

POCAHONTAS COUNTY

Bridge Replacement-PPCB
BRF-015-1(013)--38-76

LETTING DATE
Nov 17 2026



PLANS OF PROPOSED IMPROVEMENT ON THE
PRIMARY ROAD SYSTEM
POCAHONTAS COUNTY
Bridge Replacement-PPCB
IA 15 Bridge over Pilot Creek
at the N Jct Co Rd C26

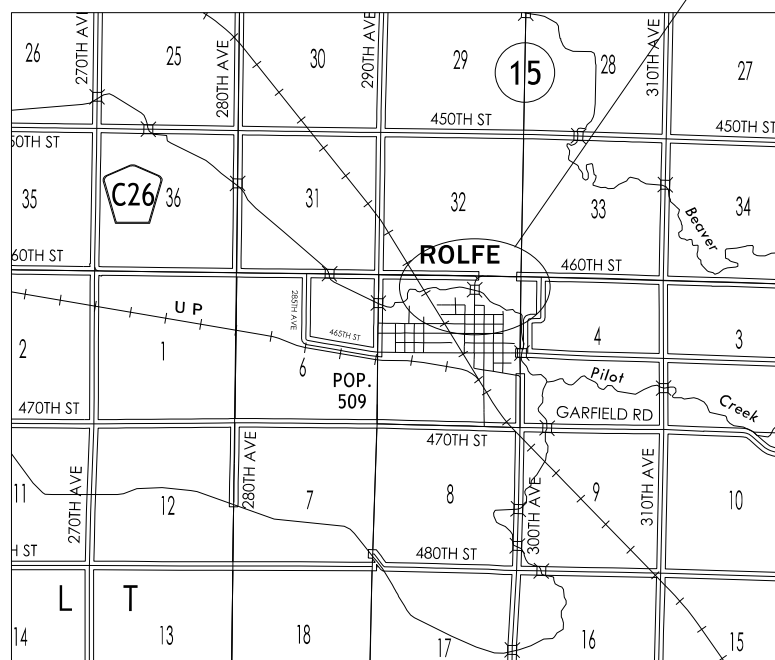
SCALES: As Noted

Refer to the Proposal Form for list of applicable specifications.

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



PROJECT LOCATION



DESIGN DATA RURAL			
2027	AADT	500	V.P.D.
2047	AADT	600	V.P.D.
20 --	DHV	--	V.P.H.
	TRUCKS	17 %	
	Total Design ESALs	--	

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

D5 PLAN - Date: 8/30/24
P9 PLAN - Date: 1/22/25
D4 PLAN - Date: 7/21/26

PRELIMINARY PLANS

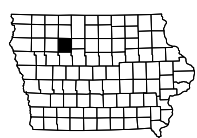
Subject to change by final design.

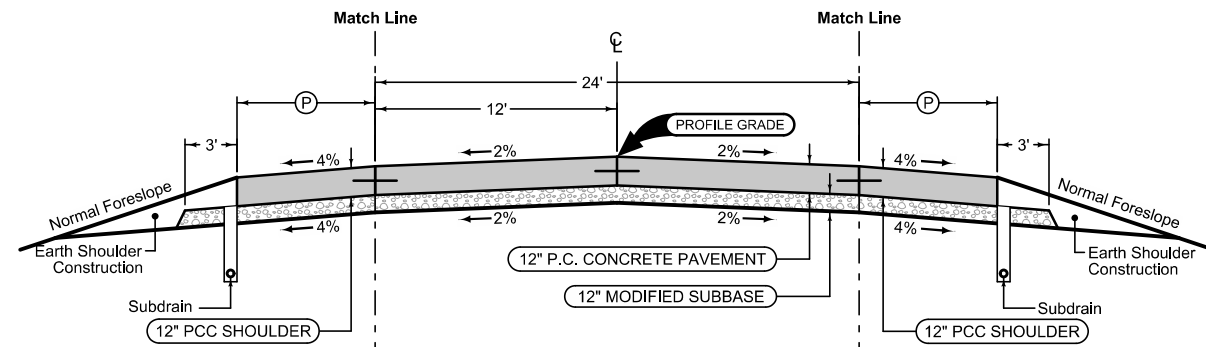
D3 PLAN - Date: 4/04/24

INDEX OF SHEETS	
No.	DESCRIPTION
A Sheets	Title Sheets
A.1	Title Sheet
B Sheets	Typical Cross Sections and Details
B.1 - 2	Typical Cross Sections and Details
D Sheets	Mainline Plan and Profile Sheets
* D.1	Plan & Profile Legend & Symbol Information Sheet
* D.2	IA 15
G Sheets	Survey Sheets
G.1	Reference Ties and Bench Marks
G.2	Control Point Vicinity Map
G.3	Horizontal and Vertical Control Tab.
J Sheets	Traffic Control and Staging Sheets
J.1 - 3	Traffic Control Plan
* J.4	Detour Route
V Sheets	Bridge and Culvert Situation Plans
* V.1	Bridge and Culvert Situation Plans
W Sheets	Mainline Cross Sections
* W.1	Cross Sections Legend & Symbol Information Sheet
* W.2 - 10	IA 15 Mainline Cross Sections
	* Color Plan Sheets

