



## 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: \*

Pamlico

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-4593

WBS # \*

42328.1.2

(for NCDOT use only)

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

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

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

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 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: 03 - Maintenance

Nationwide Permit (NWP) Number: 12 - Utility Lines

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

401 Water Quality Certification - Regular

Non-404 Jurisdictional General Permit

Individual Permit

401 Water Quality Certification - Express

Riparian Buffer Authorization

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

\*

For the record only for DWR 401 Certification:

Yes  No

For the record only for Corps Permit:

Yes  No

1f. Is this an after-the-fact permit application? \*

Yes  No

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

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

Yes  No

**Acceptance Letter Attachment**

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

FILETYPE MUST BE PDF

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

Yes  No

**1i. Is the project located within a NC DCM Area of Environmental Concern (AEC)? \***

Yes  No  Unknown

**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? \***

Gordon Cashin

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

gcashin@ncdot.gov

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

(xxx)xxx-xxxx  
(919)707-6107

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

Owner  Applicant (other than owner)  
(Check all that apply)

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

Yes  No

**2. Owner Information**

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

Multiple property owners

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

**2c. Responsible party:**

(for Corporations)

**2d. Address \***

Street Address

1000 Birch Ridge Dr.

Address Line 2

City

Raleigh

Postal / Zip Code

27612

State / Province / Region

NC

Country

USA

**2e. Telephone Number: \***

(xxx)xxx-xxxx

(919)707-6107

**2f. Fax Number:**

(xxx)xxx-xxxx

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

gcashin@ncdot.gov

**C. Project Information and Prior Project History**

**1. Project Information**

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

B-4593 Bridge No. 38 on NC Highway 55 over Trent Creek (Central)

**1b. Subdivision name:**

(if appropriate)

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

## 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

Postal / Zip Code

State / Province / Region

Country

### 2d. Site coordinates in decimal degrees

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

#### Latitude: \*

35.104395  
ex: 34.208504

#### Longitude: \*

-76.718223  
-77.796371

## 3. Surface Waters

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

Trent Creek

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

SC; Sw; NSW

[Surface Water Lookup](#)

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

Neuse

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

030202040802

[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: \*

Land use in the project area consists of agriculture, residential development along roadways, and forestland along stream corridors. Topography in the vicinity is predominately flat with gentle slopes descending into a wide floodplain along the stream. Elevations in the study area range from sea level to approximately eight feet above sea level.

### 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:

6.46

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

(intermittent and perennial)

300

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

The purpose is to replace the deficient bridge No. 38 on NC Highway 55 over Trent Creek. The existing Bridge 38 has a sufficiency rating of 37.89 out of a possible 100.

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

The existing bridge will be replaced with a longer bridge (160 feet vs. 145 feet) providing a minimum of 32-foot five-inch clear deck width. The bridge will include two 12-foot lanes with four foot offsets on each side. A temporary on-site detour, on the south side, will be utilized to maintain traffic during construction. Standard road building equipment 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

B4593 Buffer Drawings.pdf	1.48MB
B4593 Permit Drawings.pdf	5.52MB
B4593 Roadway Plans.pdf	4.04MB
B4593 Utility Buffer Drawings.pdf	1.36MB
B4593 Utility Permit Drawings.pdf	1.67MB

File type must be pdf

## 5. Jurisdictional Determinations

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

Yes  No  Unknown

Comments:

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

Preliminary  Approved  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): Lane Sauls  
 Agency/Consultant Company: Ecological Engineering  
 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.

## D. Proposed Impacts Inventory

### 1. Impacts Summary

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

Wetlands  Streams-tributaries  Buffers  
 Open Waters  Pond Construction

### 2. Wetland Impacts

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

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

2a. Site #* (?)	2a1 Reason* (?)	2b. Impact type* (?)	2c. Type of W.*	2d. W. name*	2e. Forested*	2f. Type of Jurisdiction* (?)	2g. Impact area*
1	Roadway fill slope	P	Salt/Brackish Marsh	WA & WB	No	Both	0.090 (acres)
1	Detour fill slope	T	Salt/Brackish Marsh	WB	No	Both	0.150 (acres)
U2	Poles, guy wire, water main	P	Salt/Brackish Marsh	WA & WB	No	Both	0.010 (acres)
U3	Water main	P	Salt/Brackish Marsh	WA & WB	No	Both	0.010 (acres)

2g. Total Temporary Wetland Impact

0.150

2g. Total Permanent Wetland Impact

0.110

2g. Total Wetland Impact

0.260



**2h. Comments:**

There will be 0.32 acre of hand clearing due to bridge construction and 0.65 of hand clearing due to utility relocations. Additionally there will be 0.09 acre of temporary fill in wetlands in hand clearing areas for erosion control measures.

**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 * Average (feet)	3h. Impact length * (linear feet)
S1	rip rap	Permanent	Fill	Trent Creek	Perennial	Both	100	8

\*\* 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:**

8

**3i. Total temporary stream impacts:**

0

**3i. Total stream and ditch impacts:**

8

**3j. Comments:**

**4. Open Water Impacts**

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

4a. Site # * (?)	4a1. Impact Reason	4b. Impact type * (?)	4c. Name of waterbody (?)	4d. Activity type *	4e. Waterbody type *	4f. Impact area * (acres)
1	rip rap	P	Trent Creek	Bridge	Tributary	0.01

**4g. Total temporary open water impacts:**

0.00

**4g. Total permanent open water impacts:**

0.01

**4g. Total open water impacts:**

0.01

**4h. Comments:**

There will also be >0.01 ac of permanent surface water impacts due to bents.

**6. Buffer Impacts (for DWR)**

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

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

Check all that apply.

- Neuse
- Tar-Pamlico
- Catawba
- Randleman
- Goose Creek
- Jordan Lake
- Other

6b. Impact Type * (?)	6c. Per or Temp * (?)	6d. Stream name *	6e. Buffer mitigation required? *	6f. Zone 1 impact * (square feet)	6g. Zone 2 impact * (square feet)
Site 1 Bridge	P	Trent Creek	No	425	373
Site 1 Detour Bridge	T	Trent Creek	No	1,371	880
Site 1 Utilities	P	Trent Creek	No	2,092	1,392

## 6h. Total buffer impacts:

	Zone 1	Zone 2
Total Temporary impacts:	1,371.00	880.00
Total Permanent impacts:	2,517.00	1,765.00
Total combined buffer impacts:	3,888.00	2,645.00

### 6i. Comments:

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

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

File must be PDF

## E. Impact Justification and Mitigation

### 1. Avoidance and Minimization

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

Bridge No. 38 will be replaced on the existing alignment with a longer bridge. The proposed roadway fill slopes are 2:1. There are no deck drains over Trent Creek. There are two proposed outlets on the beginning and end of the bridge left side to allow proper drainage for the bridge and minimize disturbance in the surrounding wetlands. Rip Rap outlet pads will be utilized to dissipate the flow and minimize erosion. All piping outlets beyond buffer zones. Rip rap toe protection has been added to stabilize fill slopes as needed. The detour has been redesigned using 2:1 fill slopes as well as a sheet pile retaining wall in order to minimize wetland impacts.

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

Best Management Practices for Construction and Maintenance Activities will apply. Fill material for the temporary detour will be removed to wetland grade and replanted.

### 2. Compensatory Mitigation for Impacts to Waters of the U.S. or Waters of the State

#### 2a. Does the project require Compensatory Mitigation for impacts to Waters of the U.S. or Waters of the State?

Yes  No

#### 2c. If yes, mitigation is required by (check all that apply):

DWR  Corps

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

Mitigation bank  Payment to in-lieu fee program  Permittee Responsible Mitigation

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

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

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

See attached B-4593 Lengyel Mitigation Site Debit Ledger

#### 5b. Mitigation Plan Upload

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

B-4593\_Lengyel Mitigation Site Debit.pdf

153.32KB

File type must be pdf

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

\*\*\* Recent changes to the stormwater rules have required updates to this section. \*\*\*

### 1. Diffuse Flow Plan

#### 1a. Does the project include or is it adjacent to protected riparian buffers identified within one of the NC Riparian Buffer Protection Rules?

Yes  No

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

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

**What type of SCM are you providing?**

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

For a list of options to meet the diffuse flow requirements, click [here](#).

**Diffuse Flow Documentation**

*Click the upload button or drag and drop files here to attach document*  
*File type must be PDF*

## 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*  
*FILETYPE 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.**

The proposed project is the replacement of an existing bridge.

### 4. Sewage Disposal (DWR Requirement)

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

- Yes  No  NA

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

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

- Yes  No

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

- Yes  No

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

Raleigh

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

- Yes  No  Unknown

**What Federal Agency is involved?**

National Marine Fisheries Service

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

Yes  No

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

FWS website, County lists, coordination with NMFS.

Consultation Documentation Upload

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

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? \*

NOAA website

## 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/hpweb/>)

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? \*

Map review, file search, and fieldwork associated with NEPA documentation.

7c. Historic or Prehistoric Information Upload

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

File must be PDF

## 8. Flood Zone Designation (Corps Requirement)

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

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

Yes  No

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

Hydraulics Unit coordination with FEMA.

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

FEMA maps

## Miscellaneous

### Comments

Miscellaneous attachments not previously requested.

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

manatee\_guidelines.pdf

116KB

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: \*

Mack Christopher Rivenbark, III

Signature

*Mack C. Rivenbark, III*

Date

5/3/2019



STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION

ROY COOPER  
GOVERNOR

JAMES H. TROGDON, III  
SECRETARY

May 2, 2019

N.C. Dept. of Environmental Quality  
Division of Coastal Management  
400 Commerce Avenue  
Morehead City, NC 28557

ATTN: Mr. Stephen Lane  
NCDOT Coordinator

Subject: **Application for CAMA Major Development Permit** for the Proposed Replacement of Bridge No. 38 over Trent Creek on NC 55 in Pamlico County, North Carolina; TIP No. B-4593; Debit \$475 from WBS No. 42328.1.2

Dear Sir,

The North Carolina Department of Transportation (NCDOT) proposes to replace the existing 145-foot bridge No. 38 on NC 55 over Trent Creek in Pamlico County. The purpose of the project is to replace a deficient bridge; the existing bridge has a sufficiency rating of 37.89 out of a possible 100 for a new structure.

The proposed structure is a 165-foot, three-span bridge on the existing alignment, 34.6 feet wide. A temporary on-site detour will be utilized on the south side to maintain traffic during construction. An offsite detour was considered during project planning. This option was precluded by the status of NC 55 as a primary Hurricane Evacuation Route for the area, the traffic volume served by the route, and limited connectivity to the other major routes in the project vicinity.

A Minimum Criteria Determination Checklist (MCDC) was completed in February 2018 and distributed shortly after. Additional copies are available at the NCDOT website:  
<https://xfer.services.ncdot.gov/pdea/EnvironmentalDocs/Documents>.

On January 16, 2019, draft permit drawings were sent by e-mail to Stephen Lane, Garcy Ward, and Tom Steffens. Over subsequent weeks, different design alternatives were considered to minimize the project impact to coastal wetlands. The current design includes a sheet pile wall to restrict the amount of fill required. This option has reduced the amount of permanent wetland fill from 0.24 acre to 0.11 acre. Temporary fill has been reduced from 0.45 acre to 0.15 acre.

Several utilities conflict with the proposed project alignment and will require relocation, including underground cable and overhead electric power lines and poles. A more detailed utility narrative is attached along with drawings depicting utility impacts to wetlands and riparian buffers.

Proposed permanent impacts to wetlands total 0.09 acre, with 0.15 acre of temporary fill for the bridge replacement. An additional 8 linear feet of permanent stream impact will occur to Trent Creek. Utility work will require 0.02 acre of excavation in wetlands, with an additional 0.65 acre of hand clearing.

Impacts to riparian buffers total 1796 sq. ft of allowable impact in Zone 1 and 1253 sq. ft in Zone 2. Utility relocations will impact 2092 in Zone 1 and 1392 in Zone 2, both allowable.

Please see enclosed copies of the Major Permit Forms 1 and 5, Lengyel Mitigation Site Debit Ledger, permit drawings, stormwater management plan, utility drawings, and roadway plans for the above referenced project.

### Federally Protected Species

Table 5 lists the federally protected species for Pamlico County as of June 27, 2018. These species are discussed in Section 5.8 of the project Natural Resources Technical Report (June, 2015). Species with the federal classification of Endangered (E), Threatened (T), or officially Proposed (P) for such listing, are protected under Section 7 of the Endangered Species Act (ESA) of 1973, as amended. Species listed as Threatened due to Similarity of Appearance [T(S/A)], such as the American alligator, are not subject to Section 7 consultation. The Bald Eagle is protected by the Bald and Golden Eagle Protection Act and is not subject to Section 7 consultation.

Scientific Name	Common Name	Federal Status	Habitat Present	Biological Conclusion
<i>Acipenser oxyrinchus oxyrinchus</i>	Atlantic sturgeon	E	Yes	No Effect
<i>Acipenser brevirostrum</i>	Shortnose sturgeon	E	Yes	No Effect
<i>Alligator mississippiensis</i>	American alligator	T(S/A)	Yes	Not Required
<i>Chelonia mydas</i>	Green sea turtle	T	No	No Effect
<i>Haliaeetus leucocephalus</i>	Bald Eagle	NA	Yes	NA
<i>Lepidochelys kemp</i>	Kemp's ridley sea turtle	E		No Effect
<i>Picoides borealis</i>	Red-cockaded woodpecker	E	Yes	No Effect
<i>Calidris canutus rufa</i>	Red knot	T	No	No Effect
<i>Trichechus manatus</i>	West Indian manatee	E	No	MA-NLAA
<i>Lysimachia sperulaefolia</i>	Rough-leaved loosestrife	E	Yes	No Effect

### Biological Conclusions for ESA Listed Species

The USFWS has developed a programmatic biological opinion (PBO) in conjunction with the Federal Highway Administration (FHWA), the US Army Corps of Engineers (USACE), and NCDOT for the northern long-eared bat (NLEB) in eastern North Carolina. The PBO covers the entire NCDOT program in Divisions 1-8, including all NCDOT projects and activities. The programmatic determination for NLEB for the NCDOT program is "May Affect, Likely to Adversely Affect." The PBO provides incidental take coverage for NLEB and will ensure compliance with Section 7 of the Endangered Species Act for five years

for all NCDOT projects with a federal nexus in Divisions 1-8, which includes Pamlico County where B-4593 is located.

As discussed in the NRTR, West Indian manatees may inhabit Trent Creek. A review of North Carolina Natural Heritage Program records dated January 2015 show that West Indian manatees have been documented within 1 mile of the study area. The NC Department of Transportation will adhere to recommendations listed in the USFWS publication *Guidelines for Avoiding Impacts to the West Indian Manatee – Precautionary Measures for Construction Activities in North Carolina Waters* (USFWS 2003) during construction. Adherence to these recommendations will minimize the likelihood of adverse effects to this species. For this reason, project implementation is not likely to adversely affect this species.

Since the MCDC was completed, the NCDOT has coordinated with the National Marine Fisheries Service regarding the potential effects of the project on the two sturgeon species. The NMFS concurred on January 28, 2019 that the project will have no effect on these species. For the remaining ESA listed species, NCDOT has concluded the project will have No Effect.

### **Regulatory Approvals**

CAMA Major Development Permit: NCDOT requests that the proposed work be authorized under a Coastal Area Management Act Major Permit. Adjacent riparian landowner certified mail return receipts will be provided once they are received. Authorization to debit the \$475 Permit Application Fee from WBS Element 42328.1.2 is hereby given.

Section 10 Permit: Application has been submitted for a Section 10 Permit as required for the above-described activities in accordance with Section 10 of the Rivers and Harbors Act of March 3, 1899 (33 U.S.C. 403) under separate letter.

Section 404 Permit: We anticipate that the bridge replacement, including all approach work will be authorized under Section 404 Nationwide Permit 14 in accordance with Section 404 of the Clean Water Act (33 U.S.C. 1344) and have requested under separate letter.

Section 401 Permit: We anticipate 401 General Certification number 4135 will apply to this project. NCDOT has requested written concurrence from the North Carolina Department of Environmental Quality, Division of Water Resources under separate letter.

#### U.S. Coast Guard:

The proposed project received Advance Approval from the United States Coast Guard in a letter dated August 10, 2017 which was appended to the project Minimum Criteria Checklist document.

A copy of this permit application will be posted on the NCDOT Website at <https://xfer.services.ncdot.gov/pdea/PermApps>. Should you have any questions regarding this information, please contact Gordon Cashin at (919) 707-6107 or [gcashin@ncdot.gov](mailto:gcashin@ncdot.gov).

Sincerely,



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

cc: NCDOT Permit Application Standard Distribution List



# APPLICATION for Major Development Permit



(last revised 12/27/06)

North Carolina DIVISION OF COASTAL MANAGEMENT

<b>1. Primary Applicant/ Landowner Information</b>			
Business Name NC Department Of Transportation		Project Name (if applicable) B-4593	
Applicant 1: First Name Philip	MI S	Last Name Harris	
Applicant 2: First Name	MI	Last Name	
<i>If additional applicants, please attach an additional page(s) with names listed.</i>			
Mailing Address 1000 Birch Ridge Drive		PO Box	City Raleigh
		State NC	
ZIP 27610	Country	Phone No. 919 - 707 - 6107 ext.	FAX No. - -
Street Address (if different from above)		City	State
		ZIP -	
Email gcashin@ncdot.gov			

<b>2. Agent/Contractor Information</b>			
Business Name			
Agent/ Contractor 1: First Name	MI	Last Name	
Agent/ Contractor 2: First Name	MI	Last Name	
Mailing Address		PO Box	City
		State	
ZIP		Phone No. 1 - - ext.	Phone No. 2 - - ext.
FAX No.	Contractor #		
Street Address (if different from above)		City	State
		ZIP -	
Email			

&lt;Form continues on back&gt;

<b>3. Project Location</b>			
County (can be multiple) Pamlico	Street Address NC 55 between Florence Road and Gibbtown road	State Rd. # NC 55	
Subdivision Name NA	City Merritt	State NC	Zip 28556 -
Phone No. - - ext.	Lot No.(s) (if many, attach additional page with list) , , , ,		
a. In which NC river basin is the project located? Neuse	b. Name of body of water nearest to proposed project Trent Creek		
c. Is the water body identified in (b) above, natural or manmade? <input checked="" type="checkbox"/> Natural <input type="checkbox"/> Manmade <input type="checkbox"/> Unknown	d. Name the closest major water body to the proposed project site. Bay River		
e. Is proposed work within city limits or planning jurisdiction? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	f. If applicable, list the planning jurisdiction or city limit the proposed work falls within. Pamlico County		

<b>4. Site Description</b>	
a. Total length of shoreline on the tract (ft.) 435 (length within easement)	b. Size of entire tract (sq.ft.) 239813 (area within easement and ROW)
c. Size of individual lot(s) N/A, (If many lot sizes, please attach additional page with a list)	d. Approximate elevation of tract above NHW (normal high water) or NWL (normal water level) 8.0 <input type="checkbox"/> NHW or <input checked="" type="checkbox"/> NWL
e. Vegetation on tract Brackish marsh dominated by big cordgrass and black needlerush fringed by loblolly pine forest.	
f. Man-made features and uses now on tract Public road and bridge	
g. Identify and describe the existing land uses <u>adjacent</u> to the proposed project site. Natural Areas, Wetlands, light residential	
h. How does local government zone the tract? NA	i. Is the proposed project consistent with the applicable zoning? (Attach zoning compliance certificate, if applicable) <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> NA
j. Is the proposed activity part of an urban waterfront redevelopment proposal? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
k. Has a professional archaeological assessment been done for the tract? If yes, attach a copy.  If yes, by whom?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA  NCDOT Archeology Group
l. Is the proposed project located in a National Registered Historic District or does it involve a National Register listed or eligible property? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> NA	

<Form continues on next page>

m. (i) Are there wetlands on the site?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
(ii) Are there coastal wetlands on the site?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
(iii) If yes to either (i) or (ii) above, has a delineation been conducted? <i>(Attach documentation, if available)</i>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
n. Describe existing wastewater treatment facilities. Unknown	
o. Describe existing drinking water supply source. Water is pumped from Castle Hayne aquifer and treated in Bayboro	
p. Describe existing storm water management or treatment systems. Stormwater runs off the side of the road to wetlands which discharge into Trent Creek	

<b>5. Activities and Impacts</b>	
a. Will the project be for commercial, public, or private use?	<input type="checkbox"/> Commercial <input checked="" type="checkbox"/> Public/Government <input type="checkbox"/> Private/Community
b. Give a brief description of purpose, use, and daily operations of the project when complete. Replacement of bridge 680038 over Trent Creek	
c. Describe the proposed construction methodology, types of construction equipment to be used during construction, the number of each type of equipment and where it is to be stored. Detour bridge will be constructed. Existing bridge will be demolished and proposed bridge will be constructed in its place. Project is to be let. Construction equipment may include but is not limited to cranes, excavators, and backhoes. Equipment will be stored within right of way and easements.	
d. List all development activities you propose. Construction of detour bridge, construction of proposed bridge, repavement of select surrounding roads within project limits, construction of erosion control, utility relocation	
e. Are the proposed activities maintenance of an existing project, new work, or both?	Existing
f. What is the approximate total disturbed land area resulting from the proposed project?	3.06 <input type="checkbox"/> Sq.Ft or <input checked="" type="checkbox"/> Acres
g. Will the proposed project encroach on any public easement, public accessway or other area that the public has established use of?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA
h. Describe location and type of existing and proposed discharges to waters of the state. Runoff on the road currently runs down the roadway embankment to wetlands which discharge into Trent Creek. Some of the runoff, is discharged directly into Buffer Zone 1. Deck drains are installed on the existing bridge, so runoff on the bridge is discharged directly into Trent Creek. The proposed bridge does not have deck drains, and all runoff from the bridge and approaches is collected and discharged outside Buffer Zone 2. With the proposed roadway, runoff will continue to run down the roadway embankment to the wetlands.	
i. Will wastewater or stormwater be discharged into a wetland?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA
If yes, will this discharged water be of the same salinity as the receiving water?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA
j. Is there any mitigation proposed?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA
If yes, attach a mitigation proposal.	

**<Form continues on back>**

**6. Additional Information**

In addition to this completed application form, (MP-1) the following items below, if applicable, must be submitted in order for the application package to be complete. Items (a) – (f) are always applicable to any major development application. Please consult the application instruction booklet on how to properly prepare the required items below.

- a. A project narrative.
- b. An accurate, dated work plat (including plan view and cross-sectional drawings) drawn to scale. Please give the present status of the proposed project. Is any portion already complete? If previously authorized work, clearly indicate on maps, plats, drawings to distinguish between work completed and proposed.
- c. A site or location map that is sufficiently detailed to guide agency personnel unfamiliar with the area to the site.
- d. A copy of the deed (with state application only) or other instrument under which the applicant claims title to the affected properties.
- e. The appropriate application fee. Check or money order made payable to DENR.

f. A list of the names and complete addresses of the adjacent waterfront (riparian) landowners and signed return receipts as proof that such owners have received a copy of the application and plats by certified mail. Such landowners must be advised that they have 30 days in which to submit comments on the proposed project to the Division of Coastal Management.

<b>Name</b> See attached landowner letters	<b>Phone No.</b>
<b>Address</b>	
Name	Phone No.
Address	
<b>Name</b>	<b>Phone No.</b>
<b>Address</b>	

g. A list of previous state or federal permits issued for work on the project tract. Include permit numbers, permittee, and issuing dates.

\_\_\_\_\_

\_\_\_\_\_

- h. Signed consultant or agent authorization form, if applicable.
- i. Wetland delineation, if necessary.
- j. A signed AEC hazard notice for projects in oceanfront and inlet areas. (Must be signed by property owner)
- k. A statement of compliance with the N.C. Environmental Policy Act (N.C.G.S. 113A 1-10), if necessary. If the project involves expenditure of public funds or use of public lands, attach a statement documenting compliance with the North Carolina Environmental Policy Act.

**7. Certification and Permission to Enter on Land**

I understand that any permit issued in response to this application will allow only the development described in the application. The project will be subject to the conditions and restrictions contained in the permit.

I certify that I am authorized to grant, and do in fact grant permission to representatives of state and federal review agencies to enter on the aforementioned lands in connection with evaluating information related to this permit application and follow-up monitoring of the project.

I further certify that the information provided in this application is truthful to the best of my knowledge.

Date 5/2/19 Print Name Philip S. Harris III, P.E., C.P.M. for  
Signature Carla Davis

Please indicate application attachments pertaining to your proposed project.

- DCM MP-2 Excavation and Fill Information
- DCM MP-3 Upland Development
- DCM MP-4 Structures Information
- DCM MP-5 Bridges and Culverts

# BRIDGES and CULVERTS

Attach this form to Joint Application for CAMA Major Permit, Form DCM MP-1. Be sure to complete all other sections of the Joint Application that relate to this proposed project. Please include all supplemental information.

**1. BRIDGES**  This section not applicable

- a. Is the proposed bridge:  
 Commercial  Public/Government  Private/Community
- b. Water body to be crossed by bridge:  
Trent Creek
- c. Type of bridge (construction material):  
36" Girder Bridge with Concrete Deck and 4 foot Caps
- d. Water depth at the proposed crossing at NLW or NWL:  
10 feet
- e. (i) Will proposed bridge replace an existing bridge?  Yes  No  
If yes,  
(ii) Length of existing bridge: 145.0  
(iii) Width of existing bridge: 31.5  
(iv) Navigation clearance underneath existing bridge: 7.5  
(v) Will all, or a part of, the existing bridge be removed?  
(Explain) All of the existing bridge will be removed.
- f. (i) Will proposed bridge replace an existing culvert?  Yes  No  
If yes,  
(ii) Length of existing culvert: \_\_\_\_\_  
(iii) Width of existing culvert: \_\_\_\_\_  
(iv) Height of the top of the existing culvert above the NHW or NWL: \_\_\_\_\_  
(v) Will all, or a part of, the existing culvert be removed?  
(Explain)
- g. Length of proposed bridge: 160
- h. Width of proposed bridge: 34.6
- i. Will the proposed bridge affect existing water flow?  Yes  No  
If yes, explain: larger waterway opening allows larger conveyance
- j. Will the proposed bridge affect navigation by reducing or increasing the existing navigable opening?  Yes  No  
If yes, explain: The low chord of the bridge is slightly higher than the existing low chord
- k. Navigation clearance underneath proposed bridge: 7.5'
- l. Have you contacted the U.S. Coast Guard concerning their approval?  Yes  No  
If yes, explain: Advance Approval received
- m. Will the proposed bridge cross wetlands containing no navigable waters?  Yes  No  
If yes, explain:
- n. Height of proposed bridge above wetlands: 8

**2. CULVERTS**  This section not applicable

- a. Number of culverts proposed: \_\_\_\_\_
- b. Water body in which the culvert is to be placed:  
\_\_\_\_\_

< Form continues on back >

c. Type of culvert (construction material):

---

d. (i) Will proposed culvert replace an existing bridge?  Yes  No

If yes,

(ii) Length of existing bridge: \_\_\_\_\_

(iii) Width of existing bridge: \_\_\_\_\_

(iv) Navigation clearance underneath existing bridge: \_\_\_\_\_

(v) Will all, or a part of, the existing bridge be removed? (Explain)

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

e. (i) Will proposed culvert replace an existing culvert?  Yes  No

If yes,

(ii) Length of existing culvert(s): \_\_\_\_\_

(iii) Width of existing culvert(s): \_\_\_\_\_

(iv) Height of the top of the existing culvert above the NHW or NWL: \_\_\_\_\_

(v) Will all, or a part of, the existing culvert be removed? (Explain)

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

f. Length of proposed culvert: \_\_\_\_\_

g. Width of proposed culvert: \_\_\_\_\_

h. Height of the top of the proposed culvert above the NHW or NWL.

\_\_\_\_\_

i. Depth of culvert to be buried below existing bottom contour.

\_\_\_\_\_

j. Will the proposed culvert affect navigation by reducing or increasing the existing navigable opening?  Yes  No

If yes, explain:

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

k. Will the proposed culvert affect existing water flow?  Yes  No

If yes, explain:

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

**3. EXCAVATION and FILL**  This section not applicable

a. (i) Will the placement of the proposed bridge or culvert require any excavation below the NHW or NWL?  Yes  No

If yes,

(ii) Avg. length of area to be excavated: \_\_\_\_\_

(iii) Avg. width of area to be excavated: \_\_\_\_\_

(iv) Avg. depth of area to be excavated: \_\_\_\_\_

(v) Amount of material to be excavated in cubic yards: \_\_\_\_\_

b. (i) Will the placement of the proposed bridge or culvert require any excavation within coastal wetlands/marsh (CW), submerged aquatic vegetation (SAV), shell bottom (SB), or other wetlands (WL)? If any boxes are checked, provide the number of square feet affected.

CW \_\_\_\_\_  SAV \_\_\_\_\_  SB \_\_\_\_\_

WL \_\_\_\_\_  None

(ii) Describe the purpose of the excavation in these areas:

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

c. (i) Will the placement of the proposed bridge or culvert require any high-ground excavation?  Yes  No

If yes,

(ii) Avg. length of area to be excavated: 17ft

(iii) Avg. width of area to be excavated: 71.5ft

(iv) Avg. depth of area to be excavated: 2.12ft

(v) Amount of material to be excavated in cubic yards: 192 CY

**Form DCM MP-5 (Bridges and Culverts, Page 3 of 4)**

d. If the placement of the bridge or culvert involves any excavation, please complete the following:

(i) Location of the spoil disposal area: Currently unknown, to be determined by contractor

(ii) Dimensions of the spoil disposal area: \_\_\_\_\_

(iii) Do you claim title to the disposal area? Yes No (If no, attach a letter granting permission from the owner.)

(iv) Will the disposal area be available for future maintenance? Yes No

(v) Does the disposal area include any coastal wetlands/marsh (CW), submerged aquatic vegetation (SAVs), other wetlands (WL), or shell bottom (SB)?

CW SAV WL SB None

If any boxes are checked, give dimensions if different from (ii) above.

(vi) Does the disposal area include any area below the NHW or NWL? ? Yes No

If yes, give dimensions if different from (ii) above.

e. (i) Will the placement of the proposed bridge or culvert result in any fill (other than excavated material described in Item d above) to be placed below NHW or NWL? Yes No

If yes,

(ii) Avg. length of area to be filled: \_\_\_\_\_

(iii) Avg. width of area to be filled: \_\_\_\_\_

(iv) Purpose of fill:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

f. (i) Will the placement of the proposed bridge or culvert result in any fill (other than excavated material described in Item d above) to be placed within coastal wetlands/marsh (CW), submerged aquatic vegetation (SAV), shell bottom (SB), or other wetlands (WL)? If any boxes are checked, provide the number of square feet affected.

CW 10,450 sf SAV \_\_\_\_\_ SB \_\_\_\_\_

WL \_\_\_\_\_ None

(ii) Describe the purpose of the excavation in these areas:

The fill is for the construction of both the proposed and detour bridges. Of the total 10450 sf of fill, approximately 6500 sf is temporary fill and will be removed once the proposed bridge is completed.

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

g. (i) Will the placement of the proposed bridge or culvert result in any fill (other than excavated material described in Item d above) to be placed on high-ground? Yes No

If yes,

(ii) Avg. length of area to be filled: 950 ft

(iii) Avg. width of area to be filled: 40 ft

(iv) Purpose of fill: Slightly raising the grade and widening the road

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**4. GENERAL**

a. Will the proposed project require the relocation of any existing utility lines? Yes No

If yes, explain: Relocation of multiple power poles and associated overhead power lines and guy wire anchor units. Cable and phone lines will be relocated via burial and overhead. Sewer and water lines will also be relocated. See utility narrative for additional detail.

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

*If this portion of the proposed project has already received*

b. Will the proposed project require the construction of any temporary detour structures? Yes No

If yes, explain: 140' Detour bridge around the existing while proposed structure is built

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_



approval from local authorities, please attach a copy of the approval or certification.

< Form continues on back >

c. Will the proposed project require any work channels?  Yes  No

If yes, complete Form DCM-MP-2.

d. How will excavated or fill material be kept on site and erosion controlled?

Erosion control devices during and after construction

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

e. What type of construction equipment will be used (for example, dragline, backhoe, or hydraulic dredge)?

Construction equipment may include but is not limited to cranes, excavators, and backhoes.

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

f. Will wetlands be crossed in transporting equipment to project site?  Yes  No

If yes, explain steps that will be taken to avoid or minimize environmental impacts.

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

g. Will the placement of the proposed bridge or culvert require any shoreline stabilization?  Yes  No

If yes, complete form MP-2, Section 3 for Shoreline Stabilization only.

6/7/19

Date

B-4593 Bridge Replacement

Project Name

Philip S. Harris III

Applicant Name



Applicant Signature



## Lengyel Mitigation Site ONEID 025-001

The Lengyel Site is in Craven County within the USGS hydrologic unit 03020204 of the Neuse River. NCDOT acquired the 11.9 acre brackish marsh site to mitigate for unavoidable, jurisdictional impacts associated with TIP B-2531. Monitoring requirements were performed from 1999 to 2003 and the site was closed out in 2004. Table 1 shows the final mitigation quantities approved for the site. The site has been placed on the NCDOT On-site Debit Ledger for use within HUC 03020202. Table 2 indicates all mitigation debits that have occurred per regulatory agency approval.

In order to offset 0.11 acres of unavoidable brackish marsh impacts associated with B-4593, the Lengyel Mitigation Site will be debited 0.11 acres of brackish marsh mitigation.

