1457716.9113
L	18+56.69	30.26	907368.3100	1457734.0965

## DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCDOT FOR MONUMENT "B4979-2"  
WITH NAD 83/NA 2011 STATE PLANE GRID COORDINATES OF  
NORTHING: 907796.2830(++) EASTING: 1457167.1558(++)  
ELEVATION: 916.58'(++)  
THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.9999798962  
THE N.C. LAMBERT GRID BEARING AND  
LOCALIZED HORIZONTAL GROUND DISTANCE FROM  
"B4979-2" TO -L- STATION 8+10.00 IS  
N 43°06'04.79" 340.51'  
ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES  
VERTICAL DATUM USED IS NAVD 88

## NOTES:

- PROJECT CONTROL WAS ESTABLISHED USING GNSS, THE GLOBAL NAVIGATION SATELLITE SYSTEM.
- THE SURVEY CONTROL DATA FOR THIS PROJECT HAS BEEN COMPILED FROM VARIOUS SOURCES. IF FURTHER INFORMATION REGARDING PROJECT CONTROL IS NEEDED, PLEASE CONTACT THE LOCATION AND SURVEYS UNIT.



6/2/99

PAVEMENT SCHEDULE			
(FINAL PAVEMENT DESIGN)			
C1	PROP. APPROX. 3" ASPHALT CONCRETE SURFACE COURSE TYPE S9.5B, AT AN AVERAGE RATE OF 165 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.	R1	2'-6" CONCRETE CURB AND GUTTER.
C2	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE TYPE S9.5B, AT AN AVERAGE RATE OF 110 LBS. PER SQ. YD. PER 1" DEPTH, TO BE PLACED IN LAYERS NOT TO EXCEED 1½" IN DEPTH.	R2	8" x 12" CONCRETE CURB.
C3	PROP. APPROX. 1½" ASPHALT CONCRETE SURFACE COURSE TYPE S9.5B, AT AN AVERAGE RATE OF 165 LBS. PER SQ. YD.	R3	SHOULDER BERM GUTTER.
D1	PROP. APPROX. 4" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.	T	EARTH MATERIAL.
D2	PROP. VAR. DEPTH ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1" DEPTH, TO BE PLACED IN LAYERS NOT LESS THAN 2½" IN DEPTH OR GREATER THAN 4" IN DEPTH.	V	MILLING BITUMINOUS PAVEMENT 1½" DEPTH.
E1	PROP. APPROX. 4" ASPHALT CONCRETE BASE COURSE TYPE B25.0C, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.	U	EXISTING PAVEMENT.
E2	PROP. VAR. DEPTH ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1" DEPTH, TO BE PLACED IN LAYERS NOT LESS THAN 3" IN DEPTH OR GREATER THAN 4" IN DEPTH.	W	VARIABLE DEPTH ASPHALT PAVEMENT (SEE -L- WEDGING DETAIL)

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

PROJECT REFERENCE NO.  
B-4979

SHEET NO.  
2A-1

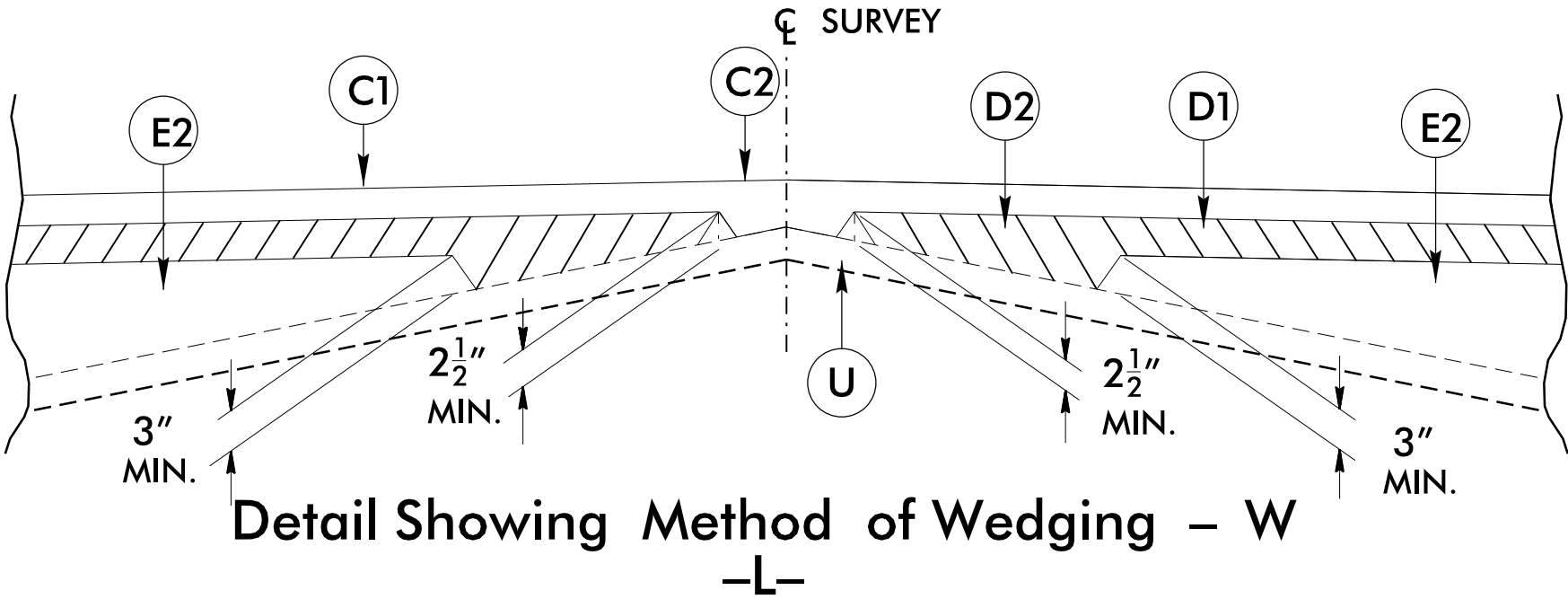
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PAVEMENT DESIGN ENGINEER

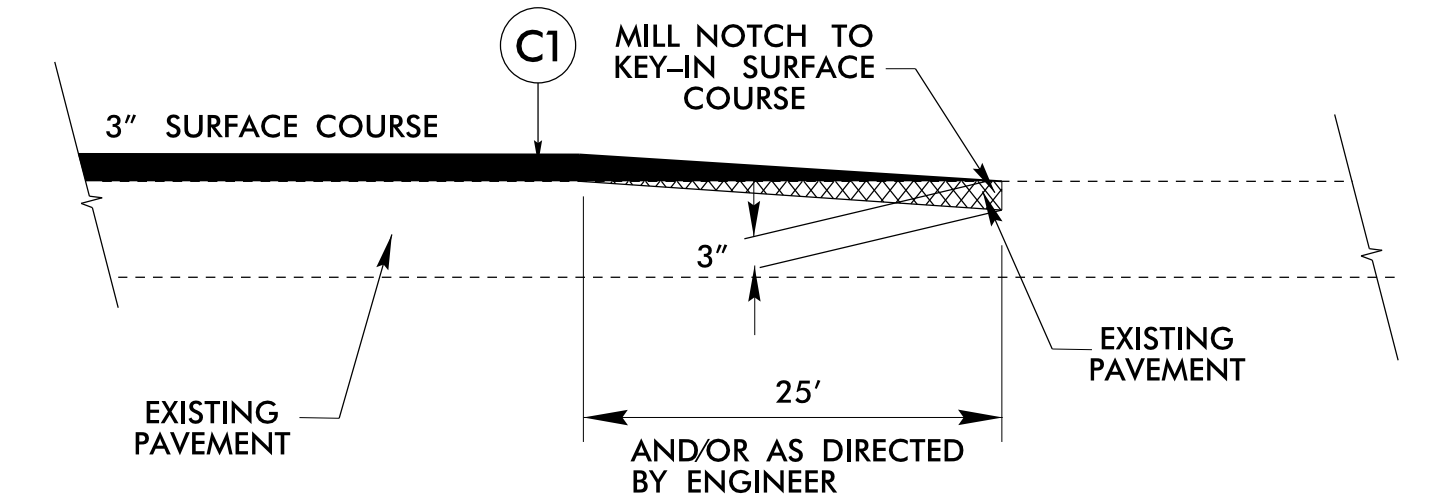
CDM Smith  
5400 Glenwood Avenue  
Suite 400  
Raleigh, NC 27612-3228  
NC CEA No. F-1250

