



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: *

Brunswick

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-4438

WBS # *

38365.1.2

(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

Regional General Permit (RGP) Number:

198200031 - NCDOT Bridges, Widening Projects 2015

RGP Numbers (for multiple RGPs):

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

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

check all that apply

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

B-4438 DMS Revised.pdf

72.16KB

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? *

NCDOT

1b. Primary Contact Email: *

driffey@ncdot.gov

1c. Primary Contact Phone: *

(xxx)xxx-xxxx
(919)707-6151

1d. Who is applying for the permit? *

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

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

- Yes No

2. Owner Information

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

Multiple properties

2b. Deed book and page no.:

2c. Responsible party:

(for Corporations)

2d. Address *

Street Address

1598 Mail Service Center

Address Line 2

City

Raleigh

Postal / Zip Code

27699-1598

State / Province / Region

NC

Country

USA

2e. Telephone Number: *

(xxx)xxx-xxxx

(919)707-6000

2f. Fax Number:

(xxx)xxx-xxxx

2g. Email Address: *

pharris@ncdot.gov

C. Project Information and Prior Project History

1. Project Information

1a. Name of project: *

B-4438 Bridge No. 47 over Bear Pen Islands Swamp on NC 211 (Central)

1b. Subdivision name:

(if appropriate)

1c. Nearest municipality / town: *

Bolivia

2. Project Identification

2a. Property Identification Number:

(tax PIN or parcel ID)

2b. Property size:

(in acres)

2c. Project Address

Street Address

Address Line 2

City

State / Province / Region

Postal / Zip Code

Country

2d. Site coordinates in decimal degrees

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

Latitude: *

34.140887
ex: 34.208504

Longitude: *

-78.32502
-77.796371

3. Surface Waters

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

Bear Pen Islands Swamp

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

C; Sw

[Surface Water Lookup](#)

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

Lumber

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

30402060401

[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 surrounding the bridge consists of agriculture, Juniper Creek Game Lands, and forestland. Existing conditions are the same as land use.

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:

1.8

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

(intermittent and perennial)

226

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

Replacement of Bridge No. 47 that was built in 1954 and is structurally deficient and functionally obsolete.

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

The project involves replacement of existing Bridge No. 47, a 53-foot long bridge, with a 105-foot bridge. The new bridge will have 12-foot travel lanes in each direction and 3-foot shoulders on each side. The new bridge will be placed east of the existing bridge. Traffic will be maintained on the existing bridge. Standard road building equipment, such as trucks, dozers, and cranes will be used.

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

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

B4438_Permit_Drawings_20181108.pdf

3.6MB

B-4438 Brunswick Roadway Plans.pdf

1.86MB

File type must be pdf

5. Jurisdictional Determinations

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

Yes No Unknown

Comments:

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

SAW -2015-000954

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

Name (if known): Adam Efrid
 Agency/Consultant Company: Atkins Environmental
 Other:

5d. List the dates of the Corp jurisdiction determination or State determination if a determination was made by the Corps or DWR.

May 4, 2018

5d1. Jurisdictional determination upload

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

B-4438 JD.pdf

120.85KB

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	Fill	P	Riverine Swamp Forest	WB	Yes	Both	0.050 (acres)
1	Cut ditch-excavation	P	Riverine Swamp Forest	WB	Yes	Both	0.050 (acres)
1	Mechanized Clearing	P	Riverine Swamp Forest	WB	Yes	Both	0.003 (acres)
2	Fill	P	Riverine Swamp Forest	WB	Yes	Both	0.140 (acres)
2	Mechanized Clearing	P	Riverine Swamp Forest	WB	Yes	Both	0.020 (acres)
3	Bridge - fill	P	Riverine Swamp Forest	WB/WA	Yes	Both	0.040 (acres)
3	Bridge - excavation	P	Riverine Swamp Forest	WB/WA	Yes	Both	0.005 (acres)
3	Bridge - Mechanized Clearing	P	Riverine Swamp Forest	WB/WA	Yes	Both	0.030 (acres)

5	Outlet - Mechanized Clearing	P	Riverine Swamp Forest	WC	Yes	Both	0.002 (acres)
6	Outlet - Mechanized Clearing	P	Riverine Swamp Forest	WC	Yes	Both	0.003 (acres)
7	Fill	P	Riverine Swamp Forest	WA	Yes	Both	0.360 (acres)
7	Mechanized Clearing	P	Riverine Swamp Forest	WA	Yes	Both	0.080 (acres)

2g. Total Temporary Wetland Impact

0.000

2g. Total Permanent Wetland Impact

0.783

2g. Total Wetland Impact

0.783

2h. Comments:

There will be 0.05 acre of hand clearing and 0.03 acre of temporary fill for erosion and sediment control measures in the hand clearing areas.

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	Roadway/Bridge	Temporary	Bank Stabilization	Bear Pen Islands Swamp	Perennial	Both	52	129

** 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:

0

3i. Total temporary stream impacts:

129

3i. Total stream and ditch impacts:

131

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)
7	Fill	P	Bear Pen Islands Swamp	Bridge	Ditch	0.17

4g. Total temporary open water Impacts:

0.00

4g. Total permanent open water impacts:

0.17

4g. Total open water impacts:

0.17

4h. Comments:

E. Impact Justification and Mitigation



1. Avoidance and Minimization

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

The proposed bridge will not use deck drains. Runoff from the bridge and paved shoulders at the bridge drain into inlets. Runoff is then diffused to a riprap pad outlet prior to discharging. During planning an offsite detour was evaluated and determined to be to long. Other than no build, impacts to the wetlands and stream on this project is unavoidable.

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

NCDOT Best Management Practices for Construction and Maintenance Activities will be employed and 3:1 slopes in wetlands..

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

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

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

Yes No

4b. Stream mitigation requested:

(linear feet)

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

warm

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

4d. Buffer mitigation requested (DWR only):

(square feet)

4e. Riparian wetland mitigation requested:

(acres)

0.78

4f. Non-riparian wetland mitigation requested:

(acres)

4g. Coastal (tidal) wetland mitigation requested:

(acres)

4h. Comments

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

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

1. Diffuse Flow Plan

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

Yes No

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

If no, explain why:

2. Stormwater Management Plan

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

Yes No

Comments:

G. Supplementary Information

1. Environmental Documentation

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

Yes No

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

Yes No

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

Yes No

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.

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

4. Sewage Disposal (DWR Requirement)

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

Yes No N/A

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

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

Yes No

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

Yes No

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

Raleigh

5d. Is another Federal agency involved? *

Yes No Unknown

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

Yes No

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

USFWS county list and NCNHP database along with field surveys. See attached concurrence letter.

Consultation Documentation Upload

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

20181004 USFWS Letter B-4438.pdf

31.88KB

File type must be PDF

6. Essential Fish Habitat (Corps Requirement)

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

Yes No

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

NMFS County Index

7. Historic or Prehistoric Cultural Resources (Corps Requirement)

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

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

Yes No

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

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:

NCDOT 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

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

11/21/2018



NORTH CAROLINA
Environmental Quality

ROY COOPER
Governor

MICHAEL S. REGAN
Secretary

TIM BAUMGARTNER
Director

November 16, 2018

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

Dear Mr. Harris:

Subject: Mitigation Acceptance Letter:

B-4438, Replace Bridge 47 on NC 211 over Bear Pen Island Swamp, Brunswick County

The purpose of this letter is to notify you that the Division of Mitigation Services (DMS) will provide the compensatory wetland mitigation for the subject project. Based on the information supplied by you on November 9, 2018, the impacts are located in CU 03040206 of the Lumber River basin in the Southern Outer Coastal Plain (SOCP) Eco-Region, and are as follows:

Lumber 03040206 SOCP	Stream			Wetlands			Buffer (Sq. Ft.)	
	Cold	Cool	Warm	Riparian	Non-Riparian	Coastal Marsh	Zone 1	Zone 2
Impacts (feet/acres)	0	0	0	0.78	0	0	0	0

*Some of the stream and/or wetland impacts may be proposed to be mitigated at a 1:1 mitigation ratio. See permit application for details.

This mitigation acceptance letter replaces the mitigation acceptance letter issued on October 24, 2018. The impacts and associated mitigation needs were under projected by the NCDOT in the 2018 impact data. DMS will commit to implement sufficient compensatory wetland mitigation credits to offset the impacts associated with this project as determined by the regulatory agencies using the delivery timeline listed in Section F.3.c.iii of the In-Lieu Fee Instrument dated July 28, 2010. If the above referenced impact amounts are revised, then this mitigation acceptance letter will no longer be valid and a new mitigation acceptance letter will be required from DMS.

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

Sincerely,


for James B. Stanfill
DMS Asset Management Supervisor

cc: Mr. Brad Shaver, USACE – Wilmington Regulatory Field Office
Ms. Joanne Steenhuis, NCDWR – Wilmington Field Office
File: B-4438 Revised





North Carolina Department of Transportation

Highway Stormwater Program
STORMWATER MANAGEMENT PLAN

FOR NCDOT PROJECTS



(Version 2.07; Released October 2016)

WBS Element: 38365.1.2 TIP No.: B-4438 County(ies): Brunswick Page 1 of 1

General Project Information

WBS Element:	38365.1.2	TIP Number:	B-4438	Project Type:	Bridge Replacement	Date:	11/6/2018
NCDOT Contact:	David Stutts		Contractor / Designer:	JEFF RECK, P.E.			
Address:	NCDOT CENTURY CENTER 1000 BIRCH RIDGE DR RALEIGH NC 27610		Address:	MOFFATT & NICHOL 4700 FALLS OF THE NEUSE RD, SUITE 300 RALEIGH, NC 27609			
	Phone: (919) 707-6574			Phone: (919) 781-4626			
	Email: dstutts@ncdot.gov			Email: JRECK@MOFFATTNICHOL.COM			
City/Town:	Bailey		County(ies):	Brunswick			
River Basin(s):	Lumber		CAMA County?	Yes			
Wetlands within Project Limits?	Yes						

Project Description

Project Length (lin. miles or feet):	0.403 MILES	Surrounding Land Use:	RURAL, AGRICULTURE, WOODS					
	Proposed Project			Existing Site				
Project Built-Upon Area (ac.)	2.1	ac.	1.8	ac.				
Typical Cross Section Description:	THE PROPOSED ROADWAY WILL BE A TWO-WAY ALIGNMENT WITH 12' TRAVEL LANES, 2' PAVED SHOULDER, 6' GRASSED SHOULDER, AND 3:1 SLOPES. THE PROPOSED BRIDGE HAS AN OUT TO OUT OF 33' AND CLEAR ROADWAY OF 30'10" THE BRIDGE WILL HAVE TWO 12' TRAVEL LANES AND 3' WIDE SHOULDER ON THE NORTH SIDE AND 3'10" WIDE SHOULDER ON THE SOUTH SIDE			THE EXISTING ROADWAY IS A TWO-WAY ALIGNMENT WITH 12' TRAVEL LANES, 1' PAVED SHOULDER, AND 3:1 SLOPES. THE EXISTING BRIDGE HAS AN OUT TO OUT OF 25'5".				
Annual Avg Daily Traffic (veh/hr/day):	Design/Future:	2948	Year:	2039	Existing:	1908	Year:	2019

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

Project consists of the replacement of Bridge #090047 in Brunswick County. The existing bridges carries NC 211 Green Swamp Road over Bear Pen Islands Swamp between Little Loop Road and Federal Road. The proposed structure for Bridge #090047 is a 39" Box Beam bridge. The proposed alignment is upstream of the existing alignment. There are wetlands located within the project limits.

STORMWATER CONTROLS:

The proposed bridge does not utilize deck drains. Runoff from the bridge roadway and paved shoulders at the bridge approaches drains into inlets. The stormwater is then diffused at a riprap pad outlet prior to discharging into Bear Pen Islands Swamp. Shoulders will be paved and then grassed except on the proposed bridges. Bank Stabilization is planned to prevent erosion of the streambanks.

Waterbody Information

Surface Water Body (1):	Bear Pen Island Swamp		NCDWR Stream Index No.:	15-7-3				
NCDWR Surface Water Classification for Water Body	Primary Classification:		Class C					
	Supplemental Classification:		Swamp Waters (Sw)					
Other Stream Classification:								
Impairments:	None							
Aquatic T&E Species?	Comments:							
NRTR Stream ID:						Buffer Rules in Effect:	N/A	
Project Includes Bridge Spanning Water Body?	Yes	Deck Drains Discharge Over Buffer?	No	Dissipator Pads Provided in Buffer?				N/A
Deck Drains Discharge Over Water Body?	No	(If yes, provide justification in the General Project Narrative)			(If yes, describe in the General Project Narrative; if no, justify in the General Project Narrative)			
(If yes, provide justification in the General Project Narrative)								

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-4438	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
38365.1.2		P.E.	
38365.2.1		RW, UTIL.	
38365.3.1		CONST.	

PERMIT DRAWING
SHEET 1 OF 18

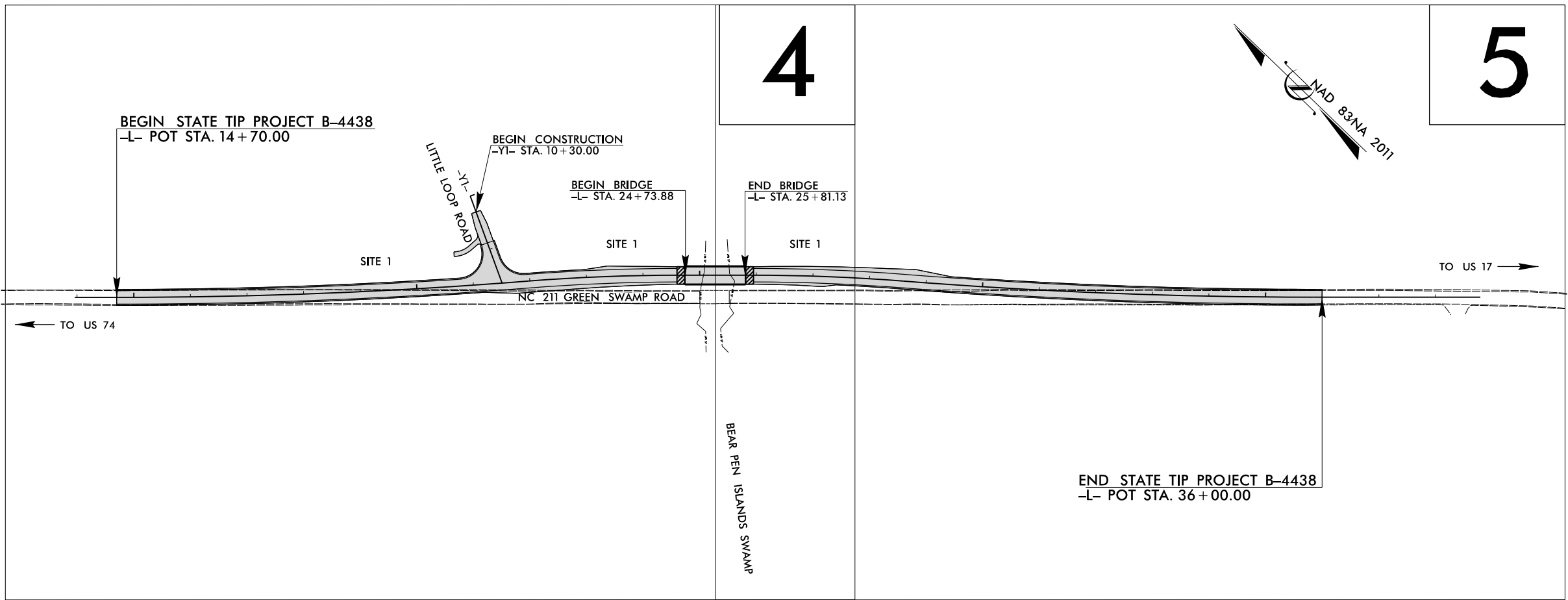
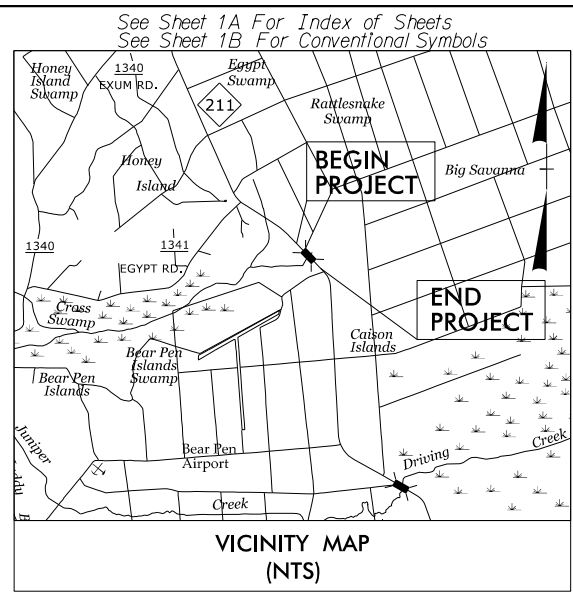
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

BRUNSWICK COUNTY

LOCATION: REPLACE BRIDGE NO. 47 OVER
BEAR PEN ISLANDS SWAMP ON NC 211 (GREEN SWAMP ROAD)

TYPE OF WORK: GRADING, PAVING, DRAINAGE AND STRUCTURE

WETLAND AND SURFACE WATER IMPACTS PERMIT

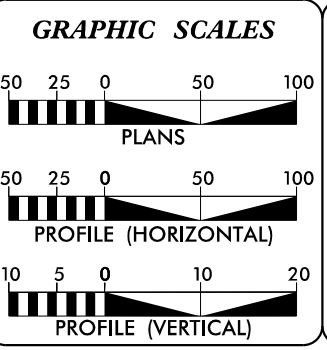


- NOTE:
1. THIS PROJECT IS NOT WITHIN ANY MUNICIPAL BOUNDARIES.
2. CLEARING ON THIS PROJECT SHALL BE PERFORMED TO MODIFIED METHOD III

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED
NCDOT CONTACT: DAVID STUTTS, P.E.

CONTRACT: TIP PROJECT: B-4438

CONTRACT: TIP PROJECT: B-4438



DESIGN DATA

ADT 2019 =	1,908
ADT 2039 =	2,948
K =	9 %
D =	55 %
T =	15 % *
V =	60 MPH
* TTST =	9% DUAL 6%
FUNC CLASS =	MAJOR COLLECTOR
REGIONAL TIER	

PROJECT LENGTH

LENGTH OF ROADWAY TIP PROJECT B-4438	=	0.383 MILES
LENGTH OF STRUCTURE TIP PROJECT B-4438	=	0.020 MILES
TOTAL LENGTH OF TIP PROJECT B-4438	=	0.403 MILES

Prepared in the Office of:
moffatt & nichol
4700 FALLS OF NEUSE ROAD, SUITE 300
RALEIGH, NORTH CAROLINA 27609
(919) 781-4626 VOICE (919) 781-4869 FAX
NC License NO.: F-0105

2018 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE: MAY 18, 2018

LETTING DATE: JANUARY 15, 2019

TIM R. REID, P.E.
PROJECT ENGINEER

TRENT E. HUFFMAN, P.E.
PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

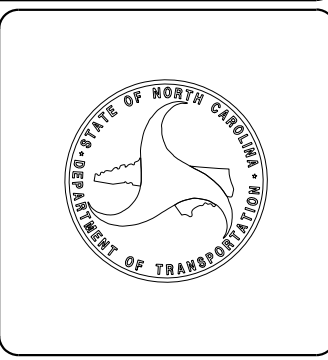
moffatt & nichol

SIGNATURE: _____ P.E.

ROADWAY DESIGN ENGINEER

moffatt & nichol

SIGNATURE: _____ P.E.

