



STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION

PAT L. MCCRORY  
GOVERNOR

ANTHONY J. TATA  
SECRETARY

May 14, 2013

U. S. Army Corps of Engineers  
Regulatory Field Office  
69 Darlington Avenue  
Wilmington, NC 28402-1890

ATTN: Mr. Ronnie Smith  
NCDOT Division 8 Coordinator

Dear Sir:

Subject: **Application for Section 404 Nationwide Permits 23 and 33 and Section 401 Water Quality Certification** for the replacement of Bridge No. 65 over Juniper Creek on US 15-501 in Scotland County, Federal Aid Project No. BRSTP-0015(22), Division 8, T.I.P No. B-4816.

Debit \$240.00 from WBS No. 38586.1.1

The North Carolina Department of Transportation (NCDOT) proposes to replace bridge No. 65 over Juniper Creek on US-15-501 (Aberdeen Road) in Scotland County.

Please see the enclosed copies of the Pre-Construction Notification (PCN), Preliminary JD form, stormwater management plan, permit drawings, utility impact drawings, and roadway design plans for the above-referenced project. The Categorical Exclusion (CE) for this project was completed in May 7, 2012. Additional copies are available upon request.

The let date for the project is December 17, 2013 with a review date of October 29, 2013. However, the let date may advance as additional funds become available.

MAILING ADDRESS:  
NC DEPARTMENT OF TRANSPORTATION  
PROJECT DEVELOPMENT AND ENVIRONMENTAL ANALYSIS  
NATURAL ENVIRONMENT SECTION  
1598 MAIL SERVICE CENTER  
RALEIGH NC 27699-1598


TELEPHONE: 919-707-6000  
FAX: 919-212-5785  
WEBSITE: [WWW.NCDOT.ORG](http://WWW.NCDOT.ORG)

LOCATION:  
Century Center Building B  
1020 Birch Ridge Drive  
Raleigh, NC 27610

A copy of this permit application will be posted on the NCDOT Website at:  
<https://connect.ncdot.gov/resources/Environmental/Pages/default.aspx>.

Thank you for your assistance with this project. If you have any questions or need additional information, please contact Greg Price at [gwprice@ncdot.gov](mailto:gwprice@ncdot.gov) or (919) 707-6148.

Sincerely,



for

Gregory J. Thorpe, Ph.D., Manager  
Project Development and Environmental Analysis Unit

cc: NCDOT Permit Application Standard Distribution List



Office Use Only:  
 Corps action ID no. \_\_\_\_\_  
 DWQ project no. \_\_\_\_\_  
 Form Version 1.3 Dec 10 2008

## Pre-Construction Notification (PCN) Form

### A. Applicant Information

#### 1. Processing

1a. Type(s) of approval sought from the Corps:	<input checked="" type="checkbox"/> Section 404 Permit <input type="checkbox"/> Section 10 Permit				
1b. Specify Nationwide Permit (NWP) number: 23 and 33 or General Permit (GP) number:					
1c. Has the NWP or GP number been verified by the Corps?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No				
1d. Type(s) of approval sought from the DWQ (check all that apply):					
<input checked="" type="checkbox"/> 401 Water Quality Certification – Regular <input type="checkbox"/> Non-404 Jurisdictional General Permit <input type="checkbox"/> 401 Water Quality Certification – Express <input type="checkbox"/> Riparian Buffer Authorization					
1e. Is this notification solely for the record because written approval is not required?	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 33%;">For the record only for DWQ 401 Certification:</td> <td style="width: 33%;">For the record only for Corps Permit:</td> </tr> <tr> <td style="text-align: center;"> <input type="checkbox"/> Yes    <input checked="" type="checkbox"/> No         </td> <td style="text-align: center;"> <input type="checkbox"/> Yes    <input checked="" type="checkbox"/> No         </td> </tr> </table>	For the record only for DWQ 401 Certification:	For the record only for Corps Permit:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
For the record only for DWQ 401 Certification:	For the record only for Corps Permit:				
<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No				
1f. 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.	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No				
1g. Is the project located in any of NC's twenty coastal counties. If yes, answer 1h below.	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No				
1h. Is the project located within a NC DCM Area of Environmental Concern (AEC)?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No				

#### 2. Project Information

2a. Name of project:	Replacement of Bridge No. 65 on US 15-501 (Aberdeen Road) over Juniper Creek
2b. County:	Scotland
2c. Nearest municipality / town:	Laurinburg
2d. Subdivision name:	<i>not applicable</i>
2e. NCDOT only, T.I.P. or state project no.:	B-4816

#### 3. Owner Information

3a. Name(s) on Recorded Deed:	North Carolina Department of Transportation
3b. Deed Book and Page No.	<i>not applicable</i>
3c. Responsible Party (for LLC if applicable):	<i>not applicable</i>
3d. Street address:	1598 Mail Service Center
3e. City, state, zip:	Raleigh, NC 27699-1598
3f. Telephone no.:	(919) 707-6148
3g. Fax no.:	(919) 212-5785
3h. Email address:	gwprice@ncdot.gov

<b>4. Applicant Information (if different from owner)</b>	
4a. Applicant is:	<input type="checkbox"/> Agent <input type="checkbox"/> Other, specify:
4b. Name:	<i>not applicable</i>
4c. Business name (if applicable):	
4d. Street address:	
4e. City, state, zip:	
4f. Telephone no.:	
4g. Fax no.:	
4h. Email address:	
<b>5. Agent/Consultant Information (if applicable)</b>	
5a. Name:	<i>not applicable</i>
5b. Business name (if applicable):	
5c. Street address:	
5d. City, state, zip:	
5e. Telephone no.:	
5f. Fax no.:	
5g. Email address:	

<b>B. Project Information and Prior Project History</b>	
<b>1. Property Identification</b>	
1a. Property identification no. (tax PIN or parcel ID):	<i>not applicable</i>
1b. Site coordinates (in decimal degrees):	Latitude: 34.83385 (DD.DDDDDD) Longitude: - 79.4593 (-DD.DDDDDD)
1c. Property size:	0.6 acres
<b>2. Surface Waters</b>	
2a. Name of nearest body of water (stream, river, etc.) to proposed project:	Juniper Creek
2b. Water Quality Classification of nearest receiving water:	C; Sw
2c. River basin:	Lumber
<b>3. Project Description</b>	
3a. Describe the existing conditions on the site and the general land use in the vicinity of the project at the time of this application: Land use in the project vicinity is primarily agriculture, interspersed with residential development and forestland.	
3b. List the total estimated acreage of all existing wetlands on the property: 0.6 acres	
3c. List the total estimated linear feet of all existing streams (intermittent and perennial) on the property: 80	
3d. Explain the purpose of the proposed project: To replace a structurally deficient bridge.	
3e. Describe the overall project in detail, including the type of equipment to be used: The project involves replacing a 4-span 68-foot bridge with a 3-span 135-foot bridge on the existing bridge location with an onsite detour. The new bridge will be of sufficient width to provide for two 12-foot lanes with 4-foot offsets on each side. Standard road building equipment, such as trucks, dozers, and cranes will be used.	
<b>4. Jurisdictional Determinations</b>	
4a. Have jurisdictional wetland or stream determinations by the Corps or State been requested or obtained for this property / project (including all prior phases) in the past? Comments: perennial stream and wetland	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown
4b. If the Corps made the jurisdictional determination, what type of determination was made?	<input checked="" type="checkbox"/> Preliminary <input type="checkbox"/> Final
4c. If yes, who delineated the jurisdictional areas? Name (if known): Lindsey Riddick, NCDOT	Agency/Consultant Company: NCDOT Other:
4d. If yes, list the dates of the Corps jurisdictional determinations or State determinations and attach documentation. November 1, 2009.	
<b>5. Project History</b>	
5a. Have permits or certifications been requested or obtained for this project (including all prior phases) in the past?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Unknown
5b. If yes, explain in detail according to "help file" instructions.	
<b>6. Future Project Plans</b>	
6a. Is this a phased project?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
6b. If yes, explain.	

**C. Proposed Impacts Inventory**

**1. Impacts Summary**

1a. Which sections were completed below for 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.

2a. Wetland impact number – Permanent (P) or Temporary (T)	2b. Type of impact	2c. Type of wetland (if known)	2d. Forested	2e. Type of jurisdiction (Corps - 404, 10 DWQ – non-404, other)	2f. Area of impact (acres)
Site 1 <input checked="" type="checkbox"/> P <input type="checkbox"/> T	Fill	Riverine Swamp Forest	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Corps <input type="checkbox"/> DWQ	<0.01
Site 1 <input checked="" type="checkbox"/> P <input type="checkbox"/> T	Mechanized Clearing	Riverine Swamp Forest	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input checked="" type="checkbox"/> Corps <input type="checkbox"/> DWQ	0.03
Site 2 <input checked="" type="checkbox"/> P <input type="checkbox"/> T	Fill	Riverine Swamp Forest	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Corps <input type="checkbox"/> DWQ	<0.01
Site 2 <input type="checkbox"/> P <input checked="" type="checkbox"/> T	Fill	Riverine Swamp Forest	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Corps <input type="checkbox"/> DWQ	0.25
Site 3 <input checked="" type="checkbox"/> P <input type="checkbox"/> T	Fill	Riverine Swamp Forest	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Corps <input type="checkbox"/> DWQ	<0.01
Site 3 <input type="checkbox"/> P <input checked="" type="checkbox"/> T	Fill	Riverine Swamp Forest	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Corps <input type="checkbox"/> DWQ	0.36
Site 4 <input checked="" type="checkbox"/> P <input type="checkbox"/> T	Mechanized Clearing	Riverine Swamp Forest	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Corps <input type="checkbox"/> DWQ	<0.01
<b>2g. Total wetland impacts</b>					0.03 Perm 0.61 Temp

2h. Comments: Additional Impacts: 3 Bridge bents and 5 Utility poles totalling <0.01 acres; Roadway hand clearing – 0.18 acres; Utility hand clearing - 0.21 acres.

**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. Stream impact number - Permanent (P) or Temporary (T)	3b. Type of impact	3c. Stream name	3d. Perennial (PER) or intermittent (INT)?	3e. Type of jurisdiction (Corps - 404, 10 DWQ – non-404, other)	3f. Average stream width (feet)	3g. Impact length (linear feet)
<input type="checkbox"/> P <input type="checkbox"/> T			<input type="checkbox"/> PER <input type="checkbox"/> INT	<input type="checkbox"/> Corps <input type="checkbox"/> DWQ		
<input type="checkbox"/> P <input type="checkbox"/> T			<input type="checkbox"/> PER <input type="checkbox"/> INT	<input type="checkbox"/> Corps <input type="checkbox"/> DWQ		
<input type="checkbox"/> P <input type="checkbox"/> T			<input type="checkbox"/> PER <input type="checkbox"/> INT	<input type="checkbox"/> Corps <input type="checkbox"/> DWQ		
<input type="checkbox"/> P <input type="checkbox"/>			<input type="checkbox"/> PER <input type="checkbox"/> INT	<input type="checkbox"/> Corps <input type="checkbox"/> DWQ		
<b>3h. Total stream and tributary impacts</b>						

3i. 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. Open water impact number – Permanent (P) or Temporary (T)	4b. Name of waterbody (if applicable)	4c. Type of impact	4d. Waterbody type	4e. Area of impact (acres)
O1 <input type="checkbox"/> P <input type="checkbox"/> T				
O2 <input type="checkbox"/> P <input type="checkbox"/> T				
O3 <input type="checkbox"/> P <input type="checkbox"/> T				
O4 <input type="checkbox"/> P <input type="checkbox"/> T				
<b>4f. Total open water impacts</b>				

4g. Comments:

**5. Pond or Lake Construction**

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

5a. Pond ID number	5b. Proposed use or purpose of pond	5c. Wetland Impacts (acres)			5d. Stream Impacts (feet)			5e. Upland (acres)
		Flooded	Filled	Excavated	Flooded	Filled	Excavated	Flooded
P1								
P2								
<b>5f. Total</b>								

5g. Comments:

5h. Is a dam high hazard permit required?

Yes

No

If yes, permit ID no:

5i. Expected pond surface area (acres):

5j. Size of pond watershed (acres):

5k. Method of construction:

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

If project will impact a protected riparian buffer, then complete the chart below. If yes, then individually list all buffer impacts below. If any impacts require mitigation, then you **MUST** fill out Section D of this form.

6a. Project is in which protected basin?			<input type="checkbox"/> Neuse <input type="checkbox"/> Catawba	<input type="checkbox"/> Tar-Pamlico <input type="checkbox"/> Randleman	<input type="checkbox"/> Other: Jordan
6b. Buffer impact number – Permanent (P) or Temporary (T)	6c. Reason for impact	6d. Stream name	6e. Buffer mitigation required?	6f. Zone 1 impact (square feet)	6g. Zone 2 impact (square feet)
<input type="checkbox"/> P <input type="checkbox"/> T			<input type="checkbox"/> Yes <input type="checkbox"/> No		
<input type="checkbox"/> P <input type="checkbox"/> T			<input type="checkbox"/> Yes <input type="checkbox"/> No		
<input type="checkbox"/> P <input type="checkbox"/> T			<input type="checkbox"/> Yes <input type="checkbox"/> No		
<b>6h. Total buffer impacts</b>					
6i. Comments:					




<b>D. Impact Justification and Mitigation</b>		
<b>1. Avoidance and Minimization</b>		
1a. Specifically describe measures taken to avoid or minimize the proposed impacts in designing project. The proposed bridge replacement will take place on existing alignment and is longer, reducing the number of bents in water from 2 bents to 1 bent.		
1b. Specifically describe measures taken to avoid or minimize the proposed impacts through construction techniques. NCDOT will use Best Management Practices for Bridge Demolition and Removal as well as Best Management Practices for the Protection of Surface Waters.		
<b>2. Compensatory Mitigation for Impacts to Waters of the U.S. or Waters of the State</b>		
2a. Does the project require Compensatory Mitigation for impacts to Waters of the U.S. or Waters of the State?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If no, explain: Impacts are minimal and less than 0.1 acres and will not impact the wetland's function.	
2b. If yes, mitigation is required by (check all that apply):	<input type="checkbox"/> DWQ <input type="checkbox"/> Corps	
2c. If yes, which mitigation option will be used for this project?	<input type="checkbox"/> Mitigation bank <input type="checkbox"/> Payment to in-lieu fee program <input type="checkbox"/> Permittee Responsible Mitigation	
<b>3. Complete if Using a Mitigation Bank</b>		
3a. Name of Mitigation Bank: not applicable		
3b. Credits Purchased (attach receipt and letter)	Type	Quantity
3c. Comments:		
<b>4. Complete if Making a Payment to In-lieu Fee Program</b>		
4a. Approval letter from in-lieu fee program is attached.	<input type="checkbox"/> Yes	
4b. Stream mitigation requested:		
4c. If using stream mitigation, stream temperature:	<input type="checkbox"/> warm <input type="checkbox"/> cool <input type="checkbox"/> cold	
4d. Buffer mitigation requested (DWQ only):		
4e. Riparian wetland mitigation requested:	acres	
4f. Non-riparian wetland mitigation requested:	acres	
4g. Coastal (tidal) wetland mitigation requested:	acres	
4h. Comments:		
<b>5. Complete if Using a Permittee Responsible Mitigation Plan</b>		
5a. If using a permittee responsible mitigation plan, provide a description of the proposed mitigation plan.		

<b>6. Buffer Mitigation (State Regulated Riparian Buffer Rules) – required by DWQ</b>					
6a. Will the project result in an impact within a protected riparian buffer that requires buffer mitigation?				<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
6b. If yes, then identify the square feet of impact to each zone of the riparian buffer that requires mitigation. Calculate the amount of mitigation required.					
Zone	6c. Reason for impact	6d. Total impact (square feet)	Multiplier	6e. Required mitigation (square feet)	
Zone 1			3 (2 for Catawba)		
Zone 2			1.5		
	<b>6f. Total buffer mitigation required:</b>				
6g. If buffer mitigation is required, discuss what type of mitigation is proposed (e.g., payment to private mitigation bank, permittee responsible riparian buffer restoration, payment into an approved in-lieu fee fund).					
6h. Comments:					

<b>E. Stormwater Management and Diffuse Flow Plan (required by DWQ)</b>	
<b>1. Diffuse Flow Plan</b>	
1a. Does the project include or is it adjacent to protected riparian buffers identified within one of the NC Riparian Buffer Protection Rules?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
1b. If yes, then is a diffuse flow plan included? If not, explain why. Comments:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
<b>2. Stormwater Management Plan</b>	
2a. What is the overall percent imperviousness of this project?	N/A
2b. Does this project require a Stormwater Management Plan?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
2c. If this project DOES NOT require a Stormwater Management Plan, explain why:	
2d. If this project DOES require a Stormwater Management Plan, then provide a brief, narrative description of the plan: See attached permit drawings.	
2e. Who will be responsible for the review of the Stormwater Management Plan?	<input type="checkbox"/> Certified Local Government <input type="checkbox"/> DWQ Stormwater Program <input checked="" type="checkbox"/> DWQ 401 Unit
<b>3. Certified Local Government Stormwater Review</b>	
3a. In which local government's jurisdiction is this project?	not applicable
3b. Which of the following locally-implemented stormwater management programs apply (check all that apply):	<input type="checkbox"/> Phase II <input type="checkbox"/> NSW <input type="checkbox"/> USMP <input type="checkbox"/> Water Supply Watershed <input type="checkbox"/> Other:
3c. Has the approved Stormwater Management Plan with proof of approval been attached?	<input type="checkbox"/> Yes <input type="checkbox"/> No
<b>4. DWQ Stormwater Program Review</b>	
4a. Which of the following state-implemented stormwater management programs apply (check all that apply):	<input type="checkbox"/> Coastal counties <input type="checkbox"/> HQW <input type="checkbox"/> ORW <input type="checkbox"/> Session Law 2006-246 <input type="checkbox"/> Other:
4b. Has the approved Stormwater Management Plan with proof of approval been attached?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
<b>5. DWQ 401 Unit Stormwater Review</b>	
5a. Does the Stormwater Management Plan meet the appropriate requirements?	<input type="checkbox"/> Yes <input type="checkbox"/> No N/A
5b. Have all of the 401 Unit submittal requirements been met?	<input type="checkbox"/> Yes <input type="checkbox"/> No N/A

<b>F. Supplementary Information</b>	
<b>1. Environmental Documentation (DWQ Requirement)</b>	
1a. Does the project involve an expenditure of public (federal/state/local) funds or the use of public (federal/state) land?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> 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)?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> 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.)  Comments:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
<b>2. Violations (DWQ Requirement)</b>	
2a. Is the site in violation of DWQ Wetland Rules (15A NCAC 2H .0500), Isolated Wetland Rules (15A NCAC 2H .1300), DWQ Surface Water or Wetland Standards, or Riparian Buffer Rules (15A NCAC 2B .0200)?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
2b. Is this an after-the-fact permit application?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
2c. If you answered "yes" to one or both of the above questions, provide an explanation of the violation(s):	
<b>3. Cumulative Impacts (DWQ Requirement)</b>	
3a. Will this project (based on past and reasonably anticipated future impacts) result in additional development, which could impact nearby downstream water quality?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
3b. If you answered "yes" to the above, submit a qualitative or quantitative cumulative impact analysis in accordance with the most recent DWQ policy. 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.	
<b>4. Sewage Disposal (DWQ Requirement)</b>	
4a. Clearly detail the ultimate treatment methods and disposition (non-discharge or discharge) of wastewater generated from the proposed project, or available capacity of the subject facility.  not applicable	

<b>5. Endangered Species and Designated Critical Habitat (Corps Requirement)</b>		
5a. Will this project occur in or near an area with federally protected species or habitat? Habitat for <i>Rhus michauxii</i>	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
5b. Have you checked with the USFWS concerning Endangered Species Act impacts? No effect: A recent survey occurred 6/12/12.	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
5c. If yes, indicate the USFWS Field Office you have contacted.	<input type="checkbox"/> Raleigh <input type="checkbox"/> Asheville	
5d. 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.		
<b>6. Essential Fish Habitat (Corps Requirement)</b>		
6a. Will this project occur in or near an area designated as essential fish habitat?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
6b. What data sources did you use to determine whether your site would impact Essential Fish Habitat? NMFS County Index		
<b>7. Historic or Prehistoric Cultural Resources (Corps Requirement)</b>		
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)?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
7b. What data sources did you use to determine whether your site would impact historic or archeological resources? NEPA Documentation		
<b>8. Flood Zone Designation (Corps Requirement)</b>		
8a. Will this project occur in a FEMA-designated 100-year floodplain?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> 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		
<u>Dr. Gregory J. Thorpe, Ph D</u> Applicant/Agent's Printed Name	 _____ Applicant/Agent's Signature <small>(Agent's signature is valid only if an authorization letter from the applicant is provided.)</small>	<u>5.14.13</u> Date



**ATTACHMENT**

**PRELIMINARY JURISDICTIONAL DETERMINATION FORM**

**BACKGROUND INFORMATION**

**A. REPORT COMPLETION DATE FOR PRELIMINARY JURISDICTIONAL DETERMINATION (JD):** October 27, 2009

**B. NAME AND ADDRESS OF PERSON REQUESTING PRELIMINARY JD:**

Lindsey Riddick, NCDOT, 1598 Mail Service Center, Raleigh, NC 27699-1698

**C. DISTRICT OFFICE, FILE NAME, AND NUMBER:** SAW-2009-01698  
(NCDOT/B-4816/Bridge No. 65 on US 15-501 (Aberdeen Road) over Juniper Creek/Div. 8/ Scotland County)

**D. PROJECT LOCATION(S) AND BACKGROUND INFORMATION:**

B-4816, Scotland County

**(USE THE ATTACHED TABLE TO DOCUMENT MULTIPLE WATERBODIES AT DIFFERENT SITES)**

State: North Carolina County/parish/borough: Scotland City: Laurinburg

Center coordinates of site (lat/long in degree decimal format):

Lat. 34.83385° N, Long. -79.4593° W.

