



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

ROY COOPER
GOVERNOR

JAMES H. TROGDON, III
SECRETARY

August 2, 2017

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

ATTN: Ms. Loretta Beckwith
NCDOT Coordinator

Subject: **Application for Section 404 Nationwide Permits 13, 23, and 33, for the Proposed Replacement of Bridge 29 on NC 226 over Big Rock Creek in Mitchell County, Division 14, TIP No. B-5170, Federal Aid Project No. BRSTP-0226(14) Debit \$240 from WBS# 42328.1.1.**

Dear Ms. Beckwith:

The North Carolina Department of Transportation (NCDOT) proposes to replace bridge number 29 on NC 226 over Big Rock Creek in Mitchell County with a new single-span, 65-foot, 24-inch cored slab bridge, with end bent caps extended to the scour line and spanning the creek with no bents in the water. An on-site detour bridge will be constructed upstream of the existing/proposed bridge. Total permanent stream impacts are 30 lf, with 20 lf from a 42-inch RCP, and 10 lf from bank stabilization. Temporary stream impacts total 83 lf (0.02 ac.), with 29 lf (<0.01 ac.) from a temporary work pad needed to remove the existing bridge bents, 13 lf (<0.01 ac.) from the 42-inch RCP, and 41 lf (<0.01 ac.) from a 24-inch RCP used for the detour.

Please see enclosed copies of the Pre-Construction Notification (PCN), DMS Acceptance Letter, Stormwater Management Plan, Permit Drawings, and Roadway Plan Sheets. A Exclusion (CE) was completed in October 2016 and distributed shortly thereafter. Additional copies are available upon request.

This project calls for a letting date of February 20, 2018 and a review date of January 2, 2018; however, the let date may advance as additional funding becomes available.

A copy of this permit application and its distribution list will be posted on the NCDOT Website at: <http://connect.ncdot.gov/resources/Environmental>. If you have any questions or need additional information, please call Bill Barrett at (919) 707-6103.

Sincerely,

A handwritten signature in black ink, appearing to read "Philip S. Harris III".

Philip S. Harris III, P.E., C.P.M.
Natural Environment Section Head

Cc:
NCDOT Permit Application Standard Distribution List



Pre-Construction Notification (PCN) Form

For Nationwide Permits and Regional General Permits

(along with corresponding Water Quality Certifications)

June 28, 2017 Ver 1.8

*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.*

Below is a link to the DRAFT online help file.

<http://edocs.deq.nc.gov/WaterResources/0/doc/549884/Page1.aspx>

A. Processing Information

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

Mitchell

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-5170

WBS #

42328.1.1

(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

Nationwide Permit (NWP) Number: 33 - Temporary Construction

Nationwide Permit (NWP) Number: 23 - Categorical Exclusions

NWP Number Other:

List all NWP 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

Acceptance Letter Attachment

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

B-5170 - STR - FB 08 Cold.pdf 57.8KB

FILE TYPE MUST BE PDF

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

Yes No

B. Applicant Information

1a. Who is the Primary Contact? *

William Barrett

1b. Primary Contact Email: *

wabarrett@ncdot.gov

1c. Primary Contact Phone: *

(xxx)xxx-xxxx

(919)707-6103

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:

NCDOT

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:*

Replacement of Bridge 29 over Big Rock Creek on NC 226

1b. Subdivision name:

(if appropriate)

1c. Nearest municipality / town:*

Buladean

1d. Driving directions*

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

GPS

2. Project Identification

2a. Property Identification Number:

(tax PIN or parcel ID)

2b. Property size:

(in acres)

2c. Project Address

Street Address

Address Line 2

City

State / Province / Region

Postal / Zip Code

Country

2d. Site coordinates in decimal degrees

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

Latitude:*

36.107332

ex: 34.208504

Longitude:*

-82.194224

-77.796371

3. Surface Waters

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

Big Rock Creek

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

C;Tr

[Surface Water Lookup](#)

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

French Broad

[River Basin Lookup](#)

4. Project Description

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

Rural farmland with some residential properties.

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

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

(intermittent and perennial)

958

4f. Explain the purpose of the proposed project:

To replace a structure that is a functionally obsolete bridge (Deck Geometry appraisal of 2 out of 9).

4g. Describe the overall project in detail, including the type of equipment to be used:

The project involves replacing a 52-foot bridge with a 65-foot, 24-inch cored slab, single-span bridge on the existing alignment with an on-site detour. 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

B-5170_Permit Drawings_20170307.pdf

3MB

B5170_rdy.pdf

5.08MB

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

Corps AID Number:

Example: SAW-2017-99999

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

Name (if known):

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

Agency/Consultant Company:

Other:

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

5d1. Jurisdictional determination upload

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

File type must be PDF

6. Project History

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

Yes No Unknown

7. Future Project Plans

7a. Is this a phased project?*

Yes No

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

D. Proposed Impacts Inventory

1. Impacts Summary

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

Wetlands Streams-tributaries Buffers
 Open Waters Pond Construction

2. Wetland Impacts

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

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. Jurisdiction	3g. Stream width	3h. Impact length
Site 1 workpad Map label (e.g. Road Crossing 1)	T Permanent (P) or Temporary (T)	Fill	Bif Rock Creek	Perennial Perennial (PER) or intermittent (INT)	Corps	Average 30 (feet)	29 (linear feet)
Site 2 Map label (e.g. Road Crossing 1)	P Permanent (P) or Temporary (T)	Bank Stabilization	UT Big Rock Creek	Perennial Perennial (PER) or intermittent (INT)	Corps	Average 3 (feet)	10 (linear feet)
Site 2 - RCP Map label (e.g. Road Crossing 1)	P Permanent (P) or Temporary (T)	Fill	UT Big Rock Creek	Perennial Perennial (PER) or intermittent (INT)	Corps	Average 3 (feet)	20 (linear feet)

3a. Site # - Reason for impact	3b. Impact type	3c. Type of impact	3d. Stream name	3e. Stream Type	3f. Jurisdiction type	3g. Stream width	3h. Impact length
Site 2 - RCP Map label (e.g. Road Crossing 1)	T Permanent (P) or Temporary (T)	Fill	UT Big Rock Creek	Perennial Perennial (PER) or intermittent (INT)	Corps	Average 3 (feet)	13 (linear feet)
Site 2 RCP Map label (e.g. Road Crossing 1)	T Permanent (P) or Temporary (T)	Fill	UT Big Rock Creek	Perennial Perennial (PER) or intermittent (INT)	Corps	Average 3 (feet)	41 (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:

30

3i. Total temporary stream impacts:

83

3i. Total stream and tributary impacts:

113

3j. Comments:

10 feet of permanent impacts are bank stabilization and no mitigation is proposed.

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.

5. Pond or Lake Construction

If pond or lake construction is proposed, then complete the chart below.

6. Buffer Impacts (for DWR)

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

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 is 13 feet longer than the existing bridge, and is a single-span structure that spans the creek with no bents in the water; the proposed bridge will be at approximately the same grade as the existing structure; 3:1 fill slopes where practicable. An off-site detour was not feasible given the traffic volume and limited connectivity to other major routes in the vicinity.

The proposed bridge does not have deck drains, therefore, direct discharge into the stream is eliminated. Bridge deck drainage will be collected into TB 2GIs at each end of the bridge on the downstream side that outlets to the downstream side of the bridge, onto riprap pads, and then disperses into the floodplain before entering the creek.

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

Design Standards in Sensitive Waters will be adhered to throughout project construction to reduce storm water impacts to the receiving stream.

A trout moratorium prohibiting in-stream work and land disturbance within the 25-foot buffer will be adhered to from October 15 to April 15

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

4b. Stream mitigation requested:

(linear feet)

20

4c. If using stream mitigation, stream temperature:

cold

4d. Buffer mitigation requested (DWR only):

(square feet)

4e. Riparian wetland mitigation requested:

(acres)

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)

1a. Does this project require a Stormwater Management Plan?

Yes No

1b. If this project DOES require a Stormwater Management Plan, then provide a brief, narrative description of the plan:

See permit drawings attached

1c. What is the overall percent imperviousness of this project?

%

1d. Who will be responsible for the review of the Stormwater Management Plan? *

Certified Local Government DEMLR Stormwater Review
 DWR 401 & Buffer Permitting Branch DWR Transportation Permitting Branch

2. Diffuse Flow Plan

2a. Does the project include or is it adjacent to protected riparian buffers identified within one of the NC Riparian Buffer Protection Rules?

Yes No

5. DWR 401 Stormwater Review

5a. Is the Stormwater Management Plan (including BMP Supplemental Forms and Operation and Maintenance Agreements) attached?

Yes No

Stormwater Management Plan Upload

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

file type must be pdf

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

2c. If you answered "yes" to one or both of the above questions, provide an explanation of the violation(s):

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. Describe, in detail, the treatment methods and dispositions (non-discharge or discharge) of wastewater generated from the proposed project. If the wastewater will be treated at a treatment plant, list the capacity available at that plant.

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

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

Yes No

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

Yes No

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

Asheville

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

Yes
 No

5e. Will you cut any trees in order to conduct the work in waters of the U.S.?*

Yes No

5f. Does this project involve bridge maintenance or removal?*

Yes No

5f(1). If yes, have you inspected the bridge for signs of bat use such as staining, guano, bats, etc.? Representative photos of signs of bat use can be found in the NLEB SLOPES, Appendix F, pages 3-7.

Yes No

Link to the NLEB SLOPES document: http://saw-reg.usace.army.mil/NLEB/1-30-17-signed_NLEB-SLOPES&apps.pdf

If you answered "Yes" to 5f(1), did you discover any signs of bat use?*

Yes No Unknown

If yes, please show the location of the bridge on the permit drawings/project plans.

