



REVISIONS

TOTAL

27

PROJECT IDENTIFICATION NUMBER

20-14-030-010

PROJECT NUMBER

BRF-030-1(172)--38-14

R.O.W. PROJECT NUMBER

Hydraulic Design

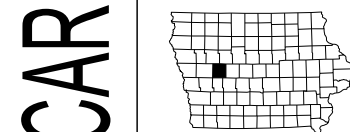
INDEX OF SHEETS	
No.	DESCRIPTION
<b>A Sheets</b>	<b>Title Sheets</b>
A.1	Title Sheet
A.2	Location Map Sheet
<b>B Sheets</b>	<b>Typical Cross Sections and Details</b>
B.1 - 3	Typical Cross Sections and Details
<b>D Sheets</b>	<b>Mainline Plan and Profile Sheets</b>
* D.1	Plan & Profile Legend & Symbol Information Sheet
* D.2	US 30
<b>G Sheets</b>	<b>Survey Sheets</b>
G.1 - 3	Reference Ties and Bench Marks
<b>J Sheets</b>	<b>Traffic Control and Staging Sheets</b>
J.1	Traffic Control Plan
* J.2	Stage 1
* J.3	Stage 2
* J.4	Stage 3
<b>V Sheets</b>	<b>Bridge and Culvert Situation Plans</b>
V.1 - 3	Bridge and Culvert Situation Plans
<b>W Sheets</b>	<b>Mainline Cross Sections</b>
W.1	Cross Sections Legend & Symbol Information Sheet
W.2 - 10	Mainline Cross Sections
	* Color Plan Sheets

PLANS OF PROPOSED IMPROVEMENT ON THE  
**PRIMARY ROAD SYSTEM**  
**CARROLL COUNTY**  
Bridge Replacement  
Storm Creek 2.5 mi W of Co Rd N41

SCALES: As Noted

Refer to the Proposal Form for list of applicable specifications.

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



DESIGN DATA RURAL	
2025 AADT	7,600 V.P.D.
2045 AADT	8,700 V.P.D.
2045 DHV	900 V.P.H.
TRUCKS	9 %
Total Design ESALs	--

INDEX OF SEALS		
	Michael J. Janecek	
V.1	Phillip M. Harpole	Hydraulic Design

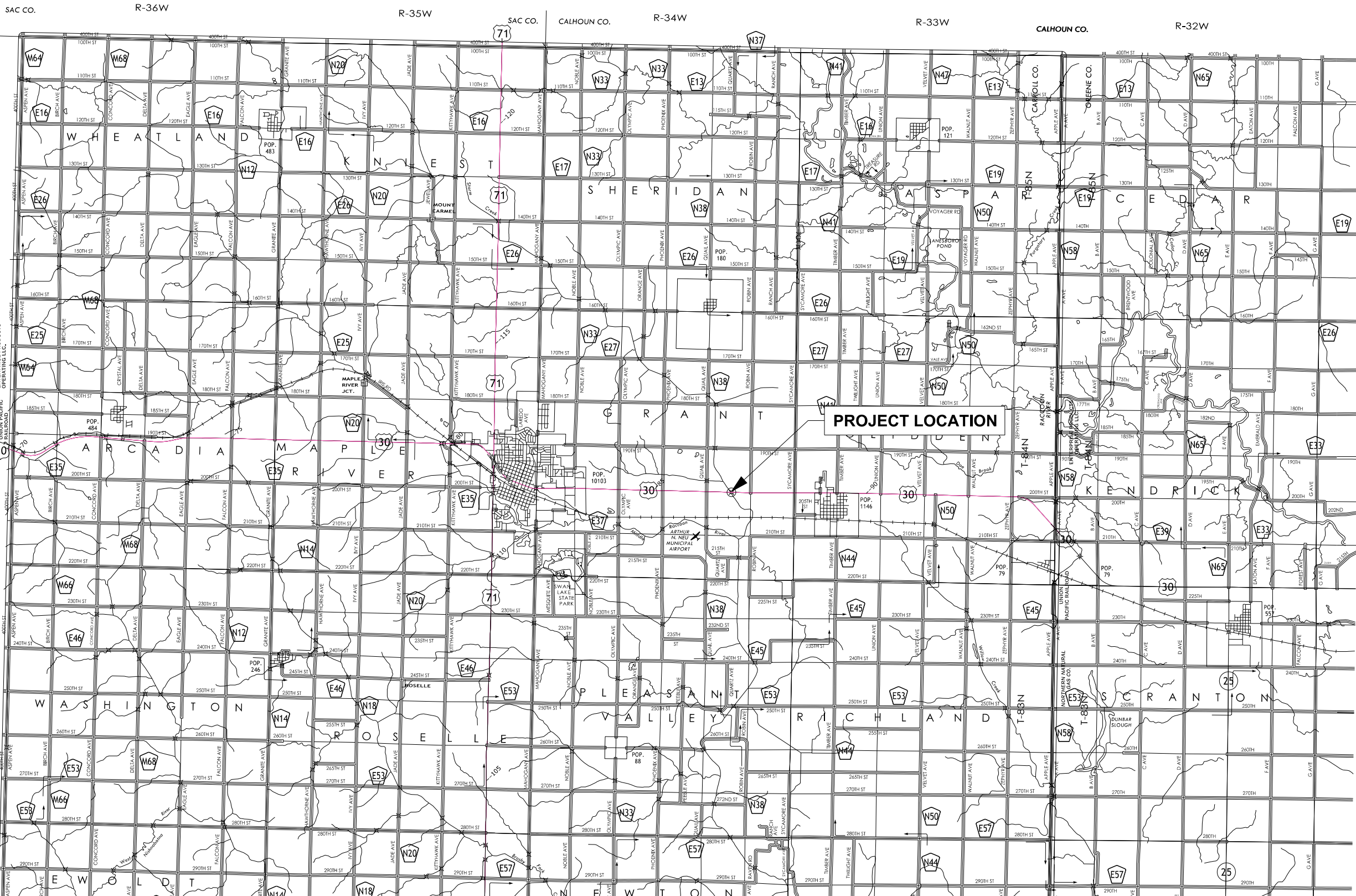
D5 PLAN – September 9, 2022

D4 PLAN – June 18, 2024

PRELIMINARY PLANS

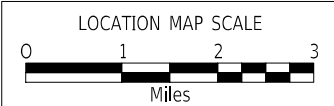
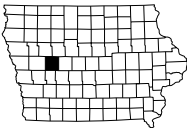
Subject to change by final design.

D3 PLAN – April 15, 2022



US 30  
 STA. 214+36  
 FHWA #17110

# CARROLL COUNTY





**Paved Shoulder at Guardrail**

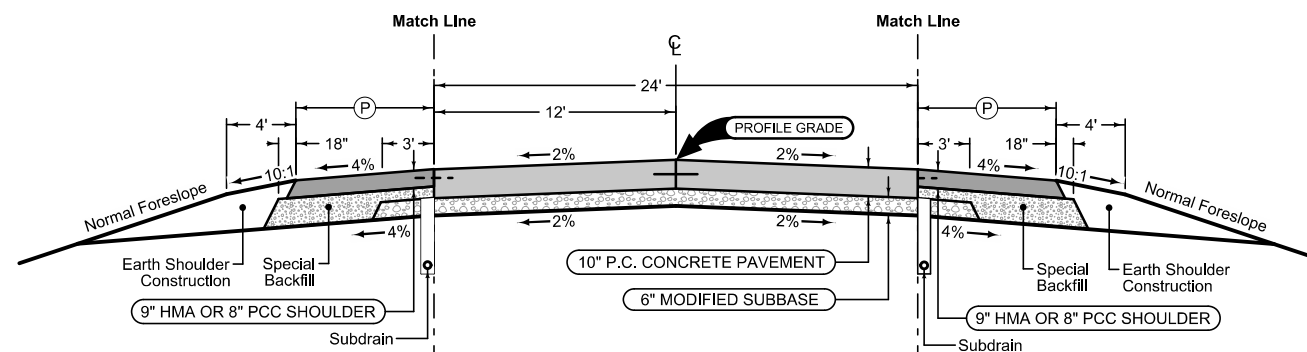
PCC Shoulder Jointing:  
 Longitudinal joint: BT-1 or BT-5  
 Transverse joints: C at mainline spacing  
 HMA Shoulder Jointing:  
 Longitudinal joint: B

2_P_Guard_ 04-21-20		
STATION TO STATION	(P)	Feet
212+09.00	212+84.00	VARIES
215+88.00	216+83.50	VARIES

**Paved Shoulder at Guardrail**

PCC Shoulder Jointing:  
 Longitudinal joint: BT-1 or BT-5  
 Transverse joints: C at mainline spacing  
 HMA Shoulder Jointing:  
 Longitudinal joint: B

2_P_Guard_ 04-21-20		
STATION TO STATION	(P)	Feet
211+89.00	212+84.00	VARIES
215+88.00	216+63.50	VARIES



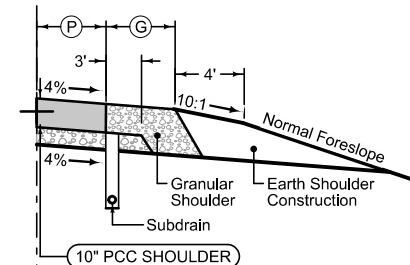
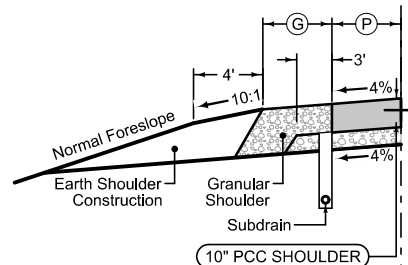
Mainline Jointing:  
 Transverse joints: CD at 17' spacing  
 Longitudinal joint: L-2

2P_ 04-21-20	
STATION TO STATION	
211+80.00	212+84.00
215+88.00	217+09.00

**Full Depth PCC Combination Shoulder**

Shoulder Jointing:  
 Longitudinal joint: L-2 or KT-2  
 Transverse joints: C at 17' spacing

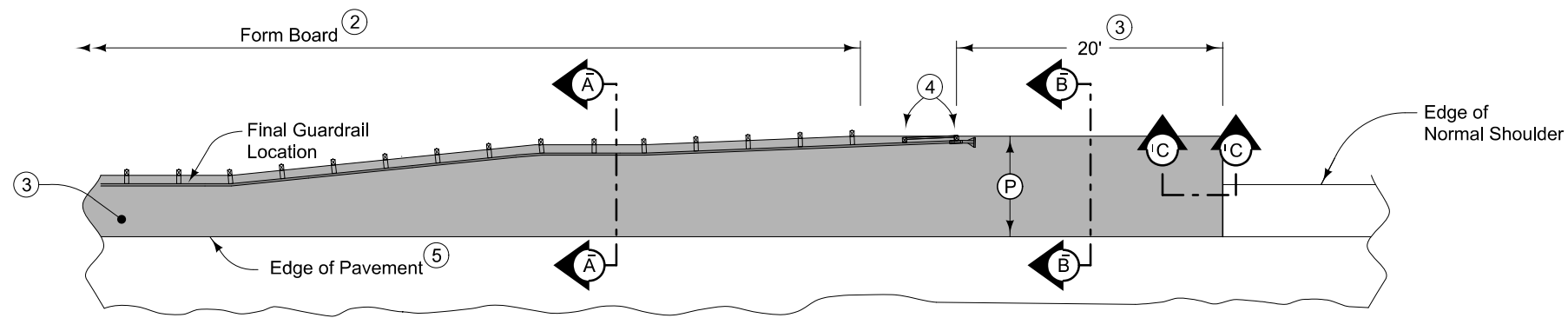
2_C_FullPCC_ 04-21-20			
STATION TO STATION	(P)	(G)	Feet
211+80.00	212+09.00	6	4
216+83.50	217+09.00	6	4



**Full Depth PCC Combination Shoulder**

Shoulder Jointing:  
 Longitudinal joint: L-2 or KT-2  
 Transverse joints: C at 17' spacing

2_C_FullPCC_ 04-21-20			
STATION TO STATION	(P)	(G)	Feet
211+80.00	211+89.00	6	4
216+63.50	217+09.00	6	4



PLAN VIEW

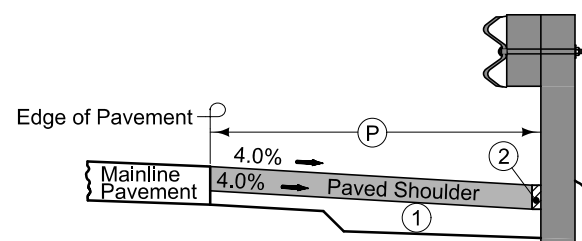
9" HMA Paved Shoulder at guardrail. 8" PCC may be substituted with the following jointing layout:

Match mainline pavement joint spacing. When mainline pavement is 8" or greater in thickness, place additional transverse 'C' joints in shoulder at mid-panel of the mainline pavement. Place longitudinal 'C' joint at P/2 from edge of mainline pavement when P is greater than 10' wide. Terminate longitudinal joint at transverse joint less than 10' in length.