Universal Transverse Mercator: Zone 17

Name of nearest waterbody: Juniper Creek

Identify (estimate) amount of waters in the review area:

Non-wetland waters: 200 linear feet: 30 width (ft) and/or acres.

Cowardin Class:

Stream Flow: perennial

Wetlands: 3.70 acres.

Cowardin Class: PFO1C

Name of any water bodies on the site that have been identified as Section 10 waters: N/A

Tidal:

Non-Tidal:

**E. REVIEW PERFORMED FOR SITE EVALUATION (CHECK ALL THAT APPLY):**

Office (Desk) Determination. Date: October 27, 2009

Field Determination. Date(s):

1. The Corps of Engineers believes that there may be jurisdictional waters of the United States on the subject site, and the permit applicant or other affected party who requested this preliminary JD is hereby advised of his or her option to





request and obtain an approved jurisdictional determination (JD) for that site. Nevertheless, the permit applicant or other person who requested this preliminary JD has declined to exercise the option to obtain an approved JD in this instance and at this time.

2. In any circumstance where a permit applicant obtains an individual permit, or a Nationwide General Permit (NWP) or other general permit verification requiring "pre-construction notification" (PCN), or requests verification for a non-reporting NWP or other general permit, and the permit applicant has not requested an approved JD for the activity, the permit applicant is hereby made aware of the following: (1) the permit applicant has elected to seek a permit authorization based on a preliminary JD, which does not make an official determination of jurisdictional waters; (2) that the applicant has the option to request an approved JD before accepting the terms and conditions of the permit authorization, and that basing a permit authorization on an approved JD could possibly result in less compensatory mitigation being required or different special conditions; (3) that the applicant has the right to request an individual permit rather than accepting the terms and conditions of the NWP or other general permit authorization; (4) that the applicant can accept a permit authorization and thereby agree to comply with all the terms and conditions of that permit, including whatever mitigation requirements the Corps has determined to be necessary; (5) that undertaking any activity in reliance upon the subject permit authorization without requesting an approved JD constitutes the applicant's acceptance of the use of the preliminary JD, but that either form of JD will be processed as soon as is practicable; (6) accepting a permit authorization (e.g., signing a proffered individual permit) or undertaking any activity in reliance on any form of Corps permit authorization based on a preliminary JD constitutes agreement that all wetlands and other water bodies on the site affected in any way by that activity are jurisdictional waters of the United States, and precludes any challenge to such jurisdiction in any administrative or judicial compliance or enforcement action, or in any administrative appeal or in any Federal court; and (7) whether the applicant elects to use either an approved JD or a preliminary JD, that JD will be processed as soon as is practicable. Further, an approved JD, a proffered individual permit (and all terms and conditions contained therein), or individual permit denial can be administratively appealed pursuant to 33 C.F.R. Part 331, and that in any administrative appeal, jurisdictional issues can be raised (see 33 C.F.R. 331.5(a)(2)). If, during that administrative appeal, it becomes necessary to make an official determination whether CWA jurisdiction exists over a site, or to provide an official delineation of jurisdictional waters on the site, the Corps will provide an approved JD to accomplish that result, as soon as is practicable. This preliminary JD finds that there "*may be*" waters of the United States on the subject project site, and identifies all aquatic features on the site that could be affected by the proposed activity, based on the following information:

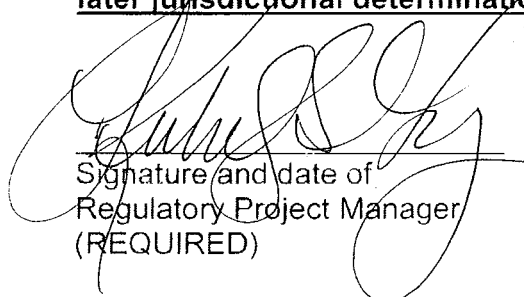


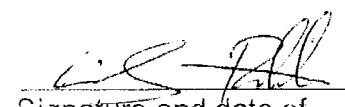
**SUPPORTING DATA. Data reviewed for preliminary JD (check all that apply)**

- checked items should be included in case file and, where checked and requested, appropriately reference sources below:

- Maps, plans, plots or plat submitted by or on behalf of the applicant/consultant:NDOT.
- Data sheets prepared/submitted by or on behalf of the applicant/consultant.
  - Office concurs with data sheets/delineation report.
  - Office does not concur with data sheets/delineation report.
- Data sheets prepared by the Corps:
- Corps navigable waters' study:
- U.S. Geological Survey Hydrologic Atlas:
  - USGS NHD data.
  - USGS 8 and 12 digit HUC maps.
- U.S. Geological Survey map(s). Cite scale & quad name:1:24000; Raeford.
- USDA Natural Resources Conservation Service Soil Survey. Citation: Scotland County.
- National wetlands inventory map(s). Cite name:.
- State/Local wetland inventory map(s):
- FEMA/FIRM maps:
- 100-year Floodplain Elevation is: (National Geodectic Vertical Datum of 1929)
- Photographs:  Aerial (Name & Date):  
or  Other (Name & Date):
- Previous determination(s). File no. and date of response letter:
- Other information (please specify):

**IMPORTANT NOTE: The information recorded on this form has not necessarily been verified by the Corps and should not be relied upon for later jurisdictional determinations.**

 11/1/09  
Signature and date of  
Regulatory Project Manager  
(REQUIRED)

  
Signature and date of  
person requesting preliminary JD  
(REQUIRED, unless obtaining  
the signature is impracticable)





**North Carolina Department of Transportation**  
**Highway Stormwater Program**  
**STORMWATER MANAGEMENT PLAN**  
**FOR LINEAR ROADWAY PROJECTS**



(Version 1.2; Released July 2012)

**Project/TIP No.:** B-4816      **County(ies):** Scotland      **Page** 1 **of** 3

**General Project Information**

<b>Project No.:</b>	B-4816	<b>Project Type:</b>	Bridge Replacement	<b>Date:</b>	2/28/2013
<b>NCDOT Contact:</b>	Marshall Clawson, PE	<b>Contractor / Designer:</b>	Ecological Engineering, LLP		
<b>Address:</b>	NCDOT-Hydraulics Unit	<b>Address:</b>	1151 SE Cary Parkway		
	1020 Birch Ridge Road		Suite 101		
	Raleigh, NC, 27610		Cary, NC 27518		
	<b>Phone:</b> 919-707-6713		<b>Phone:</b>	919-557-0929	
<b>Email:</b> mclawson@ncdot.gov		<b>Email:</b>	jfleming@ecologicaleng.com		
<b>City/Town:</b>		<b>County(ies):</b>	Scotland		
<b>River Basin(s):</b>	Lumber	<b>CAMA County?</b>	No		
<b>Primary Receiving Water:</b>	Juniper Creek	<b>NCDWQ Stream Index No.:</b>	14-34-4-3		
<b>NCDWQ Surface Water Classification for Primary Receiving Water</b>	<b>Primary:</b>	Class C			
	<b>Supplemental:</b>	Swamp Waters (Sw)			
<b>Other Stream Classification:</b>					
<b>303(d) Impairments:</b>	None				
<b>Buffer Rules in Effect</b>	N/A				

**Project Description**

<b>Project Length (lin. Miles or feet):</b>	1100'	<b>Surrounding Land Use:</b>	Wooded		
	<b>Proposed Project</b>		<b>Existing Site</b>		
<b>Project Built-Upon Area (ac.)</b>	0.94 ac.		0.72 ac.		
<b>Typical Cross Section Description:</b>	2-12' lanes with 4' paved shoulders		2-12' lanes with 2' paved shoulders		
<b>Average Daily Traffic (veh/hr/day):</b>	<b>Design/Future:</b> 6050/9280	<b>Existing:</b>	6050		

**General Project Narrative:** This project involves replacing bridge #65 over Juniper Creek on US15-501

**References**



**Project Environmental Summary**

**Surface Water Impacts**

Sheet No.	Station (From / To)	Feature Impacted	Water / Wetland / Buffer Type	Receiving Surface Water Name	NRTR Map ID	NCDWQ Stream Index	NCDWQ Surface Water Classification	303(d) Impairments	Type of Impact	Existing SCM	Proposed SCM
4	11+00 20+00	Wetland	Bottomland Hardwood	Juniper Creek		14-34-4-3	C, Sw	None	Fill	N/A	

\* List all stream and surface water impact locations regardless of jurisdiction or size.  
 Equalizer Pipes to be noted as a minimization of impacts.  
 All proposed SCMs listed must also be listed under Swales, Preformed Sour Holes and other Energy Dissipators, or Other Stormwater Control Measures.

**Description of Minimization of Impacts or Mitigation**

**References**



North Carolina Department of Transportation  
Highway Stormwater Program  
**STORMWATER MANAGEMENT PLAN**  
FOR LINEAR ROADWAY PROJECTS



(Version 1.2; Released July 2012)

**Project/TIP No.:** B-4816      **County(ies):** Scotland      **Page** 3      **of**      **3**

**Preformed Scour Holes and Energy Dissipators**

Sheet No.	Station	Energy Dissipator Type	Riprap Type	Drainage Area (ac)	Conveyance Structure	Pipe/Structure Dimensions (in)	Q10 (cfs)	V10 (fps)
4	14+96 -L- Rt	Riprap Apron / Pad	Class 'B'	0.05	Pipe	15	0.3	0.4
4	15+36 -L- Lt	Riprap Apron / Pad	Class 'B'	0.04	Pipe	15	0.2	0.4
4	16+93 -L- Rt	Riprap Apron / Pad	Class 'B'	0.04	Pipe	15	0.2	0.4
4	17+33 -L- Lt	Riprap Apron / Pad	Class 'B'	0.05	Pipe	15	0.3	0.4

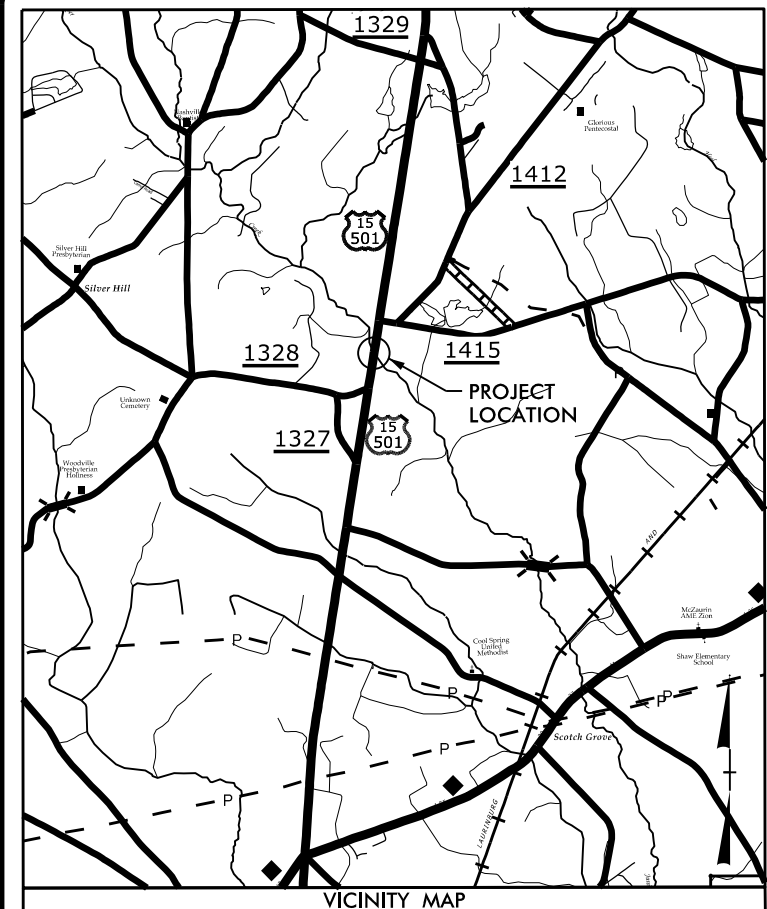
YES     NO    Have minimum design criteria, as presented in the NCDOT Best Management Practices Toolbox (2008), NCDOT Standard Details, or FHWA HEC-14 (July 2006), been met and verified, as applicable? If No, provide further explanation of why design criteria was not met.

**Additional Comments**

\* Refer to the NCDOT Best Management Practices Toolbox, Version 1 (March 2008), NCDOT Standard Details, the Federal Highway Administration (FHWA) Hydraulic Engineering Circular No. 14 (HEC-14), Third Edition, Hydraulic Design of Energy Dissipators for Culverts and Channels (July 2006), as applicable, for design guidance and criteria.

09/08/99

TIP PROJECT: B-4816



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

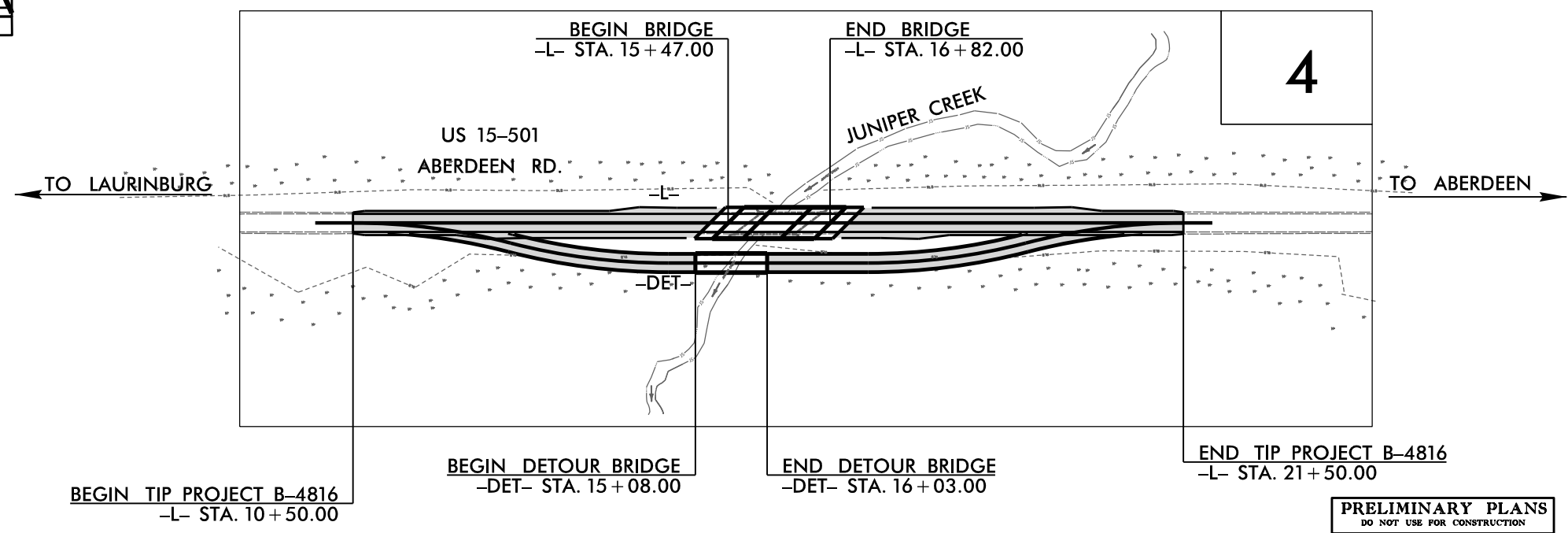
STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS  
**SCOTLAND COUNTY**

LOCATION: BRIDGE NO. 65 OVER JUNIPER CREEK  
ON US 15-501

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

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-4816	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
38586.1.1	BRSTP-0015(22)	PE	
38586.2.1	BRSTP-0015(22)	RW & UTILITIES	

PERMIT SHEET 1 OF 10



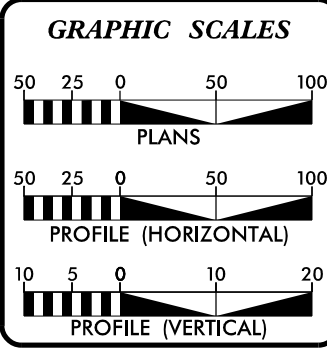
THIS PROJECT IS NOT WITHIN ANY MUNICIPAL BOUNDARIES

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

WETLAND AND SURFACE WATER IMPACTS PERMIT

PRELIMINARY PLANS  
DO NOT USE FOR CONSTRUCTION

CONTRACT:



**DESIGN DATA**

ADT 2013 = 6050
ADT 2033 = 9280
DHV = 10%
D = 60%
T = 25% *
* (TTST 6% + DUAL 19%)
V = 60 MPH
CLASS = RURAL MINOR ARTERIAL
REGIONAL TIER

**PROJECT LENGTH**

LENGTH ROADWAY TIP PROJECT B-4816	= 0.182 mi.
LENGTH STRUCTURE TIP PROJECT B-4816	= 0.026 mi.
TOTAL LENGTH TIP PROJECT B-4816	= 0.208 mi.

