



Pre-Construction Notification (PCN) Form

For Nationwide Permits and Regional General Permits

(along with corresponding Water Quality Certifications)

December 15, 2017 Ver 2.2

*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.

<http://edocs.deq.nc.gov/WaterResources/0/doc/603610/Page1.aspx>

A. Processing Information

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

Wake

Johnston

Is this project a public transportation project? * (?)

Yes No

Is this a NCDOT Project? *

Yes No

(NCDOT only) T.I.P. or state project number:

B-5140

WBS #

42301.1.1

(for NCDOT use only)

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

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

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

- Nationwide Permit (NWP)
 Regional General Permit (RGP)

Nationwide Permit (NWP) Number:

13 - Bank Stabilization

NWP Number Other:

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

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

check all that apply

- 401 Water Quality Certification - Regular
 Non-404 Jurisdictional General Permit
 401 Water Quality Certification - Express
 Riparian Buffer Authorization

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

For the record only for DWR 401 Certification:

Yes No

For the record only for Corps Permit:

Yes No

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

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

Yes No

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

Yes No

1h. Is the project located in a designated trout watershed? *

Yes No

Link to trout information: <http://www.saw.usace.army.mil/Missions/Regulatory-Permit-Program/Agency-Coordination/Trout.aspx>

B. Applicant Information

1a. Who is the Primary Contact? *

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) Agent/Consultant
(Check all that apply)

2. Owner Information

2a. Name(s) on recorded deed:

2b. Deed book and page no.:

2c. Responsible party:

(for Corporations)

2d. Address

Street Address

Address Line 2

City

State / Province / Region

Postal / Zip Code

Country

2e. Telephone Number:

(xxx)xxx-xxxx

2f. Fax Number:

(xxx)xxx-xxxx

2g. Email Address: *

pharris@ncdot.gov

C. Project Information and Prior Project History

1. Project Information

1a. Name of project: *

Bridge replacement No. 195 on SR1001 (Pearces Rd) over Moccasin Creek

1b. Subdivision name:

(if appropriate)

1c. Nearest municipality / town: *

Zebulon

1d. Driving directions *

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

35.896351, -78.310515

2. Project Identification

2a. Property Identification Number:

(tax PIN or parcel ID)

2b. Property size:

(in acres)

2c. Project Address

Street Address

Address Line 2

City

State / Province / Region

Postal / Zip Code

Country

2d. Site coordinates in decimal degrees

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

Latitude: *

35.896351

ex: 34.208504

Longitude: *

-78.310515

-77.796371

3. Surface Waters

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

Moccasin Creek

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

C;NSW

[Surface Water Lookup](#)

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

Neuse

[River Basin Lookup](#)

4. Project Description

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

Land use within the vicinity is agricultural, residential, and a nearby golf course.

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

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

File type must be pdf

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

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

File type must be pdf

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

0.01

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

(intermittent and perennial)

118

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

Bridge replacement

4g. 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.195, a 37-foot long single span bridge with an 80-foot long bridge. The new bridge will have two 11-foot travel lanes with 4.4-foot shoulders and be placed on the same alignment as the existing bridge. Traffic will be detoured off-site during construction. Standard road building equipment, such as trucks, dozers, and cranes will be used.

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

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

B5140_Hyd_Permit_Drawings.pdf

2.58MB

B5140_RDWYplans.pdf

2.12MB

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

Unknown

N/A

Corps AID Number:

Example: SAW-2017-99999

SAW-2009-01202

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

Name (if known):

Richard Darling

Agency/Consultant Company:

Michael Baker Engineering

Other:

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

June 24, 2009

5d1. Jurisdictional determination upload

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

B-5140 Prelim JD.pdf

2.46MB

File type must be PDF

6. Project History

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

Yes

No

Unknown

7. Future Project Plans

7a. Is this a phased project? *

Yes

No

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

No

D. Proposed Impacts Inventory

1. Impacts Summary

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

Wetlands

Streams-tributaries

Buffers

Open Waters

Pond Construction

3. Stream Impacts

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

3a. Site # - Reason for impact *	3b. Impact type *	3c. Type of impact *	3d. Stream name *	3e. Stream Type *	3f. Type of Jurisdiction *	3g. Stream width *	3h. Impact length *
Site 1 - Bridge Map label (e.g. Road Crossing 1)	P Permanent (P) or Temporary (T)	Bank Stabilization	Moccasin Creek	Perennial Perennial (PER) or intermittent (INT)	Both	18 Average (feet)	76 (linear feet)
Site 2 - Bridge Map label (e.g. Road Crossing 1)	T Permanent (P) or Temporary (T)	Bank Stabilization	Moccasin Creek	Perennial Perennial (PER) or intermittent (INT)	Both	18 Average (feet)	10 (linear feet)

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

3i. Total jurisdictional ditch impact in square feet:

0

3i. Total permanent stream impacts:

76

3i. Total temporary stream impacts:

10

3i. Total stream and tributary impacts:

86

3j. Comments:

6. Buffer Impacts (for DWR)

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

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

Check all that apply.

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

6b. Impact Type *	6c. Per or Temp *	6d. Stream name *	6e. Buffer mitigation required? *	6f. Zone 1 impact *	6g. Zone 2 impact *
Site 1 -Allowable-Road crossing Location and Exempt, Allowable, allowable w/ mitigation	P Permanent (P) or Temporary (T)	Moccasin Creek	No	1,188 (square feet)	2,607 (square feet)
Site 1 - Allowable - Bridge Location and Exempt, Allowable, allowable w/ mitigation	P Permanent (P) or Temporary (T)	Moccasin Creek	No	3,116 (square feet)	222 (square feet)

6h. Total buffer impacts:

	Zone 1	Zone 2
Temporary impacts:	0.00	0.00
Permanent impacts:	4,304.00	2,829.00
Total buffer impacts:	4,304.00	2,829.00

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: *

Replace in place was incorporated to minimize jurisdictional impacts along with lengthening the bridge. Roadway drainage will sheet flow over grassed slopes before entering stream. Other than no build, the minimal effects to the stream due to this project are unavoidable. Design avoided impacting nearby wetland.

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

NCDOT Design Standards in Sensitive Watersheds will be adhered to.

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

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

Yes No

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

Bank stabilization does not require mitigation and the impacts for the Neuse Riparian Buffers are below the required threshold.

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

(check all that apply)

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

Diffus 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

G. Supplementary Information

1. Environmental Documentation

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

Yes No

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

Yes No

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

Yes No

NEPA or SEPA Final Approval Letter

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

FILE TYPE MUST BE PDF

2. Violations (DWR Requirement)

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

Yes No

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

Yes No

3. Cumulative Impacts (DWR Requirement)

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

Yes No

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

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

4. Sewage Disposal (DWR Requirement)

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

Yes No N/A

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

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

Yes No

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

Yes No

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.

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

Miscellaneous attachments not previously requested.

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

File must be PDF

Signature

*

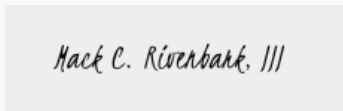
By checking the box and signing below, I certify that:

- 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



Date:

current_date



North Carolina Department of Transportation

Highway Stormwater Program
STORMWATER MANAGEMENT PLAN
FOR NCDOT PROJECTS



(Version 2.06; Released June 2016)

WBS Element: 42301.1.1 TIP No.: B-5140 County(ies): Wake Page 1 of 1

General Project Information

WBS Element:	42301.1.1	TIP Number:	B-5140	Project Type:	Bridge Replacement	Date:	6/1/2017
NCDOT Contact:	William Elam Jr., PE			Contractor / Designer:	Brandon Barham, PE - Ecological Engineering		
Address:	1000 Birch Ridge Drive Raleigh, NC 27610			Address:	1151 SE Cary Parkway Suite 101 Cary, NC 27518		
	Phone:	(919) 707-6718			Phone:	919-557-0929	
	Email:	belam@ncdot.gov			Email:	bbarham@ecologicaleng.com	
City/Town:	Zebulon			County(ies):	Wake		
River Basin(s):	Neuse			CAMA County?	No		
Wetlands within Project Limits?	Yes						

Project Description

Project Length (lin. miles or feet):	0.114 Miles	Surrounding Land Use:	Forest, agricultural, and rural residential					
	Proposed Project			Existing Site				
Project Built-Upon Area (ac.)	0.8	ac.	0.6	ac.				
Typical Cross Section Description:	2 @ 11 ft lanes with 4.4 ft shoulders.			2 @ 10 ft lanes with 2 ft shoulders				
Annual Avg Daily Traffic (veh/hr/day):	Design/Future:	5612	Year:	2038	Existing:	3535	Year:	2018
General Project Narrative: (Description of Minimization of Water Quality Impacts)	<p>State project B-5140 involves the replacement of the existing NCDOT Bridge #910195 on SR 1001 over Moccasin Creek. Bridge #910195 consists of 1@34.8' steel girder and H-Pile cap on concrete vertical abutments. The proposed bridge at #910195 will be 1@80' 33" Box beam with 4'-0" caps. The proposed crossing is located in Zone AE of FIRM Map number 3720270800K and was studied by Detailed methods. One stormwater outfall is proposed which will be placed at a distance to minimize disturbance to adjacent stream and buffers. Rip Rad pads will be utilized to dissipate the energy. A minimal amount of additional impervious area was added due to this project. Grass shoulders were maintained to promote sheet flow and infiltration. No deck drains are required for the proposed bridge.</p>							

Waterbody Information

Surface Water Body (1):	Moccasin Creek		NCDWR Stream Index No.:	27-86-2				
NCDWR Surface Water Classification for Water Body	Primary Classification:		Class C					
	Supplemental Classification:		Nutrient Sensitive Waters (NSW) +					
Other Stream Classification:	None							
Impairments:	None							
Aquatic T&E Species?	No	Comments:						
NRTR Stream ID:	Moccasin 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)							

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-5140	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
42301.1.1	BRSTP-1001(45)	PE	
42301.2.1		R/W & UTILITY	

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

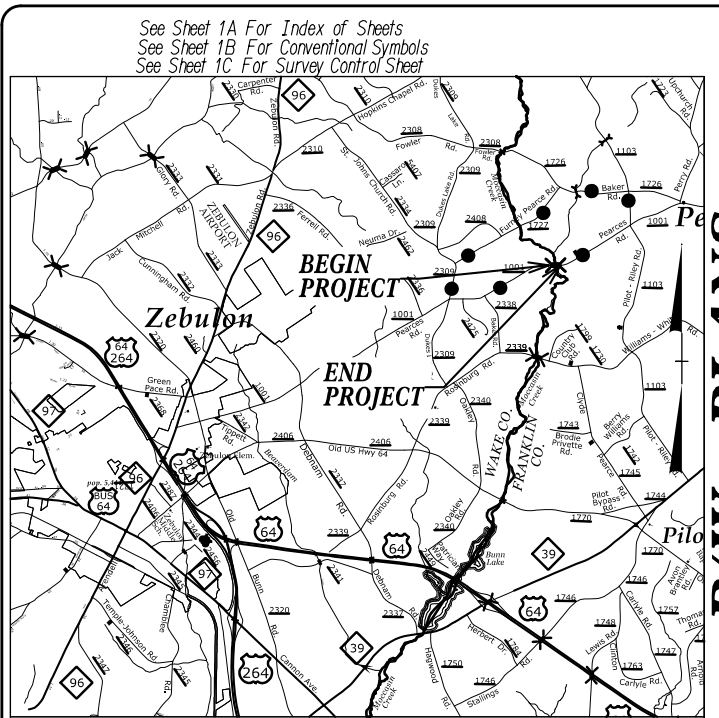
WAKE & FRANKLIN COUNTIES

LOCATION: BRIDGE NO. 195 OVER MOCCASIN CREEK
ON SR 1001 (PEARCES ROAD)