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

File must be PDF

5g. Does this project involve the construction/installation of a wind turbine(s)?*

Yes No

If yes, please show the location of the wind turbine(s) on the permit drawings/project plans.

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

File must be PDF

5h. Does this project involve (1) blasting, and/or (2) other percussive activities that will be conducted by machines, such as jackhammers, mechanized pile drivers, etc.?*

Yes No

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

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

File must be PDF

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

USFWS and NHP website were used, along with on-site surveys.

A Memo, dated November 2, 2016, was submitted to USFWS-Asheville on March 20, 2017, regarding the northern long-eared bat (NLEB), noting that NCDOT has determined that the proposed action does not require separate consultation on the grounds that the proposed action is consistent with the final Section 4(d) rule, codified at 50 C.F.R. 17.40(o) and effective February 16, 2016. A No Effect determination for gray bat was included with the Memo submitted to USFWS.

One species, Virginia spiraea, has habitat at the project site. An initial survey for this species was conducted on June 26, 2010, and subsequent surveys were conducted on July 9, 2013 and May 21, 2015. During these three surveys, no individuals of this species were identified, resulting in a No Effect determination.

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:

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

NCDOT Hydraulics Unit coordination with FEMA

FEMA Maps

Miscellaneous attachments not previously requested.

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

B-5170 Cover Letter.pdf

255.62KB

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:*

Colin Mellor

Signature

Colin Mellor



ROY COOPER
Governor

Environmental
Quality

March 24, 2017

Mr. Philip S. Harris, III, P.E., CPM
Project Development and 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-5170, Replace Bridge 29 over Big Rock Creek on NC 226, Mitchell County

The purpose of this letter is to notify you that the Division of Mitigation Services (DMS) will provide the compensatory stream mitigation for the subject project. Based on the information supplied by you on March 23, 2017, the impacts are located in CU 06010108 of the French Broad River basin in the Northern Mountains (NM) Eco-Region, and are as follows:

French Broad 06010108 NM	Stream			Wetlands			Buffer (Sq. Ft.)	
	Cold	Cool	Warm	Riparian	Non-Riparian	Coastal Marsh	Zone 1	Zone 2
Impacts (feet/acres)	20.0	0	0	0	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.

The impacts and associated mitigation needs were under projected by the NCDOT in the 2017 impact data. DMS will commit to implement sufficient compensatory stream 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,

James B. Stanfill
Credit Management Supervisor

cc: Ms. Lori Beckwith, USACE – Asheville Regulatory Field Office
Ms. Amy Chapman, NCDWR
File: B-5170

Nothing Compares



(Version 2.07; Released October 2016)

North Carolina Department of Transportation
Highway Stormwater Program
STORMWATER MANAGEMENT PLAN
FOR NCDOT PROJECTS



Page 1 of 1

WBS Element:	42328.1.1	TIP No.:	B-5170	County(ies):	Mitchell				
General Project Information									
WBS Element:	42328.1.1	TIP Number:	B-5170	Project Type:	Bridge Replacement	Date:	3/7/2017		
NCDOT Contact:	Jay Twisdale			Contractor / Designer:	Andrew Nottingham				
Address:	1020 Birchridge Drive 1590 Mail Service Center Raleigh NC 27699-1590			Address:	1011 Schaub Dr. Suite 100 Raleigh NC, 27606				
	Phone:	919-707-6754			Phone:	919-851-6606			
	Email:	itwisdale@ncdot.gov			Email:	anottingham@mi-engineers.com			
City/Town:	Buladean, NC			County(ies):	Mitchell				
River Basin(s):	French Broad			CAMA County?	No				
Wetlands within Project Limits?	No								
Project Description									
Project Length (lin. miles or feet):	0.12	Surrounding Land Use:	Rural farmland and some residential						
	Proposed Project			Existing Site					
Project Built-Upon Area (ac.)	0.6	ac.		0.4	ac.				
Typical Cross Section Description:	2 lanes undivided highway with 12' lanes crown.			2 lanes undivided highway with 11' lanes crown.					
Annual Avg Daily Traffic (veh/hr/day):	Design/Future: 2123	Year: 2038	Existing:	1970	Year:	2018			
General Project Narrative: (Description of Minimization of Water Quality Impacts)	The existing 51.8' (1@17.5', 1@16.9', and 1@17.4') bridge on NC 226 spans Big Rock Creek. The existing bridge will be replaced utilizing an onsite detour (upstream of the existing bridge). The replacement bridge is a single span of 1@65' 24" cored slab bridge with end bent caps extended to scour line and spans the creek with no bents in the water. The proposed bridge does not have any bridge deck drains, therefore, direct discharge into the stream is eliminated. Bridge deck drainage is collected into TB 2GI's at each end of the bridge on the downstream side and outlets to the downstream side of the bridge into rip rap pads and then disperses into the floodplain before entering creek. Roadway drainage on the southwestern (Beg. Proj.) side of the project drains via grassed fill slopes and disperses into floodplain before entering creek. Roadway drainage on the northwestern (End Proj.) side of the project drains through a rip rapped lined base ditch before entering into an unnamed tributary to Big Rock Creek. Offsite drainage in the southeastern quadrant of the project is conveyed via an 18" RCP and then disperses into the floodplain before entering the creek. The unnamed tributary to Big Rock Creek, located in the northeastern quadrant, is conveyed via a 42" RCP with bank stabilization at the outlet before entering Big Rock Creek. A temporary work pad will be required to remove the existing interior pier on the south side of the creek.								
Waterbody Information									
Surface Water Body (1):	Big Rock Creek		NCDWR Stream Index No.:	7-2-64					
NCDWR Surface Water Classification for Water Body		Primary Classification:	Class C						
		Supplemental Classification:	Trout Waters (Tr)						
Other Stream Classification:	None								
Impairments:	None								
Aquatic T&E Species?	No	Comments:							
NRTR Stream ID:	Big Rock Creek			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)									

ENLARGEMENT SITE 1, SITE 2

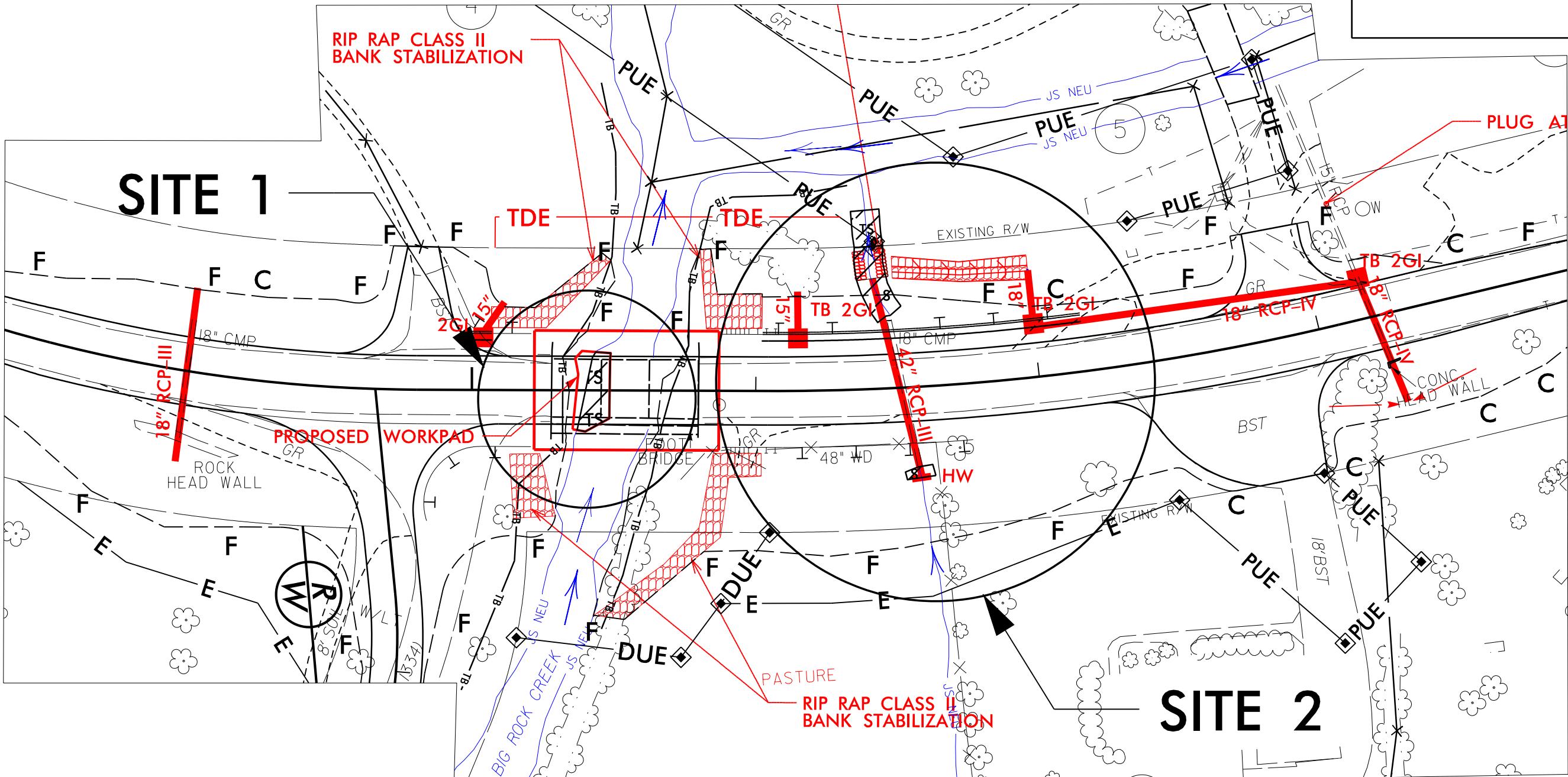


MI ENGINEERING
1011 SCHAUB DRIVE, SUITE 100
RALEIGH, NC 27606
(919) 851-6606
FIRM PE NUMBER : P-0671

PROJECT REFERENCE NO.	SHEET NO.
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION	