Prepared in the Office of:  
STEWART  
For  
NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION

2012 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:  
DECEMBER 20, 2012

LETTING DATE:  
DECEMBER 20, 2013

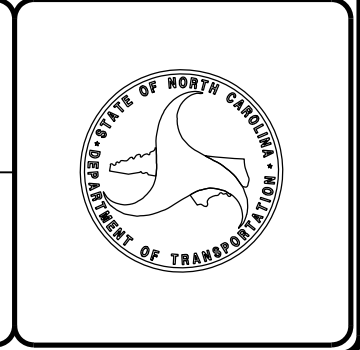
BEN CRAWFORD, PE PROJECT ENGINEER
JONATHAN HEFNER, PE PROJECT DESIGN ENGINEER
BRENDA L. MOORE, PE NCDOT CONTACT

HYDRAULICS ENGINEER

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

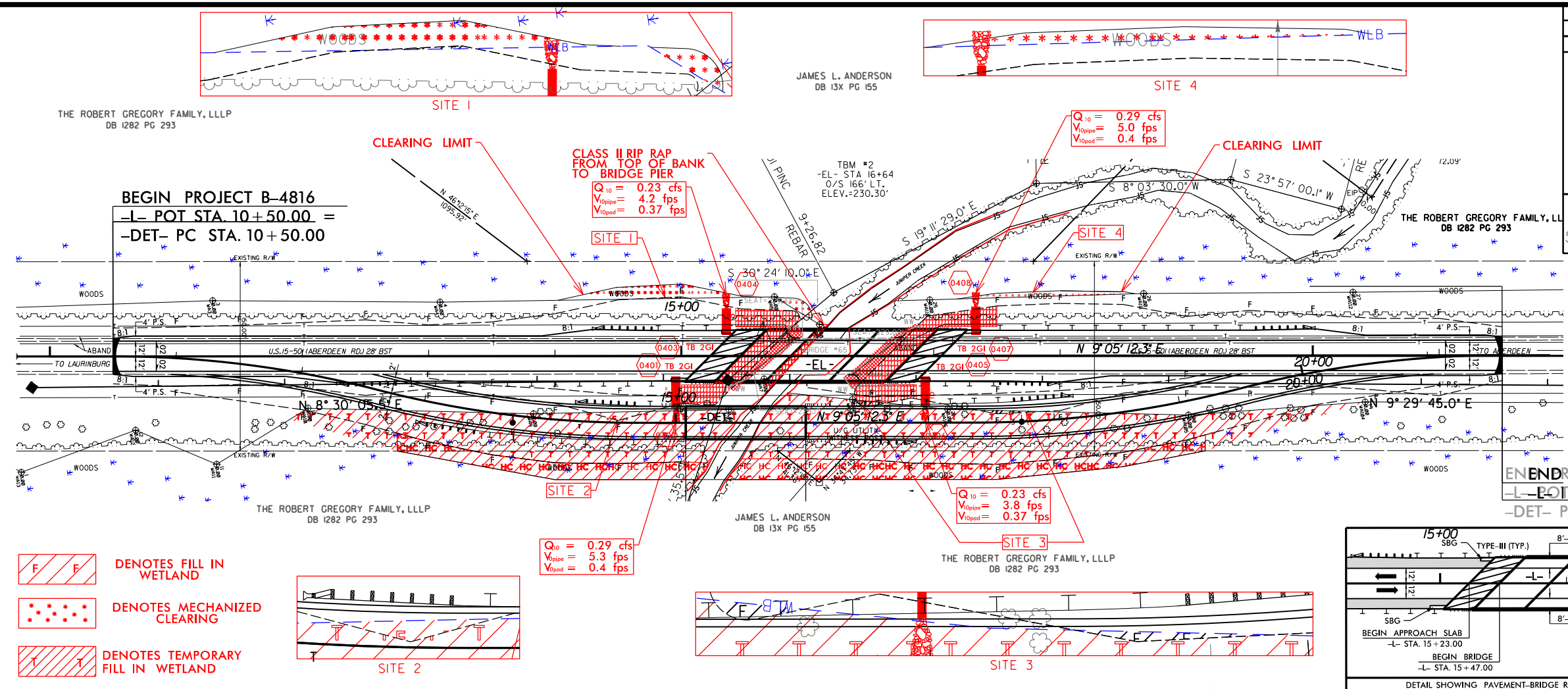
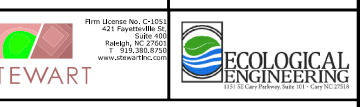
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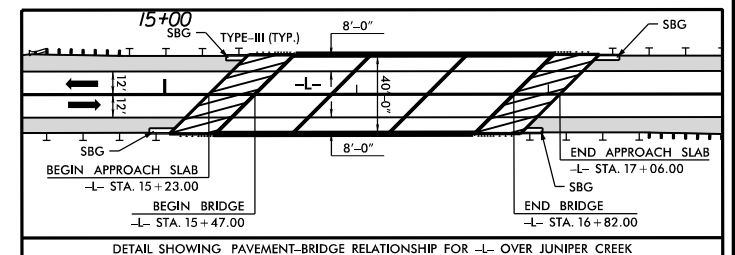


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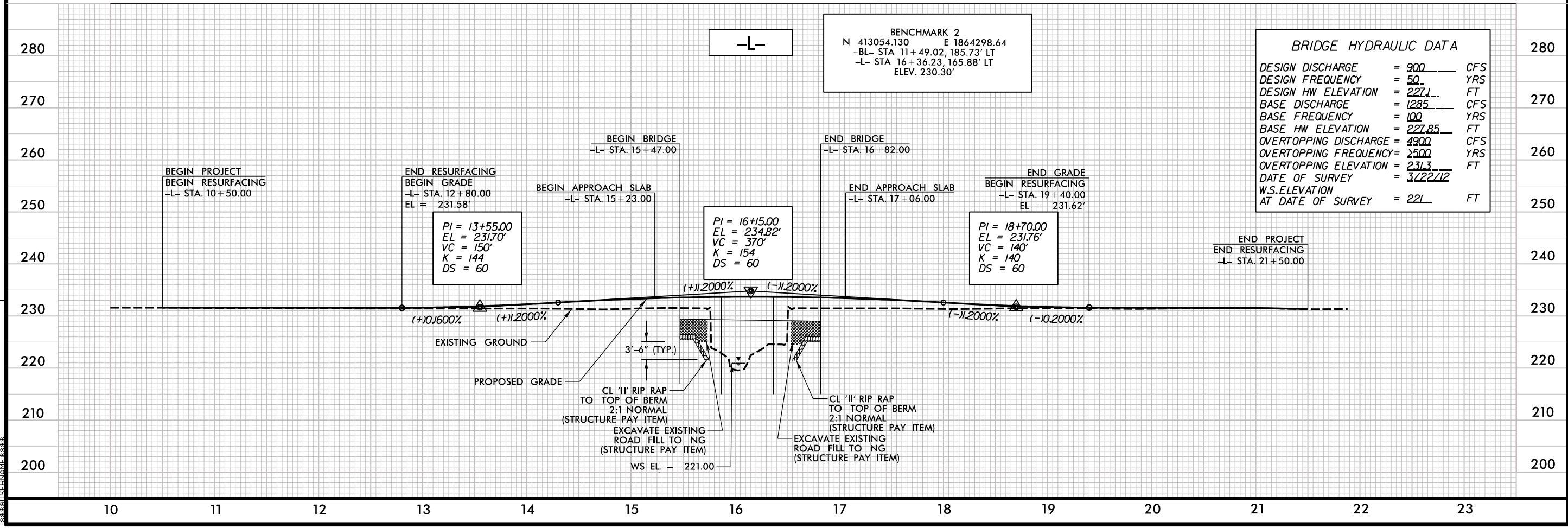




- DENOTES FILL IN WETLAND
- DENOTES MECHANIZED CLEARING
- DENOTES TEMPORARY FILL IN WETLAND

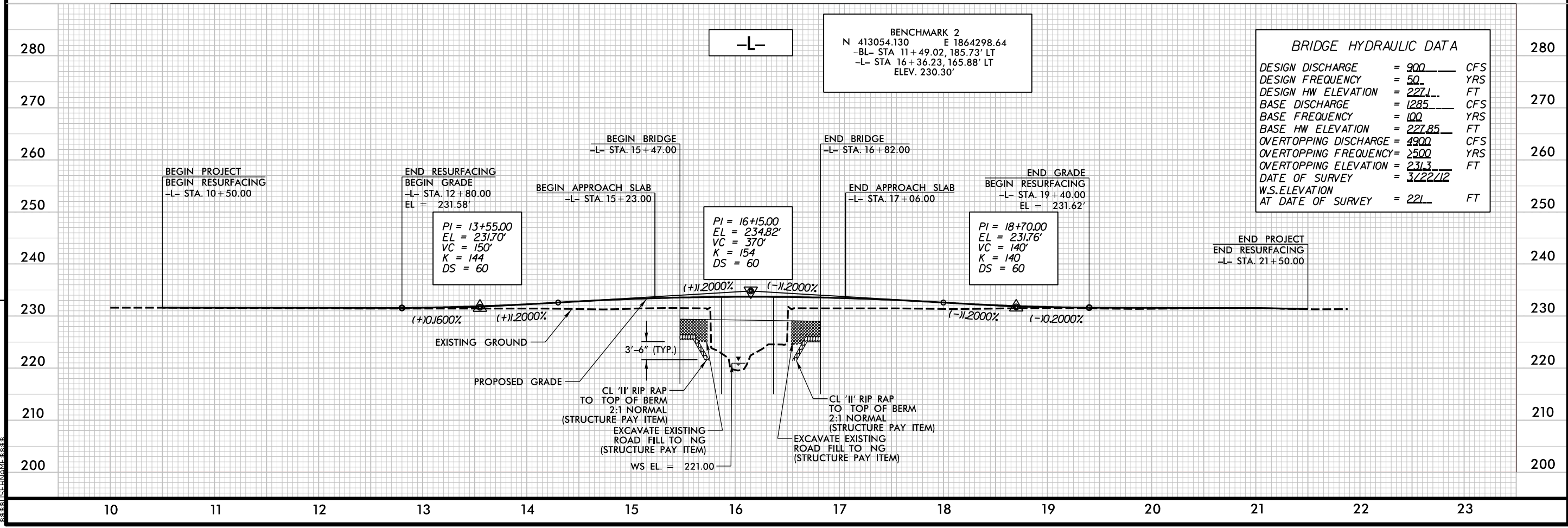
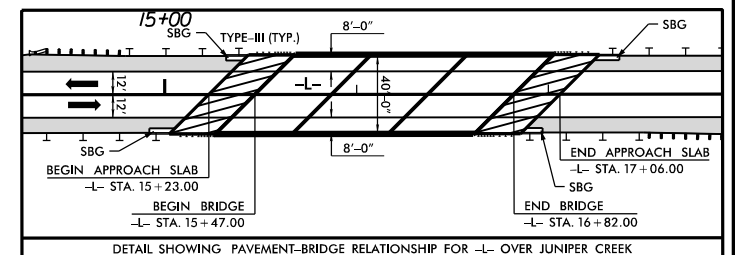
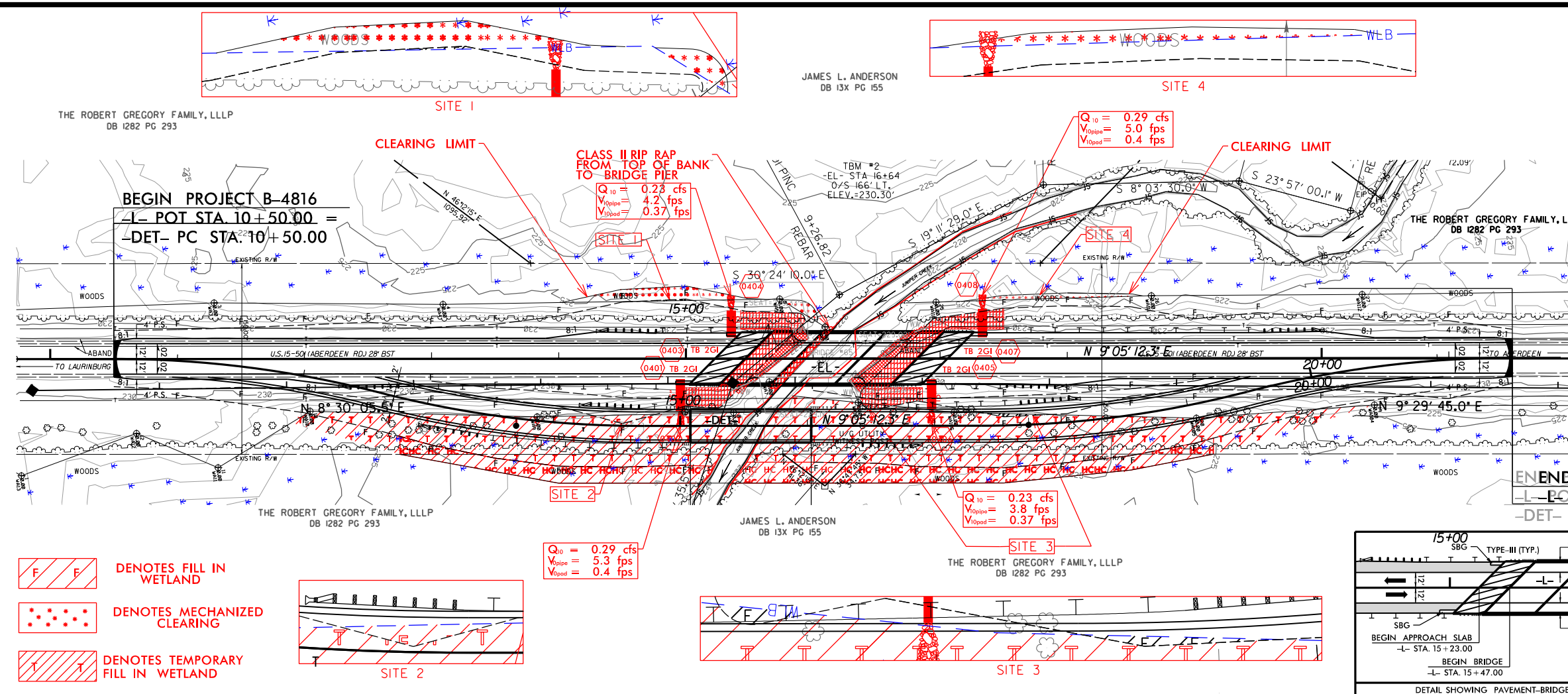


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 -DET- PT STA. 21+58.94







PERMIT SHEET 3 OF 10



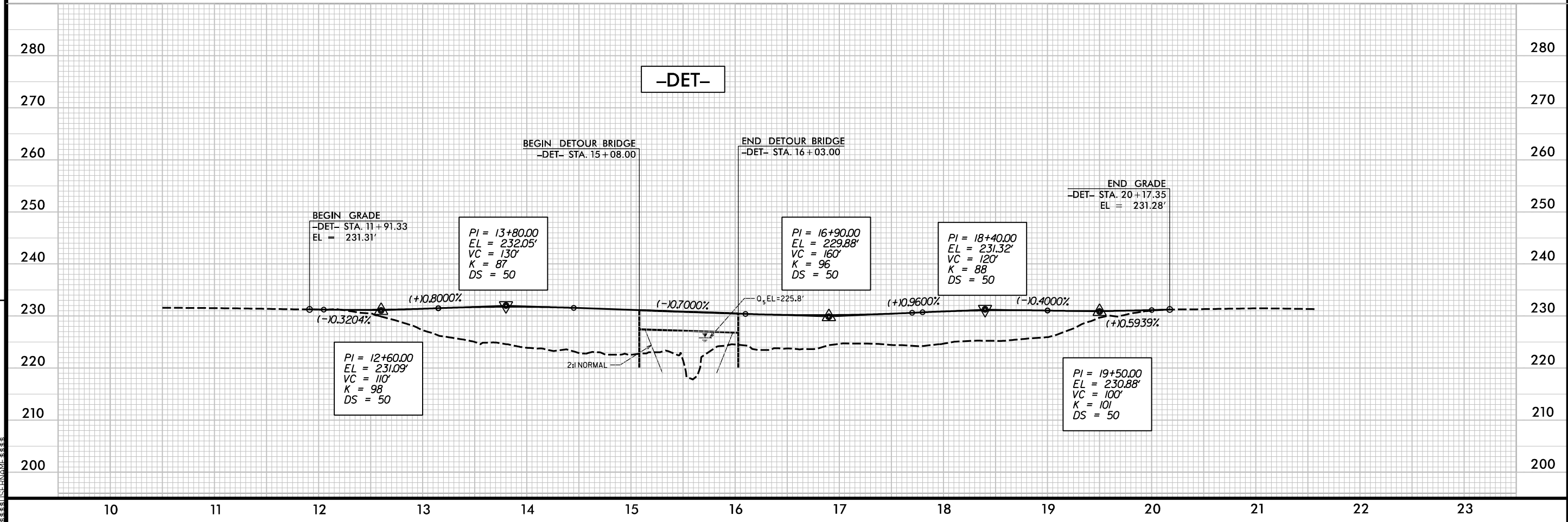
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REVISIONS

# DETOUR PROFILE

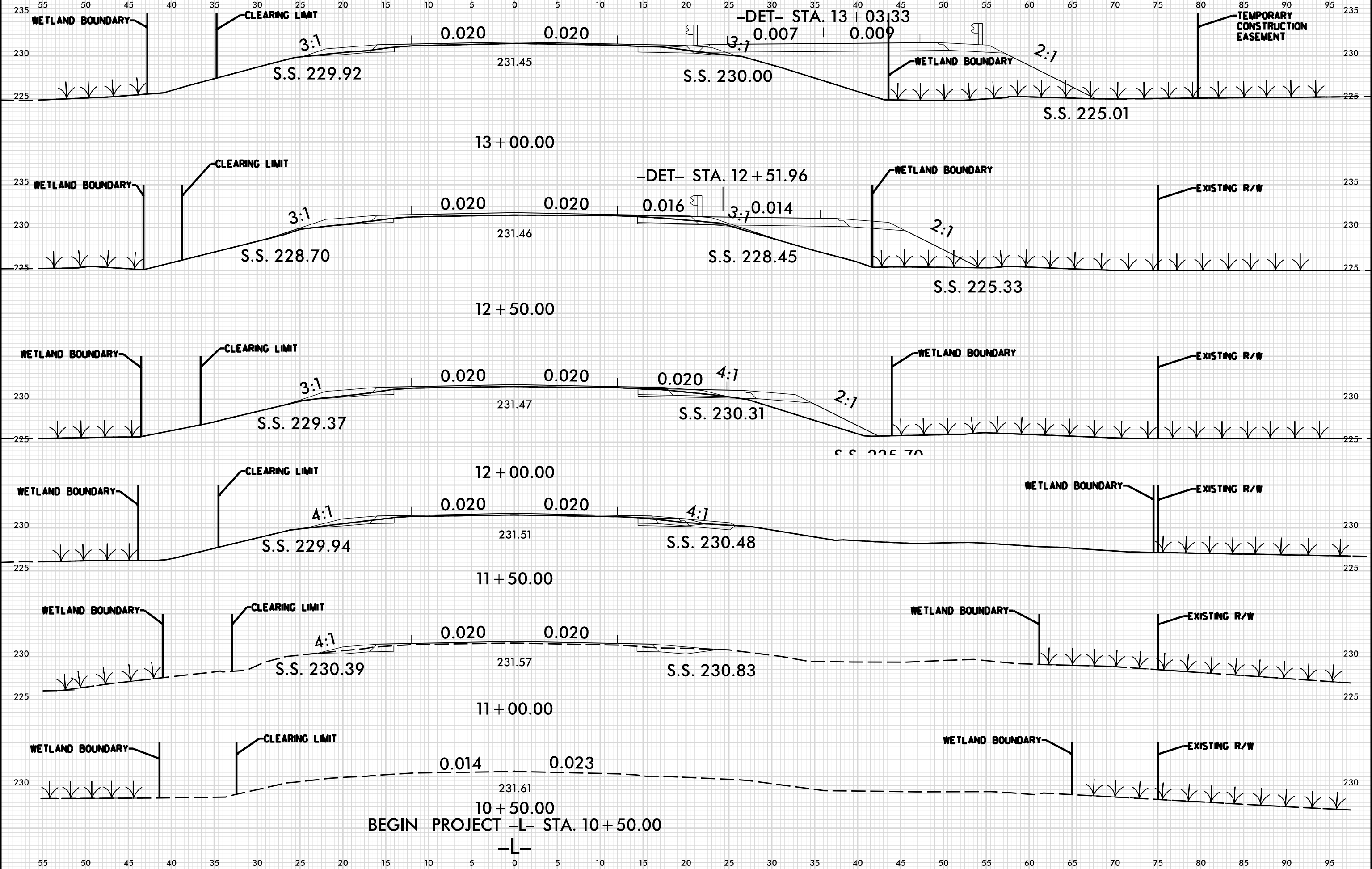
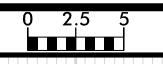
PROJECT REFERENCE NO. <i>B-4816</i>	SHEET NO. <i>4</i>
RW SHEET NO.	
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<b>INCOMPLETE PLANS</b> DO NOT USE FOR A/W ACQUISITION <b>PRELIMINARY PLANS</b> DO NOT USE FOR CONSTRUCTION	
 <small>Ill. License No. C-1013 421 Fayetteville St. Raleigh, NC 27601 P. 919.386.8750 www.stewartec.com</small>	 <small>ECOLOGICAL ENGINEERING</small>