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

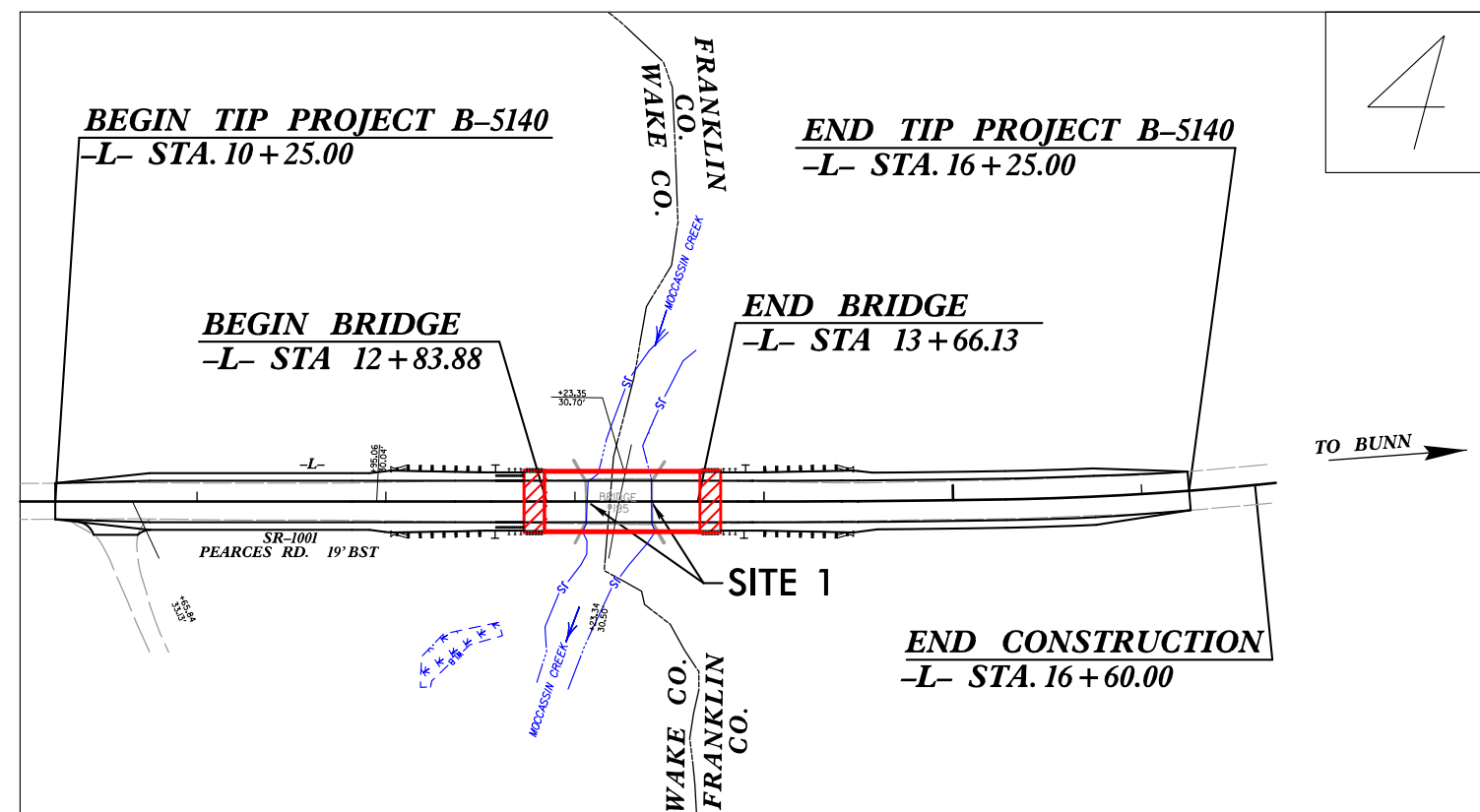
PERMIT DRAWING
SHEET 1 OF 5

SURFACE WATER IMPACTS PERMIT



VICINITY MAP

●●●●● OFF-SITE DETOUR



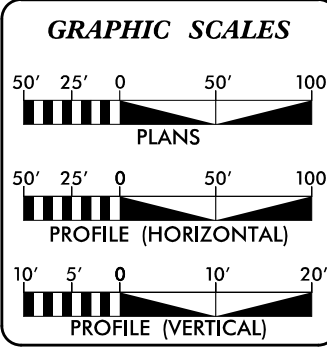
TIP PROJECT: B-5140

R/W PLANS

CONTRACT:

** DESIGN EXCEPTION REQUIRED FOR VERTICAL ALIGNMENT

THIS IS NOT A CONTROL OF ACCESS PROJECT
THIS PROJECT IS NOT WITHIN ANY MUNICIPAL BOUNDARY
CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD III.



DESIGN DATA

ADT 2018 =	3,535
ADT 2038 =	5,612
K =	11 %
D =	65 %
T =	4 % *
** V =	60 MPH
* TTST =	1% DUAL 3%
FUNC CLASS =	MINOR COLLECTOR
	SUBREGIONAL TIER

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT B-5140 =	0.098 MILES
LENGTH STRUCTURE TIP PROJECT B-5140 =	0.016 MILES
TOTAL LENGTH OF TIP PROJECT B-5140 =	0.114 MILES

Prepared In the Office of:

LOCHNER
H. W. LOCHNER, INC.
2840 PLAZA PLACE SUITE 202
RALEIGH, NC 27612
NC License Number F-0159

2018 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
SEPTEMBER 15, 2017

LETTING DATE:
MAY 5, 2018

ECOLOGICAL ENGINEERING
NC FIRM LICENSE No: F-1148
1151 SE Cary Parkway
Suite 101
Cary, NC 27518
(919) 557-0029

BRIAN K. EASON, PE
PROJECT ENGINEER

CHRISTINA YOKEYLEY, EI
PROJECT DESIGN ENGINEER

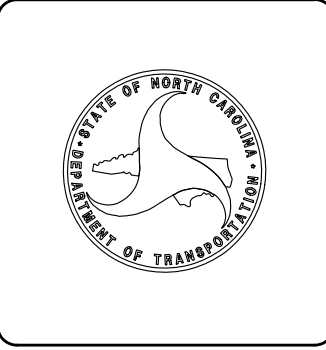
DAVID STUTTS, PE
NCDOT CONTACT

HYDRAULICS ENGINEER

SIGNATURE: _____ P.E.

ROADWAY DESIGN ENGINEER

SIGNATURE: _____ P.E.



8:07:34 AM R:\Hydraulics\PERMITS_Environmental\Drawings\B5140_Hyd_Prm_Wet_TSH.dgn BrandonBarham

8/17/99

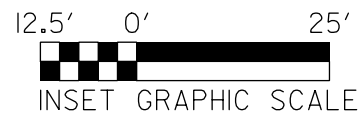
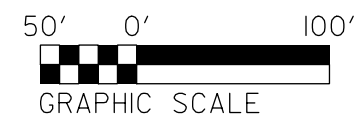
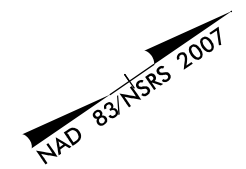
PERMIT DRAWING SHEET 2 OF 5

LOCHNER
 H. W. LOCHNER, INC.
 2840 PLAZA PLACE, SUITE 202
 RALEIGH, NC 27612
 (919) 571-7111

NC License Number F-0159

ECOLOGICAL ENGINEERING
 NC FIRM LICENSE No-F-1148
 1151 SE Cary Parkway
 Suite 101
 Cary, NC 27513
 (919) 557-0929

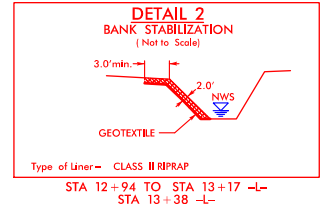
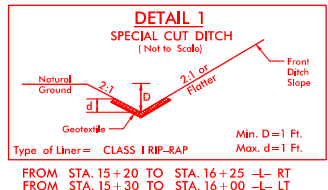
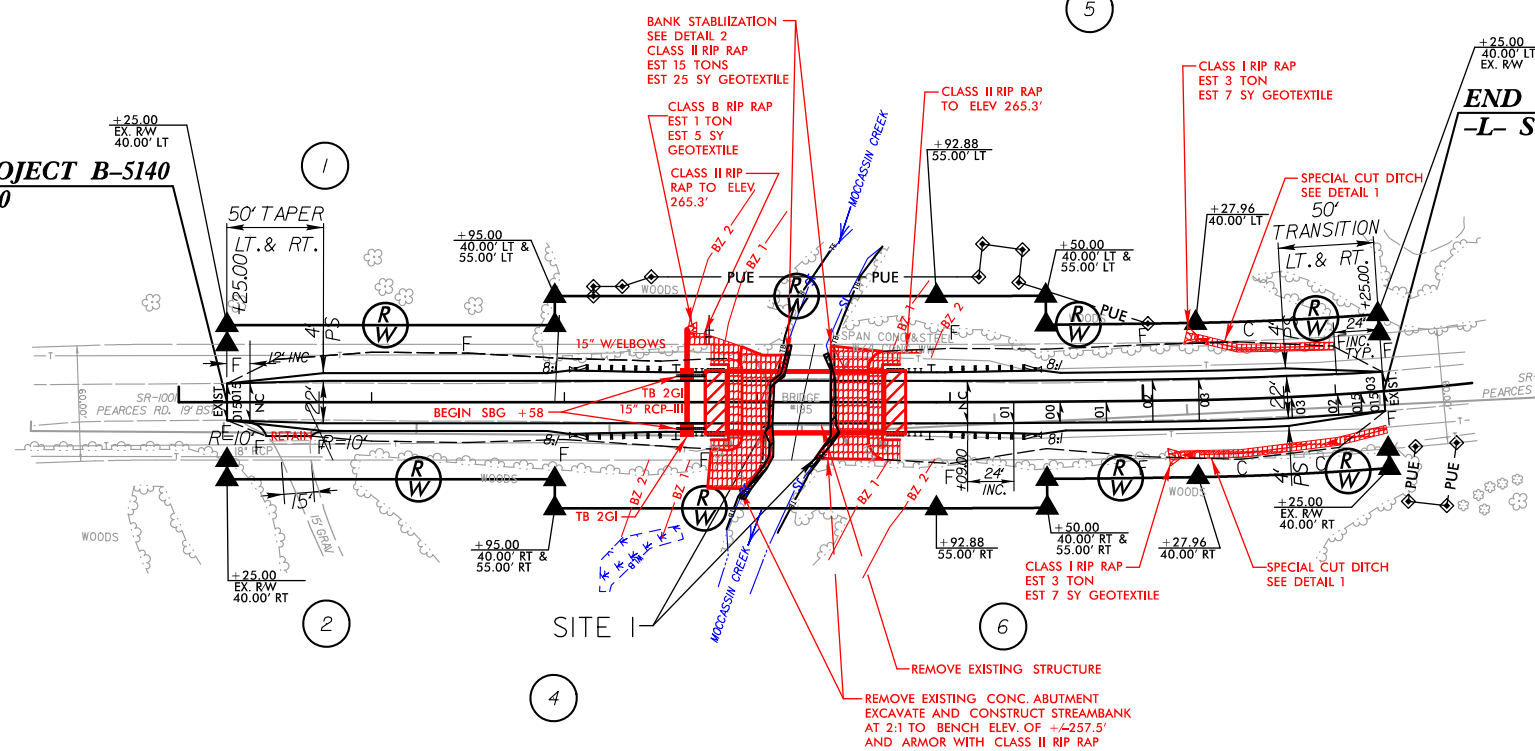
PROJECT REFERENCE NO. B-5140	SHEET NO. 4
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



NOTE:
 (CENTERLINE OF CREEK IS COUNTY LINE)
 (WAKE COUNTY) (FRANKLIN COUNTY)

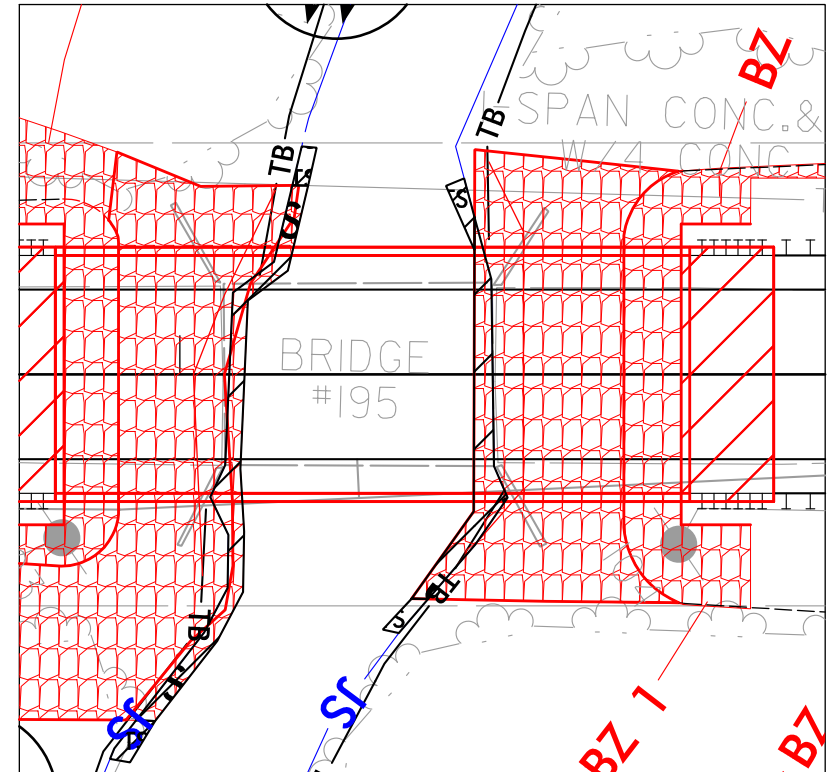
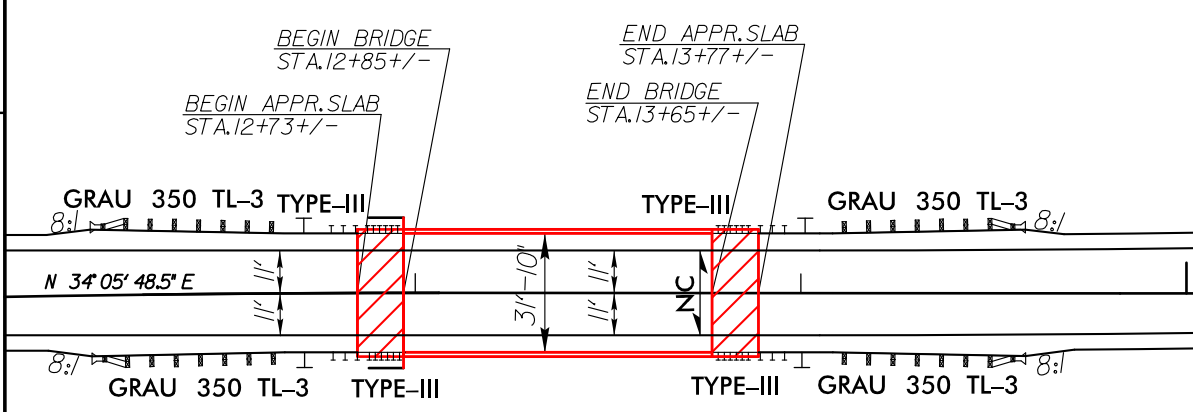
BEGIN TIP PROJECT B-5140
 -L- STA. 10+25.00