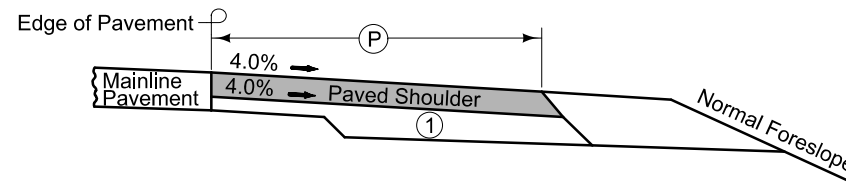
Compaction of HMA is required to face of guardrail post. Hand compaction will be allowed under guardrail. Removal and reinstallation of guardrail will be allowed with no additional payment.

Refer to Tabulation 112-9 for shoulder quantities.

- ① For subgrade treatment, refer to other details in the plan.
- ② PCC option only: When guardrail posts are installed prior to construction of PCC paved shoulder, fasten form board to the face of guardrail posts for the length shown. Refer to note 4 for final 2 posts.
- ③ Continue paved shoulder to existing paved shoulder or 20 feet beyond the center of the first post.
- ④ Shoulder may be notched for final 2 posts or post sleeves may be installed through pavement. Do not drive posts through pavement.
- ⑤ 'KT-1 joint for PCC shoulder. 'B' joint for HMA shoulder.

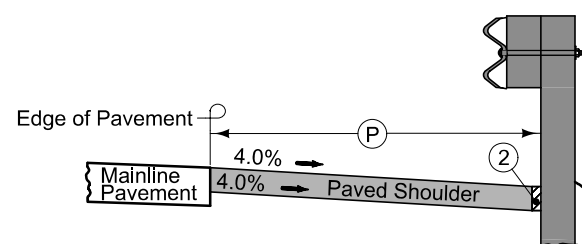


Section A-A

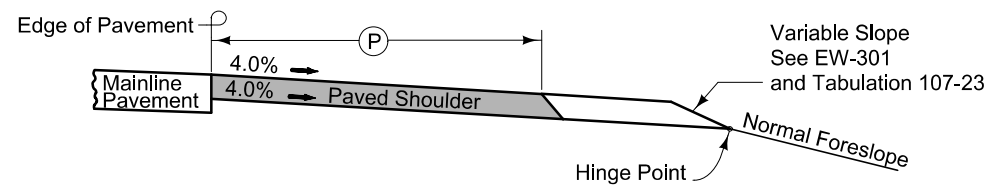


Section B-B

NEW CONSTRUCTION

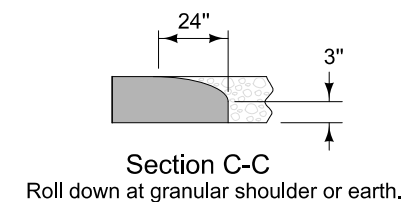


Section A-A



Section B-B

EXISTING SHOULDER



Section C-C  
Roll down at granular shoulder or earth.

PAVED SHOULDER AT GUARDRAIL

### 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

### UTILITY LEGEND

Sub-Surface Utility Mapping Quality Level is in accordance with CI/ASCE 38-02 Standard Guidelines for the Collection and Depiction of Existing Subsurface Utility Data.

Remark Abbreviations  
 QLA Quality Level A Highest guideline quality level  
 QLD Quality Level D Lowest guideline quality level

- TLID, CenturyLink - Quality D
- PPA, Raccoon Valley Electric Cooperative
- FO1D, ICN - Quality D
- FO2D, Mediacom - Quality D

### 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
Yellow	(4)	Proposed Pavement Shading
Orange	(6)	Proposed Granular Shading
Orange	(70)	Proposed Shoulder Granular Shading
Yellow	(68)	Proposed Shoulder Paved Full Depth Shading
Yellow	(70)	Proposed Shoulder Paved Partial Depth Shading
Gray, Dark	(112)	Proposed Grade and Pave Shading "In conjunction with a paving project"
Brown, Light	(236)	Grading Shading
Orange, Light	(134)	Proposed Granular Entrance Shading
Yellow	(220)	Proposed Paved Entrance Shading
Tan	(8)	Proposed Sidewalk Shading
Blue, Light	(230)	Proposed Sidewalk Landing Shading
Pink	(11)	Proposed Sidewalk Ramp Shading
Green, Light	(225)	Existing Pavement Shading
Red	(3)	Proposed Structure 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)



## Survey Information

Carroll County  
BRF-030-2(172)--38-14  
Location: Storm Creek 2.5 mi W of CO Rd N41  
Type of Work: Bridge-Unspecified  
Project Directory: 1403001020  
PIN: 20-14-030-010  
Sap-0967

### Party Personnel

Clayton Henningsen- Survey Party Chief  
Jason Arn- Survey Party Chief

### Date(s) of Survey

Begin Date 01/29/2021  
End Date 02/18/2021

### General Information

Measurement units for this survey are US survey feet. This survey is for proposed bridge reconstruction on US 30 2.5 miles east of Co Rd N41. This is a full field survey.

### Vertical Control

Vertical datum for this survey is NAVD88 (Computed using Geoid12b). GRS80 Ellipsoidal Height was computed at project Pts. GSVS 033, GSVS 034, and W 89 by completing concurrent 6 hour static observations. The project control is relative to nearby Iowa RTN Base Stations.

This survey observed 3 NGS GPS control with published NAVD88 heights to compare to local ground control:

NGS mark designated W 89 (PID NL0186) has a published Elev. of 1200.92  
Survey Elev. = 1200.843

NGS mark designated GSVS 033 (PID DP4487) has a published Elev. of 1201.45  
Survey Elev. = 1201.439

NGS mark designated GSVS 034 (PID DP4488) has a published Elev. of 1206.62  
Survey Elev. = 1206.600

### Horizontal Control

The project coordinate system for this survey is Iowa RCS Zone 7 Carroll-Atlantic (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. Coordinates were determined by conducting concurrent 6 hour static observations on Project Pts. GSVS 033, GSVS 034, and W 89.

### Alignment Information

The horizontal alignment for this survey is a retrace of PCC Paving Plans No.611A. Survey stationing was equated to the plan PI at Sta. 184+38.0 and run ahead without equation throughout the survey.

Survey stationing relates to as built plan stationing as follows:

PI Sta. 184+38.0 Paving Plans Project No. 611A  
Survey PI Sta. 184+38.0

PI Sta. 210+87.9 Paving Plans Project No. 611A  
Survey PI Sta. 210+89.88

PI Sta. 237+27.7 Paving Plans Project No. 611A  
Survey PI Sta. 237+29.26



## 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 2010.00

VERT. DATUM: NAVD88

1a. Regional Coordinate System Zone 7

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 2010.00

VERT. DATUM: NAVD88

1a. Regional Coordinate System Zone 7  
Project Control Marks are Bench Marks

Point Name	Y	X	Z	Feature Definition-Description
GSVS_033	7460904.974	17461985.9	1201.439	CP GSVS_033 FROM THE JUNCTION OF NORTH GRANT ROAD AND US 30 ON THE EAST SIDE OF CARROLL GO EAST ON US 30 FOR 4.42 MI TO THE MARK ON THE RIGHT THE GEODETIC CONTROL MARK IS FOUND ABOUT 35 FT SOUTH OF BRIDGE OVER STORM CREEK 69 FT WEST OF EXPANSION JOINT IN SOUTHWEST CORNER OF BRIDGE 66 FT SOUTHWEST OF EXPANSION JOINT IN NORTHWEST CORNER OF BRIDGE 43 FT NORTHWEST OF A T-POST ENCASED IN ORANGE TUBING AT A SUB DRAINAGE OUTLET 28 FT SOUTH OF THE CENTERLINE OF US 30 4 FT SOUTH OF A FIBERGLASS WITNESS POST AND SET IN THE TOP OF A 1 FT DIAMETER BY 4 FT DEEP BELLOWED OUT CONCRETE MONUMENT SURROUNDED BY A 2 FT DIAMETER BY 0.5 FT DEEP CONCRETE COLLAR CONSTRUCTED TO SUPPORT GRAVITY MEASURING EQUIPMENT
GSVS_034	7460862.126	17467064.14	1206.6	CP GSVS_034 FROM THE INTERSECTION OF NORTH GRANT ROAD AND US 30 ON THE EAST SIDE OF CARROLL GO EAST ON US 30 FOR 5.38 MI TO THE MARK ON THE RIGHT THE GEODETIC CONTROL MARK IS FOUND 56 FT SOUTH OF THE CENTERLINE OF US 30 51 FT WEST OF A T-POST ENCASED IN ORANGE TUBING AT A SUB DRAINAGE OUTLET 47 FT EAST OF BRACED WOODEN FENCE POST 5.8 FT NORTH OF A CORNER FENCE POST 5 FT NORTH OF A FIBERGLASS WITNESS POST AND SET IN THE TOP OF A 1 FT DIAMETER BY 4 FT DEEP BELLOWED OUT CONCRETE MONUMENT SURROUNDED BY A 2 FT DIAMETER BY 0.5 FT DEEP CONCRETE COLLAR CONSTRUCTED TO SUPPORT GRAVITY MEASURING EQUIPMENT
W 89	7457922.391	17459164.64	1200.843	CP W 89 THE STATION IS LOCATED ABOUT 4.05 MI EAST OF CARROLL AT THE JUNCTION OF COUNTY ROAD N 38 AND THE CHICAGO AND NORTHWESTERN RAILROAD TO REACH THE STATION FROM THE JUNCTION OF US HIGHWAY 30 AND MAIN STREET AT THE NORTHWEST CORNER OF THE COURTHOUSE SQUARE IN CARROLL GO EAST ON STATE HIGHWAY 30 FOR 3.35 MI TO THE JUNCTION OF COUNTY ROAD N 38 TURN RIGHT SOUTH ON COUNTY ROAD N 38 FOR 0.60 MI TO A RAILROAD CROSSING AND THE STATION IS ON THE LEFT THE STATION IS A CGS BENCHMARK DISK LOCATED 45.3 FT NORTH OF THE NORTH RAIL OF THE TRACKS 34.4 FT EAST OF AND 6.6 FT LOWER THAN THE CENTER OF COUNTY ROAD N 38 2.3 FT SOUTHEAST OF A SQUARE FENCEPOST AT A FIELD ENTRANCE AND 0.7 FT WEST OF A FIBERGLASS WITNESS POST

**NOTE:**

The first two digits in the control point name refer to the county number.  
The next 3 digits refer to the highway number.  
The next 3 digits refer to the highway milepost.  
The last digit refers to the distance from the referenced milepost to the nearest tenth of a mile.

108-23A  
08-01-08

**TRAFFIC CONTROL PLAN**

- 1) While bridge and approaches are being removed and replaced, traffic shall be maintained on US 30 at all times by staged construction with temporary signals allowing one lane of traffic.
- 2) Signage and devices shall be furnished, installed, maintained, and removed by Contractor.

108-26A  
08-01-08

**STAGING NOTES**

Stage 1:  
Remove and replace north portion of US 30 roadway, approaches and bridge with traffic shifted to EB lane using temporary signals.

Stage 2:  
Remove and replace south half of roadway, approaches and complete bridge structure with traffic shifted to WB temporary pavement lane using temporary signals.

Stage 3:  
Remove temporary paving on north half of roadway and complete approach and roadway to re-establish centerline with US 30 traffic shifted to EB lane using temporary signals.