PERMIT SHEET 4 OF 10



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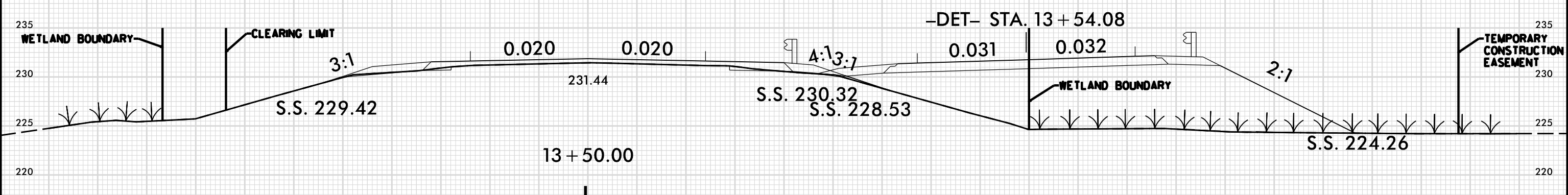
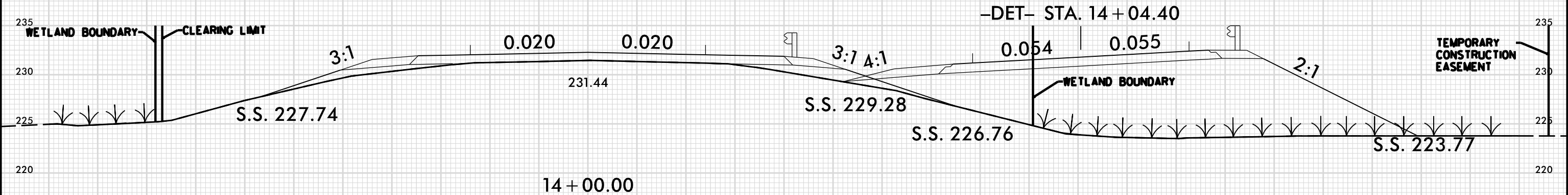
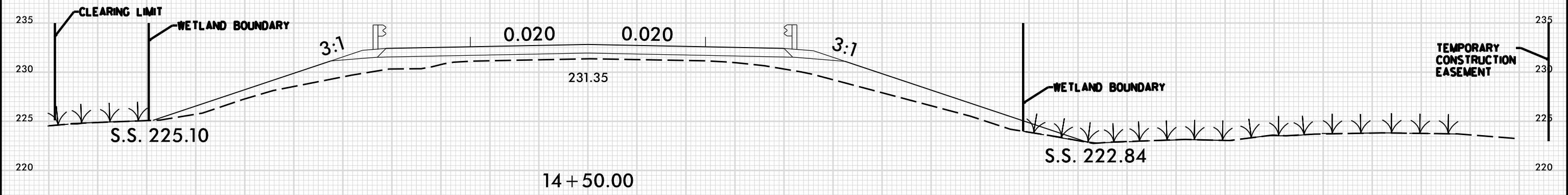
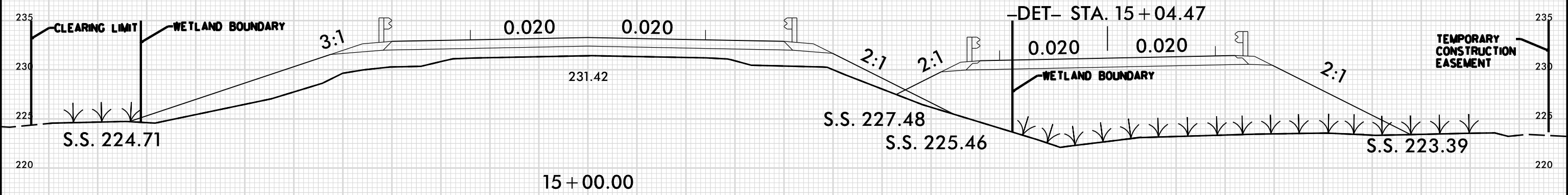
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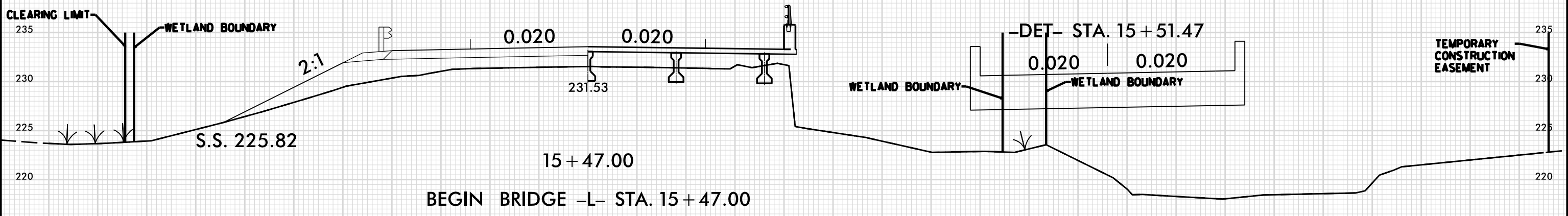
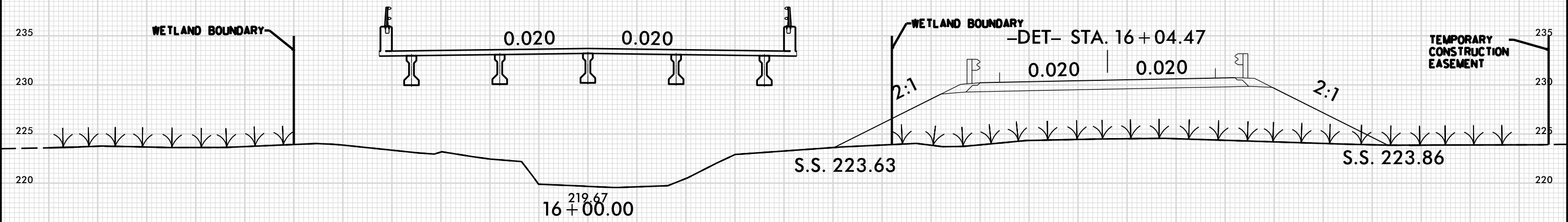
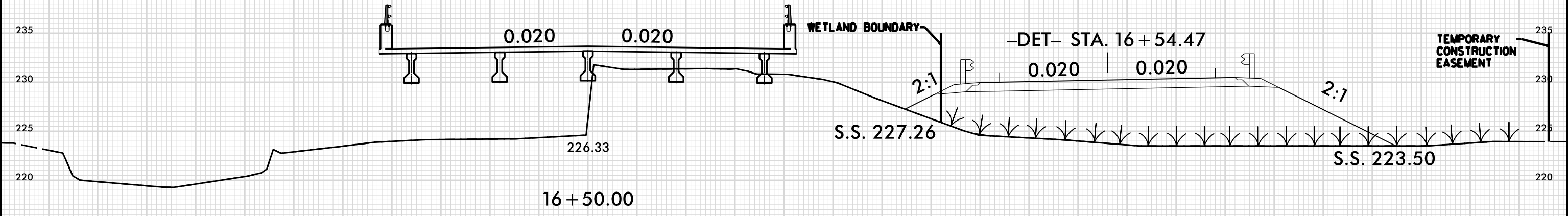
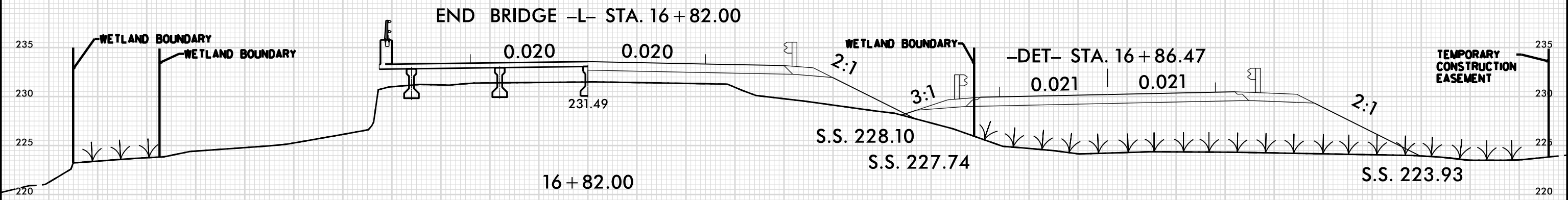


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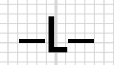
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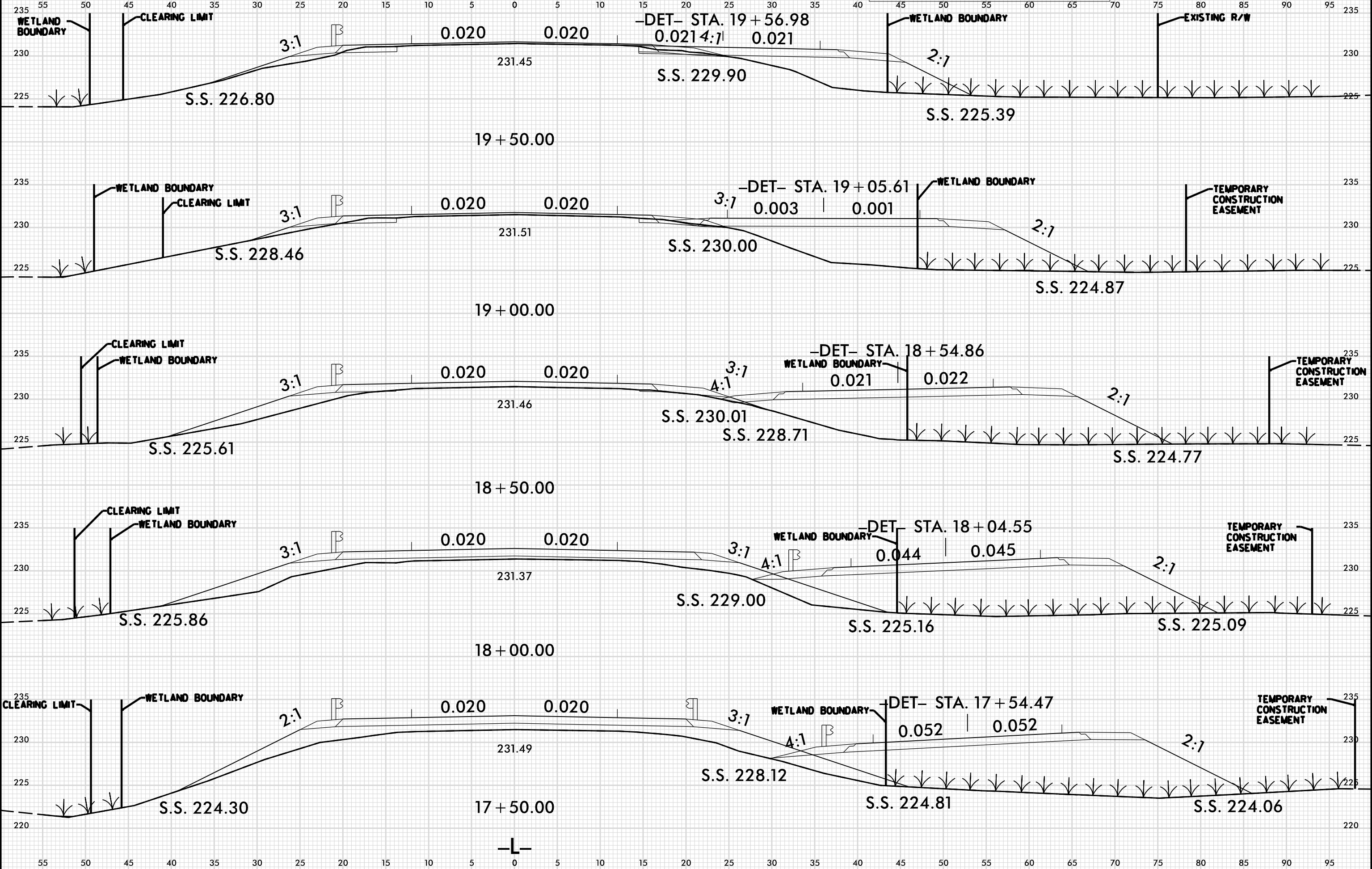
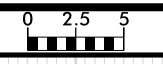


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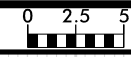


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SUSAN M. HAYES  
REGISTERED PROFESSIONAL ENGINEER  
NO. 10000  
STATE OF CALIFORNIA

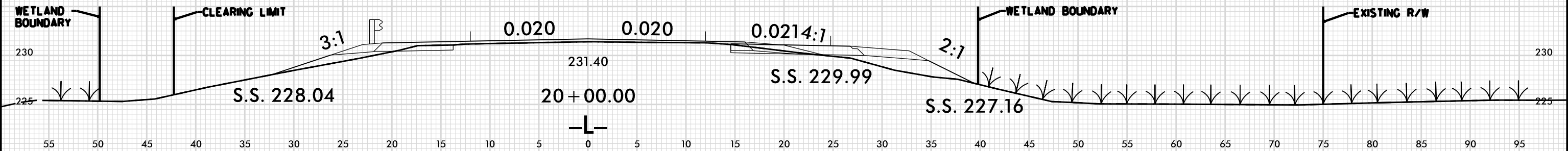
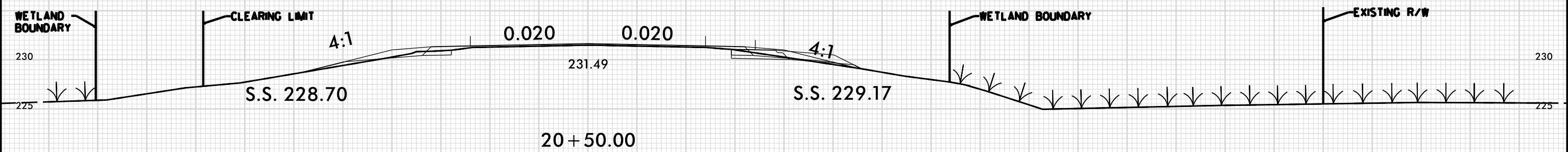
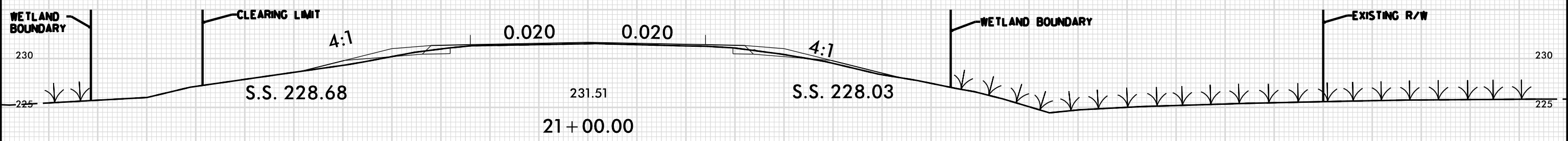
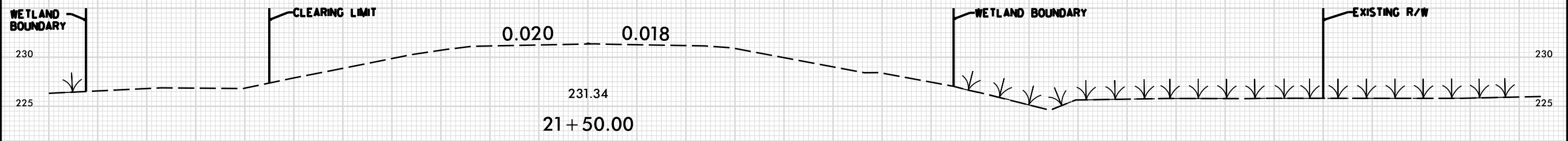


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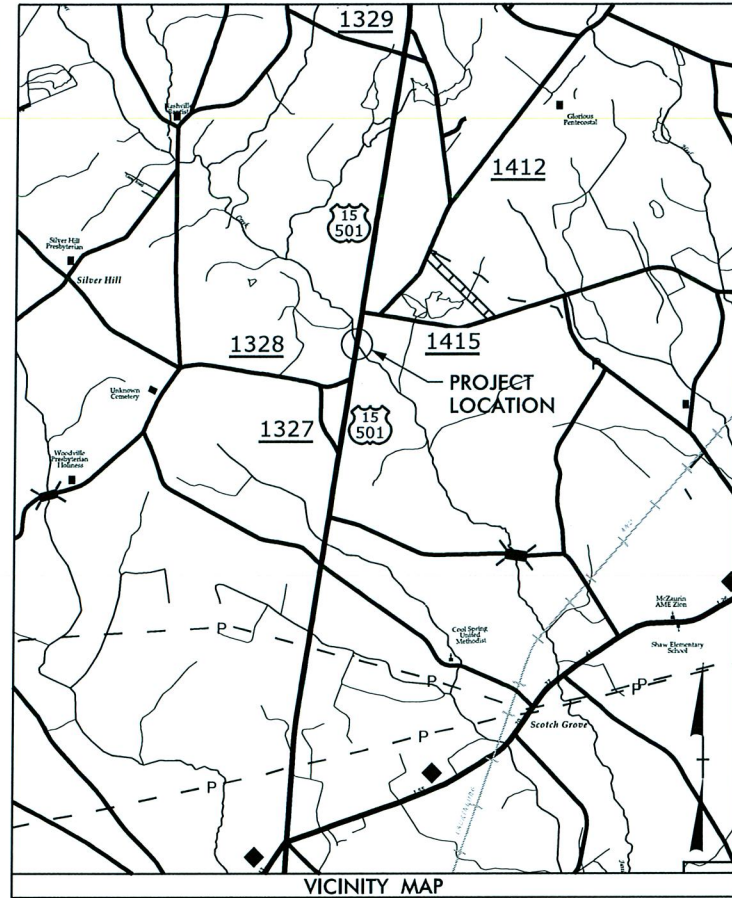
**WETLAND PERMIT IMPACT SUMMARY**

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)	Natural Stream Design (ft)
1	14+02 to 16+03 -L- LT.	1@40', 1@50', 1@45', 36" Prestressed Concrete Girders	<0.01			0.03						
2	11+91 to 15+52 -L- RT.	1@40', 1@50', 1@45', 36" Prestressed Concrete Girders	<0.01	0.25			0.07					
3	15+35 to 20+41 -L- RT.	1@40', 1@50', 1@45', 36" Prestressed Concrete Girders	<0.01	0.36			0.11					
4	17+18 to 18+60 -L- RT.	1@40', 1@50', 1@45', 36" Prestressed Concrete Girders				<0.01						
TOTALS: *			0.00	0.61		0.03	0.18					

\*Rounded totals are sum of actual impacts.