NC DEPARTMENT OF TRANSPORTATION  
PAVEMENT MANAGEMENT UNIT  
1003 MAIL SERVICE CENTER  
RALEIGH, NC 27699-1850

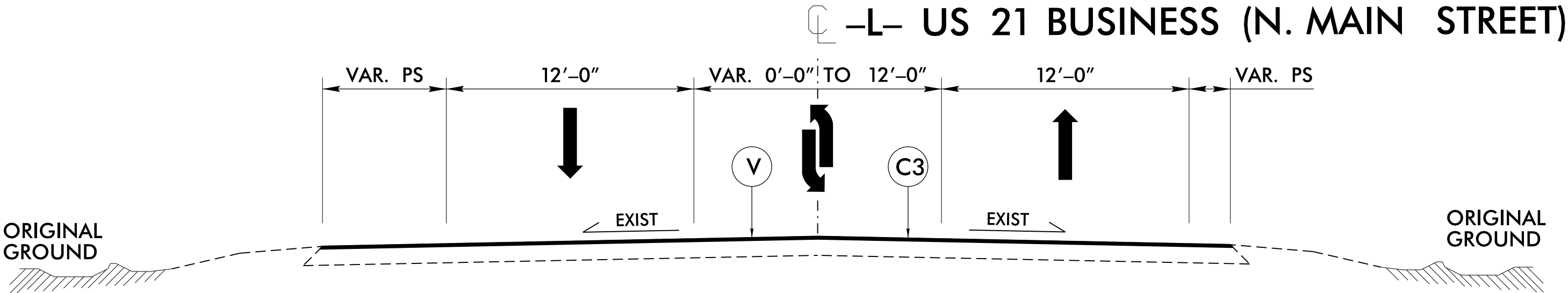
DOCUMENT NOT CONSIDERED FINAL  
UNLESS ALL SIGNATURES COMPLETED



MILLING DETAIL  
INCIDENTAL MILLING AT BEGINEND FOR TIE-INS



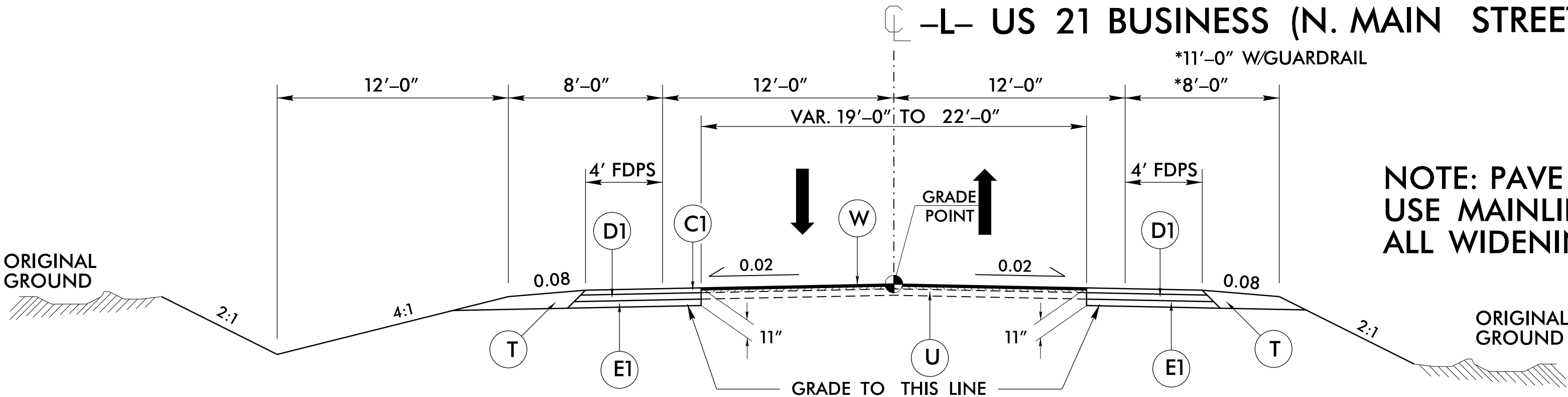
-L- STA. 13 + 23.67 TO STA. 13 + 48.67  
-L- STA. 18 + 05.00 TO STA. 18 + 30.00