108-25  
10-21-14

**511 TRAVEL RESTRICTIONS**

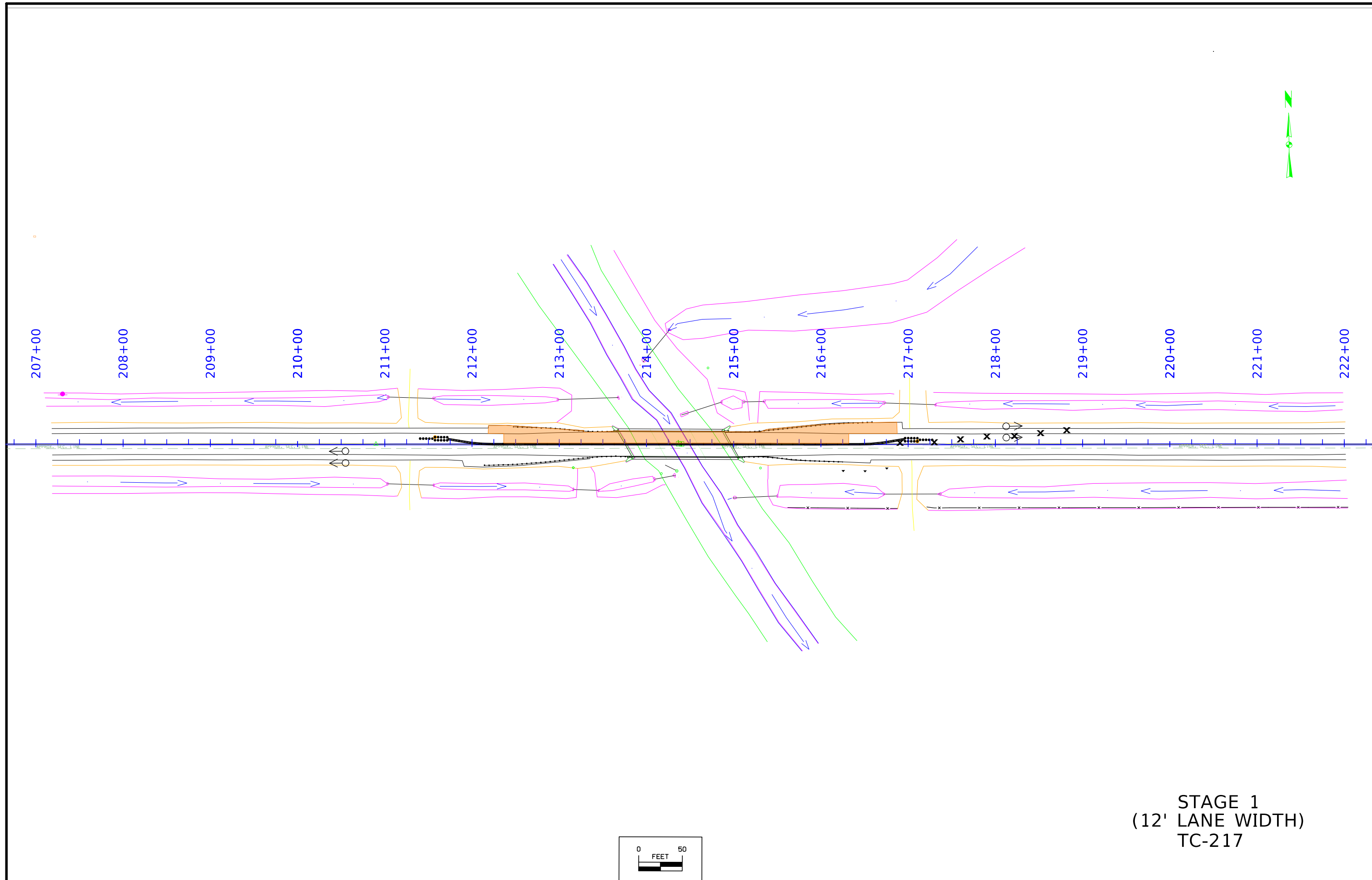
Route	Direction	County	Location Description	Feature Crossed	Object Type	Maint. Bridge No., Structure ID, or FHWA No.	Type of Restriction	Existing Measurement	Construction Measurement	Construction Measurement as Signed	Projected As Built Measurement	Remarks
US 30	Both	CARROLL	Bridge over Caleb Creek	STORM CREEK	Bridge		Width		12			

111-01  
04-17-12

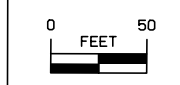
**COORDINATED OPERATIONS**

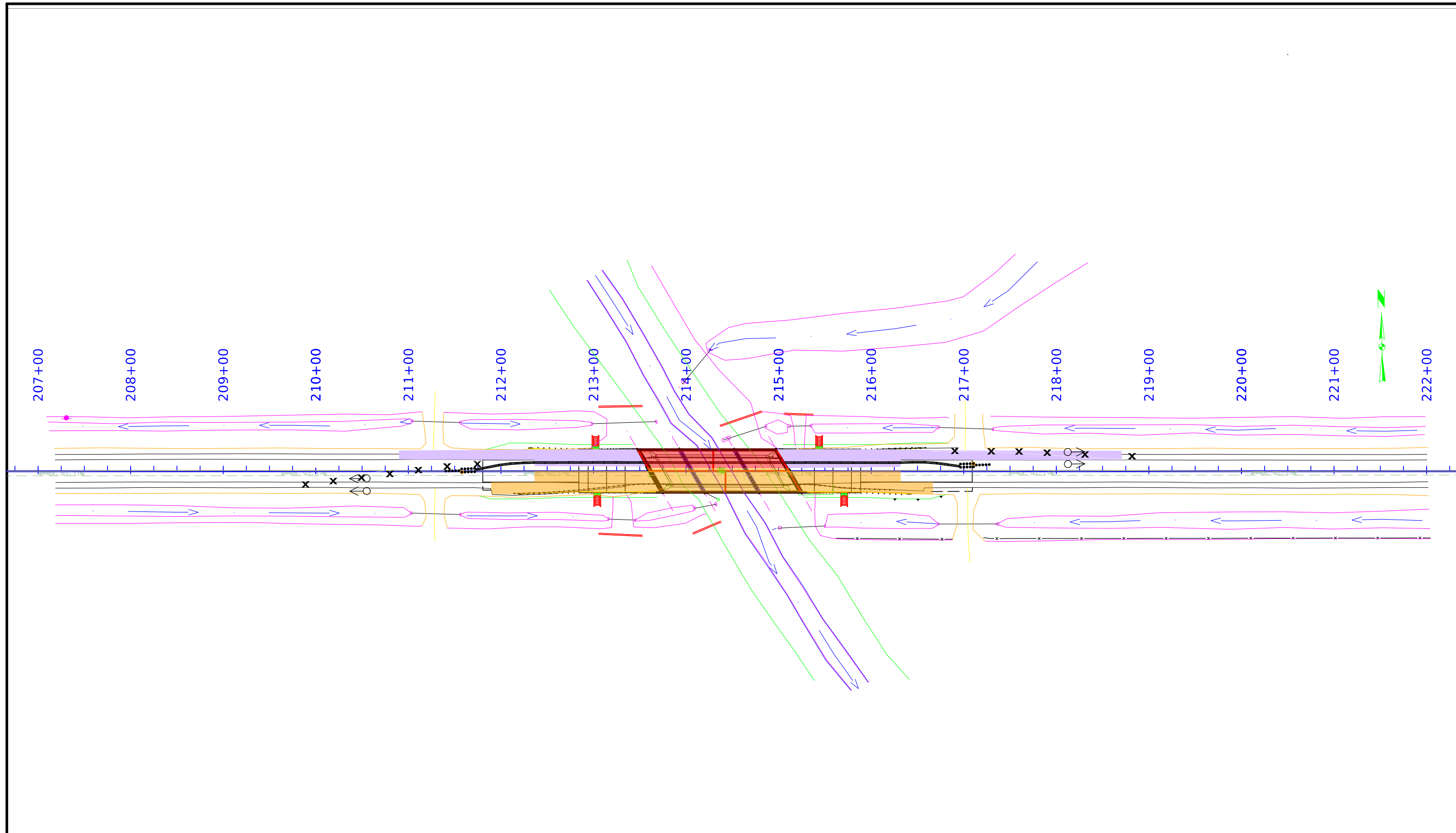
Other work in progress during the same period of time will include the construction of the projects listed. Coordinate operations with those of other contractors working within the same area.

Project	Type of Work
None Provided	

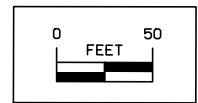


STAGE 1  
 (12' LANE WIDTH)  
 TC-217

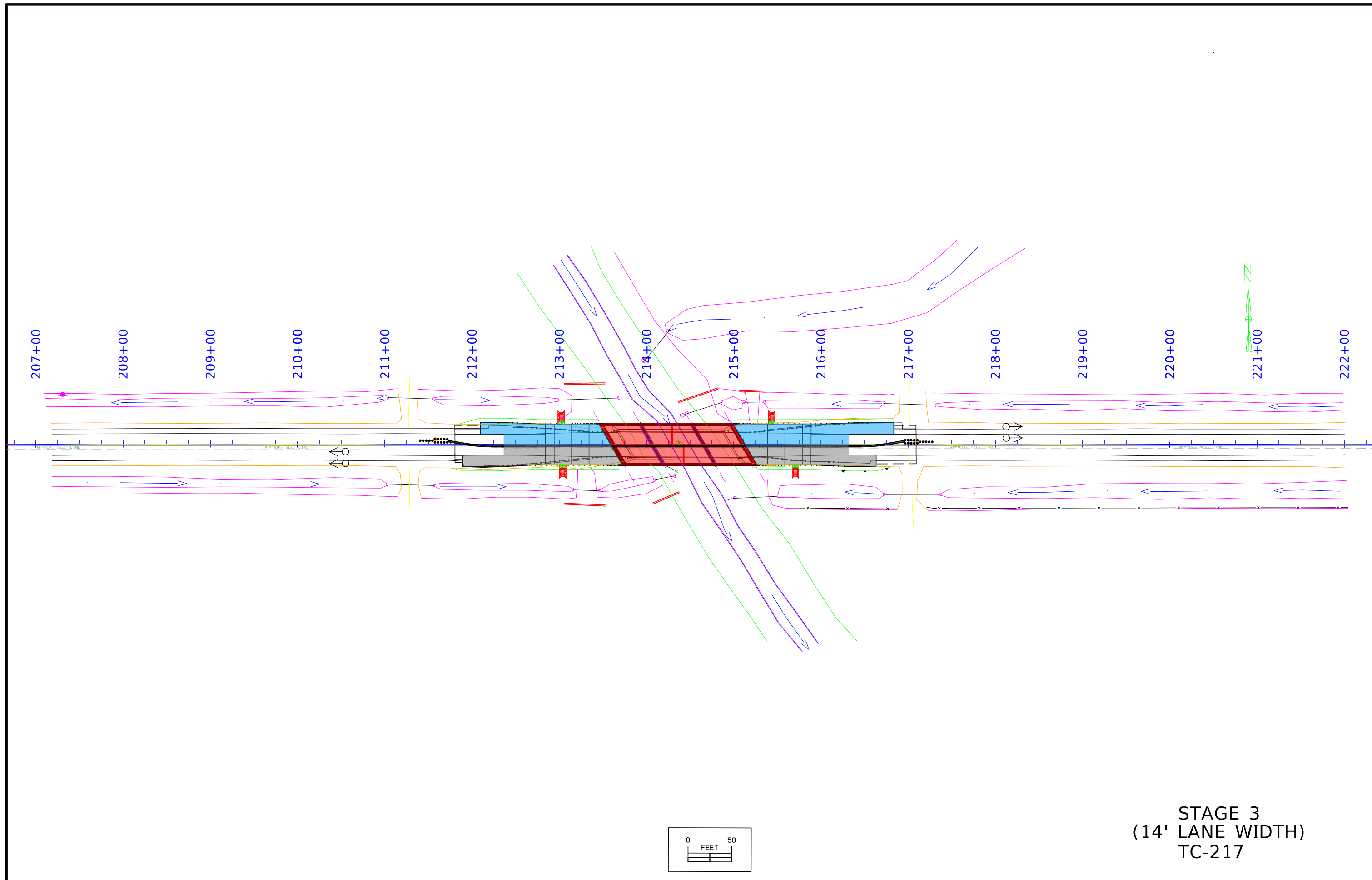




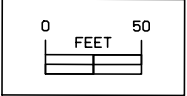
STAGE 2  
 (12' LANE WIDTH)  
 TC-217



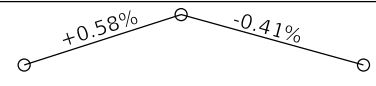
FILE NO.	ENGLISH	DESIGN TEAM IOWA DOT/SHIVE-HATTERY	CARROLL COUNTY	PROJECT NUMBER BRF-030-1(172)--38-14	SHEET NUMBER J3
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STAGE 3  
 (14' LANE WIDTH)  
 TC-217



FILE NO.	ENGLISH	DESIGN TEAM IOWA DOT/SHIVE-HATTERY	CARROLL COUNTY	PROJECT NUMBER BRF-030-1(172)--38-14	SHEET NUMBER J4
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VPI Sta. = 214+31.02 LVC = 250'  
 VPI Elev. = 1203.06

**Proposed Profile  
 Grade US 30**

**Hydraulic Data**

Drainage Area = 56.1 Sq. Mi.  
 Stream Slope = 7.1 Ft./Mi.  
 Avg. Low Water Stage = 1181.6

Q<sub>25</sub> = 3,960 CFS  
 Stage = 1196.7

Q<sub>50</sub> = 4,890 CFS  
 Stage = 1197.2  
 Regulatory Low Beam = 1200.28  
 Backwater = 0.1 FT.  
 Avg. Bridge Velocity = 5.7 FPS

Q<sub>100</sub> = 5,920 CFS  
 Stage = 1198.7  
 Operational Low Beam = 1200.08  
 Backwater = 0.1 Ft.  
 Avg. Bridge Velocity = 7.9 FPS

Q<sub>200</sub> = 7,040 CFS  
 Stage = 1199.5  
 Calculated Design Scour = ????