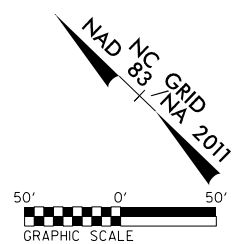


8/17/99
 U:\8\2018\05\FINAL\729-01\CADD\B4438\Hydro\lics\PERMITS_Environmental\Drawings\B4438_hyd_prm_wet_04_no_contours.dgn
 CLU

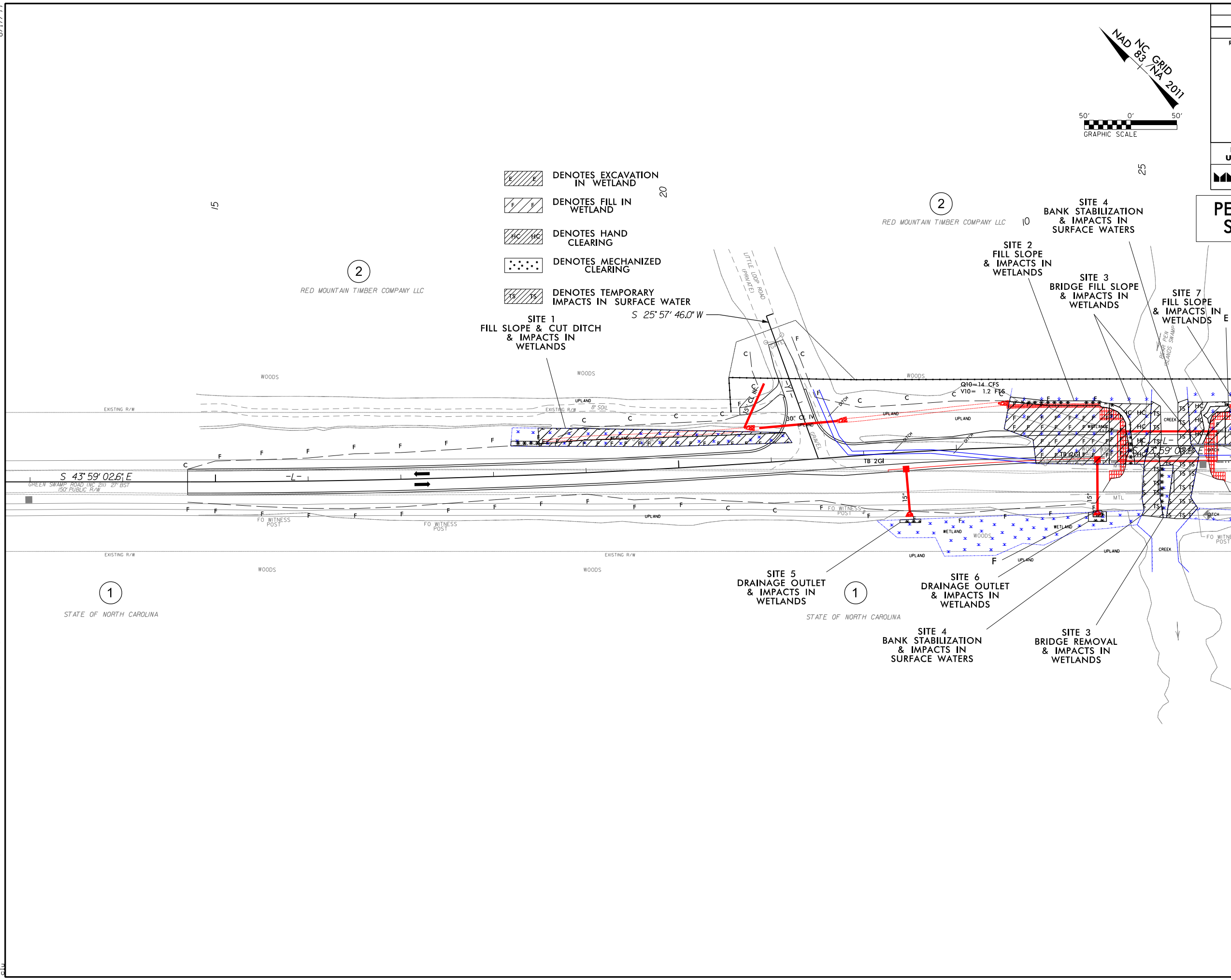
PROJECT REFERENCE NO. B-4438	SHEET NO. PRM-02
R/W SHEET NO. PSH-04	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

**DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED**
 moffatt & nichol
4700 FALLS OF NEUSE ROAD, SUITE 300
DALEBORO, NORTH CAROLINA 27629
(919) 781-4626 VOICE (919) 781-4669 FAX
PE 7-0105

**PERMIT DRAWING
SHEET 2 OF 18**



- DENOTES EXCAVATION IN WETLAND
- DENOTES FILL IN WETLAND
- DENOTES HAND CLEARING
- DENOTES MECHANIZED CLEARING
- DENOTES TEMPORARY IMPACTS IN SURFACE WATER



1
 STATE OF NORTH CAROLINA

1
 STATE OF NORTH CAROLINA

2
 RED MOUNTAIN TIMBER COMPANY LLC

2
 RED MOUNTAIN TIMBER COMPANY LLC

4
 BANK STABILIZATION & IMPACTS IN SURFACE WATERS

2
 FILL SLOPE & IMPACTS IN WETLANDS

3
 BRIDGE FILL SLOPE & IMPACTS IN WETLANDS

7
 FILL SLOPE & IMPACTS IN WETLANDS

5
 DRAINAGE OUTLET & IMPACTS IN WETLANDS

6
 DRAINAGE OUTLET & IMPACTS IN WETLANDS

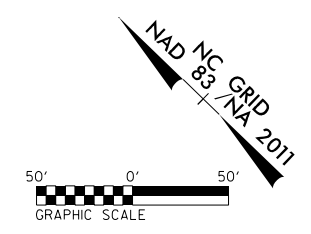
4
 BANK STABILIZATION & IMPACTS IN SURFACE WATERS

3
 BRIDGE REMOVAL & IMPACTS IN WETLANDS

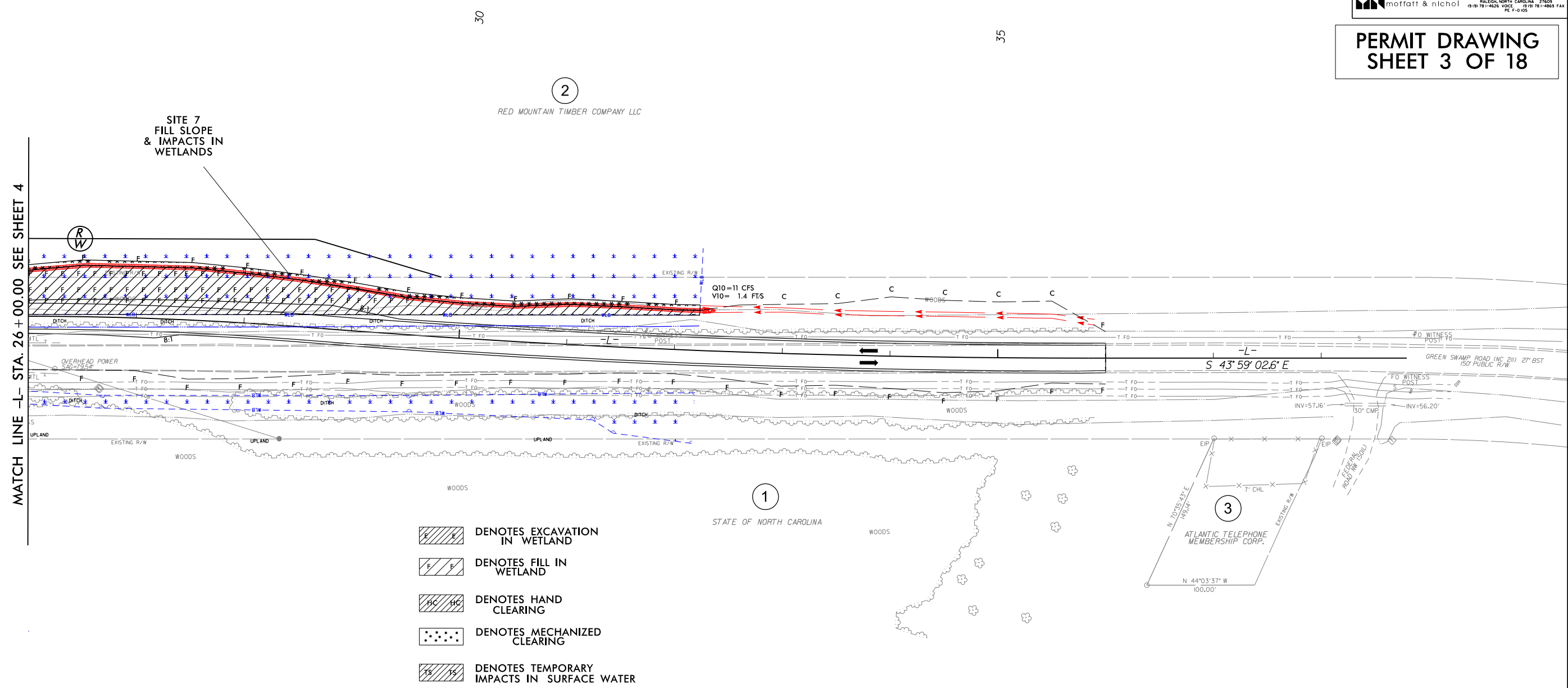
MATCH LINE -L- STA. 26 + 00.00 SEE SHEET 5

8/17/99
 I:\8/2008\05-PRM\729-01\CADD\B4438\Hydro\ulcs\PERMITS_Environmental\Drawings\B4438_hyd_prm_wet_05_noContours.dgn
 CHU

PROJECT REFERENCE NO. B-4438	SHEET NO. PRM-03
R/W SHEET NO. PSH-05	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	



**PERMIT DRAWING
SHEET 3 OF 18**



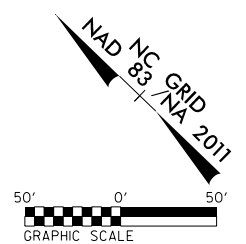
- DENOTES EXCAVATION IN WETLAND
- DENOTES FILL IN WETLAND
- DENOTES HAND CLEARING
- DENOTES MECHANIZED CLEARING
- DENOTES TEMPORARY IMPACTS IN SURFACE WATER

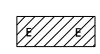
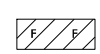
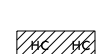


8/17/99
 I:\8/2008\05-FA\729-01\CADD\B4438\Hydro\lics\PERMITS_Environmental\Drawings\B4438_hyd_prm_wet_02_contours.dgn
 CLU

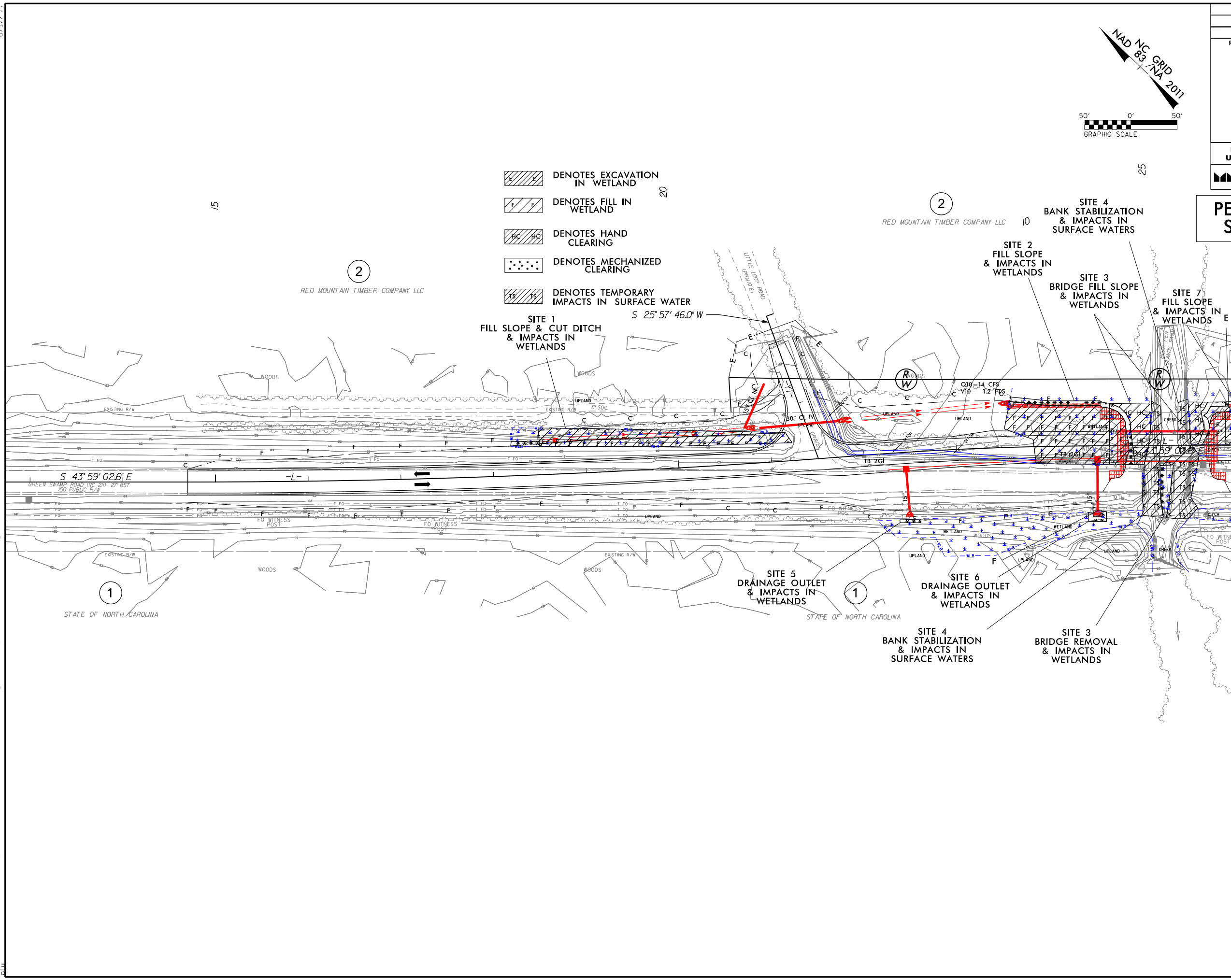
PROJECT REFERENCE NO. B-4438	SHEET NO. PRM-02
RW SHEET NO. PSH-04	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

**DOCUMENT NOT CONSIDERED FINAL
 UNLESS ALL SIGNATURES COMPLETED**
 moffatt & nichol
4700 FALLS OF NEUSE ROAD, SUITE 300
 WALENCIA, NORTH CAROLINA 27629
 (919) 781-4626 VOICE (919) 781-4669 FAX
 PE 7-0105

**PERMIT DRAWING
SHEET 4 OF 18**



-  DENOTES EXCAVATION IN WETLAND
-  DENOTES FILL IN WETLAND
-  DENOTES HAND CLEARING
-  DENOTES MECHANIZED CLEARING
-  DENOTES TEMPORARY IMPACTS IN SURFACE WATER



MATCH LINE -L- STA. 26 + 00.00 SEE SHEET 5

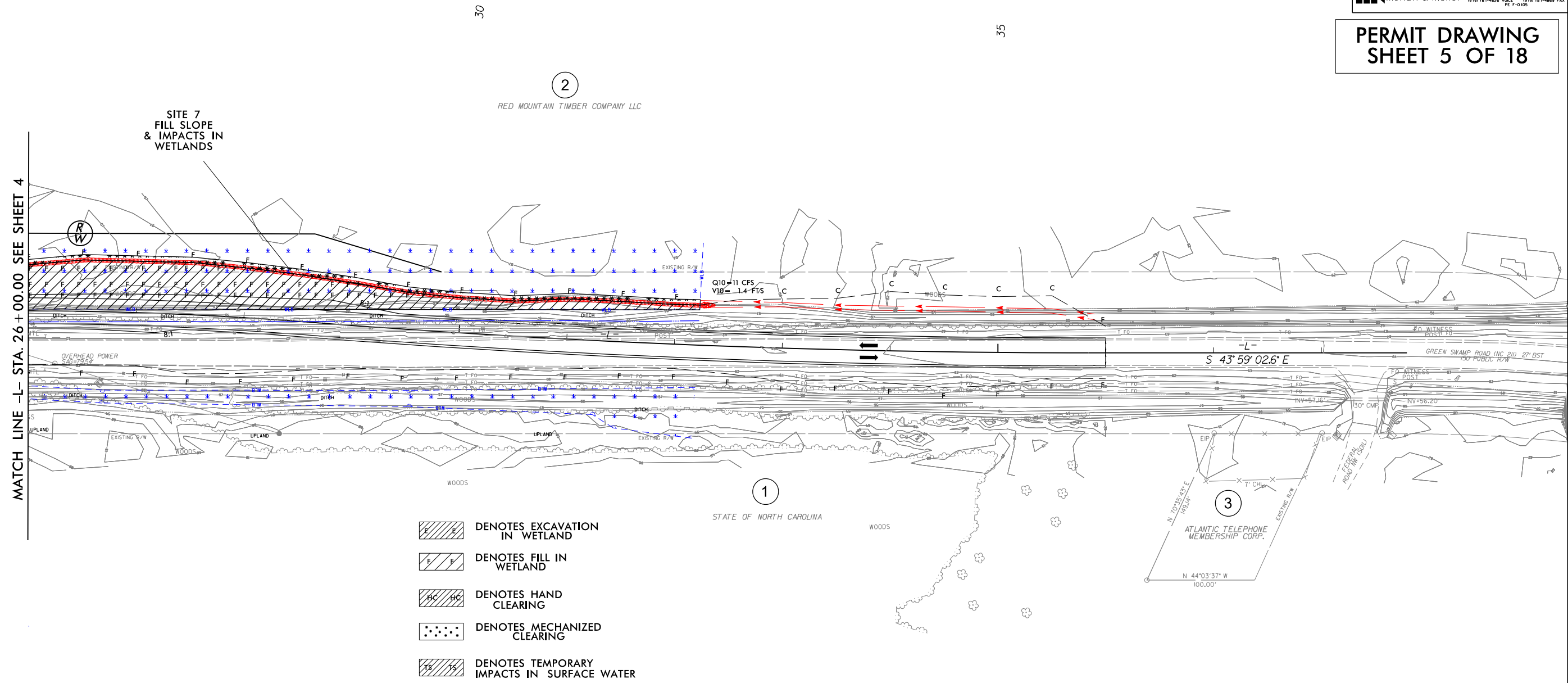
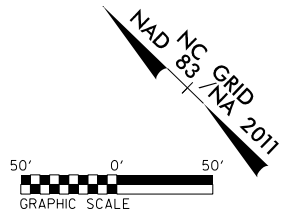
8/17/99
 I:\8/2008\05\FR\729-01\CADD\B4438\Hydro\PERMITS_Environmental\Drawings\B4438_hyd_prm_wet_03_contours.dgn

PROJECT REFERENCE NO. B-4438	SHEET NO. PRM-03
RW SHEET NO. PSH-05	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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

4100 FALLS OF NEUSE ROAD, SUITE 300
 WALEDO, NORTH CAROLINA 27629
 (919) 781-4626 VOICE (919) 781-4869 FAX
 PE 7-0105

**PERMIT DRAWING
SHEET 5 OF 18**



MATCH LINE -L- STA. 26 + 00.00 SEE SHEET 4

30

35

2

RED MOUNTAIN TIMBER COMPANY LLC

1

STATE OF NORTH CAROLINA

3

ATLANTIC TELEPHONE
 MEMBERSHIP CORP.
 N 10°35'45"E
 100.00'
 N 44°03'37" W
 100.00'

S 43° 59' 02.6" E

Q10=11 CFS
V10= 1.4 FTS

GREEN SWAMP ROAD (INC 211) 27° BST
100' PUBLIC R/W

FD WITNESS POST
EUST. 11

FD WITNESS POST
INV=56.20

30' CMP

EXISTING R/W

GREEN SWAMP ROAD (INC 211)

EXISTING R/W

FD WITNESS POST

FD WITNESS POST

FD WITNESS POST

FD WITNESS POST

FD WITNESS POST

FD WITNESS POST

FD WITNESS POST

FD WITNESS POST

FD WITNESS POST

FD WITNESS POST

FD WITNESS POST

FD WITNESS POST

FD WITNESS POST

FD WITNESS POST

FD WITNESS POST

FD WITNESS POST

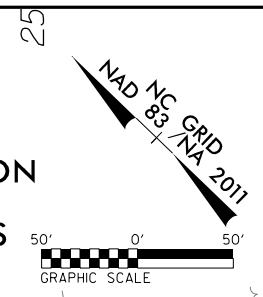
FD WITNESS POST

FD WITNESS POST

8/17/99
I:\8/20/08
D:\FRA\729-01\CADD\B4438\Hydro\Permits\Environmental\Drawings\B4438_hyd_perm_wet_06_enlarged.dgn

- DENOTES EXCAVATION IN WETLAND
- DENOTES FILL IN WETLAND
- DENOTES HAND CLEARING
- DENOTES MECHANIZED CLEARING
- DENOTES TEMPORARY IMPACTS IN SURFACE WATER

2
RED MOUNTAIN TIMBER COMPANY LLC



PROJECT REFERENCE NO. B-4438	SHEET NO. PRM-06
R/W SHEET NO. PSH-04	HYDRAULICS ENGINEER
ROADWAY DESIGN ENGINEER	

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

moffatt & nichol
4700 FALLS OF NEUSE ROAD, SUITE 300
DALEBORO, NORTH CAROLINA 27629
(919) 781-4626 VOICE (919) 781-4669 FAX
PE 7-025

