



STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION

BEVERLY EAVES PERDUE  
GOVERNOR

EUGENE A. CONTI, JR.  
SECRETARY

April 6, 2009

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

ATTN: Mr. David Baker  
NCDOT Coordinator

Subject: **Application for Section 404 Nationwide Permits 23 & 33 and 401 Water Quality Certification** for the proposed replacement of Bridge No. 37 over Cathey's Creek and Bridge No. 39 over the Fork of Cathey's Creek on SR 1520 (Rock Road) in Rutherford County, Federal Aid Project No. BRZ-1520(4); Division 13; WBS Element 33603.1.1; TIP No. B-4261 Debit Work Order \$240.00

Dear Sir:

The North Carolina Department of Transportation (NCDOT) proposes to replace Bridge No. 37 over Cathey's Creek and Bridge No. 39 over the Fork of Cathey's Creek on SR 1520 (Rock Road) in Rutherford County. There will be 24 linear feet of permanent surface water impacts, 0.02 acre of temporary surface water impacts, and 0.07 acre of wetland impacts for Bridge 37. There will be 105 lf of permanent surface water impacts; 0.03 acre of temporary surface water impacts and no wetland impacts for Bridge 39. An offsite detour will be utilized for this project. NCDOT proposes no mitigation due to the partial passage of the streams through agricultural land and no presence of ORW or HQW waters in the project area


Please see enclosed copies of the Pre-Construction Notification (PCN), Approved Jurisdictional Determination Form, permit drawings and roadway plan sheets for the above-referenced project. The Categorical Exclusion (CE) was completed in December 2006 and an Addendum to the CE was completed in July 2007 and were distributed shortly thereafter. Additional copies of both are available upon request.

This project calls for a letting date of November 17, 2009 and a review date of September 29, 2009.

In a letter dated March 21, 2003, the North Carolina Wildlife Resource Commission (NCWRC) requested a moratorium for smallmouth bass and redbreast sunfish from May 1 to July 15. However, these species are not afforded federal protection in Waters of the US in NC. Imposing a moratorium for these species could result in increased construction costs and a longer overall construction period, resulting in a longer sustained effect on the environment. Therefore, the NCDOT does not believe this moratorium is warranted and does not propose to adhere to it.

Thank you for your assistance with this project. If you have any questions or need additional information, please contact Mr. Jeffrey Hemphill (919) 431-6674.

Sincerely,

  
for

Gregory J. Thorpe, Ph.D., Environmental Management Director  
Project Development and Environmental Analysis Branch

W/attachment:

Mr. Brian Wrenn, NCDWQ (5 Copies)  
Ms. Marella Buncick, USFWS  
Ms. Marla Chambers, NCWRC  
Dr. Charles Nicholson, TVA

W/o attachment (see website for attachments):

Dr. David Chang, P.E., Hydraulics  
Mr. Victor Barbour, P.E., Project Services Unit  
Mr. Greg Perfetti, P.E., Structure Design  
Mr. Mark Staley, Roadside Environmental  
Mr. Jay Swain, P.E., Division Engineer  
Mr. Roger Bryan, DEO  
Mr. Jay Bennett, P.E., Roadway Design  
Mr. Majed Alghandour, P. E., Programming and TIP  
Mr. Art McMillan, P.E., Highway Design  
Mr. Scott McLendon, USACE, Wilmington  
Ms. Stacy Oberhausen, PDEA Planning Engineer



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 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 <span style="margin-left: 100px;"><input type="checkbox"/> Non-404 Jurisdictional General Permit</span> <input type="checkbox"/> 401 Water Quality Certification – Express <span style="margin-left: 100px;"><input type="checkbox"/> Riparian Buffer Authorization</span>		
1e. Is this notification solely for the record because written approval is not required?	For the record only for DWQ 401 Certification: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	For the record only for Corps Permit: <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:	Replacment of Bridge 37 & 39 over Cathey's Cr. & Fork to Cathey's Cr. on SR 1520
2b. County:	Rutherford
2c. Nearest municipality / town:	Rutherfordton
2d. Subdivision name:	<i>not applicable</i>
2e. NCDOT only, T.I.P. or state project no:	B-4261

#### 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) 431-6674
3g. Fax no.:	(919) 431-2002
3h. Email address:	jhemphill@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: 35.4197 (DD.DDDDDD) Longitude: - 81.9384 (-DD.DDDDDD)
1c. Property size:	2.92 acres
<b>2. Surface Waters</b>	
2a. Name of nearest body of water (stream, river, etc.) to proposed project:	Second Broad River
2b. Water Quality Classification of nearest receiving water:	WS-IV; CA
2c. River basin:	Broad
<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: Farmland & Rural Residential	
3b. List the total estimated acreage of all existing wetlands on the property: 0.14	
3c. List the total estimated linear feet of all existing streams (intermittent and perennial) on the property: 1600	
3d. Explain the purpose of the proposed project: To replace 2 structurally deficient and/ or functionally obsolete bridges.	
3e. Describe the overall project in detail, including the type of equipment to be used: The project involves replacing two bridges: a 158-foot bridge with a 180-foot, 3-span bridge on the same alignment and a 60.7-foot bridge will be replaced by (2) 9' x 8' concrete box culverts also on the existing alignment with both construction sites utilizing an off-site detour. 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:	<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):	Agency/Consultant Company: Kimley Horn & Associates Other:
4d. If yes, list the dates of the Corps jurisdictional determinations or State determinations and attach documentation. April 27, 2007	
<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.	

<b>C. Proposed Impacts Inventory</b>						
<b>1. Impacts Summary</b>						
1a. Which sections were completed below for your project (check all that apply):						
<input checked="" type="checkbox"/> Wetlands		<input checked="" type="checkbox"/> Streams - tributaries		<input type="checkbox"/> Buffers		
<input type="checkbox"/> Open Waters		<input type="checkbox"/> Pond Construction				
<b>2. Wetland Impacts</b>						
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)	
W1 <input checked="" type="checkbox"/> P <input type="checkbox"/> T	Fill/Excavation	Palustrine Emergent	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input checked="" type="checkbox"/> Corps <input type="checkbox"/> DWQ	0.04	
W2 <input checked="" type="checkbox"/> P <input type="checkbox"/> T	Fill	Palustrine Emergent	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input checked="" type="checkbox"/> Corps <input type="checkbox"/> DWQ	0.03	
W3 <input type="checkbox"/> P <input type="checkbox"/> T			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Corps <input type="checkbox"/> DWQ		
W4 <input type="checkbox"/> P <input type="checkbox"/> T			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Corps <input type="checkbox"/> DWQ		
W5 <input type="checkbox"/> P <input type="checkbox"/> T			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Corps <input type="checkbox"/> DWQ		
W6 <input type="checkbox"/> P <input type="checkbox"/> T			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Corps <input type="checkbox"/> DWQ		
<b>2g. Total wetland impacts</b>					0.07 Permanent 0 Temporary	
2h. Comments: W1 corresponds to Site 2 on the permit drawings and W2 correspond to Site 3 on the permit drawings						
<b>3. Stream Impacts</b>						
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)
S1 <input type="checkbox"/> P <input checked="" type="checkbox"/> T	Causeways	Catheys Creek	<input checked="" type="checkbox"/> PER <input type="checkbox"/> INT	<input checked="" type="checkbox"/> Corps <input type="checkbox"/> DWQ	25	115
S2 <input checked="" type="checkbox"/> P <input type="checkbox"/> T	Rip/Rap	Catheys Creek	<input checked="" type="checkbox"/> PER <input type="checkbox"/> INT	<input checked="" type="checkbox"/> Corps <input type="checkbox"/> DWQ	25	24
S3 <input checked="" type="checkbox"/> P <input type="checkbox"/> T	Culverts	Fork to Catheys Creek	<input checked="" type="checkbox"/> PER <input type="checkbox"/> INT	<input checked="" type="checkbox"/> Corps <input type="checkbox"/> DWQ	7	105
S4 <input type="checkbox"/> P <input checked="" type="checkbox"/> T	Dewatering	Fork to Catheys Creek	<input checked="" type="checkbox"/> PER <input type="checkbox"/> INT	<input checked="" type="checkbox"/> Corps <input type="checkbox"/> DWQ	7	95
S5 <input type="checkbox"/> P <input type="checkbox"/> T			<input type="checkbox"/> PER <input type="checkbox"/> INT	<input type="checkbox"/> Corps <input type="checkbox"/> DWQ		
S6 <input type="checkbox"/> P <input type="checkbox"/> T			<input type="checkbox"/> PER <input type="checkbox"/> INT	<input type="checkbox"/> Corps <input type="checkbox"/> DWQ		
<b>3h. Total stream and tributary impacts</b>					129 Perm 210 Temp	
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>				X Permanent X Temporary

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?	<input type="checkbox"/> Yes	<input type="checkbox"/> 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:	
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)		
B1 <input type="checkbox"/> P <input type="checkbox"/> T			<input type="checkbox"/> Yes <input type="checkbox"/> No				
B2 <input type="checkbox"/> P <input type="checkbox"/> T			<input type="checkbox"/> Yes <input type="checkbox"/> No				
B3 <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. An offsite detour will be utilized thereby minimizing temporary impacts.		
1b. Specifically describe measures taken to avoid or minimize the proposed impacts through construction techniques. A preformed scourhole will be utilized to control water velocity and provide vegetated treatment for stormwater runoff.		
<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	
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:	linear feet	
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):	square feet	
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.		

6. Buffer Mitigation (State Regulated Riparian Buffer Rules) – required by DWQ				
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	
6f. Total buffer mitigation required:				
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 type="checkbox"/> Yes <input checked="" type="checkbox"/> No
1b. If yes, then is a diffuse flow plan included? If no, explain why. Comments:	<input type="checkbox"/> Yes <input type="checkbox"/> No
<b>2. Stormwater Management Plan</b>	
2a. What is the overall percent imperviousness of this project?	%
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 SMP for Section E parts 2 - 4	
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 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 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
5b. Have all of the 401 Unit submittal requirements been met?	<input type="checkbox"/> Yes <input type="checkbox"/> No

<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.	
<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?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
5b. Have you checked with the USFWS concerning Endangered Species Act impacts?	<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? NHP, USFW & NCDOT 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 checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
8b. If yes, explain how project meets FEMA requirements: Hydraulics coordination with FEMA		
8c. What source(s) did you use to make the floodplain determination? FEMA Maps		
Dr. Gregory J. Thorpe, Ph D 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>	4.6.09 Date

# STORMWATER MANAGEMENT PLAN

Project: 33603.1.1  
TIP No. B-4261  
Rutherford County

03/23/2009

Hydraulics Project Manager: Dan Robinson, P.E. (Kimley-Horn and Associates, Inc.),  
Marshall Clawson, P.E. (NCDOT Hydraulics Unit)

## ROADWAY DESCRIPTION

The project B-4261 consists of constructing a new bridge 180 feet long to replace the existing bridge #37 in Rutherford County on SR-1520 over Cathey's Creek. It also includes constructing a 2 @ 9' x 8' RCBC which is 112 feet long to replace the existing bridge #39 in Rutherford County on SR-1520 over the Fork of Cathey's Creek. The total project length is 0.365 miles. The project creates impacts to Cathey's Creek and the Fork of Cathey's Creek, which are located in the Broad River Basin. The project drainage systems consist of roadside ditches, a grated inlet with associated pipe system, and a preformed scour hole at the pipe outlet.

Jurisdictional Streams: Cathey's Creek and the Fork of Cathey's Creek

## ENVIRONMENTAL DESCRIPTION

The project is located within the Broad River Basin in Rutherford County, which is not a CAMA county. Both streams are classified as Class C. There are two wetland sites on either side of the roadway near the Cathey's Creek crossing that will be impacted by the proposed project. Impacts have been minimized by reducing the roadway approach work to minimize fill slopes encroachment into the wetlands; by burying the proposed RCBC that impacts the Fork of Cathey's Creek and by spanning Cathey's Creek with a bridge.

## BEST MANAGEMENT PRACTICES AND MAJOR STRUCTURES

The primary goal of Best Management Practices (BMPs) is to prevent degradation of the states surface waters by the location, construction and operation of the highway system. The BMPs are activities, practices and procedures taken to prevent or reduce stormwater pollution. The BMP measures used on this project to reduce stormwater impacts are:

- Rip rap preformed scour hole at pipe outlet.
- Burying RCBC 1' at the Fork of Cathey's Creek

Memphill

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

Action Id. SAW-2007-1486-381

County: Rutherford

U.S.G.S. Quad: Rutherfordton North

**JURISDICTIONAL INFORMATION SHEET**

Property Owner/Agent: NC Department of Transportation, Division of Highways

Address: Attn: Gregory J. Thorpe, Ph.D.

Project Development and Environmental Analysis

1598 Mail Service Center

Raleigh, North Carolina 27699-1598

Telephone No.: 919-733-3141

Size and location of property (waterbody, road name/number, town, etc.) The TIP No. B-4261 study area for the replacement of Bridge Numbers 37 and 39 on SR 1520, Rock Road, over Cathey's Creek and the Fork of Cathey's Creek in Rutherford County, North Carolina.

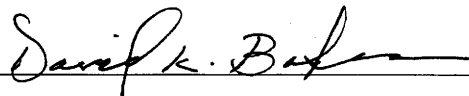
In the wake of the recent Supreme Court decisions in *United States v. Rapanos* and *United States v. Carabell*, the U.S. Army Corps of Engineers and the Environmental Protection Agency are examining the methods in which we describe and document jurisdictional determinations (JDs) pursuant to the Clean Water Act (CWA). In order to allow the Corps and EPA to prepare and issue substantive guidance, the Wilmington District is, in accordance with guidance from our Headquarters and to the extent circumstances allow, delaying making CWA jurisdictional determinations for areas beyond the limits of traditional navigable waters (Section 10 waters) until new guidance is issued.

I am in receipt of the information you have provided to the U.S. Army Corps of Engineers regarding CWA jurisdiction over the property described above. Based upon the regulations and guidance available to this agency prior to the decisions in *United States v. Rapanos* and *United States v. Carabell*, it appears that the proposed jurisdictional boundaries you have provided to this office are accurate. However, until final guidance is issued, I will not be able to make a final determination of CWA jurisdiction on the referenced property.

Placement of dredged or fill material within waters of the US and/or wetlands without a Department of the Army permit may constitute a violation of Section 301 of the Clean Water Act (33 USC 1311). If you have any questions regarding this information sheet and/or the Corps regulatory program, please contact David Baker at 828-271-7980, extension 225.

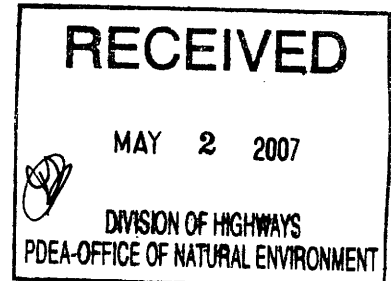
Remarks:

Corps Regulatory Official: \_\_\_\_\_



Date April 27, 2007

Copy furnished: Ms. Beth A. Reed, Kimley-Horn and Associates, 3001 Weston Parkway, Cary, NC 27513



**APPROVED JURISDICTIONAL DETERMINATION FORM**  
**U.S. Army Corps of Engineers**

This form should be completed by following the instructions provided in Section IV of the JD Form Instructional Guidebook.

**SECTION I: BACKGROUND INFORMATION**

**A. REPORT COMPLETION DATE FOR APPROVED JURISDICTIONAL DETERMINATION (JD):**

**B. DISTRICT OFFICE, FILE NAME, AND NUMBER:**

**C. PROJECT LOCATION AND BACKGROUND INFORMATION: TIP# B-4261 NCDOT**

State: NC County/parish/borough: Rutherford City:  
Center coordinates of site (lat/long in degree decimal format): Lat. 35° N, Long. 81° W.  
Universal Transverse Mercator:

Name of nearest waterbody: Cathey's Creek & Fork of Cathey's Creek

Name of nearest Traditional Navigable Water (TNW) into which the aquatic resource flows: Broad River

Name of watershed or Hydrologic Unit Code (HUC): 03050105

Check if map/diagram of review area and/or potential jurisdictional areas is/are available upon request.

Check if other sites (e.g., offsite mitigation sites, disposal sites, etc...) are associated with this action and are recorded on a different JD form.

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

Office (Desk) Determination. Date:

Field Determination. Date(s):

**SECTION II: SUMMARY OF FINDINGS**

**A. RHA SECTION 10 DETERMINATION OF JURISDICTION.**

There **are no** "navigable waters of the U.S." within Rivers and Harbors Act (RHA) jurisdiction (as defined by 33 CFR part 329) in the review area. [Required]

Waters subject to the ebb and flow of the tide.

Waters are presently used, or have been used in the past, or may be susceptible for use to transport interstate or foreign commerce.  
Explain:

**B. CWA SECTION 404 DETERMINATION OF JURISDICTION.**

There **are** "waters of the U.S." within Clean Water Act (CWA) jurisdiction (as defined by 33 CFR part 328) in the review area. [Required]

**1. Waters of the U.S.**

**a. Indicate presence of waters of U.S. in review area (check all that apply):<sup>1</sup>**

TNWs, including territorial seas

Wetlands adjacent to TNWs

Relatively permanent waters<sup>2</sup> (RPWs) that flow directly or indirectly into TNWs

Non-RPWs that flow directly or indirectly into TNWs

Wetlands directly abutting RPWs that flow directly or indirectly into TNWs

Wetlands adjacent to but not directly abutting RPWs that flow directly or indirectly into TNWs

Wetlands adjacent to non-RPWs that flow directly or indirectly into TNWs

Impoundments of jurisdictional waters

Isolated (interstate or intrastate) waters, including isolated wetlands

**b. Identify (estimate) size of waters of the U.S. in the review area:**

Non-wetland waters: 9,984 linear feet: width (ft) and/or acres.

Wetlands: 0.47 acres.

**c. Limits (boundaries) of jurisdiction based on: 1987 Delineation Manual**

Elevation of established OHWM (if known):

**2. Non-regulated waters/wetlands (check if applicable):<sup>3</sup>**

Potentially jurisdictional waters and/or wetlands were assessed within the review area and determined to be not jurisdictional.  
Explain:

<sup>1</sup> Boxes checked below shall be supported by completing the appropriate sections in Section III below.

<sup>2</sup> For purposes of this form, an RPW is defined as a tributary that is not a TNW and that typically flows year-round or has continuous flow at least "seasonally" (e.g., typically 3 months).

<sup>3</sup> Supporting documentation is presented in Section III.F.



**SECTION III: CWA ANALYSIS**

**A. TNWs AND WETLANDS ADJACENT TO TNWs**

The agencies will assert jurisdiction over TNWs and wetlands adjacent to TNWs. If the aquatic resource is a TNW, complete Section III.A.1 and Section III.D.1. only; if the aquatic resource is a wetland adjacent to a TNW, complete Sections III.A.1 and 2 and Section III.D.1.; otherwise, see Section III.B below.

**1. TNW**

Identify TNW:

Summarize rationale supporting determination:

**2. Wetland adjacent to TNW**

Summarize rationale supporting conclusion that wetland is "adjacent":

**B. CHARACTERISTICS OF TRIBUTARY (THAT IS NOT A TNW) AND ITS ADJACENT WETLANDS (IF ANY):**

This section summarizes information regarding characteristics of the tributary and its adjacent wetlands, if any, and it helps determine whether or not the standards for jurisdiction established under *Rapanos* have been met.

The agencies will assert jurisdiction over non-navigable tributaries of TNWs where the tributaries are "relatively permanent waters" (RPWs), i.e. tributaries that typically flow year-round or have continuous flow at least seasonally (e.g., typically 3 months). A wetland that directly abuts an RPW is also jurisdictional. If the aquatic resource is not a TNW, but has year-round (perennial) flow, skip to Section III.D.2. If the aquatic resource is a wetland directly abutting a tributary with perennial flow, skip to Section III.D.4.

A wetland that is adjacent to but that does not directly abut an RPW requires a significant nexus evaluation. Corps districts and EPA regions will include in the record any available information that documents the existence of a significant nexus between a relatively permanent tributary that is not perennial (and its adjacent wetlands if any) and a traditional navigable water, even though a significant nexus finding is not required as a matter of law.

If the waterbody<sup>4</sup> is not an RPW, or a wetland directly abutting an RPW, a JD will require additional data to determine if the waterbody has a significant nexus with a TNW. If the tributary has adjacent wetlands, the significant nexus evaluation must consider the tributary in combination with all of its adjacent wetlands. This significant nexus evaluation that combines, for analytical purposes, the tributary and all of its adjacent wetlands is used whether the review area identified in the JD request is the tributary, or its adjacent wetlands, or both. If the JD covers a tributary with adjacent wetlands, complete Section III.B.1 for the tributary, Section III.B.2 for any onsite wetlands, and Section III.B.3 for all wetlands adjacent to that tributary, both onsite and offsite. The determination whether a significant nexus exists is determined in Section III.C below.

**1. Characteristics of non-TNWs that flow directly or indirectly into TNW**

**(i) General Area Conditions:**

Watershed size: **Pick List**  
Drainage area: **Pick List**  
Average annual rainfall: inches  
Average annual snowfall: inches

**(ii) Physical Characteristics:**

**(a) Relationship with TNW:**

- Tributary flows directly into TNW.
- Tributary flows through **Pick List** tributaries before entering TNW.

Project waters are **Pick List** river miles from TNW.  
Project waters are **Pick List** river miles from RPW.  
Project waters are **Pick List** aerial (straight) miles from TNW.  
Project waters are **Pick List** aerial (straight) miles from RPW.  
Project waters cross or serve as state boundaries. Explain:

Identify flow route to TNW<sup>5</sup>:  
Tributary stream order, if known:

<sup>4</sup> Note that the Instructional Guidebook contains additional information regarding swales, ditches, washes, and erosional features generally and in the arid West.

<sup>5</sup> Flow route can be described by identifying, e.g., tributary a, which flows through the review area, to flow into tributary b, which then flows into TNW.

(b) General Tributary Characteristics (check all that apply):

- Tributary is:  Natural  
 Artificial (man-made). Explain:  
 Manipulated (man-altered). Explain:

Tributary properties with respect to top of bank (estimate):

Average width: feet  
Average depth: feet  
Average side slopes: **Pick List**.

Primary tributary substrate composition (check all that apply):

- |  |  |                                   |
|--|--|-----------------------------------|
| <input type="checkbox"/> Silts           | <input type="checkbox"/> Sands                     | <input type="checkbox"/> Concrete |
| <input type="checkbox"/> Cobbles         | <input type="checkbox"/> Gravel                    | <input type="checkbox"/> Muck     |
| <input type="checkbox"/> Bedrock         | <input type="checkbox"/> Vegetation. Type/% cover: |                                   |
| <input type="checkbox"/> Other. Explain: |  |                                   |

Tributary condition/stability [e.g., highly eroding, sloughing banks]. Explain:

Presence of run/riffle/pool complexes. Explain:

Tributary geometry: **Pick List**

Tributary gradient (approximate average slope): %

(c) Flow:

Tributary provides for: **Pick List**

Estimate average number of flow events in review area/year: **Pick List**

Describe flow regime:

Other information on duration and volume:

Surface flow is: **Pick List**. Characteristics:

Subsurface flow: **Pick List**. Explain findings:

Dye (or other) test performed:

Tributary has (check all that apply):

- |   |   |
|---|---|
| <input type="checkbox"/> Bed and banks  |   |
| <input type="checkbox"/> OHWM <sup>6</sup> (check all indicators that apply): |   |
| <input type="checkbox"/> clear, natural line impressed on the bank            | <input type="checkbox"/> the presence of litter and debris          |
| <input type="checkbox"/> changes in the character of soil                     | <input type="checkbox"/> destruction of terrestrial vegetation      |
| <input type="checkbox"/> shelving   | <input type="checkbox"/> the presence of wrack line                 |
| <input type="checkbox"/> vegetation matted down, bent, or absent              | <input type="checkbox"/> sediment sorting                           |
| <input type="checkbox"/> leaf litter disturbed or washed away                 | <input type="checkbox"/> scour                                      |
| <input type="checkbox"/> sediment deposition                                  | <input type="checkbox"/> multiple observed or predicted flow events |
| <input type="checkbox"/> water staining                                       | <input type="checkbox"/> abrupt change in plant community           |
| <input type="checkbox"/> other (list):  |   |
| <input type="checkbox"/> Discontinuous OHWM. <sup>7</sup> Explain:            |   |

If factors other than the OHWM were used to determine lateral extent of CWA jurisdiction (check all that apply):

- |  |  |
|--|--|
| <input checked="" type="checkbox"/> High Tide Line indicated by:   | <input checked="" type="checkbox"/> Mean High Water Mark indicated by: |
| <input type="checkbox"/> oil or scum line along shore objects      | <input type="checkbox"/> survey to available datum;                    |
| <input type="checkbox"/> fine shell or debris deposits (foreshore) | <input type="checkbox"/> physical markings;                            |
| <input type="checkbox"/> physical markings/characteristics         | <input type="checkbox"/> vegetation lines/changes in vegetation types. |
| <input type="checkbox"/> tidal gauges                              |  |
| <input type="checkbox"/> other (list):                             |  |

(iii) Chemical Characteristics:

Characterize tributary (e.g., water color is clear, discolored, oily film; water quality; general watershed characteristics, etc.).

Explain:

Identify specific pollutants, if known:

<sup>6</sup>A natural or man-made discontinuity in the OHWM does not necessarily sever jurisdiction (e.g., where the stream temporarily flows underground, or where the OHWM has been removed by development or agricultural practices). Where there is a break in the OHWM that is unrelated to the waterbody's flow regime (e.g., flow over a rock outcrop or through a culvert), the agencies will look for indicators of flow above and below the break.

<sup>7</sup>Ibid.