PERMIT DRAWING
SHEET 4 OF 9

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED



DENOTES IMPACTS IN
SURFACE WATER



DENOTES TEMPORARY
IMPACTS IN SURFACE WATER

40' 0' 40' 80' 120'
GRAPHIC SCALE

8/17/99



MI ENGINEERING
1011 SCHAU DRIVE, SUITE 100
RALEIGH, NC 27606
(919) 851-6606
FIRM PE NUMBER: P-0671

PROJECT REFERENCE NO.		SHEET NO.
B-5/70		2B-1
RW SHEET NO.		
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER	

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

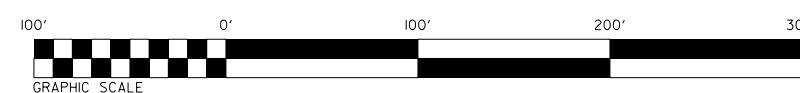
**PERMIT DRAWING
SHEET 5 OF 9**

NAD 83 NSRS 2007

REVISIONS

10
-DET-

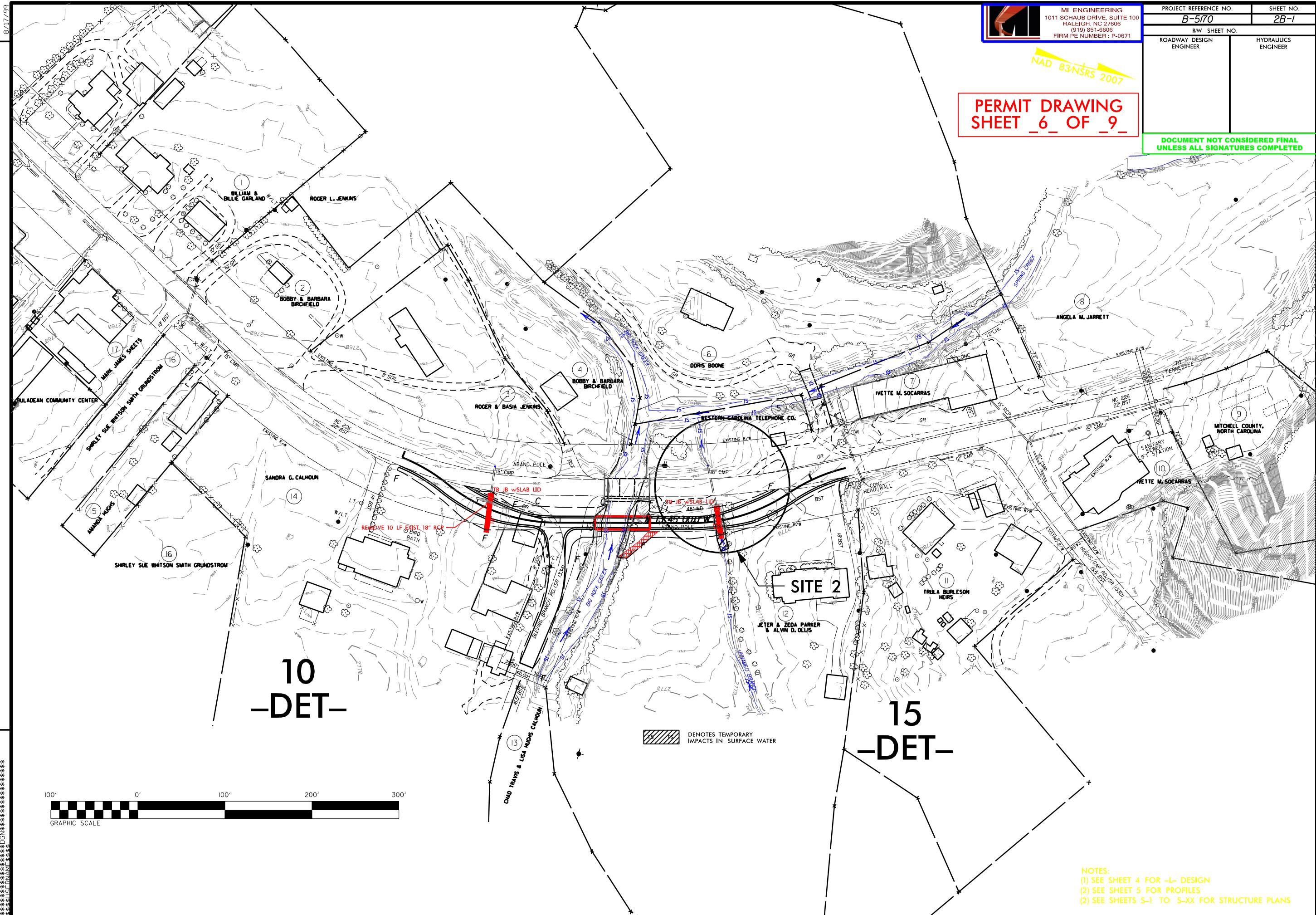
15
-DET-



CONTINUATION OF SHEET NO. 4

CHAD TRAVIS & LSI, MFGS, CALHOUN
Hatched area denotes temporary
impacts in surface water

NOTES:
(1) SEE SHEET 4 FOR -L- DESIGN
(2) SEE SHEET 5 FOR PROFILES
(3) SEE SHEETS S-1 TO S-XX FOR STRUCTURE PLANS





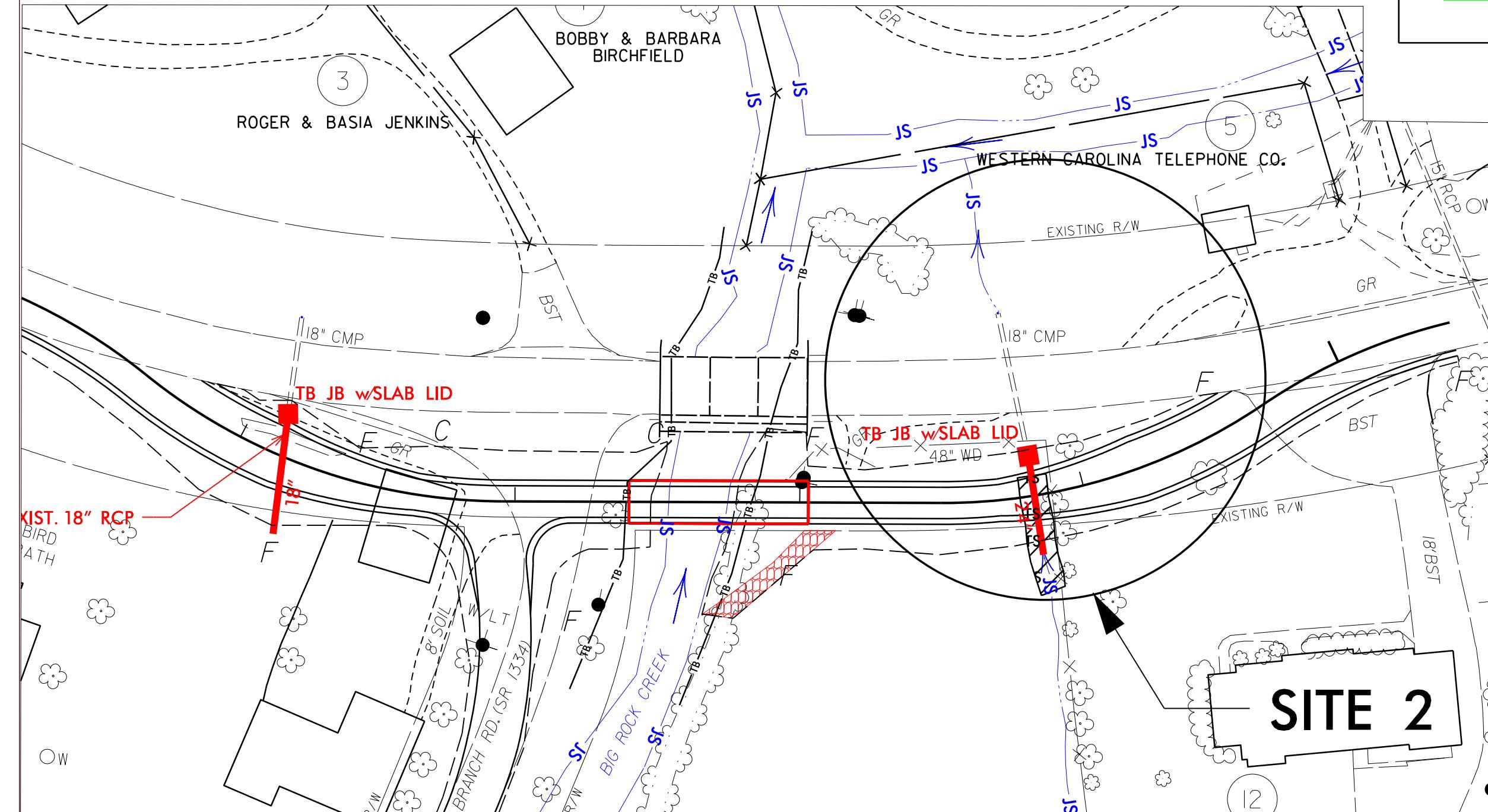
PROJECT REFERENCE NO.	SHEET NO.
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION	