Table 1. Mitigation Quantities Approved

HUC	Mitigation Type	Starting Amount	Additional Notes
3020202	Brackish Marsh Restoration	7.2	
3020202	Brackish Marsh Preservation	4.7	Do not debit.

Table 2. Mitigation Debts – Brackish Marsh Restoration

Mitigation Type	Debit Amount	Status	Site TIP	Action ID#	Notes
Brackish Marsh Restoration	1.56	Close Out	B-2531	199401568	0.78@2:1 ratio Debited in 03020202
Brackish Marsh Restoration	1.08	Close Out	B-2531 Mod	1994-01568	0.46 acres of these impacts were charged to Sawmill Debited in 03020202
Brackish Marsh Restoration	0.18	Close Out	B-4598		Impacts were 0.09 @ 2:1 ratio Debited in 03020202
Brackish Marsh Restoration	0.11	Close Out	B-4593		Debited in 03020204



# United States Department of the Interior

## FISH AND WILDLIFE SERVICE

Raleigh Field Office  
Post Office Box 33726  
Raleigh, North Carolina 27636-3726

### **GUIDELINES FOR AVOIDING IMPACTS TO THE WEST INDIAN MANATEE Precautionary Measures for Construction Activities in North Carolina Waters**

The West Indian manatee (*Trichechus manatus*), also known as the Florida manatee, is a Federally-listed endangered aquatic mammal protected under the Endangered Species Act of 1973, as amended (16 U.S.C. 1531 *et seq.*) and the Marine Mammal Protection Act of 1972, as amended (16 U.S.C 1461 *et seq.*). The manatee is also listed as endangered under the North Carolina Endangered Species Act of 1987 (Article 25 of Chapter 113 of the General Statutes). The U.S. Fish and Wildlife Service (Service) is the lead Federal agency responsible for the protection and recovery of the West Indian manatee under the provisions of the Endangered Species Act.

Adult manatees average 10 feet long and weigh about 2,200 pounds, although some individuals have been recorded at lengths greater than 13 feet and weighing as much as 3,500 pounds. Manatees are commonly found in fresh, brackish, or marine water habitats, including shallow coastal bays, lagoons, estuaries, and inland rivers of varying salinity extremes. Manatees spend much of their time underwater or partly submerged, making them difficult to detect even in shallow water. While the manatee's principal stronghold in the United States is Florida, the species is considered a seasonal inhabitant of North Carolina with most occurrences reported from June through October.

To protect manatees in North Carolina, the Service's Raleigh Field Office has prepared precautionary measures for general construction activities in waters used by the species. Implementation of these measure will allow in-water projects which do not require blasting to proceed without adverse impacts to manatees. In addition, inclusion of these guidelines as conservation measures in a Biological Assessment or Biological Evaluation, or as part of the determination of impacts on the manatee in an environmental document prepared pursuant to the National Environmental Policy Act, will expedite the Service's review of the document for the fulfillment of requirements under Section 7 of the Endangered Species Act. These measures include:

1. The project manager and/or contractor will inform all personnel associated with the project that manatees may be present in the project area, and the need to avoid any harm to these endangered mammals. The project manager will ensure that all construction personnel know the general appearance of the species and their habit of moving about completely or partially submerged in shallow water. All construction personnel will be informed that they are responsible for observing water-related activities for the presence of manatees.
2. The project manager and/or the contractor will advise all construction personnel that

there are civil and criminal penalties for harming, harassing, or killing manatees which are protected under the Marine Mammal Protection Act and the Endangered Species Act.

3. If a manatee is seen within 100 yards of the active construction and/or dredging operation or vessel movement, all appropriate precautions will be implemented to ensure protection of the manatee. These precautions will include the immediate shutdown of moving equipment if a manatee comes within 50 feet of the operational area of the equipment. Activities will not resume until the manatee has departed the project area on its own volition (i.e., it may not be herded or harassed from the area).

4. Any collision with and/or injury to a manatee will be reported immediately. The report must be made to the U.S. Fish and Wildlife Service (ph. 919.856.4520 ext. 16), the National Marine Fisheries Service (ph. 252.728.8762), and the North Carolina Wildlife Resources Commission (ph. 252.448.1546).

5. A sign will be posted in all vessels associated with the project where it is clearly visible to the vessel operator. The sign should state:

**CAUTION:** The endangered manatee may occur in these waters during the warmer months, primarily from June through October. Idle speed is required if operating this vessel in shallow water during these months. All equipment must be shut down if a manatee comes within 50 feet of the vessel or operating equipment. A collision with and/or injury to the manatee must be reported immediately to the U.S. Fish and Wildlife Service (919-856-4520 ext. 16), the National Marine Fisheries Service (252.728.8762), and the North Carolina Wildlife Resources Commission (252.448.1546).

6. The contractor will maintain a log detailing sightings, collisions, and/or injuries to manatees during project activities. Upon completion of the action, the project manager will prepare a report which summarizes all information on manatees encountered and submit the report to the Service's Raleigh Field Office.

7. All vessels associated with the construction project will operate at "no wake/idle" speeds at all times while in water where the draft of the vessel provides less than a four foot clearance from the bottom. All vessels will follow routes of deep water whenever possible.

8. If siltation barriers must be placed in shallow water, these barriers will be: (a) made of material in which manatees cannot become entangled; (b) secured in a manner that they cannot break free and entangle manatees; and, (c) regularly monitored to ensure that manatees have not become entangled. Barriers will be placed in a manner to allow manatees entry to or exit from essential habitat.

Prepared by (rev. 06/2003):  
U.S. Fish and Wildlife Service  
Raleigh Field Office  
Post Office Box 33726  
Raleigh, North Carolina 27636-3726  
919/856-4520

Figure 1. The whole body of the West Indian manatee may be visible in clear water; but in the dark and muddy waters of coastal North Carolina, one normally sees only a small part of the head when the manatee raises its nose to breathe.

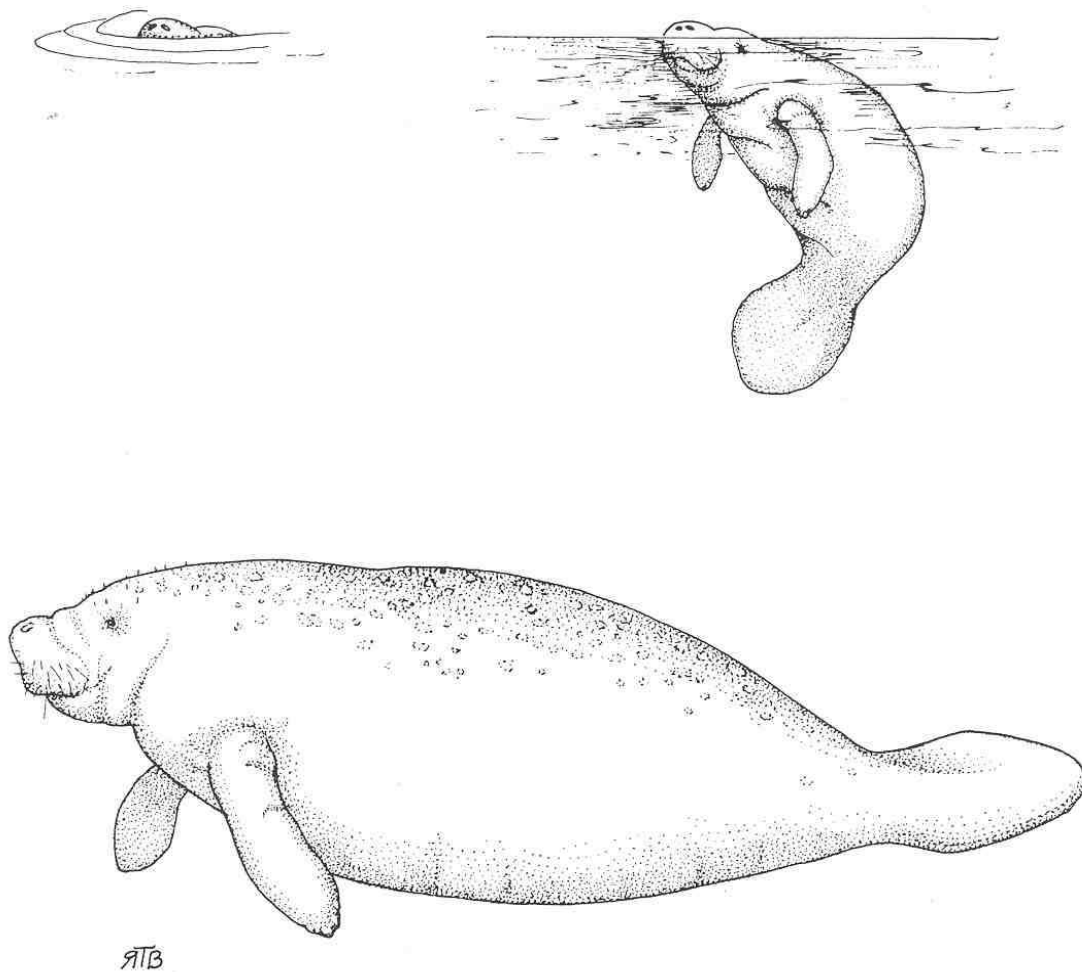


Illustration used with the permission of the North Carolina State Museum of Natural Sciences.  
Source: Clark, M. K. 1987. Endangered, Threatened, and Rare Fauna of North Carolina: Part I. A re-evaluation of the mammals. Occasional Papers of the North Carolina Biological Survey 1987-3. North Carolina State Museum of Natural Sciences. Raleigh, NC. pp. 52.



North Carolina Department of Transportation

Highway Stormwater Program  
STORMWATER MANAGEMENT PLAN  
FOR NCDOT PROJECTS



(Version 2.01: Released December 2014)

WBS Element: 38422.1.2      TIP No.: B-4593      County(ies): Pamlico      Page 1 of 1

General Project Information

WBS Element:	38422.1.2	TIP Number:	B-4593	Project Type:	Bridge Replacement	Date:	9/19/2018
NCDOT Contact:	Paul Atkinson, P.E.		Contractor / Designer:	Jason Patskoski, PhD, P.E.			
Address:	NCDOT Hydraulics Unit 1020 Birch Ridge Drive		Address:	Summit Design and Engineering Services 100 East Six Forks Road, Suite 300 Raleigh, NC 27609			
	Phone:	(919) 707-6707		Phone:	(919) 322-0115		
	Email:	patkinson@ncdot.gov		Email:	jason.patskoski@summitde.net		
City/Town:	Merrit		County(ies):	Pamlico			
River Basin(s):	Neuse		CAMA County?	Yes			
Wetlands within Project Limits?	Yes						

Project Description

Project Length (lin. miles or feet):	0.284 miles	Surrounding Land Use:	Rural Area with Agricultural or Residential Land Uses, Coastal					
	Proposed Project			Existing Site				
Project Built-Upon Area (ac.)	3.06	ac.	1.04	ac.				
Typical Cross Section Description:	2 lane road with 12' travel lanes and 4' paved shoulder with total bridge length of 160 ft and width of 34.58 ft			2 lane road with 12' travel lanes and no paved shoulder with total bridge length of 145.4 ft and width of 28 ft				
Annual Avg Daily Traffic (veh/hr/day):	Design/Future:	8600	Year:	2040	Existing:	5576	Year:	2019
General Project Narrative: (Description of Minimization of Water Quality Impacts)	State Project 38422.1.2 involves the replacement of NCDOT Bridge 680038 on NC 55 over Trent Creek. The proposed bridge will maintain the existing level of service. The proposed roadway fill slopes are 2:1 (which per geotechnical recommendations are the steepest allowable) and are grassy. There are no deck drains over Trent Creek. There are two proposed outlets on the beginning and end of the bridge left side to allow proper drainage for the bridge and minimize disturbance in the surrounding wetlands. Rip Rap outlet pads will be utilized to dissipate the flow and minimize erosion. All piping is outletted beyond buffer zones. Rip rap toe protection has been added to stabilize fill slopes as needed. The detour bridge will utilize 2:1 fill slopes as well as a pile retaining wall in order to minimize wetland impacts.							

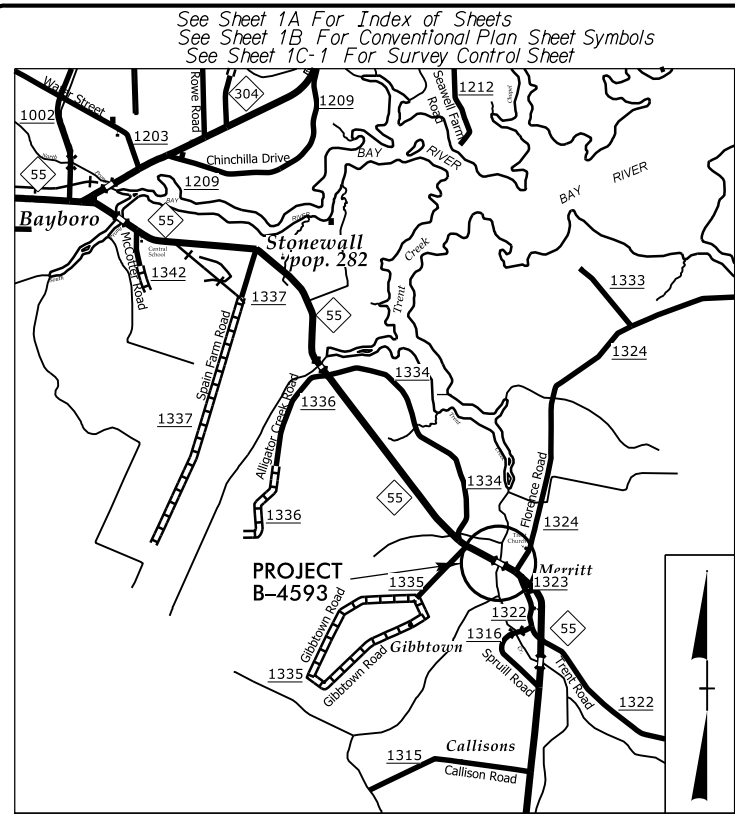
Waterbody Information

Surface Water Body (1):	Trent Creek		NCDWR Stream Index No.:	27-150-(6)			
NCDWR Surface Water Classification for Water Body	Primary Classification:		Class SC				
	Supplemental Classification:		Nutrient Sensitive Waters (NSW)				
Other Stream Classification:	None						
Impairments:	None						
Threatened/Endangered Species?	No	Comments:					
NRTR Stream ID:	Trent Creek			Buffer Rules in Effect:	Neuse		
Project Includes Bridge Spanning Water Body?	Yes	Deck Drains Discharge Over Buffer?	No	Dissipator Pads Provided in Buffer?	No		
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

TIP PROJECT: B-4593

CONTRACT: C204217



VICINITY MAP

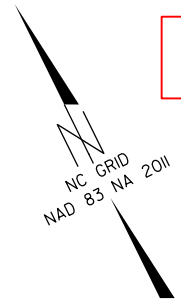
STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

**PAMLICO COUNTY**

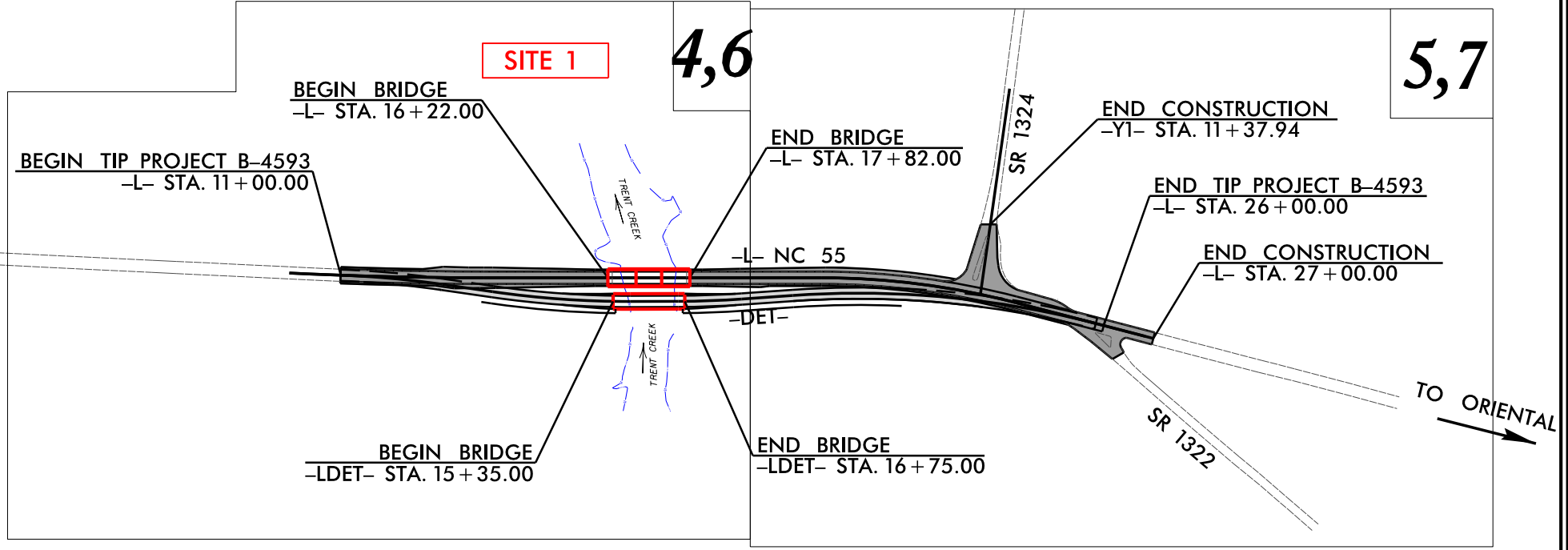
LOCATION: BRIDGE NO. 38 ON NC 55 OVER TRENT CREEK  
TYPE OF WORK: GRADING, DRAINAGE, PAVING AND STRUCTURE.

PERMIT DRAWINGS  
STREAM AND WETLAND IMPACTS

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-4593	1	
STATE PROJ. NO.	P.A. PROJ. NO.	DESCRIPTION	
38422.1.2	-	PE	
38422.2.1	-	RW, Utilities	
38422.3.1	-	CONST.	

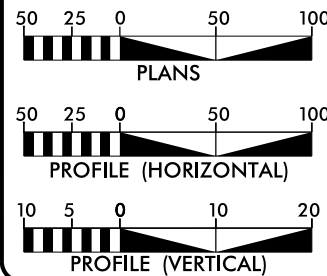


PERMIT DRAWING  
SHEET 1 OF 14



DOCUMENT NOT CONSIDERED FINAL  
UNLESS ALL SIGNATURES COMPLETED

GRAPHIC SCALES



DESIGN DATA

ADT 2019 = 5576  
ADT 2040 = 8600  
K = 8 %  
D = 55 %  
T = 9 % \*  
V = 60 MPH  
V<sub>DET</sub> = 50 MPH  
\* TTST = 2% DUAL = 7%  
FUNC CLASS = MAJOR COLLECTOR REGIONAL TIER

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT B-4593 = 0.254 MILES  
LENGTH STRUCTURE TIP PROJECT B-4593 = 0.030 MILES  
TOTAL LENGTH OF TIP PROJECT B-4593 = 0.284 MILES

NCDOT CONTACT: DAVID STUTTS, PE

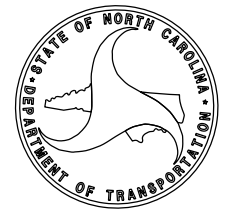
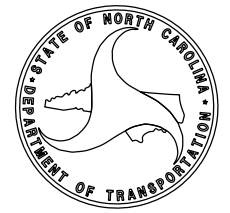
Prepared in the Office of:  
**SUMMIT**  
DESIGN AND ENGINEERING SERVICES  
FIRM NO. P-0339  
504 Meadowland Drive  
Hillsborough, NC 27278-8551  
Voice: (919) 732-3883  
Fax: (919) 732-6776  
www.summitde.net

RIGHT OF WAY DATE: NOVEMBER 1, 2018  
BRANDON W. JOHNSON, PE  
PROJECT ENGINEER

LETTING DATE: MAY 21, 2019  
FAITH E. JAHNKE, PE  
PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

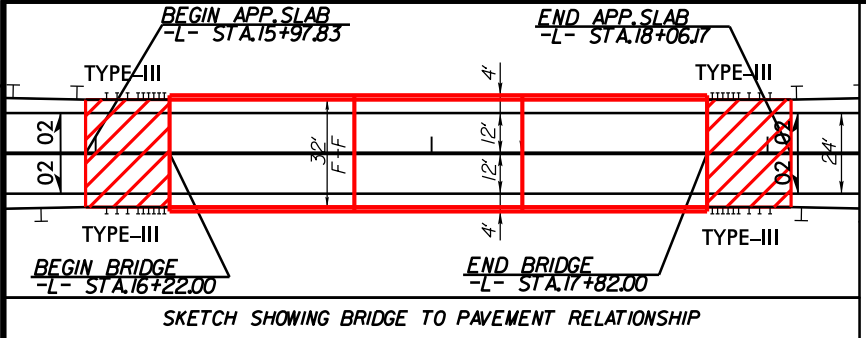
Signature: \_\_\_\_\_  
P.E.  
Signature: \_\_\_\_\_  
ROADWAY DESIGN ENGINEER  
P.E.



25-MAR-2019 12:27  
B4593-Hyd-prm\_+sh.dgn  
Patrick.Hartnett



8/17/99



PERMIT DRAWING SHEET 2 OF 14

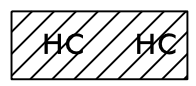
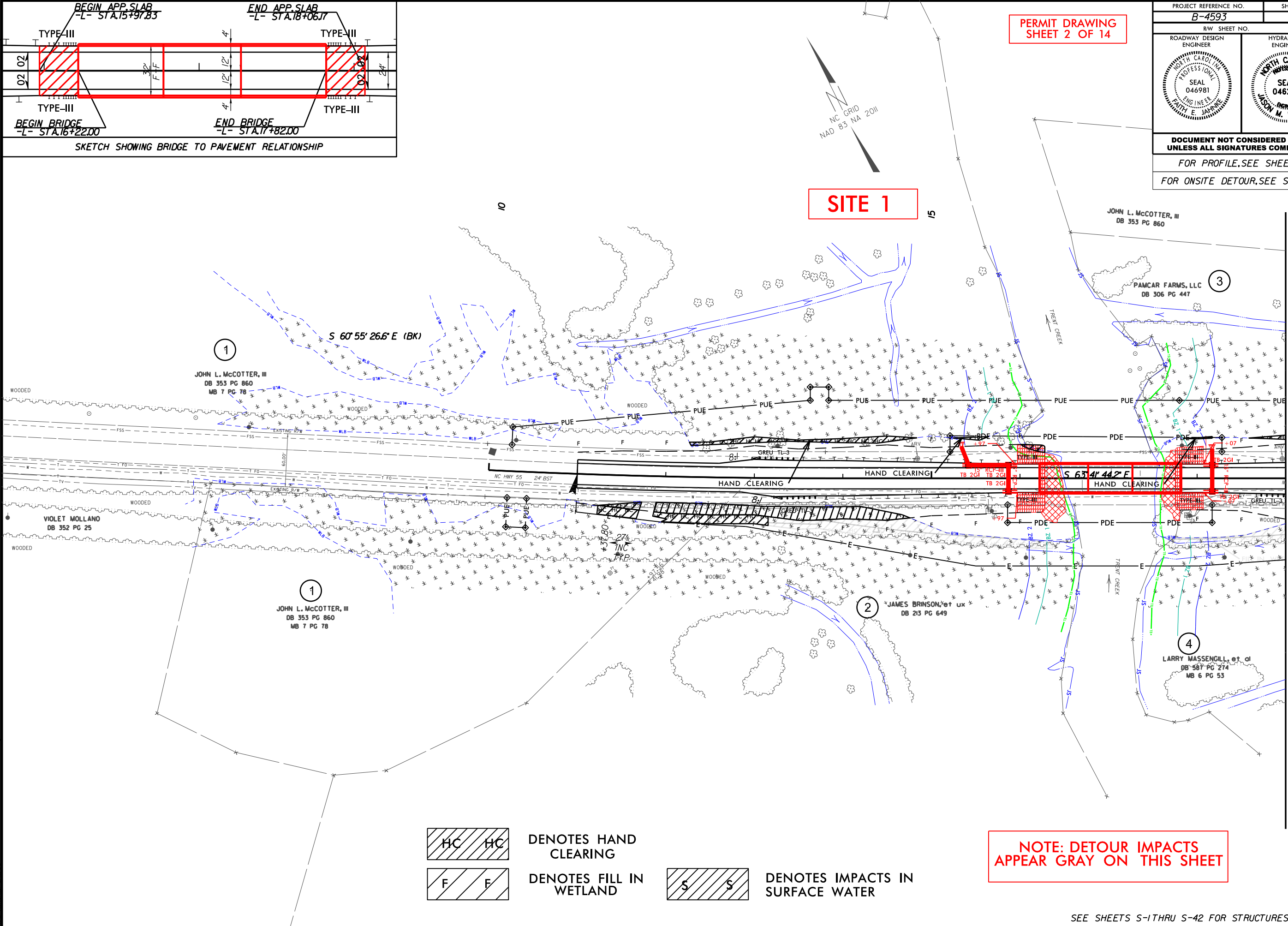
PROJECT REFERENCE NO. <b>B-4593</b>	SHEET NO. <b>4</b>
R/W SHEET NO.	HYDRAULICS ENGINEER
ROADWAY DESIGN ENGINEER	SEAL 046981 PAITH E. JARVIS
	SEAL 046226 JACQ M. PATSYKON
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	
FOR PROFILE, SEE SHEET 8	
FOR ONSITE DETOUR, SEE SHEET 6	

**SITE 1**

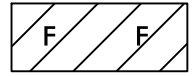
REVISIONS

R/W REV. REMOVED ROW. ADDED TCE. ADDED PDE ON PARCELS 1, 2, 3, AND 4. - FEJ 19031

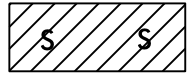
MATCHLINE -L- STA 19 + 00.00 (SEE SHEET 5)



DENOTES HAND CLEARING



DENOTES FILL IN WETLAND



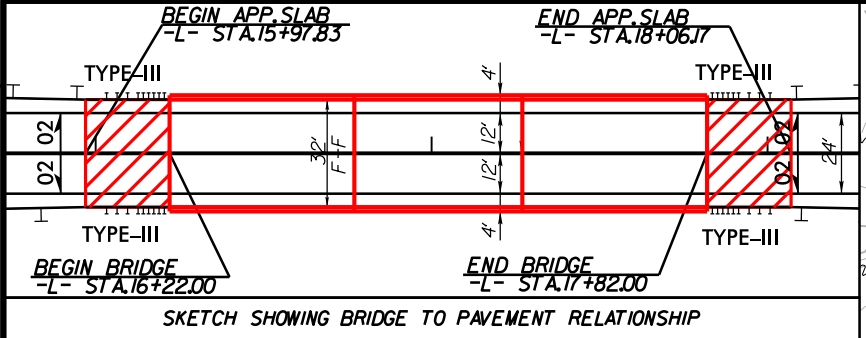
DENOTES IMPACTS IN SURFACE WATER

NOTE: DETOUR IMPACTS APPEAR GRAY ON THIS SHEET

SEE SHEETS S-1 THRU S-42 FOR STRUCTURES PLANS

25-MAR-2019 12:27

8/17/99



SKETCH SHOWING BRIDGE TO PAVEMENT RELATIONSHIP

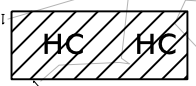
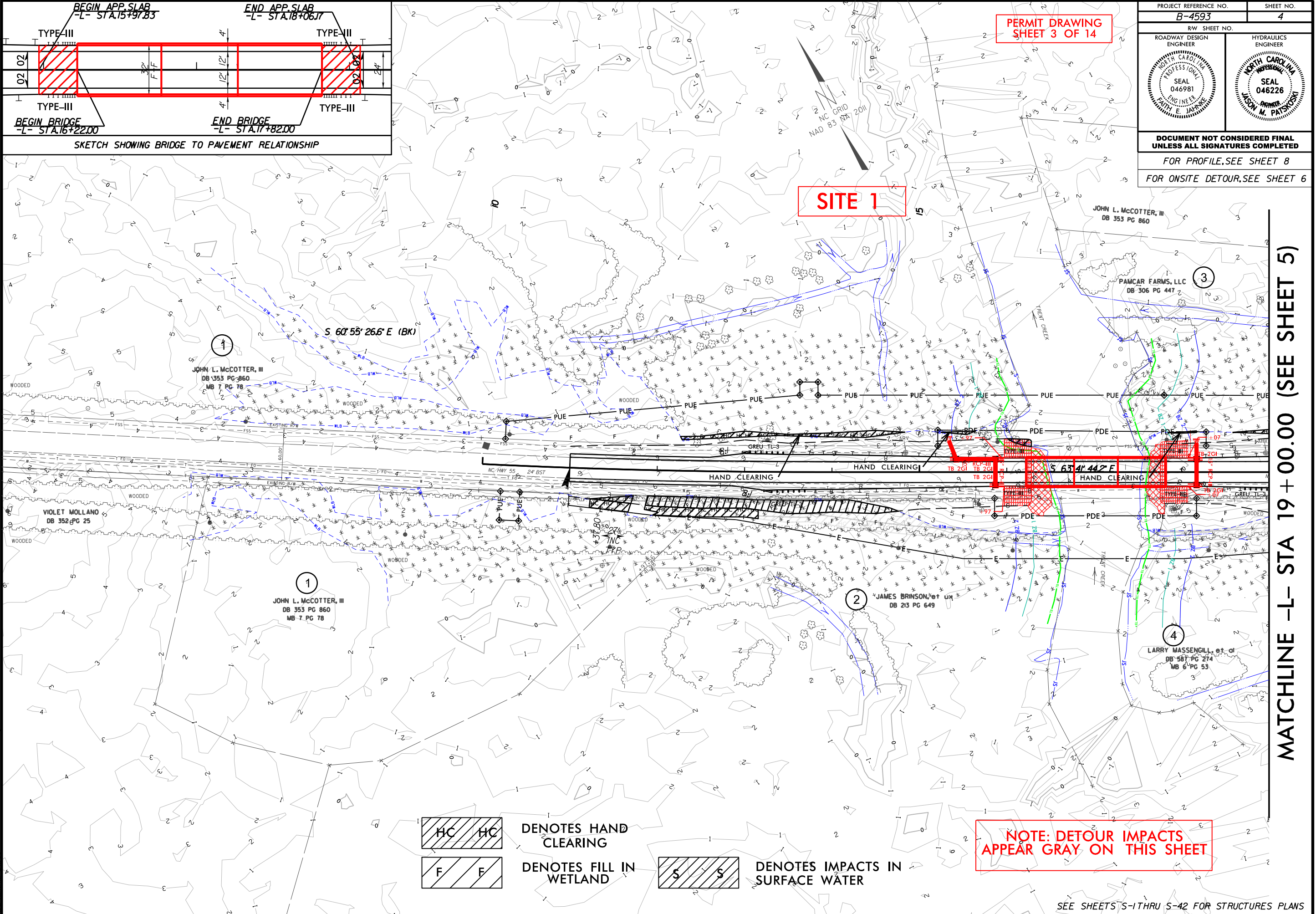
PERMIT DRAWING  
SHEET 3 OF 14

PROJECT REFERENCE NO. <b>B-4593</b>	SHEET NO. <b>4</b>
R/W SHEET NO.	HYDRAULICS ENGINEER
ROADWAY DESIGN ENGINEER	SEAL 046981 PATRICK E. JARVIS
	SEAL 046226 JACQ M. PATSYKOW
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	
FOR PROFILE, SEE SHEET 8	
FOR ONSITE DETOUR, SEE SHEET 6	

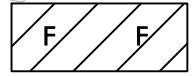
**SITE 1**

REVISIONS  
R/W REV. REMOVED ROW. ADDED TCE. ADDED PDE ON PARCELS 1, 2, 3, AND 4. - FEJ 190/31

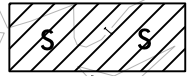
MATCHLINE -L- STA 19 + 00.00 (SEE SHEET 5)