(iv) **Biological Characteristics. Channel supports (check all that apply):**

- Riparian corridor. Characteristics (type, average width):
- Wetland fringe. Characteristics:
- Habitat for:
  - Federally Listed species. Explain findings:
  - Fish/spawn areas. Explain findings:
  - Other environmentally-sensitive species. Explain findings:
  - Aquatic/wildlife diversity. Explain findings:

2. **Characteristics of wetlands adjacent to non-TNW that flow directly or indirectly into TNW**

(i) **Physical Characteristics:**

(a) General Wetland Characteristics:

Properties:

Wetland size:        acres

Wetland type. Explain:

Wetland quality. Explain:

Project wetlands cross or serve as state boundaries. Explain:

(b) General Flow Relationship with Non-TNW:

Flow is: **Pick List**. Explain:

Surface flow is: **Pick List**

Characteristics:

Subsurface flow: **Pick List**. Explain findings:

Dye (or other) test performed:

(c) Wetland Adjacency Determination with Non-TNW:

Directly abutting

Not directly abutting

Discrete wetland hydrologic connection. Explain:

Ecological connection. Explain:

Separated by berm/barrier. Explain:

(d) Proximity (Relationship) to TNW

Project wetlands are **Pick List** river miles from TNW.

Project waters are **Pick List** aerial (straight) miles from TNW.

Flow is from: **Pick List**.

Estimate approximate location of wetland as within the **Pick List** floodplain.

(ii) **Chemical Characteristics:**

Characterize wetland system (e.g., water color is clear, brown, oil film on surface; water quality; general watershed characteristics; etc.). Explain:

Identify specific pollutants, if known:

(iii) **Biological Characteristics. Wetland supports (check all that apply):**

- Riparian buffer. Characteristics (type, average width):
- Vegetation type/percent cover. Explain:
- Habitat for:
  - Federally Listed species. Explain findings:
  - Fish/spawn areas. Explain findings:
  - Other environmentally-sensitive species. Explain findings:
  - Aquatic/wildlife diversity. Explain findings:

3. **Characteristics of all wetlands adjacent to the tributary (if any)**

All wetland(s) being considered in the cumulative analysis: **Pick List**

Approximately (        ) acres in total are being considered in the cumulative analysis.

For each wetland, specify the following:

Directly abuts? (Y/N)      Size (in acres)      Directly abuts? (Y/N)      Size (in acres)

Summarize overall biological, chemical and physical functions being performed:

### C. SIGNIFICANT NEXUS DETERMINATION

A significant nexus analysis will assess the flow characteristics and functions of the tributary itself and the functions performed by any wetlands adjacent to the tributary to determine if they significantly affect the chemical, physical, and biological integrity of a TNW. For each of the following situations, a significant nexus exists if the tributary, in combination with all of its adjacent wetlands, has more than a speculative or insubstantial effect on the chemical, physical and/or biological integrity of a TNW. Considerations when evaluating significant nexus include, but are not limited to the volume, duration, and frequency of the flow of water in the tributary and its proximity to a TNW, and the functions performed by the tributary and all its adjacent wetlands. It is not appropriate to determine significant nexus based solely on any specific threshold of distance (e.g. between a tributary and its adjacent wetland or between a tributary and the TNW). Similarly, the fact an adjacent wetland lies within or outside of a floodplain is not solely determinative of significant nexus.

Draw connections between the features documented and the effects on the TNW, as identified in the *Rapanos* Guidance and discussed in the Instructional Guidebook. Factors to consider include, for example:

- Does the tributary, in combination with its adjacent wetlands (if any), have the capacity to carry pollutants or flood waters to TNWs, or to reduce the amount of pollutants or flood waters reaching a TNW?
- Does the tributary, in combination with its adjacent wetlands (if any), provide habitat and lifecycle support functions for fish and other species, such as feeding, nesting, spawning, or rearing young for species that are present in the TNW?
- Does the tributary, in combination with its adjacent wetlands (if any), have the capacity to transfer nutrients and organic carbon that support downstream foodwebs?
- Does the tributary, in combination with its adjacent wetlands (if any), have other relationships to the physical, chemical, or biological integrity of the TNW?

**Note: the above list of considerations is not inclusive and other functions observed or known to occur should be documented below:**

1. **Significant nexus findings for non-RPW that has no adjacent wetlands and flows directly or indirectly into TNWs.** Explain findings of presence or absence of significant nexus below, based on the tributary itself, then go to Section III.D:
2. **Significant nexus findings for non-RPW and its adjacent wetlands, where the non-RPW flows directly or indirectly into TNWs.** Explain findings of presence or absence of significant nexus below, based on the tributary in combination with all of its adjacent wetlands, then go to Section III.D:
3. **Significant nexus findings for wetlands adjacent to an RPW but that do not directly abut the RPW.** Explain findings of presence or absence of significant nexus below, based on the tributary in combination with all of its adjacent wetlands, then go to Section III.D:

### D. DETERMINATIONS OF JURISDICTIONAL FINDINGS. THE SUBJECT WATERS/WETLANDS ARE (CHECK ALL THAT APPLY):

1. **TNWs and Adjacent Wetlands.** Check all that apply and provide size estimates in review area:  
 TNWs:      linear feet      width (ft), Or,      acres.  
 Wetlands adjacent to TNWs:      acres.
2. **RPWs that flow directly or indirectly into TNWs.**  
 Tributaries of TNWs where tributaries typically flow year-round are jurisdictional. Provide data and rationale indicating that tributary is perennial: DWQ rating form greater than 30.  
 Tributaries of TNW where tributaries have continuous flow "seasonally" (e.g., typically three months each year) are jurisdictional. Data supporting this conclusion is provided at Section III.B. Provide rationale indicating that tributary flows seasonally:

Provide estimates for jurisdictional waters in the review area (check all that apply):

- Tributary waters:            linear feet            width (ft).  
 Other non-wetland waters:            acres.  
Identify type(s) of waters:            .

3. **Non-RPWs<sup>8</sup> that flow directly or indirectly into TNWs.**

- Waterbody that is not a TNW or an RPW, but flows directly or indirectly into a TNW, and it has a significant nexus with a TNW is jurisdictional. Data supporting this conclusion is provided at Section III.C.

Provide estimates for jurisdictional waters within the review area (check all that apply):

- Tributary waters:            linear feet            width (ft).  
 Other non-wetland waters:            acres.  
Identify type(s) of waters:            .

4. **Wetlands directly abutting an RPW that flow directly or indirectly into TNWs.**

- Wetlands directly abut RPW and thus are jurisdictional as adjacent wetlands.  
 Wetlands directly abutting an RPW where tributaries typically flow year-round. Provide data and rationale indicating that tributary is perennial in Section III.D.2, above. Provide rationale indicating that wetland is directly abutting an RPW: **87 Corps Manuel Wetland criteria were met in areas adjacent to RPWs.**  
 Wetlands directly abutting an RPW where tributaries typically flow "seasonally." Provide data indicating that tributary is seasonal in Section III.B and rationale in Section III.D.2, above. Provide rationale indicating that wetland is directly abutting an RPW:            .

Provide acreage estimates for jurisdictional wetlands in the review area: **0.47** acres.

5. **Wetlands adjacent to but not directly abutting an RPW that flow directly or indirectly into TNWs.**

- Wetlands that do not directly abut an RPW, but when considered in combination with the tributary to which they are adjacent and with similarly situated adjacent wetlands, have a significant nexus with a TNW are jurisdictional. Data supporting this conclusion is provided at Section III.C.

Provide acreage estimates for jurisdictional wetlands in the review area:            acres.

6. **Wetlands adjacent to non-RPWs that flow directly or indirectly into TNWs.**

- Wetlands adjacent to such waters, and have when considered in combination with the tributary to which they are adjacent and with similarly situated adjacent wetlands, have a significant nexus with a TNW are jurisdictional. Data supporting this conclusion is provided at Section III.C.

Provide estimates for jurisdictional wetlands in the review area:            acres.

7. **Impoundments of jurisdictional waters.<sup>9</sup>**

As a general rule, the impoundment of a jurisdictional tributary remains jurisdictional.

- Demonstrate that impoundment was created from "waters of the U.S.," or  
 Demonstrate that water meets the criteria for one of the categories presented above (1-6), or  
 Demonstrate that water is isolated with a nexus to commerce (see E below).

E. **ISOLATED [INTERSTATE OR INTRA-STATE] WATERS, INCLUDING ISOLATED WETLANDS, THE USE, DEGRADATION OR DESTRUCTION OF WHICH COULD AFFECT INTERSTATE COMMERCE, INCLUDING ANY SUCH WATERS (CHECK ALL THAT APPLY):<sup>10</sup>**

- which are or could be used by interstate or foreign travelers for recreational or other purposes.  
 from which fish or shellfish are or could be taken and sold in interstate or foreign commerce.  
 which are or could be used for industrial purposes by industries in interstate commerce.  
 Interstate isolated waters. Explain:            .  
 Other factors. Explain:            .

**Identify water body and summarize rationale supporting determination:**            .

<sup>8</sup>See Footnote # 3.

<sup>9</sup>To complete the analysis refer to the key in Section III.D.6 of the Instructional Guidebook.

<sup>10</sup>Prior to asserting or declining CWA jurisdiction based solely on this category, Corps Districts will elevate the action to Corps and EPA HQ for review consistent with the process described in the Corps/EPA Memorandum Regarding CWA Act Jurisdiction Following Rapanos.

Provide estimates for jurisdictional waters in the review area (check all that apply):

- Tributary waters: linear feet width (ft).
- Other non-wetland waters: acres.  
Identify type(s) of waters: .
- Wetlands: acres.

**F. NON-JURISDICTIONAL WATERS, INCLUDING WETLANDS (CHECK ALL THAT APPLY):**

- If potential wetlands were assessed within the review area, these areas did not meet the criteria in the 1987 Corps of Engineers Wetland Delineation Manual and/or appropriate Regional Supplements.
- Review area included isolated waters with no substantial nexus to interstate (or foreign) commerce.
  - Prior to the Jan 2001 Supreme Court decision in "SWANCC," the review area would have been regulated based solely on the "Migratory Bird Rule" (MBR).
- Waters do not meet the "Significant Nexus" standard, where such a finding is required for jurisdiction. Explain: .
- Other: (explain, if not covered above): .

Provide acreage estimates for non-jurisdictional waters in the review area, where the sole potential basis of jurisdiction is the MBR factors (i.e., presence of migratory birds, presence of endangered species, use of water for irrigated agriculture), using best professional judgment (check all that apply):

- Non-wetland waters (i.e., rivers, streams): linear feet width (ft).
- Lakes/ponds: acres.
- Other non-wetland waters: acres. List type of aquatic resource: .
- Wetlands: acres.

Provide acreage estimates for non-jurisdictional waters in the review area that do not meet the "Significant Nexus" standard, where such a finding is required for jurisdiction (check all that apply):

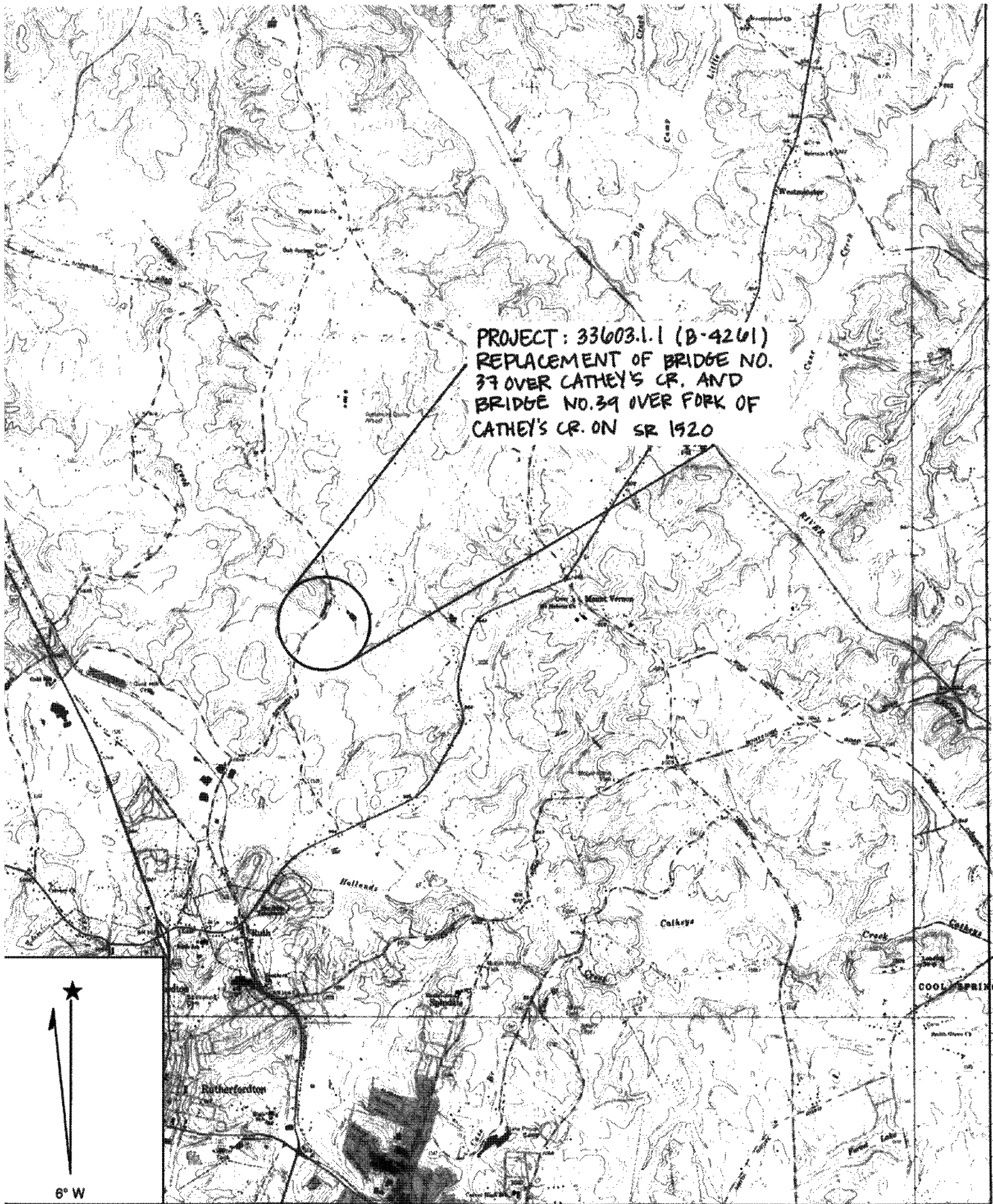
- Non-wetland waters (i.e., rivers, streams): linear feet, width (ft).
- Lakes/ponds: acres.
- Other non-wetland waters: acres. List type of aquatic resource: .
- Wetlands: acres.

**SECTION IV: DATA SOURCES.**

**A. SUPPORTING DATA. Data reviewed for JD (check all that apply - checked items shall 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:
- 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: .
- USDA Natural Resources Conservation Service Soil Survey. Citation: .
- National wetlands inventory map(s). Cite name: .
- State/Local wetland inventory map(s): .
- FEMA/FIRM maps:
- 100-year Floodplain Elevation is: (National Geodetic Vertical Datum of 1929)
- Photographs:  Aerial (Name & Date): .  
or  Other (Name & Date): .
- Previous determination(s). File no. and date of response letter: .
- Applicable/supporting case law: .
- Applicable/supporting scientific literature: .
- Other information (please specify): .

**B. ADDITIONAL COMMENTS TO SUPPORT JD:**



PROJECT: 33603.1.1 (B-4261)  
REPLACEMENT OF BRIDGE NO.  
37 OVER CATHEY'S CR. AND  
BRIDGE NO. 39 OVER FORK OF  
CATHEY'S CR. ON SR 1920



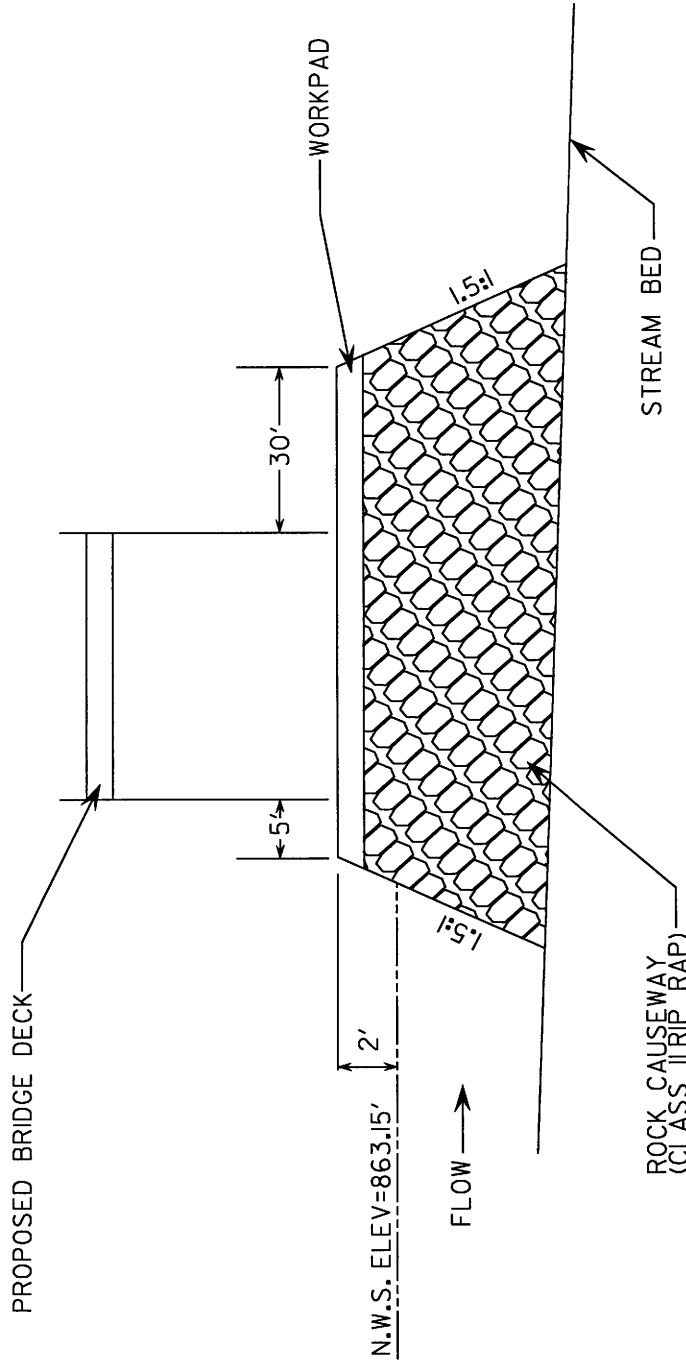
Name: RUTHERFORDTON NORTH  
Date: 2/28/2007  
Scale: 1 inch equals 4000 feet

Location: 035° 24' 45.4" N 081° 55' 18.6" W  
Caption: Project: 33603.1.1 (B-4261)





# CAUSEWAY DETAIL (NOT TO SCALE)



\$ FILE #

QUANTITIES OF ESTIMATES: CAUSEWAY 1	QUANTITIES OF ESTIMATES: CAUSEWAY 2
VOLUME OF CLASS II RIP RAP= 29 yds <sup>3</sup>	VOLUME OF CLASS II RIP RAP= 28 yds <sup>3</sup>
AREA OF CLASS II RIP RAP= 0.02 acres	AREA OF CLASS II RIP RAP= 0.02 acres
Estimate 41 Tons Class II Rip Rap	Estimate 40 Tons Class II Rip Rap

**NC DOT**  
 DIVISION OF HIGHWAYS  
 RUTHERFORD COUNTY  
 PROJECT: 33603.1.1 (B-426D)  
 REPLACEMENT OF BRIDGE NO.37  
 OVER CATHEY'S CREEK AND  
 BRIDGE NO.39 OVER THE FORK  
 OF CATHEY'S CREEK ON SR 1520  
 12 / 11 / 2008

**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	-L- 17+19	Causeway 1									0.01		70	
1	-L- 17+44	Causeway 2									0.01		45	
1	-L- 16+89	Rip Rap Embankment										24		
2	-L- 18+01	Base Ditch												
2	-L- 18+06	---			<0.01									
2	-L- 18+28	---	0.03											
2	-L- 19+44	---			<0.01									
3	-L- 20+27	---						<0.01						
3	-L- 19+93	---	0.03											
4	-L- 28+03	---									0.01			
4	-L- 28+15	2 @ 9' X 8' RCBC								0.03	0.02	105	95	
<b>TOTALS:</b>			0.06		0.01			0.01		0.04	0.05	129	210	

<0.01 acres of Temporary Fill in Wetlands in the Hand Clearing areas for erosion control measures

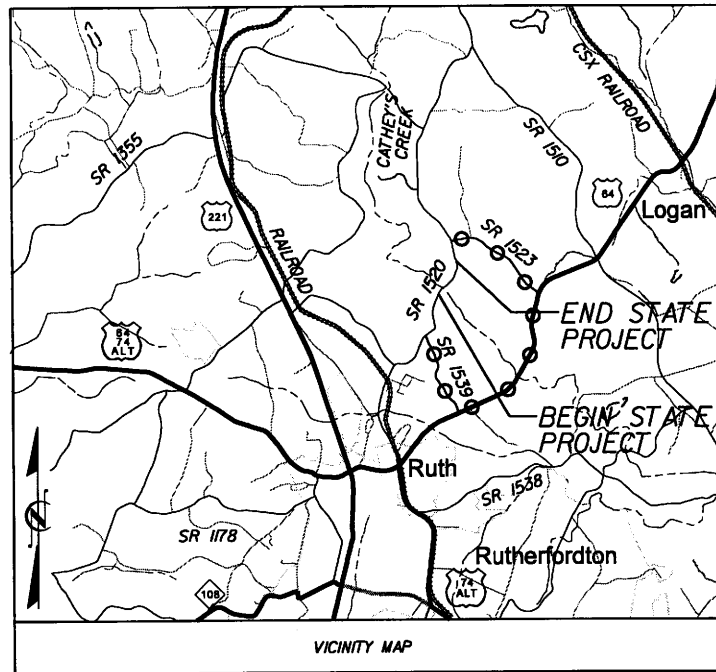
NC DEPARTMENT OF TRANSPORTATION  
 DIVISION OF HIGHWAYS  
 RUTHERFORD COUNTY  
 PROJECT: 33603.1.1 (B-4261)

2/9/2009

ATN Revised 3/31/05

**TIP PROJECT: B-4261**

SEE SHEET 1-A FOR INDEX OF SHEETS  
SEE SHEET 1-B FOR CONVENTIONAL PLAN SHEET SYMBOLS



OFF-SITE DETOUR ROUTE ○ ○ ○ ○ ○

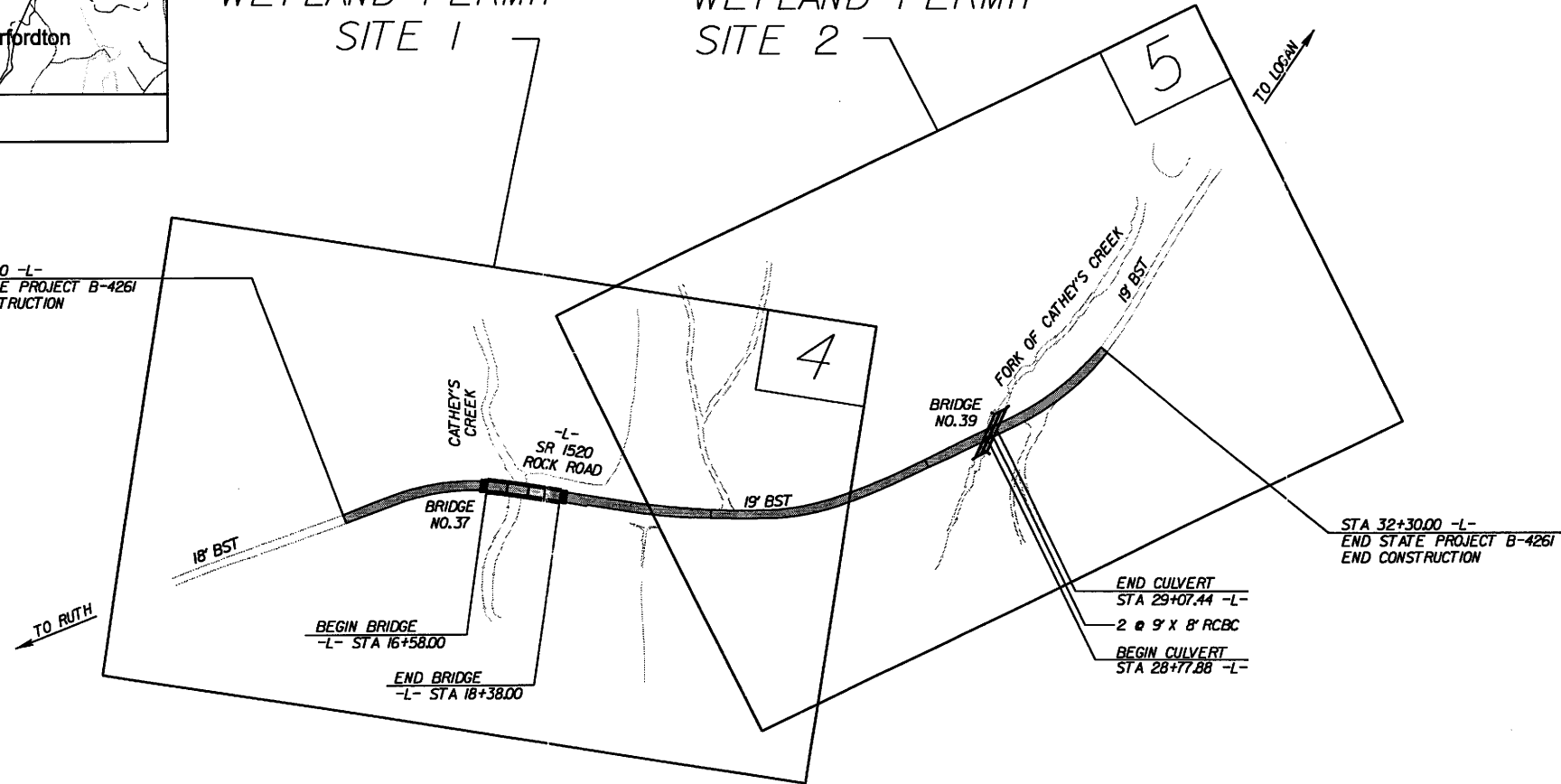
STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS  
**RUTHERFORD COUNTY**