PERMIT DRAWING
SHEET 7 OF 9

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

ENLARGEMENT SITE 2, DETOUR

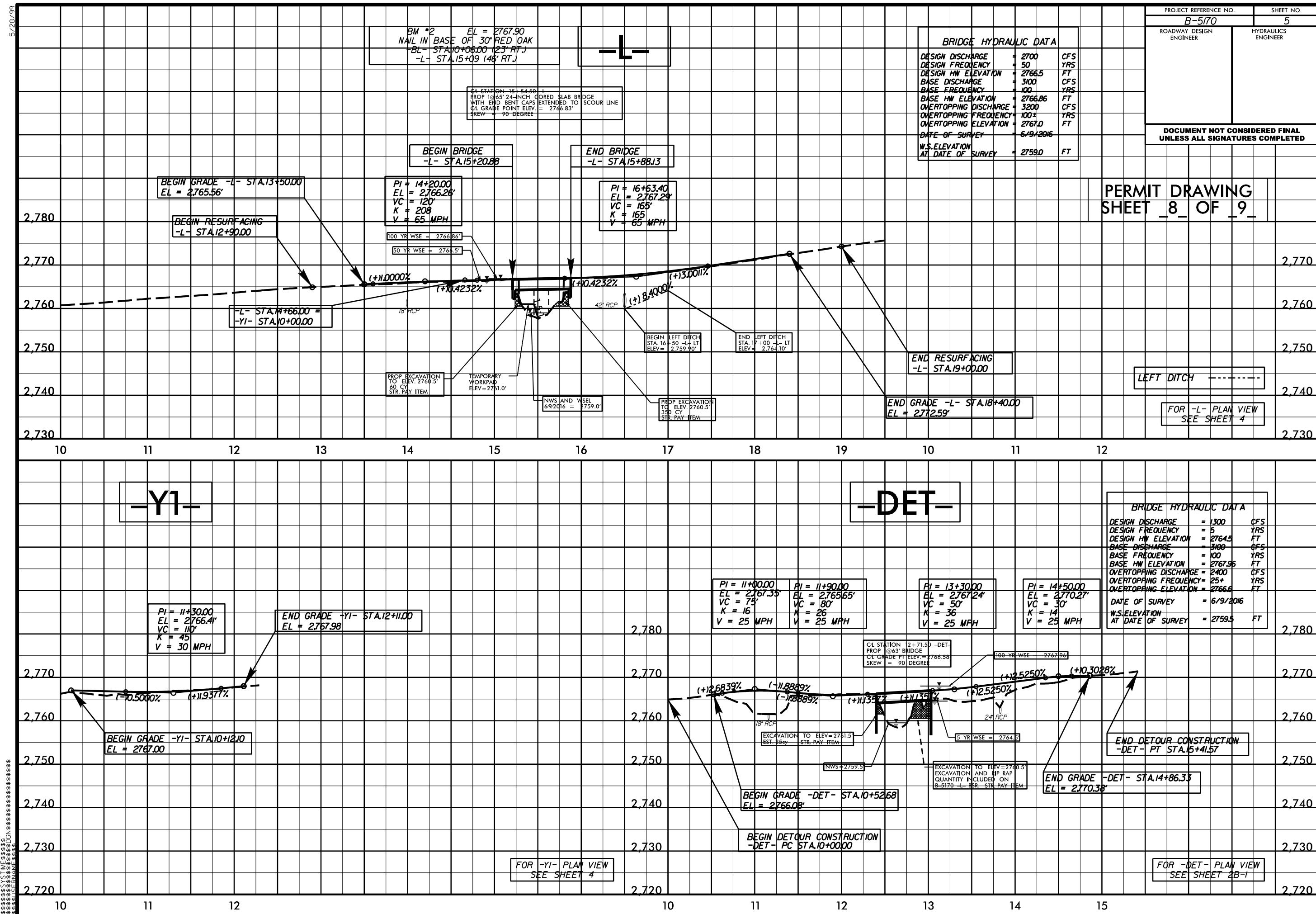
REVISIONS



40' 0' 40' 80' 120'
GRAPHIC SCALE



DENOTES TEMPORARY
IMPACTS IN SURFACE WATER



WETLAND PERMIT IMPACT SUMMARY											
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)
1	15+45 -L-	Temporary Workpad						< 0.01		29	
2	16+40 -L-	Bank Stabilization						< 0.01		10	
2	16+51 -L-	42" RCP						< 0.01	< 0.01	20	13
2	13+83 -Det-	24" RCP						< 0.01		41	
TOTALS*:								< 0.01	0.02	30	83
											0

*Rounded totals are sum of actual impacts

NOTES:

NC DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
3/1/2017
MITCHELL COUNTY
B-5170

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

MICHELL COUNTY



See Sheet 1A For Index of Sheets

This map shows a network of roads and highways. Key features include:

- Highways: 226 (marked with diamond signs), 1326, 1330, 1331, 1332, 1333, 1334, 1337, 1338, 1341, 1343, and 261.
- Project Location: Indicated by a box labeled "PROJECT LOCATION" centered on the intersection of Highway 1330 and Highway 1333.
- Other Labels: 1329, 1358, 1337, and 1329.

VICINITY MAP

VICINITY MAP

The diagram illustrates a road detour. A solid line represents the main road, with a dashed line extending from the top right. A shaded gray area indicates a construction zone. Arrows point from the main road to the detour. The detour is labeled "TO BAKERSTOWN" and "NC 226". Below the diagram, text provides construction details:

BEGIN DETOUR CONSTRUCTION
-DET- STA. 10 + 00.00

BEGIN DETOUR BRIDGE
-DET- STA. 12 + 40.00

END CONSTRUCTION
-Y1- STA. 12 + 11.00

BEGIN TIP PROJECT B-5170
-L- STA. 12 + 90.00

END TIP PROJECT B-5170
-L- STA. 19 + 00.00

BEGIN BRIDGE
-L- STA. 15 + 20.88

END BRIDGE
-L- STA. 15 + 88.13

END DETOUR CONSTRUCTION
-DET- STA. 15 + 41.57

END DETOUR BRIDGE
-DET- STA. 13 + 03.00

Y1
BEVINS BRANCH RD.
(SR 1334)

ON

UNNAMED BRANCH

NC 226
TO TENNESSEE

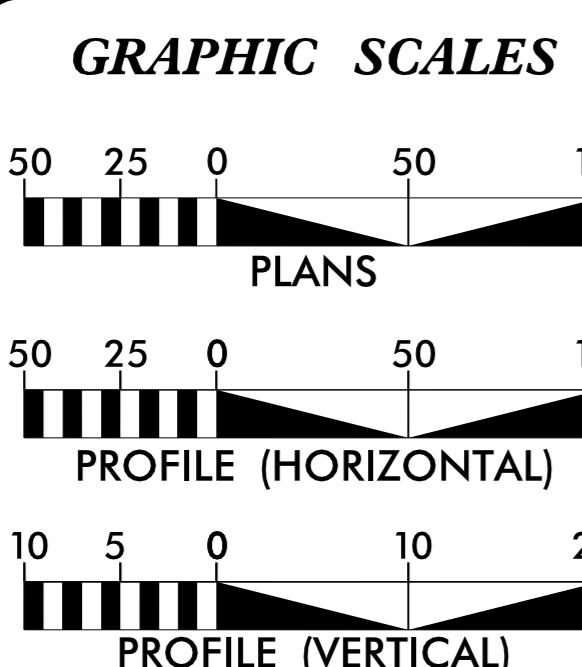
BIG ROCK CREEK

SPRING CREEK

4

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

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



DESIGN DATA

ADT 2018 =	1,970
ADT 2038 =	2,123
K =	11 %
D =	55 %
T =	10 % *
V =	40 MPH
* TTST = 7%	DUAL = 3%
FUNC CLASS =	
COLLECTOR	
REGIONAL	TIER

PROJECT LENGTH

Prepared in the Office of:

DIVISION OF HIGHWAYS

1000 Birch Ridge Dr., Raleigh NC, 27610

2012 STANDARDS SPECIFICATION

RIGHT OF WAY DATE

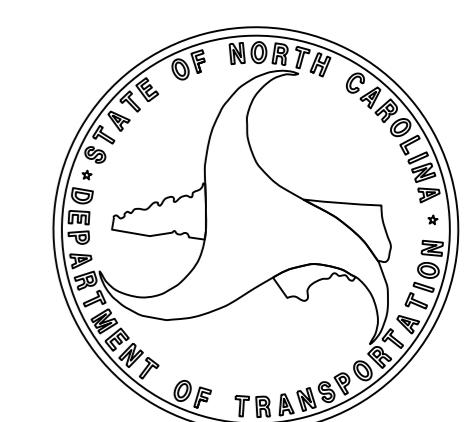
LETTING DATE:
FEBRUARY 20, 2018

HYDRAULICS ENGINEER

P.E.

ROADWAY DESIGN

P.E.



