Pre-Construction Notification (PCN) Form

For Nationwide Permits and Regional General Permits

(along with corresponding Water Quality Certifications)

October 26, 2020 Ver 3.3

*Please note: fields marked with a red asterisk * below are required. You will not be able to submit the form until all mandatory questions are answered.*

Also, if at any point you wish to print a copy of the E-PCN, all you need to do is right-click on the document and you can print a copy of the form.

Below is a link to the online help file.

https://edocs.deq.nc.gov/WaterResources/0/edoc/624704/PCN%20Help%20File%202018-1-30.pdf

A. Processing Information

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

Randolph

Is this a NCDMS Project*

○ Yes ◉ No

Click Yes, only if NCDMS is the applicant or co-applicant.

Is this project a public transportation project?*

◉ Yes ○ No

This is any publicly funded by municipal,state or federal funds road, rail, airport transportation project.

Is this a NCDOT Project?*

◉ Yes ○ No

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

U-5813

WBS #*

44385.1.3

(for NCDOT use only)

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

☑ Section 404 Permit (wetlands, streams and waters, Clean Water Act)

☐ Section 10 Permit (navigable waters, tidal waters, Rivers and Harbors Act)

Has this PCN previously been submitted?*

○ Yes

◉ No

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

☐ Nationwide Permit (NWP)

☑ Regional General Permit (RGP)

☐ Standard (IP)

This form may be used to initiate the standard/individual permit process with the Corps. Please contact your Corps representative concerning submittals for standard permits. All required items that are not provided in the E-PCN can be added to the miscellaneous upload area located at the bottom of this form.

1c. Has the NWP or GP number been verified by the Corps?*

◉ Yes ○ No

Regional General Permit (RGP) Number: 201902350 - Work associated with bridge construction, widening, replacement, and interchanges

RGP Numbers (for multiple RGPS):

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

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

check all that apply

☑ 401 Water Quality Certification - Regular

☐ Non-404 Jurisdictional General Permit

☐ Individual Permit

☐ 401 Water Quality Certification - Express

☐ Riparian Buffer Authorization

Pre-Filing Meeting Information

Before submitting this form please ensure you have submitted the Pre-Filing Meeting Request Form as we will not be able to accept your application without this important first step. The Pre-Filing Meeting Request Form is used in accordance with 40 C.F.R. Section 121.4(a) "At least 30 days prior to submitting a certification request, the project proponent shall request a pre-filing meeting with the certifying agency" and in accordance with 40 C.F.R. Section 121.5(b)(7), and (c)(5) all certification requests shall include documentation that a pre-filing meeting request was submitted to the certifying authority at least 30 days prior to submitting the certification request. Click **here** to read more information on when this form is needed prior to application submission or **here** to view the form.

ID#
20210147

Version
1

Pre-fling Meeting or Request Date *
1/27/2021

Attach documentation of Pre-Filing Meeting Request here: *
U5813_DWR Pre-Filing Meeting Request Form.pdf 55.6KB

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

*

For the record only for DWR 401 Certification: ○ Yes ◉ No

For the record only for Corps Permit: ○ Yes ◉ No

1f. Is this an after-the-fact permit application? *
○ Yes ◉ No

1g. Is payment into a mitigation bank or in-lieu fee program proposed for mitigation of impacts?
If so, attach the acceptance letter from mitigation bank or in-lieu fee program
◉ Yes ○ No

Acceptance Letter Attachment
Click the upload button or drag and drop files here to attach document
U-5813 - STR - YD 103 & 104.pdf 468.91KB
FILE TYPE MUST BE PDF

1h. Is the project located in any of NC's twenty coastal counties? *
○ Yes ◉ No

1j. Is the project located in a designated trout watershed? *
○ Yes ◉ No

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

B. Applicant Information

1a. Who is the Primary Contact? *
NCDOT

1b. Primary Contact Email: *
jldilday@ncdot.gov

1c. Primary Contact Phone: *
(xxx)xxx-xxxx
(919)707-6111

1d. Who is applying for the permit? *
☑ Owner ☐ Applicant (other than owner)
(Check all that apply)

1e. Is there an Agent/Consultant for this project? *
○ Yes ◉ No

2. Owner Information

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

2b. Deed book and page no.:

2c. Responsible party:
(for Corporations)

2d. Address *

Street Address
1000 Birch Ridge Drive
Address Line 2
City
Raleigh
State / Province / Region
NC
Postal / Zip Code
27610
Country
USA

2e. Telephone Number: *
(xxx)xxx-xxxx
(919)707-6000

2f. Fax Number:
(xxx)xxx-xxxx

2g. Email Address: *
pharris@ncdot.gov

C. Project Information and Prior Project History

1. Project Information

1a. Name of project: *
Widening of US64 from US220 to Asheboro Bypass (U-5813 Central)

1b. Subdivision name:
(if appropriate)

1c. Nearest municipality / town: *
Asheboro

2. Project Identification

2a. Property Identification Number:
(tax PIN or parcel ID)

2b. Property size:
(in acres)

2c. Project Address
Street Address
Address Line 2
City
State / Province / Region
Postal / Zip Code
Country

2d. Site coordinates in decimal degrees

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

Latitude: *
35.690875
ex: 34.208504

Longitude: *
-79.849547
-77.796371

3. Surface Waters

3a. Name of the nearest body of water to proposed project: *
Little River; Cedar Fork Creek

3b. Water Resources Classification of nearest receiving water: *
C; WS-II, HQW

Surface Water Lookup

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

3d. Please provide the 12-digit HUC in which the project is located. *
030401040301, 030401030403

River Basin Lookup

4. Project Description and History

4a. Describe the existing conditions on the site and the general land use in the vicinity of the project at the time of this application: *
Land use in the project vicinity consists primarily of residential and commercial properties along with forested communities.

4b. Have Corps permits or DWR certifications been obtained for this project (including all prior phases) in the past?*

○ Yes ◉ No ○ Unknown

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

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

File type must be pdf

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

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

File type must be pdf

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

0.15

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

(intermittent and perennial)

3,500

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

The purpose of the project is to increase traffic capacity and operational improvements to accommodate projected traffic volumes. The project will also replace the functionally obsolete Albemarle Road bridge. As a secondary benefit, the project will improve traffic safety by limiting conflict points along the U.S. 64 corridor within the project limits.

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

The proposed project will increase the capacity and improve mobility and connectivity within the study area. The mainline US64 will be widened to a 4-lane facility with a variable width median. The proposed improvements will limit left turning vehicles through superstreet design. The project will also upgrade the N.C. 49/U.S. 64 interchange, including replacing the Albemarle Road bridge, and the I-73/I-74/U.S. 220 interchange with U.S. 64 and Albemarle Road to meet current design standards and improve mobility, connectivity, and safety in the study area. The proposed project will widen approximately 1.1 miles of U.S. 64 from a three-lane section to a four-lane median divided roadway between the Asheboro Bypass and the existing four-lane median divided section east of the Albemarle Road Bridge No. 171. The widening will occur to the south of the roadway, primarily within existing right of way. The total project length is 2.26 miles. Typical road building equipment will be used including cranes, bulldozers, dump trucks, etc.

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

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

U-5813_Permit Drawing Package.pdf	39.71MB
U5813_RDY_RPC_XPL.pdf	21.64MB

File type must be pdf

5. Jurisdictional Determinations

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

◉ Yes ○ No ○ Unknown

Comments:

5b. If the Corps made a jurisdictional determination, what type of determination was made?*

◉ Preliminary ○ Approved ○ Not Verified ○ Unknown ○ N/A

Corps AID Number:

Example: SAW-2017-99999

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

Name (if known): Beth Reed

Agency/Consultant Company: Kimley-Horn

Other:

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

Field visit conducted on 2/6/2018 with Andy Williams (USACE) and April Norton (NCDWR). Written verification not received from USACE. Revised information from field visit sent to USACE on 2/19/2018.

5d1. Jurisdictional determination upload

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

File type must be PDF

6. Future Project Plans

6a. Is this a phased project?*

○ Yes ◉ No

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

D. Proposed Impacts Inventory

1. Impacts Summary

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

☐ Wetlands ☑ Streams-tributaries ☐ Buffers
☐ Open Waters ☐ Pond Construction

3. Stream Impacts

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

"S." will be used in the table below to represent the word "stream".

	3a. Reason for impact * (?)	3b.Impact type *	3c. Type of impact *	3d. S. name *	3e. Stream Type * (?)	3f. Type of Jurisdiction *	3g. S. width *	3h. Impact length *
S1	S1-Channel Stabilization	Permanent	Stabilization	SL	Perennial	Both	4 Average (feet)	52 (linear feet)
S2	S1-Channel Stabilization	Temporary	Stabilization	SL	Perennial	Both	4 Average (feet)	10 (linear feet)
S3	S2-Relocation	Permanent	Relocation	SK	Intermittent	Both	2 Average (feet)	103 (linear feet)
S4	S2-Relocation	Temporary	Relocation	SK	Intermittent	Both	2 Average (feet)	31 (linear feet)
S5	S3-Bank Stabilization	Permanent	Bank Stabilization	SJ	Perennial	Both	8 Average (feet)	50 (linear feet)
S6	S3-Bank Stabilization	Temporary	Bank Stabilization	SJ	Perennial	Both	8 Average (feet)	15 (linear feet)
S7	S3-Culvert	Permanent	Culvert	SJ	Perennial	Both	8 Average (feet)	53 (linear feet)
S8	S4-Relocation	Permanent	Relocation	SH	Perennial	Both	5 Average (feet)	190 (linear feet)
S9	S4-Relocation	Temporary	Relocation	SH	Perennial	Both	5 Average (feet)	11 (linear feet)
S10	S5-RipRap at Embankment	Permanent	Rip Rap Fill	SI	Intermittent	Both	2 Average (feet)	5 (linear feet)
S11	S5-RipRap at Embankment	Temporary	Rip Rap Fill	SI	Intermittent	Both	2 Average (feet)	20 (linear feet)
S12	S6-Pipe Outfall	Permanent	Fill	SE	Perennial	Both	6 Average (feet)	19 (linear feet)
S13	S6-Pipe Outfall	Temporary	Fill	SE	Perennial	Both	6 Average (feet)	23 (linear feet)
S14	S7-Pipe Outfall	Permanent	Fill	SF	Intermittent	Both	2 Average (feet)	16 (linear feet)
S15	S7-Pipe Outfall	Temporary	Fill	SF	Intermittent	Both	2 Average (feet)	20 (linear feet)
S16	S7-Channel Change/Relocation	Permanent	Relocation	SF	Intermittent	Both	2 Average (feet)	132 (linear feet)
S17	S7-Channel Change/Relocation	Temporary	Relocation	SF	Intermittent	Both	2 Average (feet)	10 (linear feet)
S18	S8-Pipe Outfall	Permanent	Fill	SA	Intermittent	Both	3 Average (feet)	55 (linear feet)
S19	S8-Pipe Outfall	Temporary	Fill	SA	Intermittent	Both	3 Average (feet)	17 (linear feet)

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

3i. Total jurisdictional ditch impact in square feet:

0

3i. Total permanent stream impacts:

675

3i. Total temporary stream impacts:

157

3i. Total stream and ditch impacts:

832

3j. Comments:

50 linear feet of permanent impact due to bank stabilization and does not require mitigation.

E. Impact Justification and Mitigation

1. Avoidance and Minimization

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

-Maintaining existing drainage patterns to the maximum extent practical.
-Riprap utilized at the outlet of open pipes
-Riprap proposed in ditches with high velocity
-No wetland impacts
-2:1 fill slopes at jurisdictional streams

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

Traffic will be maintained within the existing roadway and phased during construction. Design standards in Sensitive Watersheds will be used in the vicinity of all streams to Cedar Fork Creek.

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

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

(•) Yes ( ) No

2c. If yes, mitigation is required by (check all that apply):

[ ] DWR [x] Corps

2d. If yes, which mitigation option(s) will be used for this project?

[ ] Mitigation bank [x] Payment to in-lieu fee program [ ] Permittee Responsible Mitigation

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

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

(•) Yes ( ) No

4b. Stream mitigation requested:

(linear feet)

625

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

warm

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

4d. Buffer mitigation requested (DWR only):

(square feet)

4e. Riparian wetland mitigation requested:

(acres)

4f. Non-riparian wetland mitigation requested:

(acres)

4g. Coastal (tidal) wetland mitigation requested:

(acres)

4h. Comments

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

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

1. Diffuse Flow Plan

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

( ) Yes (•) No

For a list of options to meet the diffuse flow requirements, click here.

If no, explain why:

Waters within the project vicinity are not subject to riparian buffers.

2. Stormwater Management Plan

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

(•) Yes ( ) No

Comments:

G. Supplementary Information

1. Environmental Documentation

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

(•) Yes ( ) No

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

(•) Yes ( ) No

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

(•) Yes ( ) No

NEPA or SEPA Final Approval Letter

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

FILE TYPE MUST BE PDF

2. Violations (DWR Requirement)

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

( ) Yes (•) No

3. Cumulative Impacts (DWR Requirement)

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

( ) Yes (•) No

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

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

4. Sewage Disposal (DWR Requirement)

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

( ) Yes ( ) No (•) N/A

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

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

(•) Yes ( ) No

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

(•) Yes ( ) No

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

Raleigh

5d. Is another Federal agency involved? *

( ) Yes (•) No ( ) Unknown

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

(•) Yes ( ) No

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

N.C. Natural Heritage Program database; USFWS-Raleigh Field Office website; biological surveys for protected species listed for Randolph County, which include Cape Fear shiner and Schweinitz's sunflower. Habitat for Cape Fear shiner does not exist in the study area and the biological conclusion is No Effect. This project is within the Yadkin/PeeDee Basin, not the Cape Fear basin. Surveys for Schweinitz's sunflower were conducted on 9/27/2018 and updated on 8/20/2019. Habitat is present however no individuals were observed. The biological conclusion for Schweinitz's sunflower is No Effect.

Consultation Documentation Upload

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

File type must be PDF

6. Essential Fish Habitat (Corps Requirement)

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

( ) Yes (•) No

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

NMFS County Index

7. Historic or Prehistoric Cultural Resources (Corps Requirement)

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

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

( ) Yes (•) No

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

NEPA documentation

7c. Historic or Prehistoric Information Upload

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

File must be PDF

8. Flood Zone Designation (Corps Requirement)

Link to the FEMA Floodplain Maps: https://msc.fema.gov/portal/search

8a. Will this project occur in a FEMA-designated 100-year floodplain? *

○ Yes ◉ No

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

FEMA maps

Miscellaneous

Comments

Miscellaneous attachments not previously requested.

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

U5813_Final CP4C Meeting Minutes_HNTB Response to Comments.pdf 162.26KB

File must be PDF or KMZ

Signature

*

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

- The project proponent hereby certifies that all information contained herein is true, accurate, and complete to the best of my knowledge and belief'; and
- The project proponent hereby requests that the certifying authority review and take action on this CWA 401 certification request within the applicable reasonable period of time.
- I have given true, accurate, and complete information on this form;
- I agree that submission of this PCN form is a "transaction" subject to Chapter 66, Article 40 of the NC General Statutes (the "Uniform Electronic Transactions Act");
- I agree to conduct this transaction by electronic means pursuant to Chapter 66, Article 40 of the NC General Statutes (the "Uniform Electronic Transactions Act");
- I understand that an electronic signature has the same legal effect and can be enforced in the same way as a written signature; AND
- I intend to electronically sign and submit the PCN form.

Full Name: *

Mack Christopher Rivenbark III

Signature *

Mack C. Rivenbark, III

Date

3/2/2021

DWR Pre-Filing Meeting Request Form

ID#* 20210147 **Version*** 1

Regional Office* Central Office - (919) 707-9000

Reviewer List* Robert Patterson

Pre-Filing Meeting Request submitted 1/25/2021

Contact Name* Jason Dilday

Contact Email Address* jldilday@ncdot.gov

Project Name* Widening of US64 from Asheboro Bypass to NC49 (U-5813)

Project Owner* NCDOT

Project County* Randolph

Owner Address:

Street Address
1000 Brich Ridge Drive
Address Line 2

City	State / Province / Region
Raleigh	NC
Postal / Zip Code	**Country**
27610	USA

Is this a transportation project?* (•) Yes ( ) No

Type(s) of approval sought from the DWR:

- [x] 401 Water Quality Certification - Regular
- [ ] 401 Water Quality Certification - Express
- [ ] Individual Permit
- [ ] Modification
- [ ] Shoreline Stabilization

Does this project have an existing project ID#?*

( ) Yes (•) No

Do you know the name of the staff member you would like to request a meeting with?

Rob Ridings

Please give a brief project description below.*

Widening of US 64 from Asheboro Bypass to NC 49. A field visit was conducted by Andy Williams (USACE) and April Norton (NCDWR) on 2.6.2018 to review jurisdictional features.

Please give a couple of dates you are available for a meeting.

1/29/2021

Please attach the documentation you would like to have the meeting about.

pdf only

By digitally signing below, I certify that I have read and understood that per the Federal Clean Water Act Section 401 Certification Rule the following statements:

- This form completes the requirement of the Pre-Filing Meeting Request in the Clean Water Act Section 401 Certification Rule.
- I understand by signing this form that I cannot submit my application until 30 calendar days after this pre-filing meeting request.
- I also understand that DWR is not required to respond or grant the meeting request.

Your project's thirty-day clock started upon receipt of this application. You will receive notification regarding meeting location and time if a meeting is necessary. You will receive notification when the thirty-day clock has expired, and you can submit an application.

Signature



Submittal Date 1/25/2021

ROY COOPER
Governor
MICHAEL S. REGAN
Secretary
TIM BAUMGARTNER
Director

NORTH CAROLINA
Environmental Quality

February 26, 2021

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

Dear Mr. Harris:

Subject: Mitigation Acceptance Letter:

U-5813, US 64 Widening from Asheboro Bypass to East of I-73 / I-74 / US 220, Randolph County

The purpose of this letter is to notify you that the Division of Mitigation Services (DMS) will provide the compensatory stream mitigation for the subject project. Based on the information supplied by you on February 25, 2021, the impacts are located in CUs 03040103 and 03040104 of the Yadkin River basin in the Central Piedmont (CP) Eco-Region, and are as follows:

Stream and Wetlands	River Basin	CU Location	Eco-Region	Stream			Wetlands		
				Cold	Cool	Warm	Riparian	Non-Riparian	Coastal Marsh
Impacts	Yadkin	03040103	CP	0	0	551.0	0	0	0
Impacts	Yadkin	03040104	CP	0	0	74.0	0	0	0

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

DMS commits to implementing sufficient compensatory stream mitigation credits to offset the impacts associated with this project as determined by the regulatory agencies in accordance with the In-Lieu Fee Instrument dated July 28, 2010. If the above referenced impact amounts are revised, then this mitigation acceptance letter will no longer be valid and a new mitigation acceptance letter will be required from DMS.

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

Sincerely,

Elizabeth Harmon

James B. Stanfill
DMS Asset Management Supervisor

cc: Mr. Monte Matthews, USACE – Raleigh Regulatory Field Office
Ms. Amy Chapman, NCDWR
File: U-5813

U-5813 CP-4C MEETING MINUTES

Interagency Permit Drawing Package Review Meeting

State Project: U-5813, US 64 from Asheboro Bypass to East of I-73/I-74/US-220
Meeting Date: October 21, 2020
Date: November 5, 2020
Location: GoTo Meeting

Team Members:

Rob Ridings, NCDWR	(present)
Robert Patterson, NCDWR	(present)
Travis Wilson, NCWRC	(not present)
Felix Davila, FHWA	(not present)
James Lastinger, USACE	(not present)
Gary Jordan, USFWS	(not present)
Amanetta Somerville, USEPA	(not present)

Participants:

Reuben Blakley, PE (NCDOT – Div. 8 DCE)
Rex Badgett (NCDOT – Div. 8)
Pam Williams (NCDOT – PMU)
Terry Farr, PE (NCDOT – PMU)
Melanie Nguyen, PE (NCDOT – PMU)
Jennifer Hernandez, PE (NCDOT – PMU)
Paul Atkinson, PE (NCDOT – Hydraulics)
Krishna Sedai, PE (NCDOT – SMU)
Tucker Martin, PE (NCDOT – Utilities)
Chris Rivenbark (NCDOT – ECAP)
Jason Dilday (NCDOT – ECAP)
Jennifer Parish, EI (NCDOT – REU)
Mark Staley, EI (NCDOT – REU)
Dan Robinson, PE (Kimley Horn – Hydraulics GEC)
Jordan Bendl, EI (Kimley Horn – Hydraulics GEC)
Roy Tellier, PE (HNTB Roadway)
John Hornbeck, PE (HNTB Roadway)
James Byrd, PE (HNTB Hydraulics)
Paul Cameron, PE (HNTB Hydraulics)

On 11/23/20 HNTB provided response to comments provided within these minutes. Those responses are shown in RED.

Minutes

James Byrd, HNTB Hydraulics Section Manager, welcomed everyone to the meeting and handled introductions of the project team. Attendance was confirmed and the Permit Drawing Package was displayed on screen using the GoTo Meeting platform to facilitate discussions.

Digital pdf copies of the U-5813 Permit Drawing Package were provided to meeting attendees on the NCDOT xfer site at this link: https://xfer.services.ncdot.gov/pdea/4B4CMtgPkgDraw/U-5813%204C/

The meeting continued with a page flip of the Permit Drawing Package beginning with the Stormwater Management Plan (SMP) followed by a site by site review.

General Comments

- It should be noted that this project "is not" in Merger. This meeting was held following the CP4C Meeting format to facilitate interagency discussion while providing a review of the Project Drainage Designs and Permit Drawing Package.

SMP

- Robert Patterson led off the discussion with revisions needed on the SMP. This included updating the stream classification for the UT to Cedar Fork Creek to HQW, WS-II from the Class C designation shown. Comment incorporated.
- Rob Ridings added that the correct classification is included on the project Green Sheet and has been well documented. He further added that there are potential design implications of the classification change and that HNTB will need to provide designs that meet the design criteria to the maximum extent practicable (MEP).
  HNTB has updated the SMP and looked at all sites draining to the UT to Cedar Fork Creek to maximum treatment opportunities. Site 4 has been updated to include some grassed swale treatment where allowable. Going forward, the erosion control plans will be designed to High Quality Water standards.
- HNTB responded that it would update the SMP accordingly and make sure that Erosion Control Designs in the area of concern are designed to the standards for Sensitive Watersheds.
- Robert Patterson requested that HNTB revisit the Swales portion of the SMP and delete any listed features that are clearly not swales such as Channel Relocations.
  - HNTB acknowledged the direction and advised that it would update the table.
    The swale table has been updated to only include features that meet swale criteria and don't carry any live flow.
- Prior to this meeting, Robert Patterson provided an e-mail requesting that the implementation of Hazardous Spill Basins be investigated for the portion of the project that drains into the UT to Cedar Fork Creek watershed. This e-mail is attached to these minutes.
  - At the conclusion of the meeting Dan Robinson advised that hazardous spill basins are not required since the project is approx. 1.5 miles upstream of the Critical Area (CA).
  - Robert Patterson conceded that while DWR cannot enforce the use of hazardous spill basins, they would like to see more treatment provided for Sites 2 through 5.
  - HNTB advised that they would investigate additional treatment options along with the site comments provided below.
    Treatment options investigated. It has been confirmed that hazardous spill basins are not warranted and provide NCDOT unwanted maintenance issues.
- At the conclusion of the meeting Rob Ridings reiterated several key points that included the following:
  - Keep investigating treatment options and maximize swale placement.
  - Confirm that the erosion control plan will be developed to sensitive watershed standards resultant of the revised UT to Cedar Fork Creek classification.
  - When submitting the permit package, designs/plans for locations such as Site 4 should include provisions to keep banks stabilized and vegetated to the extent possible. This includes the use of coir fiber beyond limits of geotextile shown in ditch details and notes to develop thick stand of native vegetation on overbanks.
    Channel change details have been updated in response to comments. This includes channel changes at Site 2 and Site 4. The Class II Rip Rap in Detail 10 (site 4) extends to top of bank (shallow channel change on steeper slope) so no additional matting has been called for. The same applies to Channel Change Detail 23 Detail 11 (site 2) has been updated to include coir fiber to top of banks.
  - For any questions or concerns, contact Rob directly and he will provide any necessary information. He will also provide the Standard Project 401 Conditions for HQW and WS-II for the design team's use.
    - The above noted Standard Project 401 Conditions were provided on 10/21/2020.

Site 1

- James Byrd provided a description of the impacts at this location.
- There were no questions or comments provided.
- James Byrd added the beginning of the project ties to the recently completed NCDOT Design Build Project R-2536 (Asheboro Bypass).

- Roy Tellier advised that the Permit Drawing Package is showing the up-to-date FS File.

Site 2

- James Byrd provided a description of the impacts at this location.
- No questions or comments were provided.

Site 3

- James Byrd provided a description of the impacts at this location.
- Special attention was given to this location to avoid impacts on the downstream property and the existing 3 @ 54" RCP culverts.

Site 3 (Cont.)

- Rob Riding asked the design team to consider other options for pipe outlets that would avoid direct untreated discharges into the stream if possible.
  - Of particular concern was the discharge directly into the proposed RCBC via a 36" RCP.
  - James Byrd advised this outlet point was chosen to minimize impacts to Parcel 20.
  - James Byrd added that in addition to the SBG that's being drained, this outlet also included runoff from line ahead that's being treated in grass swales.
  - James Byrd advised that designs in this area would be revisited as requested but added that limiting factors at this location such as existing topography and ROW constraints may dictate that current designs remain.

  Additional investigations completed for Site 3. It has been confirmed that the best option is to route the pipe outlet through the culvert sidewalk due to ROW concerns on Parcel 20 and downstream property impacts.
- Krishna Sedai asked for confirmation that the proposed 36" RCP will outlet into the side wall of the proposed RCBC.
  - James Byrd confirmed the design and noted that other options weren't viable due to NCDOT direction that impacts to Parcel 20 be minimized/avoided to the extent practicable.

Site 4

- James Byrd provided a description of the impacts at this location.
- James Byrd noted that the proposed culvert is steeper than ideal and added that the proposed designs match the existing conditions.
- Rob Ridings mentioned maximizing potential treatment of the outfall at the beginning of Permit Drawing Sheet 9.
  - HNTB advised that it would revisit this area for potential design revisions.

  System 0802 has been redesigned to discharge line ahead at -L- 57+00 Rt. This allowed 70 linear feet of grass swale treatment for the outfall previously discharging directly into the HQW.

Site 5

- James Byrd provided a description of the impacts at this location.
  - Downstream impacts are resultant of repair work being done to retain the existing pipe.
  - Upstream impacts are the result the driveway near the culvert inlet.
- No questions or comments were provided.

Site 6

- James Byrd provided a description of the impacts at this location.
  - Proposed impacts are the result of an existing pipe being replaced along with the placement of adequate outlet protection.
- No questions or comments were provided.

Site 7

- James Byrd provided a description of the impacts at this location.

    - Proposed impacts are the result of the improvements to Ramp A.
- There were no questions or comments provided.

Site 8

- James Byrd provided a description of the impacts at this location.
    - Proposed impacts are the result of the improvements to Ramp D.
- There were no questions or comments provided.

This is our understanding of items discussed and decisions reached. Please contact us if there are changes or additions.

Submitted by,
HNTB North Carolina, P.C.
Paul Cameron, PE

Submitted 3/2/2021

North Carolina Department of Transportation

Highway Stormwater Program

STORMWATER MANAGEMENT PLAN

FOR NCDOT PROJECTS

(Version 2.08; Released April 2018)

General Project Information

WBS Element:	44385.1.3	**TIP Number:**	U-5813	**Project Type:**	Roadway Widening	**Date:**	9/2/2020
NCDOT Contact:	Tatia L White, PE, PLS			**Contractor / Designer:**	John Hornbeck		
	Address: 1000 Birch Ridge Drive Raleigh, NC 27610			**Address:**	343 E. Six Forks Road Suite 200 Raleigh, NC 27609		
	Phone: (919) 707-6342			**Phone:**	(919)-424-3301		
	Email: tlwhite@ncdot.gov			**Email:**	ghornbeck@HNTB.com		
City/Town:	Asheboro			**County(ies):**	Randolph		
River Basin(s):	Yadkin-Pee Dee			**CAMA County?**	No		
Wetlands within Project Limits?	Yes						

Project Description

Project Length (lin. miles or feet):	1.97	**Surrounding Land Use:**	Urban

	Proposed Project	Existing Site
Project Built-Upon Area (ac.)	34.8 ac.	26.0 ac.
Typical Cross Section Description:	4-lane divided roadway consisting of 12' travel lanes and curb and gutter	3-lane divided roadway consisting of 12' travel lanes and 4' shoulders
Annual Avg Daily Traffic (veh/hr/day):	Design/Future: 35700 Year: 2040	Existing: 32200 Year: 2020

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

Minimum measures for the drainage design included:

- Maintaining existing drainage patterns to the maximum extent practical.
- Maximum side slopes of 2:1.
- Rip-rap pads utilized at the outlet of any open pipe.
- Rip-rap proposed in ditches with high velocity and shear stress.
- No wetland impacts.
- Minimized to 610 linear feet if permanent stream impacts.

Waterbody Information

Surface Water Body (1):	UT to Cedar Fork Creek	**NCDWR Stream Index No.:**	13-2-3-3-2-2-(1)
NCDWR Surface Water Classification for Water Body	**Primary Classification:**	Water Supply II (WS-II)	
	Supplemental Classification:	High Quality Waters (HQW)	
Other Stream Classification:			
Impairments:			
Aquatic T&E Species?		Comments:	
NRTR Stream ID:	SK, SJ, SH, SI, SF, SG	**Buffer Rules in Effect:**	N/A
Project Includes Bridge Spanning Water Body?	No	**Deck Drains Discharge Over Buffer?**	N/A
Deck Drains Discharge Over Water Body?	N/A	(If yes, provide justification in the General Project Narrative)	**Dissipator Pads Provided in Buffer?** N/A
(If yes, provide justification in the General Project Narrative)			(If yes, describe in the General Project Narrative; if no, justify in the General Project Narrative)

Submitted 3/2/2021

North Carolina Department of Transportation

Highway Stormwater Program

STORMWATER MANAGEMENT PLAN

FOR NCDOT PROJECTS

(Version 2.08; Released April 2018)

WBS Element:	44385.1.3	TIP No.:	U-5813	County(ies):	Randolph	Page	2	of	3

Additional Waterbody Information

Surface Water Body (2):	UT to Little River		**NCDWR Stream Index No.:**	13-25-(1)		
NCDWR Surface Water Classification for Water Body		**Primary Classification:**	Class C			
		Supplemental Classification:				
Other Stream Classification:						
Impairments:						
Aquatic T&E Species?		Comments:				
NRTR Stream ID:	SA, SC, SE, SD			**Buffer Rules in Effect:**	N/A	
Project Includes Bridge Spanning Water Body?	No	**Deck Drains Discharge Over Buffer?**	No	**Dissipator Pads Provided in Buffer?**	N/A	
Deck Drains Discharge Over Water Body?	N/A	(If yes, provide justification in the General Project Narrative)		(If yes, describe in the General Project Narrative; if no, justify in the General Project Narrative)		
(If yes, provide justification in the General Project Narrative)						

Surface Water Body (3):	UT to Cable Creek		**NCDWR Stream Index No.:**	13-2-3-3-3		
NCDWR Surface Water Classification for Water Body		**Primary Classification:**	Class C			
		Supplemental Classification:				
Other Stream Classification:						
Impairments:						
Aquatic T&E Species?		Comments:				
NRTR Stream ID:	SL			**Buffer Rules in Effect:**	N/A	
Project Includes Bridge Spanning Water Body?	No	**Deck Drains Discharge Over Buffer?**	N/A	**Dissipator Pads Provided in Buffer?**	N/A	
Deck Drains Discharge Over Water Body?	N/A	(If yes, provide justification in the General Project Narrative)		(If yes, describe in the General Project Narrative; if no, justify in the General Project Narrative)		
(If yes, provide justification in the General Project Narrative)						

Surface Water Body (4):	Little River		**NCDWR Stream Index No.:**	13-25-(1)		
NCDWR Surface Water Classification for Water Body		**Primary Classification:**	Class C			
		Supplemental Classification:				
Other Stream Classification:						
Impairments:						
Aquatic T&E Species?		Comments:				
NRTR Stream ID:	Little River			**Buffer Rules in Effect:**	N/A	
Project Includes Bridge Spanning Water Body?	No	**Deck Drains Discharge Over Buffer?**	No	**Dissipator Pads Provided in Buffer?**	N/A	
Deck Drains Discharge Over Water Body?	N/A	(If yes, provide justification in the General Project Narrative)		(If yes, describe in the General Project Narrative; if no, justify in the General Project Narrative)		
(If yes, provide justification in the General Project Narrative)						

Surface Water Body (5):			**NCDWR Stream Index No.:**			
NCDWR Surface Water Classification for Water Body		**Primary Classification:**				
		Supplemental Classification:				
Other Stream Classification:						
Impairments:						
Aquatic T&E Species?		Comments:				
NRTR Stream ID:				**Buffer Rules in Effect:**	N/A	
Project Includes Bridge Spanning Water Body?		**Deck Drains Discharge Over Buffer?**		**Dissipator Pads Provided in Buffer?**		
Deck Drains Discharge Over Water Body?		(If yes, provide justification in the General Project Narrative)		(If yes, describe in the General Project Narrative; if no, justify in the General Project Narrative)		
(If yes, provide justification in the General Project Narrative)						

Submitted 3/2/2021

North Carolina Department of Transportation

Highway Stormwater Program

STORMWATER MANAGEMENT PLAN

FOR NCDOT PROJECTS

(Version 2.08; Released April 2018)

WBS Element: 44385.1.3 **TIP No.:** U-5813 **County(ies):** Randolph

Swales

Sheet No.	Station & Coordinates (Road and Non Road Projects)	Surface Water Body	Base Width (ft)	Front Slope (H:1)	Back Slope (H:1)	Drainage Area (ac)	Recommended Treatm't Length (ft)	Actual Length (ft)	Longitudinal Slope (%)	Q2 (cfs)	V2 (fps)	Q10 (cfs)	V10 (fps)	Rock Checks Used	BMP Associated w/ Buffer Rules?
5	-L- 28+73 LT 35.694189, -79.856446	(11)UT to Cable Creek	4.0	2.0	2.0	13.3	1330	77	0.70%	23.2	2.6	29.5	2.8	No	No
6	-L- 40+46 LT 35.692608, -79.853007	(11)UT to Cable Creek	0.0	2.0	2.0	0.4	40	58	0.98%	1.1	1.4	1.4	1.5	No	No
6	-L- 43+50 LT 35.692232, -79.852098	(1)UT to Cedar Fork	0.0	2.0	3.0	0.7	70	246	0.93%	1.7	1.6	2.2	1.7	No	No
7	-L- 46+52 RT 35.691511, -79.851399	(1)UT to Cedar Fork	0.0	6.0	6.0	1.3	130	52	2.04%	3.4	1.9	4.3	2.1	No	No
7	-L- 56+30 RT 35.690216,-79.848509	(3)UT to Cedar Fork Creek	2.0	3.0	3.0	0.4	35	75	4.00%	1.2	2.0	1.5	2.2	No	No
10	-L- 83+29 RT 35.687599, -79.839952		0.0	4.0	2.0	3.0	300	496	0.50%	4.7	1.5	6.0	1.5	No	No
10	-L- 91+60 LT 35.686411, -79.837606		2.0	4.0	2.0	6.8	679	333	1.18%	7.7	2.2	10.2	2.4	No	No
11	-L- 103+00 LT 35.685545, -79.833907		0.0	2.0	2.0	3.0	297	215	2.66%	5.0	2.8	6.4	2.9	No	No
12	-L- 109+79 LT 35.685640, -79.831761		2.0	3.0	2.0	5.7	566	432	1.07%	4.1	1.9	5.2	2.0	No	No
13	-L- 121+25 LT 35.686725, -79.828179		0.0	3.0	2.0	0.1	12	210	0.74%	0.2	0.8	0.3	0.9	No	No
6	-Y1- 12+25 LT 35.693053, -79.853874		0.0	2.0	2.0	0.2	20	288	2.00%	0.7	1.9	0.7	1.6	No	No
9	-Y8- 13+00 RT 35.688619, -79.842595	(4)UT to Cedar Fork	0.0	2.0	2.0	0.7	70	250	3.50%	1.8	2.6	2.3	2.7	No	No
11	-Y19- 10+00 LT 35.685700, -79.833761	(6)UT to Cedar Fork	0.0	3.0	2.0	1.1	114	125	1.66%	1.8	1.9	2.3	2.0	No	No
12	-RPA- 16+00 LT 35.688767, -79.830458	(5)UT to Cedar Fork	0.0	6.0	2.0	0.5	50	100	1.60%	1.1	1.5	1.4	1.6	No	No
12	-RPD- 13+50 LT 35.684235, -79.829220	(7)UT to Little River	2.0	2.0	4.0	0.3	25	100	3.05%	0.5	1.4	0.6	1.5	No	No
12	-Y- 29+50 LT 35.686660, -79.833825	(6)UT to Cedar Fork	0.0	4.0	4.0	1.2	122	300	4.00%	2.9	2.4	2.4	1.4	No	No

Additional Comments

Submitted 3/2/2021

09/08/99

TIP PROJECT: U-5813

CONTRACT:

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

RANDOLPH COUNTY

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	U-5813	1	

STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION
44385.1.3	NHP-0095(045)	PE
44385.2.3	NHP-0095(045)	R/W /UTILITIES
44385.3.2	NHP-0095(045)	CONSTRUCTION

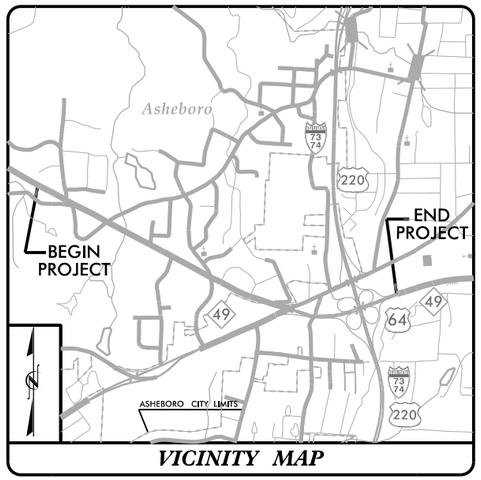
PERMIT DRAWING
SHEET 1 OF 19

LOCATION: *US 64 FROM ASHEBORO BYPASS TO EAST OF I-73/I-74/US 220 TO ASHEBORO*

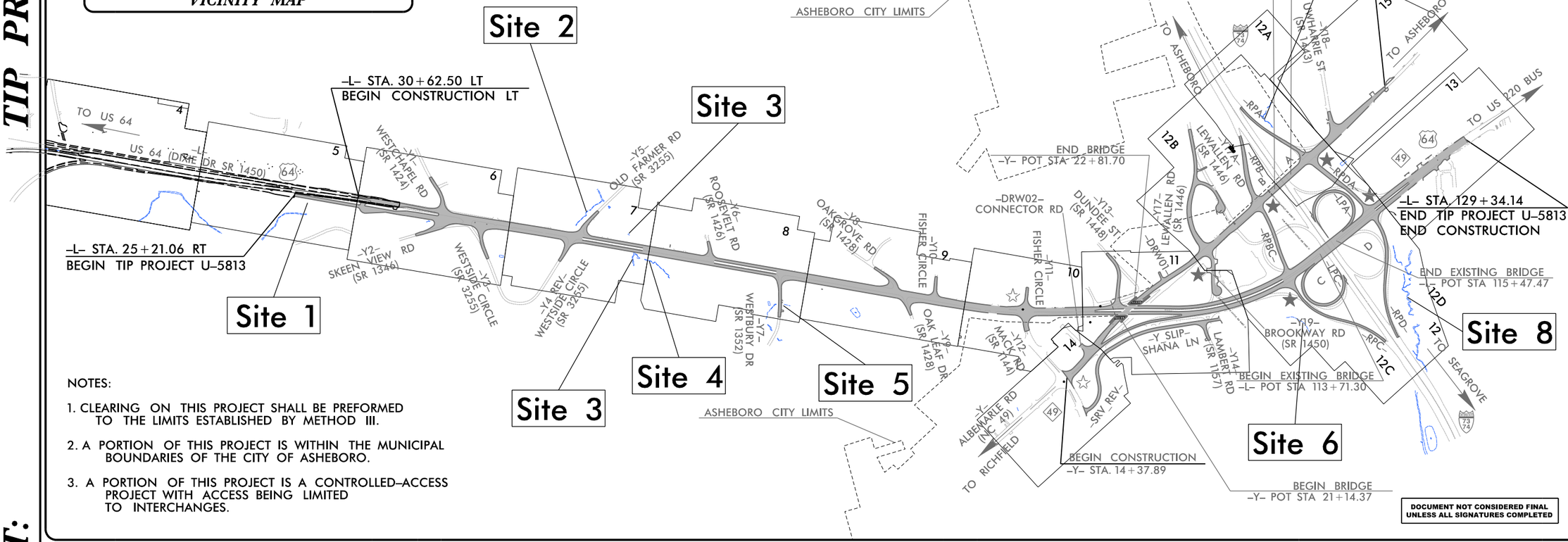
TYPE OF WORK: *GRADING, DRAINAGE, PAVING, STRUCTURES, CULVERT & SIGNALS*

WETLAND AND SURFACE WATER IMPACTS PERMIT

NAD 83/NA 2011



VICINITY MAP



NOTES:

1. CLEARING ON THIS PROJECT SHALL BE PREFORMED TO THE LIMITS ESTABLISHED BY METHOD III.
2. A PORTION OF THIS PROJECT IS WITHIN THE MUNICIPAL BOUNDARIES OF THE CITY OF ASHEBORO.
3. A PORTION OF THIS PROJECT IS A CONTROLLED-ACCESS PROJECT WITH ACCESS BEING LIMITED TO INTERCHANGES.

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

GRAPHIC SCALES

PLANS: 50 25 0 50 100

PROFILE (HORIZONTAL): 50 25 0 50 100

PROFILE (VERTICAL): 10 5 0 10 20

DESIGN DATA

ADT 2020 = 32,200
ADT 2040 = 35,700
K = 8%
D = 55%
T = 4 % *
V = 60 MPH / 50 MPH (C&G)
* TTST = 3% DUAL 1%
FUNC CLASS = PRINCIPAL ARTERIAL STATEWIDE TIER

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT U-5813 = 1.972 MILES

TOTAL LENGTH TIP PROJECT U-5813 = 1.972 MILES

TOTAL LENGTH BASED ON –L– CENTERLINE AND RIGHT SIDE BEGIN CONSTRUCTION

PREPARED IN THE OFFICE OF:
HNTB
HNTB NORTH CAROLINA, P.C.
343 E. Six Forks Road, Suite 200
Raleigh, North Carolina 27609
NC License No: C-1554
FOR NCDOT

2018 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
JANUARY 15, 2021

LETTING DATE:
SEPTEMBER 20, 2022

G. JOHN HORNBECK, PE
PROJECT ENGINEER

ROY H. TELLIER, PE
PROJECT DESIGN ENGINEER

MELANIE NGUYEN, PE
NCDOT CONTACT

HYDRAULICS ENGINEER

SIGNATURE: P.E.

ROADWAY DESIGN ENGINEER

SIGNATURE: P.E.

STATE OF NORTH CAROLINA • DEPARTMENT OF TRANSPORTATION •

10/6/2020
...\U-5813_HYD_PRM_TSH.dgn
HNTB

Submitted 3/2/2021

U–5813 PROPOSED DITCH TYPICALS

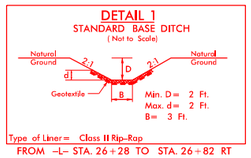
HNTB NORTH CAROLINA, P.C.
343 E. Six Forks Road, Suite 200
Raleigh, North Carolina 27609
NC License No: C-1554

PROJECT REFERENCE NO.	SHEET NO.
U–5813	2D–1

HYDRAULICS ENGINEER

PERMIT DRAWING SHEET 2 OF 19

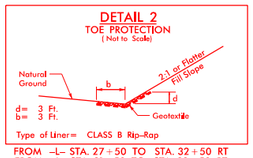
DETAIL 1
STANDARD BASE DITCH
(Not to Scale)



Type of Liner= Class II Rip–Rap

FROM –L– STA. 26+28 TO STA. 26+82 RT

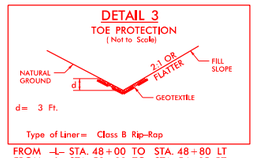
DETAIL 2
TOE PROTECTION
(Not to Scale)



Type of Liner= CLASS B Rip–Rap

FROM –L– STA. 27+50 TO STA. 32+50 RT
FROM –L– STA. 91+50 TO STA. 92+50 RT
FROM –RPC– STA. 17+50 TO STA. 20+50 LT
FROM –YSLIP– STA. 14+00 TO STA. 16+00 LT
FROM –RPB– STA. 11+00 TO STA. 12+85 RT
FROM –LPC– STA. 11+75 TO STA. 15+00 RT

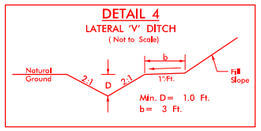
DETAIL 3
TOE PROTECTION
(Not to Scale)



Type of Liner= Class B Rip–Rap

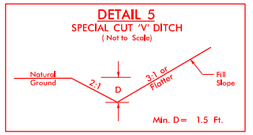
FROM –L– STA. 48+00 TO STA. 48+80 LT
FROM –L– STA. 53+00 TO STA. 54+15 RT
FROM –Y7– STA. 11+41 TO STA. 12+22 LT
FROM –Y7– STA. 12+00 TO STA. 12+55 RT

DETAIL 4
LATERAL 'V' DITCH
(Not to Scale)



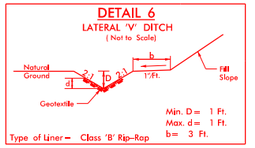
FROM –Y2– STA. 11+50 TO STA. 12+42 LT

DETAIL 5
SPECIAL CUT 'V' DITCH
(Not to Scale)



FROM –L– STA. 40+46 TO STA. 43+50 LT
FROM –L– STA. 78+32 TO STA. 81+25 RT
FROM –Y– STA. 31+25 TO STA. 31+50 LT
FROM –Y– STA. 33+50 TO STA. 35+50 LT

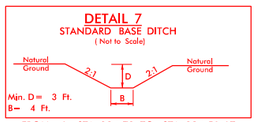
DETAIL 6
LATERAL 'V' DITCH
(Not to Scale)



Type of Liner= Class 'B' Rip–Rap

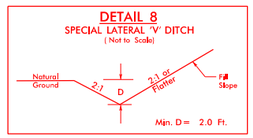
FROM –Y2– STA. 11+50 TO STA. 13+00 RT

DETAIL 7
STANDARD BASE DITCH
(Not to Scale)



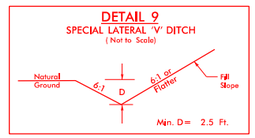
FROM –L– STA. 28+73 TO STA. 29+50 LT

DETAIL 8
SPECIAL LATERAL 'V' DITCH
(Not to Scale)



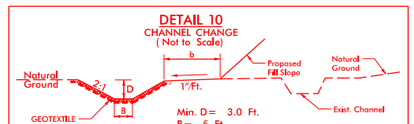
FROM –Y3– STA. 10+00 TO STA. 12+50 RT
FROM –Y6– STA. 11+22 TO STA. 11+50 RT

DETAIL 9
SPECIAL LATERAL 'V' DITCH
(Not to Scale)



FROM –L– STA. 46+00 TO STA. 46+52 RT

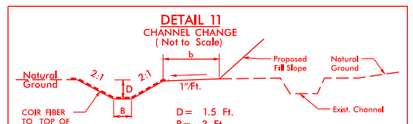
DETAIL 10
CHANNEL CHANGE
(Not to Scale)



Type of Liner= Class II Rip–Rap TO TOP OF BANKS

FROM –L– STA. 54+32 TO STA. 56+30 RT

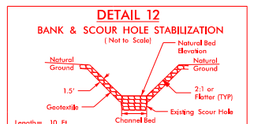
DETAIL 11
CHANNEL CHANGE
(Not to Scale)



Type of Liner= COIR FIBER TO TOP OF BANKS

FROM –Y5– STA. 10+82 TO STA. 11+69 LT

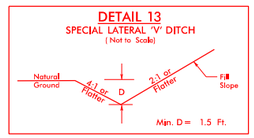
DETAIL 12
BANK & SCOUR HOLE STABILIZATION
(Not to Scale)



Type of Liner= CL I Rip–Rap – Keyed–In

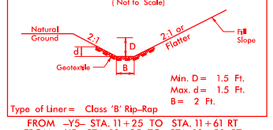
STA. –Y5– 10+81 LT
STA. –Y4– 12+50 RT

DETAIL 13
SPECIAL LATERAL 'V' DITCH
(Not to Scale)



FROM –RPDA– STA. 11+25 TO STA. 12+00 RT
FROM –Y17– STA. 13+75 TO STA. 15+25 RT
FROM –Y17– STA. 13+75 TO STA. 15+75 LT

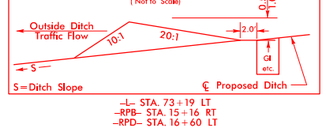
DETAIL 14
SPECIAL LATERAL BASE DITCH
(Not to Scale)



Type of Liner= Class 'B' Rip–Rap

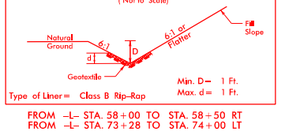
FROM –Y5– STA. 11+25 TO STA. 11+61 RT
FROM –Y5– STA. 12+25 TO STA. 13+50 RT
FROM –RPB– STA. 12+00 TO STA. 13+50 RT

DETAIL 15
FALSE SUMP
(Not to Scale)



–L– STA. 73+19 LT
–RPB– STA. 15+16 RT
–RPD– STA. 16+60 LT

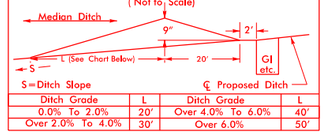
DETAIL 16
SPECIAL LATERAL 'V' DITCH
(Not to Scale)



Type of Liner= Class B Rip–Rap

FROM –L– STA. 58+00 TO STA. 58+50 RT
FROM –L– STA. 73+28 TO STA. 74+00 LT

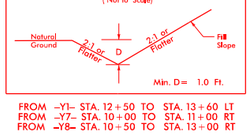
DETAIL 17
FALSE SUMP
(Not to Scale)



Ditch Grade	L	Ditch Grade	L
0.0% To 2.0%	20'	Over 4.0% To 6.0%	40'
Over 2.0% To 4.0%	30'	Over 6.0%	50'

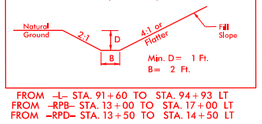
–L– STA. 25+38 MED.
–L– STA. 28+38 MED.

DETAIL 18
SPECIAL LATERAL 'V' DITCH
(Not to Scale)



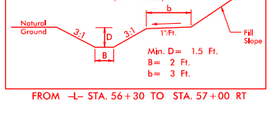
FROM –Y1– STA. 12+50 TO STA. 13+60 LT
FROM –Y7– STA. 10+00 TO STA. 11+00 RT
FROM –Y8– STA. 10+50 TO STA. 13+00 RT

DETAIL 19
SPECIAL LATERAL BASE DITCH
(Not to Scale)



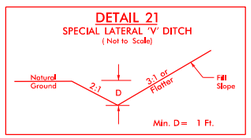
FROM –L– STA. 91+60 TO STA. 94+93 LT
FROM –RPB– STA. 13+00 TO STA. 17+00 LT
FROM –RPD– STA. 13+50 TO STA. 14+50 LT

DETAIL 20
LATERAL BASE DITCH
(Not to Scale)



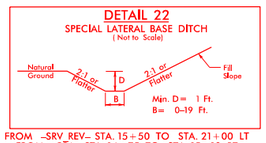
FROM –L– STA. 56+30 TO STA. 57+00 RT

DETAIL 21
SPECIAL LATERAL 'V' DITCH
(Not to Scale)



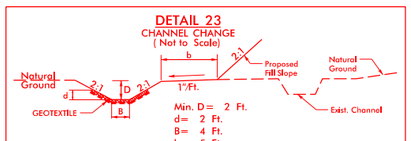
FROM –L– STA. 121+25 TO STA. 123+35 LT
FROM –Y– STA. 49+37 TO STA. 50+50 RT
FROM –RPA– STA. 16+00 TO STA. 17+00 LT
FROM –Y19– STA. 10+00 TO STA. 12+25 LT

DETAIL 22
SPECIAL LATERAL BASE DITCH
(Not to Scale)



FROM –SRV_REV– STA. 15+50 TO STA. 21+00 LT
FROM –RPA– STA. 14+75 TO STA. 15+10 RT
FROM –SRV_REV– STA. 25+21 TO STA. 26+00 LT

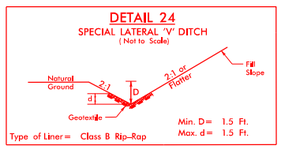
DETAIL 23
CHANNEL CHANGE
(Not to Scale)



Type of Liner= Class I Rip–Rap TO TOP OF BANK

FROM –RPA– STA. 14+00 TO STA. 15+25 LT

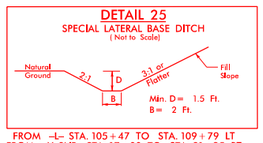
DETAIL 24
SPECIAL LATERAL 'V' DITCH
(Not to Scale)



Type of Liner= Class B Rip–Rap

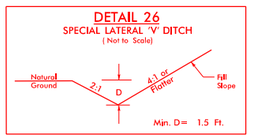
FROM –Y7– STA. 11+50 TO STA. 12+00 RT

DETAIL 25
SPECIAL LATERAL BASE DITCH
(Not to Scale)



FROM –L– STA. 105+47 TO STA. 109+79 LT
FROM –Y_SLIP– STA. 17+00 TO STA. 21+25 RT

DETAIL 26
SPECIAL LATERAL 'V' DITCH
(Not to Scale)



FROM –L– STA. 81+25 TO STA. 84+50 RT

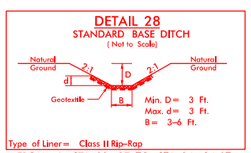
DETAIL 27
SPECIAL LATERAL BASE DITCH
(Not to Scale)



Type of Liner= Class I Rip–Rap

FROM –RPD– STA. 16+75 TO STA. 20+75 LT

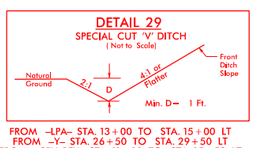
DETAIL 28
STANDARD BASE DITCH
(Not to Scale)



Type of Liner= Class II Rip–Rap

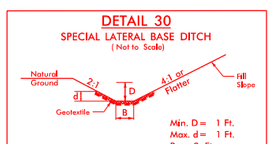
FROM –L– STA. 83+27 TO STA. 84+34 LT

DETAIL 29
SPECIAL CUT 'V' DITCH
(Not to Scale)



FROM –LPA– STA. 13+00 TO STA. 15+00 LT
FROM –Y– STA. 26+50 TO STA. 29+50 LT
FROM –SRV_REV– STA. 11+00 TO STA. 15+50 LT
FROM –SRV_REV– STA. 13+50 TO STA. 20+75 RT
FROM –SRV_REV– STA. 21+50 TO STA. 24+00 RT
FROM –SRV_REV– STA. 25+25 TO STA. 26+00 RT
FROM –Y14– STA. 10+75 TO STA. 11+39 LT

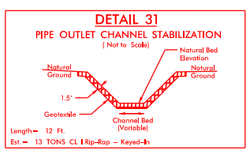
DETAIL 30
SPECIAL LATERAL BASE DITCH
(Not to Scale)



Type of Liner= Class 'B' Rip–Rap

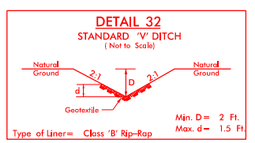
FROM –Y13– STA. 10+50 TO STA. 14+50 LT
FROM –RPB– STA. 15+25 TO STA. 17+75 RT

DETAIL 31
PIPE OUTLET CHANNEL STABILIZATION
(Not to Scale)



–RPA– STA. 13+98 LT

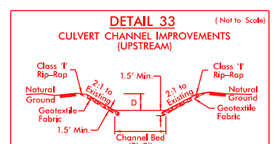
DETAIL 32
STANDARD 'V' DITCH
(Not to Scale)



Type of Liner= Class 'B' Rip–Rap

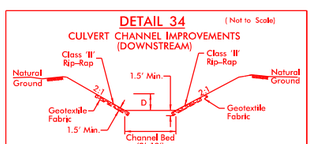
–SRV– STA. 11+00 RT

DETAIL 33
(Not to Scale)
CULVERT CHANNEL IMPROVEMENTS
(UPSTREAM)



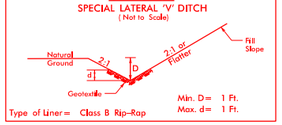
–L– STA. 54+22 RT

DETAIL 34
(Not to Scale)
CULVERT CHANNEL IMPROVEMENTS
(DOWNSTREAM)



–L– STA. 53+77 LT

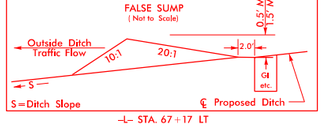
DETAIL 35
SPECIAL LATERAL 'V' DITCH
(Not to Scale)



Type of Liner= Class B Rip–Rap

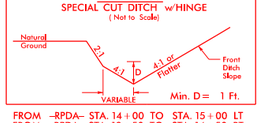
FROM –Y1– STA. 10+75 TO –Y1– STA. 12+30 RT
FROM –Y1– STA. 12+25 TO –Y1– STA. 12+50 LT

DETAIL 36
FALSE SUMP
(Not to Scale)



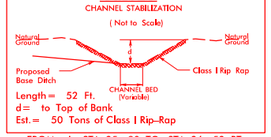
–L– STA. 67+17 LT

DETAIL 37
SPECIAL CUT DITCH w/HINGE
(Not to Scale)



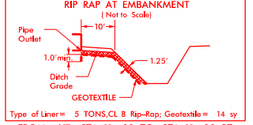
FROM –RPDA– STA. 14+00 TO STA. 15+00 LT
FROM –RPDA– STA. 13+50 TO STA. 14+50 RT
FROM –L– STA. 101+00 TO STA. 103+00 LT

DETAIL 38
CHANNEL STABILIZATION
(Not to Scale)



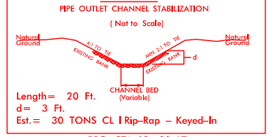
FROM –L– STA. 25+90 TO STA. 26+52 RT

DETAIL 39
RIP RAP AT EMBANKMENT
(Not to Scale)



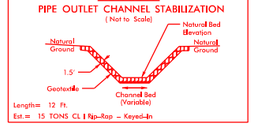
FROM –Y7– STA. 11+08 TO STA. 11+20 RT

DETAIL 40
PIPE OUTLET CHANNEL STABILIZATION
(Not to Scale)



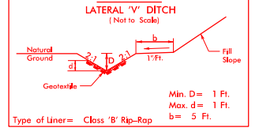
–RPC– STA. 18+30 LT

DETAIL 41
PIPE OUTLET CHANNEL STABILIZATION
(Not to Scale)



–RPD– STA. 18+00 RT

DETAIL 42
LATERAL 'V' DITCH
(Not to Scale)



Type of Liner= Class 'B' Rip–Rap

FROM –RPA– STA. 15+25 TO STA. 16+00 LT

1/2/2021
U-5813_HYD_PRM_PSH_02_ditch details.dgn
HNTB

Submitted 3/2/2021

8/17/99

HNTB NORTH CAROLINA, P.C.
343 E. Six Forks Road, Suite 200
Raleigh, North Carolina 27609
NC License No: C-1554

PROJECT REFERENCE NO.	SHEET NO.
U-5813	5
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PERMIT DRAWING
SHEET 3 OF 19

WETLAND & STREAM IMPACTS

NAD 83/NA 2011

MATCH LINE -L- 17+00
SEE SHEET 4

MATCH LINE -L- 30+50
SEE SHEET 6

AREA UNDER CONSTRUCTION
KELLY CONTRACTORS, LLC
JHS MASTER CAPITAL, LLC
AMOS & LOUELLA NEWSOME
PERMANENT UTILITY EASEMENT DB 2504 PG 1897
CERTIFIED CONCRETE CORPORATION
STEPHEN BRUEILLY
MARTHA B BRASWELL
ROBERT GLENDON DAVIS
WOODS
DEBRIS PILE
ISFB
MTL AIRPORT
SKEEN VIEW RD (SR-1346) BST
US 64 VARIABLE WIDTH R/W BST

-L- 20
-L- 25
-L- 30

REMOVE
DI
TOP=753.1
INV=749.5
PDE
REMOVE
24"
STANDARD 4' BASE DITCH
SEE DETAIL 7
EST 48 CY DDE
3GI
RETAIN
15" CMP
REMOVE
REMOVE 47 FT OF 36" RCP
RETAIN
36" RCP-IV
RETAIN
RETAIN
TB 2GI
FALSE SUMP
SEE DETAIL 17
15" RCP
FILL W/FLOWABLE FILL
2GI
FALSE SUMP
NO TREATMENT
SEE DETAIL 17
REMOVE
REMOVE
36" RCP-IV
EXIST 02
15" RCP-IV
REMOVE
PROP. SBG
REMOVE 47 FT OF 36" RCP
±24.84
15" RCP-IV
2GI
2GI
GREU TL-3
15" HDPE W/ ELBOWS
JB w/MH
36" RCP-IV
JB w/MH
24" RCP-IV
CRUSHED PIPE
18" RCP-III
CLASS 'B' RIP-RAP
EST. 1 TONS
EST. 5 SY GF
RETAIN
TOE PROTECTION
SEE DETAIL 2
CLASS 'B' RIP-RAP
EST. 91 TONS
EST. 202 SY GF
FILL W/ FLOWABLE FILL
REMOVE HW
STANDARD 3' BASE DITCH
SEE DETAIL 1
CLASS I RAP RAP
EST 124 TONS
EST 170 SY GF
EST 50 CY DDE
S =13.7%
CHANNEL STABILIZATION
SEE DETAIL 38
CLASS I RAP RAP
EST 50 TONS

BEGIN CONSTRUCTION
-L- Sta. 23+56.44 RT

BEGIN PROJECT
-L- Sta. 25+21.06 RT

S 61°59'43.8" E

Site 1 SL

TEMP. IMPACTS IN SURFACE WATER

IMPACTS IN SURFACE WATER (CHANNEL CHANGE-CHANNEL STABILIZATION)

LEGEND

S S DENOTES IMPACTS IN SURFACE WATER

TS TS DENOTES TEMPORARY IMPACTS IN SURFACE WATER

50' 0' 50' 100' 150'
GRAPHIC SCALE

10/1/2020
U-5813_HYD_PRM_PSH_05.dgn
HNTB

Submitted 3/2/2021

8/17/99

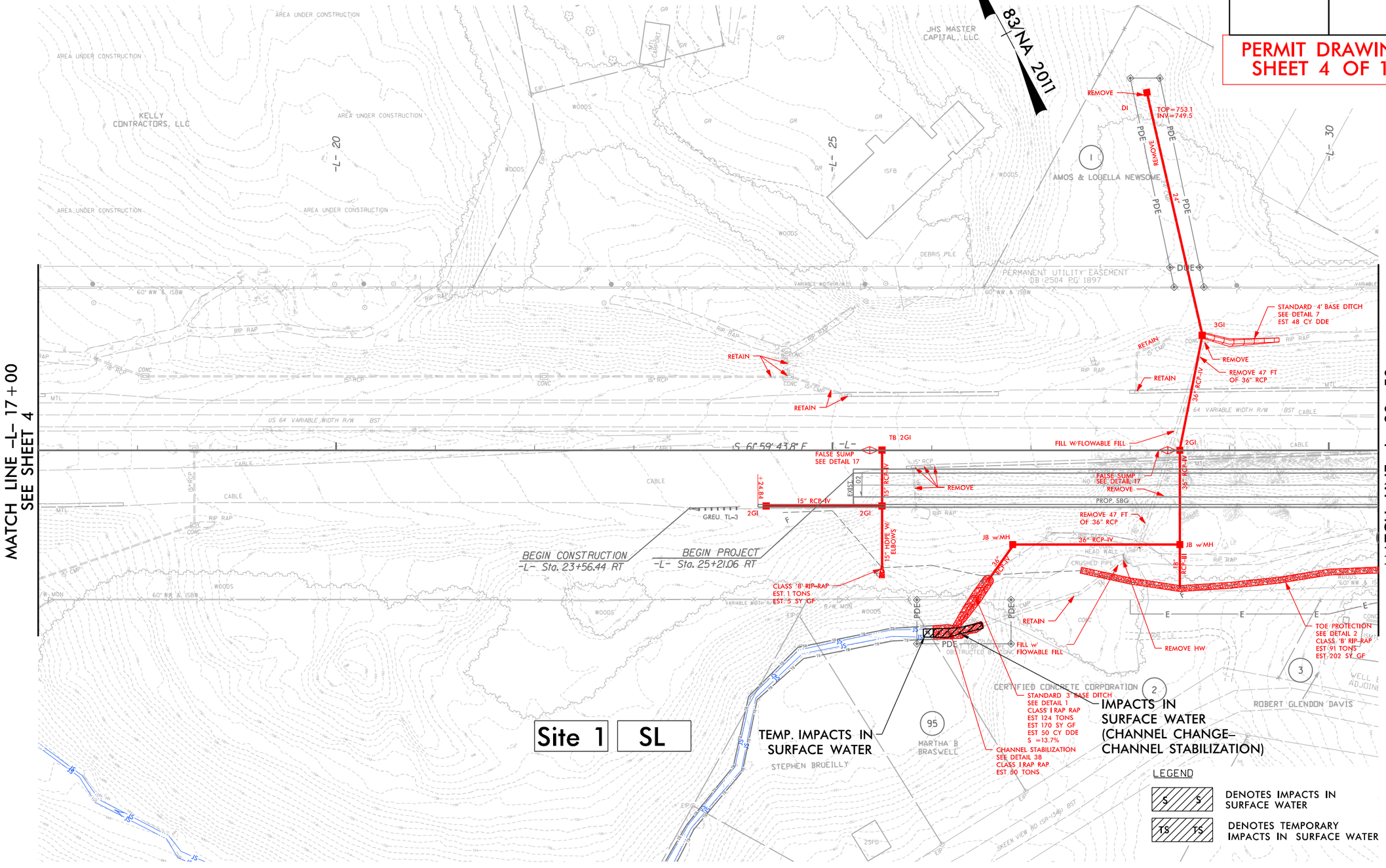
HNTB NORTH CAROLINA, P.C.
343 E. Six Forks Road, Suite 200
Raleigh, North Carolina 27609
NC License No: C-1554

PROJECT REFERENCE NO.	SHEET NO.
U-5813	5
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PERMIT DRAWING
SHEET 4 OF 19

WETLAND & STREAM IMPACTS

NAD 83/NA 2011



10/1/2020
U-5813_HYD_PRM_PSH_05.dgn
HNTB

Submitted 3/2/2021

8/17/99

WETLAND & STREAM IMPACTS

HNTB NORTH CAROLINA, P.C.
343 E. Six Forks Road, Suite 200
Raleigh, North Carolina 27609
NC License No: C-1554

PROJECT REFERENCE NO.	SHEET NO.
U-5813	7
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PERMIT DRAWING
SHEET 5 OF 19

NAD 83/NA 2011

MATCH LINE –L– 43+50
SEE SHEET 6

MATCH LINE –L– 55+50
SEE SHEET 8

Site 2 SK

Site 3 SJ

Site 3 SJ

Site 4 SH

RALPH AMOS NEWSOME AND WIFE JUDY M NEWSOME

ABAC LLC

JOHN L VESTAL AND WIFE, VIRGINIA G VESTAL

MITCHELL LEE HOGAN AND WIFE CAROL F HOGAN

KENNETH CECIL SMALL

BRENDA S BRANSON

TIMOTHY S SATTERFIELD TRUSTEE

BRANSON-COLEMAN PROPERTIES, LLC

CHANNEL CHANGE
SEE DETAIL 11

BANK & SCOUR HOLE STABILIZATION CLASS I RIP-RAP
5EST. 8 TONS
EST. 11 SY GF
SEE DETAIL 12

TEMP. IMPACTS IN SURFACE WATER

IMPACTS IN SURFACE WATER (STREAM RELOCATION)

TOE PROTECTION CLASS 'B' RIP-RAP
EST. 24 TONS
EST. 54 SY
SEE DETAIL 3

COLLAR AND EXTEND 24" RCP

SPECIAL LATERAL 'V' DITCH
SEE DETAIL 9

BANK & SCOUR HOLE STABILIZATION CLASS I RIP-RAP
EST. 5 TONS
EST. 6 SY GF
SEE DETAIL 12

CLASS 'B' RIP-RAP
EST. 2 TONS
EST. 7 SY GF

IMPACTS IN SURFACE WATER (BANK STABILIZATION)
SEE DETAIL 33

SPECIAL 2' LATERAL BASE DITCH
CLASS 'B' RIP-RAP
EST. 38 TONS
EST. 84 SY GF
SEE DETAIL 14

DO NOT DISTURB EXISTING 3-54" RCP CULVERTS

SPECIAL 2' LATERAL BASE DITCH
CLASS 'B' RIP-RAP
EST. 11 TONS
EST. 23 SY GF
SEE DETAIL 14

TEMP. IMPACTS IN SURFACE WATER

CULVERT CHANNEL IMPROVEMENTS (DOWNSTREAM)
SEE DETAIL 34

IMPACTS IN SURFACE WATER (BANK STABILIZATION)
SEE DETAIL 34

IMPACTS IN SURFACE WATER (STREAM RELOCATION)

IMPACTS IN SURFACE WATER (9' X 8' RCBC)

TOE PROTECTION CLASS 'B' RIP-RAP
EST. 14 TONS
EST. 31 SY GF
SEE DETAIL 3

CULVERT CHANNEL IMPROVEMENTS (UPSTREAM)
SEE DETAIL 33

CHANNEL CHANGE CLASS II RIP-RAP
EST. 50 TONS
EST. 85 SY GF
SEE DETAIL 10

LEGEND

S S DENOTES IMPACTS IN SURFACE WATER

TS TS DENOTES TEMPORARY IMPACTS IN SURFACE WATER

50' 0' 50' 100' 150'
GRAPHIC SCALE

10/6/2020
U-5813_HYD_PRM_PSH_07.dgn
HNTB

Submitted 3/2/2021

8/17/99

WETLAND & STREAM IMPACTS

HNTB NORTH CAROLINA, P.C.
343 E. Six Forks Road, Suite 200
Raleigh, North Carolina 27609
NC License No: C-1554

PROJECT REFERENCE NO.	SHEET NO.
U-5813	7
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PERMIT DRAWING
SHEET 6 OF 19

NAD 83/NA 2011

MATCH LINE –L– 43+50
SEE SHEET 6

MATCH LINE –L– 55+50
SEE SHEET 8

Site 2 SK

Site 3 SJ

Site 3 SJ

Site 4 SH

RALPH AMOS NEWSOME AND WIFE JUDY M NEWSOME

ABAC LLC

JOHN L VESTAL AND WIFE, VIRGINIA G VESTAL

MITCHELL LEE HOGAN AND WIFE CAROL F HOGAN

KENNETH CECIL SMALL

TIMOTHY S SATTERFIELD TRUSTEE

BRENDA S BRANSON

BRANSON-COLEMAN PROPERTIES, LLC

CHANNEL CHANGE SEE DETAIL 11

BANK & SCOUR HOLE STABILIZATION CLASS I RIP-RAP 5EST. 8 TONS EST. 11 SY GF SEE DETAIL 12

TEMP. IMPACTS IN SURFACE WATER

IMPACTS IN SURFACE WATER (STREAM RELOCATION)

TOE PROTECTION CLASS 'B' RIP-RAP EST. 24 TONS EST. 54 SY SEE DETAIL 3

SPECIAL 2' LATERAL BASE DITCH CLASS 'B' RIP-RAP EST. 38 TONS EST. 84 SY GF SEE DETAIL 14

SPECIAL 2' LATERAL BASE DITCH CLASS 'B' RIP-RAP EST. 11 TONS EST. 23 SY GF SEE DETAIL 14

DO NOT DISTURB EXISTING 3-54" RCP CULVERTS

CULVERT CHANNEL IMPROVEMENTS (DOWNSTREAM) SEE DETAIL 34

IMPACTS IN SURFACE WATER (BANK STABILIZATION) SEE DETAIL 34

IMPACTS IN SURFACE WATER (STREAM RELOCATION)

IMPACTS IN SURFACE WATER (9' X 8' RCBC)

IMPACTS IN SURFACE WATER (BANK STABILIZATION) SEE DETAIL 33

TEMP. IMPACTS IN SURFACE WATER

TOE PROTECTION CLASS 'B' RIP-RAP EST. 14 TONS EST. 31 SY GF SEE DETAIL 3

CULVERT CHANNEL IMPROVEMENTS (UPSTREAM) SEE DETAIL 33

CHANNEL CHANGE CLASS II RIP-RAP EST. 50 TONS EST. 85 SY GF SEE DETAIL 10

CLASS 'B' RIP-RAP EST. 2 TONS EST. 7 SY GF

SPECIAL LATERAL 'V' DITCH SEE DETAIL 9

COLLAR AND EXTEND 24" RCP

BANK & SCOUR HOLE STABILIZATION CLASS I RIP-RAP EST. 5 TONS EST. 6 SY GF SEE DETAIL 12

LEGEND

S S DENOTES IMPACTS IN SURFACE WATER

TS TS DENOTES TEMPORARY IMPACTS IN SURFACE WATER

50' 0' 50' 100' 150'
GRAPHIC SCALE

10/6/2020
U-5813_HYD_PRM_PSH_07.dgn
HNTB

Submitted 3/2/2021

6/23/16

PROJ. REFERENCE NO.	SHEET NO.
U-5813	

PERMIT DRAWING
SHEET 7 OF 19

DETAIL C1
(NOT TO SCALE)

SINGLE BARREL CULVERT SKEWED LOW FLOW CHANNEL AND SILLS

*NOTES:

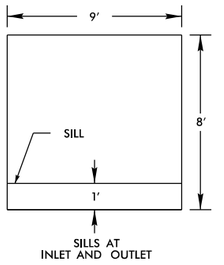
1) NATIVE MATERIAL BETWEEN SILLS/BAFFLES IN THE CULVERT SHALL PROVIDE A CONTINUOUS LOW FLOW CHANNEL. NATIVE MATERIAL CONSISTS OF MATERIAL THAT IS EXCAVATED FROM THE STREAM BED AT THE PROJECT SITE DURING CONSTRUCTION. NATIVE MATERIAL IS SUBJECT TO APPROVAL BY THE ENGINEER AND MAY BE SUBJECT TO PERMIT CONDITIONS.