**LOCATION: BRIDGE NO. 37 OVER CATHEY'S CREEK AND BRIDGE NO. 39  
OVER THE FORK OF CATHEY'S CREEK ON SR 1520**

**WETLAND PERMIT DRAWINGS**

WETLAND PERMIT  
SITE 1

WETLAND PERMIT  
SITE 2

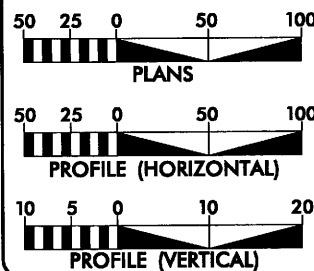


NCDOT CONTACT: B.D. TAYLOR, P.E.  
PROJECT ENGINEER  
ROADWAY DESIGN UNIT

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

PRELIMINARY PLANS  
DO NOT USE FOR CONSTRUCTION

**GRAPHIC SCALES**



**DESIGN DATA**

ADT 2008 = 1,600 VPD  
ADT 2030 = 2,800 VPD  
DHV = 10%  
D = 60%  
T = 3%  
V = 60 mph  
DESIGN EXCEPTION:  
HORIZONTAL RADIUS  
HORIZONTAL SSD  
VERTICAL CURVE K  
VERTICAL SSD  
FUNCTIONAL CLASSIFICATION:  
LOCAL RURAL  
\* (TTST 1% + DUAL 2%)

**PROJECT LENGTH**

LENGTH OF ROADWAY TIP PROJECT B-4261 = 0.331 MILES  
LENGTH OF STRUCTURE TIP PROJECT B-4261 = 0.034 MILES  
TOTAL LENGTH OF TIP PROJECT B-4261 = 0.365 MILES

PLANS PREPARED FOR  
THE NCDOT BY:



2006 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:  
NOVEMBER 21, 2008

LETTING DATE:  
NOVEMBER 17, 2009

**JEFFREY W. MOORE, P.E.**  
PROJECT ENGINEER

**R. ERSKINE BROOKS, P.E.**  
PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

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

SIGNATURE: \_\_\_\_\_ P.E.  
STATE HIGHWAY DESIGN ENGINEER

DIVISION OF HIGHWAYS  
STATE OF NORTH CAROLINA



STATE HIGHWAY DESIGN ENGINEER

K:\PAL\_Roadway\01035123\Permits\B-4261\_wet\_tst\dgn  
12/12/2008

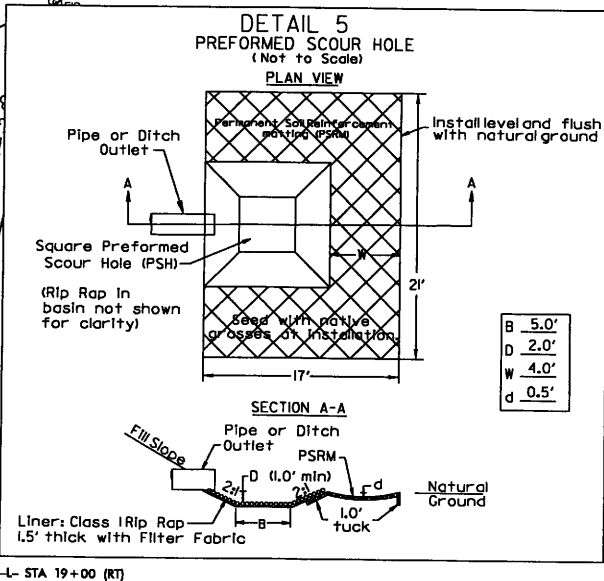
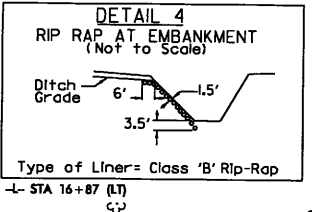
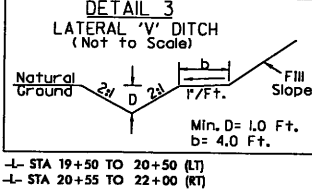
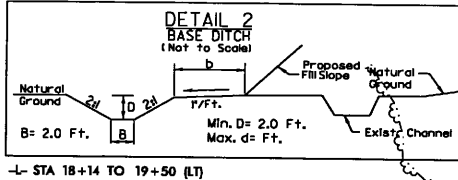
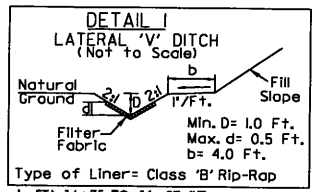
**CONTRACT:**



PROJECT REFERENCE NO. B-4261	SHEET NO. 4
RAW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

Kimley-Horn  
and Associates, Inc.  
P.O. BOX 33068  
RALEIGH, N.C. 27634-3068

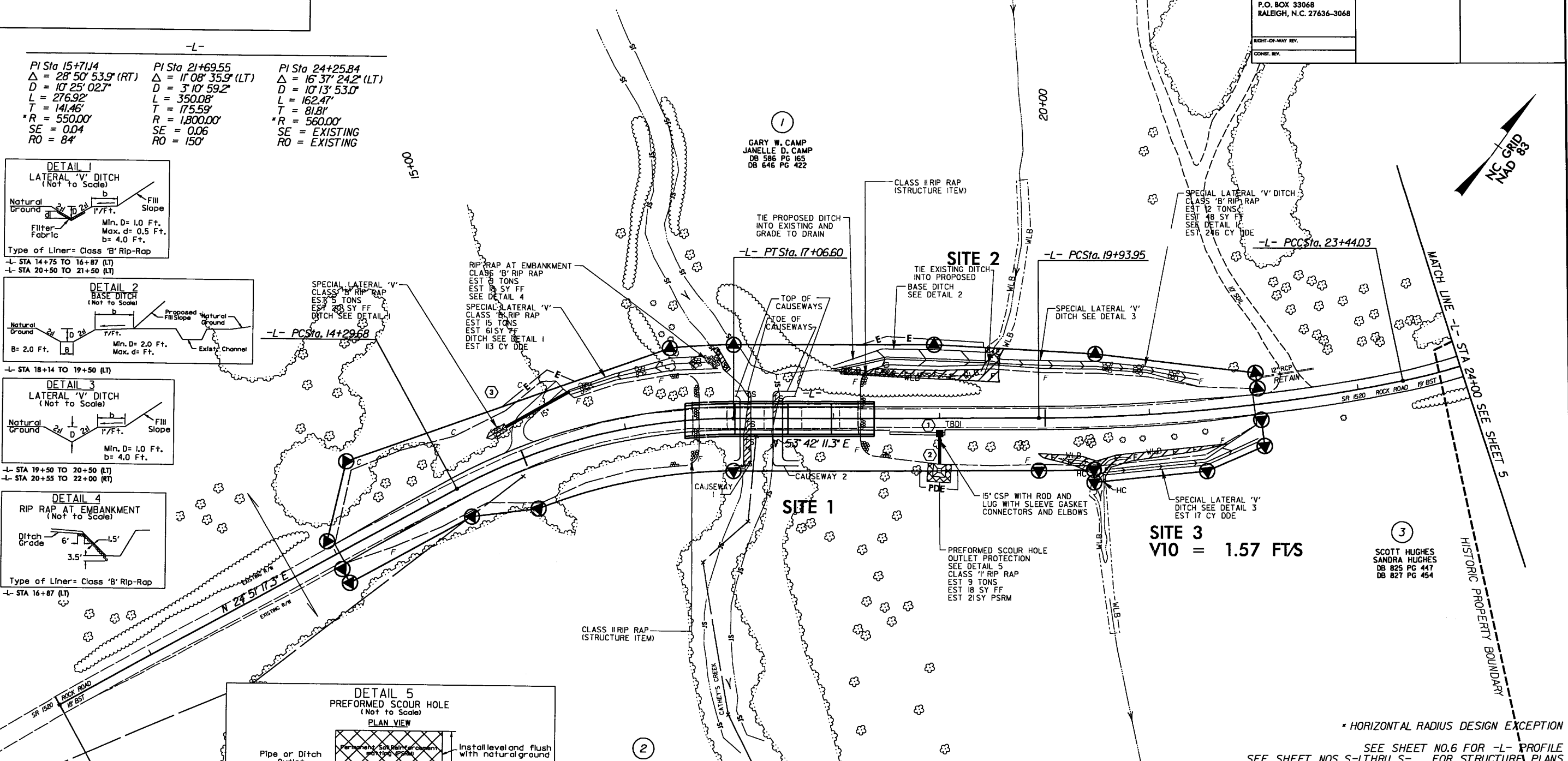
PI Sta 15+71.14 Δ = 28° 50' 53.9" (RT) D = 10' 25' 02.7" L = 276.92' T = 141.46' *R = 550.00' SE = 0.04 RO = 84'	PI Sta 21+69.55 Δ = 11° 08' 35.9" (LT) D = 3' 10' 59.2" L = 350.08' T = 175.59' R = 1,800.00' SE = 0.06 RO = 150'	PI Sta 24+25.84 Δ = 16° 37' 24.2" (LT) D = 10' 13' 53.0" L = 162.47' T = 81.81' *R = 560.00' SE = EXISTING RO = EXISTING
---	--	---



2  
HARDY H. HUNTLEY  
JANET A. HUNTLEY  
DB 405 PG 148

SHIRLEY M. GLOVER  
BOBBY LEO GLOVER  
DB 477 PG 340

SCALE\$

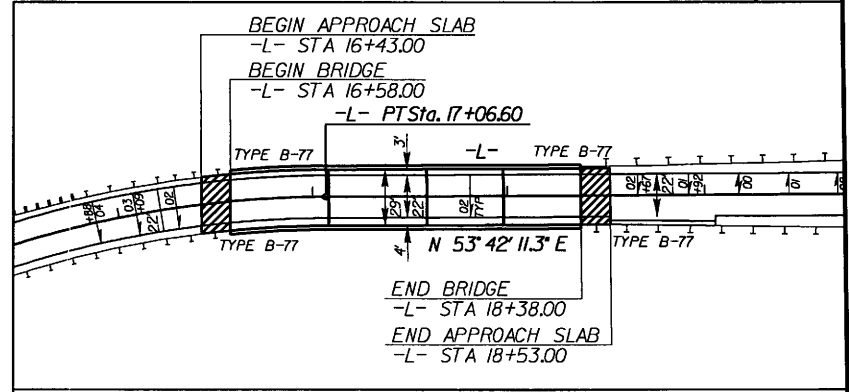


NC GRID  
MAD 83

3  
SCOTT HUGHES  
SANDRA HUGHES  
DB 825 PG 447  
DB 827 PG 454

\* HORIZONTAL RADIUS DESIGN EXCEPTION  
SEE SHEET NO. 6 FOR -L- PROFILE  
SEE SHEET NOS. 5-1 THRU 5- FOR STRUCTURE PLANS

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



SKETCH SHOWING BRIDGE /PAVEMENT RELATIONSHIP

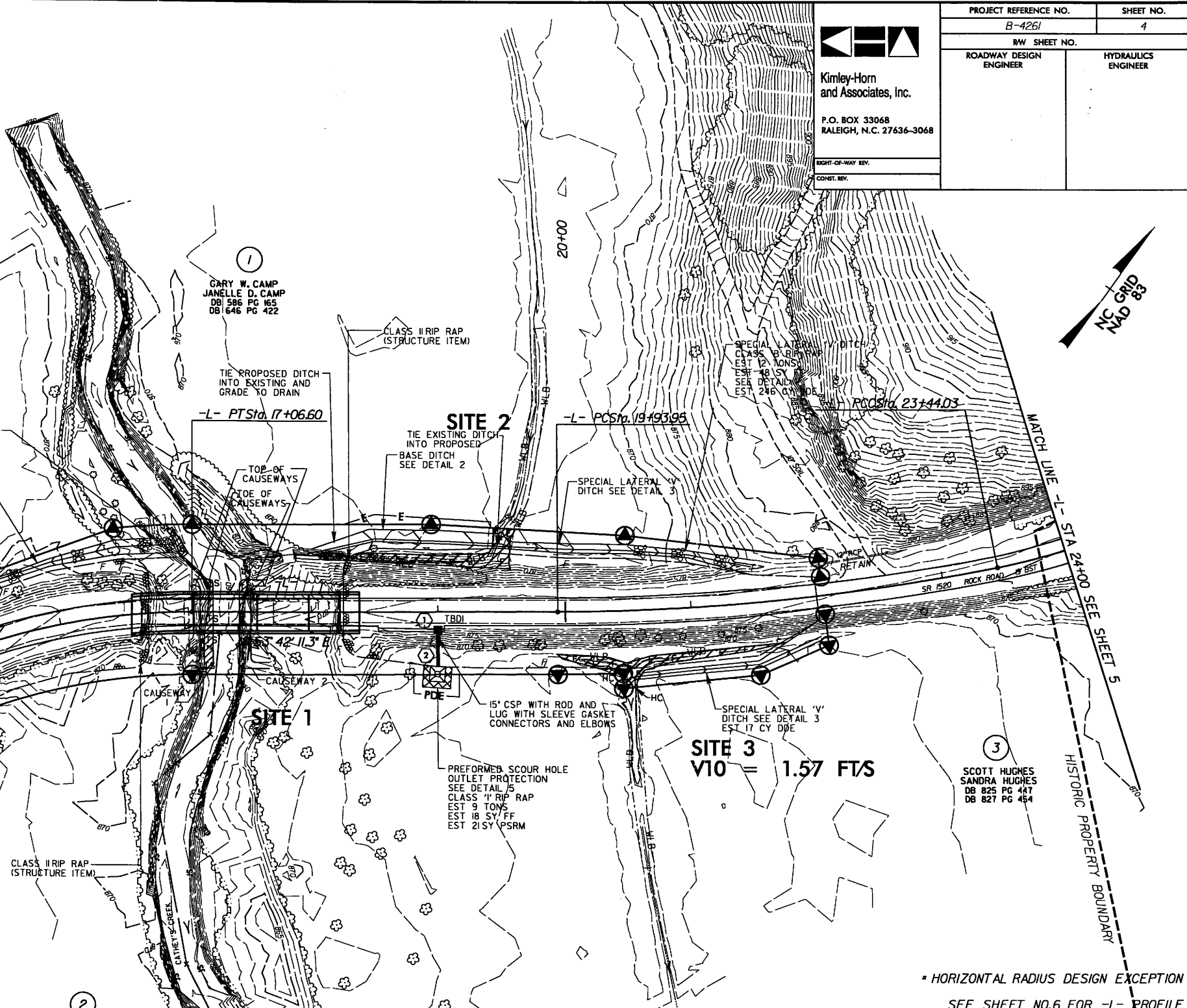
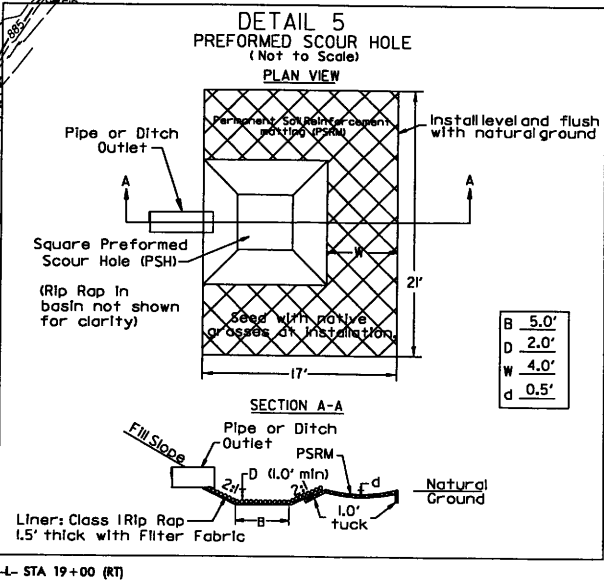
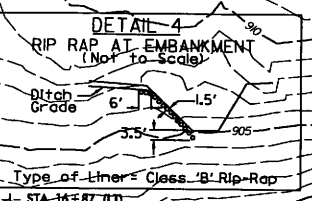
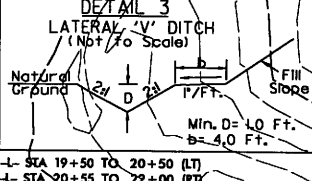
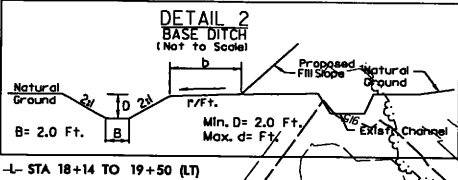
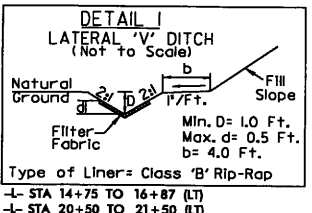


Kimley-Horn and Associates, Inc.

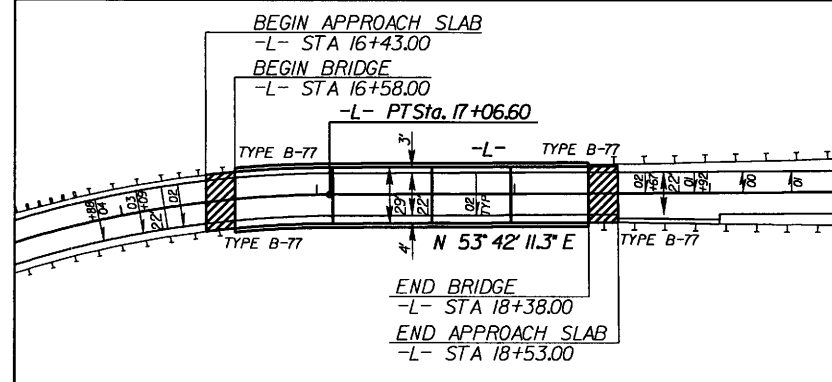
P.O. BOX 33068  
RALEIGH, N.C. 27636-3068

RIGHT-OF-WAY REV.  
CONST. REV.

<p>PI Sta 15+71.14  <math>\Delta = 28' 50" 53.9" (RT)</math>  <math>D = 10' 25" 02.7"</math>  <math>L = 276.92'</math>  <math>T = 141.46'</math>  <math>R = 550.00'</math>  <math>SE = 0.04</math>  <math>RO = 84'</math></p>	<p>PI Sta 21+69.55  <math>\Delta = 11' 08" 35.9" (LT)</math>  <math>D = 3' 10" 59.2"</math>  <math>L = 350.08'</math>  <math>T = 175.59'</math>  <math>R = 1,800.00'</math>  <math>SE = 0.06</math>  <math>RO = 150'</math></p>	<p>PI Sta 24+25.84  <math>\Delta = 16' 37" 24.2" (LT)</math>  <math>D = 10' 13" 53.0"</math>  <math>L = 162.47'</math>  <math>T = 81.81'</math>  <math>R = 560.00'</math>  <math>SE = EXISTING</math>  <math>RO = EXISTING</math></p>
---	---	---



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



\* HORIZONTAL RADIUS DESIGN EXCEPTION  
 SEE SHEET NO.6 FOR -L- PROFILE FOR STRUCTURE PLANS  
 SEE SHEET NOS. S-1 THRU S-

\$DATE\$

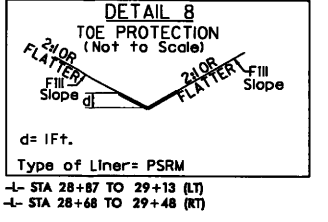
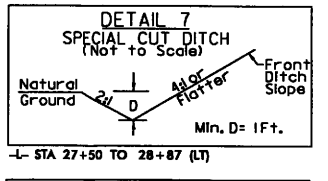
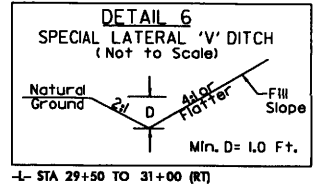
REVISIONS

PI Sta 24+25.84 Δ = 16° 37' 24.2" (LT) D = 10' 13' 53.0" L = 162.47' T = 81.81' *R = 560.00' SE = EXISTING RO = EXISTING	PI Sta 25+80.29 Δ = 7° 02' 13.5" (LT) D = 4' 46' 28.7" L = 147.38' T = 73.78' *R = 1200.00' SE = EXISTING RO = EXISTING
PI Sta 31+48.72 Δ = 33° 31' 18.1" (LT) D = 8' 57' 08.9" L = 374.44' T = 192.75' *R = 640.00' SE = 0.06 RO = 126'	PI Sta 36+08.95 Δ = 3° 59' 59.1" (RT) D = 1' 33' 40.3" L = 256.20' T = 128.15' R = 3670.00' SE = EXISTING RO = EXISTING

PROJECT REFERENCE NO. B-4261	SHEET NO. 5
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
<b>PRELIMINARY PLANS</b> DO NOT USE FOR CONSTRUCTION	

Kimley-Horn and Associates, Inc.  
P.O. BOX 33068  
RALEIGH, N.C. 27636-3068

RIGHT-OF-WAY REV.  
CONST. REV.



MATCH LINE -L- STA 24+00 SEE SHEET 4

3  
SCOTT HUGHES  
SANDRA HUGHES  
DB 825 PG 447  
DB 827 PG 454

1  
GARY W. CAMP  
JANELLE D. CAMP  
DB 586 PG 165  
DB 646 PG 422

5  
RICHARD L. WARD  
JOYCE C. WARD  
DB 739 PG 209

4  
RICHARD L. WARD  
JOYCE C. WARD  
DB 727 PG 762

MARJORIE J. WHITE  
DB 743 PG 821

AARON ADKINS  
JESSICA ADKINS  
DB 827 PG 456

/// DENOTES TEMPORARY IMPACTS IN SURFACE WATER  
/// DENOTES IMPACTS IN SURFACE WATER



\* HORIZONTAL RADIUS DESIGN EXCEPTION  
SEE SHEET NO. 6 FOR -L- PROFILE  
SEE SHEET NOS. C-1 THRU C- FOR CULVERT PLANS

Permit Drawing

REVISIONS

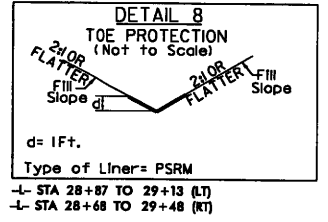
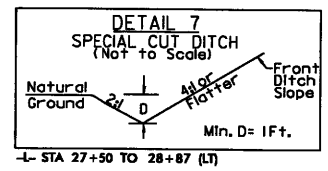
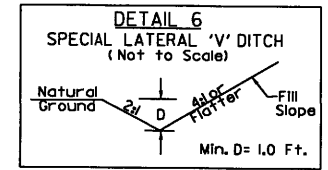
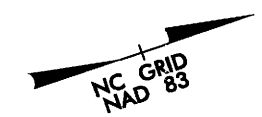
-L-

PI Sta 24+25.84 Δ = 16° 37' 24.2" (LT) D = 10' 13" 53.0" L = 162.47' T = 81.81' R = 560.00' SE = EXISTING RO = EXISTING	PI Sta 25+80.29 Δ = 7° 02' 13.5" (LT) D = 4' 46" 28.7" L = 147.38' T = 73.78' R = 1200.00' SE = EXISTING RO = EXISTING
--	---

PI Sta 31+48.22 Δ = 53° 31' 48.1" (LT) D = 8' 57" 08.9" L = 192.75' T = 64.00' R = 125' SE = EXISTING RO = EXISTING	PI Sta 36+08.95 Δ = 3° 59' 59.1" (RT) D = 1' 33" 40.3" L = 256.20' T = 128.15' R = 3670.00' SE = EXISTING RO = EXISTING
--	--

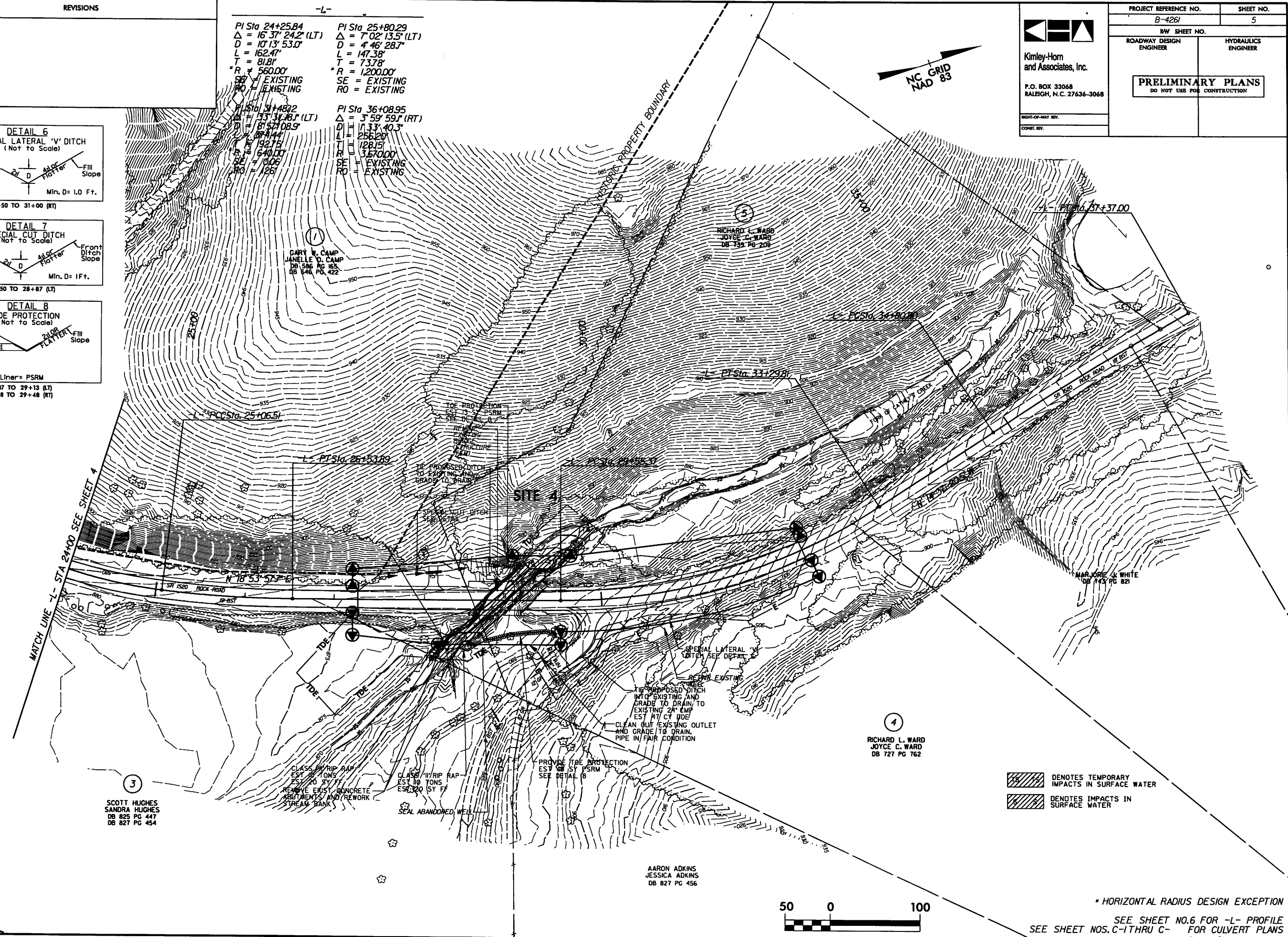
Kimley-Horn  
and Associates, Inc.  
P.O. BOX 33068  
RALEIGH, N.C. 27636-3068