END TIP PROJECT B-5140
 -L- STA. 16+25.00



REVISIONS

BRIDGE/ PAVEMENT RELATIONSHIP SKETCH



DENOTES TEMPORARY IMPACTS IN SURFACE WATER

DENOTES IMPACTS IN SURFACE WATER

SITE I

PAVED SHOULDER

SEE SHEET 5 FOR -L- PROFILE

SEE SHEETS S-1 TO S-? FOR STRUCTURE PLANS

8:00:44 AM
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8/17/99

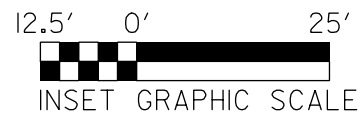
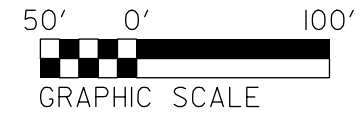
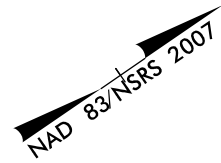
PERMIT DRAWING SHEET 3 OF 5

LOCHNER
 H. W. LOCHNER, INC.
 2840 PLAZA PLACE, SUITE 202
 RALEIGH, NC 27612
 (919) 571-7111

NC License Number F-0159
 NC FIRM LICENSE No. F-1148
 1151 SE Cary Parkway
 Suite 101
 Cary, NC 27513
 (919) 557-0929

ECOLOGICAL ENGINEERING

PROJECT REFERENCE NO. B-5140	SHEET NO. 4
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

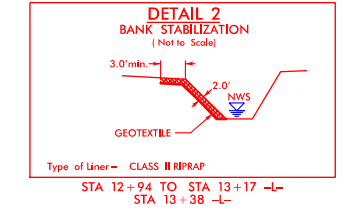
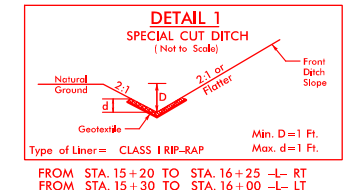
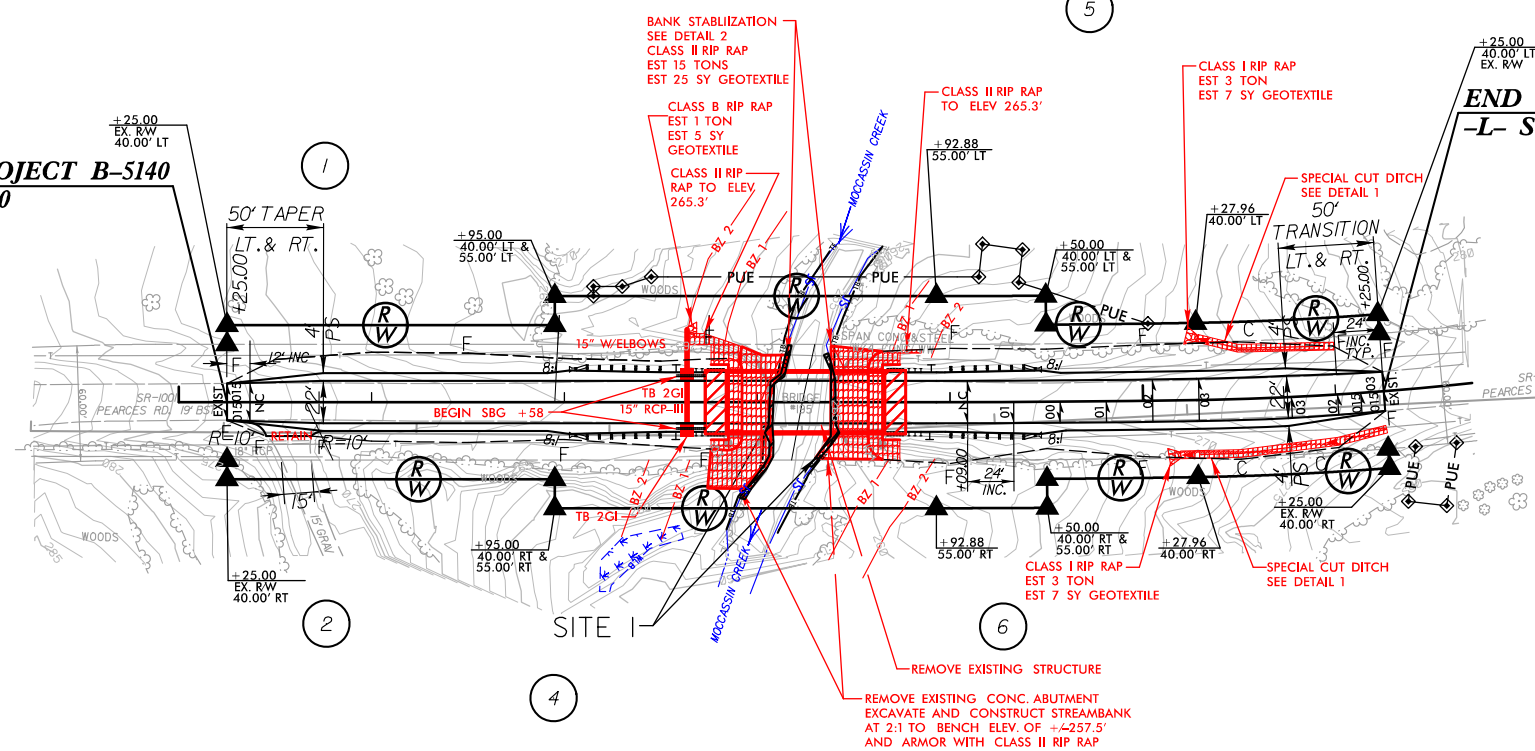


NOTE:
 (CENTERLINE OF CREEK IS COUNTY LINE)
 (WAKE COUNTY)

(FRANKLIN COUNTY)

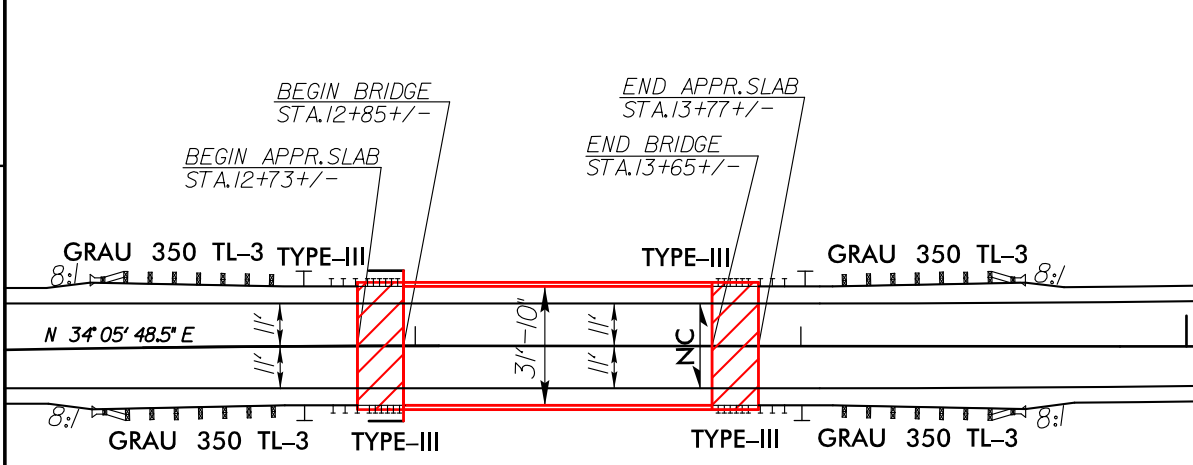
BEGIN TIP PROJECT B-5140
 -L- STA. 10+25.00

END TIP PROJECT B-5140
 -L- STA. 16+25.00



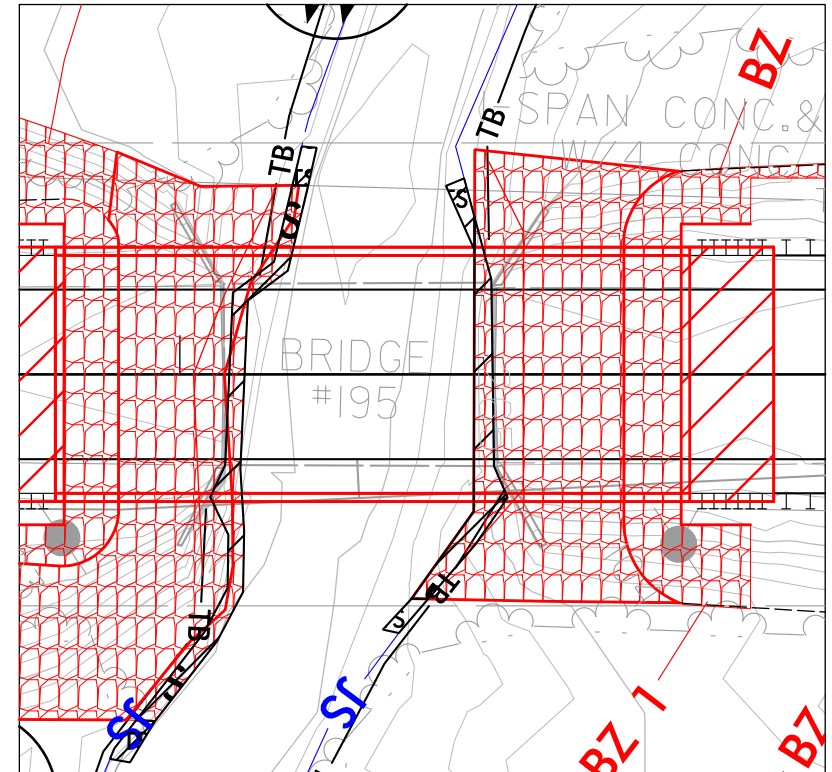
REVISIONS

BRIDGE/ PAVEMENT RELATIONSHIP SKETCH



DENOTES TEMPORARY IMPACTS IN SURFACE WATER

DENOTES IMPACTS IN SURFACE WATER



SITE I

PAVED SHOULDER

SEE SHEET 5 FOR -L- PROFILE

SEE SHEETS S-1 TO S-? FOR STRUCTURE PLANS

8:00:38 AM
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 8/17/99

5/14/99

PROJECT REFERENCE NO. B-5140		SHEET NO. 5
H. W. LOCHNER, INC. 2840 PLAZA PLACE, SUITE 202 RALEIGH, NC 27612 (919) 571-7111		NC License Number F-0159 NC FIRM LICENSE No F-1148 1151 SE Cary Parkway Suite 101 Cary, NC 27518 (919) 557-0929
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER

**PERMIT DRAWING
SHEET 4 OF 5**

BM#1
RR SPIKE IN BASE OF 5" PINE
BL -
STA 5+10.21
24.04' RIGHT
ELEV. = 282.54'

BM#2
RR SPIKE IN BASE OF 18" ELM
BL -
STA 12+71.87
40.35' RIGHT
ELEV. = 263.98'

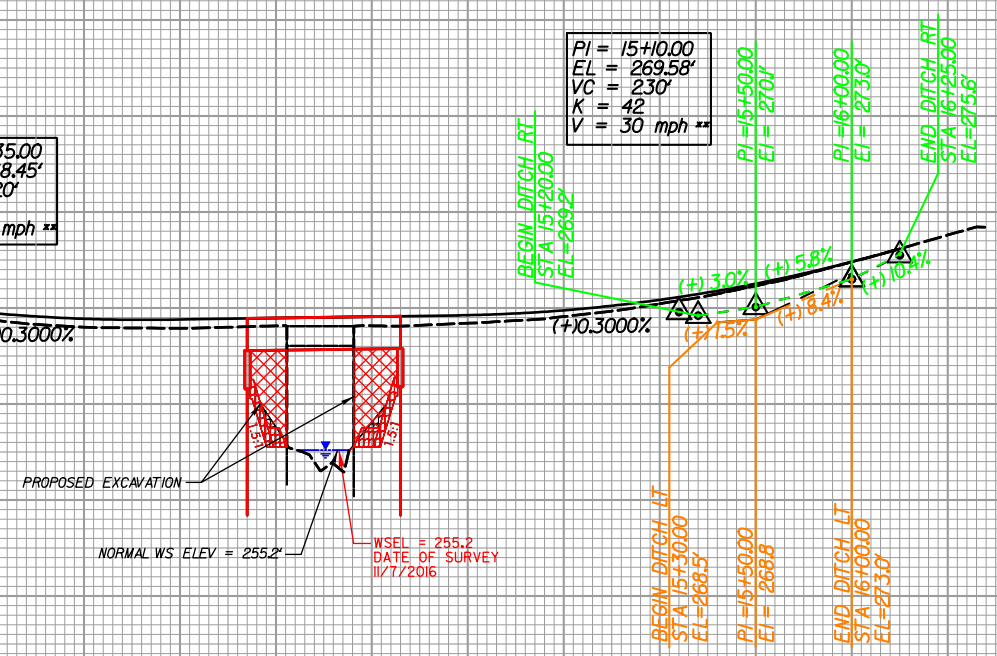
BM#3
RR SPIKE IN BASE OF 15" PINE
BL -
STA 16+31.65
39.25' RIGHT
ELEV. = 280.52'