DENOTES HAND CLEARING



DENOTES FILL IN WETLAND



DENOTES IMPACTS IN SURFACE WATER

**NOTE: DETOUR IMPACTS  
APPEAR GRAY ON THIS SHEET**

SEE SHEETS S-1 THRU S-42 FOR STRUCTURES PLANS

25-MAR-2019 12:28  
C:\projects\B-4593\Drawings





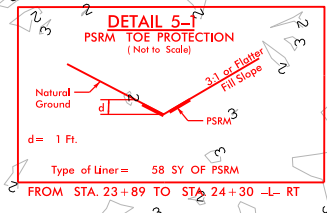
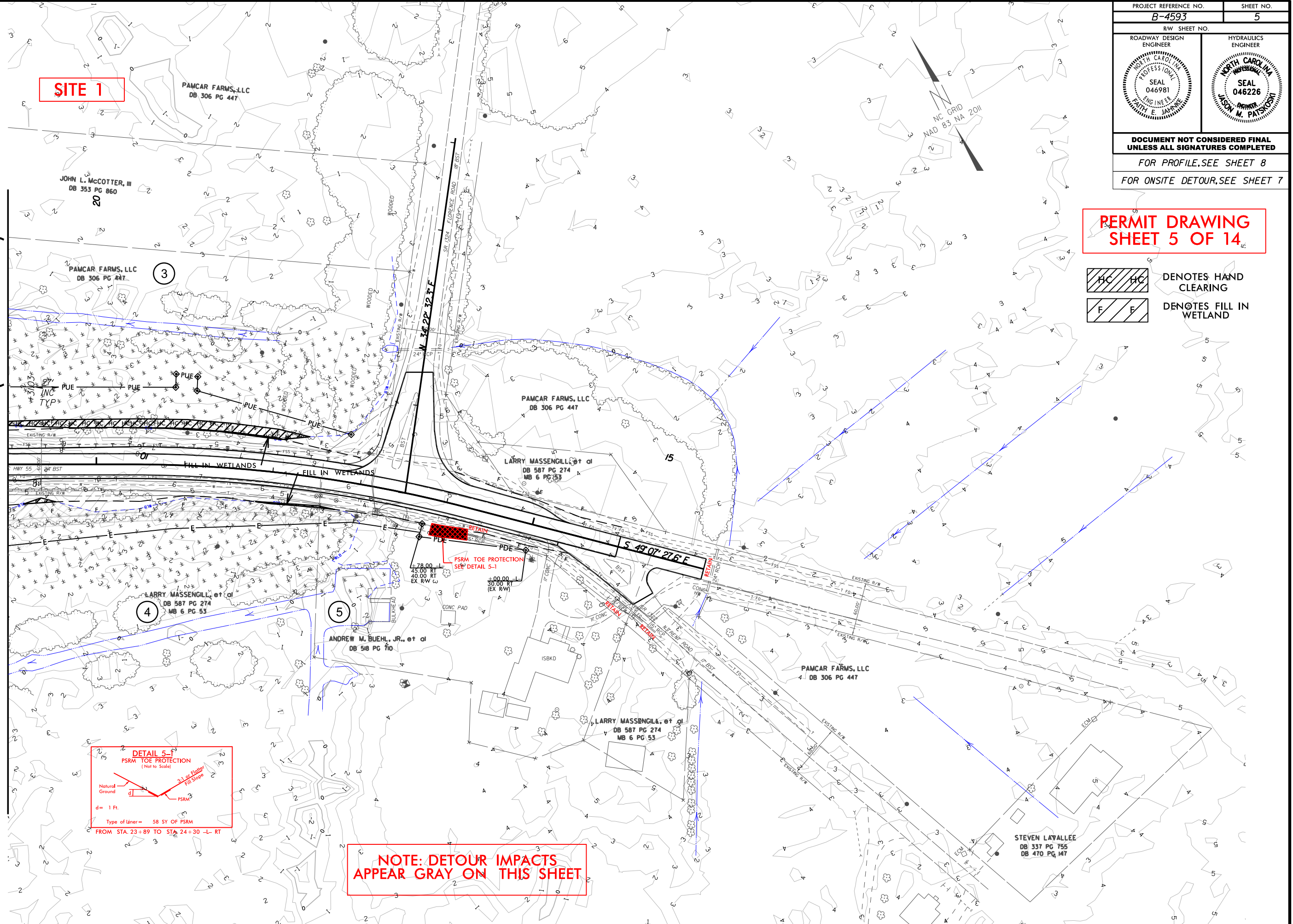
PROJECT REFERENCE NO. <b>B-4593</b>	SHEET NO. <b>5</b>
R/W SHEET NO.	HYDRAULICS ENGINEER
ROADWAY DESIGN ENGINEER	PROFESSIONAL SEAL 046981 PAITH E. JAFFAR
	PROFESSIONAL SEAL 046226 JASON M. PATSKO
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	
FOR PROFILE, SEE SHEET 8	
FOR ONSITE DETOUR, SEE SHEET 7	

**PERMIT DRAWING  
SHEET 5 OF 14**

**HC HC** DENOTES HAND CLEARING  
**F F** DENOTES FILL IN WETLAND

**MATCHLINE -L- STA 19 + 00.00 (SEE SHEET 4)**

**SITE 1**



**NOTE: DETOUR IMPACTS  
APPEAR GRAY ON THIS SHEET**

REVISIONS

8/17/99

R/W REV. REMOVED ROW. ADDED TCE. ADDED PDE ON PARCELS 1, 2, 3, AND 4. - FEJ 190131

25-MAR-2019 12:28  
25-MAR-2019 12:28



**DETOUR BRIDGE**

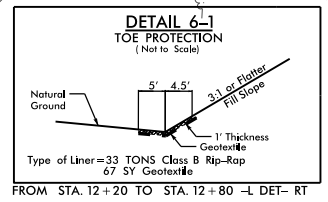
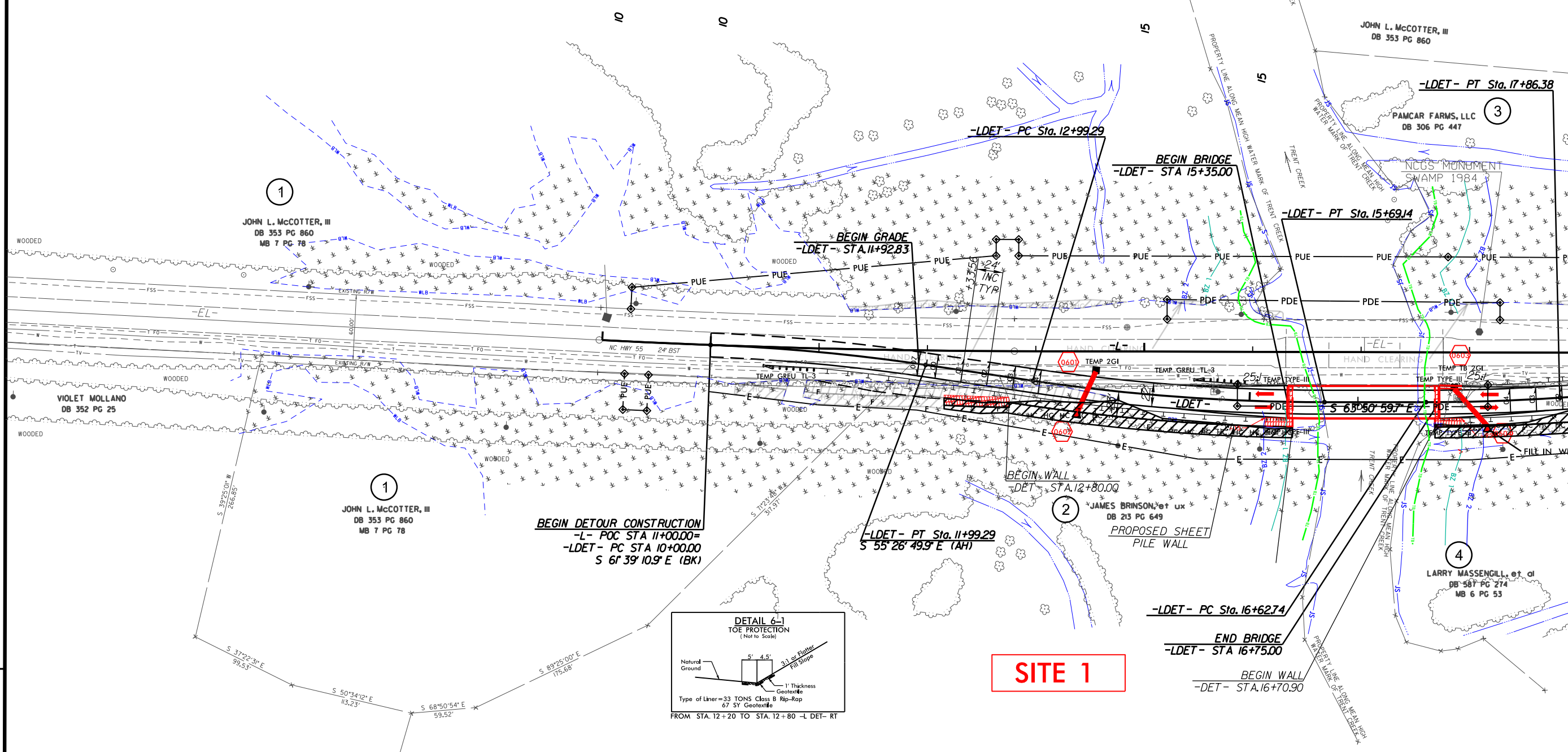
**PERMIT DRAWING  
SHEET 6 OF 14**

**NOTE: ALL DETOUR  
IMPACTS ARE TEMPORARY**

**NOTE: MAIN BRIDGE IMPACTS  
APPEAR GRAY ON THIS SHEET**



8/17/99  
REVISED  
R/W REV: REMOVED ROW ADDED TCE, ADDED PDE ON PARCELS 1, 2, 3, AND 4 - FEJ 19/03/1  
25-MAR-2019 12:28  
Bates



**T T** DENOTES TEMPORARY FILL IN WETLAND

**HC HC** DENOTES HAND CLEARING

**SITE 1**

-LDET-		
PI Sta 10+99.74	PI Sta 14+34.46	PI Sta 17+24.58
Δ = 6' 12' 21.0" (RT)	Δ = 8' 24' 09.8" (LT)	Δ = 3' 51' 00.3" (LT)
D = 3' 06' 50.0"	D = 3' 06' 50.0"	D = 3' 06' 50.0"
L = 199.29'	L = 269.85'	L = 123.64'
T = 99.74'	T = 135.16'	T = 61.84'
R = 1,840.00'	R = 1,840.00'	R = 1,840.00'
SE = 04	SE = 04	SE = 04
RO = 96'	RO = 96'	RO = 96'

**MATCHLINE -L- STA 19+00.00 (SEE SHEET 7)**

**DETOUR BRIDGE**

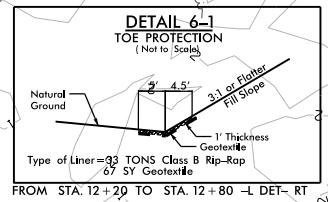
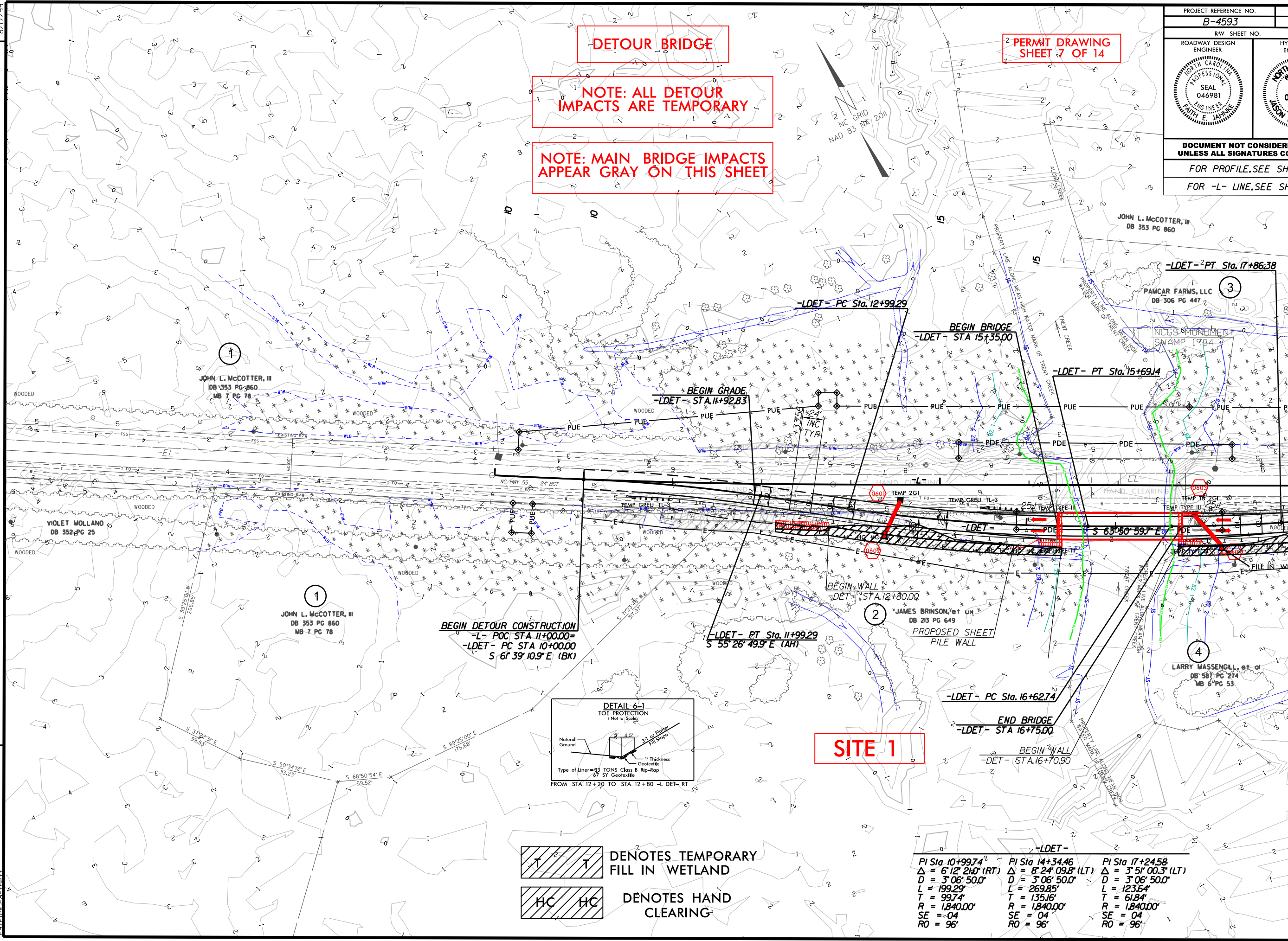
**2 PERMIT DRAWING SHEET 7 OF 14**

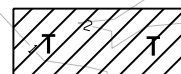
**NOTE: ALL DETOUR IMPACTS ARE TEMPORARY**


**NOTE: MAIN BRIDGE IMPACTS APPEAR GRAY ON THIS SHEET**

REVISED  
R/W REV: REMOVED ROW ADDED TCE ADDED PDE ON PARCELS 1, 2, 3, AND 4 - FEJ 19/03/1

MATCHLINE -L- STA 19+00.00 (SEE SHEET 7)





 DENOTES TEMPORARY FILL IN WETLAND

 DENOTES HAND CLEARING

PI Sta 10+99.74	PI Sta 14+34.46	PI Sta 17+24.58
$\Delta = 6' 12' 24''$ (RT)	$\Delta = 8' 24' 09''$ (LT)	$\Delta = 3' 51' 00.3''$ (LT)
D = 3' 06' 50.0"	D = 3' 06' 50.0"	D = 3' 06' 50.0"
L = 199.29'	L = 269.85'	L = 123.64'
T = 99.74'	T = 135.16'	T = 61.84'
R = 1,840.00'	R = 1,840.00'	R = 1,840.00'
SE = 04	SE = 04	SE = 04
RO = 96'	RO = 96'	RO = 96'



8/17/99

PROJECT REFERENCE NO. <b>B-4593</b>	SHEET NO. <b>7</b>
RW SHEET NO.	
ROADWAY DESIGN ENGINEER 	HYDRAULICS ENGINEER 
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	
FOR PROFILE, SEE SHEET 9	
FOR -L- LINE, SEE SHEET 5	





**DETOUR BRIDGE**

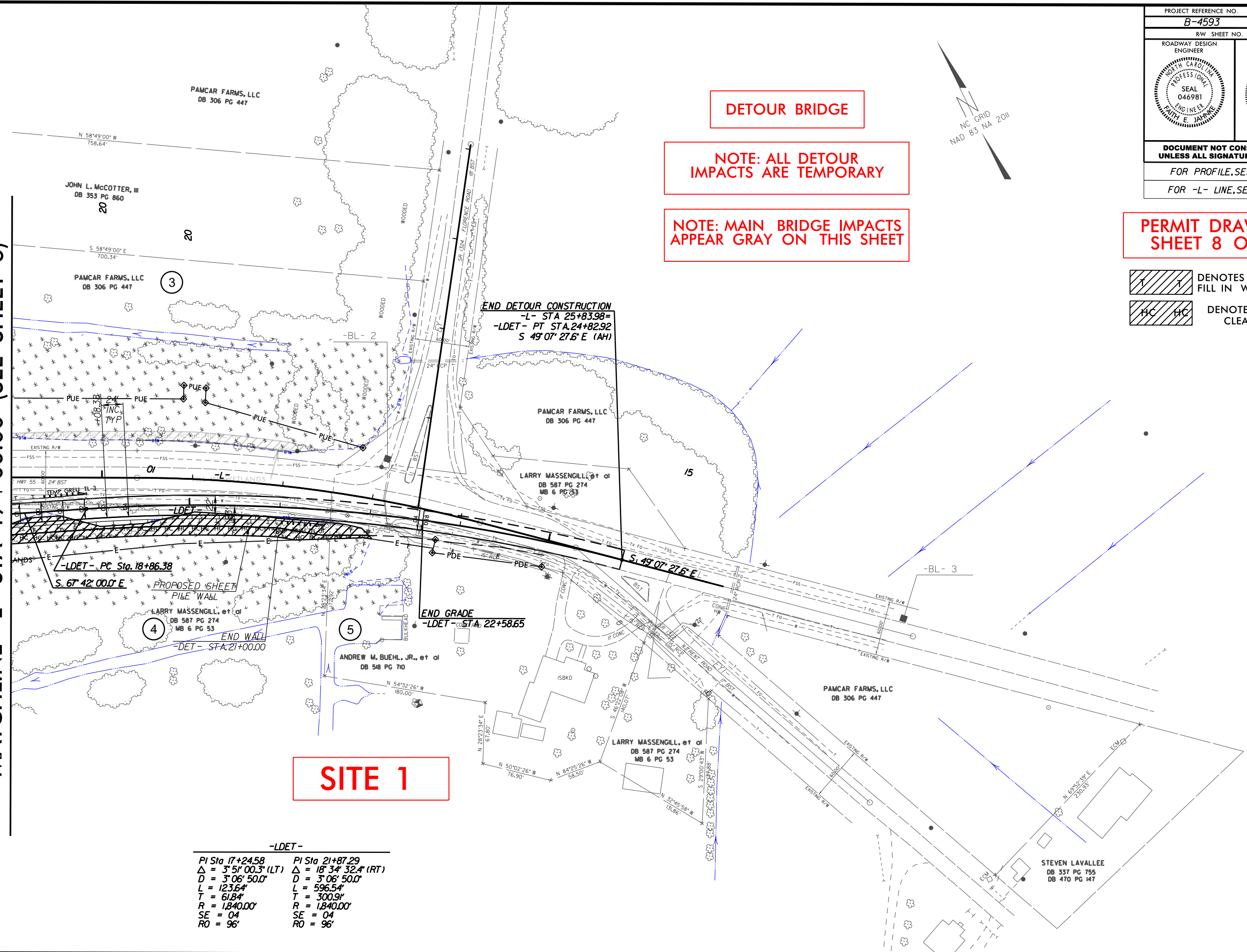
**NOTE: ALL DETOUR IMPACTS ARE TEMPORARY**

**NOTE: MAIN BRIDGE IMPACTS APPEAR GRAY ON THIS SHEET**

**PERMIT DRAWING SHEET 8 OF 14**

-  DENOTES TEMPORARY FILL IN WETLAND
-  DENOTES HAND CLEARING

**MATCHLINE -L- STA 19 + 00.00 (SEE SHEET 6)**



**SITE 1**

-LDET-	
PI Sta 17+24.58	PI Sta 21+87.29
$\Delta = 3^{\circ} 51' 00.3\"$ (LT)	$\Delta = 18^{\circ} 34' 32.4\"$ (RT)
D = 3' 06' 50.0"	D = 3' 06' 50.0"
L = 123.64'	L = 596.54'
T = 61.84'	T = 300.91'
R = 1,840.00'	R = 1,840.00'
SE = 04	SE = 04
RO = 96'	RO = 96'

REVISIONS

R/W REV: REMOVED ROW ADDED TCE ADDED POE ON PARCELS 1, 2, 3, AND 4. - FEJ 19/03/1

25-MAR-2019 12:28  
B4593\_Hyd perm.psh.7\_det.dgn  
Batesak Electric

PROJECT REFERENCE NO. <b>B-4593</b>	SHEET NO. <b>7</b>
RW SHEET NO.	
ROADWAY DESIGN ENGINEER 	HYDRAULICS ENGINEER 
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	
FOR PROFILE, SEE SHEET 9	
FOR -L- LINE, SEE SHEET 5	

**PERMIT DRAWING SHEET 9 OF 14**

- DENOTES TEMPORARY FILL IN WETLAND
- DENOTES HAND CLEARING

**DETOUR BRIDGE**

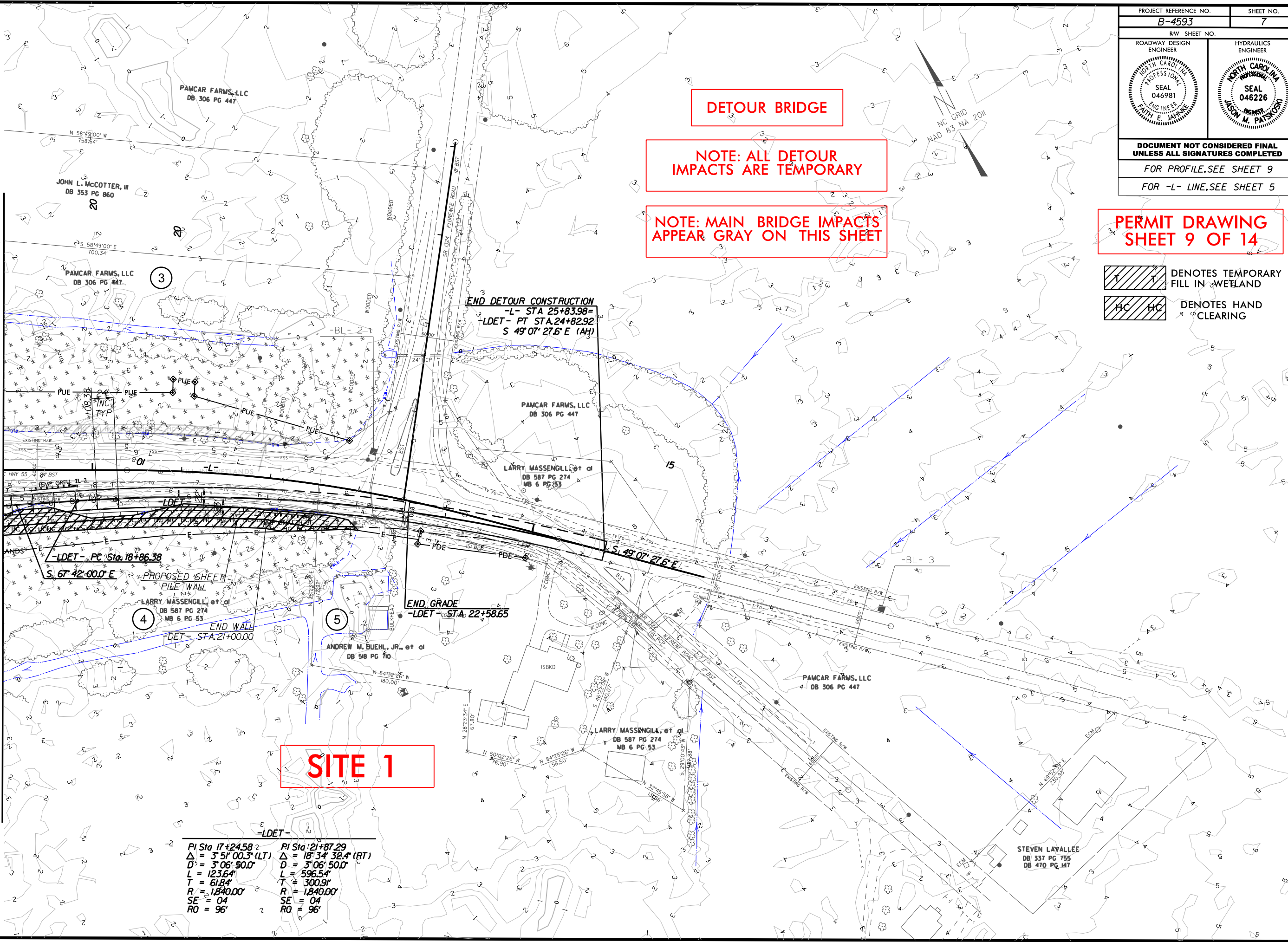
**NOTE: ALL DETOUR IMPACTS ARE TEMPORARY**

**NOTE: MAIN BRIDGE IMPACTS APPEAR GRAY ON THIS SHEET**

**MATCHLINE -L- STA 19 + 00.00 (SEE SHEET 6)**

R/W REV: REMOVED ROW ADDED TCE ADDED POE ON PARCELS 1, 2, 3, AND 4 - FEJ 19/03/1

25-MAR-2019 12:28 B:\593\_Hyd perm.psh.7\_det\_contour.dgn

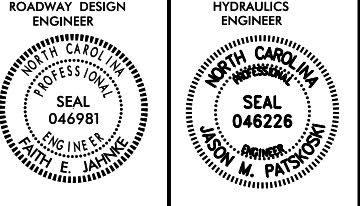


PI Sta 17+24.58	PI Sta 21+87.29
$\Delta = 3^{\circ} 51' 00.3''$ (LT)	$\Delta = 18^{\circ} 34' 32.4''$ (RT)
$D = 3^{\circ} 06' 50.0''$	$D = 3^{\circ} 06' 50.0''$
$L = 123.64'$	$L = 596.54'$
$T = 61.84'$	$T = 300.91'$
$R = 1,840.00'$	$R = 1,840.00'$
$SE = 04'$	$SE = 04'$
$RO = 96'$	$RO = 96'$

REVISIONS

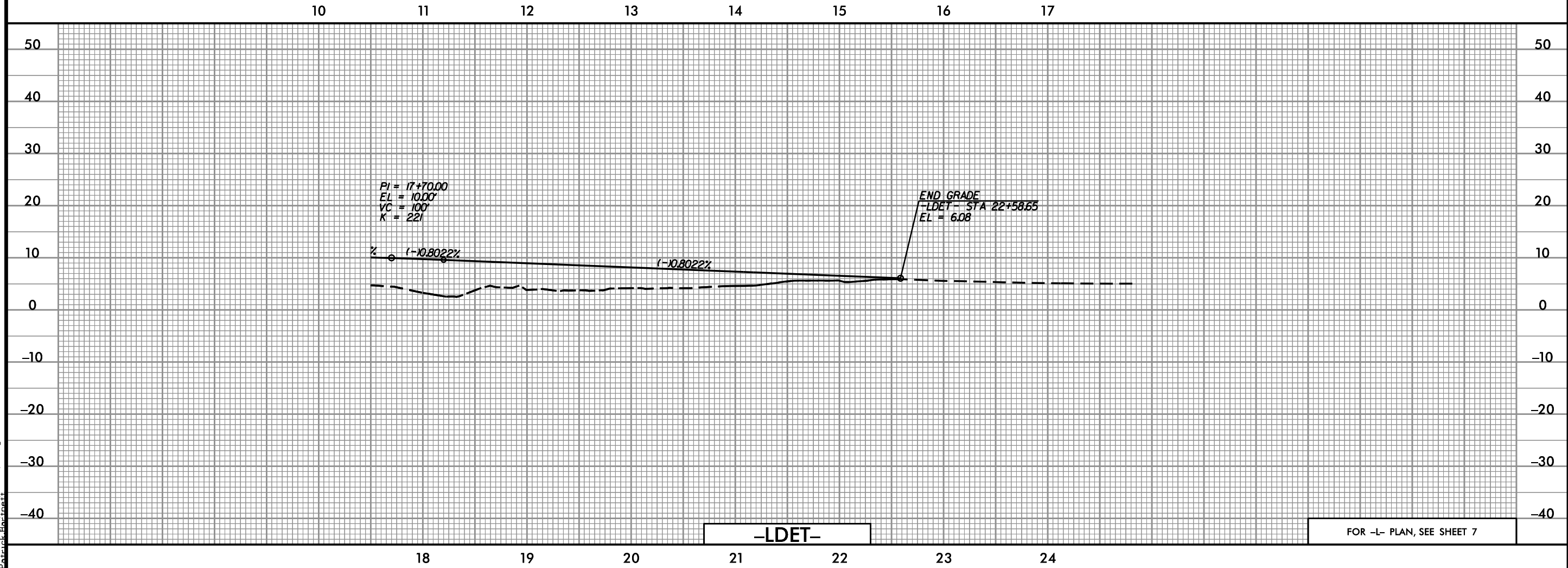
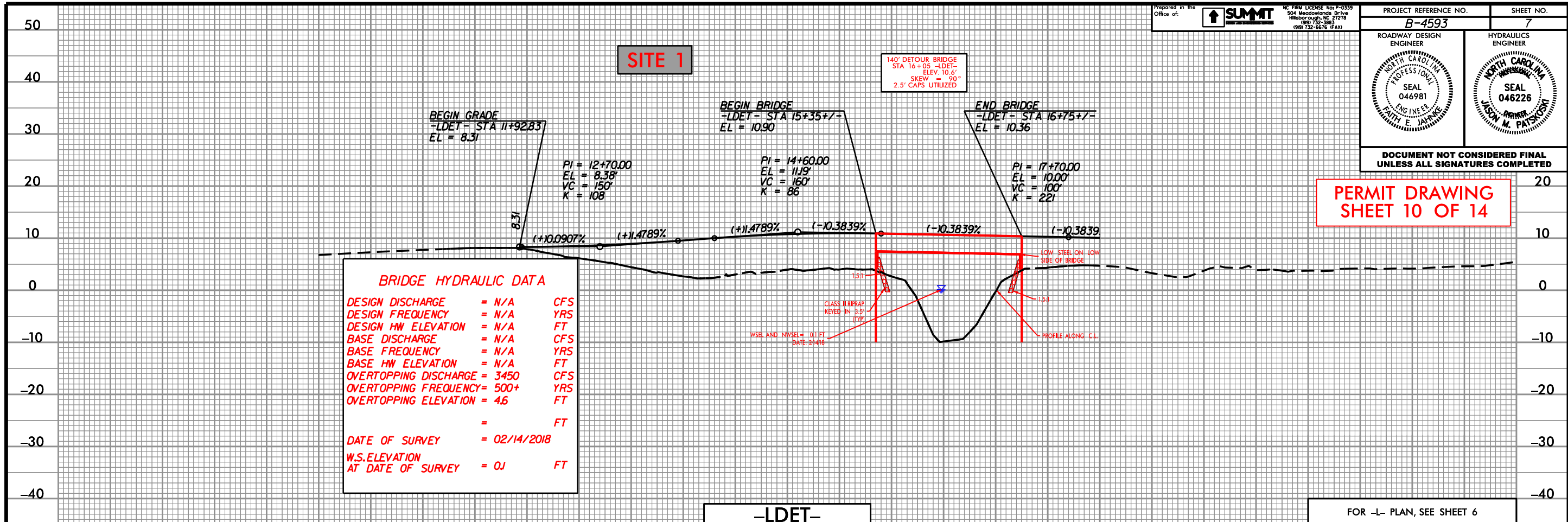
8/17/99



