

MARION COUNTY

PCC Pavement - New  
NHSN-163-3(58)--2R-63

LETTING DATE  
08-17-2021



Highway Division

PLANS OF PROPOSED IMPROVEMENT ON THE

PRIMARY ROAD SYSTEM  
MARION COUNTY

PCC Pavement - New  
198th Ave Intersection

SCALES: As Noted

Refer to the Proposal Form for list of applicable specifications.

Value Engineering Saves. Refer to Article 1105.14 of the Specifications.



REVISIONS

TOTAL

PROJECT IDENTIFICATION NUMBER	20-63-163-010
PROJECT NUMBER	NHSN-163-3(58)--2R-63
R.O.W. PROJECT NUMBER	

INDEX OF SHEETS

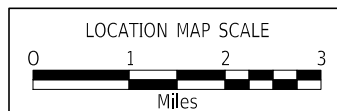
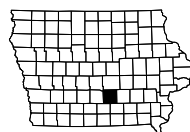
No.	DESCRIPTION
<b>A Sheets</b>	<b>Title Sheets</b>
A.1	Title Sheet
A.2 - 3	Concept
<b>B Sheets</b>	<b>Typical Cross Sections and Details</b>
B.1	Typical Cross Sections and Details
<b>D Sheets</b>	<b>Mainline Plan and Profile Sheets</b>
* D.1	Plan & Profile Legend & Symbol Information Sheet
* D.2 - 4	ML 163
<b>G Sheets</b>	<b>Survey Sheets</b>
G.1	Reference Ties and Bench Marks
G.2 - 3	Horizontal Control Tab. & Super for all Alignments
<b>L Sheets</b>	<b>Geometric, Staking and Jointing Sheets</b>
L.1	Staking ML 163 Median
L.2	Jointing ML 163 Median
<b>W Sheets</b>	<b>Mainline Cross Sections</b>
W.1 - 3	Mainline Cross Sections
	* Color Plan Sheets

STA. 442+56.90 (ML 163)  
BEGIN CONSTRUCTION



STA. 446+37.08 (ML 163)  
END CONSTRUCTION

DM5 04-27-2021  
D08 06-01-2021  
L03 08-17-2021



DESIGN DATA RURAL			
2018	AADT	11,000	V.P.D.
20	-- AADT	--	V.P.D.
20	-- DHV	--	V.P.H.
	TRUCKS	14	%
	Total		
	Design ESALs	--	

INDEX OF SEALS		
SHEET NO.	NAME	TYPE
A.1	X	Primary Signature Block
X	X	X

PRELIMINARY PLANS

Subject to change by final design.

D2 PLAN - Date: 04-06-2021

**TO OFFICE:** District 5  
**ATTENTION:** Jim Armstrong  
**FROM:** Jim Phillips  
**OFFICE:** District 5  
**SUBJECT:** FY 2022 NR Concept Statement - FINAL

**DATE:** June 22, 2020  
**COUNTY:** Marion  
**PROJ. NO.:** NHSN-163-3(58)--2R-63  
**PIN:** 20-63-163-010  
**FOLDER:** Draft Concept PIN 63 163 01020.docx

**PROJECT DATA:**

ROUTE AND LOCATION: IA 163 at the intersection with 198<sup>th</sup> Ave.  
 LENGTH: 0.1 Miles (MP 38.65 to MP 38.75)  
 PLANNING CLASSIFICATION: Commercial and Industrial  
 MAINTENANCE SERVICE LEVEL: B  
 NHS ROUTE: YES  
 TRAFFIC: 2018: 11,100 ADT with 15% Trucks

**PURPOSE AND NEED:**

There is an existing granular surfaced median crossing at the intersection of IA 163 and 198<sup>th</sup> Ave in Marion County, just north of Pella. Maintenance staff regularly makes surface repairs to this granular median crossing due to increased traffic using this crossing to access 198<sup>th</sup> Ave.

A church off 198<sup>th</sup> Ave was built around 2004 and prior to that when the 4-lane was built in 1996, the dead-end road only served about 4 residents. It is assumed it was decided to not pave this median crossing at that time due to low volumes at the intersection. There are roughly 150 parking spaces at the church, and this would equate to about 300 additional trips at least on Sundays if at full capacity.



**RECOMMENDATIONS:**

This proposed project would include a paved median with 150' EB left turn lane to bring it up to our normal design standards. Design Manual 3E-2 states that median crossings should be paved and include left turn lanes at all public side roads.

As-built plans shows an existing median drain culvert under the EB lane about 100' east of the intersection. The final design should verify that this does not need to be extended. UAC the existing longitudinal subdrains.

No clearing and grubbing required. No known environmental or cultural impacts.

No ROW will be required.



**CRASH ANALYSIS:**

5-year crash history shows one PDO crash at this intersection.