PI = 11+35.00
EL = 268.45'
VC = 220'
K = 44
V = 30 mph **

PI = 15+10.00
EL = 269.58'
VC = 230'
K = 42
V = 30 mph **

PI = 16+00.00
EL = 273.0'
PI = 16+25.00
EL = 275.6'

BRIDGE HYDRAULIC DATA		
DESIGN DISCHARGE	= 1900	CFS
DESIGN FREQUENCY	= 25	YR
DESIGN HW ELEVATION	= 264.4	FT
BASE DISCHARGE	= 3470	CFS
BASE FREQUENCY	= 100	YR
BASE HW ELEVATION	= 267.3	FT
OVERTOPPING DISCHARGE	= 4640	CFS
OVERTOPPING FREQUENCY	= 100+	YR
OVERTOPPING ELEVATION	= 268.8	FT
DATE OF SURVEY	= 11/7/2016	
W.S. ELEVATION AT DATE OF SURVEY	= 255.2	FT



▣ STRUCTURE EXCAVATION
SEE SHEET 4 FOR -L- PLAN VIEW

R:\0550 AM
R:\CH05\Drawings\PERMITS_Environmental\Drawings\B5140_Hyd.Prj.m_PSH05.dgn
eric@hwr.com

10 11 12 13 14 15 16

WETLAND PERMIT IMPACT SUMMARY

Surface and Wetland Package:

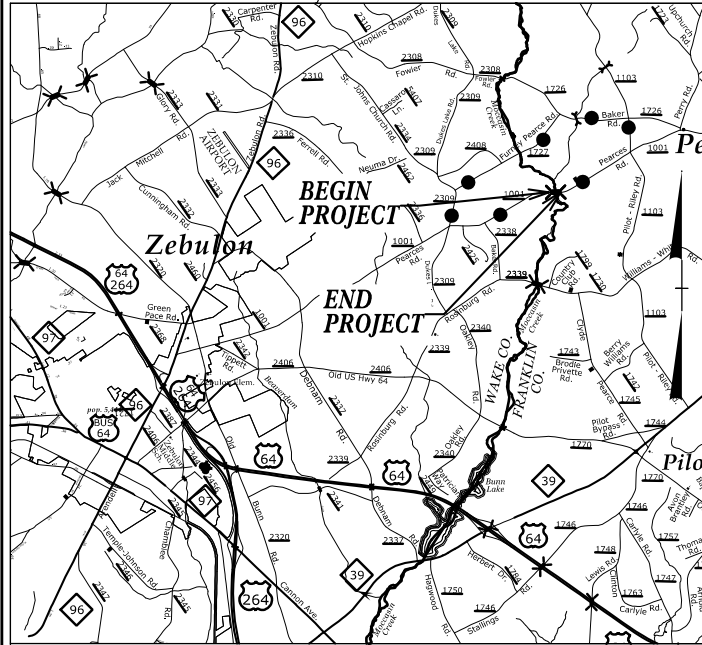
Site No.	Station (From/To)	Structure Size / Type	WETLAND IMPACTS					SURFACE WATER IMPACTS				
			Permanent Fill In Wetlands (ac)	Temp. Fill In Wetlands (ac)	Excavation in Wetlands (ac)	Mechanized Clearing in Wetlands (ac)	Hand Clearing in Wetlands (ac)	Permanent SW impacts (ac)	Temp. SW impacts (ac)	Existing Channel Impacts Permanent (ft)	Existing Channel Impacts Temp. (ft)	Natural Stream Design (ft)
1	12+97 to 13+40 -L-	Bank Stabilization						<0.01	<0.01	76	10	
TOTALS:								<0.01	<0.01	76	10	

NC DEPARTMENT OF TRANSPORTATION
 DIVISION OF HIGHWAYS
 08/22/2017
 Wake County
 B-5140
 SHEET 5 OF 5

ATN Revised 3/31/05

09/28/19

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



VICINITY MAP

●●●●● OFF-SITE DETOUR

TIP PROJECT: B-5140

R/W PLANS

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

WAKE COUNTY

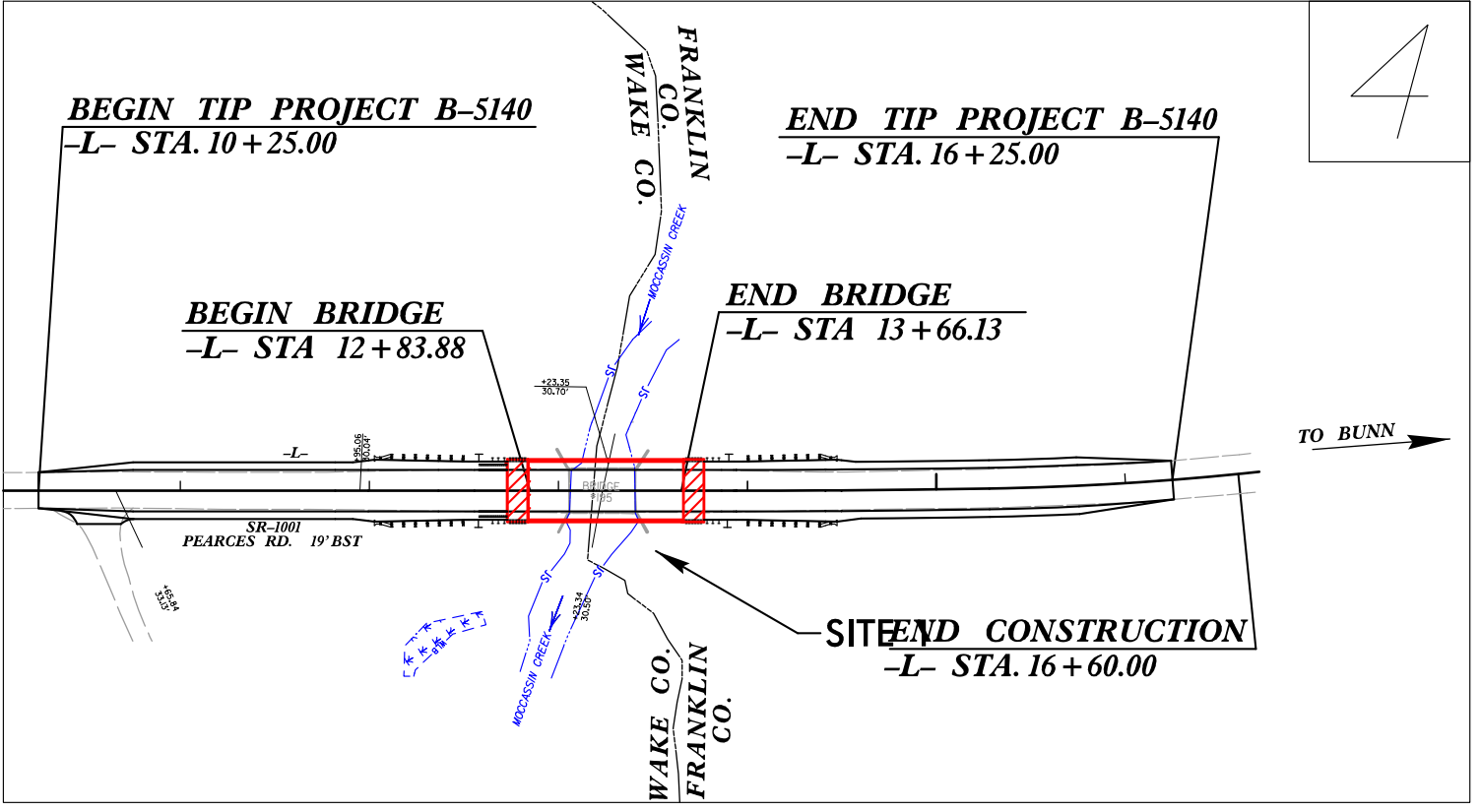
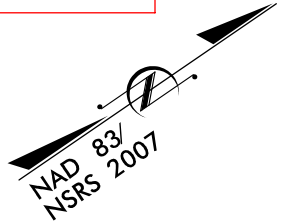
**LOCATION: BRIDGE NO. 195 OVER MOCCASIN CREEK
ON SR 1001 (PEARCES ROAD)**

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

BUFFER IMPACTS PERMIT

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-5140	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
42301.1.1	BRSTP-1001(45)	PE	
42301.2.2		R/W & UTILITY	

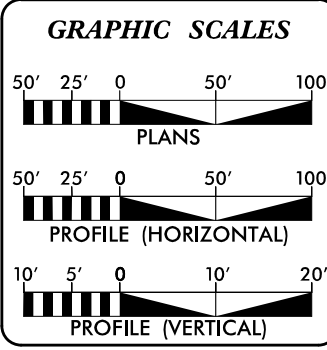
BUFFER DRAWING
SHEET 1 OF 3



** DESIGN EXCEPTION REQUIRED FOR VERTICAL ALIGNMENT

THIS IS NOT A CONTROL OF ACCESS PROJECT
THIS PROJECT IS NOT WITHIN ANY MUNICIPAL BOUNDARY
CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD III.

CONTRACT:



DESIGN DATA

ADT 2018 =	3,535
ADT 2038 =	5,612
K =	11 %
D =	65 %
T =	4 % *
** V =	60 MPH
* TTST =	1% DUAL 3%
FUNC CLASS =	MINOR COLLECTOR
	SUBREGIONAL TIER

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT B-5140 =	0.098 MILES
LENGTH STRUCTURE TIP PROJECT B-5140 =	0.016 MILES
TOTAL LENGTH OF TIP PROJECT B-5140 =	0.114 MILES

Prepared In the Office of:

LOCHNER
H. W. LOCHNER, INC.
2840 PLAZA PLACE SUITE 202
RALEIGH, NC 27612
NC License Number F-0159

2018 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
SEPTEMBER 15, 2017

LETTING DATE:
APRIL 17, 2018

ECOLOGICAL ENGINEERING
NC FIRM LICENSE No: F-1148
1151 SE Cary Parkway
Suite 101
Cary, NC 27518
(919) 557-0029

BRIAN K. EASON, PE
PROJECT ENGINEER

CHRISTINA YOKELEY, EI
PROJECT DESIGN ENGINEER

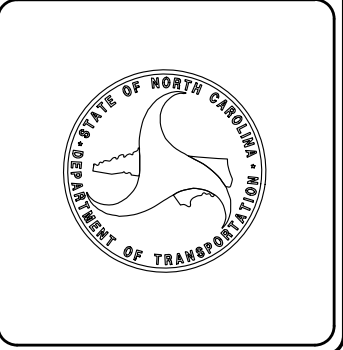
DAVID STUTTS, PE
NCDOT CONTACT

HYDRAULICS ENGINEER

SIGNATURE: _____ P.E.

ROADWAY DESIGN ENGINEER

SIGNATURE: _____ P.E.



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8/17/99

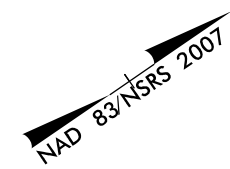
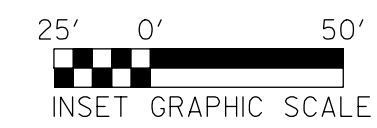
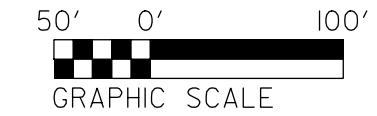
BUFFER DRAWING SHEET 2 OF 3

LOCHNER
 H. W. LOCHNER, INC.
 2840 PLAZA PLACE, SUITE 202
 RALEIGH, NC 27612
 (919) 571-7111

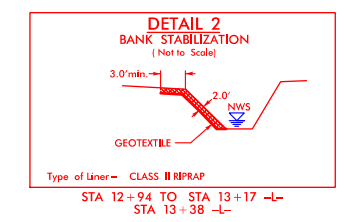
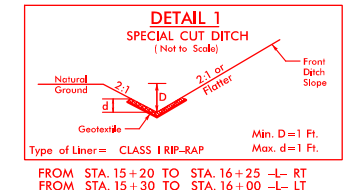
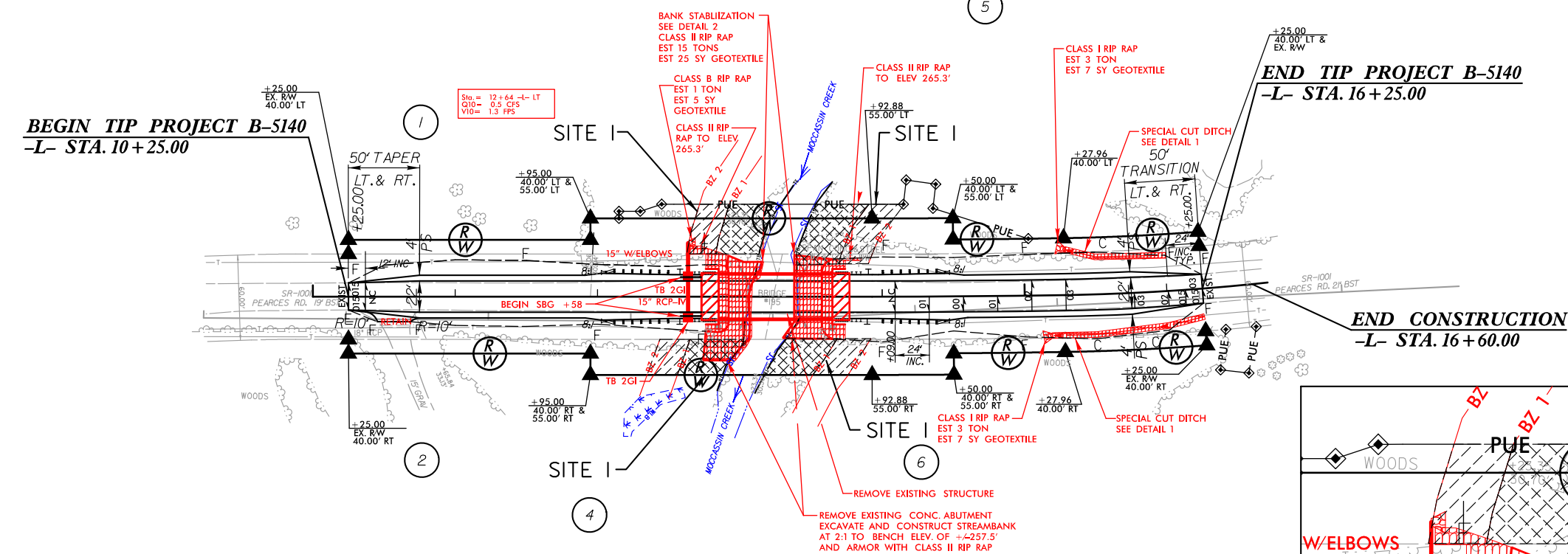
NC License Number F-0159
 NC FIRM LICENSE No. F-1148
 1151 SE Cary Parkway
 Suite 101
 Cary, NC 27518
 (919) 557-0929