TYPICAL SECTION NO. 1

USE TYPICAL SECTION NO. 1

-L- STA. 8 + 33.50 TO 13 + 23.67

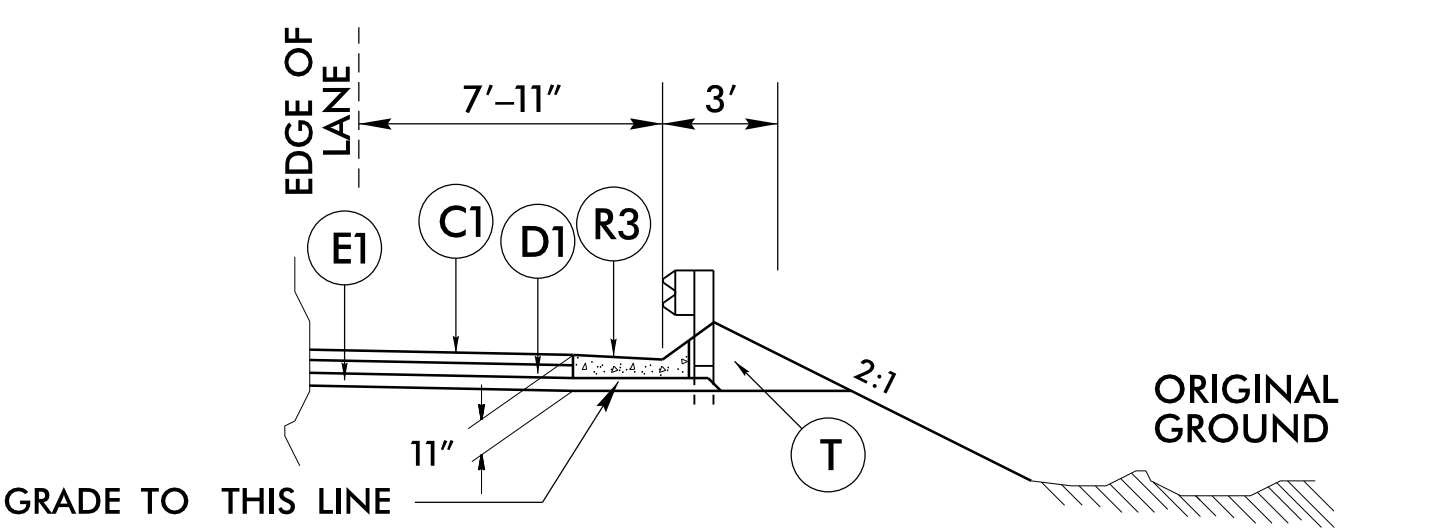


TYPICAL SECTION NO. 2

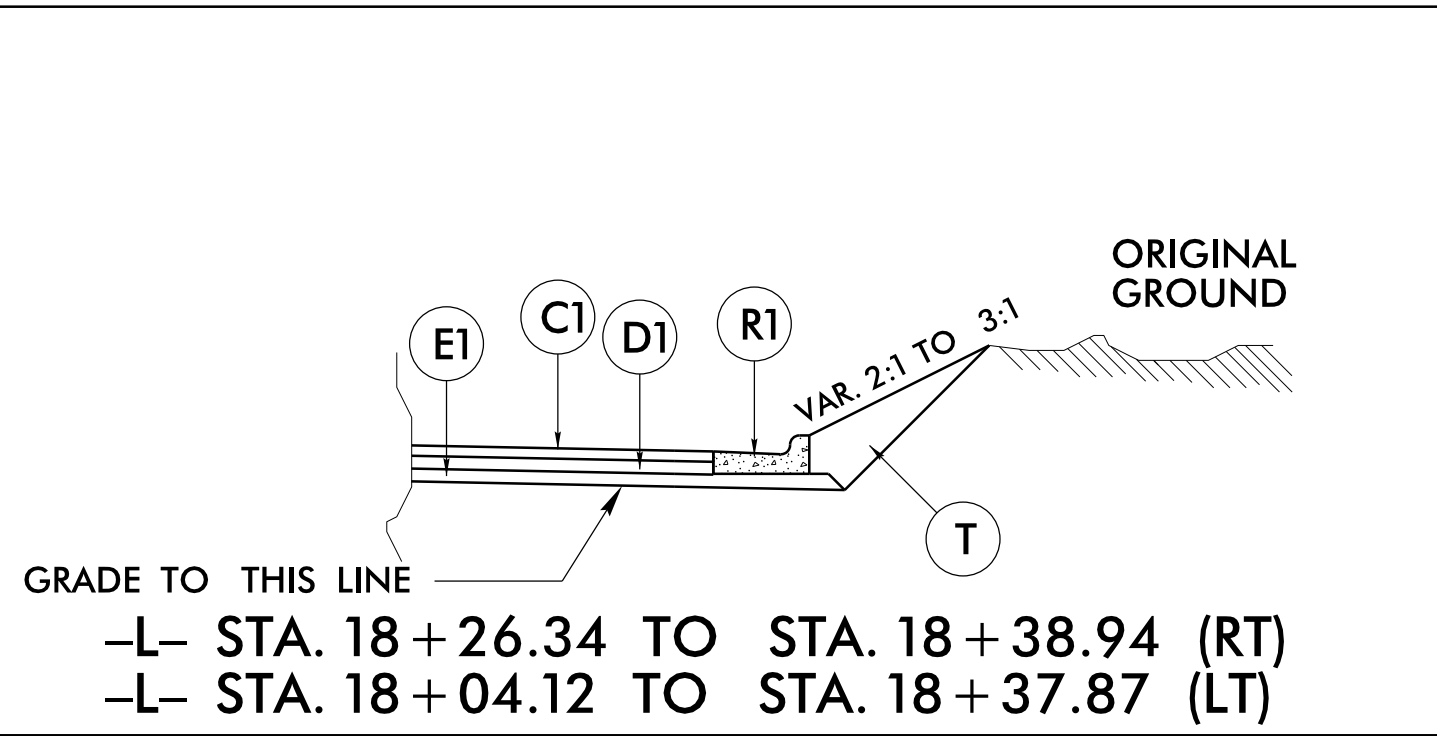
NOTE: PAVE TO FACE OF GUARDRAIL.  
USE MAINLINE PAVEMENT DESIGN FOR ALL WIDENING

USE TYPICAL SECTION NO. 2

-L- STA. 13 + 23.67 TO 13 + 93.63  
-L- STA. 17 + 18.24 TO 18 + 30.00



-L- STA. 14 + 52.06 TO STA. 14 + 79.93 (RT)  
-L- STA. 14 + 59.91 TO STA. 14 + 68.43 (LT)




-L- STA. 18 + 26.34 TO STA. 18 + 38.94 (RT)  
-L- STA. 18 + 04.12 TO STA. 18 + 37.87 (LT)


-SYTIME-  
11:55:00 AM  
C:\Users\p\OneDrive\Projects\B4979\_Rdy\_tup.dgn

6/2/99

PROJECT REFERENCE NO.  
B-4979

SHEET NO.  
2A-2

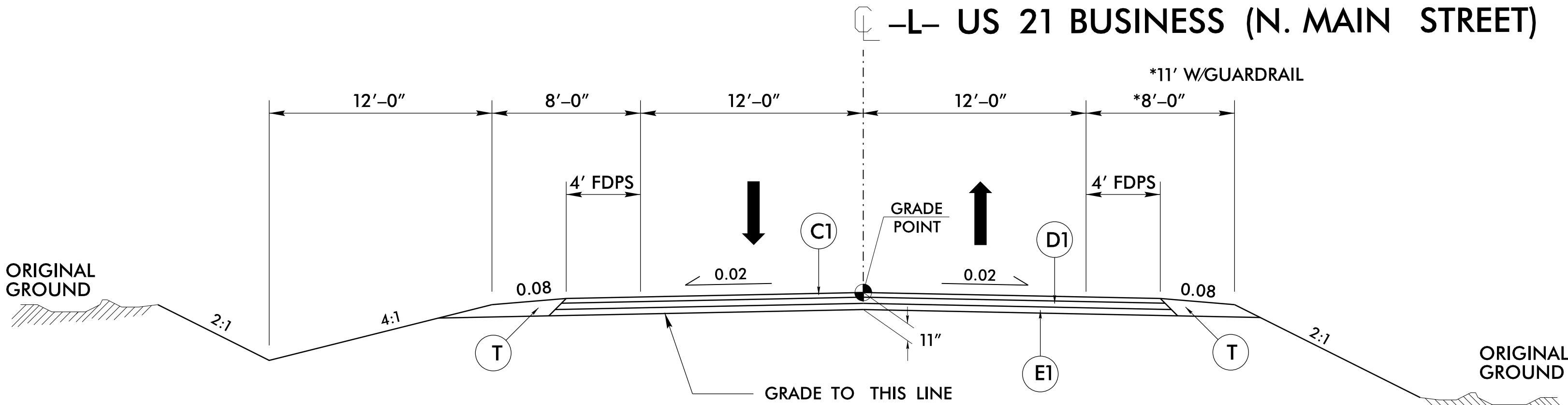
ROADWAY DESIGN ENGINEER  


PAVEMENT DESIGN ENGINEER  


CDM Smith  
CDM Smith Inc.  
5400 Glenwood Avenue  
Suite 400  
Raleigh, NC 27612-3228  
NC CDA No. F-1250