Q<sub>500</sub> = 8,360 CFS  
 Stage = 1201.5  
 Avg. Bridge Velocity = 10.5 FPS  
 Calculated Check Scour = ????

Roadway Overtop 1197.90  
 Sta. 200+40

**Utilities Legend:**

- Power Pole
- F0 --- Fiber Optic Line
- F02 --- Fiber Optic Line
- T1 --- Telephone Line

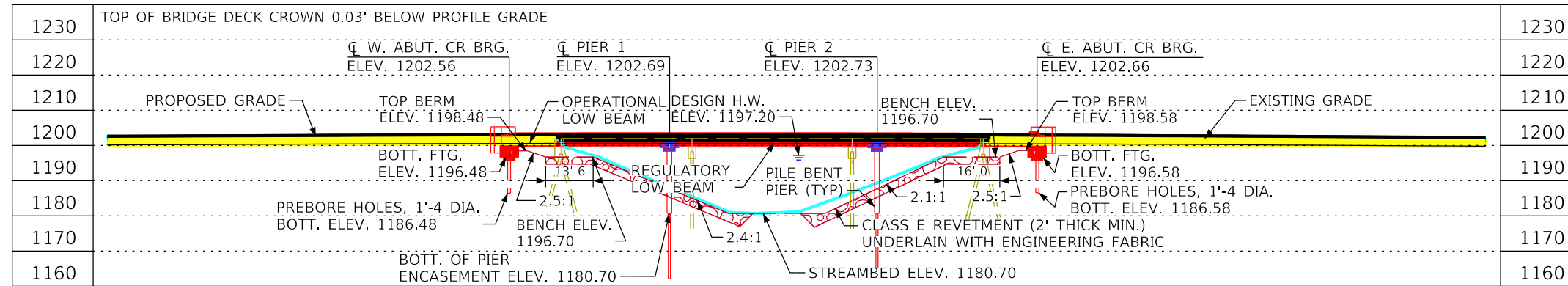
Utilities shown on this sheet are for information only, see road design sheets for final utility information.

**Location**

US 30 over  
 Storm Creek  
 T-84N R-34W  
 Section 23/26  
 Grant Township  
 Carroll County  
 FHWA No. 17111  
 Bridge Maint. No. 1486.85030  
 Latitude 42.063764°  
 Longitude -94.772858°

**Traffic Estimate**

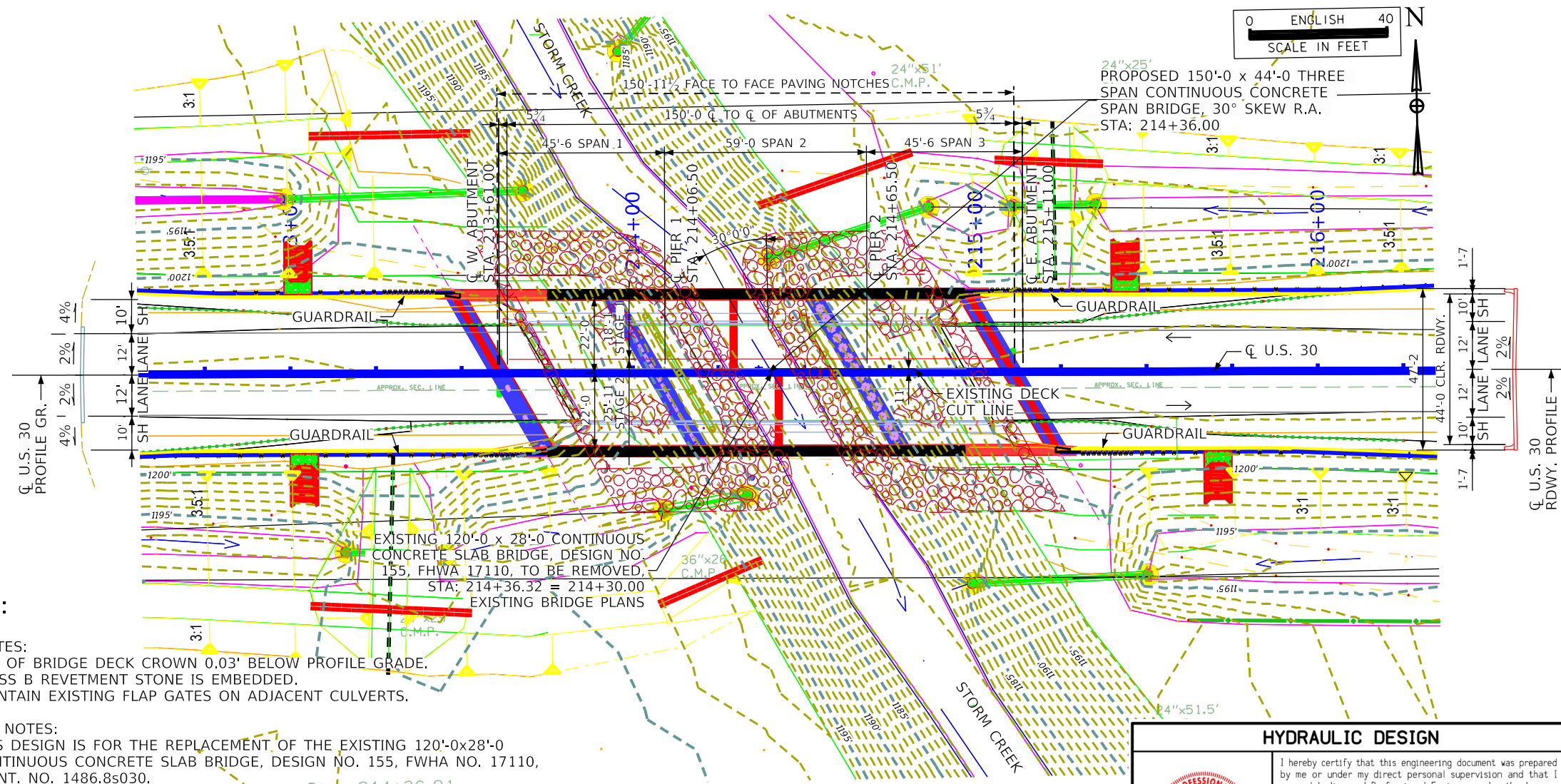
2025 AADT	7,600	V.P.D.
2045 AADT	8,700	V.P.D.
2045 DHV	900	V.P.H.
Trucks	9	%
Total		
Design ESALs		



LONGITUDINAL SECTION ALONG CL APPROACH ROADWAY

TYPICAL APPROACH SECTION

TYPICAL BRIDGE SECTION



SITUATION PLAN

**Notes:**

- PLAN NOTES:**
- TOP OF BRIDGE DECK CROWN 0.03' BELOW PROFILE GRADE.
  - CLASS B REVETMENT STONE IS EMBEDDED.
  - MAINTAIN EXISTING FLAP GATES ON ADJACENT CULVERTS.
- GENERAL NOTES:**
- THIS DESIGN IS FOR THE REPLACEMENT OF THE EXISTING 120'-0"x28'-0" CONTINUOUS CONCRETE SLAB BRIDGE, DESIGN NO. 155, FHWA NO. 17110, MAINT. NO. 1486.85030.
- DESIGN NOTES:**
- TL-4 BRIDGE RAILING PROPOSED.
  - J44-14 CONTINUOUS CONCRETE SLAB BRIDGE (STAINLESS STEEL).
  - FULLY ENCASED PILE BENT PIERS.
  - USE STAINLESS STEEL REINFORCING BARS IN THE DECK WITH THE 3'-0" GAP BETWEEN REMOVAL LINE AND STAGE 1 CONSTRUCTED DECK.
  - STAGE 1 SLAB CONSTRUCTION SHALL REMAIN SHORED DURING STAGE 2 CONSTRUCTION.

**HYDRAULIC DESIGN**

I hereby certify that this engineering document was prepared by me or under my direct personal supervision and that I am a duly licensed Professional Engineer under the laws of the State of Iowa.