ECOLOGICAL ENGINEERING

PROJECT REFERENCE NO. B-5140	SHEET NO. 4
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

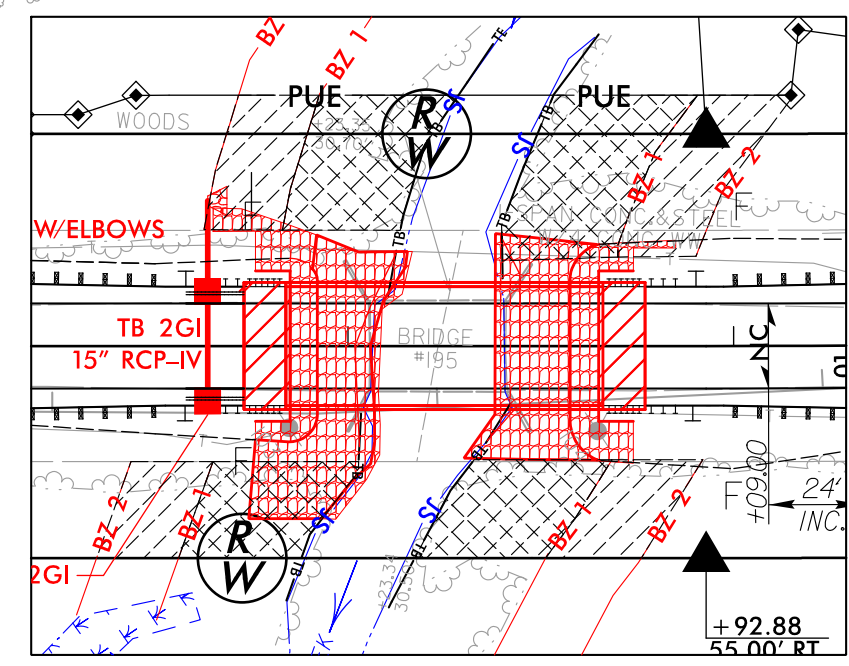
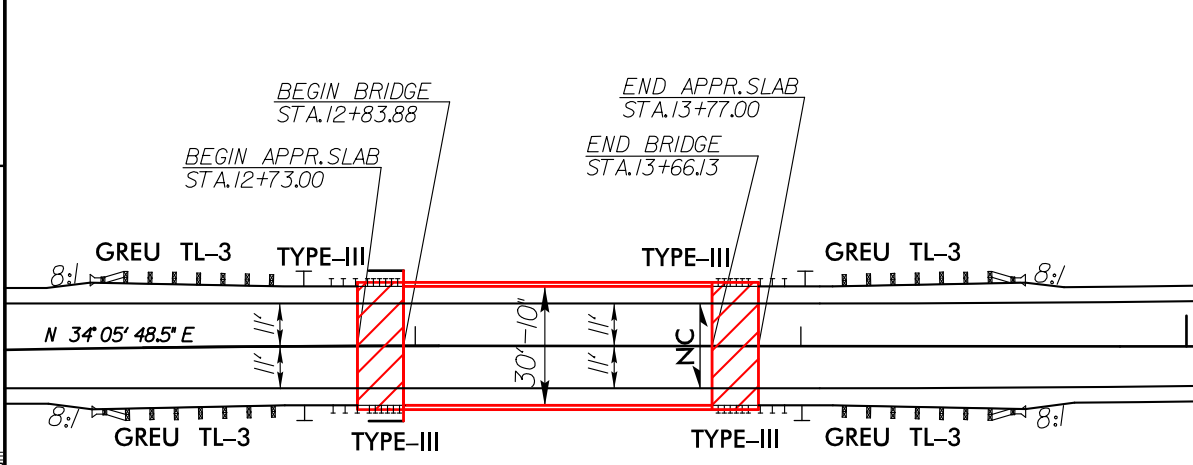


NOTE:
 (CENTERLINE OF CREEK IS COUNTY LINE)
 (WAKE COUNTY)
 (FRANKLIN COUNTY)



REVISIONS

BRIDGE/ PAVEMENT RELATIONSHIP SKETCH



ALLOWABLE IMPACTS ZONE 1
 ALLOWABLE IMPACTS ZONE 2
 PAVED SHOULDER
 SEE SHEET 5 FOR -L- PROFILE
 SEE SHEETS S-1 TO S-? FOR STRUCTURE PLANS

4:46:45 PM
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 prandabach

BUFFER IMPACTS SUMMARY

SITE NO.	STRUCTURE SIZE / TYPE	STATION (FROM/TO)	IMPACT									BUFFER REPLACEMENT	
			TYPE			ALLOWABLE			MITIGABLE			ZONE 1 (ft ²)	ZONE 2 (ft ²)
			ROAD CROSSING	BRIDGE	PARALLEL IMPACT	ZONE 1 (ft ²)	ZONE 2 (ft ²)	TOTAL (ft ²)	ZONE 1 (ft ²)	ZONE 2 (ft ²)	TOTAL (ft ²)		
1	1@80' 33" BB W/ 4' CAPS	12+63/14+16 -L- LT	X			562	1599	2161					
1	1@80' 33" BB W/ 4' CAPS	12+85/13+65 -L- LT		X		1954	90	2044					
1	1@80' 33" BB W/ 4' CAPS	12+34/12+85 -L- RT	X			626	1008	1634					
1	1@80' 33" BB W/ 4' CAPS	12+85/13+65 -L- RT		X		1162	132	1294					
TOTAL:						4304	2829	7133	0.0	0.0	0.0	0.0	0.0

N.C. DEPT. OF TRANSPORTATION
 DIVISION OF HIGHWAYS

 WAKE COUNTY
 PROJECT: WBS #42301.1.1 (STIP #B-5140)

 12/6/2017
 SHEET 3 OF 3

09/08/2017

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

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-5140	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
42301.1.1	BRSTP-1001(45)	PE	
42301.2.1		RW & UTILITY	
42301.3.1		CONST.	

WAKE & FRANKLIN COUNTIES

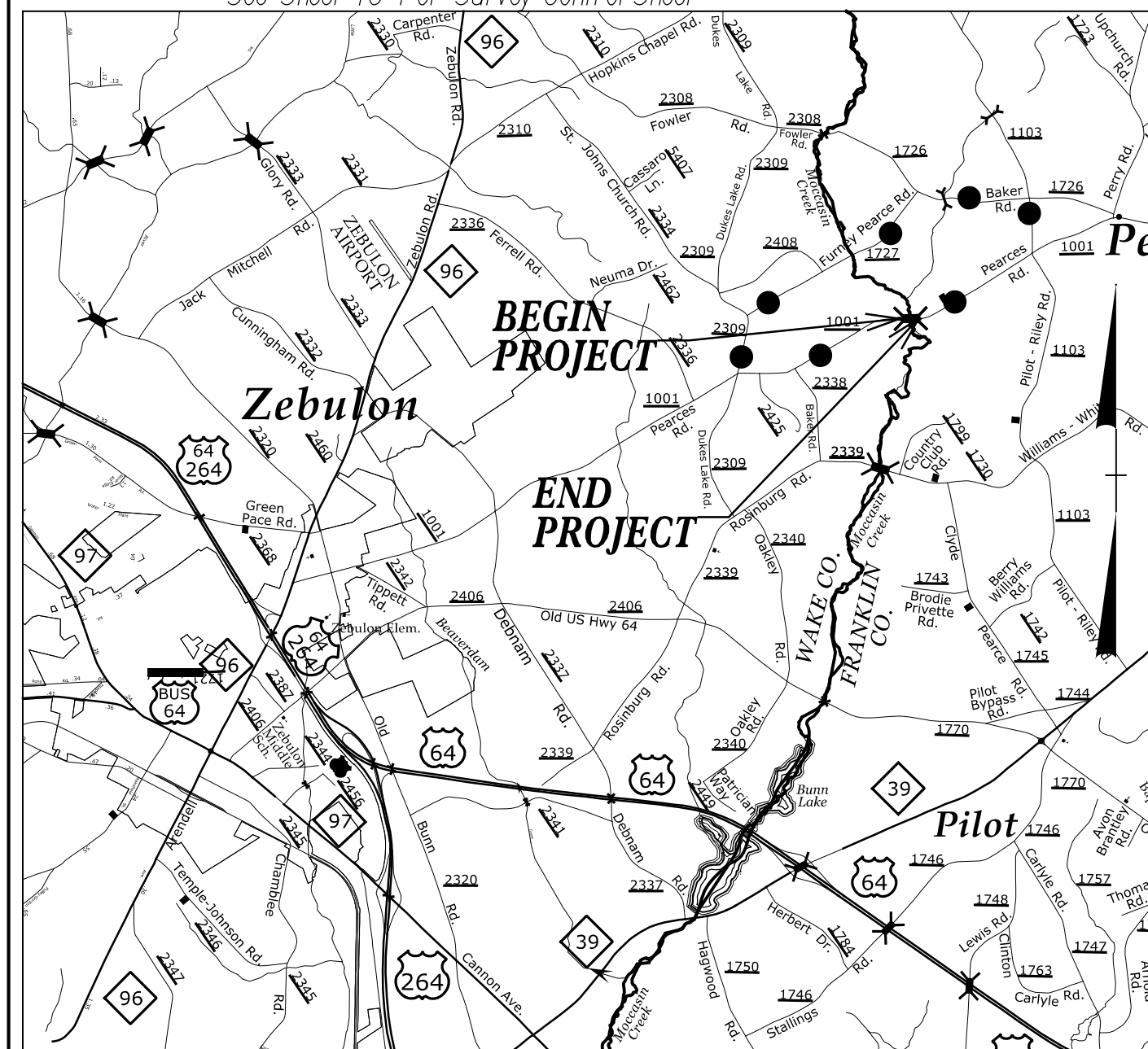
LOCATION: BRIDGE NO. 195 OVER MOCCASIN CREEK
ON SR 1001 (PEARCES ROAD)