REVISIONS	TOTAL
	--

PROJECT IDENTIFICATION NUMBER
22-76-015-010
PROJECT NUMBER
BRF-015-1(013)--38-76
R.O.W. PROJECT NUMBER
STPN-015-1(014)--2J-76





Full Depth PCC Shoulder

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

2_P_FullPCC_ 04-20-21		
STATION TO STATION		(P) Feet
4+87.86	5+83.59	8
8+96.41	9+65.59	8

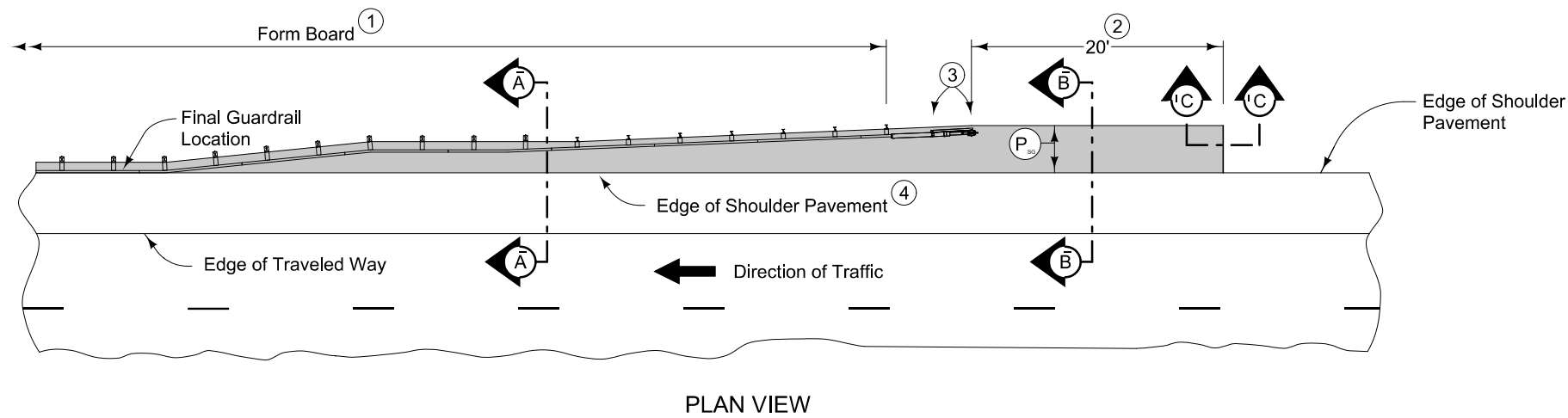
Mainline Jointing:
 Transverse joints: CD at 17' spacing
 Longitudinal joint: L-2

2P_ 04-21-20	
STATION TO STATION	
4+87.86	5+83.59
8+96.41	9+65.59

Full Depth PCC Shoulder

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

2_P_FullPCC_ 04-20-21		
STATION TO STATION		(P) Feet
4+87.86	5+83.59	8
8+96.41	9+65.59	8

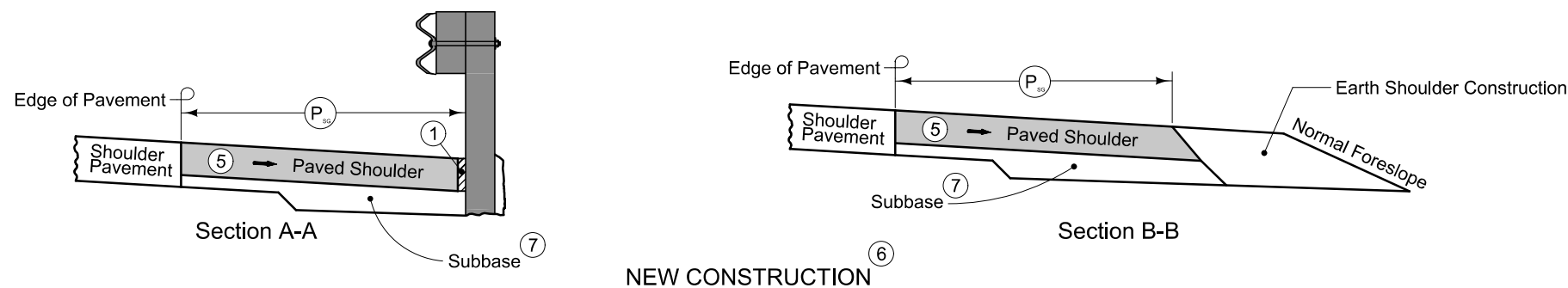


12" PCC Paved Shoulder at guardrail.