**COST ESTIMATE:**

16" Class 13 Excavation	12,000
6" Modified Subbase	15,000
10" PCC Pavement	72,800
Erosion Control	5,000
Traffic Control	10,000
Misc. & Contingency	<u>32,850</u>
	\$147,650

**FUNDS PROGRAMMED:**

Recommended for programming (NR funds) in FY 2022 at an estimated cost of \$150,000.

**PROJECT IMPACTS:**

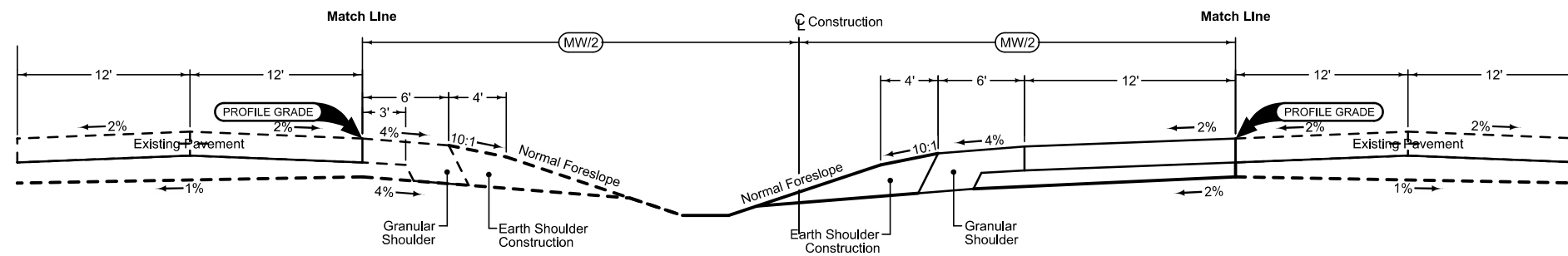
Designed by: Design

Design Impact	Assistance Requested (Y/N)	Remarks
ADA:	N	
Agreements/Notification Letters:	N	
Bridges and Structures:	N	
Consultant:	N	
Contracts:	N	
Design/Methods:	Y	Complete the final plans
Location and Environment:	N	
Maintenance: (Oskaloosa)	N	
Project Management:	N	
Railroad:	N	
RCE: (Chariton)	N	
Right of Way:	N	
Soils:	N	
Survey/Photogrammetry:	Y	Field survey
Systems Planning:	Y	Completing intersection count summer of 2020
Traffic and Safety:	N	
Utilities:	N	
Other:		

Cc: C. Purcell  
 S. J. Megivern  
 M. Nop  
 K. Brink  
 J. W. Laaser-Webb  
 E. C. Wright  
 N. M. Miller  
 B. E. Azeltine  
 S. J. Gent  
 J. Selmer  
 D. R. Claman  
 F. Todey  
 J. Bartholomew  
 D. L. Maifield  
 E. D. Gansen  
 J. Garton  
 C. Steffensmeier  
 J. Webb  
 FHWA [Program.Delivery-IA@dot.gov](mailto:Program.Delivery-IA@dot.gov)  
 K. Olson

M. J. Kennerly  
 J. S. Nelson  
 M. A. Swenson  
 D. L. Newell  
 W. A. Sorenson  
 M. E. Ross  
 C. C. Poole  
 B. Bradley  
 S. Anderson  
 K. K. Patel  
 C. Brakke  
 E. Engle  
 N. Cuva  
 J. Vortherms  
 T. Nicholson  
 J. Woodcock  
 D. Upton  
 L. Finarty  
 B. Clancy  
 H. Beach

K. D. Nicholson  
 B. Walls  
 R. A. Younie  
  
 D. E. Sprengeler  
 A. A. Welch  
 B. D. Hofer  
 T. D. Crouch  
 D. Stokes  
 S. Godbold  
 T. Hanson  
 M. Hobbs  
 D. A. Popp  
 S. Nielsen  
 Milly Ortiz-Pagan  
 M. Van Dyke  
 M. Claeys  
 \_\_\_\_\_ RCE Fairfield  
 Supervisor Jay Ridlen



See Tab 100-24 for pavement quantities.  
 See Tab 112-9 for shoulder quantities.  
 See L Sheets for median crossing details.