Signature: Philip M Harpole Date: 04/18/2022

Printed or Typed Name: Philip M Harpole

My license renewal date is December 31, 2023

Pages or sheets covered by this seal: SHEETS V.1, V.2, V.3

Design For 30° Skew RA

**150'-0 X 44'-0 THREE SPAN  
 CONTINUOUS CONCRETE SLAB BRIDGE**

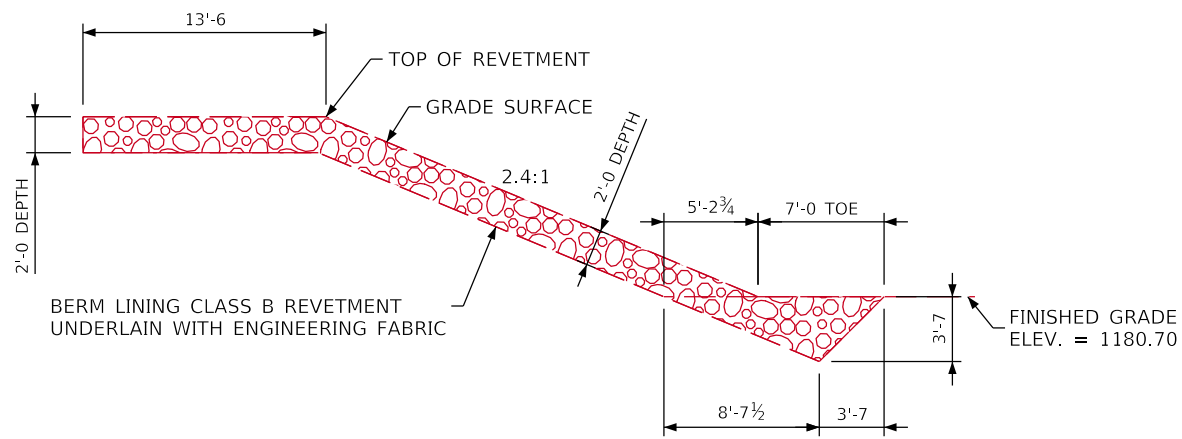
45'-6 End Span 59'-0 Interior Span

**SITUATION PLAN**

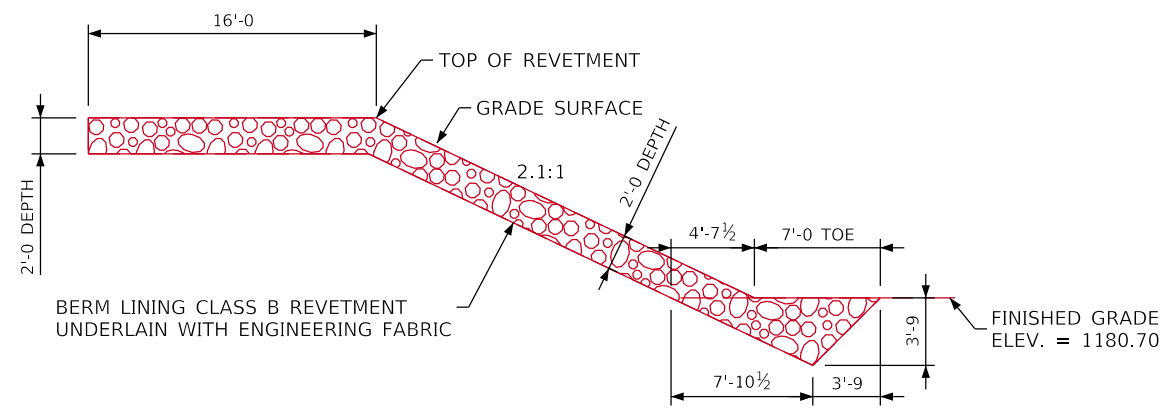
STA. 214+36.00 (US 30) APRIL 2022

**Carroll County**

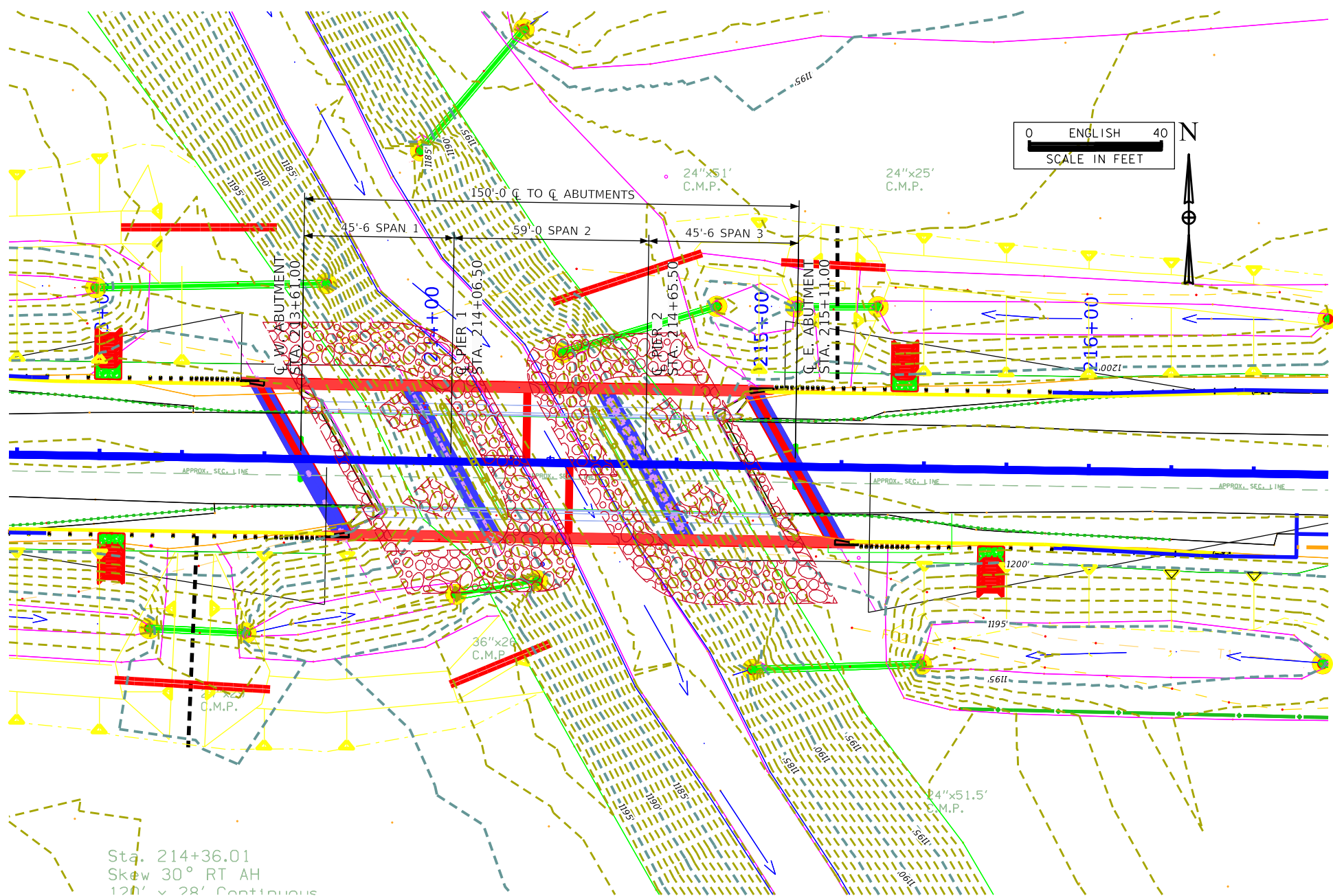
IOWA DEPARTMENT OF TRANSPORTATION  
 Design No. 0125 Design Sheet No. 001 of 003 FHWA No. 17111



SECTION THROUGH EMBEDDED REVETMENT BERM



SECTION THROUGH EMBEDDED REVETMENT BERM



SITE PLAN

Points	West Abutment			East Abutment		
	Station	Offset	Elev.	Station	Offset	Elev.
A1	XXXX+XX.XX	XXX.XX' XX	XXX.XX	XXXX+XX.XX	XXX.XX' XX	XXX.XX
A2	XXXX+XX.XX	XXX.XX' XX	XXX.XX	XXXX+XX.XX	XXX.XX' XX	XXX.XX
B1	XXXX+XX.XX	XXX.XX' XX	XXX.XX	XXXX+XX.XX	XXX.XX' XX	XXX.XX
B2	XXXX+XX.XX	XXX.XX' XX	XXX.XX	XXXX+XX.XX	XXX.XX' XX	XXX.XX
W1	XXXX+XX.XX	XXX.XX' XX	XXX.XX	XXXX+XX.XX	XXX.XX' XX	XXX.XX
W2	XXXX+XX.XX	XXX.XX' XX	XXX.XX	XXXX+XX.XX	XXX.XX' XX	XXX.XX

Berm slope elevations reflect the grading surface.

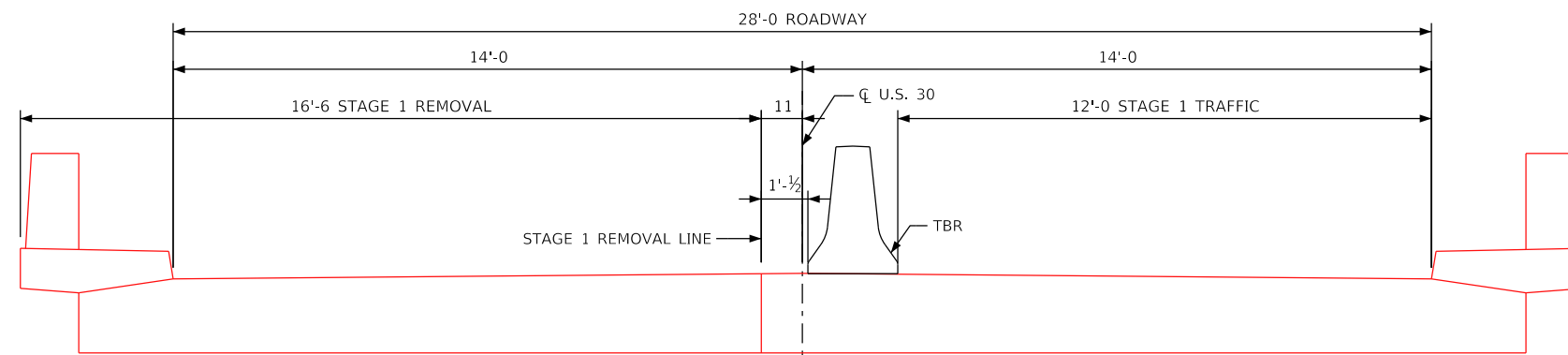
Location	Revetment CL. ?? (Ton)	Erosion Stone (Ton)	Engineering Fabric (SY)	Excavation (CY)
Berm Lining - XX	XX	XX	XX	XX
Berm Lining - XX	XX	XX	XX	XX
Totals	XX	XX	XX	XX

Excavation quantity calculated from grading surface.

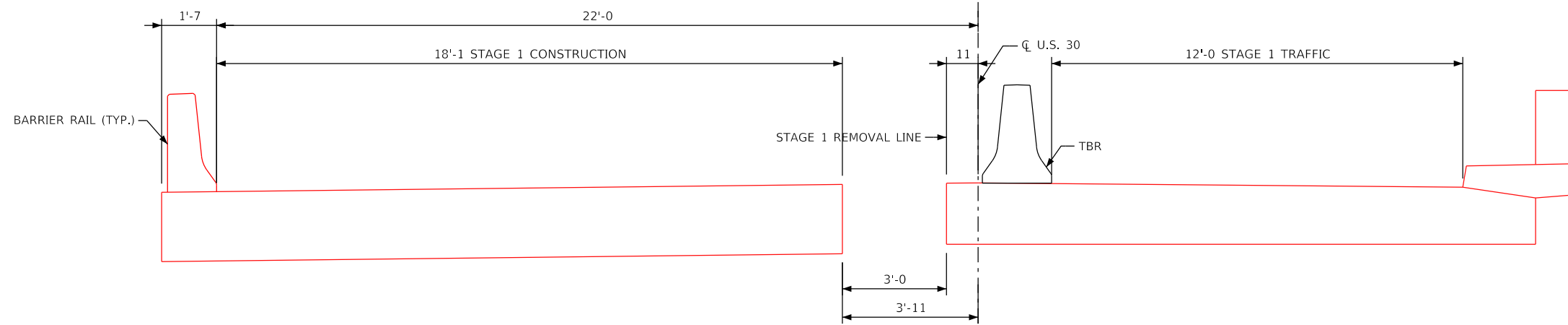
Stone toe - XX                      XX                      XX                      XX                      XX  
 Use when quantity equals or exceeds quantity under the bridge.

Design For 30° Skew RA  
**150'-0 X 44'-0 THREE SPAN**  
**CONTINUOUS CONCRETE SLAB BRIDGE**  
 45'-6 End Span                      59'-0 Interior Span  
**SITUATION PLAN - SITE**  
 STA. 214+36.00 (US 30)                      APRIL 2022  
**Carroll County**  
 IOWA DEPARTMENT OF TRANSPORTATION  
 Design No. 0125    Design Sheet No. 002 of 003    FHWA No. 17111

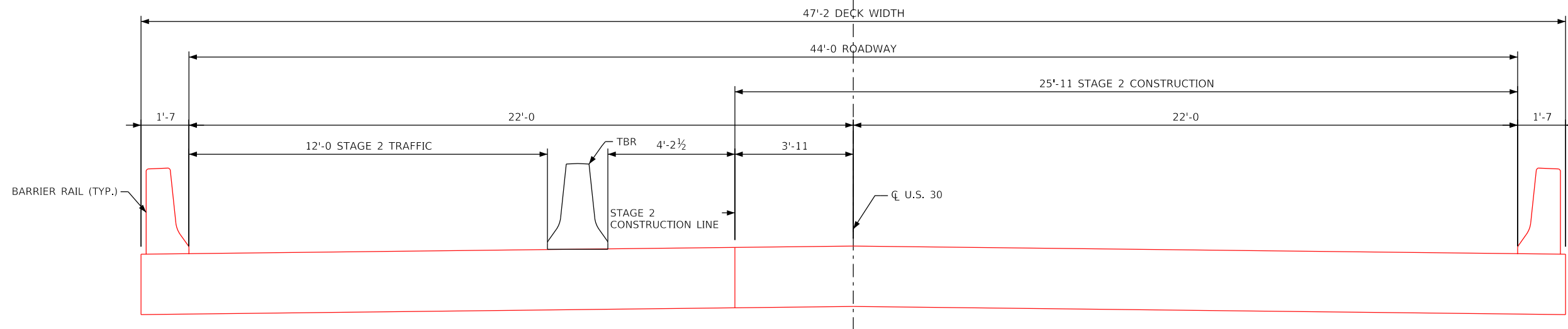




STAGE 1 REMOVAL



STAGE 1 CONSTRUCTION



STAGE 2 CONSTRUCTION

Design For 30° Skew RA  
**150'-0 X 44'-0 THREE SPAN**  
**CONTINUOUS CONCRETE SLAB BRIDGE**  
 45'-6 End Span 59'-0 Interior Span  
**STAGE PLAN**  
 STA. 214+36.00 (US 30) APRIL 2022  
**Carroll County**  
 IOWA DEPARTMENT OF TRANSPORTATION  
 Design No. 0125 Design Sheet No. 003 of 003 FHWA No. 17111