CONVENTIONAL PLAN SHEET SYMBOLS

Note: Not to Scale

*S.U.E. = Subsurface Utility Engineering

BOUNDARIES AND PROPERTY:

State Line _____

County Line _____

Township Line _____

City Line _____

Reservation Line _____

Property Line _____

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

BUILDINGS AND OTHER CULTURE:

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

HYDROLOGY:

Stream or Body of Water _____

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

RAILROADS:

Standard Gauge _____

RR Signal Milepost _____

Switch _____

RR Abandoned _____

RR Dismantled _____

RIGHT OF WAY:

Baseline Control Point Existing Right of Way Marker 

Existing Right of Way Line _____

Proposed Right of Way Line Proposed Right of Way Line with Iron Pin and Cap Marker Proposed Right of Way Line with Concrete or Granite RW Marker Proposed Control of Access Line with Concrete C/A Marker Existing Control of Access Proposed Control of Access Existing Easement Line Proposed Temporary Construction Easement Proposed Temporary Drainage Easement Proposed Permanent Drainage Easement Proposed Permanent Drainage / Utility Easement Proposed Permanent Utility Easement Proposed Temporary Utility Easement Proposed Aerial Utility Easement Proposed Permanent Easement with Iron Pin and Cap Marker 

ROADS AND RELATED FEATURES:

Existing Edge of Pavement _____

Existing Curb _____

Proposed Slope Stakes Cut Proposed Slope Stakes Fill Proposed Curb Ramp 

Existing Metal Guardrail _____

Proposed Guardrail _____

Existing Cable Guiderrail _____

Proposed Cable Guiderrail _____

Equality Symbol Pavement Removal 

VEGETATION:

Single Tree Single Shrub Hedge Woods Line 

RAILROADS:

Standard Gauge _____

RR Signal Milepost _____

Switch _____

RR Abandoned _____

RR Dismantled _____

RIGHT OF WAY:

Baseline Control Point Existing Right of Way Marker 

Existing Right of Way Line _____

Proposed Right of Way Line Proposed Right of Way Line with Iron Pin and Cap Marker Proposed Right of Way Line with Concrete or Granite RW Marker Proposed Control of Access Line with Concrete C/A Marker Existing Control of Access Proposed Control of Access Existing Easement Line Proposed Temporary Construction Easement Proposed Temporary Drainage Easement Proposed Permanent Drainage Easement Proposed Permanent Drainage / Utility Easement Proposed Permanent Utility Easement Proposed Temporary Utility Easement Proposed Aerial Utility Easement Proposed Permanent Easement with Iron Pin and Cap Marker 

ROADS AND RELATED FEATURES:

Existing Edge of Pavement _____

Existing Curb _____

Proposed Slope Stakes Cut Proposed Slope Stakes Fill Proposed Curb Ramp 

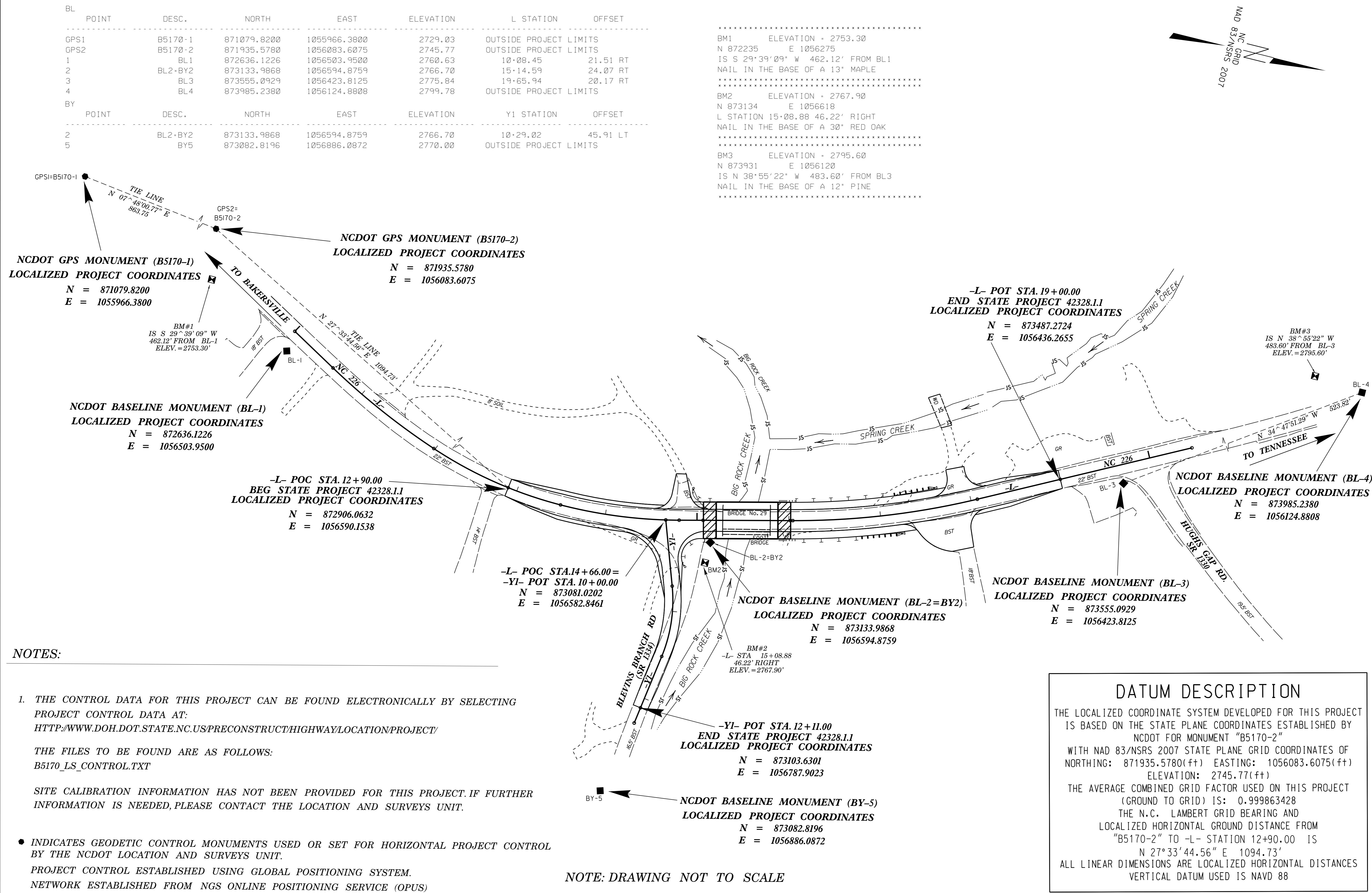
Existing Metal Guardrail _____

Proposed Guardrail _____

Existing Cable Guiderrail _____

SURVEY CONTROL SHEET B-5170 (FINAL)