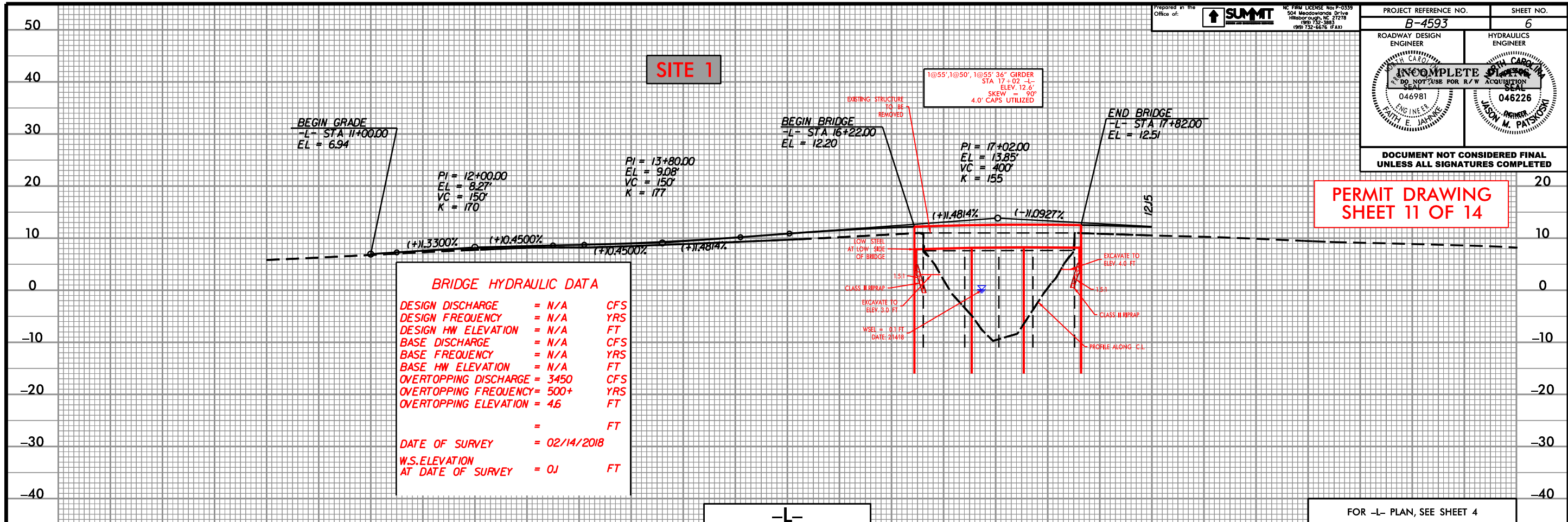


DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

**PERMIT DRAWING SHEET 10 OF 14**



25-MAR-2018 12:28  
 2315331\_H:\p\ofl.edg  
 Patrick.Hartman

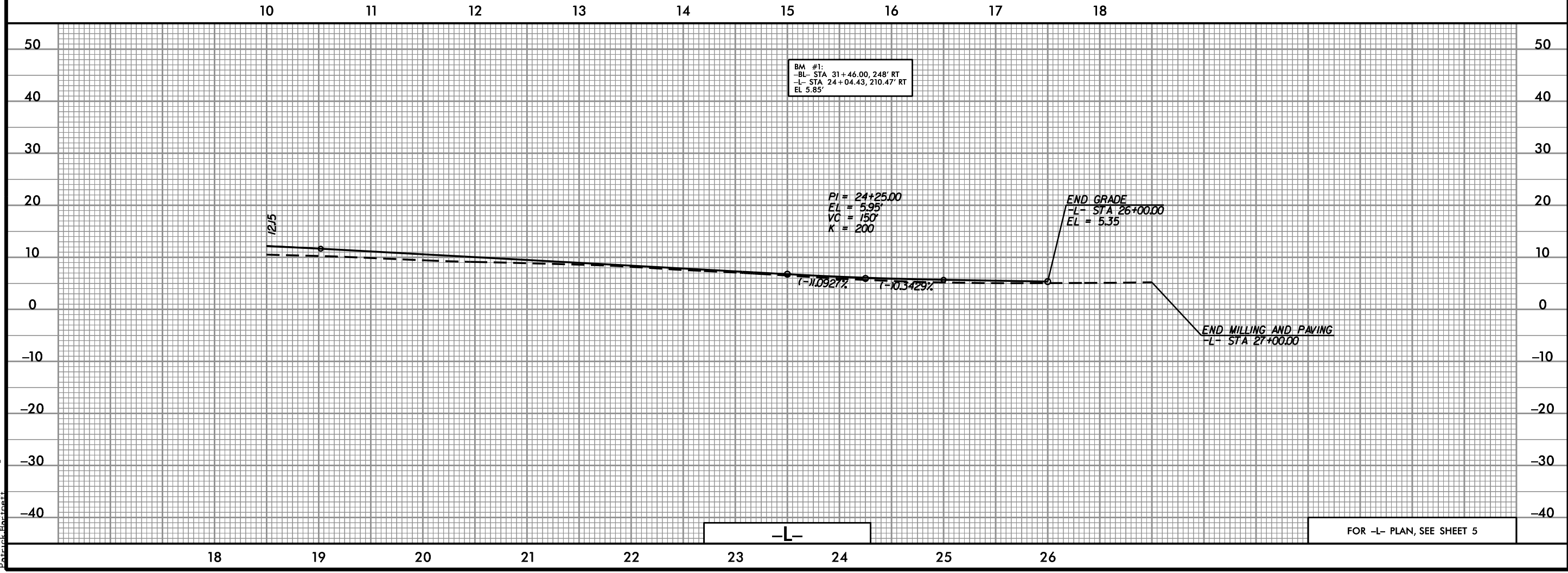


BRIDGE HYDRAULIC DATA		
DESIGN DISCHARGE	= N/A	CFS
DESIGN FREQUENCY	= N/A	YRS
DESIGN HW ELEVATION	= N/A	FT
BASE DISCHARGE	= N/A	CFS
BASE FREQUENCY	= N/A	YRS
BASE HW ELEVATION	= N/A	FT
OVERTOPPING DISCHARGE	= 3450	CFS
OVERTOPPING FREQUENCY	= 500+	YRS
OVERTOPPING ELEVATION	= 4.6	FT
	=	FT
DATE OF SURVEY	= 02/14/2018	
W.S. ELEVATION AT DATE OF SURVEY	= 0J	FT

PERMIT DRAWING SHEET 11 OF 14

-L-

FOR -L- PLAN, SEE SHEET 4



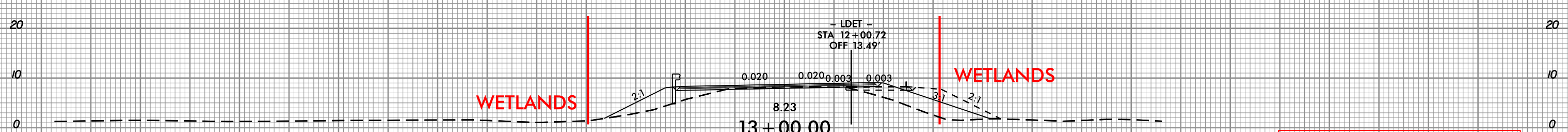
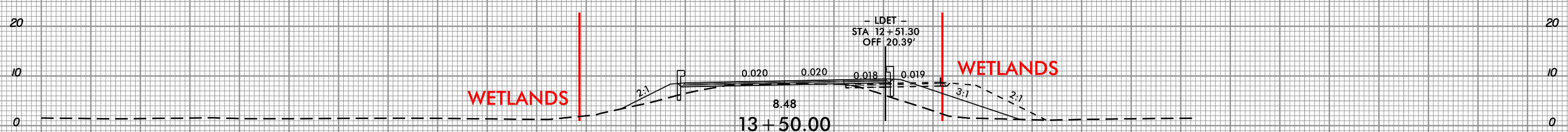
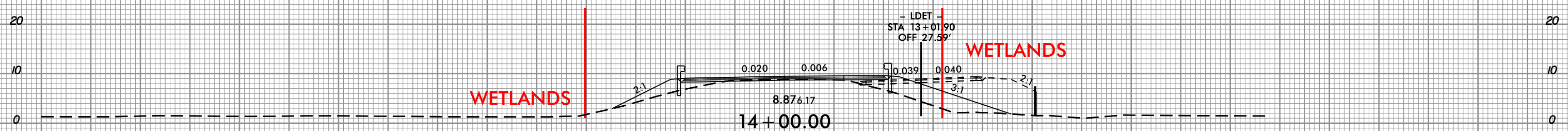
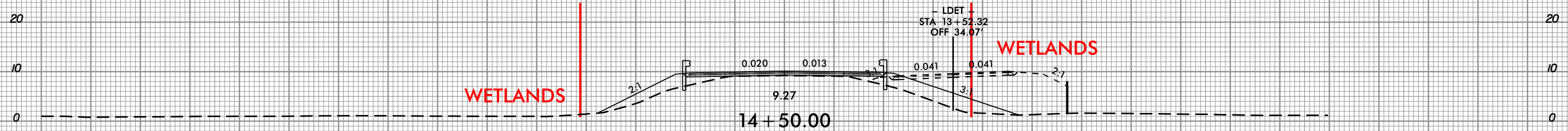
BM #1:  
 -BL- STA 31+46.00, 248' RT  
 -L- STA 24+04.43, 210.47' RT  
 EL 5.85'

-L-

FOR -L- PLAN, SEE SHEET 5



150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

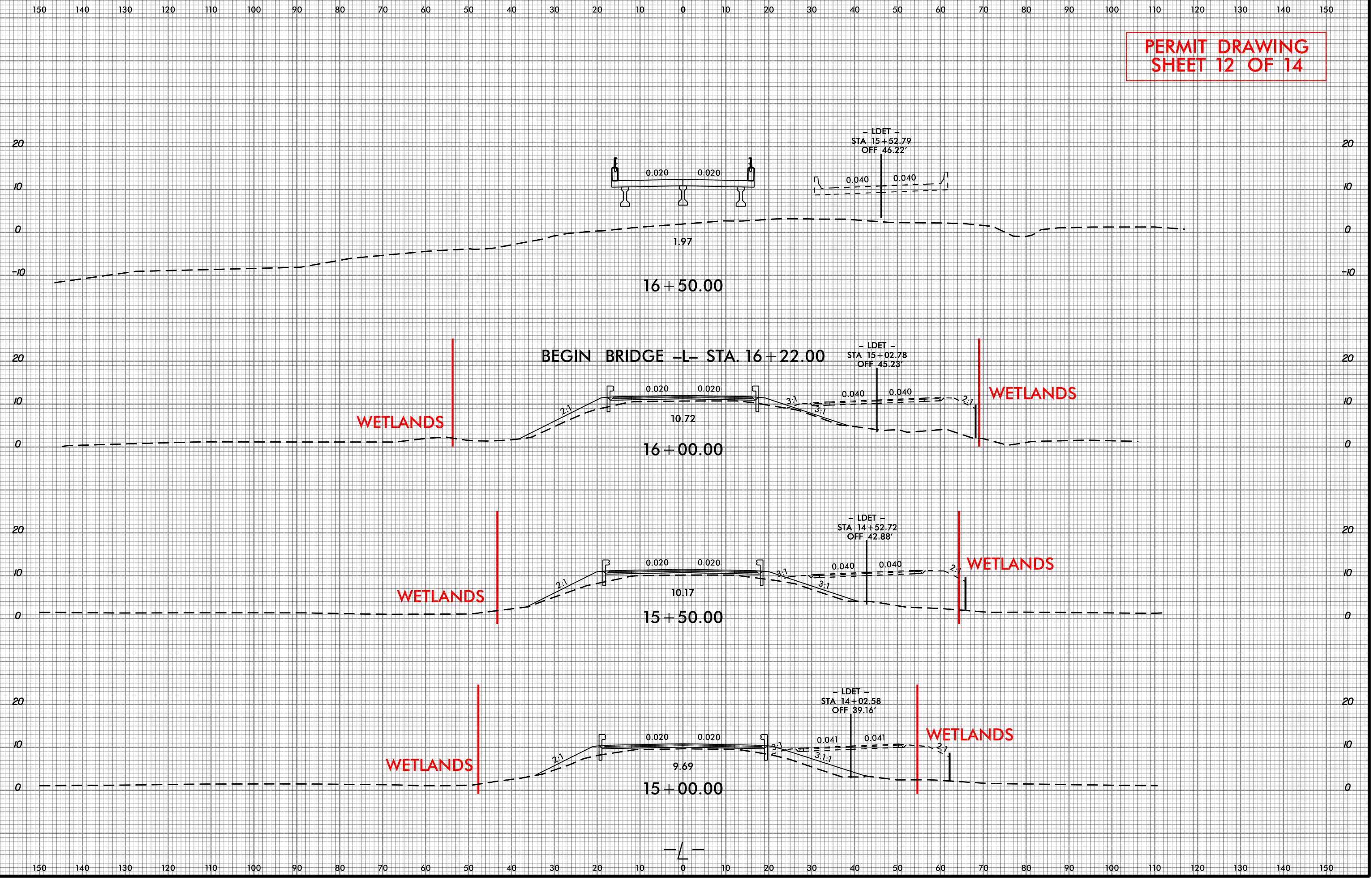


**REDLINE DRAINAGE PLANS**  
 APRIL 25, 2018

25-MAR-2019 12:29  
 B4593\_HYD\_xpl.dwg  
 Patrick.Harlett

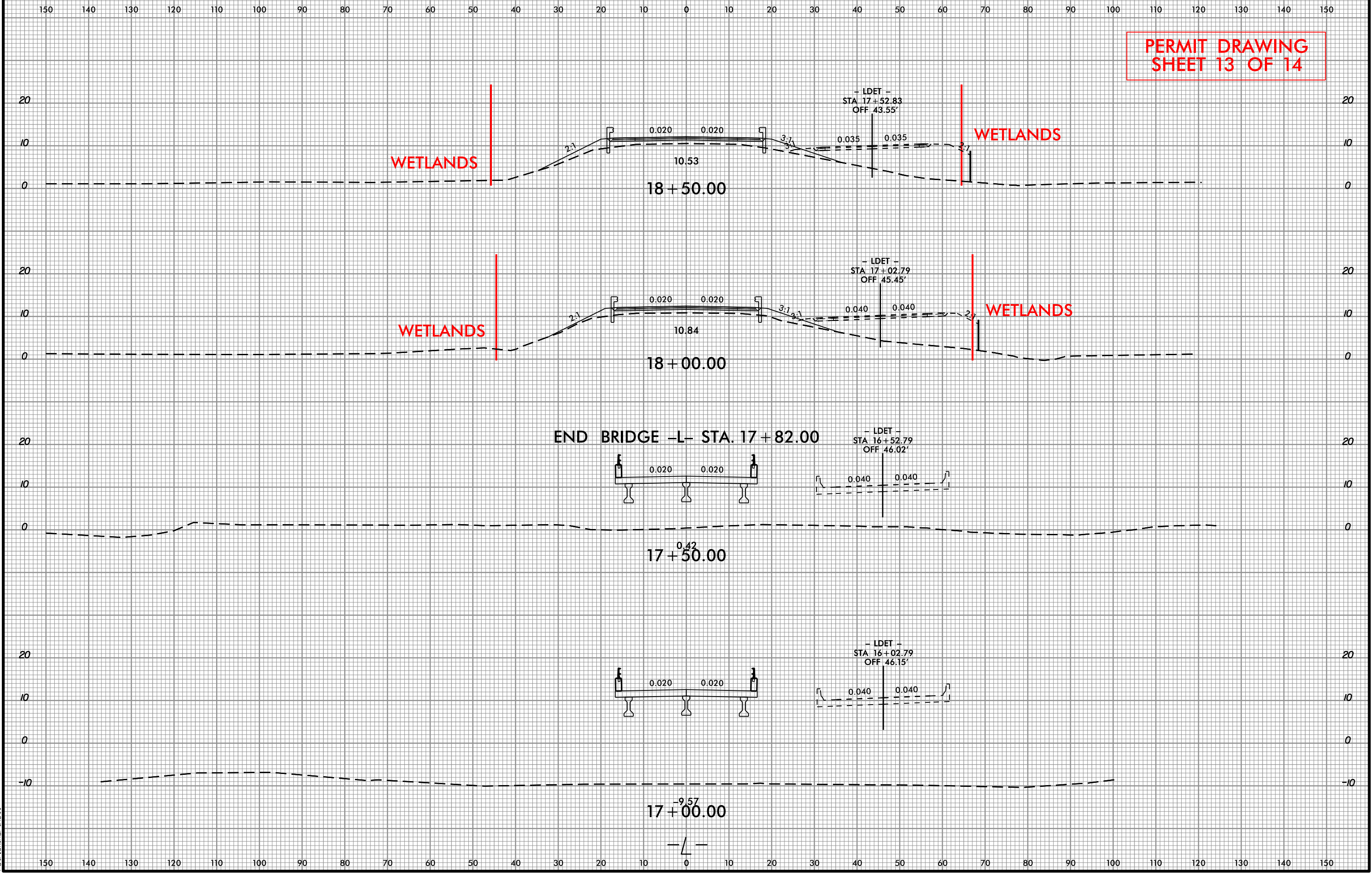
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**PERMIT DRAWING  
 SHEET 12 OF 14**



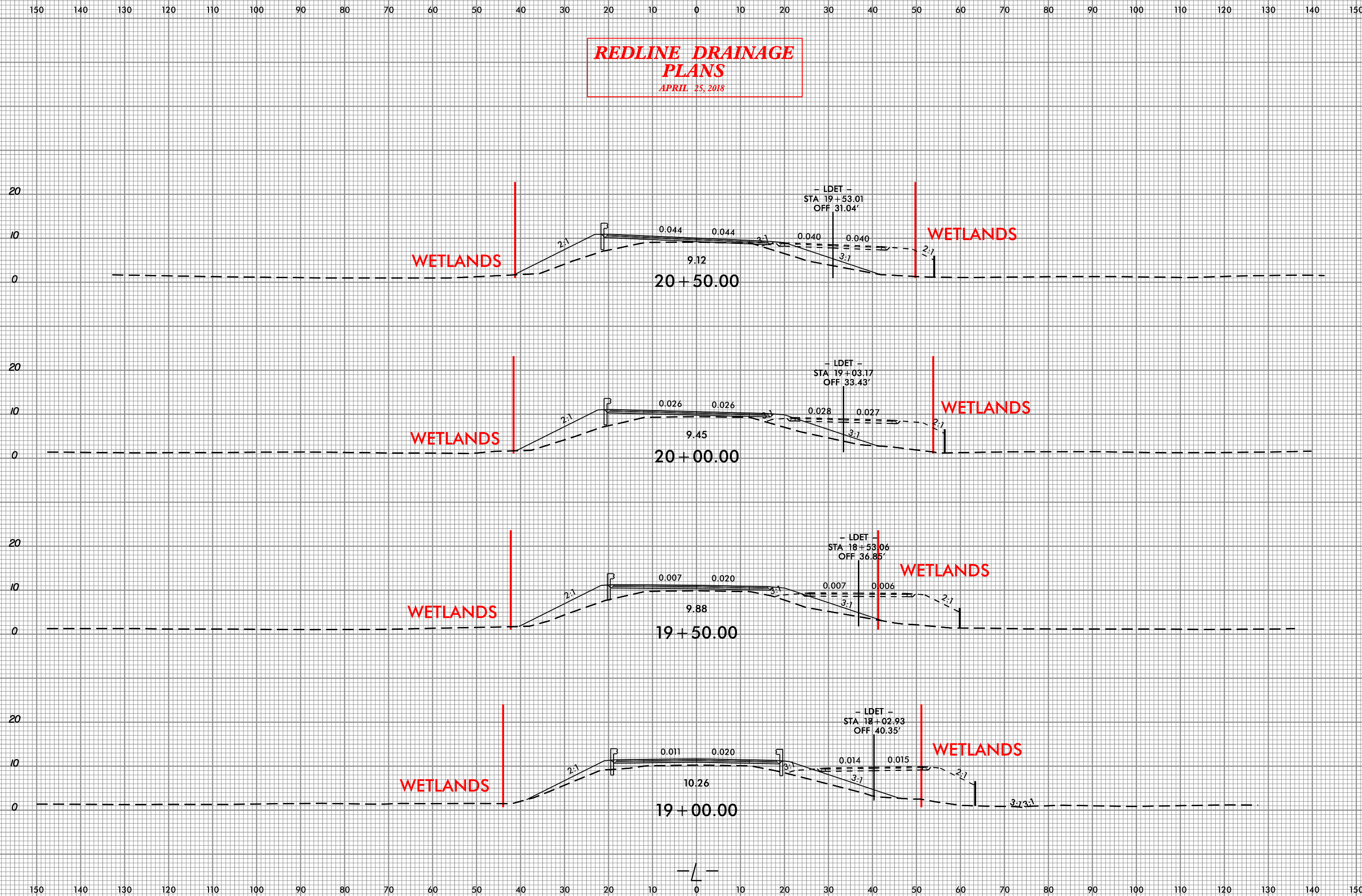
25-MAR-2019 12:29  
 B4593\_H10\_x1.ctb.dgn  
 Patrick.Herbert

**PERMIT DRAWING SHEET 13 OF 14**



25-MAR-2019 12:29  
B4593\_H10\_x1.ctb.dgn  
Patrick.Harshett

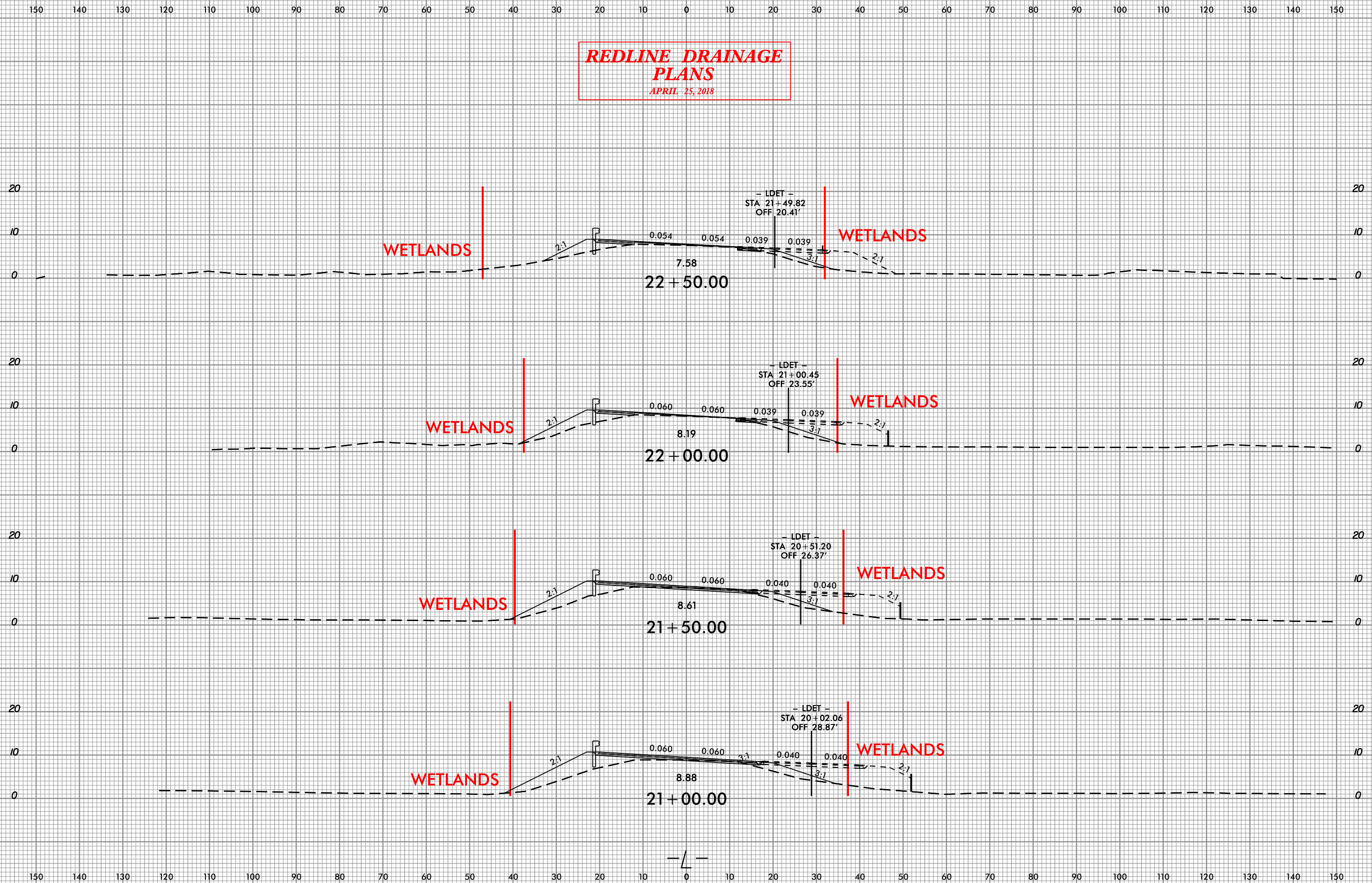
**REDLINE DRAINAGE PLANS**  
APRIL 25, 2018



25-MAR-2019 12:29  
B4593\_HYD\_xpl.dwg  
Patrick.Harlett



**REDLINE DRAINAGE PLANS**  
 APRIL 25, 2018

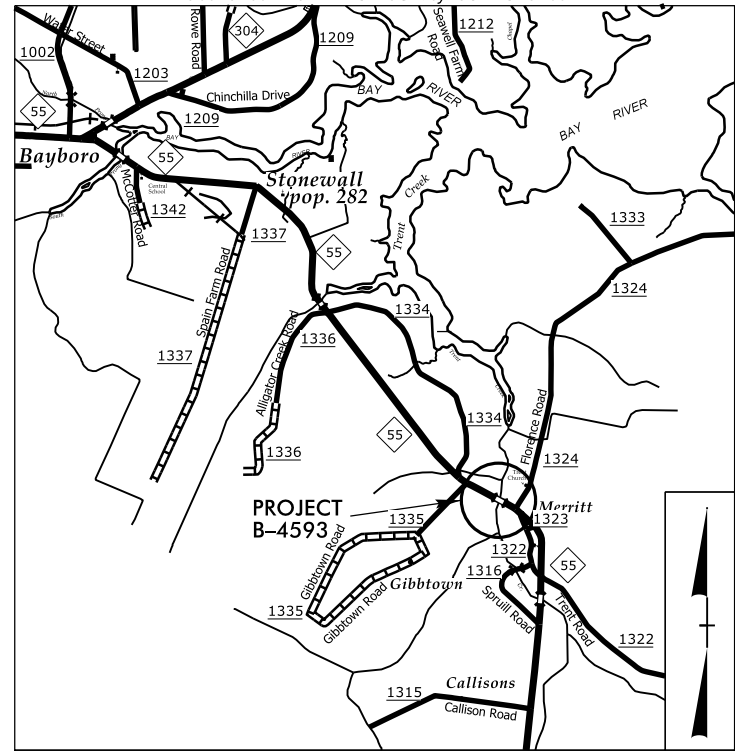


25-MAR-2019 12:29  
 B4593\_HYD\_xp1.de.tdgn  
 Patrick.Harlett



09\_08/99

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



VICINITY MAP

STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

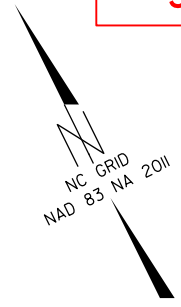
**PAMLICO COUNTY**

LOCATION: BRIDGE NO. 38 ON NC 55 OVER TRENT CREEK  
TYPE OF WORK: GRADING, DRAINAGE, PAVING AND STRUCTURE.

**BUFFER IMPACTS PERMIT**

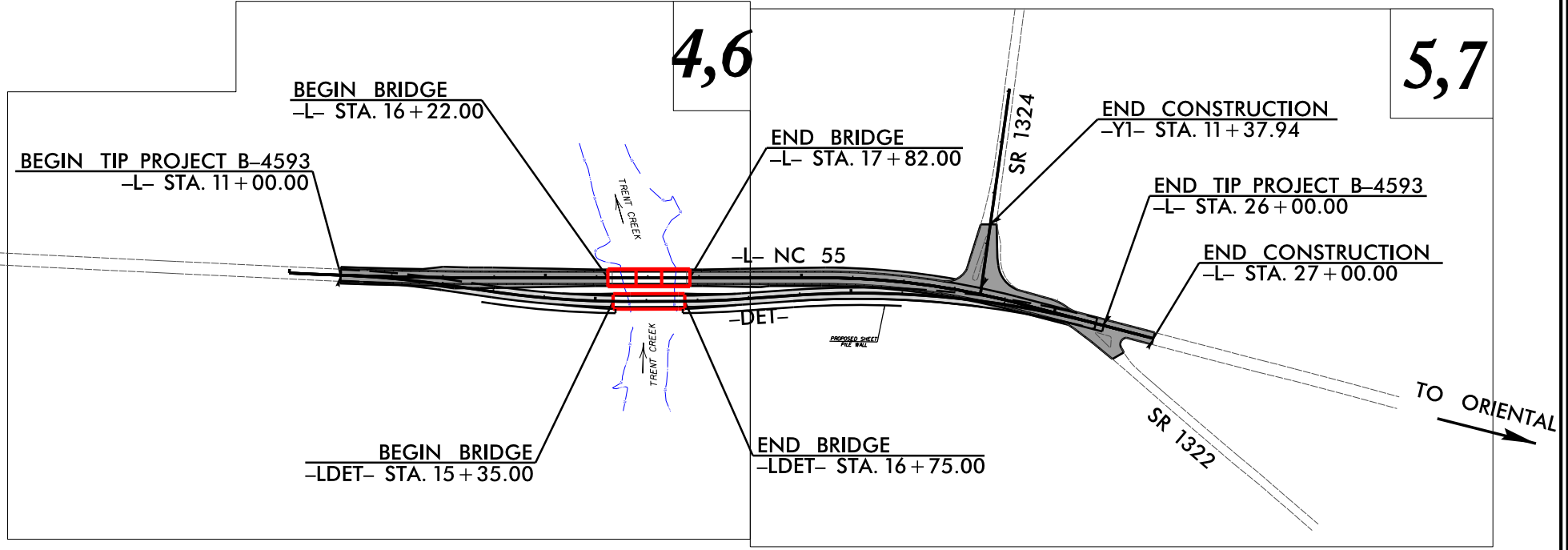
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-4593	1	
STATE PROJ. NO.	P.A. PROJ. NO.	DESCRIPTION	
38422.1.2	-	PE	
38422.2.1	-	R/W, Utilities	
38422.3.1	-	CONST.	

**BUFFER DRAWING  
SHEET 1 OF 5**



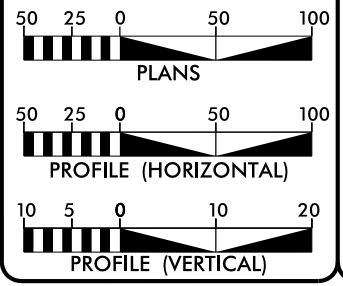
**TIP PROJECT: B-4593**

**CONTRACT: C204217**



DOCUMENT NOT CONSIDERED FINAL  
UNLESS ALL SIGNATURES COMPLETED

**GRAPHIC SCALES**



**DESIGN DATA**

ADT 2019 = 5576  
ADT 2040 = 8600  
K = 8 %  
D = 55 %  
T = 9 % \*  
V = 60 MPH  
V<sub>DET</sub> = 50 MPH  
\* TTST = 2% DUAL = 7%  
FUNC CLASS = MAJOR COLLECTOR  
REGIONAL TIER

**PROJECT LENGTH**

LENGTH ROADWAY TIP PROJECT B-4593 = 0.254 MILES  
LENGTH STRUCTURE TIP PROJECT B-4593 = 0.030 MILES  
TOTAL LENGTH OF TIP PROJECT B-4593 = 0.284 MILES

NCDOT CONTACT: DAVID STUTTS, PE

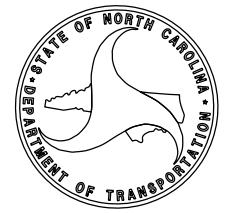
Prepared in the Office of:  
**SUMMIT**  
DESIGN AND ENGINEERING SERVICES  
2018 STANDARD SPECIFICATIONS  
504 Meadowland Drive  
Hillsborough, NC 27278-8551  
Voice: (919) 732-3883  
Fax: (919) 732-6776  
www.summitde.net

RIGHT OF WAY DATE: NOVEMBER 1, 2018  
BRANDON W. JOHNSON, PE  
PROJECT ENGINEER

LETTING DATE: MAY 21, 2019  
FAITH E. JAHNKE, PE  
PROJECT DESIGN ENGINEER

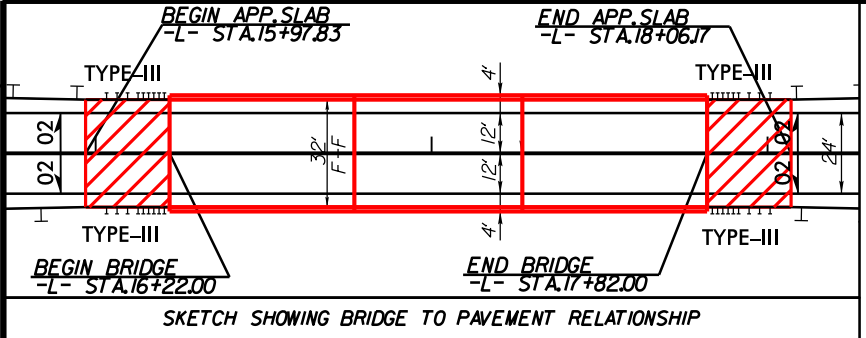
**HYDRAULICS ENGINEER**

SIGNATURE: \_\_\_\_\_ P.E.  
NORTH CAROLINA SEAL 046226  
JASON M. PATTERSON  
ROADWAY DESIGN ENGINEER  
NORTH CAROLINA PROFESSIONAL ENGINEERS SEAL 046981  
FAITH E. JAHNKE  
SIGNATURE: \_\_\_\_\_ P.E.