PERMIT DRAWING SHEET 6 OF 18

SITE 1
SLOPE & CUT DITCH
& IMPACTS IN WETLANDS

SITE 4
BANK STABILIZATION
& IMPACTS IN SURFACE WATERS

SITE 2
FILL SLOPE
& IMPACTS IN WETLANDS

SITE 3
BRIDGE FILL SLOPE
& IMPACTS IN WETLANDS

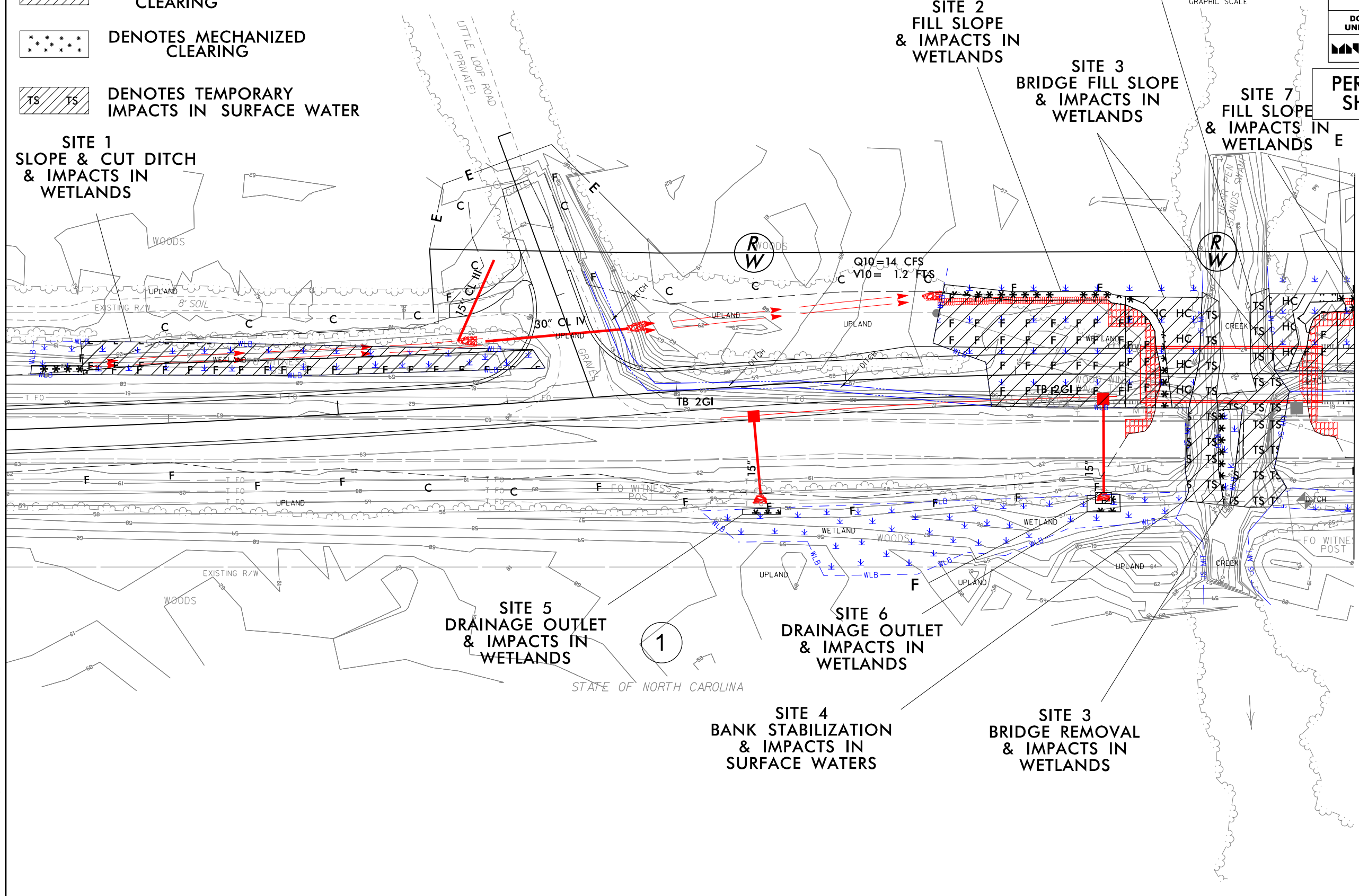
SITE 7
FILL SLOPE
& IMPACTS IN WETLANDS

SITE 5
DRAINAGE OUTLET
& IMPACTS IN WETLANDS

SITE 6
DRAINAGE OUTLET
& IMPACTS IN WETLANDS

SITE 4
BANK STABILIZATION
& IMPACTS IN SURFACE WATERS

SITE 3
BRIDGE REMOVAL
& IMPACTS IN WETLANDS



8/17/99

I:\8\208\05\FR\729-01\CADD\B4438\Hydro\Permits\Environmental\Drawings\B4438_hyd_prm_wet_07_enlarged.dgn

2

RED MOUNTAIN TIMBER COMPANY LLC

NAD NC GRID 83 / NA 2011



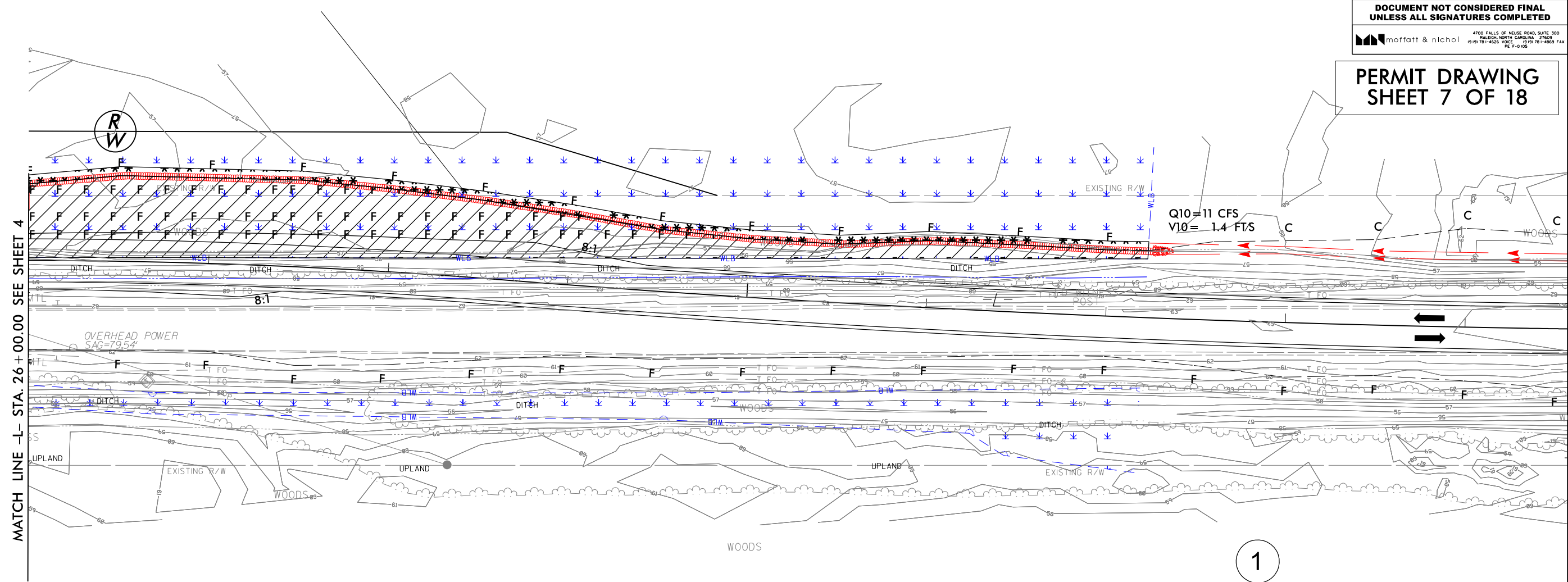
PROJECT REFERENCE NO. B-4438	SHEET NO. PRM-07
R/W SHEET NO. PSH-05	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER


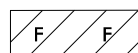
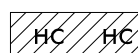

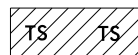
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

moffatt & nichol 4700 FALLS OF NEUSE ROAD, SUITE 300 DALEBORO, NORTH CAROLINA 27629 (919) 781-4626 VOICE (919) 781-4869 FAX PE 7-025

PERMIT DRAWING SHEET 7 OF 18

SITE 7 FILL SLOPE & IMPACTS IN WETLANDS

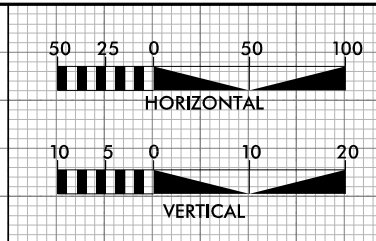


-  DENOTES EXCAVATION IN WETLAND
-  DENOTES FILL IN WETLAND
-  DENOTES HAND CLEARING
-  DENOTES MECHANIZED CLEARING
-  DENOTES TEMPORARY IMPACTS IN SURFACE WATER

STATE OF NORTH CAROLINA

WOODS

5/28/99



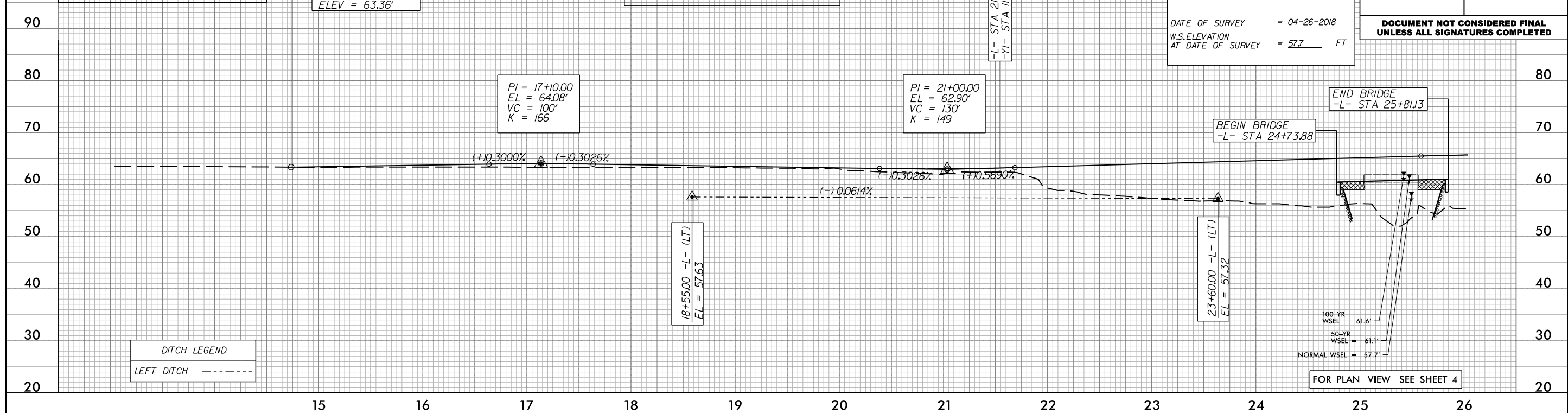
**PERMIT DRAWING
SHEET 8 OF 18**

-L-

BM *1 - R/R SPIKE SET IN 10" OAK
-L- STA 25+70.89, 74.82' RT
EL = 63.12'

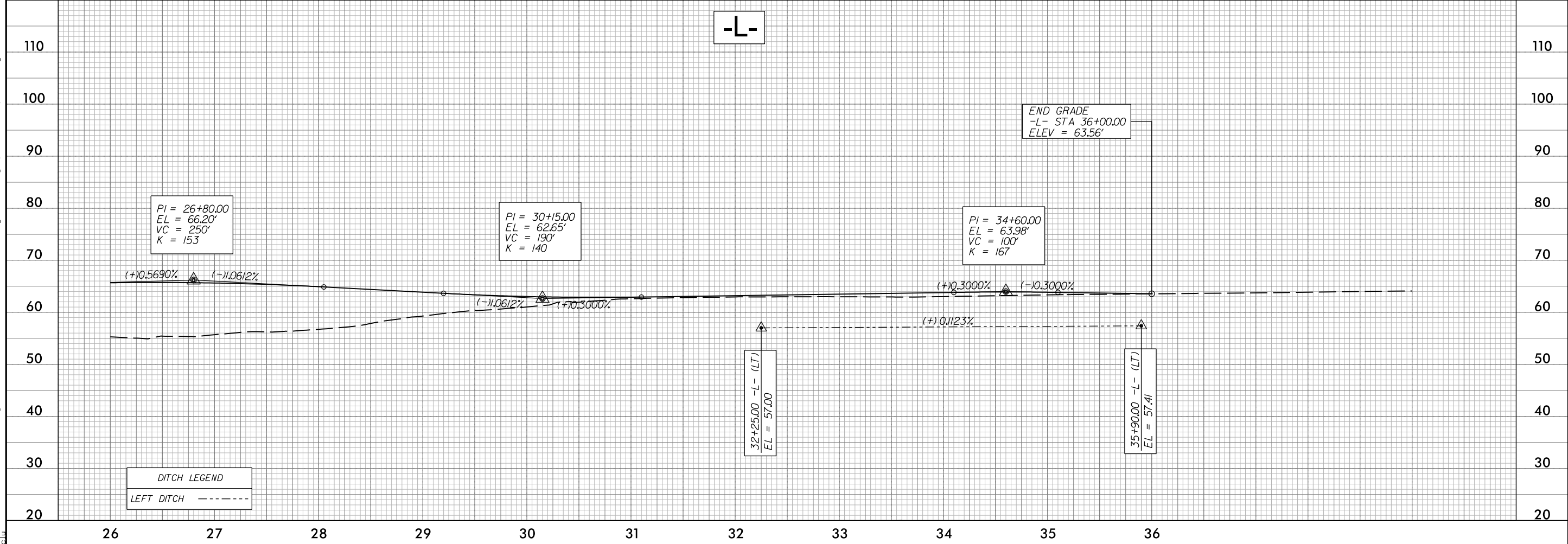
BRIDGE HYDRAULIC DATA	
DESIGN DISCHARGE	= 1400 CFS
DESIGN FREQUENCY	= 50 YRS
DESIGN HW ELEVATION	= 61.0 FT
BASE DISCHARGE	= 1720 CFS
BASE FREQUENCY	= 100 YRS
BASE HW ELEVATION	= 61.6 FT
OVERTOPPING DISCHARGE	= 3400 CFS
OVERTOPPING FREQUENCY	= 500+ YRS
OVERTOPPING ELEVATION	= 62.5 FT
DATE OF SURVEY = 04-26-2018	
W.S. ELEVATION AT DATE OF SURVEY = 57.7 FT	

PROJECT REFERENCE NO.	SHEET NO.
B-4438	PRM-08
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	



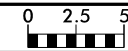
-L-

END GRADE
-L- STA 36+00.00
ELEV = 63.56'



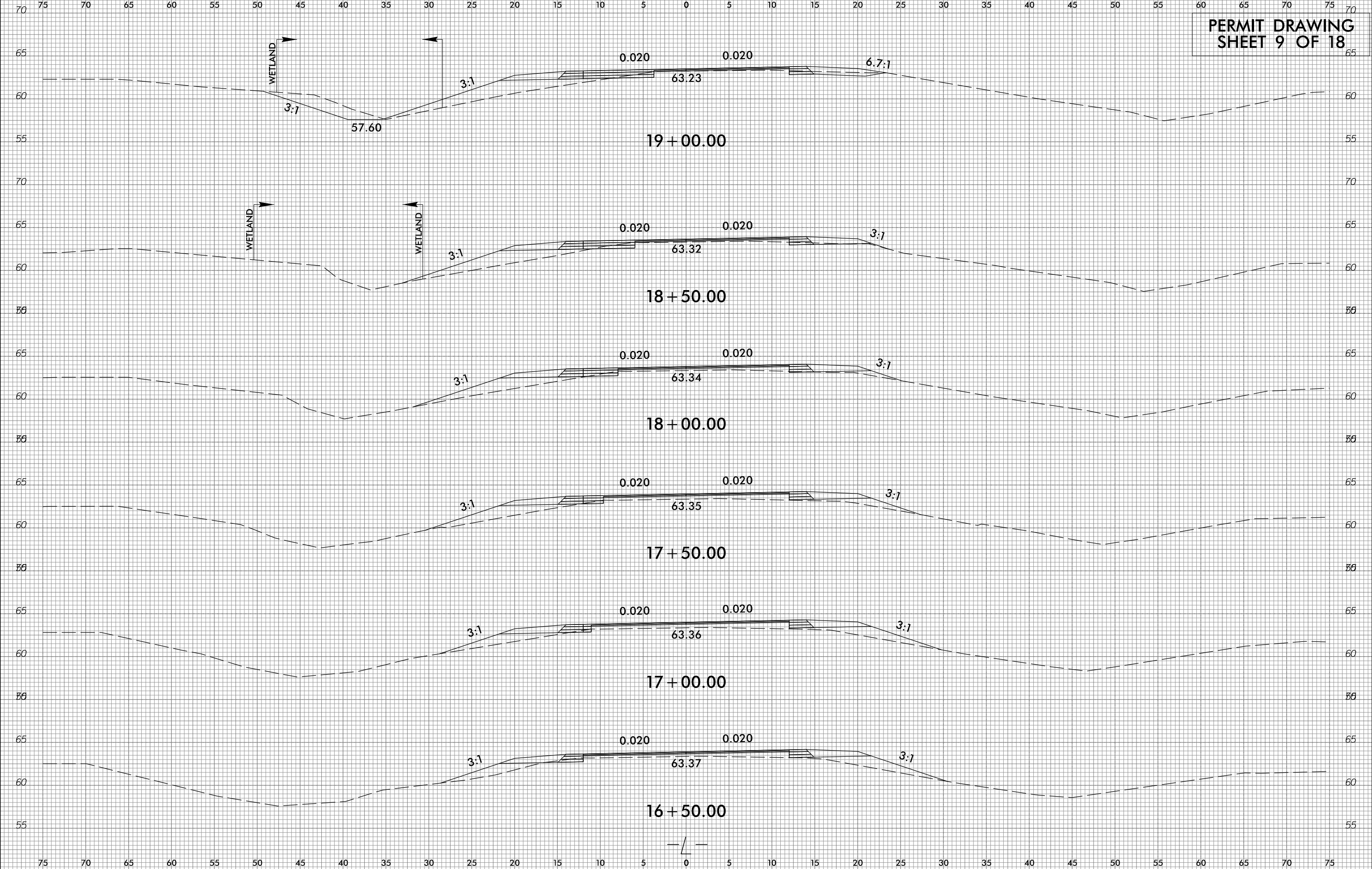
I:\81208\05-PRM\729-01\CADD\B4438-Hydraulics\PERMITS-Environmental\Drawings\B4438-hyd-prm-wet_08-prof11e.dgn

6/23/16



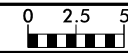
PROJ. REFERENCE NO.	SHEET NO.
B-4438	PRM-09

**PERMIT DRAWING
SHEET 9 OF 18**



I:\8\2016\01\CADD\B4438-Hydro\16\PERMITS-Environmental\Drawings\B4438_hyd-prm-wet_09-17_xpl.dgn

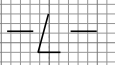
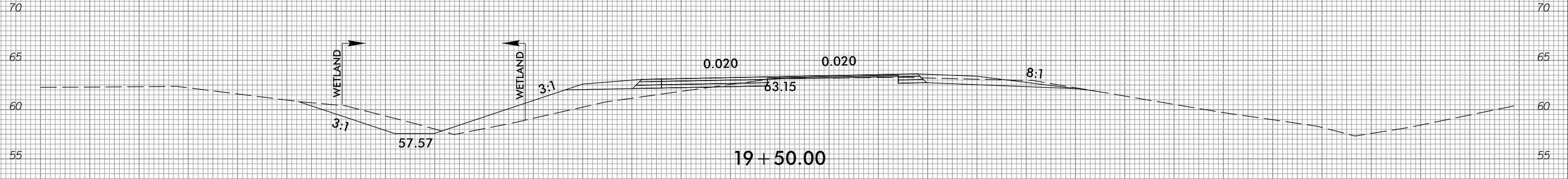
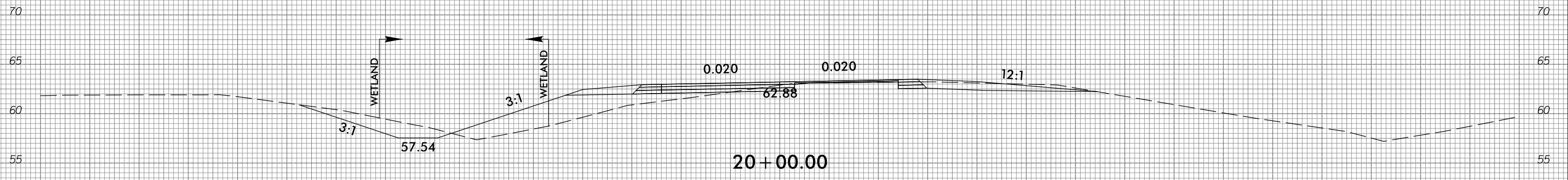
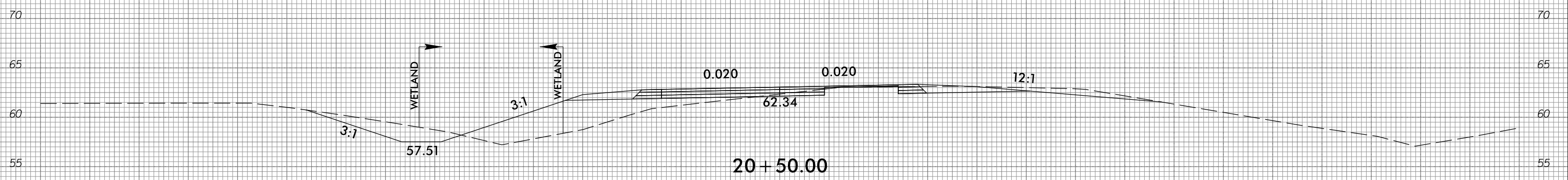
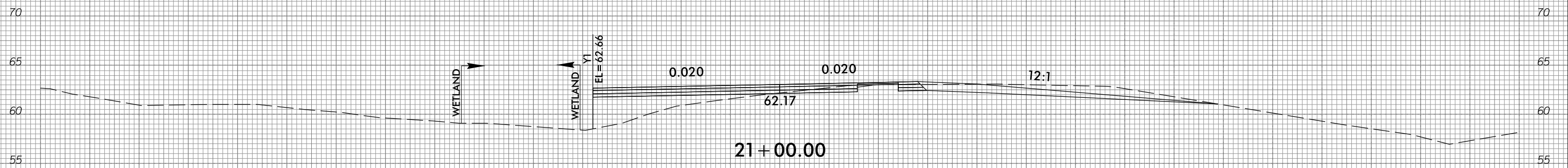
6/23/16