**IA 163 Existing**

### SURVEY SYMBOLS

- Interstate Highway Symbol
- U.S. Highway Symbol
- Iowa Highway Symbol
- County Road Highway Symbol
- Evergreen Tree
- Deciduous Tree
- Fruit Tree
- Shrub (Bushes)
- Timber
- Hedge
- Stump
- Swamp
- Rock Outcrop
- Broken Concrete
- Revetment (Rip Rap)
- Cemetery
- Grave
- Cave
- Sink Hole
- Board Fence
- Chain Link or Security Fence
- Wire Fence
- Terrace
- Earth Dam or Dike (Existing)
- Tile Outlet
- Edge of Water
- Existing Drainage
- Right of Way Rail or Lot Corner
- Concrete Monument
- Well
- Windmill
- Beehive Intake
- Existing Intake
- Existing Utility Access (Manhole)
- Fire Hydrant
- Water Hydrant (Rural)
- Septic Tank
- Cistern
- L.P. Gas Tank (No Footing)
- Underground Storage Tank
- Latrine
- Satellite TV Dish
- Water Hook Up
- Radio Tower
- Tower Anchor
- Guardrail (Beam or Cable)
- Guard Post (one or two)
- Guard Post (over two)
- Filler Pipe
- Gas Valve
- Water Valve
- Speed Limit Sign
- Mile Marker Post
- Sign
- Traffic Signal Control Box
- Rail Road Signal Control Box
- Telephone Switch Box
- Electric Box
- BL Topo Breakline
- C Centerline BL of Road (ML or SR)
- D Centerline Draw or Stream (Down)
- ENT Centerline BL of Entrance
- ENU Edge Unpaved Entrance & Parking
- EP Edge of Paved Roads (ML or SR)
- FO1D Fiber Optic Co. 1 - Quality D
- PIP Pipe Culvert
- SNP Unpaved Shoulder
- TL1D Telephone Line Co. 1 - Quality D
- CP Control Point
- SI Sign
- SOP Size of Pipe or Culvert
- PLG Location of General Photo
- VS Channel Cross Section
- TPD Telephone Pedestal
- PPA Power Pole Co. 1
- WV Water Valve

### UTILITY LEGEND

- FO1D Aureon Network Services - Quality D
- TL1D Windstream Communications - Quality D
- PPA Pella Cooperative Electric

### PLAN VIEW COLOR LEGEND OF PLAN AND PROFILE SHEETS

LINEWORK		Design Color No.	
Green	(2)		Existing Topographic Features and Labels
Blue	(1)		Proposed Alignment, Stationing, Tic Marks, and Alignment Annotation
Magenta	(5)		Existing Utilities
SHADING		Design Color No.	
Lavender	(9)		Temporary Pavement Shading
Gray, Light	(48)		Proposed Pavement Shading
Gray, Med	(80)		Proposed Granular Shading
Gray, Dark	(112)		Proposed Grade and Pave Shading "In conjunction with a paving project"
Brown, Light	(236)		Grading Shading
Tan	(8)		Proposed Sidewalk Shading
Blue, Light	(230)		Proposed Sidewalk Landing Shading
Pink	(11)		Proposed Sidewalk Ramp Shading

### PROFILE VIEW COLOR LEGEND OF PLAN AND PROFILE SHEETS

LINEWORK		Design Color No.	
Green	(2)		Existing Ground Line Profile
Blue	(1)		Proposed Profile and Annotation
Magenta	(5)		Existing Utilities
Blue, Light	(230)		Proposed Ditch Grades, Left
Black	(0)		Proposed Ditch Grades, Median
Rust	(14)		Proposed Ditch Grades, Right

- Reference Point
- Station
- Survey Line
- Section Corner
- Ground Line Intercept
- Saw Cut
- Guardrail
- Trench Drain
- HighTension Cable Guardrail
- Sheet Pile
- Pavement Removal
- Clearing & Grubbing Area

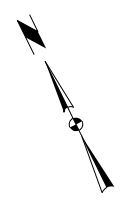
### RIGHT-OF-WAY LEGEND

- Proposed Right-of-Way
- Existing Right of Way
- Existing and Proposed Right-of-Way
- Easement and Existing Right-of-Way
- Easement (Temporary)
- Easement
- Access Control
- Property Line

## PLAN AND PROFILE LEGEND AND SYMBOL INFORMATION SHEET

(COVERS SHEET SERIES D, E, F, & K)

Lake Prairie TWP.  
T-77N R-18W  
SEC. 31



BEGIN CONSTRUCTION  
STA. 442+56.90

Sta. 444+26 (Plan)  
24"x156' RCP  
D.A.=4' Ac. R. (Plan)

Sta. 446+75 (Plan)  
18"x64' RCP  
D.A.= Median

END CONSTRUCTION  
STA. 446+37.08

442+00

443+00

444+00

445+00

446+00

447+00

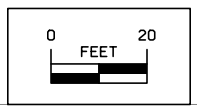
IA 163 (ML163)