2) SILLS/BAFFLES ARE TO BE 1.0 FT. WIDE, CAST SEPARATELY AND ATTACHED BY DOWELS.

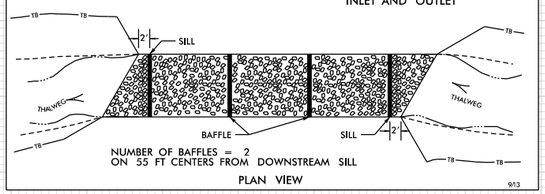
3) TOP OF LOW FLOW SILLS/BAFFLES SHOULD MATCH STREAM BED ELEVATION IN LOW FLOW CHANNEL OF STREAM. (THALWEG)

4) DO NOT SET ELEVATION OF HIGH SILL/BAFFLES ABOVE BANK FULL.

5) NUMBER OF SILL/BAFFLES DETERMINED BY THE ENGINEER.



SILLS AT
INLET AND OUTLET



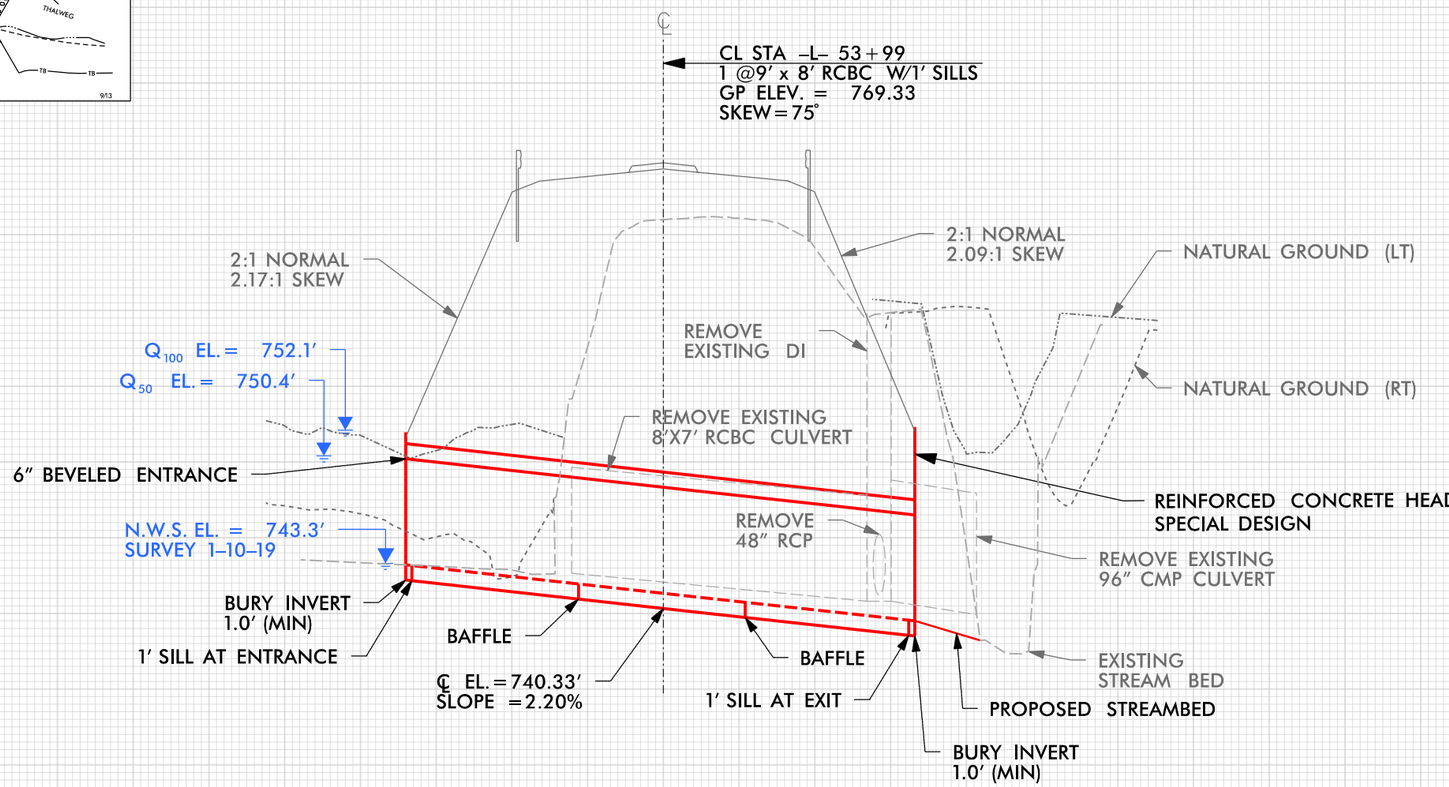
NUMBER OF BAFFLES = 2
ON 55 FT CENTERS FROM DOWNSTREAM SILL

PLAN VIEW

9/13

(–) 150 (–) 100 (–) 50 0 50 100 150

Site 3



RANDOLPH COUNTY
PROJECT: U-5813
US-64
FROM ASHEBORO BYPASS TO
EAST OF I-73/I-74/US 220

9/29/2020
U-5813_HYD_PRM_PSH_07_PFL.dgn
HNTB

Submitted 3/2/2021

6/23/16

PROJ. REFERENCE NO.	SHEET NO.
U-5813	

PERMIT DRAWING
SHEET 8 OF 19

(–) 150 (–) 100 (–) 50 0 50 100 150

Site 4

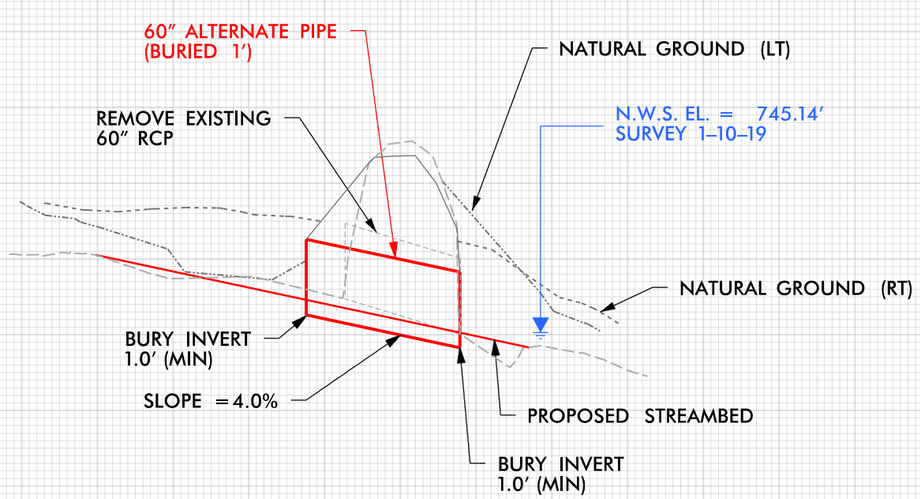
770 770

760 760

750 750

740 740

730 730



RANDOLPH COUNTY
PROJECT: U-5813
US-64
FROM ASHEBORO BYPASS TO
EAST OF I-73/I-74/US 220

9/29/2020
U-5813_HYD_PRM_PSH_07_PFL.dgn
HNTB

Submitted 3/2/2021

8/17/99

WETLAND & STREAM IMPACTS

HNTB NORTH CAROLINA, P.C.
343 E. Six Forks Road, Suite 200
Raleigh, North Carolina 27609
NC License No: C-1554

PROJECT REFERENCE NO.	SHEET NO.
U-5813	8
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PERMIT DRAWING SHEET 9 OF 19

PARCEL NO.	PARCEL OWNER	DEED BOOK/PAGE
29	RICHARD DOSIER CRIDER AND WIFE, DOLLIE FRYER CRIDER	

NAD 83/NA 2011

MATCH LINE –L– 55+50 SEE SHEET 7

MATCH LINE –L– 66+00 SEE SHEET 9

ABAC LLC (20)

TYLER L COLE AND WIFE, DEBORAH W COLE (23)

ALVIN B MCELREATEH AND WIFE RUTH I MCELREATH (24)

RODNEY D. DAVIS AND WIFE KAREN I. DAVIS (25)

OMAYRA ROBLES AND HUSBAND ALVIS H. ADAMES (26)

(NO CLAIM)

SHJ CAPITAL LLC (27)

SCHWARZ PROPERTIES, LLC (30)

CAROL W BRUTON (31)

BRANSON-COLEMAN PROPERTIES, LLC (21)

JONATHAN ERIC PHILLIPS (22)

ACBC LLC

LUIS ANTONIO MARTINEZ MEDINA AND WIFE, USVELIA AGUIRRE GOMEZ

SAMRETH KEM

DAVID L BURTON AND WIFE, BETTY J BURTON (28)

LARRY BARNS JR. AND WIFE LORRANE C. BARNES

Site 4 SH

Site 5 SI

IMPACTS IN SURFACE WATER (STREAM RELOCATION)

TEMP. IMPACTS IN SURFACE WATER

TEMP. IMPACTS IN SURFACE WATER

IMPACTS IN SURFACE WATER (RIPRAP AT EMBANKMENT)

SPECIAL LATERAL 'V' DITCH SEE DETAIL 8

SPECIAL LATERAL 'V' DITCH EST. 40 TONS EST. 28 SY GF SEE DETAIL 16

CHANNEL CHANGE CLASS II RIP-RAP EST. 72 TONS EST. 122 SY GF SEE DETAIL 10

CLASS 'B' RIP-RAP EST. 3 TONS EST. 7 SY GF

LATERAL 2' BASE DITCH SEE DETAIL 20

BACKFILL EXISTING CHANNEL W/SUITABLE MATERIAL EST 120 CY

TOE PROTECTION CLASS 'B' RIP-RAP EST. 30 TONS EST. 66 SY SEE DETAIL 3

TOE PROTECTION CLASS 'B' RIP-RAP EST. 75 TONS EST. 54 SY GF SEE DETAIL 3

SPECIAL LATERAL V DITCH SEE DETAIL 24

CLASS 'B' RIP-RAP EST. 18 TONS EST. 38 SY GF

RIP-RAP AT EMBANKMENT SEE DETAIL 39

SPECIAL LATERAL V DITCH SEE DETAIL 18

RETAIN AND REPAIR LAST TWO JOINTS ON DOWNSTREAM END OF PIPE

FALSE SUMP SEE DETAIL 36

LEGEND

S S DENOTES IMPACTS IN SURFACE WATER

TS TS DENOTES TEMPORARY IMPACTS IN SURFACE WATER

GRAPHIC SCALE 50' 0' 50' 100' 150'

11/20/2020
U-5813_HYD_PRM_PSH_08.dgn
HNTB

Submitted 3/2/2021

8/17/99

WETLAND & STREAM IMPACTS

HNTB NORTH CAROLINA, P.C.
343 E. Six Forks Road, Suite 200
Raleigh, North Carolina 27609
NC License No: C-1554

PROJECT REFERENCE NO.	SHEET NO.
U-5813	8
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PERMIT DRAWING SHEET 10 OF 19

PARCEL NO.	PARCEL OWNER	DEED BOOK/PAGE
29	RICHARD DOSIER CRIDER AND WIFE, DOLLIE FRYER CRIDER	

NAD 83/NA 2011

MATCH LINE –L– 55+50 SEE SHEET 7

MATCH LINE –L– 66+00 SEE SHEET 9

RODNEY D. DAVIS AND WIFE KAREN I. DAVIS

ALVIN B MCELREATEH AND WIFE RUTH I MCELREATH

ALVIN B MCELREATEH AND WIFE, RUTH I MCELREATH

OMAYRA ROBLES AND HUSBAND ALVIS H. ADAMES (NO CLAIM)

CAROL W BRUTON

SHJ CAPITAL LLC

SCHWARZ PROPERTIES, LLC

TYLER L COLE AND WIFE, DEBORAH W COLE

ABAC LLC

BRANSON-COLEMAN PROPERTIES, LLC

JONATHAN ERIC PHILLIPS

ACBC LLC

LUIS ANTONIO MARTINEZ MEDINA AND WIFE, OSVELIA AGUIRRE GOMEZ

SAMRETH KEM

DAVID L BURTON AND WIFE, BETTY J BURTON

LARRY BARNS JR. AND WIFE LORRANE C. BARNES

Site 4 SH

Site 5 SI

IMPACTS IN SURFACE WATER (STREAM RELOCATION)

TEMP. IMPACTS IN SURFACE WATER

TEMP. IMPACTS IN SURFACE WATER

IMPACTS IN SURFACE WATER (RIPRAP AT EMBANKMENT)

SPECIAL LATERAL 'V' DITCH SEE DETAIL 8

SPECIAL LATERAL 'V' DITCH EST. 40 TONS EST. 28 SY GF SEE DETAIL 16

CLASS 'B' RIP-RAP EST. 3 TONS EST. 7 SY GF

CHANNEL CHANGE CLASS II RIP-RAP EST. 72 TONS EST. 122 SY GF SEE DETAIL 10

LATERAL 2' BASE DITCH SEE DETAIL 20

BACKFILL EXISTING CHANNEL W/SUITABLE MATERIAL EST 120 CY

TOE PROTECTION CLASS 'B' RIP-RAP EST. 30 TONS EST. 66 SY SEE DETAIL 3

TOE PROTECTION CLASS 'B' RIP-RAP EST. 75 TONS EST. 54 SY GF SEE DETAIL 3

SPECIAL LATERAL V DITCH SEE DETAIL 24

CLASS 'B' RIP-RAP EST. 18 TONS EST. 38 SY GF

RIP-RAP AT EMBANKMENT SEE DETAIL 39

SPECIAL LATERAL V DITCH SEE DETAIL 18

RETAIN AND REPAIR LAST TWO JOINTS ON DOWNSTREAM END OF PIPE

FALSE SUMP SEE DETAIL 36

LEGEND

S S DENOTES IMPACTS IN SURFACE WATER

TS TS DENOTES TEMPORARY IMPACTS IN SURFACE WATER

50' 0' 50' 100' 150'
GRAPHIC SCALE

11/20/2020
U-5813_HYD_PRM_PSH_08.dgn
HNTB

Submitted 3/2/2021

WETLAND & STREAM IMPACTS

HNTB NORTH CAROLINA, P.C.
343 E. Six Forks Road, Suite 200
Raleigh, North Carolina 27609
NC License No: C-1554

PROJECT REFERENCE NO.	SHEET NO.
U-5813	12
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

NAD 83/NA 2011

PERMIT DRAWING SHEET 11 OF 19

DETAIL SHEET FOR SITE 7 SHEET 15 OF 19

MATCH LINE -Y- 44+00 SEE SHEET 15

MATCH LINE -L- 120+50 SEE SHEET 13

DETAIL SHEET FOR SITE 8 SHEET 17 OF 19

IMPACTS IN SURFACE WATER (CHANNEL CHANGE)

TEMP. IMPACTS IN SURFACE WATER

IMPACTS IN SURFACE WATER (36" RCP–IV)

TEMP. IMPACTS IN SURFACE WATER

Site 7 | SF

Site 8 | SA

IMPACTS IN SURFACE WATER (18" HDPE)

IMPACTS IN SURFACE WATER (STREAM RELOCATION)

A

A

D

B

C

IMPACTS IN SURFACE WATER (36" HDPE)

DETAIL SHEET FOR SITE 6 SHEET 13 OF 19

TEMP. IMPACTS IN SURFACE WATER (OUTLET PROTECTION AND PIPE REMOVEAL)

TEMP. IMPACTS IN SURFACE WATER

Site 6 | SE

MATCH LINE -Y- 29+25 SEE SHEET 11

MATCH LINE -Y1- 21+75 SEE SHEET 11

MATCH LINE -L- 106+00 SEE SHEET 11

NOTE:
1.) ALL DRIVEWAY RADII ARE 20' UNLESS OTHERWISE NOTED

GRAPHIC SCALE
100 50 0 100 200
PLANS

Submitted 3/2/2021

WETLAND & STREAM IMPACTS

HNTB NORTH CAROLINA, P.C.
343 E. Six Forks Road, Suite 200
Raleigh, North Carolina 27609
NC License No: C-1554

PROJECT REFERENCE NO.	SHEET NO.
U-5813	12
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

NAD 83/NA 2011

PERMIT DRAWING
SHEET 12 OF 19

DETAIL SHEET FOR SITE 7
SHEET 15 OF 19

MATCH LINE -Y- 44+00
SEE SHEET 15

MATCH LINE -L- 120+50
SEE SHEET 13

DETAIL SHEET FOR SITE 8
SHEET 17 OF 19

IMPACTS IN SURFACE WATER (CHANNEL CHANGE)

IMPACTS IN SURFACE WATER (36" RCP–IV)

TEMP. IMPACTS IN SURFACE WATER

TEMP. IMPACTS IN SURFACE WATER

Site 7 | SF

Site 8 | SA

IMPACTS IN SURFACE WATER (18" HDPE)

IMPACTS IN SURFACE WATER (STREAM RELOCATION)

A

B

A

D

C

IMPACTS IN SURFACE WATER (36" HDPE)

TEMP. IMPACTS IN SURFACE WATER (OUTLET PROTECTION AND PIPE REMOVEAL)

TEMP. IMPACTS IN SURFACE WATER

DETAIL SHEET FOR SITE 6
SHEET 13 OF 19

Site 6 | SE

MATCH LINE -Y- 29+25
SEE SHEET 11

MATCH LINE -L- 106+00
SEE SHEET 11

MATCH LINE -L- 119+75
SEE SHEET 11

NOTE:
1) ALL DRIVEWAY RADII ARE 20' UNLESS OTHERWISE NOTED

GRAPHIC SCALE
100 50 0 100 200
PLANS

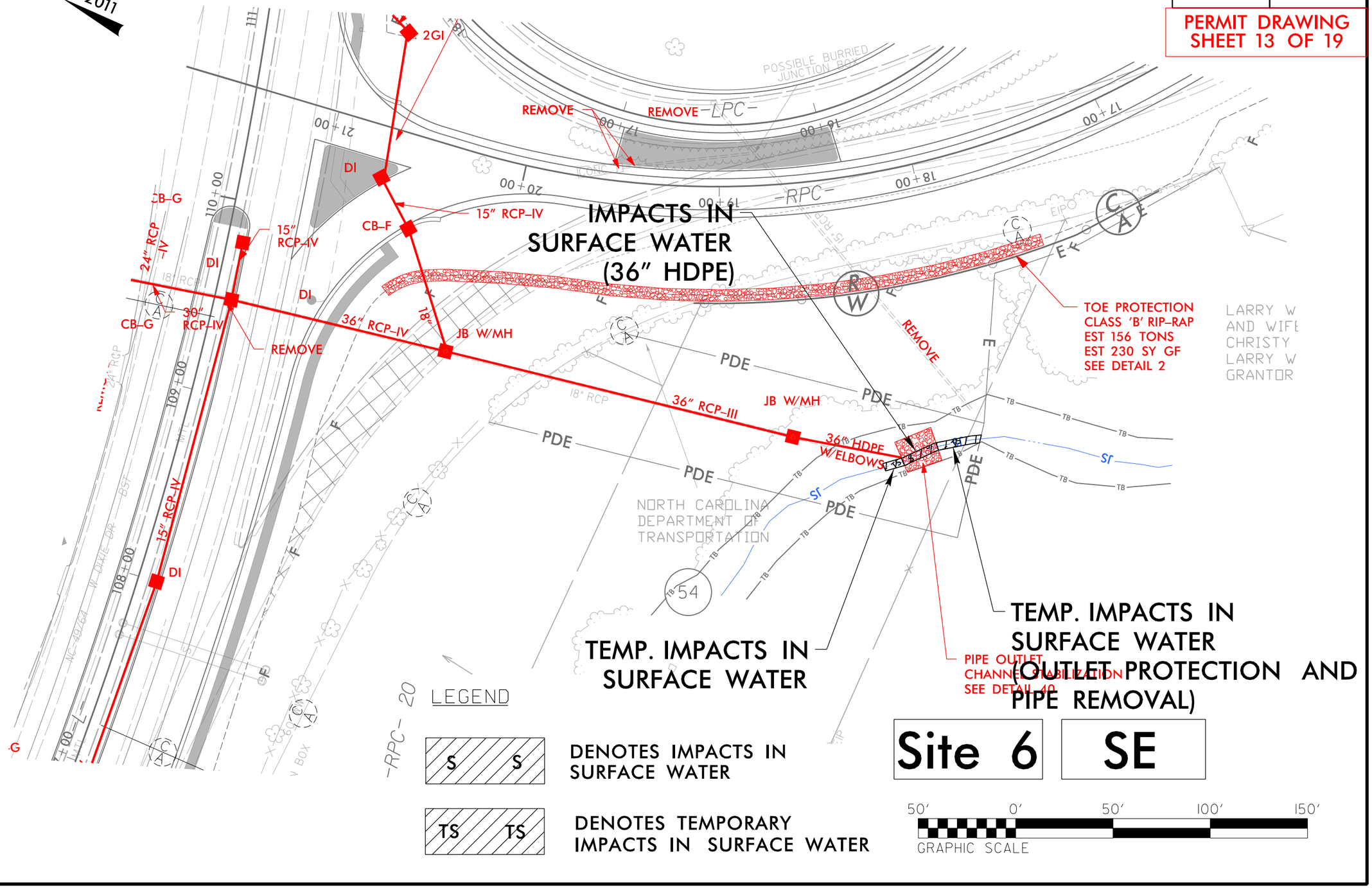
Submitted 3/2/2021

PROJECT REFERENCE NO.	SHEET NO.
U-5813	12
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PERMIT DRAWING SHEET 13 OF 19

WETLAND & STREAM IMPACTS

NAD 83/NA 2011


2GI
DI
CB–G
24" RCP –IV
15" RCP–IV
CB–F
15" RCP–IV
DI
DI
DI
CB–G
30" RCP–IV
REMOVE
36" RCP–IV
18" RCP
JB W/MH
36" RCP–III
JB W/MH
36" HDPE W/ELBOWS
15" RCP–IV
REMOVE
REMOVE
–LPC–
–RPC–
–RPC– 20
IMPACTS IN SURFACE WATER (36" HDPE)
TOE PROTECTION CLASS 'B' RIP–RAP EST 156 TONS EST 230 SY GF SEE DETAIL 2
LARRY W AND WIFE CHRISTY LARRY W GRANTOR
PDE
PDE
PDE
PDE
PDE
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
54
TEMP. IMPACTS IN SURFACE WATER
TEMP. IMPACTS IN SURFACE WATER (OUTLET PROTECTION AND PIPE REMOVAL)
PIPE OUTLET CHANNEL STABILIZATION SEE DETAIL 4D
POSSIBLE BURIED JUNCTION BOX
EIP
W DIXIE DR
NC 49/64
SR
SR
SR
111
110+00
109+00
108+00
107+00
21+00
20+00
19+00
18+00
17+00
18" RCP
24" RCP
15" RCP–IV
TB
TB
TB

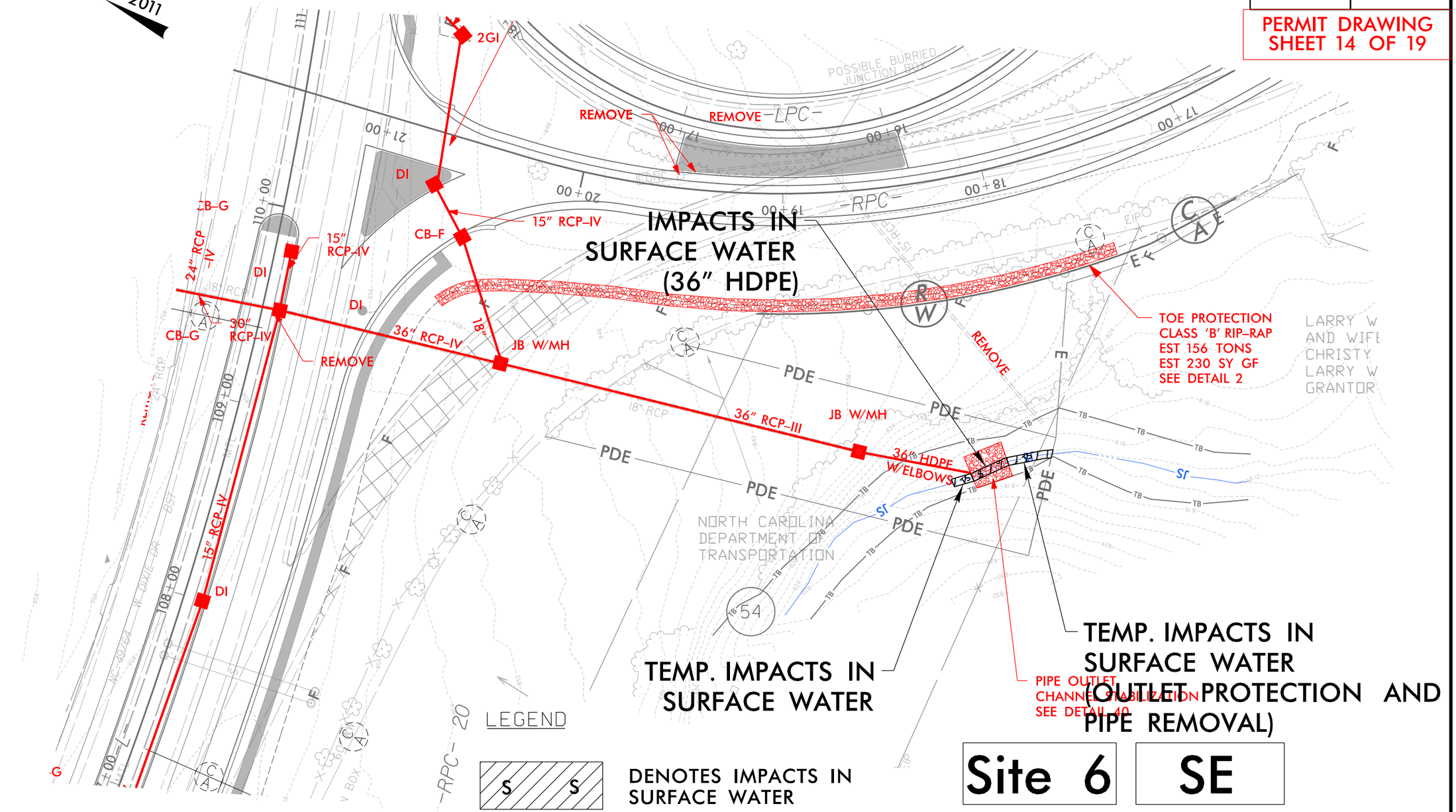
Submitted 3/2/2021

PROJECT REFERENCE NO.	SHEET NO.
U-5813	12
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PERMIT DRAWING SHEET 14 OF 19

WETLAND & STREAM IMPACTS

NAD 83/NA 2011



LEGEND

S S	DENOTES IMPACTS IN SURFACE WATER
TS TS	DENOTES TEMPORARY IMPACTS IN SURFACE WATER

Site 6 **SE**

50′ 0′ 50′ 100′ 150′

GRAPHIC SCALE

Submitted 3/2/2021

PROJECT REFERENCE NO.	SHEET NO.
U-5813	12
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PERMIT DRAWING
SHEET 15 OF 19

WETLAND & STREAM IMPACTS

NAD 83/NA 2011

Site 7 | SF

TEMP. IMPACTS IN SURFACE WATER

CLASS 'B' RIP-RAP
EST. 2 TONS
EST. 7 SYGF

PIPE OUTLET CHANNEL STABILIZATION
SEE DETAIL 31

CHANNEL CHANGE
SEE DETAIL 23
CLASS I RIP-RAP
EST. 180 TONS
EST. 253 SYGF

SPECIAL LATERAL 'V' DITCH
SEE DETAIL 24
CLASS B RIP-RAP
EST. 35 TONS
EST. 51 SYGF

IMPACTS IN SURFACE WATER (CHANNEL CHANGE)

18" HDPE W/ELBOWS

SPECIAL LATERAL 'V' DITCH
SEE DETAIL 42

CLASS 'B' RIP-RAP
EST. 3 TONS
EST. 10 SYGF

15" HDPE W/ELBOWS

TB 2GI

JB W/MH

30" HDPE W/ELBOWS

TB 2GI

JB W/MH

15" HDPE W/ELBOWS

IMPACTS IN SURFACE WATER (18" HDPE)

IMPACTS IN SURFACE WATER (STREAM RELOCATION)

CONVERT CB to JB

RETAIN

JB W/MH

SPECIAL LATERAL VARIABLE BASE DITCH
SEE DETAIL 22

RETAIN AND TV INSPECT

RETAIN

30" WELDED STEEL PIPE TRENCHLESS INSTALLATION

FILL W/ FLOWABLE FILL

FILL W/ FLOWABLE FILL (NOT PART OF SYSTEM)

RETAIN

TB 2GI

15"

2GI

2GI-D

LEGEND

S S — DENOTES IMPACTS IN SURFACE WATER

TS TS — DENOTES TEMPORARY IMPACTS IN SURFACE WATER

50' 0' 50' 100' 150'
GRAPHIC SCALE

Submitted 3/2/2021

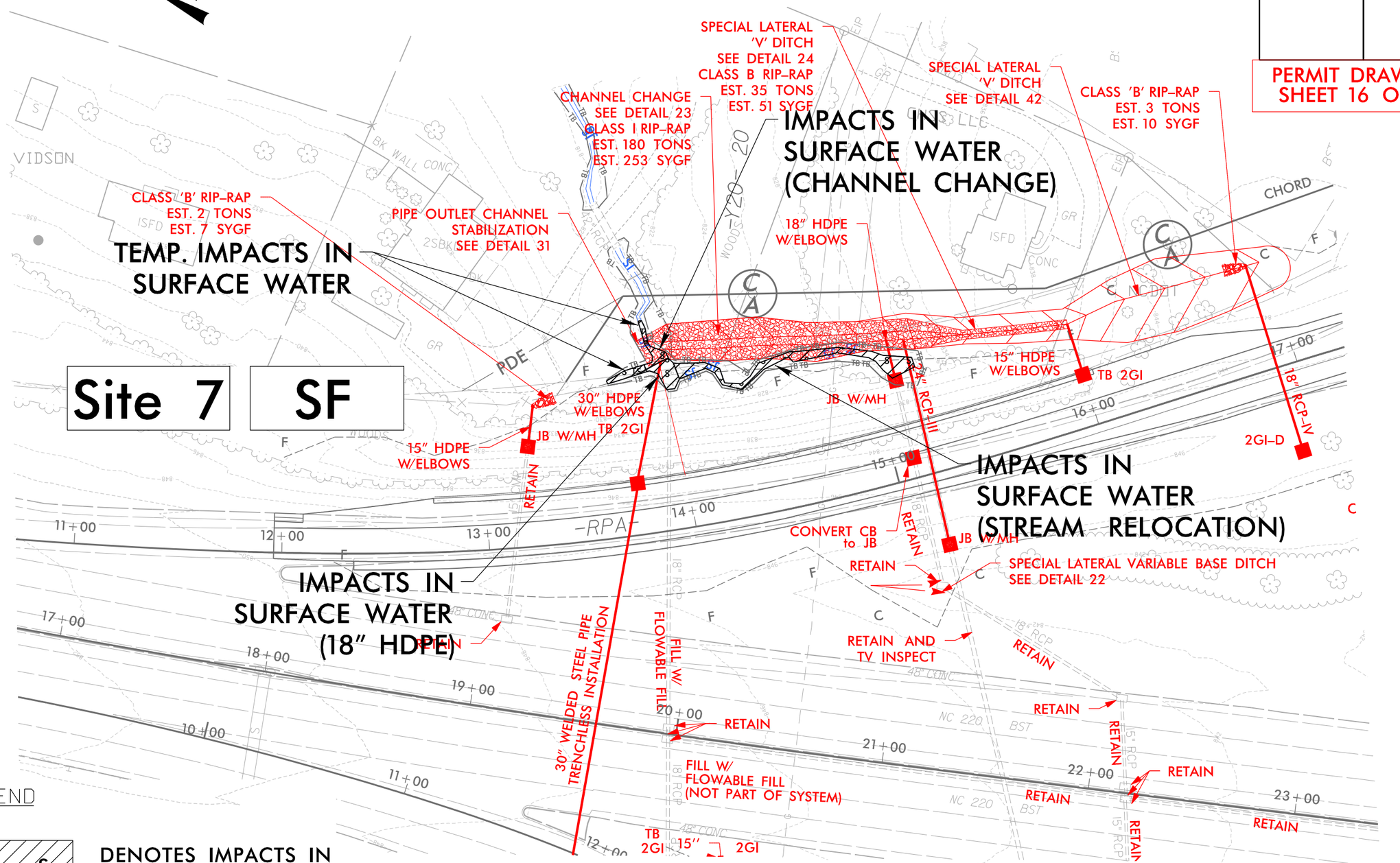
PROJECT REFERENCE NO.	SHEET NO.
U-5813	12
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PERMIT DRAWING SHEET 16 OF 19

WETLAND & STREAM IMPACTS

NAD 83/NA 2011

Site 7 **SF**



LEGEND

S S — DENOTES IMPACTS IN SURFACE WATER

TS TS — DENOTES TEMPORARY IMPACTS IN SURFACE WATER

50' 0' 50' 100' 150'

GRAPHIC SCALE

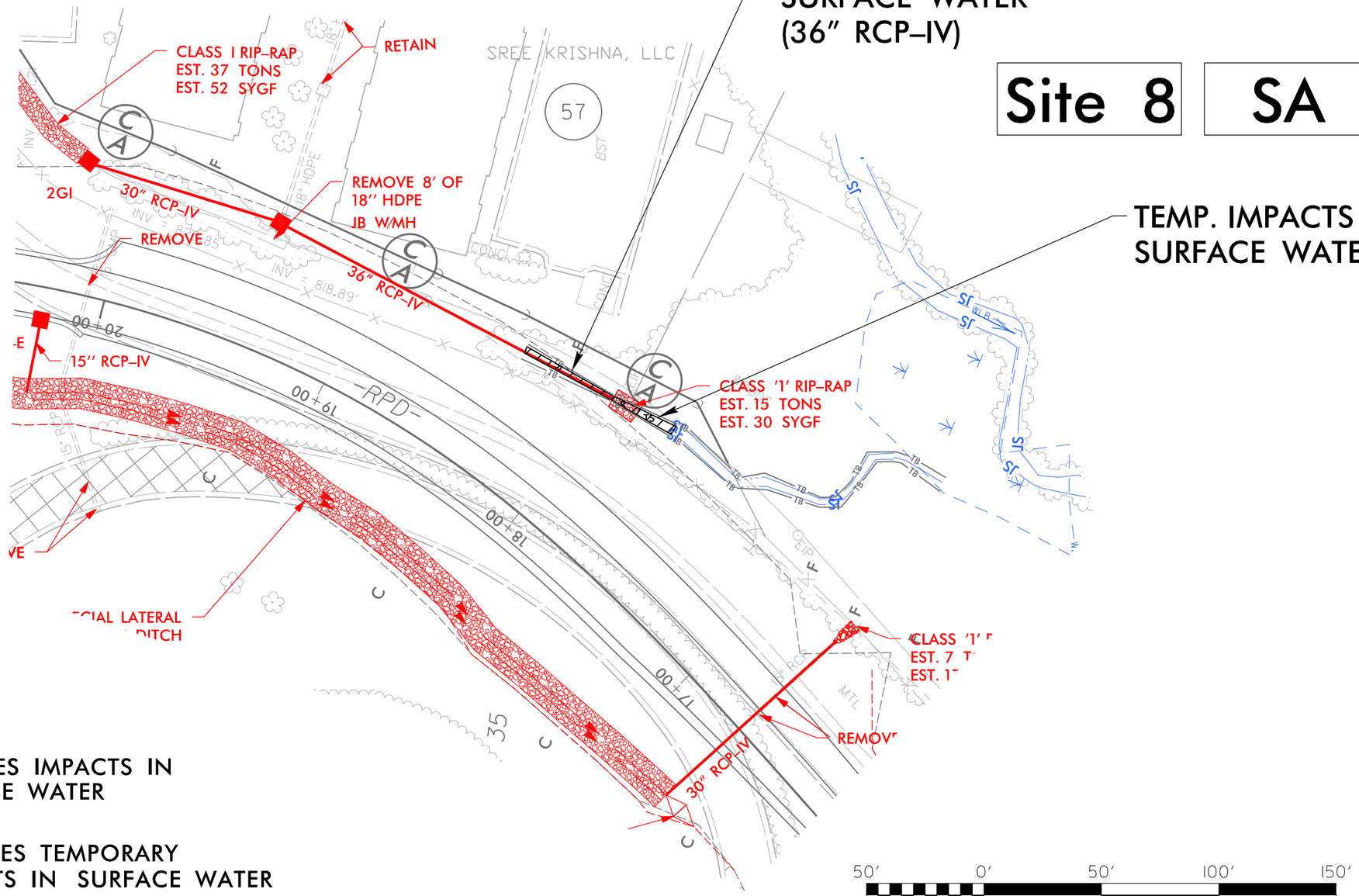
Submitted 3/2/2021

PROJECT REFERENCE NO.	SHEET NO.
U-5813	12
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PERMIT DRAWING
SHEET 17 OF 19

WETLAND & STREAM IMPACTS

NAD 83/NA 2011



LEGEND

S S — DENOTES IMPACTS IN SURFACE WATER

TS TS — DENOTES TEMPORARY IMPACTS IN SURFACE WATER

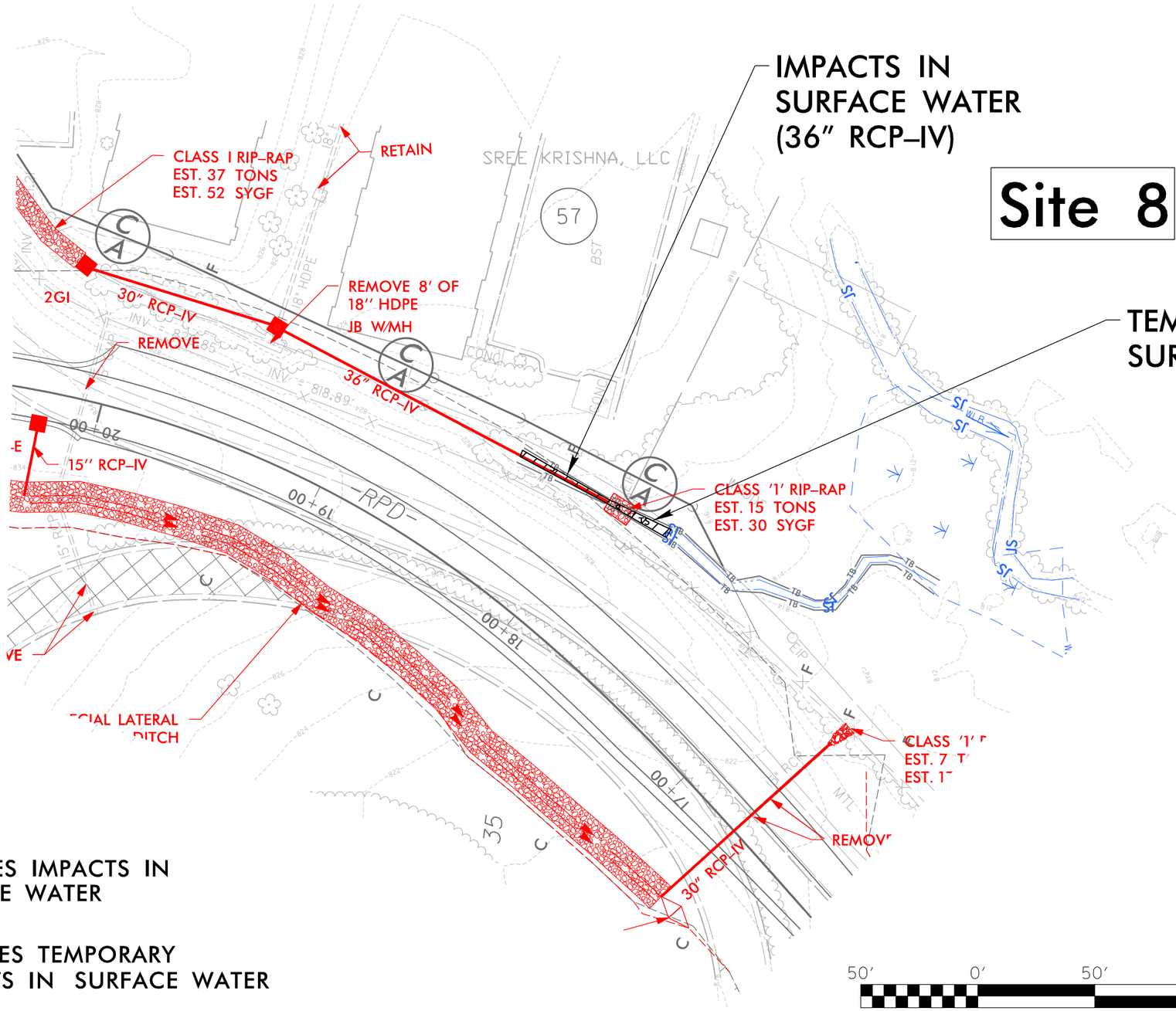
Submitted 3/2/2021

PROJECT REFERENCE NO.	SHEET NO.
U-5813	12
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PERMIT DRAWING
SHEET 18 OF 19

WETLAND & STREAM IMPACTS

NAD 83/NA 2011



LEGEND

S S — DENOTES IMPACTS IN SURFACE WATER

TS TS — DENOTES TEMPORARY IMPACTS IN SURFACE WATER

Submitted 3/2/2021

WETLAND AND SURFACE WATER IMPACTS SUMMARY

Site No.	Stream Name Stream ID	Station (From/To)	Structure Size / Type	WETLAND IMPACTS: Permanent Fill In Wetlands (ac)	WETLAND IMPACTS: Temp. Fill In Wetlands (ac)	WETLAND IMPACTS: Excavation in Wetlands (ac)	WETLAND IMPACTS: Mechanized Clearing in Wetlands (ac)	WETLAND IMPACTS: Hand Clearing in Wetlands (ac)	SURFACE WATER IMPACTS: Permanent SW impacts (ac)	SURFACE WATER IMPACTS: Temp. SW impacts (ac)	SURFACE WATER IMPACTS: Existing Channel Impacts Permanent (ft)	SURFACE WATER IMPACTS: Existing Channel Impacts Temp. (ft)	SURFACE WATER IMPACTS: Natural Stream Design (ft)
1	UT to Cable Creek / SL	-L- 25+91 to 26+52 RT	Channel Stabilization						< 0.01	< 0.01	52	10	
2	UT to Cedar Fork Creek / SK	-Y5- 10+82 to 11+91 LT	Stream Relocation						< 0.01	< 0.01	103	31	
3	UT to Cedar Fork Creek / SJ	-L- 53+47 to 53+66 LT	Bank Stabilization						< 0.01	< 0.01	14	5	
3	UT to Cedar Fork Creek / SJ	-L- 54+18 to 54+35 RT	9' X 8' RCBC						< 0.01		53		
3	UT to Cedar Fork Creek / SJ	-L- 54+19 to 54+38 RT	Bank Stabilization						< 0.01	< 0.01	36	10	
4	UT to Cedar Fork Creek / SH	-L- 54+33 to 56+40 RT	Stream Relocation						0.02	< 0.01	190	11	
5	UT to Cedar Fork Creek / SI	-Y7- 11+04 to 11+11 LT/RT	Riprap at embankment						< 0.01	< 0.01	5	20	
6	UT to Little River / SE	-RPC- 17+98 to 18+37 LT	36" HDPE						< 0.01	< 0.01	19	23	
7	UT to Cedar Fork Creek / SF	-RPA- 13+66 to 14+04 LT	18" HDPE						< 0.01	< 0.01	16	20	
7	UT to Cedar Fork Creek / SF	-RPA- 13+87 to 14+00 LT	Channel Change						< 0.01	< 0.01	12	10	
7	UT to Cedar Fork Creek / SF	-RPA- 14+02 to 15+22 LT	Stream Relocation						0.01		120		
8	UT to Little River / SA	-RPD- 17+75 to 18+38 RT	36" RCP-IV						< 0.01	< 0.01	55	17	
TOTALS*:									0.068	0.014	675	157	

*Rounded totals are sum of actual impacts

NOTES:

NC DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
10/6/2020
Randolph County
U-5813
44385.1.3
SHEET 19 OF 19

Revised 2018 Feb

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-5813	X-0

US 64 & US 49
TIP NO. U-5813
CROSS SECTION INDEX

LOCATION	STATION TO STATION	SHEET NO.
–L–	STA. 13+00.00 TO STA. 129+00.00	X–1 THRU X–52
–Y–	STA. 13+50.00 TO STA. 51+50.00	X–53 THRU X–72
–Y_SLIP–	STA. 10+00.00 TO STA. 21+25.00	X–73 THRU X–84
–Y1–	STA. 10+00.00 TO STA. 13+75.00	X–85 THRU X–88
–Y2–	STA. 10+25.00 TO STA. 14+00.00	X–89 THRU X–92
–Y3–	STA. 10+00.00 TO STA. 12+75.00	X–93 THRU X–95
–Y4_REV–	STA. 11+50.00 TO STA. 14+00.00	X–96 THRU X–98
–Y5–	STA. 10+00.00 TO STA. 13+25.00	X–99 THRU X–102
–Y6–	STA. 10+00.00 TO STA. 11+75.00	X–103 THRU X–104
–Y7–	STA. 10+00.00 TO STA. 13+50.00	X–105 THRU X–108
–Y8–	STA. 10+00.00 TO STA. 12+75.00	X–109 THRU X–111
–Y9–	STA. 10+00.00 TO STA. 11+50.00	X–112 THRU X–113
–Y10–	STA. 10+00.00 TO STA. 12+00.00	X–114 THRU X–116
–Y11–	STA. 10+00.00 TO STA. 12+00.00	X–117 THRU X–118
–Y12–	STA. 12+50.00 TO STA. 20+25.00	X–119 THRU X–123
–Y13–	STA. 10+25.00 TO STA. 16+00.00	X–124 THRU X–129

LOCATION	STATION TO STATION	SHEET NO.
–Y14–	STA. 10+00.00 TO STA. 11+50.00	X–130 THRU X–131
–Y17–	STA. 10+00.00 TO STA. 21+00.00	X–132 THRU X–143
–Y17A–	STA. 11+50.00 TO STA. 15+00.00	X–144 THRU X–147
–Y18–	STA. 10+00.00 TO STA. 12+50.00	X–148 THRU X–150
–Y19–	STA. 10+00.00 TO STA. 13+50.00	X–151 THRU X–154
–RPA–	STA. 11+50.00 TO STA. 19+00.00	X–155 THRU X–166
–RPB–	STA. 12+00.00 TO STA. 18+00.00	X–167 THRU X–175
–RPC–	STA. 11+00.00 TO STA. 21+00.00	X–176 THRU X–189
–RPD–	STA. 10+00.00 TO STA. 21+25.00	X–190 THRU X–205
–RPBC–	STA. 10+00.00 TO STA. 16+50.00	X–206 THRU X–214
–RPDA–	STA. 10+00.00 TO STA. 17+00.00	X–215 THRU X–225
–LPA–	STA. 10+00.00 TO STA. 20+50.00	X–226 THRU X–242
–LPC–	STA. 10+00.00 TO STA. 20+50.00	X–243 THRU X–258
–SRV_REV–	STA. 10+00.00 TO STA. 26+00.00	X–259 THRU X–265
–DRW01–	STA. 10+00.00 TO STA. 10+75.00	X–266
–DRW02–	STA. 10+00.00 TO STA. 11+25.00	X–267 THRU X–268
–DRW03–	STA. 10+00.00 TO STA. 11+25.00	X–269

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HNTB

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U–5813	X–1

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

730 720 710 700 690

723.69

14+00.00

740 730 720 710 700

722.08

13+50.00

750 740 730 720 710 700

720.65

13+00.00

–L–

Note: "Quantities are approximate only. The Resident Engineer will re–cross–section the work accurately when the project is staked out. These cross–section notes will be used in computing the final quantities for which the contractor will be paid."

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

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8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-5813	X-1A

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

730 720 710 700 690

728.61

15+50.00

730 720 710 700 690

726.97

15+00.00

730 720 710 700 690

725.40

14+50.00

—L—

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

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0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-5813	X-1B

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

740
730
720
710

733.34

17+00.00

740
730
720
710

731.65

16+50.00

740
730
720
710
700

729.92

16+00.00

-L-

740
730
720
710
700
690

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

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HNB

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-5813	X-1C

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

760
750
740
737.09
19+00.00
760
750
740
730
738.70
18+50.00

750
740
738.46
730
18+00.00
750
740
730
720
736.48
17+50.00
-L-

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

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8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-5813	X-1D

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

760
750
770
760
750
740

743.16

21+00.00

760
750
740

741.26

20+00.00

760
750
740

739.09

19+50.00

-L-

760
750
740

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

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\Roadway\Corridor Modeling\U5813_RDY_L_XPL.dgn
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8/23/99

0 5 10

PROJ. REFERENCE NO.	SHEET NO.
U–5813	X–1E

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

780 770 760 750

752.72

22+50.00

780 770 760 750

750.17

22+00.00

780 770 760 750

747.71

21+50.00

–L–

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

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HNB

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U–5813	X–1F

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

770
760
750

757.02

24+00.00

780
770
760
750

755.58

23+50.00

780
770
760
750

754.14

23+00.00

–L–

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

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HNB

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U–5813	X–1G

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

780
770
760
750

758.44

24+50.00
–L–

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HNTB

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-5813	X-1H

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

770
760
750
740
730

760.55

0.020

6:1

761.42

2:1

25+50.00

780
770
760
750
740
730

759.86

25+00.00

–L–

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

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8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U–5813	X–2

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

780
770
760
750
740
730

764.41
6:1
0.020
763.82
2:1

26+50.00

762.89
760.08
6:1
0.020
762.19
2:1

26+00.00

–L–

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\Roadway\CorridorModeling\U5813_RDY_L_XPL.dgn
HNTB

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-5813	X-3

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

780
770
760
750
740
730

6:1
0.020
767.10
767.49
764.99
2:1

27+50.00

780
770
760
750
740
730

6:1
0.020
765.46
765.95
763.36
2:1

27+00.00

-L-

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

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MNB

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U–5813	X–4

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

780
770
760
750
740
730

768.27
767.87
6:1
0.020
770.37
2:1

28+50.00

768.63
764.24
6:1
0.020
768.74
2:1

28+00.00

–L–

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

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\Roadway\Corridor Modeling\U5813_RDY_L_XPL.dgn
HNB

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-5813	X-5

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

780
770
760
750
740
730

771.54
770.13
6:1
0.020
773.65
2:1

29+50.00

780
770
760
750
740
730

769.91
766.38
6:1
0.020
772.01
2:1

29+00.00

-L-

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

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HNTB

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-5813	X-6

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

790 780 770 760 750 740

778.44
3:1
0.020
0.020
777.28
777.94
2:1

31+00.00

790 780 770 760 750 740

776.92
6:1
0.020
774.82
774.83
2:1

30+50.00

790 780 770 760 750 740

775.29
6:1
0.020
773.18
773.32
2:1

30+00.00
-L-

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

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HNB

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U–5813	X–7

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

800 790 780

6:1 0.020 6:1 6:1 0.020 6:1

783.59 783.57

32 + 50.00

800 790 780 770

6:1 0.020 6:1 6:1 0.020 781.84

782.02 781.97 2:1

32 + 00.00

800 790 780 770 760 750

3:1 780.08 0.020 0.020 779.52

780.66 2:1

31 + 50.00

–L–

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

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\Roadway\Corridor Modeling\U5813_RDY_L_XPL.dgn
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8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U–5813	X–8

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

800
790

2:1 4:1 6:1 0.020 6:1 6:1 0.020 6:1 4:1 2:1

786.62 789.00 787.00 786.43

34 + 50.00

800
790

2:1 4:1 6:1 0.020 6:1 6:1 0.020 2% 8% 15%

784.90 787.48 786.79

34 + 00.00

800
790

2:1 4:1 6:1 0.020 6:1 6:1 0.020 6:1 6:1

783.18 786.36 784.18 783.66

33 + 50.00

800
790
780

6:1 6:1 0.020 6:1 6:1 0.020 6:1 6:1

781.68 785.13 783.88 782.13

33 + 00.00

–L–

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

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\Roadway\CorridorModeling\U5813_RDY_L_XPL.dgn
HNTB

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U–5813	X–9

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

810 800 790

0.020 6:1 6:1 0.020 2%

797.31 794.87

37 + 00.00

0.020 6:1 6:1 0.020 6:1 4:1

795.66 793.52 792.42

36 + 50.00

6:1 6:1 0.020 6:1 6:1 0.020 6:1 4:1 2:1

791.25 794.00 792.16 790.90

36 + 00.00

2:1 4:1 0.020 6:1 6:1 0.020 4:1 2:1

789.73 792.35 790.30 789.38

35 + 50.00

2:1 4:1 6:1 0.020 6:1 6:1 0.020 6:1 4:1 2:1

788.21 790.69 788.82 787.86

35 + 00.00

–L–

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

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\Roadway\Corridor Modeling\U5813_RDY_L_XPL.dgn
HNB

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-5813	X-10

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

810
800
790

12% 10% 4%
0.020
0.020
802.02
3:1

39+50.00

5:1
6:1
799.00
0.020
0.020
800.14
4:1

39+00.00

6:1
6:1
797.94
0.020
0.020
799.44
Y2

38+50.00

Y1
0.020
0.020
798.07
Y2

38+00.00

Y1
0.020
0.020
796.39
Y2

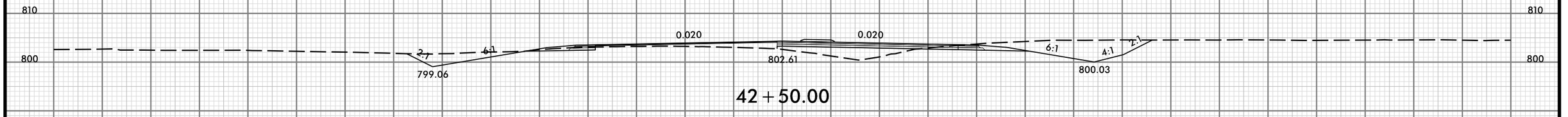
37+50.00
L

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HNB

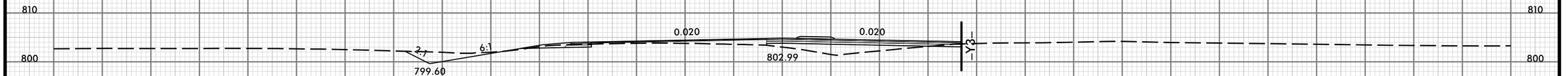
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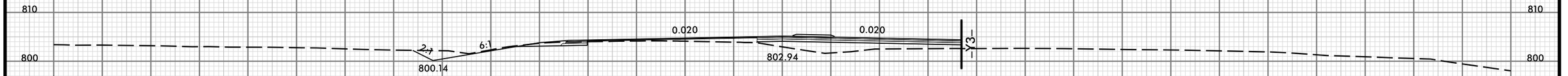
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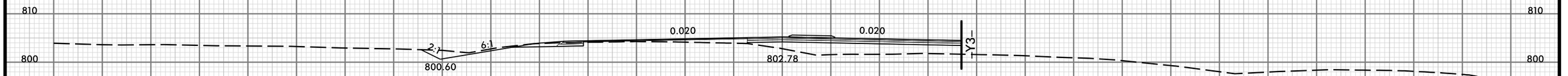
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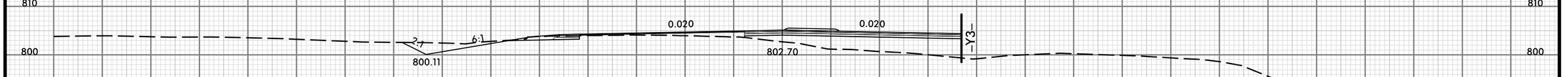
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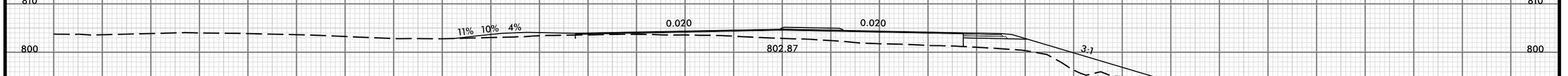
41 + 50.00



41 + 00.00



40 + 50.00



40 + 00.00

–L–

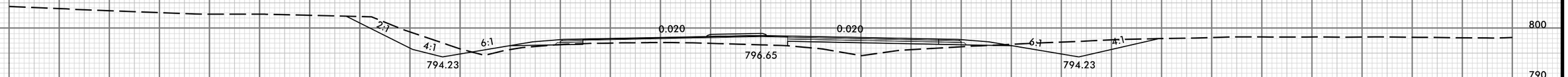
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HNB

8/23/99

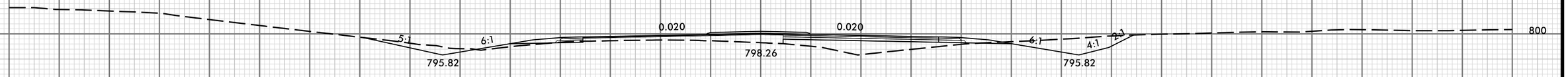
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	U-5813	X-12

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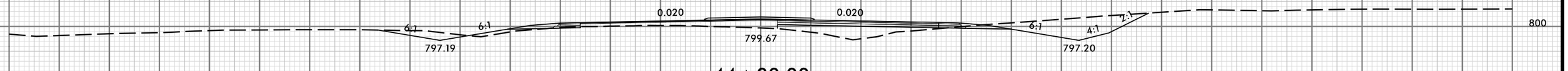
810
800
790



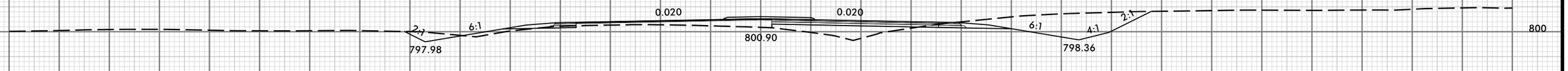
45+00.00



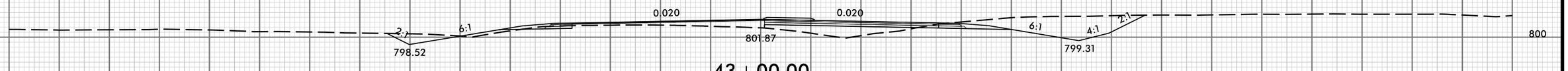
44+50.00



44+00.00



43+50.00



43+00.00

–L–

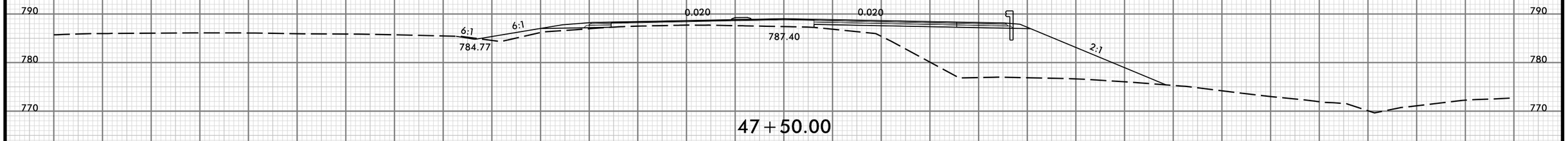
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HNB

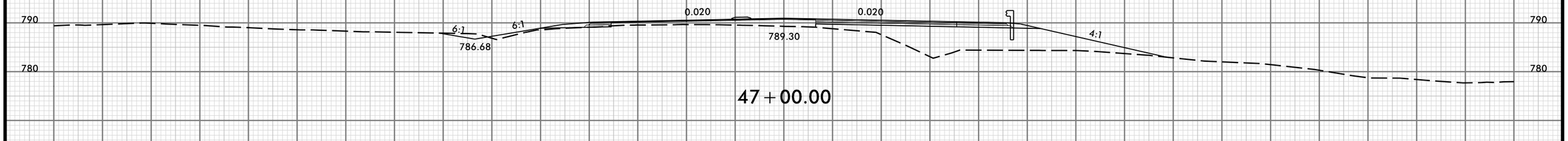
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	U–5813	X–13

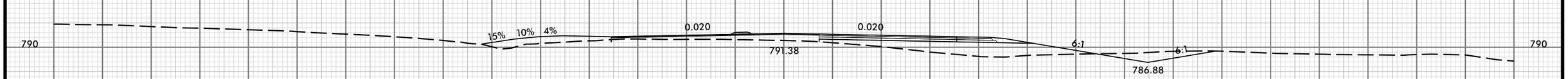
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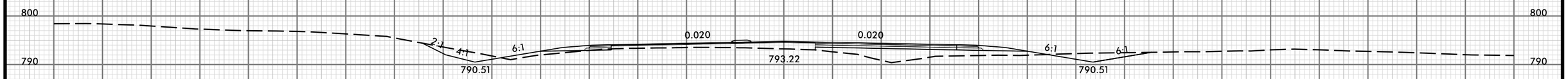
47 + 50.00