NC DEPARTMENT OF TRANSPORTATION  
PAVEMENT MANAGEMENT UNIT  
1503 MAIL SERVICE CENTER  
RALEIGH, NC 27699-1850

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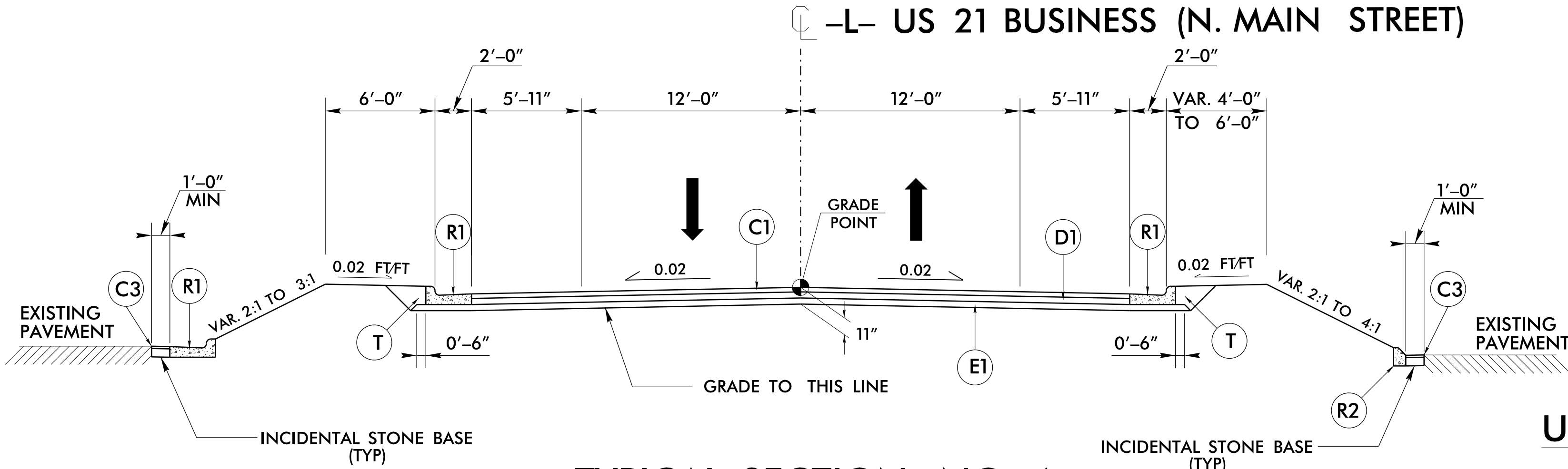


TYPICAL SECTION NO. 3

USE TYPICAL SECTION NO. 3

-L- STA. 13+93.63 TO 14+93.63 (BEGIN BRIDGE)

NOTE: PAVE TO FACE OF GUARDRAIL.  
USE MAINLINE PAVEMENT DESIGN FOR  
ALL WIDENING



TYPICAL SECTION NO. 4

USE TYPICAL SECTION NO. 4

-L- STA. 16+16.37 (END BRIDGE) TO 17+18.24

PAVEMENT SCHEDULE

C1	3" S9.5B
C2	VAR. S9.5B
C3	1½" S9.5B
D1	4" I19.0C
D2	VAR. I19.0C
E1	4" B25.0C
E2	VAR. B25.0C
R1	2'-6" C & G
R2	8" X 12" CURB
R3	SBG
T	EARTH MATERIAL
V	1½" MILLING
U	EXIST. PAVEMENT
W	WEDGING

PAVEMENT EDGESLOPES 1:1  
UNLESS NOTED OTHERWISE

I4-DEC-2017 10:36 S:\Contracts\Special Details\Howerton\Standard Drawings\Details in Lieu of Standards\Division 8\0662d0301.dgn Jhowerton AT CSO-252595

STATE OF  
NORTH CAROLINA  
DEPT. OF TRANSPORTATION  
DIVISION OF HIGHWAYS  
RALEIGH, N.C.

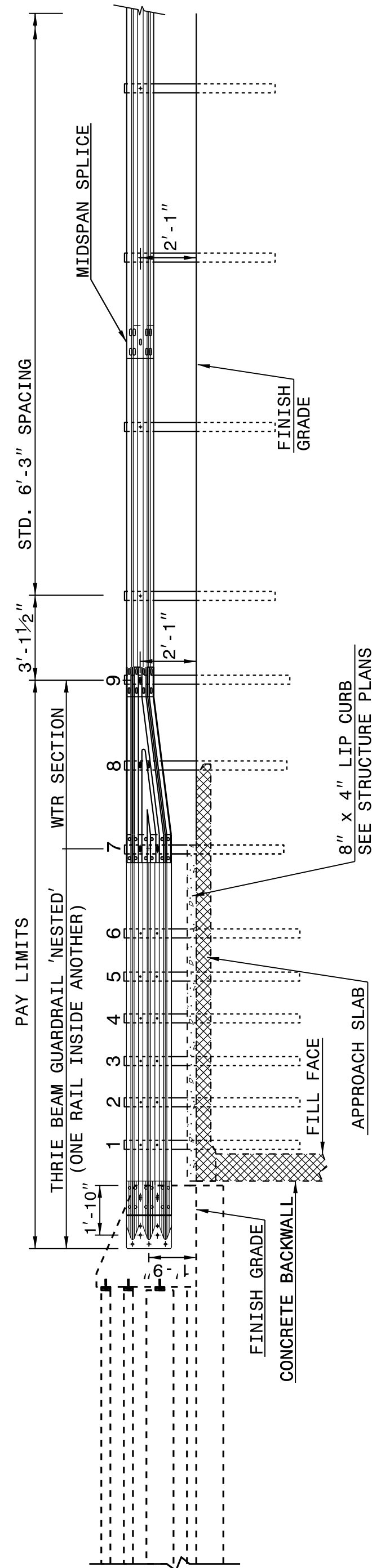
ROADWAY DETAIL DRAWING FOR  
**STRUCTURE ANCHOR UNITS**  
GUARDRAIL ANCHOR UNIT, TYPE III  
FOR ATTACHMENT TO RAIL ON BRIDGE

SHEET 1 OF 7  
**862D03**

STATE OF  
NORTH CAROLINA  
DEPT. OF TRANSPORTATION  
DIVISION OF HIGHWAYS  
RALEIGH, N.C.

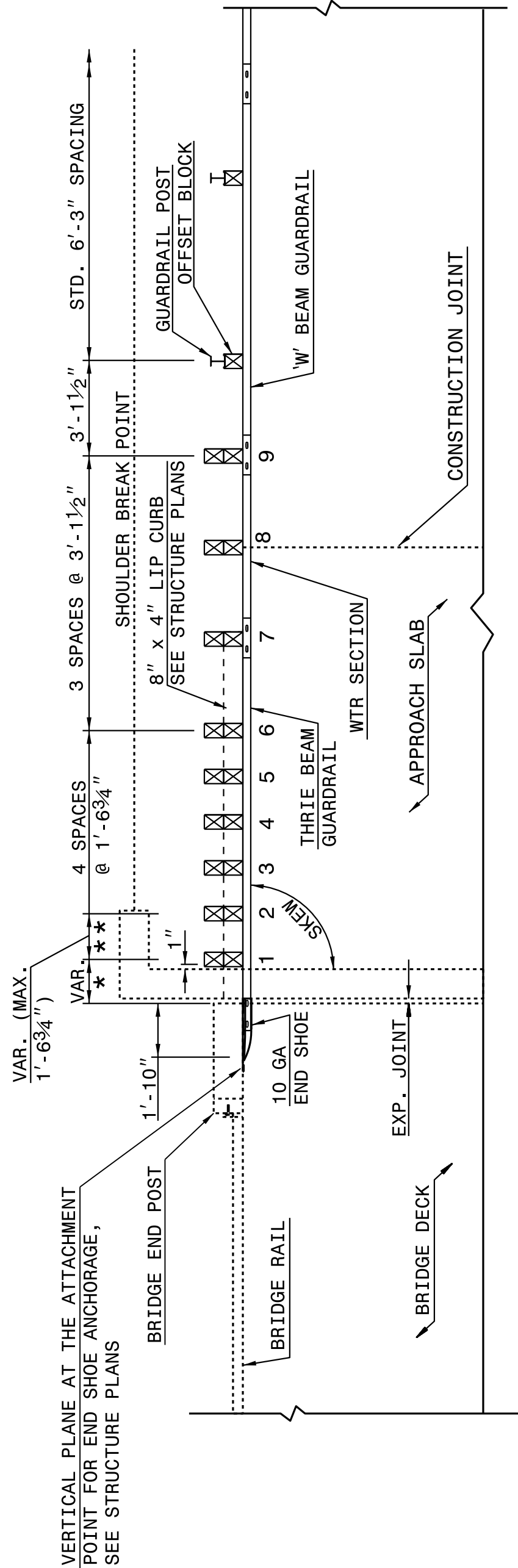
ROADWAY DETAIL DRAWING FOR  
**STRUCTURE ANCHOR UNITS**  
GUARDRAIL ANCHOR UNIT, TYPE III  
FOR ATTACHMENT TO RAIL ON BRIDGE