PROJECT REFERENCE NO. B-4261	SHEET NO. 5
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
<b>PRELIMINARY PLANS</b> DO NOT USE FOR CONSTRUCTION	



-L- STA 28+87 TO 29+13 (LT)  
-L- STA 28+68 TO 29+48 (RT)

\$FILEL\$  
\$DATE\$



DENOTES TEMPORARY IMPACTS IN SURFACE WATER  
 DENOTES IMPACTS IN SURFACE WATER



\* HORIZONTAL RADIUS DESIGN EXCEPTION  
SEE SHEET NO.6 FOR -L- PROFILE  
SEE SHEET NOS. C-1 THRU C- FOR CULVERT PLANS

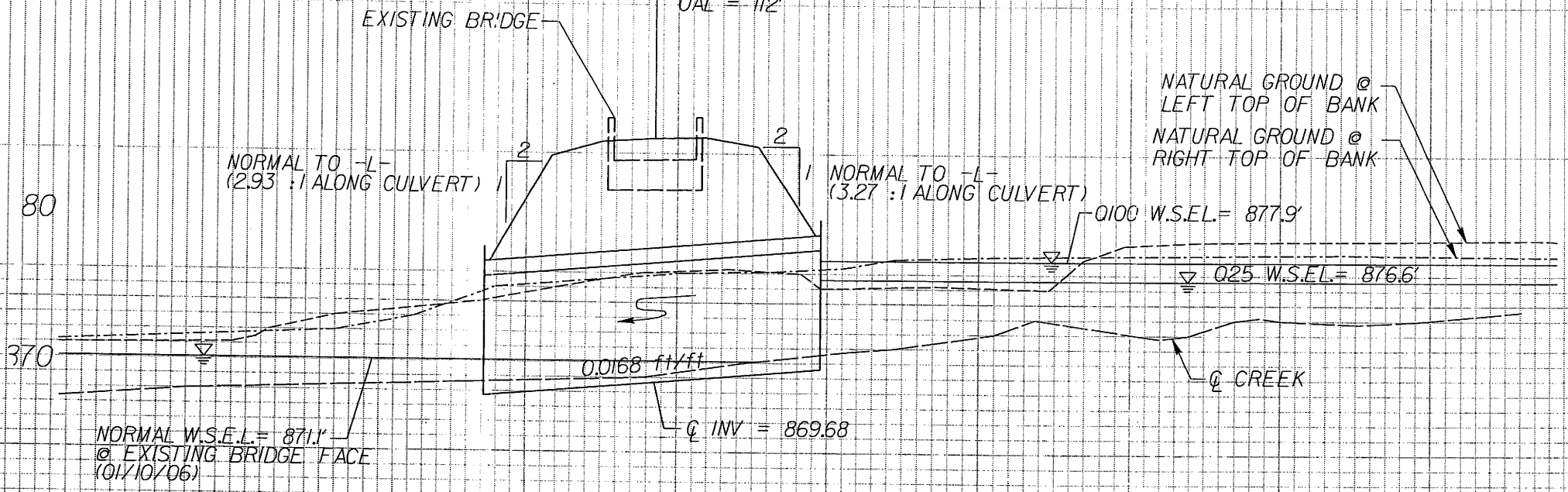
Permit Drawing

25+00      26+00      27+00      28+00      29+00      30+00      31+00      32+00

915  
905  
895  
885  
875  
865  
855  
845

SCALE  
1" = 50' H  
1" = 10' V

CL STA 28+92.66 -L-  
GRADE POINT ELEV = 886.03  
SKEW = 140'00" @ -L-  
2 @ 9' x 8' RCBC  
W/ BEVELED INLET  
OAL = 112'



**WETLAND PERMIT DRAWING**  
**BSR PROFILE @ 28+77.88 -L-**  
**B-4261**

**NCDOT**  
DIVISION OF HIGHWAYS  
RUTHERFORD COUNTY  
PROJECT 33603.1.1 (B-4261)  
REPLACEMENT OF BRIDGE NO. 37  
OVER CATHEY'S CREEK AND BRIDGE  
NO. 39 OVER THE FORK OF CATHEY'S  
CREEK ON SR 1520  
8/9/2007 Permit Drawing  
10 of 11

R:\011036123\Permits\V8\_Wetland-profile\Culvert.dgn

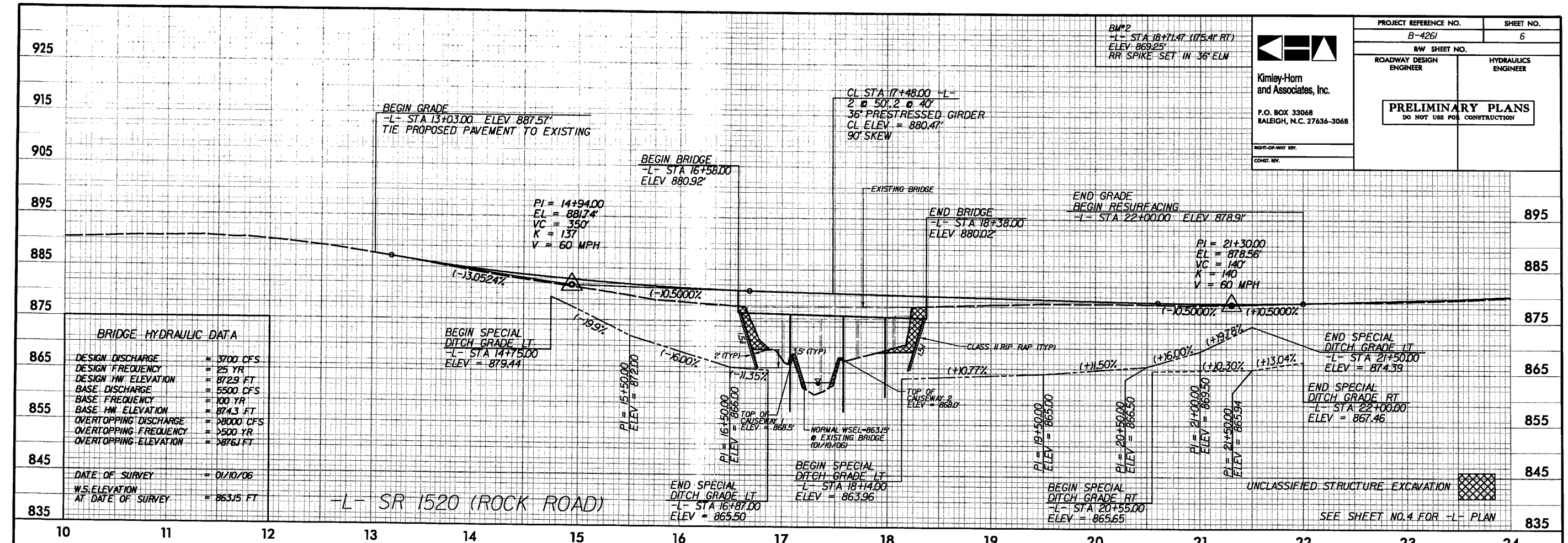


BM#2  
 -L- STA 18+71.47 (175.41' RT)  
 ELEV 869.25'  
 RR SPIKE SET IN 36" ELM

**Kimley-Horn and Associates, Inc.**  
 P.O. BOX 33068  
 RALEIGH, N.C. 27636-3068

RIGHT-OF-WAY REV.  
 CONST. REV.

PROJECT REFERENCE NO. B-4261	SHEET NO. 6
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
<b>PRELIMINARY PLANS</b> DO NOT USE FOR CONSTRUCTION	

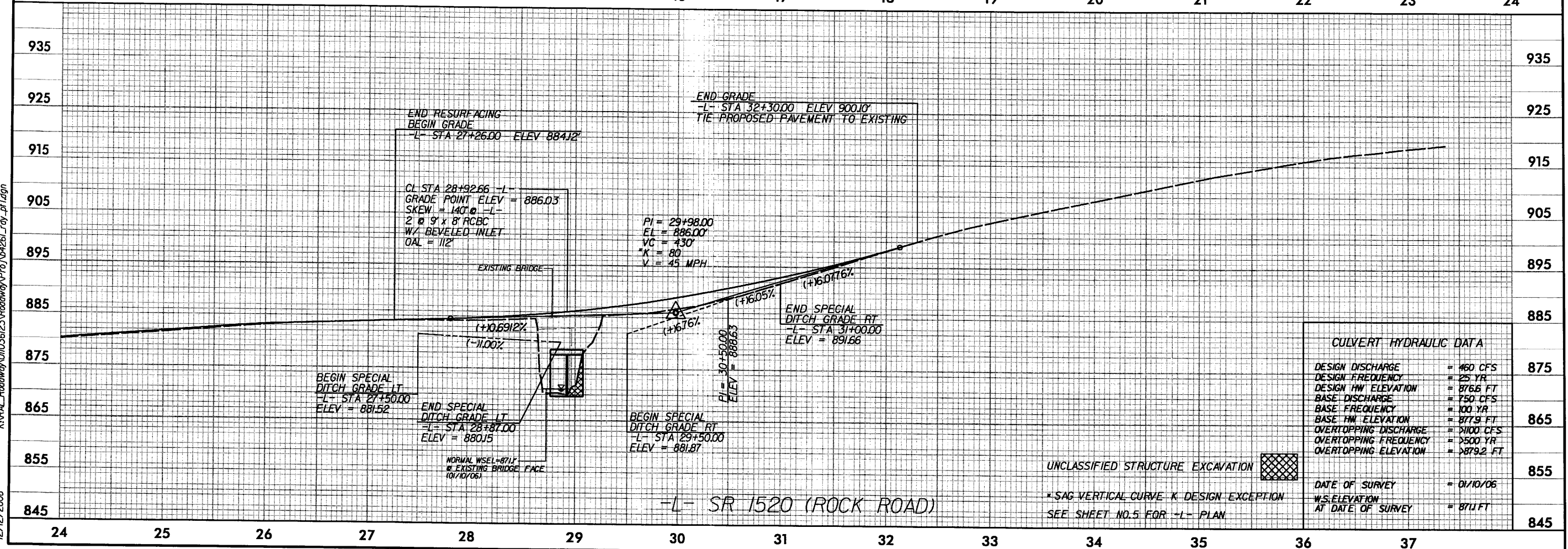


**BRIDGE HYDRAULIC DATA**

DESIGN DISCHARGE	= 3700 CFS
DESIGN FREQUENCY	= 25 YR
DESIGN HW ELEVATION	= 872.9 FT
BASE DISCHARGE	= 5500 CFS
BASE FREQUENCY	= 100 YR
BASE HW ELEVATION	= 874.3 FT
OVERTOPPING DISCHARGE	= >8000 CFS
OVERTOPPING FREQUENCY	= >500 YR
OVERTOPPING ELEVATION	= >876.1 FT
DATE OF SURVEY	= 01/10/06
W.S. ELEVATION AT DATE OF SURVEY	= 863.15 FT

**CULVERT HYDRAULIC DATA**

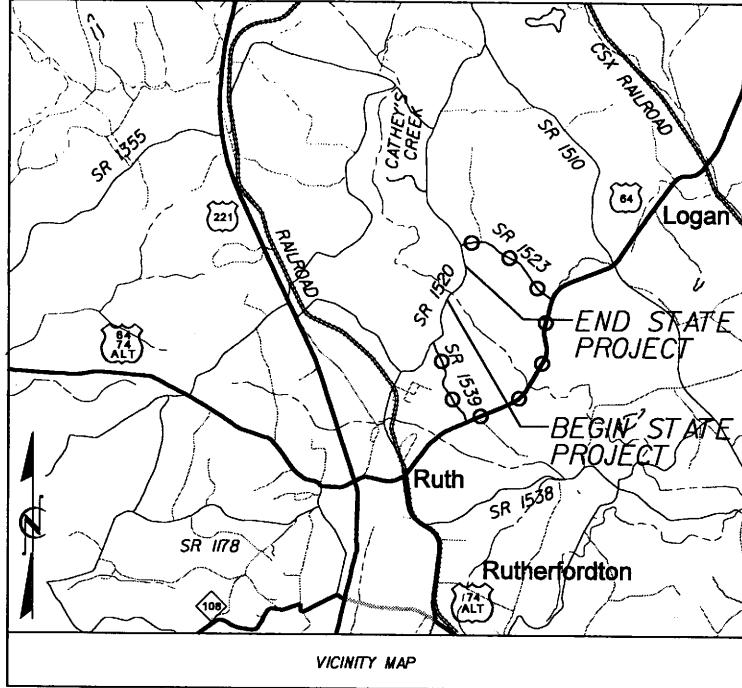
DESIGN DISCHARGE	= 460 CFS
DESIGN FREQUENCY	= 25 YR
DESIGN HW ELEVATION	= 876.6 FT
BASE DISCHARGE	= 750 CFS
BASE FREQUENCY	= 100 YR
BASE HW ELEVATION	= 877.9 FT
OVERTOPPING DISCHARGE	= >1100 CFS
OVERTOPPING FREQUENCY	= >500 YR
OVERTOPPING ELEVATION	= >879.2 FT
DATE OF SURVEY	= 01/10/06
W.S. ELEVATION AT DATE OF SURVEY	= 871.1 FT



K:\RAL\_Roadway\01036123\Roadway\Prj\04261\_rdy\_pl.dgn  
 12/12/2008

TIP PROJECT: B-4261

SEE SHEET 1-A FOR INDEX OF SHEETS  
SEE SHEET 1-B FOR CONVENTIONAL PLAN SHEET SYMBOLS



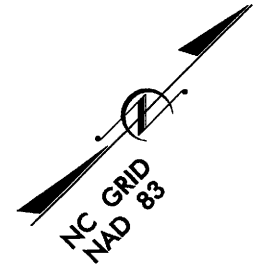
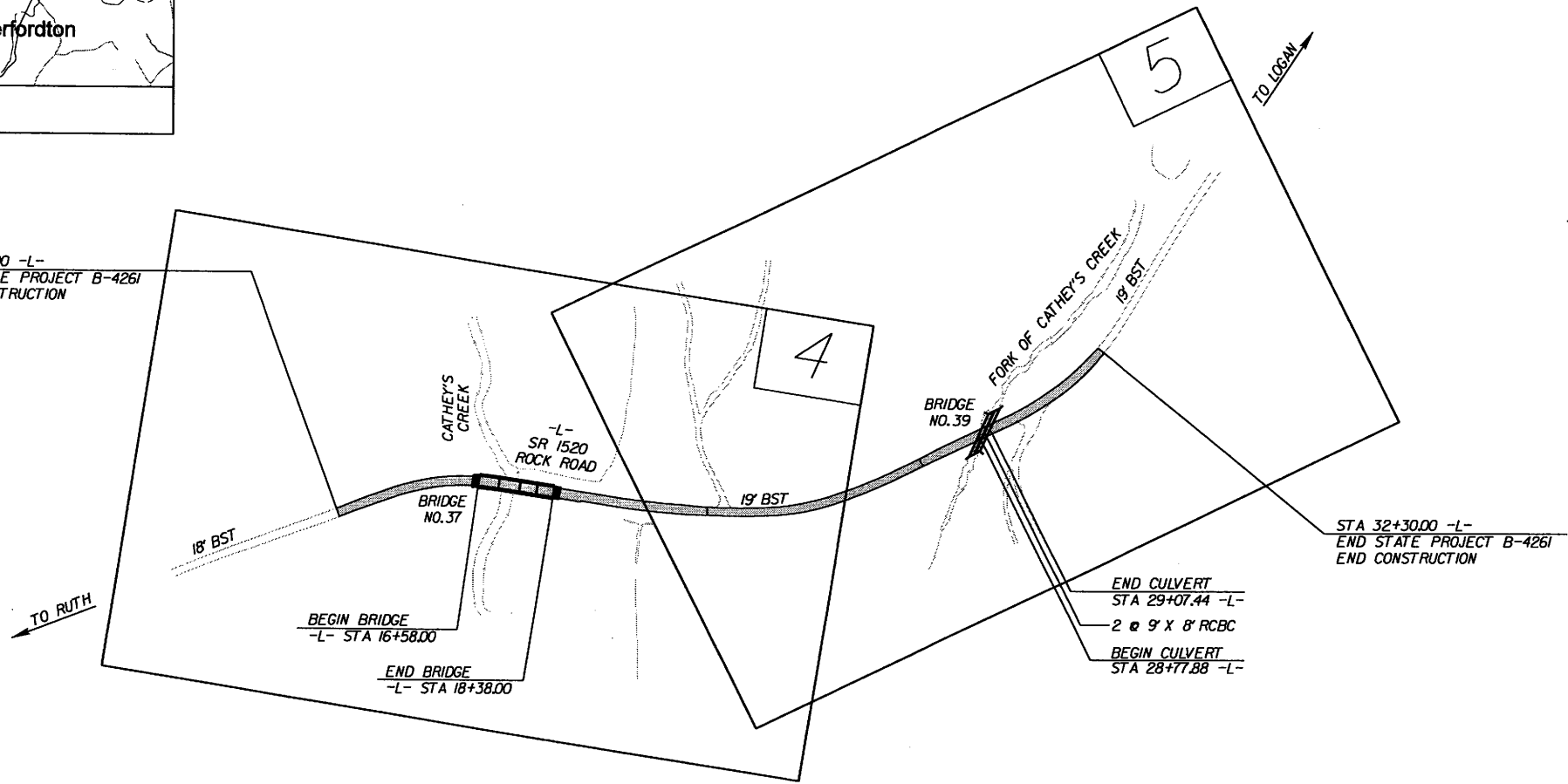
OFF-SITE DETOUR ROUTE ○-○-○-○

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

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-4261	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
33603.1.1	BRZ-1520(4)	P.E.	
33603.2.1	BRZ-1520(4)	RIGHT-OF-WAY	

**LOCATION: BRIDGE NO. 37 OVER CATHEY'S CREEK AND BRIDGE NO. 39 OVER THE FORK OF CATHEY'S CREEK ON SR 1520**

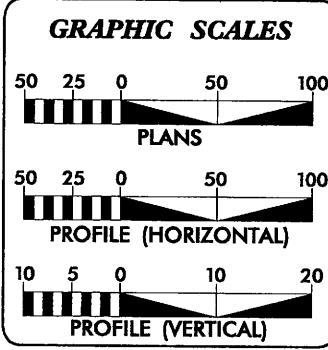
**TYPE OF WORK: GRADING, PAVING, DRAINAGE, CULVERT, AND STRUCTURE**



NCDOT CONTACT: B.D. TAYLOR, P.E.  
PROJECT ENGINEER  
ROADWAY DESIGN UNIT

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

PRELIMINARY PLANS  
DO NOT USE FOR CONSTRUCTION



**DESIGN DATA**

ADT 2008	= 1,600 VPD
ADT 2030	= 2,800 VPD
DHV	= 10%
D	= 60%
T	= 3% *
V	= 60 mph

DESIGN EXCEPTION:  
HORIZONTAL RADIUS  
HORIZONTAL SSD  
VERTICAL CURVE K  
VERTICAL SSD  
FUNCTIONAL CLASSIFICATION:  
LOCAL RURAL

\* (TTST 1% + DUAL 2%)

**PROJECT LENGTH**

LENGTH OF ROADWAY TIP PROJECT B-4261	= 0.331 MILES
LENGTH OF STRUCTURE TIP PROJECT B-4261	= 0.034 MILES
TOTAL LENGTH OF TIP PROJECT B-4261	= 0.365 MILES

PLANS PREPARED FOR THE NCDOT BY:

2006 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:  
NOVEMBER 21, 2008

LETTING DATE:  
NOVEMBER 17, 2009

Kimley-Horn and Associates, Inc.  
© 2008  
Post Office Box 23068  
Raleigh, North Carolina 27626

**JEFFREY W. MOORE, P.E.**  
PROJECT ENGINEER

**R. ERSKINE BROOKS, P.E.**  
PROJECT DESIGN ENGINEER

**HYDRAULICS ENGINEER**

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

SIGNATURE: \_\_\_\_\_ P.E.  
STATE HIGHWAY DESIGN ENGINEER

**DIVISION OF HIGHWAYS  
STATE OF NORTH CAROLINA**

P.E.  
STATE HIGHWAY DESIGN ENGINEER

K:\PAL\_Roadway\01036123\Roadway\Pro\B4261\_rdy\_1.shdgn  
12/12/2008

CONTRACT:

Note: Not to Scale

\*S.U.E. = Subsurface Utility Engineering

STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

PROJECT REFERENCE NO.	SHEET NO.
B-4261	1-B

# CONVENTIONAL PLAN SHEET SYMBOLS

### 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	②③
Existing Fence Line	-x-x-x-
Proposed Woven Wire Fence	○
Proposed Chain Link Fence	□
Proposed Barbed Wire Fence	◇
Existing Wetland Boundary	-w.s-
Proposed Wetland Boundary	-w.s-
Existing Endangered Animal Boundary	-eab-
Existing Endangered Plant Boundary	-epb-

### 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	-js-
Buffer Zone 1	-bz 1-
Buffer Zone 2	-bz 2-
Flow Arrow	←
Disappearing Stream	→
Spring	○
Swamp Marsh	□
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 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 Utility Easement	-pue-

### ROADS AND RELATED FEATURES:

Existing Edge of Pavement	_____
Existing Curb	_____
Proposed Slope Stakes Cut	-c-
Proposed Slope Stakes Fill	-f-
Proposed Wheel Chair Ramp	WCR
Curb Cut for Future Wheel Chair Ramp	CCFR
Existing Metal Guardrail	_____
Proposed Guardrail	_____
Existing Cable Guiderail	_____
Proposed Cable Guiderail	_____
Equality Symbol	⊕
Pavement Removal	XXXX

### VEGETATION:

Single Tree	○
Single Shrub	○
Hedge	_____
Woods Line	_____
Orchard	_____
Vineyard	_____

### EXISTING STRUCTURES:

MAJOR:	
Bridge, Tunnel or Box Culvert	_____
Bridge Wing Wall, Head Wall and End Wall	_____
MINOR:	
Head and End Wall	_____
Pipe Culvert	_____
Footbridge	_____
Drainage Box: Catch Basin, DI or JB	□
Paved Ditch Gutter	_____
Storm Sewer Manhole	○
Storm Sewer	_____

### UTILITIES:

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

### TELEPHONE:

Existing Telephone Pole	●
Proposed Telephone Pole	○
Telephone Manhole	○
Telephone Booth	□
Telephone Pedestal	□
Telephone Cell Tower	⊞
UG Telephone Cable Hand Hole	□
Recorded UG Telephone Cable	_____
Designated UG Telephone Cable (S.U.E.*)	_____
Recorded UG Telephone Conduit	_____
Designated UG Telephone Conduit (S.U.E.*)	_____
Recorded UG Fiber Optics Cable	_____
Designated UG Fiber Optics Cable (S.U.E.*)	_____

### WATER:

Water Manhole	○
Water Meter	○
Water Valve	⊗
Water Hydrant	⊕
Recorded UG Water Line	_____
Designated UG Water Line (S.U.E.*)	_____
Above Ground Water Line	_____

### TV:

TV Satellite Dish	⊞
TV Pedestal	□
TV Tower	⊗
UG TV Cable Hand Hole	□
Recorded UG TV Cable	_____
Designated UG TV Cable (S.U.E.*)	_____
Recorded UG Fiber Optic Cable	_____
Designated UG Fiber Optic Cable (S.U.E.*)	_____

### GAS:

Gas Valve	◇
Gas Meter	○
Recorded UG Gas Line	_____
Designated UG Gas Line (S.U.E.*)	_____
Above Ground Gas Line	_____

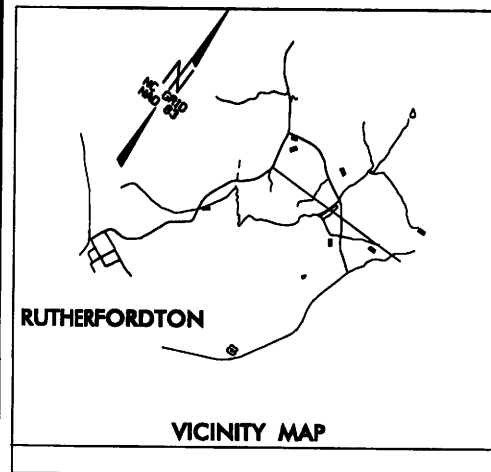
### SANITARY SEWER:

Sanitary Sewer Manhole	⊕
Sanitary Sewer Cleanout	⊕
UG Sanitary Sewer Line	_____
Above Ground Sanitary Sewer	_____
Recorded SS Forced Main Line	_____
Designated SS Forced Main Line (S.U.E.*)	_____

### MISCELLANEOUS:

Utility Pole	●
Utility Pole with Base	□
Utility Located Object	○
Utility Traffic Signal Box	□
Utility Unknown UG Line	_____
UG Tank; Water, Gas, Oil	□
AG Tank; Water, Gas, Oil	□
UG Test Hole (S.U.E.*)	⊕
Abandoned According to Utility Records	AATUR
End of Information	E.O.I.