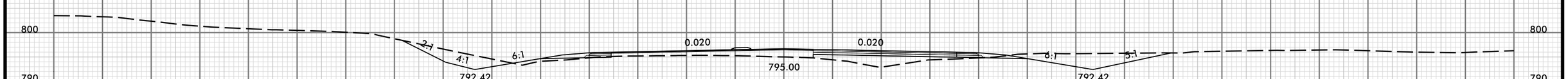
47 + 00.00



46 + 50.00



46 + 00.00



45 + 50.00

–L–

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

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0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-5813	X-14

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

790
780
770
760

-Y5-

0.020

0.020

780.33

-Y4_REV-

49+50.00

790
780
770
760

-Y5-

0.020

0.020

782.17

-Y4_REV-

49+00.00

790
780
770
760

-Y5-

0.020

0.020

783.75

-Y4_REV-

48+50.00

790
780
770
760

5:1

0.020

0.020

785.61

-Y4_REV-

48+00.00

-L-

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

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\Roadway\Corridor Modeling\U5813_RDY_L_XPL.dgn
HNB

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-5813	X-15

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

780
770
760

6:1 6:1 0.020 772.08 772.08 0.020 6:1 4:1 2:1
768.03 768.20

52+00.00

780
770
760

15% 9:1 10% 4% 0.020 773.60 773.60 0.020 6:1 4:1 2:1
769.55

51+50.00

780
770

6:1 6:1 0.020 775.43 775.43 0.020 6:1 4:1 2:1
771.37 771.37

51+00.00

780
770

-Y5- 0.020 777.34 777.34 0.020 6:1 4:1 2:1
773.29

50+50.00

790
780
770

-Y5- 0.020 779.26 779.26 0.020 -Y4_REV-

50+00.00

-L-

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

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\Roadway\Corridor Modeling\U5813_RDY_L_XPL.dgn
HNB

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0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-5813	X-16

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

780 770 760 750

768.37 0.020 769.11 769.11 0.020 768.37

2:1 2:1

54+00.00

780 770 760 750

768.64 0.020 769.39 769.39 0.020 768.64

2:1 3:1

53+50.00

740

780 770 760

769.97 0.020 769.97 0.020 769.23

4:1 4:1

53+00.00

780 770 760

770.87 0.020 770.87 0.020 770.13

6:1 6:1

767.28

52+50.00

-L-

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

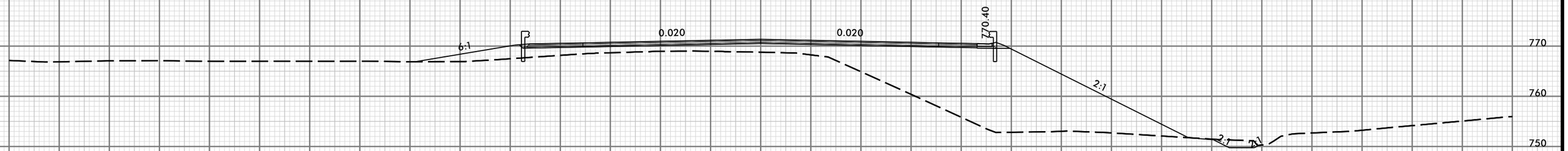
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HNB

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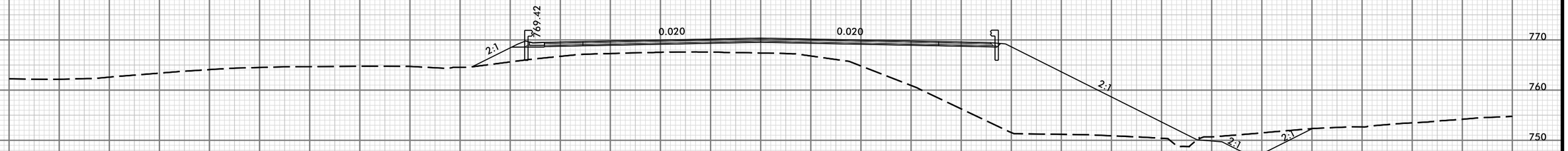
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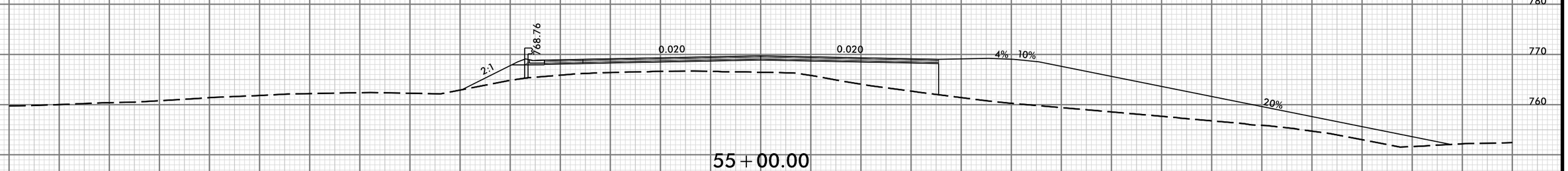
780 770 760 750



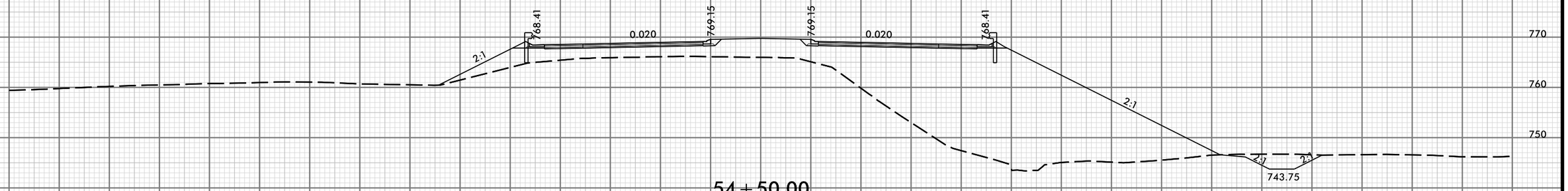
56+00.00



55+50.00



55+00.00



54+50.00

–L–

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0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-5813	X-18

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

790
780
770

6:1 6:1 0.020 0.020 6:1

774.11

58+00.00

780
770
760

6:1 0.020 0.020 4:1

57+50.00

780
770
760

6:1 6:1 0.020 0.020 2:1

769.98 273.29

57+00.00

780
770
760

6:1 6:1 0.020 0.020 2:1 3:1 3:1

768.56 271.69 753.75

56+50.00

℄

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

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HNB

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U–5813	X–19

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

800
790
780

1
0
Y
1

0.020 0.020 6:1 5:1 783.32

60+00.00

800
790
780

2:1 4:1 6:1 781.02 0.020 0.020 4% 7%

59+50.00

800
790
780

2:1 4:1 6:1 778.71 0.020 0.020 6:1 5:1 778.71

59+00.00

790
780

7% 4% 0.020 0.020 6:1 6:1 776.53

58+50.00

–L–

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

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HNB

8/23/99

PROJ. REFERENCE NO.	SHEET NO.
U–5813	X–20

0 5 10

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

810 800 790

2:1 4:1 6:1 0.020 798.89 798.89 0.020 6:1 4:1 2:1 794.84 794.84

62+50.00

810 800 790

2:1 4:1 6:1 0.020 796.59 796.59 0.020 6:1 4:1 2:1 792.53 792.53

62+00.00

810 800 790 780

2:1 4:1 6:1 0.020 794.29 794.29 0.020 6:1 4:1 2:1 790.23 790.23

61+50.00

800 790

–Y6– 0.020 0.020 6:1 4:1 2:1 787.93

61+00.00

800 790 780

–Y6– 0.020 0.020 6:1 4:1 785.62

60+50.00

–L–

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

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HNB

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-5813	X-21

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

830 820 810 800

2:1 4:1 6:1 804.05 0.020 808.11 808.11 0.020 6:1 4:1 2:1 804.05

64+50.00

820 810 800

2:1 4:1 6:1 801.75 0.020 805.80 805.80 0.020 6% 801.75

64+00.00

820 810 800

2:1 4:1 6:1 799.44 0.020 803.50 803.50 0.020 6:1 4:1 2:1 799.44

63+50.00

820 810 800

2:1 4:1 6:1 797.14 0.020 801.20 801.20 0.020 6:1 4:1 2:1 797.14

63+00.00

-L-

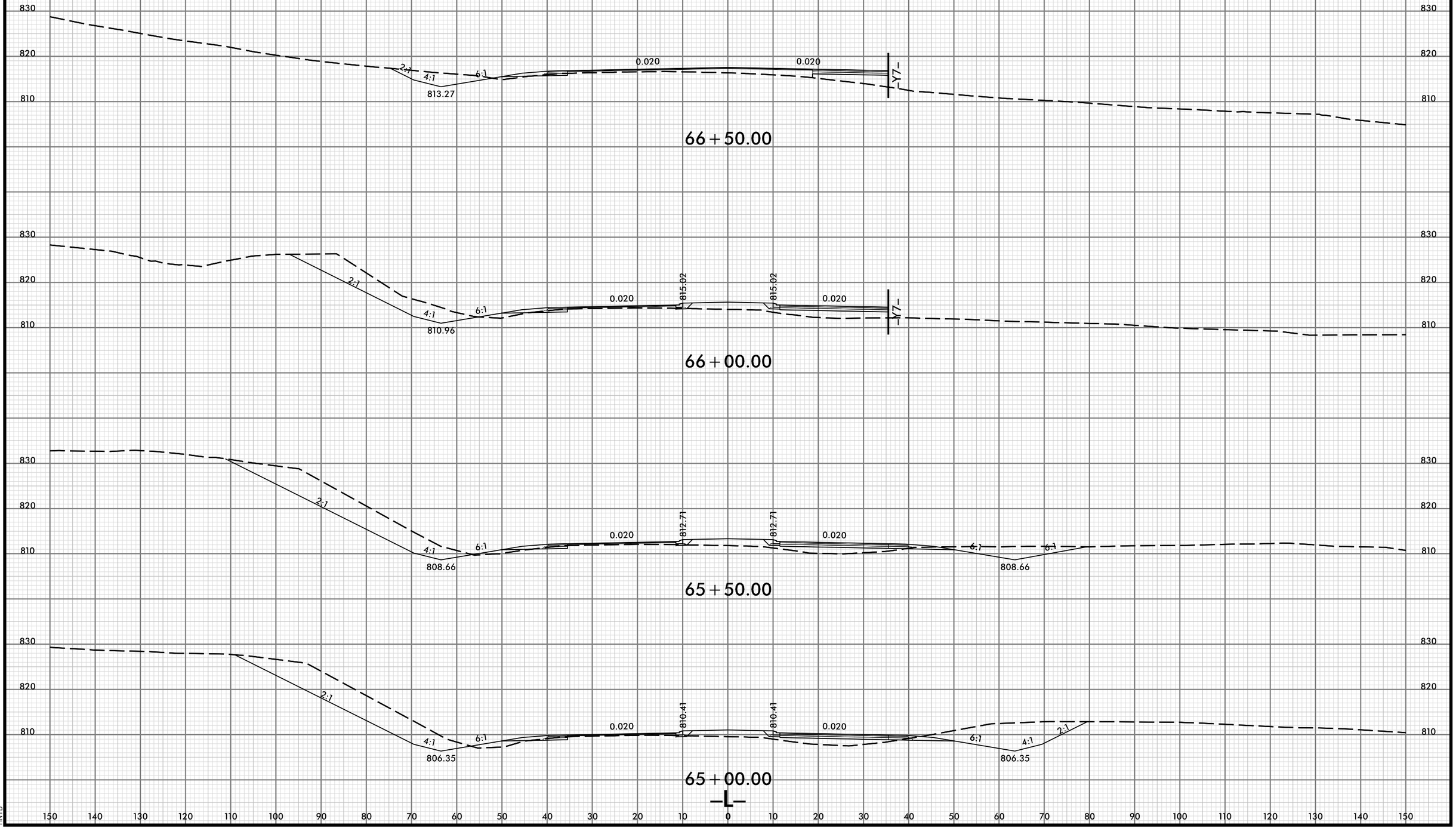
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HNB

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-5813	X-22

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150



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HNB

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0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-5813	X-23

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

830
820
810

0.020
0.020
825.79
2:1

68+50.00

2:1
4:1
6:1
820.18
0.020
0.020
-Y7-

68+00.00

2:1
4:1
6:1
817.87
0.020
0.020
-Y7-

67+50.00

2:1
4:1
6:1
815.57
0.020
0.020
-Y7-

67+00.00
-L-

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

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0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U–5813	X–24

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

850 840 830

2:1 4:1 6:1 831.69 0.020 0.020 4% 10% 15%

70+50.00

850 840 830

2:1 4:1 6:1 829.39 0.020 0.020 838.70 6:1 2:1 829.85

70+00.00

840 830

2:1 4:1 6:1 827.09 0.020 0.020 830.40 6:1 2:1 827.55

69+50.00

840 830 820

2:1 4:1 6:1 824.78 0.020 0.020 828.10 2:1

69+00.00

–L–

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

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HNB

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U–5813	X–25

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

850
840
830
820

2:1 4:1 6:1 838.60 0.020 0.020 841.92 2:1

72+00.00

850
840
830
820

2:1 4:1 6:1 836.30 0.020 0.020 839.61 6:1 2:1

71+50.00

850
840
830

2:1 4:1 6:1 834.00 0.020 0.020 6:1 6:1 834.11

71+00.00

—L—

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

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HNB

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-5813	X-26

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

850 840 830

6:1 6:1 846.41 0.020 0.020 849.73 2:1

74+00.00

850 840 830

6:1 6:1 844.04 0.020 0.020 848.0 2:1

73+50.00

850 840 830 820

6:1 6:1 842.86 0.020 0.020 846.17 2:1

73+00.00

850 840 830 820

6:1 6:1 840.82 0.020 0.020 844.13 2:1

72+50.00

-L-

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

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HNB

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0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-5813	X-27

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

870
860
850
840

0.020
0.020
854.37
851.41
6:1
4:1
2:1
YB

76+00.00

0.020
0.020
853.35
850.42
6:1
6:1
YB

75+50.00

0.020
0.020
5:1
YB

75+00.00

6:1
6:1
847.93
0.020
0.020
3:1

74+50.00

-L-

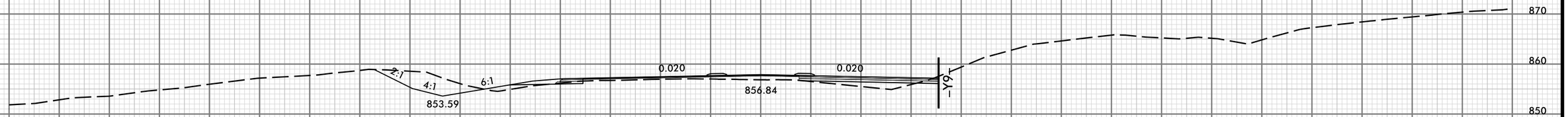
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MNB

8/23/99

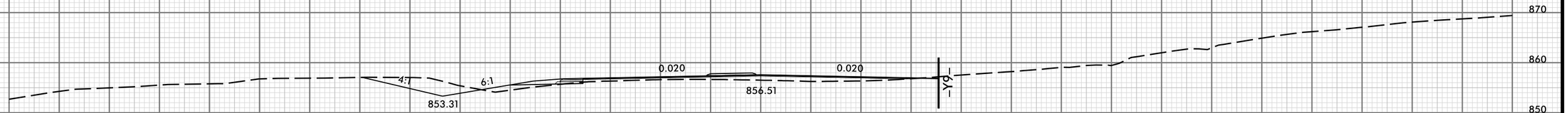
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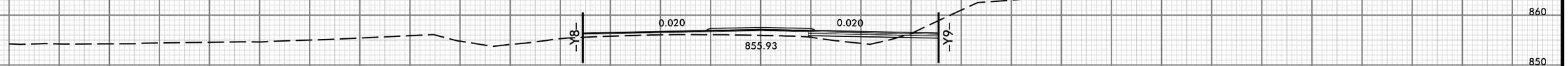
870
860
850



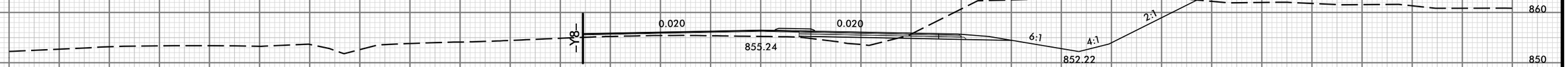
78+00.00



77+50.00



77+00.00



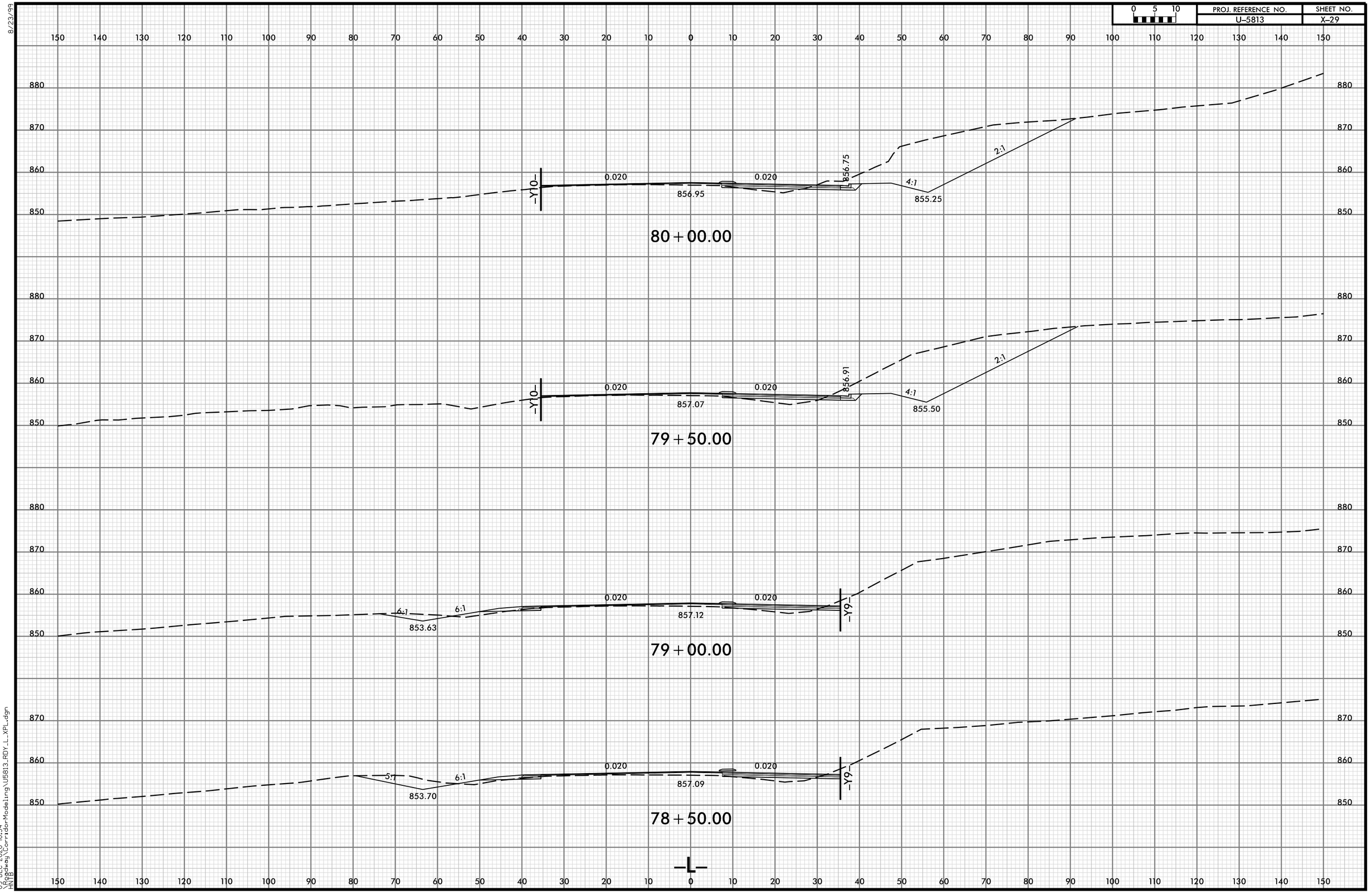
76+50.00

-L-

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0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U–5813	X–29



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0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U–5813	X–30

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

880 870 860

3:1 856.32 0.020 0.004 857.19 4:1 2:1

856.54 854.50

81+50.00

880 870 860 850

3:1 856.46 0.020 0.006 856.97 4:1 2:1

856.69 854.75

81+00.00

890 880 870 860 850

3:1 856.60 0.020 0.016 856.73 4:1 2:1

856.80 855.00

80+50.00

–L–

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

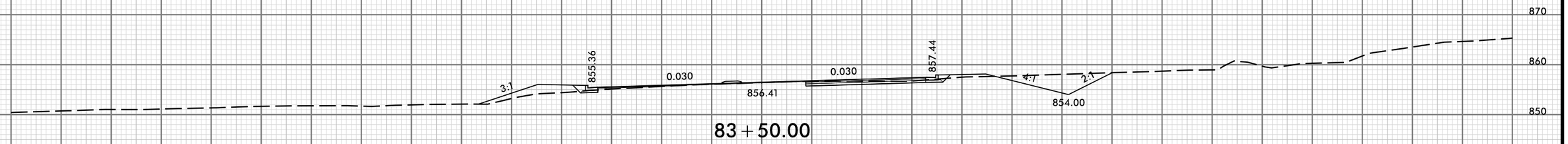
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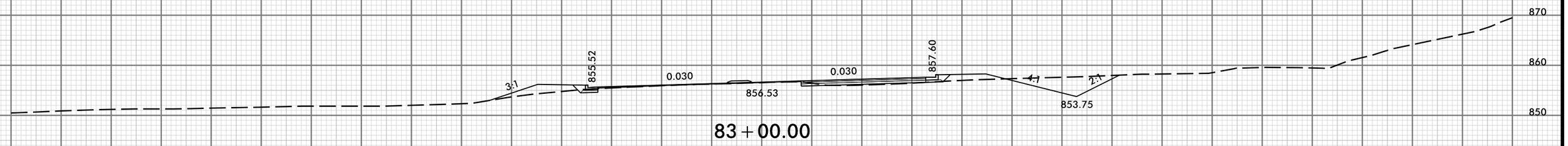
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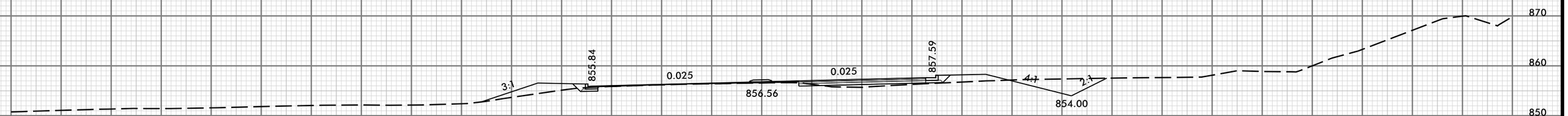
870 860 850



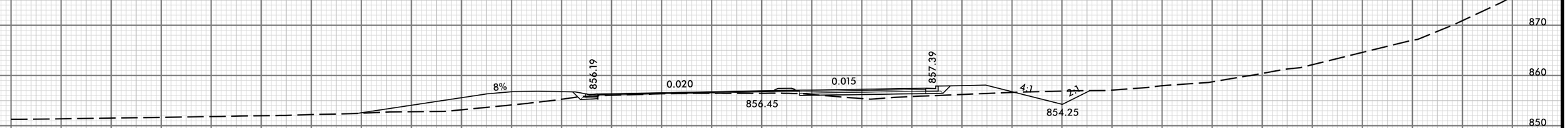
83 + 50.00



83 + 00.00



82 + 50.00



82 + 00.00

–L–

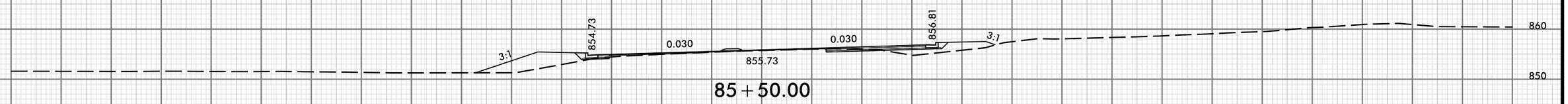
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HNTB

8/23/99

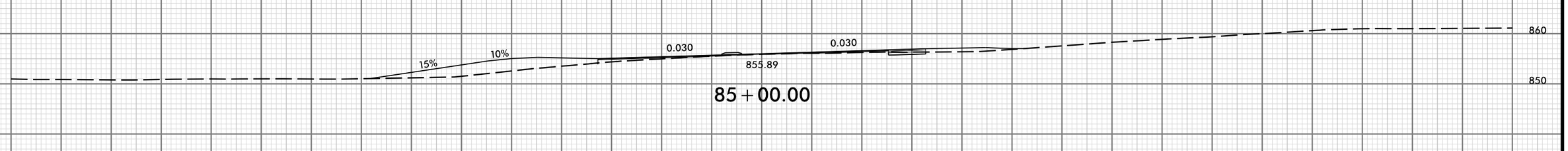
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	U-5813	X-32

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

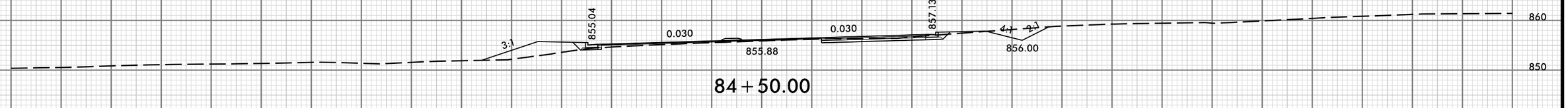
870
860
850



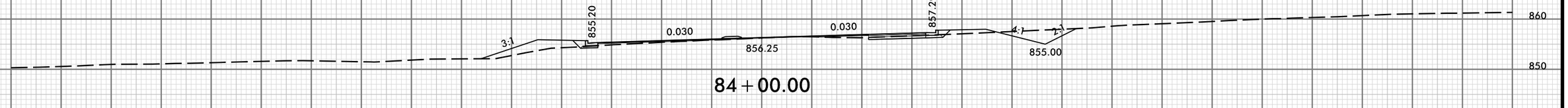
85+50.00



85+00.00



84+50.00



84+00.00

-L-

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

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\Roadway\CorridorModeling\U5813_RDY_L_XPL.dgn
HNTB

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U–5813	X–33

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

870
860
850

–Y11–
0.030
855.01
0.030
–Y12–

87 + 50.00

870
860
850

–Y11–
0.030
855.21
0.030
–Y12–

87 + 00.00

870
860
850

3:1
854.27
0.030
855.34
0.030
856.50
3:1

86 + 50.00

870
860
850

3:1
854.57
0.030
855.54
0.030
856.66
3:1

86 + 00.00

–L–

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

09-DEC-2020 10:34
\Roadway\Corridor Modeling\U5813_RDY_L_XPL.dgn
HNB

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-5813	X-34

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

870 860 850

853.31 7.3:1 854.67 0.020 855.18 0.012 855.79 3:1

90+00.00

852.90 7.1:1 854.29 0.023 854.93 0.023 855.87 3:1

89+50.00

852.52 7.2:1 853.88 0.030 854.82 0.030 855.96 3:1

89+00.00

3:1 853.83 0.030 854.74 0.030 –Y12–

88+50.00

–Y11– 0.030 854.84 0.030 –Y12–

88+00.00

–L–

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

09-DEC-2020 10:34
\Roadway\Corridor Modeling\U5813_RDY_L_XPL.dgn
HNB

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-5813	X-35

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

860
850

2:1 4:1 853.97 856.40 0.020 856.82 0.020 856.40 3:1

92+50.00

860
850

2:1 4:1 853.37 856.05 0.020 856.48 0.020 856.05 3:1

92+00.00

860
850

3:1 855.71 0.020 856.13 0.019 855.74 3:1

91+50.00

880
870
860
850

3:1 855.36 0.020 855.75 0.009 855.76 3:1

91+00.00

870
860

15% 10% 855.45 0.020 0.002 855.77 3:1

90+50.00

-L-

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

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\Roadway\CorridorModeling\U5813_RDY_L_XPL.dgn
HNTB

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-5813	X-36

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

870
860

Y13

0.020 | 858.89 | 858.89 | 0.020 | 858.23 | 3:1

858.55

95+00.00

870
860

Y13

0.020 | 858.41 | 858.41 | 0.020 | 857.78 | 3:1

858.12

94+50.00

870
860
850

2:1 | 4:1 | 857.43 | 0.020 | 858.05 | 858.05 | 0.020 | 857.44 | 3:1

855.74 | 857.95

94+00.00

860
850

2:1 | 4:1 | 857.09 | 0.020 | 857.83 | 857.71 | 0.020 | 857.09 | 3:1

855.15 | 857.56

93+50.00

860
850

2:1 | 4:1 | 856.74 | 0.020 | 0.020 | 856.74 | 3:1

854.56 | 857.17

93+00.00

-L-

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

09-DEC-2020 10:34
\Roadway\Corridor Modeling\U5813_RDY_L_XPL.dgn
HNB

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-5813	X-37

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

880 870 860

2:1 862.31 0.020 862.98 862.98 0.020 862.31 2:1

861.55

97+50.00

880 870 860

870 860 861.35 0.020 861.96 861.96 0.020 861.35

860.71

97+00.00

880 870 860

880 870 860 860.39 0.020 861.00 861.00 0.020 860.39

860.42

96+50.00

880 870 860

880 870 860 Y13 0.020 860.15 860.15 0.020 859.54

859.87

96+00.00

880 870 860

880 870 860 Y13 0.020 859.43 859.43 0.020 858.81

859.19

95+50.00

-L-

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

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\RoadwayCorridorModeling\U5813_RDY_L_XPL.dgn
$HNTB

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-5813	X-38

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

880
870

2:1
864.97
0.020
865.64
865.90
0.014
866.23
865.22

99+50.00

880
870

2:1
864.49
0.020
865.16
865.34
0.003
865.36
4:1
864.64

99+00.00

880
870

2:1
863.89
0.020
864.56
864.66
0.007
864.37
4:1
862.50
863.90

98+50.00

880
870
860

2:1
2:1
863.16
0.020
863.83
863.85
0.018
863.25
3:1
861.50
862.61

98+00.00

-L-

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

09-DEC-2020 10:34
\Roadway\Corridor Modeling\U5813_RDY_LT_XPL.dgn
HNB

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-5813	X-39

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

880 870 860

2:1 4:1 4:1

863.62

864.88 0.040 866.14 866.78 0.036

865.27

-Y_SLIP-

101+50.00

880 870 860

2:1 2:1

864.95

864.90 0.040 866.16 866.80 0.029

865.46

-Y_SLIP-

101+00.00

880 870 860

2:1

865.00 0.034 866.10 866.65 0.022

865.69

-Y_SLIP-

100+50.00

880 870 860

2:1

865.16 0.024 865.95 866.34 0.024 866.97

865.57

100+00.00

-L-

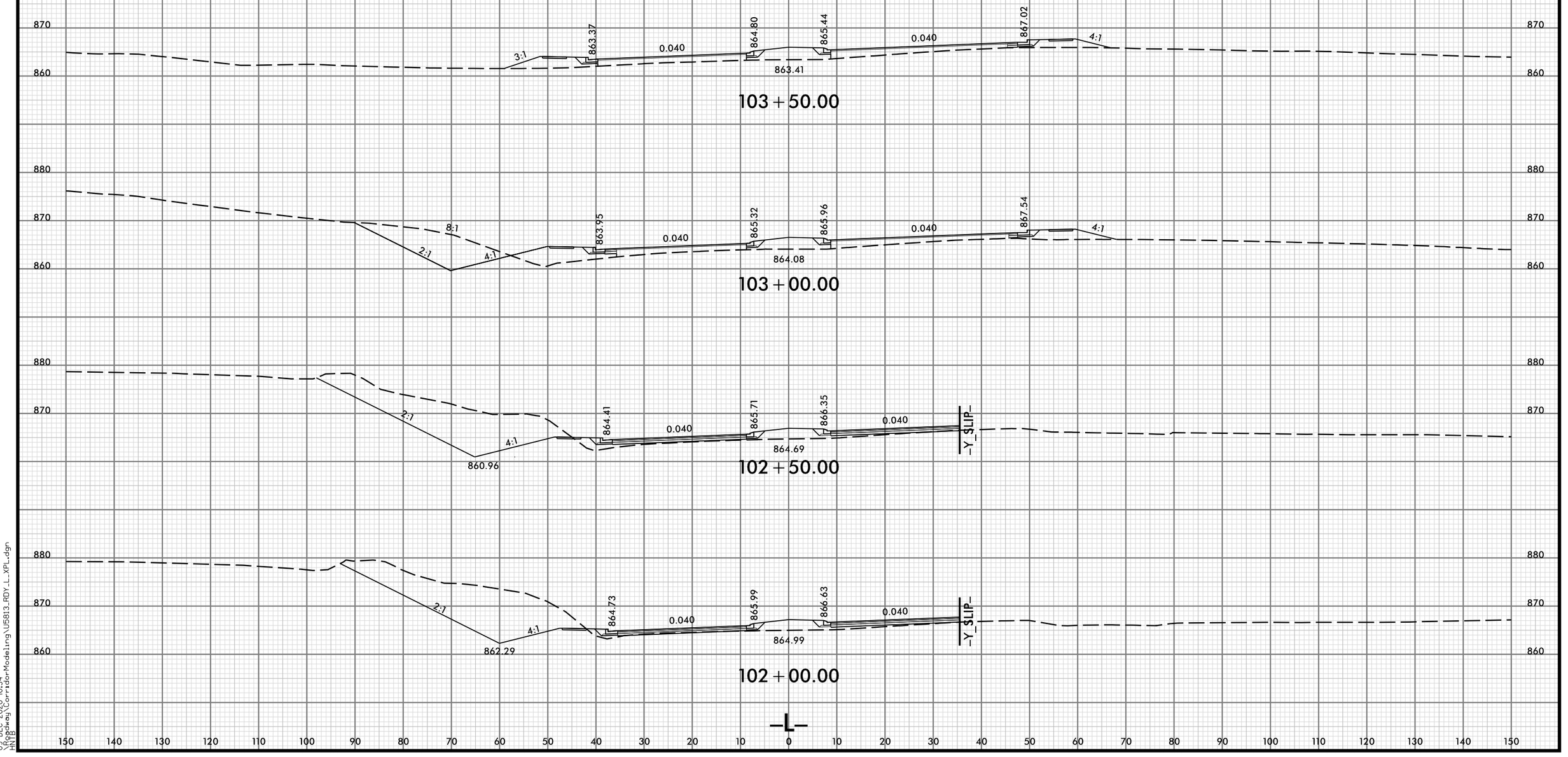
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HNB

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-5813	X-40

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150



150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

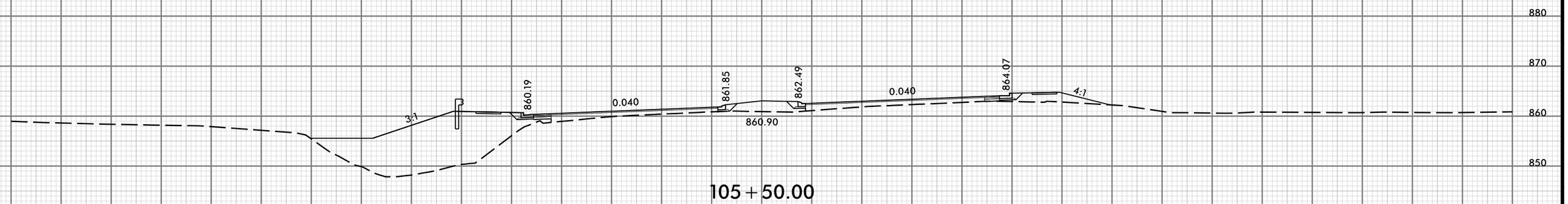
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\Roadway\CorridorModeling\U5813_RDY_L_XPL.dgn
HNTB

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-5813	X-41

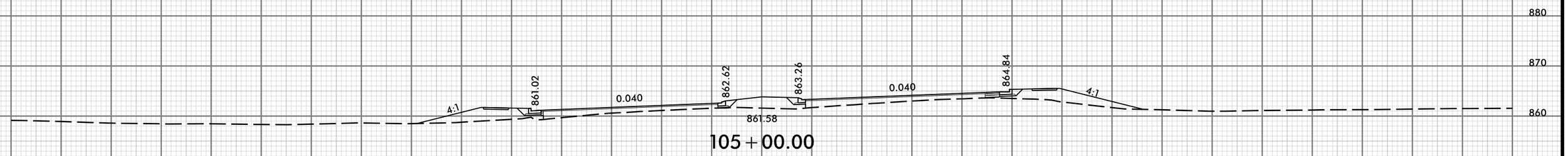
150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

880 870 860 850



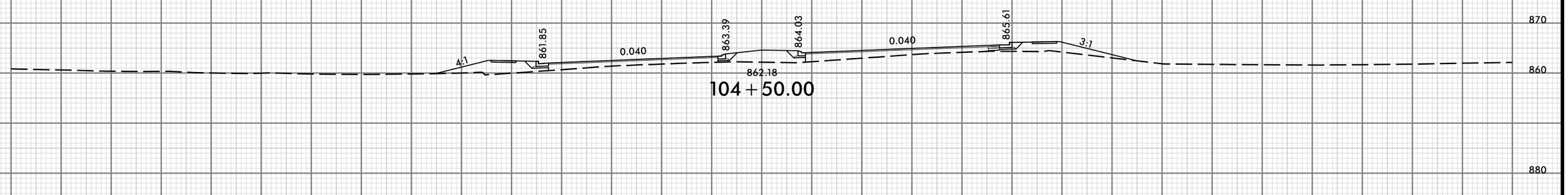
105+50.00

880 870 860



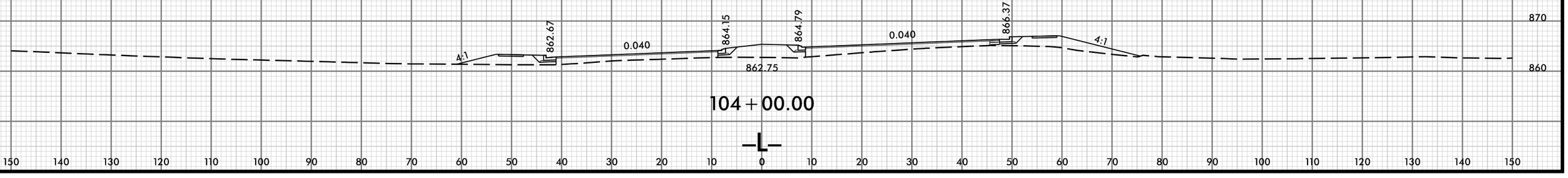
105+00.00

880 870 860



104+50.00

880 870 860



104+00.00

–L–

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

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\Roadway\Corridor Modeling\U5813_RDY_L_XPL.dgn
HNB

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-5813	X-42

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

870 860 880 870 860

856.25 857.99 858.63 860.21

0.040 0.040

2:1 4:1

852.91

857.62

108+00.00

857.03 858.77 859.41 860.99

0.040 0.040

2:1 4:1

853.44

858.38

107+50.00

857.80 859.54 860.18 861.76

0.040 0.040

2:1 4:1

853.98

858.97

107+00.00

858.57 860.31 860.95 862.53

0.040 0.040

2:1 3:1 4:1

854.51

859.55

106+50.00

859.36 861.08 861.72 863.30

0.040 0.040

2:1 3:1 4:1

855.05

860.21

106+00.00

-L-

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

09-DEC-2020 10:35
\Roadway\Corridor Modeling\U5813_RDY_L_XPL.dgn
HNB

8/23/99

PROJ. REFERENCE NO.	SHEET NO.
U–5813	X–43

0 5 10

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

860
850

–RPBC–

0.040

853.47

0.040

–RPC–

110 + 50.00

860
850

4:1

852.87

0.040

854.33

0.040

–RPC–

110 + 00.00

870
860
850

2:1

4:1

851.31

853.88

0.040

855.58

856.22

855.12

0.040

–RPC–

109 + 50.00

870
860
850

2:1

4:1

851.84

854.70

0.040

856.44

857.08

856.09

0.040

858.66

4:1

109 + 00.00

870
860
850

2:1

4:1

852.38

855.48

0.040

857.22

857.86

856.93

0.040

859.44

4:1

108 + 50.00

–L–

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

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\Roadway\CorridorModeling\U5813_RDY_L_XPL.dgn
tNTB

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U–5813	X–44

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

850
840

4:1 848.91 0.020 849.59 0.004 –LPC–

112 + 50.00

860
850
840

4:1 849.89 0.020 850.61 0.014 –LPC–

112 + 00.00

860
850
840

4:1 850.76 0.023 851.62 0.023 852.62 4:1

111 + 50.00

860
850

4:1 851.34 0.033 852.59 0.033 854.11 4:1

111 + 00.00

–L–

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

09-DEC-2020 10:35
\Roadway\Corridor Modeling\U5813_RDY_L_XPL.dgn
HNB

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-5813	X-45

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

850
840
830

0.020 0.020

825.13

114 + 50.00

850
840
830

0.020 0.020

832.34

114 + 00.00

850
840
830

4:1 847.10 0.020 0.016 847.64 LPC

113 + 50.00

860
850
840

4:1 847.98 0.020 0.006 848.57 LPC

113 + 00.00

L

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

09-DEC-2020 10:35
\Roadway\Corridor Modeling\U5813_RDY_L_XPL.dgn
HNB

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-5813	X-46

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

850
840
830

—LPA—

0.020 842.26 0.020

841.80

4:1

116 + 50.00

850
840
830

3:1

842.71

0.020 843.19 0.020

842.68

3:1

116 + 00.00

860
850
840
830

0.020 0.020

842.16
841.76

115 + 50.00

850
840
830

0.020 0.020

824.78

115 + 00.00

—L—

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

09-DEC-2020 10:35
\Roadway\Corridor Modeling\U5813_RDY_L_XPL.dgn
HNB

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-5813	X-47

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

850
840
830

838.73 | 0.020 | 0.020 | 838.54
4:1 | 839.31 | 4:1

118 + 50.00

850
840

839.46 | 0.020 | 0.020 | 839.19
4:1 | 840.03 | 4:1

118 + 00.00

850
840
830

–LPA– | 0.020 | 0.020 | 840.05
840.67 | 4:1

117 + 50.00

850
840
830

–LPA– | 0.020 | 0.020 | 840.92
841.48 | 4:1

117 + 00.00

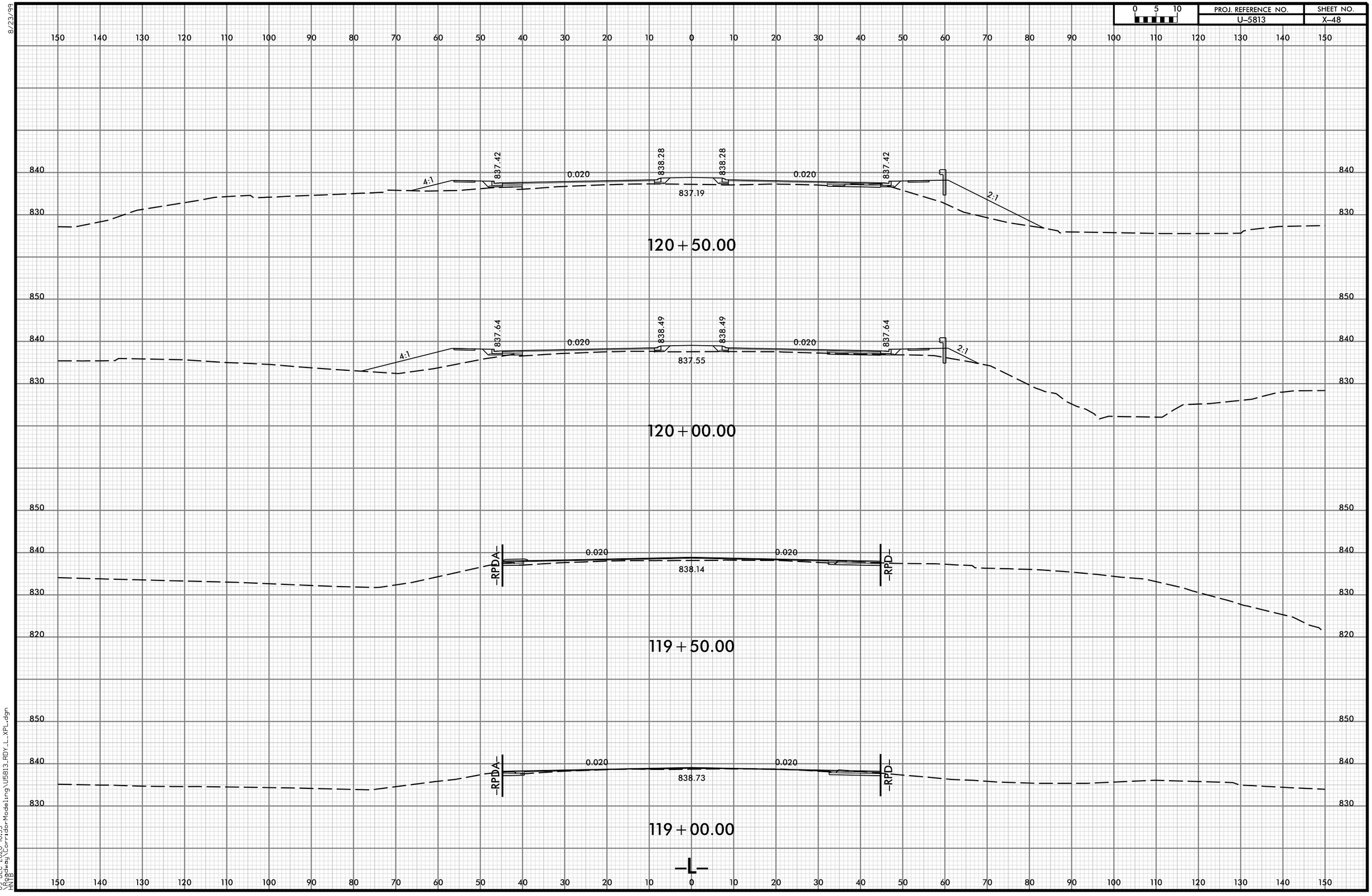
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150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

09-DEC-2020 10:35
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HNB

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-5813	X-48



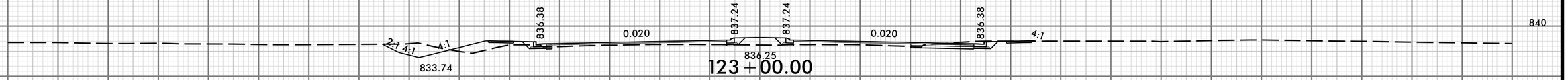
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HNB

8/23/99

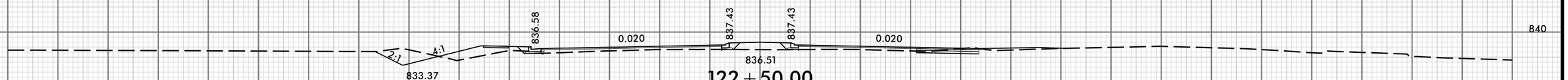
0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U–5813	X–49

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

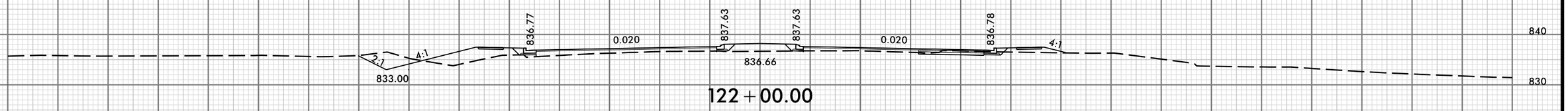
850 840 830



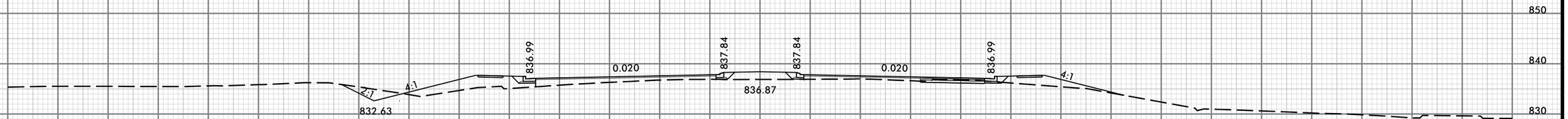
123 + 00.00



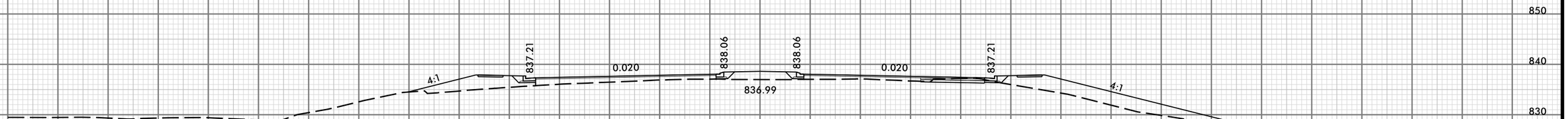
122 + 50.00



122 + 00.00



121 + 50.00



121 + 00.00

–L–

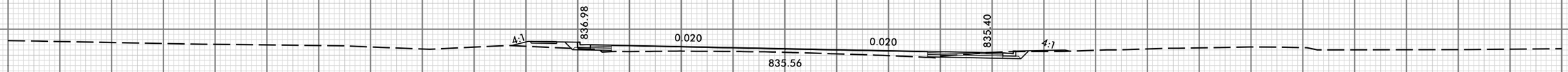
09-DEC-2020 10:35
\Roadway\Corridor Modeling\U5813_RDY_L_XPL.dgn
HNB

8/23/99

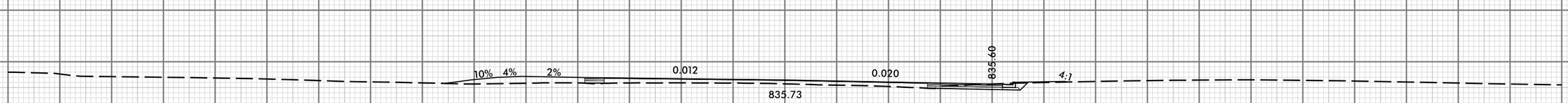
0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U–5813	X–50

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

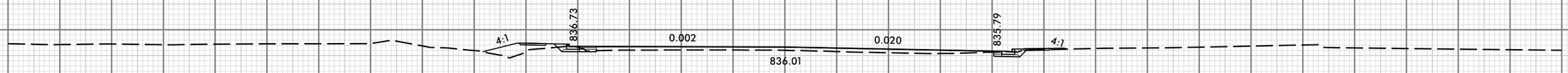
850 840 830



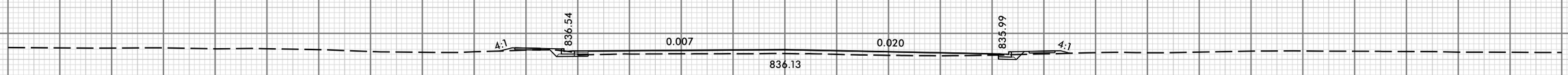
125+50.00



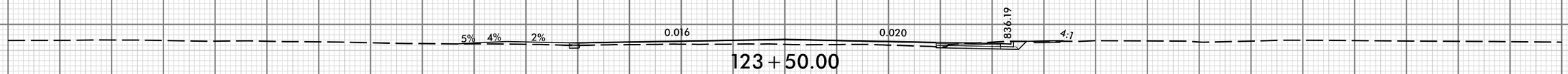
125+00.00



124+50.00



124+00.00



123+50.00

–L–

09-DEC-2020 10:35
\Roadway\Corridor Modeling\U5813_RDY_L_XPL.dgn
HNB

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-5813	X-51

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

840
830

7% 8% 2% 0.020 0.041

834.84

128+00.00

850
840
830

4:1 836.04 0.020 0.031 834.61 4:1

834.97

127+50.00

850
840
830

2% 0.020 0.020 4% 10%

835.14

127+00.00

850
840
830

4:1 836.51 0.020 0.020 835.01 4:1

835.22

126+50.00

850
840
830

10% 4% 2% 0.020 0.020 4% 8%

835.39

126+00.00

–L–

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

09-DEC-2020 10:35
\Roadway\Corridor Modeling\U5813_RDY_L_XPL.dgn
HNB

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U–5813	X–52

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

840

830

4:1

835.11

0.013

834.52

0.045

129 + 00.00

840

830

4:1

835.56

0.020

834.66

0.045

128 + 50.00

–L–

840

830

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

09-DEC-2020 10:35
\Roadway\Corridor Modeling\U5813_RDY_L_XPL.dgn
HNB

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U–5813	X–53

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

880
870

4:1 874.15 0.020 0.020 0.020 874.76 4:1

874.04

15+50.00

880
870

4:1 873.99 0.020 0.003 0.020 874.30 4:1

874.28

15+00.00

880
870

–Y12– 0.020 0.020 –Y12–

874.44

14+50.00

880
870

874.68

14+00.00

880
870

13+50.00

–Y–

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

09-DEC-2020 10:35
\Roadway\Corridor Modeling\U5813_RDY_Y_XPL.dgn
HNB

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U–5813	X–54

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

880
870
860

–Y15–

0.001

0.002

–Y_SLIP–

873.15

17+50.00

880
870
860

–Y15–

0.016

0.016

–Y_SLIP–

873.31

17+00.00

880
870
860

–Y15–

0.020

0.020

–Y_SLIP–

873.50

16+50.00

880
870
860

4:1

874.13

0.020

0.020

0.020

874.75

4:1

873.80

16+00.00

–Y–

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

09-DEC-2020 10:35
\Roadway\Corridor Modeling\U5813_RDY_Y_XPL.dgn
HNB

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U–5813	X–55

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

890
880
870
860
850

878.14
0.030
0.030
876.65
4:1
2:1
862.49

19+00.00

877.21
0.030
0.020
–Y_SLIP–
2:1
864.42

18+50.00

–Y15–
0.018
0.013
–Y_SLIP–
868.02

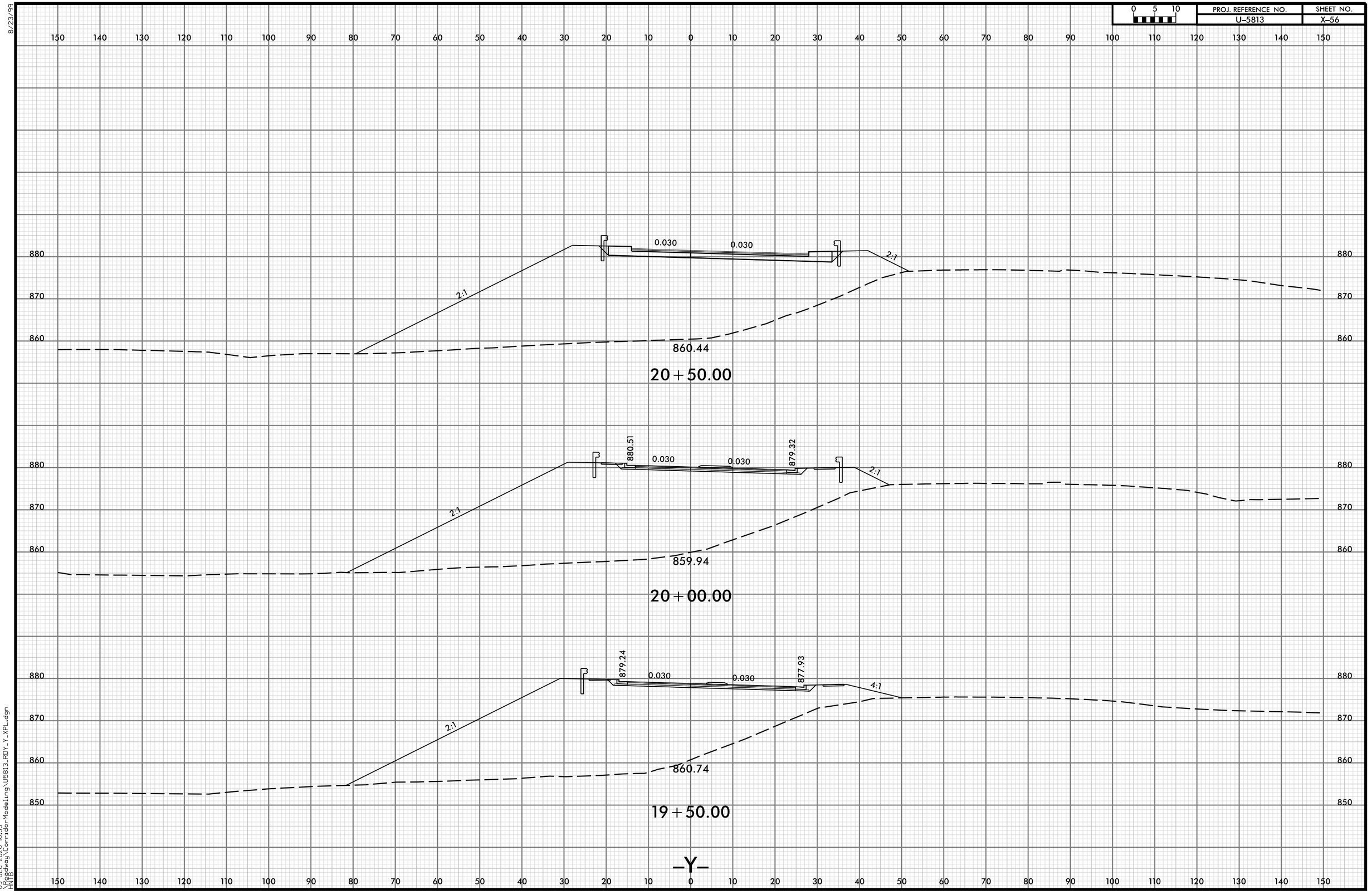
18+00.00

–Y–

09-DEC-2020 10:35
\Roadway\Corridor Modeling\U5813_RDY_Y_XPL.dgn
HNB

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U–5813	X–56



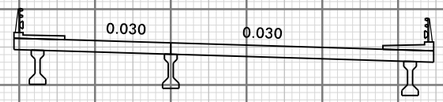
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HNB

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U–5813	X–57

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

890
880
870
860



860.17

22+00.00

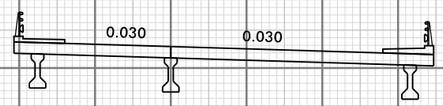
890
880
870
860



860.91

21+50.00

890
880
870
860



863.07

21+00.00

–Y–

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

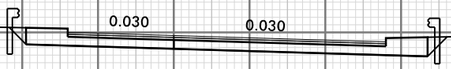
09-DEC-2020 10:35
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HNB

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U–5813	X–58

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

900 890 880 870 860

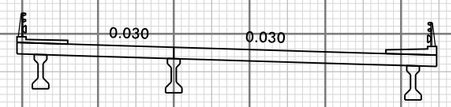


2:1

2:1

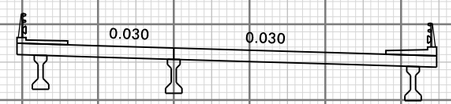
870.20

23+50.00



866.61

23+00.00



862.57

22+50.00

–Y–

09-DEC-2020 10:35
\Roadway\Corridor Modeling\U5813_RDY_Y_XPL.dgn
HNB

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U–5813	X–59

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

910 900 890 880

4:1 892.09 0.030 0.030 890.89 3:1

881.00

25+00.00

910 900 890 880 870

3:1 891.86 0.030 0.030 890.66 3:1

876.59

24+50.00

900 890 880 870 860

2:1 891.13 0.030 0.030 889.93 3:1

873.54

24+00.00

–Y–

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

09-DEC-2020 10:35
\Roadway\Corridor Modeling\U5813_RDY_Y_XPL.dgn
HNB

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U–5813	X–60

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

900
890
880

2:1
4:1
887.57
887.00
0.006
0.006
887.83
3:1
884.15

27 + 00.00

900
890
880

2:1
4:1
889.53
889.00
0.010
0.010
889.15
3:1
886.17

26 + 50.00

910
900
890
880

DRW01
0.026
0.026
889.98
3:1
884.27

26 + 00.00

920
910
900
890
880

4:1
891.83
0.030
0.030
890.63
3:1
884.95

25 + 50.00

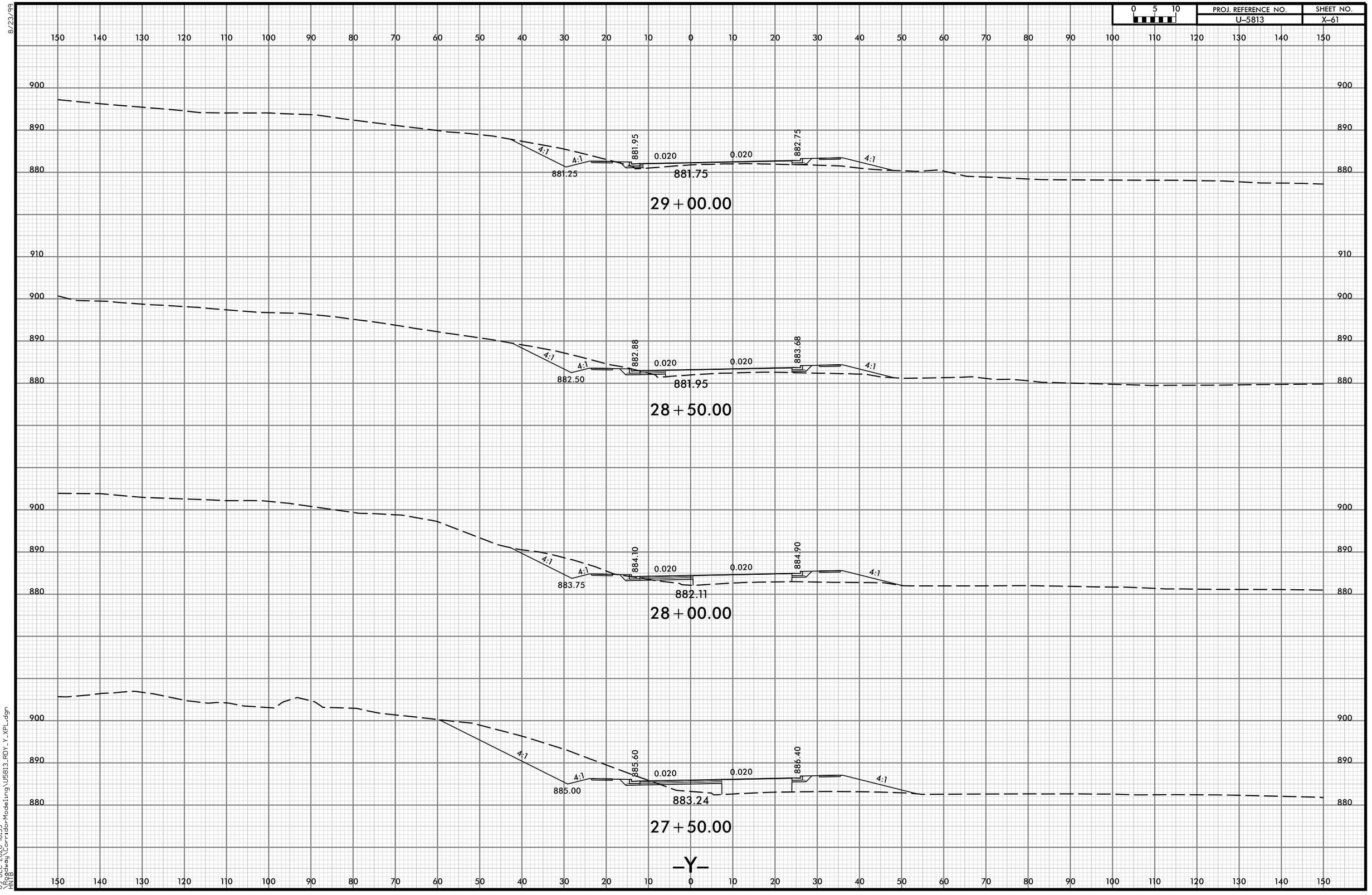
–Y–

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

09-DEC-2020 10:35
\Roadway\Corridor Modeling\U5813_RDY_Y_XPL.dgn
HNB

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-5813	X-61



09-DEC-2020 10:35
\RoadwayCorridorModeling\U5813_RDY_Y_XPL.dgn
HNB

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U–5813	X–62

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

890 880 870

–Y17–

0.020 0.020 880.01 4:1

878.88

31+00.00

890 880 870

–Y17– –Y19–

0.020 0.020

879.56

30+50.00

890 880 870

–Y17–

0.020 0.020 881.48 3:1

880.40

30+00.00

890 880 870

2:1 4:1 881.01 0.020 0.020 882.02 4:1

880.00 881.12

29+50.00

–Y–

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

09-DEC-2020 10:35
\Roadway\Corridor Modeling\U5813_RDY_Y_XPL.dgn
HNB

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-5813	X-63

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

880
870

2:1 4:1
873.10
875.13
0.020
0.020
875.08
874.89
4:1

33+50.00

880
870

4:1
875.87
0.020
0.020
875.87
875.75
4:1

33+00.00

890
880
870

876.59
0.020
0.020
876.58
876.52
4:1

32+50.00

890
880
870

4:1
877.33
0.020
0.005
877.20
877.68
4:1

32+00.00

890
880
870

4:1
878.06
0.020
0.011
877.94
878.94
3:1

31+50.00

-Y-

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

09-DEC-2020 10:35
\Roadway\Corridor Modeling\U5813_RDY_Y_XPL.dgn
HNTB

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-5813	X-64

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

880
870
860

–RPB–

0.020 0.020 871.36 4:1

871.13

35 + 50.00

880
870
860

3:1 4:1 872.84 0.020 0.020 872.60 4:1

870.40

872.37

35 + 00.00

880
870
860

3:1 4:1 873.68 0.020 0.020 873.43 4:1

871.30

873.40

34 + 50.00

880
870
860

3:1 4:1 874.41 0.020 0.020 874.17 4:1

872.20

874.33

34 + 00.00

–Y–

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

09-DEC-2020 10:35
\Roadway\Corridor Modeling\U5813_RDY_Y_XPL.dgn
HNTB

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-5813	X-65

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

870
860
850

4:1 863.96 0.020 0.020 863.96 4:1
864.46

37+50.00

870
860
850

–RPB– 0.020 0.020 865.95 4:1
866.39

37+00.00

870
860

–RPB– 0.020 0.020 867.73 4:1
868.20

36+50.00

880
870
860

–RPB– 0.020 0.020 –RPBC–
869.70

36+00.00

–Y–

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

09-DEC-2020 10:35
\Roadway\Corridor Modeling\U5813_RDY_Y_XPL.dgn
HNB

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U–5813	X–66

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

870
860
850
840
830

837.40

39+00.00

860
850
840

841.74

38+50.00

4:1 861.96 0.020 0.020 861.96 3:1

862.42

860
850

38+00.00

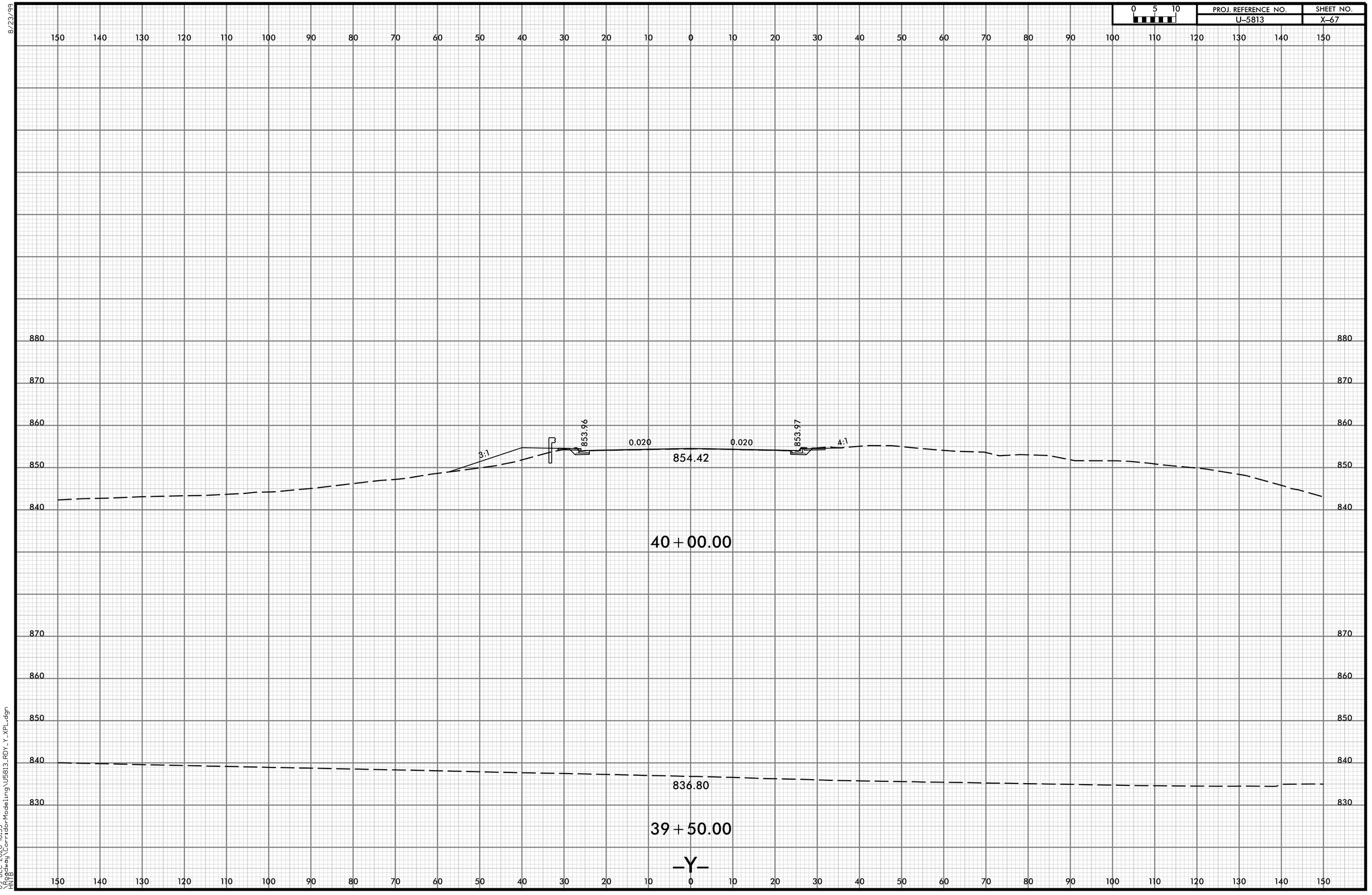
–Y–

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

09-DEC-2020 10:35
\Roadway\Corridor Modeling\U5813_RDY_Y_XPL.dgn
HNB

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U–5813	X–67



09-DEC-2020 10:35
\Roadway\CorridorModeling\U5813_RDY_Y_XPL.dgn
HNTB

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-5813	X-68

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

850
840

-RPA-

0.020

0.020

846.49

-RPDA-

42+00.00

860
850

-RPA-

0.020

0.020

847.93

4:1

848.43

41+50.00

860
850
840

4:1

849.96

0.020

0.020

849.97

4:1

850.40

41+00.00

880
870
860
850
840

4:1

851.97

0.020

0.020

851.97

4:1

852.45

40+50.00

-Y-

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

09-DEC-2020 10:35
\Roadway\Corridor Modeling\U5813_RDY_Y_XPL.dgn
HNB

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U–5813	X–69

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

850
840

–Y18–
0.020 | 839.42 | 0.020 | 839.42 | 0.020 | 838.93 | 4:1
839.31
44 + 50.00

850
840

4:1 | 839.65 | 0.020 | 840.27 | 0.020 | 840.27 | 0.020 | 839.77 | 4:1
840.27
44 + 00.00