FILE NO. 32163	ENGLISH	DESIGN TEAM SHIVE-HATTERY, INC.	CARROLL	COUNTY	PROJECT NUMBER BRF-030-2(172)-38-14	SHEET NUMBER V.3	REVISED
SYSTEMTIME	SYSTEMDATE	USERNAME	DGNSPEC	Changed by Addenda			

## CROSS SECTION VIEW COLOR LEGEND

Design Color No.	Feature	Design Color No.	Feature
<b>Aggregate</b>			
(64)	Choke Stone	(8)	Behind Curb Cut
(42)	Engineering Fabric	(6)	Granular
(8)	Flooded Backfill	(13)	Granular Back Fill
(92)	Macadam Stone	(48)	Rock Undercut
(20)	Modified	(8)	Shoulder Earth Fill
(12)	Plowing Shaping	(2)	Side Slopes
(14)	Porous Backfill	(226)	Side Slopes Dressing
(8)	Revetment Class A	<b>Substrata</b>	
(6)	Revetment Class B	(128)	Boulder Substrata
(62)	Revetment Class C	(209)	Boulder Removed Substrata
(188)	Revetment Class D	(48)	Broken Weathered Substrata
(28)	Revetment Class E	(210)	Broken Weathered Removed Substrata
(12)	Shoulder Special Backfill	(3)	Core Out Substrata
(12)	Special Backfill	(195)	Core Out Remove and Replace Substrata
(20)	Subbase	(115)	Core Out Remove Only Substrata
(20)	Subbase Lower	(203)	Existing Pavement Substrata
(20)	Subbase Upper	(200)	Existing Pavement Remove and Replace Substrata
(118)	Subgrade Treatment	(184)	Existing Pavement Remove Only Substrata
<b>Asphalt</b>			
(207)	HMA Base Course	(6)	Loam Substrata
(207)	HMA Interim Course	(211)	Loam Removed Substrata
(207)	HMA Surface Course	(80)	Rock Substrata
<b>Concrete</b>			
(0)	Barrier Concrete	(212)	Rock Removed Substrata
(0)	Barrier Concrete Footing	(4)	Select Sand Substrata
(0)	Curb Gutter	(214)	Select Sand Removed Substrata
(48)	Flowable Mortar	(3)	Shale Substrata
(0)	Median Concrete	(215)	Shale Removed Substrata
(0)	PCC Pavement	(10)	Topsoil Substrata
(0)	Sidewalk	(4)	Topsoil Remove and Replace Substrata
		(2)	Topsoil Remove Only Substrata
<b>Shoulder</b>			
(209)	Shoulder HMA	<b>Unsuitable / Waste</b>	
(0)	Shoulder PCC	(3)	Unsuitable Type A
(6)	Shoulder Granular	(216)	Unsuitable Type A Removed
<b>Existing</b>			
(0)	Existing Pavement	(13)	Unsuitable Type B
<b>Structural</b>			
(0)	Bridge	(217)	Unsuitable Type B Removed
(21)	Guardrail	(11)	Unsuitable Type C
(112)	Noise Wall	(218)	Unsuitable Type C Removed
(112)	Noise Wall Footing	(3)	Waste
(112)	Retaining Wall Back	(219)	Waste Removed
(112)	Retaining Wall Back Excavate	<b>Trigger Switches</b>	
(112)	Retaining Wall Face	(27)	Do Not Construct
(112)	Retaining Wall Front Excavate		
(112)	Retaining Wall Front Footing		
(112)	Retaining Wall MSE Gutter		
(112)	Retaining Wall Reinforced Earth		

**NOTES:**

Text

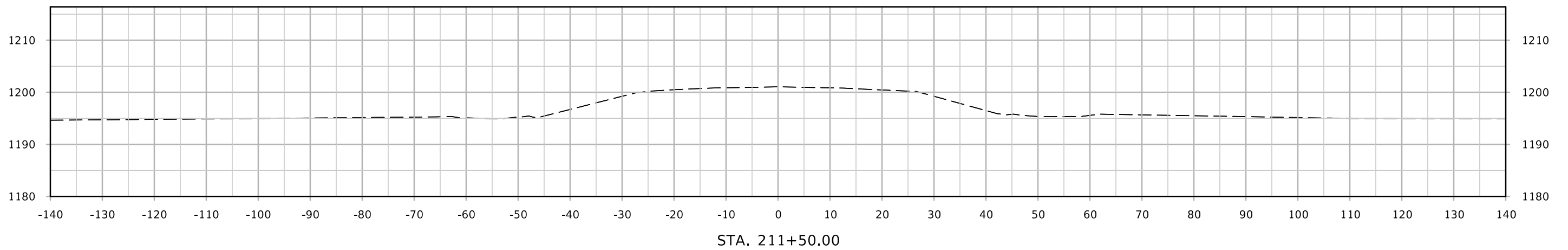
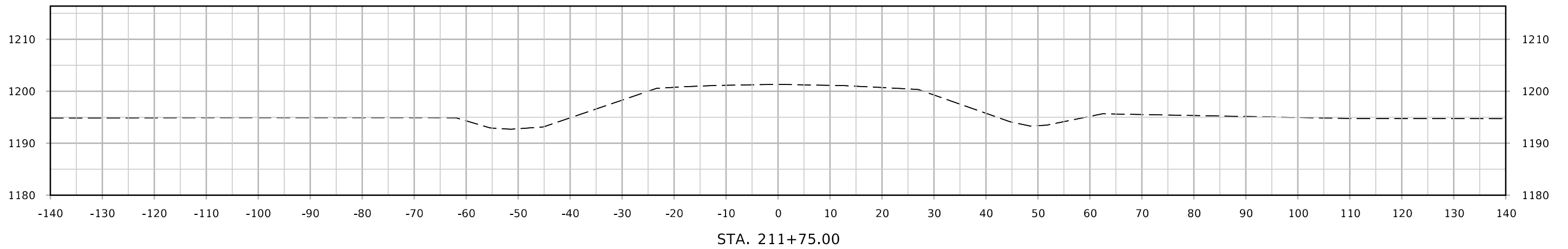
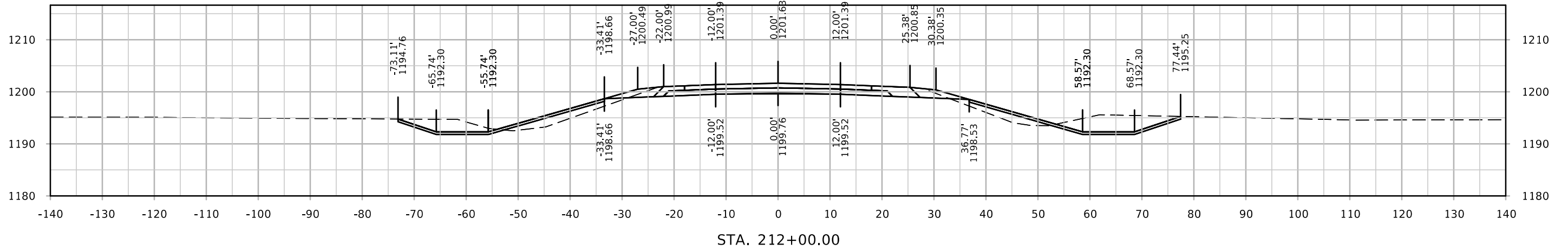
**NOTES:**

Text

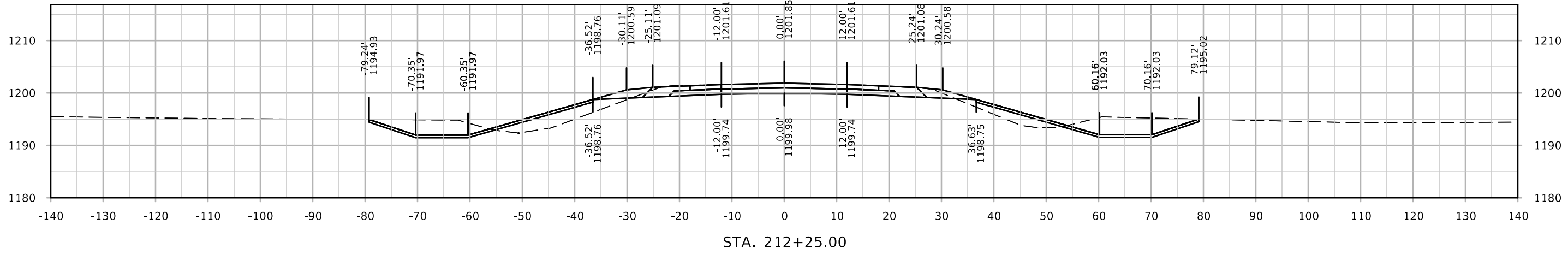
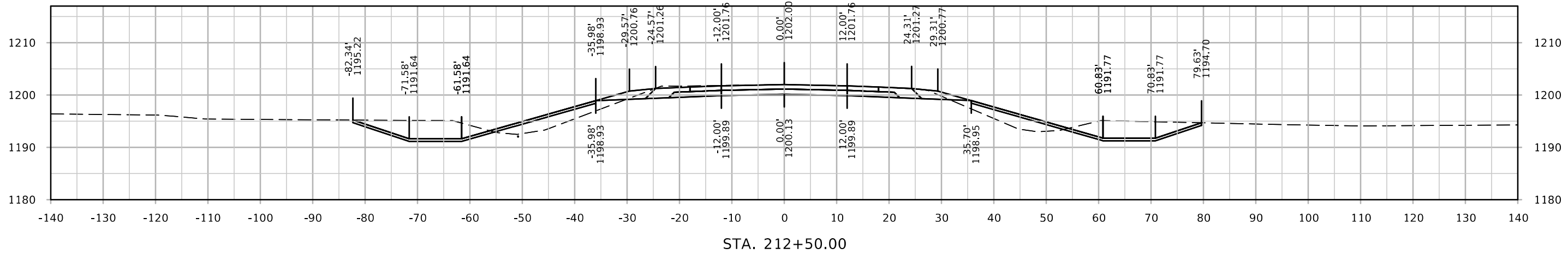
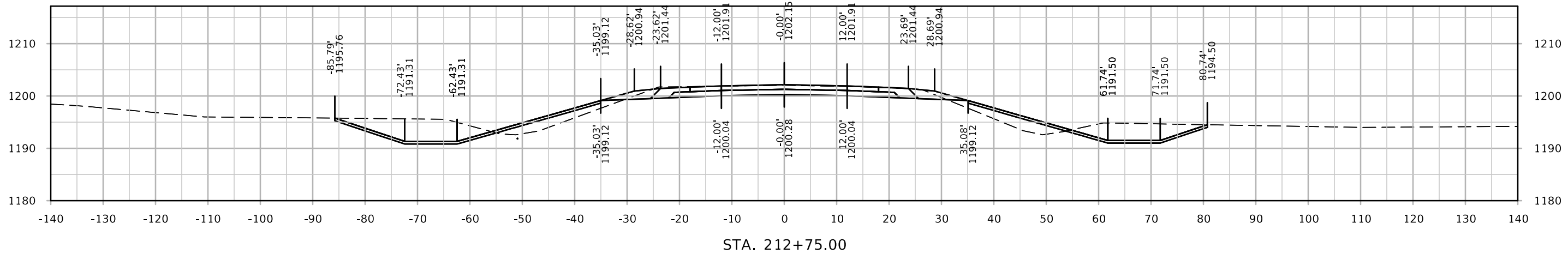
## CROSS SECTIONS LEGEND AND INFORMATION SHEET

(COVERS SHEET SERIES W, X, Y, & Z)