SHEET 1 OF 7  
**862D03**



**ELEVATION**

NOTE:  
\*\*POST NOT REQUIRED FOR SKEW ANGLES GREATER THAN 150° OR LESS THAN 30° UNLESS OTHERWISE DIRECTED BY THE ENGINEER.  
\*THE DISTANCE FROM END OF BRIDGE RAIL TO CENTER LINE OF THE FIRST POST SHOULD BE 11½" IF CONCRETE BACKWALL IS NOT PRESENT.  
-SHOULDER BERM GUTTER MUST BE INSTALLED TO THE LIMITS 8" x 4" LIP CURB IS SHOWN IF ANCHOR UNIT IS NOT ADJACENT TO AN APPROACH SLAB.  
-MEASURE GUARDRAIL HEIGHT FROM THE TOP OF ADJACENT SURFACE (SHOULDER, BERM, OR GUTTER).  
-LAP JOINTS IN THE DIRECTION OF TRAFFIC FLOW.  
-SEE SHEET 3 FOR POST SECTIONS 1 THRU 9.



**GUARDRAIL ANCHOR UNIT, TYPE III  
FOR ATTACHMENT TO RAIL ON BRIDGE**

STATE OF  
NORTH CAROLINA  
DEPT. OF TRANSPORTATION  
DIVISION OF HIGHWAYS  
RALEIGH, N.C.

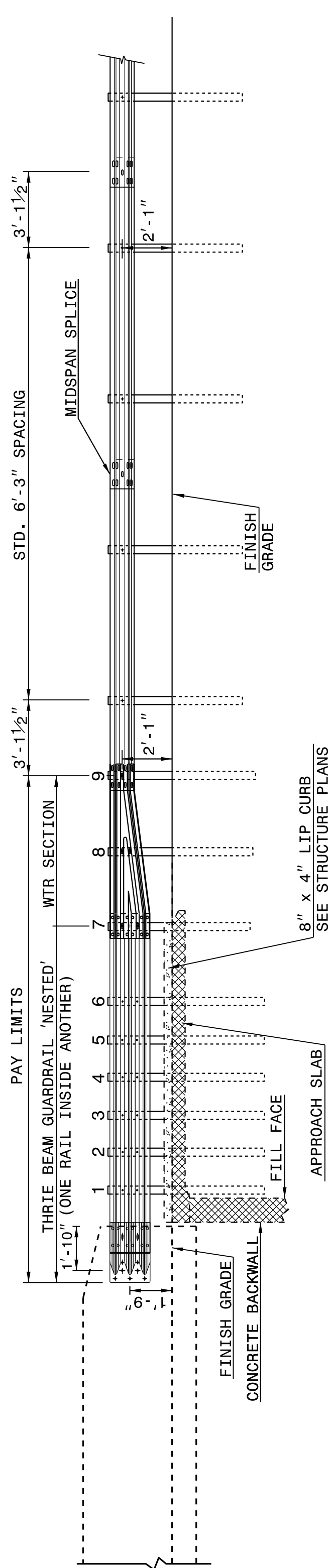
ROADWAY DETAIL DRAWING FOR  
**STRUCTURE ANCHOR UNITS**  
GUARDRAIL ANCHOR UNIT, TYPE III FOR ATTACHMENT TO  
RAIL ON BRIDGE - SUB REGIONAL TIER

SHEET 2 OF 7  
**862D03**

STATE OF  
NORTH CAROLINA  
DEPT. OF TRANSPORTATION  
DIVISION OF HIGHWAYS  
RALEIGH, N.C.

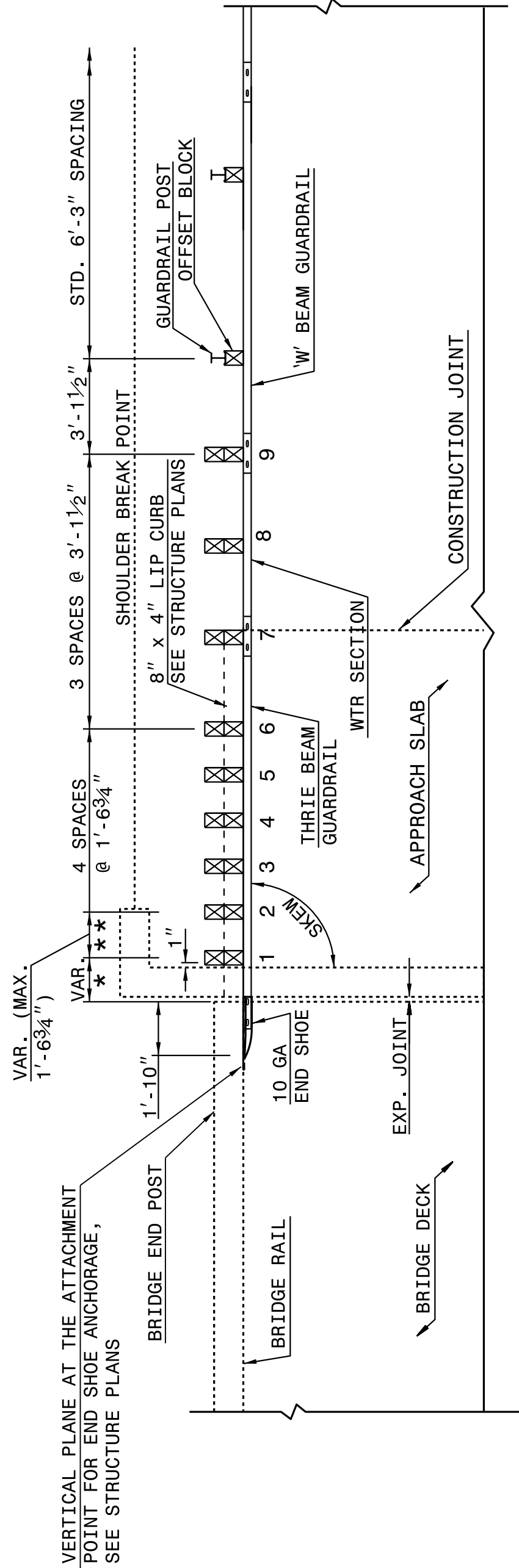
ROADWAY DETAIL DRAWING FOR  
**STRUCTURE ANCHOR UNITS**  
GUARDRAIL ANCHOR UNIT, TYPE III FOR ATTACHMENT TO  
RAIL ON BRIDGE - SUB REGIONAL TIER

SHEET 2 OF 7  
**862D03**



**ELEVATION**

NOTE:  
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\*THE DISTANCE FROM END OF BRIDGE RAIL TO CENTER LINE OF THE FIRST POST SHOULD BE 11½" IF CONCRETE BACKWALL IS NOT PRESENT.  
-SHOULDER BERM GUTTER MUST BE INSTALLED TO THE LIMITS 8" x 4" LIP CURB IS SHOWN IF ANCHOR UNIT IS NOT ADJACENT TO AN APPROACH SLAB.  
-MEASURE GUARDRAIL HEIGHT FROM THE TOP OF ADJACENT SURFACE (SHOULDER, BERM, OR GUTTER).  
-LAP JOINTS IN THE DIRECTION OF TRAFFIC FLOW.  
-SEE SHEET 3 FOR POST SECTIONS 1 THRU 9.