850
840

4:1 | 840.77 | 0.020 | 841.39 | 0.020 | 841.39 | 0.020 | 840.89 | 4:1
841.39
43 + 50.00

850
840

4:1 | 842.16 | 0.020 | 842.77 | 0.020 | 842.77 | 0.020 | –RPDA–
842.87
43 + 00.00

850
840
830

–RPA– | 0.020 | 0.020 | –RPDA–
844.66
42 + 50.00

–Y–

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

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\Roadway\Corridor Modeling\U5813_RDY_Y_XPL.dgn
HNB

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U–5813	X–70

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

840
830

4:1 | 835.71 | 0.020 | 836.32 | 836.32 | 0.020 | 835.83 | 4:1

835.97

47+00.00

840
830

836.27 | 0.020 | 836.87 | 836.87 | 0.020 | 836.38 | 4:1

836.44

46+50.00

840
830

–Y18– | 0.020 | 837.49 | 837.49 | 0.020 | DRIVEWAY

837.05

46+00.00

840
830

–Y18– | 0.020 | 838.11 | 838.11 | 0.020 | 837.61 | 4:1

837.78

45+50.00

850
840
830

–Y18– | 0.020 | 838.76 | 838.76 | 0.020 | 838.27 | 4:1

838.42

45+00.00

–Y–

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

09-DEC-2020 10:35
\Roadway\Corridor Modeling\U5813_RDY_Y_XPL.dgn
HNB

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-5813	X-71

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

840 830 820

15% 10% 4% 0.020 0.020 836.92 4:1 2:1 836.86 836.00

49+50.00

840 830 820

4:1 836.08 0.020 0.020 3% 836.24

49+00.00

840 830 820

4:1 835.58 0.020 0.020 835.70 4:1 835.80

48+50.00

840 830

4:1 835.36 0.020 0.020 835.48 4:1 835.56

48+00.00

840 830

4:1 835.40 0.020 0.020 835.52 4:1 835.70

47+50.00

-Y-

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

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HNB

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-5813	X-72

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

850
840

840.84

51+50.00

850
840

839.84

51+00.00

850
840

838.72 838.82

4:1 0.027 0.020 4:1 3:1

838.80

837.00

50+50.00

840
830
820

837.82 837.87

4:1 0.020 0.020 4:1 3:1

837.78

836.50

50+00.00

-Y-

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

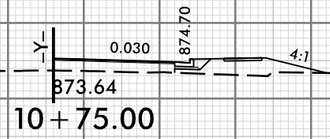
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HNB

8/23/99

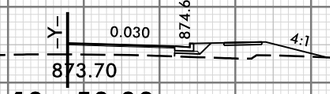
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	U–5813	X–73

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

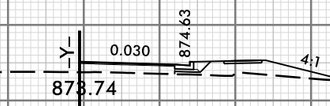
890
880
870



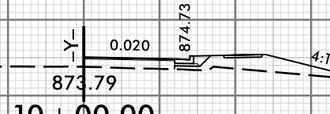
10+75.00



10+50.00



10+25.00



10+00.00

–Y_SLIP–

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

09-DEC-2020 10:35
\Roadway\Corridor Modeling\U5813_RDY_Y_SLIP_XPL.dgn
HNB

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U–5813	X–74

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

880 870 860

–Y–

0.030

874.91

4:1

874.01

11+75.00

880 870 860

–Y–

0.030

874.81

4:1

873.84

11+50.00

890 880 870 860

–Y–

0.030

874.77

4:1

873.73

11+25.00

890 880 870

–Y–

0.030

874.73

4:1

873.69

11+00.00

–Y_SLIP–

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

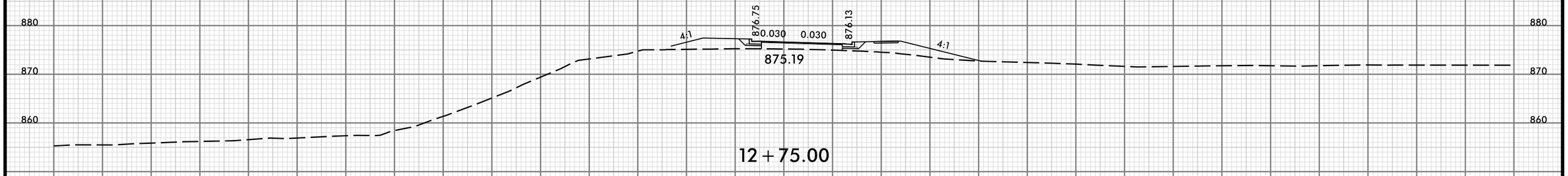
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HNB

8/23/99

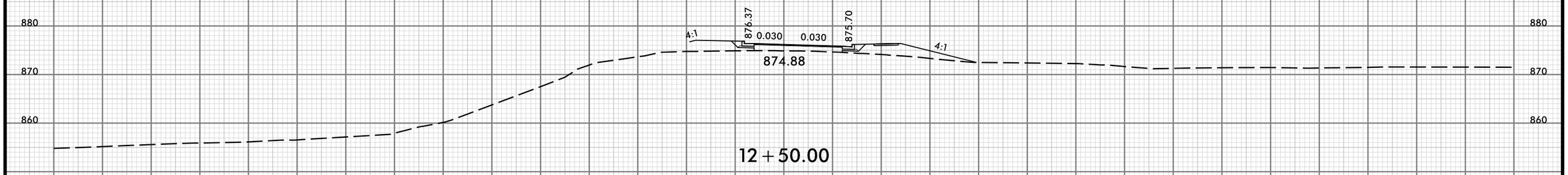
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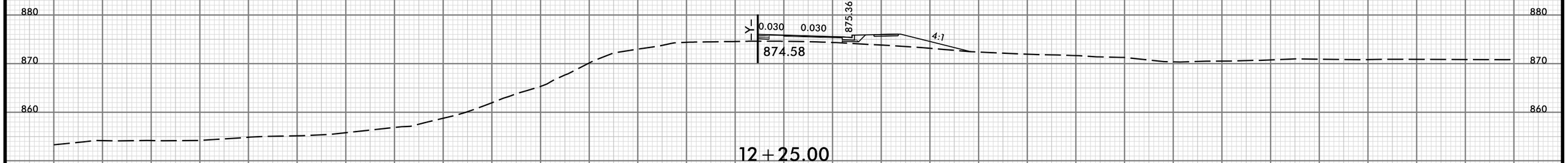
880 870 860



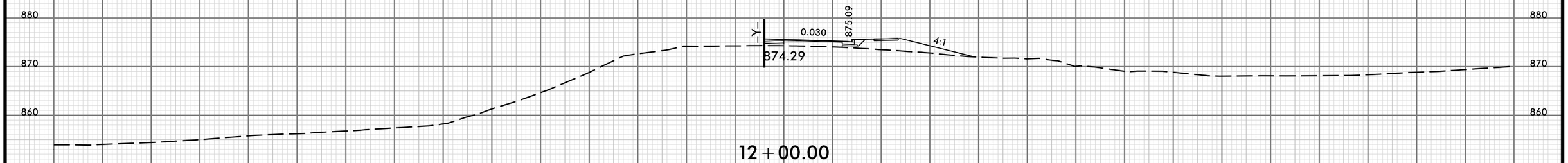
12+75.00



12+50.00



12+25.00



12+00.00

–Y_SLIP–

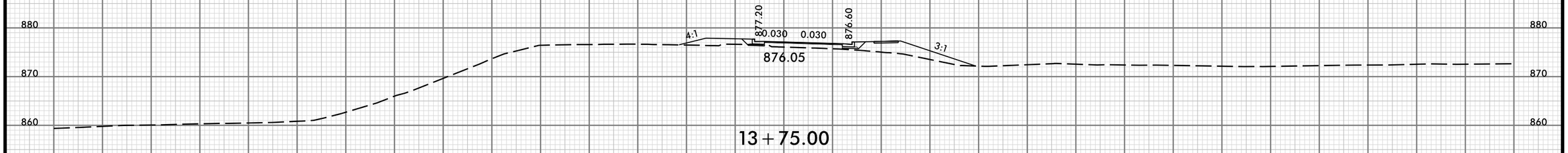
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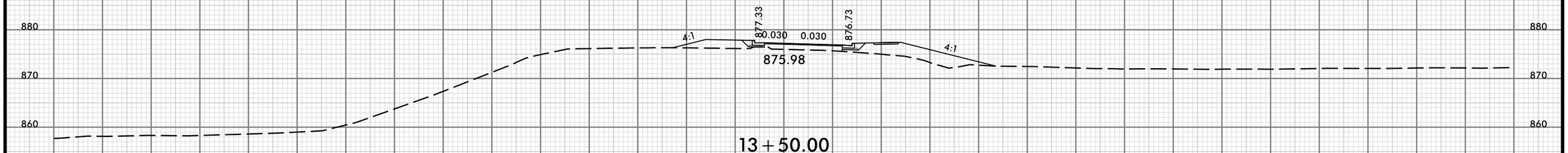
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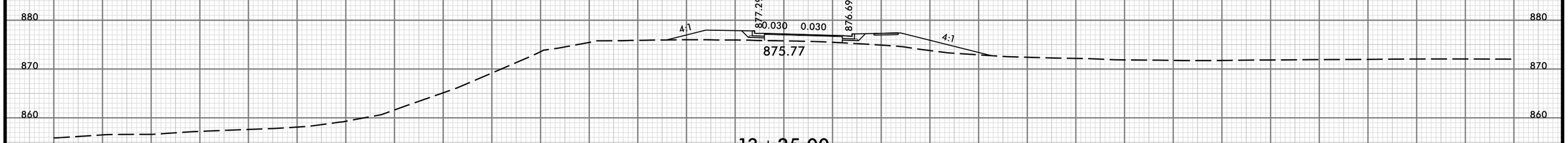
880 870 860



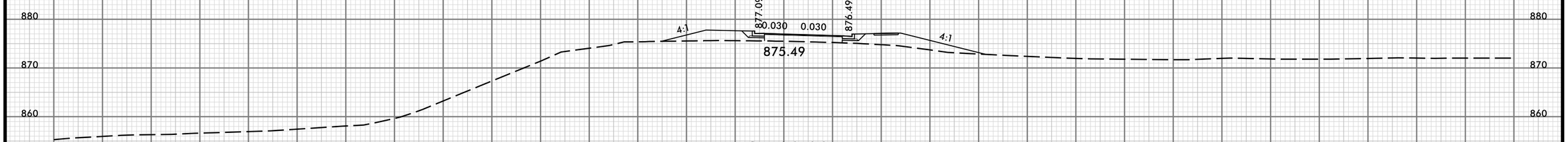
13+75.00



13+50.00



13+25.00



13+00.00

–Y_SLIP–

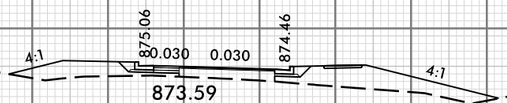
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8/23/99

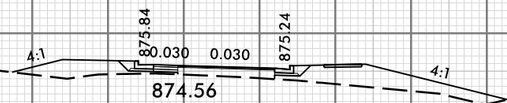
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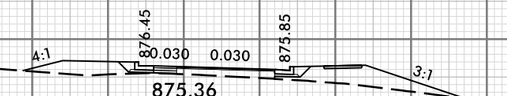
880
870
860



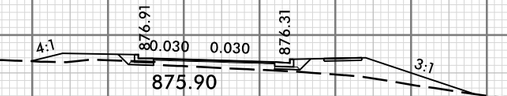
14+75.00



14+50.00



14+25.00



14+00.00

–Y_SLIP–

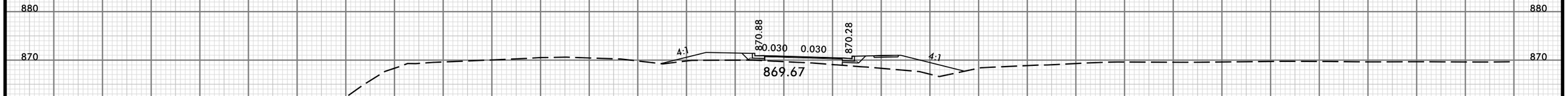
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8/23/99

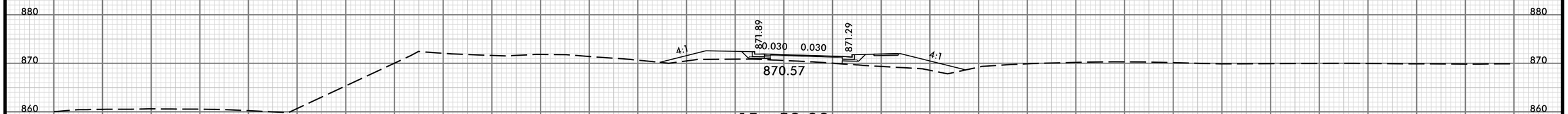
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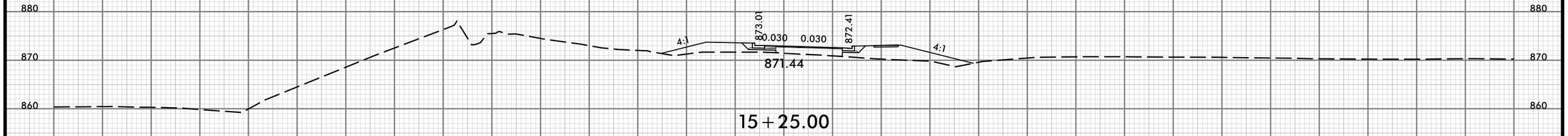
880 870 860



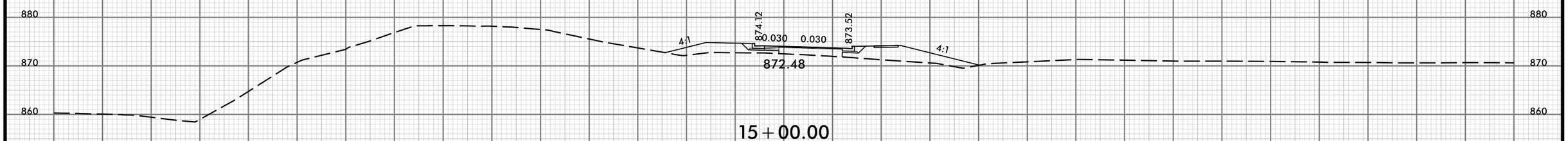
15+75.00



15+50.00



15+25.00



15+00.00

–Y_SLIP–

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

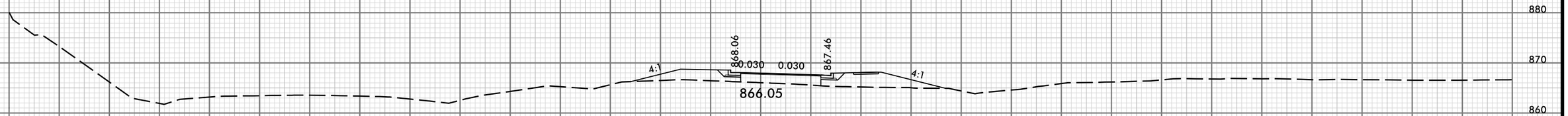
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0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U–5813	X–79

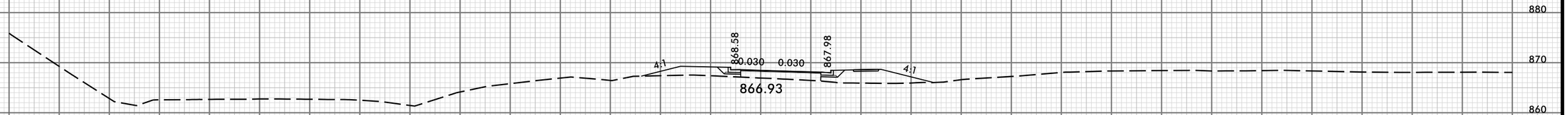
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880 870 860



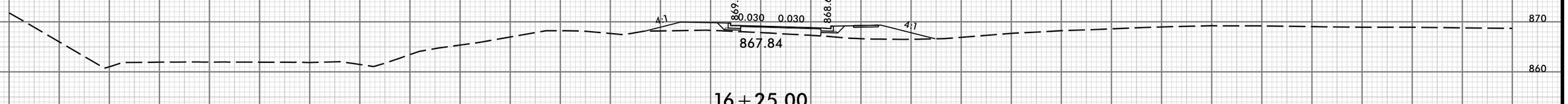
16+75.00

880 870 860



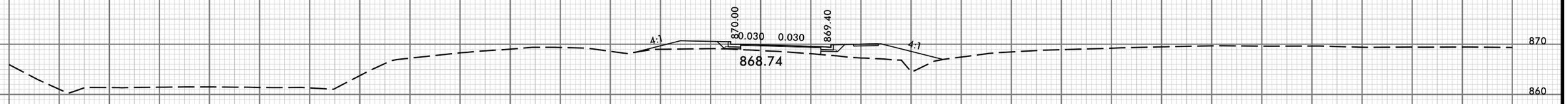
16+50.00

880 870 860



16+25.00

880 870 860



16+00.00

–Y_SLIP–

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

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HNB

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-5813	X-80

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

880 870 860

SRV_REV – FOR INFORMATION ONLY

867.03 0.009 0.009 866.86 4:1 4:1

864.29 864.76

17+75.00

880 870 860

SRV_REV – FOR INFORMATION ONLY

867.15 0.021 0.021 866.73 4:1 4:1

864.47 864.64

17+50.00

880 870 860

SRV_REV – FOR INFORMATION ONLY

4:1 867.37 0.030 0.030 866.77 4:1 4:1

864.74 864.51

17+25.00

880 870 860

4:1 867.65 0.030 0.030 867.05 4:1

865.26

17+00.00

–Y_SLIP–

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

09-DEC-2020 10:36
\Roadway\Corridor Modeling\U5813_RDY_Y_SLIP_XPL.dgn
HNB

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U–5813	X–81

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

880 870 860

SRV_REV – FOR INFORMATION ONLY

868.22
0.040
4:1
4:1
865.50
865.27

18+75.00

880 870 860

SRV_REV – FOR INFORMATION ONLY

867.30
867.88
0.029 0.029
4:1
4:1
865.02
865.14

18+50.00

880 870 860

SRV_REV – FOR INFORMATION ONLY

867.15
867.47
0.016 0.016
4:1
4:1
864.64
865.02

18+25.00

880 870 860

SRV_REV – FOR INFORMATION ONLY

867.03
867.10
0.004 0.004
4:1
4:1
864.29
864.89

18+00.00

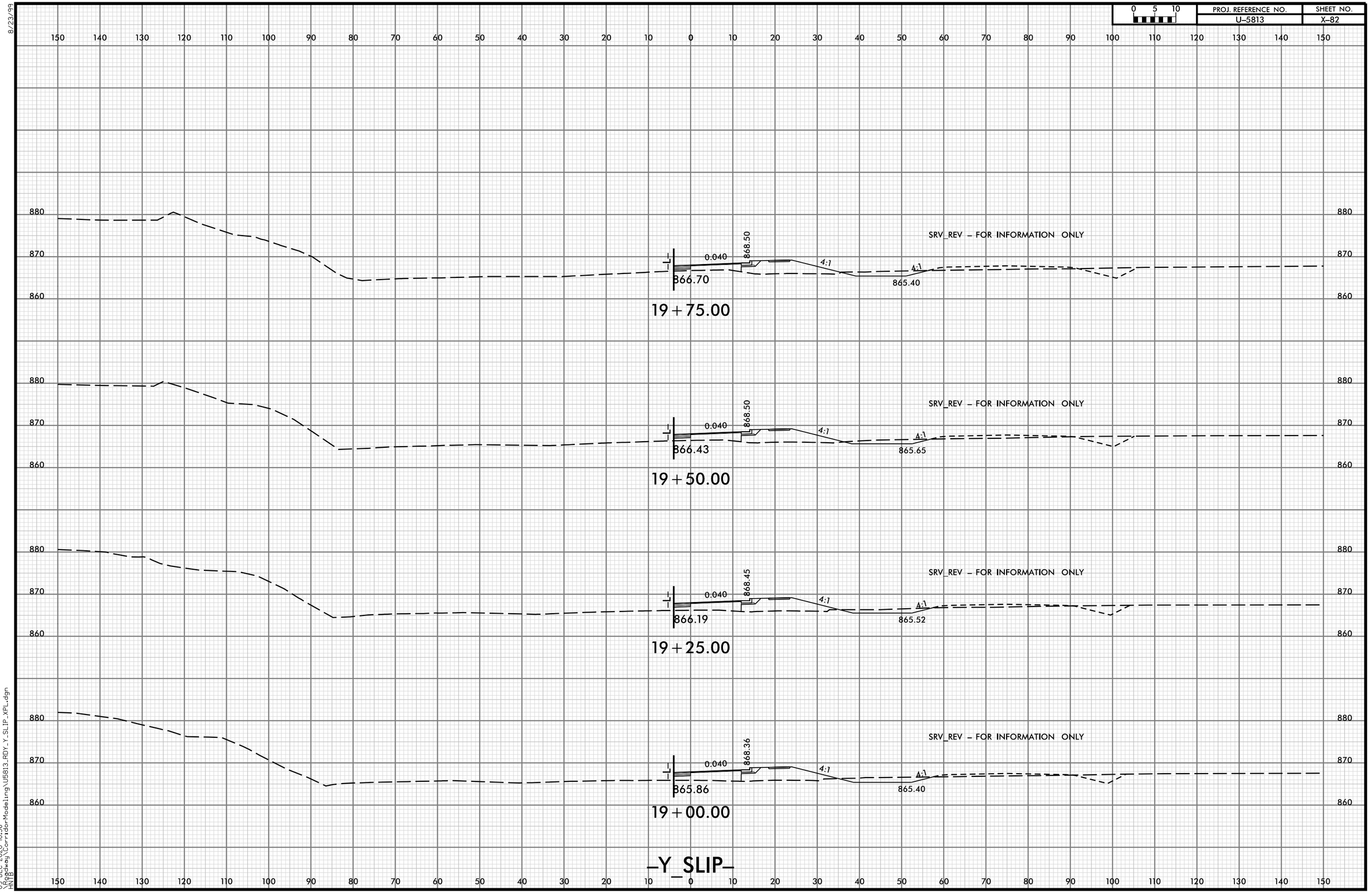
–Y_SLIP–

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

09-DEC-2020 10:36
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HNTB

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-5813	X-82



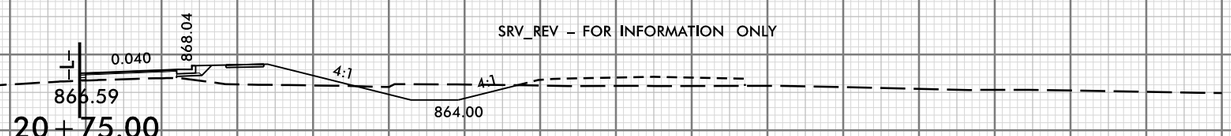
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8/23/99

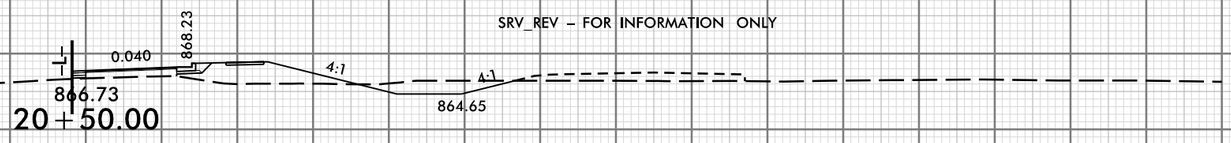
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	U–5813	X–83

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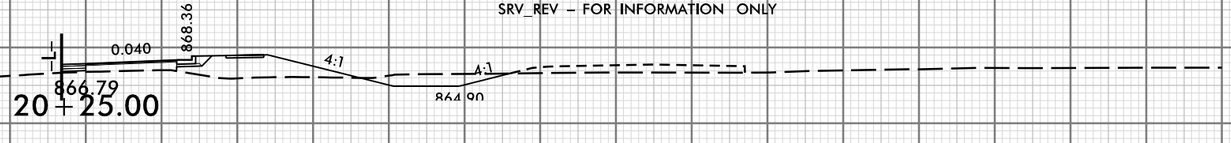
880
870



880
870



880
870



880
870



–Y_SLIP–

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

09-DEC-2020 10:36
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HNTB

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U–5813	X–84

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

890
880
870
860

0.040
867.63
866.06
21+25.00
4:1
4:1
862.71
SRV_REV – FOR INFORMATION ONLY

890
880
870

0.040
867.83
866.37
21+00.00
4:1
4:1
863.36
SRV_REV – FOR INFORMATION ONLY

–Y_SLIP–

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

09-DEC-2020 10:36
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6/23/16

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-5813	X-85

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

810
800
790

2:1 0.038 0.038 3:1 2:1

799.10

796.80
796.80

10+75.00

0.030 0.028 2:1

799.54

10+50.00

799.71

10+25.00

797.52

10+00.00

–Y1–

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

09-DEC-2020 10:36
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HNB

6/23/16

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-5813	X-86

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

810
800
790

0.040 0.040
2:1 3:1 2:1
805.17
~~802.74~~
802.74

11+75.00

0.040 0.040
2:1 3:1 2:1
803.42
~~801.25~~
801.25

11+50.00

0.040 0.040
2:1 3:1 2:1
801.68
~~799.77~~
799.77

11+25.00

0.040 0.040
2:1 3:1 2:1
800.09
~~798.28~~
798.28

11+00.00

–Y1–

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

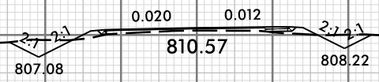
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6/23/16

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-5813	X-87

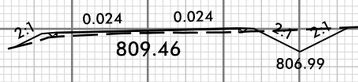
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830 820 810 800



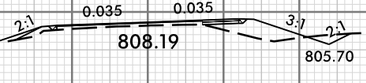
12+75.00

820 810 800



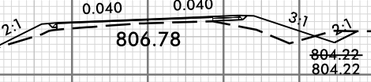
12+50.00

820 810 800



12+25.00

810 800 790



12+00.00

–Y1–

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

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HNB

6/23/16

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-5813	X-88

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

830 820 810

814.43

13+75.00

830 820 810

2:1 0.020 0.020 2:1

811.89 813.64 811.92

13+50.00

830 820 810

2:1 0.020 0.012 2:1

810.29 812.67 810.68

13+25.00

830 820 810

2:1 0.020 0.000 2:1

808.69 811.67 809.45

13+00.00

–Y1–

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

09-DEC-2020 10:36
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HNB

6/23/16

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-5813	X-89

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

810
800
790

2:1 0.040 0.001 2:1

801.58

11+00.00

802.16

10+75.00

802.08

10+50.00

801.07

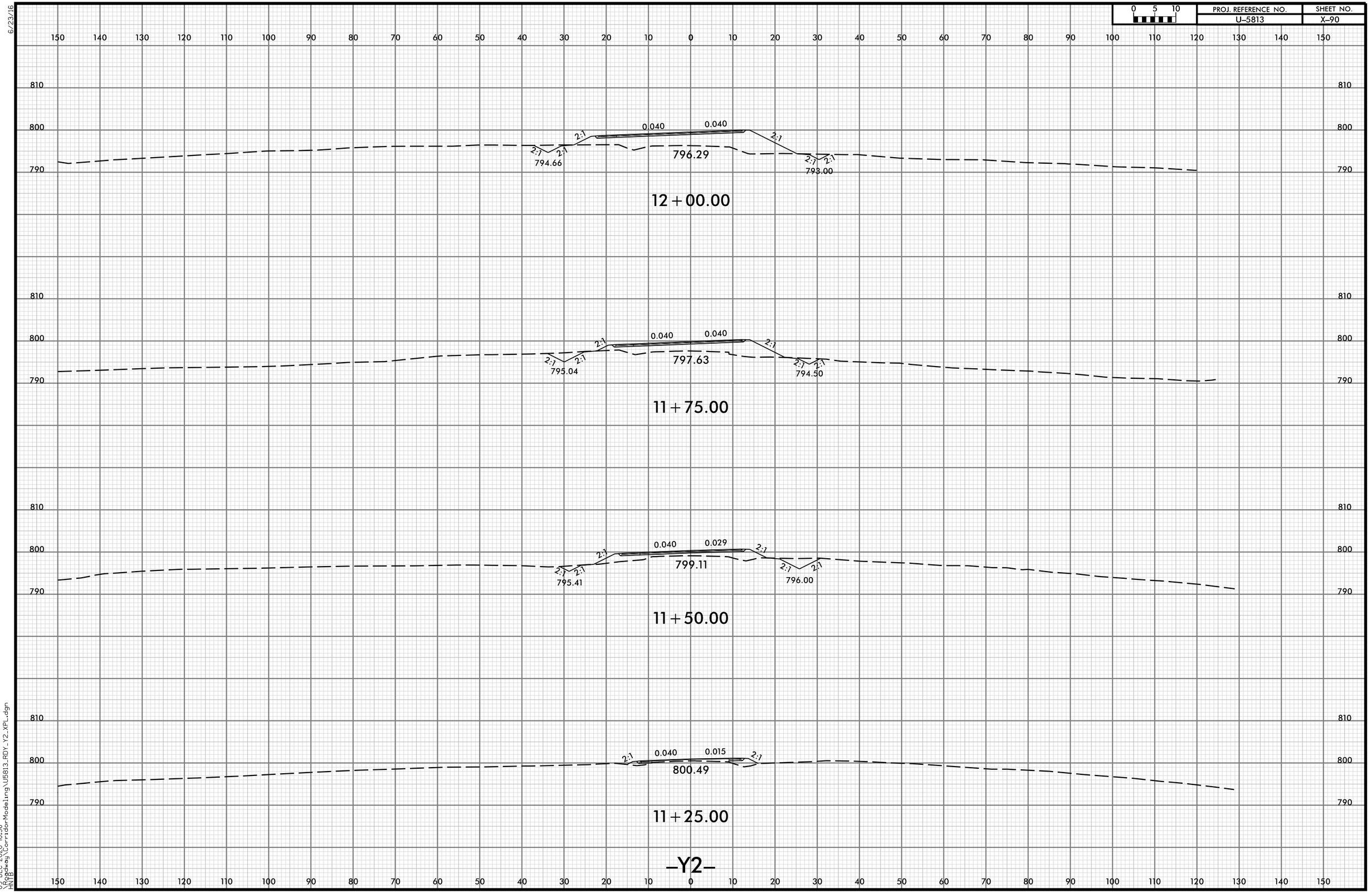
10+25.00

-Y2-

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HNB

6/23/16

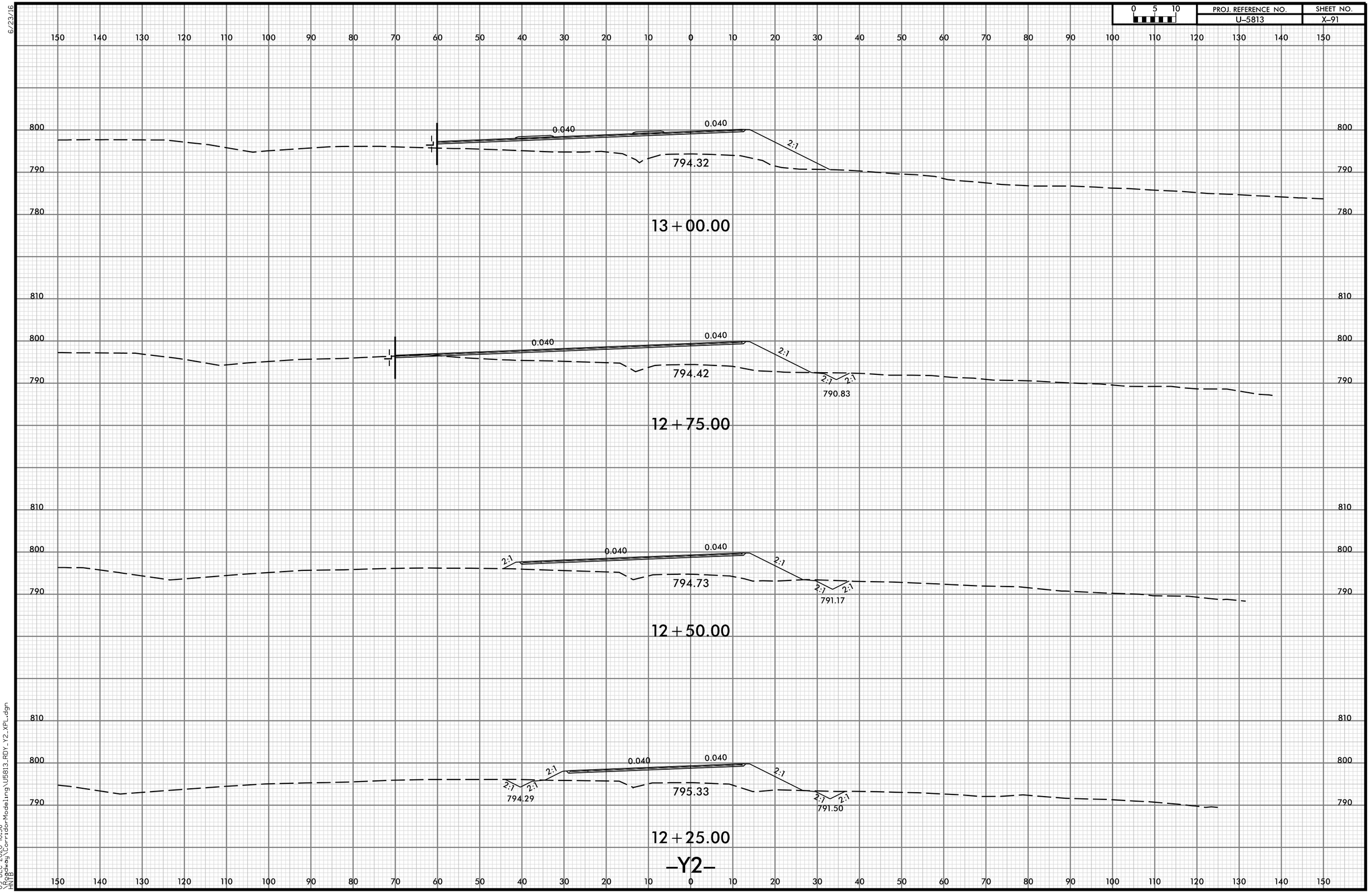
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HNB

6/23/16

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-5813	X-91



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HNB

6/23/16

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-5813	X-92

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

810
800
790

797.89

14+00.00

797.14

13+75.00

0.035 0.040 2:1

795.11

13+50.00

0.037 0.040 2:1

794.42

13+25.00

780

–Y2–

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

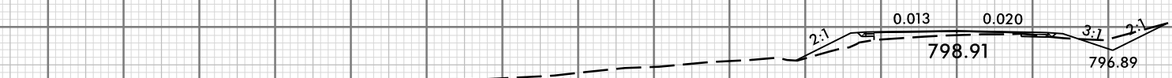
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MNB

6/23/16

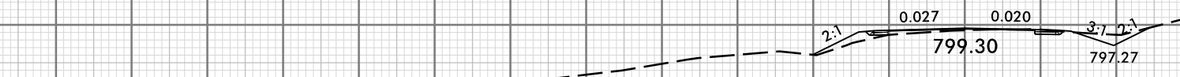
0 5 10	PROJ. REFERENCE NO.	SHEET NO.
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150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

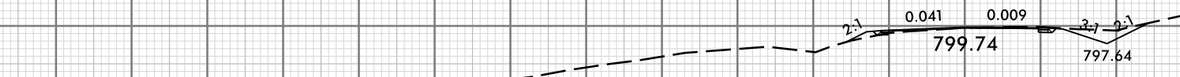
810
800
790



10+75.00



10+50.00



10+25.00



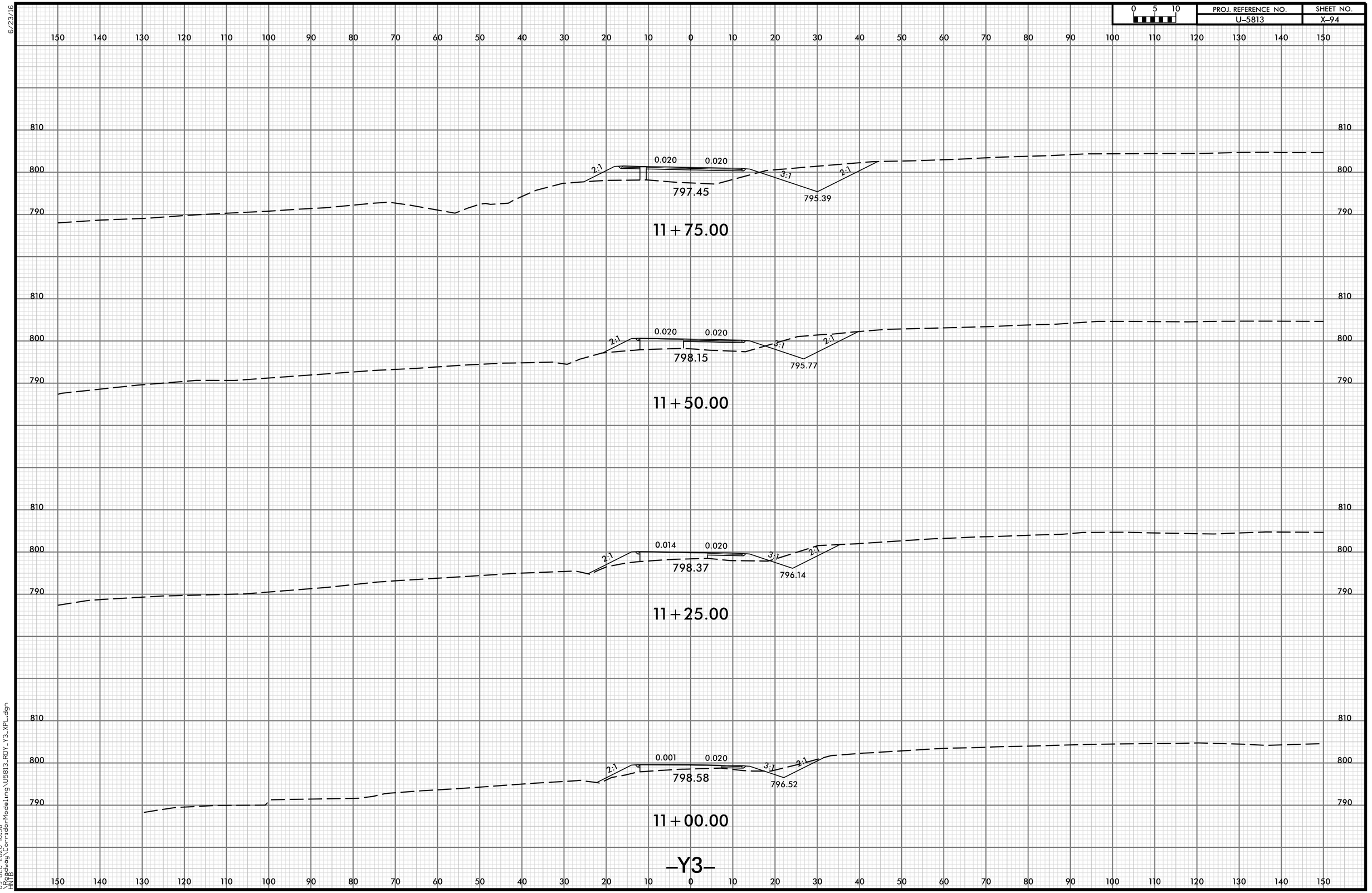
10+00.00

–Y3–

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HNB

6/23/16

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
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HNB

6/23/16

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-5813	X-95

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

820 810 800

2:1 0.000 0.005

802.03

12+75.00

810 800 790

2:1 0.014 0.014 3:1 2:1

801.57 800.76

12+50.00

820 810 800

2:1 0.020 0.020 3:1 2:1

800.58

12+25.00

810 800 790

2:1 0.020 0.020 3:1 2:1 2:1

796.62 797.18

12+00.00

-Y3-

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

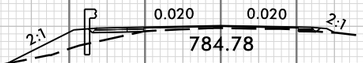
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6/23/16

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-5813	X-96

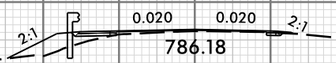
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800
790
780
770



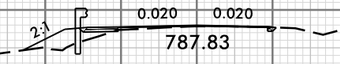
12+25.00

800
790
780



12+00.00

800
790
780



11+75.00

800
790
780



11+50.00

–Y4_REV–

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

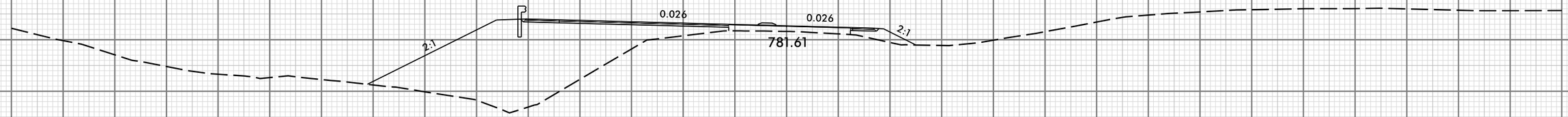
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HNB

6/23/16

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-5813	X-97

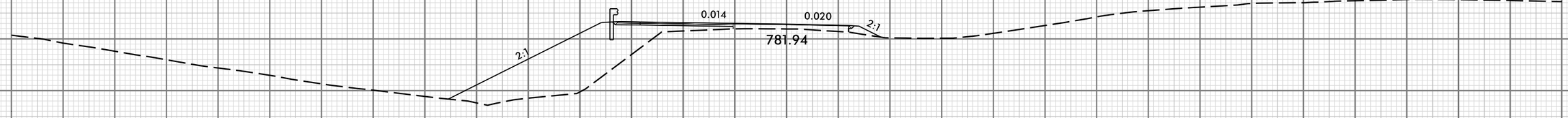
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790 780 770 760



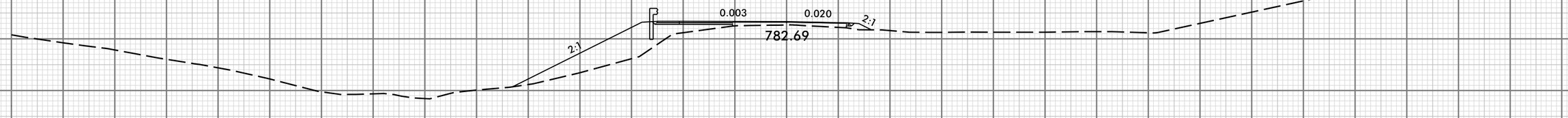
13+25.00

790 780 770



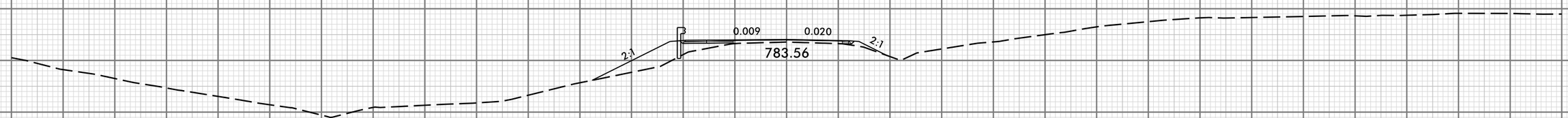
13+00.00

790 780 770



12+75.00

790 780 770



12+50.00

–Y4_REV–

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

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HNB

6/23/16

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-5813	X-98

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

800
790
780
770

782.42

14+00.00

781.69

13+75.00

0.038

0.038

2:1

781.42

13+50.00

-Y4_REV-

09-DEC-2020 10:36
\Roadway\Corridor Modeling\U5813_RDY_Y4_XPL.dgn
HNB

6/23/16

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-5813	X-99

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

780 770 760

0.040 0.040

776.76

2:1 4:1 2:1

772.93

10+75.00

790 780 770

2:1 0.040 0.040

779.02

10+50.00

790 780 770

780.40

10+25.00

790 780 770

780.49

10+00.00

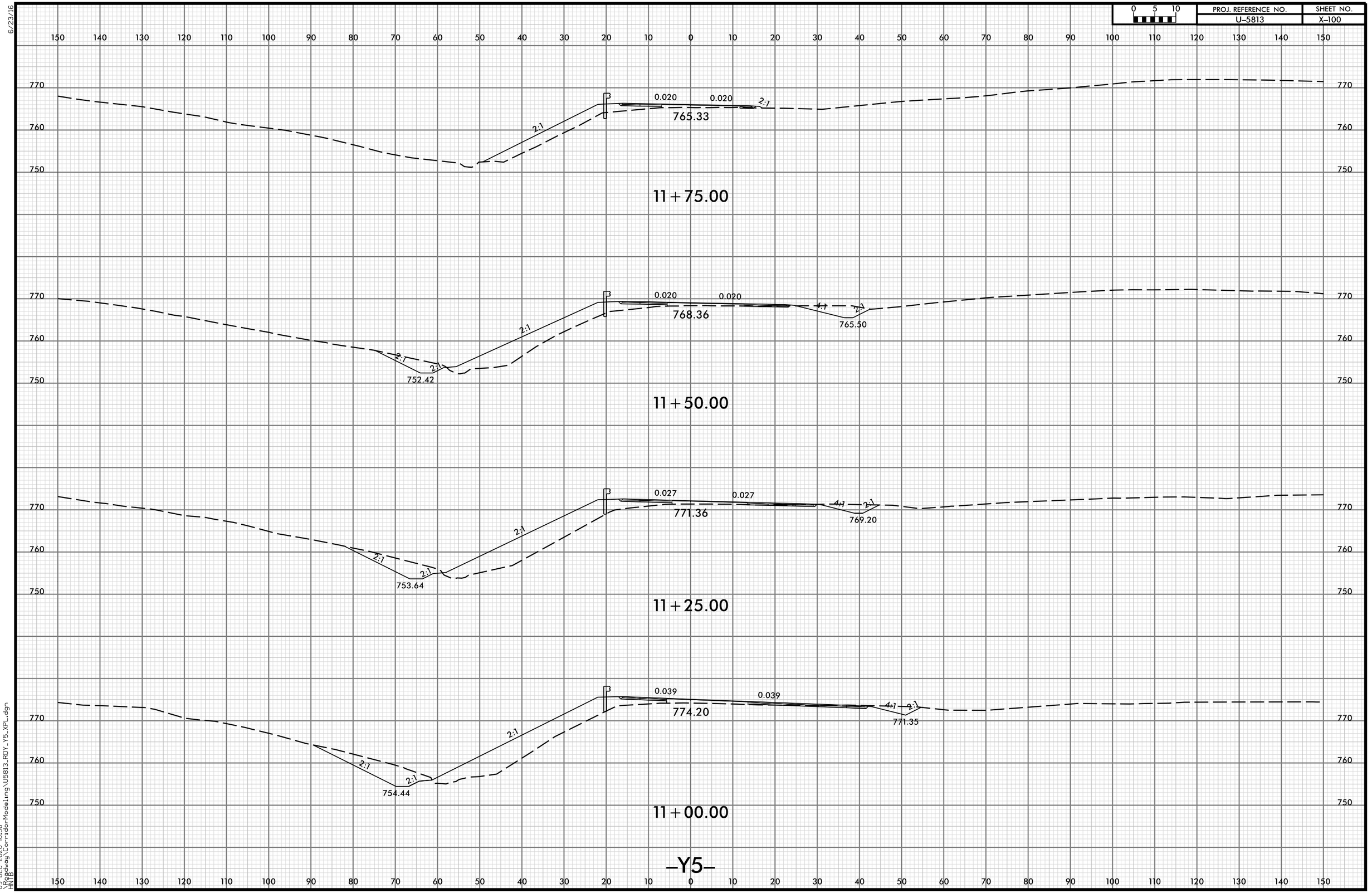
–Y5–

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

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HNB

6/23/16

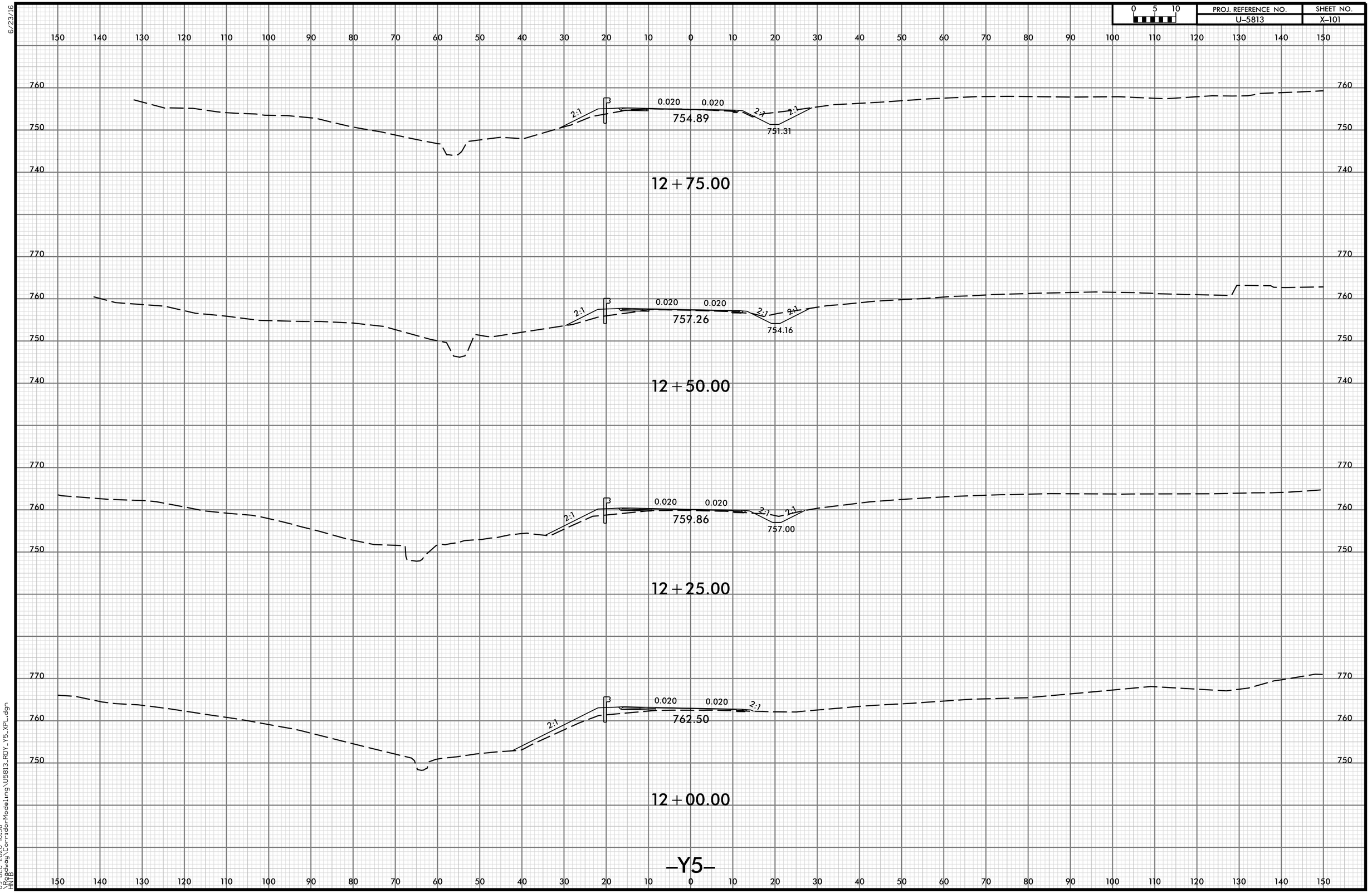
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	U-5813	X-100



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HNB

6/23/16

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-5813	X-101



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HNB

6/23/16

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-5813	X-102

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

760
750
740

750.95

2:1

2:1

745.63

2:1

13+25.00

760
750
740

752.64

2:1

2:1

748.47

13+00.00

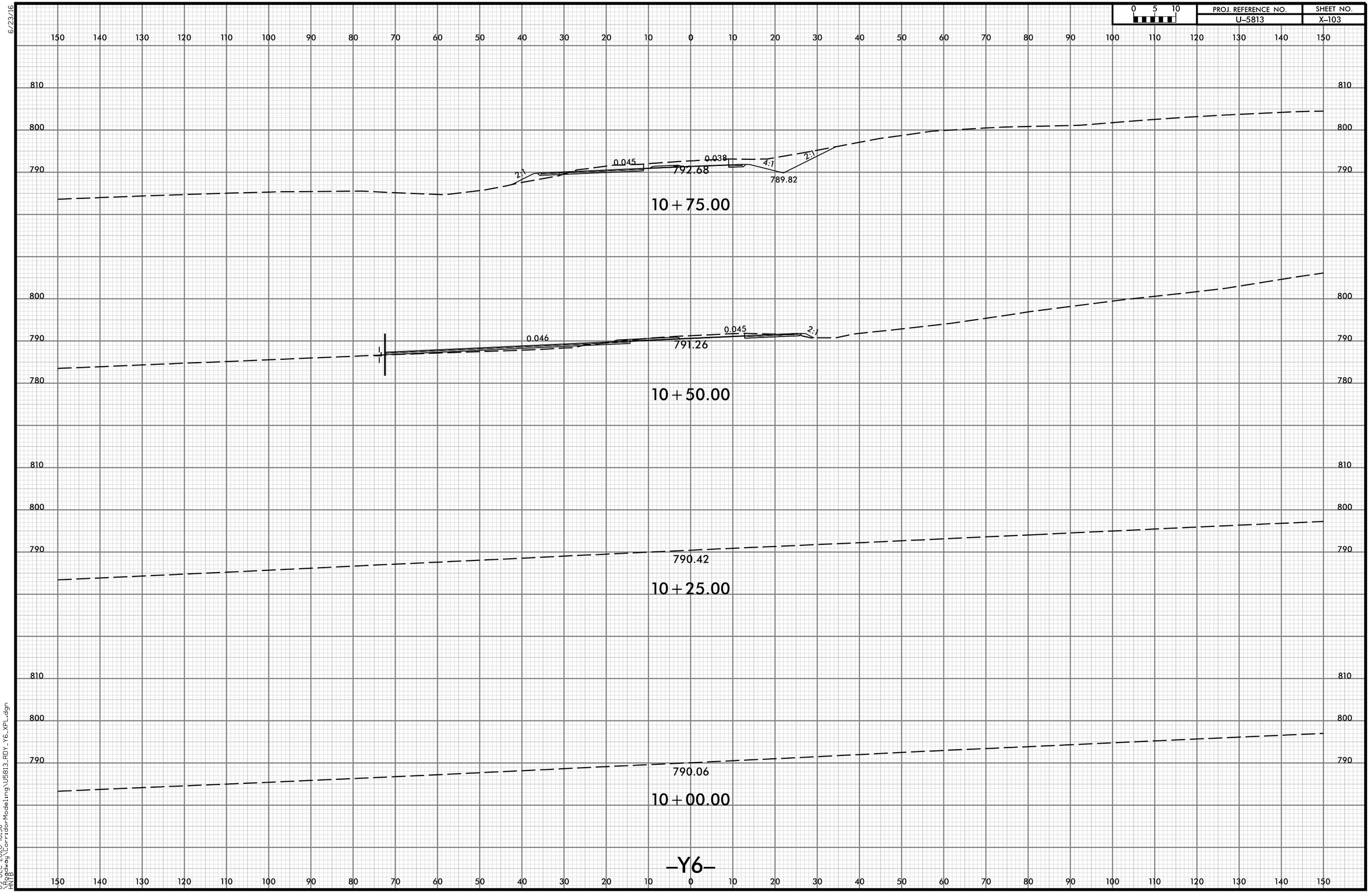
–Y5–

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

09-DEC-2020 10:36
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MNB

6/23/16

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-5813	X-103



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HNB

6/23/16

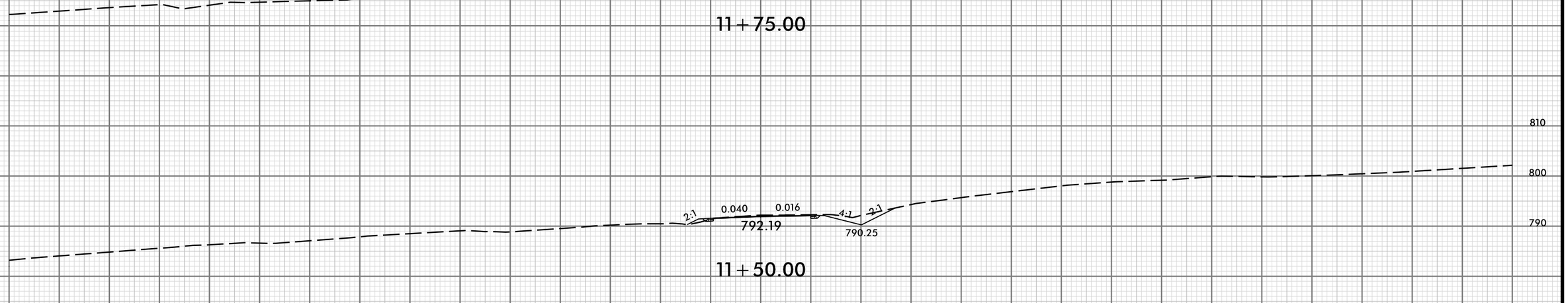
0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-5813	X-104

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

810
800
790

790.90

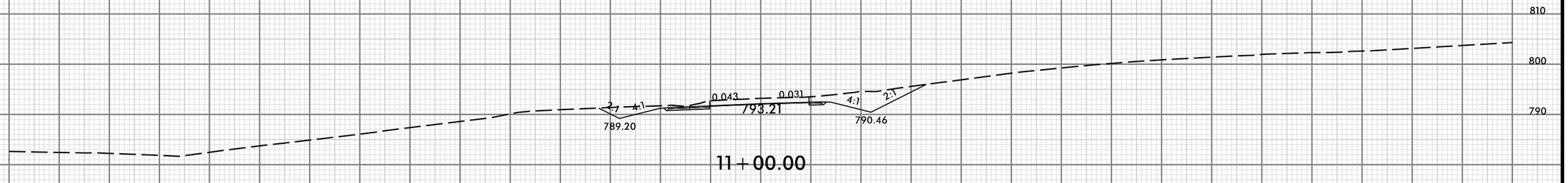
11+75.00



11+50.00



11+25.00



11+00.00

–Y6–

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

09-DEC-2020 10:36
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HNB

6/23/16

PROJ. REFERENCE NO.	SHEET NO.
U-5813	X-105

0 5 10

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

810
800
790

2:1 0.040 0.040 2:1 2:1
797.36
793.86

10+75.00

2:1 0.040 0.028 2:1 2:1
797.35
794.26

10+50.00

2:1 0.040 0.016 2:1 2:1
797.37
794.66

10+25.00

2:1 0.046 0.006 2:1 2:1
797.51
795.06

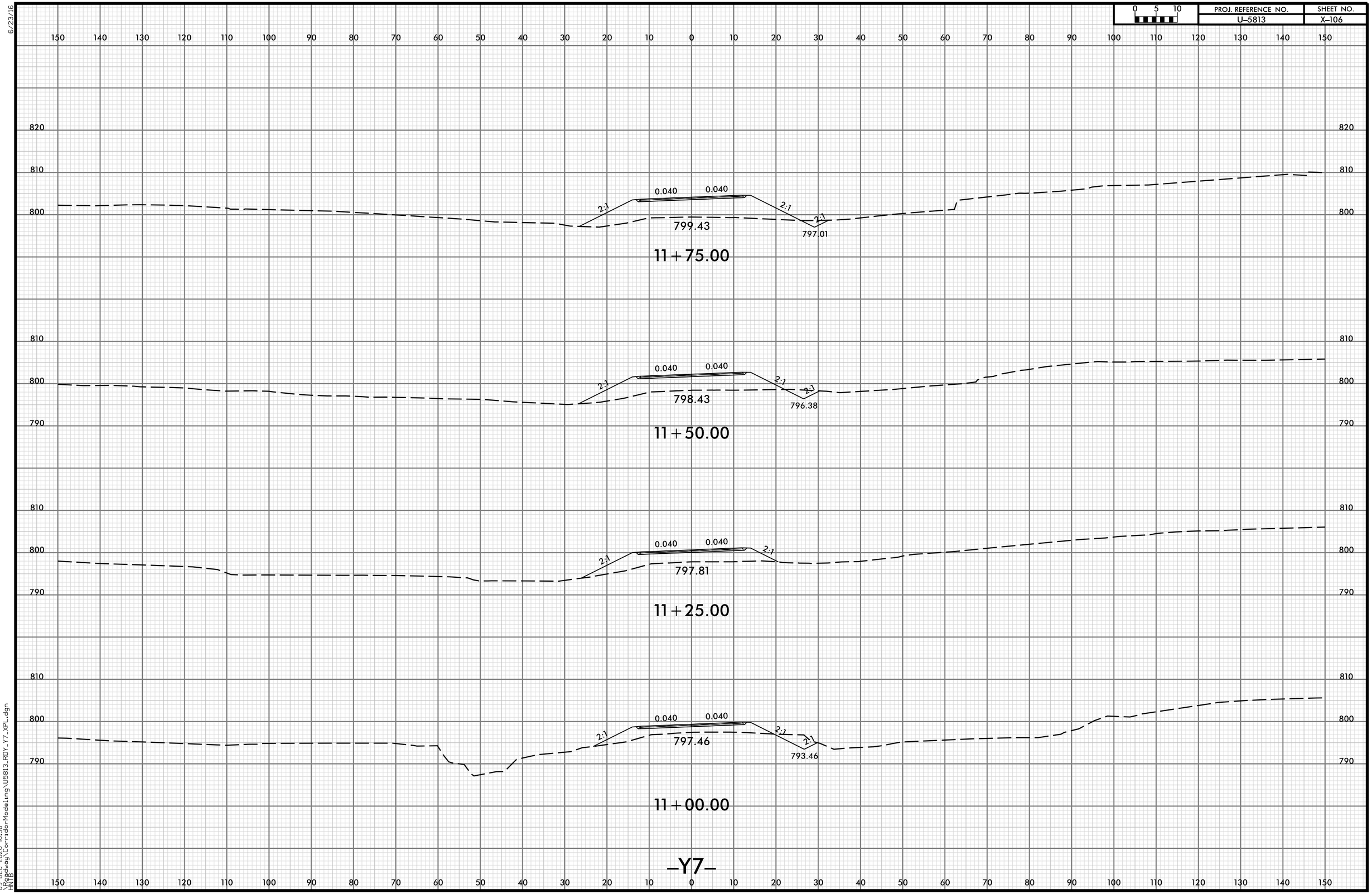
10+00.00

–Y7–

09-DEC-2020 10:36
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HNB

6/23/16

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
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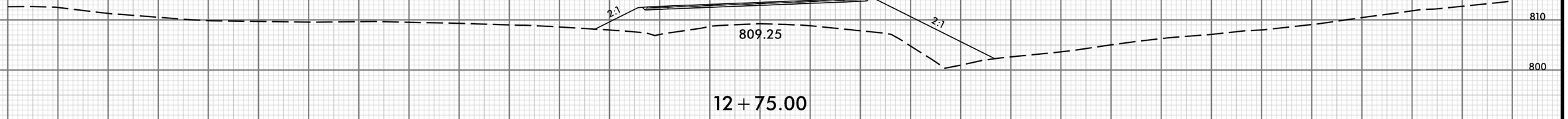
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HNB