FO

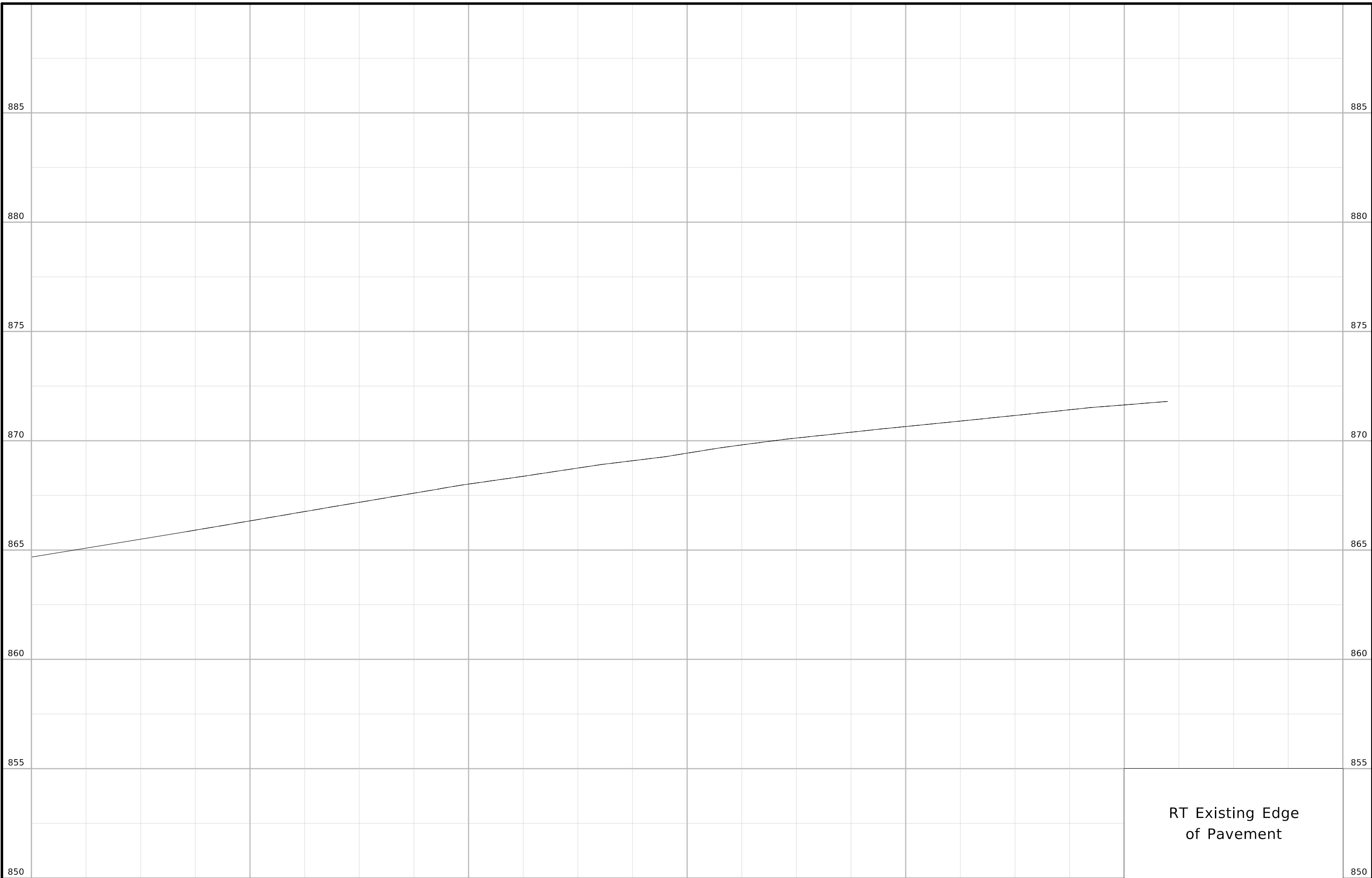
FO

FO

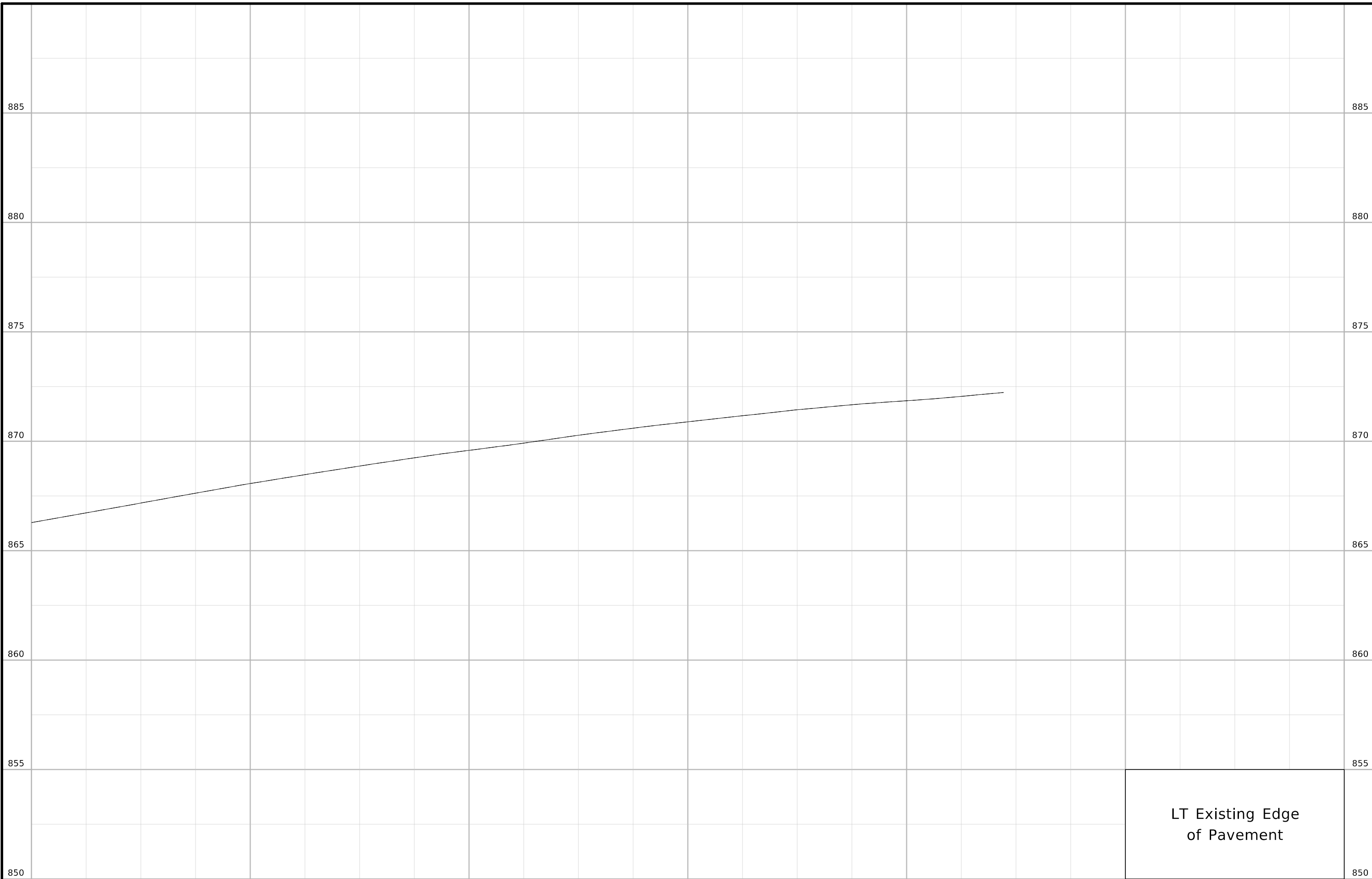
18"x86.5'  
C.M.P.



FILE NO.	ENGLISH	DESIGN TEAM STRUM \ MCNAMARA	MARION COUNTY	PROJECT NUMBER NHSN-163-3(58)-2R-63	SHEET NUMBER D.2
----------	---------	------------------------------	---------------	-------------------------------------	------------------



RT Existing Edge  
of Pavement



LT Existing Edge  
of Pavement



## Survey Information

County: Marion  
SAP 0961  
PIN: 20-63-163-010  
Project Number: NHSN-163-3(58)--2R-63  
Location: 198th Ave Intersection  
Type of Work: PCC Pavement - New  
Project Directory: 6316301020

### Party Personnel

Nels Sutherland- Survey Party Chief  
Myron Fox- Assistant Survey Party Chief

### Date(s) of Survey

Begin Date 10/12/2020  
End Date 11/10/2020

### General Information

Measurement units for this survey are US survey feet. This survey is for proposed PCC Paving. Project datum and control information is provided by Design Survey Office. This project is a full field survey.

### Vertical Control

Vertical datum for this survey is NAVD88 (Computed using Geoid12B). Benchmarks were placed throughout the project using post processed static observations relative to laRTN Base Network. A minimum of 6hrs of data was simultaneously collected on each of the primary control points.

NGS Monument No. H 5, was checked for vertical tolerance. The difference was less than 0.10ft.

### Horizontal Control

The project coordinate system for this survey is laRCS Zone 09 (U.S. Survey Feet). This survey control is relative to laRTN reference stations. laRTN Reference Station coordinates are relative to the National Reference Station network datum: NAD83 (2011) for Epoch 2010.00.

### Alignment Information

The horizontal alignment for this survey is a retrace of As-built Plans No. NHS-163-3(14)—19-63. Survey stationing was equated to the plan PT at Sta. 417+91.36 and ran ahead without equation throughout the survey.

Survey stationing relates to as built plan stationing as follows:

PT Sta. 417+91.36 Project No. NHS-163-3(14)—19-63  
Survey PT Sta. 36+85.13

POT Sta. 468+96.07 Project No. NHS-163-3(14)—19-63  
Survey POT Sta. 468+95+97

### CONTROL POINT VICINITY MAP

This map is a guide to the vicinity of the primary project control points  
Primary control is for use with RTK base stations and for RTN validation.  
Future surveys will use primary project control to establish temporary  
control as needed for construction or other surveying applications.