**GUARDRAIL ANCHOR UNIT, TYPE III FOR ATTACHMENT TO  
RAIL ON BRIDGE - SUB REGIONAL TIER**

**SEE TITLE BLOCK**

ORIGINAL BY: J HOWERTON DATE: 06-22-12  
MODIFIED BY: DATE:  
CHECKED BY: DATE:  
FILE SPEC.: DATE:

**CONTRACT STANDARDS  
AND DEVELOPMENT UNIT**  
Office 919-707-6950 FAX 919-250-4119

DOCUMENT NOT CONSIDERED FINAL  
UNLESS ALL SIGNATURES COMPLETED



STATE OF  
NORTH CAROLINA  
DEPT. OF TRANSPORTATION  
DIVISION OF HIGHWAYS  
RALEIGH, N.C.

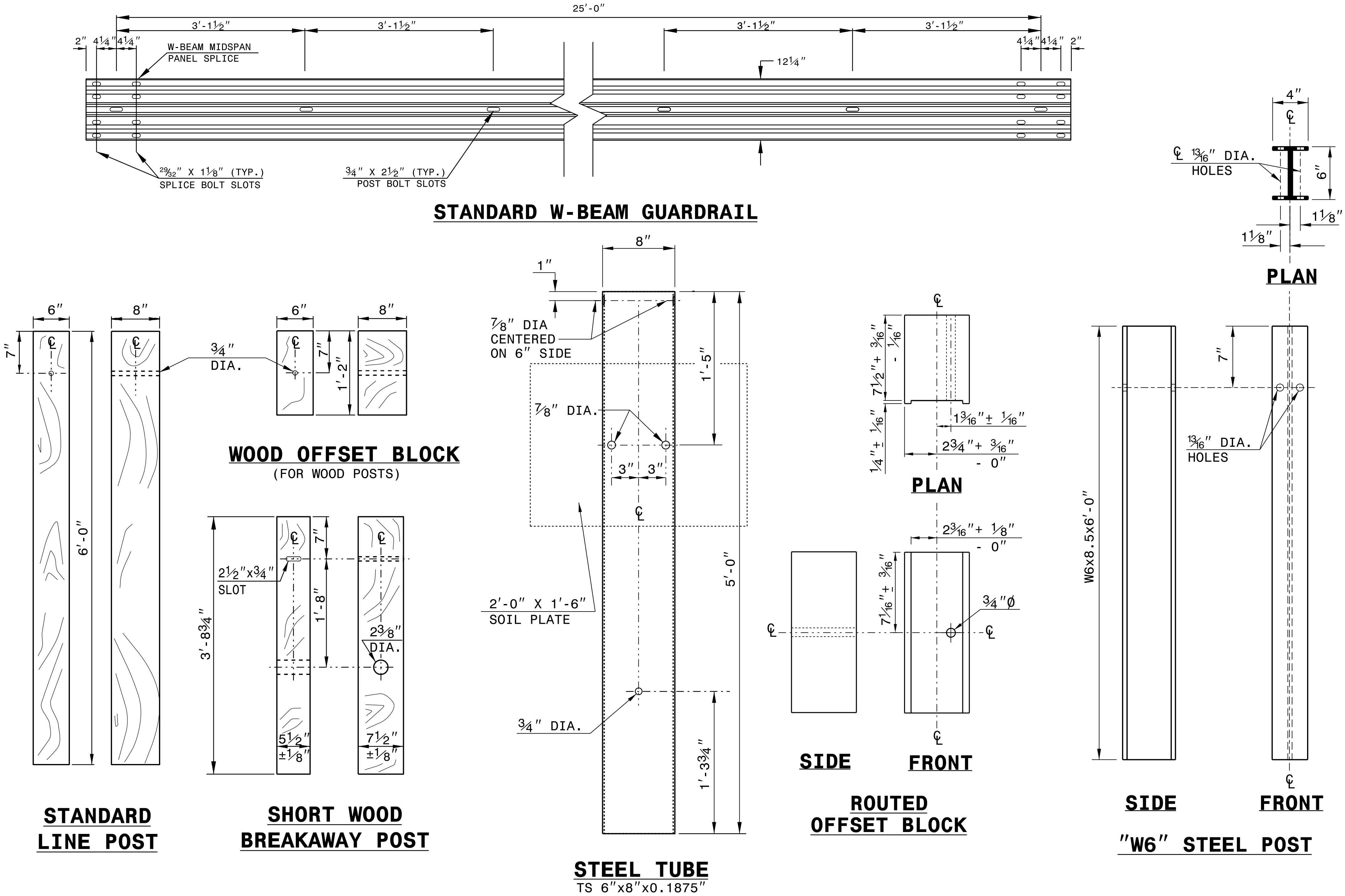
ROADWAY DETAIL DRAWING FOR  
**GUARDRAIL INSTALLATION**

SHEET 6 OF 8  
**862D02**

STATE OF  
NORTH CAROLINA  
DEPT. OF TRANSPORTATION  
DIVISION OF HIGHWAYS  
RALEIGH, N.C.

ROADWAY DETAIL DRAWING FOR  
**GUARDRAIL INSTALLATION**

SHEET 6 OF 8  
**862D02**



**SYSTEM PARTS**



<b>CONTRACTS STANDARDS AND DEVELOPMENT UNIT</b>	
Office 919-707-6950 FAX 919-250-4119	
<b>SEE TITLE BLOCK</b>	
ORIGINAL BY: J. HOWERTON	DATE: 3-7-2018
MODIFIED BY:	DATE:
CHECKED BY:	DATE:
FILE SPEC.:	