NC DEPARTMENT OF TRANSPORTATION  
 DIVISION OF HIGHWAYS  
 REPLACE BRIDGE #65 ON US 15-501 OVER JUNIPER CREEK  
 SCOTLAND COUNTY  
 38586.1.1 (B-4816)  
**10**     **10**  
 SHEET     OF     6/13/2013

**TIP PROJECT: B-4816**



STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

**NEU UTILITY RELOCATION PLANS  
SCOTLAND COUNTY**

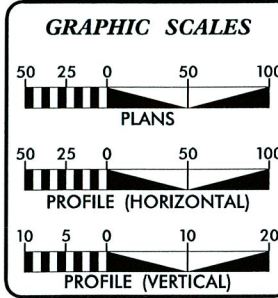
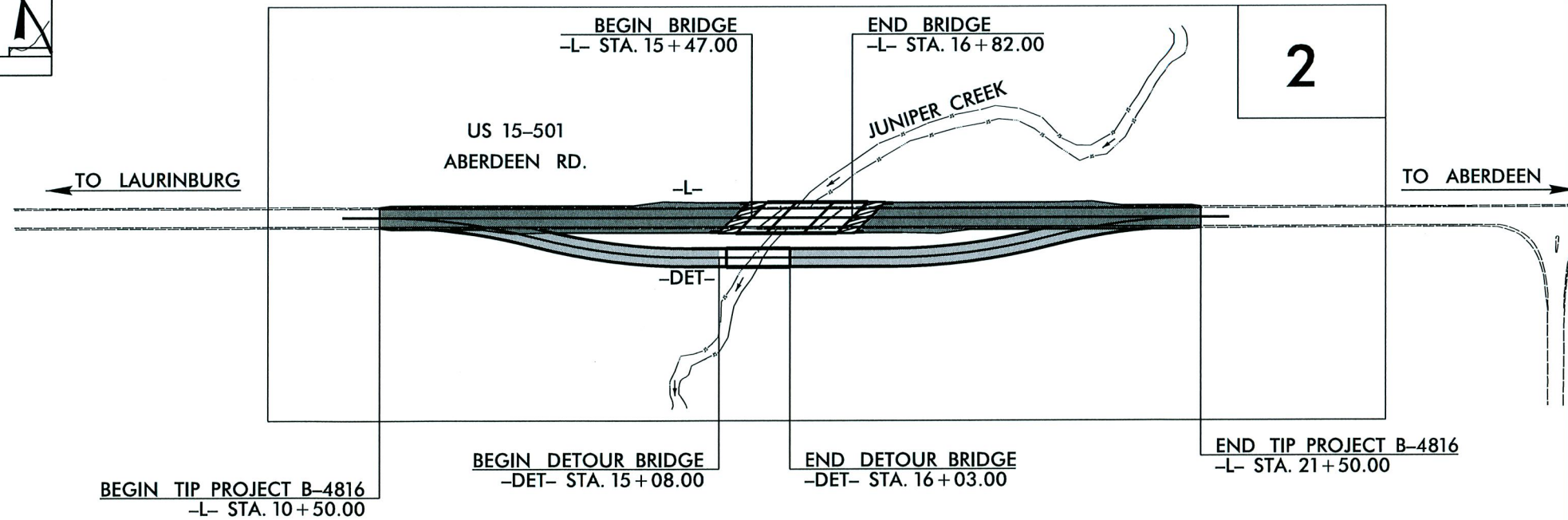
**LOCATION: BRIDGE NO. 65 ON US 15-501  
OVER JUNIPER CREEK**

**TYPE OF WORK: UTILITY BY OTHERS RELOCATION**

T.I.P. NO.	SHEET NO.
B-4816	UO-1

NEU UTILITY  
RELOCATION PLANS

Utility Permit Drawing  
Sheet 1 of 3



**INDEX OF SHEETS**

SHEET NO.	DESCRIPTION
UO-1	TITLE SHEET
UO-2	UTILITY RELOCATION

**UTILITY OWNERS ON PROJECT**

(1) POWER - PROGRESS ENERGY
(2) PHONE - AT&T

UTILITY DESIGN BY:

**MA Engineering**  
CONSULTANTS, INC.  
598 East Chatham Street Suite 137 Cary, NC 27511  
Phone: 919 297 0220 Fax: 919 297 0221

NCDOT PROJECT ENGINEER:  
STEVE MCKEE, P.E.

PREPARED FOR:  
NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
DIVISION BRIDGE PROGRAM

4/24/2013 11:02:09 AM P:\JOBS\0659\082\B-4816\Utl\Files\Rdy\_Uf\Pro\NEU Drawings\B4816\_ut\_NEU\_tsh.dgn

**UTILITIES BY OTHERS**

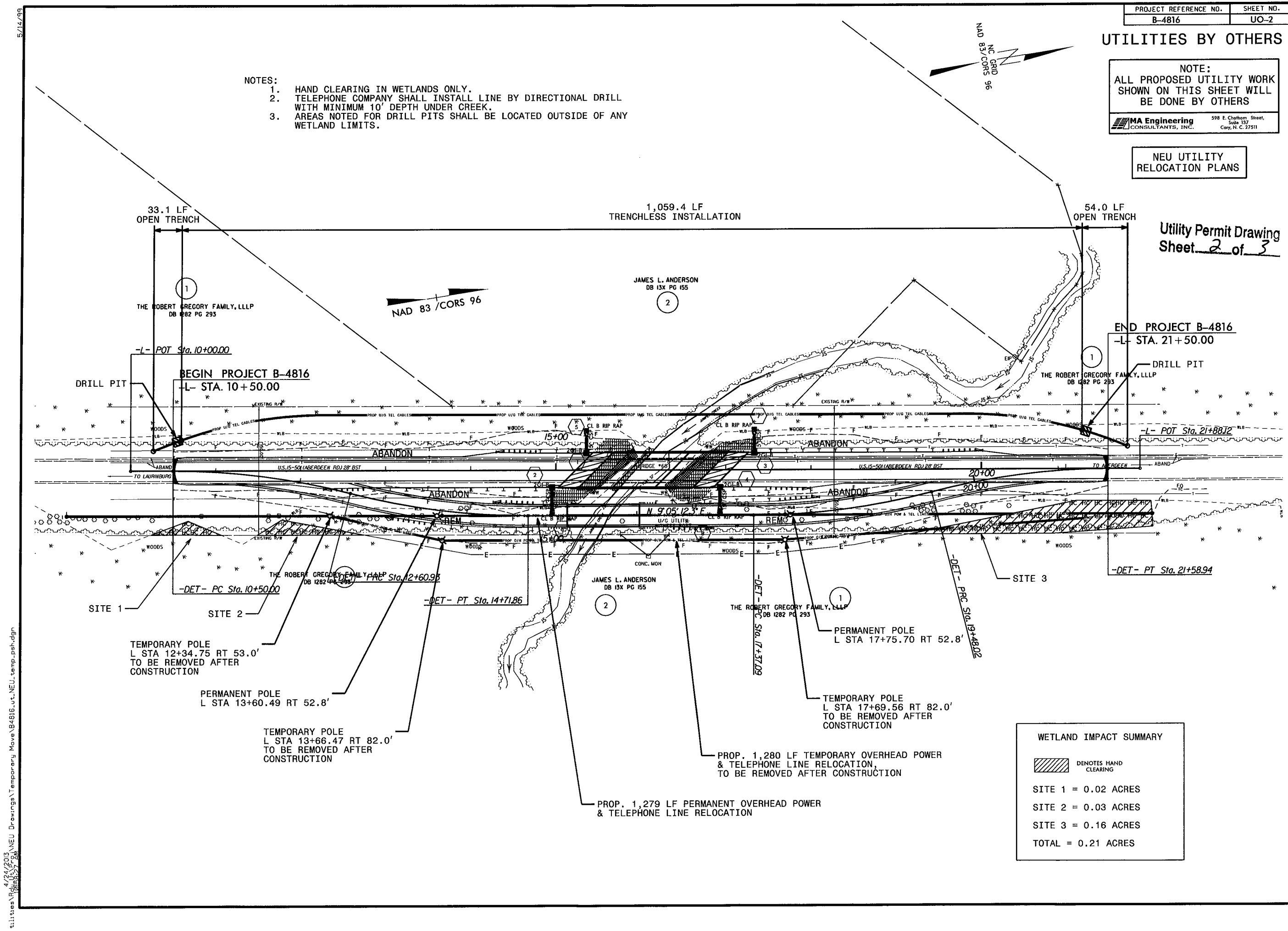
NOTE:  
ALL PROPOSED UTILITY WORK SHOWN ON THIS SHEET WILL BE DONE BY OTHERS

**MA Engineering**  
CONSULTANTS, INC. 598 E. Chatham Street, Suite 137, Cary, N. C. 27511

**NEU UTILITY RELOCATION PLANS**

- NOTES:
- HAND CLEARING IN WETLANDS ONLY.
  - TELEPHONE COMPANY SHALL INSTALL LINE BY DIRECTIONAL DRILL WITH MINIMUM 10' DEPTH UNDER CREEK.
  - AREAS NOTED FOR DRILL PITS SHALL BE LOCATED OUTSIDE OF ANY WETLAND LIMITS.

Utility Permit Drawing Sheet 2 of 3



**WETLAND IMPACT SUMMARY**

	DENOTES HAND CLEARING
SITE 1	= 0.02 ACRES
SITE 2	= 0.03 ACRES
SITE 3	= 0.16 ACRES
<b>TOTAL</b>	<b>= 0.21 ACRES</b>

4/24/2015 11:57 AM NEU Drawings\Temporary Move\B4816.ut...NEU.temp\_psh.dgn  
 5/14/99

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	10+24.4 to 11+20.5	Temp O/H Line							0.02						
2	11+38.1 to 15+32.5	Temp O/H Line							0.03						
	12+34.75 RT 53.0'	Temp Utility Pole	<0.01												
	13+60.49 RT 52.8'	Perm Utility Pole	<0.01												
	13+66.47 RT 82.0'	Temp Utility Pole	<0.01												
3	15+36.7 to 22+03.9	Temp O/H Line						0.16							
	17+69.56 RT 82.0'	Temp Utility Pole	<0.01												
	17+75.70 RT 52.8'	Perm Utility Pole	<0.01												
TOTALS:			<0.01							0.21					

Actual impact from one proposed utility pole equal to 0.00004 acres

Total impact from proposed utility poles equal to 0.00020 acres

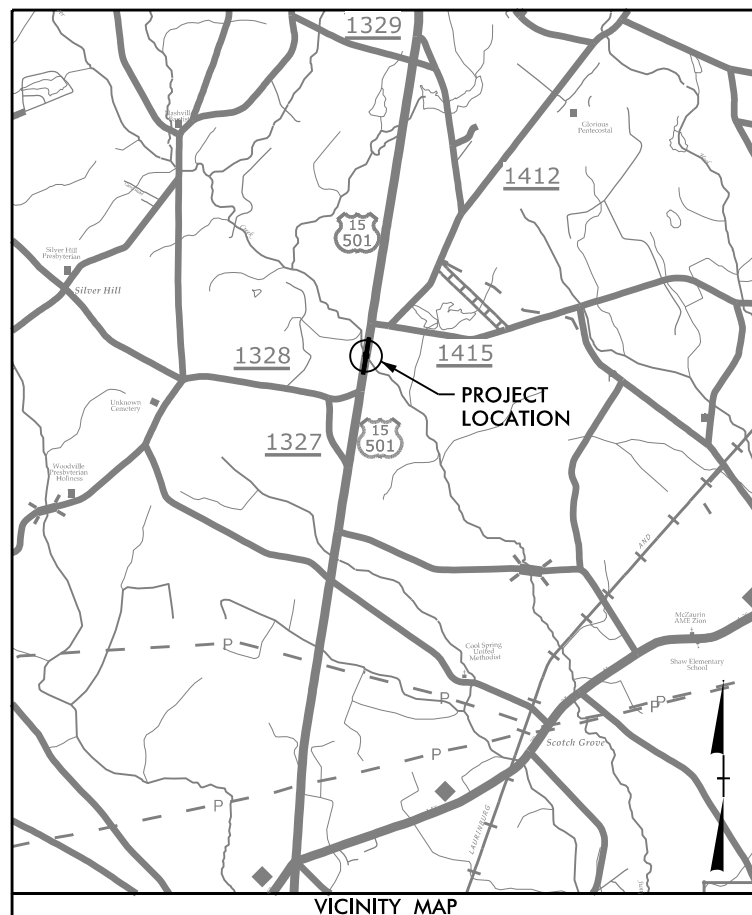
Utility Permit Drawing  
Sheet 3 of 3

NC DEPARTMENT OF TRANSPORTATION  
DIVISION OF HIGHWAYS  
SCOTLAND COUNTY  
WBS - (B-4816)

SHEET 1 OF 1 4/24/2013

09.08/99

**TIP PROJECT: B-4816**



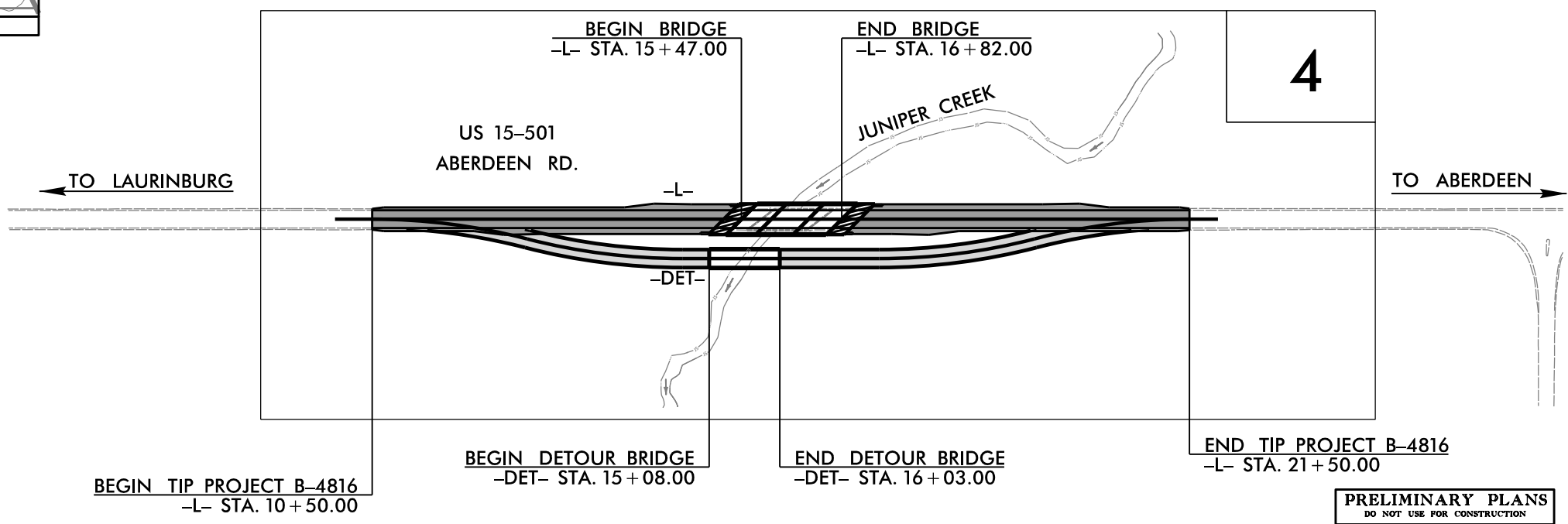
See Sheet 1-A For Index of Sheets  
See Sheet 1-B For Conventional Symbols

STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS  
**SCOTLAND COUNTY**

**LOCATION:** BRIDGE NO. 65 OVER JUNIPER CREEK  
ON US 15-501

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

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-4816	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
38586.1.1	BRSTP-0015(22)	PE	
38586.2.1	BRSTP-0015(22)	RW & UTILITIES	



THIS PROJECT IS NOT WITHIN ANY MUNICIPAL BOUNDARIES

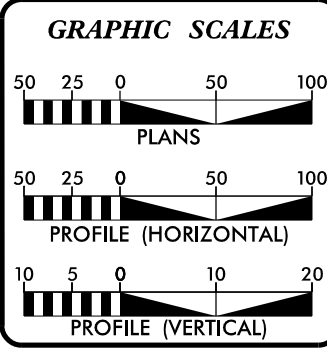
CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD III

BEGIN TIP PROJECT B-4816  
-L- STA. 10+50.00

END TIP PROJECT B-4816  
-L- STA. 21+50.00

**PRELIMINARY PLANS**  
DO NOT USE FOR CONSTRUCTION

**CONTRACT:**



**DESIGN DATA**  
ADT 2013 = 6050  
ADT 2033 = 9280  
DHV = 10%  
D = 60%  
T = 25% \*  
\* (TTST 6% + DUAL 19%)  
V = 60 MPH  
CLASS = RURAL MINOR ARTERIAL  
REGIONAL TIER

**PROJECT LENGTH**

LENGTH ROADWAY TIP PROJECT B-4816 = 0.182 mi.  
LENGTH STRUCTURE TIP PROJECT B-4816 = 0.026 mi.  
TOTAL LENGTH TIP PROJECT B-4816 = 0.208 mi.

Prepared in the Office of:  
**STEWART**  
For  
NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
2012 STANDARD SPECIFICATIONS

**RIGHT OF WAY DATE:**

**LETTING DATE:**  
DECEMBER 20, 2013

**BEN CRAWFORD, PE**  
PROJECT ENGINEER

**JONATHAN HEFNER, PE**  
PROJECT DESIGN ENGINEER

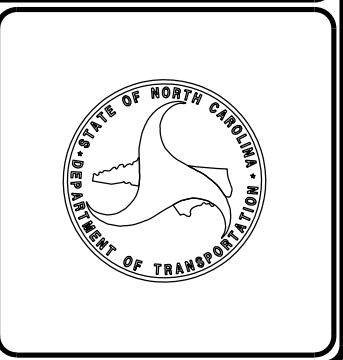
**BRENDA L. MOORE, PE**  
NCDOT CONTACT

**HYDRAULICS ENGINEER**

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

**ROADWAY DESIGN ENGINEER**

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



12/18/2012  
I:\Roadway\Proj\B4816\_rdy\_tsh.dgn  
USER:jhefner

STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

# 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	○ EP
Property Corner	-----
Property Monument	□ ECM
Parcel/Sequence Number	②③
Existing Fence Line	-x-x-x-
Proposed Woven Wire Fence	○
Proposed Chain Link Fence	□
Proposed Barbed Wire Fence	◇
Existing Wetland Boundary	--- WLB ---
Proposed Wetland Boundary	--- WLB ---
Existing Endangered Animal Boundary	--- EAB ---
Existing Endangered Plant Boundary	--- EPB ---
Known Soil Contamination: Area or Site	☠ ☠
Potential Soil Contamination: Area or Site	☠ ?