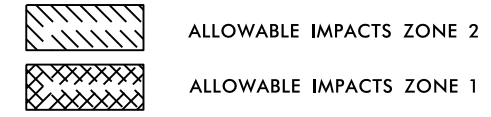
25-MAR-2019 11:23  
B4593-Hyd-prm-buf-tsh.dgn  
Patrick.Hartnett

8/17/99



-L-  
 PI Sta 11+90.14  
 $\Delta = 2' 46' 17.6" (LT)$   
 $D = 0' 43' 44.2"$   
 $L = 380.2'$   
 $T = 190.14'$   
 $R = 7,860.00'$   
 $SE = RC$   
 $RO = 54'$

**BUFFER DRAWING SHEET 2 OF 5**

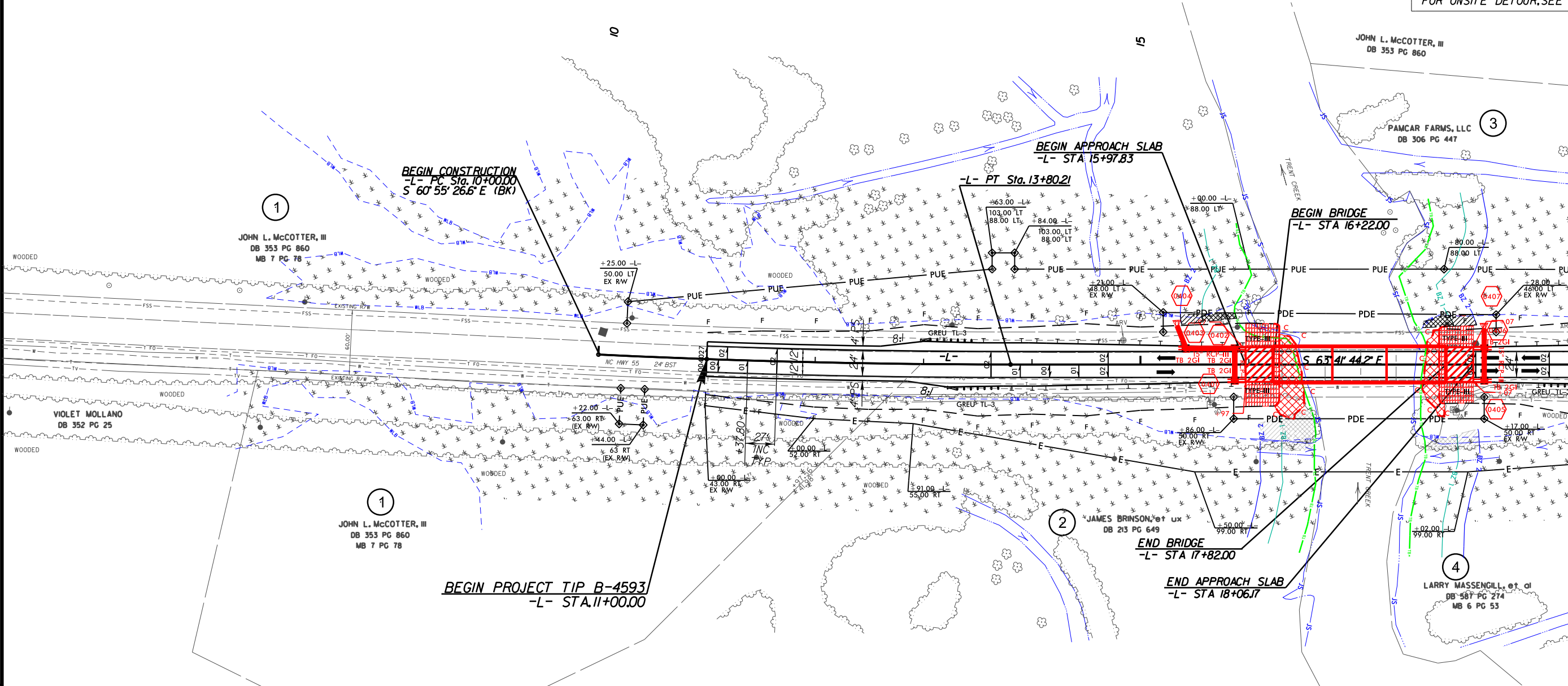


PROJECT REFERENCE NO. <b>B-4593</b>	SHEET NO. <b>2/CONST.4</b>
R/W SHEET NO.	HYDRAULICS ENGINEER
ROADWAY DESIGN ENGINEER	SEAL 046981
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	
FOR PROFILE, SEE SHEET 8	
FOR ONSITE DETOUR, SEE SHEET 6	

REVISIONS

R/W REV-REMOVED ROW, ADDED TCE, ADDED PDE ON PARCELS 1, 2, 3, AND 4 - FEJ 190131

MATCHLINE -L- STA 19 + 00.00 (SEE SHEET 5)



**DETOUR BUFFER IMPACTS APPEAR GRAY ON THIS SHEET**

25-MAR-2019 11:23







## WETLANDS IN BUFFER IMPACTS SUMMARY

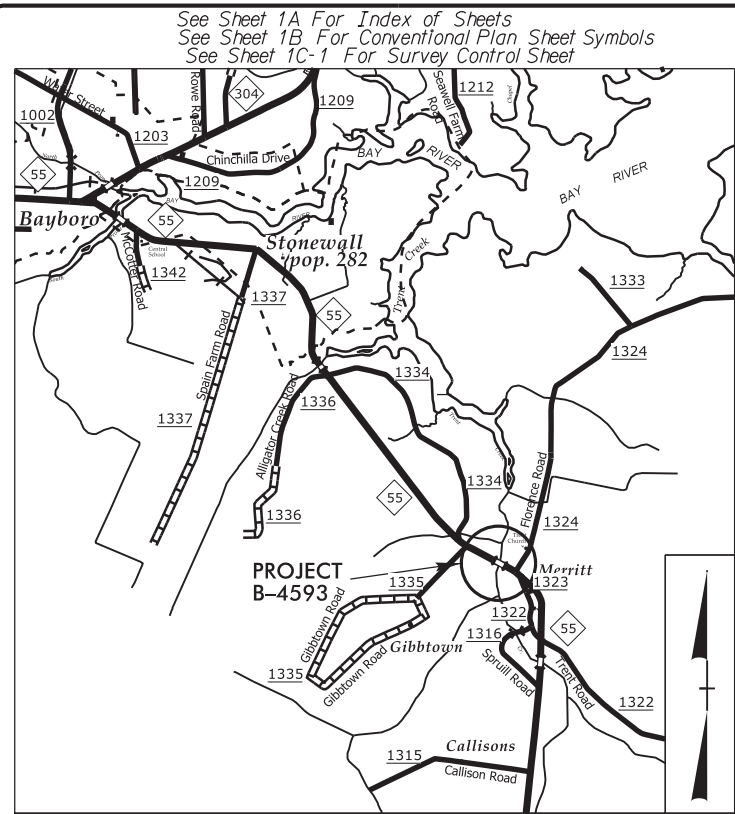
SITE NO.	STATION (FROM/TO)	WETLANDS IN BUFFERS	
		ZONE 1 (ft <sup>2</sup> )	ZONE 2 (ft <sup>2</sup> )
1	15+37 to 18+09 -L- LT	22	73
1	16+09 to 18+12 -L- RT	597	389
<b>TOTAL:</b>		<b>619</b>	<b>462</b>

NC DEPARTMENT OF TRANSPORTATION  
 DIVISION OF HIGHWAYS  
 3/25/2019  
 PAMLICO COUNTY  
 B-4593  
 BRIDGE REPLACEMENT ON NC HWY 55 BYPASS  
 OVER TRENT CREEK  
 SHEET        5        OF        5

Revised 2018 Feb

09\_08/99

**PROJECT: B-4593**



VICINITY MAP

STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

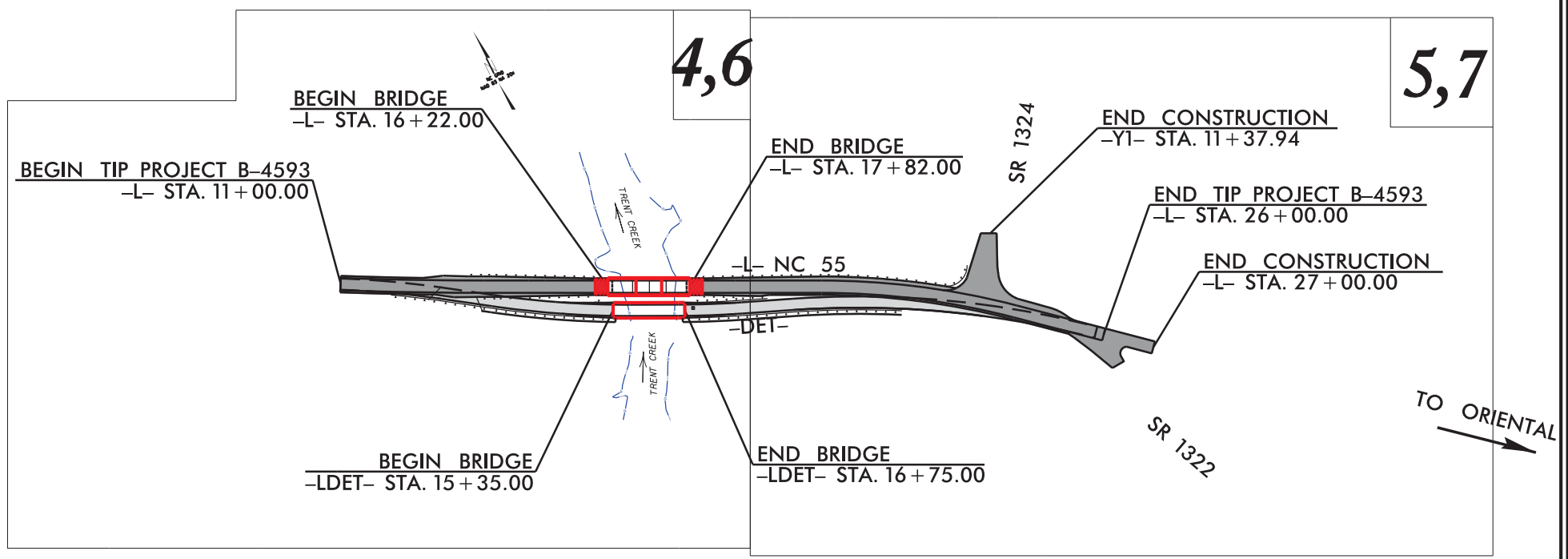
**NEU PERMIT PLANS  
PAMLICO COUNTY**

**LOCATION: BRIDGE NO. 38 ON NC 55 OVER TRENT CREEK**  
**TYPE OF WORK: RELOCATION OF POWER, TELEPHONE, CABLE, WATER, AND SANITARY SEWER**

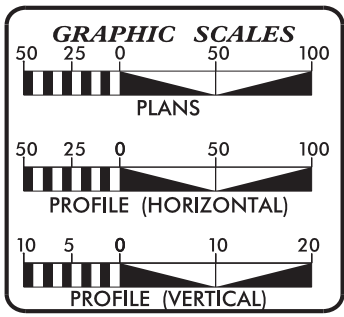
**BUFFER IMPACTS PERMIT  
FOR UTILITIES**

T.I.P. NO.	SHEET NO.
B-4593	UE-1

**BUFFER DRAWING  
SHEET 1 OF 4**



DOCUMENT NOT CONSIDERED FINAL  
UNTIL ALL SIGNATURES ARE COMPLETED



SHEET NO.:	DESCRIPTION:
UE-1	TITLE SHEET
UE-2 THRU UE-3	UTILITY CONSTRUCTION PLAN

**UTILITY OWNERS ON PROJECT**

- (A) TELEPHONE - CENTURYLINK
- (B) POWER - DUKE ENERGY
- (C) CABLE - SPECTRUM
- (D) WATER - PAMLICO COUNTY WATER METROPOLITAN
- (E) SANITARY SEWER - BAY RIVER METROPOLITAN

PREPARED IN THE OFFICE OF

504 Meadowland Drive  
Hillsborough, NC 27278-8551  
Voice: (919) 732-3883  
Fax: (919) 732-6776  
www.summitde.net

**BRANDON W. JOHNSON, PE** PROJECT ENGINEER  
**FAITH E. JAHNKE, PE** PROJECT DESIGNER

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

**KYLE PLEASANT** REGIONAL UTILITY COORDINATOR  
**LARRY M. JAMES, JR.** SENIOR UTILITY COORDINATOR  
**NABIL HAMDAN** REGIONAL UTILITIES ENGINEER  
**KELVIN S. MARTIN, EI** SENIOR UTILITIES ENGINEER

16-APR-2019 11:26  
B-4593-Hyd\_Util\_Buff\_p\_r.m\_.tsh.dgn  
jason.patskoski

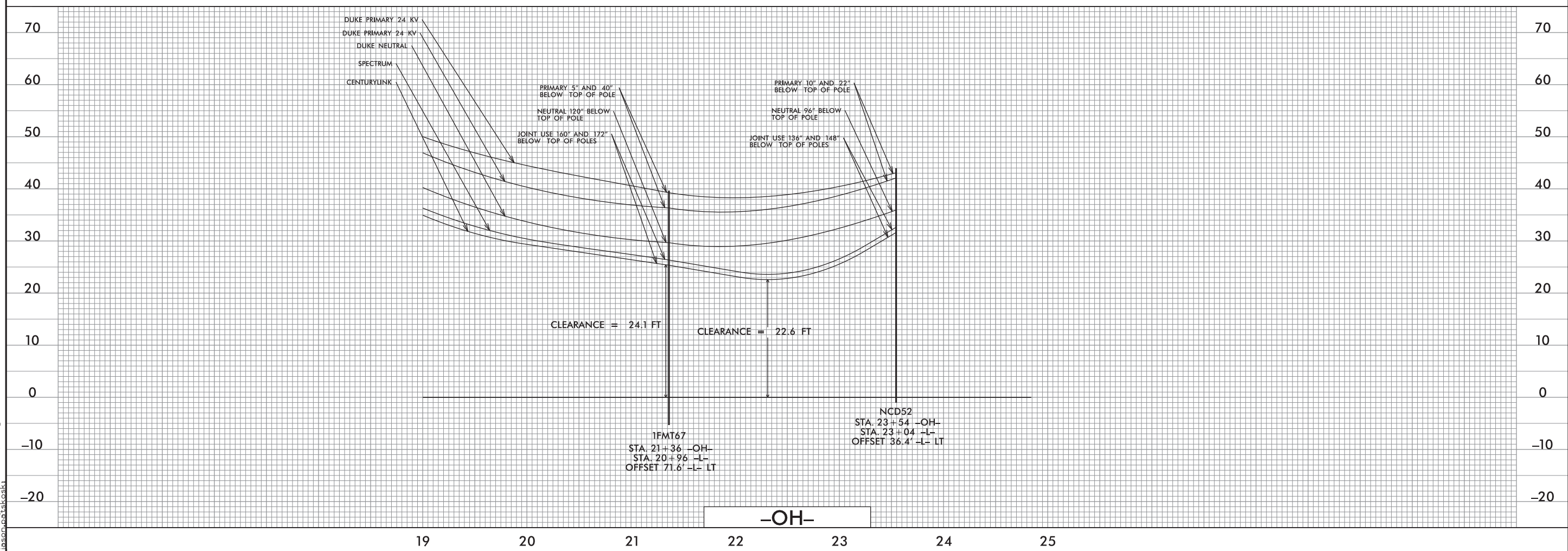
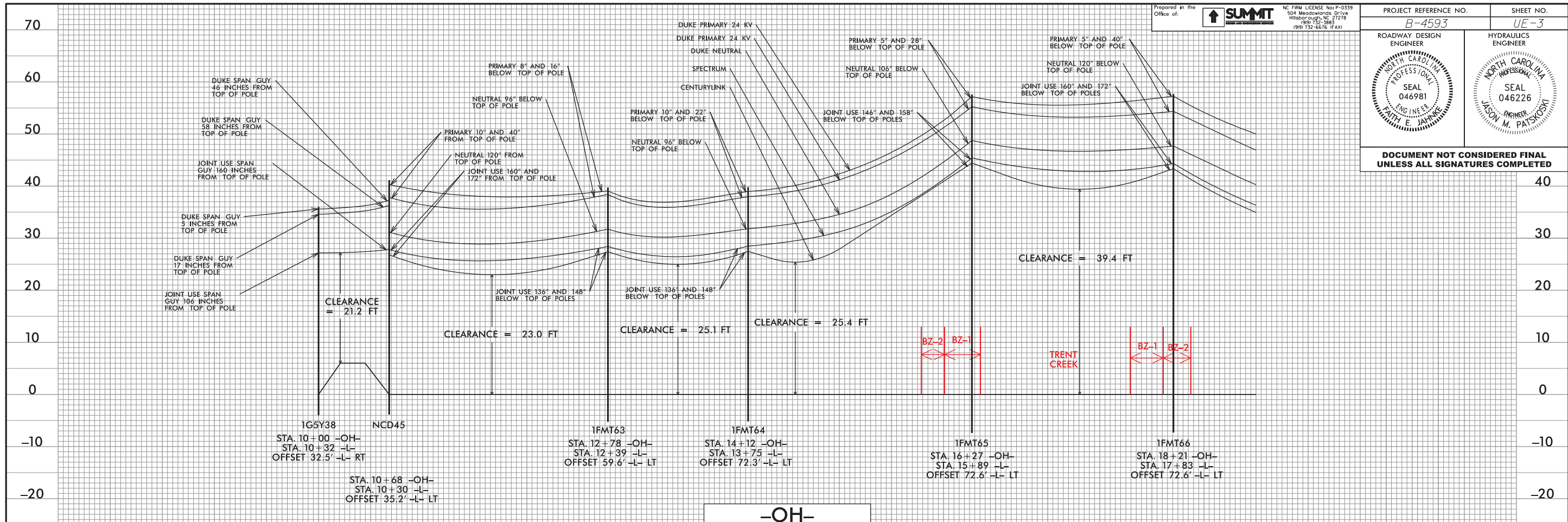




ROADWAY DESIGN ENGINEER: **JEFF E. JAHANEK**  
 SEAL 046981  
 PROFESSIONAL ENGINEER

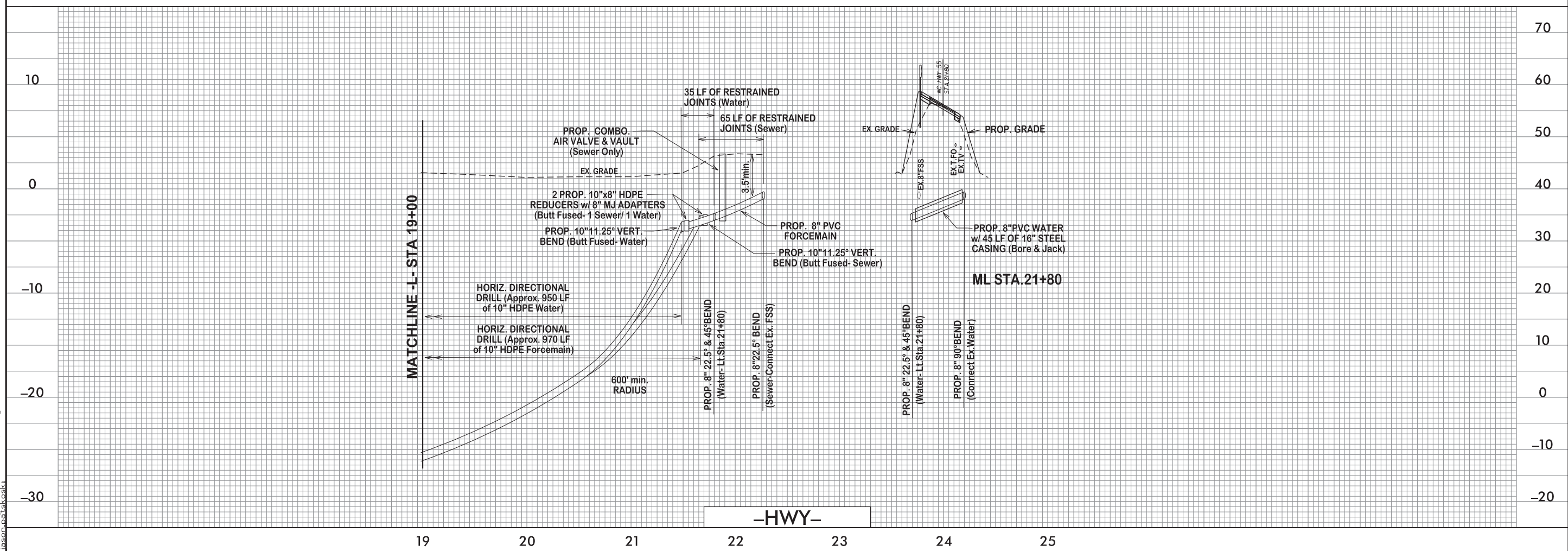
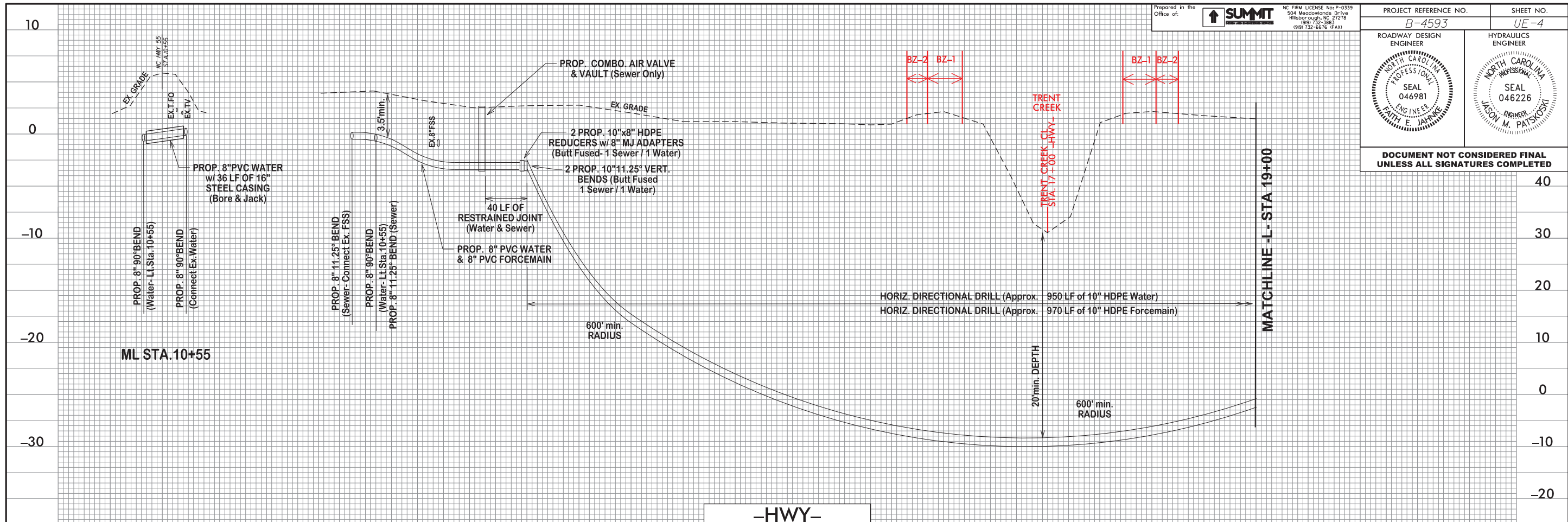
HYDRAULICS ENGINEER: **JOHN M. PATSKOSKI**  
 SEAL 046226  
 PROFESSIONAL ENGINEER

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



I:\74593\2019\_09\13\sh\_oh.pfl.dgn  
 04/23/19  
 Jason Patkoski

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



B:\155-209\_1727  
 B-4593\_Hwy\_Utility\_Cash\_W&SS\_p1.dgn  
 jason.patskoski







**B-4593 Utility Narrative**  
**Pamlico County, North Carolina**  
**Updated April 16, 2019**

**Duke Energy**

Contact Information: Alex Craig (919) 399-3081 ext. 7304  
alex.craig@duke-energy.com

Duke Energy will be changing out (2) poles for taller poles, placing (5) new poles in the new PUE acquired north of NC Hwy 55, removing (5) existing poles north of NC Hwy 55, placing (1) new pole south of NC Hwy 55, and installing (11) and replacing (1) guys and anchors.

Wetland areas will be impacted by the installation of five new poles and 11 guys and anchors in the wetland areas and the clearing required. The clearing for the proposed power lines will be 30 feet wide (15 feet on each side of the lines), and the hand clearing impacts total 0.66 acres. There are also 15 square feet of utility pole impacts attributed to Duke Energy. Additionally, Duke energy guy wires/anchors account for 33 square feet of impacts.

**CenturyLink**

Contact Information: Rod Medlin (252) 413-7711  
rod.m.medlin@centurylink.com

CenturyLink will be removing (2) poles, installing (4) guys and anchors, and abandoning buried cables south of NC Hwy 55. The replacement copper and fiber cables will be placed on the north side on NC Hwy 55 both buried in the R/W, and aurally west of the project, then both aurally attached to the new Duke poles inside the project, then riser down the existing pole at Florence Road, and buried under NC Hwy 55 to an existing handhole south of NC Hwy 55.

Wetland areas will be impacted by the installation of (2) guys and anchors in the wetland which account for 6 square feet of impacts.

**Spectrum**

Contact Information: Stan Ramsay (252) 725-1141  
stan.ramsay@pintechcorp.com

Spectrum will be abandoning buried cable south of NC Hwy 55, and removed from the aerial crossing attached to CenturyLink's poles (to be removed). Spectrum will be attaching to Duke's new poles north of NC Hwy 55, and to Duke's existing poles until they are east of Florence Rd. Then, they will go buried under NC Hwy 55 to tie back into their existing facilities west of N Trent Rd. Spectrum will be installing (4) guys and anchors.

Wetland areas will be impacted by the installation of (3) guys and anchors in the wetland areas which account for 9 square feet of impacts.

### **Bay River Metropolitan Sewer**

Contact Information: Eric Harper - (252) 670-4055 - (252) 745-4812 (office)  
ericbayriver@gmail.com  
Chris Venters (252) 670-8236  
venters.brmsd@gmail.com

Bay River Metropolitan Sewer will be abandoning approximately 1184 LF of 6-inch PVC sanitary sewer forcemain north on the northside of NC Hwy 55. The abandoned segment will be replaced by approximately 230 LF of 8-inch PVC forcemain, 970 LF of 10-inch HDPE forcemain, two 8-inch insertion valves, 2 8-inch 11.25-degree bends, one 8-inch 22.5 degree bends, two combination air valve and vaults, and two 10"x8" HDPE Reducers with 8" MJ Adaptors. The new segment will connect to the existing sanitary sewer forcemain east and west of the bridge. The proposed forcemain will cross underneath Trent Creek (maintaining a 20' minimum separation below the bottom of the channel) with 970 LF of directionally drilled 10-inch HDPE. The sanitary sewer directional drilling will require a 35'x25' bore pit west of the bridge and utilize the 35'x20' bore pit for the waterline relocation's eastern crossing of NC Hwy 55 as a receiving pit. A combination air valve and vaults will be installed on both sides of the directional boring. Wetland areas will be impacted by the installation of the combination air valve and vault east of the bridge for a total impact of 34 sf. It is important to note that the 35'x20' bore and receiving pit will also impact the wetland areas, but this impact is attributed to the water relocation (outlined below).

### **Pamlico County Water**

Contact Information: Jeff Sanders (252) 670-7519, (252) 745-5453 (office)  
jeff.sanders@pamlicocounty.org  
Paul Campbell (252) 670-2037, (252) 745-5453 (office)  
paul.campbell@pamlicocounty.org

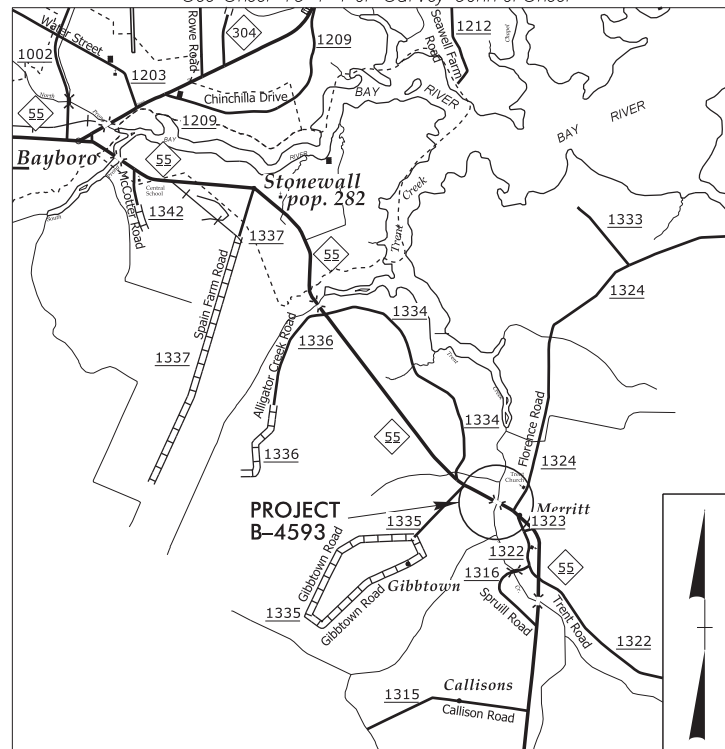
Pamlico County Water will be removing/abandoning approximately 1111 feet of 8-inch PVC waterline on the south side of NC Hwy 55. The existing waterline is suspended from the existing bridge. This segment will be removed. The removed/abandoned segment of waterline will be replaced with approximately 270 LF of 8-inch PVC, 950 LF of 10" HDPE, two 8-inch insertion valves, three 8-inch 90-degree bends, an 8-inch 22.5-degree bend, an 8-inch 45-degree bend, and two 10"x8" HDPE Reducers with 8" MJ Adaptors. The new segment will cross NC Hwy 55 West and East of the bridge, requiring 36 and 45 LF of 16-inch steel casing respectively. The steel casing will be bore and jacked which will require a 35'x15' bore pit at the west crossing and a 35'x20' bore pit at the east crossing. Both bore pits will be north of NC Hwy 55. The new segment will connect to the existing waterline at the crossings of NC Hwy 55 which will require 15'x15' receiving pits at both locations. The proposed waterline will cross underneath Trent Creek (maintaining a 20' minimum separation below the bottom of the channel) with 950 LF of directionally drilled 10-inch HDPE. The waterline directional drilling will utilize the 35'x25' bore pit west

of the bridge used to directionally drill the sanitary sewer and require a 15'x15' receiving pit east of the bridge. Wetland areas will be impacted by the bore pits at both crossings of NC Hwy 55 (north of NC Hwy 55) and the receiving pit north of NC Hwy 55 and east of the bridge. These impacts total 727 sf.