6/23/16

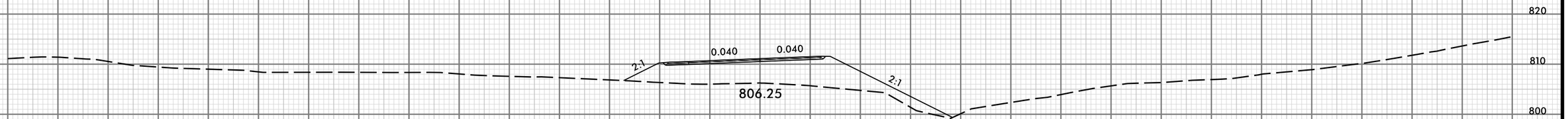
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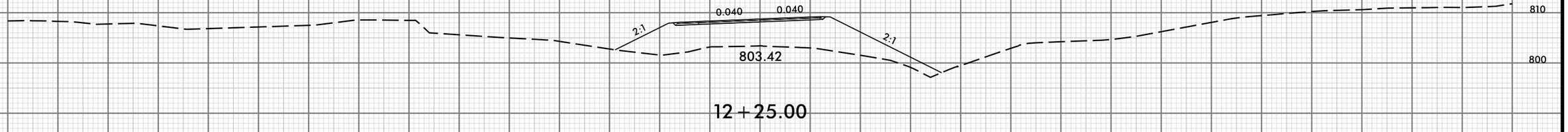
820
810
800



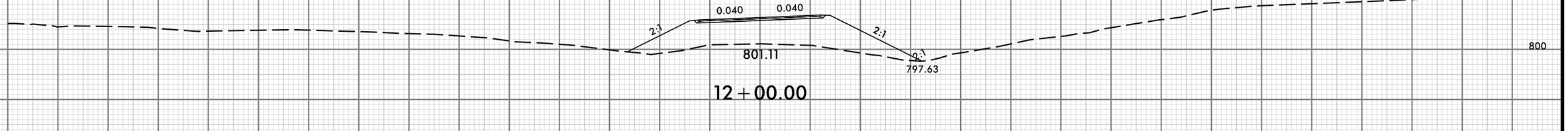
12+75.00



12+50.00



12+25.00



12+00.00

–Y7–

09-DEC-2020 10:36
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HNB

6/23/16

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-5813	X-108

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840
830
820
810

816.41

13+50.00

830
820
810

2:1 0.040 0.040

814.45

13+25.00

820
810
800

2:1 0.040 0.040 2:1

811.97

13+00.00

-Y7-

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

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6/23/16

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-5813	X-109

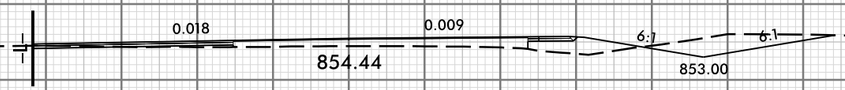
150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

870
860
850



10+75.00

870
860
850



10+50.00

880
870
860

855.40

10+25.00

880
870
860

855.31

10+00.00

–Y8–

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

09-DEC-2020 10:36
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HNB

6/23/16

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-5813	X-110

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

870
860
850

2:1 0.020 0.020 2:1
851.95
849.25

11+75.00

870
860
850

2:1 0.020 0.020 2:1
852.52
850.00

11+50.00

870
860
850

2:1 0.020 0.020 2:1
853.02
850.75

11+25.00

870
860
850

0.020 0.015 2:1
853.40
851.50

11+00.00

–Y8–

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

09-DEC-2020 10:37
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HNB

6/23/16

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-5813	X-111

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

870
860
850

848.47 847.31

12+75.00

2:1 0.053 0.006 2:1 2:1

849.24 846.75

12+50.00

2:1 0.041 0.019 2:1 2:1

850.20 847.63

12+25.00

2:1 0.030 0.020 2:1 2:1

851.21 848.50

12+00.00

-Y8-

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

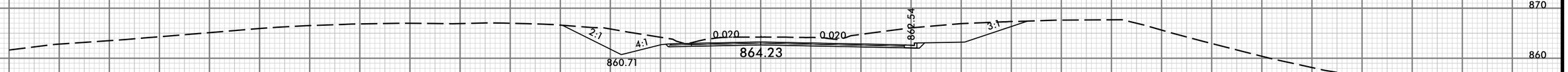
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HNB

6/23/16

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-5813	X-112

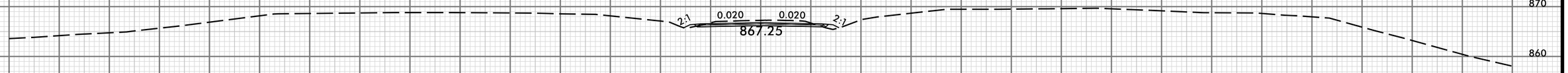
150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

870
860
850



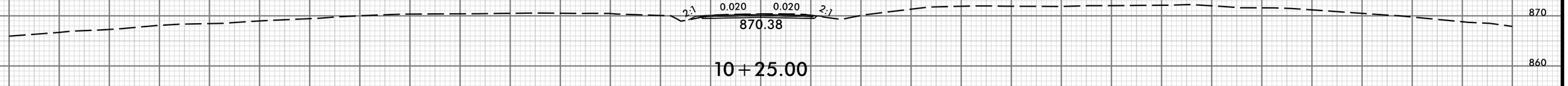
10+75.00

880
870
860



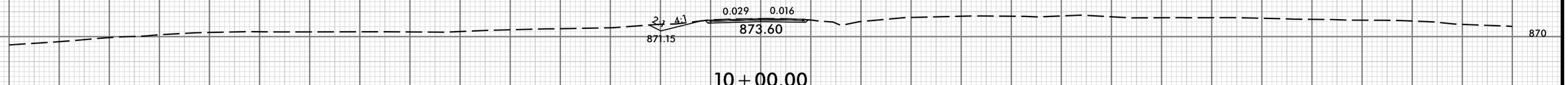
10+50.00

890
880
870
860



10+25.00

890
880
870



10+00.00

–Y9–

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

09-DEC-2020 10:37
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HNB

6/23/16

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-5813	X-113

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

870
860
850

856.53

11+50.00

870
860
850

2:1
4:1
0.020
0.005
854.77
858.38

11+25.00

870
860
850

2:1
4:1
0.020
0.008
857.22
861.12

11+00.00

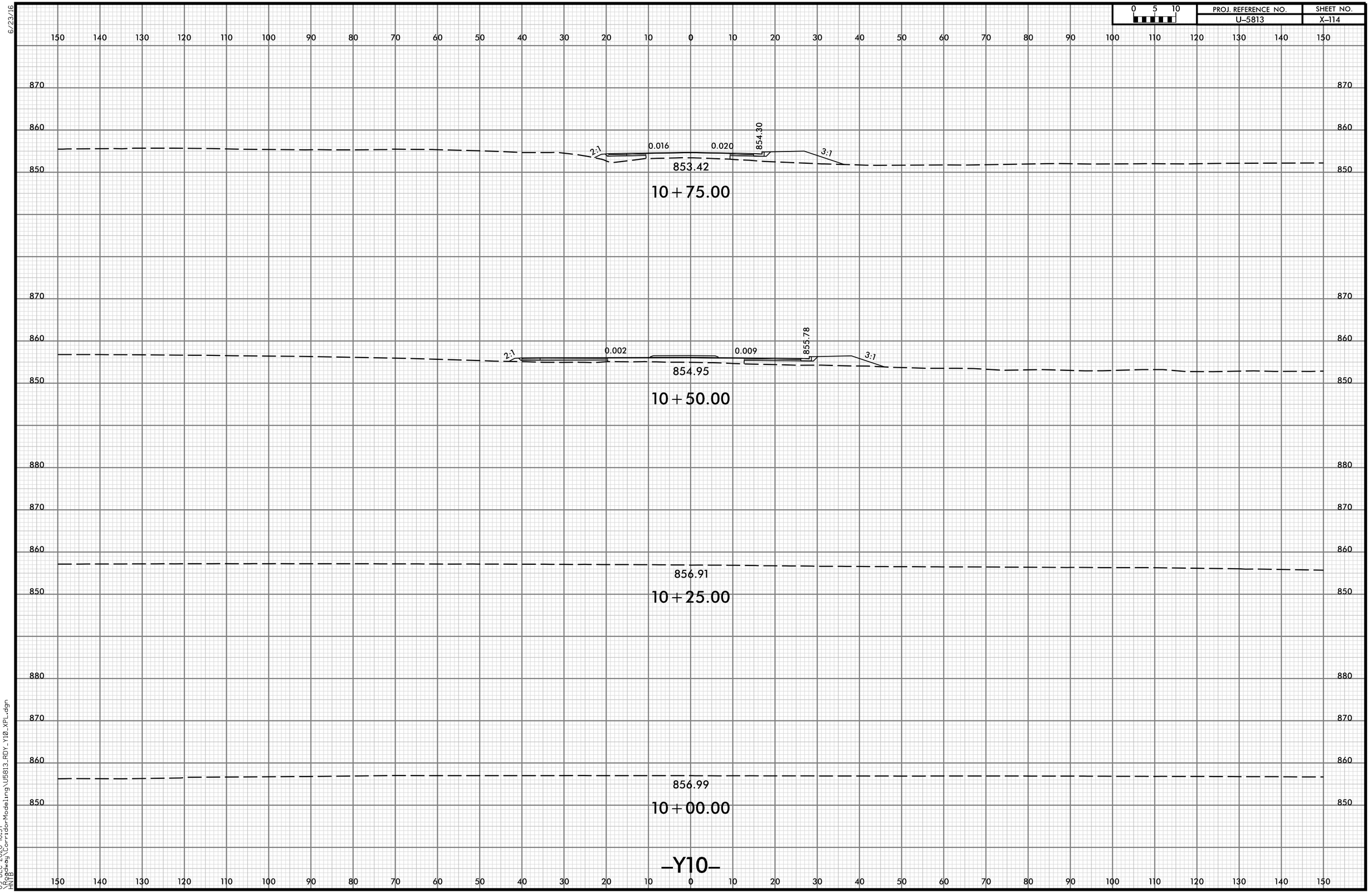
–Y9–

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09-DEC-2020 10:37
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HNB

6/23/16

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-5813	X-114



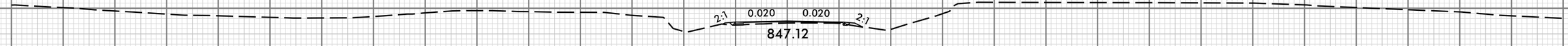
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HNB

6/23/16

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-5813	X-115

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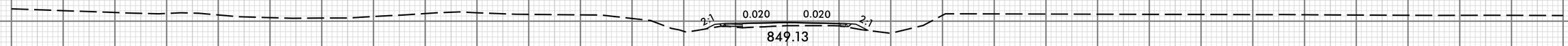
860
850
840



847.12

11+75.00

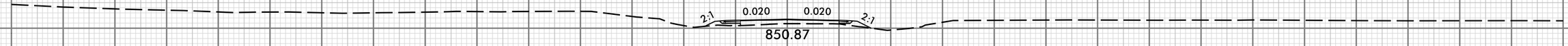
870
860
850



849.13

11+50.00

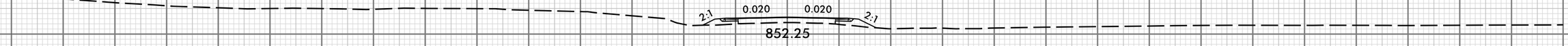
870
860
850



850.87

11+25.00

870
860
850



852.25

11+00.00

–Y10–

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

09-DEC-2020 10:37
\Roadway\Corridor Modeling\U5813_RDY_Y10_XPL.dgn
HNB

6/23/16

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-5813	X-116

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

850
840
830

0.033 0.022 2:1

844.81

12+00.00

-Y10-

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

09-DEC-2020 10:37
\Roadway\Corridor Modeling\U5813_RDY_Y10_XPL.dgn
MNB

6/23/16

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-5813	X-117

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

860
850

0.020 0.020 855.02 3:1
855.06

11+00.00

860
850

0.020 0.020 854.10 3:1
854.49

10+75.00

860
850

0.007 0.013 853.59 3:1
854.25

10+50.00

860

10+25.00

860

10+00.00

–Y11–

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

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HNB

6/23/16

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-5813	X-118

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

860
850
870

0.050 0.008 2:1
861.49

12+00.00

860
850

0.036 0.020 2:1
859.56

11+75.00

860
850

0.022 0.020 4:1 2:1
857.63
854.87

11+50.00

860
850

0.020 0.020 4:1 2:1
855.99
853.45

11+25.00

–Y11–

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

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HNB

6/23/16

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-5813	X-119

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

890
880
870

873.73
13+25.00

872.83
13+00.00

872.33
12+75.00

871.97
12+50.00

–Y12–

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

09-DEC-2020 10:37
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HNB

6/23/16

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-5813	X-120

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

890
880
870

873.35
14+25.00

873.89
14+00.00

874.51
13+75.00

874.53
13+50.00

–Y12–

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

09-DEC-2020 10:37
\Roadway\Corridor Modeling\U5813_RDY_Y12-A_XPL.dgn
HNB

6/23/16

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-5813	X-121

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

890
880
870

872.13

15+00.00

890
880
870

872.52

14+75.00

890
880
870

872.96

14+50.00

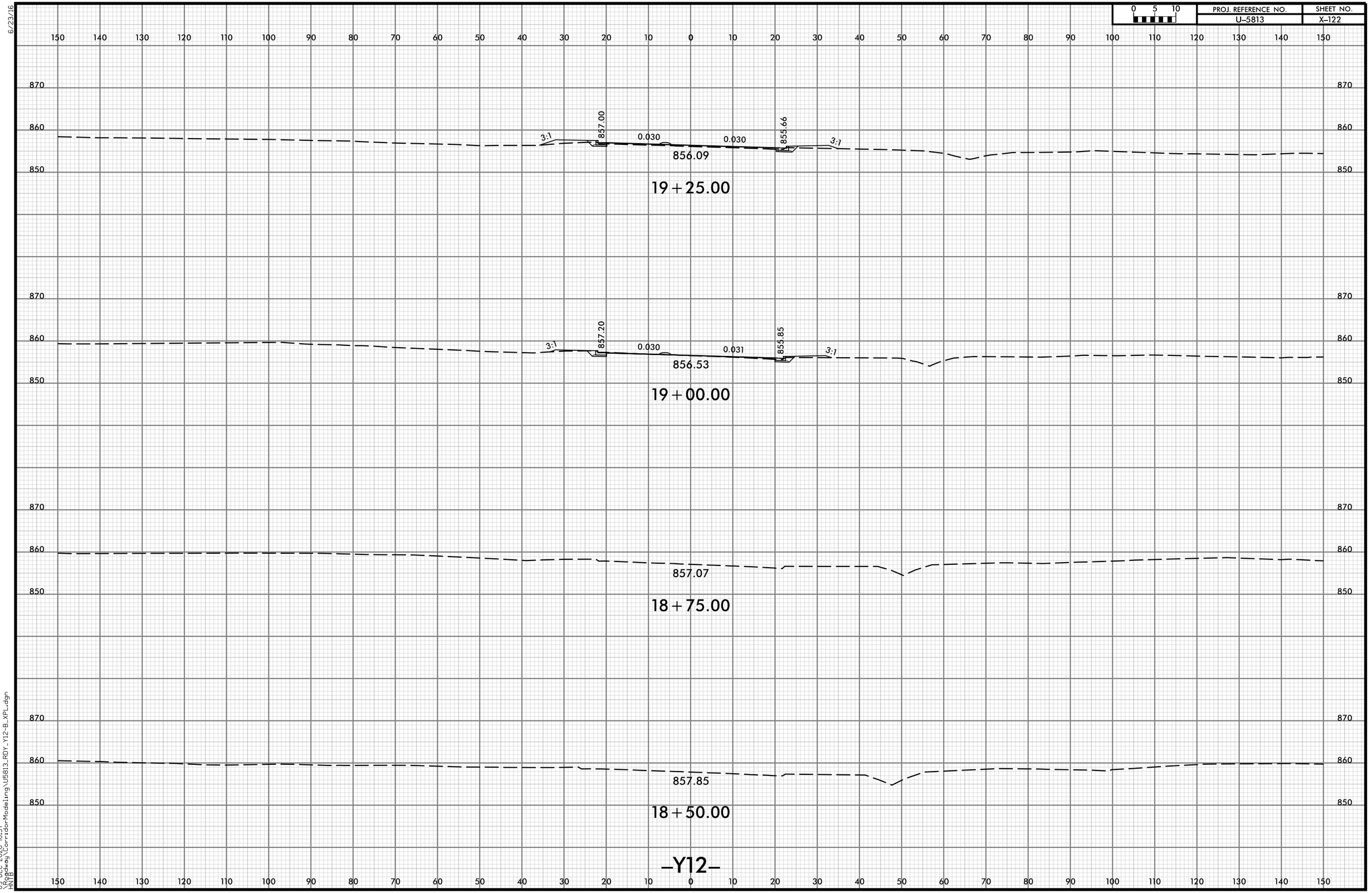
-Y12-

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

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MNB

6/23/16

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-5813	X-122



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HNB

6/23/16

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-5813	X-123

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

870
860
850

855.35

20+25.00

3:1 856.70 0.009 0.011 855.58 3:1

855.51

20+00.00

3:1 857.05 0.022 0.024 855.45 3:1

855.62

19+75.00

3:1 857.00 0.030 0.030 855.49 3:1

855.76

19+50.00

-Y12-

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

09-DEC-2020 10:37
\Roadway\Corridor Modeling\U5813_RDY_Y12-B_XPL.dgn
HNB

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-5813	X-124

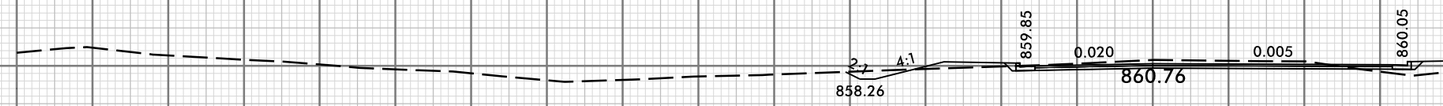
150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

880
870
860



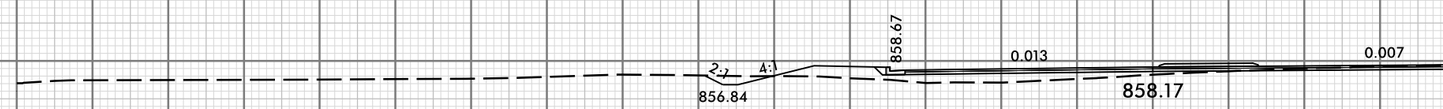
11+00.00

880
870
860



10+75.00

870
860
850



10+50.00

870
860
850

858.63

10+25.00

–Y13–

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

09-DEC-2020 10:37
\Roadway\Corridor Modeling\U5813_RDY_Y13_XPL.dgn
HNB

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-5813	X-125

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

880
870
860

2:1 4:1 0.020 0.002 4:1 2:1

868.66 871.99 868.80

12+00.00

880
870
860

2:1 4:1 0.020 0.010 867.86 4:1

866.14 869.62

11+75.00

870
860

2:1 4:1 0.020 0.020 865.23 4:1

863.62 867.80

11+50.00

880
870
860

2:1 4:1 0.020 0.020 863.04 4:1

861.10 865.37

11+25.00

-Y13-

850

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

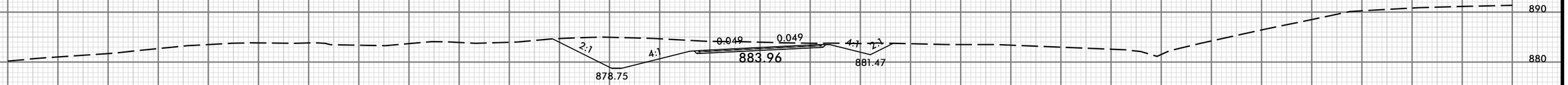
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HNB

8/23/99

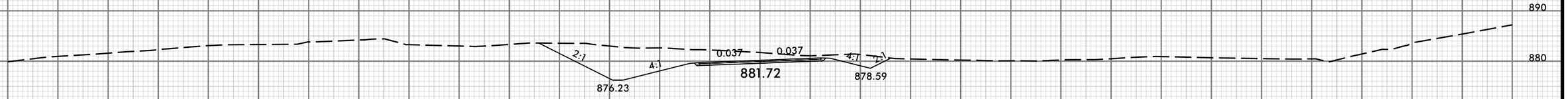
0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U–5813	X–126

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

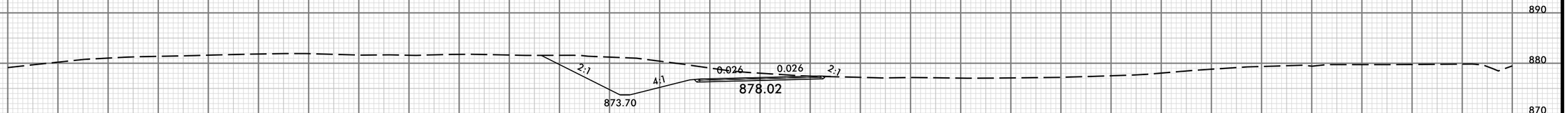
890
880
870



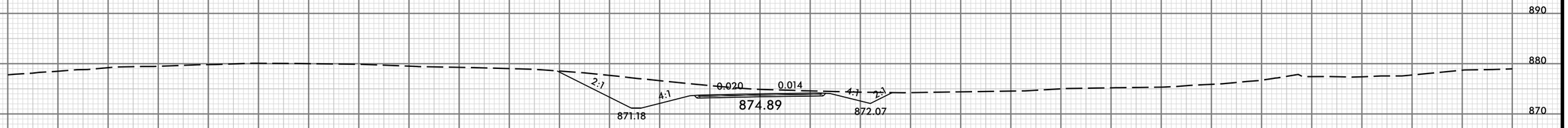
13+00.00



12+75.00



12+50.00



12+25.00

–Y13–

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

890
880
870
860

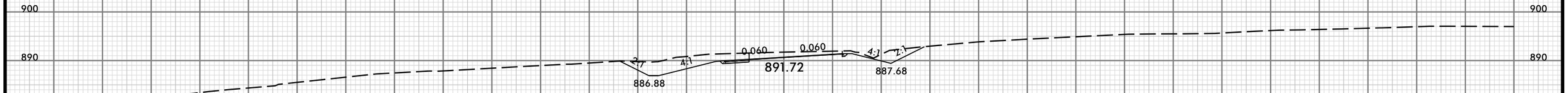
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HNB

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-5813	X-127

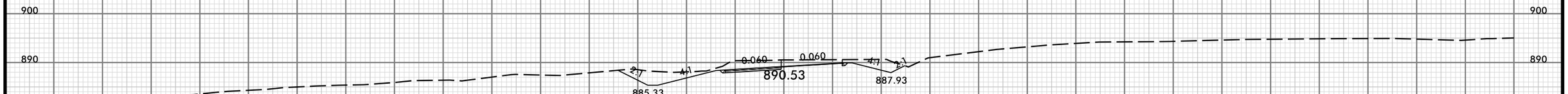
150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

900
890
880



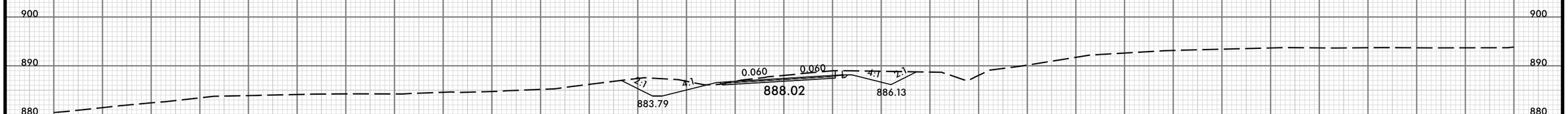
14+00.00

900
890
880



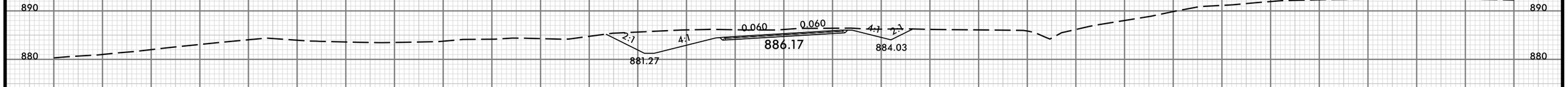
13+75.00

900
890
880



13+50.00

890
880
870



13+25.00

–Y13–

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

09-DEC-2020 10:37
\Roadway\Corridor Modeling\U5813_RDY_Y13_XPL.dgn
HNB

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-5813	X-128

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

910
900
890
880

2:1 0.050 0.050 2:1
893.65

15+00.00

900
890
880

2:1 4:1 0.050 0.050 2:1
890.58
893.13

14+75.00

900
890
880

2:1 4:1 0.050 0.050 4:1 2:1
889.97
893.05
891.31

14+50.00

900
890
880

2:1 4:1 0.060 0.060 4:1 2:1
888.42
892.47
890.59

14+25.00

-Y13-

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

09-DEC-2020 10:37
\Roadway\Corridor Modeling\U5813_RDY_Y13_XPL.dgn
HNTB

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U–5813	X–129

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

910
900
890
880

897.77

16+00.00

896.67

15+75.00

895.47

15+50.00

894.35

15+25.00

–Y13–

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

09-DEC-2020 10:37
\Roadway\CorridorModeling\U5813_RDY_Y13_XPL.dgn
HNB

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U–5813	X–130

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

880
870
860

2:1 4:1 0.014 0.020 2:1
863.15
864.49
11+00.00

870
860

2:1 4:1 0.020 0.020 2:1
862.10
864.21
10+75.00

870
860

2:1 0.020 0.020 2:1
863.58
10+50.00

870
860
850

2:1 0.012 0.020 2:1
862.75
10+25.00

860
850

2:1 0.000 0.017 2:1
861.77
10+00.00

–Y14–

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

09-DEC-2020 10:37
\Roadway\Corridor Modeling\U5813_RDY_Y14_XPL.dgn
HNB

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U–5813	X–131

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

880
870
860

2:1 0.009 0.021 2:1

865.04

11+50.00

880
870
860

2:1 4:1 0.002 0.020 2:1

864.21

864.73

11+25.00

–Y14–

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

09-DEC-2020 10:37
\Roadway\CorridorModeling\U5813_RDY_Y14_XPL.dgn
HNB

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-5813	X-132

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

880
870
860

3:1 871.63 0.020 0.001 872.00 3:1
871.09

10+75.00

880
870
860

3:1 872.76 0.020 0.013 873.63 3:1
872.12

10+50.00

880
870
860

3:1 874.01 0.011 0.023 -Y-
872.98

10+25.00

890
880
870

873.31

10+00.00

-Y15-

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

09-DEC-2020 10:37
\Roadway\CorridorModeling\U5813_RDY_Y15_XPL.dgn
HNTB

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-5813	X-132

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

900
890
880

3:1 882.10 0.029 885.05 0.029 880.53 3:1

10+75.00

900
890
880

3:1 881.22 0.021 882.31 0.021 879.68 3:1

10+50.00

900
890
880

3:1 879.92 0.013 878.96 0.015 878.65 3:1

10+25.00

890
880
870

879.64

10+00.00

-Y17-

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

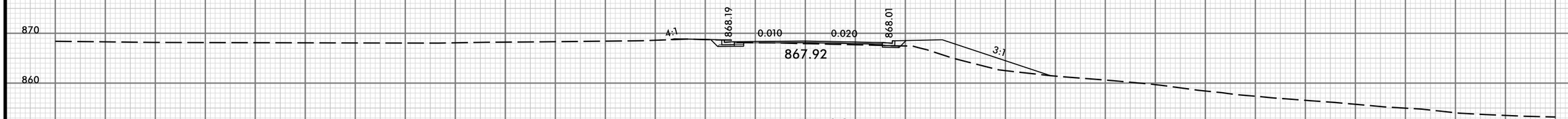
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MNB

8/23/99

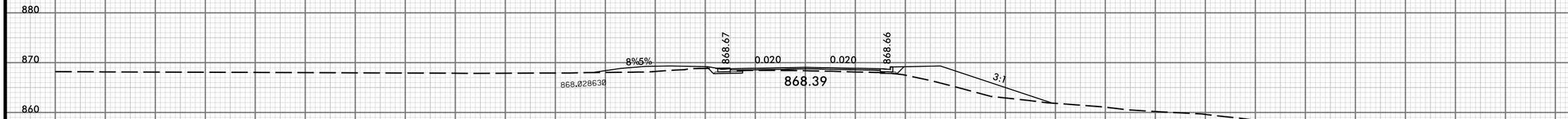
0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-5813	X-133

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

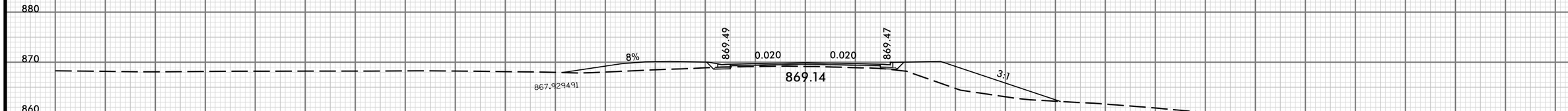
880
870
860



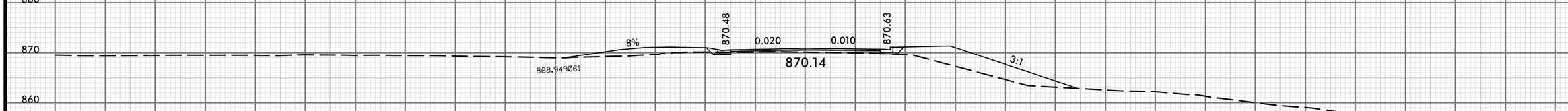
11+75.00



11+50.00



11+25.00



11+00.00

-Y15-

09-DEC-2020 10:37
\Roadway\Corridor Modeling\U5813_RDY_Y15_XPL.dgn
HNB

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U–5813	X–133

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

900 890 880

4:1 4:1 0.060 0.060 4:1 4:1

892.42

885.23 882.78

11+75.00

900 890 880

4:1 4:1 0.053 0.053 4:1 4:1

890.55

883.91 881.59

11+50.00

910 900 890 880

4:1 4:1 0.045 0.045 4:1 4:1

889.31

882.52 880.41

11+25.00

900 890 880

2:1 0.037 0.037 3:1

887.83

881.25 881.39

11+00.00

–Y17–

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

09-DEC-2020 10:37
\Roadway\CorridorModeling\U5813_RDY_Y17_XPL.dgn
HNB

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U–5813	X–134

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

870
860
850

866.57

12+75.00

870
860
850

866.98

12+50.00

870
860
850

867.32

12+25.00

880
870
860
850

4:1 867.86 0.002 0.020 867.47 3:1

867.70

12+00.00

–Y15–

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

09-DEC-2020 10:37
\Roadway\CorridorModeling\U5813_RDY_Y15_XPL.dgn
HNTB

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-5813	X-134

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

910 900 890 880

894.67
4:1 4:1 0.060 0.060 4:1 4:1
888.38 886.06

12+75.00

894.45
4:1 4:1 0.060 0.060 4:1 4:1
887.80 885.48

12+50.00

893.92
4:1 4:1 0.060 0.060 4:1 4:1
887.09 884.77

12+25.00

892.94
4:1 4:1 0.060 0.060 4:1 4:1
886.23 883.91

12+00.00

-Y17-

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

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\Roadway\Corridor Modeling\U5813_RDY_Y17_XPL.dgn
HNB

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-5813	X-135

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

910
900
890
880

4:1 4:1 0.047 893.85 0.047 4:1 4:1

888.81 886.98

13+75.00

910
900
890

4:1 4:1 0.055 894.02 0.055 4:1 4:1

889.15 887.02

13+50.00

910
900
890

4:1 4:1 0.060 894.47 0.060 4:1 4:1

889.12 886.80

13+25.00

910
900
890

4:1 4:1 0.060 894.58 0.060 4:1 4:1

888.82 886.50

13+00.00

-Y17-

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

09-DEC-2020 10:37
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HNB

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U–5813	X–136

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

900
890
880

4:1 4:1 0.015 0.015 4:1 4:1
885.27 890.04 884.85

14+75.00

4:1 4:1 0.023 0.023 4:1 4:1
886.15 891.09 885.38

14+50.00

4:1 4:1 0.031 0.031 4:1 4:1
887.04 892.88 885.91

14+25.00

4:1 4:1 0.039 0.039 4:1 4:1
887.92 893.47 886.45

14+00.00

–Y17–

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

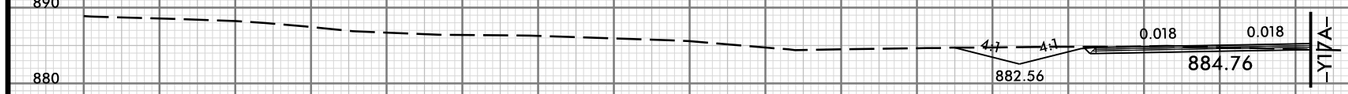
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8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
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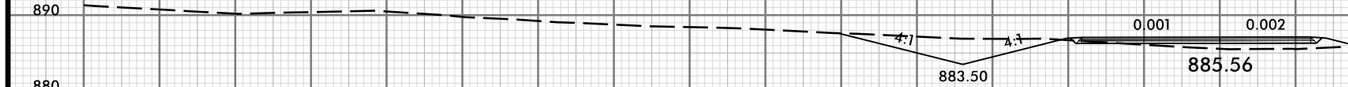
900
890
880



15+75.00



15+50.00



15+25.00



15+00.00

-Y17-

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HNB

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U–5813	X–138

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

890
880
870

4:1 4:1 0.050 0.050 2:1
877.11
878.93

16+75.00

890
880
870

4:1 4:1 0.042 0.042
878.47
880.82
–Y17A–

16+50.00

900
890
880

4:1 4:1 0.034 0.034
879.85
882.62
–Y17A–

16+25.00

900
890
880

4:1 4:1 0.026 0.026
881.24
883.71
–Y17A–

16+00.00
–Y17–

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

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HNB

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-5813	X-139

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

880
870
860

2:1 0.060 0.060 2:1

872.52

17+75.00

880
870
860

2:1 0.060 0.060 2:1

874.28

17+50.00

880
870
860

2:1 0.060 0.060 2:1

875.49

17+25.00

890
880
870

2:1 0.058 0.058 2:1

877.06

17+00.00

-Y17-

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

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HNB

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-5813	X-140

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

880
870
860

2:1 0.032 0.032 2:1
867.77

18+75.00

880
870
860

4:1 4:1 0.044 0.044 2:1
867.81
868.92

18+50.00

880
870
860

4:1 4:1 0.056 0.056 2:1
869.16
870.03

18+25.00

880
870
860

4:1 4:1 0.060 0.060 2:1
870.51
871.42

18+00.00
-Y17-

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

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HNB

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-5813	X-141

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

880
870
860

4:1 4:1 0.020 0.020 2:1
858.99
861.26

19+75.00

880
870
860

4:1 4:1 0.020 0.020 2:1
861.02
863.27

19+50.00

880
870
860

4:1 4:1 0.020 0.020 2:1
862.95
865.10

19+25.00

880
870
860

2:1 0.020 0.020 2:1
866.64

19+00.00
-Y17-

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

09-DEC-2020 10:37
\Roadway\Corridor Modeling\U5813_RDY_Y17_XPL.dgn
HNB

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-5813	X-142

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

870
860
850

852.74

20+75.00

870
860
850

2:1 0.010 0.003 2:1

854.77

20+50.00

880
870
860

2:1 0.020 0.015 2:1

856.96

20+25.00

880
870
860

4:1 4:1 0.020 0.020 2:1

856.86

859.14

20+00.00

-Y17-

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

09-DEC-2020 10:37
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HNB

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U–5813	X–143

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

870
860
850

851.07

21+00.00

–Y17–

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

870
860
850

09-DEC-2020 10:37
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HNB

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U–5813	X–144

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

890
880
870

3:1
874.68
0.020
0.020
875.03
2:1
875.45

12+25.00

890
880
870

3:1
873.78
0.020
0.020
874.81
2:1
875.14

12+00.00

890
880
870

874.98

11+75.00

890
880
870

874.84

11+50.00

–Y17A–

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

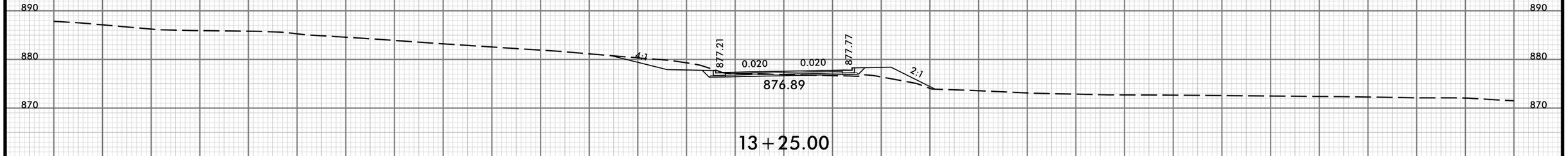
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HNTB

8/23/99

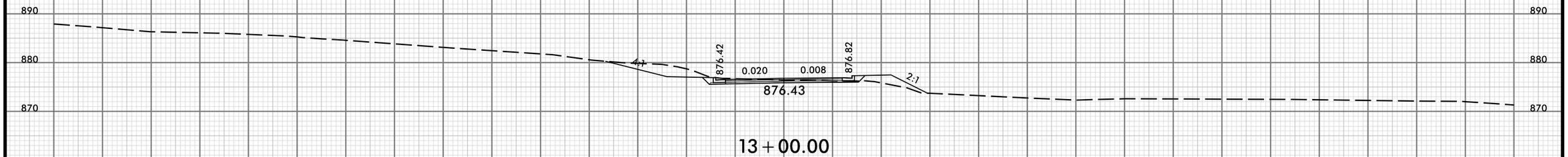
0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-5813	X-145

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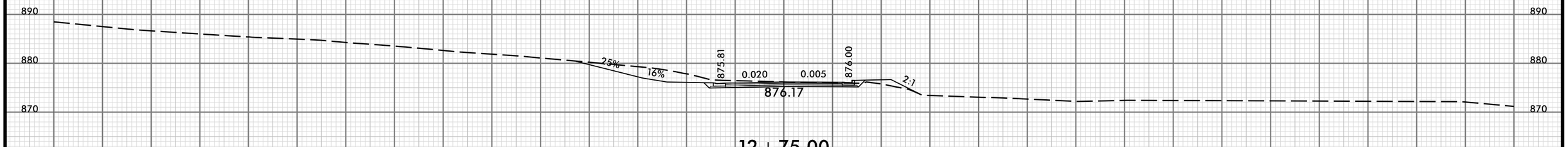
890
880
870



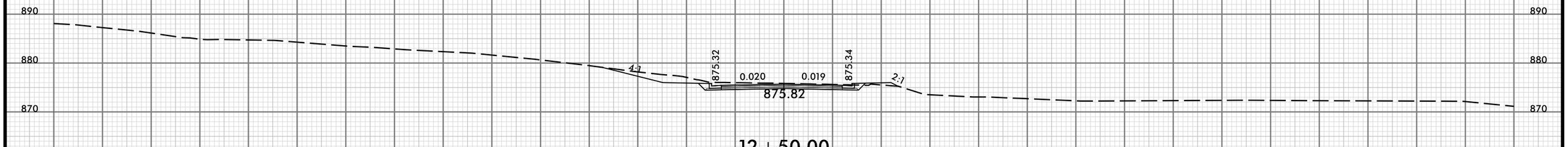
13+25.00



13+00.00



12+75.00



12+50.00

–Y17A–

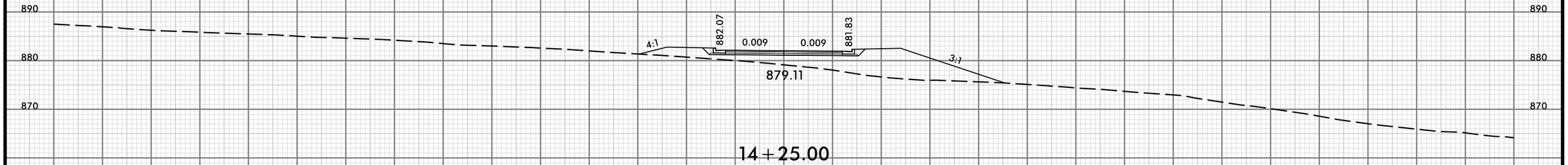
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HNTB

8/23/99

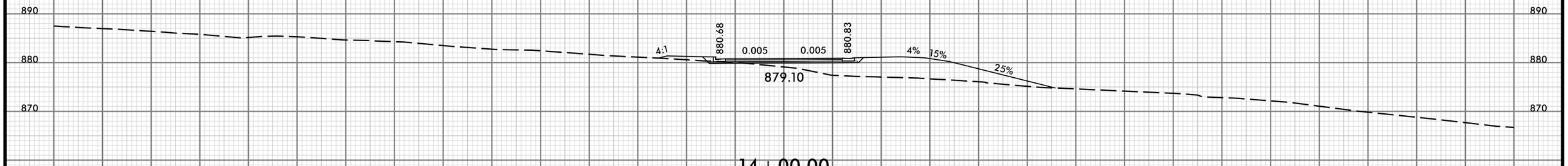
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	U–5813	X–146

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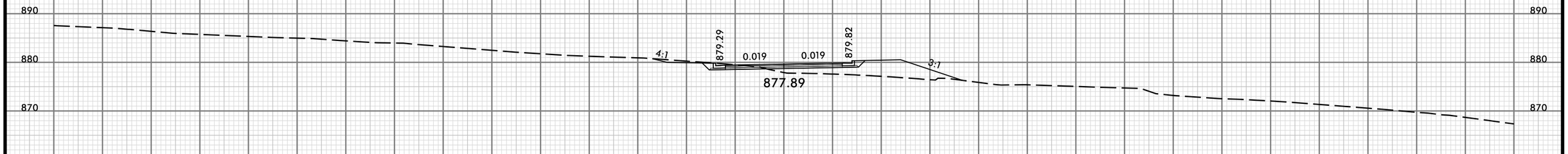
890
880
870



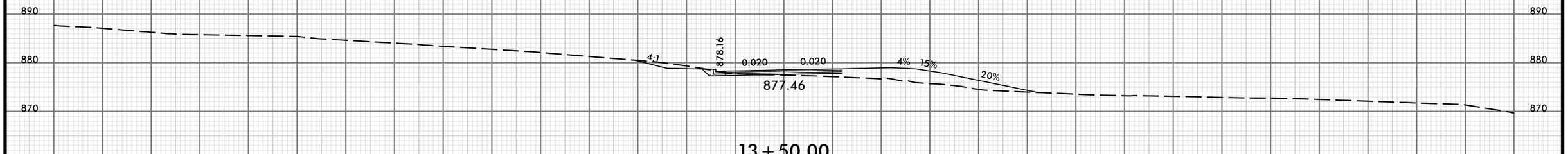
14+25.00



14+00.00



13+75.00



13+50.00

–Y17A–

09-DEC-2020 10:37
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HNB

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U–5813	X–147

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

890
880
870

4:1 0.050 0.050 4:1

881.92

15+00.00

890
880
870

884.29 883.16

4:1 0.037 0.037 3:1

881.09

14+75.00

890
880
870

883.43 882.80

4:1 0.023 0.023 3:1

880.08

14+50.00

–Y17A–

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

09-DEC-2020 10:38
\Roadway\Corridor Modeling\U5813_RDY_Y17A_XPL.dgn
HNTB

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-5813	X-148

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

850
840
830

3:1 838.73 0.006 0.020 837.96 3:1

838.71

10+75.00

850
840
830

3:1 838.25 0.006 0.018 836.83 3:1

837.70

10+50.00

860
850
840
830

837.53

10+25.00

860
850
840
830

838.11

10+00.00

-Y18-

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

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\Roadway\Corridor Modeling\U5813_RDY_Y18_XPL.dgn
HNB

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-5813	X-149

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

860 850 840 830

0.023 0.020 839.78 3:1

839.96

11+75.00

860 850 840 830

0.020 0.020 839.98 3:1

840.29

11+50.00

860 850 840 830

3:1 839.99 0.020 0.020 839.79 3:1

840.21

11+25.00

850 840 830

3:1 839.47 0.018 0.020 839.12 3:1

839.54

11+00.00

-Y18-

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

09-DEC-2020 10:38
\Roadway\Corridor Modeling\U5813_RDY_Y18_XPL.dgn
HNB

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U–5813	X–150

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

850
840
830

838.92

12 + 50.00

850
840
830

839.27

12 + 25.00

850
840
830

0.035 0.019 839.26 3:1

839.60

12 + 00.00

–Y18–

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

09-DEC-2020 10:38
\Roadway\CorridorModeling\U5813_RDY_Y18_XPL.dgn
HNB

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-5813	X-151

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

880 870 860

2:1 3:1 866.13 0.020 0.020 866.13 3:1

863.96 866.30

10+75.00

880 870 860

2:1 3:1 865.23 0.020 0.020 865.03 3:1

863.54 865.38

10+50.00

880 870 860

2:1 3:1 864.35 0.020 0.020 863.51 3:1

863.12 864.57

10+25.00

880 870 860

2:1 3:1 863.48 0.020 0.020 862.48 3:1

862.71 863.67

10+00.00

-Y19-

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

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HNB

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U–5813	X–152

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

880 870 860

871.55 0.020 0.020 871.55

2:1 3:1 3:1

866.98

869.99

11+75.00

869.92 0.020 0.020 869.92

2:1 3:1 3:1

865.89

868.99

11+50.00

868.47 0.020 0.020 868.47

2:1 3:1 3:1

864.79

868.07

11+25.00

867.21 0.020 0.020 0.020 10′ 16%

2:1 3:1

864.37

867.20

11+00.00

–Y19–

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

09-DEC-2020 10:38
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HNTB

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U–5813	X–153

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

890 880 870

878.65 0.015 0.020 878.58

4:1 3:1

874.89

12+75.00

890 880 870

877.13 0.020 0.020 877.13

4:1 3:1

873.60

12+50.00

890 880 870 860

875.33 0.020 0.020 875.33

2:1 3:1 3:1

869.18

872.12

12+25.00

880 870 860

873.36 0.020 0.020 873.36

2:1 3:1 3:1

868.08

871.02

12+00.00

–Y19–

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

09-DEC-2020 10:38
\Roadway\Corridor Modeling\U5813_RDY_Y19_XPL.dgn
HNTB

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U–5813	X–154

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

900
890
880
870

879.37

13+50.00

900
890
880
870

881.11 880.26

4:1 0.009 0.014 4:1

877.97

13+25.00

890
880
870

879.94 879.67

4:1 0.003 0.020 4:1

876.25

13+00.00

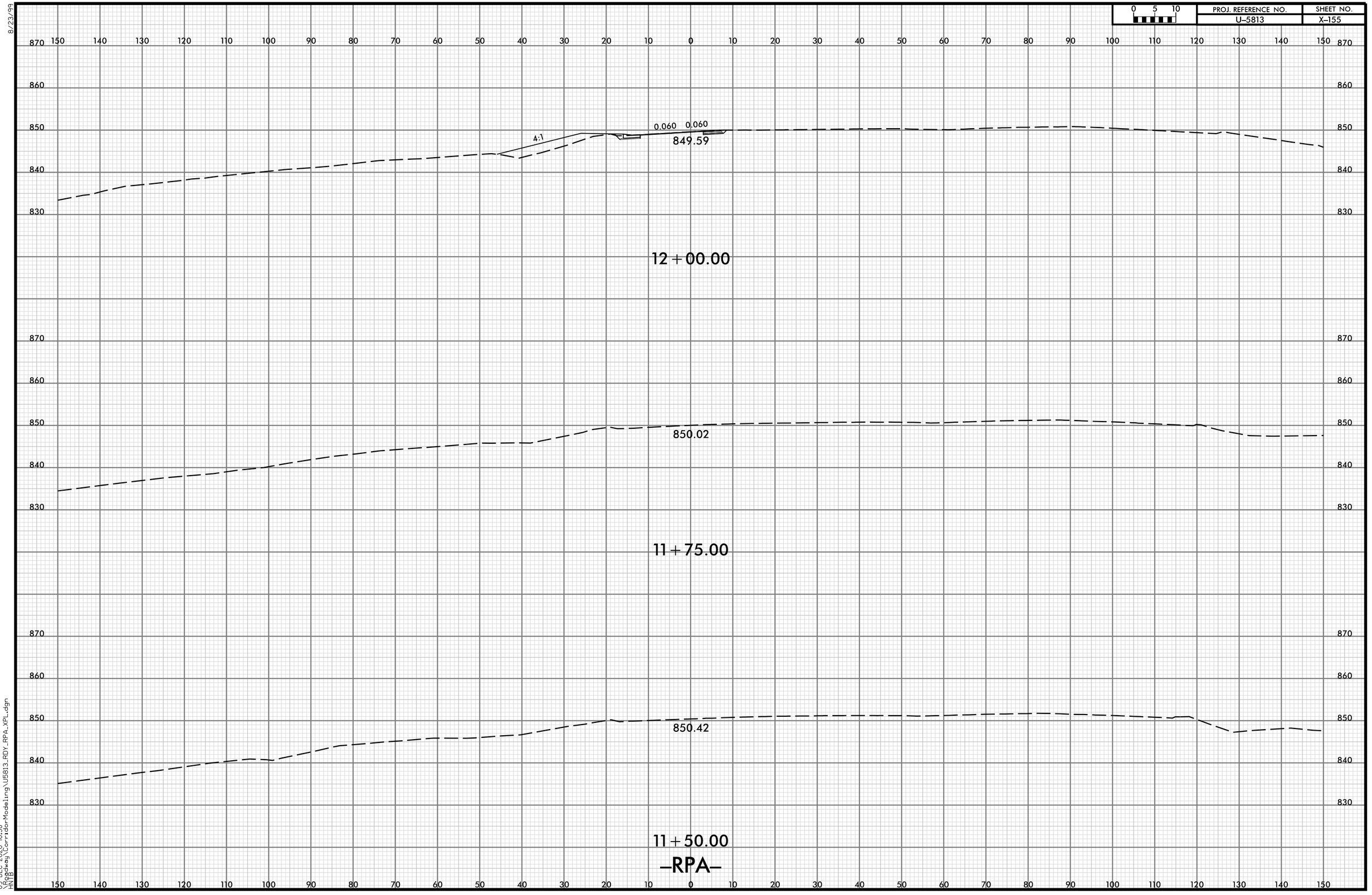
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HNB

8/23/99

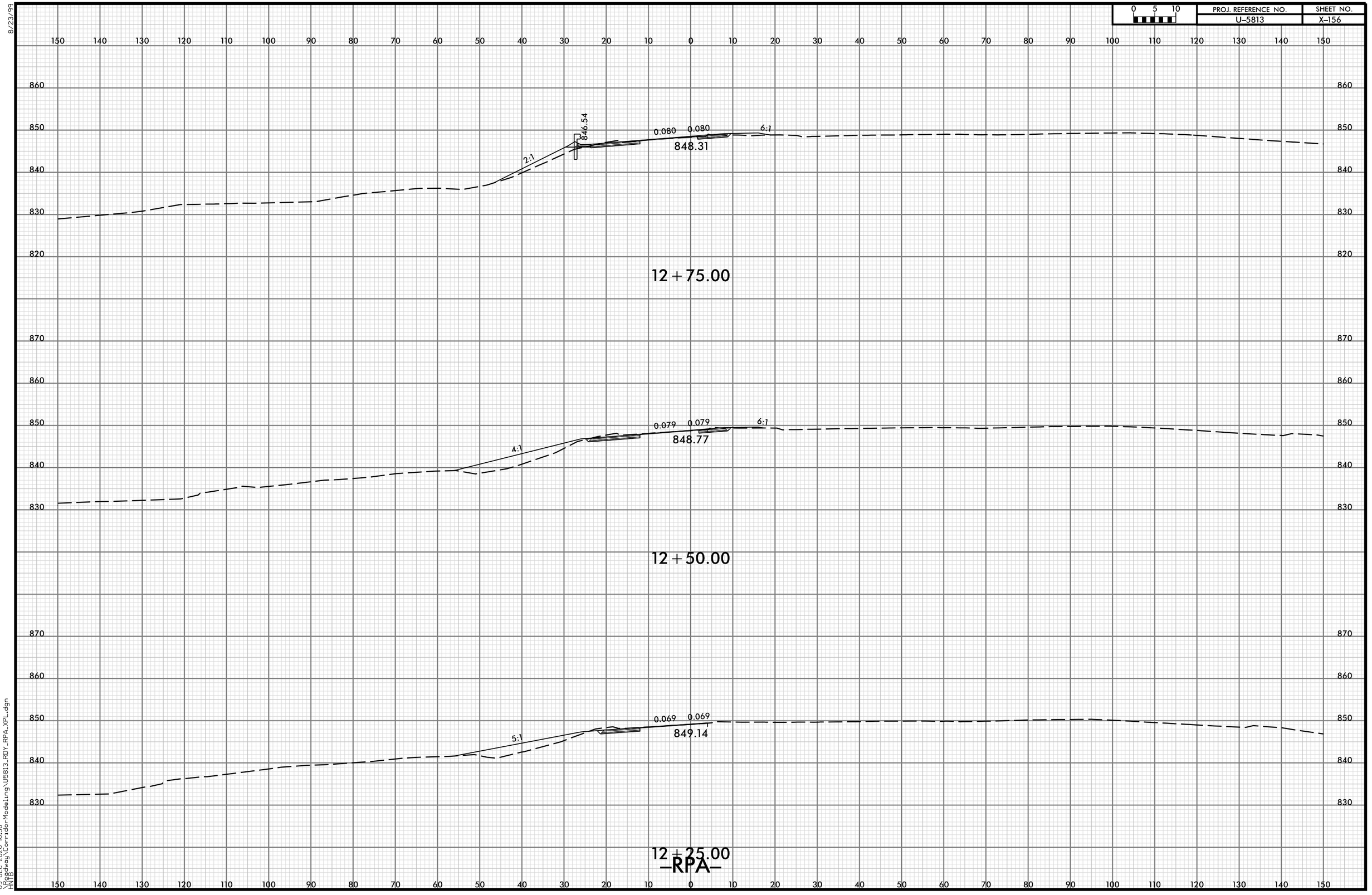
0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-5813	X-155



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HNTB

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-5813	X-156



09-DEC-2020 10:38
\Roadway\CorridorModeling\U5813_RDY_RPA_XPL.dgn
HNTB

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U–5813	X–157

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

850 840 830 820 810

845.66

0.080 0.080

6:1

847.42

2:1

13+50.00

860 850 840 830 820

845.95

0.080 0.080

6:1

847.59

2:1

13+25.00

860 850 840 830 820

846.25

0.080 0.080

6:1

847.81

2:1

13+00.00

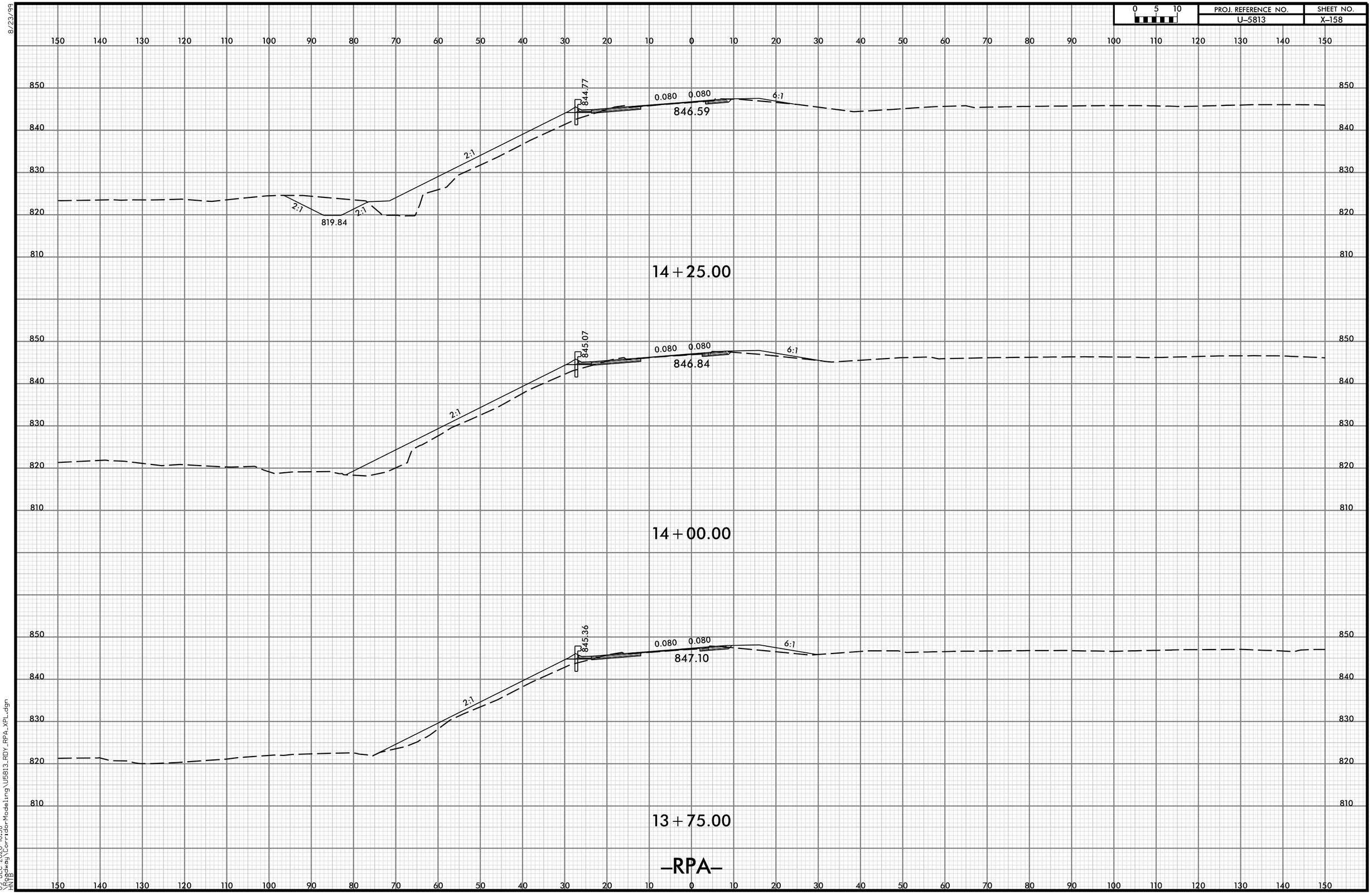
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150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

09-DEC-2020 10:38
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HNB

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-5813	X-158



09-DEC-2020 10:38
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tNTB

8/23/99

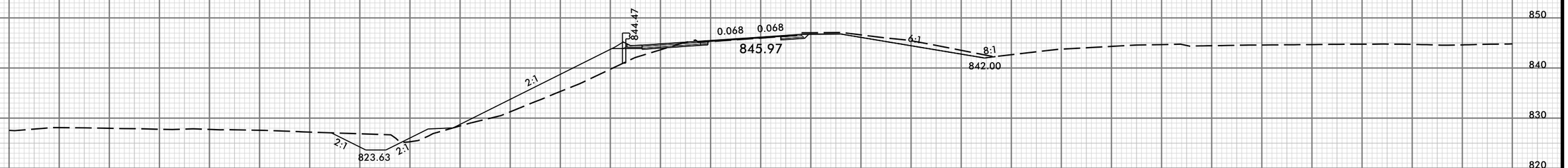
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	U-5813	X-159