### BUILDINGS AND OTHER CULTURE:

Gas Pump Vent or U/G Tank Cap	○
Sign	○ S
Well	○ W
Small Mine	✕
Foundation	□
Area Outline	□
Cemetery	⊕
Building	□
School	□
Church	⊕
Dam	▬

### HYDROLOGY:

Stream or Body of Water	-----
Hydro, Pool or Reservoir	-----
Jurisdictional Stream	--- JS ---
Buffer Zone 1	--- BZ 1 ---
Buffer Zone 2	--- BZ 2 ---
Flow Arrow	←
Disappearing Stream	→
Spring	○
Wetland	★
Proposed Lateral, Tail, Head Ditch	-----
False Sump	▽

### RAILROADS:

Standard Gauge	-----
RR Signal Milepost	○ CSX TRANSPORTATION MILEPOST 35
Switch	□ 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	--- E ---
Proposed Temporary Construction Easement	--- E ---
Proposed Temporary Drainage Easement	--- TDE ---
Proposed Permanent Drainage Easement	--- PDE ---
Proposed Permanent Drainage / Utility Easement	--- DUE ---
Proposed Permanent Utility Easement	--- PUE ---
Proposed Temporary Utility Easement	--- TUE ---
Proposed Aerial Utility Easement	--- AUE ---
Proposed Permanent Easement with Iron Pin and Cap Marker	◆

### ROADS AND RELATED FEATURES:

Existing Edge of Pavement	-----
Existing Curb	-----
Proposed Slope Stakes Cut	--- C ---
Proposed Slope Stakes Fill	--- F ---
Proposed Curb Ramp	○ CR
Existing Metal Guardrail	-----
Proposed Guardrail	-----
Existing Cable Guiderail	-----
Proposed Cable Guiderail	-----
Equality Symbol	⊕
Pavement Removal	▨

### VEGETATION:

Single Tree	☼
Single Shrub	☼
Hedge	-----
Woods Line	-----

Orchard	☼ ☼ ☼ ☼
Vineyard	□ Vineyard

### EXISTING STRUCTURES:

MAJOR:	
Bridge, Tunnel or Box Culvert	CONC
Bridge Wing Wall, Head Wall and End Wall	CONC WW
MINOR:	
Head and End Wall	CONC HW
Pipe Culvert	-----
Footbridge	-----
Drainage Box: Catch Basin, DI or JB	□ CB
Paved Ditch Gutter	-----
Storm Sewer Manhole	⊕
Storm Sewer	--- S ---

### UTILITIES:

POWER:	
Existing Power Pole	●
Proposed Power Pole	○
Existing Joint Use Pole	●
Proposed Joint Use Pole	○
Power Manhole	⊕
Power Line Tower	⊗
Power Transformer	⊗
U/G Power Cable Hand Hole	□
H-Frame Pole	●
Recorded U/G Power Line	--- P ---
Designated U/G Power Line (S.U.E.*)	--- P ---

### TELEPHONE:

Existing Telephone Pole	●
Proposed Telephone Pole	○
Telephone Manhole	⊕
Telephone Booth	□
Telephone Pedestal	⊕
Telephone Cell Tower	⊗
U/G Telephone Cable Hand Hole	□
Recorded U/G Telephone Cable	--- T ---
Designated U/G Telephone Cable (S.U.E.*)	--- T ---
Recorded U/G Telephone Conduit	--- TC ---
Designated U/G Telephone Conduit (S.U.E.*)	--- TC ---
Recorded U/G Fiber Optics Cable	--- T FO ---
Designated U/G Fiber Optics Cable (S.U.E.*)	--- T FO ---

### WATER:

Water Manhole	⊕
Water Meter	○
Water Valve	⊗
Water Hydrant	⊕
Recorded U/G Water Line	--- W ---
Designated U/G Water Line (S.U.E.*)	--- W ---
Above Ground Water Line	--- A/G Water ---

### TV:

TV Satellite Dish	☼
TV Pedestal	□
TV Tower	⊗
U/G TV Cable Hand Hole	□
Recorded U/G TV Cable	--- TV ---
Designated U/G TV Cable (S.U.E.*)	--- TV ---
Recorded U/G Fiber Optic Cable	--- TV FO ---
Designated U/G Fiber Optic Cable (S.U.E.*)	--- TV FO ---

### GAS:

Gas Valve	◇
Gas Meter	⊕
Recorded U/G Gas Line	--- G ---
Designated U/G Gas Line (S.U.E.*)	--- G ---
Above Ground Gas Line	--- A/G Gas ---

### SANITARY SEWER:

Sanitary Sewer Manhole	⊕
Sanitary Sewer Cleanout	⊕
U/G Sanitary Sewer Line	--- SS ---
Above Ground Sanitary Sewer	--- A/G Sanitary Sewer ---
Recorded SS Forced Main Line	--- FSS ---
Designated SS Forced Main Line (S.U.E.*)	--- FSS ---

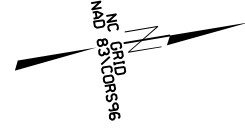
### MISCELLANEOUS:

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

6/2/99

# SURVEY CONTROL SHEET B-4816

PROJECT REFERENCE NO.	SHEET NO.
B-4816	1C
Location and Surveys	



BL POINT	DESC.	NORTH	EAST	ELEVATION	L STATION	OFFSET
101	BL-101	412381.8659	1864384.1951	230.31	OUTSIDE PROJECT LIMITS	
102	BL-102	412926.7270	1864465.6400	230.81	15+36.00	19.15 RT
2	B4816-2	413935.9340	1864634.4480	231.13	OUTSIDE PROJECT LIMITS	

.....  
 BM1 ELEVATION = 230.87  
 N 412261 E 1864412  
 L STATION 21+88.00  
 S 80°59'11.91" W DIST 1318.66  
 BM1  
 .....  
 BM2 ELEVATION = 230.30  
 N 413054 E 1864299  
 L STATION 16+36.00 166 LEFT  
 BM2  
 .....

**LOCALIZED PROJECT COORDINATES**  
**-L- STA. 10+50.00 BEGIN TIP PROJECT B-4816**  
**N = 412449.0585**  
**E = 1864369.8487**

**NCDOT BASELINE STATION "BL-102"**  
**LOCALIZED PROJECT COORDINATES**  
**N = 412926.7270**  
**E = 1864465.6400**

**LOCALIZED PROJECT COORDINATES**  
**-L- STA. 21+50.00 END TIP PROJECT B-4816**  
**N = 413535.2540**  
**E = 1864543.5712**

BM #1  
 -L- STA 21+88  
 S05°59'12" W 1318.66'  
 ELEV=230.87

BM #2  
 -L- STA 16+36  
 166' LEFT  
 ELEV=230.30'

**NCDOT BASELINE STATION "BL-101"**  
**LOCALIZED PROJECT COORDINATES**  
**N = 412381.8659**  
**E = 1864384.1951**

**NCDOT GPS MONUMENT "B4816-2"**  
**LOCALIZED PROJECT COORDINATES**  
**N = 413935.934**  
**E = 1864634.4480**

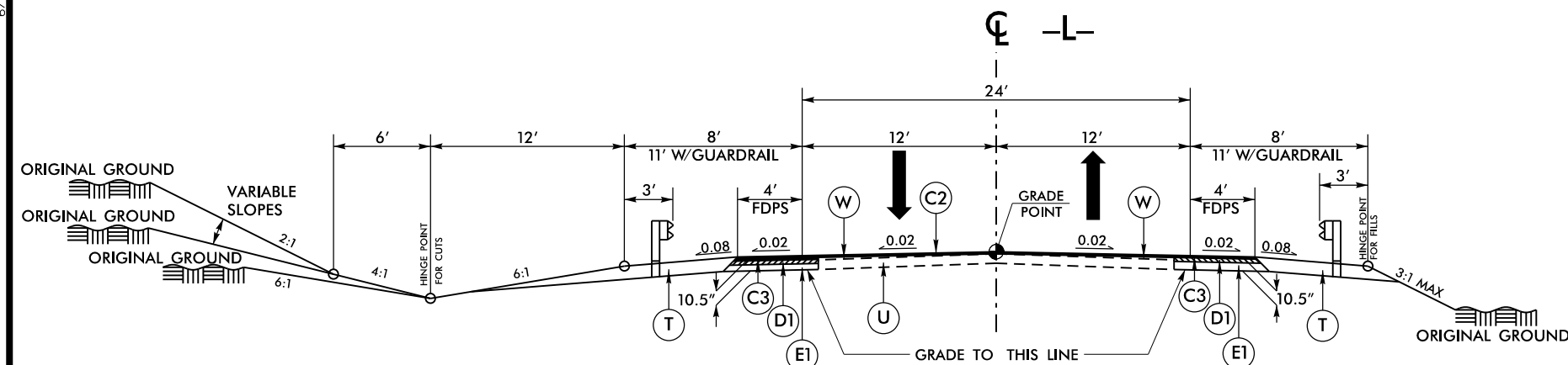
**NOTES:**

- THE CONTROL DATA FOR THIS PROJECT CAN BE FOUND ELECTRONICALLY BY SELECTING PROJECT CONTROL DATA AT:  
[HTTP://WWW.NCDOT.ORG/DOH/PRECONSTRUCT/HIGHWAY/LOCATION/PROJECT/](http://www.ncdot.org/doh/preconstruct/highway/location/project/)  
 THE FILES TO BE FOUND ARE AS FOLLOWS:  
 B4816\_LS\_CONTROL.TXT  
 SITE CALIBRATION INFORMATION HAS NOT BEEN PROVIDED FOR THIS PROJECT. IF FURTHER INFORMATION IS NEEDED, PLEASE CONTACT THE LOCATION AND SURVEYS UNIT.
- INDICATES GEODETIC CONTROL MONUMENTS USED OR SET FOR HORIZONTAL PROJECT CONTROL BY THE NCDOT LOCATION AND SURVEYS UNIT.  
 PROJECT CONTROL ESTABLISHED USING GLOBAL POSITIONING SYSTEM.  
 NETWORK ESTABLISHED FROM NGS ONLINE POSITIONING SERVICE (OPUS)

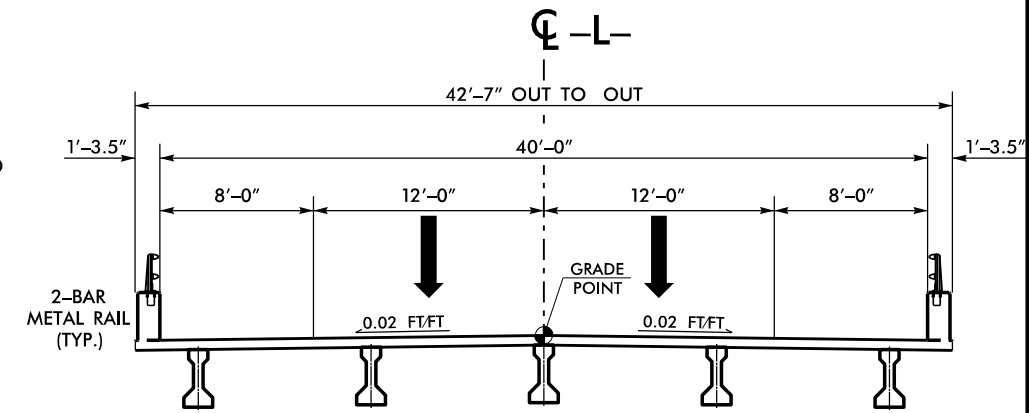
**DATUM DESCRIPTION**  
 THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCDOT FOR MONUMENT "B4816-1"  
 WITH NAD 83/CORS 96 STATE PLANE GRID COORDINATES OF  
 NORTHING: 411785.3050(ft) EASTING: 1864241.6650(ft)  
 ELEVATION: 236.5450(ft)  
 THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.999886993  
 THE N.C. LAMBERT GRID BEARING AND  
 LOCALIZED HORIZONTAL GROUND DISTANCE FROM  
 "B4816-1" TO -L- STATION 10+50.00 IS  
 N 10°55'49.3"E 676.02'  
 ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES  
 VERTICAL DATUM USED IS NAVD 88

NOTE: DRAWING NOT TO SCALE

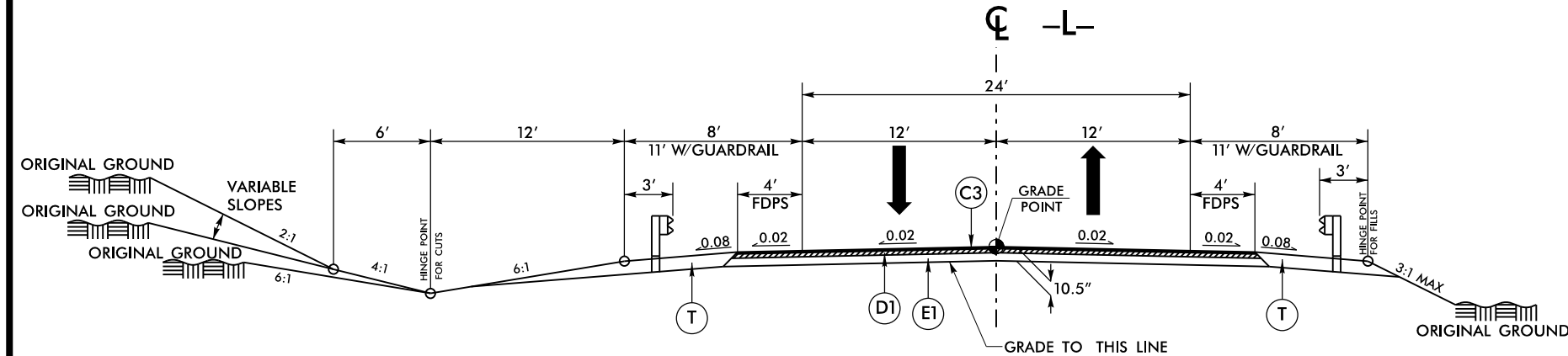
12/18/02 Is,lc.dgn



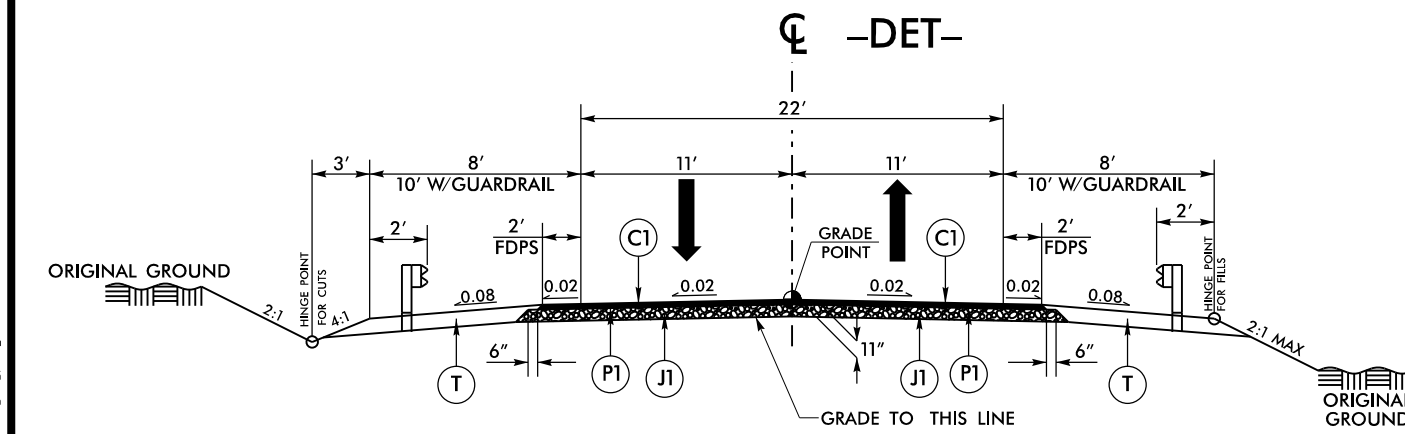
**ROADWAY TYPICAL SECTION NO. 1**  
 USE ROADWAY TYPICAL SECTION NO. 1  
 -L- STA. 10+50.00 TO -L- STA. 14+00.00  
 -L- STA. 18+50.00 TO -L- STA. 21+50.00



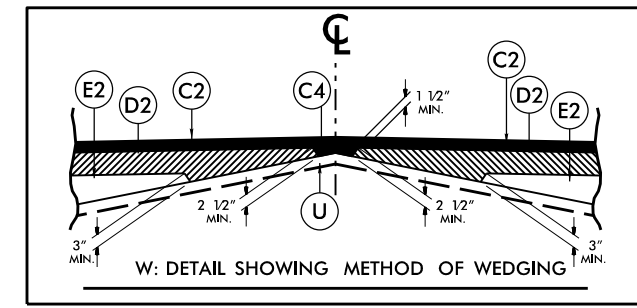
**BRIDGE TYPICAL SECTION**  
 USE BRIDGE TYPICAL SECTION  
 -L- STA. 15+47.00 TO -L- STA. 16+82.00  
 ASSUMED BRIDGE TYPE = 36" PRESTRESSED CONCRETE GIRDERS  
 NOTE: US 15-501 IS A DESIGNATED BICYCLE ROUTE, NC 1



**ROADWAY TYPICAL SECTION NO. 2**  
 USE ROADWAY TYPICAL SECTION NO. 2  
 -L- STA. 14+00.00 TO -L- STA. 15+47.00 (BEGIN BRIDGE)  
 -L- STA. 16+82.00 (END BRIDGE) TO -L- STA. 18+50.00



**ROADWAY TYPICAL SECTION NO. 3**  
 USE ROADWAY TYPICAL SECTION NO. 3  
 -DET- STA. 11+91.33 TO -DET- STA. 15+08.00 (BEGIN BRIDGE)  
 -DET- STA. 16+03.00 (END BRIDGE) TO -DET- STA. 20+17.35



PAVEMENT SCHEDULE (FINAL PAVEMENT DESIGN)	
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
C2	PROP. APPROX. 1 1/2" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.
C3	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
C4	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.
D1	PROP. APPROX. 2 1/2" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 285 LBS. PER SQ. YD.
D2	PROP. VAR. DEPTH ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT LESS THAN 2 1/2" IN DEPTH OR GREATER THAN 4" IN DEPTH.
E1	PROP. APPROX. 5" ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 570 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 5 1/2" IN DEPTH.
J1	PROP. 8" AGGREGATE BASE COURSE.
P1	PRIME COAT AT THE RATE OF .35 GAL. PER SQ. YD.
T	EARTH MATERIAL.
U	EXISTING PAVEMENT.
W	WEDGING (SEE STANDARD WEDGING DETAIL)

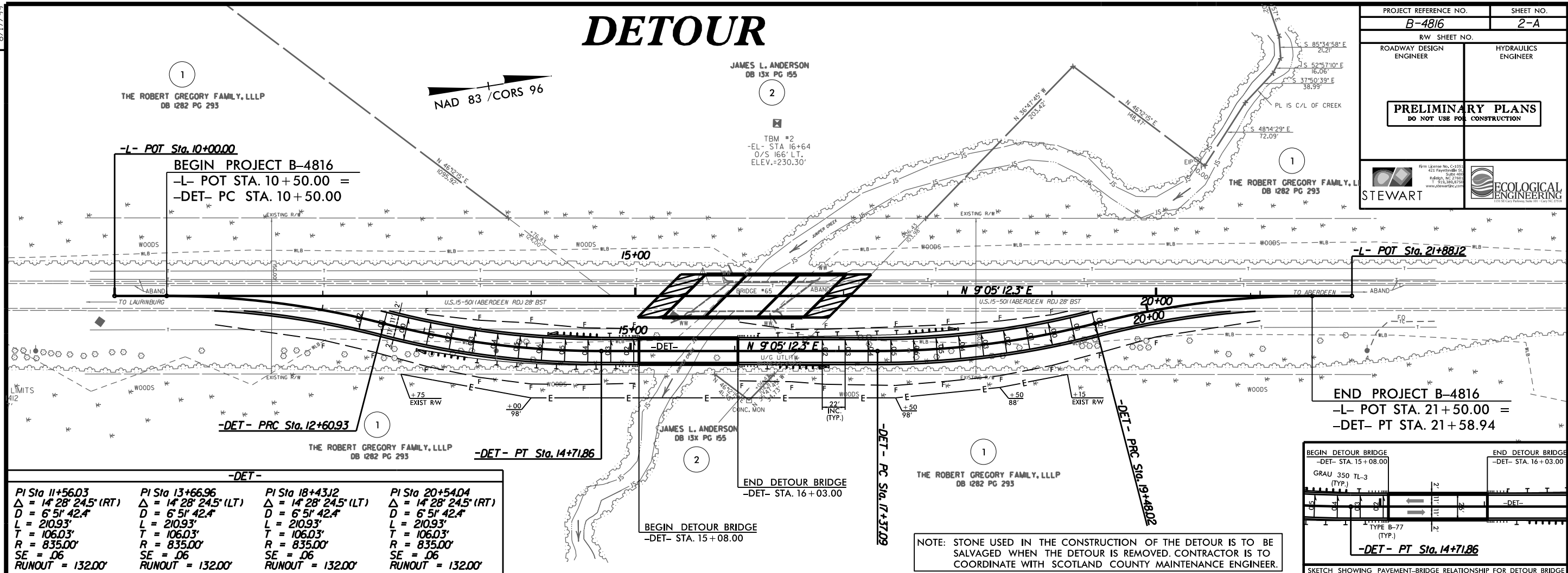
NOTE: PAVEMENT EDGE SLOPES ARE 1:1 UNLESS SHOWN OTHERWISE.