# SURVEY CONTROL SHEET B-4261



BL POINT	DESC.	NORTH	EAST	ELEVATION	L STATION	OFFSET
100	B4261-1	615058.3520	1123474.3390	908.57	OUTSIDE PROJECT LIMITS	
5	BL-5	615924.1770	1123336.4920	892.53	OUTSIDE PROJECT LIMITS	
200	B4261-2	616374.2000	1123467.4500	891.56	OUTSIDE PROJECT LIMITS	
1	BL-1	616982.1830	1123806.4450	878.00	15+81.41	11.22 RT
10	T-10	617030.2430	1123916.1760	869.61	17+01.43	51.31 RT
2	BL-2	617555.5170	1124460.0200	880.82	24+52.04	15.98 RT
6	T-6	618028.8280	1124611.2200	884.85	29+46.51	13.00 LT
3	BL-3	618238.5100	1124674.2760	896.86	31+64.73	13.39 RT
4	BL-4	618910.6370	1124510.9640	921.43	OUTSIDE PROJECT LIMITS	

.....  
 BM2 ELEVATION = 869.25  
 N 617031 E 1124126  
 L STATION 18+71 175 RIGHT  
 RR SPIKE IN 36 INCH ELM  
 .....

**DATUM DESCRIPTION**

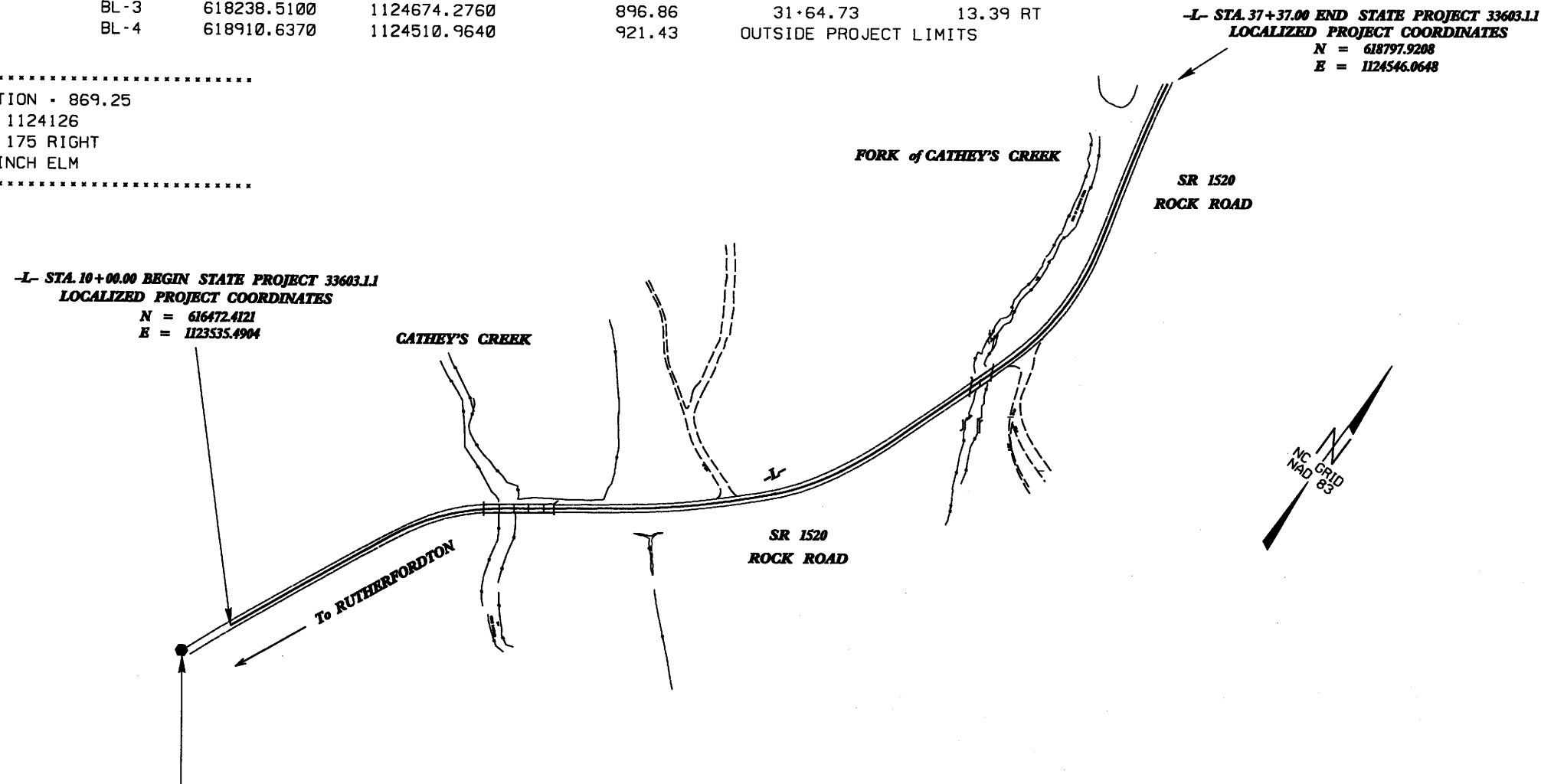
THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCDOT FOR MONUMENT "B4261-2" WITH NAD 83 STATE PLANE GRID COORDINATES OF NORTHING: 616374.2000(ft) EASTING: 1123467.4500(ft) THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.999824482 THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "B4261-2" TO -L- STATION 10+00 IS N 34 42 50 E, 119.48' ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES VERTICAL DATUM USED IS NAVD 88

-L- STA. 10+00.00 BEGIN STATE PROJECT 33603.11  
 LOCALIZED PROJECT COORDINATES  
 N = 616472.4121  
 E = 1123535.4904

NCDOT GPS STA. "B4261-2"  
 LOCALIZED PROJECT COORDINATES  
 N = 616374.2000  
 E = 1123467.4500

NCDOT GPS STA. "B4261-1"  
 LOCALIZED PROJECT COORDINATES  
 N = 615058.3520  
 E = 1123474.3390

-L- STA. 37+37.00 END STATE PROJECT 33603.11  
 LOCALIZED PROJECT COORDINATES  
 N = 618797.9208  
 E = 1124546.0648



**NOTES:**

1. THE CONTROL DATA FOR THIS PROJECT CAN BE FOUND ELECTRONICALLY BY SELECTING PROJECT CONTROL DATA AT:  
[HTTP://WWW.DOH.DOT.STATE.NC.US/PRECONSTRUCT/HIGHWAY/LOCATION/PROJECT/](http://www.doh.dot.state.nc.us/preconstruct/highway/location/project/)


THE FILES TO BE FOUND ARE AS FOLLOWS:  
 B4261\_LS\_CONTROL\_061018.TXT

SITE CALIBRATION INFORMATION HAS NOT BEEN PROVIDED FOR THIS PROJECT. IF FURTHER INFORMATION IS NEEDED, PLEASE CONTACT THE LOCATION AND SURVEYS UNIT.

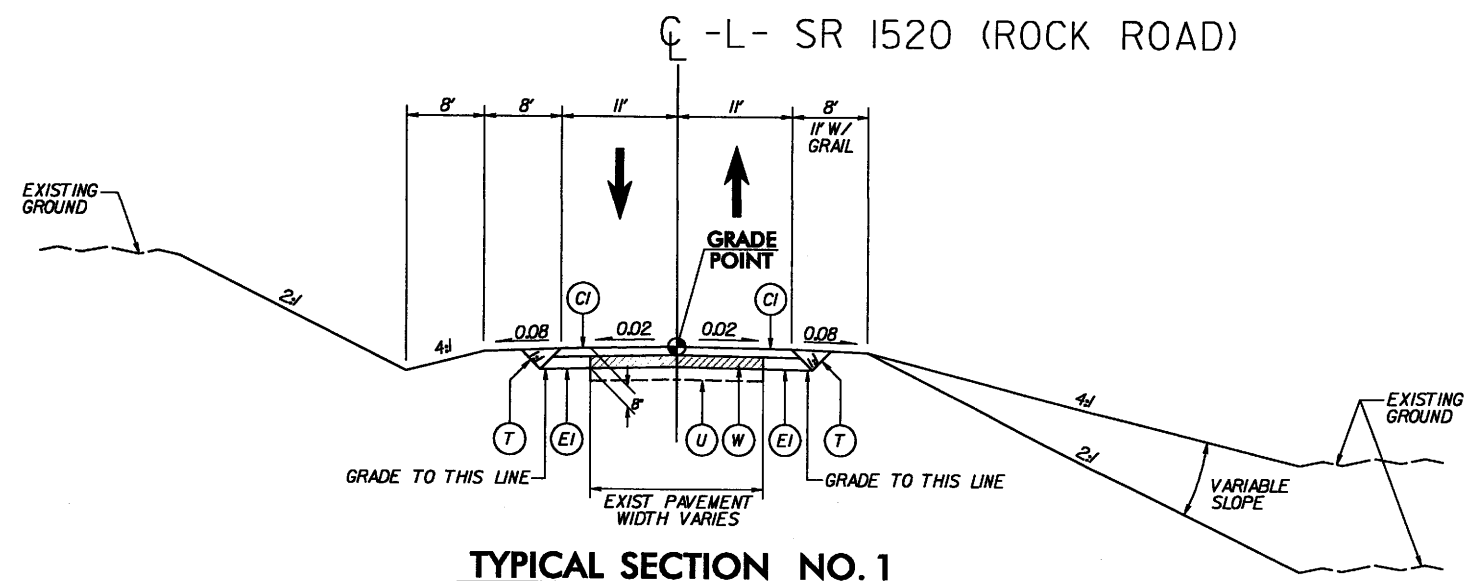
INDICATES GEODETIC CONTROL MONUMENTS USED OR SET FOR HORIZONTAL PROJECT CONTROL BY THE NCDOT LOCATION AND SURVEYS UNIT.

NETWORK ESTABLISHED FROM NGS ONLINE POSITIONING SERVICE (OPUS)

NOTE: DRAWING NOT TO SCALE

  
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 and Associates, Inc.  
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 RALEIGH, N.C. 27636-3068

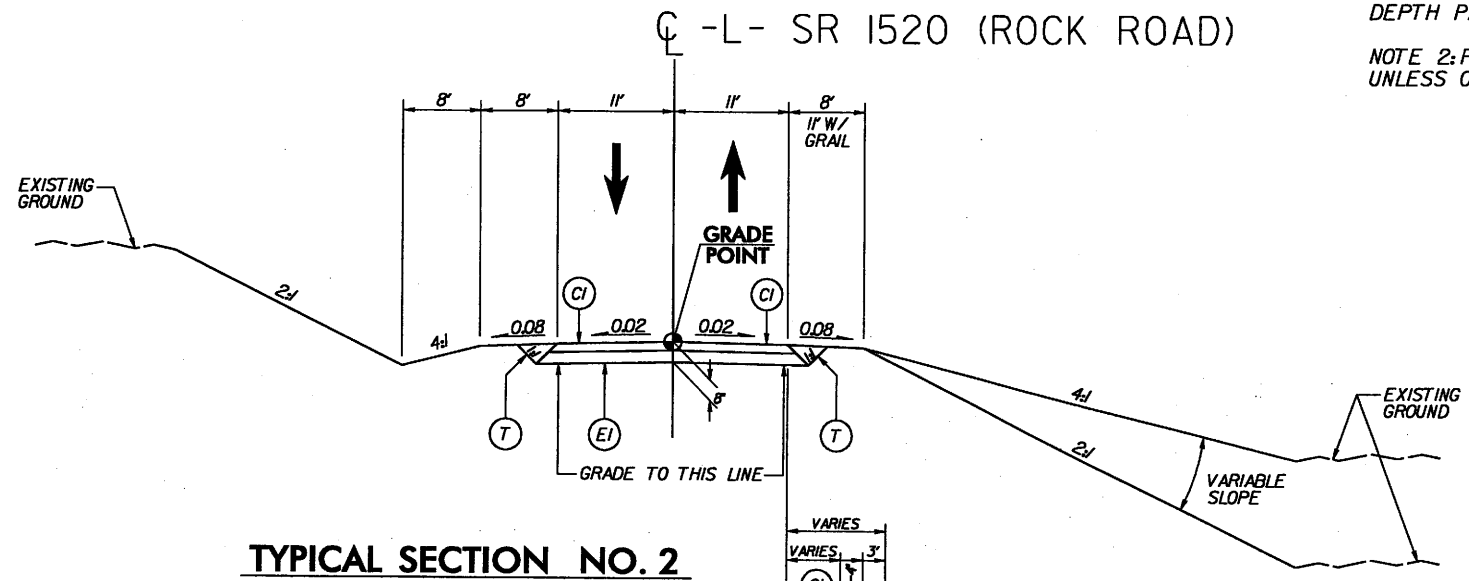
PROJECT REFERENCE NO. B-4261	SHEET NO. 2
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER
<b>PRELIMINARY PLANS</b> DO NOT USE FOR CONSTRUCTION	



**TYPICAL SECTION NO. 1**

- L- STA 13+03.00 TO STA 14+58.00
- L- STA 19+32.00 TO STA 22+00.00
- L- STA 27+26.00 TO STA 28+61.00
- L- STA 31+20.00 TO STA 32+30.00

NOTE 1: SAWCUT AND REMOVE EXISTING ASPHALT PAVEMENT TO PROVIDE 1' MINIMUM WIDTH FULL DEPTH PAVEMENT  
 NOTE 2: PAVEMENT EDGE SLOPES ARE 1:1 UNLESS OTHERWISE INDICATED



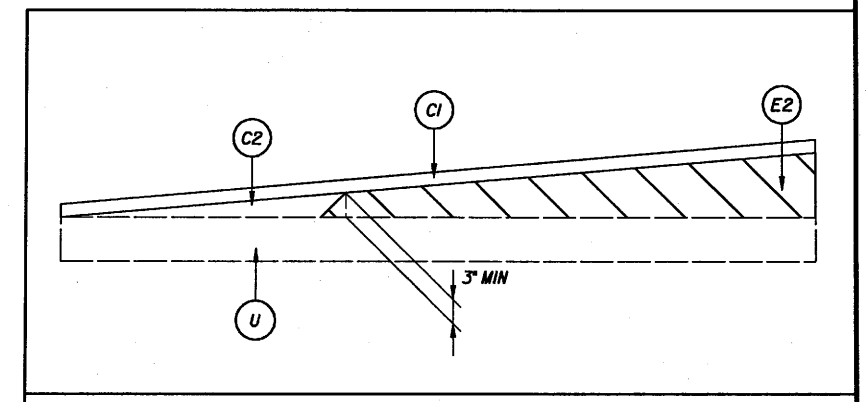
**TYPICAL SECTION NO. 2**

- L- STA 14+58.00 TO STA 16+58.00 (BEGIN BRIDGE)
- L- STA 18+38.00 (END BRIDGE) TO STA 19+32.00
- L- STA 28+61.00 TO STA 31+20.00

**TYPICAL SECTION NO. 2A**

- L- STA 18+53.00 TO STA 19+05.00 (RT)

PAVEMENT SCHEDULE	
C1	PROP. APPROX. 2 1/2" ASPHALT CONCRETE SURFACE COURSE TYPE SF9.5A, AT AN AVERAGE RATE OF 138 LBS. PER SQ. YD. IN EACH OF TWO LAYERS
C2	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 110 LBS. PER SQ. YD. PER 1" DEPTH TO BE PLACED IN LAYERS NOT LESS THAN 1" IN DEPTH OR GREATER THAN 1 1/2" IN DEPTH.
E1	PROP. APPROX. 5/8" ASPHALT CONCRETE BASE COURSE TYPE B25.0B, AT AN AVERAGE RATE OF 627 LBS. PER SQ. YD.
E2	PROP. VAR. DEPTH ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1" DEPTH TO BE PLACED IN LAYERS NOT LESS THAN 3" OR GREATER THAN 5 1/2" DEPTH.
J	PROPOSED 6" AGGREGATE BASE COURSE
R	PROPOSED SHOULDER BERM GUTTER
T	EARTH MATERIAL
U	EXISTING PAVEMENT
W	VARIABLE DEPTH ASPHALT PAVEMENT (SEE DETAIL W)



**DETAIL W SHOWING METHOD OF WEDGING**

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 12/12/2008



Kimley-Horn  
and Associates, Inc.

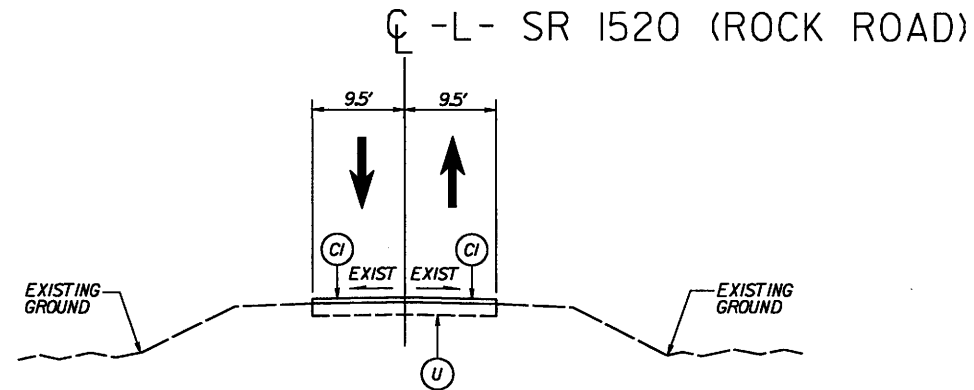
P.O. BOX 33068  
RALEIGH, N.C. 27634-3068

PROJECT REFERENCE NO. SHEET NO.

B-426I 2-A

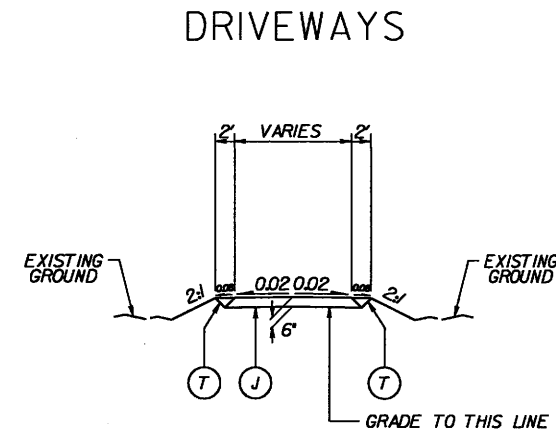
ROADWAY DESIGN ENGINEER PAVEMENT DESIGN ENGINEER

**PRELIMINARY PLANS**  
DO NOT USE FOR CONSTRUCTION



**TYPICAL SECTION NO. 3**

-L- STA 22+00.00 TO STA 27+26.00

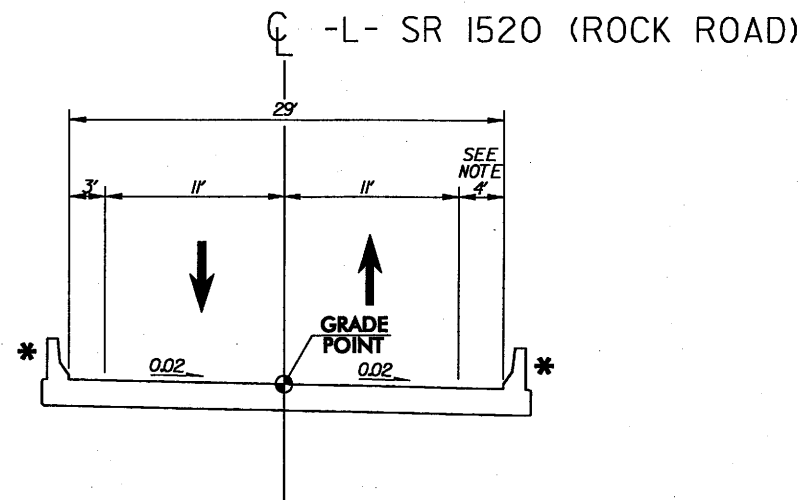


**TYPICAL SECTION NO. 4**

-L- STA 15+00 (LT)  
-L- STA 28+10 (LT)  
-L- STA 29+85 (RT)

**PAVEMENT SCHEDULE**

CI	2 1/2" SF9.5A
EI	5 1/2" B25.0B
J	6" AGGREGATE BASE COURSE
R	SHOULDER BERM GUTTER
T	EARTH MATERIAL
U	EXISTING PAVEMENT
W	VARIABLE DEPTH ASPHALT PAVEMENT (SEE DETAIL W)



**BRIDGE TYPICAL SECTION NO. 1**

**DESIGN DATA**

ADT 2008 = 1,600 VPD  
ADT 2030 = 2,800 VPD  
DHV = 10%  
D = 60%  
TTST = 1%  
DUAL = 2%  
V = 60 mph

FUNCTIONAL CLASSIFICATION:  
LOCAL RURAL

\* BRIDGE RAIL TO BE DETERMINED  
BY STRUCTURE DESIGN UNIT

NOTE:  
4' SHOULDER WIDTH BASED  
ON HYDRAULICS







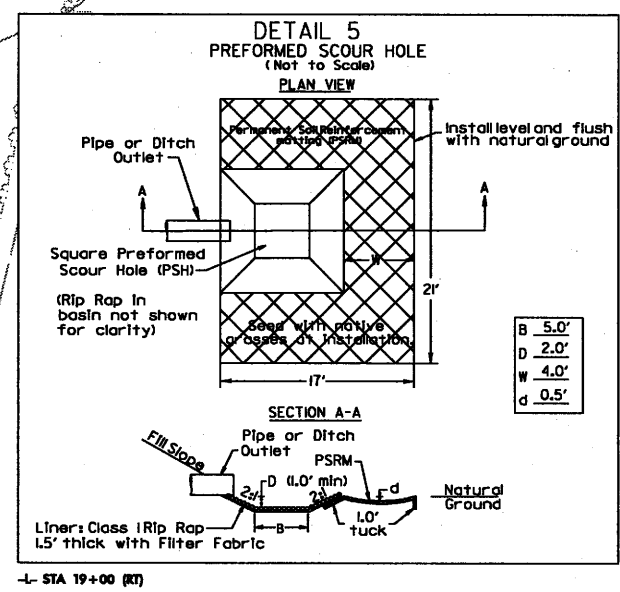
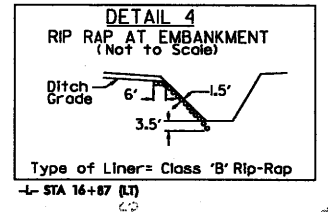
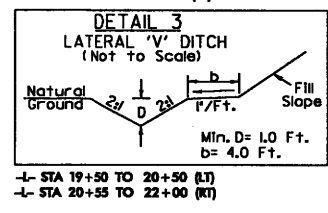
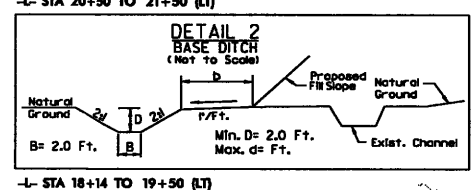
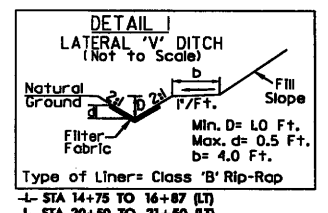
REVISIONS

PROJECT REFERENCE NO.	SHEET NO.
B-4261	4
HW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
<b>PRELIMINARY PLANS</b>	
DO NOT USE FOR CONSTRUCTION	

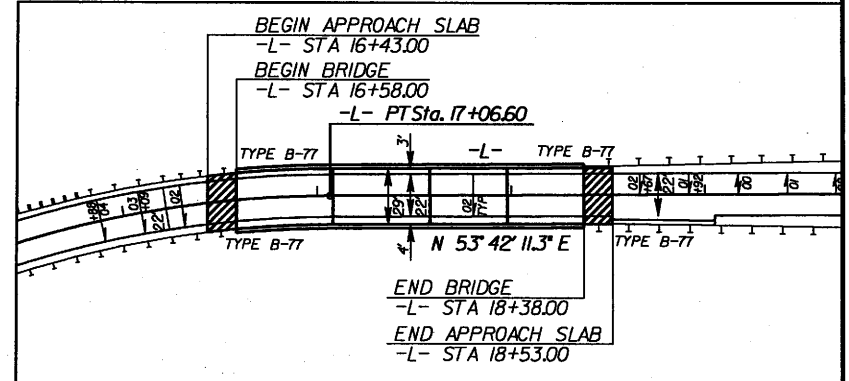
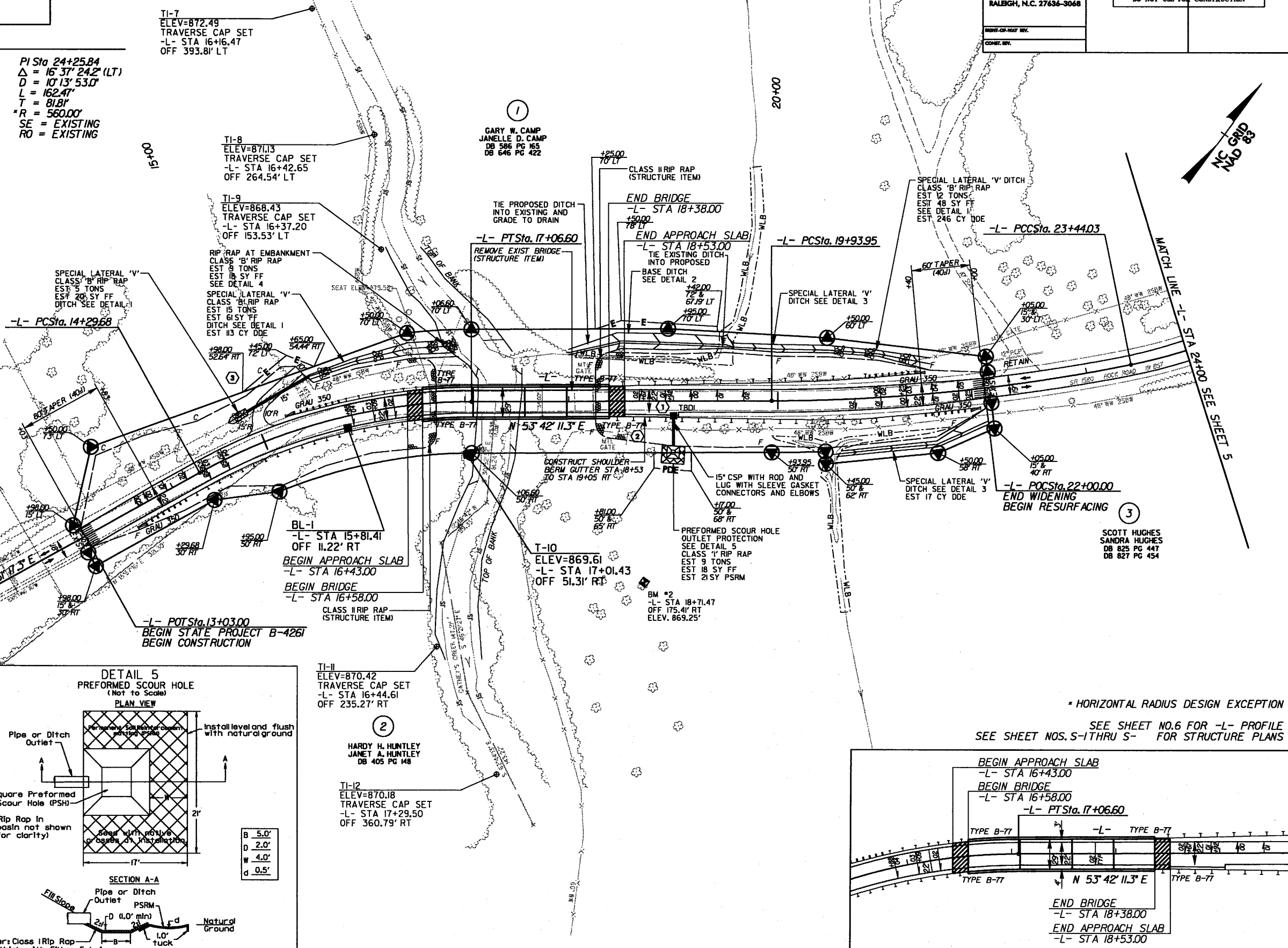
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 RALEIGH, N.C. 27636-3068