PROJECT REFERENCE NO.		SHEET NO.
B-5170		1C-1
Location and Surveys		

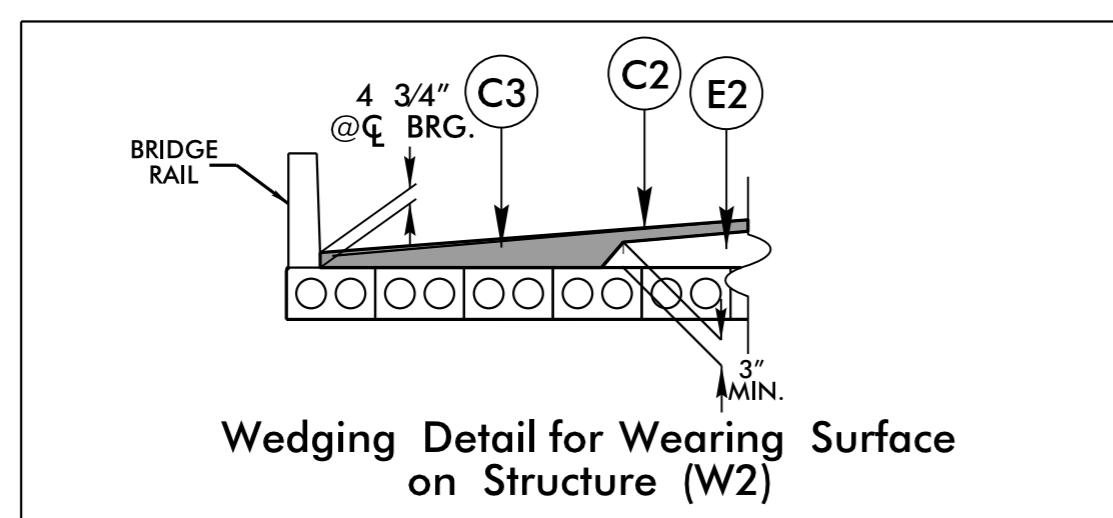


PAVEMENT SCHEDULE

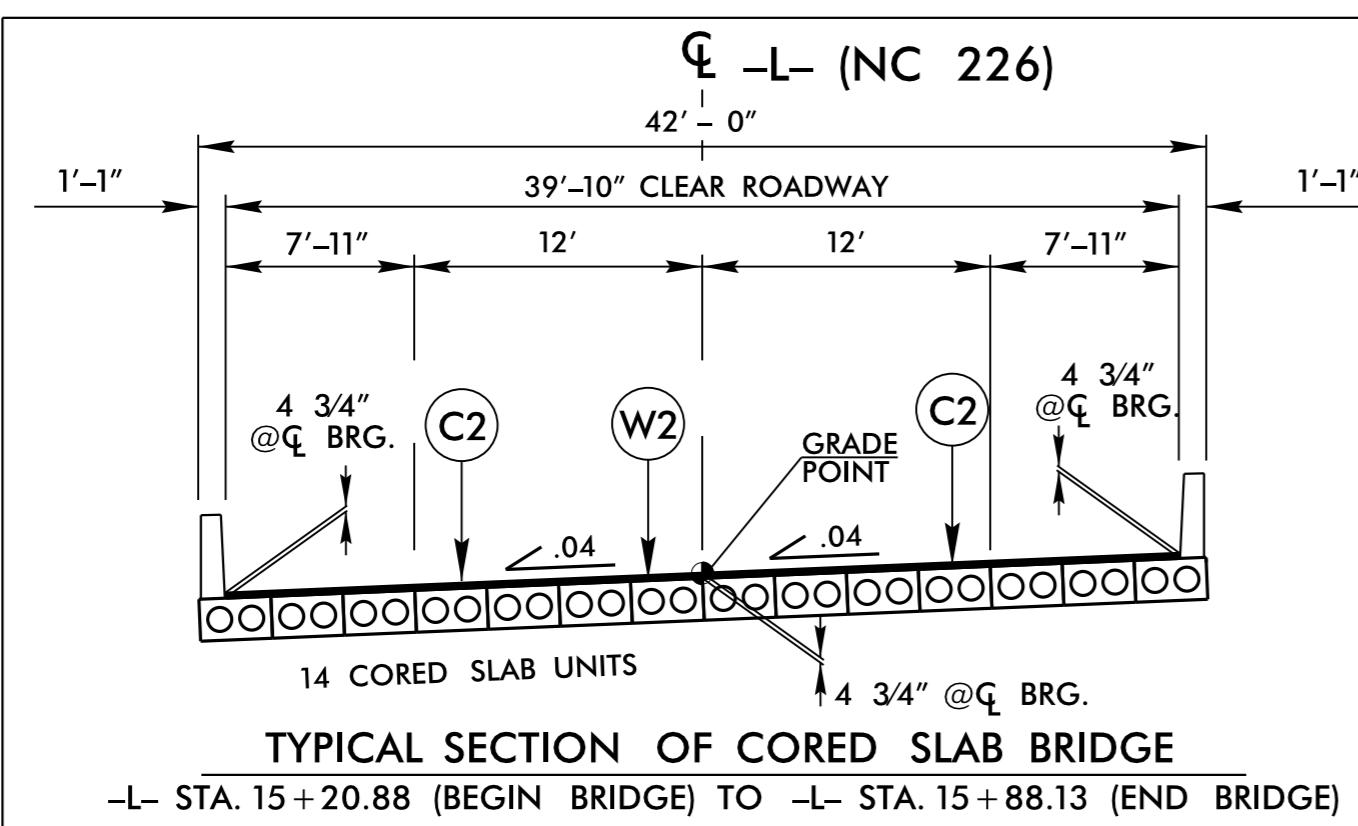
(FINAL PAVEMENT DESIGN)

C1	PROP. APPROX. 2" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 224 LBS. PER SQ. YD.
C2	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.
C3	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD. PER 1½" DEPTH. TO BE PLACED IN LAYERS NOT TO EXCEED 3" DEPTH.
E1	PROP. APPROX. 5½" ASPHALT CONCRETE BASE COURSE, TYPE B25.0, AT AN AVERAGE RATE OF 627 LBS. PER SQ. YD.
E2	PROP. VAR. DEPTH ASPHALT CONCRETE BASE COURSE, TYPE B25.0, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT LESS THAN 3" IN DEPTH OR GREATER THAN 5½" IN DEPTH.
J	PROP. 8" AGGREGATE BASE COURSE.
P	PRIME COAT AT THE RATE OF 0.35 GALLONS PER SQ. YARD
R1	SHOULDER BERM GUTTER
T	EARTH MATERIAL
U	EXISTING PAVEMENT TO BE RETAINED
W1	VAR. DEPTH ASPHALT WEDGING (SEE DETAIL)
W2	VAR. DEPTH ASPHALT WEDGING FOR WEARING SURFACE (SEE DETAIL)

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

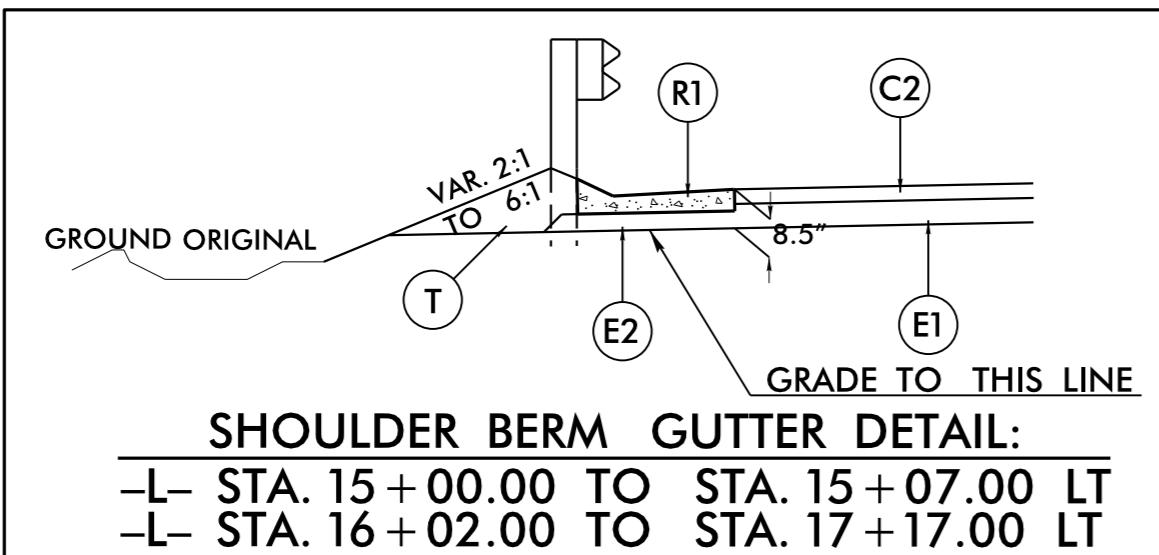


Wedging Detail for Wearing Surface on Structure (W2)



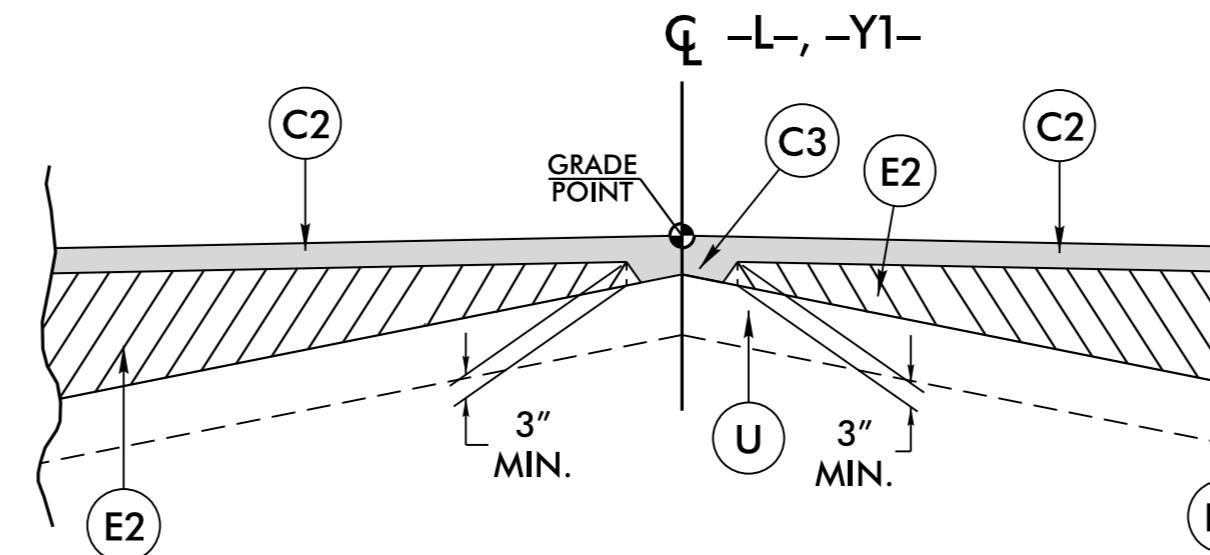
TYPICAL SECTION OF CORED SLAB BRIDGE

-L- STA. 15 + 20.88 (BEGIN BRIDGE) TO -L- STA. 15 + 88.13 (END BRIDGE)