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



TIP PROJECT: B-5140

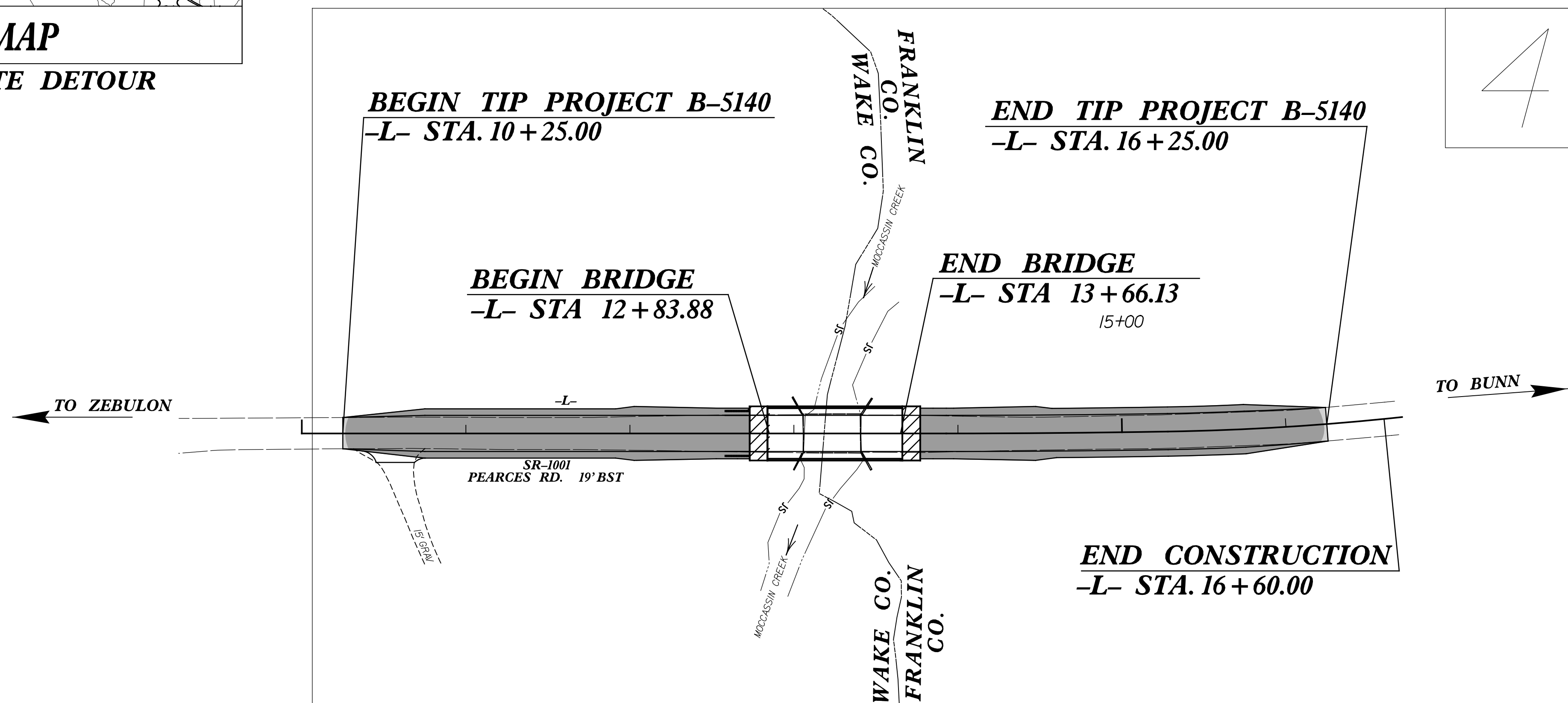
CONTRACT: C204097



VICINITY MAP

●●●●● OFF-SITE DETOUR

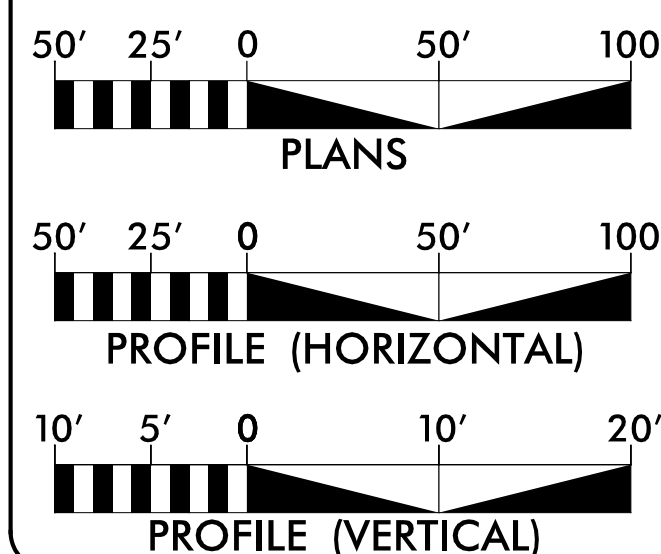
90% PLANS



** DESIGN EXCEPTION REQUIRED FOR SAG VERTICAL CURVE K VALUE

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

GRAPHIC SCALES



DESIGN DATA

ADT 2018 = 3,535
ADT 2038 = 5,612
K = 11 %
D = 65 %
T = 4 % *
** V = 60 MPH
* TTST = 1% DUAL 3%
FUNC CLASS =
MINOR COLLECTOR
SUBREGIONAL TIER

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT B-5140 = 0.098 MILES
LENGTH STRUCTURE TIP PROJECT B-5140 = 0.016 MILES
TOTAL LENGTH OF TIP PROJECT B-5140 = 0.114 MILES

LOCHNER

H. W. LOCHNER, INC.
2840 PLAZA PLACE SUITE 202
RALEIGH, NC 27612
NC License Number F-0159

2018 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
SEPTEMBER 15, 2017

LETTING DATE:
MAY 15, 2018

Prepared In the Office of:
ECOLOGICAL ENGINEERING
NC FIRM LICENSE No: F-1146
1151 SE Cary Parkway
Suite 101
Cary, NC 27518
(919) 571-7111

BRIAN K. EASON, PE
PROJECT ENGINEER

CHRISTINA YOKELEY, EI
PROJECT DESIGN ENGINEER

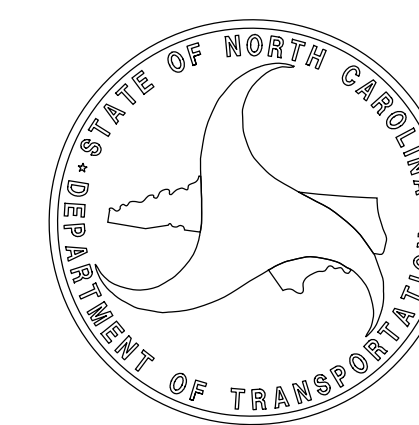
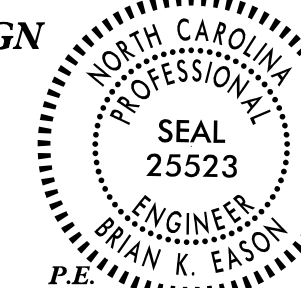
DAVID STUTTS, PE
NCDOT CONTACT

HYDRAULICS ENGINEER

SIGNATURE:

ROADWAY DESIGN ENGINEER

SIGNATURE:



11/17/2017
B5140_Frdy_tsh.dgn
cyokeley

6/2/99

FINAL PAVEMENT SCHEDULE

C1	PROP. APPROX. 3" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD. IN EACH OF TWO LAYERS	T	EARTH MATERIAL.
C2	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 112 LBS PER SQ YD PER 1" DEPTH TO BE PLACED IN LAYERS NOT TO EXCEED 1 1/2" IN DEPTH	U	EXISTING PAVEMENT.
E1	PROP. APPROX. 5.5" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 627 LBS. PER SQ. YD.	V	MILLING (VARIABLE DEPTH - SEE DETAIL)
E2	PROP. VAR. DEPTH ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, 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 5 1/2" IN DEPTH.	W	VARIABLE DEPTH ASPHALT PAVEMENT (SEE WEDGING DETAIL)
R1	SHOULDER BERM GUTTER.	J	PROP. 6" AGGREGATE BASE COURSE

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


LOCHNER
 H. W. LOCHNER, INC.
 2840 PLAZA PLACE, SUITE 202
 RALEIGH, NC 27612
 (919)571-7111

NC License
 Number F-0159

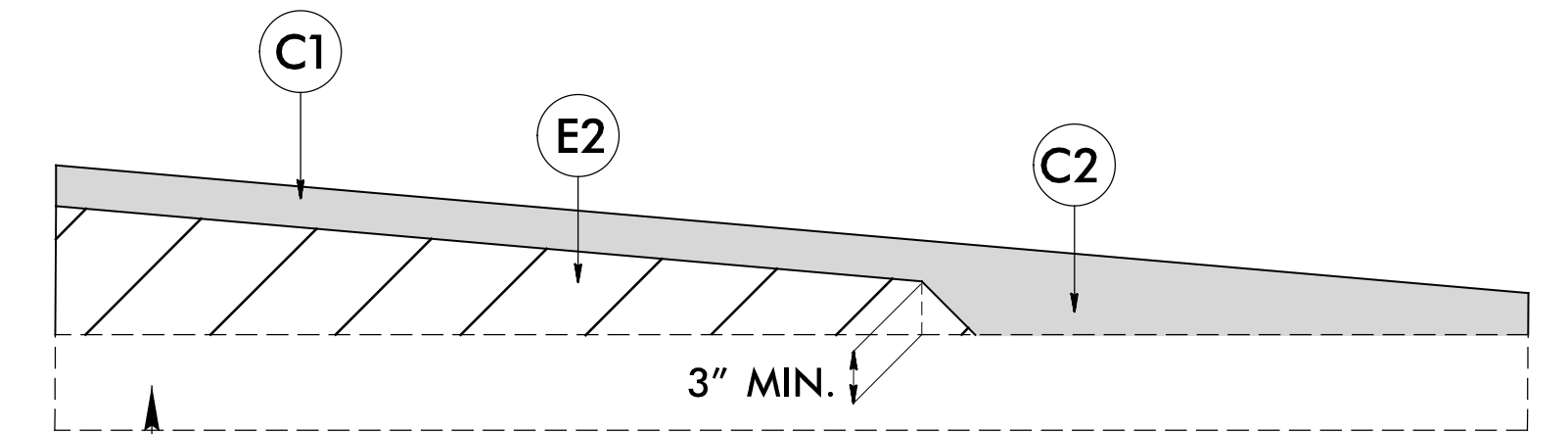
NC FIRM LICENSE No: F-1148
 1151 SE Gary Parkway
 Suite 101
 Cary, NC 27518
 (919) 557-0929

ECOLOGICAL ENGINEERING

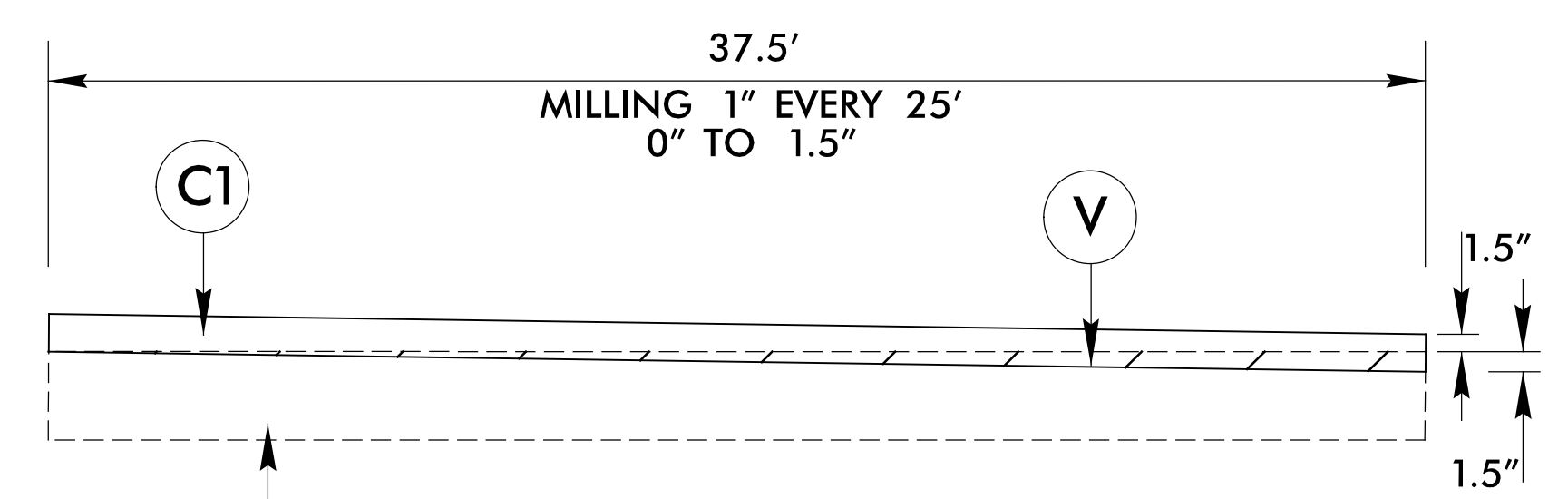
PROJECT REFERENCE NO. <i>B-5140</i>	SHEET NO. <i>2A-1</i>
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER



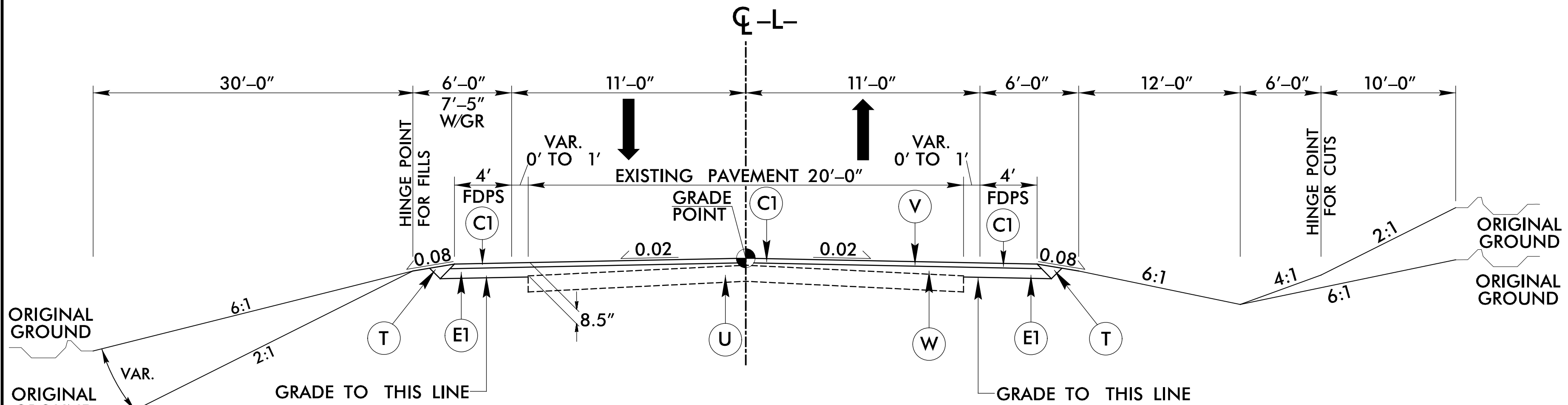
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UNLESS ALL SIGNATURES COMPLETED**