PROJ. REFERENCE NO.	SHEET NO.
B-4438	PRM-10

75 70 65 60 55 50 45 40 35 30 25 20 15 10 5 0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75

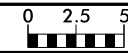
**PERMIT DRAWING
SHEET 10 OF 18**



75 70 65 60 55 50 45 40 35 30 25 20 15 10 5 0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75

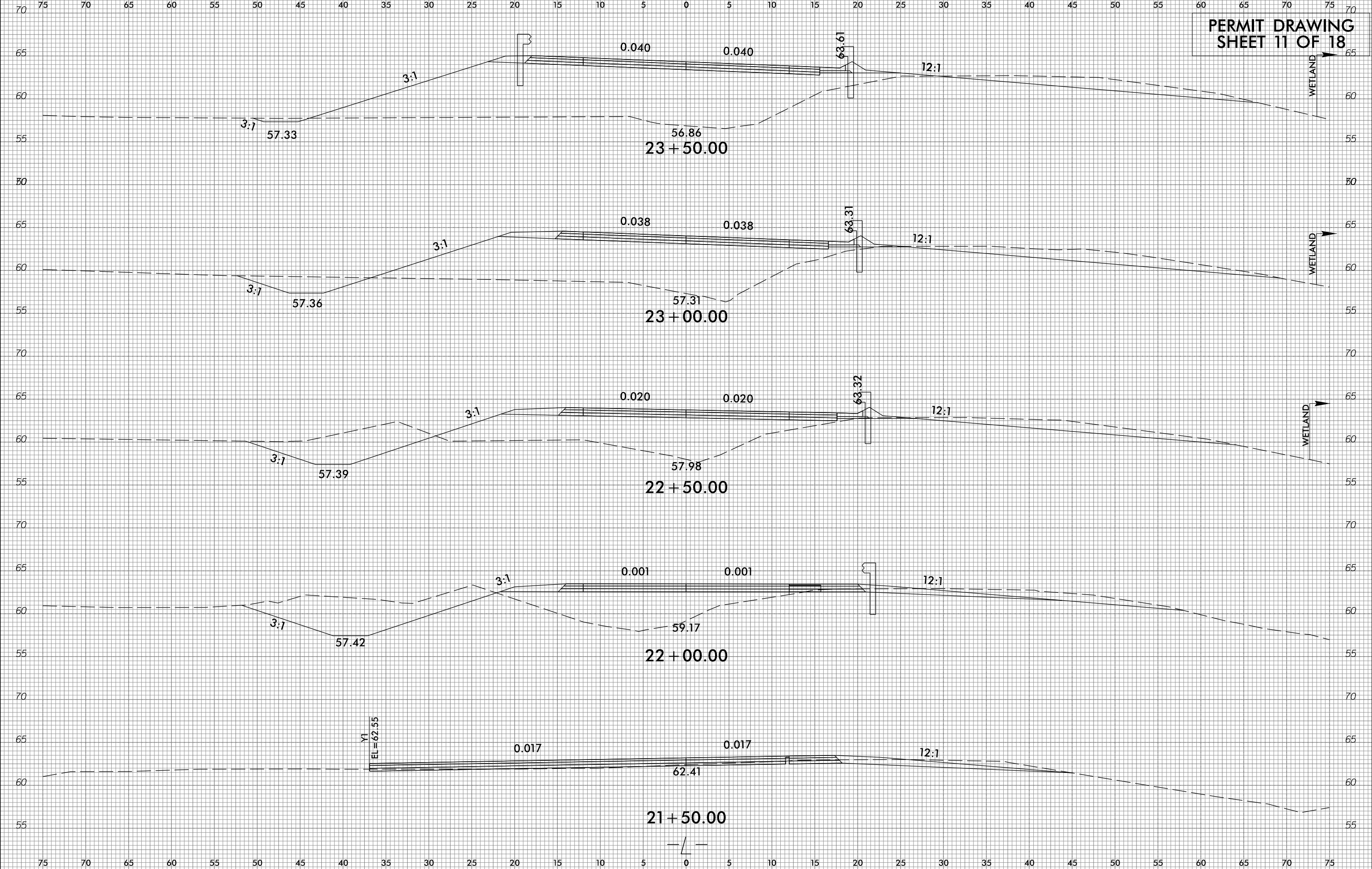
I:\8\2016\01\RA\9729-01\CADD\B4438\Hydro\10\PERMITS\Environmental\Drawings\B4438_hyd_prm_wet_09-17_xpl.dgn

6/23/16



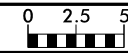
PROJ. REFERENCE NO. B-4438	SHEET NO. PRM-11
-------------------------------	---------------------

**PERMIT DRAWING
SHEET 11 OF 18**



I:\8\2018\01\RA\9729-01\CADD\B4438-Hydraulics\PERMITS-Environmental\Drawings\B4438_hyd-prm-wet_09-17_xpl.dgn
 6/23/16

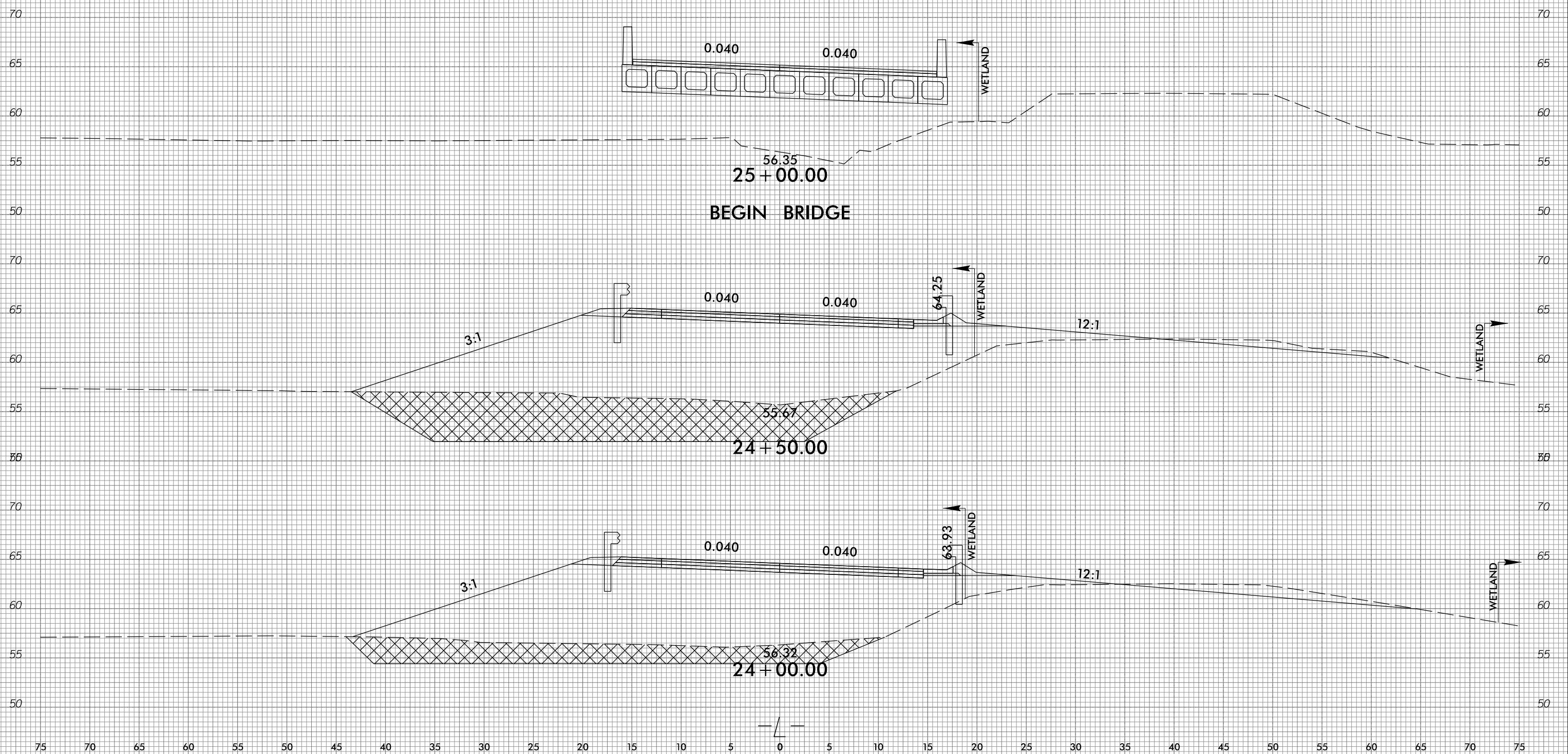
6/23/16



PROJ. REFERENCE NO.	SHEET NO.
B-4438	PRM-12

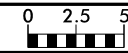
75 70 65 60 55 50 45 40 35 30 25 20 15 10 5 0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75

PERMIT DRAWING SHEET 12 OF 18



I:\8\2018\01\RA\9729-01\CADD\B4438\Hydro\lics\PERMITS_Environmental\Drawings\B4438_hyd_perm_wet_09-17_xpl.dgn

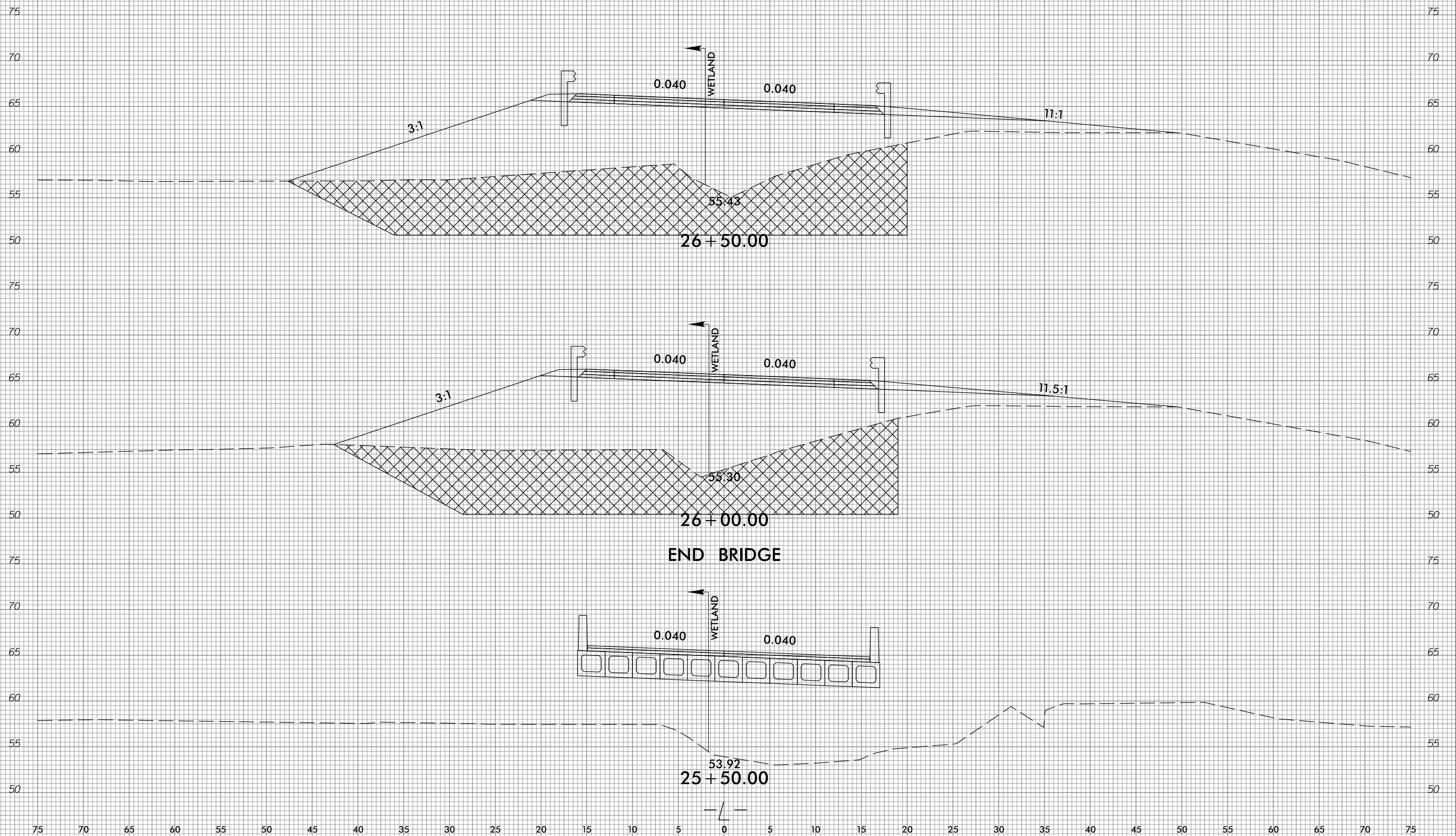
6/23/16



PROJ. REFERENCE NO.	SHEET NO.
B-4438	PRM-13

75 70 65 60 55 50 45 40 35 30 25 20 15 10 5 0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75

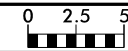
**PERMIT DRAWING
SHEET 13 OF 18**



I:\8\2018\01\RA\9729-01\CADD\B4438\Hydro\13a\PERMITS_Environmental\Drawings\B4438_hyd_prm_wet_09-17_xpl.dgn
CLU

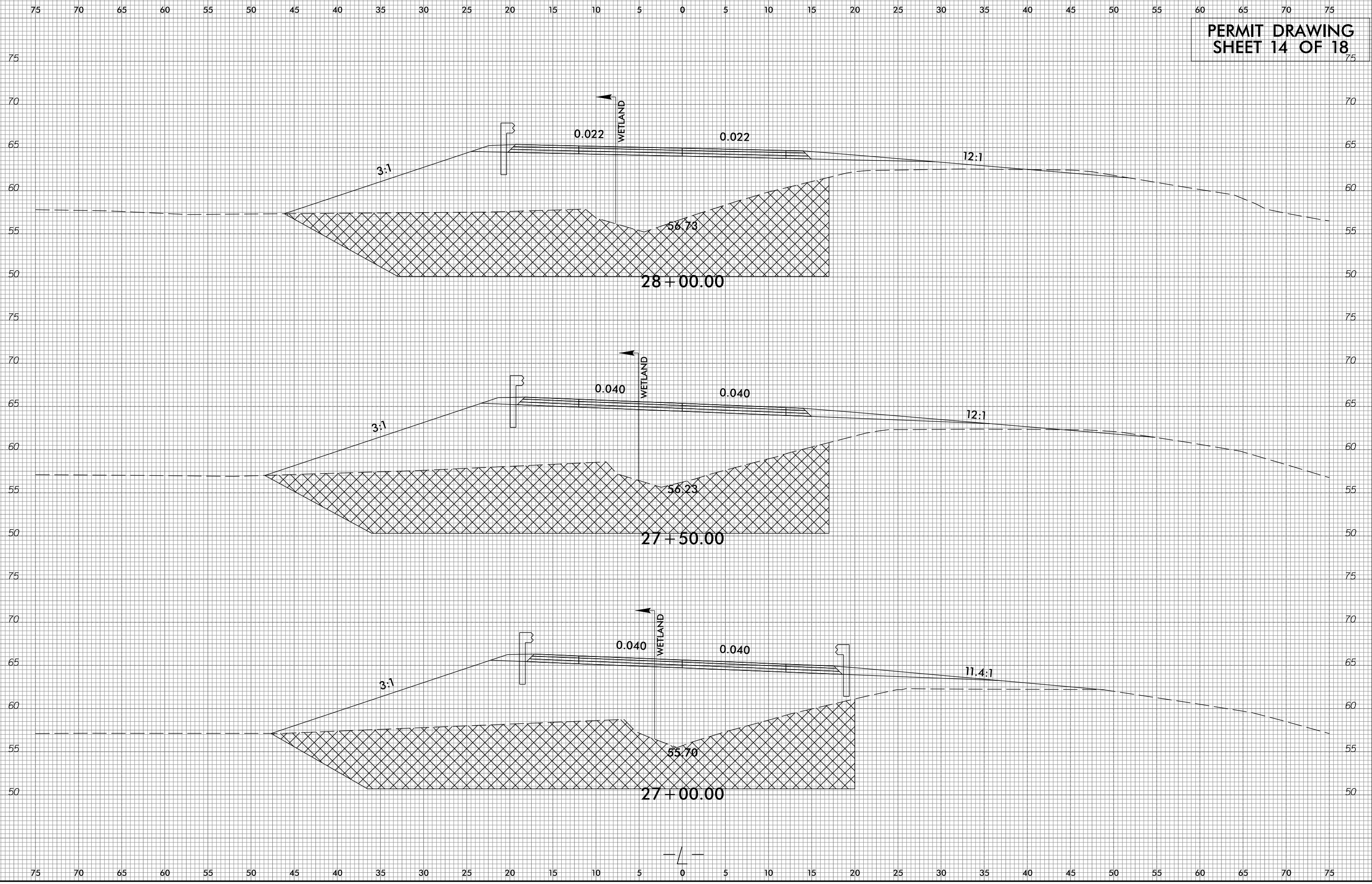
75 70 65 60 55 50 45 40 35 30 25 20 15 10 5 0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75

6/23/16



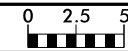
PROJ. REFERENCE NO.	SHEET NO.
B-4438	PRM-14

**PERMIT DRAWING
SHEET 14 OF 18**



I:\8\2018\01\RA\9729-01\CADD\B4438\Hydraulics\PERMITS\Environmental\Drawings\B4438_hyd_prm_wet_09-17_xpl.dgn
 6/23/16

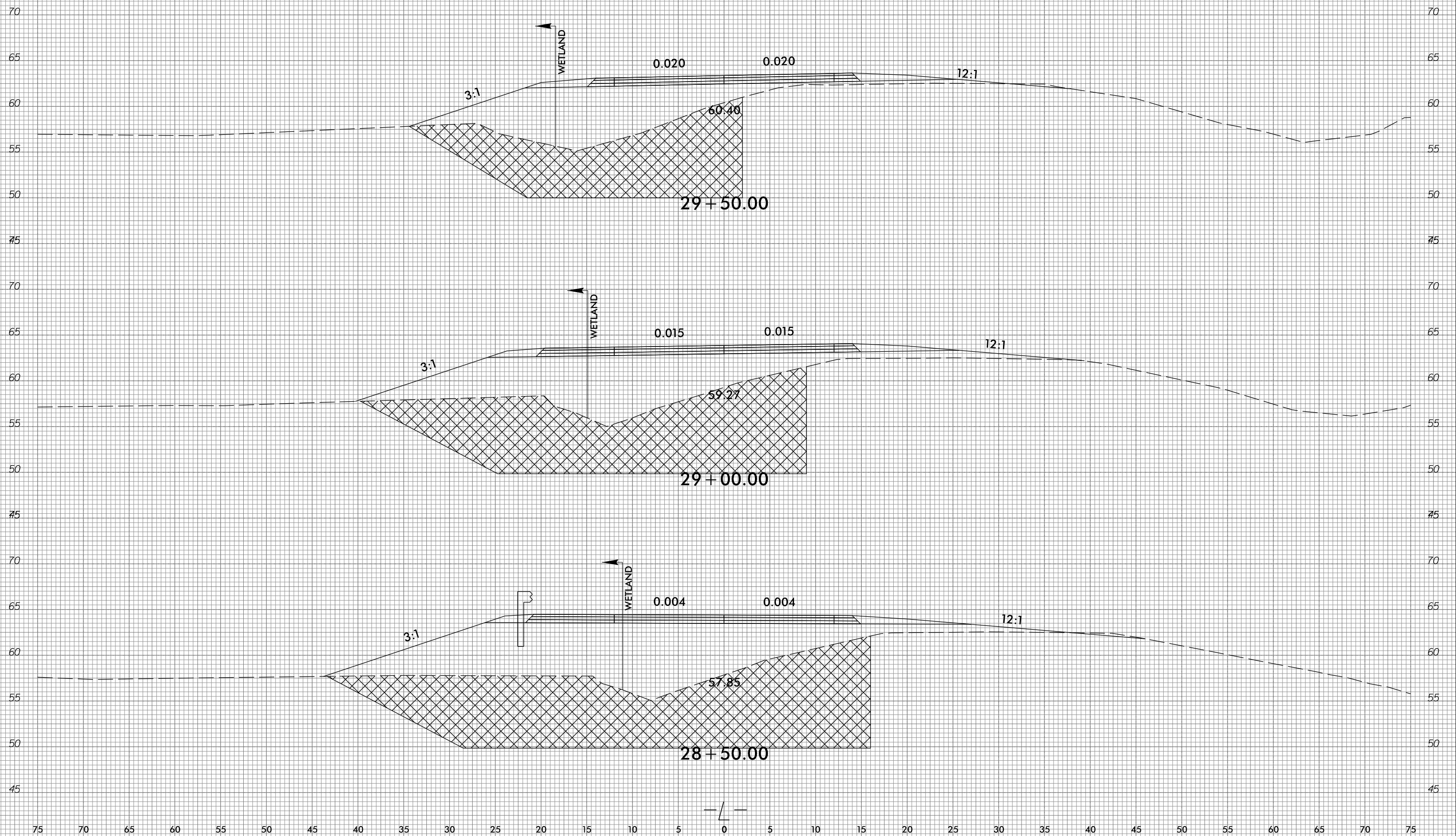
6/23/16



PROJ. REFERENCE NO.	SHEET NO.
B-4438	PRM-15

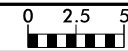
75 70 65 60 55 50 45 40 35 30 25 20 15 10 5 0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75