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

860 850 840 830 820



15+00.00



14+75.00



14+50.00

–RPA–

850 840 830 820 810

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

09-DEC-2020 13:10
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MNB

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-5813	X-160

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

870 860 850 840 830

844.28
0.026 0.026
844.85
2:1 2:1 2:1 2:1
833.24
6:1 6:1
842.00

15+75.00

870 860 850 840 830

844.33
0.037 0.037
845.17
2:1 2:1 2:1 2:1
830.84
6:1 6:1
842.44

15+50.00

860 850 840 830 820

844.37
0.047 0.047
845.38
2:1 2:1 2:1 2:1
828.44
6:1 6:1
842.87

15+25.00

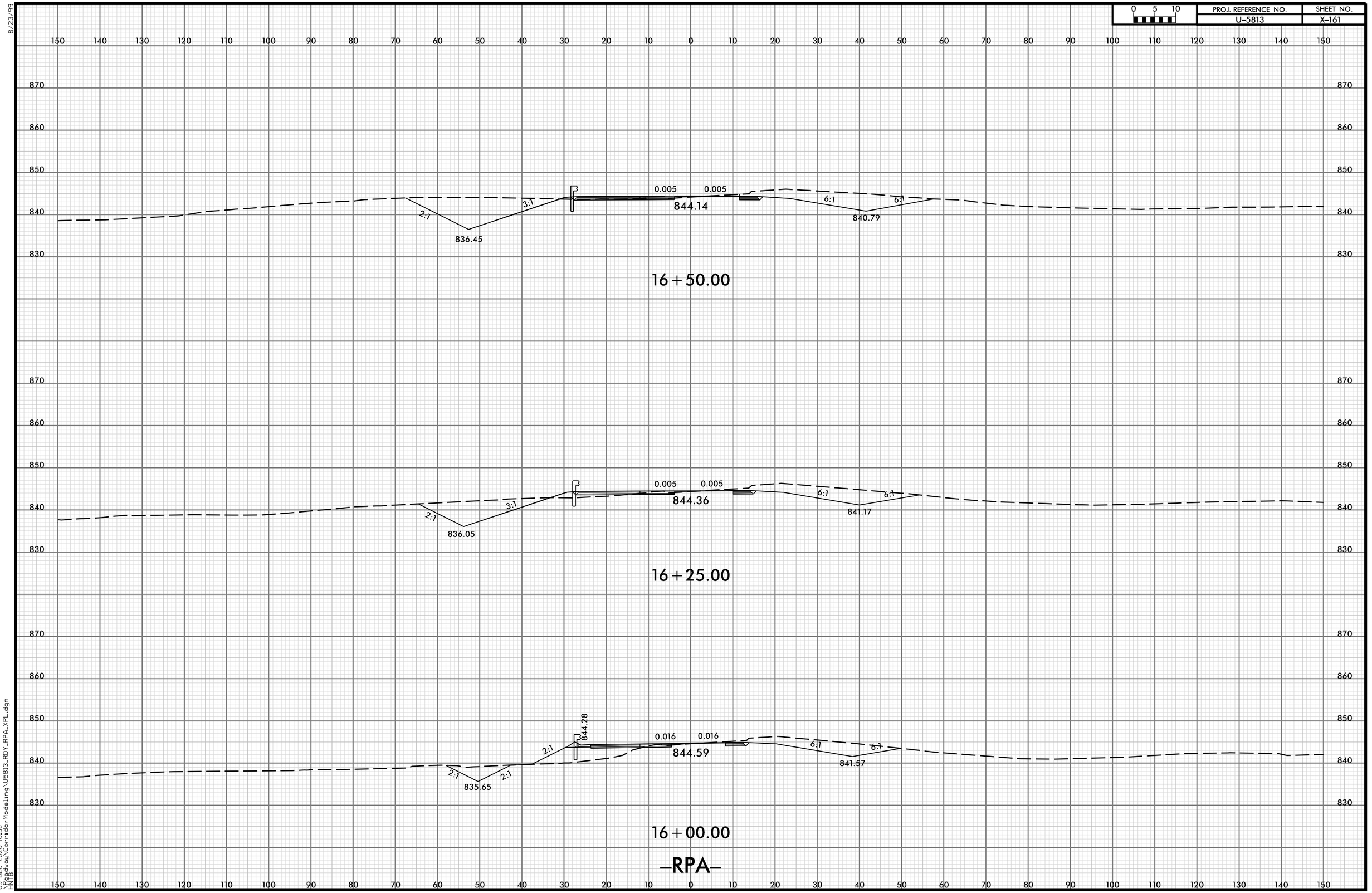
–RPA–

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

09-DEC-2020 10:38
\Roadway\Corridor Modeling\U5813_RDY_RPA_XPL.dgn
HNB

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-5813	X-161



09-DEC-2020 10:38
\Roadway\Corridor Modeling\U5813_RDY_RPA_XPL.dgn
MNB

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-5813	X-162

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

870
860
850
840
830

0.012 0.020
843.81
4:1
2:1
837.25
6:1
5:1
840.36

17+00.00

870
860
850
840
830

0.016 0.016
843.92
3:1
2:1
836.85
6:1
5:1
840.47

16+75.00

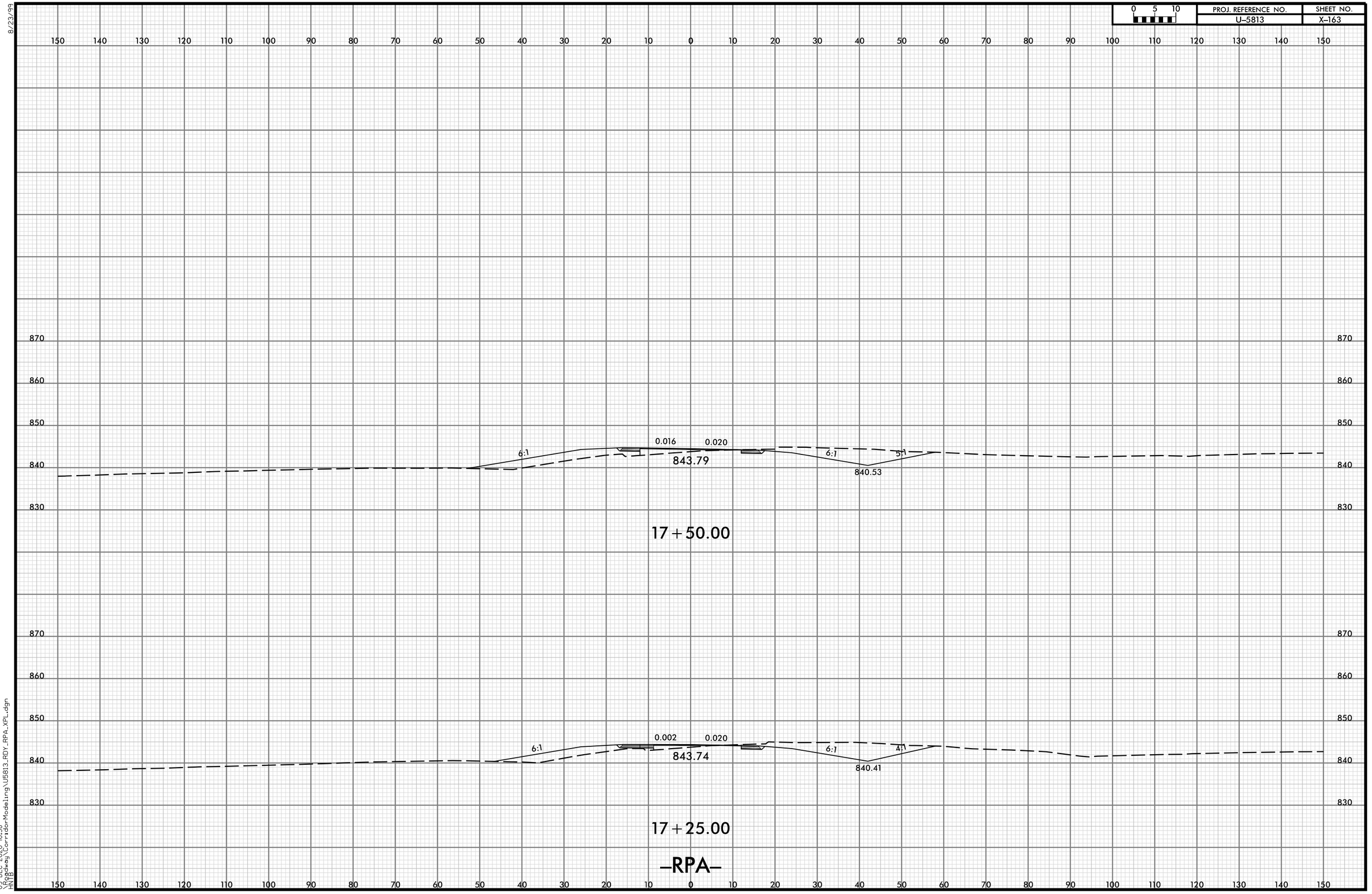
–RPA–

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

09-DEC-2020 10:38
\Roadway\CorridorModeling\U5813_RDY_RPA_XPL.dgn
HNB

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U–5813	X–163



09-DEC-2020 10:38
\Roadway\Corridor Modeling\U5813_RDY_RPA_XPL.dgn
HNB

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U–5813	X–164

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

870
860
850
840
830

844.83
844.87
0.002
0.002
4:1
4:1
844.50

18+00.00

870
860
850
840
830

0.011
0.011
5:1
6:1
6:1
843.94
840.94

17+75.00

–RPA–

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

09-DEC-2020 10:38
\Roadway\Corridor Modeling\U5813_RDY_RPA_XPL.dgn
HNB

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-5813	X-165

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

870
860
850
840
830

845.05
0.027
0.027
846.47
4:1
4:1
845.65

18+50.00

870
860
850
840
830

844.97
0.014
0.014
845.44
4:1
4:1
845.14

18+25.00

–RPA–

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

09-DEC-2020 10:38
\Roadway\CorridorModeling\U5813_RDY_RPA_XPL.dgn
tNTB

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U–5813	X–166

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

870
860
850
840
830

846.40

19+00.00

870
860
850
840
830

4:1

844.62

0.039

0.044

846.07

18+75.00

–RPA–

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

09-DEC-2020 10:38
\Roadway\Corridor Modeling\U5813_RDY_RPA_XPL.dgn
HNB

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-5813	X-167

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

870
860
850
840
830
880
870
860
850
840

4:1 0.070 0.070 4:1 2:1

846.27

840.75

12 + 50.00

4:1 0.069 0.069 4:1 2:1

846.44

840.63

12 + 25.00

846.74

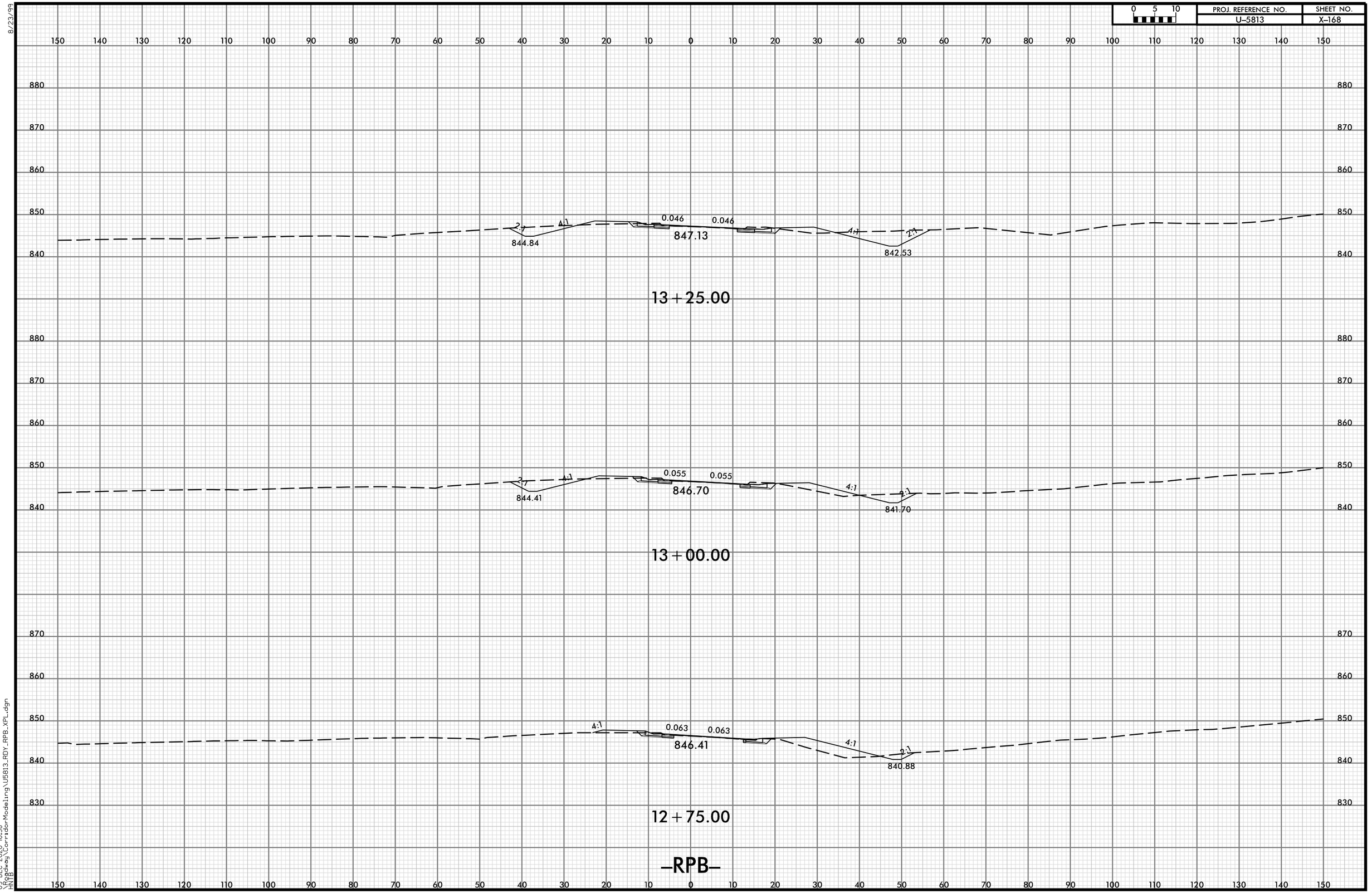
12 + 00.00

–RPB–

09-DEC-2020 10:38
\Roadway\Corridor Modeling\U5813_RDY_RPB.XPL.dgn
MNB

8/23/99

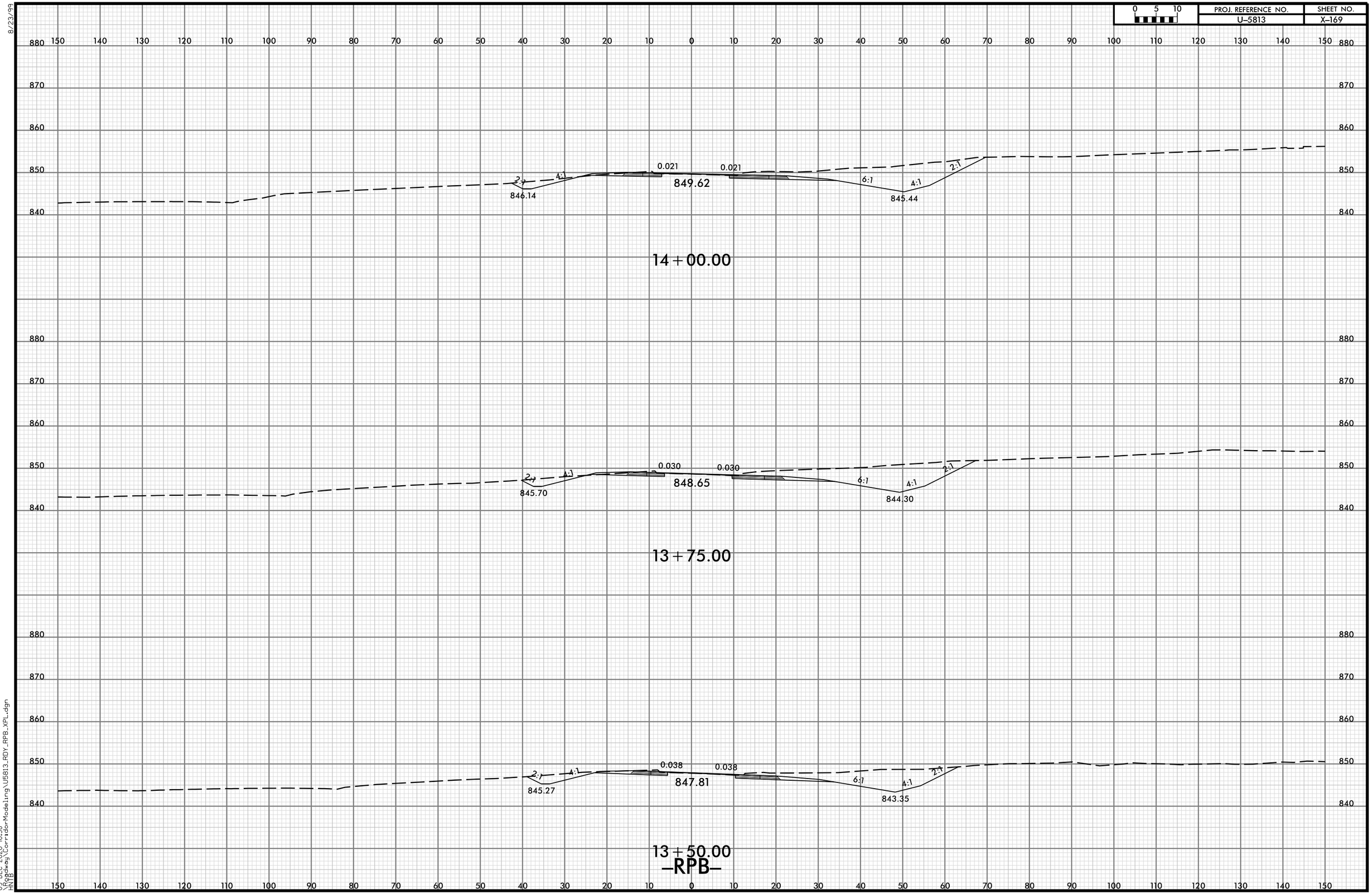
0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-5813	X-168



09-DEC-2020 10:38
\Roadway\CorridorModeling\U5813_RDY_RPB.XPL.dgn
HNB

8/23/99

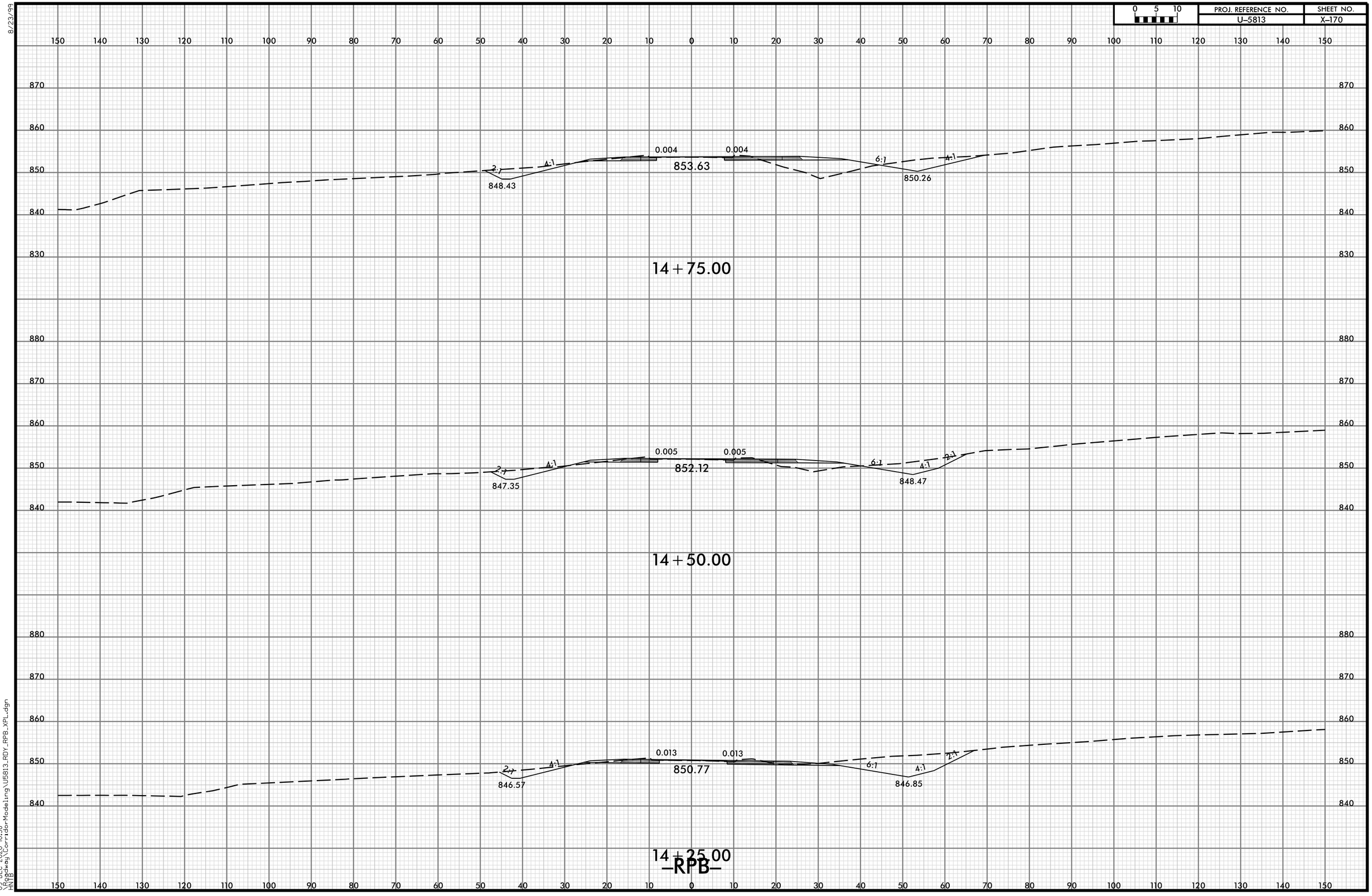
0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-5813	X-169



09-DEC-2020 10:38
\Roadway\Corridor Modeling\U5813_RDY_RPB.XPL.dgn
HNB

8/23/99

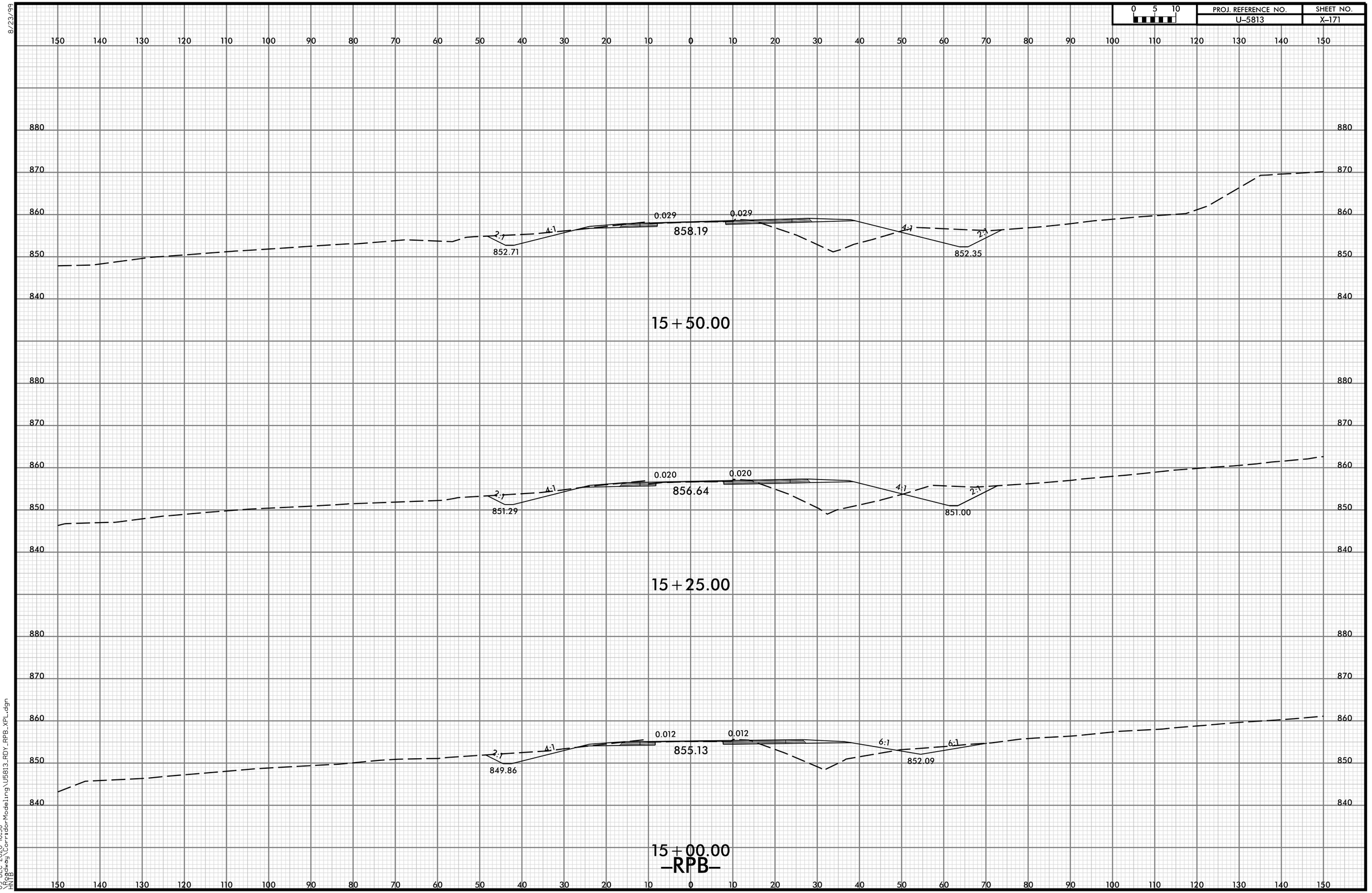
0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-5813	X-170



09-DEC-2020 10:38
\Roadway\CorridorModeling\U5813_RDY_RPB_XPL.dgn
HNTB

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-5813	X-171



09-DEC-2020 10:38
\Roadway\Corridor Modeling\U5813_RDY_RPB.XPL.dgn
MNB

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-5813	X-172

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

890 880 870 860 850

0.054 0.054

862.29

2:1 4:1 4:1 2:1

857.00 856.38

16+25.00

880 870 860 850 840

0.045 0.045

861.02

2:1 4:1 4:1 2:1

855.57 855.04

16+00.00

880 870 860 850 840

0.037 0.037

859.63

2:1 4:1 4:1 2:1

854.14 853.69

15+75.00

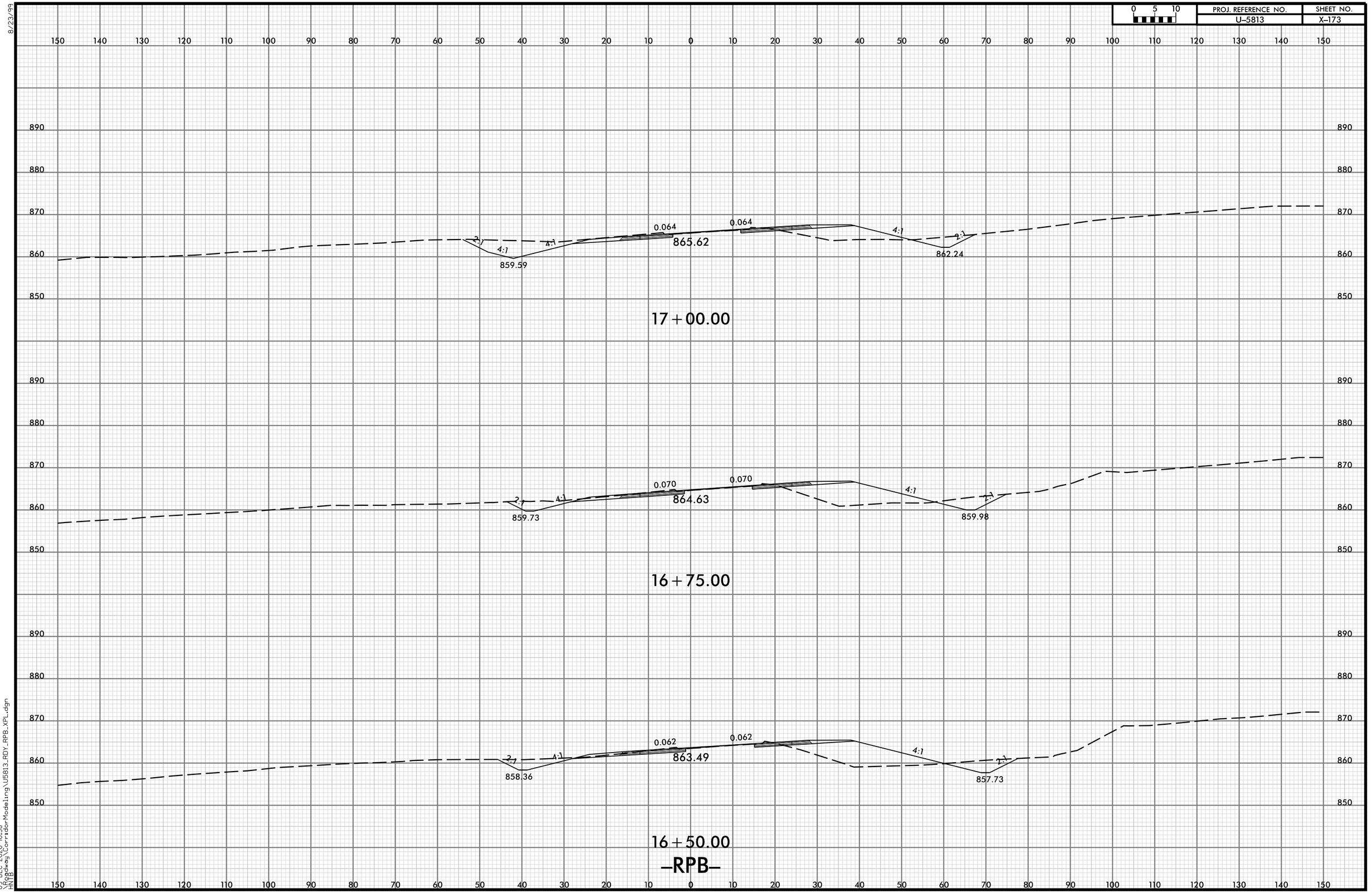
–RPB–

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

09-DEC-2020 10:38
\Roadway\Corridor Modeling\U5813_RDY_RPB.XPL.dgn
MNB

8/23/99

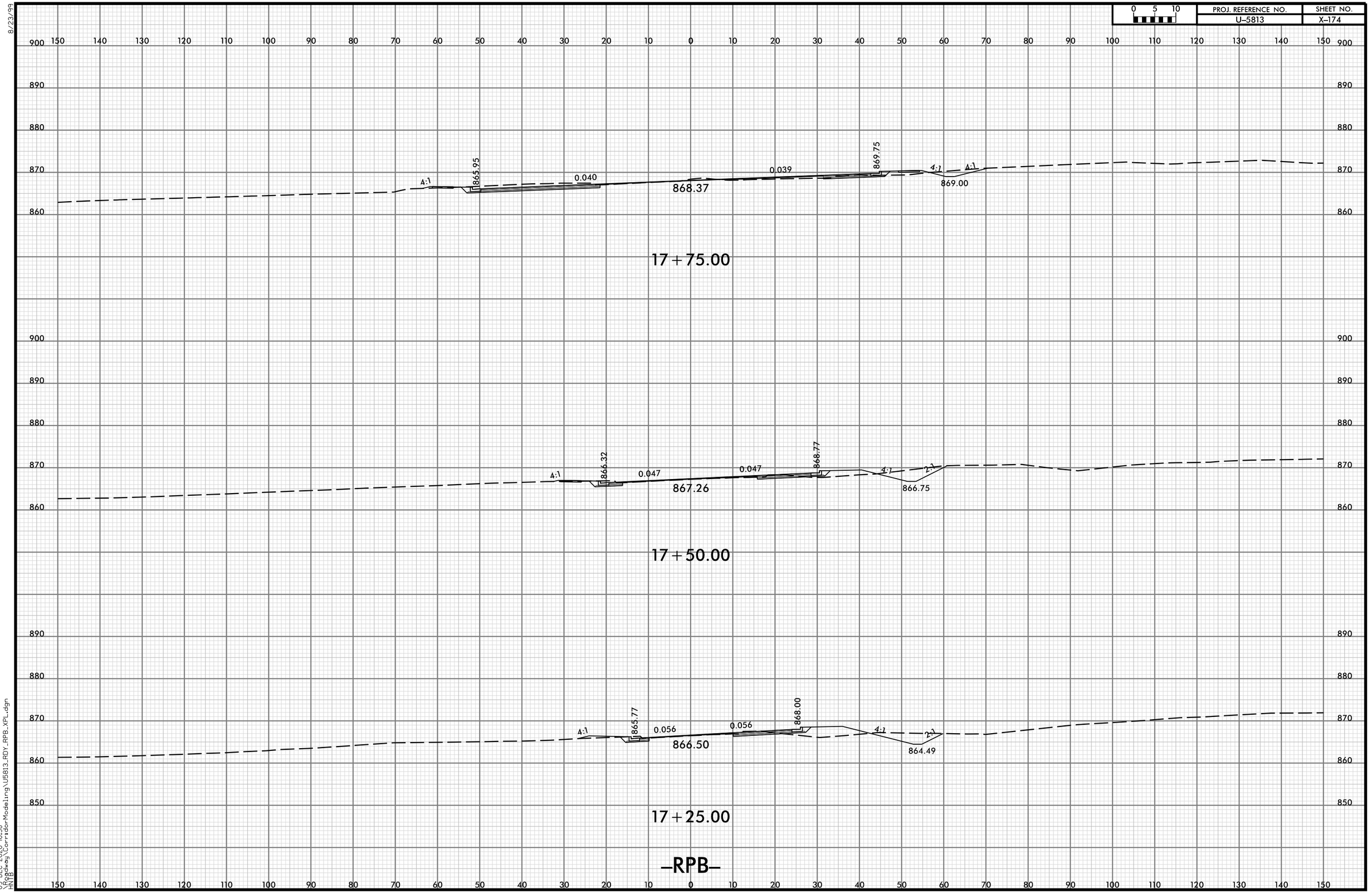
0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-5813	X-173



09-DEC-2020 10:38
\Roadway\Corridor Modeling\U5813_RDY_RPB.XPL.dgn
MNB

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U–5813	X–174



09-DEC-2020 10:38
\Roadway\CorridorModeling\U5813_RDY_RPB.XPL.dgn
HNB

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U–5813	X–175

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

900
890
880
870
860

868.55

18+00.00
–RPB–

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

09-DEC-2020 10:38
\Roadway\Corridor Modeling\U5813_RDY_RPB_XPL.dgn
HNB

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-5813	X-176

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

840
830
820
810
800

0.070 0.070

809.09

11+50.00

808.82

11+25.00

808.60

11+00.00

-RPC-

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

09-DEC-2020 10:38
\Roadway\CorridorModeling\U5813_RDY_RPC_XPL.dgn
HNB

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-5813	X-177

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

840 830 820 810 800

6:1 0.070 0.070 6:1

810.26

12+25.00

840 830 820 810 800

6:1 0.070 0.070 12:1 12:1

808.05 809.77 809.90

12+00.00

840 830 820 810 800

0.070 0.070 12:1 12:1

809.36 810.00

11+75.00

-RPC-

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

09-DEC-2020 10:38
\Roadway\Corridor Modeling\U5813_RDY_RPC_XPL.dgn
HNB

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U–5813	X–178

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

840 830 820 810 800

6:1 0.070 0.070 6:1

812.03

13 + 00.00

811.40

12 + 75.00

810.82

12 + 50.00

–RPC–

09-DEC-2020 10:38
\Roadway\Corridor Modeling\U5813_RDY_RPC_XPL.dgn
HNB

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-5813	X-179

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

840 830 820 810 800

6:1 0.070 0.070 6:1

814.56

13+75.00

840 830 820 810 800

6:1 0.070 0.070 6:1

813.94

13+50.00

840 830 820 810 800

6:1 0.070 0.070 6:1

812.76

13+25.00

–RPC–

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

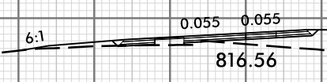
09-DEC-2020 10:38
\Roadway\CorridorModeling\U5813_RDY_RPC_XPL.dgn
HNTB

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-5813	X-180

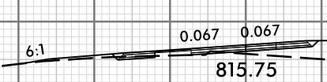
150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

850 840 830 820 810



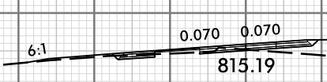
14+50.00

850 840 830 820 810



14+25.00

840 830 820 810 800



14+00.00

–RPC–

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

09-DEC-2020 10:38
\Roadway\Corridor Modeling\U5813_RDY_RPC_XPL.dgn
HNB

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-5813	X-181

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

850 840 830 820 810

6:1 0.020 0.020 6:1

819.41

15+25.00

850 840 830 820 810

6:1 0.032 0.032 6:1

818.37

15+00.00

850 840 830 820 810

6:1 0.044 0.044 6:1

817.41

14+75.00

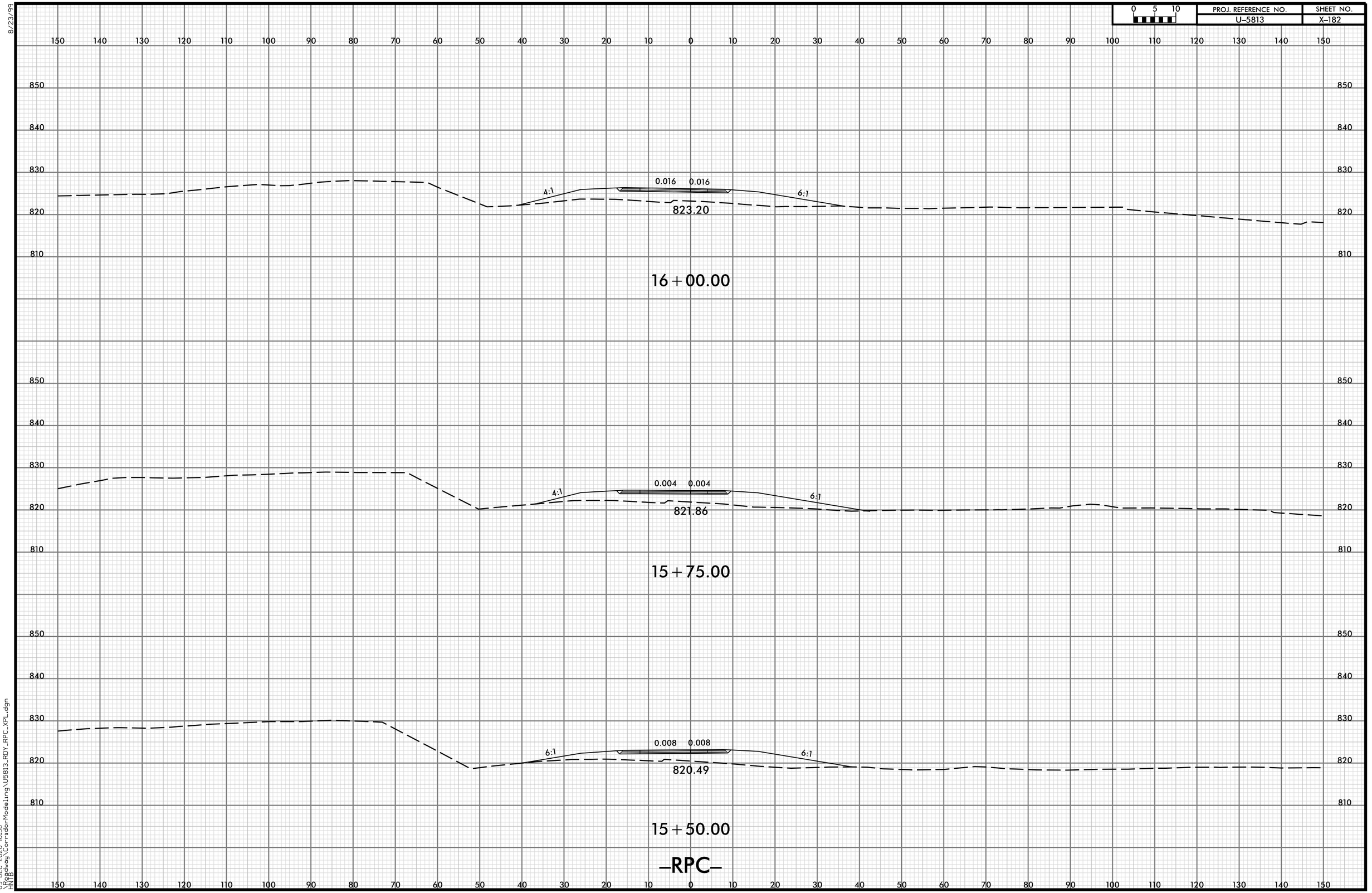
–RPC–

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

09-DEC-2020 10:38
\Roadway\Corridor Modeling\U5813_RDY_RPC_XPL.dgn
HNB

8/23/99

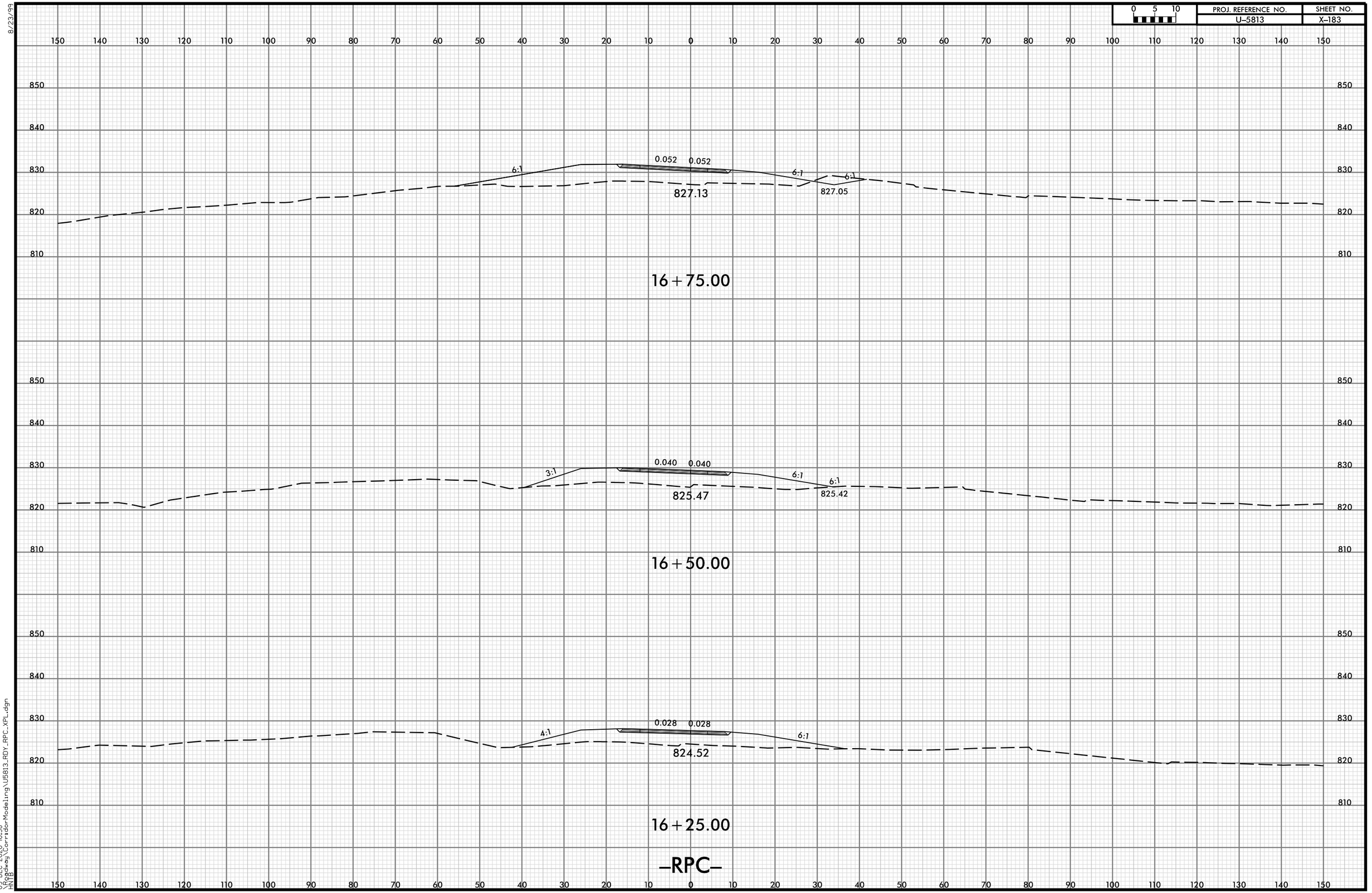
0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U–5813	X–182



09-DEC-2020 10:38
\Roadway\Corridor Modeling\U5813_RDY_RPC_XPL.dgn
HNB

8/23/99

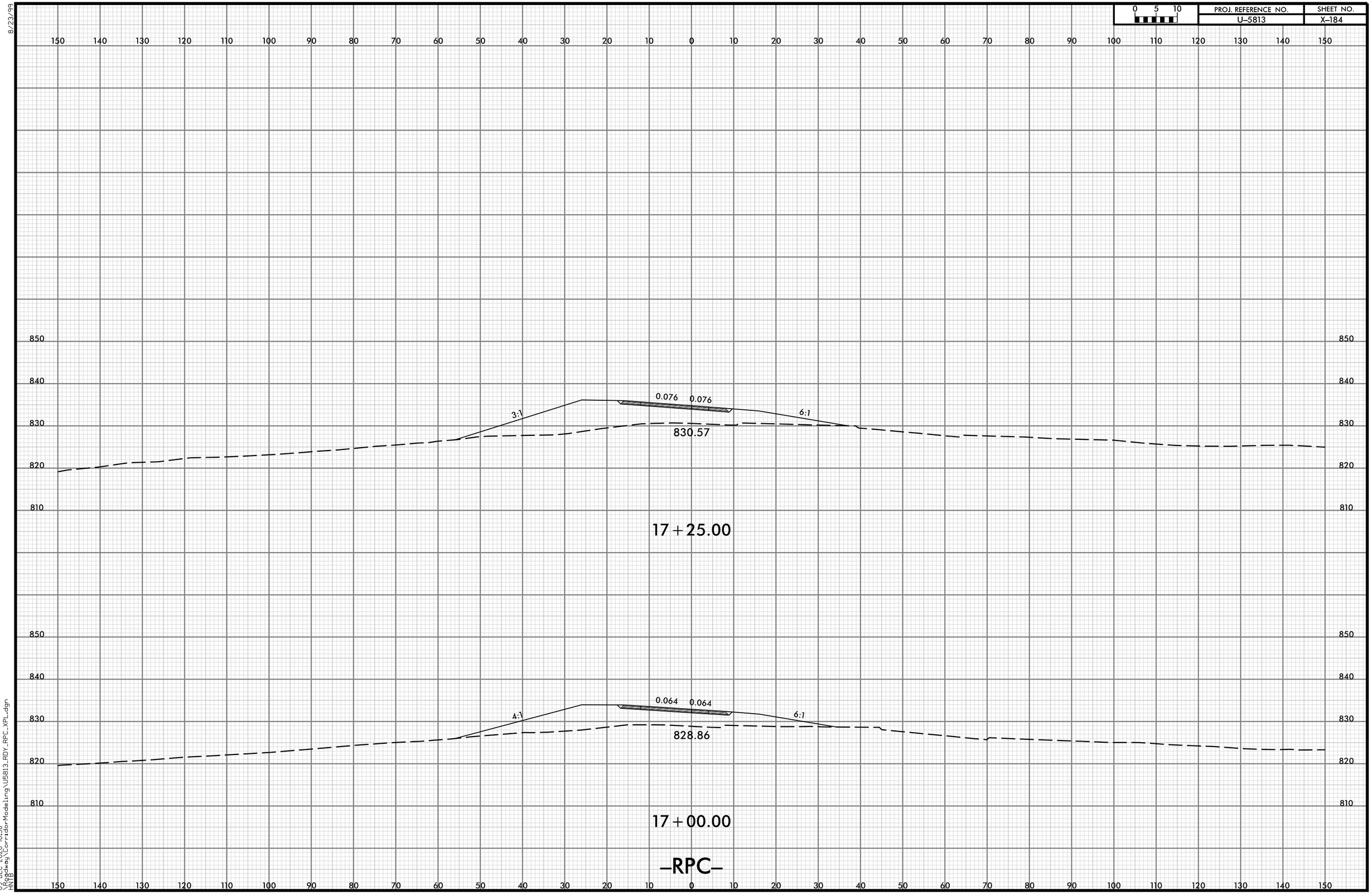
0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-5813	X-183



09-DEC-2020 10:38
\Roadway\Corridor Modeling\U5813_RDY_RPC_XPL.dgn
HNB

8/23/99

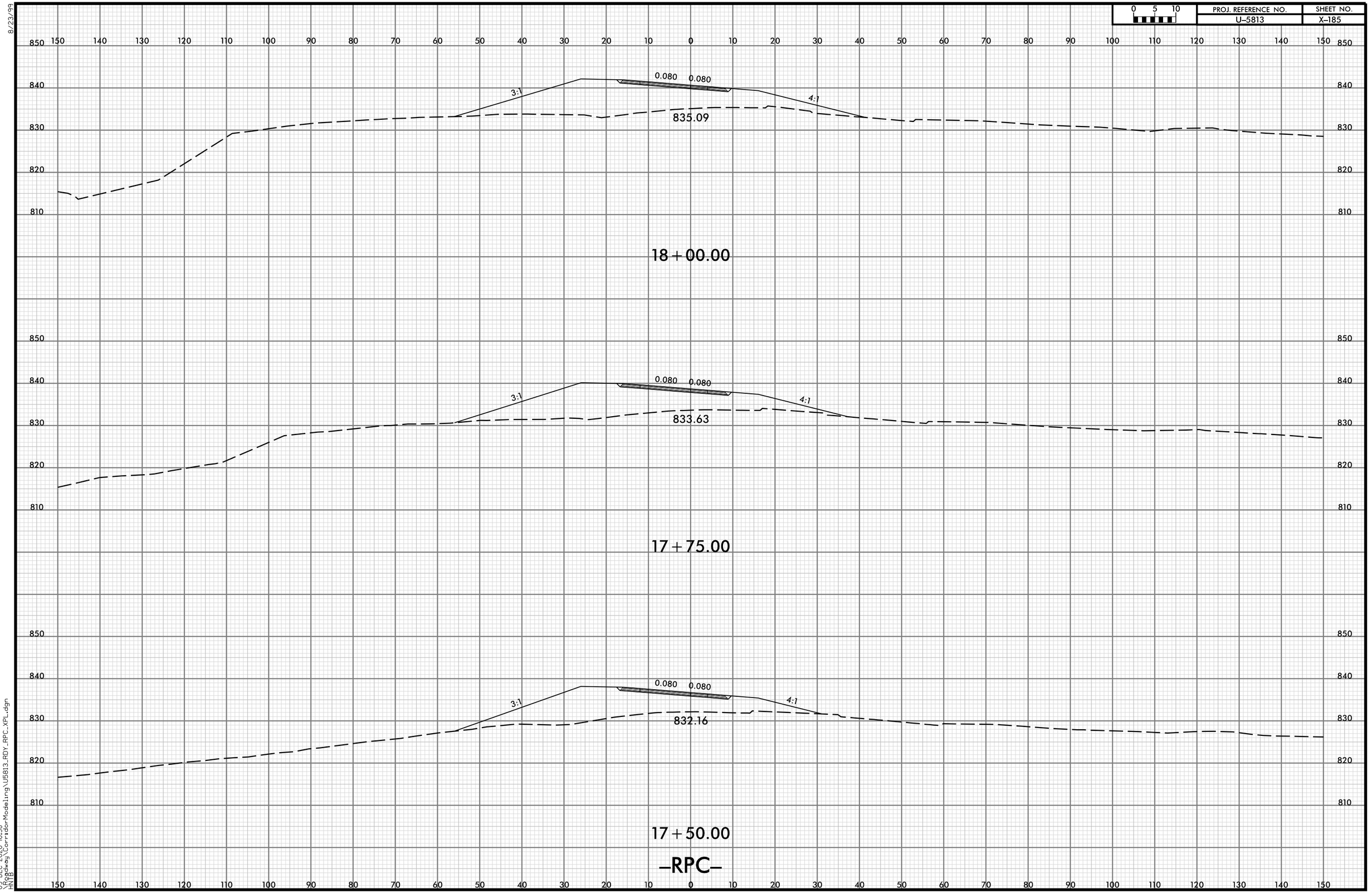
0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-5813	X-184



09-DEC-2020 10:38
\Roadway\Corridor Modeling\U5813_RDY_RPC_XPL.dgn
HNB

8/23/99

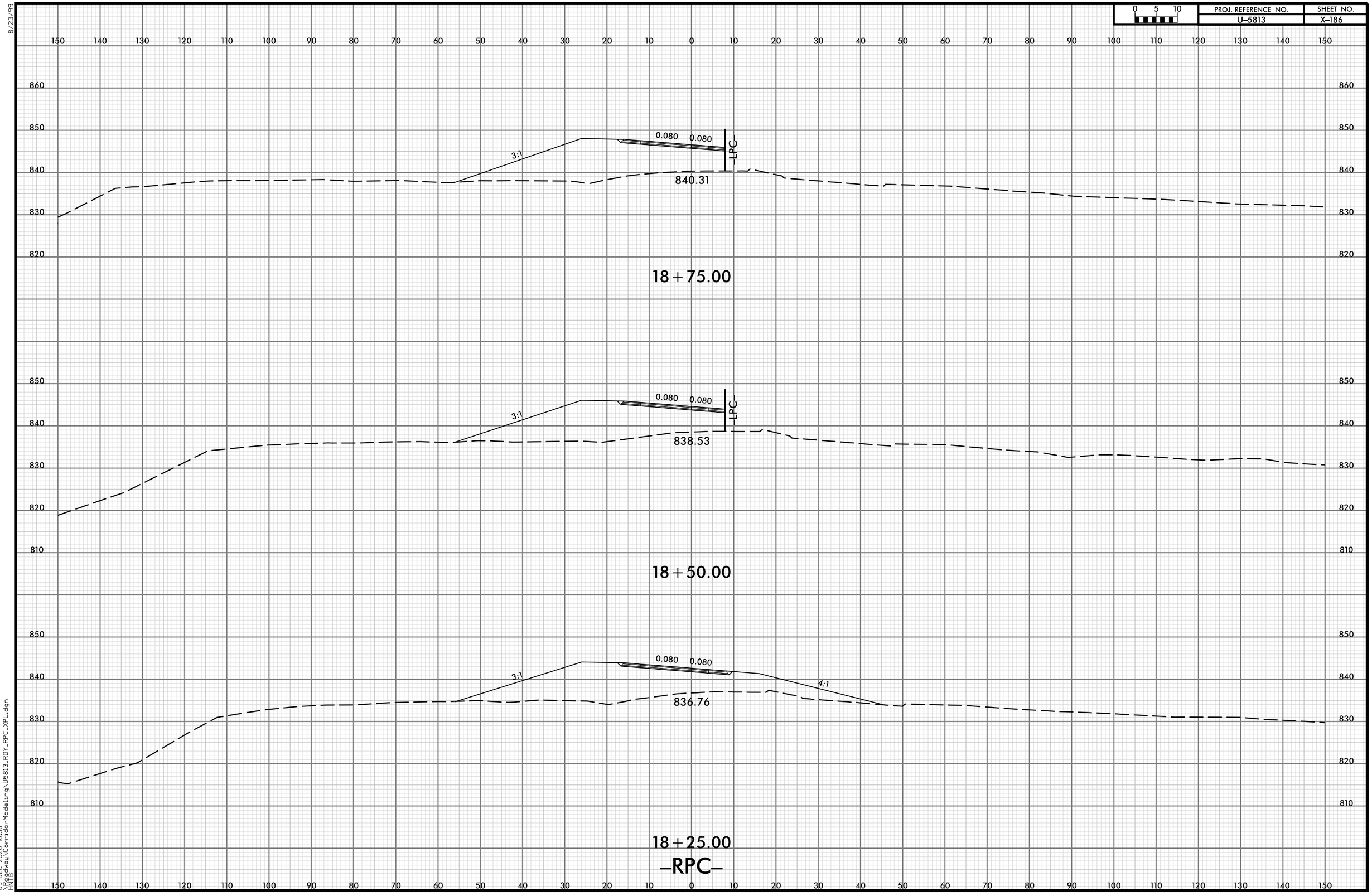
0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-5813	X-185



09-DEC-2020 10:38
\Roadway\Corridor Modeling\U5813_RDY_RPC_XPL.dgn
HNB

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-5813	X-186



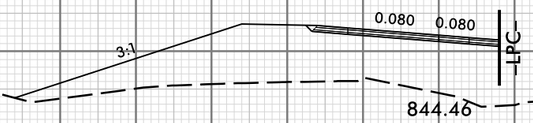
09-DEC-2020 10:38
\Roadway\Corridor Modeling\U5813_RDY_RPC_XPL.dgn
HNB

8/23/99

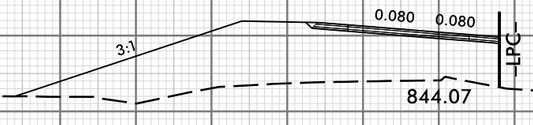
0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-5813	X-187

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

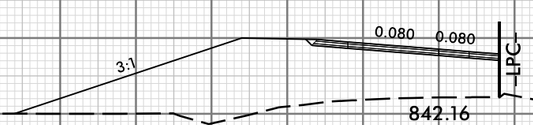
870
860
850
840
830



19+50.00



19+25.00



19+00.00
–RPC–

09-DEC-2020 10:38
\Roadway\Corridor Modeling\U5813_RDY_RPC_XPL.dgn
HNB

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U–5813	X–188

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

870 860 850 840 830

6:1 0.050 0.050 4:1

847.81

20+25.00

870 860 850 840 830

6:1 0.062 0.062 4:1

846.58

20+00.00

870 860 850 840 830

4:1 0.075 0.075 4:1

844.73

19+75.00

–RPC–

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

09-DEC-2020 10:38
\Roadway\Corridor Modeling\U5813_RDY_RPC_XPL.dgn
HNB

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-5813	X-189

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

880 870 860 850 840

855.26

21+00.00

4:1

857.91

0.024

0.024

6:1

852.14

20+75.00

3:1

857.41

0.037

0.037

6:1

849.56

20+50.00

-RPC-

830

09-DEC-2020 10:39
\Roadway\CorridorModeling\U5813_RDY_RPC_XPL.dgn
HNB

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U–5813	X–190

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

840 830 820 810 800

0.061 0.070 0.070 6:1

809.26

10+50.00

840 830 820 810 800

809.29

10+25.00

830 820 810 800 790

809.36

10+00.00

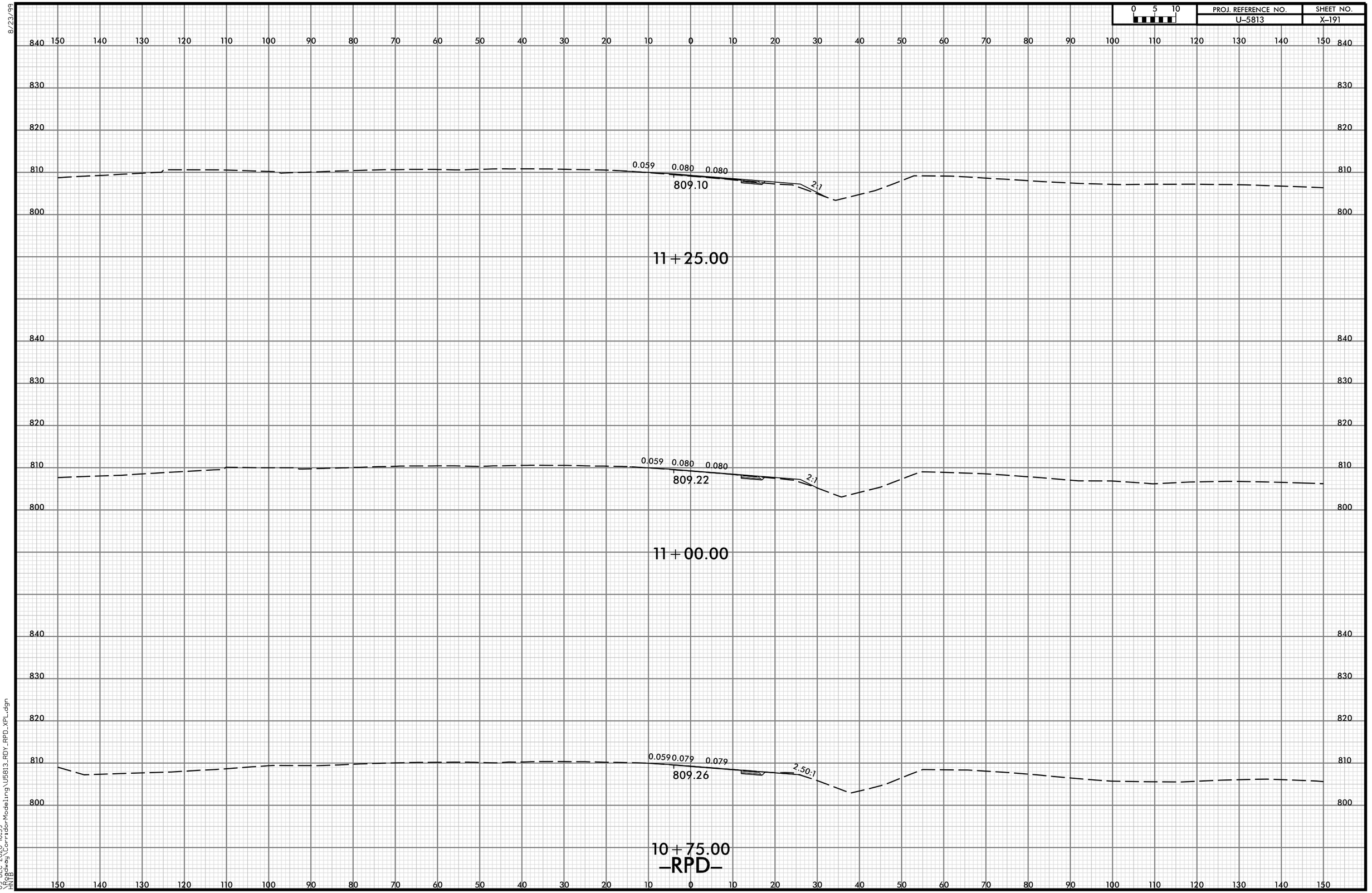
–RPD–

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

09-DEC-2020 10:39
\Roadway\CorridorModeling\U5813_RDY_RPD_XPL.dgn
HNB

8/23/99

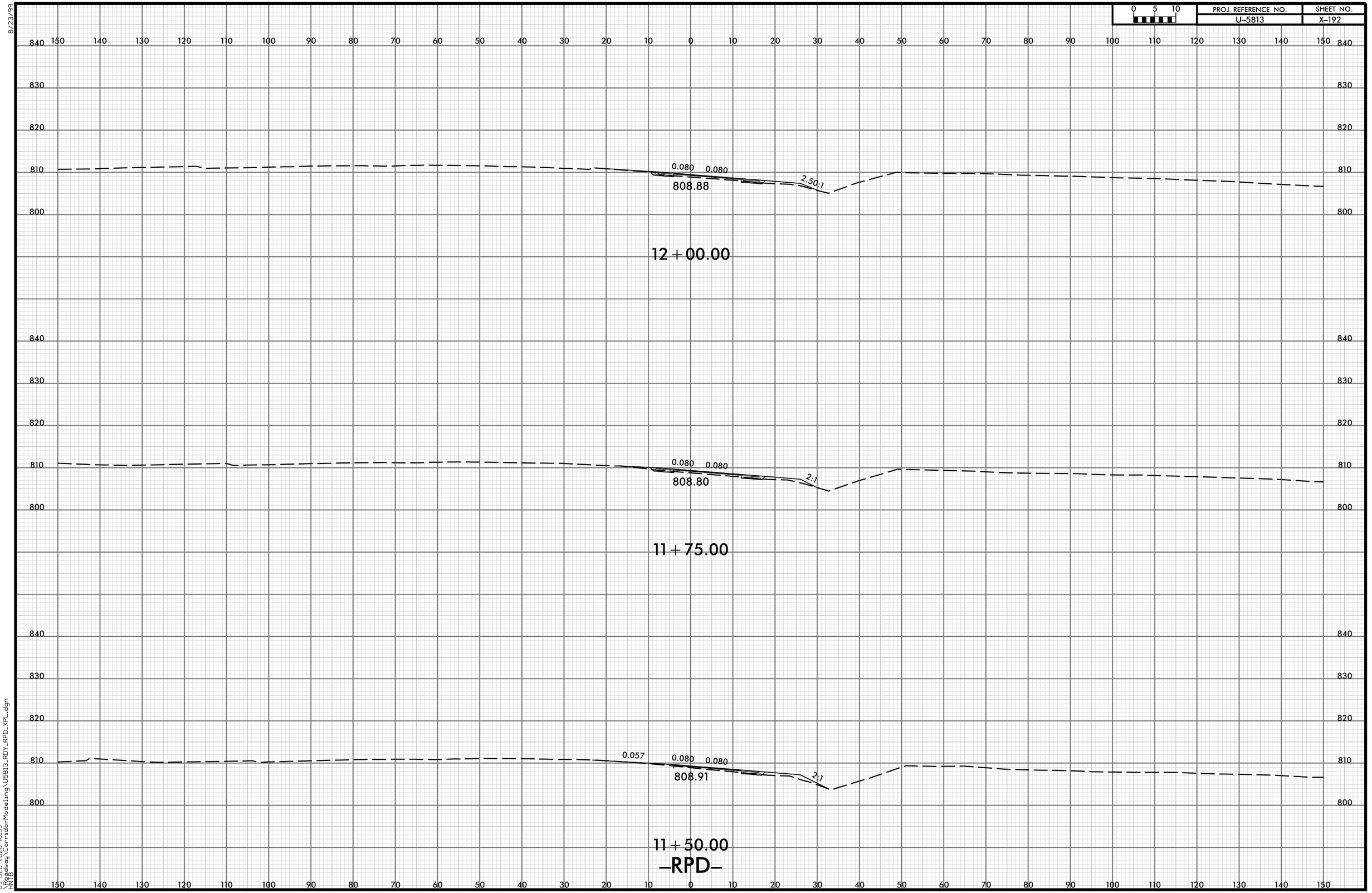
0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U–5813	X–191



09-DEC-2020 10:39
\Roadway\Corridor Modeling\U5813_RDY_RPD_XPL.dgn
HNB

8/23/99

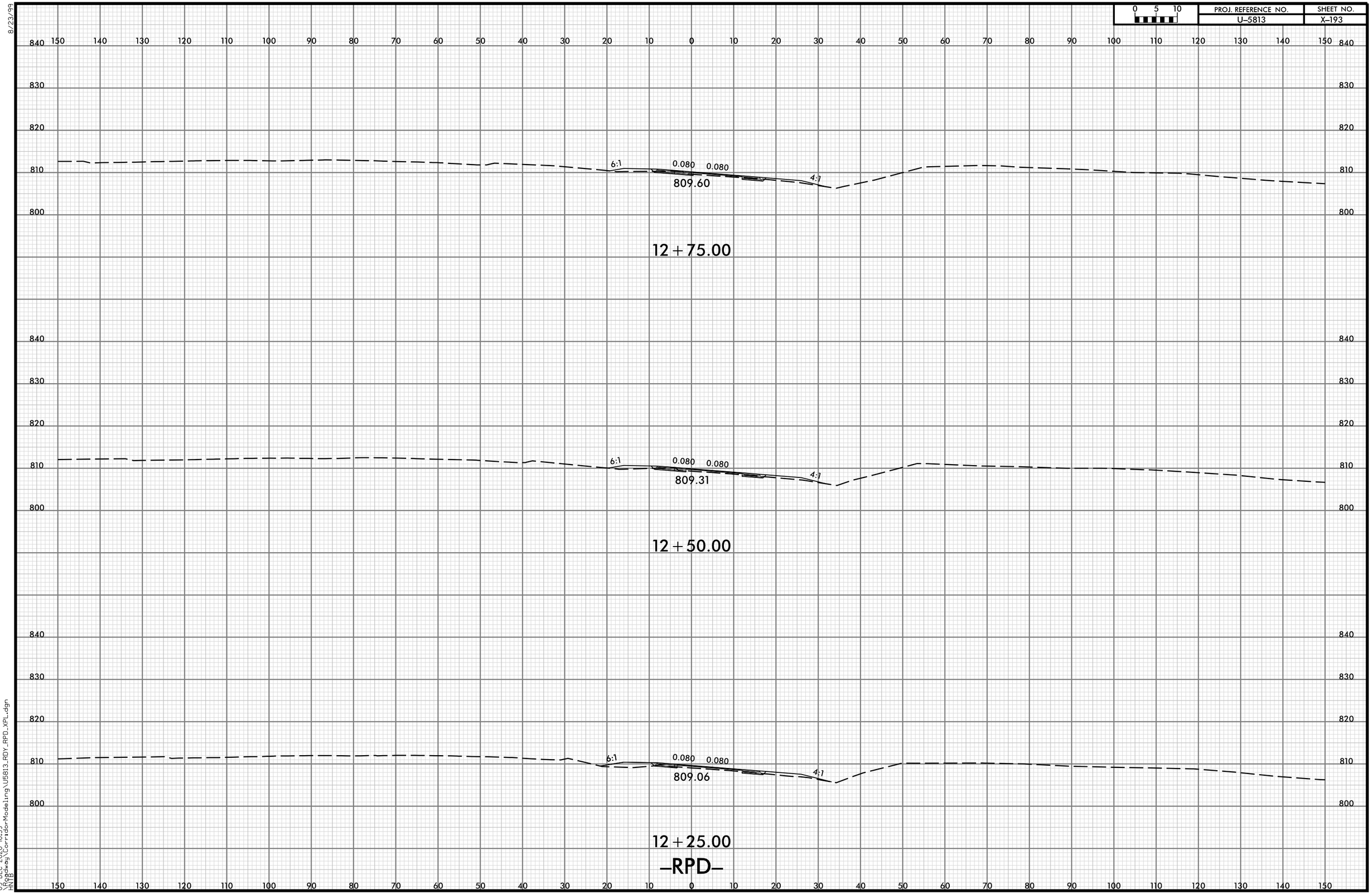
0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-5813	X-192



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HNB

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U–5813	X–193



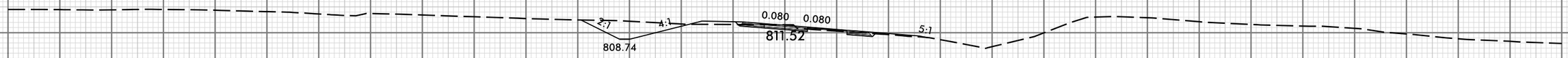
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HNB

8/23/99

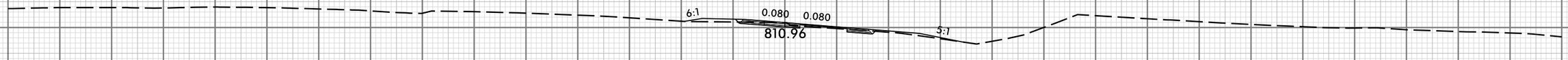
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840 830 820 810 800



13+50.00



13+25.00



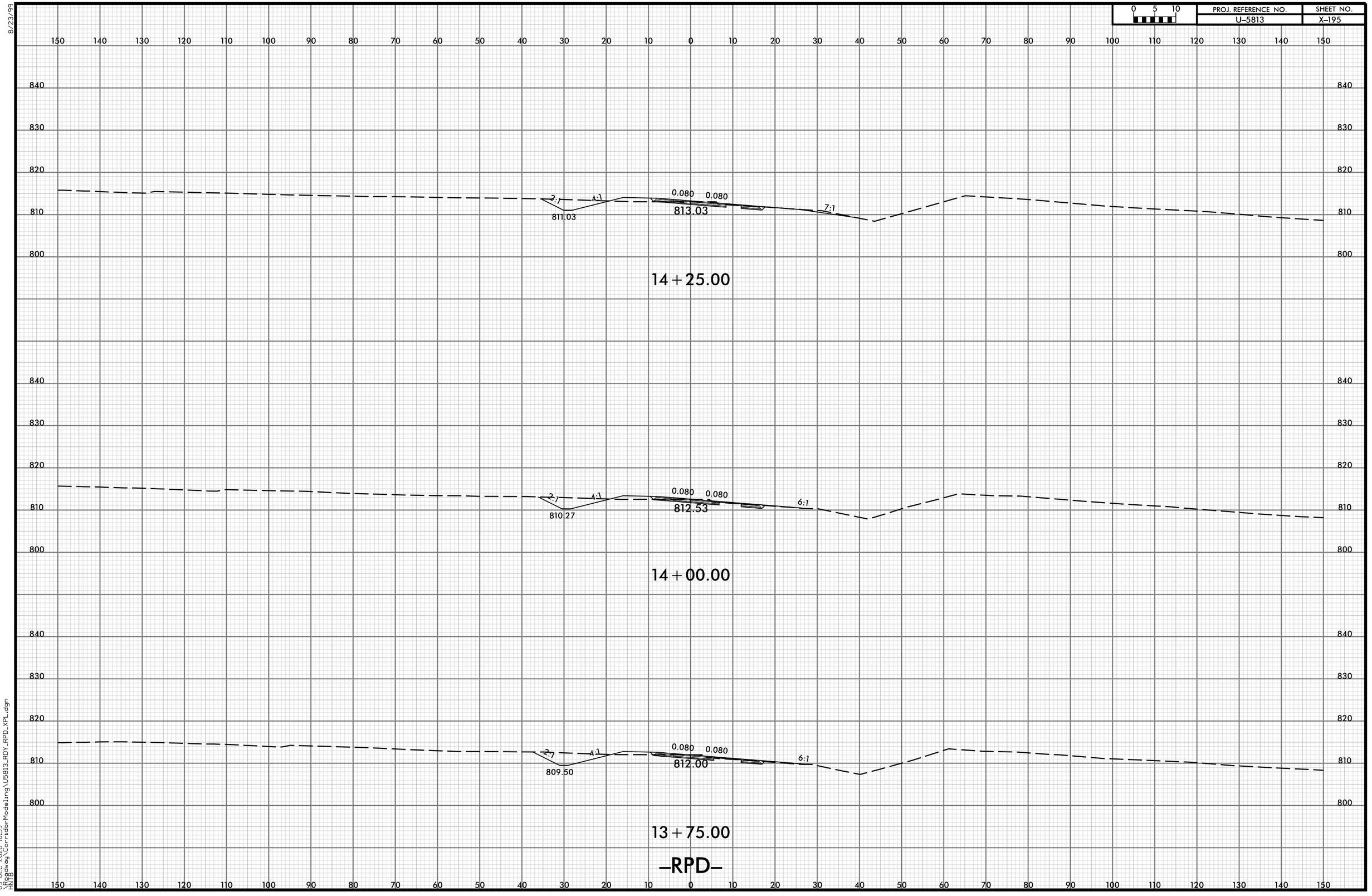
13+00.00

–RPD–

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MNB

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-5813	X-195



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MNB

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U–5813	X–196

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

840 830 820 810 800

6:1 6:1 0.077 0.077 7:1

813.40 815.09

15+00.00

840 830 820 810 800

6:1 6:1 0.080 0.080 7:1

812.58 814.23

14+75.00

840 830 820 810 800

2:1 4:1 0.080 0.080 7:1

811.79 813.57

14+50.00

–RPD–

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

09-DEC-2020 10:39
\Roadway\Corridor Modeling\U5813_RDY_RPD_XPL.dgn
HNB

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U–5813	X–197

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

840 830 820 810 800

4.44:1 6:1 0.043 0.043 6:1

815.84 817.90

15+75.00

840 830 820 810 800

4.82:1 6:1 0.055 0.055 8.50:1

814.94 816.90

15+50.00

840 830 820 810 800

6:1 6:1 0.066 0.066 8.50:1

814.14 816.05

15+25.00

–RPD–

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

09-DEC-2020 10:39
\Roadway\Corridor Modeling\U5813_RDY_RPD_XPL.dgn
MNB

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-5813	X-198

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

840 830 820 810 800

6:1 6:1 0.009 0.009 4:1

818.82 820.88

16+50.00

6:1 6:1 0.020 0.020 4:1

817.79 820.20

16+25.00

6:1 6:1 0.032 0.032 6:1

816.80 819.01

16+00.00

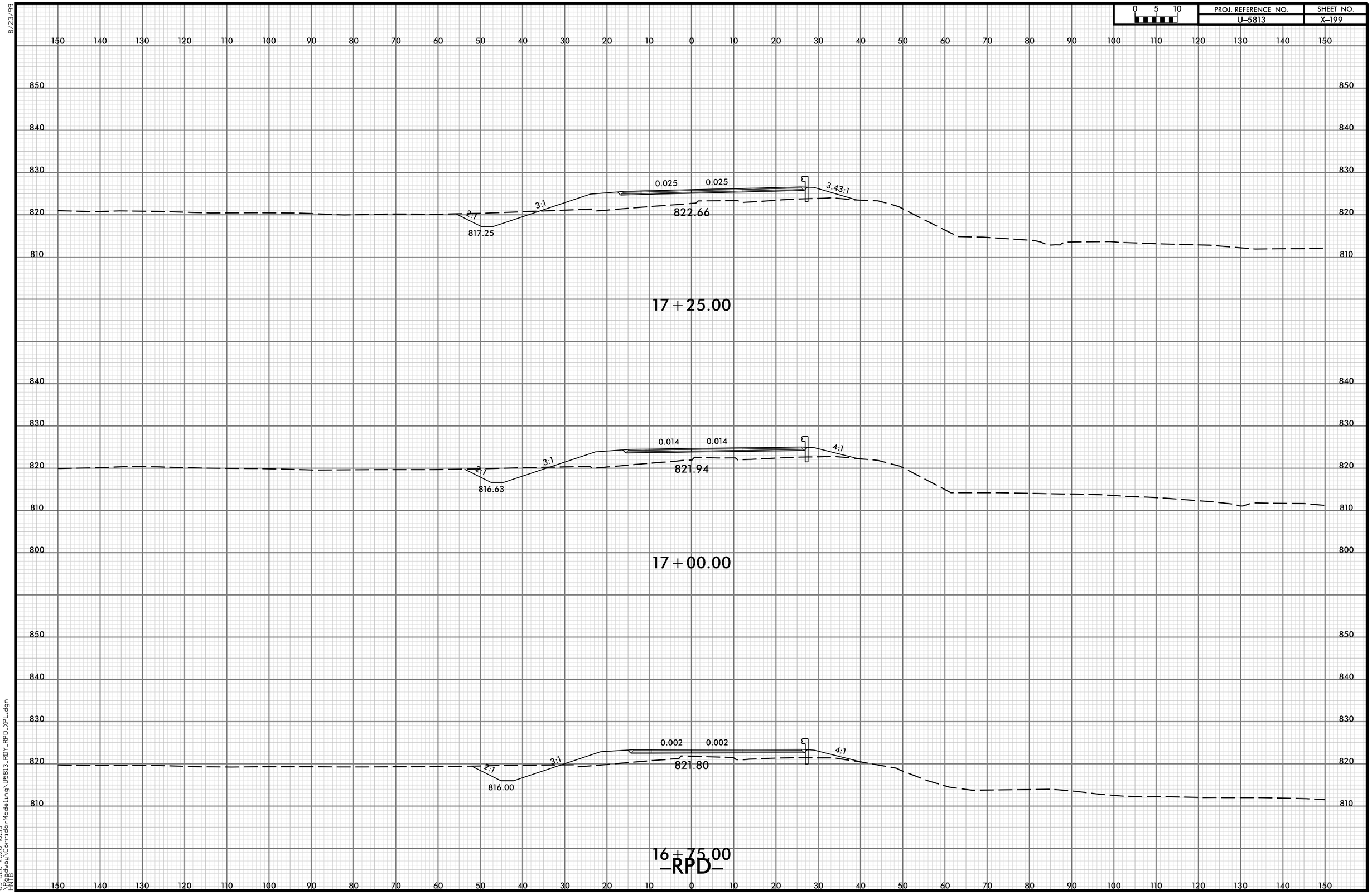
–RPD–

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

09-DEC-2020 10:39
\Roadway\Corridor Modeling\U5813_RDY_RPD_XPL.dgn
HNB

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-5813	X-199



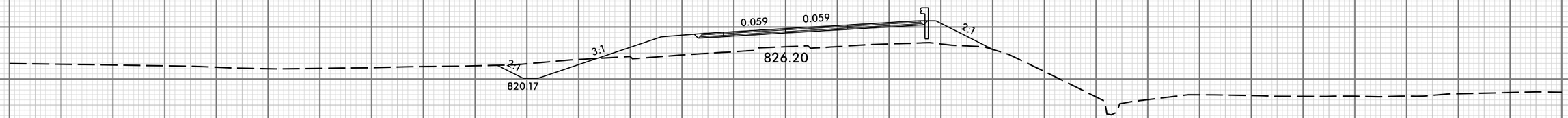
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\Roadway\Corridor Modeling\U5813_RDY_RPD_XPL.dgn
HNB