-L-

PI Sta 15+71.14 Δ = 28° 50' 53.9" (RT) D = 10' 25' 02.7" L = 276.92' T = 141.46' *R = 550.00' SE = 0.04 RO = 84'	PI Sta 21+69.55 Δ = 11° 08' 35.9" (LT) D = 3' 10' 59.2" L = 350.08' T = 175.59' R = 1,800.00' SE = 0.06 RO = 150'	PI Sta 24+25.84 Δ = 16° 37' 24.2" (LT) D = 10' 13' 53.0" L = 162.47' T = 81.81' *R = 560.00' SE = EXISTING RO = EXISTING
---	--	---



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 12/12/2008  
 SHIRLEY M. GLOVER  
 BOBBY LEO GLOVER  
 DB 477 PG 340



\* HORIZONTAL RADIUS DESIGN EXCEPTION  
 SEE SHEET NOS. S-1 THRU S-5 FOR STRUCTURE PLANS

REVISIONS

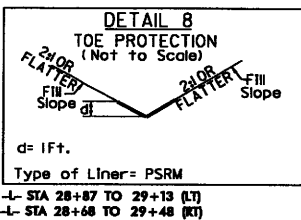
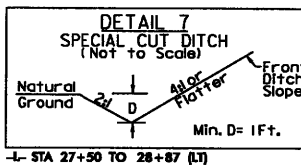
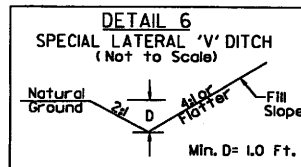
-L-

PI Sta 24+25.84  
 $\Delta = 16' 37" 24.2' (LT)$   
 $D = 10' 13" 53.0'$   
 $L = 162.47'$   
 $T = 81.81'$   
 $R = 560.00'$   
 $SE = EXISTING$   
 $RO = EXISTING$

PI Sta 25+80.29  
 $\Delta = 7' 02" 13.5' (LT)$   
 $D = 4' 46" 28.7'$   
 $L = 147.38'$   
 $T = 73.78'$   
 $R = 1200.00'$   
 $SE = EXISTING$   
 $RO = EXISTING$

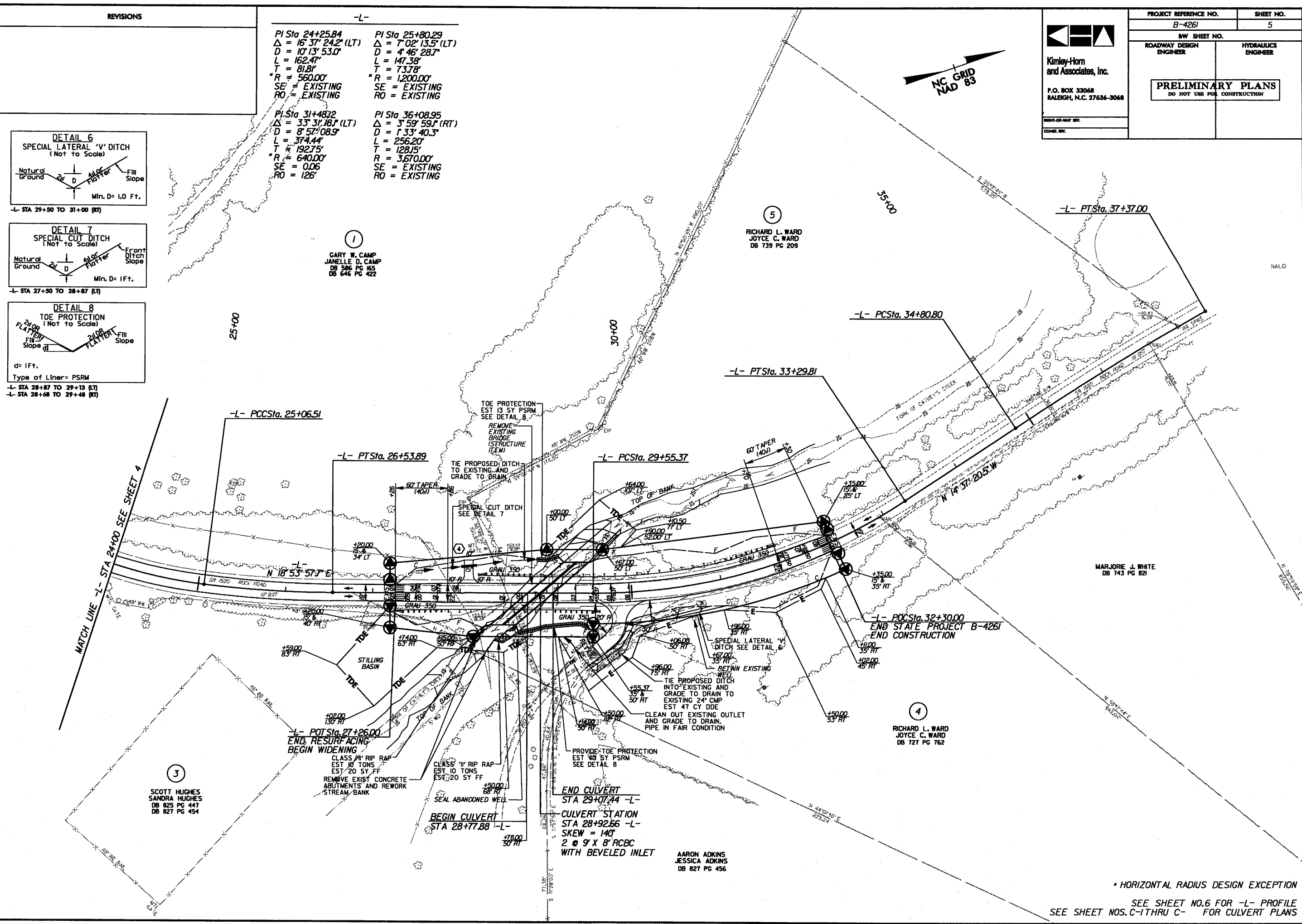
PI Sta 31+48.12  
 $\Delta = 33' 31" 18.1' (LT)$   
 $D = 8' 57" 08.9'$   
 $L = 574.44'$   
 $T = 192.75'$   
 $R = 640.00'$   
 $SE = EXISTING$   
 $RO = 126'$

PI Sta 36+08.95  
 $\Delta = 3' 59" 59.1' (RT)$   
 $D = 1' 33" 40.3'$   
 $L = 256.20'$   
 $T = 128.15'$   
 $R = 3670.00'$   
 $SE = EXISTING$   
 $RO = EXISTING$



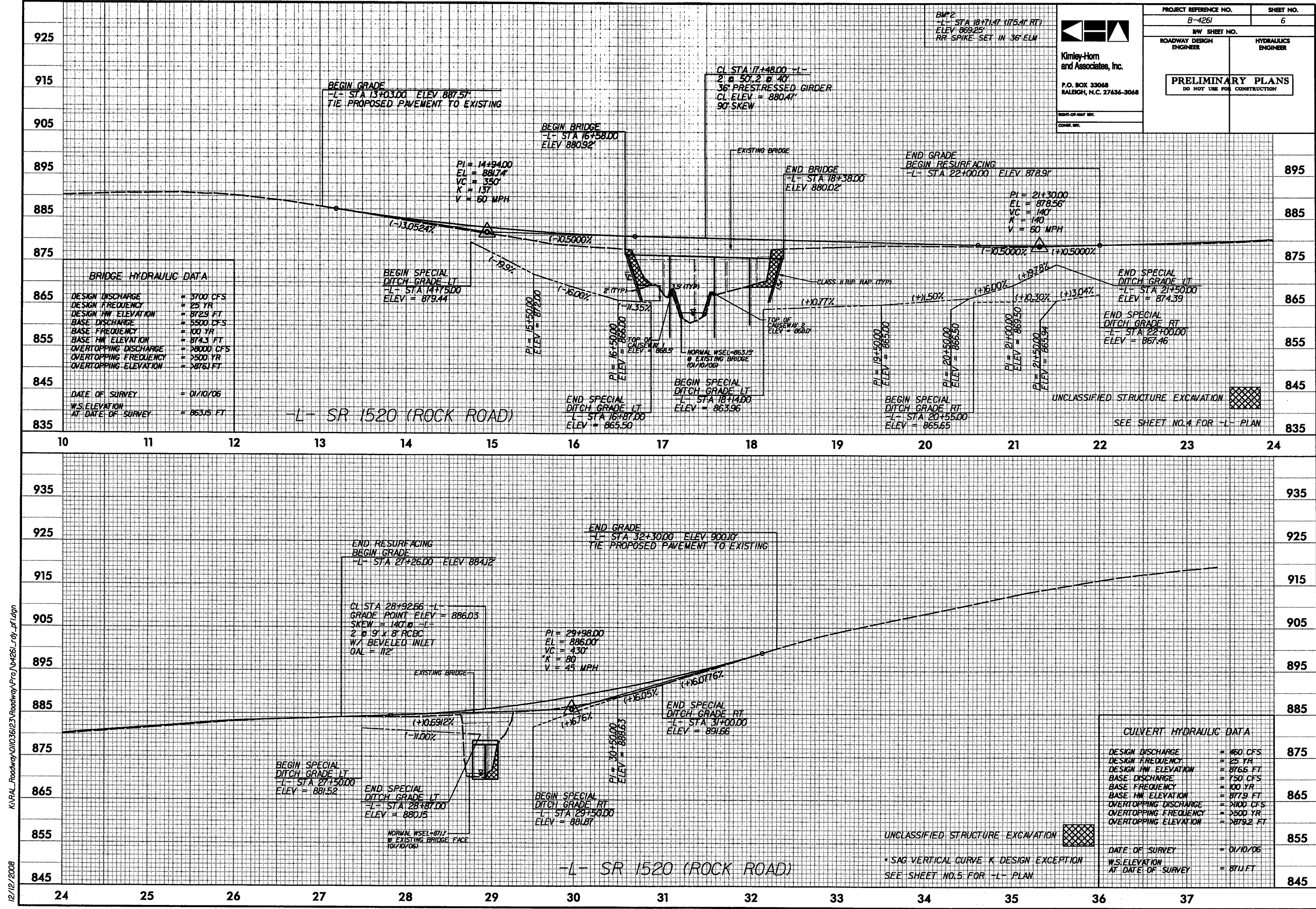
PROJECT REFERENCE NO. B-4261	SHEET NO. 5
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
<b>PRELIMINARY PLANS</b> DO NOT USE FOR CONSTRUCTION	

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 RALEIGH, N.C. 27634-3068



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 12/12/2008

\* HORIZONTAL RADIUS DESIGN EXCEPTION  
 SEE SHEET NO.6 FOR -L- PROFILE  
 SEE SHEET NOS. C-1 THRU C- FOR CULVERT PLANS



BM 2  
 -L- STA 18+14.47 (175.41 RT)  
 ELEV 869.25'  
 RR SPIKE SET IN 36" ELM

**Kimley-Horn  
 and Associates, Inc.**  
 P.O. BOX 33068  
 RALEIGH, N.C. 27634-3068

PROJECT REFERENCE NO. B-4261	SHEET NO. 6
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
<b>PRELIMINARY PLANS</b> DO NOT USE FOR CONSTRUCTION	

**BRIDGE HYDRAULIC DATA**

DESIGN DISCHARGE	= 3700 CFS
DESIGN FREQUENCY	= 25 YR
DESIGN HW ELEVATION	= 872.9 FT
BASE DISCHARGE	= 5500 CFS
BASE FREQUENCY	= 100 YR
BASE HW ELEVATION	= 874.3 FT
OVERTOPPING DISCHARGE	= 78000 CFS
OVERTOPPING FREQUENCY	= 7500 YR
OVERTOPPING ELEVATION	= 787.61 FT
DATE OF SURVEY	= 01/10/06
W.S. ELEVATION AT DATE OF SURVEY	= 863.15 FT

**CULVERT HYDRAULIC DATA**

DESIGN DISCHARGE	= 460 CFS
DESIGN FREQUENCY	= 25 YR
DESIGN HW ELEVATION	= 876.6 FT
BASE DISCHARGE	= 750 CFS
BASE FREQUENCY	= 100 YR
BASE HW ELEVATION	= 877.9 FT
OVERTOPPING DISCHARGE	= 5100 CFS
OVERTOPPING FREQUENCY	= 7500 YR
OVERTOPPING ELEVATION	= 787.92 FT
DATE OF SURVEY	= 01/10/06
W.S. ELEVATION AT DATE OF SURVEY	= 871.1 FT

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

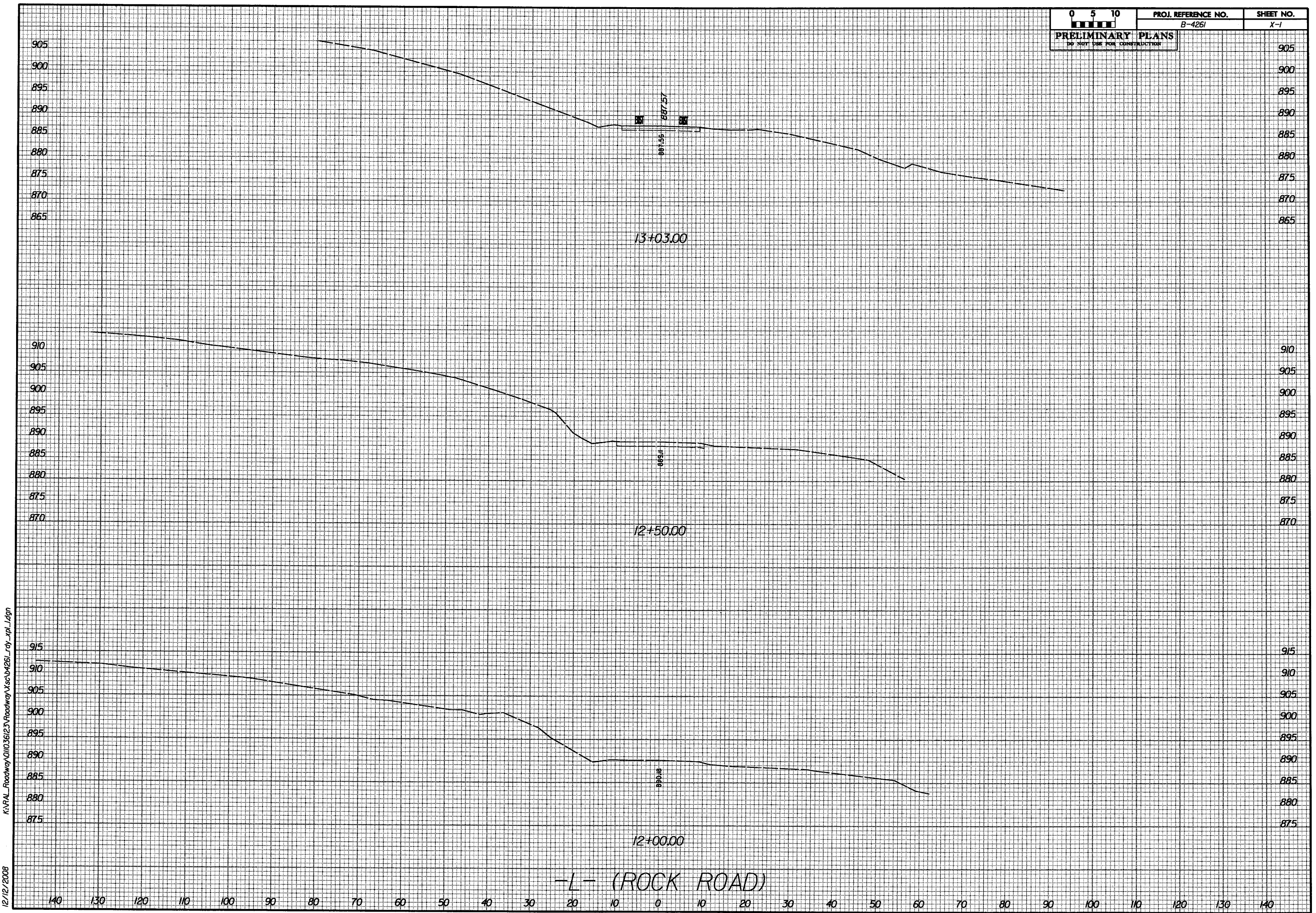
## DIVISION OF HIGHWAYS STATE OF NORTH CAROLINA

# CROSS-SECTION SUMMARY

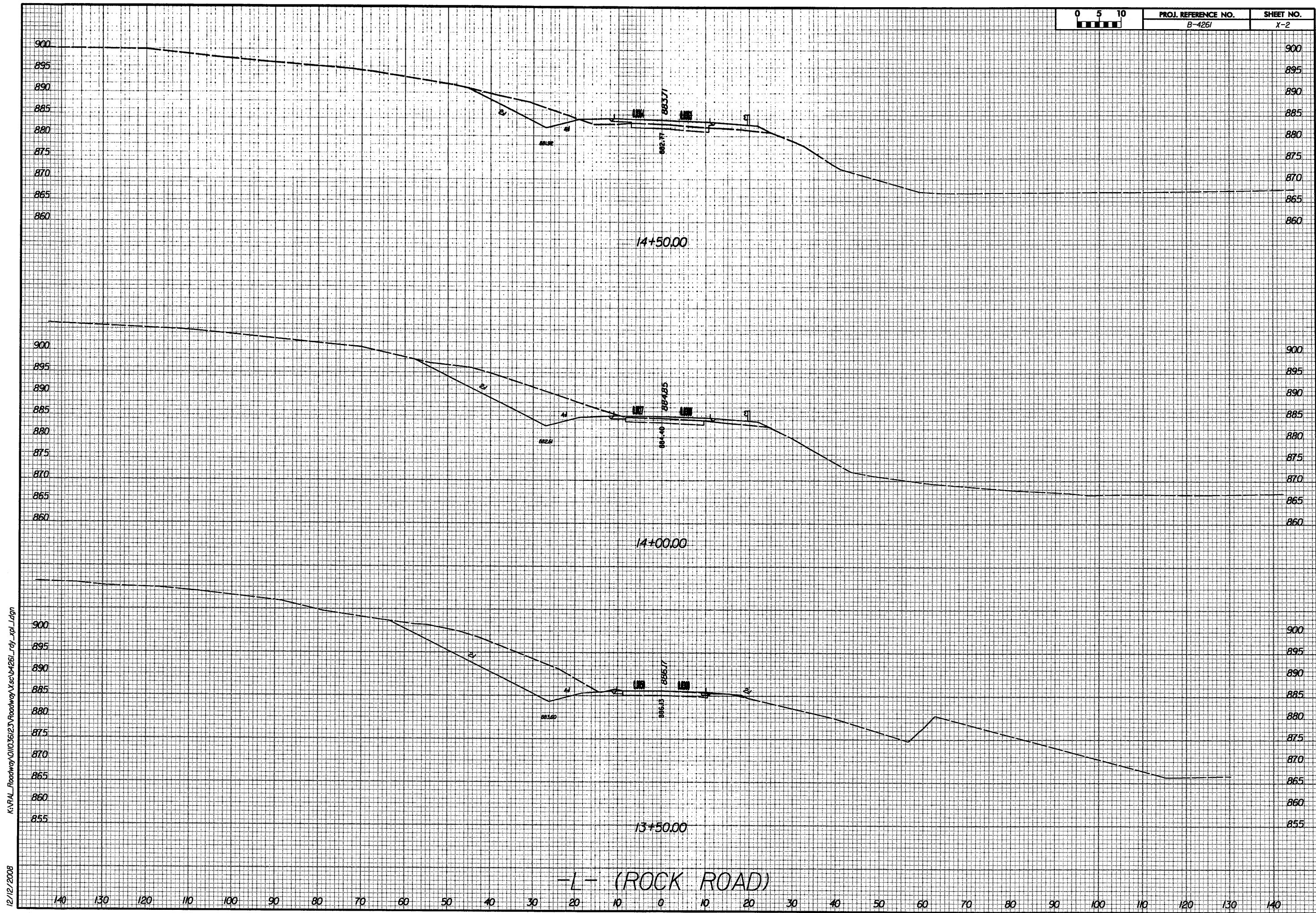
Note: Embankment Column Does Not Include Backfill For Undercut.