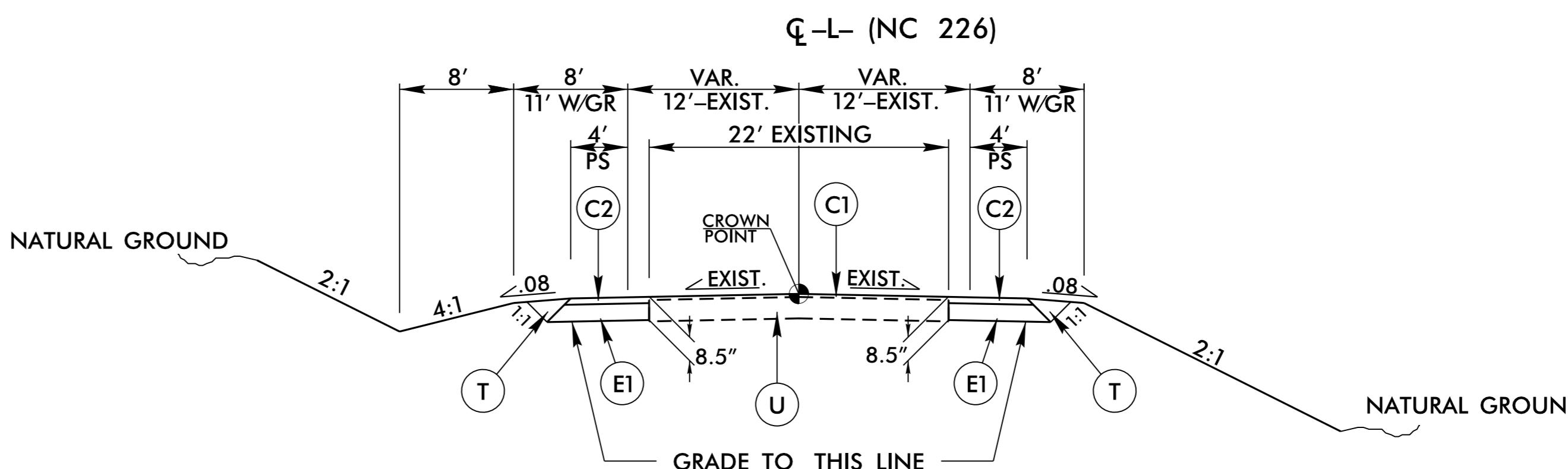


SHOULDER BERM GUTTER DETAIL

-L- STA. 15+00.00 TO STA. 15+07.00 LT
-L- STA. 16+02.00 TO STA. 17+17.00 LT



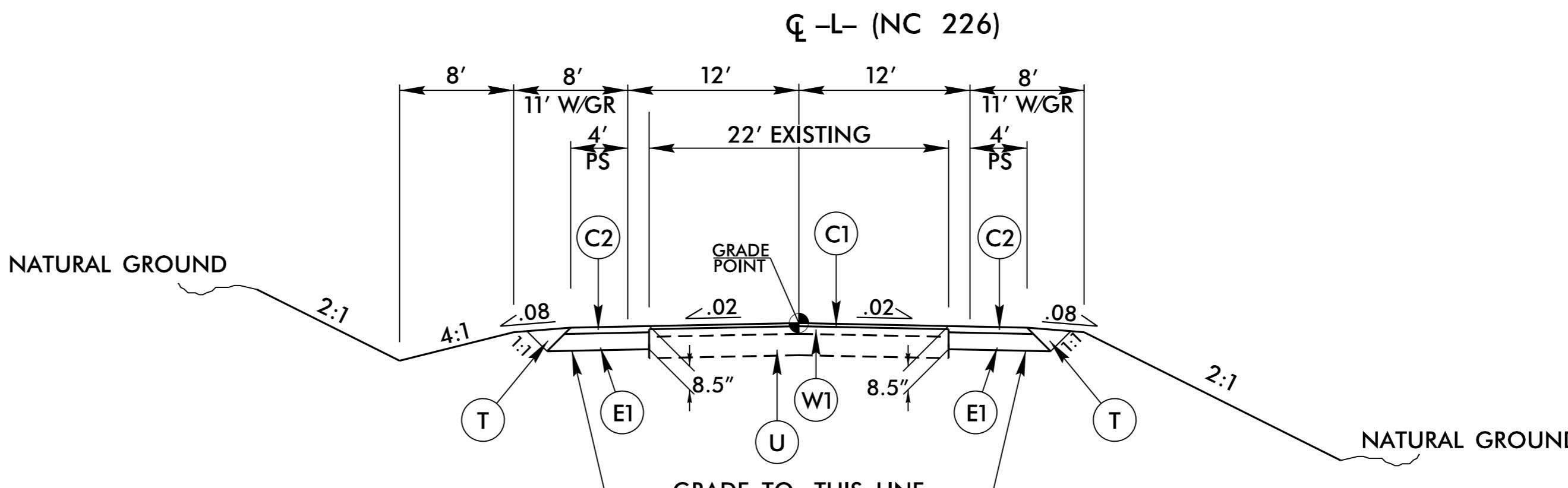
DETAIL SHOWING METHOD OF WEDGING (W)



TYPICAL SECTION NO.

USE TYPICAL SECTION NO. 1

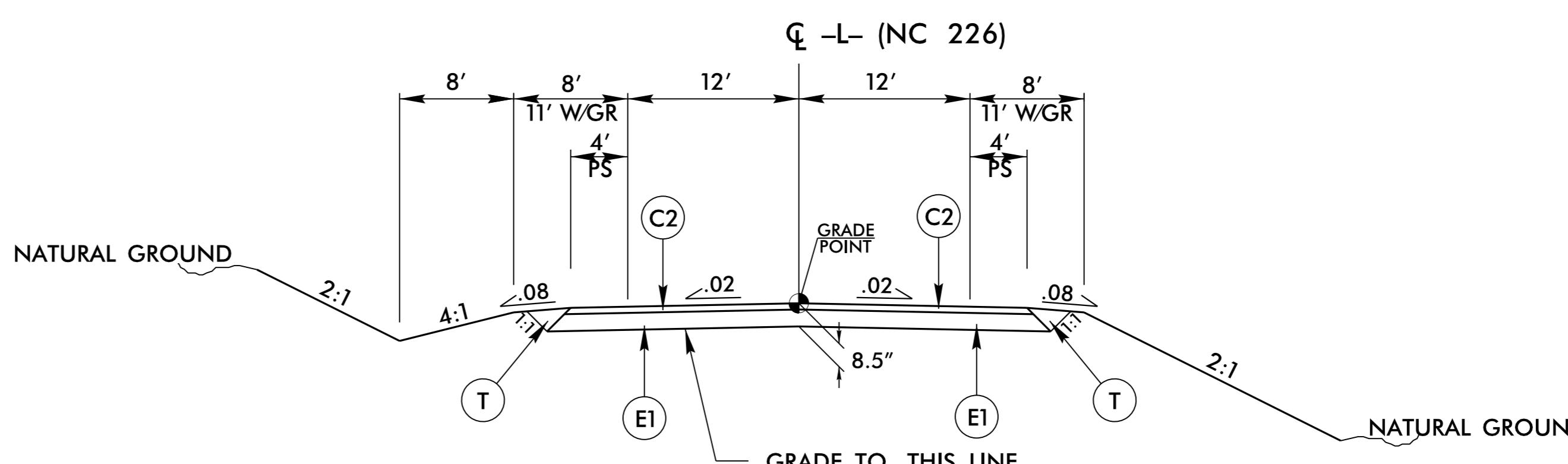
-L- STA. 12 + 90.00 TO -L- STA. 13 + 50.00
-L- STA. 18 + 40.00 TO -L- STA. 19 + 00.00



TYPICAL SECTION NO.

USE TYPICAL SECTION NO. 2

-L- STA. 13 + 50.00 TO -L- STA. 14 + 70.00
| STA. 16 + 60.00 TO | STA. 18 + 40.00



TYPICAL SECTION NO.