8/23/99

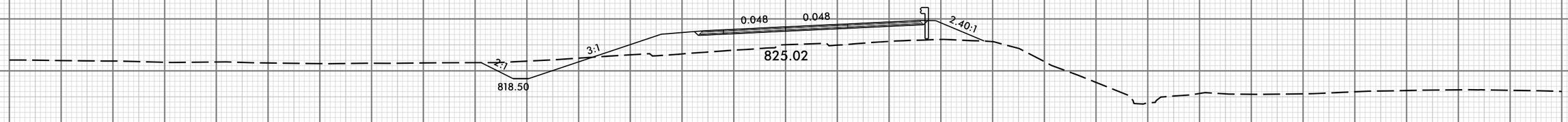
0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U–5813	X–200

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

850 840 830 820 810



18+00.00



17+75.00



17+50.00

–RPD–

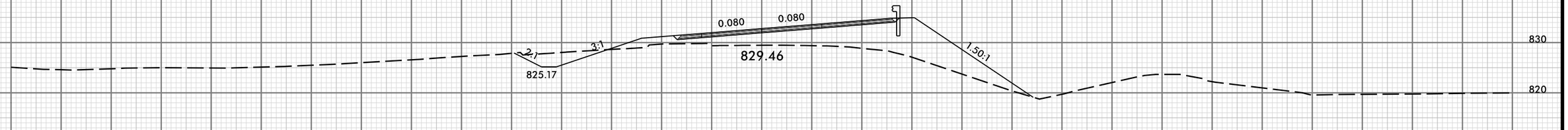
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\Roadway\Corridor Modeling\U5813_RDY_RPD_XPL.dgn
MNB

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-5813	X-201

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

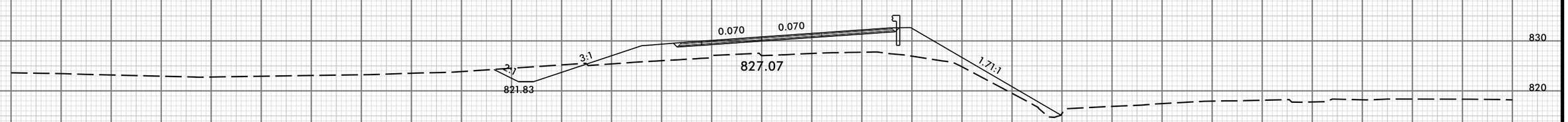
850 840 830 820 810



18+75.00



18+50.00



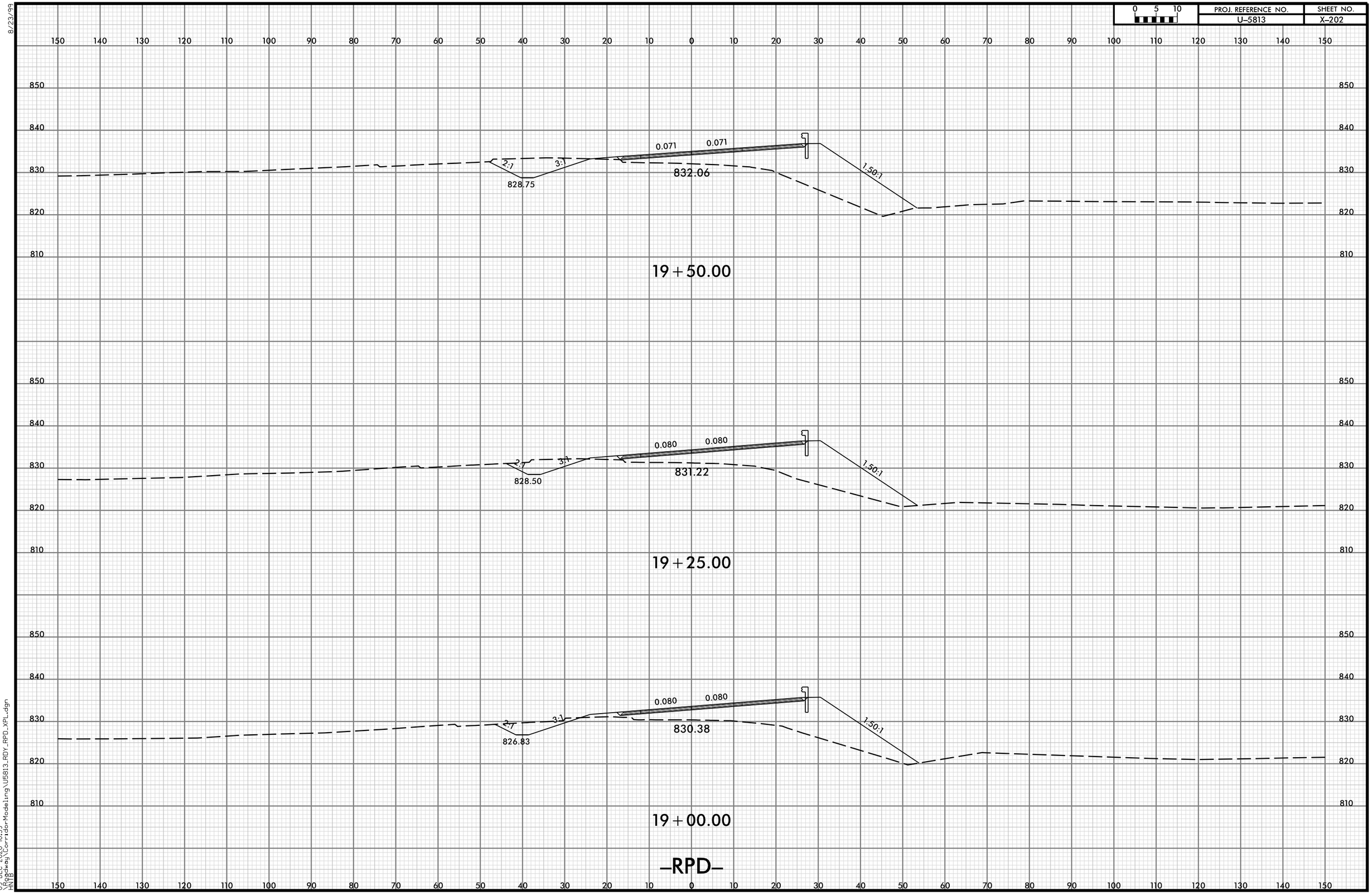
18+25.00

–RPD–

09-DEC-2020 10:39
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HNB

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-5813	X-202



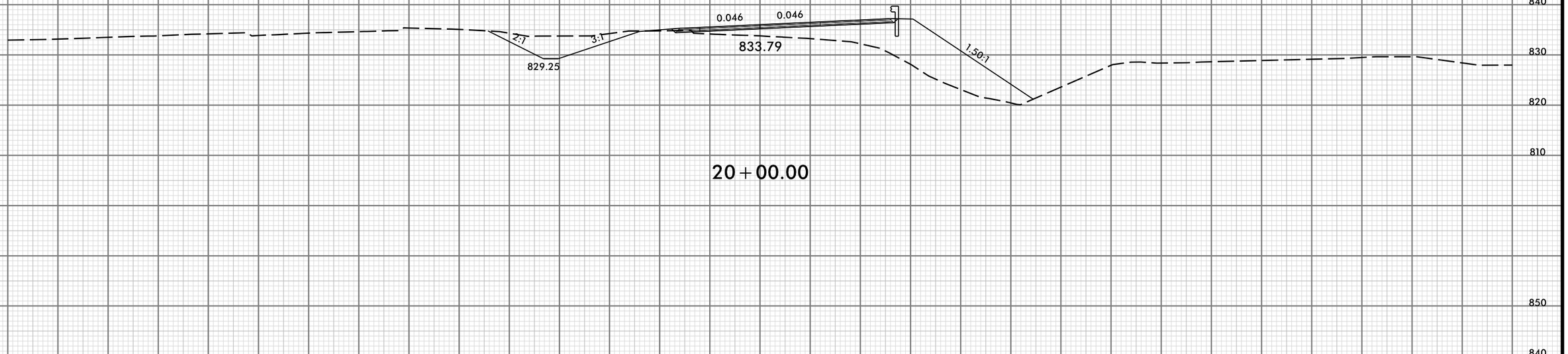
09-DEC-2020 10:39
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HNTB

8/23/99

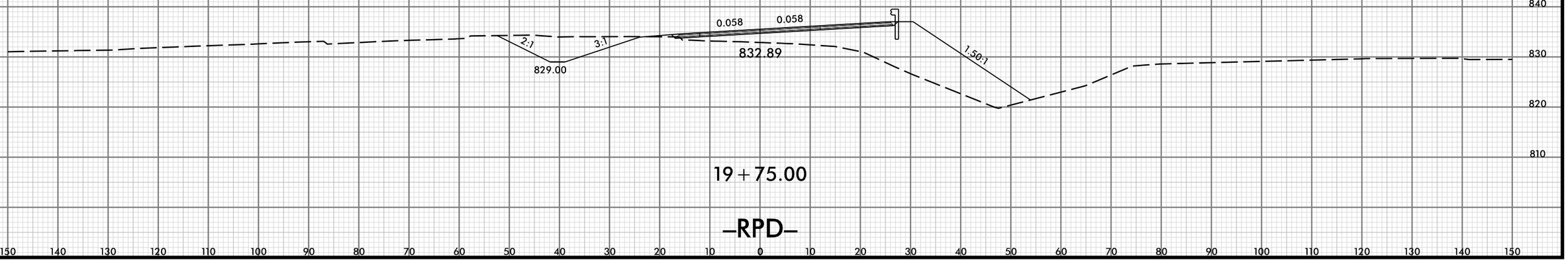
0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U–5813	X–203

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

850
840
830
820
810



20+00.00



19+75.00

–RPD–

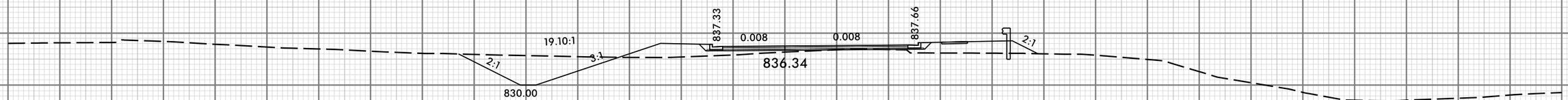
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\Roadway\Corridor Modeling\U5813_RDY_RPD_XPL.dgn
HNB

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-5813	X-204

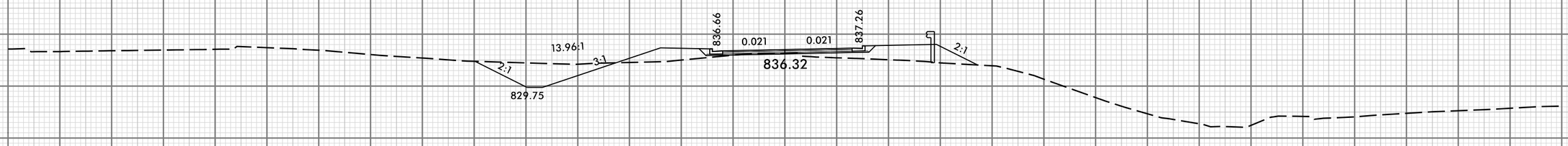
150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

860 850 840 830 820



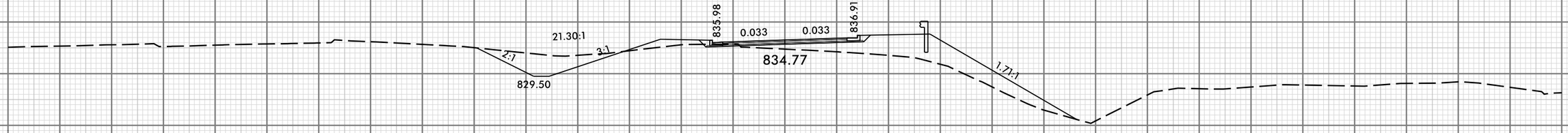
20+75.00

860 850 840 830 820



20+50.00

850 840 830 820 810



20+25.00

–RPD–

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

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tNTB

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0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U–5813	X–205

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

870
860
850
840
830

838.37

21+25.00

870
860
850
840
830

4:1 838.05 0.004 0.004 837.70 2:1

837.27

21+00.00

–RPD–

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

09-DEC-2020 10:39
\Roadway\Corridor Modeling\U5813_RDY_RPD_XPL.dgn
HNB

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U–5813	X–206

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

890
880
870
860
850

4:1

867.92

0.037

0.040

867.59

10+50.00

900
890
880
870
860

868.29

10+25.00

900
890
880
870
860

868.71

10+00.00

–RPBC–

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

09-DEC-2020 10:39
\Roadway\Corridor Modeling\U5813_RDY_RPBC_XPL.dgn
HNB

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-5813	X-207

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

880 870 860 850 840

0.002 0.002

3:1 4:1

861.29

11+25.00

880 870 860 850 840

867.23 867.61

0.013 0.013

3:1 4:1

863.38

11+00.00

890 880 870 860 850

867.66 868.58

0.025 0.025

3:1 4:1

865.43

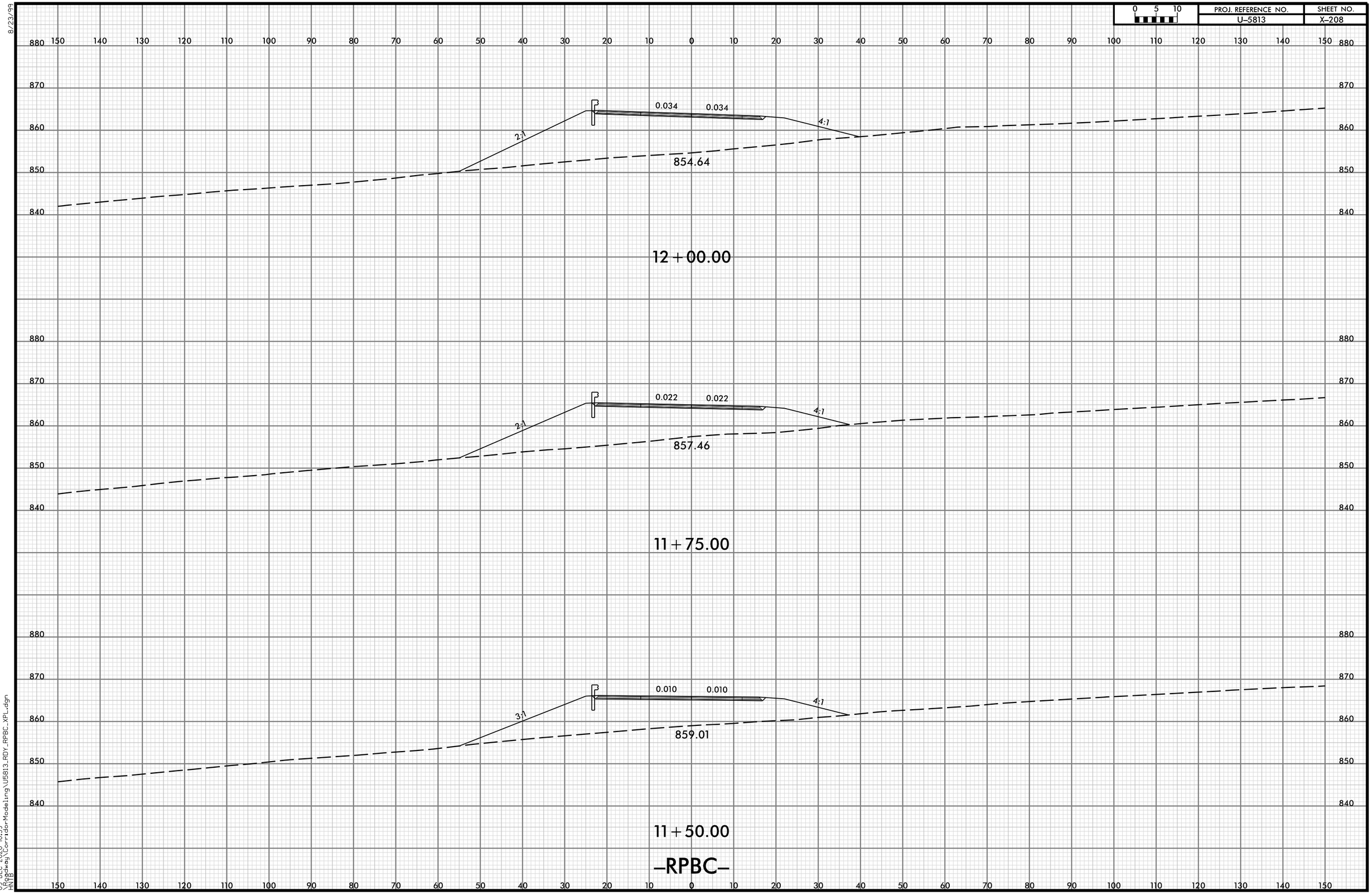
10+75.00
-RPBC-

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

09-DEC-2020 10:39
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8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-5813	X-208



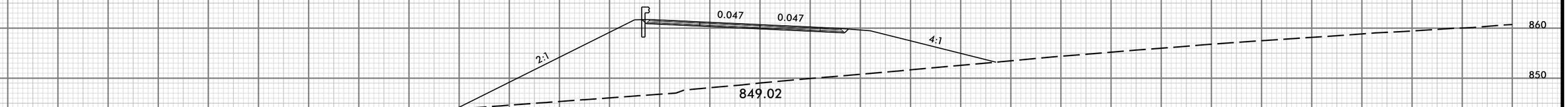
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HNB

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-5813	X-209

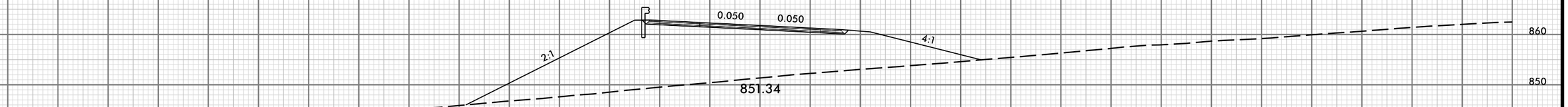
150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

870 860 850 840 830



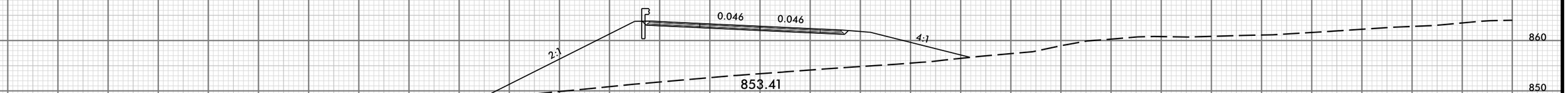
12+75.00

870 860 850 840 830



12+50.00

880 870 860 850 840



12+25.00

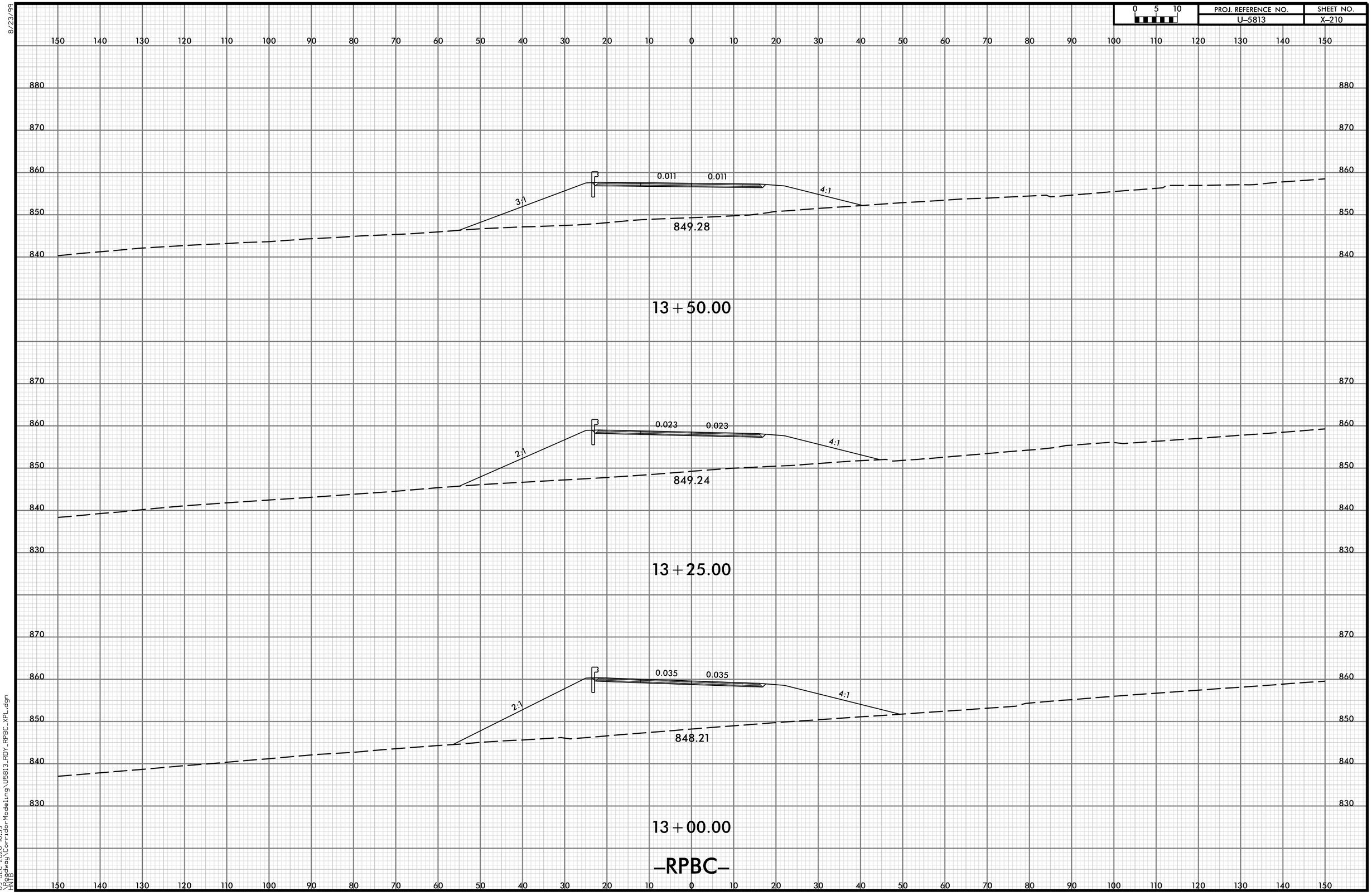
–RPBC–

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

09-DEC-2020 10:39
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HNB

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-5813	X-210



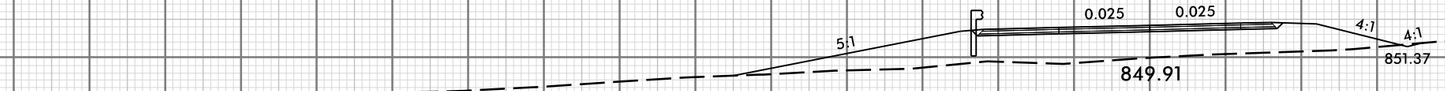
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HNTB

8/23/99

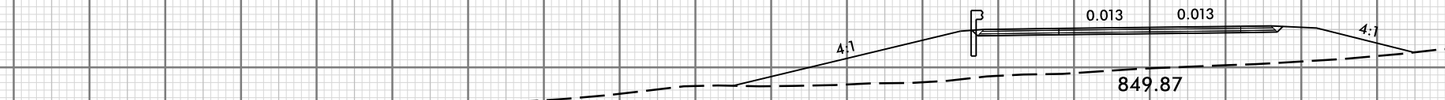
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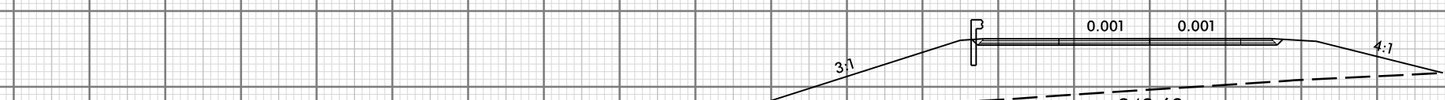
880 870 860 850 840



14+25.00



14+00.00



13+75.00
–RPBC–

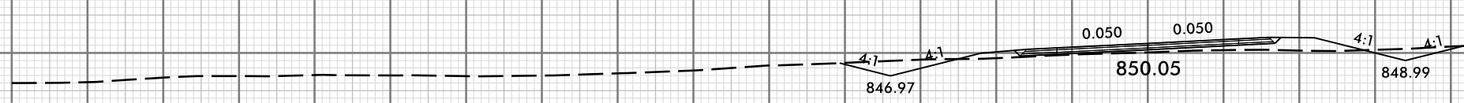
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HNB

8/23/99

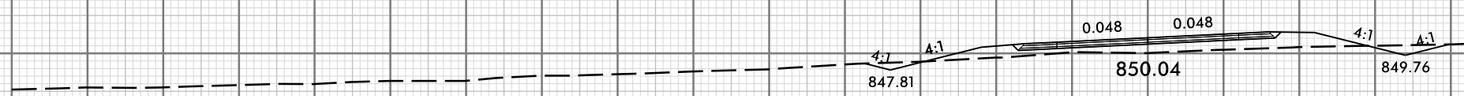
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	U-5813	X-212

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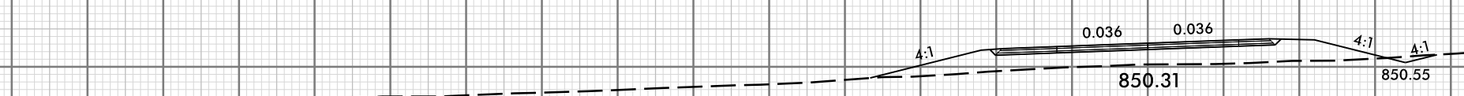
880 870 860 850 840



15+00.00



14+75.00



14+50.00

–RPBC–

09-DEC-2020 10:39
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MNB

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-5813	X-213

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

880 870 860 850 840

4:1 850.07 0.038 0.038 851.21 4:1

850.01

15+75.00

860 850 840

4:1 4:1 0.050 0.050 4:1 4:1

846.29 849.79 848.30

15+50.00

880 870 860 850 840

4:1 4:1 0.050 0.050 4:1 4:1

846.47 849.61 848.49

15+25.00

–RPBC–

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

09-DEC-2020 10:39
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HNB

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U–5813	X–214

853.05

16+50.00

851.38

16+25.00

4:1 850.67 0.026 0.026 851.75 4:1

850.34

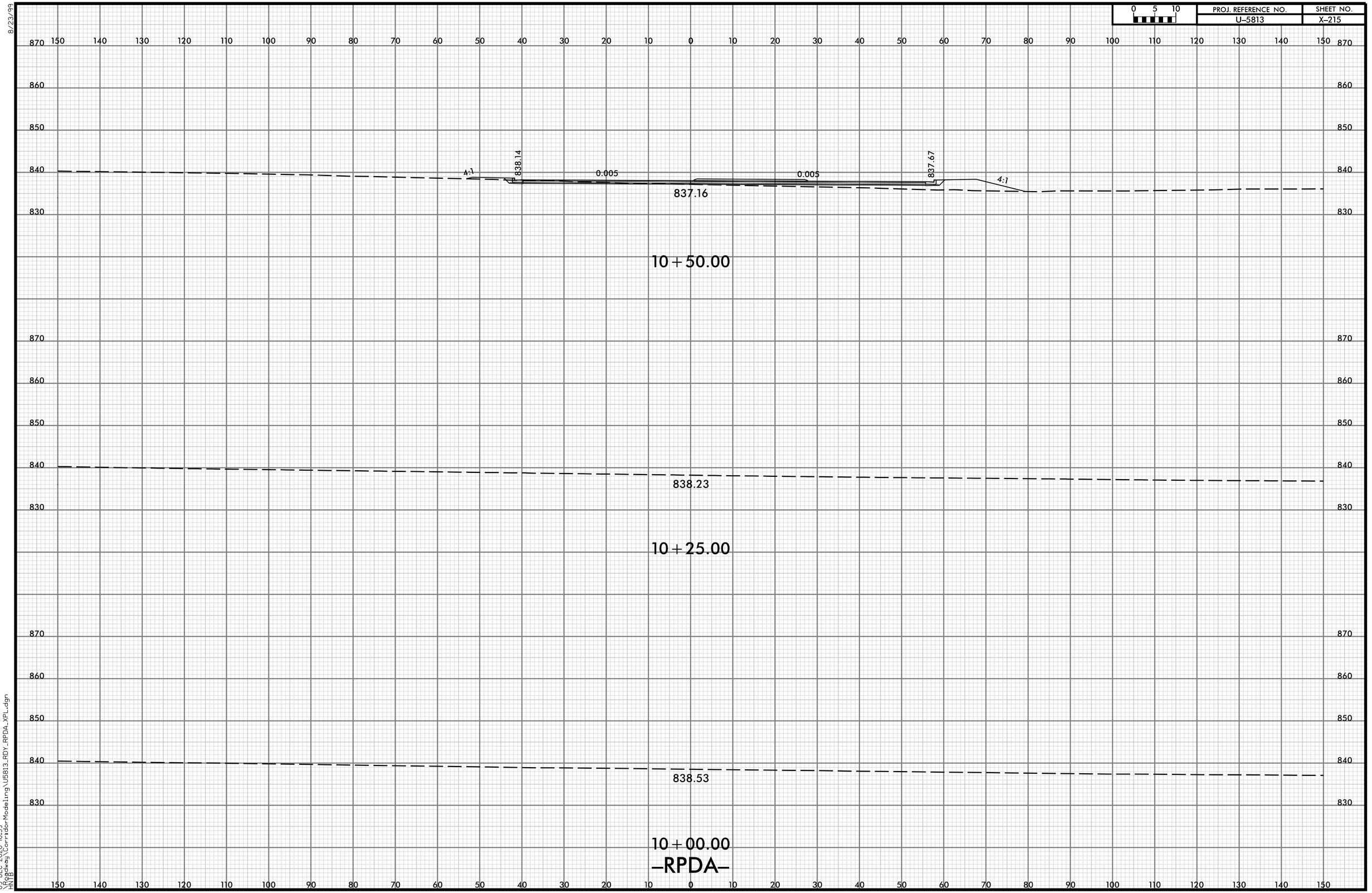
16+00.00

–RPBC–

09-DEC-2020 10:39
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HNB

8/23/99

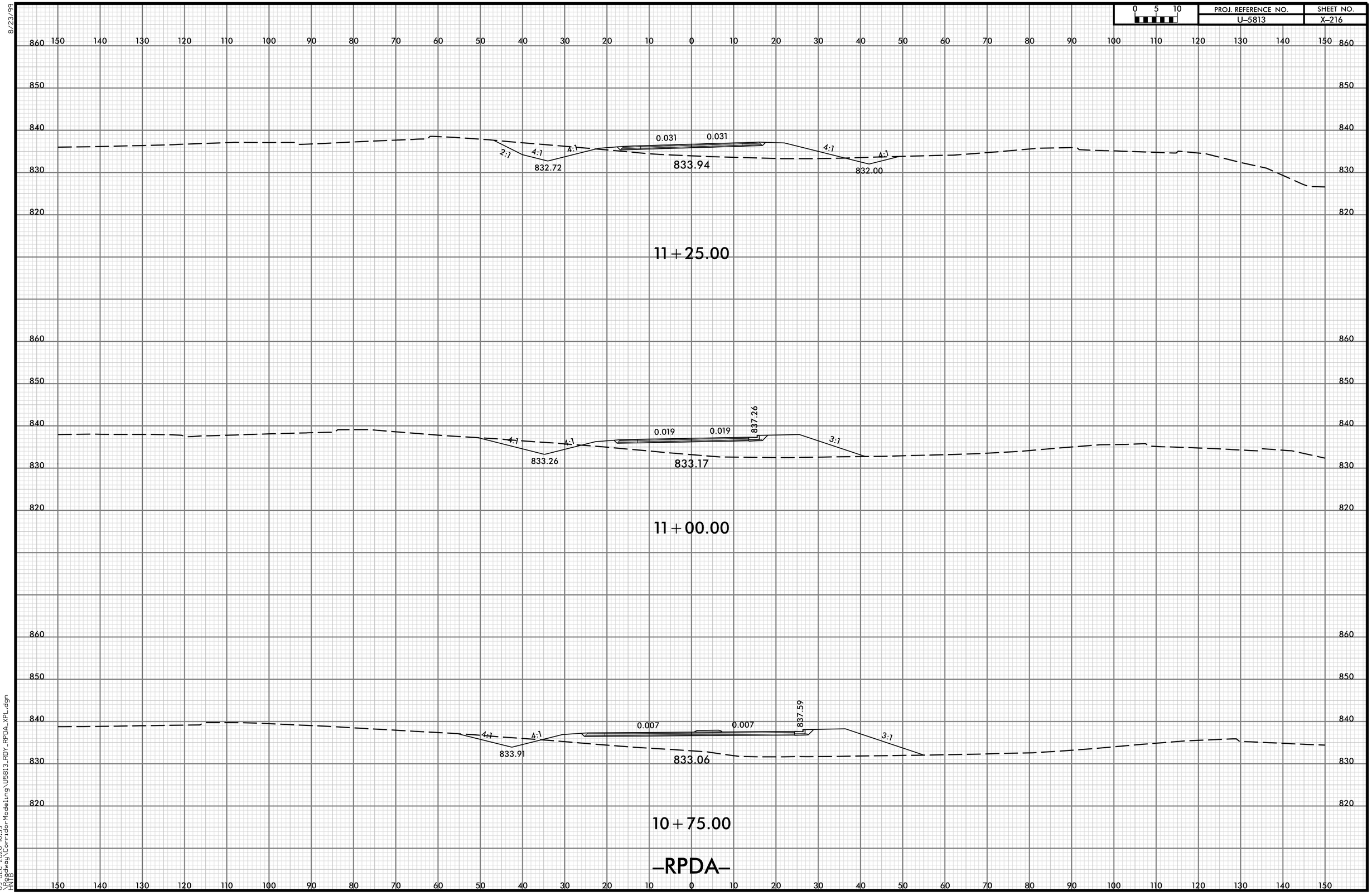
0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U–5813	X–215



09-DEC-2020 10:39
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HNB

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-5813	X-216



09-DEC-2020 10:39
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HNB

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-5813	X-217

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

860 850 840 830 820

–LPA–

0.050 0.050 4:1 4:1

835.55 833.90

12+00.00

0.050 0.050 4:1 4:1

2:1 4:1 4:1

835.08 831.97 833.27

11+75.00

0.043 0.043 4:1 4:1

2:1 4:1 4:1

834.47 832.26 832.63

11+50.00

–RPDA–

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

09-DEC-2020 10:39
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HNTB

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U–5813	X–218

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

860
850
840
830
820

–LPA–

0.050 0.050 4:1 4:1

836.01 833.99

12+50.00

860
850
840
830
820

–LPA–

0.050 0.050 4:1 4:1

835.70 833.90

12+25.00

–RPDA–

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

09-DEC-2020 10:39
\Roadway\Corridor Modeling\U5813_RDY_RPDA_XPL.dgn
HNB

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-5813	X-219

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

860 850 840 830 820

0.032 0.032

4:1 4:1 4:1 4:1 2:1

832.95 835.31 834.39

13+25.00

860 850 840 830 820

0.044 0.044

4:1 4:1 4:1 4:1

832.49 834.71 834.29

13+00.00

860 850 840 830 820

–LPA–

0.050 0.050

4:1 4:1

836.07 834.17

12+75.00

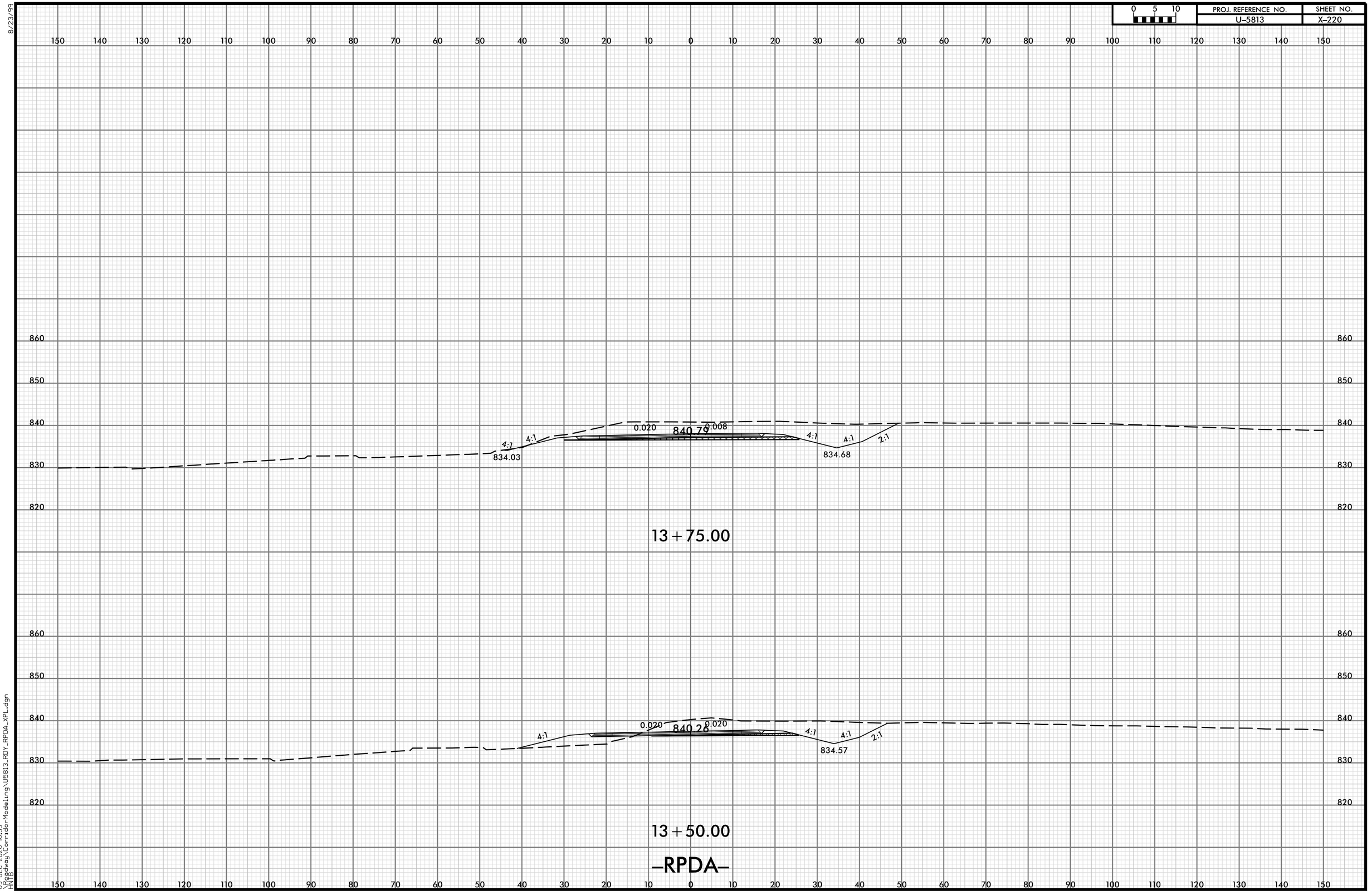
–RPDA–

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09-DEC-2020 10:39
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HNB

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-5813	X-220



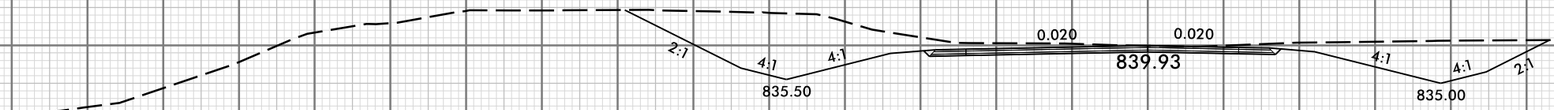
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HNB

8/23/99

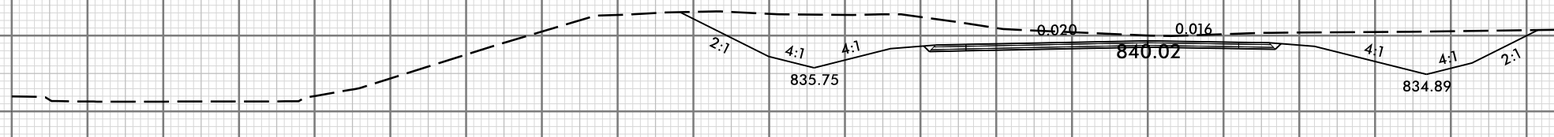
0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-5813	X-221

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

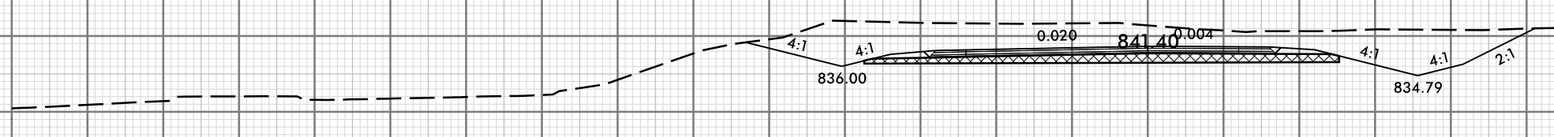
860 850 840 830 820



14+50.00



14+25.00



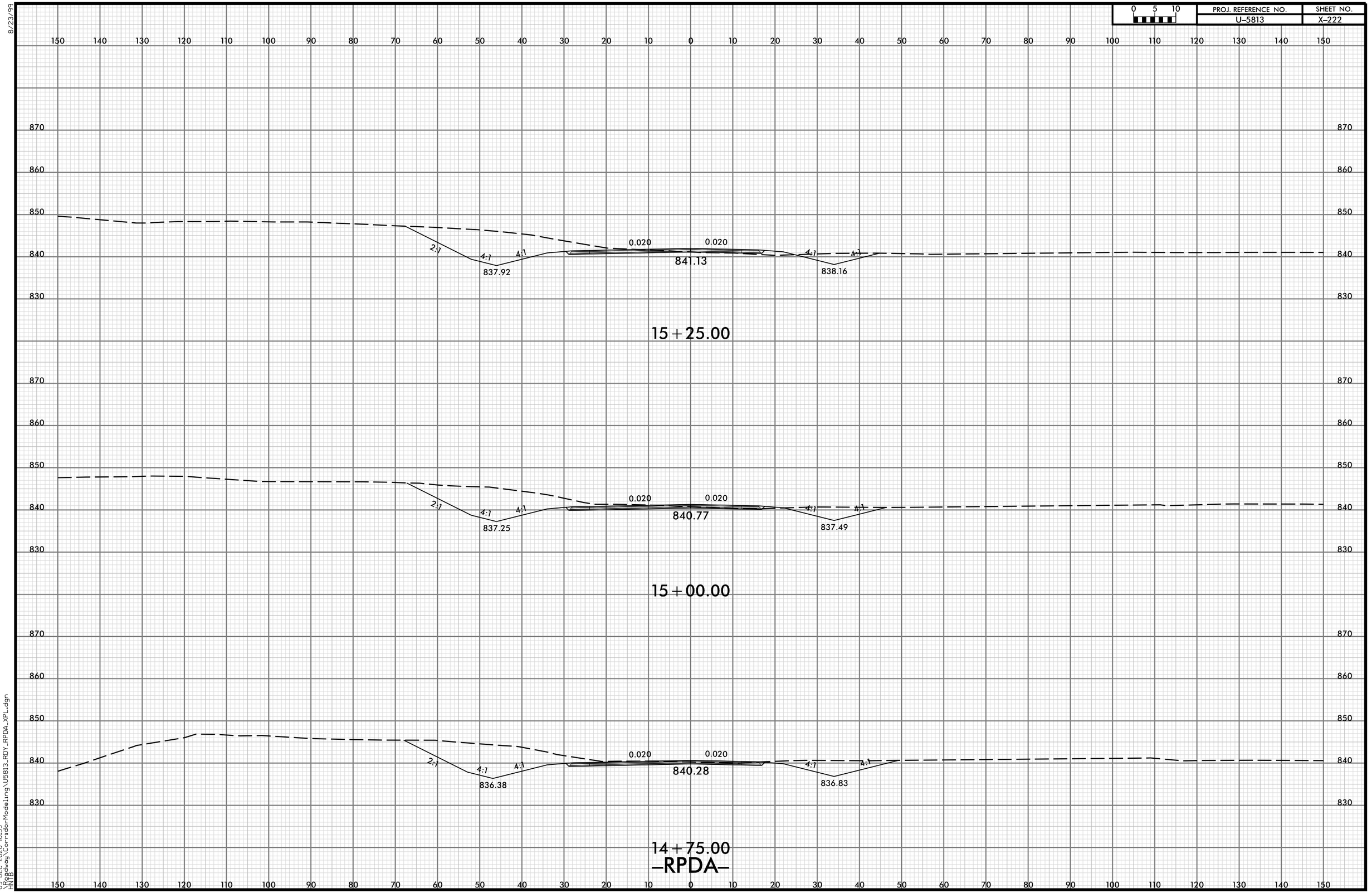
14+00.00

–RPDA–

09-DEC-2020 10:39
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MNB

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-5813	X-222



09-DEC-2020 10:39
\Roadway\Corridor Modeling\U5813_RDY_RPDA_XPL.dgn
MNB

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U–5813	X–223

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

870 860 850 840 830

4:1 844.09 0.009 0.020 843.51 4:1

842.62

16+00.00

4:1 843.12 0.003 0.020 842.92 4:1

842.09

15+75.00

2:1 4:1 4:1 838.74 0.015 0.020 4:1 4:1 838.82

841.54

15+50.00

–RPDA–

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

09-DEC-2020 10:39
\Roadway\Corridor Modeling\U5813_RDY_RPDA_XPL.dgn
HNB

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-5813	X-224

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

870
860
850
840
830

4:1
846.07
0.032
845.12
0.032
842.82
4:1

16+50.00

870
860
850
840
830

4:1
845.06
0.021
843.66
0.021
843.88
4:1

16+25.00

–RPDA–

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

09-DEC-2020 10:39
\Roadway\Corridor Modeling\U5813_RDY_RPDA_XPL.dgn
HNB

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U–5813	X–225

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

870
860
850
840
830

846.54

17 + 00.00

870
860
850
840
830

846.03

16 + 75.00

–RPDA–

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

09-DEC-2020 10:39
\Roadway\Corridor Modeling\U5813_RDY_RPDA_XPL.dgn
HNB

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-5813	X-226

860 850 840 830 820

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

0.020

3:1

820

826.90

10+50.00

0.020

3:1

820

826.49

10+25.00

0.020

2:1

820

826.04

10+00.00

–LPA–

09-DEC-2020 10:39
\Roadway\CorridorModeling\U5813_RDY_LPA_XPL.dgn
HNTB

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U–5813	X–227

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

860 850 840 830 820

0.020 827.80 3:1 828.28

11+25.00

860 850 840 830 820

0.020 6:1 827.78

11+00.00

860 850 840 830 820

0.020 4:1 827.31

10+75.00

–LPA–

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

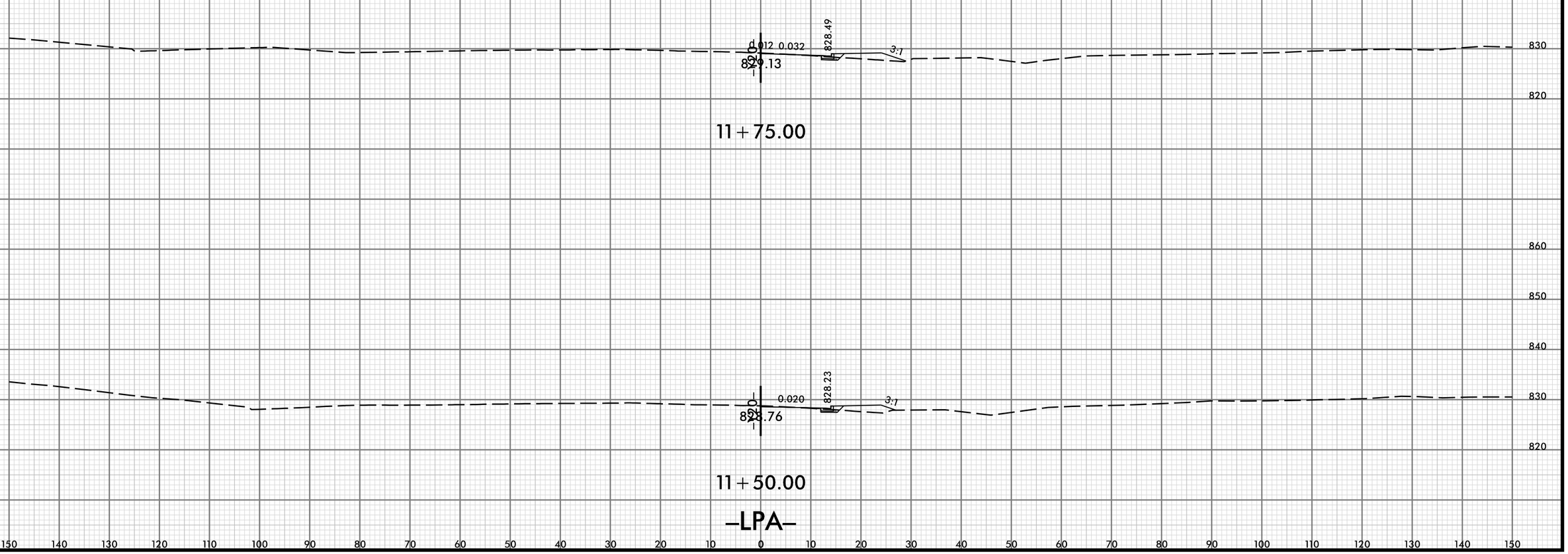
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HNB

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U–5813	X–228

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

860
850
840
830
820



860
850
840
830
820

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

09-DEC-2020 10:39
\Roadway\Corridor Modeling\U5813_RDY_LPA_XPL.dgn
MNB

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U–5813	X–229

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

860
850
840
830
820

6:1
0.059
0.059
828.75
3:1
830.08

12+25.00

860
850
840
830
820

0.000
0.046
828.64
3:1
829.39

12+00.00

–LPA–

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

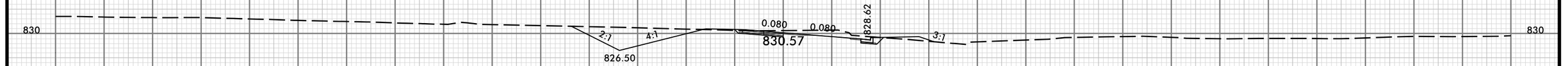
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HNB

8/23/99

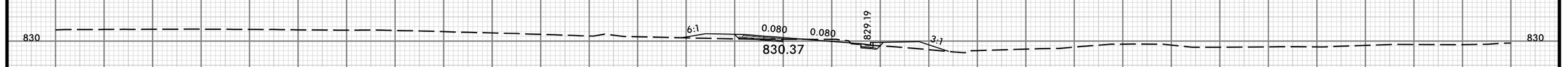
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	U–5813	X–230

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

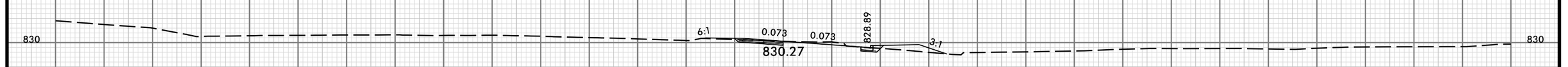
860 850 840 830 820



13+00.00



12+75.00



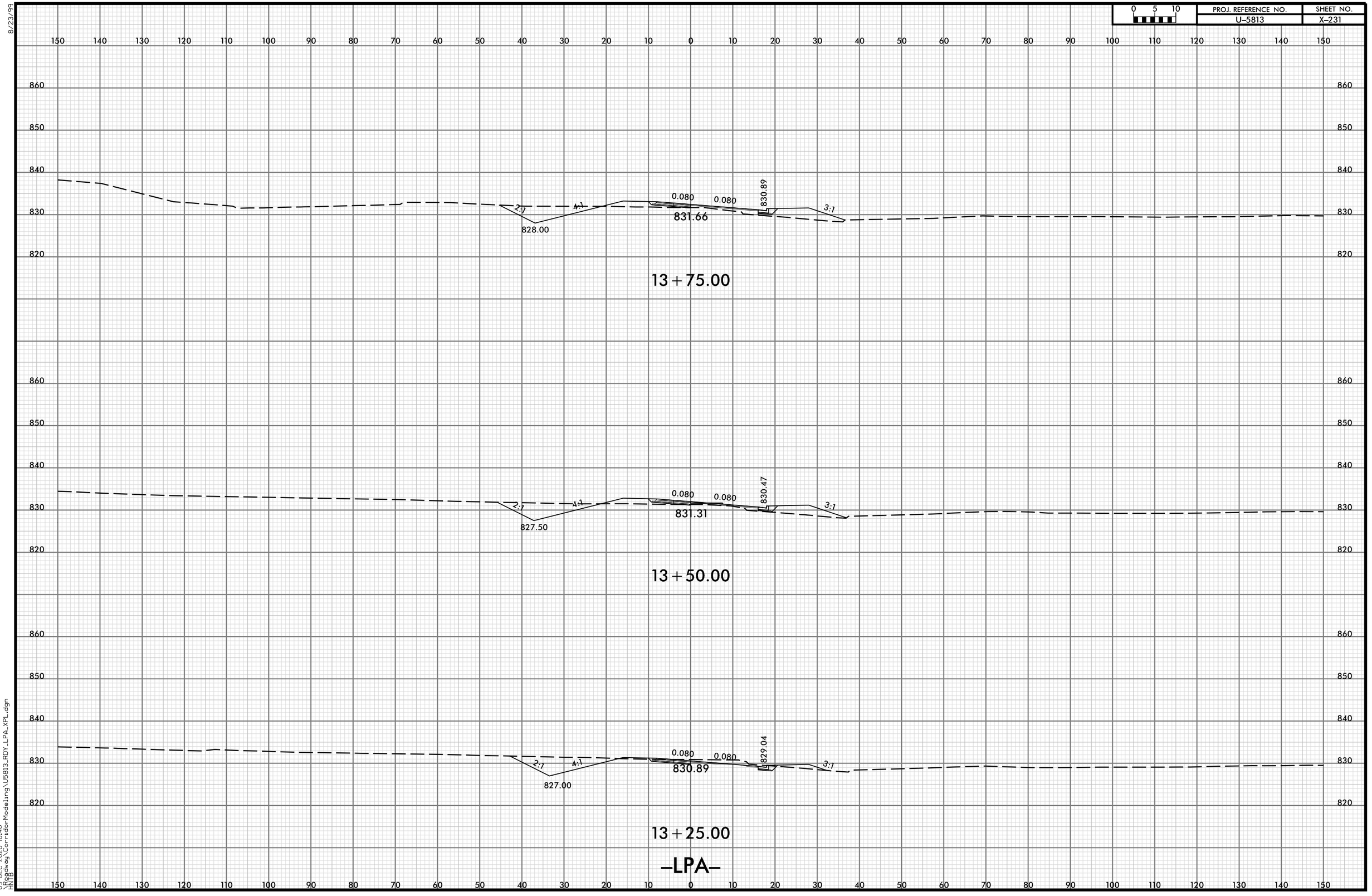
12+50.00

–LPA–

09-DEC-2020 10:40
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MNB

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-5813	X-231



09-DEC-2020 10:40
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MNB

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-5813	X-232

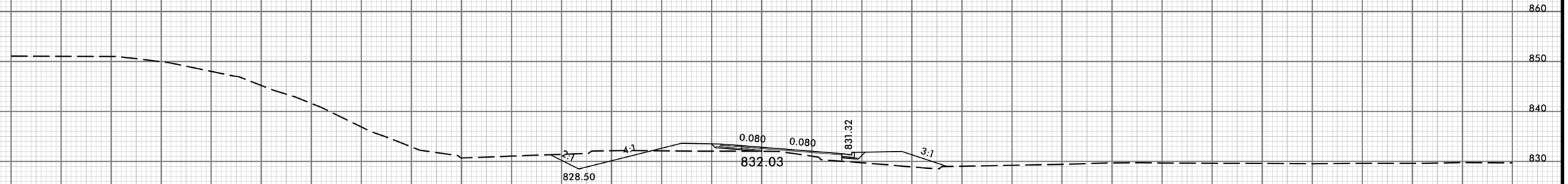
150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

860
850
840
830
820



14+25.00

860
850
840
830
820



14+00.00

–LPA–

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

09-DEC-2020 10:40
\Roadway\Corridor Modeling\U5813_RDY_LPA_XPL.dgn
HNB

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U–5813	X–233

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

860 850 840 830 820

2:1 4:1 6:1 0.080 0.080 833.02 3:1

832.69 832.16

15+00.00

860 850 840 830 820

2:1 4:1 0.080 0.080 832.59 3:1

831.46 831.96

14+75.00

860 850 840 830 820

2:1 4:1 0.080 0.080 832.17 3:1

830.23 832.05

14+50.00

–LPA–

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

09-DEC-2020 10:40
\Roadway\Corridor Modeling\U5813_RDY_LPA_XPL.dgn
HNB

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U–5813	X–234

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

860
850
840
830
820

2:1
4:1
6:1
0.080
0.080
833.87
3:1
833.18
833.29

15+50.00

860
850
840
830
820

2:1
4:1
6:1
0.080
0.080
833.44
3:1
832.76
832.70

15+25.00

–LPA–

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

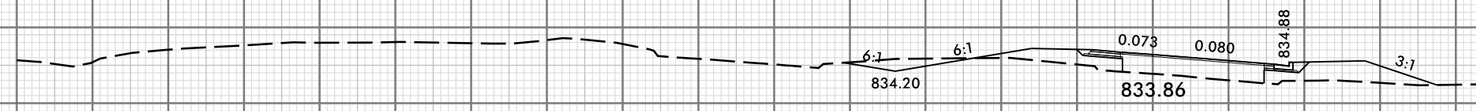
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HNB

8/23/99

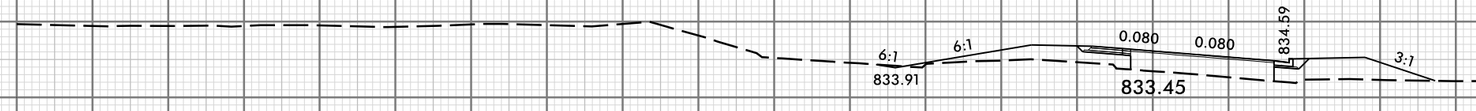
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	U–5813	X–235

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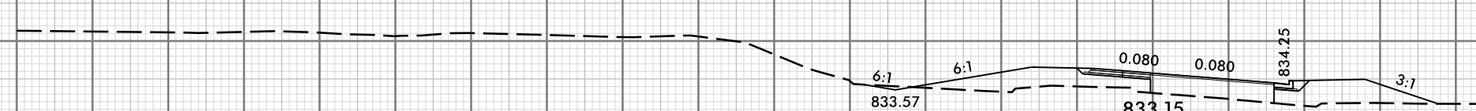
860 850 840 830 820