6/2/09  
 12/18/2012  
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 11:58:10 AM



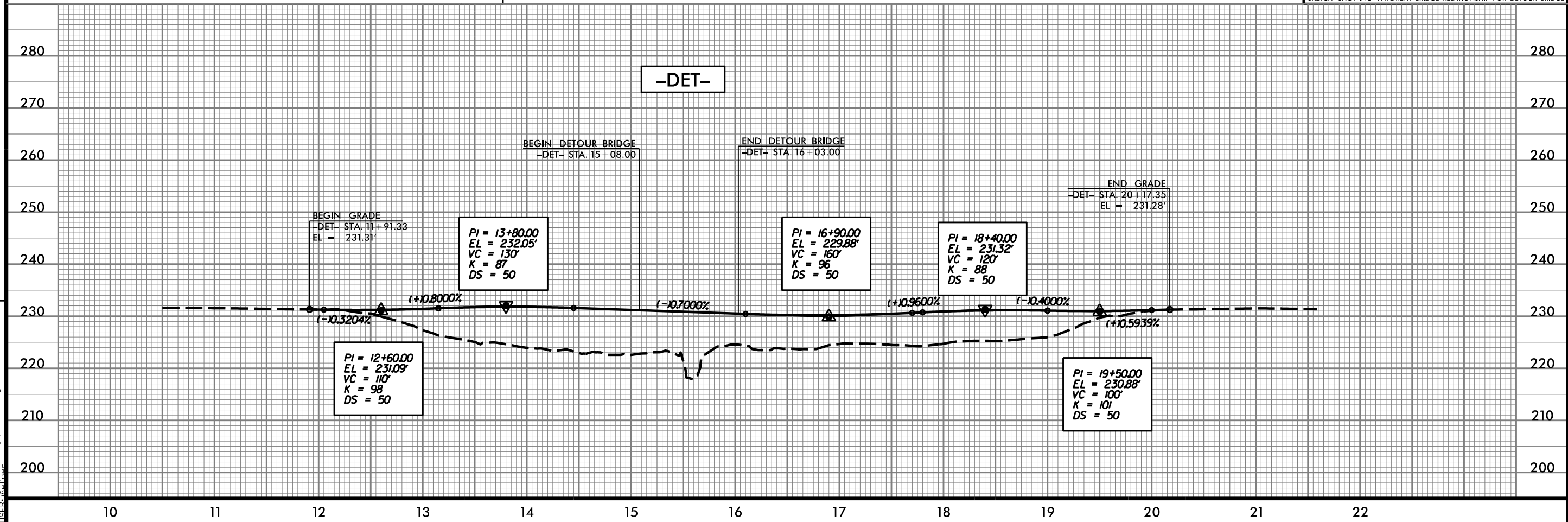
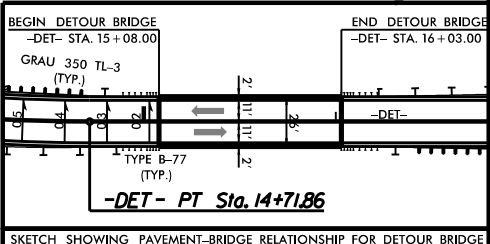
# DETOUR

PROJECT REFERENCE NO. <b>B-4816</b>	SHEET NO. <b>2-A</b>
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
<b>PRELIMINARY PLANS</b> DO NOT USE FOR CONSTRUCTION	
STEWART	ECOLOGICAL ENGINEERING



**-DET-**

PI Sta 11+56.03 Δ = 14° 28' 24.5" (RT) D = 6' 51" 42.4" L = 210.93' T = 106.03' R = 835.00' SE = .06 RUNOUT = 132.00'	PI Sta 13+66.96 Δ = 14° 28' 24.5" (LT) D = 6' 51" 42.4" L = 210.93' T = 106.03' R = 835.00' SE = .06 RUNOUT = 132.00'	PI Sta 18+43.12 Δ = 14° 28' 24.5" (LT) D = 6' 51" 42.4" L = 210.93' T = 106.03' R = 835.00' SE = .06 RUNOUT = 132.00'	PI Sta 20+54.04 Δ = 14° 28' 24.5" (RT) D = 6' 51" 42.4" L = 210.93' T = 106.03' R = 835.00' SE = .06 RUNOUT = 132.00'
--	--	--	--



REVISIONS

12/18/2012 B4816\_r.dwg psh.de.t.dgn



★ APPROXIMATE QUANTITIES ONLY. UNCLASSIFIED EXCAVATION, BORROW EXCAVATION, FINE GRADING, CLEARING AND GRUBBING, AND REMOVAL OF EXISTING PAVEMENT WILL BE PAID FOR AT THE CONTRACT LUMP SUM PRICE FOR "GRADING".

**STATE OF NORTH CAROLINA  
 DIVISION OF HIGHWAYS**

**★ SUMMARY OF EARTHWORK  
 IN CUBIC YARDS**

STATION	STATION	UNCLASSIFIED EXCAVATION	UNDERCUT	EMBT +%	BORROW	WASTE
-L-						
10+50.00	15+47.00	64	0	643	579	0
16+82.00	21+50.00	47	0	674	627	0
SUBTOTAL		111	0	1,317	1,206	0
-DET-						
10+50.00	15+08.00	43	0	2,770	2,727	0
16+03.00	21+00.00	19	0	3,228	3,209	0
SUBTOTAL		62	0	5,998	5,936	0
SHOULDER MATERIAL		0	0	336	336	0
SUBTOTAL		62	0	336	336	0
DETOUR REMOVAL						
11+00.00	15+08.00	2,576	0	0	0	2,576
16+03.00	21+00.00	3,073	0	0	0	3,073
SUBTOTAL		5,649	0	0	0	5,649
PROJECT TOTALS		5,822	0	7,651	7,478	5,649
EST. 5% TO REPLACE TOPSOIL ON BORROW PIT					374	
GRAND TOTALS		5,822			7,852	5,649
SAY		6,000			8,100	5,800

**★ ASPHALT PAVEMENT REMOVAL SUMMARY  
 IN SQUARE YARDS**

LINE	STATION TO STATION	LOCATION	REMOVAL
-L-	13+50.00 TO 15+90.64	CL	694.80
-L-	16+35.59 TO 18+50.00	CL	613.77
-DET-	11+21.36 TO 15+08.00	CL	827.94
-DET-	16+03.00 TO 20+87.58	CL	1,147.68
TOTAL			3,284.19
SAY			3,300

**SUMMARY OF SHOULDER BERM GUTTER**

LINE	STATION TO STATION	LOCATION	FT
-L-	14+92.00 TO 15+03.00	RT	11
-L-	15+32.00 TO 15+43.00	LT	11
-L-	16+86.00 TO 16+97.00	RT	11
-L-	17+26.00 TO 17+37.00	LT	11
TOTAL			44
SAY			44

ESTIMATED DRAINAGE DITCH EXCAVATION = XX CY  
 ESTIMATED UNDERCUT = XXX CY  
 ESTIMATED SHALLOW UNDERCUT = XXX CY

NOTE: Earthwork quantities are calculated by the Roadway Design Unit. These earthwork quantities are based in part on subsurface data provided by the Geotechnical Engineering Unit.

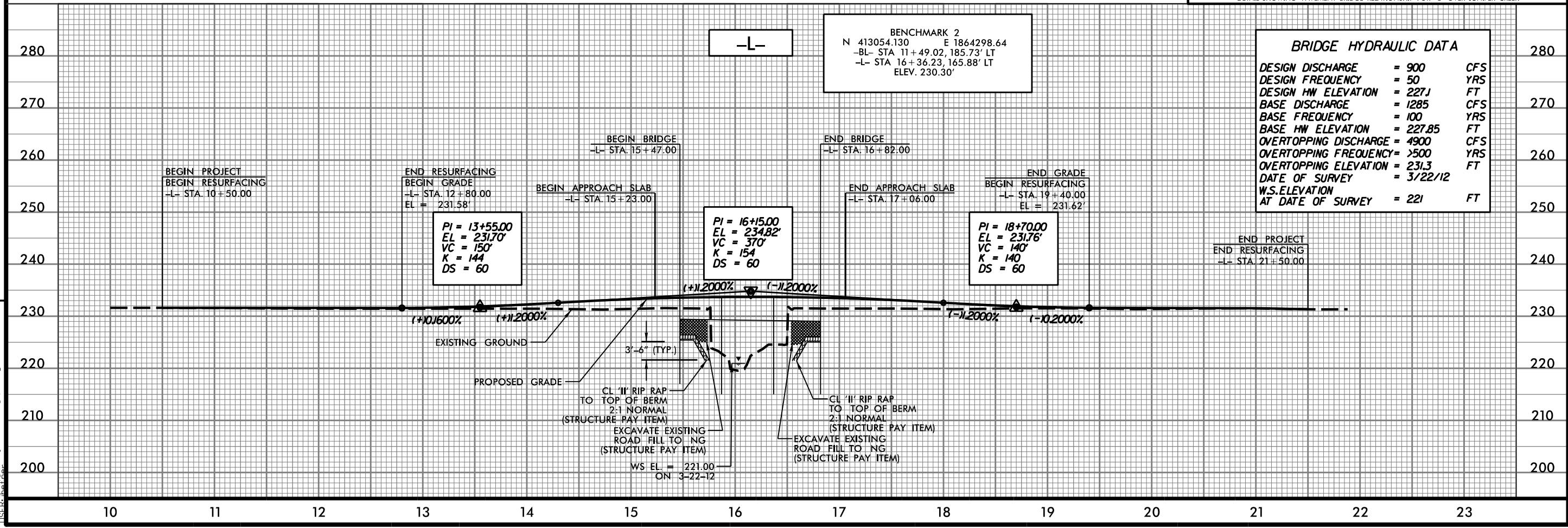
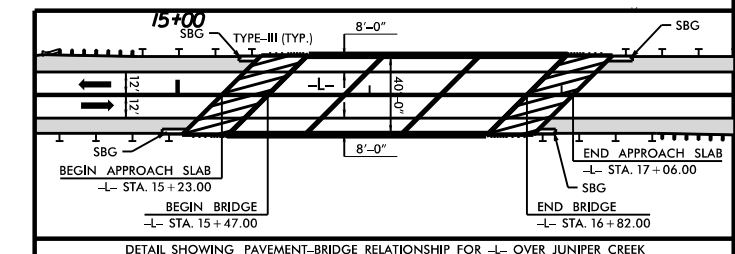
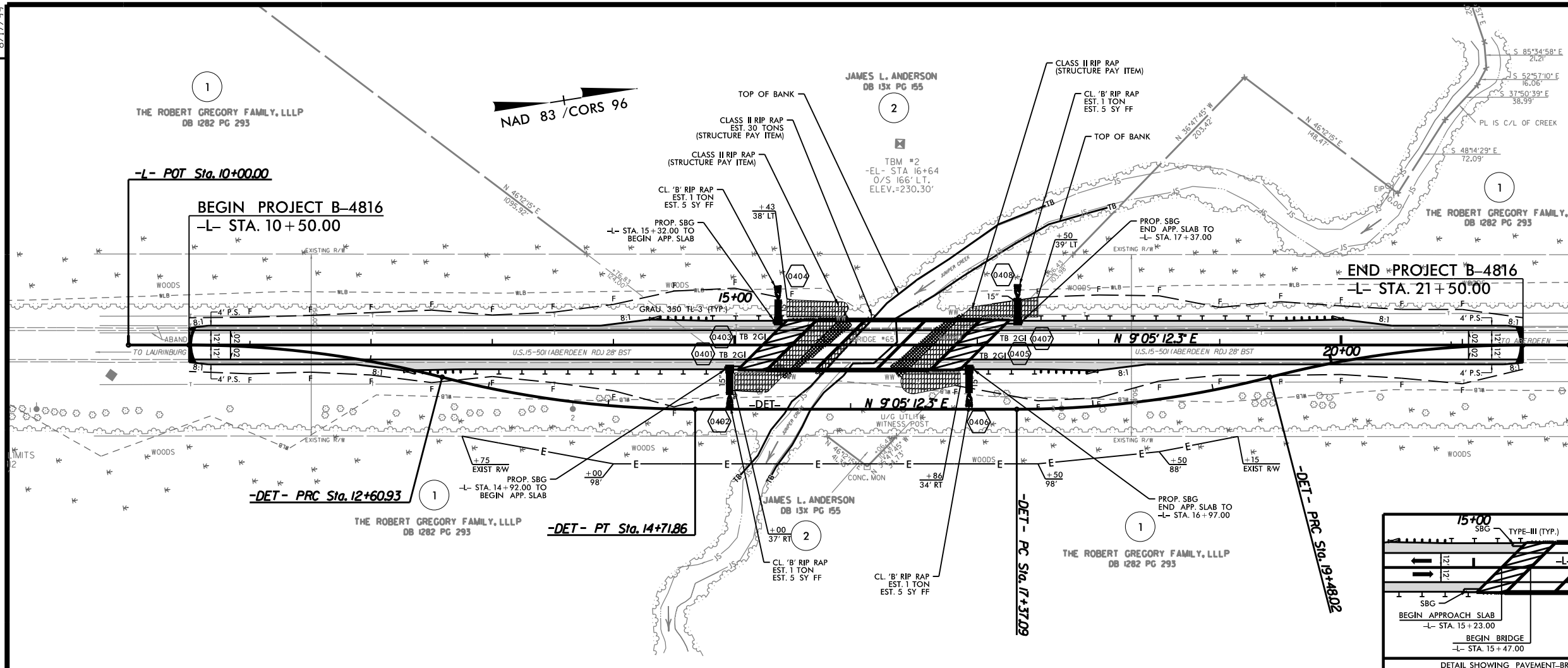
"N" = DISTANCE FROM EDGE OF LANE TO FACE OF GUARDRAIL.  
 TOTAL SHOULDER WIDTH = DISTANCE FROM EDGE OF TRAVEL LANE TO SHOULDER BREAK POINT.  
 FLARE LENGTH = DISTANCE FROM LAST SECTION OF PARALLEL GUARDRAIL TO END OF GUARDRAIL.

**GUARDRAIL SUMMARY**

W = TOTAL WIDTH OF FLARE FROM BEGINNING OF TAPER TO END OF GUARDRAIL.  
 G = GATING IMPACT ATTENUATOR TYPE 350  
 NG = NON-GATING IMPACT ATTENUATOR TYPE 350

SURVEY LINE	BEG. STA.	END STA.	LOCATION	LENGTH			WARRANT POINT		"N" DIST. FROM E.O.L.	TOTAL SHOUL. WIDTH	FLARE LENGTH		W		ANCHORS				REMARKS			
				STRAIGHT	TEMPORARY STRAIGHT	SHOP CURVED	APPROACH END	TRAILING END			APPROACH END	TRAILING END	APPROACH END	TRAILING END	III	GRAU 350	AT-1	TEMPORARY B-77		TEMPORARY GRAU 350		
-L-	14+29.50	BRIDGE 15+67.00	LT.	137.50'				15+67.00	8'-0"	11'		50'		1'	1	1						
-L-	BRIDGE 17+02.00	20+02.00	LT.	300.00'				17+02.00	8'-0"	11'	50'		1'	1	1							
-L-	12+27.00	BRIDGE 15+27.00	RT.	300.00'				15+27.00	8'-0"	11'	50'		1'	1	1					TEMP. GRAU-350 NEEDED DURING -DET- REMOVAL		
-L-	BRIDGE 16+62.00	17+99.50	RT.	137.50'				16+62.00	8'-0"	11'		50'		1'	1	1						
-DET-	14+20.50	BRIDGE 15+08.00	LT.		87.50'			15+08.00	2'	4'		68.75'		1.375'						1	1	
-DET-	BRIDGE 16+03.00	18+15.50	LT.		212.50'			16+03.00	2'	4'	193.75'		3.875'							1	1	
-DET-	12+95.50	BRIDGE 15+08.00	RT.		212.50'			15+08.00	2'	4'	193.75		3.875'							1	1	
-DET-	BRIDGE 16+03.00	16+90.50	RT.		87.50'			16+03.00	2'	4'		68.75		1.375'						1	1	
SUBTOTAL				875.00'	600.00'		DEDUCTION FOR ANCHOR UNITS :															
LESS ANCHOR UNITS				-275.00'	-275.00'		PERMANENT:															
TOTAL				600.00'	325.00'		III: 4 @ 18.75' = 75.00'															
							GRAU-350: 4 @ 50.00' = 200.00'															
							TOTAL = 275.00'															
SAY				600.00'	325.00'		TEMPORARY:															
							B-77: 4 @ 18.75' = 75.00'															
							GRAU-350: 4 @ 50.00' = 200.00'															
							TOTAL = 275.00'															
										5 ADDITIONAL GUARDRAIL POSTS												

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REVISIONS

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# CROSS SECTION SUMMARY

**PRELIMINARY PLANS**  
DO NOT USE FOR CONSTRUCTION

## -L-

NOTE: EMBANKMENT COLUMN DOES NOT INCLUDE BACKFILL FOR UNDERCUT

STATION L	UNCL. EXC. (CU. YD.)	EMBT. (CU. YD.)
10+50.00	-	-
11+00.00	7	0
11+50.00	13	0
12+00.00	11	0
12+50.00	11	1
13+00.00	12	1
13+50.00	8	1
14+00.00	2	22
14+50.00	0	113
15+00.00	0	198
15+47.00	0	200
16+82.00	-	-
17+50.00	0	247
18+00.00	0	160
18+50.00	1	93
19+00.00	6	26
19+50.00	11	8
20+00.00	10	11
20+50.00	8	7
21+00.00	7	6
21+50.00	4	4

## -DET-

NOTE: EMBANKMENT COLUMN DOES NOT INCLUDE BACKFILL FOR UNDERCUT

STATION L (DETOUR)	UNCL. EXC. (CU. YD.)	EMBT. (CU. YD.)
10+50.00	-	-
11+00.00	5	0
11+50.00	11	0
12+00.00	12	16
12+50.00	10	84
13+00.00	5	215
13+50.00	0	363
14+00.00	0	487
14+50.00	0	553
15+03.53	0	590
15+98.53	-	-
16+50.00	0	440
16+82.00	0	258
17+50.00	0	570
18+00.00	0	435
18+50.00	0	394
19+00.00	0	317
19+50.00	4	192
20+00.00	6	70
20+50.00	6	13
21+00.00	3	1

## -DET- REMOVAL

NOTE: EMBANKMENT COLUMN DOES NOT INCLUDE BACKFILL FOR UNDERCUT

STATION L (DETOUR REMOVAL)	UNCL. EXC. (CU. YD.)	EMBT. (CU. YD.)
11+00.00	-	-
11+50.00	1	0
12+00.00	25	0
12+50.00	109	0
13+00.00	259	0
13+50.00	421	0
14+00.00	546	0
14+50.00	590	0
15+03.53	625	0
15+98.53	-	-
16+50.00	497	0
16+82.00	295	0
17+50.00	635	0
18+00.00	467	0
18+50.00	440	0
19+00.00	376	0
19+50.00	238	0
20+00.00	98	0
20+50.00	24	0
21+00.00	3	0

REVISIONS

Note:  
Approximate quantities only. Unclassified Excavation, Fine Grading, Clearing and Grubbing, and Removal of Existing Pavement will be paid for at the contract lump sum price for "Grading."  
  