**PERMIT DRAWING
SHEET 15 OF 18**



I:\8\2018\01\RA\9729-01\CADD\B4438\Hydro\pics\PERMITS_Environmental\Drawings\B4438_hyd_prm_wet_09-17_xpl.dgn

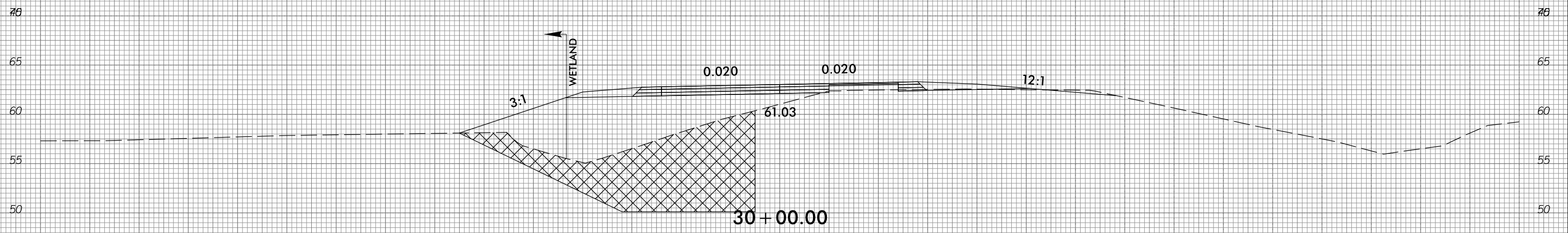
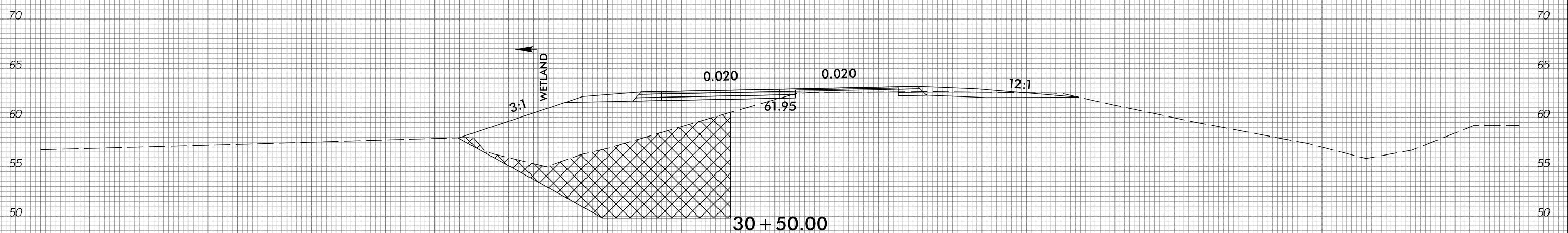
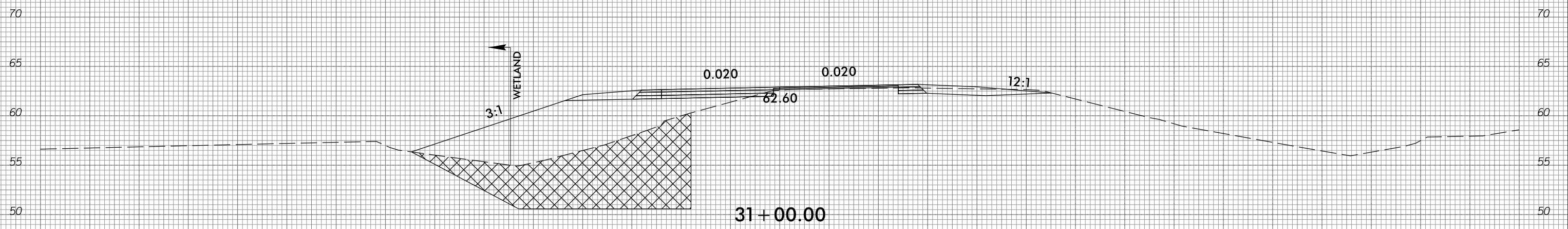
6/23/16



PROJ. REFERENCE NO.	SHEET NO.
B-4438	PRM-16

75 70 65 60 55 50 45 40 35 30 25 20 15 10 5 0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75

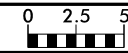
**PERMIT DRAWING
SHEET 16 OF 18**



75 70 65 60 55 50 45 40 35 30 25 20 15 10 5 0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75

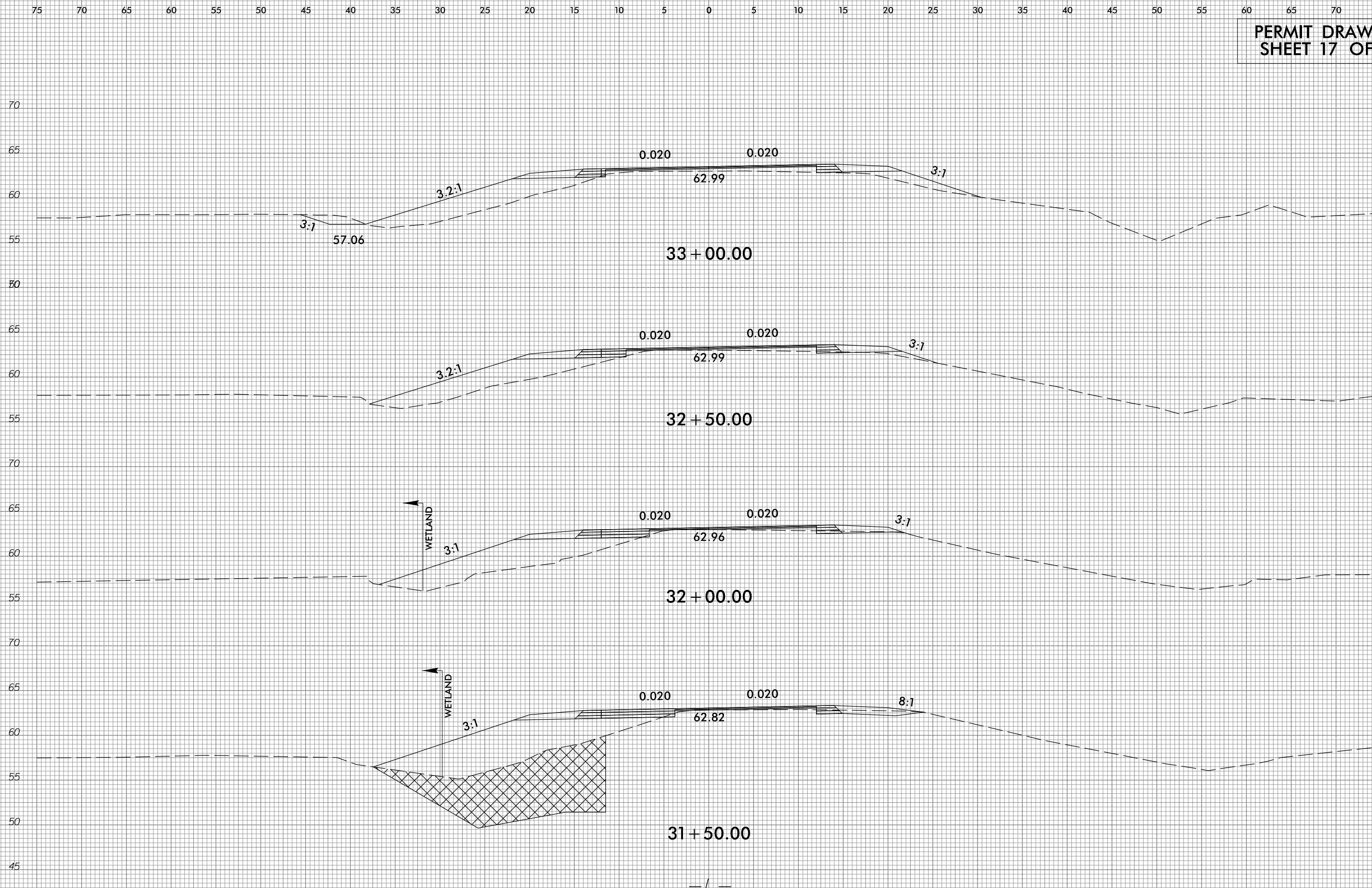
I:\8\2018\01\RA\9729-01\CADD\B4438\Hydro\16\PERMITS_Environmental\Drawings\B4438_hyd-prm-wet_09-17_xpl.dgn

6/23/16



PROJ. REFERENCE NO.	SHEET NO.
B-4438	PRM-17

**PERMIT DRAWING
SHEET 17 OF 18**



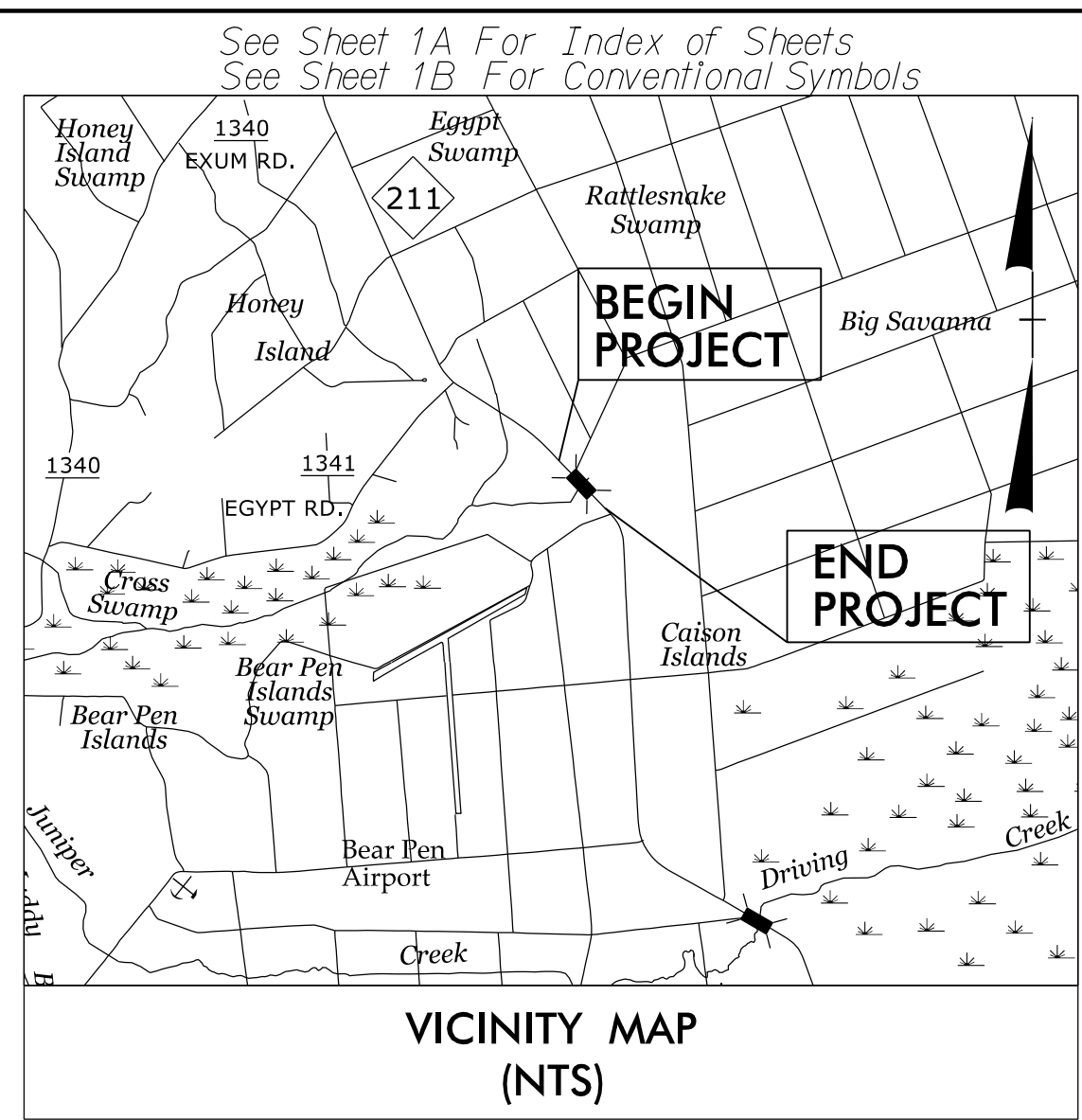
I:\8\2016\01\RA\9729-01\CADD\B4438\Hydro\pics\PERMITS\Environmental\Drawings\B4438_hyd_prm_wet_09-17_xpl.dgn

09.08/2018

8/16/2018
Q:\RA\19129-0\CADD\B4438_Roadway\Proj\B4438_rdy_tsh.dgn
Tnuftmcm

TIP PROJECT: B-4438

CONTRACT: C204151



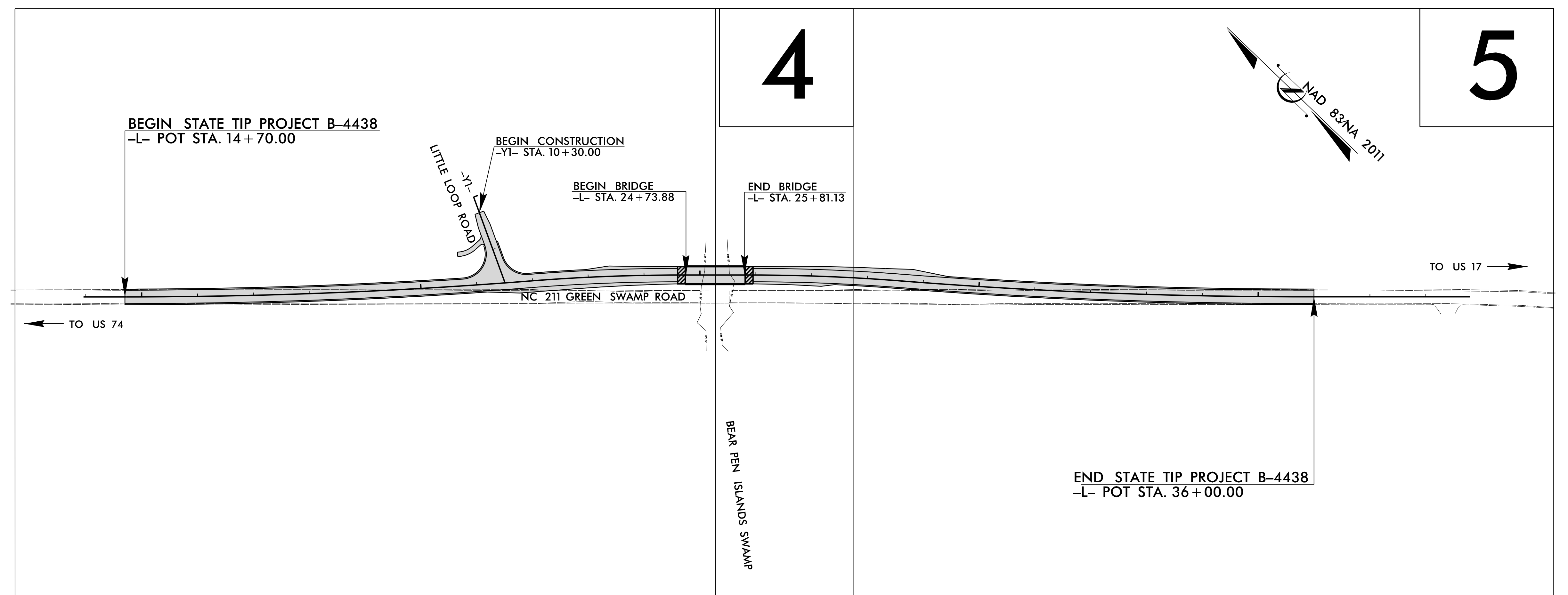
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS
BRUNSWICK COUNTY

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-4438	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
38365.1.2		P.E.	
38365.2.1		RW, UTIL.	
38365.3.1		CONST.	

**LOCATION: REPLACE BRIDGE NO. 47 OVER
BEAR PEN ISLANDS SWAMP ON NC 211 (GREEN SWAMP ROAD)**

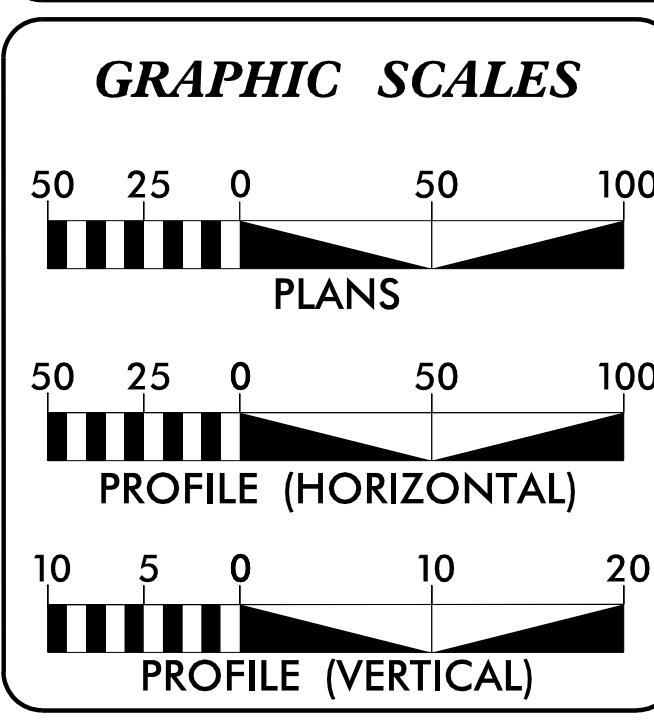
TYPE OF WORK: GRADING, PAVING, DRAINAGE AND STRUCTURE

100% PLANS



DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

NCDOT CONTACT: DAVID STUTTS, P.E.



DESIGN DATA

ADT 2019 =	1,908
ADT 2039 =	2,948
K =	9 %
D =	55 %
T =	15 % *
V =	60 MPH
* TTST = 9% DUAL 6%	
FUNC CLASS =	
MAJOR COLLECTOR	
REGIONAL TIER	

PROJECT LENGTH

LENGTH OF ROADWAY TIP PROJECT B-4438	=	0.383 MILES
LENGTH OF STRUCTURE TIP PROJECT B-4438	=	0.020 MILES
TOTAL LENGTH OF TIP PROJECT B-4438	=	0.403 MILES

Prepared in the Office of:
moffatt & nichol
4700 FALLS OF NEUSE ROAD, SUITE 300
RALEIGH, NORTH CAROLINA 27609
(919) 781-4626 VOICE (919) 781-4869 FAX
NC License NO.: F-0105

2018 STANDARD SPECIFICATIONS	
RIGHT OF WAY DATE: MAY 18, 2018	TIM R. REID, P.E. PROJECT ENGINEER
LETTING DATE: JANUARY 15, 2019	TRENT E. HUFFMAN, P.E. PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

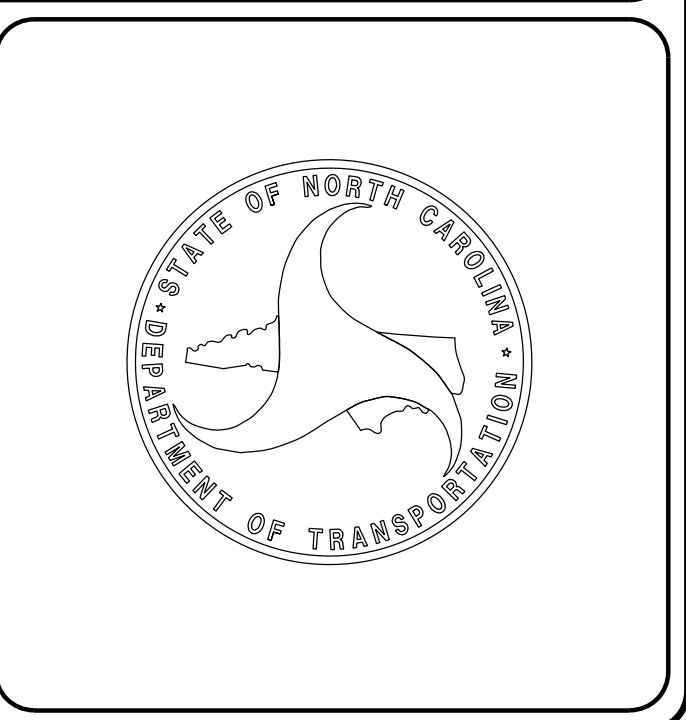
moffatt & nichol

SIGNATURE: _____ P.E.