HORIZ. DATUM: NAD83(2011) EPOCH 2013.00

VERT. DATUM: NAVD88

1a. Regional Coordinate System Zone 9

Coordinate listing from next sheet will be used with 1aRTN for monument  
recovery. No other reference ties are given.

HORIZONTAL AND VERTICAL PROJECT CONTROL COORDINATE LISTING

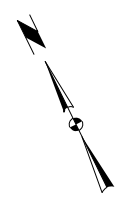
HORIZ. DATUM: NAD83(2011) EPOCH 2013.00

VERT. DATUM: NAVD88

1a. Regional Coordinate System Zone 9

Point Name	North	East	Height	Code Description
9610301	7629338.245	19454903.788	874.500	CP 5/8TH REBAR FROM THE INTERSECTION OF 198TH AVE AND HWY163 GO NW 2778FT ALONG HWY163 IN CENTER OF MEDIAN 4IN BELOW SURFACE.
9610302	7627084.530	19459483.921	858.628	CP 5/8TH REBAR FROM THE INTERSECTION OF 198TH AVE AND HWY163 GO SE 2323FT ALONG HWY163 IN CENTER OF MEDIAN 4IN BELOW SURFACE.
H5	7620104.670	19470753.876	877.951	CP USGS MON AT PELLA AT THE CITY WATER TANK IN THE CON BASE OF THE NE LEG STAMPED H 5 1930

Lake Prairie TWP.  
T-77N R-18W  
SEC. 31



BEGIN CONSTRUCTION  
STA. 442+56.90

END CONSTRUCTION  
STA. 446+37.08

442+00

443+00

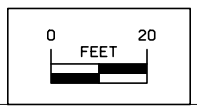
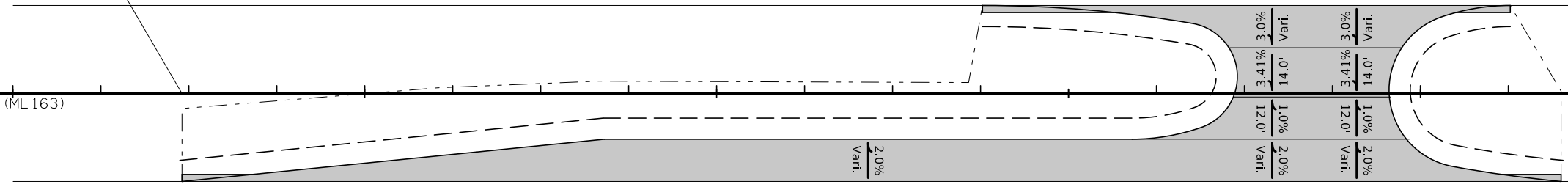
444+00

445+00

446+00

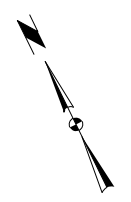
447+00

IA 163 (ML163)



Staking Details  
Intersection of  
IA 163 and 198th Ave.