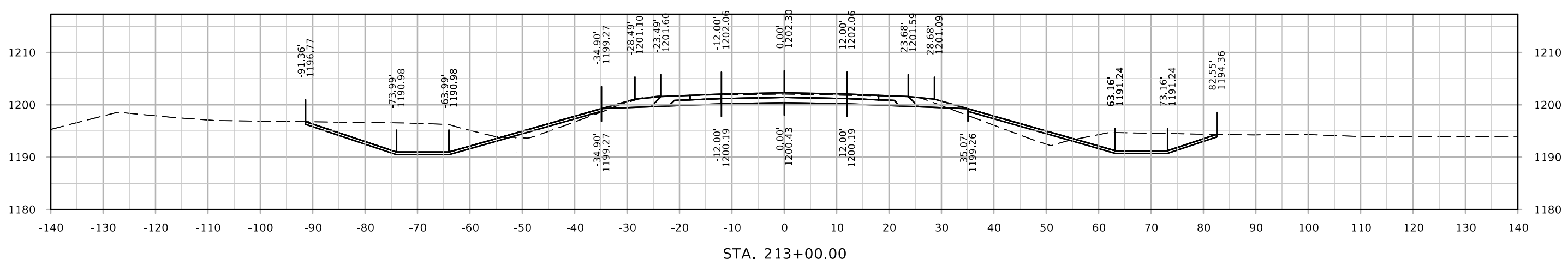
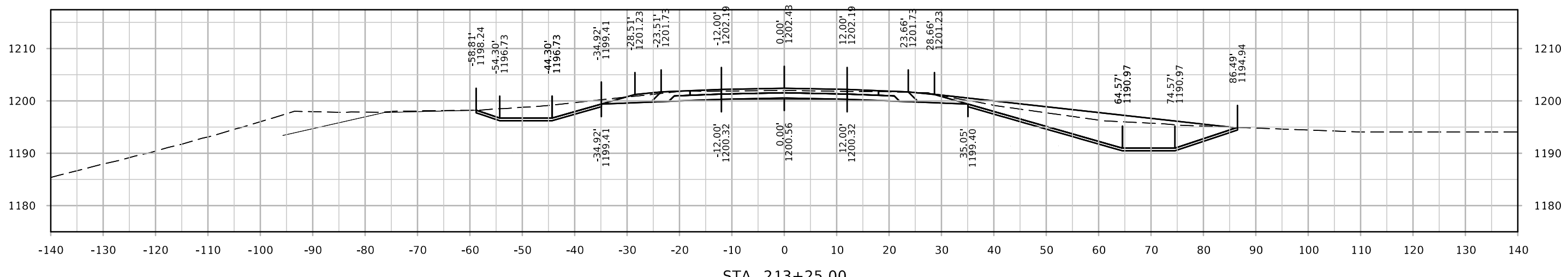
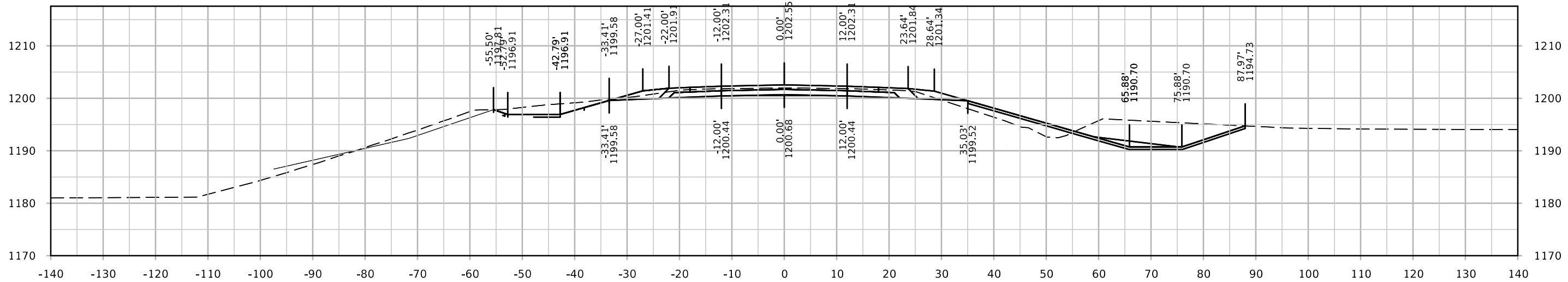
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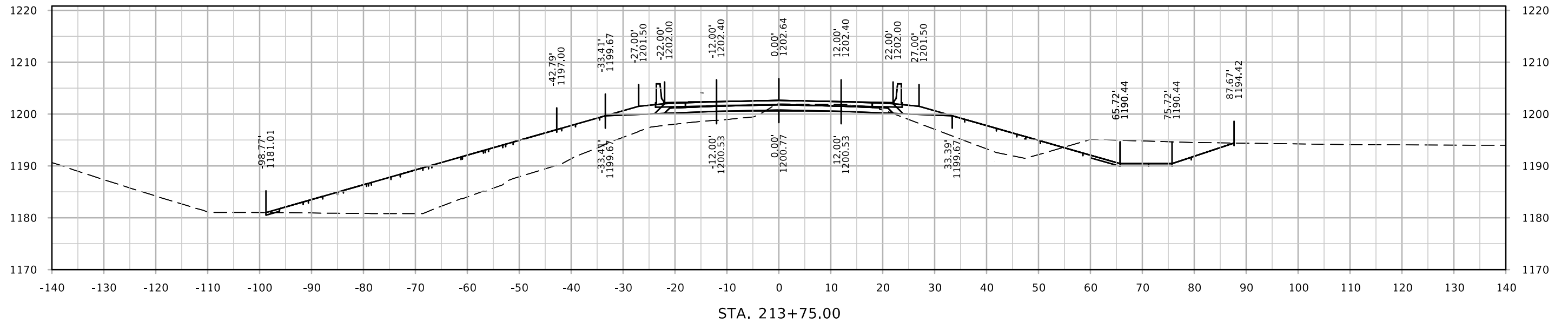
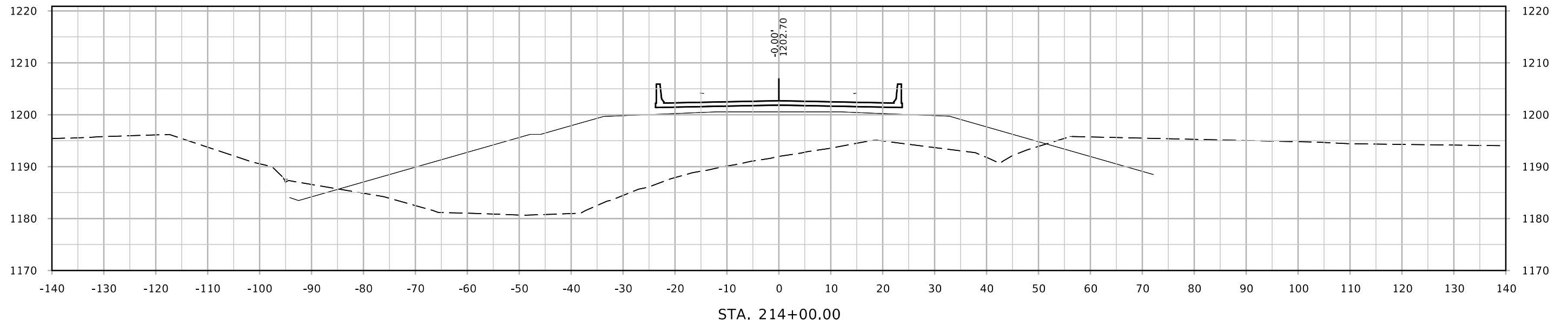
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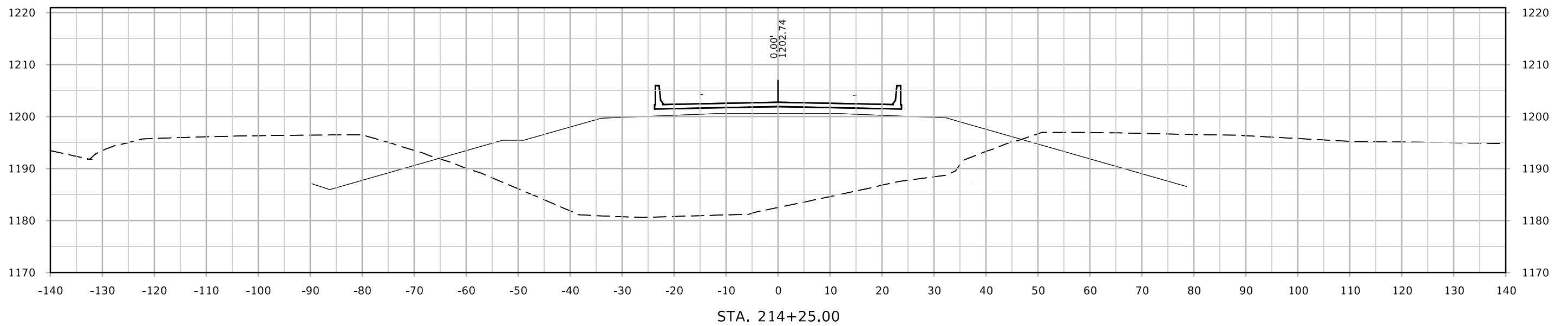
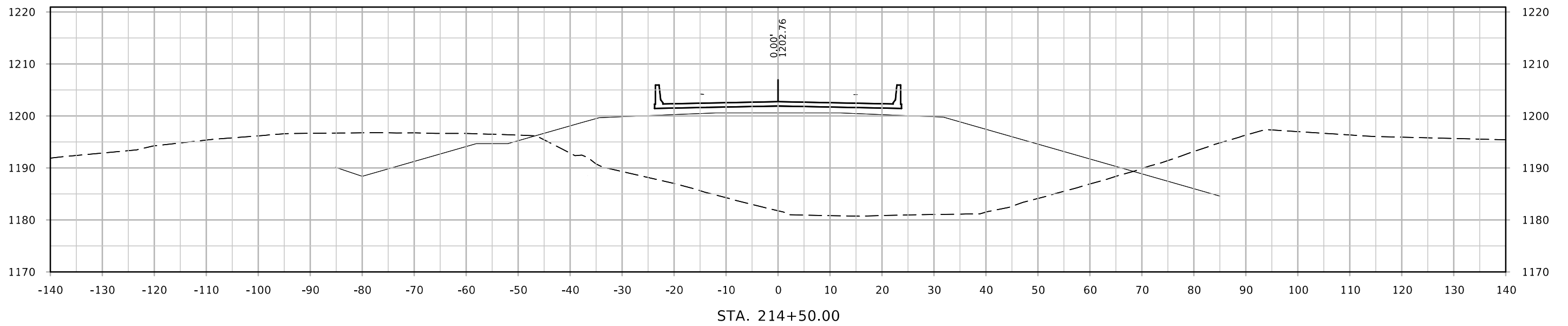
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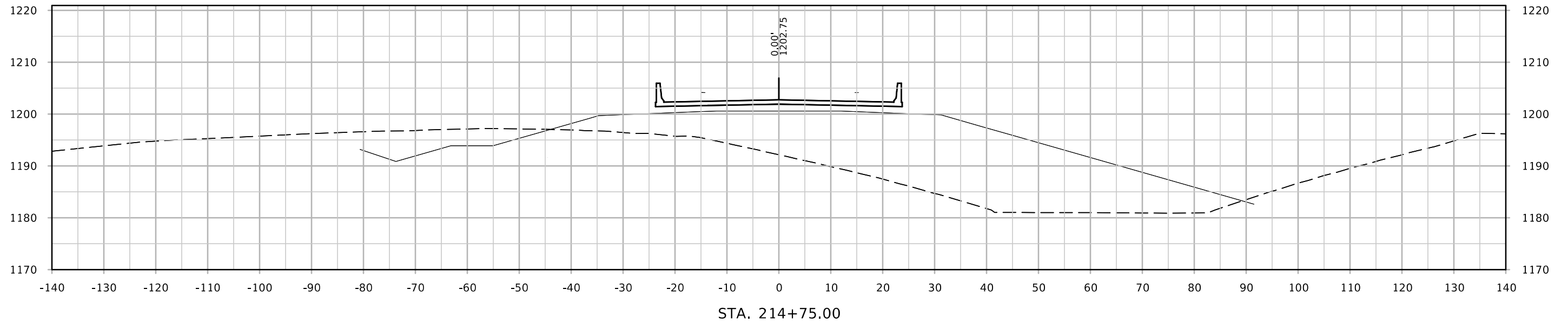
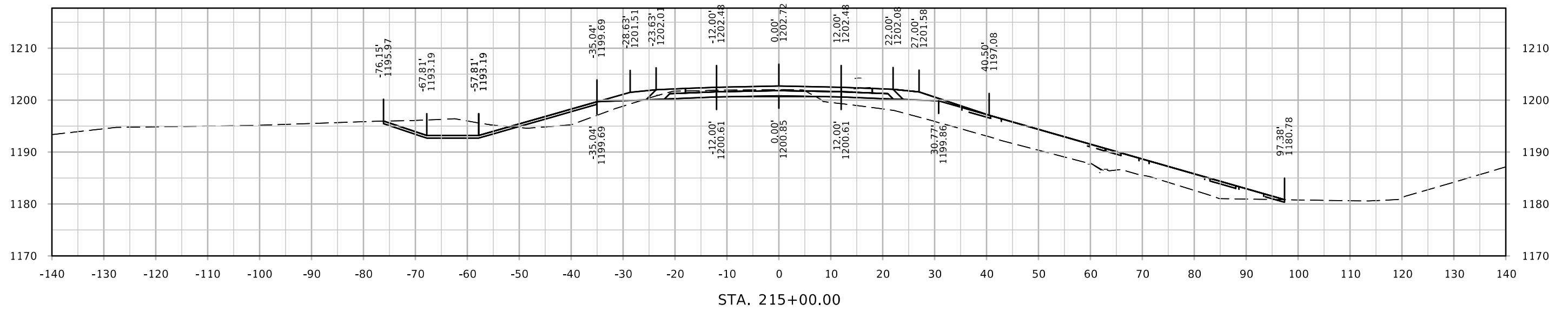
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# ML - US169