ROADWAY DESIGN ENGINEER

moffatt & nichol

SIGNATURE: _____ P.E.



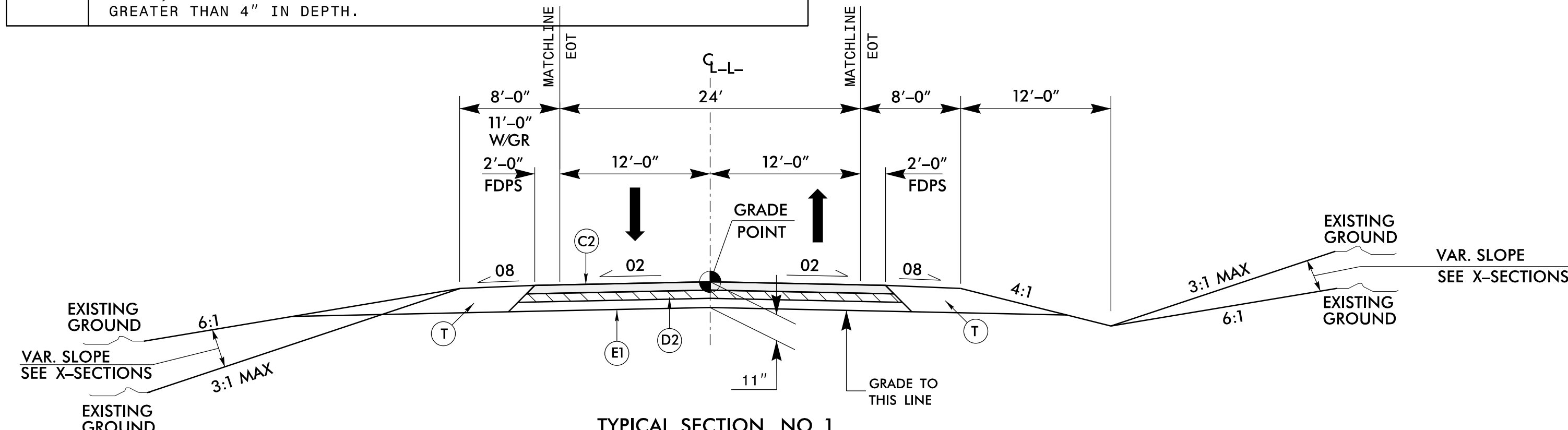
6/2/09

PAVEMENT SCHEDULE

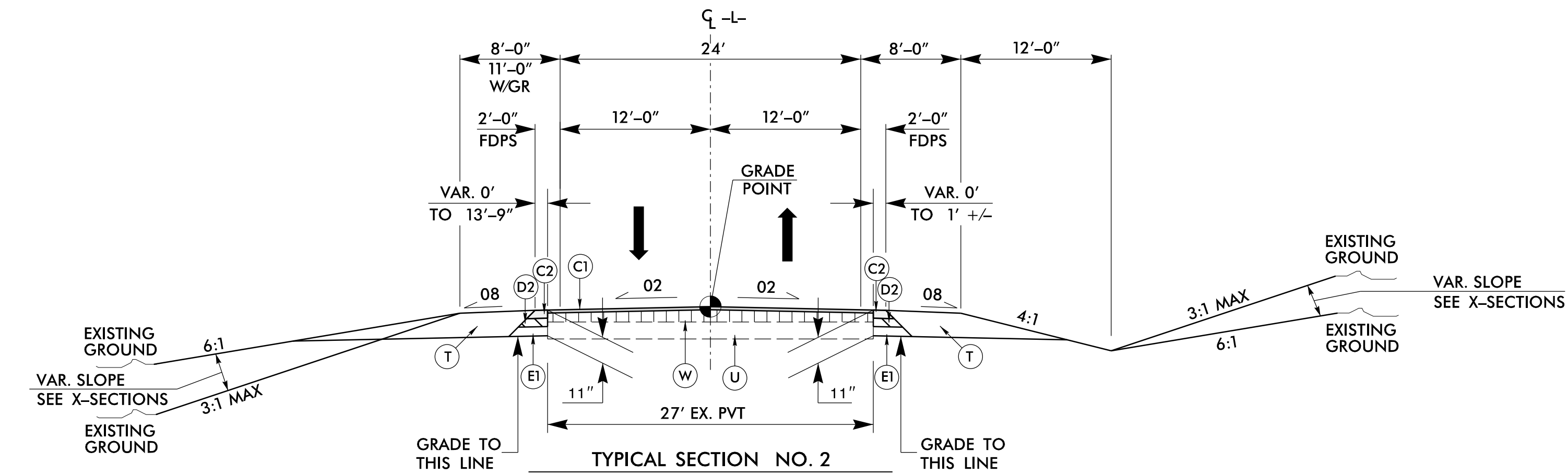
(FINAL PAVEMENT DESIGN 8/30/17) MODIFIED AFTER CFI NEED CONFIRMATION FROM PMU

A1	PROP. MINIMUM 3½" CONCRETE WEARING SURFACE	E1	PROP. APPROX. 4" ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.
C1	PROP. APPROX. 1½" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 168 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.
C2	PROP. APPROX. 3" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.	R1	SHOULDER BERM GUTTER
C3	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 112 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT TO EXCEED 2" IN DEPTH.	T	EARTH MATERIAL
D1	PROP. APPROX. 2½" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 285 LBS. PER SQ. YD.	U	EXISTING PAVEMENT
D2	PROP. APPROX. 4" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.	W	VARIABLE DEPTH ASPHALT PAVEMENT (SEE WEDGING DETAILS, THIS SHEET)
D3	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 2 1/2" IN DEPTH OR GREATER THAN 4" IN DEPTH.		

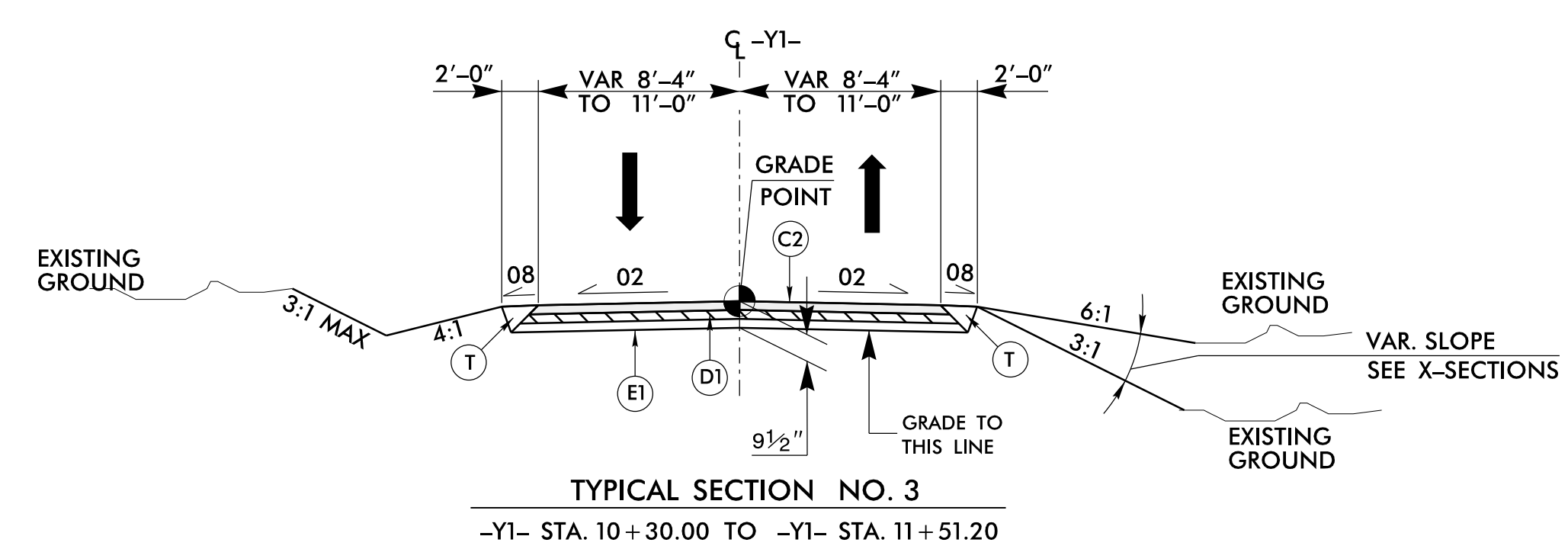
NOTE: PAVEMENT EDGE SLOPES ARE 1:1 UNLESS SHOWN OTHERWISE.



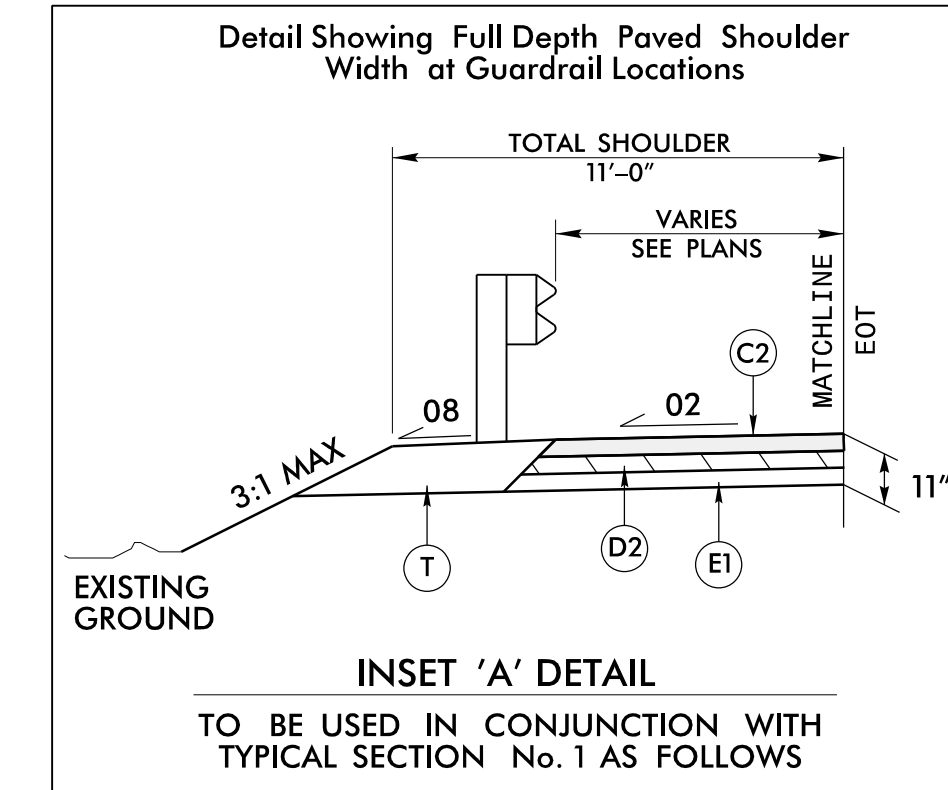
TYPICAL SECTION NO. 1
 -L- STA. 22+00.00 TO -L- STA. 24+73.88 (BEGIN BRIDGE)
 -L- STA. 25+81.13 (END BRIDGE) TO -L- STA. 30+00.00



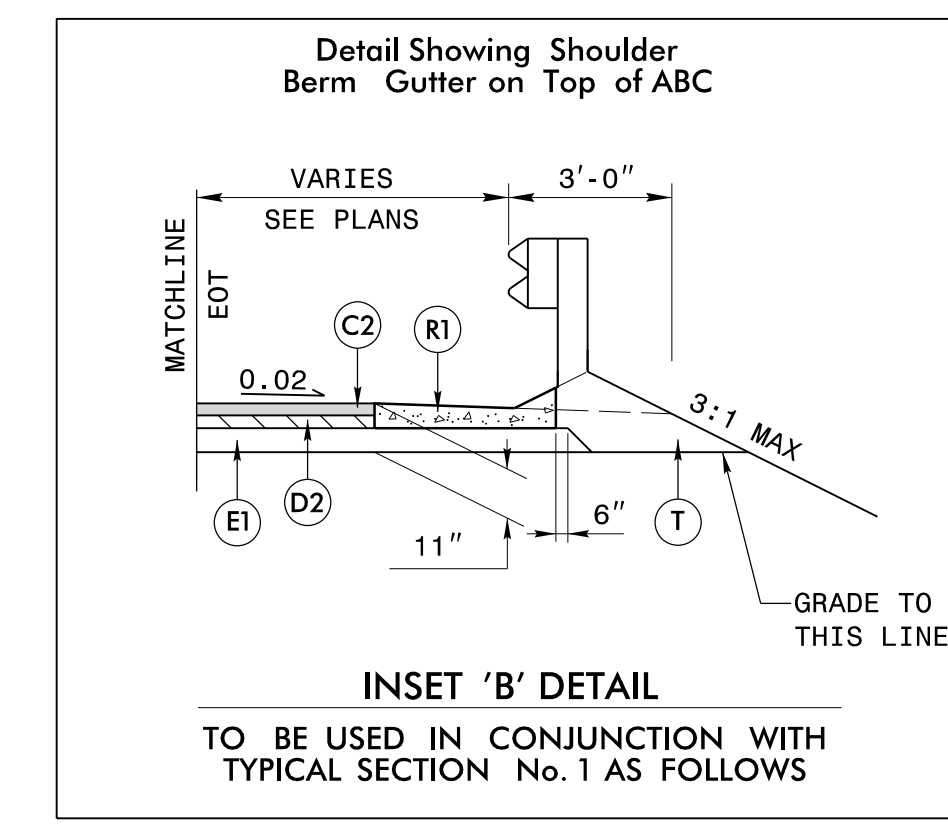
TYPICAL SECTION NO. 2
 -L- STA. 14+70.00 TO -L- STA. 22+00.00
 -L- STA. 30+00.00 TO -L- STA. 36+00.00



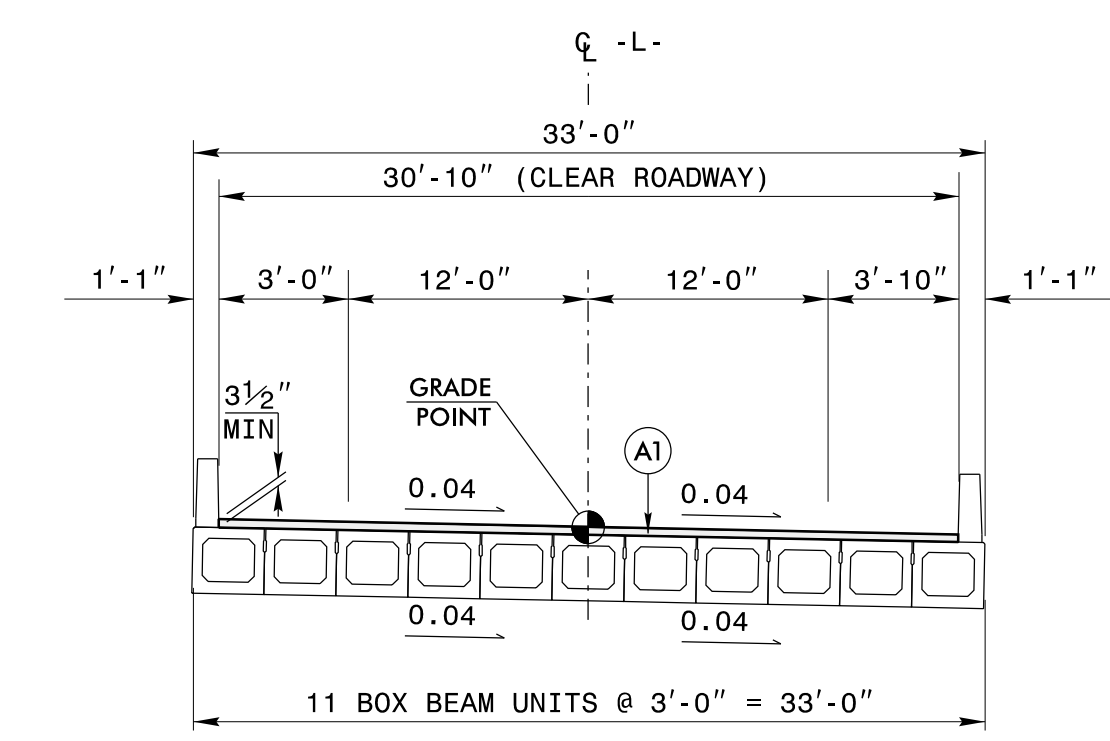
TYPICAL SECTION NO. 3
 -Y1- STA. 10+30.00 TO -Y1- STA. 11+51.20



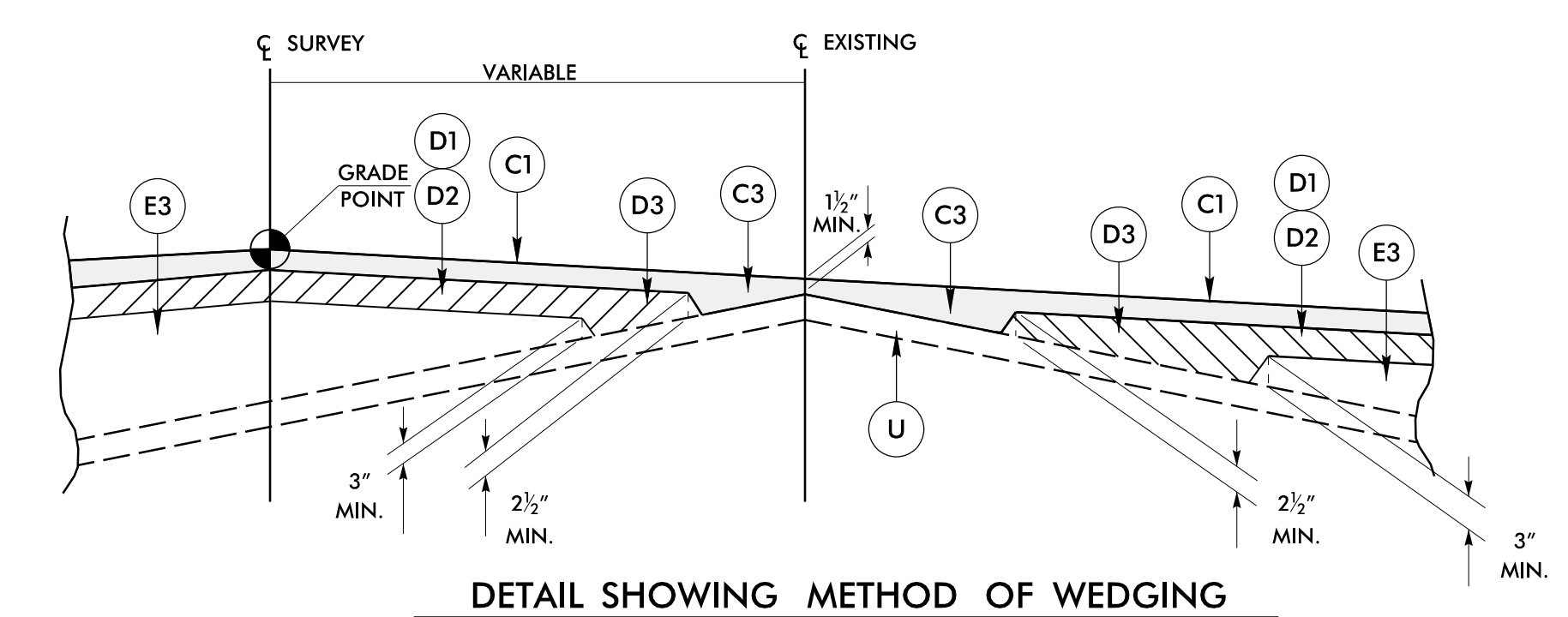
INSET 'A' DETAIL
 TO BE USED IN CONJUNCTION WITH TYPICAL SECTION No. 1 AS FOLLOWS
 -L- STA. 23+37.50 TO -L- STA. 24+73.88 (BEGIN BRIDGE) (LT)
 -L- STA. 21+75.00 TO -L- STA. 24+73.88 (BEGIN BRIDGE) (RT)
 -L- STA. 25+81.13 (END BRIDGE) TO -L- STA. 28+80.00 (LT)
 -L- STA. 25+81.13 (END BRIDGE) TO -L- STA. 27+17.50 (RT)