Lake Prairie TWP.  
T-77N R-18W  
SEC. 31



BEGIN CONSTRUCTION  
STA. 442+56.90

END CONSTRUCTION  
STA. 446+37.08

442+00

443+00

444+00

445+00

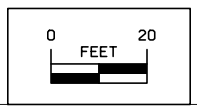
446+00

447+00

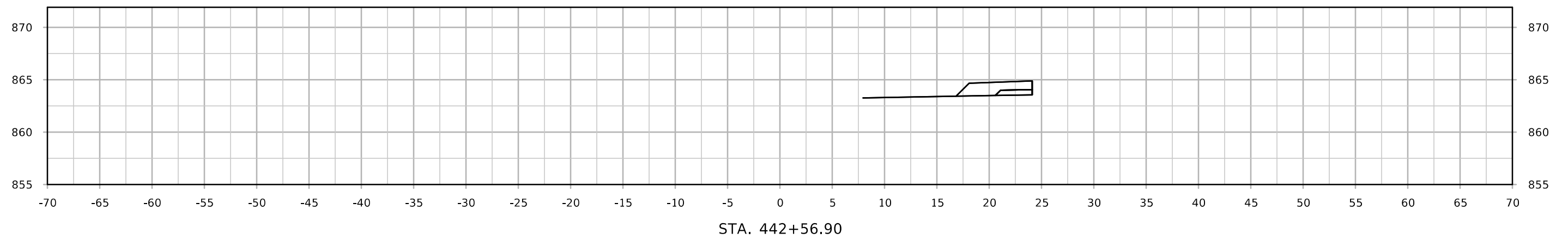
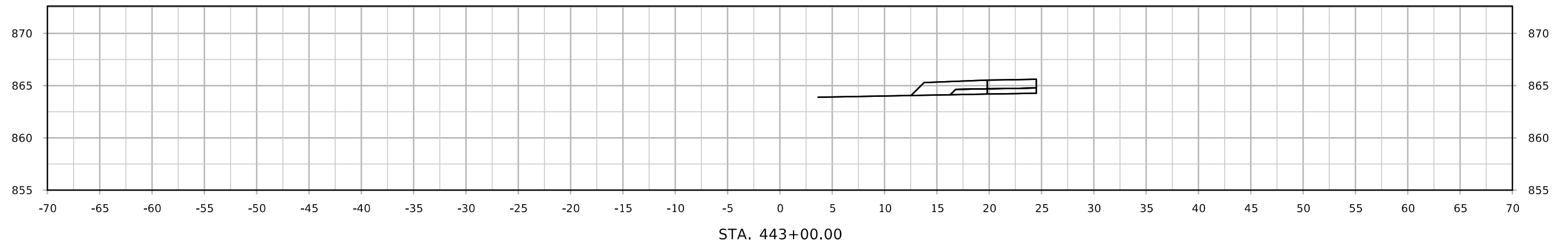
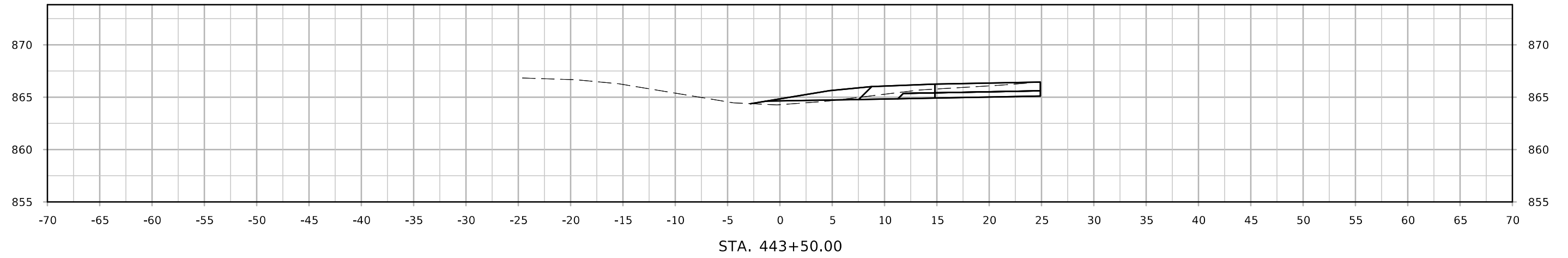
MATCH EXISTING TRANSVERSE JOINTS

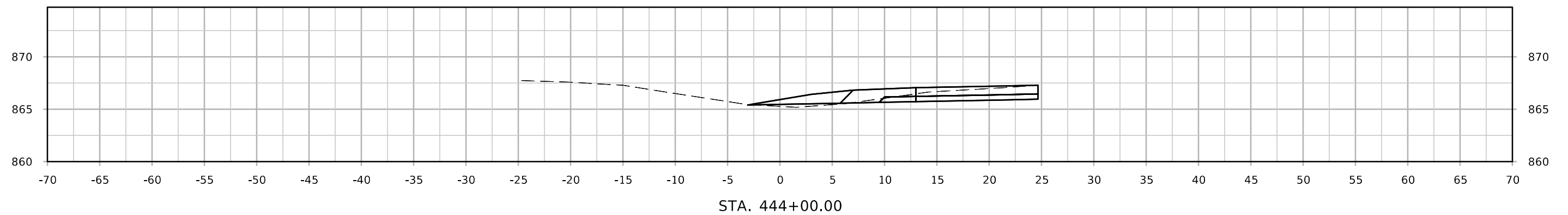
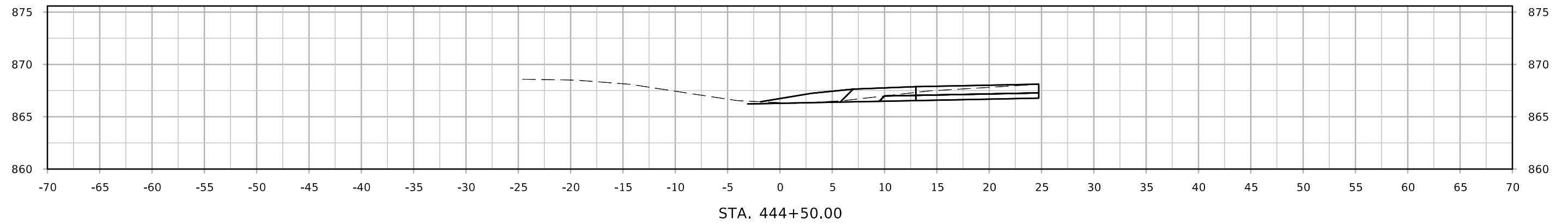
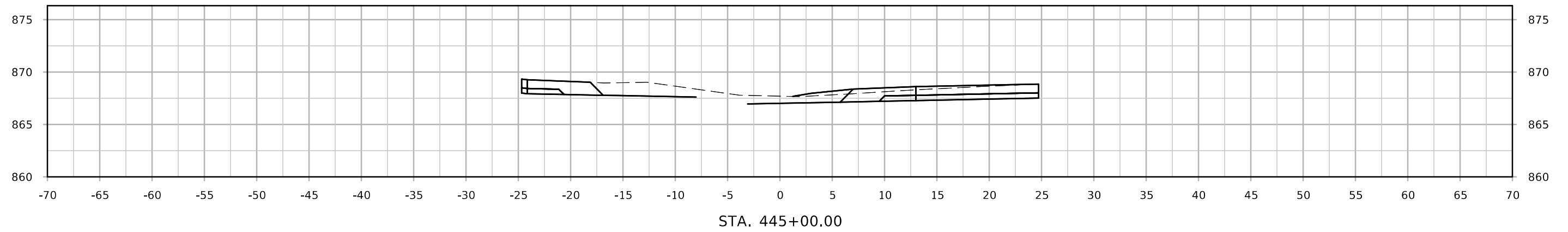
MATCH EXISTING TRANSVERSE JOINTS