16+25.00



16+00.00



15+75.00

–LPA–

09-DEC-2020 10:40
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MNB

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U–5813	X–236

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

860
850
840
830
820

–RPDA–

0.144 0.080 0.080 835.34 6:1

834.75

16+75.00

860
850
840
830
820

–RPDA–

0.113 0.080 0.080 835.13 6:1

834.32

16+50.00

–LPA–

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

09-DEC-2020 10:40
\Roadway\Corridor Modeling\U5813_RDY_LPA_XPL.dgn
HNB

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U–5813	X–237

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

860 850 840 830 820

6:1 6:1 0.080 0.080 3:1

835.13 836.44 835.81

17+50.00

6:1 6:1 0.080 0.080 3:1

834.97 835.83 835.65

17+25.00

–RPDA– 0.133 0.080 0.080 6:1

835.25 835.50

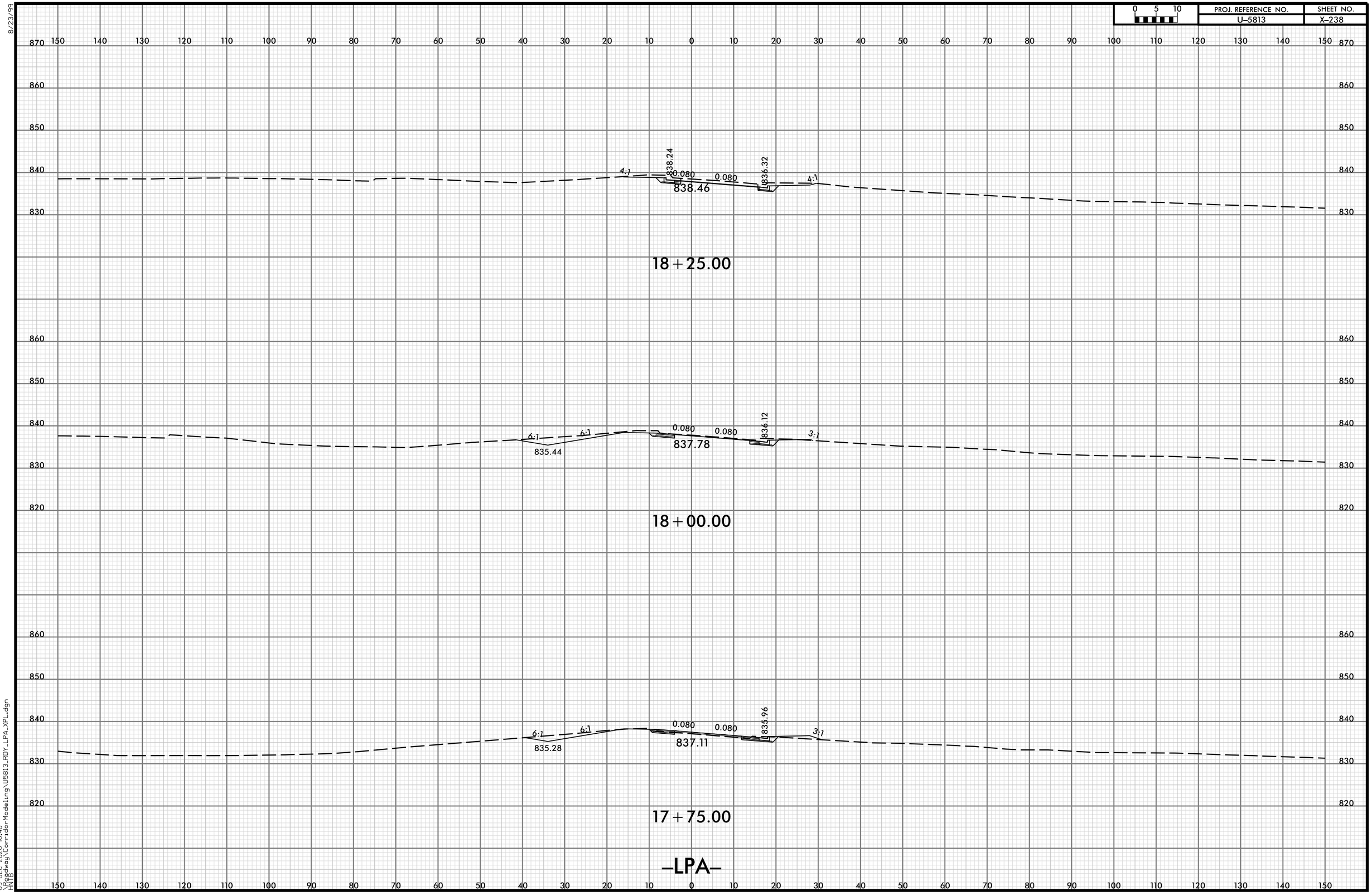
17+00.00

–LPA–

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HNB

8/23/99

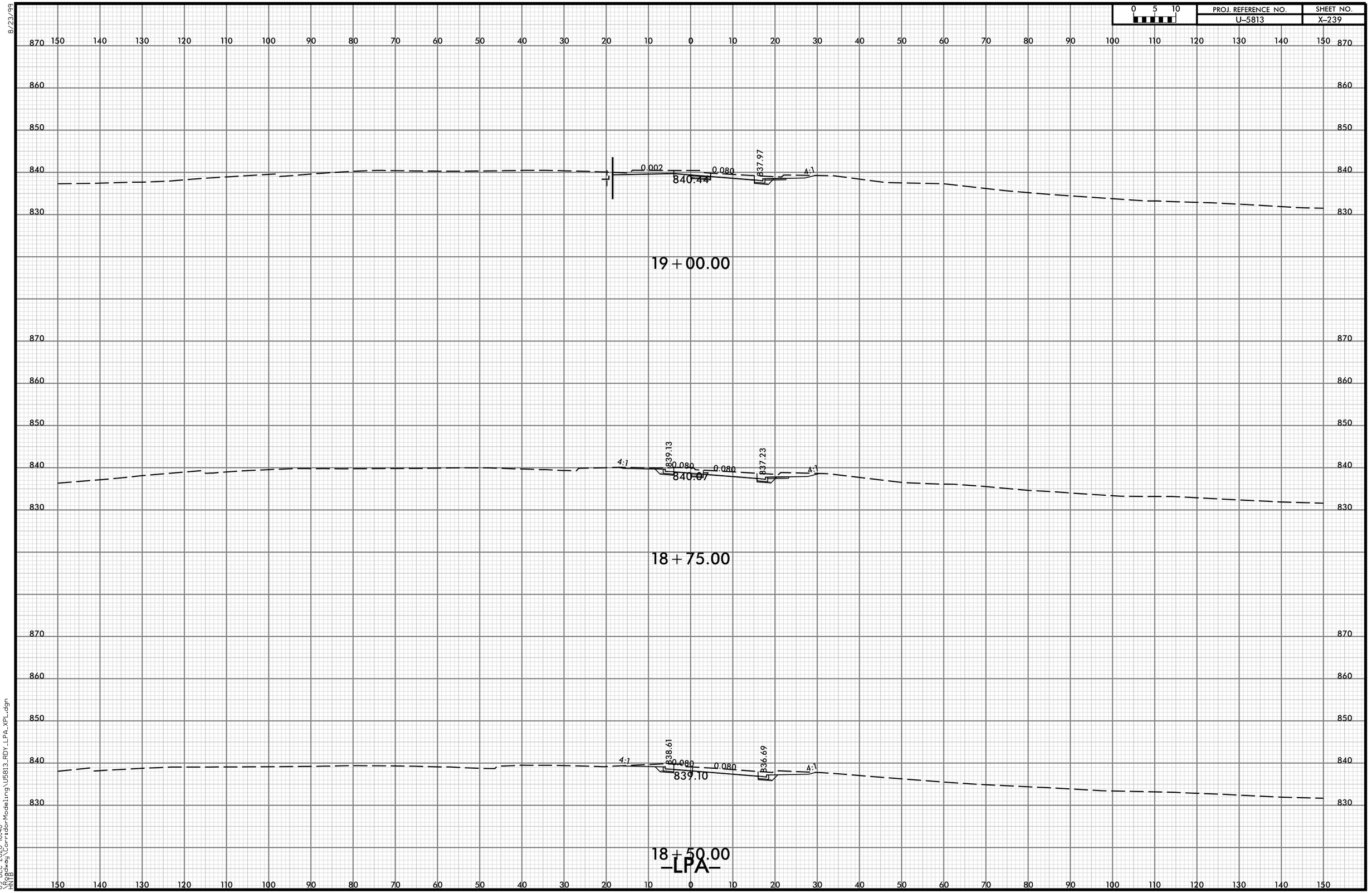
0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U–5813	X–238



09-DEC-2020 10:40
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HNB

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-5813	X-239



09-DEC-2020 10:40
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MNB

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-5813	X-240

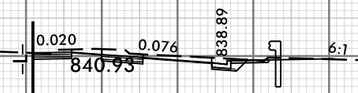
150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

860
850
840
830
820



19+50.00

860
850
840
830
820



19+25.00

–LPA–

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

09-DEC-2020 10:40
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HNB

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-5813	X-241

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

860
850
840
830
820

1
0.029 0.034
841.46
841.85
3:1

20+00.00

860
850
840
830
820

1
0.048 0.048
840.73
841.15
3:1

19+75.00

–LPA–

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

09-DEC-2020 10:40
\Roadway\Corridor Modeling\U5813_RDY_LPA_XPL.dgn
HNB

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U–5813	X–242

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

860
850
840
830
820

842.78

20+50.00

0.020

842.11

3:1

842.40

20+25.00

–LPA–

860
850
840
830
820

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

09-DEC-2020 10:40
\Roadway\Corridor Modeling\U5813_RDY_LPA_XPL.dgn
HNB

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-5813	X-243

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

850 840 830 820 810 860 850 840 830 820 860 850 840 830 820

0.020

4:1

821.69

10+50.00

822.13

10+25.00

822.56

10+00.00

-LPC-

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

09-DEC-2020 10:40
\Roadway\CorridorModeling\U5813_RDY_LPC_XPL.dgn
HNB

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U–5813	X–244

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

850
840
830
820
810

0.020
6:1
820
820.71

11+00.00

850
840
830
820
810

0.020
4:1
820
821.22

10+75.00

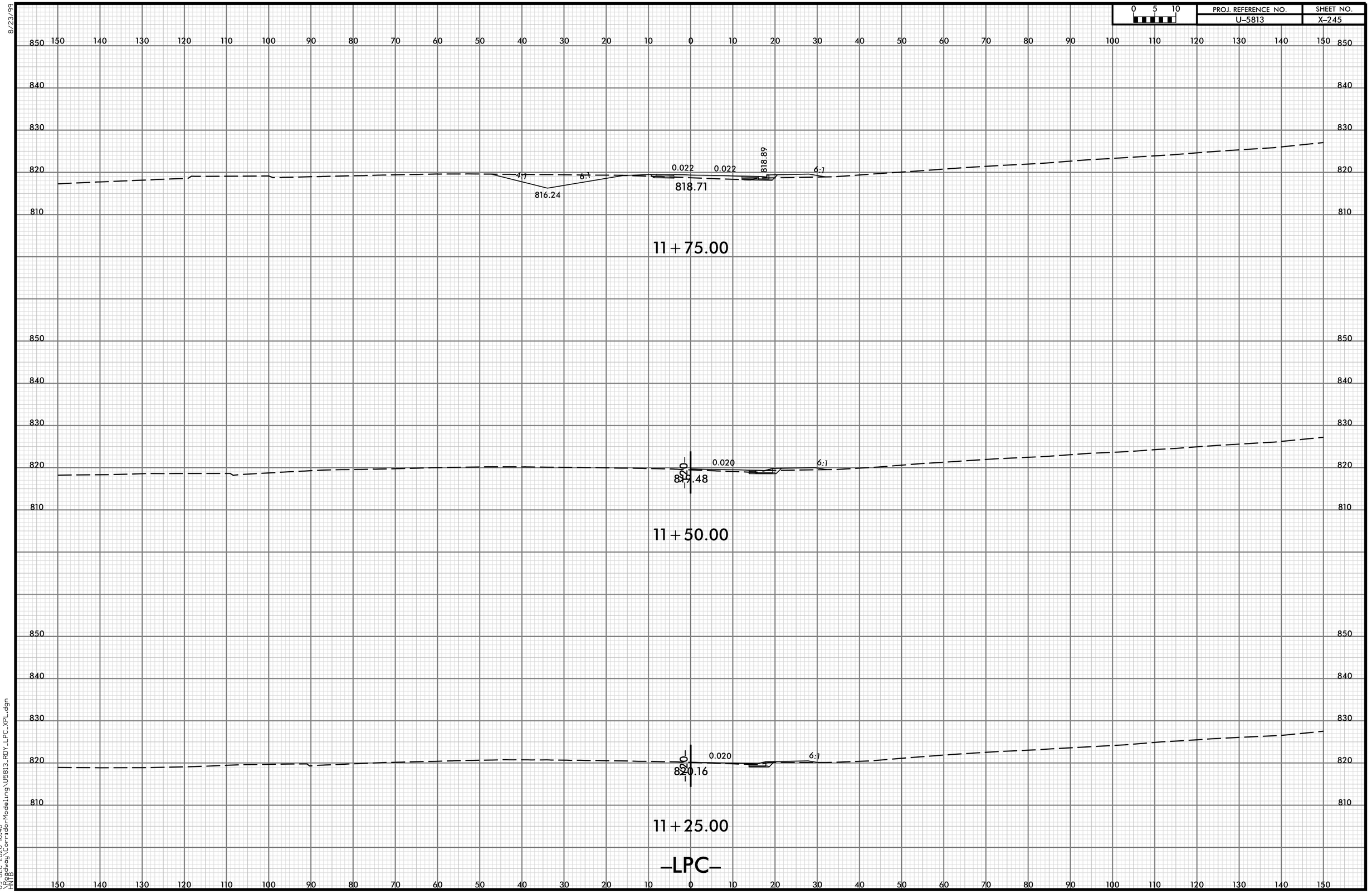
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150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

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HNB

8/23/99

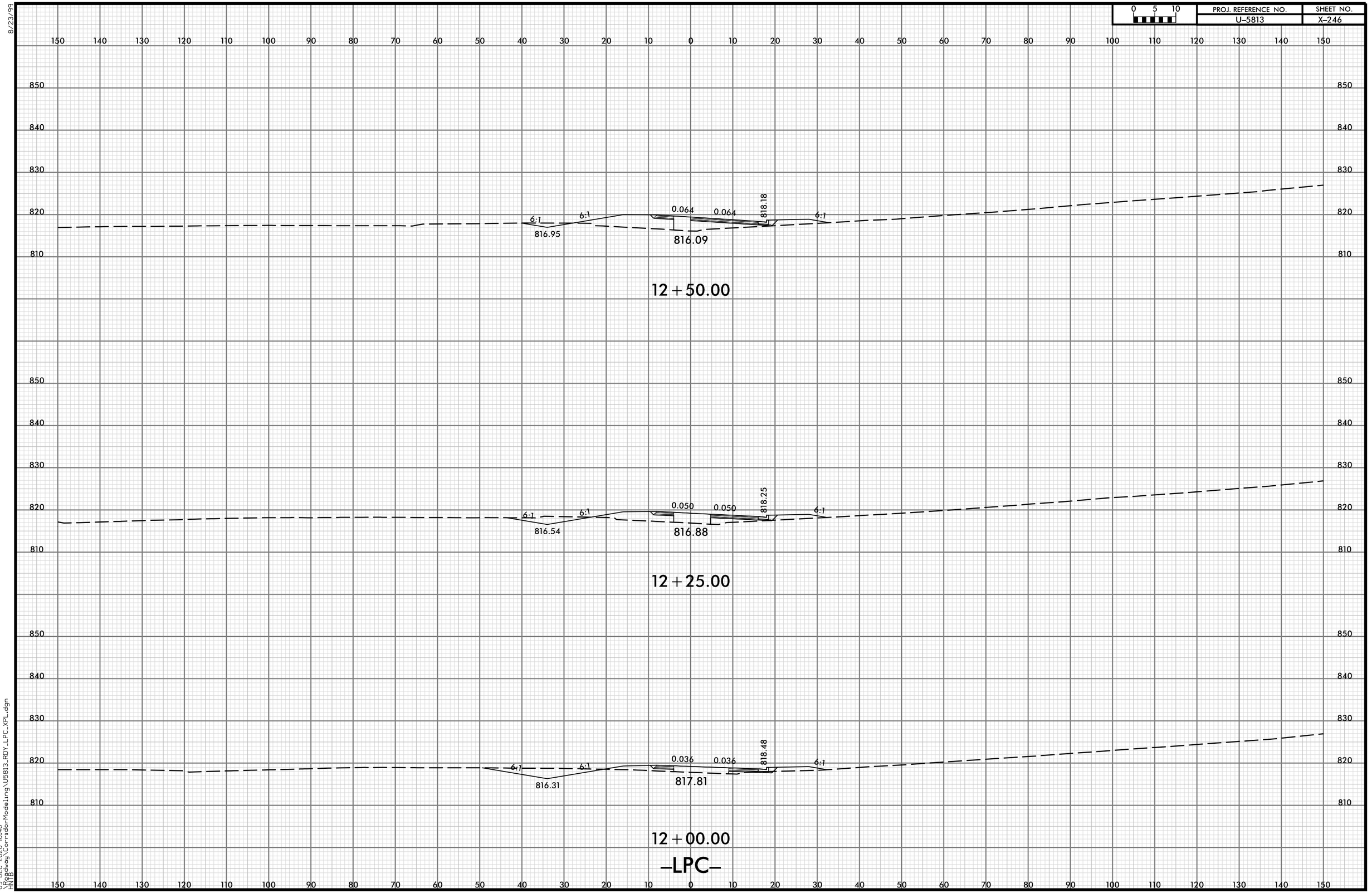
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	U-5813	X-245



09-DEC-2020 10:40
\Roadway\Corridor Modeling\U5813_RDY_LPC_XPL.dgn
HNB

8/23/99

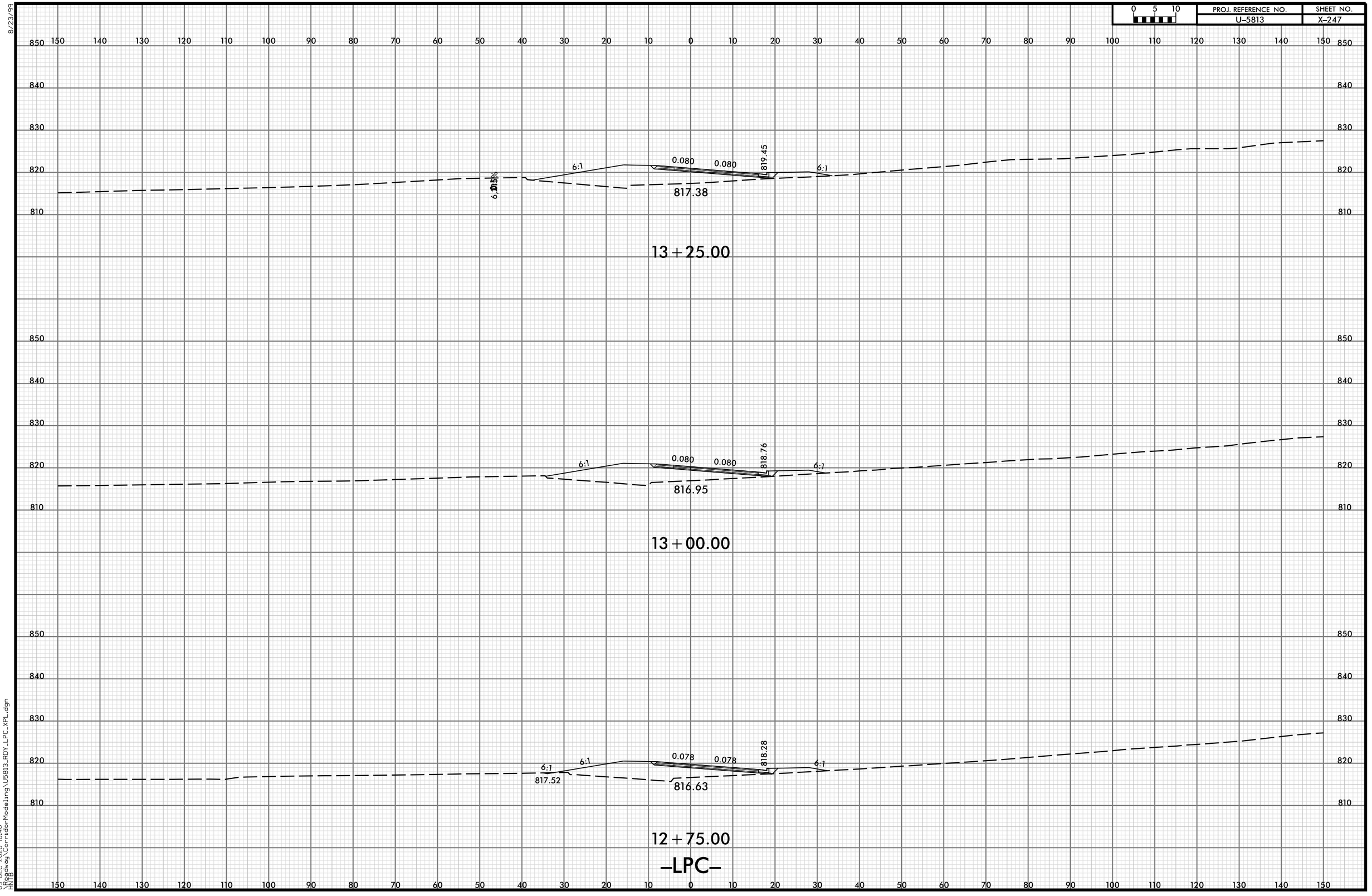
0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U–5813	X–246



09-DEC-2020 10:40
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HNB

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-5813	X-247



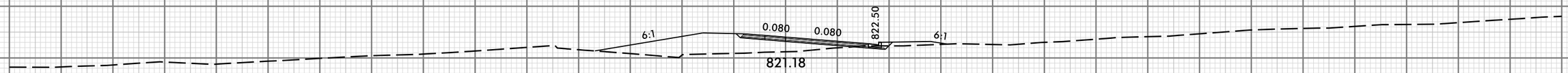
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HNB

8/23/99

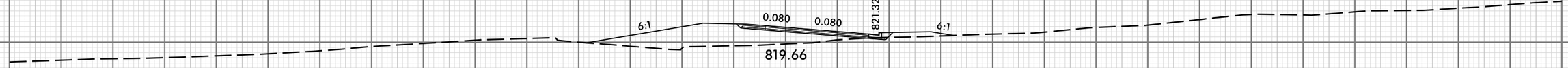
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	U-5813	X-248

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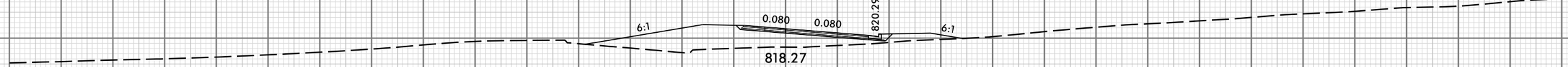
850 840 830 820 810



14+00.00



13+75.00



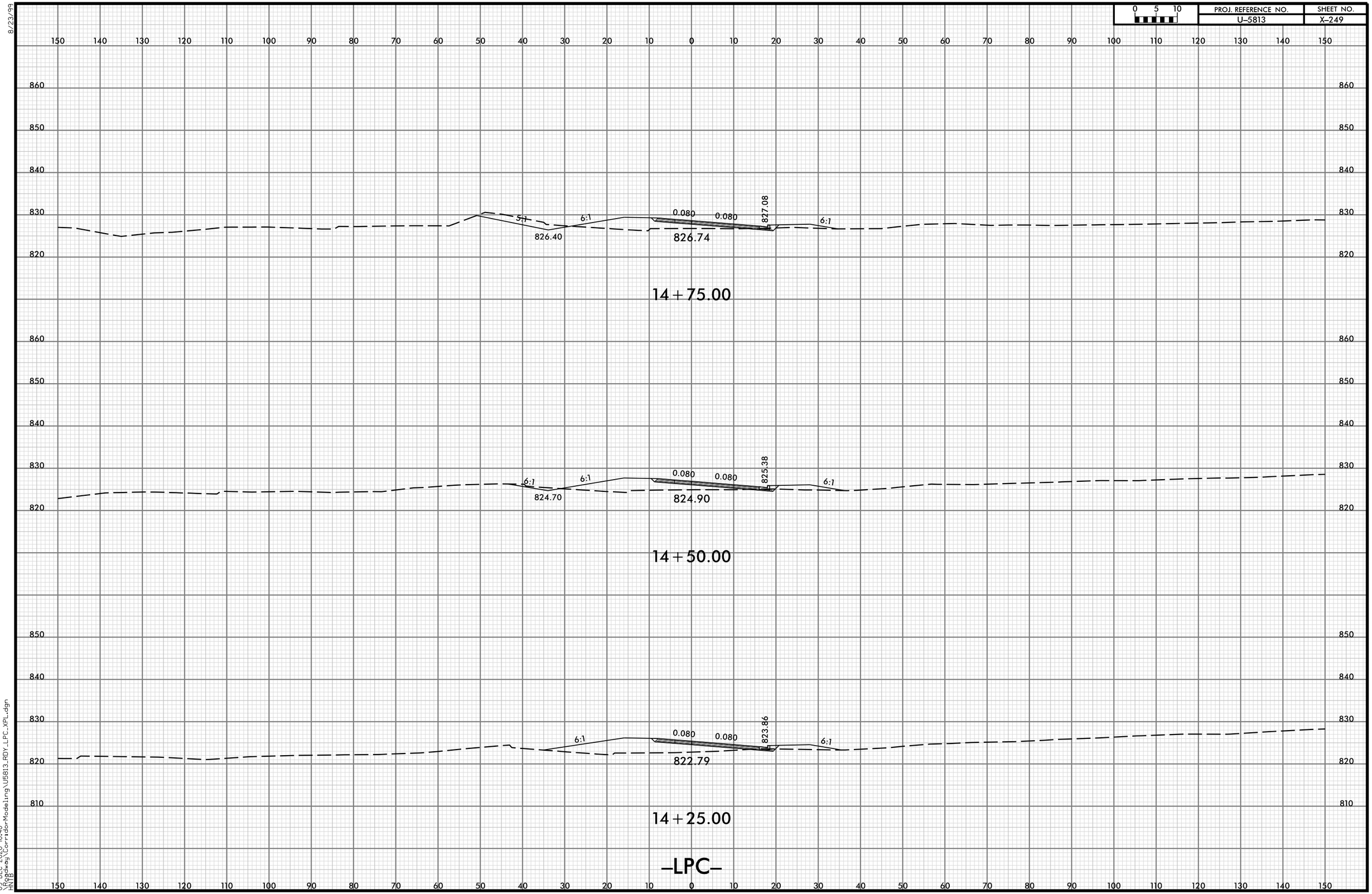
13+50.00

–LPC–

09-DEC-2020 10:40
\Roadway\Corridor Modeling\U5813_RDY_LPC_XPL.dgn
MNB

8/23/99

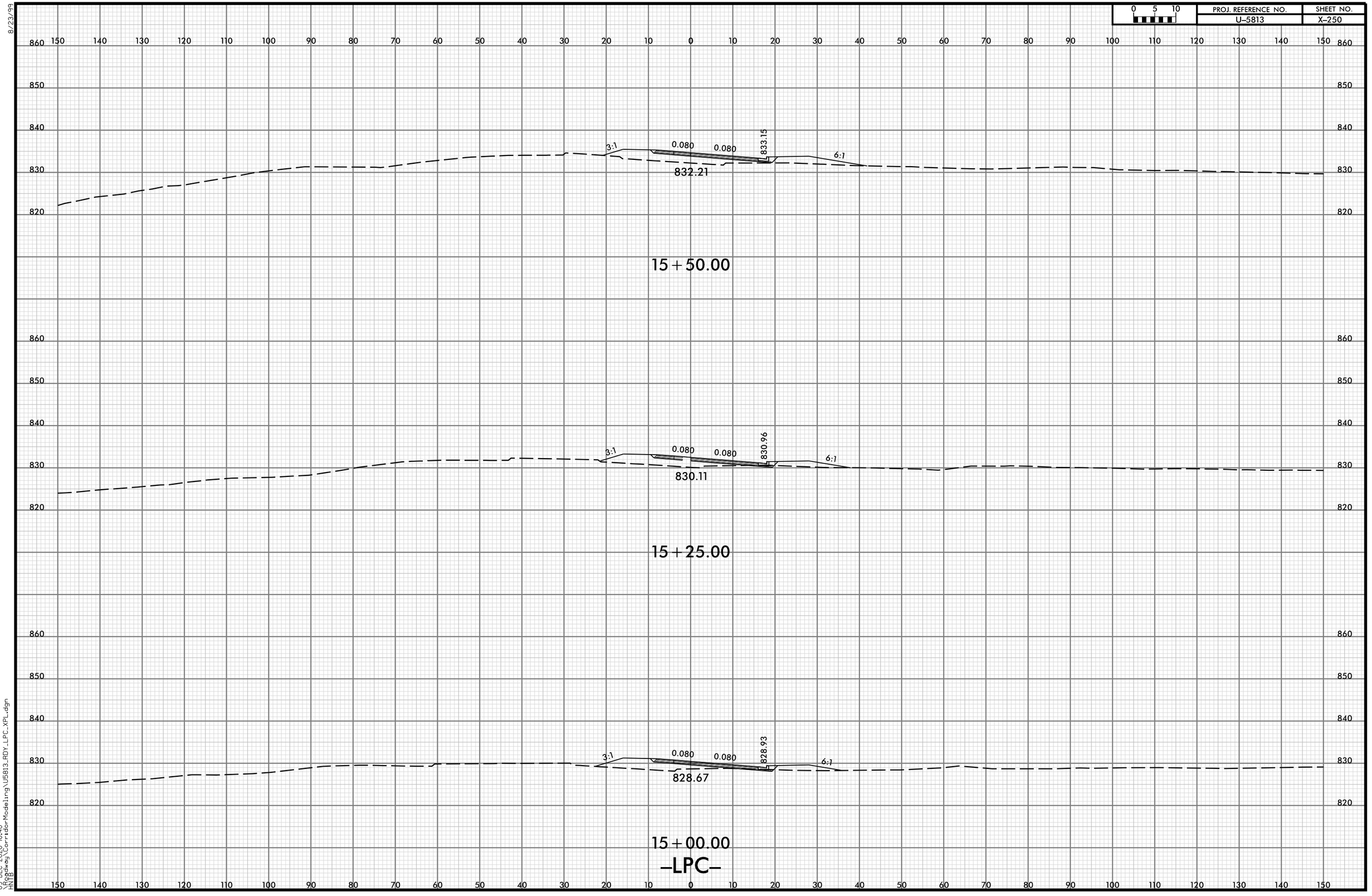
0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U–5813	X–249



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HNB

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U–5813	X–250



09-DEC-2020 10:40
\Roadway\Corridor Modeling\U5813_RDY_LPC_XPL.dgn
HNB

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-5813	X-251

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

860 850 840 830 820

–RPC–

0.152 0.080 0.080 840.40

4:1

837.70

16+25.00

860 850 840 830 820

–RPC–

0.141 0.080 0.080 837.95

4:1

835.99

16+00.00

860 850 840 830 820

3:1 0.080 0.080 835.51

6:1

834.13

15+75.00

–LPC–

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

09-DEC-2020 10:40
\Roadway\Corridor Modeling\U5813_RDY_LPC_XPL.dgn
HNB

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U–5813	X–252

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

860 850 840 830 820

–RPC–

0.140 0.080 0.080 845.07

4:1

840.93

16+75.00

860 850 840 830 820

–RPC–

0.149 0.080 0.080 842.84

4:1

839.33

16+50.00

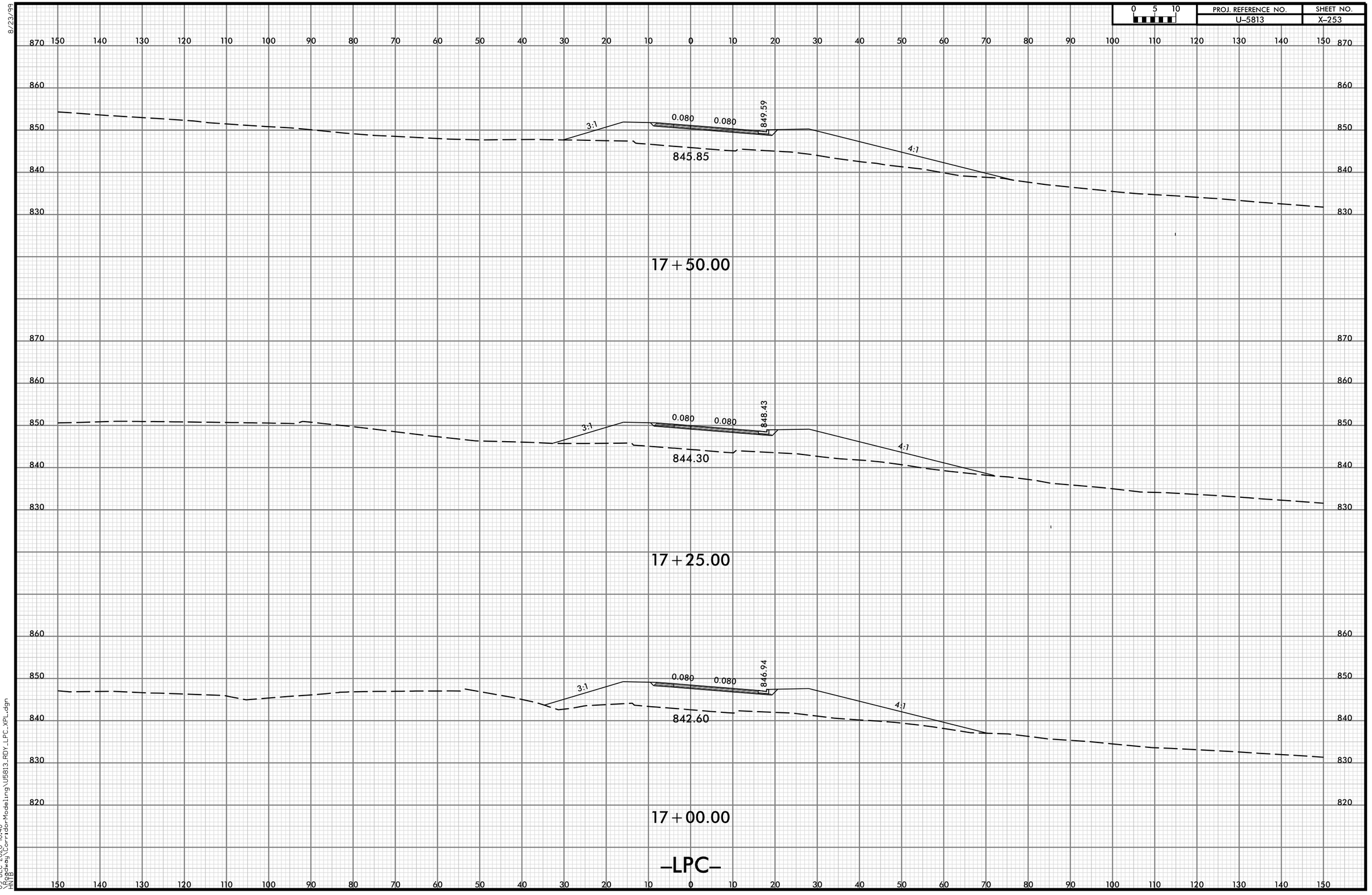
–LPC–

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

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HNB

8/23/99

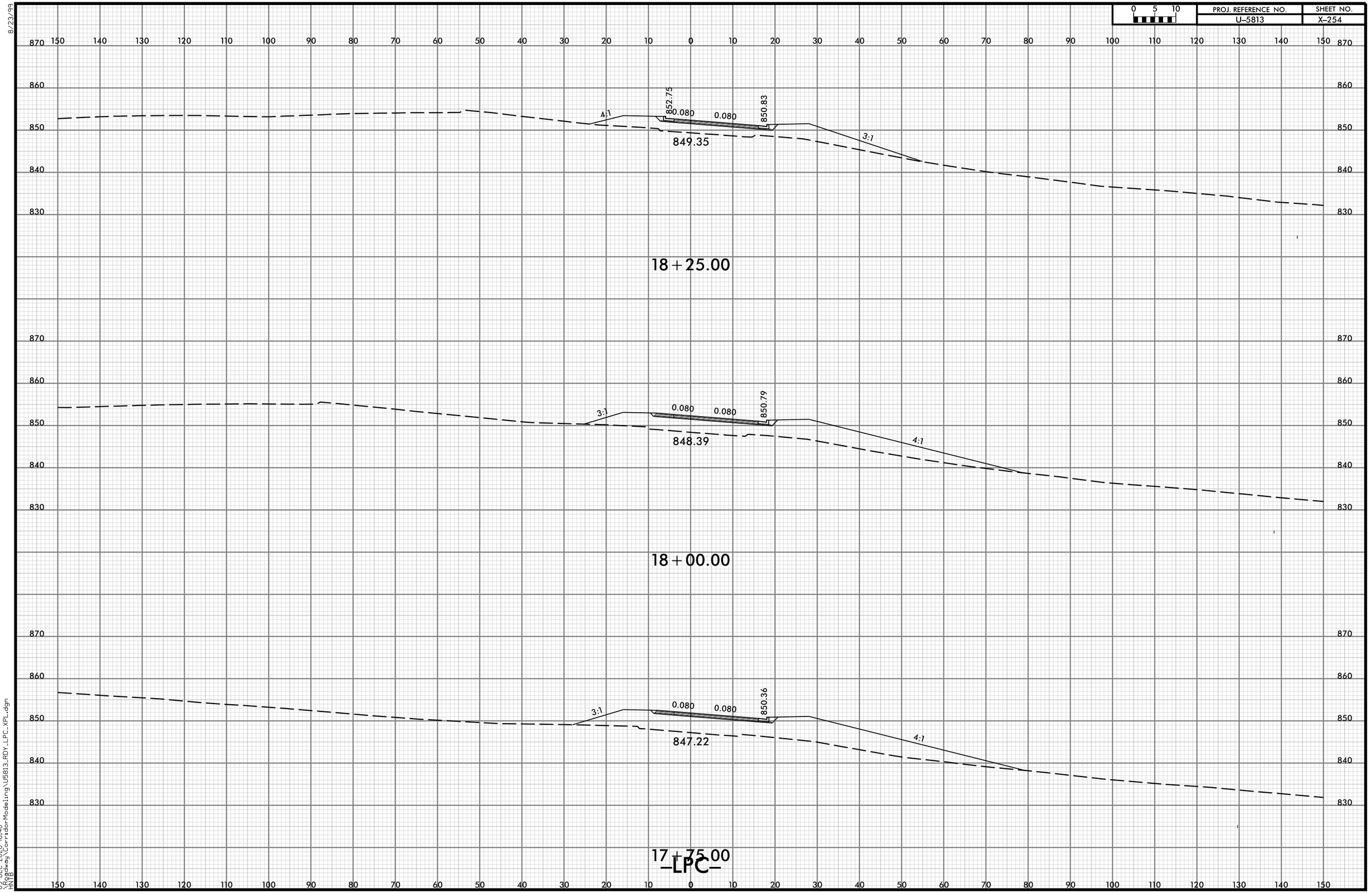
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HNB

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-5813	X-254



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HNB

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
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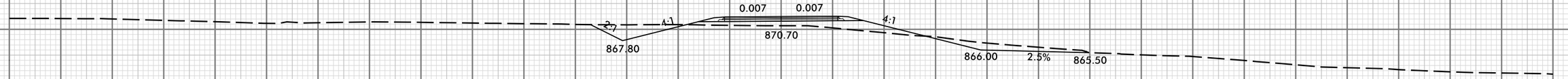
150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

880
870
860



11+50.00

880
870
860



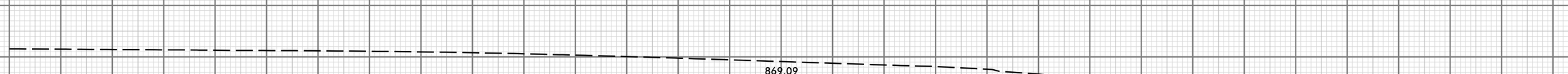
11+00.00

880
870
860



10+50.00

880
870
860



10+00.00

–SRV–

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

09-DEC-2020 10:40
\Roadway\CorridorModeling\U5813_RDY_SRV_XPL.dgn
HNB

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-5813	X-255

19+00.00

0.037 0.063 849.99 850.80 4:1

18+75.00

0.034 0.077 850.17 850.49 4:1

18+50.00

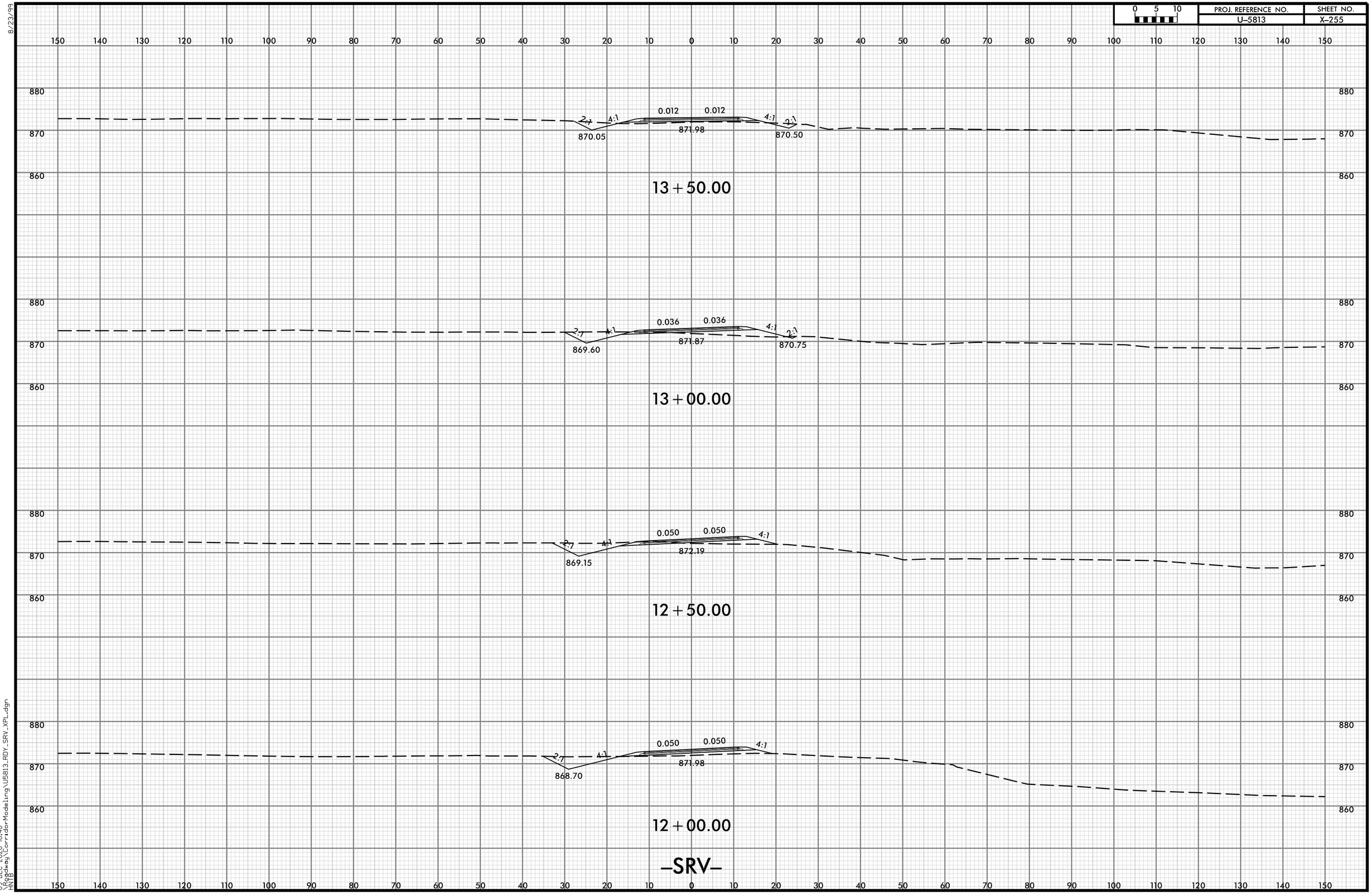
4:1 852.46 0.080 0.080 850.54 850.08 3:1

-LPC-

09-DEC-2020 10:40
\Roadway\CorridorModeling\U5813_RDY_LPC_XPL.dgn
HNTB

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
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09-DEC-2020 10:40
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HNB

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U–5813	X–256

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

860
850
840
830
820

0.035 0.035
850.40
849.53
4:1

19+50.00

860
850
840
830
820

0.014
0.040
0.049
850.81
849.79
4:1

19+25.00

–LPC–

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

09-DEC-2020 10:40
\Roadway\Corridor Modeling\U5813_RDY_LPC_XPL.dgn
HNB

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-5813	X-256

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

880 / 870

4:1 4:1 0.050 0.050 4:1 2:1

871.25 872.17 869.50

15+50.00

880 / 870

2:1 4:1 0.050 0.050 4:1 2:1

871.00 872.23 869.75

15+00.00

880 / 870 / 860

2:1 4:1 0.035 0.035 4:1 2:1

870.75 872.65 870.00

14+50.00

880 / 870 / 860

2:1 4:1 0.012 0.012 4:1 2:1

870.50 872.18 870.25

14+00.00

–SRV–

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

09-DEC-2020 10:40
\Roadway\CorridorModeling\U5813_RDY_SRV_XPL.dgn
HNB

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-5813	X-257

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

860
850
840
830
820

0.000 0.020 848.65
849.14
4:1

20+00.00

860
850
840
830
820

0.021 0.022 849.21
849.75
4:1

19+75.00

–LPC–

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

09-DEC-2020 10:40
\Roadway\Corridor Modeling\U5813_RDY_LPC_XPL.dgn
HNB

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U–5813	X–257

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

880 870 860

4:1 4:1 0.030 0.030 4:1 2:1

871.50 871.81 869.89

17+50.00

880 870 860

4:1 4:1 0.030 0.030 4:1 2:1

871.00 871.48 869.76

17+00.00

880 870 860

4:1 4:1 0.050 0.050 4:1

870.50 869.25

16+50.00

880 870 860

4:1 4:1 0.050 0.050 4:1 2:1

871.00 871.66 869.25

16+00.00

–SRV–

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

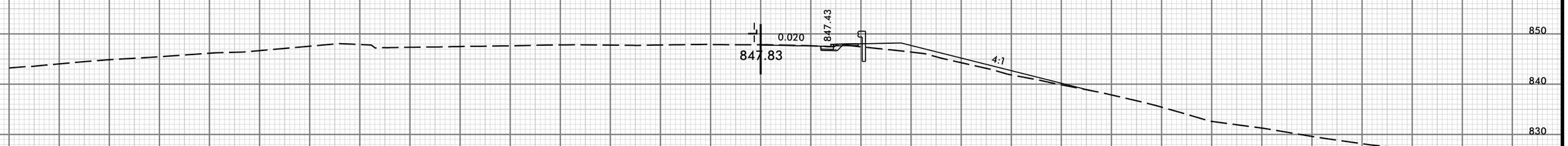
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HNB

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U–5813	X–258

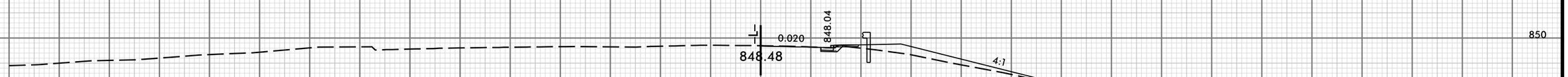
150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

860
850
840
830
820



20+50.00

860
850
840
830
820



20+25.00

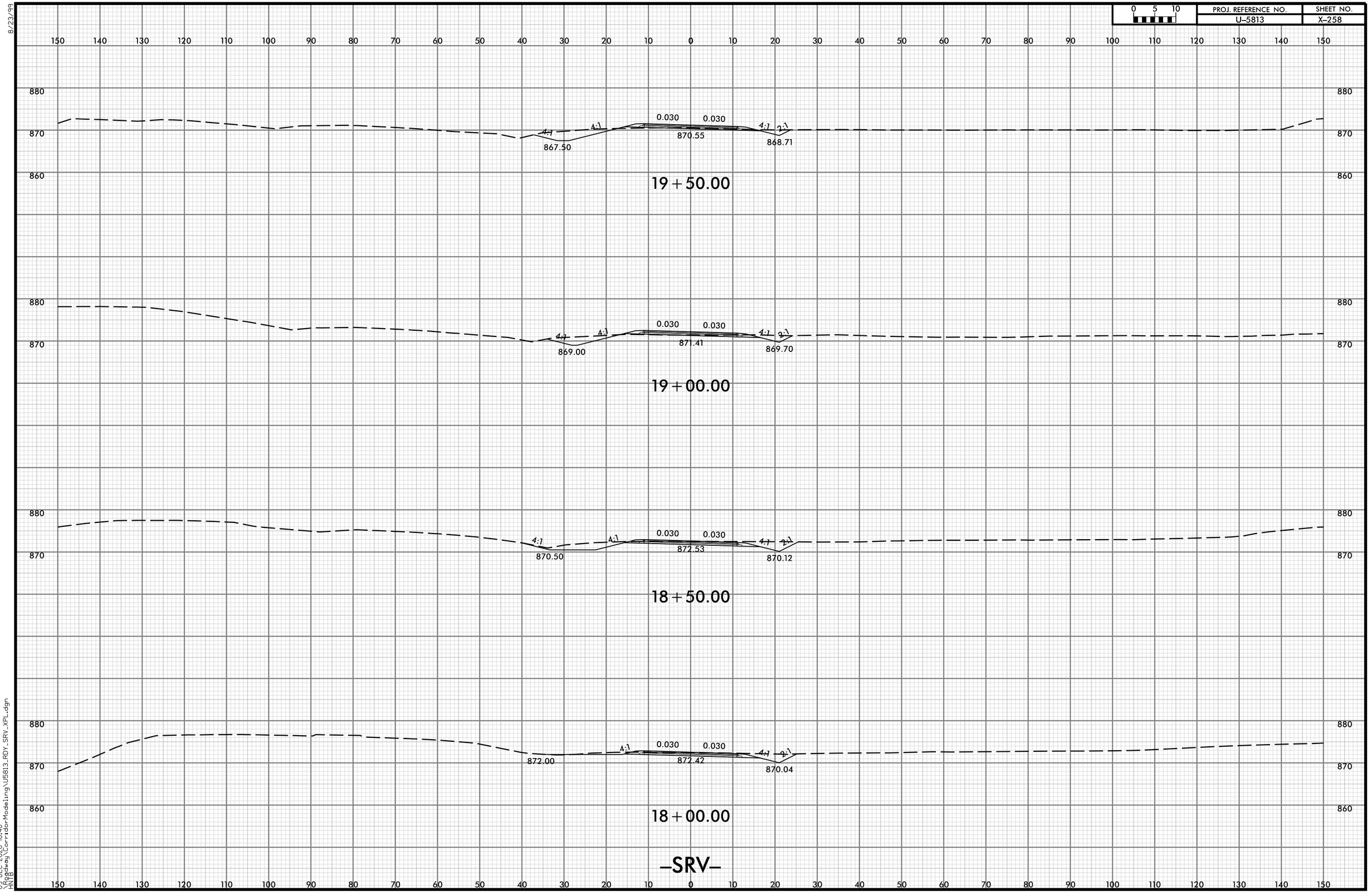
–LPC–

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

09-DEC-2020 10:40
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HNB

8/23/99

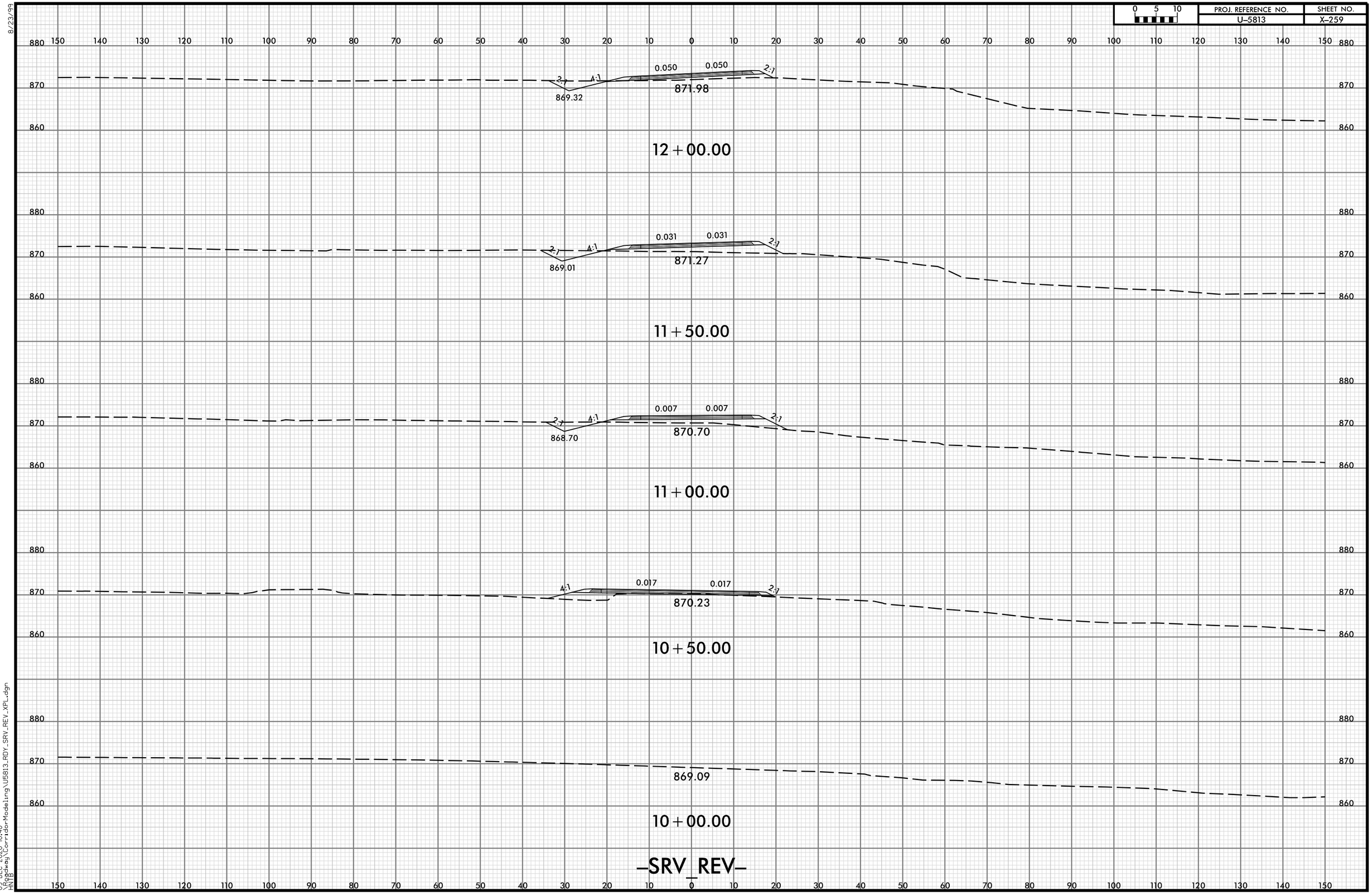
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HNB

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-5813	X-259



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\Roadway\Corridor Modeling\U5813_RDY_SRV_REV_XPL.dgn
HNB

8/23/99

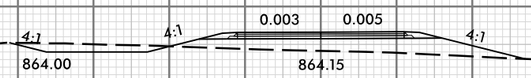
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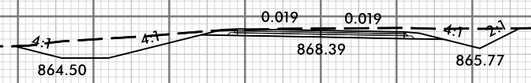
870
860

866.05

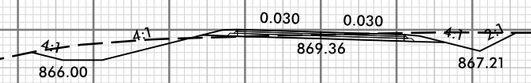
21+37.27



21+00.00



20+50.00



20+00.00

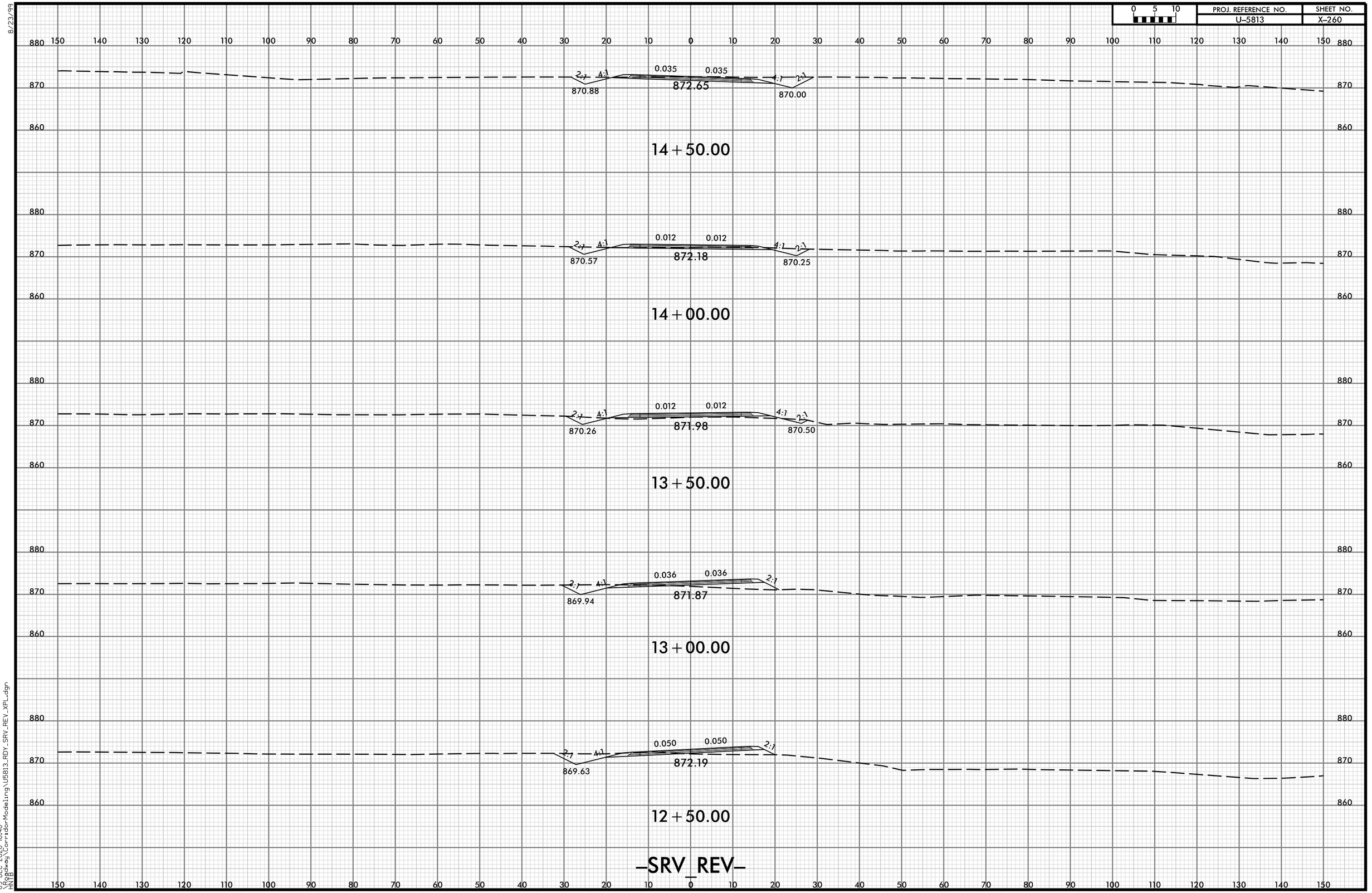
–SRV–

880
870
860

09-DEC-2020 10:40
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HNB

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-5813	X-260

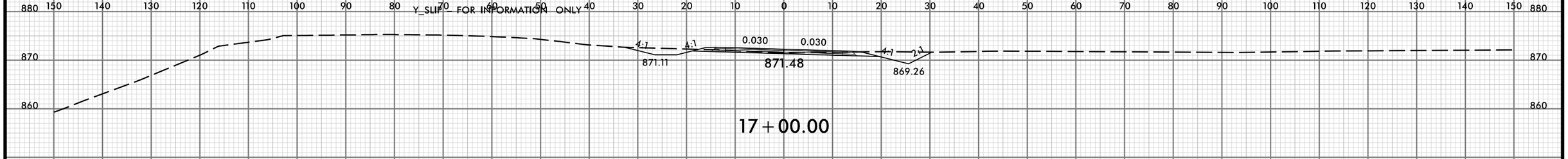


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HNB

8/23/99

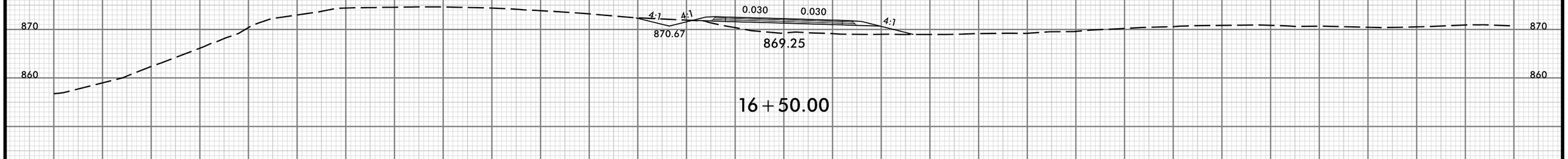
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	U-5813	X-261

Y_SLIP – FOR INFORMATION ONLY



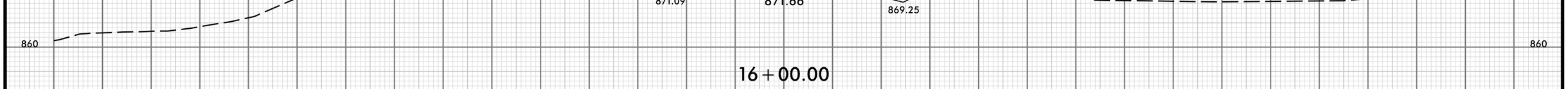
17+00.00

Y_SLIP – FOR INFORMATION ONLY

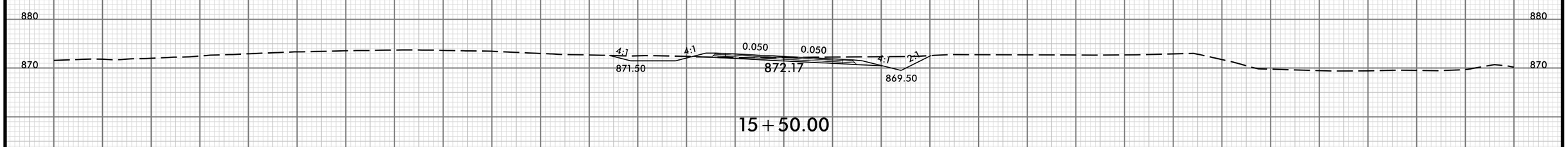


16+50.00

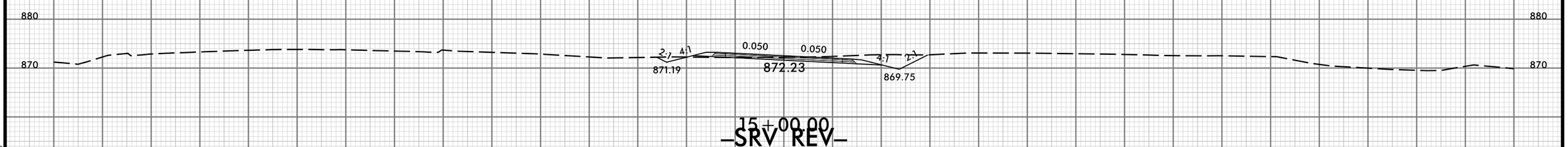
Y_SLIP – FOR INFORMATION ONLY



16+00.00



15+50.00



15+00.00

–SRV_REV–

09-DEC-2020 10:40
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HNB

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-5813	X-262

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

880
870

Y_SLIP – FOR INFORMATION ONLY

4:1 4:1 0.030 0.030 4:1 2:1

869.47 871.41 870.30

19+00.00

880
870

Y_SLIP – FOR INFORMATION ONLY

4:1 4:1 0.030 0.030 4:1 2:1

870.73 872.53 870.04

18+50.00

880
870
860

Y_SLIP – FOR INFORMATION ONLY

4:1 4:1 0.030 0.030 4:1 2:1

872.00 872.42 869.78

18+00.00

880
870
860

Y_SLIP – FOR INFORMATION ONLY

4:1 4:1 0.030 0.030 4:1 2:1

871.56 871.81 869.52

17+50.00

–SRV_REV–

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

09-DEC-2020 10:40
\Roadway\Corridor Modeling\U5813_RDY_SRV_REV_XPL.dgn
HNB

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U–5813	X–263

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

Y_SLIP – FOR INFORMATION ONLY

870
860

4:1 4:1 0.028 0.028 2:1

864.40 864.15

21+00.00

Y_SLIP – FOR INFORMATION ONLY

870
860

4:1 4:1 0.030 0.030 4:1 2:1

865.67 868.39 866.19

20+50.00

880
870
860

Y_SLIP – FOR INFORMATION ONLY

4:1 4:1 0.030 0.030 4:1 2:1

866.93 869.36 867.56

20+00.00

880
870
860

Y_SLIP – FOR INFORMATION ONLY

4:1 4:1 0.030 0.030 4:1 2:1

868.20 870.55 868.93

19+50.00

–SRV_REV–

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

09-DEC-2020 10:40
\Roadway\Corridor Modeling\U5813_RDY_SRV_REV_XPL.dgn
MNB

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-5813	X-264

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

Y_SLIP – FOR INFORMATION ONLY

870 860

4:1 0.020 0.020 4:1 2:1

866.97 864.95

23+50.00

Y_SLIP – FOR INFORMATION ONLY

870 860

4:1 0.020 0.020 4:1 2:1

866.90 865.10

23+00.00

Y_SLIP – FOR INFORMATION ONLY

870 860

4:1 0.020 0.020 4:1 2:1

866.89 865.25

22+50.00

Y_SLIP – FOR INFORMATION ONLY

870 860

4:1 0.020 0.020 4:1 2:1

866.84 865.40

22+00.00

Y_SLIP – FOR INFORMATION ONLY

870 860

4:1 0.004 0.020 4:1 2:1

866.38 865.55

21+50.00

–SRV_REV–

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

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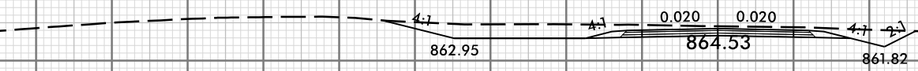
8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-5813	X-265

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

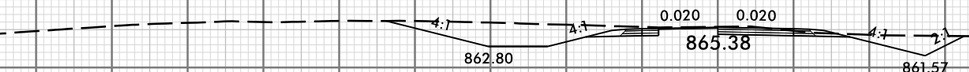
870
860

L – FOR INFORMATION ONLY



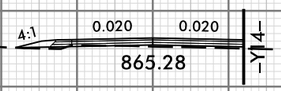
26+00.00

L – FOR INFORMATION ONLY



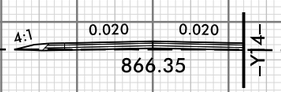
25+50.00

Y_SLIP – FOR INFORMATION ONLY



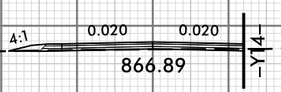
25+00.00

Y_SLIP – FOR INFORMATION ONLY



24+50.00

Y_SLIP – FOR INFORMATION ONLY



24+00.00

–SRV_REV–

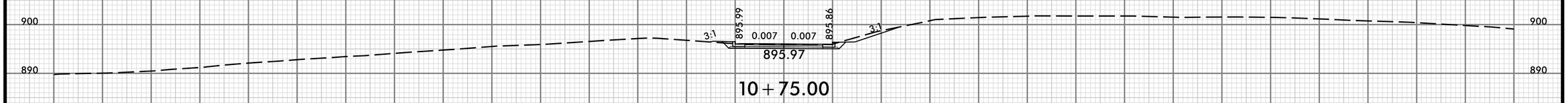
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HNB

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-5813	X-266

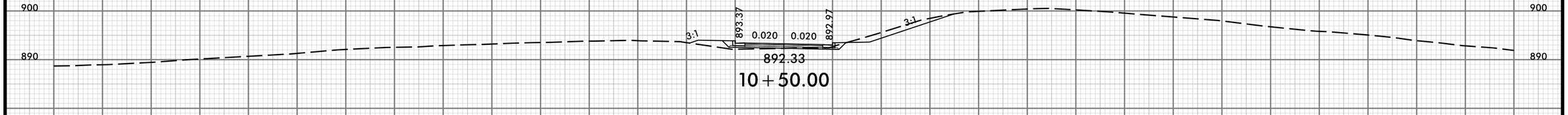
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910
900
890



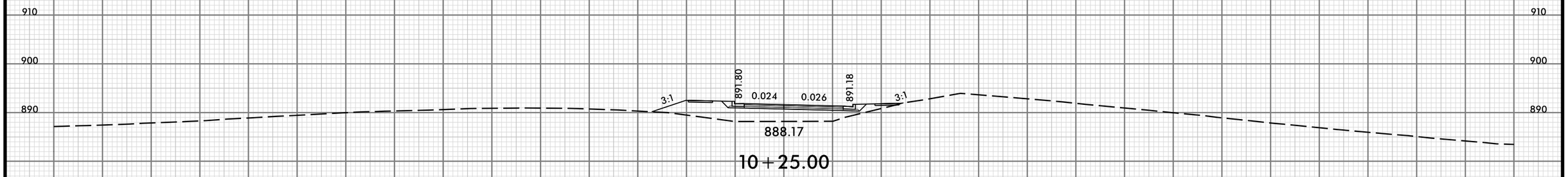
10+75.00

910
900
890



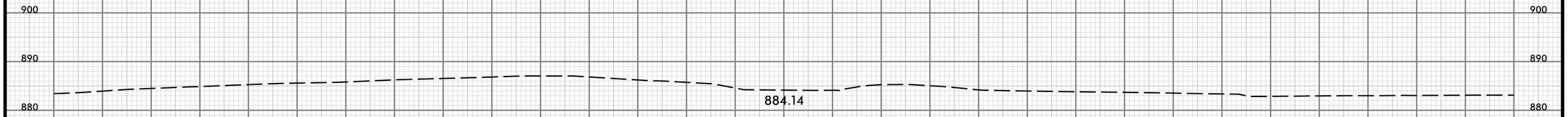
10+50.00

910
900
890



10+25.00

910
900
890
880



10+00.00

–DRW01–

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

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8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-5813	X-267

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

880
870
860

3:1 871.26 0.018 0.002 871.54 3:1
871.09

10+75.00

880
870
860

3:1 872.56 0.020 0.014 873.43 3:1
872.12

10+50.00

880
870
860

3:1 873.94 0.011 0.020
872.98

10+25.00

890
880
870

873.31

10+00.00

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

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MNB

-DRW02-

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U–5813	X–268

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

880
870
860

869.14

11+25.00

880
870
860

870.09
869.87
4:1
0.005
0.017
870.14
3:1

11+00.00
–DRW02–

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

09-DEC-2020 10:41
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HNB

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-5813	X-269

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

870

880

870

865.06

11+25.00

880

870

0.020 0.020

867.99

11+00.00

880

870

2:1 0.020 0.020 2:1

871.29

10+75.00

880

870

2:1 0.028 0.028 2:1

872.15

10+50.00

880

870

880

870

2:1 0.044 0.044 2:1

874.84

10+25.00

880

870

876.01

10+00.00

-DRW03-

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

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