INSET 'B' DETAIL
 TO BE USED IN CONJUNCTION WITH TYPICAL SECTION No. 1 AS FOLLOWS
 -L- STA. 24+48.00 TO -L- STA. 24+64.00 (RT)



NOTE: SEE STRUCTURE PLANS FOR BRIDGE DESIGN
BRIDGE TYPICAL SECTION
 -L- STA. 24+73.88 TO STA. 25+81.13



DETAIL SHOWING METHOD OF WEDGING

PROJECT REFERENCE NO. B-4438	SHEET NO. 2A-1
ROADWAY DESIGN ENGINEER T. R. REID SEAL 015869 NORTH CAROLINA PROFESSIONAL ENGINEER	PAVEMENT DESIGN ENGINEER CLARK S. MORRISON SEAL 022896 NORTH CAROLINA PROFESSIONAL ENGINEER
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	
moffatt & nichol	

6/16/2018 9:29:01 AM C:\ADD\B4438\Roadway\Proj\B4438_rdy_tj.p.dgn
 10:15 AM 6/16/2018 9:29:01 AM C:\ADD\B4438\Roadway\Proj\B4438_rdy_tj.p.dgn

GEOTECHNICAL ENGINEER ENGINEER

SEAL PE # SEAL NAME

SIGNATURE DATE SIGNATURE DATE

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

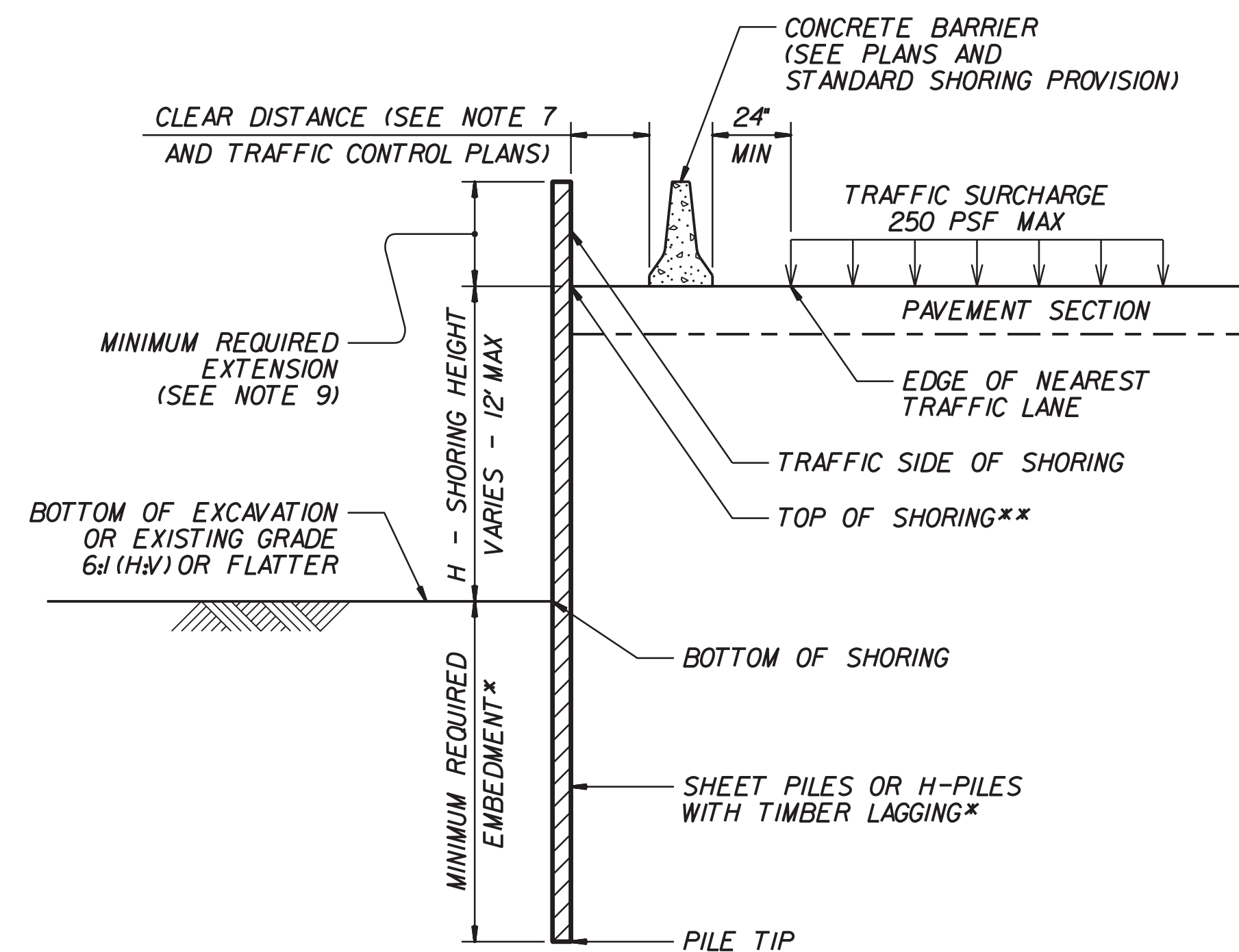
GROUNDWATER CONDITION (SEE NOTE 6)	H SHORING HEIGHT (FT)	SLOPE OR SURCHARGE CASE WITH NO TRAFFIC IMPACT					SURCHARGE CASE WITH TRAFFIC IMPACT				
		SHEET PILES		H-PILES WITH TIMBER LAGGING			SHEET PILES		H-PILES WITH TIMBER LAGGING		
		MINIMUM REQUIRED EMBEDMENT (FT)	MINIMUM REQUIRED SECTION MODULUS (IN ³ /FT)	MINIMUM REQUIRED EMBEDMENT* (FT) (SEE NOTE 10)			MINIMUM REQUIRED EMBEDMENT (FT)	MINIMUM REQUIRED SECTION MODULUS (IN ³ /FT)	MINIMUM REQUIRED EMBEDMENT* (FT) (SEE NOTE 10)		
			HP 10x42	HP 12x53	HP 14x73			HP 10x42	HP 12x53	HP 14x73	
GROUNDWATER ELEVATION BETWEEN BOTTOM OF SHORING AND PILE TIP	< 6	11.5	4.5	11.5	11.5	11.5	16.0	12.0	13.0	13.0	13.0
	7	13.0	7.0	13.0	13.0	13.0	17.0	14.5	14.5	14.5	14.5
	8	15.0	10.0	--	15.0	15.0	18.0	17.0	--	15.5	15.5
	9	17.0	14.0	--	17.0	17.0	19.0	20.0	--	17.0	17.0
	10	18.5	19.5	--	--	18.5	20.0	23.5	--	--	18.5
	11	20.5	26.0	--	--	--	21.0	28.0	--	--	20.0
	12	22.5	33.0	--	--	--	22.0	33.0	--	--	21.5
GROUNDWATER ELEVATION BELOW PILE TIP	< 6	7.5	3.0	8.0	8.0	8.0	11.0	10.0	9.5	9.5	9.5
	7	8.5	4.5	9.5	9.5	9.5	12.0	12.0	10.5	10.5	10.5
	8	10.0	6.5	10.5	10.5	10.5	12.5	14.0	11.5	11.5	11.5
	9	11.0	9.5	--	12.0	12.0	13.5	16.5	--	12.5	12.5
	10	12.5	13.0	--	--	13.5	14.0	19.5	--	13.5	13.5
	11	13.5	17.0	--	--	14.5	15.0	22.5	--	--	14.5
	12	15.0	21.5	--	--	16.0	16.0	25.5	--	--	15.5

NOTES:

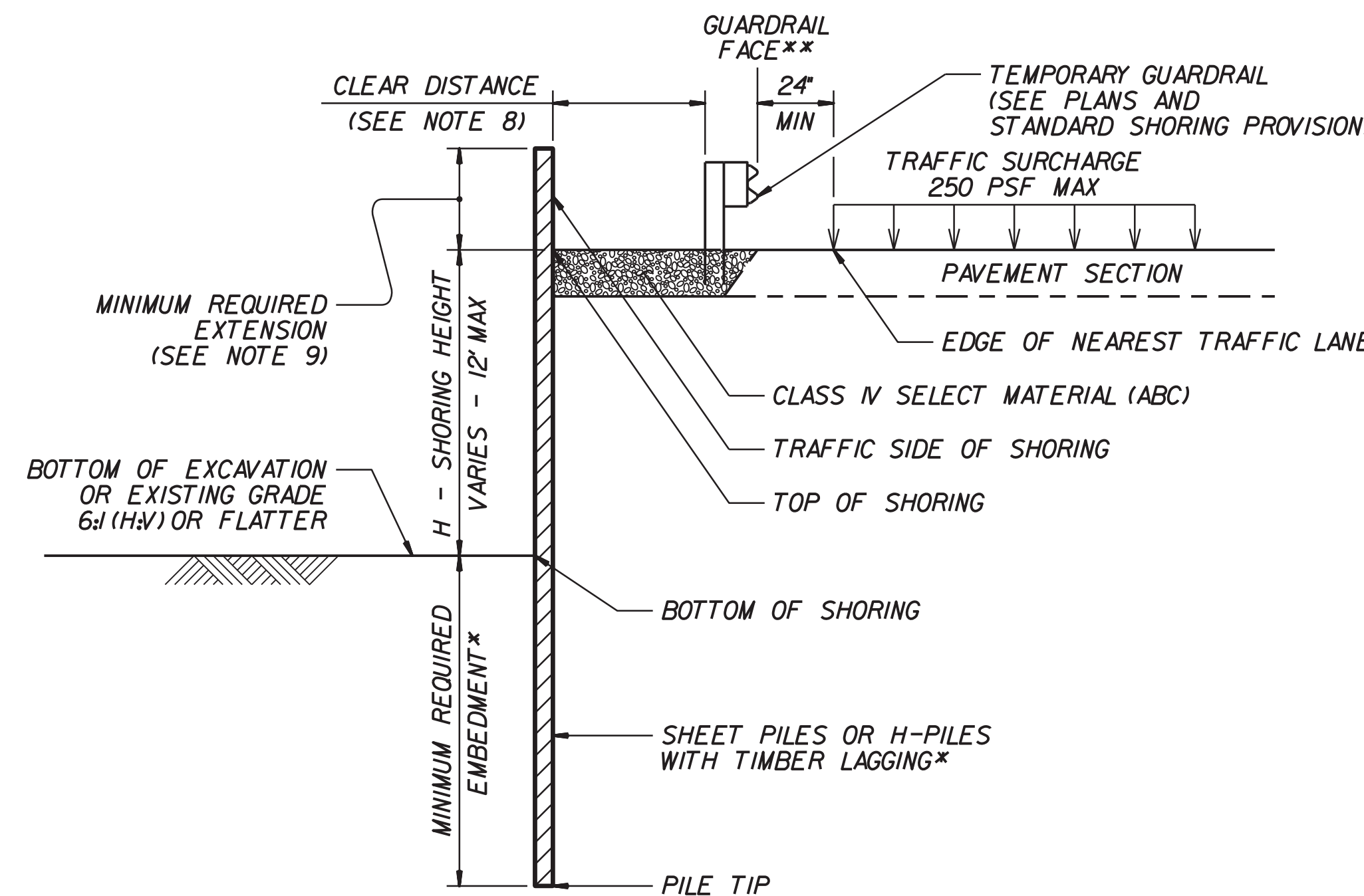
- AT THE CONTRACTOR'S OPTION, USE STANDARD TEMPORARY SHORING AS NOTED IN THE PLANS.
- FOR STANDARD TEMPORARY SHORING, SEE STANDARD SHORING PROVISION.
- STANDARD TEMPORARY SHORING IS BASED ON THE FOLLOWING IN-SITU ASSUMED SOIL PARAMETERS:
UNIT WEIGHT, $\gamma = 120$ PCF
FRICTION ANGLE, $\phi = 30$ DEGREES
COHESION, $c = 0$ PSF
- DO NOT USE STANDARD TEMPORARY SHORING IF ASSUMED SOIL PARAMETERS ARE NOT APPLICABLE.
- DO NOT USE STANDARD TEMPORARY SHORING WHEN VERY LOOSE OR SOFT SOIL OR MUCK IS WITHIN THE EMBEDMENT DEPTH.
- USE GROUNDWATER ELEVATION NOTED IN THE PLANS. IF NO GROUNDWATER ELEVATION IS SHOWN IN THE PLANS, USE "GROUNDWATER ELEVATION BETWEEN BOTTOM OF SHORING AND PILE TIP" FOR GROUNDWATER CONDITION. DO NOT USE STANDARD TEMPORARY SHORING IF GROUNDWATER IS ABOVE BOTTOM OF SHORING.
- AT THE CONTRACTOR'S OPTION OR IF AVAILABLE CLEAR DISTANCE IS LESS THAN THE MINIMUM REQUIRED FOR CONCRETE BARRIER, SET BARRIER NEXT TO AND UP AGAINST TRAFFIC SIDE OF PILES AND USE "SURCHARGE CASE WITH TRAFFIC IMPACT".
- AT THE CONTRACTOR'S OPTION OR IF AVAILABLE CLEAR DISTANCE IS LESS THAN 4' FOR TEMPORARY GUARDRAIL, ATTACH GUARDRAIL TO TRAFFIC SIDE OF PILES AS SHOWN IN THE PLANS AND USE "SURCHARGE CASE WITH TRAFFIC IMPACT".
- MINIMUM REQUIRED EXTENSION IS 6' FOR "SLOPE OR SURCHARGE CASE WITH NO TRAFFIC IMPACT" AND 32' FOR "SURCHARGE CASE WITH TRAFFIC IMPACT".
- MINIMUM REQUIRED EMBEDMENT FOR H-PILES WITH TIMBER LAGGING IS BASED ON DRIVEN H-PILES AT MAXIMUM 6' SPACING. AT THE CONTRACTOR'S OPTION, EMBEDMENT DEPTHS MAY BE REDUCED BY 25% FOR DRILLED-IN H-PILES.
- SUBMIT A "STANDARD TEMPORARY SHORING SELECTION FORM" AT LEAST 7 DAYS BEFORE STARTING TEMPORARY SHORING CONSTRUCTION. UP TO 3 SHORING LOCATIONS MAY BE INCLUDED ON EACH FORM. STANDARD SHORING SELECTION FORMS ARE AVAILABLE FROM: connect.ncdot.gov/resources/Geological/Pages/Geotech_Forms_Details.aspx
- CONTACT THE ENGINEER IF PILES DO NOT ATTAIN THE MINIMUM REQUIRED EMBEDMENT.

MINIMUM REQUIRED EMBEDMENT AND SECTION MODULUS

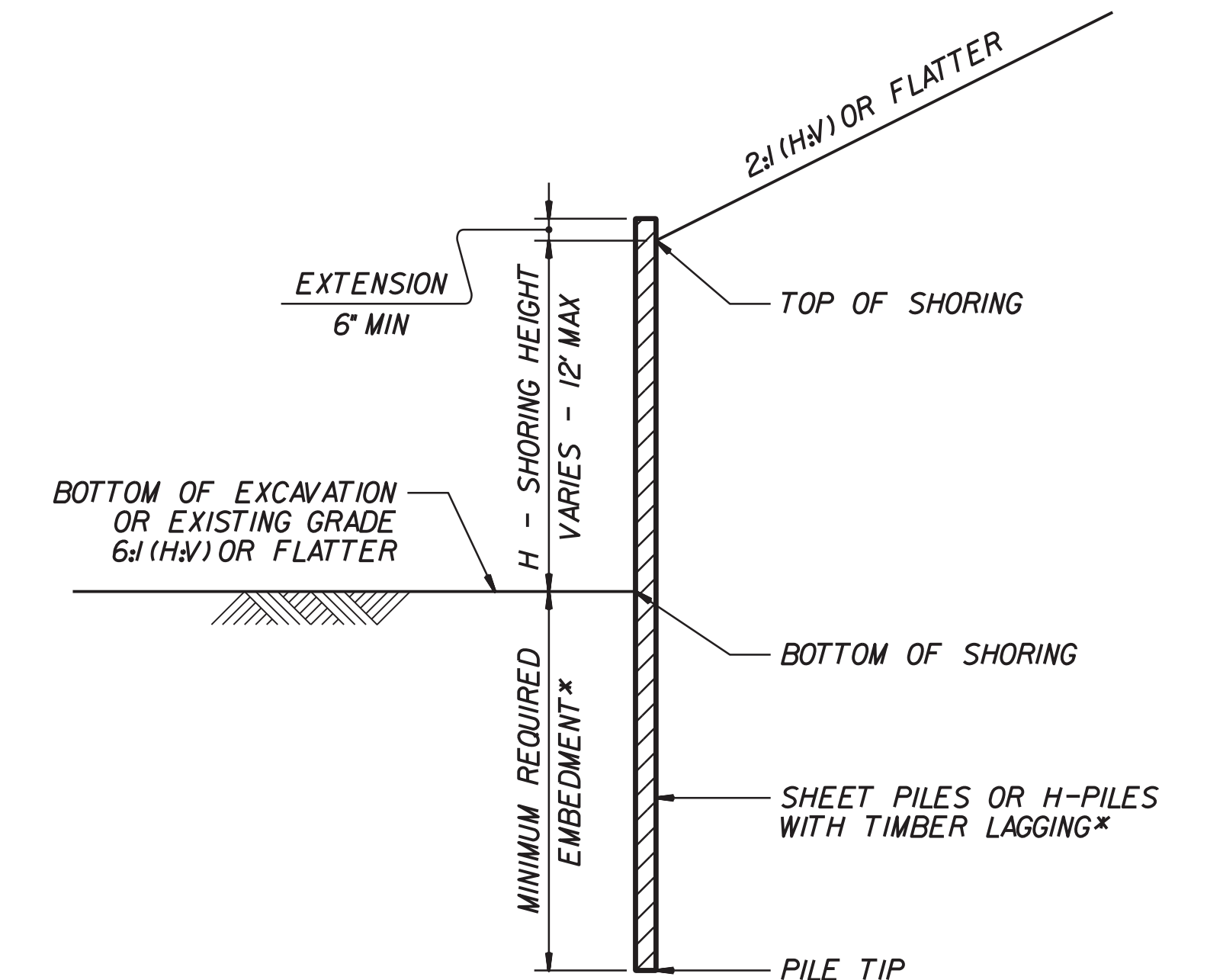
*DO NOT USE H-PILES WITH TIMBER LAGGING FOR GROUNDWATER CONDITION, SHORING HEIGHT AND H-PILE SIZE SHOWN IF MINIMUM REQUIRED EMBEDMENT IS "--".



CONCRETE BARRIER
**TOP OF SHORING = EDGE OF PAVEMENT

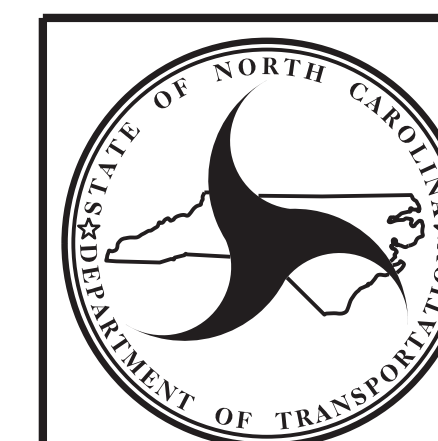


TEMPORARY GUARDRAIL
**GUARDRAIL FACE = EDGE OF PAVEMENT



STANDARD TEMPORARY SHORING (SLOPE CASE)
*SEE TABLE ABOVE.

STANDARD TEMPORARY SHORING (SURCHARGE CASE)
*SEE TABLE ABOVE.