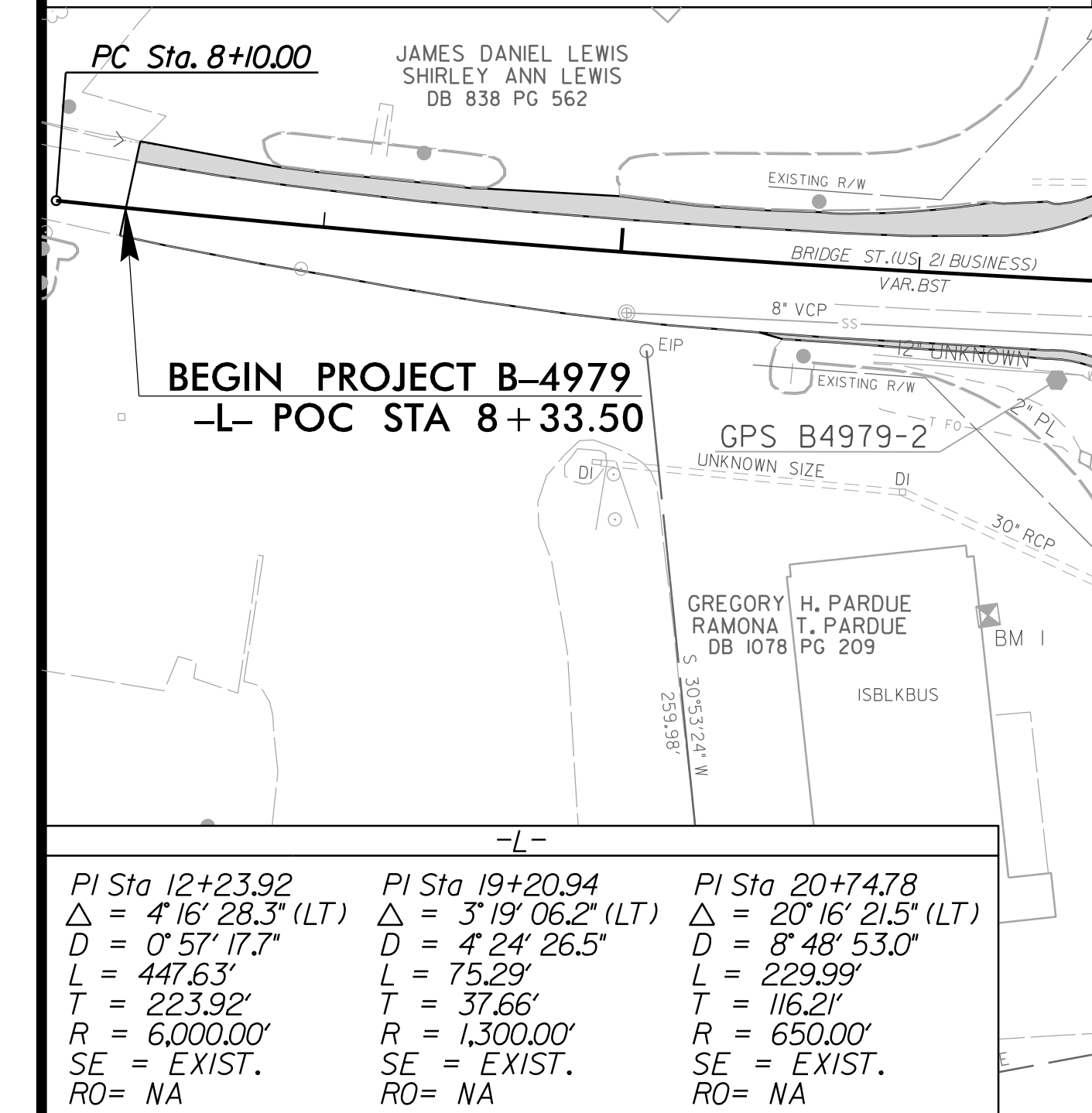
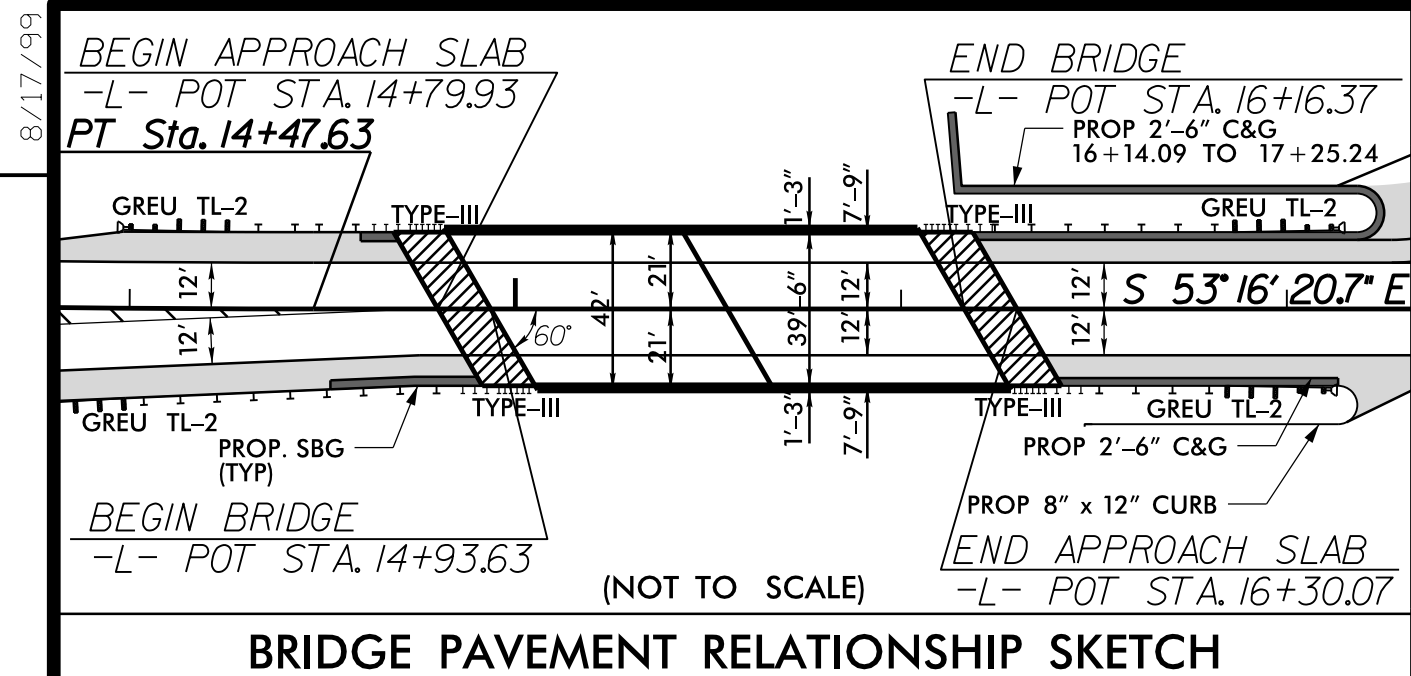