WEDGING DETAIL FOR RESURFACING
WEDGING DETAIL



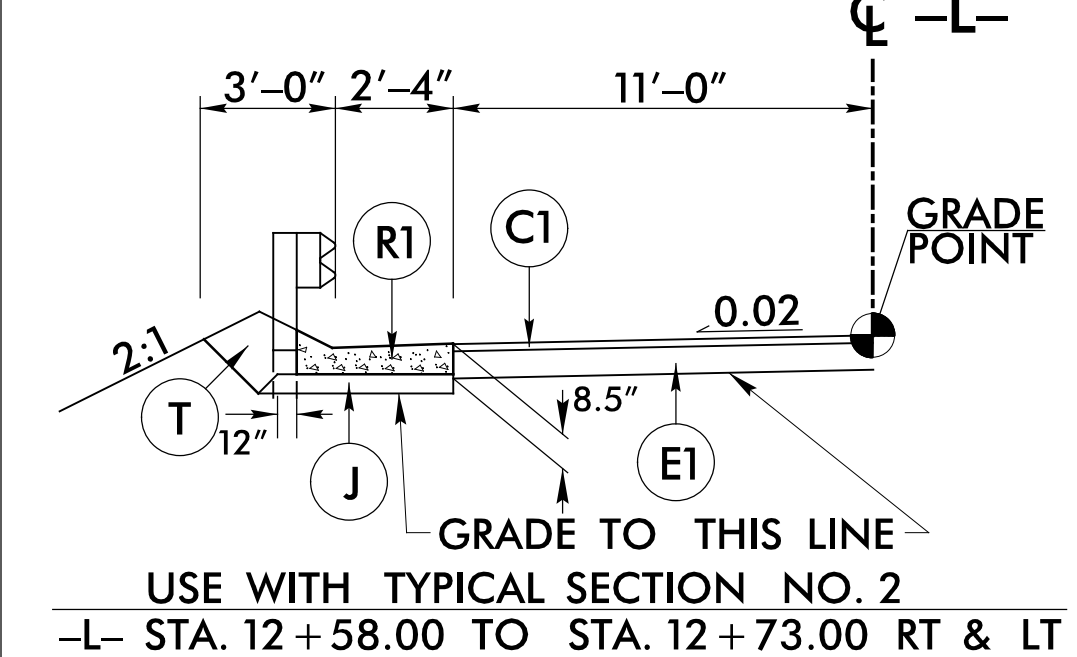
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USE MILLING DETAIL AT RESURFACING TIES



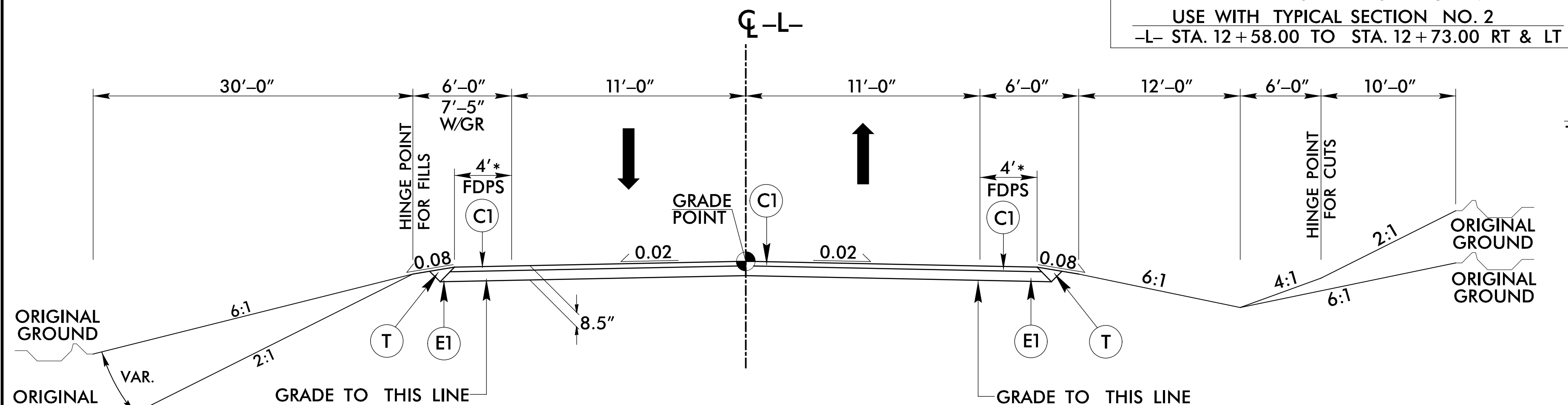
TYPICAL SECTION NO. 1

USE TYPICAL SECTION NO. 1
 -L- STA. 10+75.00 TO STA. 12+10.00
 -L- STA. 14+40.00 TO STA. 15+75.00
 NOTE: TRANSITION FROM EXISTING TO TYPICAL SECTION
 -L- STA. 10+25.00 TO STA. 10+75.00
 NOTE: TRANSITION FROM EXISTING TO TYPICAL SECTION
 -L- STA. 15+75.00 TO STA. 16+25.00

SHOULDER BERM GUTTER DETAIL



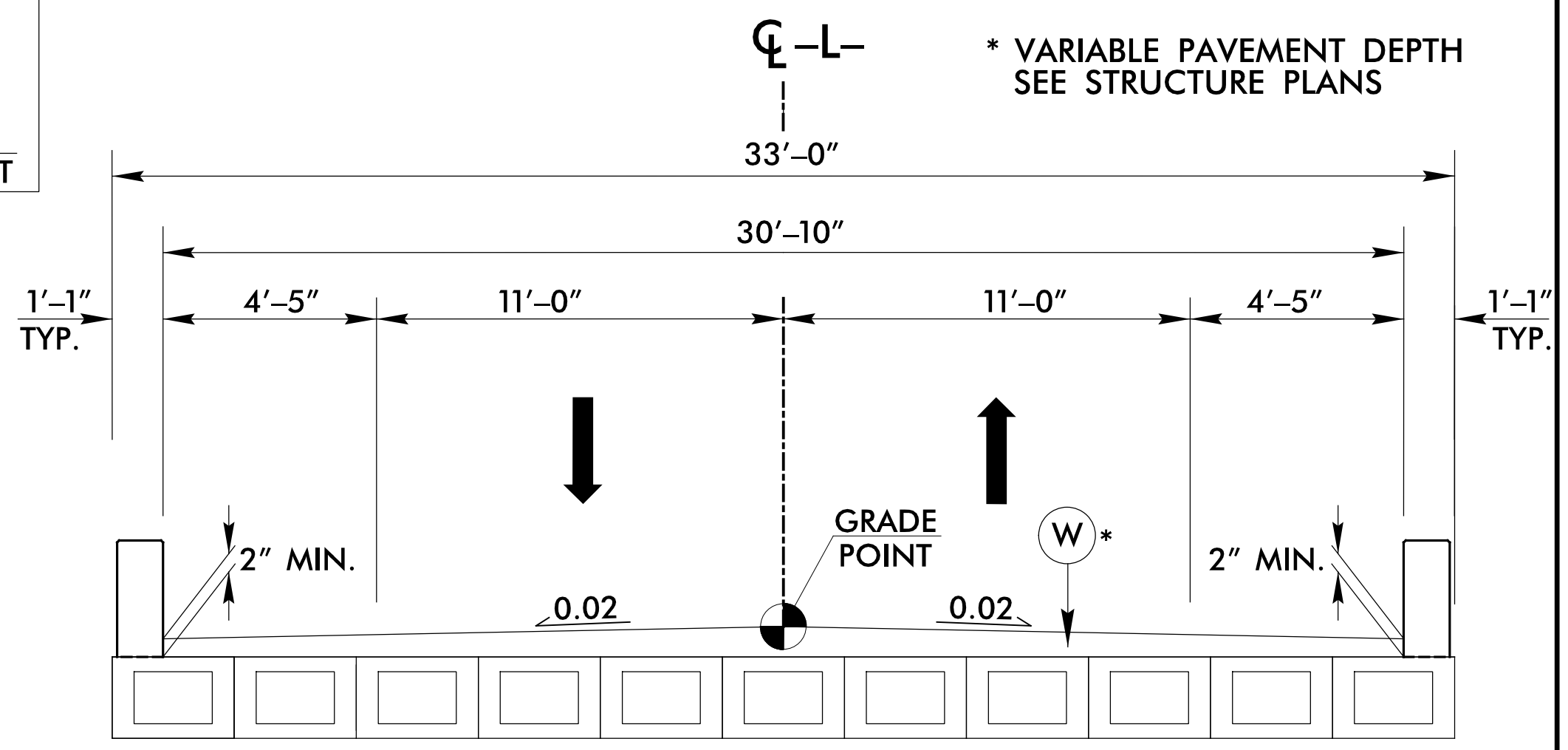
USE WITH TYPICAL SECTION NO. 2
 -L- STA. 12+58.00 TO STA. 12+73.00 RT & LT



TYPICAL SECTION NO. 2

USE TYPICAL SECTION NO. 2
 -L- STA. 12+10.00 TO STA. 12+83.88 (BEGIN BRIDGE)
 -L- STA. 13+66.13 (END BRIDGE) TO STA. 14+40.00

* PAVE TO FACE OF GUARDRAIL - SEE PLAN SHEET 4 FOR LOCATION



TYPICAL SECTION NO. 3

USE TYPICAL SECTION NO. 3
 -L- STA. 12+83.88 (BEGIN BRIDGE) TO STA. 13+66.13 (END BRIDGE)

1/27/2017
B6140_rdy_psh_02_TYP.dgn

5/14/99

LOCHNER

H. W. LOCHNER, INC.
2840 PLAZA PLACE, SUITE 202
RALEIGH, NC 27612
(919)571-7111

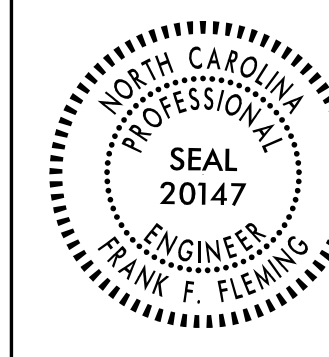
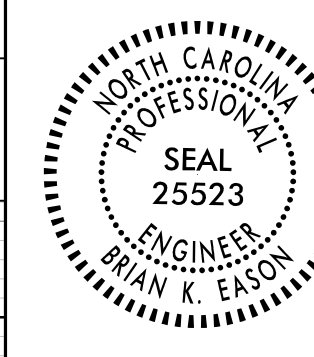
NC License
Number F-0159
NC FIRM LICENSE No: F-1148
1151 SE Cary Parkway
Suite 101
Cary, NC 27518
(919) 557-0029



PROJECT REFERENCE NO. **B-5140** SHEET NO. **5**

ROADWAY DESIGN ENGINEER

HYDRAULICS ENGINEER



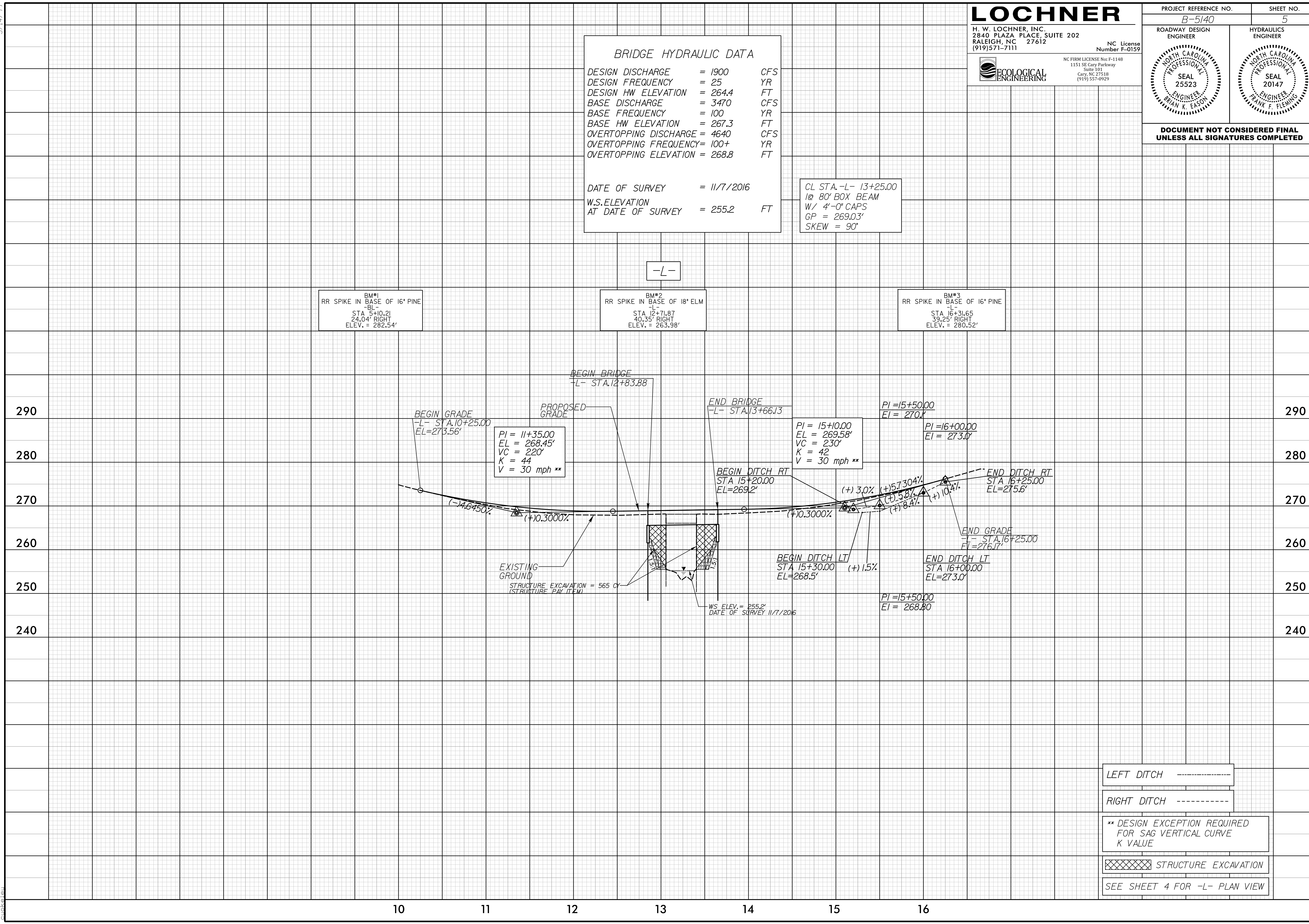
**DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED**