STATION	UNCLASSIFIED EXCAVATION AREAS (SQ. FT.)	EMBANKMENT AREAS (SQ. FT.)	UNCLASSIFIED EXCAVATION VOLUMES (CU. YARDS)	EMBANKMENT VOLUMES (CU. YARDS)	STATION	UNCLASSIFIED EXCAVATION AREAS (SQ. FT.)	EMBANKMENT AREAS (SQ. FT.)	UNCLASSIFIED EXCAVATION VOLUMES (CU. YARDS)	EMBANKMENT VOLUMES (CU. YARDS)	STATION	UNCLASSIFIED EXCAVATION AREAS (SQ. FT.)	EMBANKMENT AREAS (SQ. FT.)	UNCLASSIFIED EXCAVATION VOLUMES (CU. YARDS)	EMBANKMENT VOLUMES (CU. YARDS)
-L-														
13+03	0.00	0.00	0	0										
13+50	253.90	1.23	221	1										
14+00	206.59	10.15	426	11										
14+50	62.42	24.76	249	32										
15+00	0.00	146.68	58	159										
15+50	0.00	216.22	0	336										
16+00	0.00	214.52	0	399										
16+50	0.00	281.75	0	460										
16+58	0.00	264.76	0	81										
18+38	0.00	230.10	0	0										
18+50	0.00	243.77	0	105										
19+00	0.00	265.45	0	472										
19+50	0.00	204.97	0	436										
20+00	0.18	196.78	0	372										
20+50	1.18	173.66	1	343										
21+00	1.99	137.75	3	288										
21+50	3.47	97.89	5	218										
22+00	0.00	0.00	3	91										
27+26	0.00	0.00	0	0										
27+50	8.23	48.01	4	21										
28+00	25.19	12.83	31	56										
28+50	26.36	59.58	48	67										
29+00	0.00	711.54	24	714										
29+50	0.00	178.27	0	824										
29+85	15.88	200.88	10	246										
30+00	8.14	169.74	7	103										
30+50	2.63	179.04	10	323										
31+00	7.18	36.61	9	200										
31+50	80.82	48.67	81	79										
32+00	67.61	10.23	137	55										
32+30	0	0	38	6										

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12/12/2008

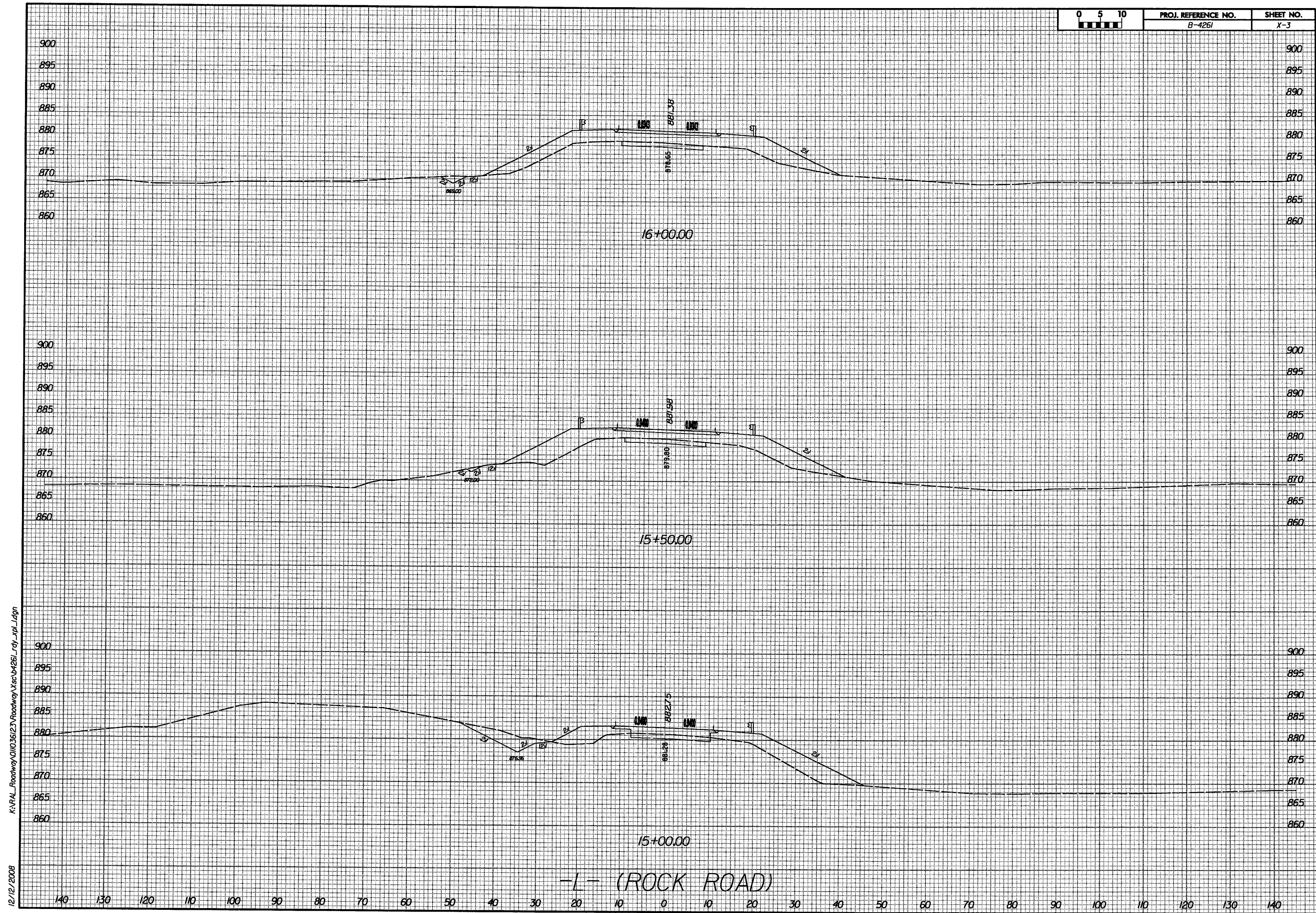


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 12/12/2008



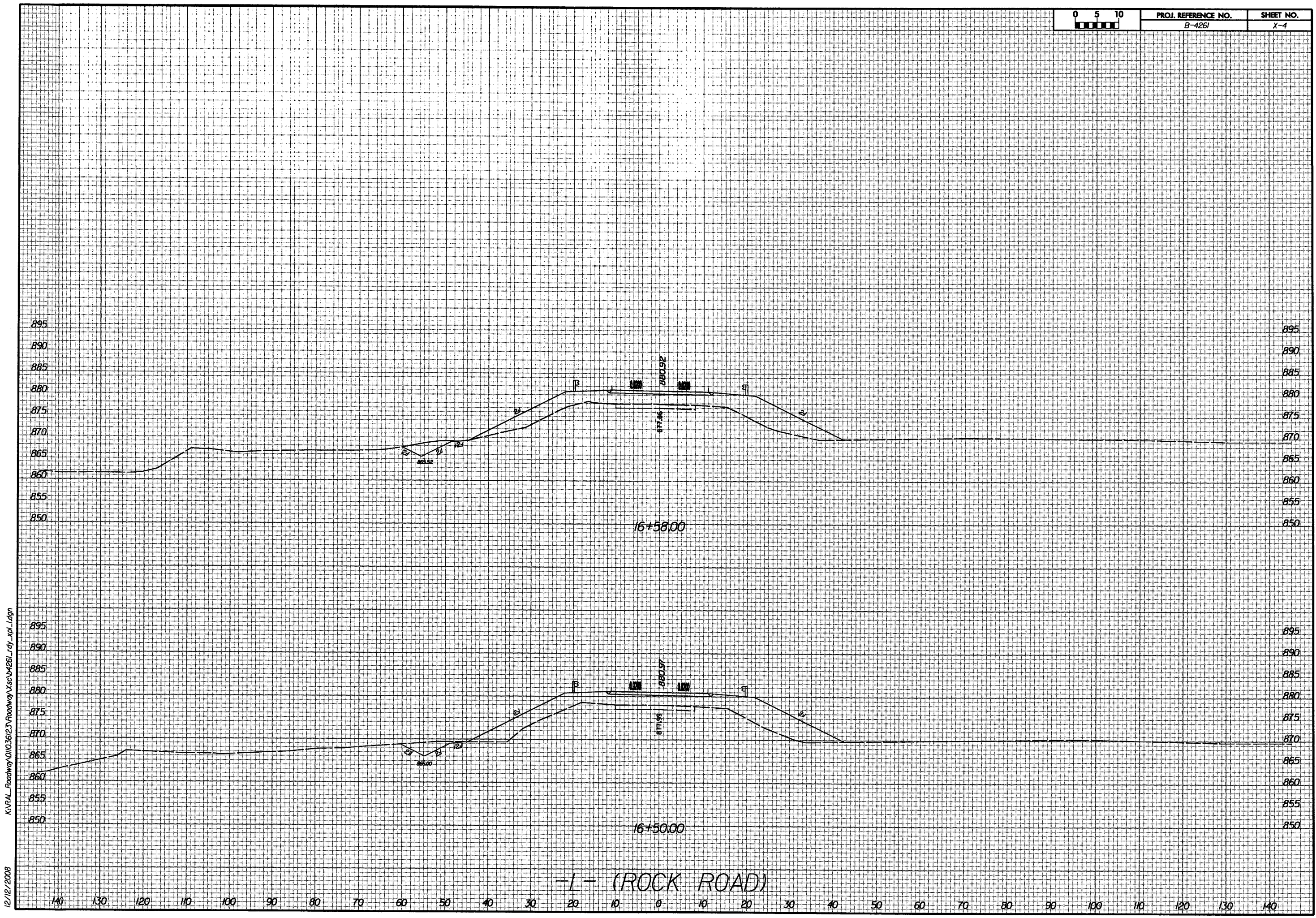
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-L- (ROCK ROAD)



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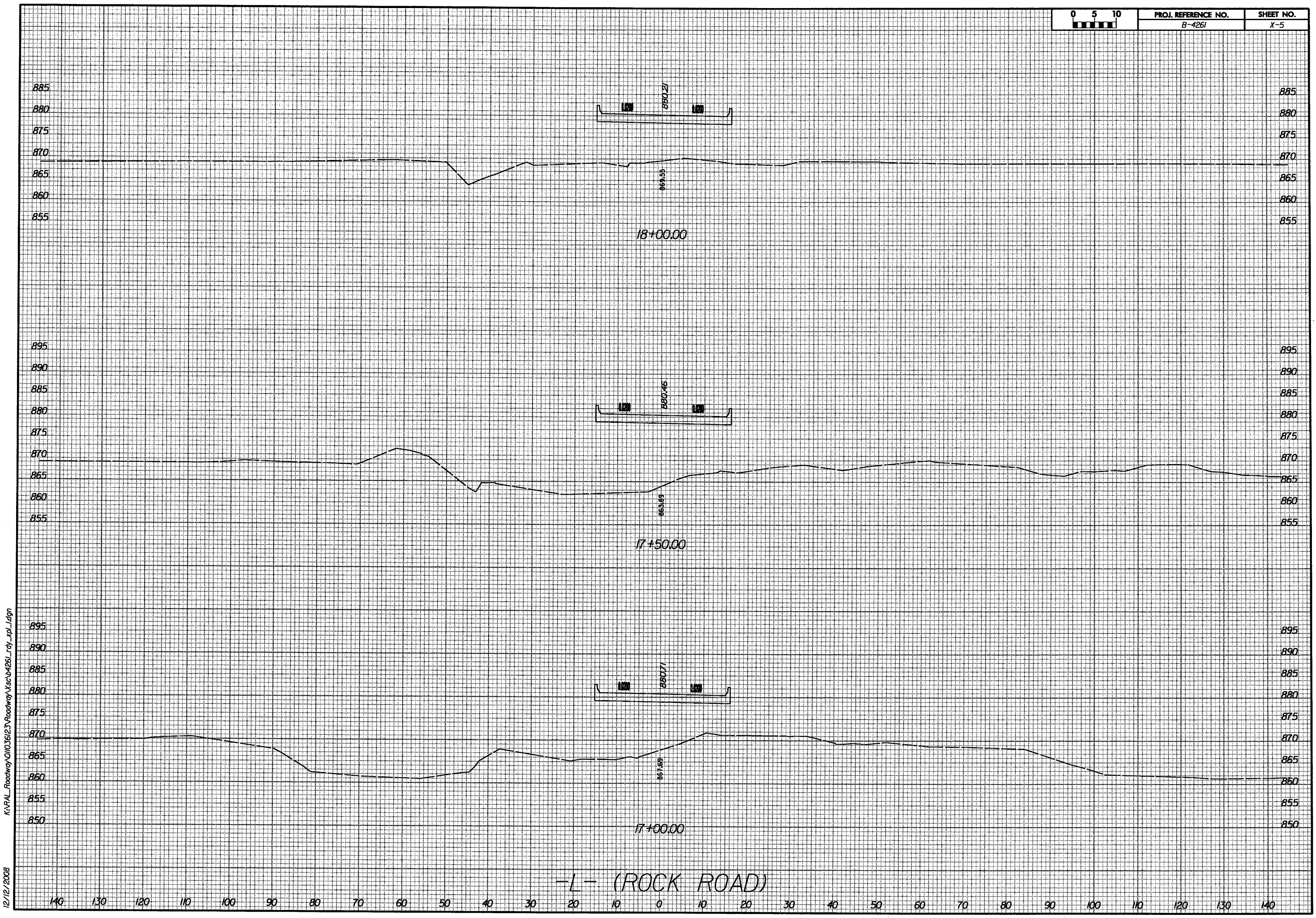
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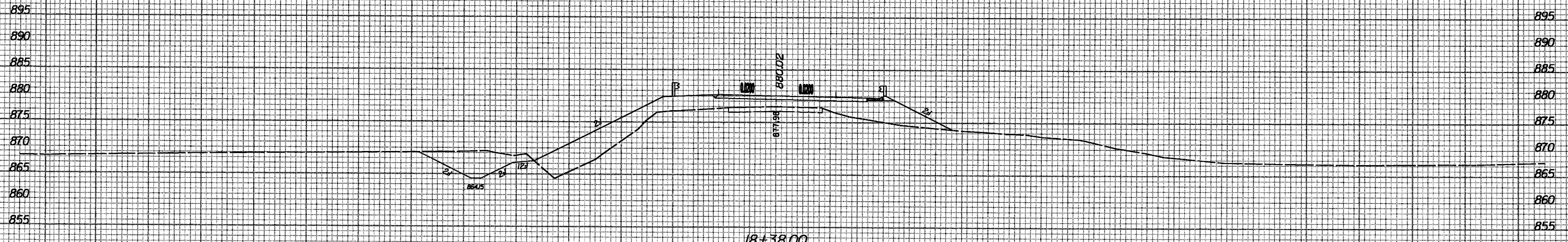
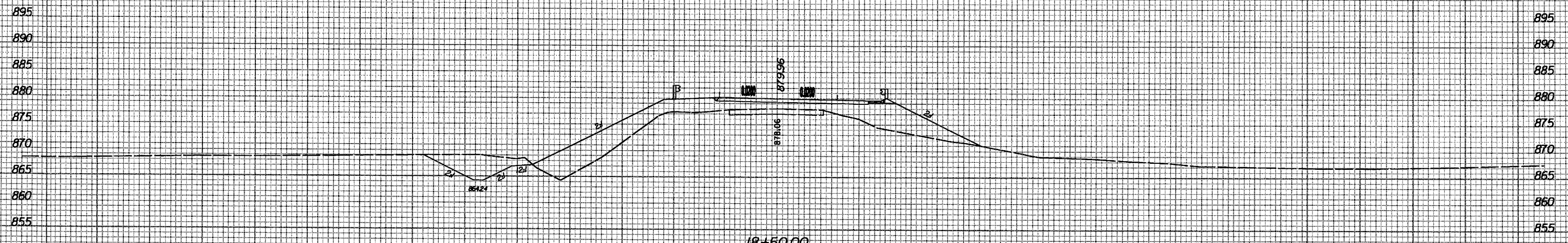
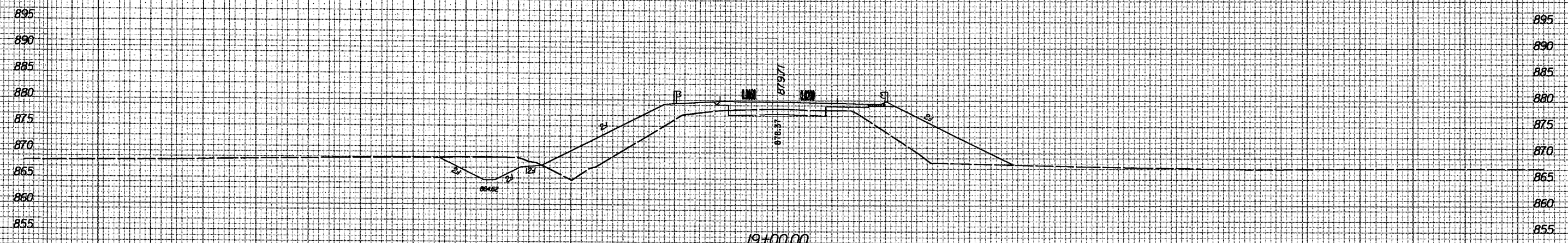
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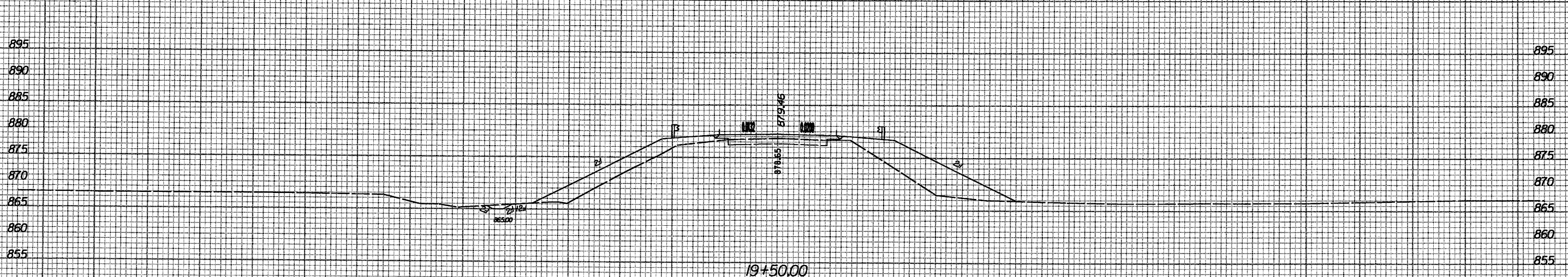
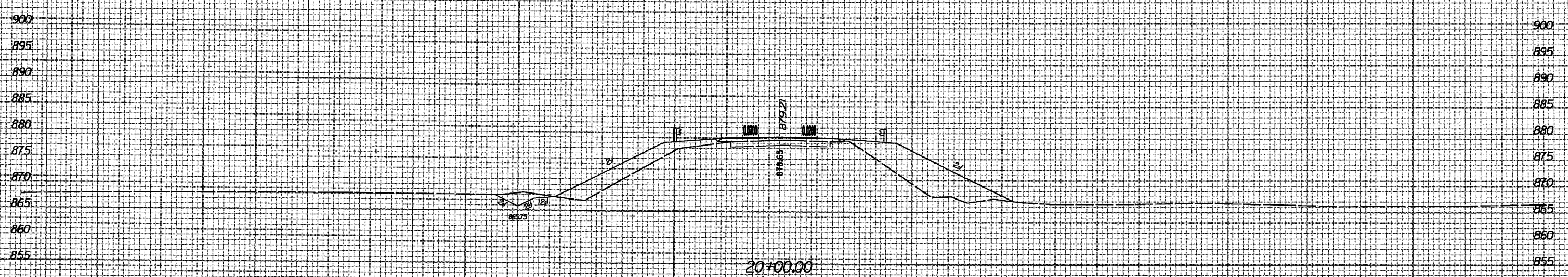
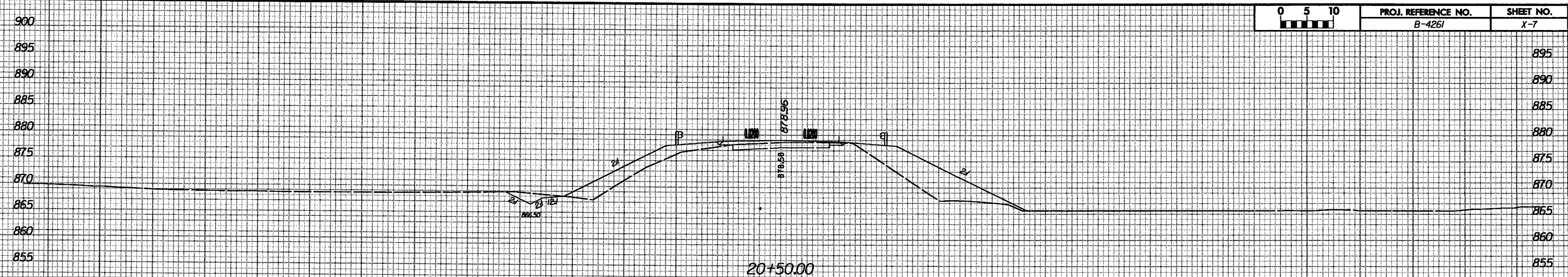
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-L- (ROCK ROAD)