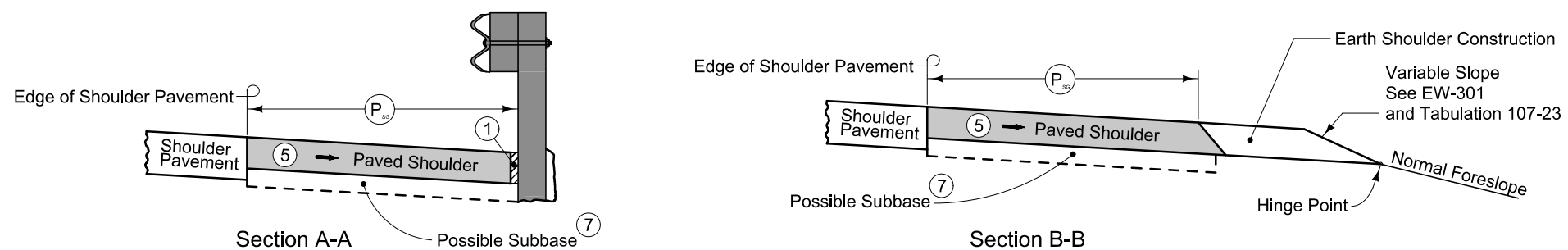
Match mainline pavement joint spacing. When mainline pavement is 8" or greater in thickness, place additional transverse 'C' joints in shoulder at mid-panel of the mainline pavement. Place longitudinal 'C' joint at P/2 from edge of mainline pavement when P is greater than 10' wide. Terminate longitudinal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

Refer to Tabulation 112-9 for shoulder quantities.

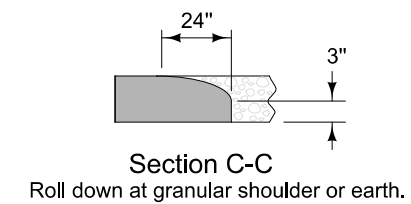
- ① When guardrail posts are installed prior to construction of PCC paved shoulder, fasten form board to the face of guardrail posts for the length shown.
- ② Continue paved shoulder 20 feet beyond the center of the first post.
- ③ Shoulder may be notched for first 2 posts or post sleeves may be installed through pavement. Do not drive posts through pavement.
- ④ 'KT' (per PV-101) joint for PCC shoulder.
- ⑤ Match shoulder slope.
- ⑥ The Contractor has the option to pave the paved shoulder at guardrail and the full width paved shoulder as one operation.
- ⑦ Refer to other details in the plan.



NEW CONSTRUCTION



EXISTING SHOULDER



PAVED SHOULDER AT GUARDRAIL (ADJACENT TO FULL WIDTH PAVED SHOULDER)

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

- E1** *EL1D, Alliant Energy - Quality D*
 - PPA**, Alliant Energy
 - T1** *TL1D, Northwest Communications - Quality D*
 - G** *GL1D, City of Rolfe - Quality D*
 - W** *WL1D, City of Rolfe - Quality D*
 - F0** *FO1D, Windstream Communications - Quality D*
 - T2** *TL2D, Windstream Communications - Quality D*
- Utilities Contact Information
- Billie Reid
Real Estate and ROW Representative II
Alliant Energy (Electric Distribution, Electric Transmission,
Fiber Distribution, Fiber Transmission, Gas Distribution, Gas Transmission)
200 1st St SE
Cedar Rapids, IA 5240
(319) 786-3703
billiereid@alliantenergy.com
- Bruce Schany
Plant Tech
Northwest Communications (Telephone)
844 Wood Street
Havelock, IA 50546
(712) 776-2222
bschany@ncn.net
- Angela Montag
City Clerk
ROLFE (Water, Sanitary Sewer)
319 Garfield Street
Rolfe, IA 50581-1119
(712) 848-3124
rolfederk@ncn.net
- John Thatcher
OSP Engineer
Windstream Communications (Fiber Distribution, Telephone)
901 E Taylor St.
Creston, IA 50801
(641) 782-4546 Cell: (641) 990-3291
John.Thatcher@windstream.com