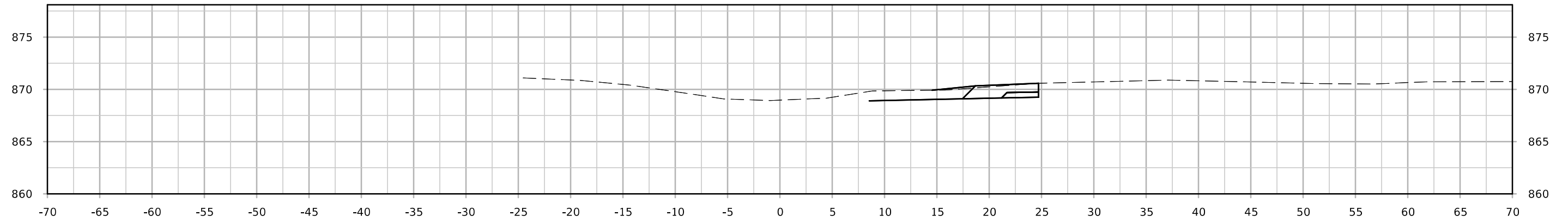
IA 163 (ML163)



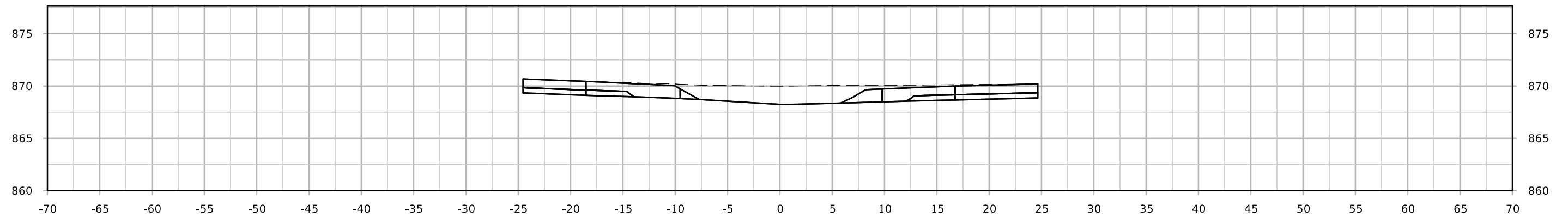
Jointing Details  
Intersection of  
IA 163 and 198th Ave.



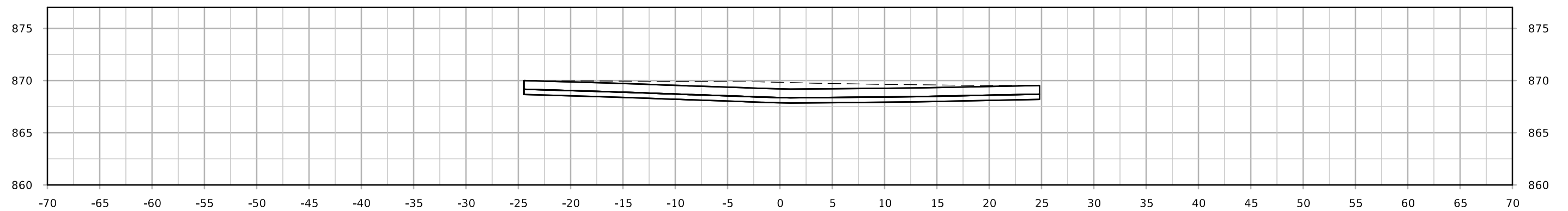




STA. 446+37.08



STA. 446+00.00



STA. 445+50.00