NORTH CAROLINA DEPARTMENT OF TRANSPORTATION DIVISION OF HIGHWAYS
GEOTECHNICAL ENGINEERING UNIT

STANDARD DETAIL NO. 1801.01

STANDARD TEMPORARY SHORING

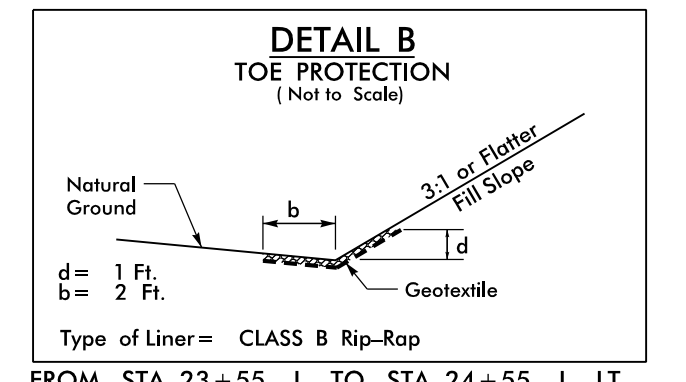
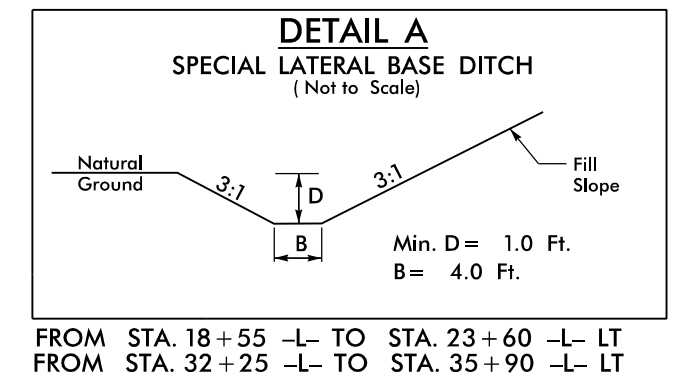
8/17/99

PROJECT REFERENCE NO. B-4438	SHEET NO. 5
RW SHEET NO.	
ROADWAY DESIGN ENGINEER SEAL 015869 T. R. REID	HYDRAULICS ENGINEER SEAL 026696 JEFFREY L. RECK
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	
<small>4700 FALLS OF NEUSE ROAD, SUITE 300 RALEIGH, NORTH CAROLINA 27609 (919) 781-4626 VOICE (919) 781-4869 FAX PE P-0105</small> moffatt & nichol	

NAD NC GRID / NA 2011

-L-

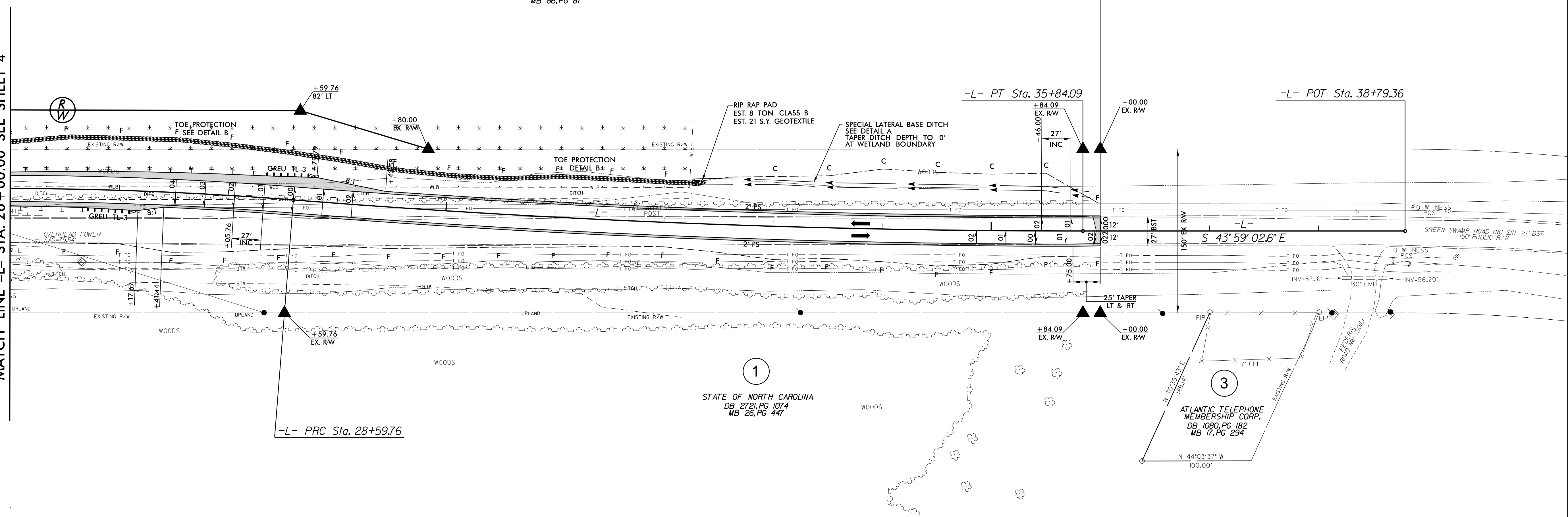
PI Sta 27+26.38	PI Sta 32+22.11
$\Delta = 4' 30'' 39.5''$ (RT)	$\Delta = 4' 30'' 39.5''$ (LT)
D = 1' 41'' 24.5"	D = 0' 37'' 22.0"
L = 266.90'	L = 724.33'
T = 133.52'	T = 362.35'
R = 3,390.00'	R = 9,200.00'
SE = .04	SE = RC
RO = 108.00'	RO = 54.00'



FROM STA. 18+55 -L- TO STA. 23+60 -L- LT
FROM STA. 32+25 -L- TO STA. 35+90 -L- LT

FROM STA. 23+55 -L- TO STA. 24+55 -L- LT
EST. 27 TON CL B RIP RAP, EST. 58 S.Y. GEOTEXTILE
FROM STA. 25+95 -L- TO STA. 32+30 -L- LT
EST. 165 TON CL B RIP RAP, EST. 365 S.Y. GEOTEXTILE

MATCH LINE -L- STA. 26+00.00 SEE SHEET 4



END STATE TIP PROJECT B-4438
-L- STA. POT 36+00.00

2
RED MOUNTAIN TIMBER COMPANY LLC
DB 2535, PG 722
MB 86, PG 87

1
STATE OF NORTH CAROLINA
DB 2721, PG 1074
MB 26, PG 447

3
ATLANTIC TELEPHONE MEMBERSHIP CORP.
DB 1080, PG 182
MB 17, PG 294

FOR L PROFILE SEE SHEET 6

B:\16\2018\1629-01\CADD\B4438\Roadway\Proj\B4438_rdy_psh_05.dgn

5/28/99

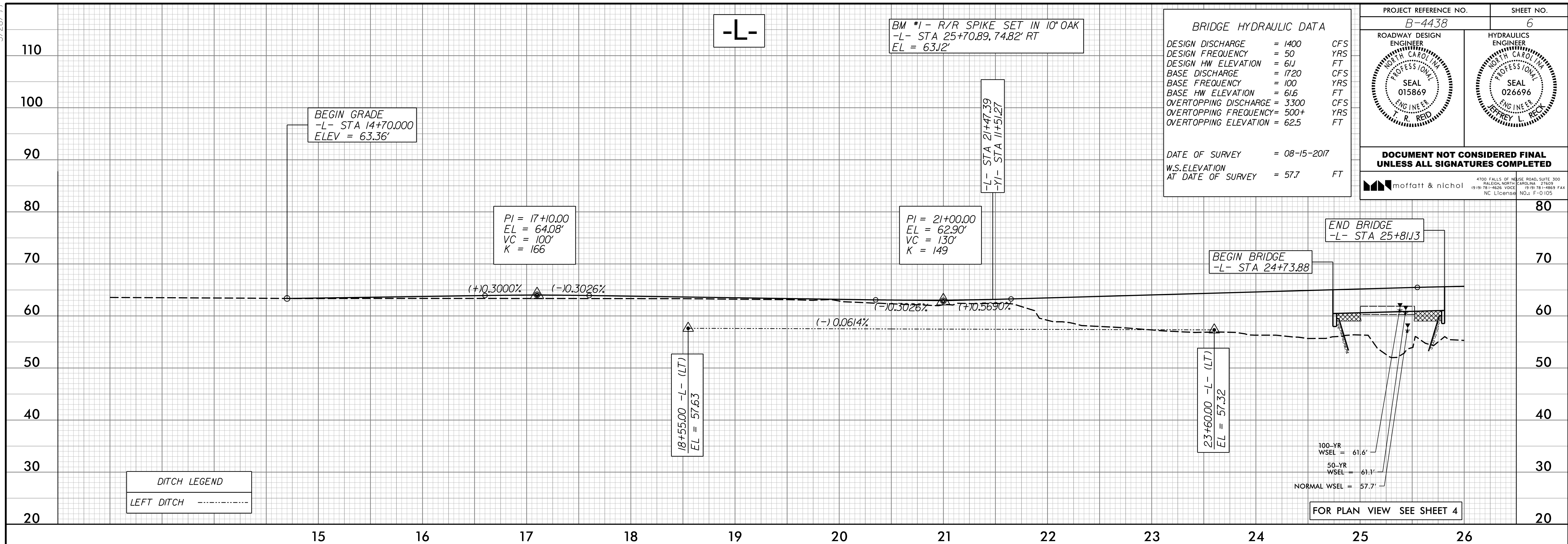
PROJECT REFERENCE NO. B-4438	SHEET NO. 6
ROADWAY DESIGN ENGINEER NORTH CAROLINA PROFESSIONAL SEAL 015869 ENGINEER R. REID	HYDRAULICS ENGINEER NORTH CAROLINA PROFESSIONAL SEAL 026696 ENGINEER JERREY L. RECK
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	
4700 FALLS OF WATUSE ROAD, SUITE 300 Raleigh, North Carolina 27609 919 871-4000 VOICE 919 871-7400 FAX NC License No. F-10105	

BRIDGE HYDRAULIC DATA

DESIGN DISCHARGE	= 1400	CFS
DESIGN FREQUENCY	= 50	YRS
DESIGN HW ELEVATION	= 61J	FT
BASE DISCHARGE	= 1720	CFS
BASE FREQUENCY	= 100	YRS
BASE HW ELEVATION	= 61.6	FT
OVERTOPPING DISCHARGE	= 3300	CFS
OVERTOPPING FREQUENCY	= 500+	YRS
OVERTOPPING ELEVATION	= 62.5	FT

DATE OF SURVEY	= 08-15-2017
W.S. ELEVATION AT DATE OF SURVEY	= 57.7 FT

BM *1 - R/R SPIKE SET IN 10" OAK
-L- STA 25+70.89, 74.82' RT
EL = 63J2'

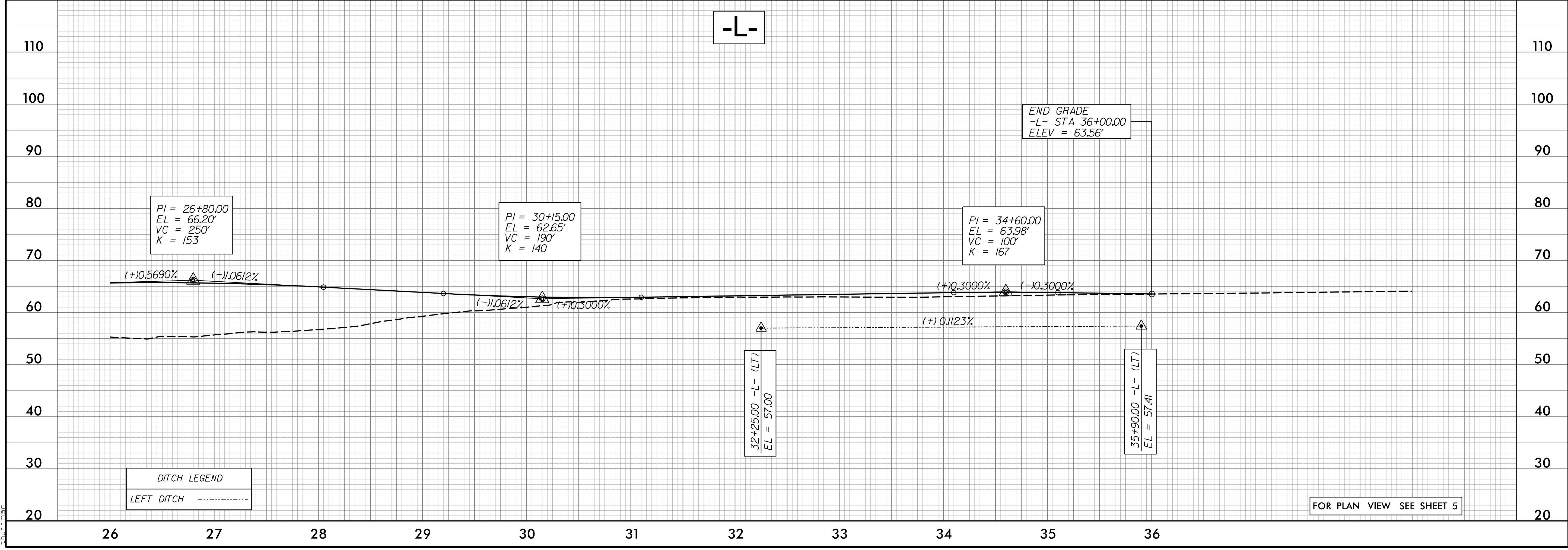


100-YR WSEL = 61.6'
50-YR WSEL = 61.3'
NORMAL WSEL = 57.7'

FOR PLAN VIEW SEE SHEET 4

8/16/2018 9:29:01 \\CADD\B4438\Roadway\Proj\B4438_rdy_psh_06-pl.dgn

-L-



FOR PLAN VIEW SEE SHEET 5

**U.S. ARMY CORPS OF ENGINEERS
WILMINGTON DISTRICT**

Action Id. SAW-2015-00954 County: Brunswick County U.S.G.S. Quad: Honey Island

NOTIFICATION OF JURISDICTIONAL DETERMINATION

Property Owner/Applicant: NCDOT-Division 3
Attn: Mr. Mason Herndon
Address: 5501 Barbados Blvd
Castle Hayne, NC 28429

Size (linear feet)	<u>+/- 1200</u>	Nearest Town	<u>Bolivia</u>
Nearest Waterway	<u>Juniper Creek</u>	River Basin	<u>Lower Pee Dee</u>
USGS HUC	<u>03040206</u>	Coordinates	Latitude: <u>34.1408874027632</u> Longitude: <u>-78.325021395591</u>

Location description: The project area is located along Hwy 211 south of Bolton and north of Bolivia, Brunswick County.

Indicate Which of the Following Apply:

A. Preliminary Determination

- There are waters, including wetlands, on the above described project area, that may be subject to Section 404 of the Clean Water Act (CWA)(33 USC § 1344) and/or Section 10 of the Rivers and Harbors Act (RHA) (33 USC § 403). The waters, including wetlands, have been delineated, and the delineation has been verified by the Corps to be sufficiently accurate and reliable. Therefore this preliminary jurisdiction determination may be used in the permit evaluation process, including determining compensatory mitigation. For purposes of computation of impacts, compensatory mitigation requirements, and other resource protection measures, a permit decision made on the basis of a preliminary JD will treat all waters and wetlands that would be affected in any way by the permitted activity on the site as if they are jurisdictional waters of the U.S. This preliminary determination is not an appealable action under the Regulatory Program Administrative Appeal Process (Reference 33 CFR Part 331). However, you may request an approved JD, which is an appealable action, by contacting the Corps district for further instruction.
- There are wetlands on the above described property, that may be subject to Section 404 of the Clean Water Act (CWA)(33 USC § 1344) and/or Section 10 of the Rivers and Harbors Act (RHA) (33 USC § 403). However, since the waters, including wetlands, have not been properly delineated, this preliminary jurisdiction determination may not be used in the permit evaluation process. Without a verified wetland delineation, this preliminary determination is merely an effective presumption of CWA/RHA jurisdiction over all of the waters, including wetlands, at the project area, which is not sufficiently accurate and reliable to support an enforceable permit decision. We recommend that you have the waters of the U.S. on your property delineated. As the Corps may not be able to accomplish this wetland delineation in a timely manner, you may wish to obtain a consultant to conduct a delineation that can be verified by the Corps.

B. Approved Determination

- There are Navigable Waters of the United States within the above described property subject to the permit requirements of Section 10 of the Rivers and Harbors Act (RHA) (33 USC § 403) and Section 404 of the Clean Water Act (CWA)(33 USC § 1344). Unless there is a change in law or our published regulations, this determination may be relied upon for a period not to exceed five years from the date of this notification.
- There are waters of the U.S., including wetlands, on the above described project area subject to the permit requirements of Section 404 of the Clean Water Act (CWA) (33 USC § 1344). Unless there is a change in the law or our published regulations, this determination may be relied upon for a period not to exceed five years from the date of this notification.
- We recommend you have the waters of the U.S. on your property delineated. As the Corps may not be able to accomplish this wetland delineation in a timely manner, you may wish to obtain a consultant to conduct a delineation that can be verified by the Corps.

— The waters of the U.S., including wetlands, on your project area have been delineated and the delineation has been verified by the Corps. We strongly suggest you have this delineation surveyed. Upon completion, this survey should be reviewed and verified by the Corps. Once verified, this survey will provide an accurate depiction of all areas subject to CWA jurisdiction on your property which, provided there is no change in the law or our published regulations, may be relied upon for a period not to exceed five years.

— The waters of the U.S., including wetlands, have been delineated and surveyed and are accurately depicted on the plat signed by the Corps Regulatory Official identified below on _____. Unless there is a change in the law or our published regulations, this determination may be relied upon for a period not to exceed five years from the date of this notification.

— There are no waters of the U.S., to include wetlands, present on the above described project area which are subject to the permit requirements of Section 404 of the Clean Water Act (33 USC 1344). Unless there is a change in the law or our published regulations, this determination may be relied upon for a period not to exceed five years from the date of this notification.

— The property is located in one of the 20 Coastal Counties subject to regulation under the Coastal Area Management Act (CAMA). You should contact the Division of Coastal Management in Morehead City, NC, at (252) 808-2808 to determine their requirements.

Placement of dredged or fill material within waters of the US, including wetlands, without a Department of the Army permit may constitute a violation of Section 301 of the Clean Water Act (33 USC § 1311). Placement of dredged or fill material, construction or placement of structures, or work within navigable waters of the United States without a Department of the Army permit may constitute a violation of Sections 9 and/or 10 of the Rivers and Harbors Act (33 USC § 401 and/or 403). If you have any questions regarding this determination and/or the Corps regulatory program, please contact **Brad Shaver at (910) 251-4611 or Brad.E.Shaver@usace.army.mil.**

C. Basis For Determination: N/A. An Approved JD has not been completed.

D. Remarks: The field visit was completed on 4/27/2015.

E. Attention USDA Program Participants

This delineation/determination has been conducted to identify the limits of Corps' Clean Water Act jurisdiction for the particular site identified in this request. The delineation/determination may not be valid for the wetland conservation provisions of the Food Security Act of 1985. If you or your tenant are USDA Program participants, or anticipate participation in USDA programs, you should request a certified wetland determination from the local office of the Natural Resources Conservation Service, prior to starting work.

SHAVER.BRAD
E.1276601756
Digitally signed by
SHAVER.BRAD.E.1276601756
DN: c=US, o=U.S. Government, ou=DoD,
ou=PKI, ou=USA,
cn=SHAVER.BRAD.E.1276601756
Date: 2018.05.04 09:55:31 -04'00'

Corps Regulatory Official: _____

Date: **May 4, 2018** Expiration Date: **None PJD**

The Wilmington District is committed to providing the highest level of support to the public. To help us ensure we continue to do so, please complete our Customer Satisfaction Survey, located online at http://corpsmapu.usace.army.mil/cm_apex/f?p=136:4:0.

Copy Furnished:

NCDEQ-DWR attn: Ms. Joanne Steenhuis



United States Department of the Interior

FISH AND WILDLIFE SERVICE
Raleigh Field Office
Post Office Box 33726
Raleigh, North Carolina 27636-3726

October 4, 2018


Philip S. Harris III, P.E., C.P.M.
North Carolina Department of Transportation
Natural Environment Section
1598 Mail Service Center
Raleigh, North Carolina 27699-1598

Dear Mr. Harris:

This letter is in response to your letter of October 4, 2018 which provided the U.S. Fish and Wildlife Service (Service) with the biological conclusion of the North Carolina Department of Transportation (NCDOT) that the proposed replacement of Bridge No. 47 on NC 211 over Bear Pen Island Swamp (TIP No. B-4438) in Brunswick County may affect, but is not likely to adversely affect the federally threatened wood stork (*Mycteria americana*). In addition, NCDOT has determined that the project will have no effect on all other federally listed species, with the exception of the northern long-eared bat (*Myotis septentrionalis*), which has been previously addressed through a programmatic consultation. These comments are provided in accordance with Section 7 of the Endangered Species Act (ESA) of 1973, as amended (16 U.S.C. 1531-1543).

According to your submitted information, the site was surveyed for wood stork nests in June 2016 and on July 16, 2018. No wood storks or wood stork nests were observed, although potential foraging habitat was present. Based on available information, the Service concurs with your biological conclusion that the project may affect, but is not likely to adversely affect the wood stork. We believe that the requirements of Section 7(a)(2) of the ESA have been satisfied. We remind you that obligations under Section 7 consultation must be reconsidered if: (1) new information reveals impacts of this identified action that may affect listed species or critical habitat in a manner not previously considered in this review; (2) this action is subsequently modified in a manner that was not considered in this review; or (3) a new species is listed or critical habitat determined that may be affected by this identified action. If you have any questions regarding our response, please contact Mr. Gary Jordan at (919) 856-4520 (Ext. 32).

Sincerely,


for Pete Benjamin
Field Supervisor

Electronic copy:

Brad Shaver, USACE, Wilmington, NC
Travis Wilson, NCWRC, Creedmoor, NC
Deanna Riffey, NCDOT, Raleigh, NC