09/28/99

**PROJECT: B-4593**

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



VICINITY MAP

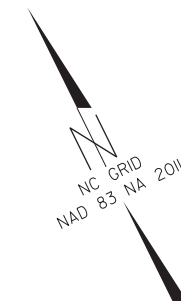
STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

**NEU PERMIT PLANS  
PAMLICO COUNTY**

**LOCATION: BRIDGE NO. 38 ON NC 55 OVER TRENT CREEK**  
**TYPE OF WORK: RELOCATION OF POWER, TELEPHONE, CABLE,**  
**WATER, AND SANITARY SEWER**

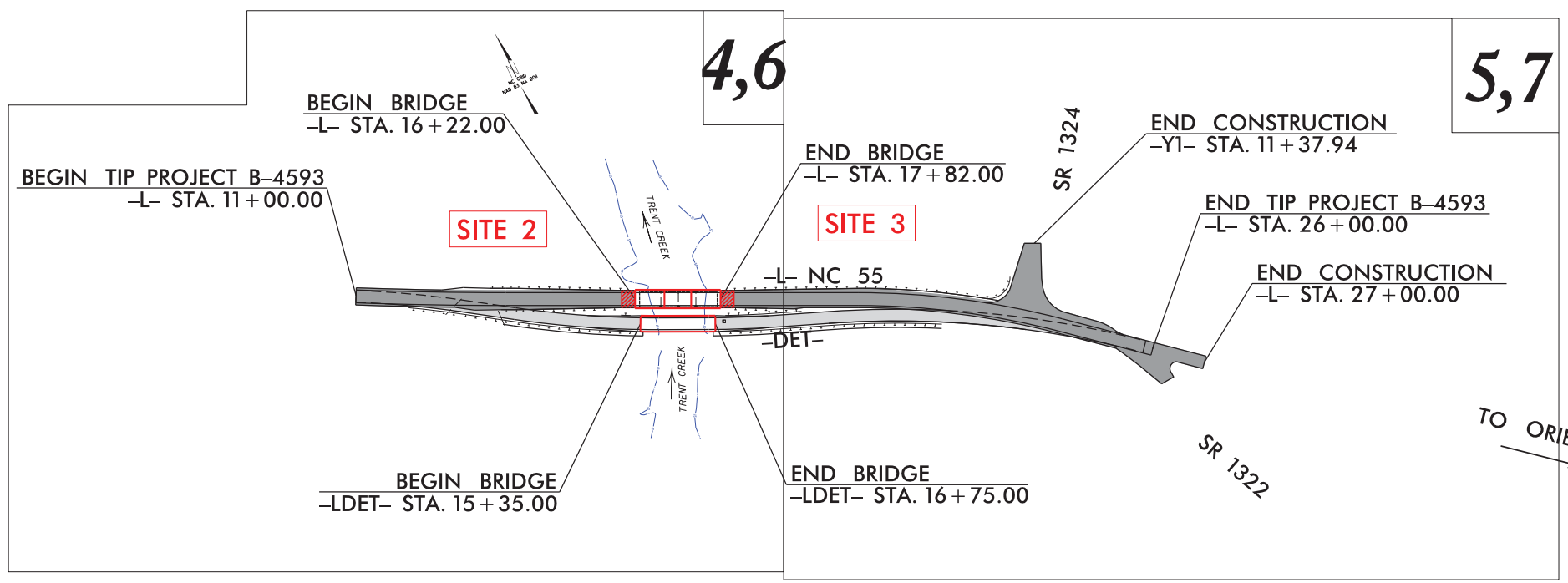
T.I.P. NO.	SHEET NO.
B-4593	UE-1

**SITE 1: ROADWAY IMPACTS  
(SHOWN IN SEPERATE  
PERMIT PACKAGE)**  
**SITE 2&3: UTILITY IMPACTS**

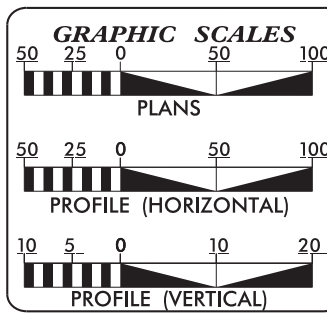


TO BAYBORO ←

TO ORIENTAL →




DOCUMENT NOT CONSIDERED FINAL  
UNTIL ALL SIGNATURES ARE COMPLETED



INDEX OF SHEETS	
SHEET NO.:	DESCRIPTION:
UE-1	TITLE SHEET
UE-2 THRU UE-3	UTILITY CONSTRUCTION PLAN


UTILITY OWNERS ON PROJECT	
(A) TELEPHONE	- CENTURYLINK
(B) POWER	- DUKE ENERGY
(C) CABLE	- SPECTRUM
(D) WATER	- PAMLICO COUNTY WATER METROPOLITAN
(E) SANITARY SEWER	- BAY RIVER METROPOLITAN

PREPARED IN THE OFFICE OF



504 Meadowland Drive  
Hillsborough, NC 27278-8551  
Voice: (919) 732-3883  
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**BRANDON W. JOHNSON, PE** PROJECT ENGINEER  
**FAITH E. JAHNKE, PE** PROJECT DESIGNER



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

**KYLE PLEASANT** REGIONAL UTILITY COORDINATOR  
**LARRY M. JAMES, JR.** SENIOR UTILITY COORDINATOR  
**NABIL HAMDAN** REGIONAL UTILITIES ENGINEER  
**KELVIN S. MARTIN, EI** SENIOR UTILITIES ENGINEER

17-APR-2019 09:09  
B-4593-Hyd-UTL-fsh.dgn  
jason.pfiskoski



PROJECT REFERENCE NO. B-4593	SHEET NO. RDY-4,UE-2
RW SHEET NO.	HYDRAULICS ENGINEER
ROADWAY DESIGN ENGINEER	SEAL 046981 FAITH E. JAHANSKI
	SEAL 046226 JASON M. PATSKOSKI

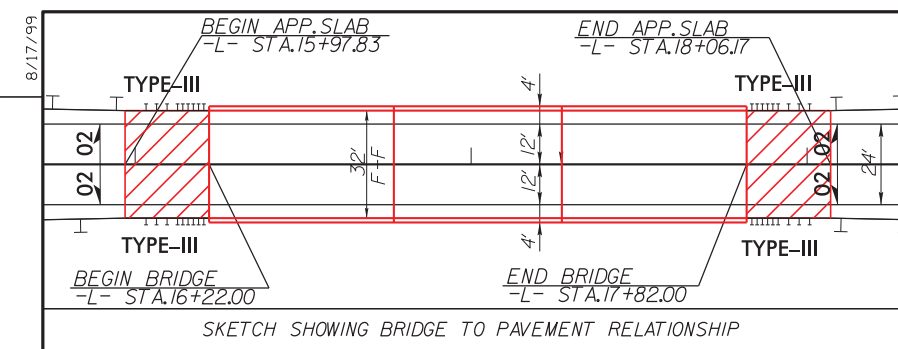
PERMIT DRAWING  
SHEET 2 OF 5

FOR PROFILE, SEE SHEET 8  
FOR ONSITE DETOUR, SEE SHEET 6

SITE 3

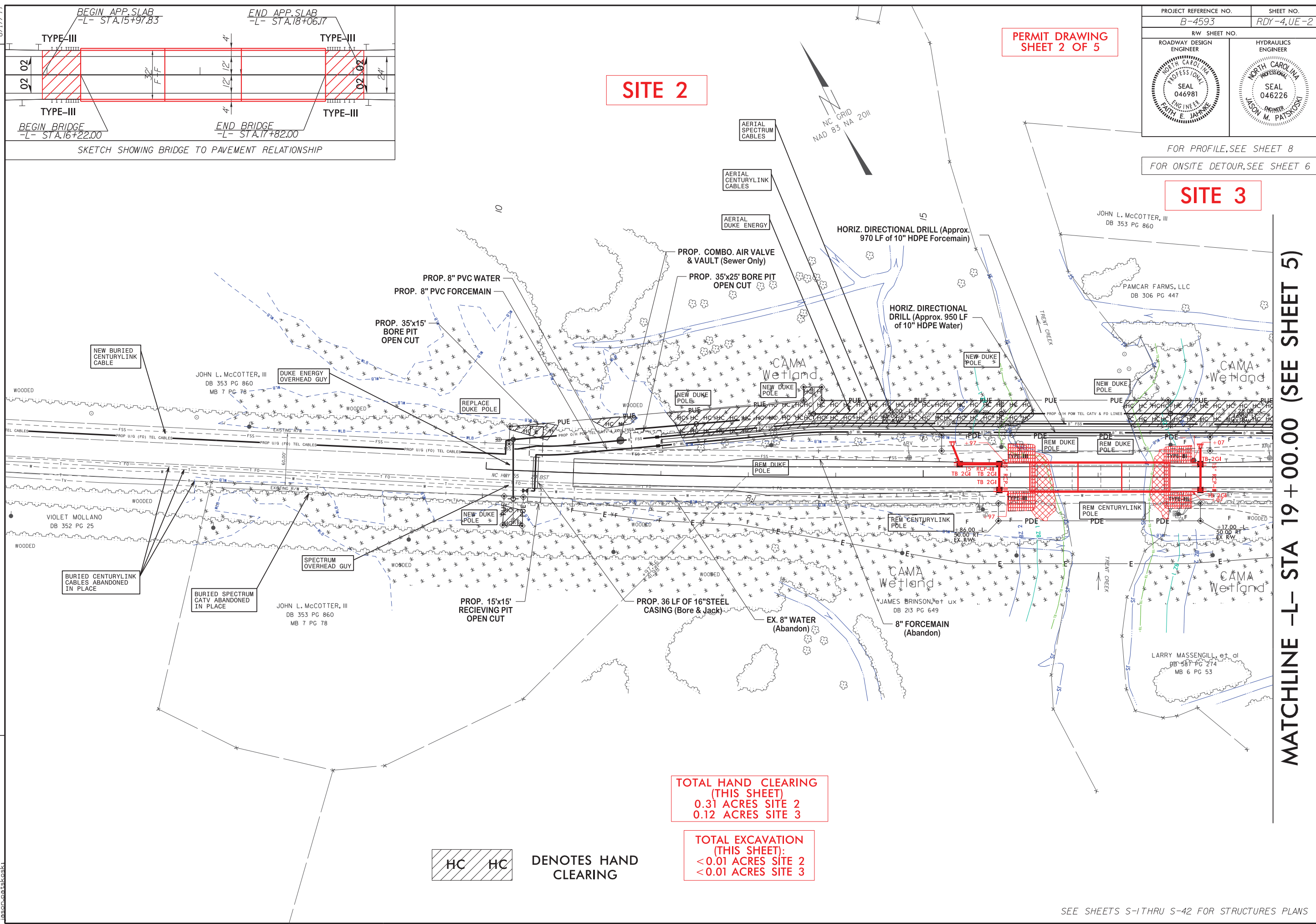
SITE 2

MATCHLINE -L- STA 19+00.00 (SEE SHEET 5)



REVISIONS  
8/17/99  
R/W REV. REMOVED. ROW, ADDED. TCE, ADDED. PDE ON PARCELS 1, 2, 3, AND 4. - FEJ 190/31

17-APR-2019 09:09  
JASON M. PATSKOSKI



TOTAL HAND CLEARING  
(THIS SHEET)  
0.31 ACRES SITE 2  
0.12 ACRES SITE 3

TOTAL EXCAVATION  
(THIS SHEET):  
< 0.01 ACRES SITE 2  
< 0.01 ACRES SITE 3

HC HC DENOTES HAND CLEARING



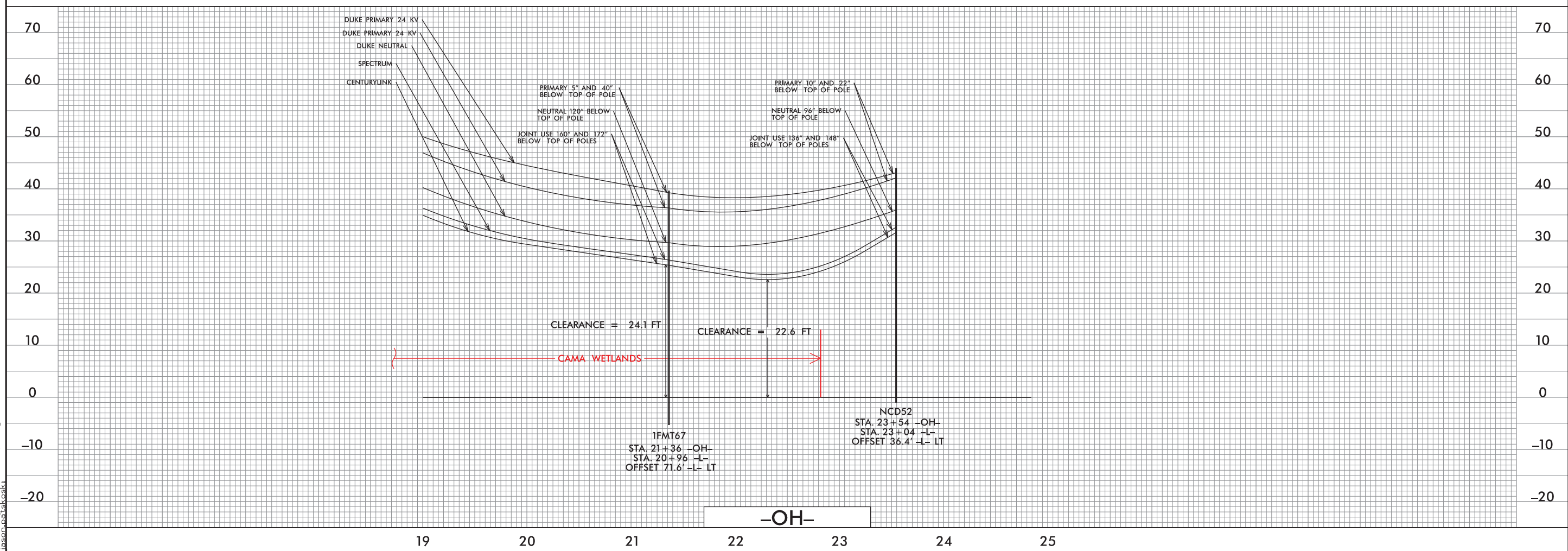
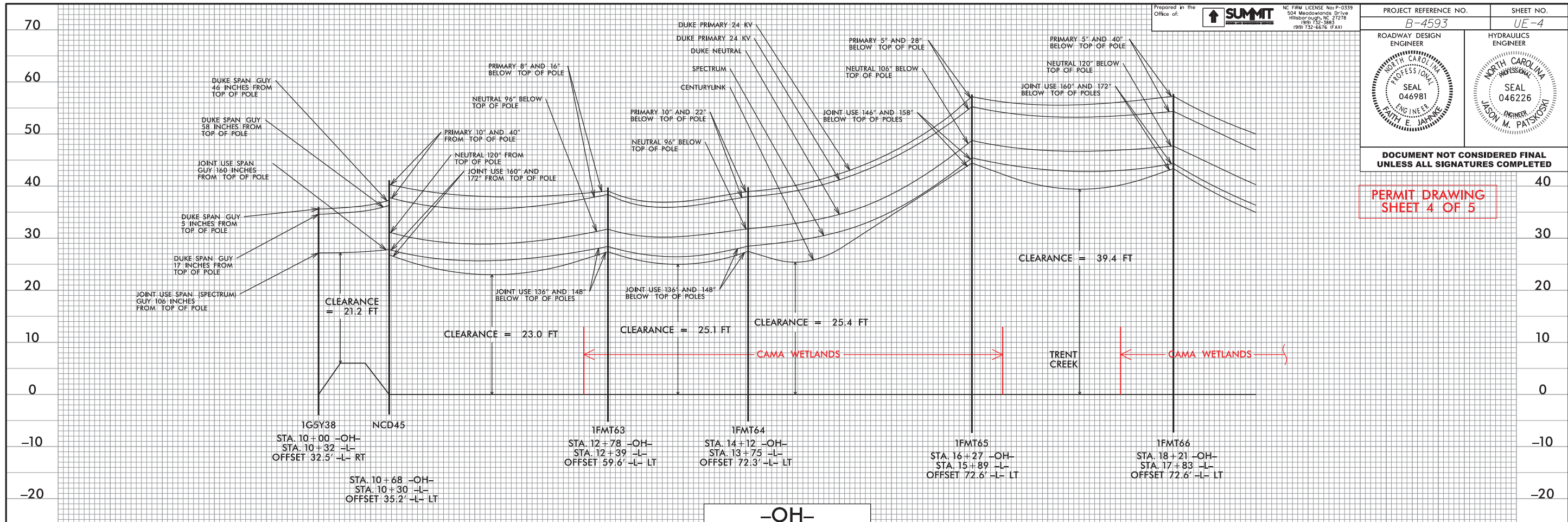


ROADWAY DESIGN ENGINEER  
 SEAL 046981  
 ENGINEER  
 E. JAHANEK

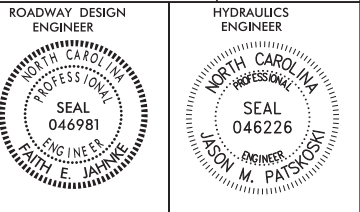
HYDRAULICS ENGINEER  
 SEAL 046226  
 ENGINEER  
 J. PATSKOSKI

DOCUMENT NOT CONSIDERED FINAL  
 UNLESS ALL SIGNATURES COMPLETED

PERMIT DRAWING  
 SHEET 4 OF 5

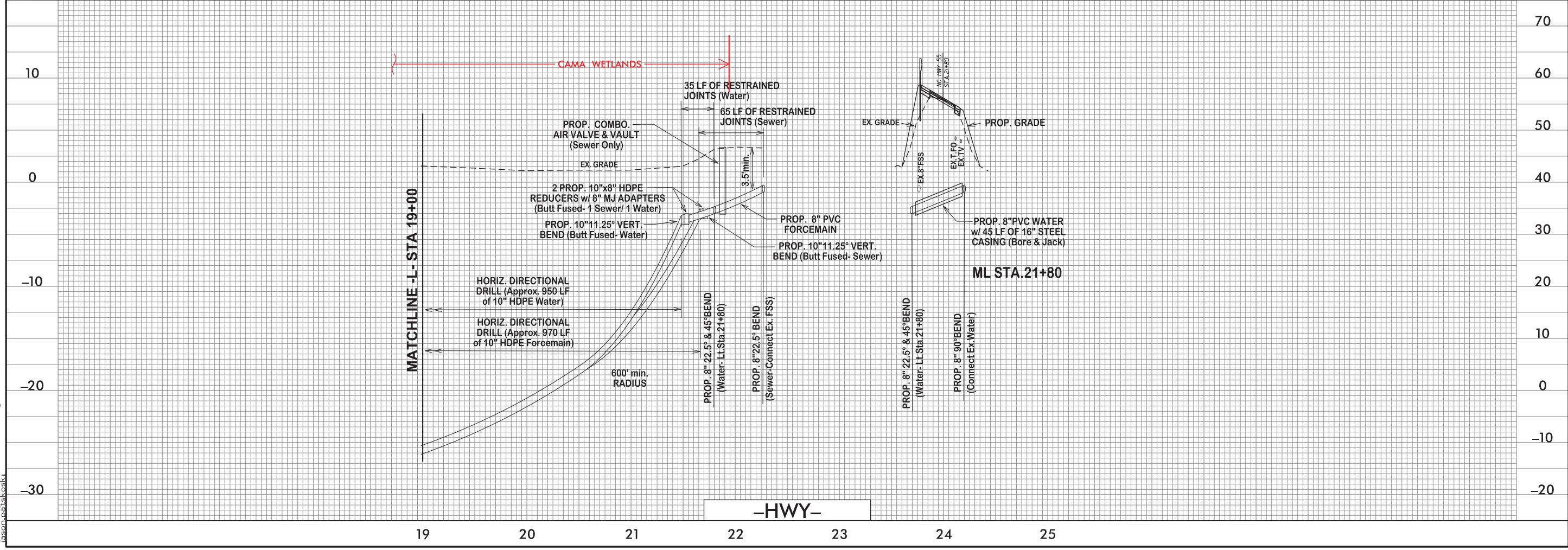
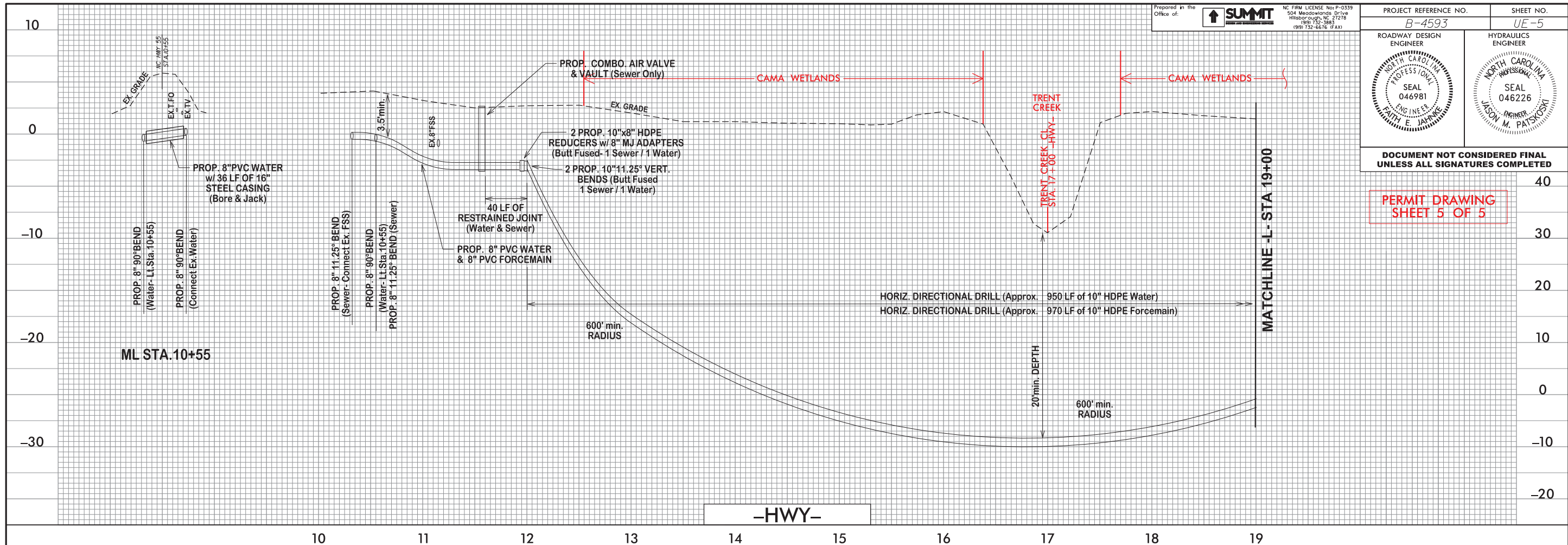


17-ABE-2019-08-09  
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 Jason Patkoski



DOCUMENT NOT CONSIDERED FINAL  
 UNLESS ALL SIGNATURES COMPLETED

PERMIT DRAWING  
 SHEET 5 OF 5



I:\ASB-2019-08-09  
 B4593\_Hwy\_01.dwg  
 W&SS-pfl.dgn  
 Jason.M.Patkoski

**WETLAND AND SURFACE WATER IMPACTS SUMMARY**

Site No.	Station (From/To)	Structure Size / Type	WETLAND IMPACTS					SURFACE WATER IMPACTS				
			Temp Fill In Wetlands (ac)	Permanent 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)
2	10+00 to 16+30 -L- LT & RT	Utility Easement					0.31					
2	10+00 to 16+30-L- LT & RT	Utility Poles and Guys			< 0.01 **							
2	10+45 to 16+65 -L- LT	Water Main			<0.01***							
3	17+25 to 22+80 -L- LT	Utility Easement					0.34					
3	17+75 to 21+00 -L- LT	Utility Poles and Guy Wires			< 0.01 **							
3	21+85 to 21+95 -L- LT	Sanitary Sewer Force Main		< 0.01 *								
3	21+45 to 21+90 -L- LT	Water Main			0.01							
TOTALS*:			0.00	0.00	0.02	0.00	0.65	0.00	0.00	0.00	0.00	0.00

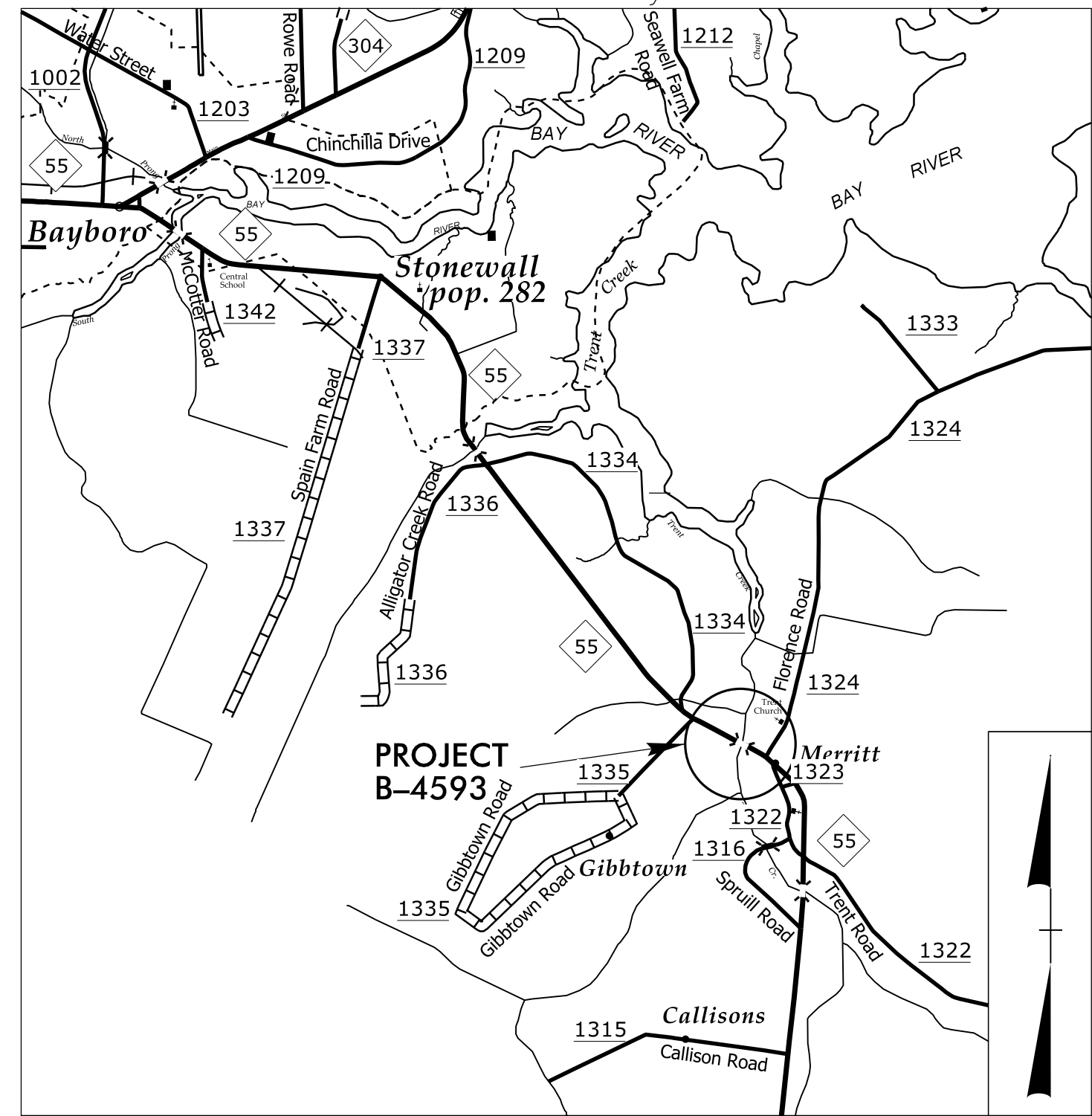
\*\*Rounded totals are sum of actual impacts\*\*

NOTES:

NC DEPARTMENT OF TRANSPORTATION  
 DIVISION OF HIGHWAYS  
 4/23/2019  
 PAMLICO COUNTY  
 B-4593  
 BRIDGE REPLACEMENT ON NC 55 OVER TRENT CREEK

09.08/2019

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



VICINITY MAP

STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

**PAMLICO COUNTY**

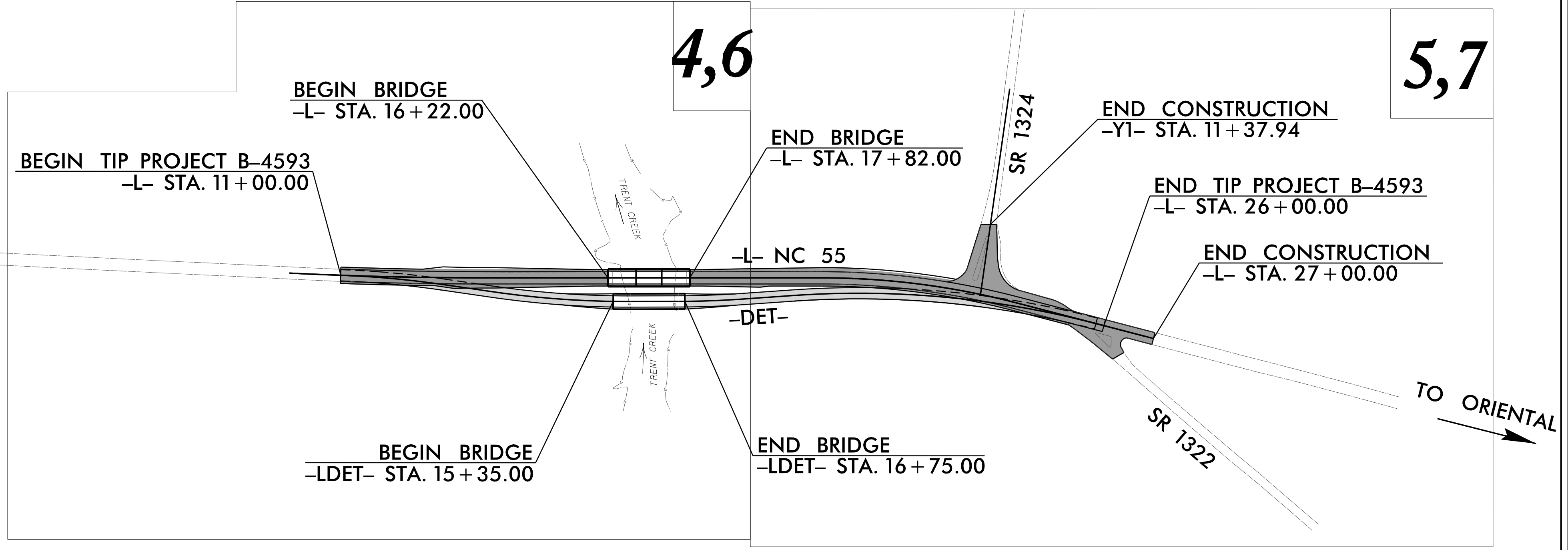
**LOCATION: BRIDGE NO. 38 ON NC 55 OVER TRENT CREEK**  
**TYPE OF WORK: GRADING, DRAINAGE, PAVING AND STRUCTURE.**

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	<b>B-4593</b>	<b>1</b>	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
38422.1.2	-	PE	
38422.2.1	-	RW, Utilities	
38422.3.1	-	CONST.	



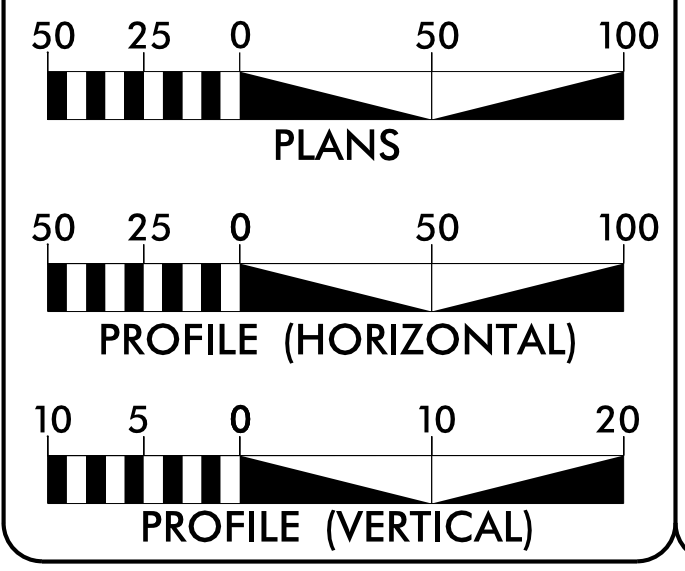
**TIP PROJECT: B-4593**

**CONTRACT: C204217**



DOCUMENT NOT CONSIDERED FINAL  
UNLESS ALL SIGNATURES COMPLETED

**GRAPHIC SCALES**



**DESIGN DATA**

ADT 2019 = 5576  
ADT 2040 = 8600  
K = 8 %  
D = 55 %  
T = 9 % \*  
V = 60 MPH  
V<sub>DET</sub> = 50 MPH  
\* TTST = 2% DUAL = 7%  
FUNC CLASS = MAJOR COLLECTOR REGIONAL TIER

**PROJECT LENGTH**

LENGTH ROADWAY TIP PROJECT B-4593 = 0.254 MILES  
LENGTH STRUCTURE TIP PROJECT B-4593 = 0.030 MILES  
TOTAL LENGTH OF TIP PROJECT B-4593 = 0.284 MILES

**NCDOT CONTACT:** DAVID STUTTS, PE



Prepared in the Office of:  
504 Meadowland Drive  
Hillsborough, NC 27278-8551  
Voice: (919) 732-3883  
Fax: (919) 732-6776  
www.summitde.net

**RIGHT OF WAY DATE:** BRANDON W. JOHNSON, PE  
NOVEMBER 1, 2018  
PROJECT ENGINEER

**LETTING DATE:** FAITH E. JAHNKE, PE  
JULY 17, 2019  
PROJECT DESIGN ENGINEER

**HYDRAULICS ENGINEER**

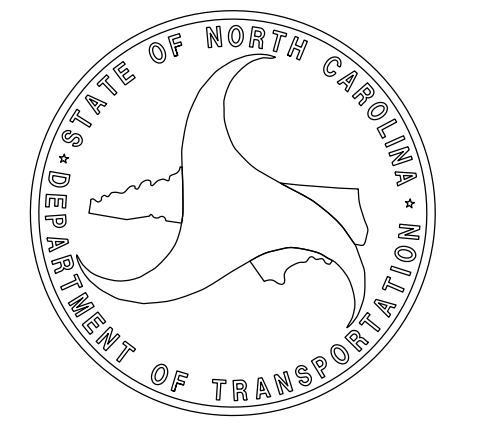


SIGNATURE: \_\_\_\_\_ P.E.