BRIDGE HYDRAULIC DATA

DESIGN DISCHARGE = 1900 CFS
 DESIGN FREQUENCY = 25 YR
 DESIGN HW ELEVATION = 264.4 FT
 BASE DISCHARGE = 3470 CFS
 BASE FREQUENCY = 100 YR
 BASE HW ELEVATION = 267.3 FT
 OVERTOPPING DISCHARGE = 4640 CFS
 OVERTOPPING FREQUENCY = 100+ YR
 OVERTOPPING ELEVATION = 268.8 FT

DATE OF SURVEY = 11/7/2016
 W.S. ELEVATION AT DATE OF SURVEY = 255.2 FT

CL STA. -L- 13+25.00
 1 @ 80' BOX BEAM
 W/ 4'-0" CAPS
 GP = 269.03'
 SKEW = 90°



BM#1
RR SPIKE IN BASE OF 16" PINE
-L-
STA 5+10.21
24.04' RIGHT
ELEV. = 282.54'

BM#2
RR SPIKE IN BASE OF 18" ELM
-L-
STA 12+71.87
40.35' RIGHT
ELEV. = 263.98'

BM#3
RR SPIKE IN BASE OF 16" PINE
-L-
STA 16+31.65
39.25' RIGHT
ELEV. = 280.52'

LEFT DITCH -----

RIGHT DITCH -----

** DESIGN EXCEPTION REQUIRED FOR SAG VERTICAL CURVE K VALUE

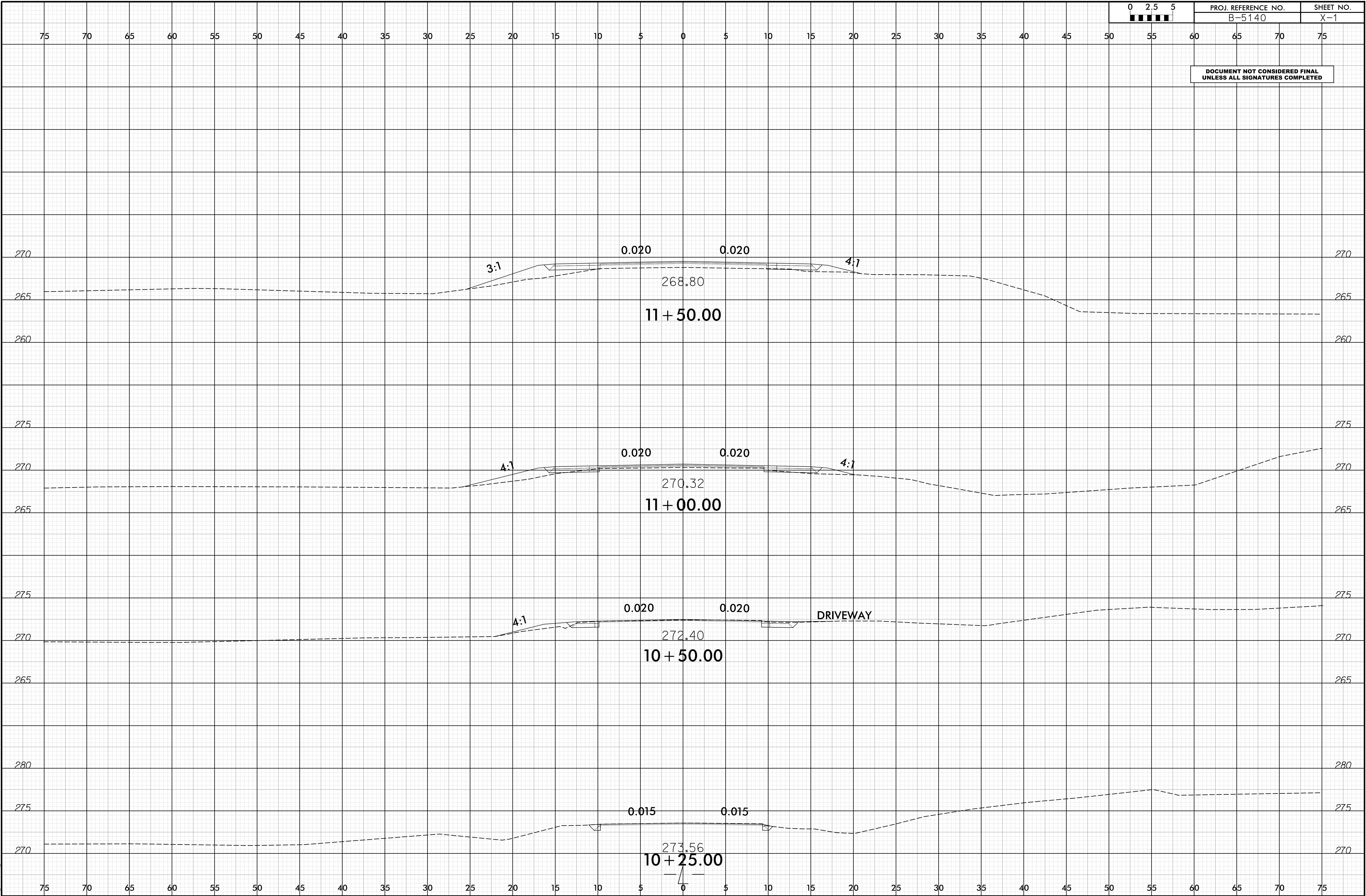
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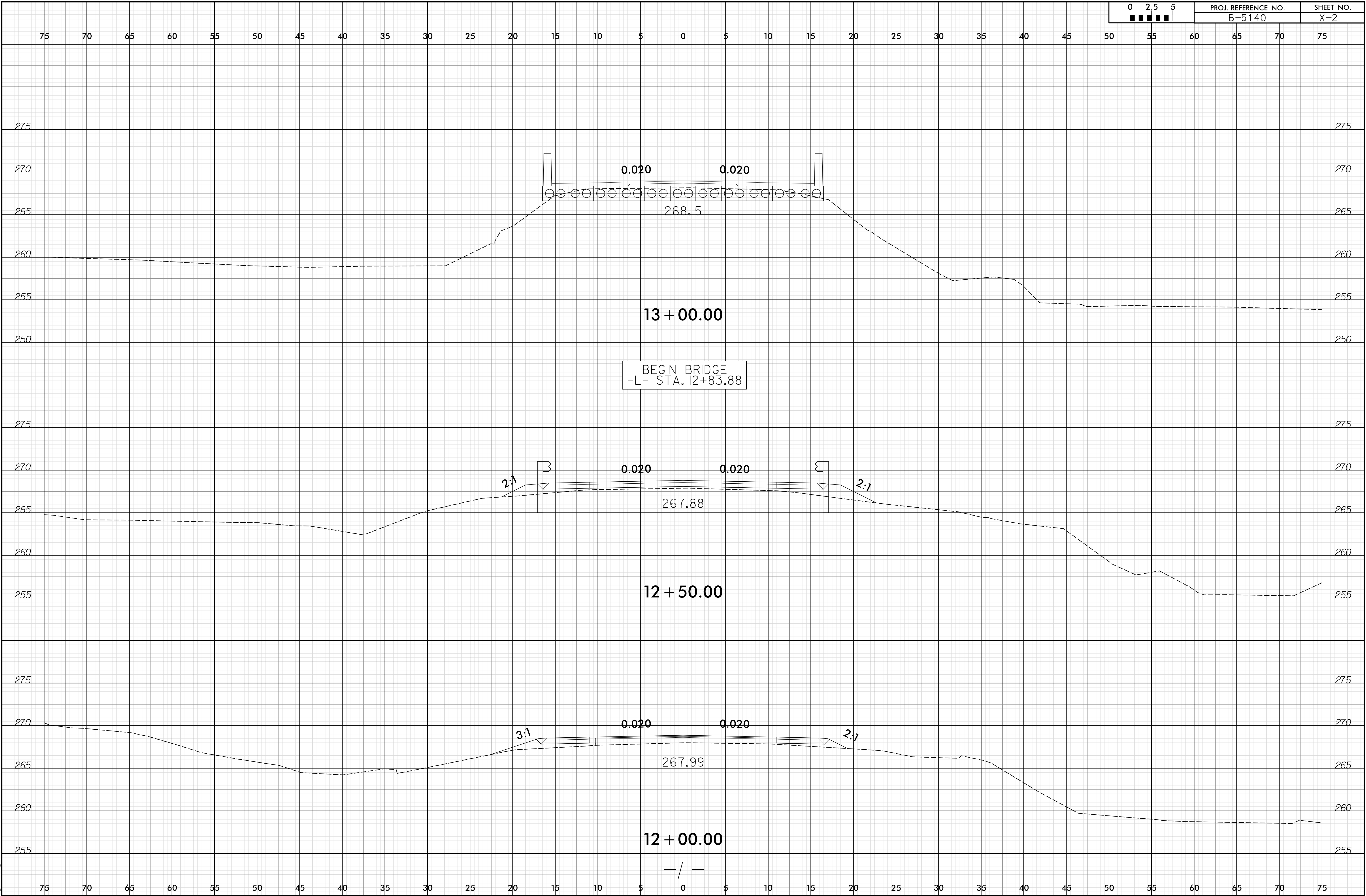
SEE SHEET 4 FOR -L- PLAN VIEW

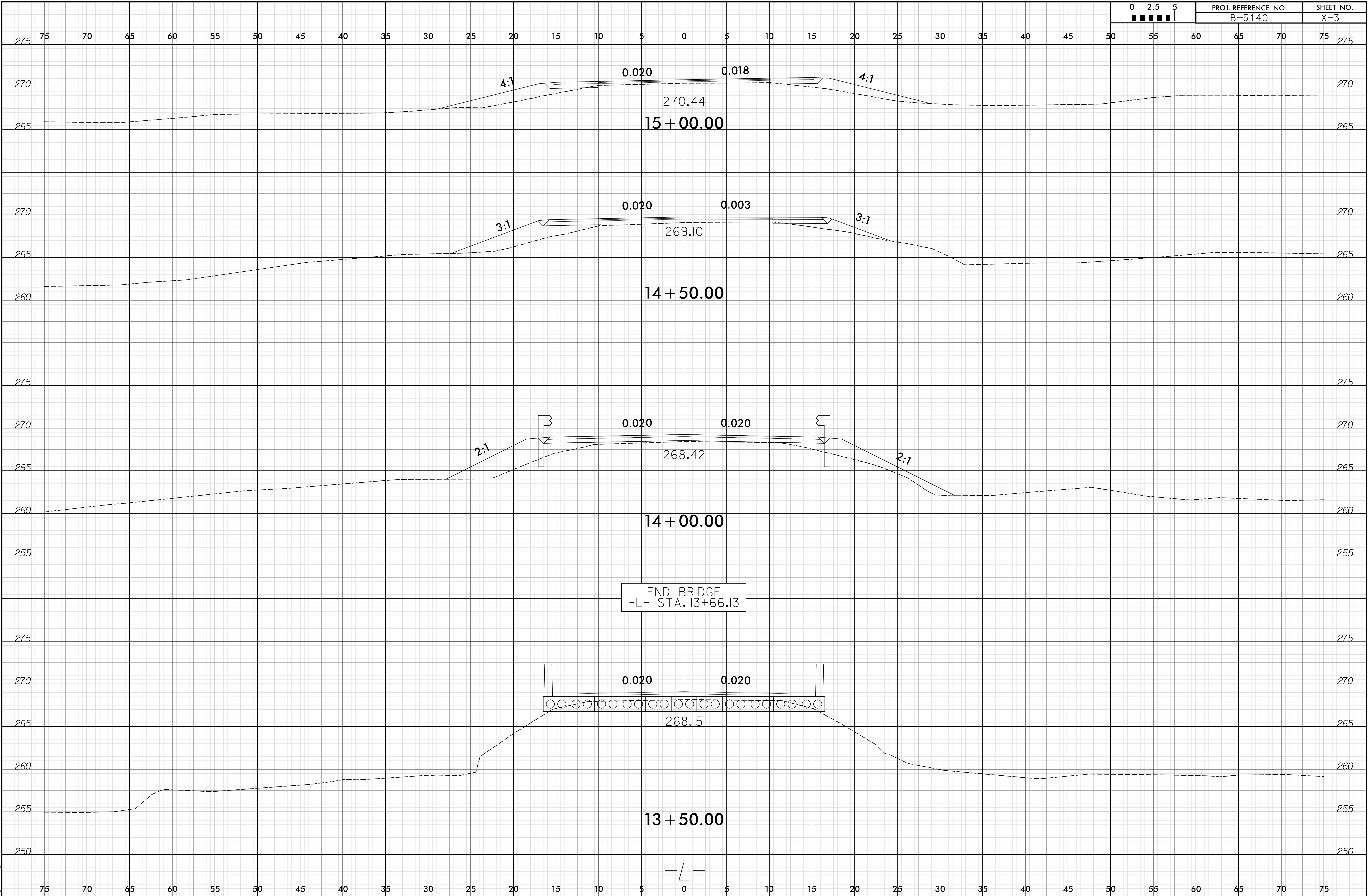
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DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED







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