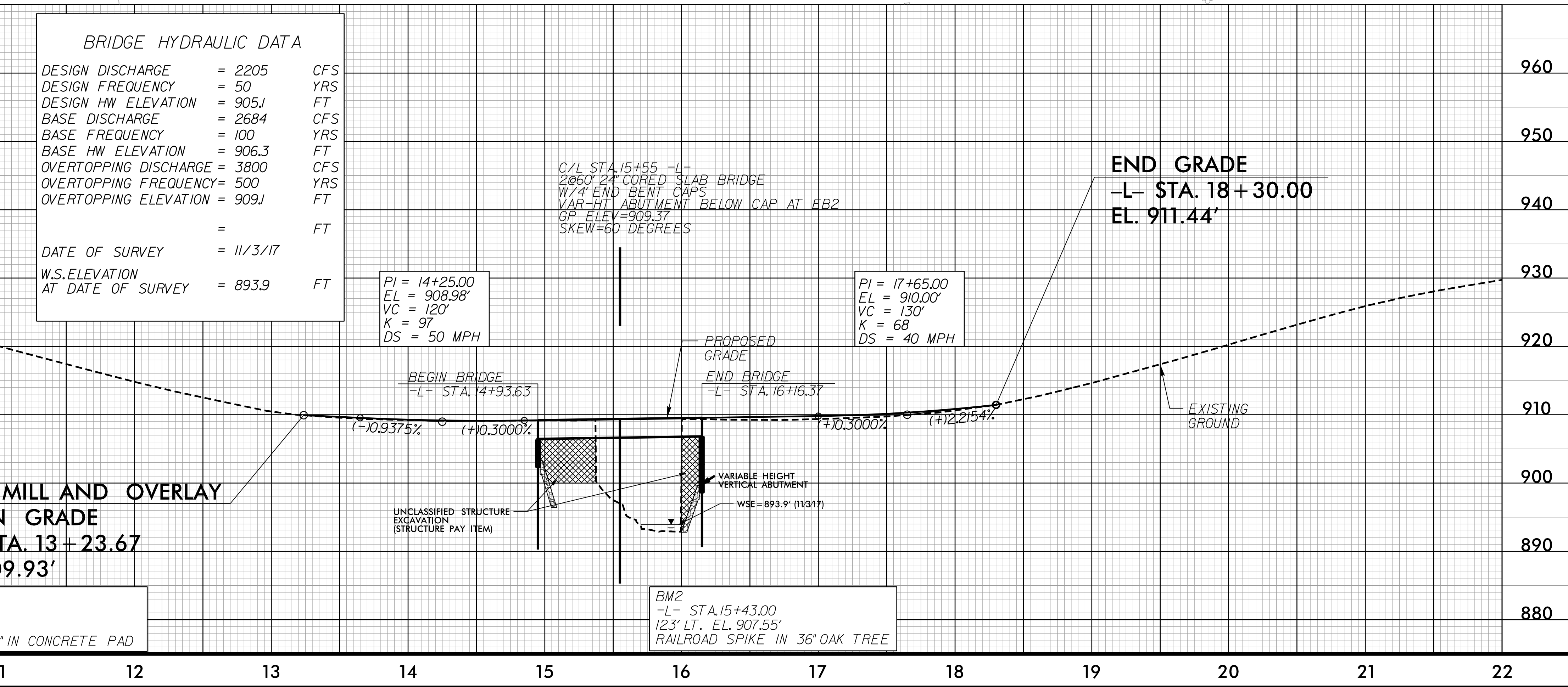
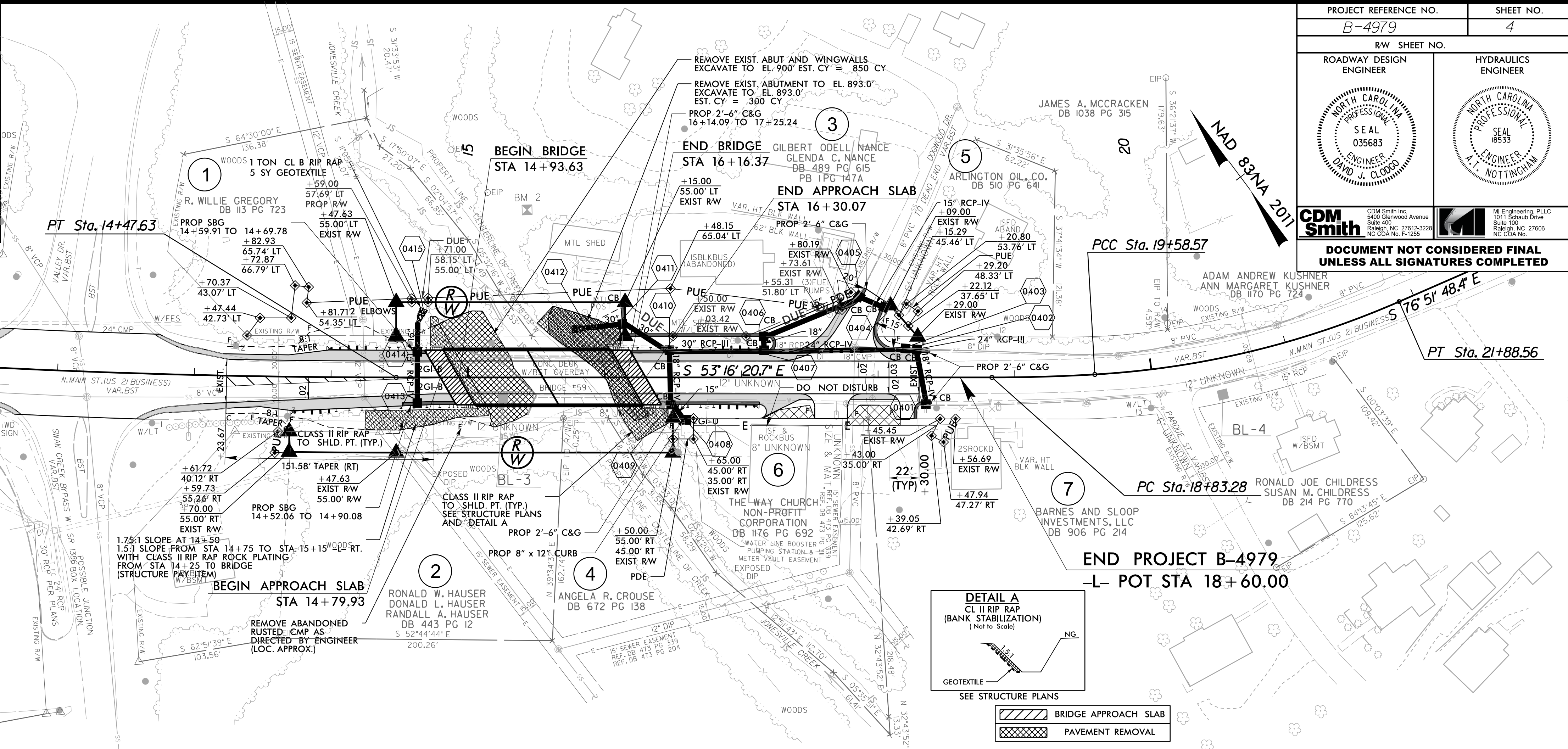




8/17/99



BRIDGE HYDRAULIC DATA											
DESIGN DISCHARGE = 2205 CFS											
DESIGN FREQUENCY = 50 YRS											
DESIGN HW ELEVATION = 905.1 FT											
BASE DISCHARGE = 2684 CFS											
BASE FREQUENCY = 100 YRS											
BASE HW ELEVATION = 906.3 FT											
OVERTOPPING DISCHARGE = 3800 CFS											
OVERTOPPING FREQUENCY = 500 YRS											
OVERTOPPING ELEVATION = 909.1 FT											
DATE OF SURVEY = 11/3/17											
W.S. ELEVATION AT DATE OF SURVEY = 893.9 FT											
PI = 14+25.00 EL = 908.98' VC = 120' K = 97 DS = 50 MPH											
PI = 17+65.00 EL = 910.00' VC = 130' K = 68 DS = 40 MPH											
UNCLASSIFIED STRUCTURE EXCAVATION (STRUCTURE PAY ITEM)											
BRI2 -L- STA. 15+43.00 123' LT. EL. 907.55' RAILROAD SPIKE IN 36" OAK TREE											



PROJECT REFERENCE NO. B-4979	SHEET NO. 4
ROADWAY DESIGN ENGINEER DAVID J. CLODD	HYDRAULICS ENGINEER DAVID J. CLODD
CDM Smith 4400 Glenwood Avenue Suite 400 Raleigh, NC 27612-3228 NC CDA No. P-1255	MI Engineering, PLLC 1011 Schuman Drive Suite 100 Raleigh, NC 27606 NC CDA No.
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

DETAIL A CL II RIP RAP (BANK STABILIZATION) (Not to Scale)	BRIDGE APPROACH SLAB PAVEMENT REMOVAL
SEE STRUCTURE PLANS	



## CROSS SECTION INDEX SHEET

**SHEET NO.: X-1**

**TIP NO: B-4979**

**INITIALS:**

[illegible][illegible]





STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION

ROY COOPER  
GOVERNOR

JAMES H. TROGDON, III  
SECRETARY

September 19, 2018

TO: Erin Cheely, Environmental Program Consultant  
Environmental Coordination & Permitting Group, EAU

FROM: Melissa Miller, Environmental Program Consultant  
Biological Surveys Group, EAU

SUBJECT: Section 7 survey results for the northern long-eared bat (*Myotis septentrionalis*) associated with the replacement of Bridge No. 59 over Jonesville Creek on US 21 in Yadkin County, **TIP No. B-4979**.

On May 30, 2018, NCDOT biologists inspected Bridge No. 59 for potential northern long-eared bat habitat. Deep vertical unsealed crevices suitable for roosting were present. No evidence (bats, staining, and guano) of bats was observed.

Bridge No. 59 is approximately 54 miles to the nearest red HUC.

Final design, tree clearing and percussive activities information will be provided in the permit application.

If you need any additional information, please contact Melissa Miller at 919-707-6127.