**ROADWAY DESIGN ENGINEER**



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



24-APR-2019 11:07  
B-4593-Ray-trsh.dgn  
faltr.jahnke



# STATE OF NORTH CAROLINA, DIVISION OF HIGHWAYS

## CONVENTIONAL PLAN SHEET SYMBOLS

12/2/2016

### BOUNDARIES AND PROPERTY:

State Line	-----
County Line	-----
Township Line	-----
City Line	-----
Reservation Line	-----
Property Line	-----
Existing Iron Pin	○ EIP
Computed Property Corner	-----
Property Monument	□ ECM
Parcel/Sequence Number	①23
Existing Fence Line	-x-x-x-
Proposed Woven Wire Fence	○
Proposed Chain Link Fence	□
Proposed Barbed Wire Fence	◇
Existing Wetland Boundary	--- WLB ---
Proposed Wetland Boundary	--- WLB ---
Existing Endangered Animal Boundary	--- EAB ---
Existing Endangered Plant Boundary	--- EPB ---
Existing Historic Property Boundary	--- HPB ---
Known Contamination Area: Soil	☠ -s- ☠
Potential Contamination Area: Soil	☠ -s- ☠
Known Contamination Area: Water	☠ -w- ☠
Potential Contamination Area: Water	☠ -w- ☠
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	--- WLB ---
Proposed Lateral, Tail, Head Ditch	-----
False Sump	▽

### RAILROADS:

Standard Gauge	-----
RR Signal Milepost	○ MILEPOST 35
Switch	□ 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 R/W 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	--- C ---
Proposed Slope Stakes Fill	--- F ---
Proposed Curb Ramp	-----
Existing Metal Guardrail	-----
Proposed Guardrail	-----
Existing Cable Guiderail	-----
Proposed Cable Guiderail	-----
Equality Symbol	⊕
Pavement Removal	-----

### VEGETATION:

Single Tree	○
Single Shrub	○

Note: Not to Scale

\*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:

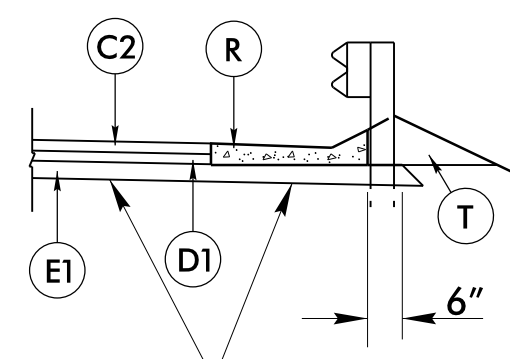
Utility Pole	●
Utility Pole with Base	□
Utility Located Object	○
Utility Traffic Signal Box	⊕
Utility Unknown U/G Line LOS B (S.U.E.*)	-----
U/G Tank; Water, Gas, Oil	-----
Underground Storage Tank, Approx. Loc.	-----
A/G Tank; Water, Gas, Oil	-----
Geoenvironmental Boring	⊕
U/G Test Hole LOS A (S.U.E.*)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



6/2/99

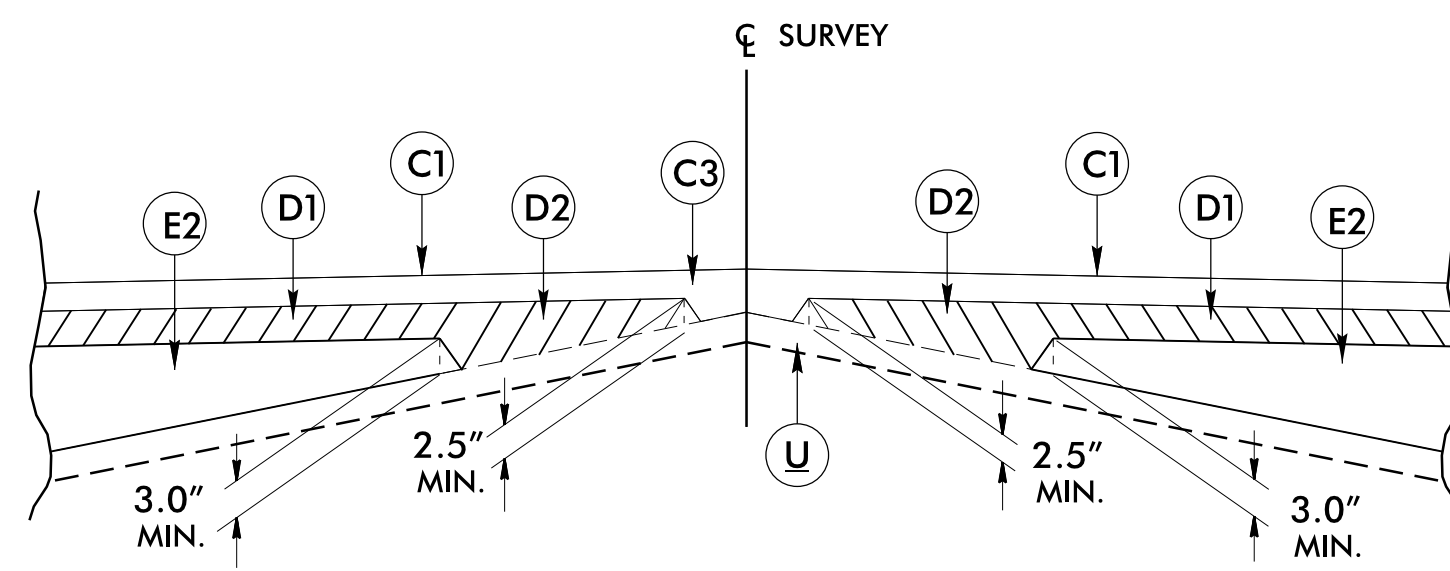
PAVEMENT SCHEDULE (FINAL)	
C1	PROP. APPROX. 1½" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 165 LBS. PER SQ. YD.
C2	PROP. APPROX. 3" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 165 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.
C3	PROP. VAR. DEPTH ASPHALT CONCRETE 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.
D1	PROP. APPROX. 2½" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 285 LBS. PER SQ. YD.
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.
E1	PROP. APPROX. 4" ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.
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 5½" IN DEPTH.
J	PROP. 6" AGGREGATE BASE COURSE.
P	PRIME COAT AT THE RATE OF .35 GAL. PER SQ. YD.
R	SHOULDER BERM GUTTER
T	EARTH MATERIAL.
U	EXISTING PAVEMENT.
V	VARIABLE MILLING BITUMINOUS PAVEMENT. 0" TO 1½" DEPTH.
W	VARIABLE DEPTH ASPHALT PAVEMENT (SEE STANDARD WEDGING DETAIL)

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

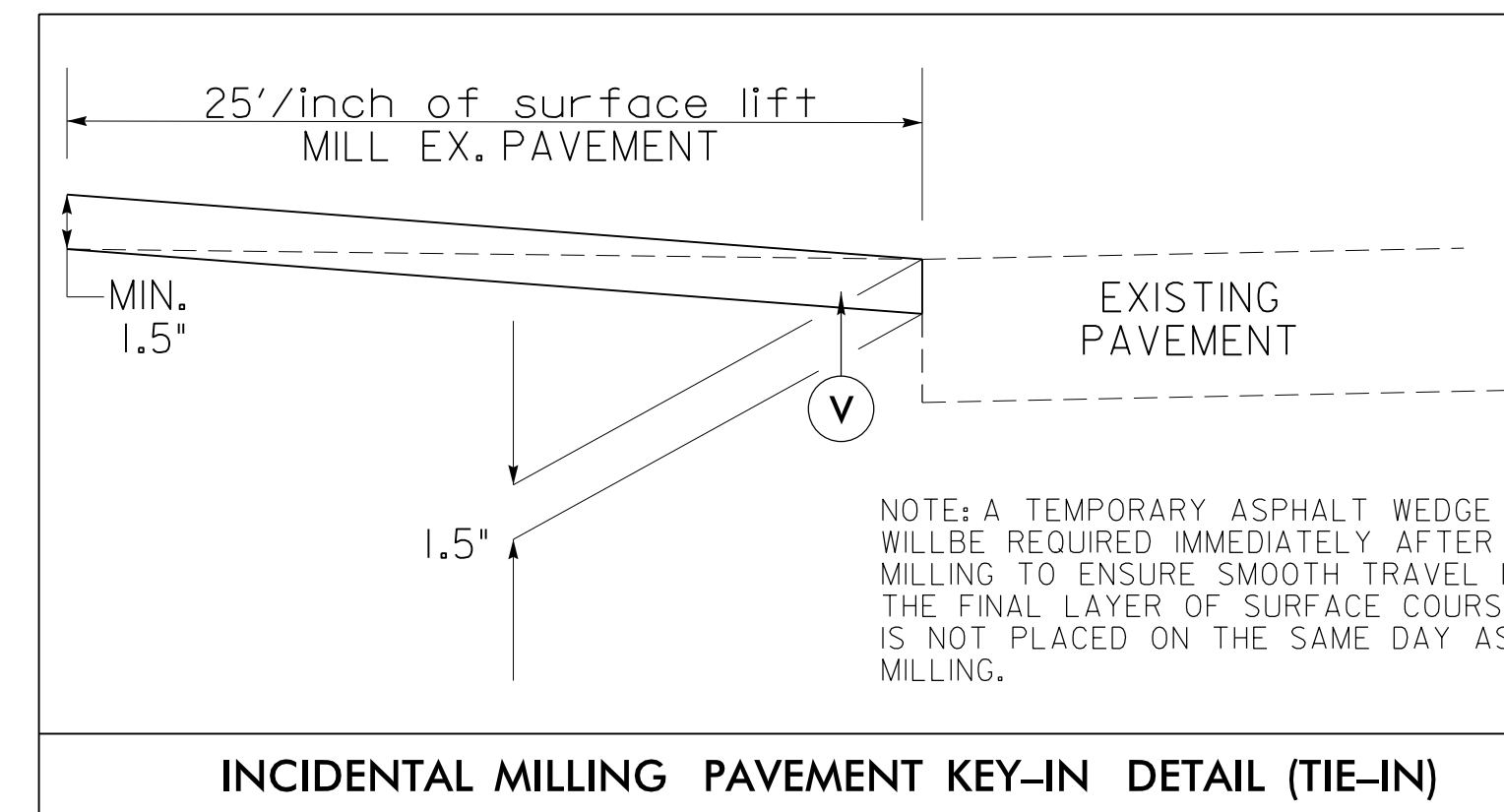


GRADE TO THIS LINE  
PARTIAL TYPICAL

USE IN CONJUNCTION WITH TYPICAL SECTION #2  
 -L- STA. 15+34.93 TO STA. 15+97.83 LT  
 -L- STA. 15+80.25 TO STA. 15+97.83 RT  
 -L- STA. 18+06.17 TO STA. 18+24.00 LT  
 -L- STA. 18+06.17 TO STA. 18+24.00 RT

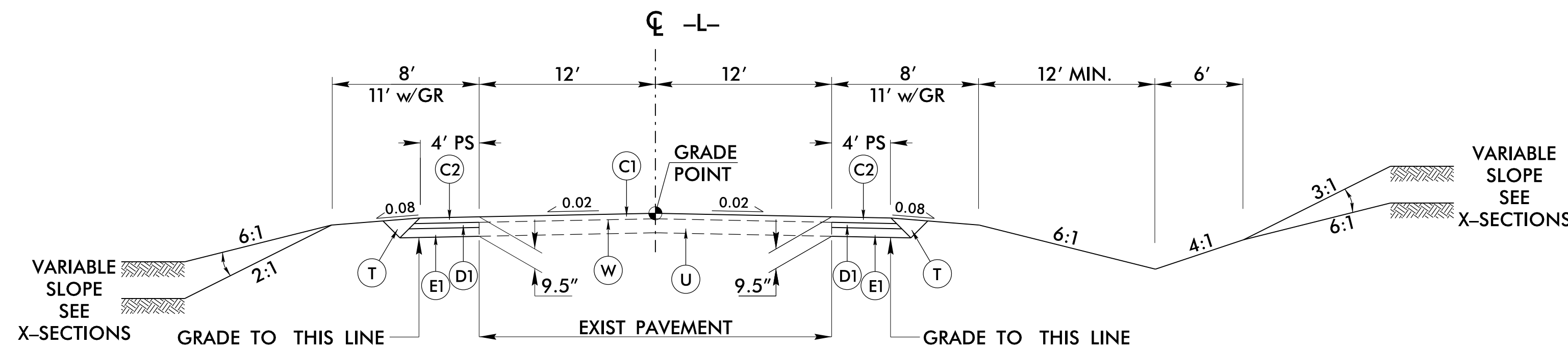


Detail Showing Method of Wedging



INCIDENTAL MILLING PAVEMENT KEY-IN DETAIL (TIE-IN)

-L- STA 11+00.00 TO 11+37.50  
 -L- STA 26+62.50 TO 27+00.00  
 STATION RANGES ARE APPROXIMATE ONLY.  
 GRADE MAY BE ADJUSTED BY ENGINEER  
 TO ENSURE A PROPER TIE-IN.

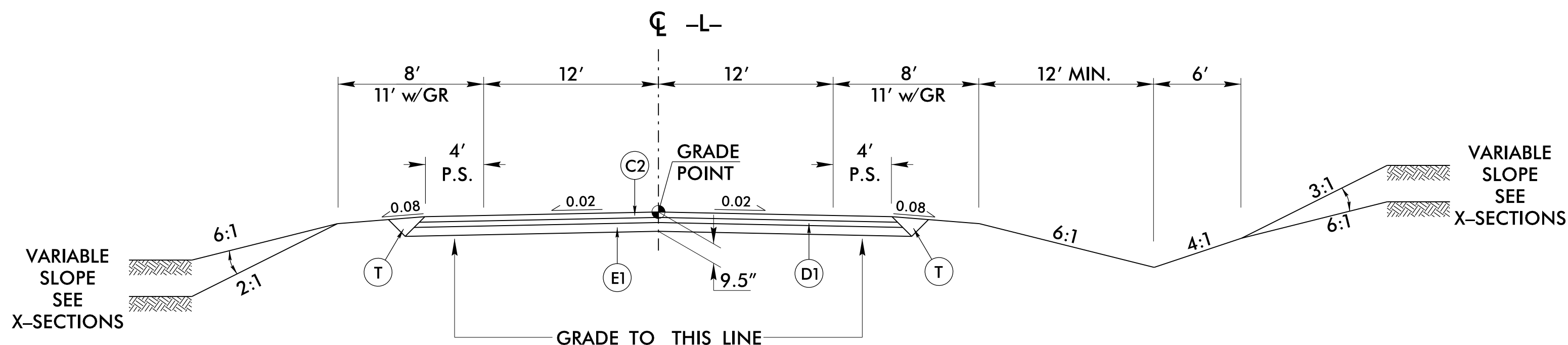


TYPICAL SECTION NO. 1

-L- (NC 55)

USE TYPICAL SECTION NO. 1

-L- STA 11+00.00 TO STA 14+50.00  
 -L- STA 21+50.00 TO STA 26+00.00

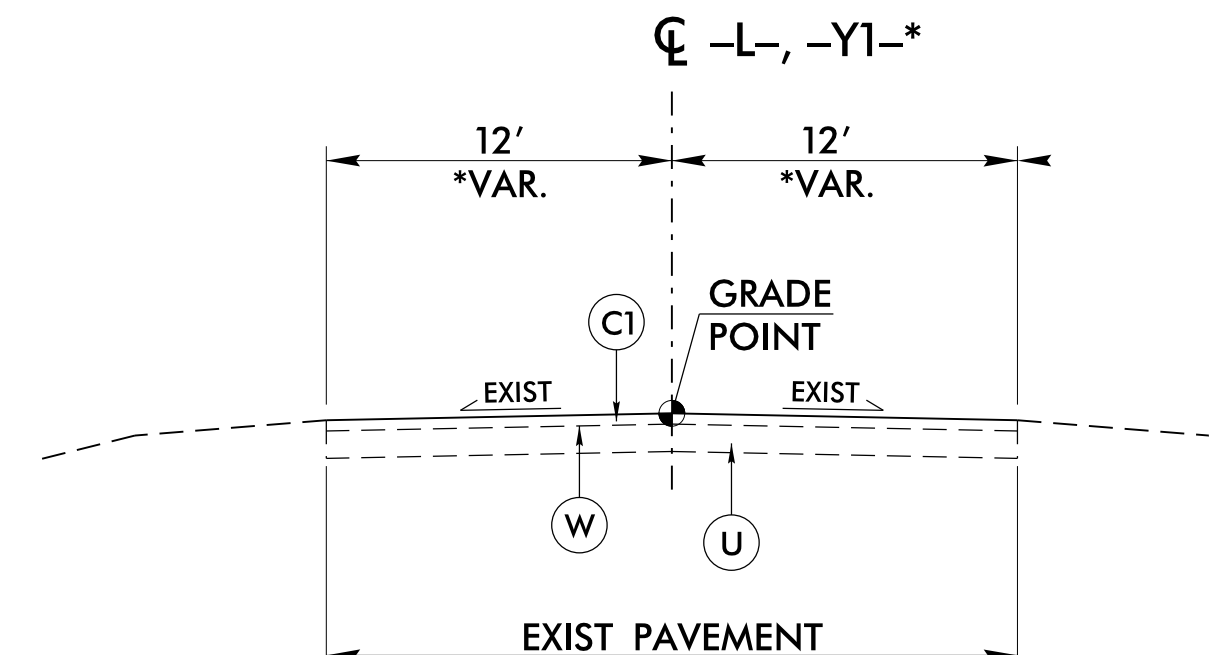


TYPICAL SECTION NO. 2

-L- (NC 55)

USE TYPICAL SECTION NO. 2

-L- STA 14+50.00 TO STA 16+22.00 (BEGIN BRIDGE)  
 -L- STA 17+82.00 (END BRIDGE) TO STA 21+50.00



TYPICAL SECTION NO. 3

-L- (NC 55)  
 -Y1- (SR 1324)

USE TYPICAL SECTION NO. 3

-L- STA 26+00.00 TO STA 27+00.00  
 -Y1- STA 10+12.04 TO STA 11+37.94

PROJECT REFERENCE NO. B-4593	SHEET NO. 2A-1
ROADWAY DESIGN ENGINEER SEAL 046981 EARTH E. JAHANS	PAVEMENT DESIGN ENGINEER SEAL 022896 CLARK S. MORRISON
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	
Prepared in the Office of: SUMMIT	NC FIRM LICENSE No. P-0339 504 Meadowslands Drive Hillsborough, NC 27278 (919) 732-2883 (919) 732-6676 (FAX)

NOTE: PLACE FDPDS TO FACE OF GUARDRAIL AS SHOWN ON PLANS.

\*FOR SLOPES VARYING FROM 3:1 TO 2:1, UTILIZE ROCK PLATING. NO SLOPES SHALL BE STEEPER THAN 2:1.

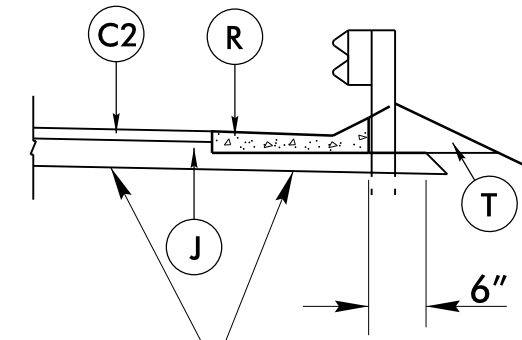
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6/2/99

PAVEMENT SCHEDULE

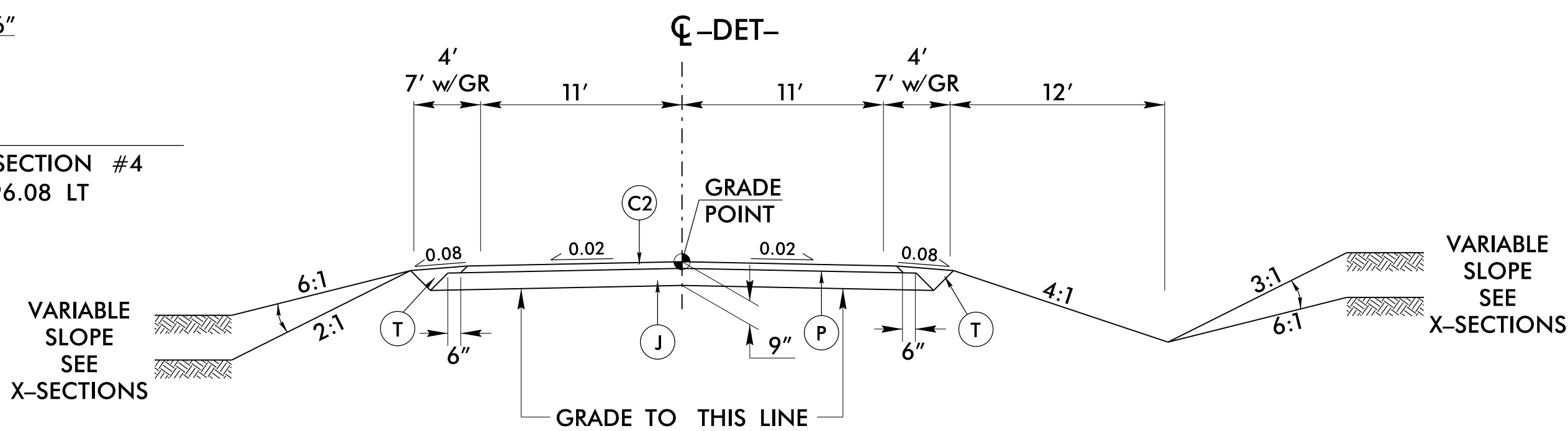
C1	1 1/2" S9.5B
C2	3" S9.5B
C3	VAR. S9.5B
D1	2 1/2" I19.0C
D1	VAR. I19.0C
E1	4" B25.0C
E2	VAR. B25.0C
J	6" ABC
P	.35 PRIME COAT
R	SHOULDER BERM GUTTER
T	EARTH MATERIAL
U	EXIST. PAVEMENT
V	VAR. MILLING
W	WEDGING

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



GRADE TO THIS LINE  
PARTIAL TYPICAL

USE IN CONJUNCTION WITH TYPICAL SECTION #4  
-DET- STA. 16+75.00 TO STA. 16+96.08 LT

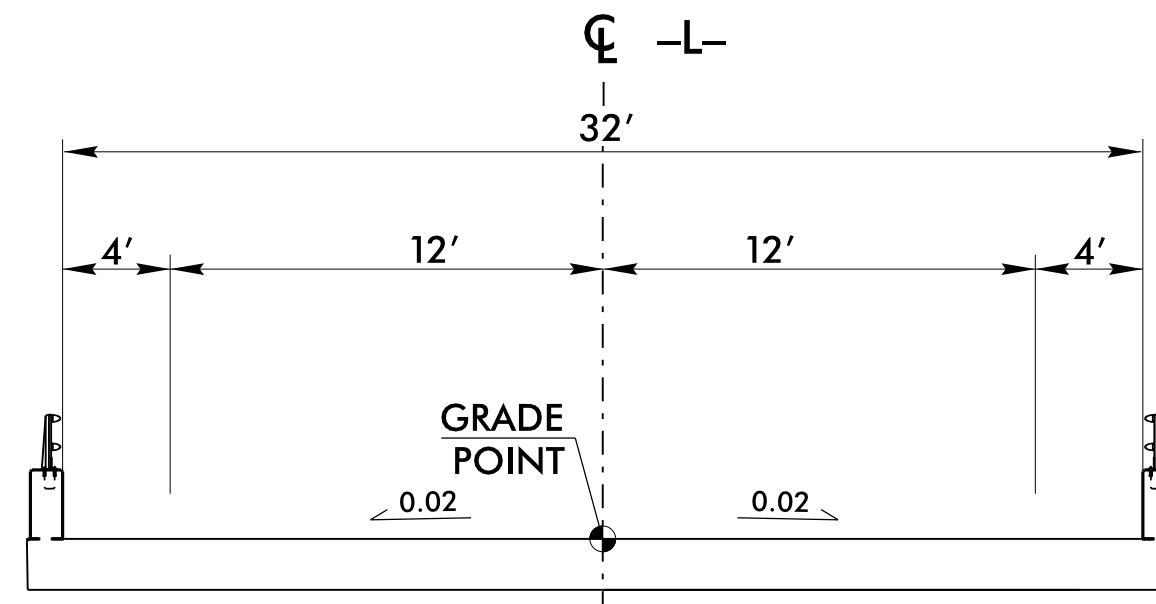


TYPICAL SECTION NO. 4

-DET- (NC 55)

USE TYPICAL SECTION NO. 4

-LDET- STA 11+92.83 TO STA 15+35.00 (BEGIN BRIDGE)  
-LDET- STA 16+75.00 (END BRIDGE) TO STA 22+58.65

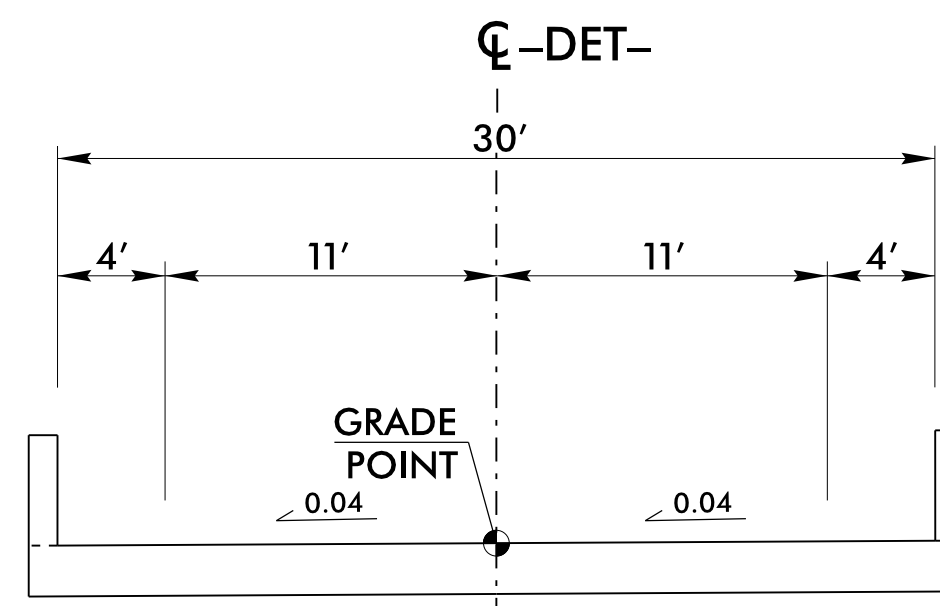


BRIDGE TYPICAL SECTION NO. 5

FOR BRIDGE OVER TRENT CREEK

USE TYPICAL SECTION NO. 5

-L- STA 16+22.00 (BEGIN BRIDGE)  
TO STA 17+82.00 (END BRIDGE)



BRIDGE TYPICAL SECTION NO. 6

FOR TEMPORARY BRIDGE OVER TRENT CREEK

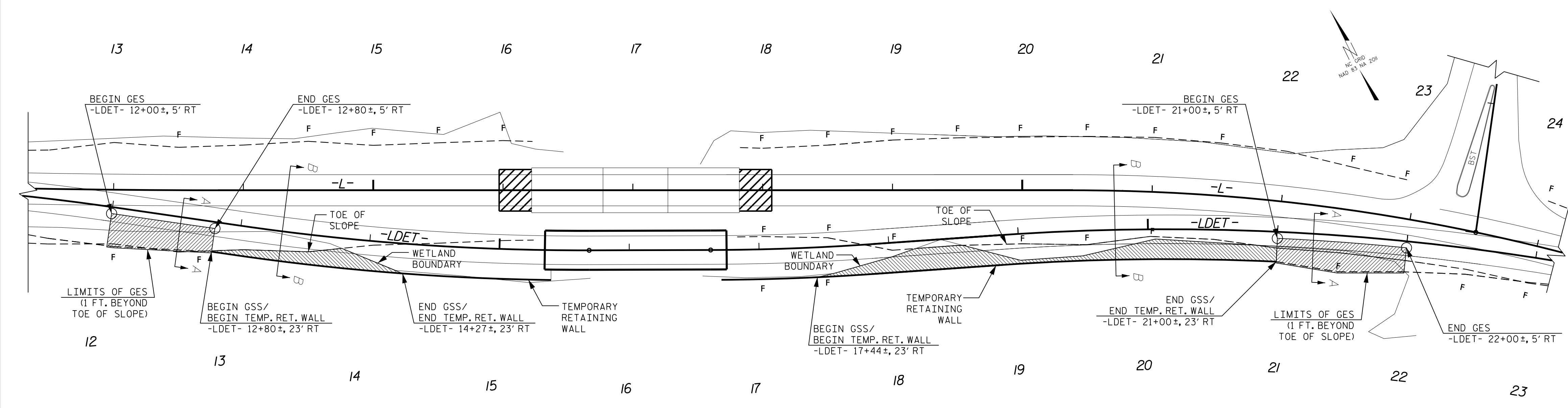
USE TYPICAL SECTION NO. 6

-LDET- STA 15+35.00 (BEGIN BRIDGE)  
TO STA 16+75.00 (END BRIDGE)



PROJECT REFERENCE NO. B-4593	SHEET NO. 2A-2
ROADWAY DESIGN ENGINEER SEAL 046981 EARTH E. JAHANSKI	PAVEMENT DESIGN ENGINEER SEAL 022896 CLARK S. MORRISON
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	
Prepared in the Office of: <b>SUMMIT</b> DESIGN AND ENGINEERING SERVICES	NC FIRM LICENSE No. P-0339 504 Meadowslands Drive Hillsborough, NC 27278 (919) 732-2883 (919) 732-6676 (FAX)

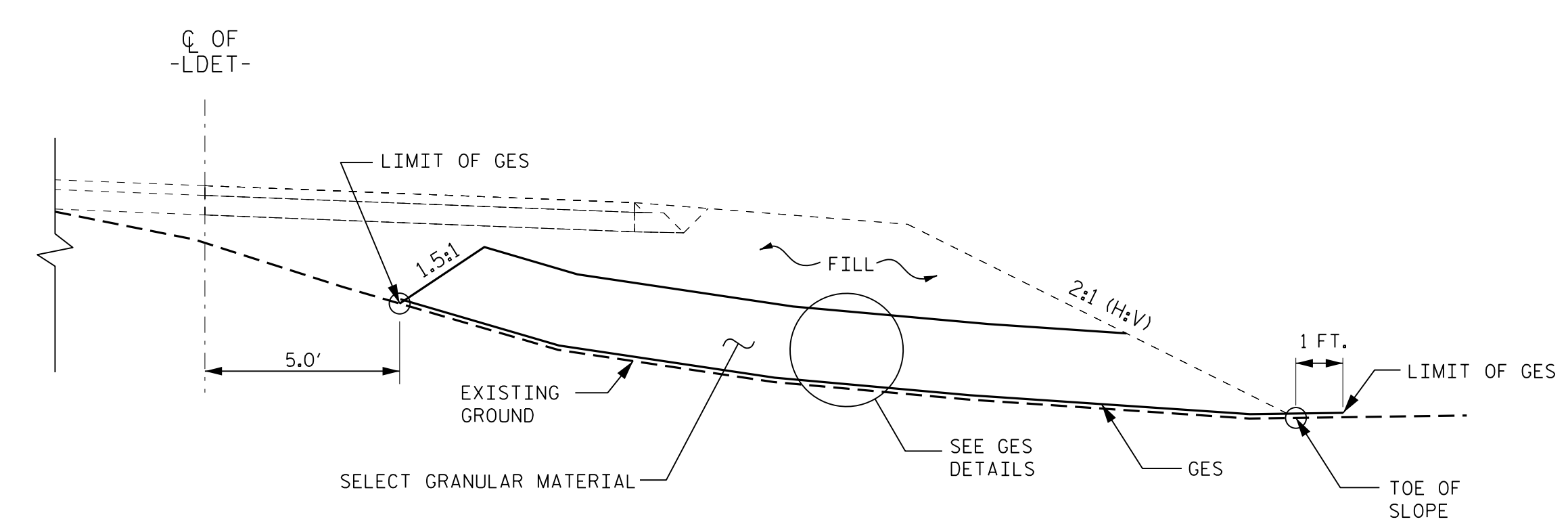
\*FOR SLOPES VARYING FROM 3:1 TO 2:1, UTILIZE ROCK PLATING. NO SLOPES SHALL BE STEEPER THAN 2:1.

24-APP-2018-11-07  
B-4593-2A-2.dgn  
F:\b\101101\B-4593-2A-2.dgn

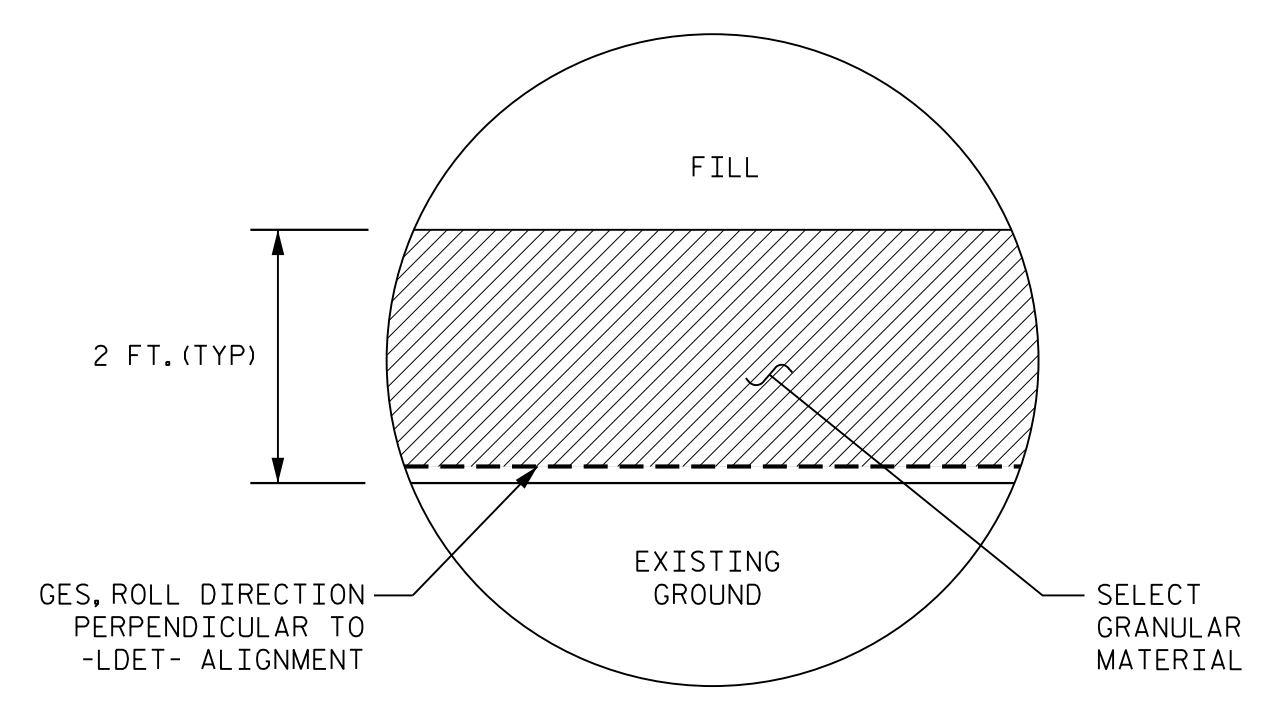


**PLAN VIEW**  
N.T.S.

 GEOTEXTILE FOR EMBANKMENT STABILIZATION (GES)  
 GEOTEXTILE FOR SOIL STABILIZATION (GSS)



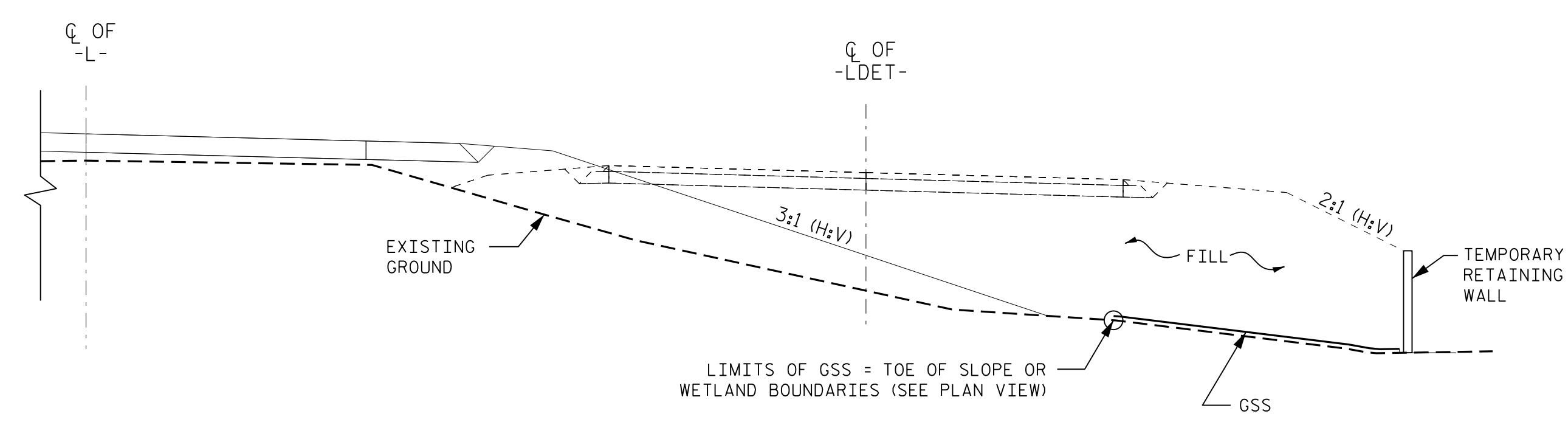
**TYPICAL A-A SECTION**  
NOT TO SCALE



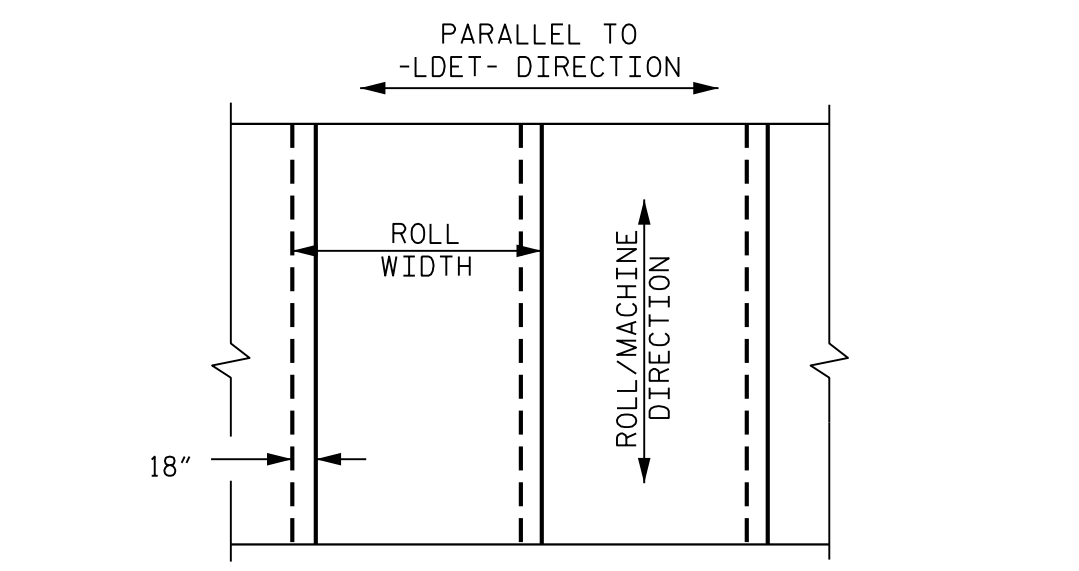
**GES DETAILS**  
N.T.S.