USE TYPICAL SECTION NO. 3

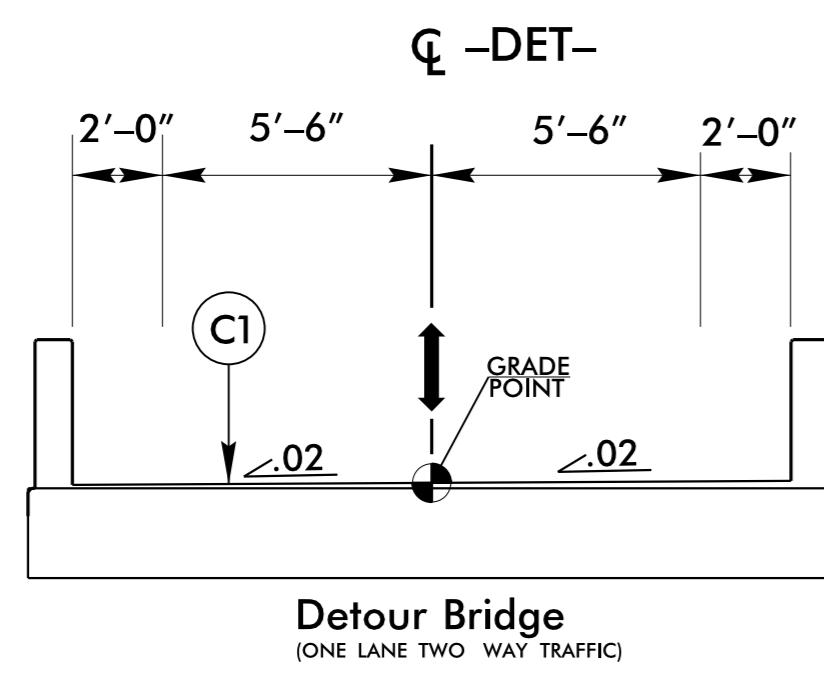
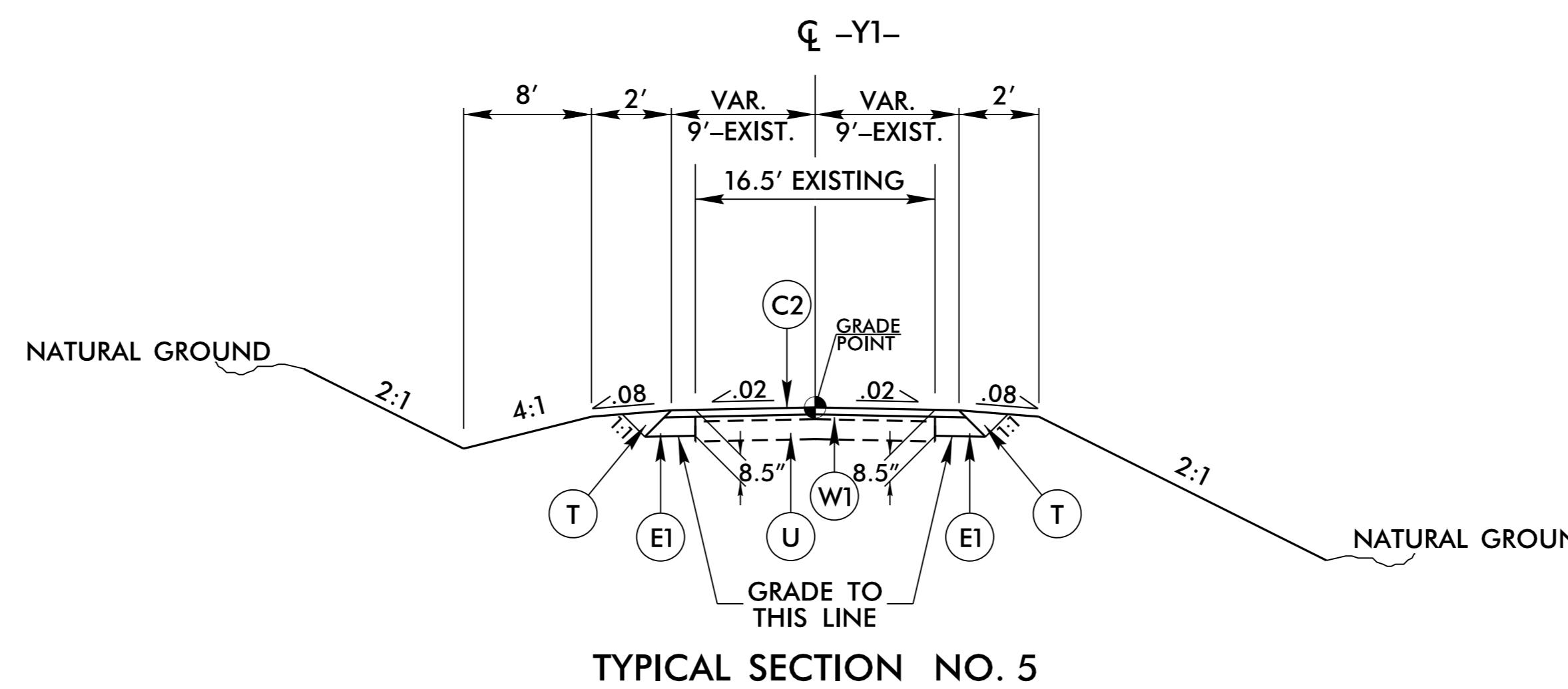
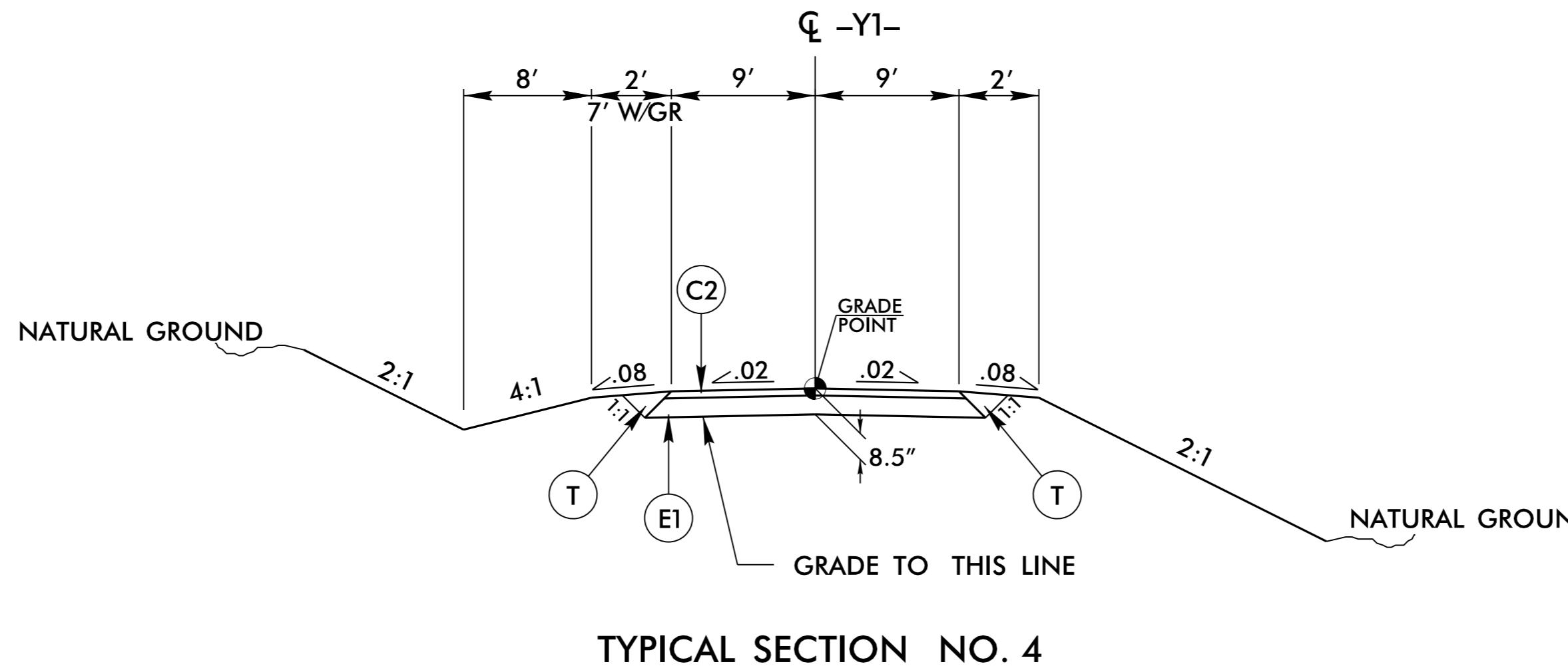
-L- STA. 14 + 70.00 TO -L- STA. 15 + 20.88 (BEGIN BRIDGE)
-L- STA. 15 + 88.13 (END BRIDGE) TO -L- STA. 16 + 60.00

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

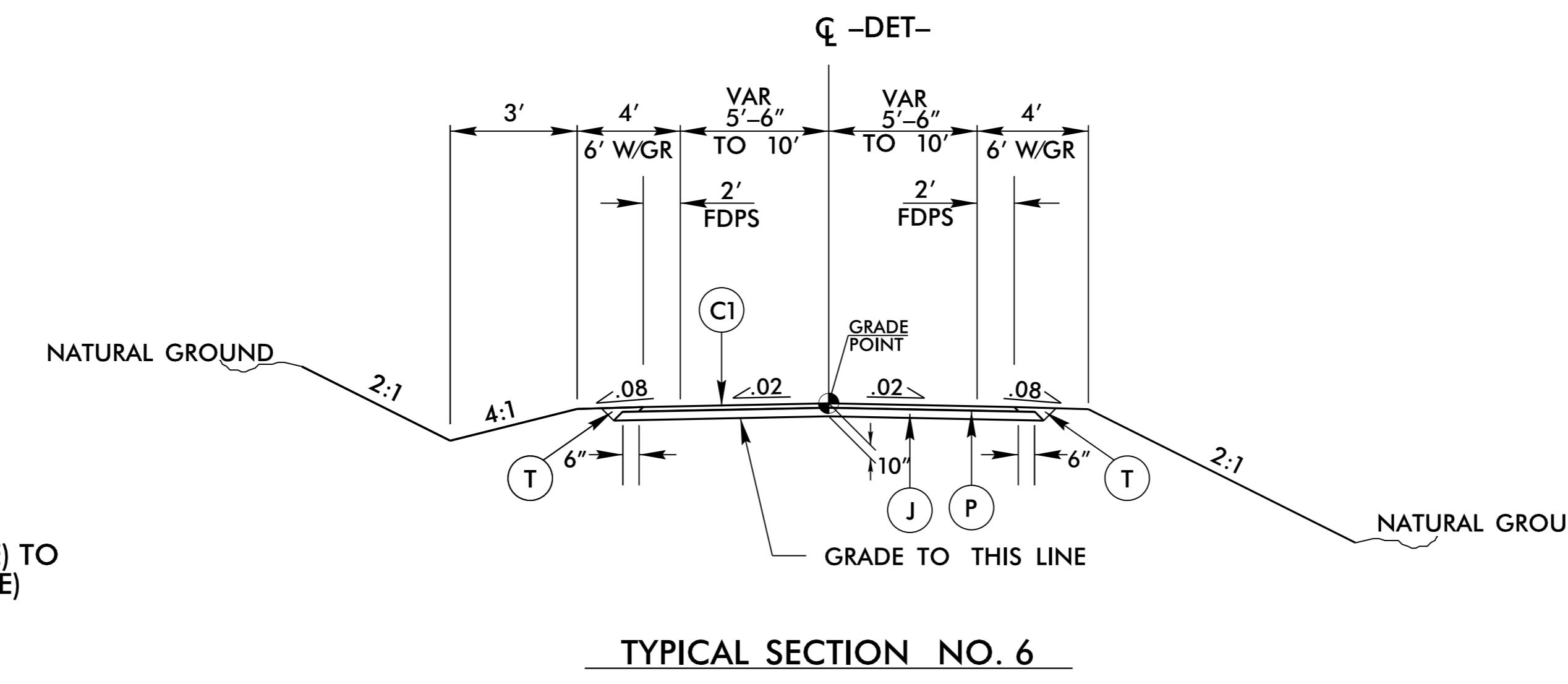
5/14/99

PAVEMENT SCHEDULE (FINAL PAVEMENT DESIGN)	
C1	2" S9.5B
C2	3" S9.5B
E1	5.5" B25.0B
J	8" Aggregate Base Course
P	PRIME COAT
T	EARTH MATERIAL
U	EXISTING PAVEMENT
W1	WEDGING DETAIL

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



-DET- STA. 12+40.00 (BEGIN DETOUR BRIDGE) TO
-DET- STA. 13+03.00 (END DETOUR BRIDGE)



PROJECT REFERENCE NO.		SHEET NO.
B-5170	2A-2	
RW SHEET NO.		
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED		