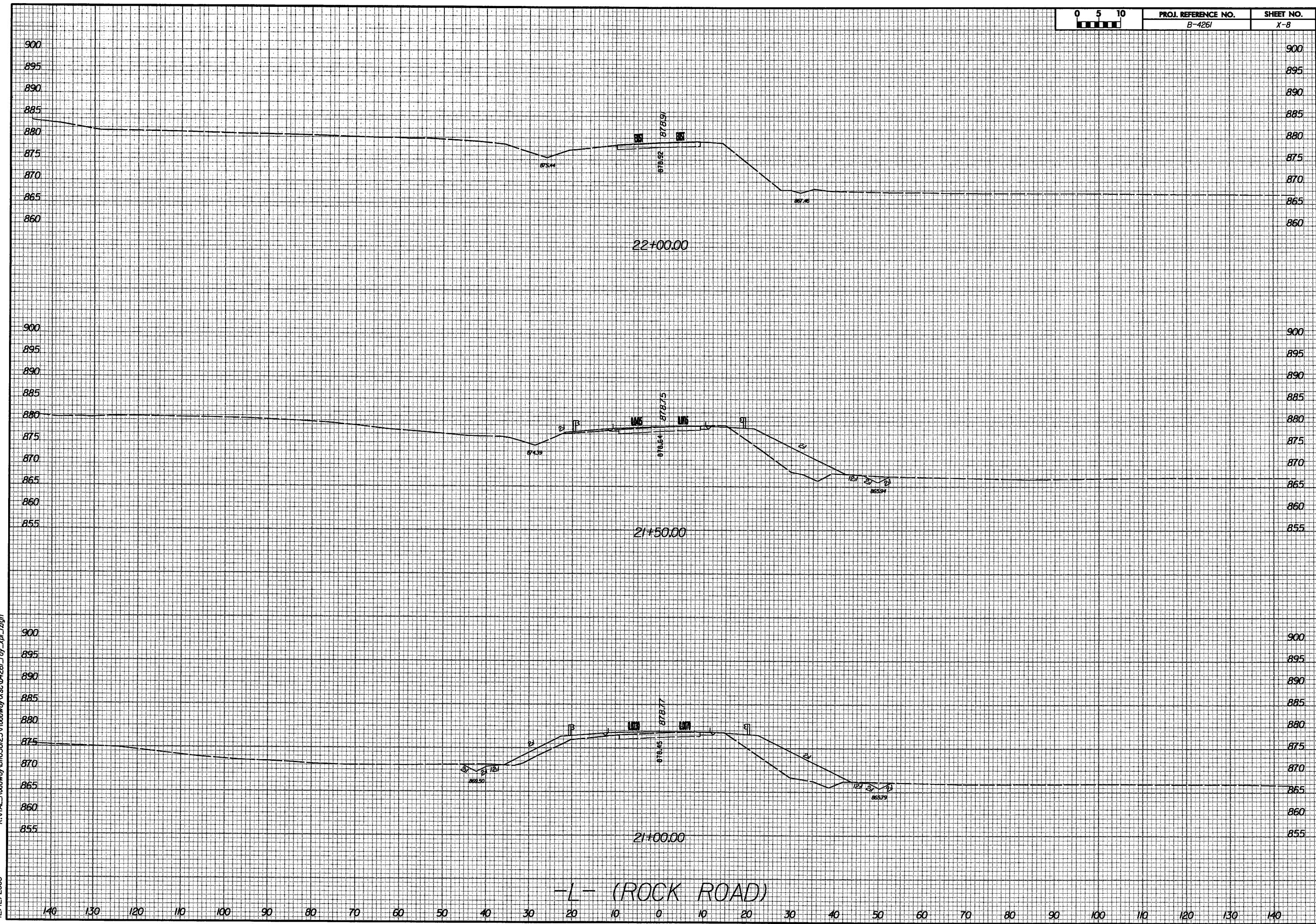
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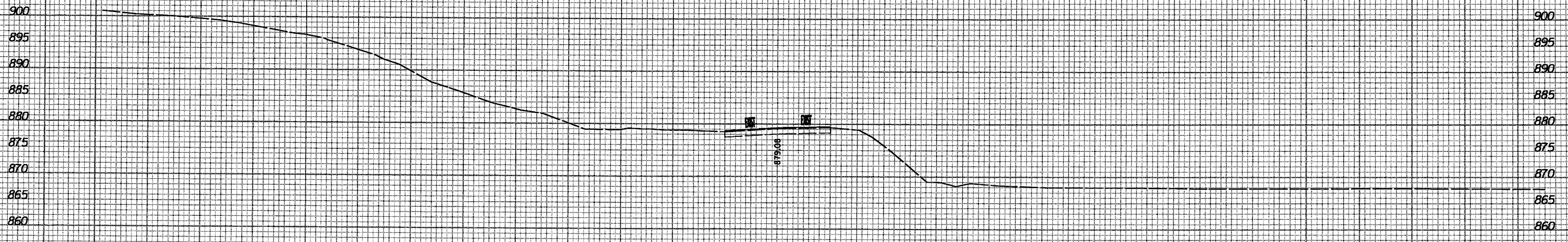
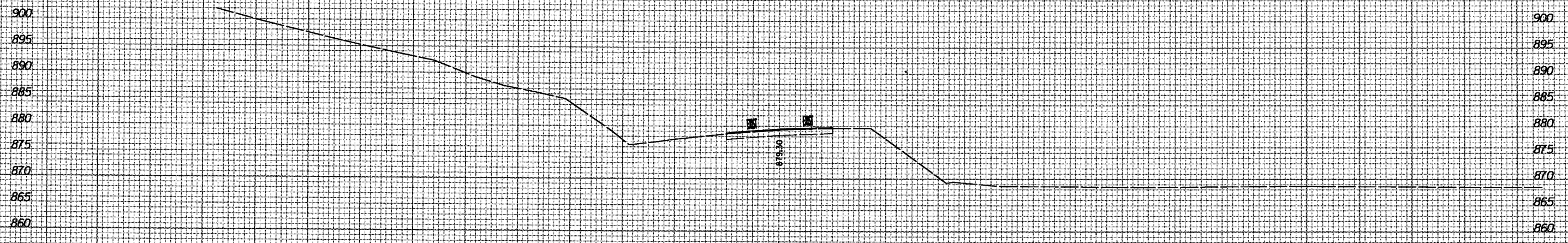
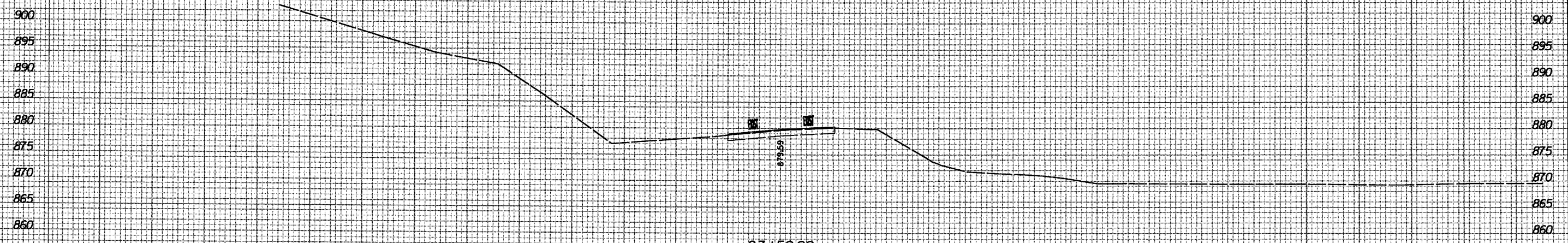
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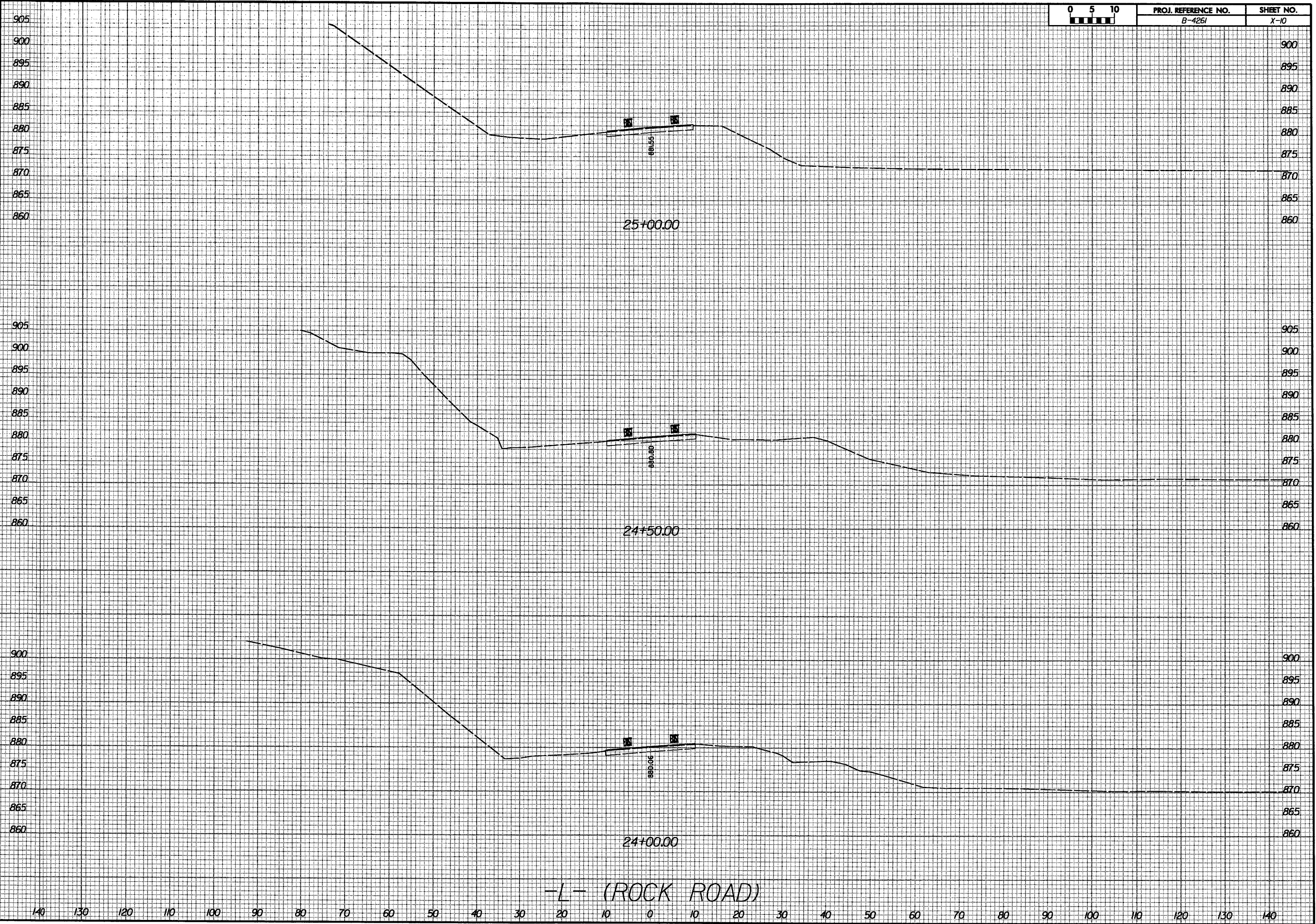
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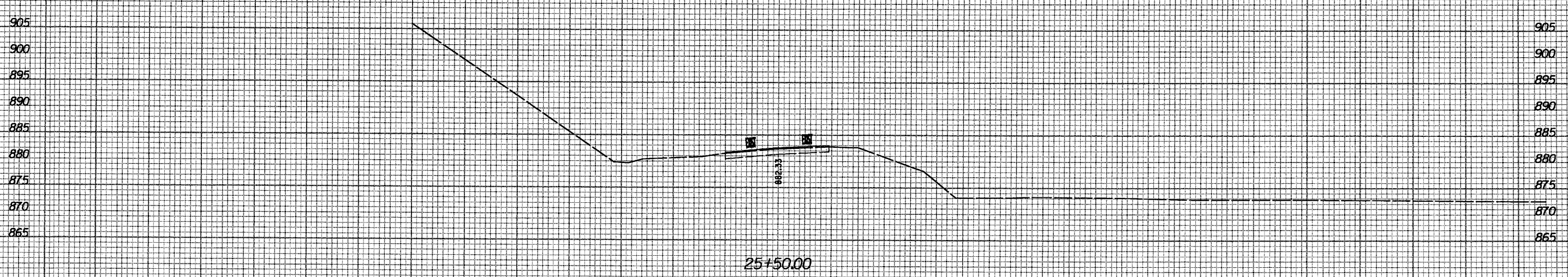
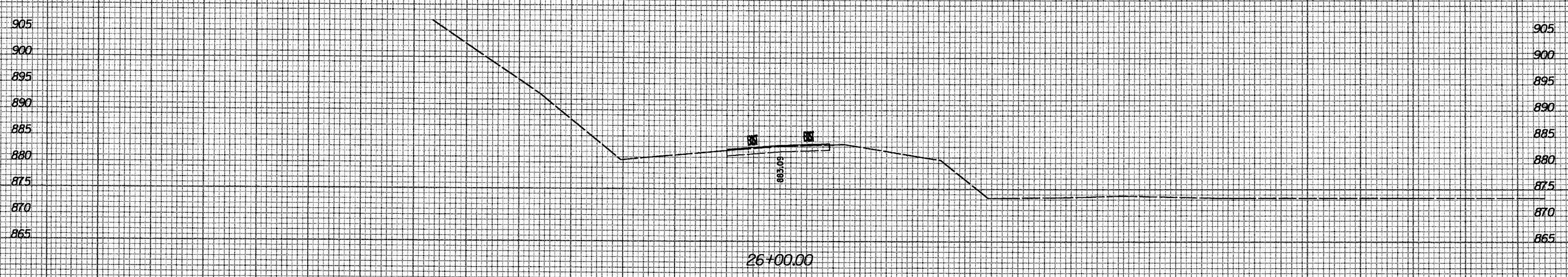
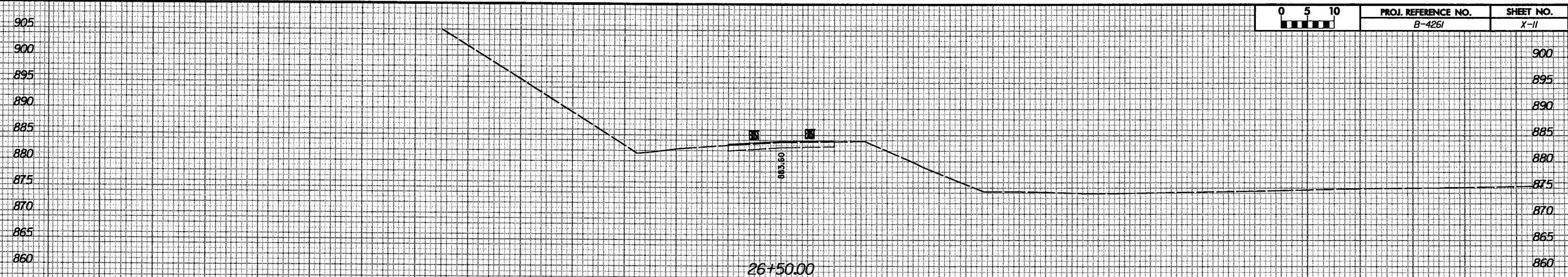
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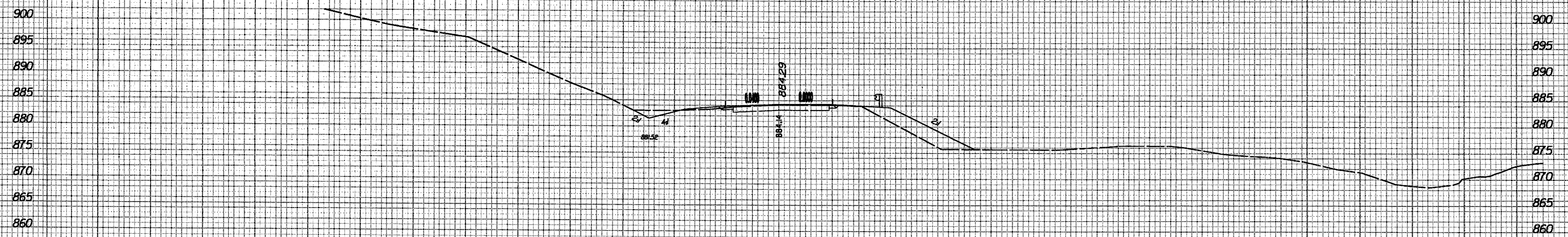
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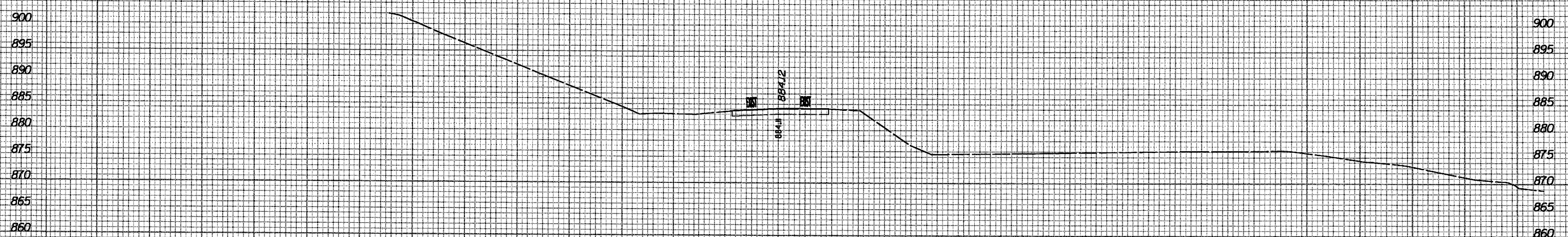
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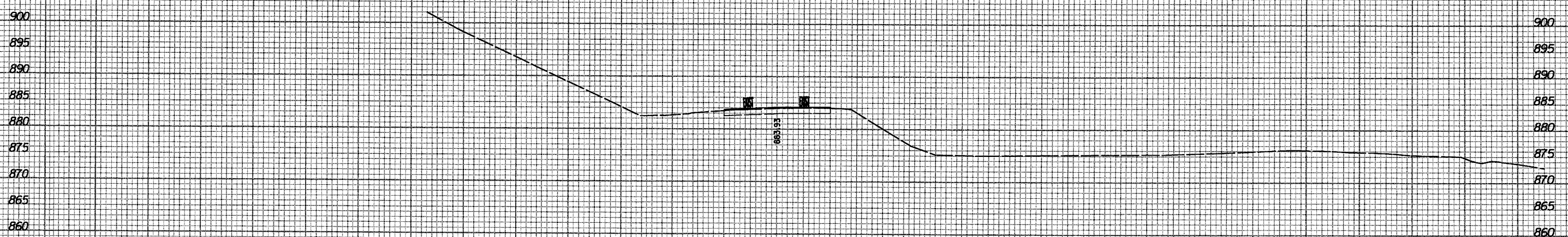
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27+50.00



27+26.00



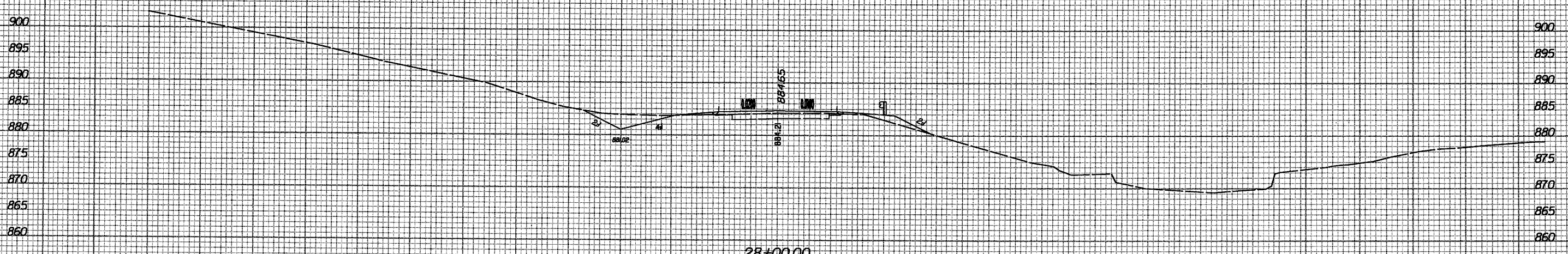
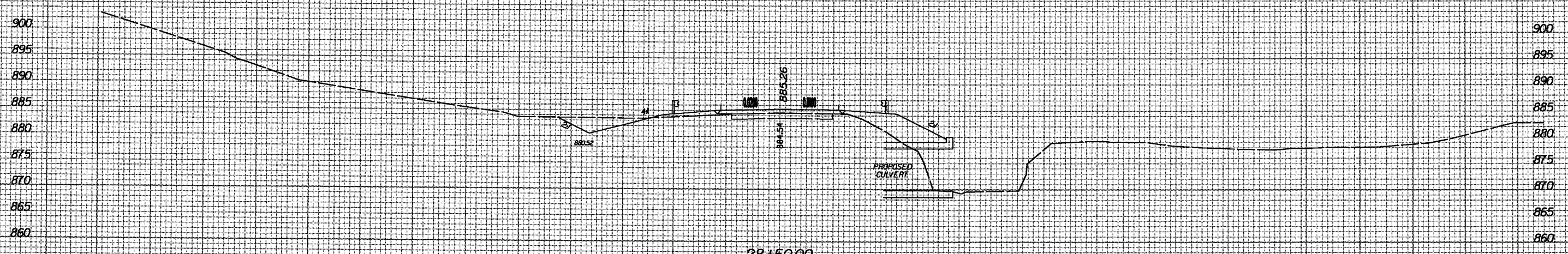
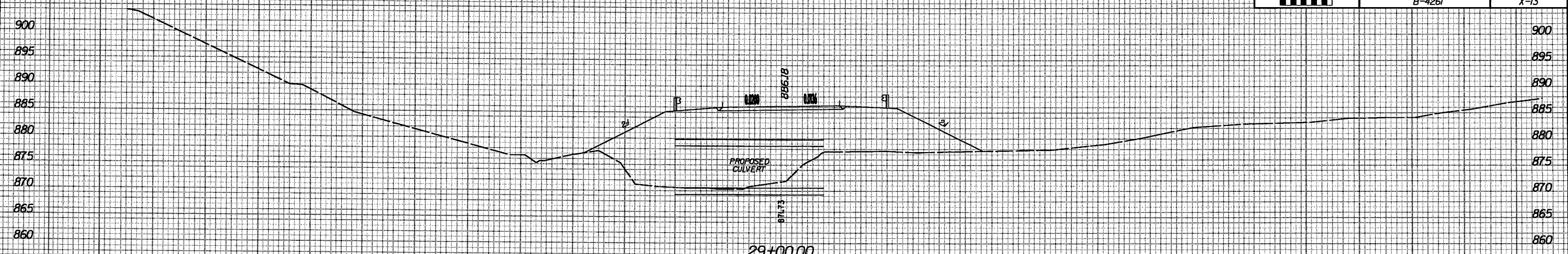
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-L- (ROCK ROAD)

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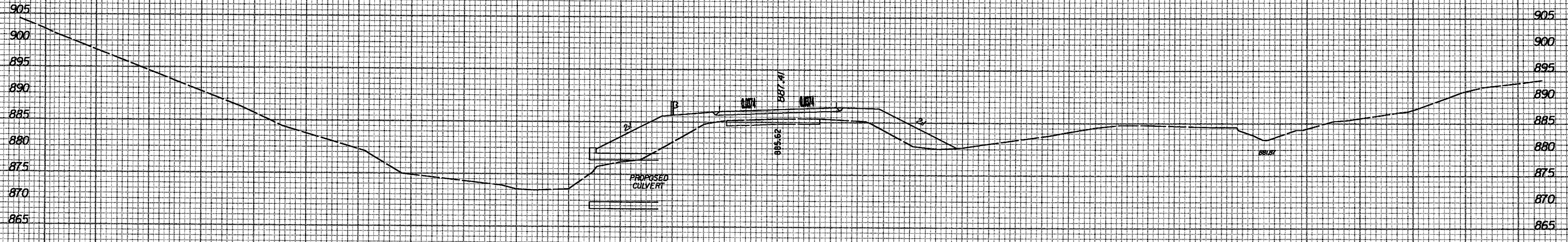
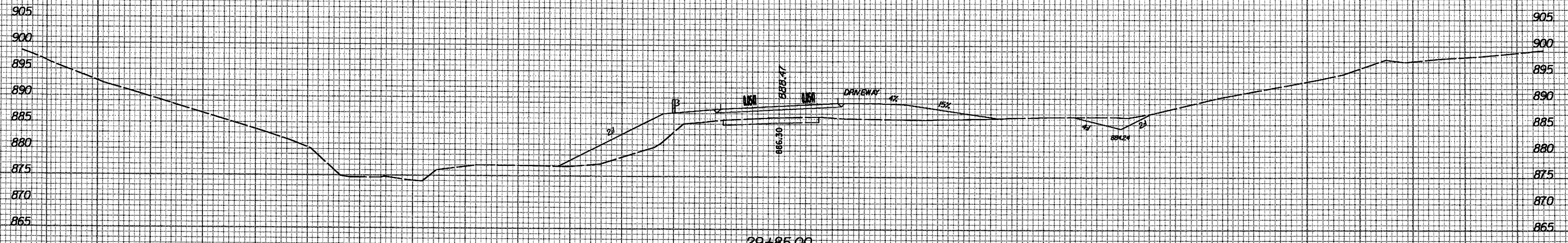
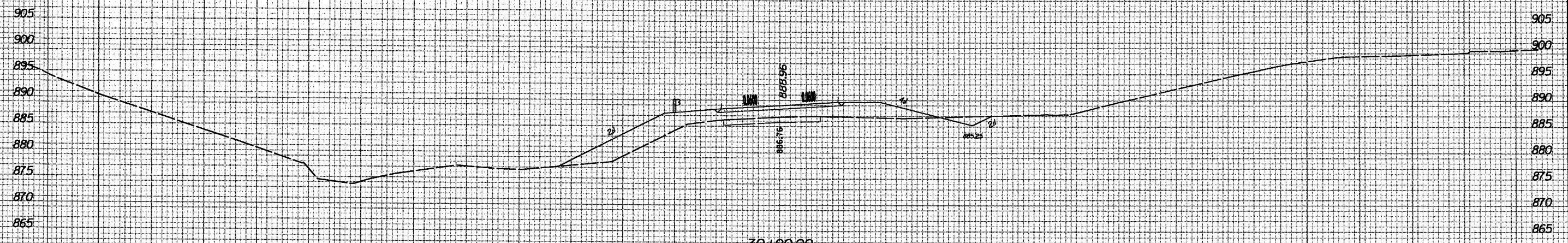
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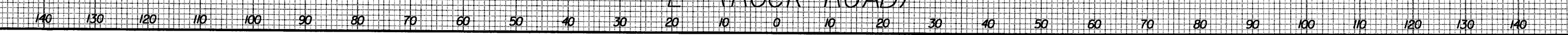
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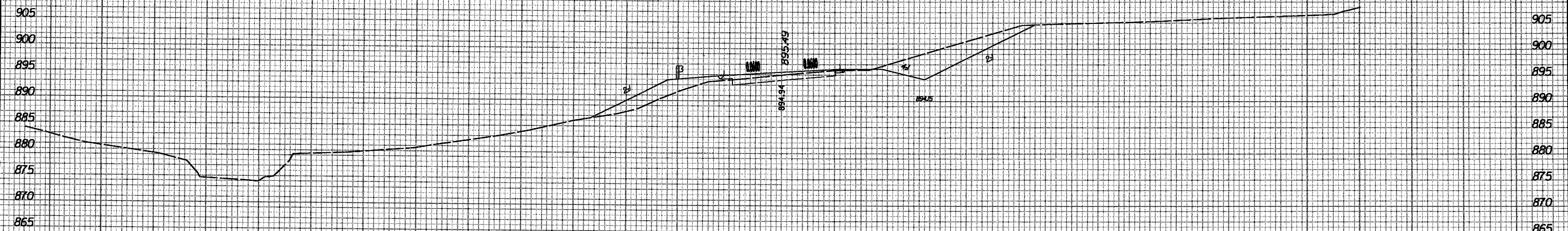
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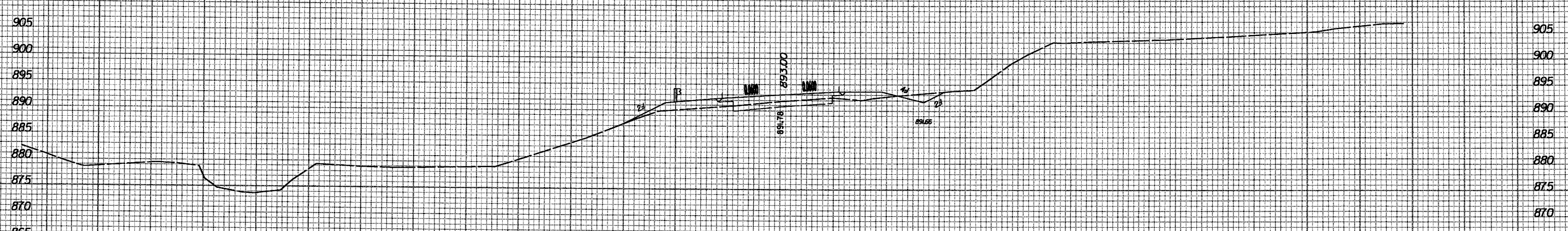
L- (ROCK ROAD)

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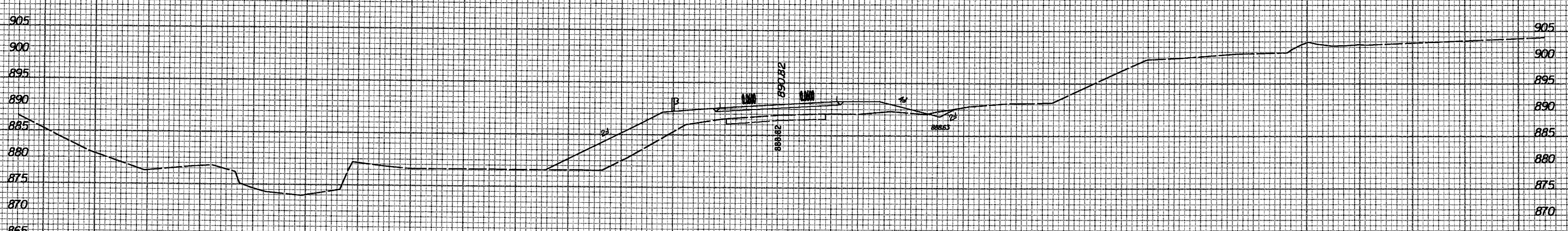




31+50.00



31+00.00

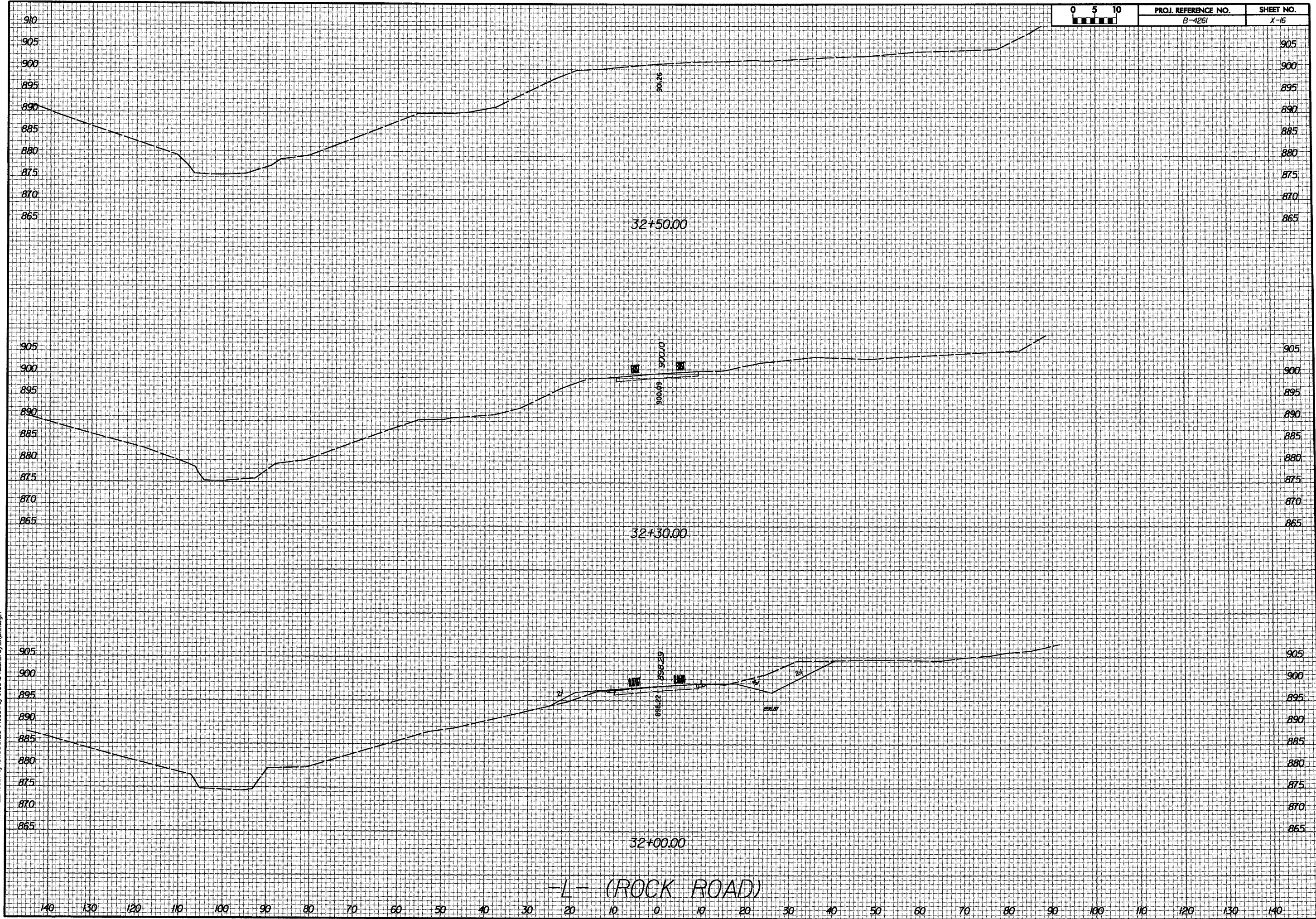
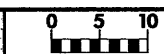


30+50.00

-L- (ROCK ROAD)

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-L- (ROCK ROAD)