**NOTES**

- GRUBBING MAY NOT BE REQUIRED IN AREAS WHERE GEOTEXTILE FOR EMBANKMENT STABILIZATION (GES) OR GEOTEXTILES FOR SOIL STABILIZATION (GSS) IS USED.
- CLEAR THE AREA WITHIN THE LIMITS OF GES AND GSS.
- PLACE GES AND GSS PERPENDICULAR TO -LDET- ALIGNMENT ON THE EXISTING GROUND AS SHOWN IN THE PLAN OR AS DIRECTED BY THE ENGINEER.
- PLACE THE GEOTEXTILE WITHOUT ANY WRINKLES OR CREASES.
- PLACE 2 FT. OF SELECT GRANULAR MATERIAL ON THE GES.
- THE TERMS ROLL AND MACHINE DIRECTION ARE USED INTERCHANGEABLY.
- NO SEAMS OR JOINTS ARE ALLOWED IN THE MACHINE DIRECTION OF GEOTEXTILE.
- ALL JOINTS IN THE CROSS MACHINE DIRECTION MUST BE OVERLAPPED A MINIMUM OF 18 INCHES.
- FOR GES, SEE GEOTEXTILE FOR EMBANKMENT STABILIZATION (SPECIAL) PROVISION.

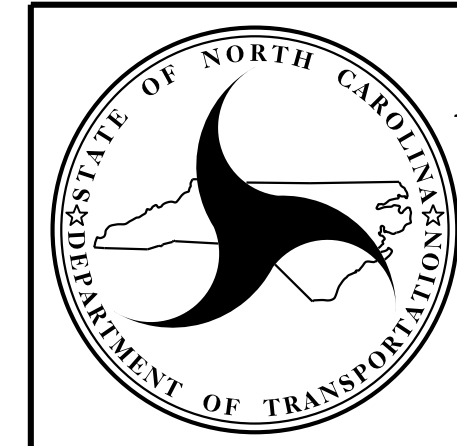


**TYPICAL B-B SECTION**  
NOT TO SCALE



**GES AND GSS OVERLAP DETAILS**  
(PLAN VIEW, NOT TO SCALE)

ESTIMATED QUANTITIES	
GEOTEXTILE FOR EMBANKMENT STABILIZATION	550 SY
GEOTEXTILE FOR SOIL STABILIZATION	650 SY
SELECT GRANULAR MATERIAL	350 CY

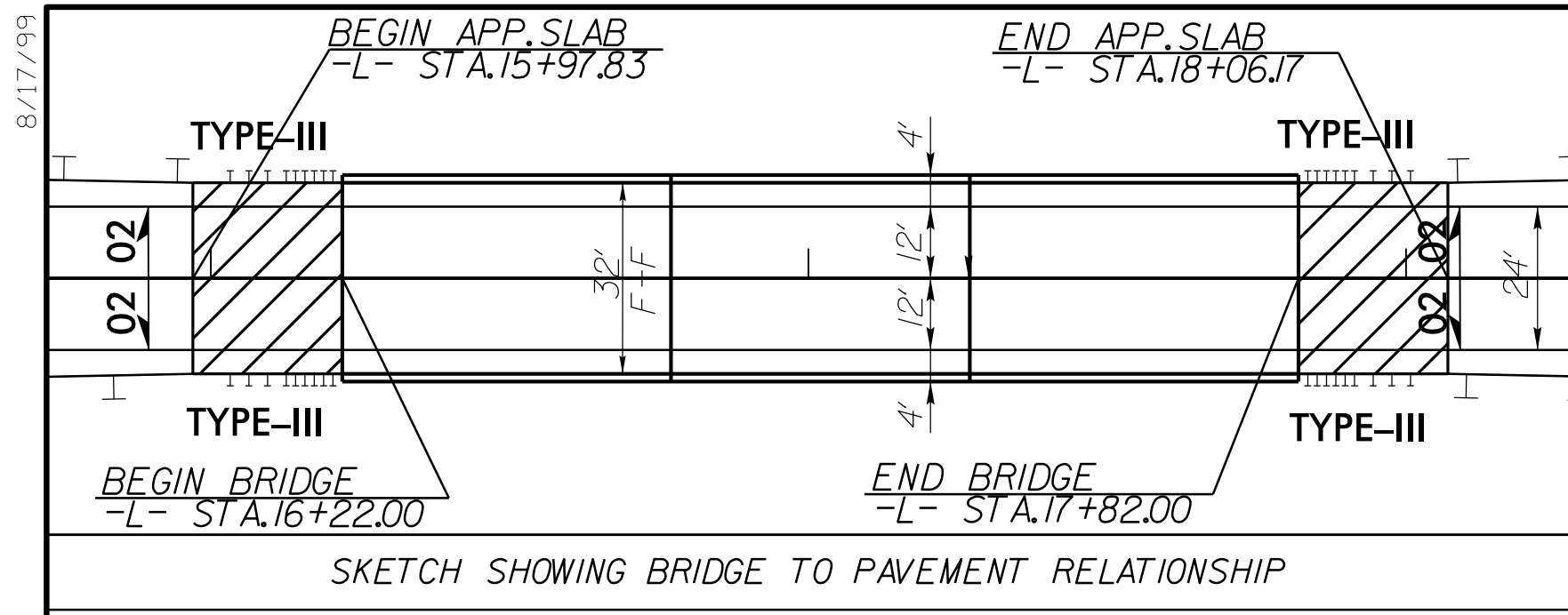


REVISIONS					
NO.	BY	DATE	NO.	BY	DATE
1			3		
2			4		

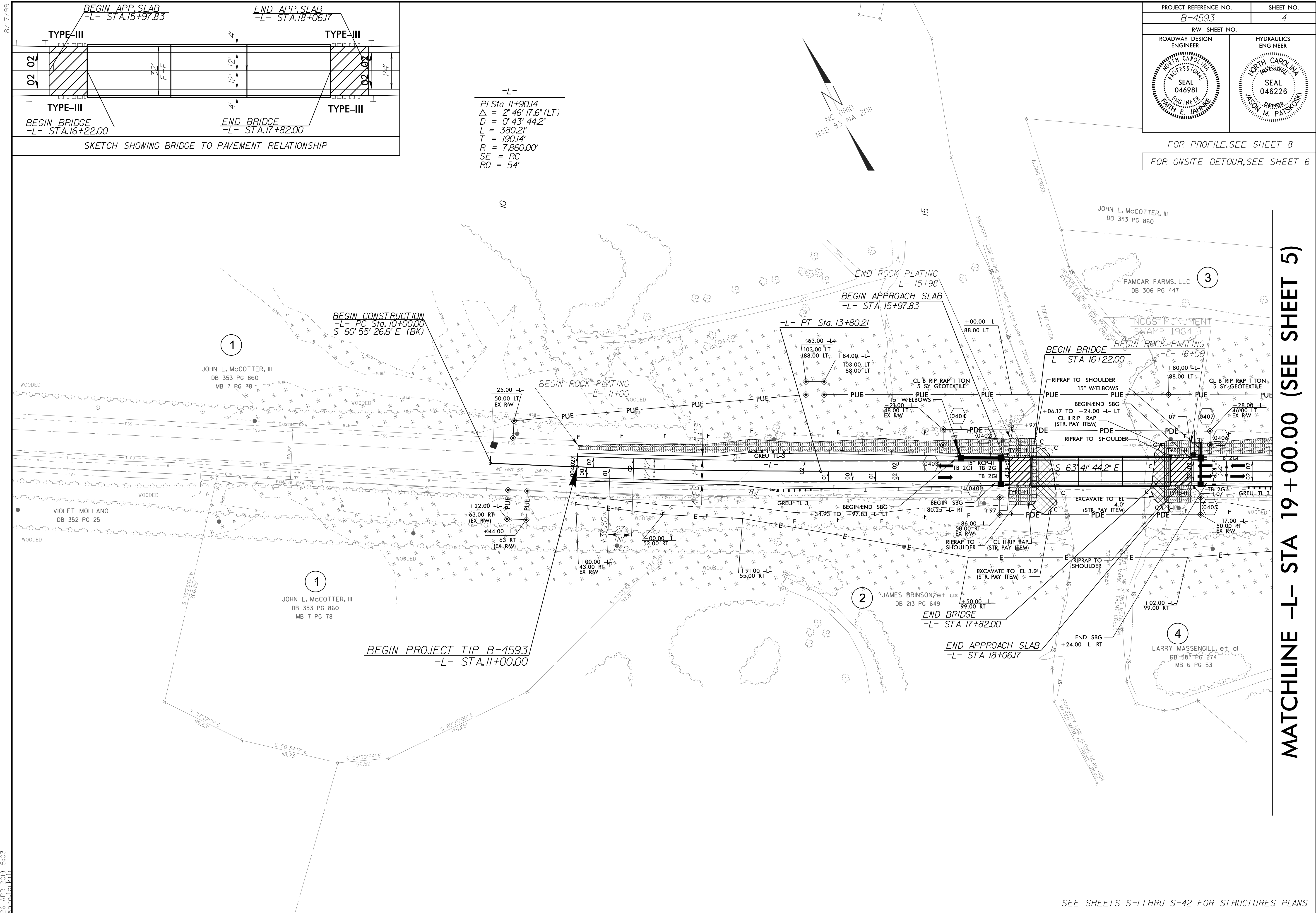


PROJECT REFERENCE NO. B-4593	SHEET NO. 4
RW SHEET NO.	
ROADWAY DESIGN ENGINEER NORTH CAROLINA PROFESSIONAL SEAL 046981 PATRICK E. JARVIS	HYDRAULICS ENGINEER NORTH CAROLINA PROFESSIONAL SEAL 046226 JASON M. PATSKOSKY

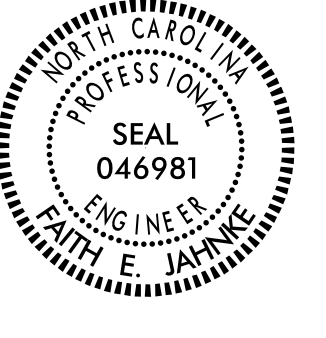
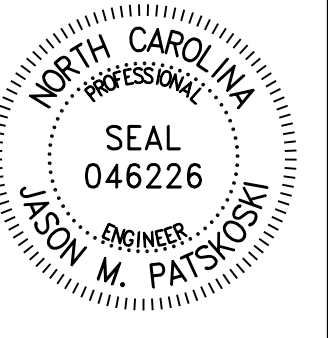
FOR PROFILE, SEE SHEET 8  
FOR ONSITE DETOUR, SEE SHEET 6



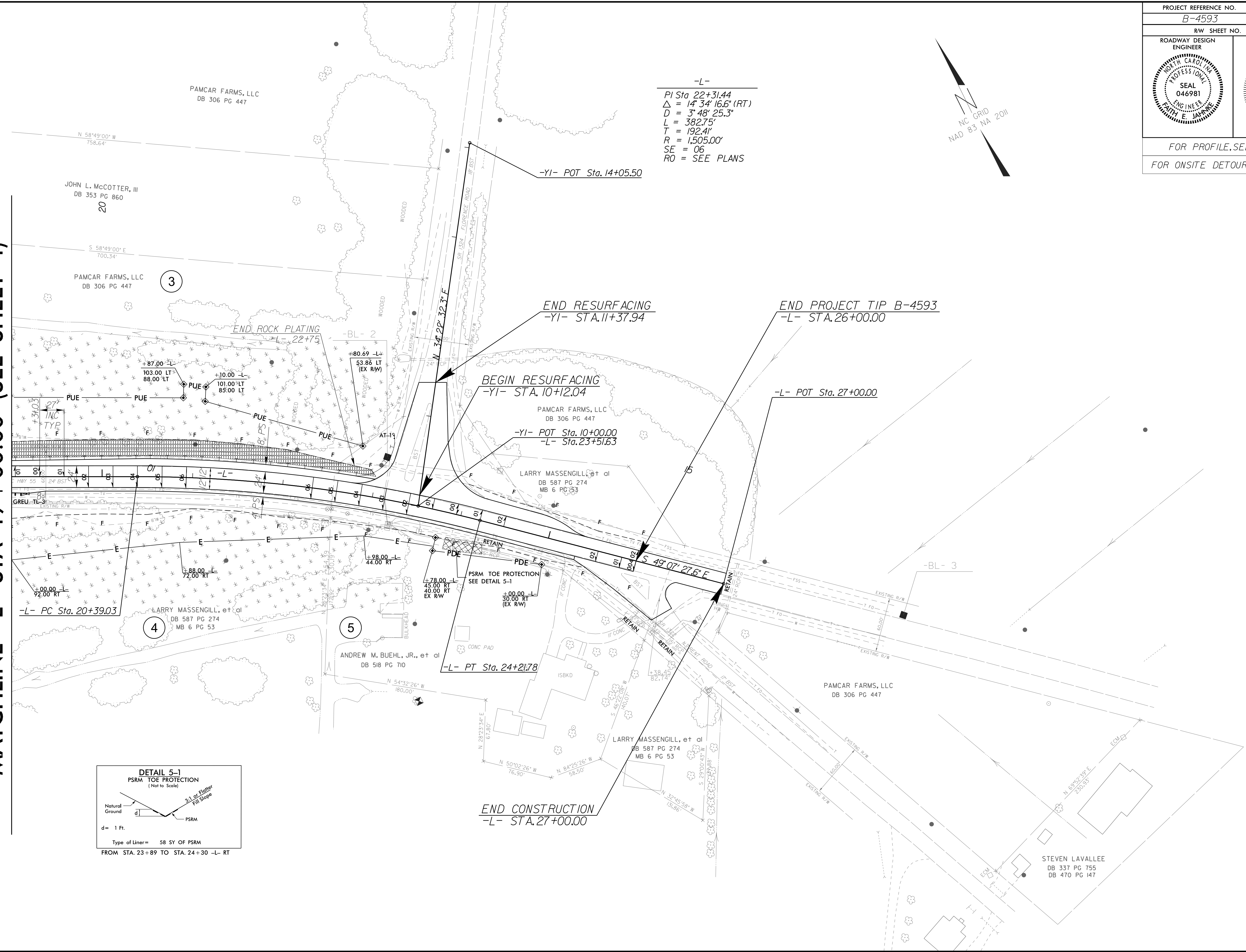
-L-  
PI Sta 11+90.14  
 $\Delta = 2' 46'' 17.6'' (LT)$   
 $D = 0' 43'' 44.2''$   
 $L = 380.21'$   
 $T = 190.14'$   
 $R = 7,860.00'$   
SE = RC  
RO = 54'



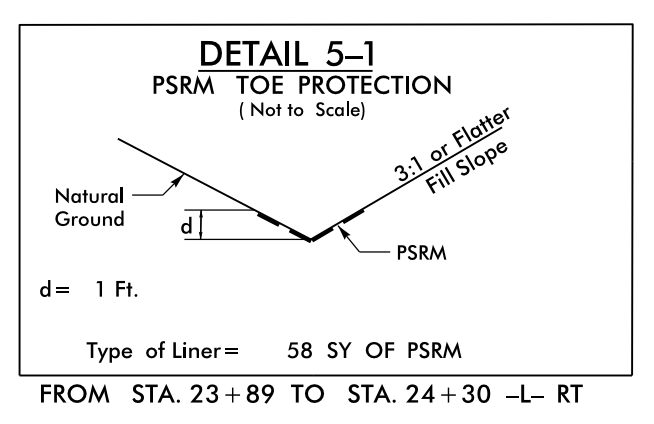
MATCHLINE -L- STA 19 + 00.00 (SEE SHEET 5)

PROJECT REFERENCE NO. B-4593		SHEET NO. 5	
RW SHEET NO.			
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
			
FOR PROFILE, SEE SHEET 8			
FOR ONSITE DETOUR, SEE SHEET 7			

MATCHLINE -L- STA 19+00.00 (SEE SHEET 4)

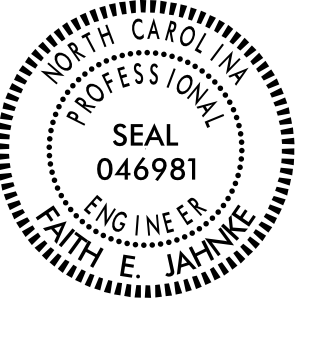
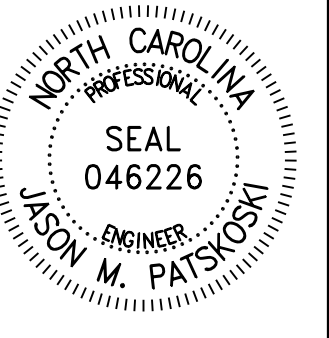


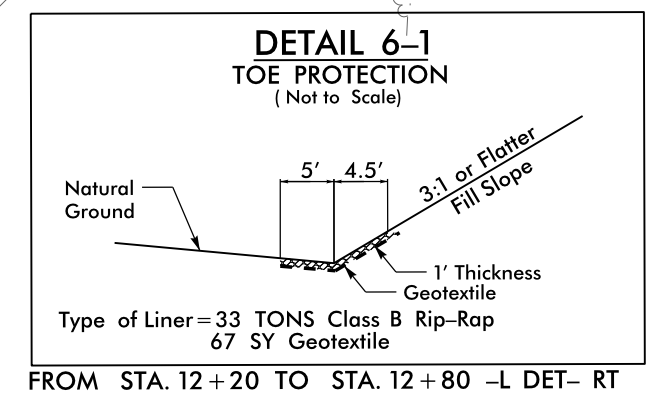
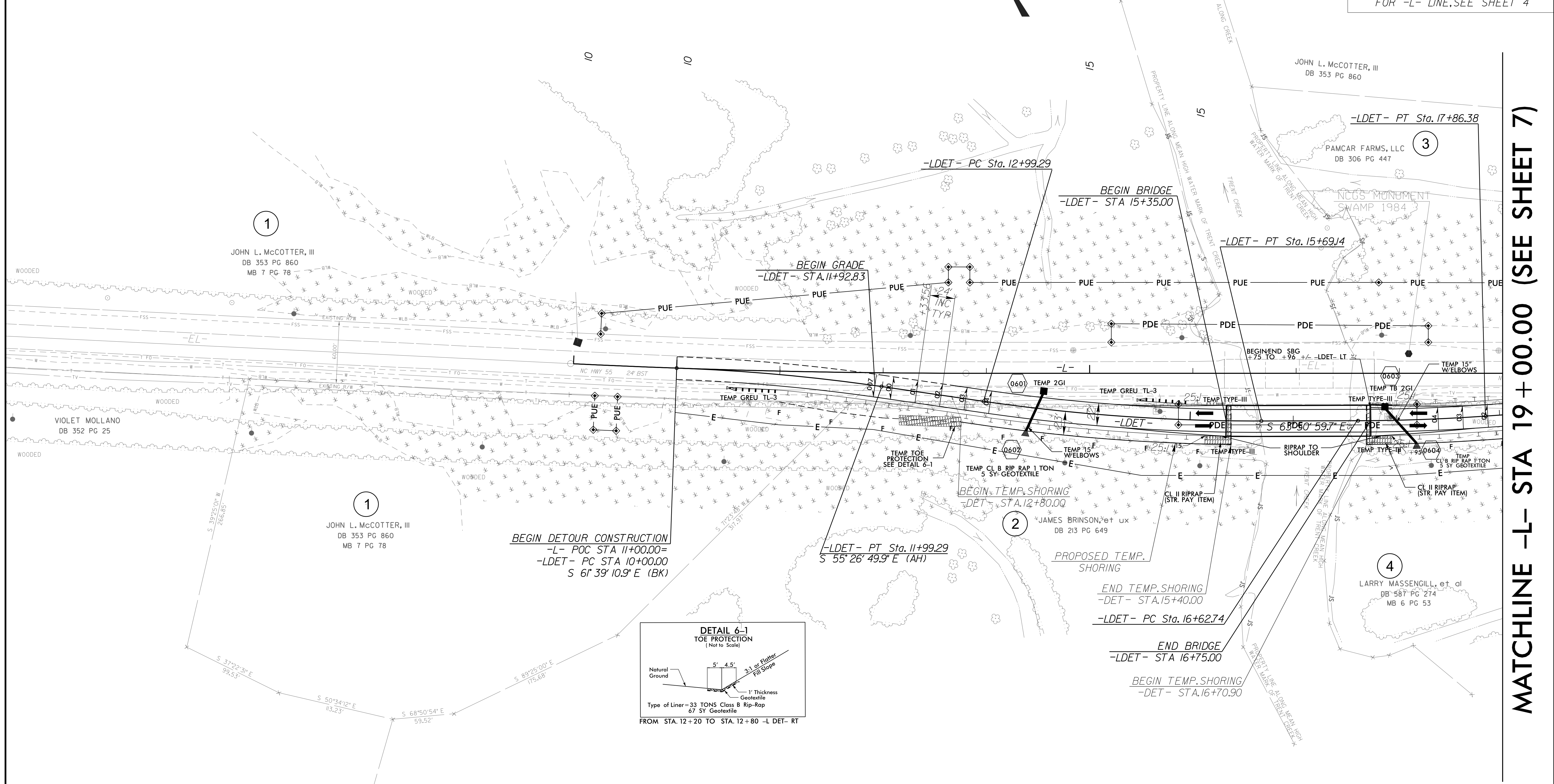
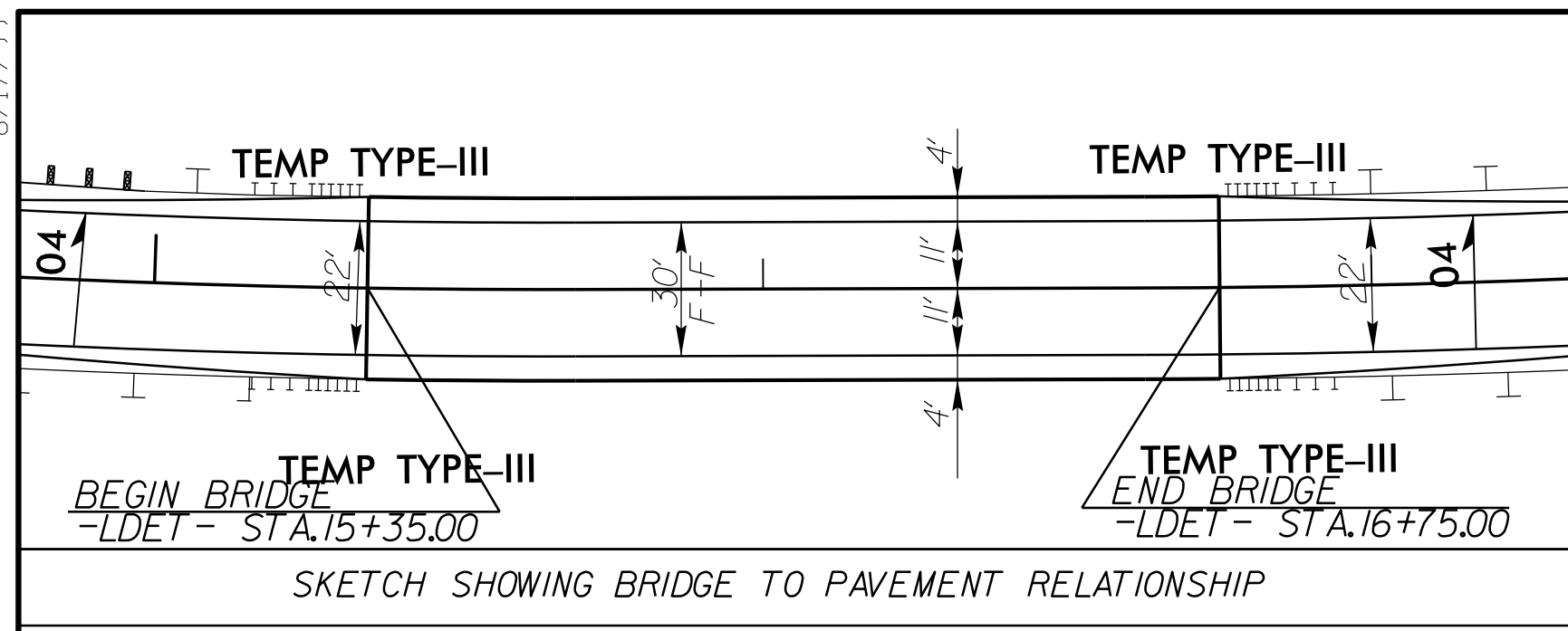
-L-  
 PI Sta 22+31.44  
 $\Delta = 14^{\circ} 34' 16.6''$  (RT)  
 $D = 3^{\circ} 48' 25.3''$   
 $L = 382.75'$   
 $T = 192.41'$   
 $R = 1,505.00'$   
 $SE = 06$   
 $RO = \text{SEE PLANS}$





8.17.19  
26-APR-2019 15:03  
sara.loukh

PROJECT REFERENCE NO. B-4593	SHEET NO. 6
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
	
FOR PROFILE, SEE SHEET 9	
FOR -L- LINE, SEE SHEET 4	



MATCHLINE -L- STA 19+00.00 (SEE SHEET 7)

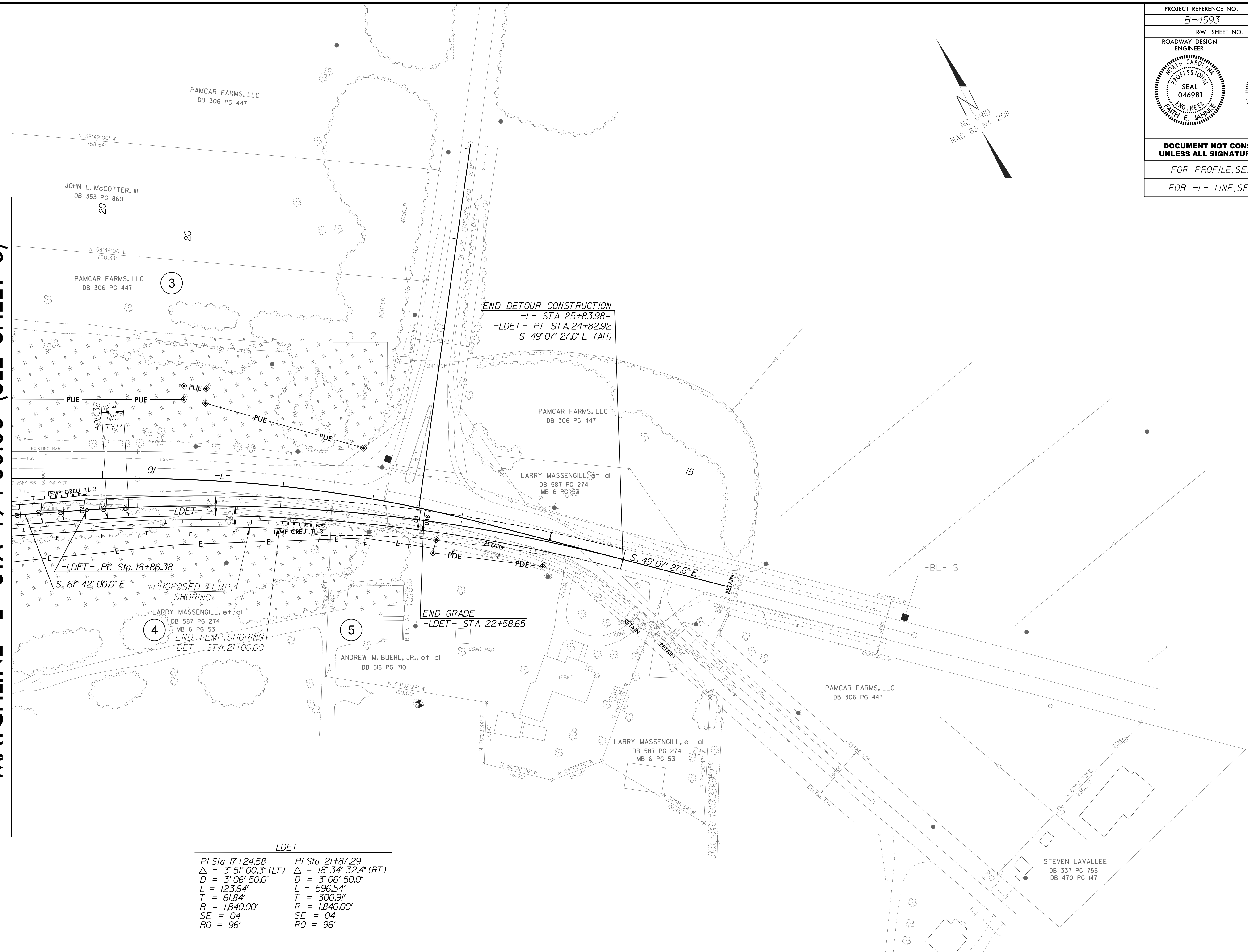
-LDET-		
PI Sta 10+99.74	PI Sta 14+34.46	PI Sta 17+24.58
$\Delta = 6'12" 21.0" (RT)$	$\Delta = 8'24" 09.8" (LT)$	$\Delta = 3'51" 00.3" (LT)$
$D = 3'06" 50.0"$	$D = 3'06" 50.0"$	$D = 3'06" 50.0"$
$L = 199.29'$	$L = 269.85'$	$L = 123.64'$
$T = 99.74'$	$T = 135.16'$	$T = 61.84'$
$R = 1,840.00'$	$R = 1,840.00'$	$R = 1,840.00'$
$SE = 04$	$SE = 04$	$SE = 04$
$RO = 96'$	$RO = 96'$	$RO = 96'$

8/17/99

PROJECT REFERENCE NO. B-4593	SHEET NO. 7
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
<b>DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED</b>	
FOR PROFILE, SEE SHEET 9	
FOR -L- LINE, SEE SHEET 5	



MATCHLINE -L- STA 19+00.00 (SEE SHEET 6)



-LDET-	
PI Sta 17+24.58	PI Sta 21+87.29
$\Delta = 3^{\circ} 51' 00.3''$ (LT)	$\Delta = 18^{\circ} 34' 32.4''$ (RT)
$D = 3^{\circ} 06' 50.0''$	$D = 3^{\circ} 06' 50.0''$
$L = 123.64'$	$L = 596.54'$
$T = 61.84'$	$T = 300.91'$
$R = 1,840.00'$	$R = 1,840.00'$
$SE = 04'$	$SE = 04'$
$RO = 96'$	$RO = 96'$

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