Earthwork quantities are calculated by the Roadway Design Unit. These earthwork quantities are based in part on subsurface data provided by the Geotechnical Engineering Unit.

## CROSS SECTION INDEX

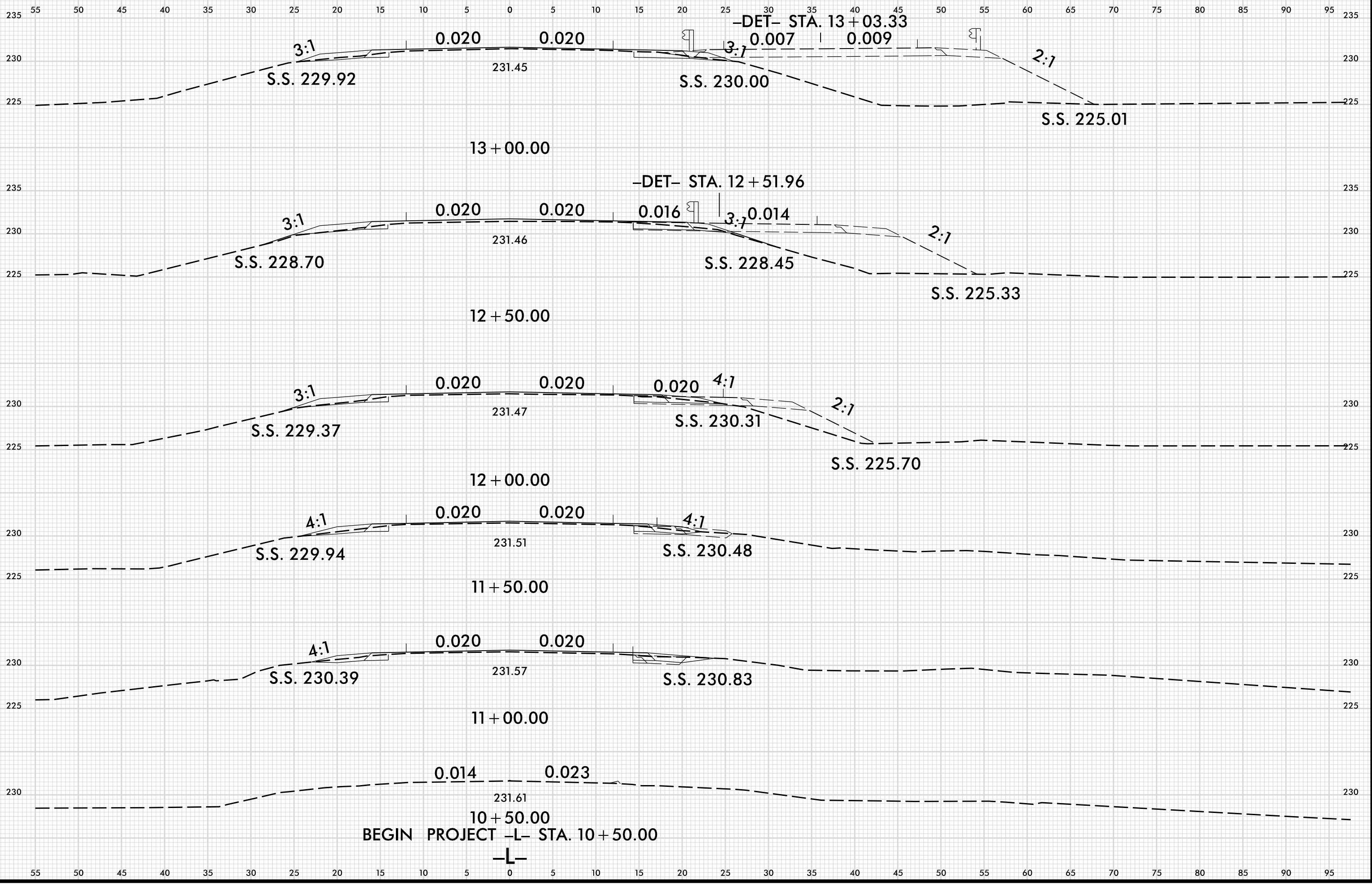
SHEET	BEGIN STATION	END STATION
X-2	10+50.00	13+00.00
X-3	13+50.00	15+00.00
X-4	15+47.00	16+82.00
X-5	17+50.00	19+50.00
X-6	20+00.00	21+50.00

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PROJ. REFERENCE NO.	SHEET NO.
B-4816	X-2



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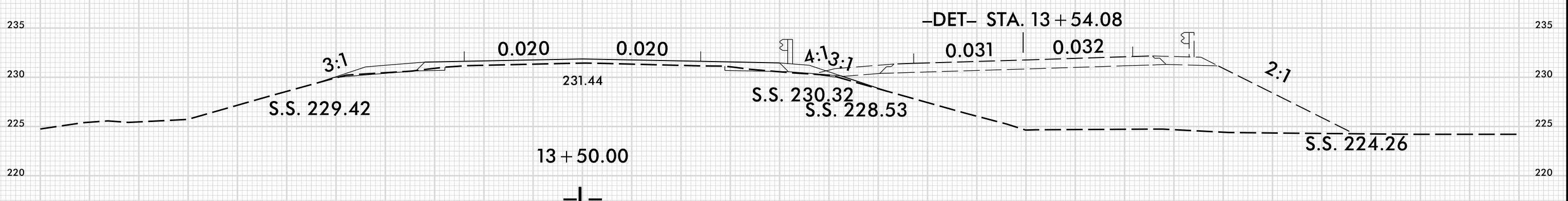
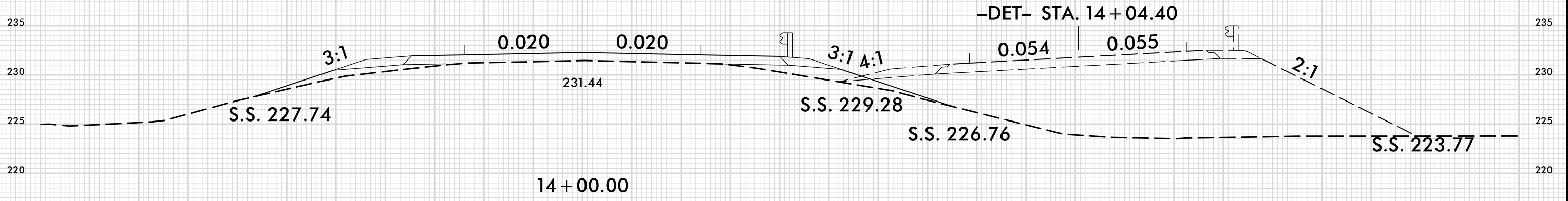
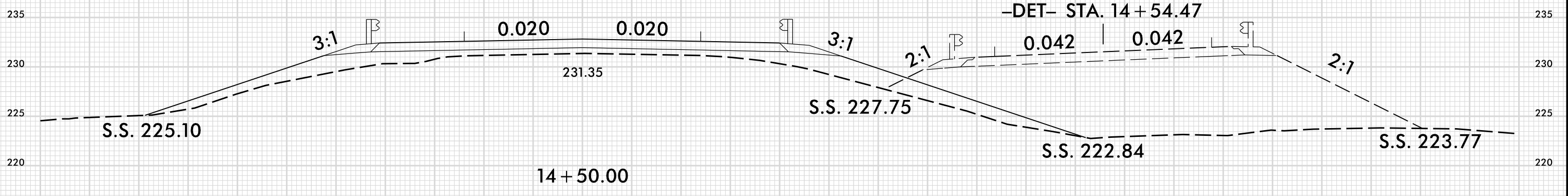
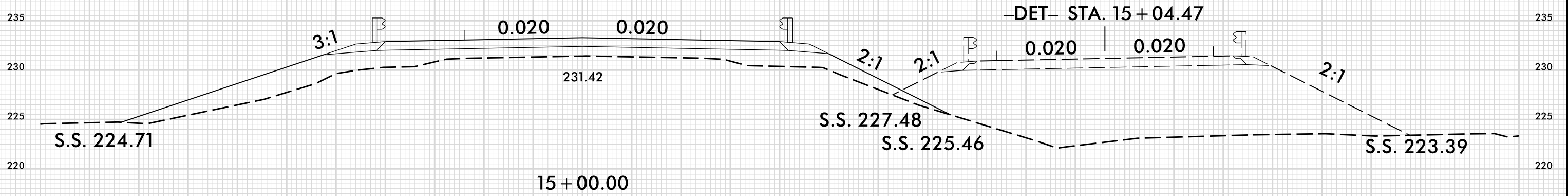
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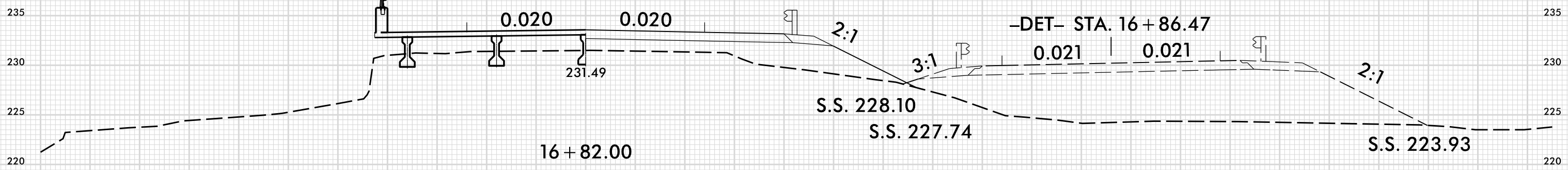


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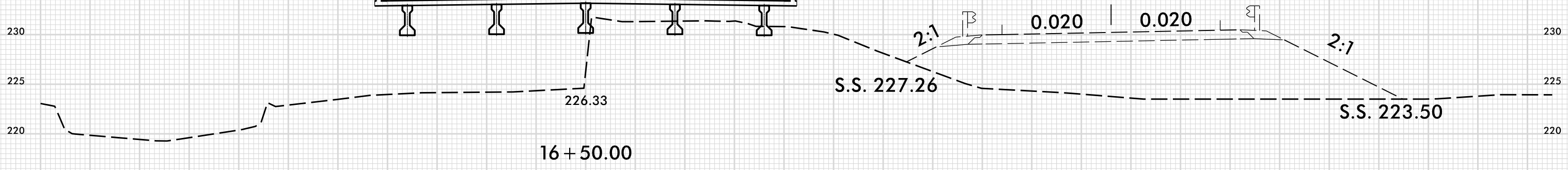
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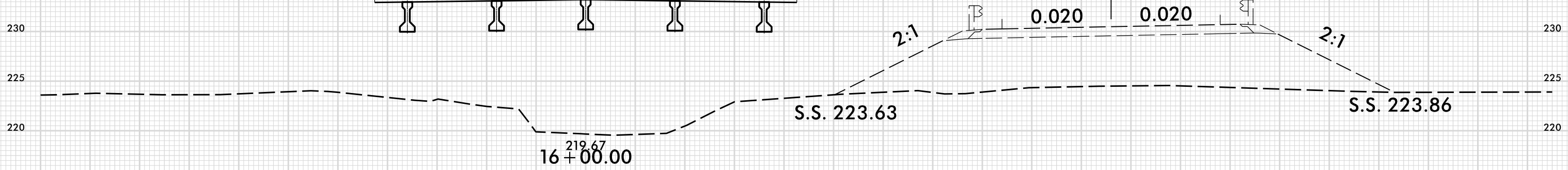
END BRIDGE -L- STA. 16 + 82.00



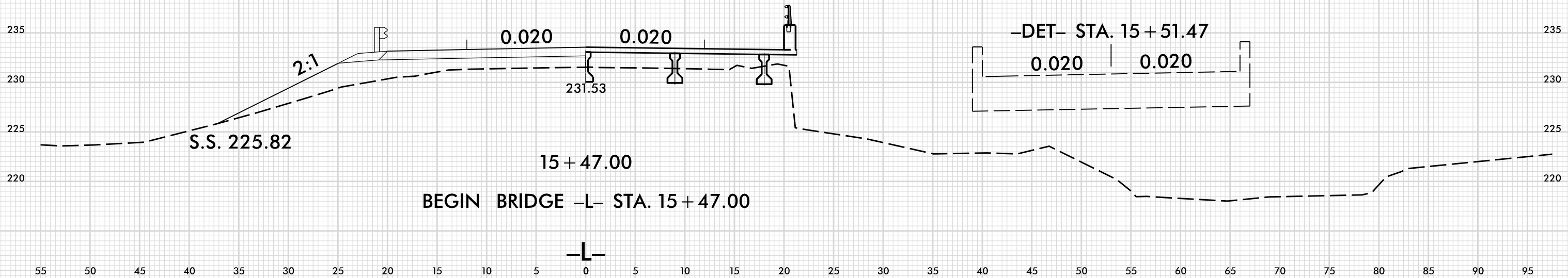
END BRIDGE -L- STA. 16 + 50.00



END BRIDGE -L- STA. 16 + 00.00



BEGIN BRIDGE -L- STA. 15 + 47.00



-L-

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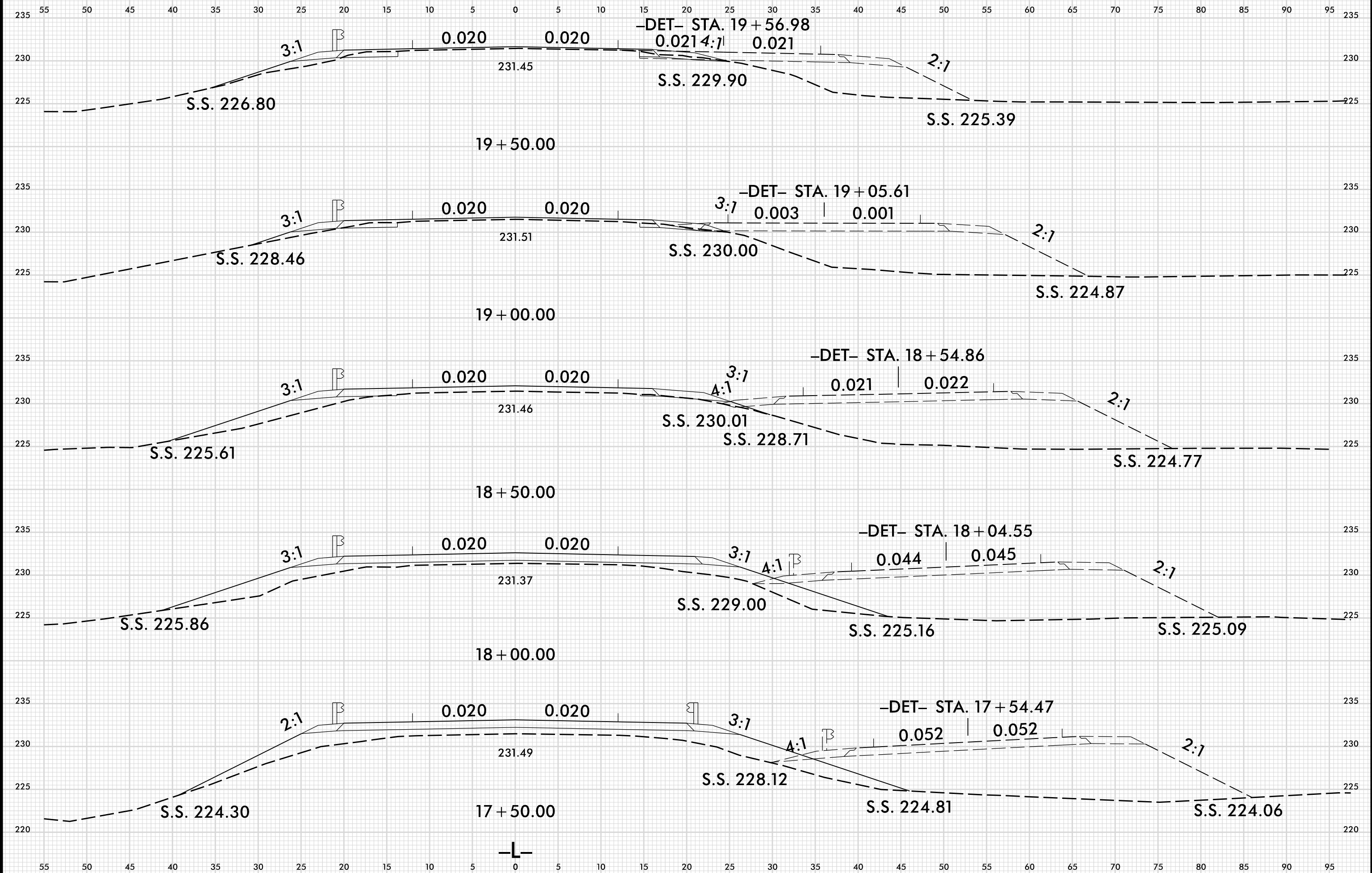
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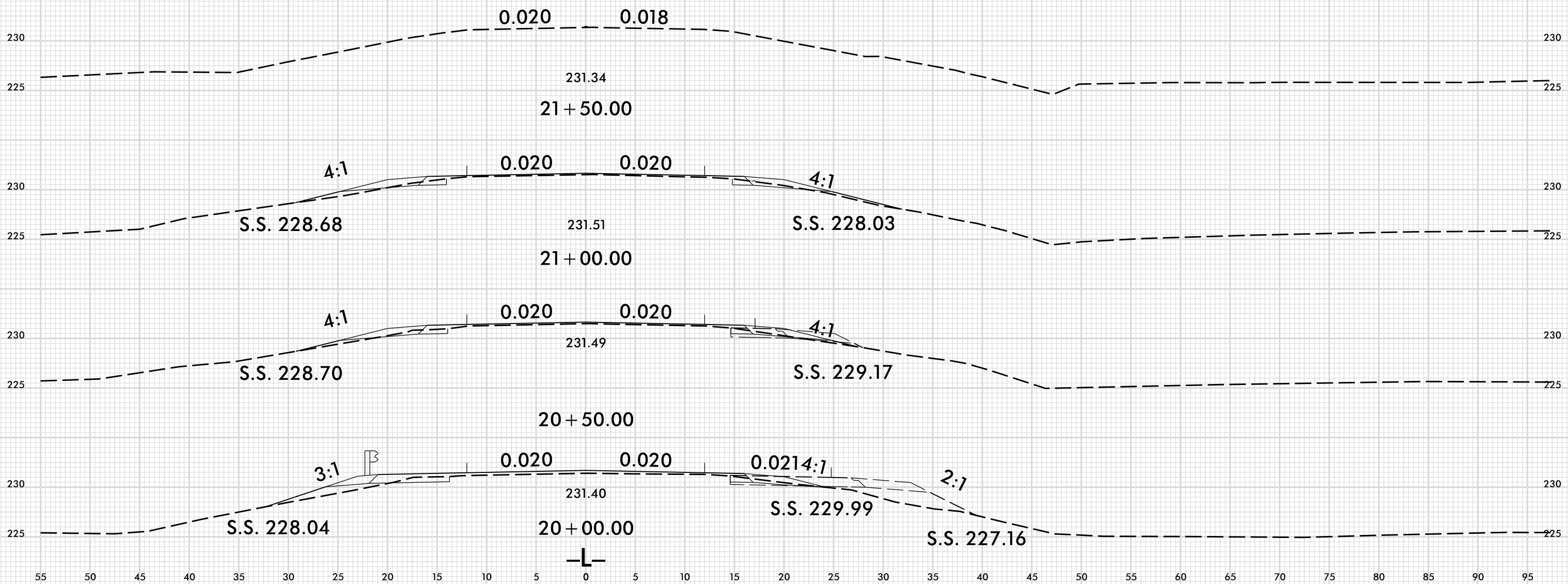
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END PROJECT -L- STA. 21+50.00



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