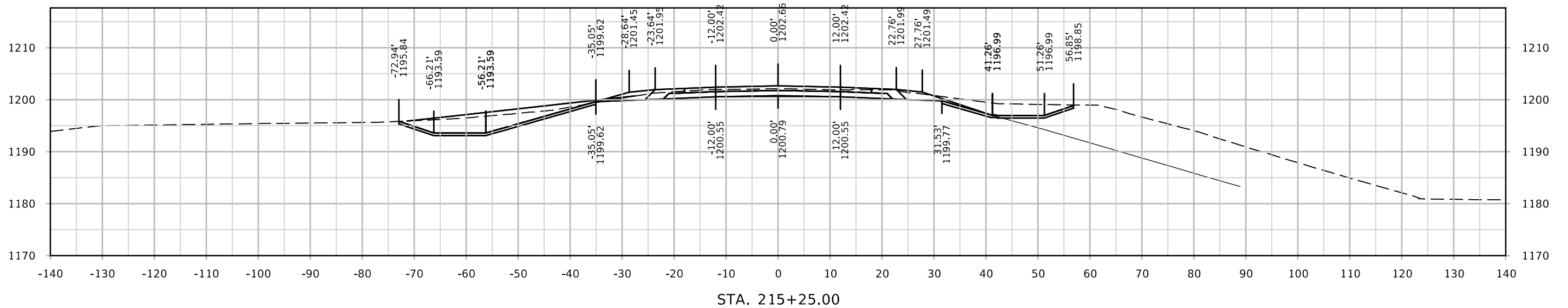
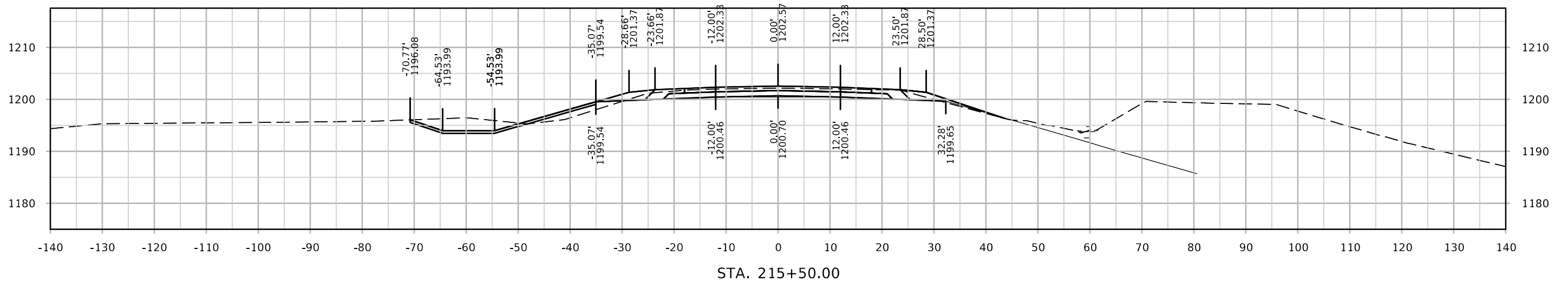
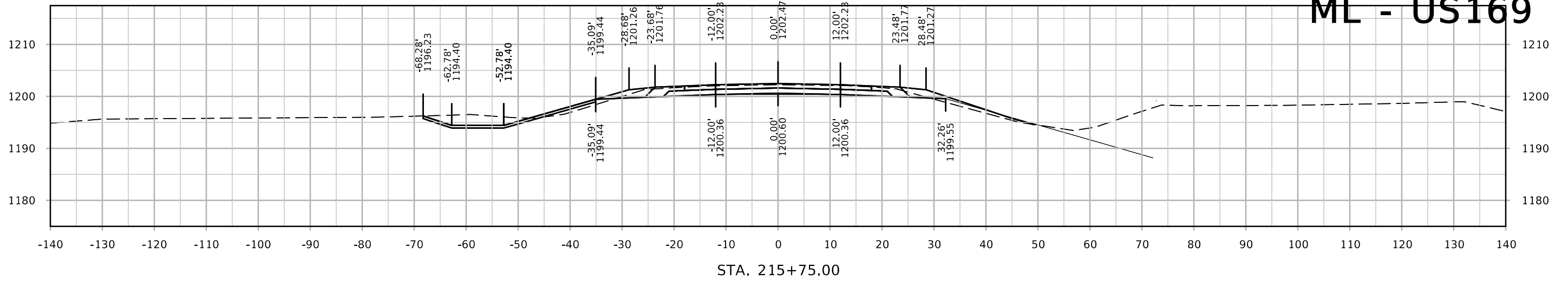


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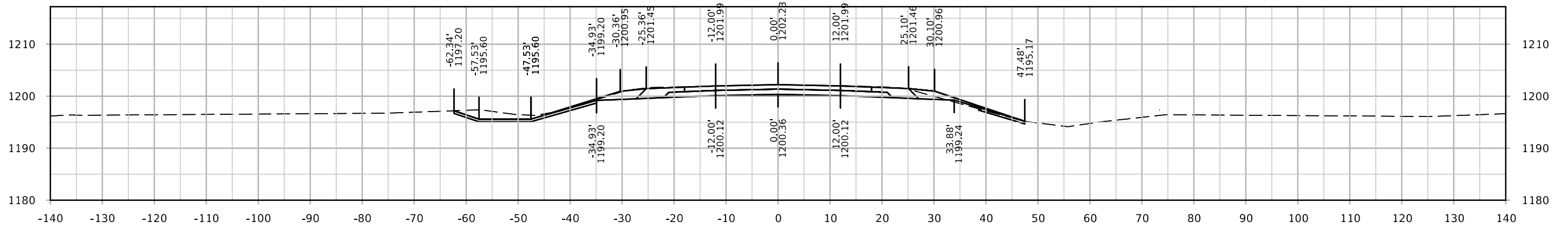




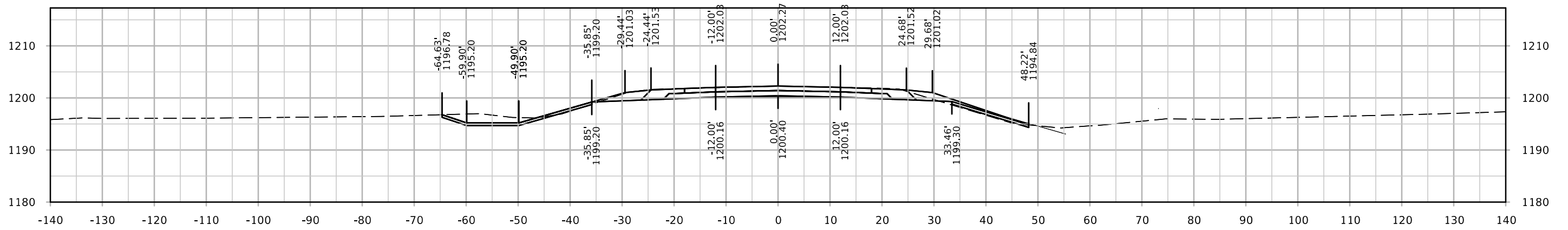
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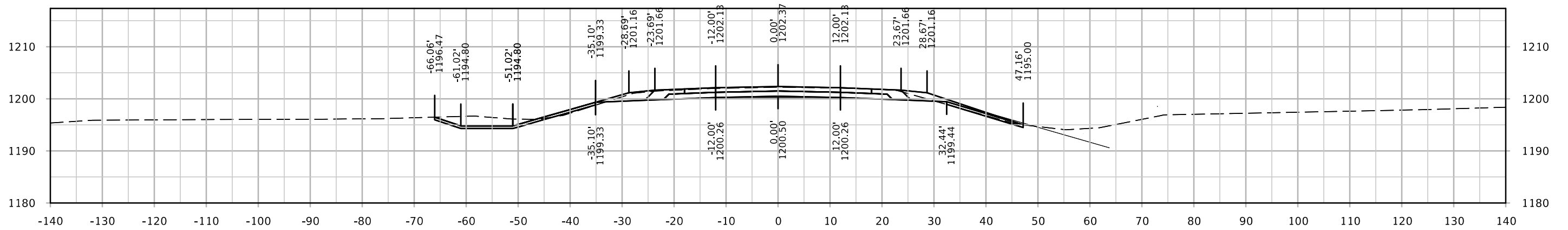
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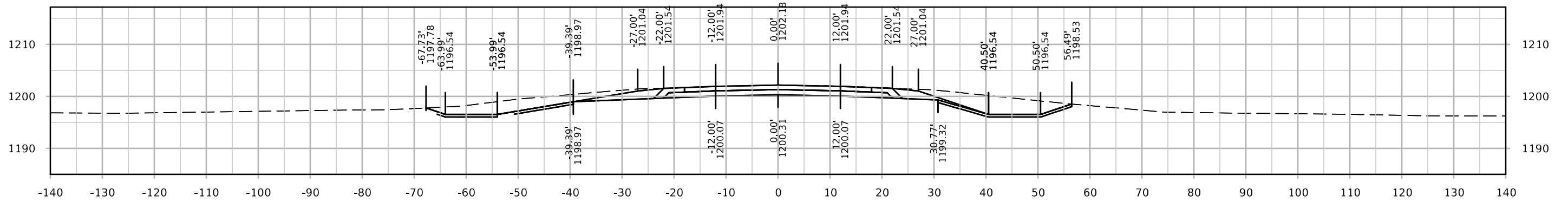
STA. 216+50.00



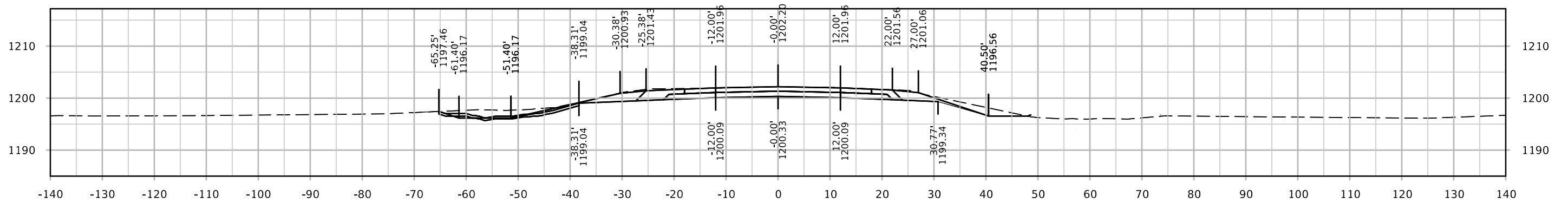
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STA. 216+00.00



STA. 217+00.00



STA. 216+75.00