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.	Transparency
Lavender	(9)		Temporary Pavement Shading 0%
Yellow	(4)		Proposed Pavement Shading 50%
Orange	(6)		Proposed Granular Shading 50%
Orange	(70)		Proposed Shoulder Granular Shading 50%
Yellow	(68)		Proposed Shoulder Paved Full Depth Shading 50%
Yellow	(132)		Proposed Shoulder Paved Partial Depth Shading 50%
Violet	(15)		Proposed Grade and Pave Shading (In conjunction with a paving project) 0%
Brown, Light	(236)		Grading Shading 50%
Orange, Light	(134)		Proposed Granular Entrance Shading 50%
Yellow	(220)		Proposed Paved Entrance Shading 50%
Tan	(8)		Proposed Sidewalk Shading 50%
Blue, Light	(230)		Proposed Sidewalk Landing Shading 50%
Pink	(11)		Proposed Sidewalk Ramp Shading 50%
Green, Light	(225)		Existing Pavement Shading 50%
Red	(3)		Proposed Structure Shading 50%
Red	(3)		Delineates Restricted Areas 0%

PROFILE VIEW COLOR LEGEND OF PLAN AND PROFILE SHEETS

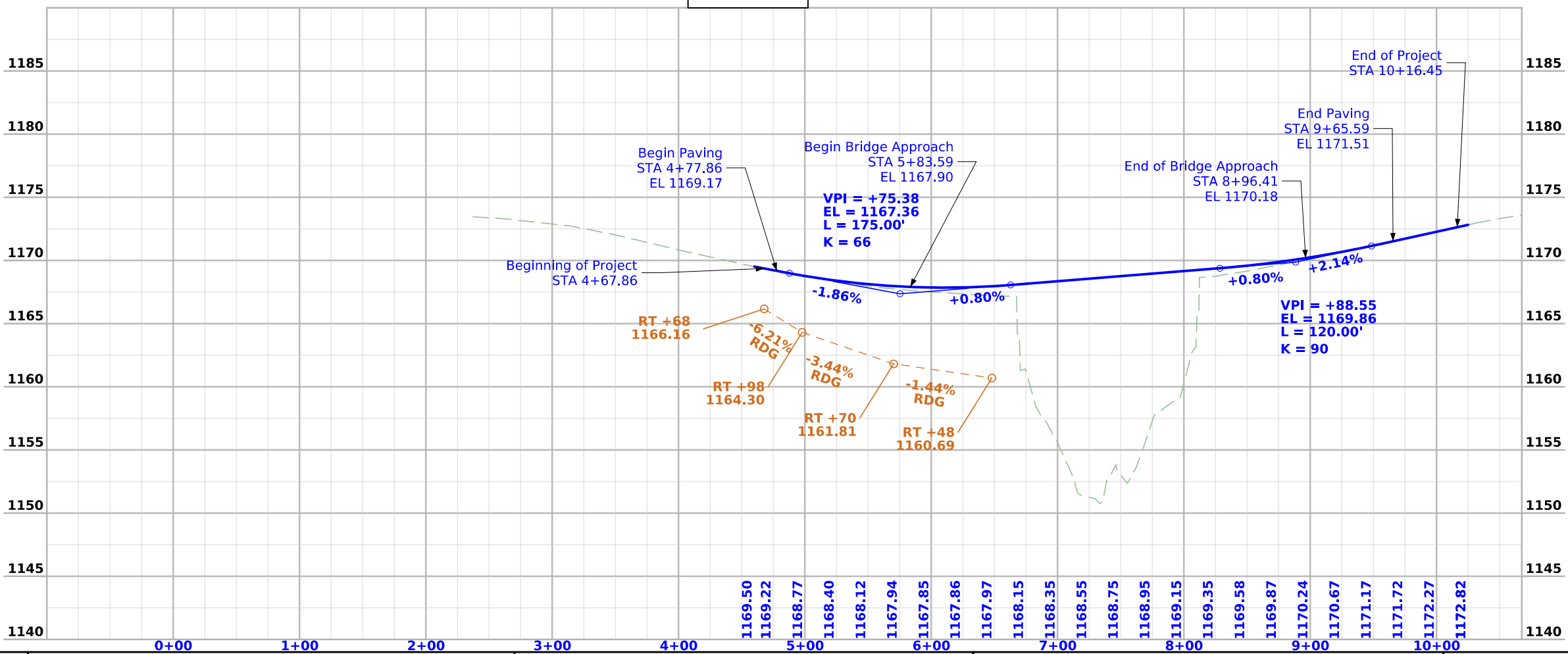
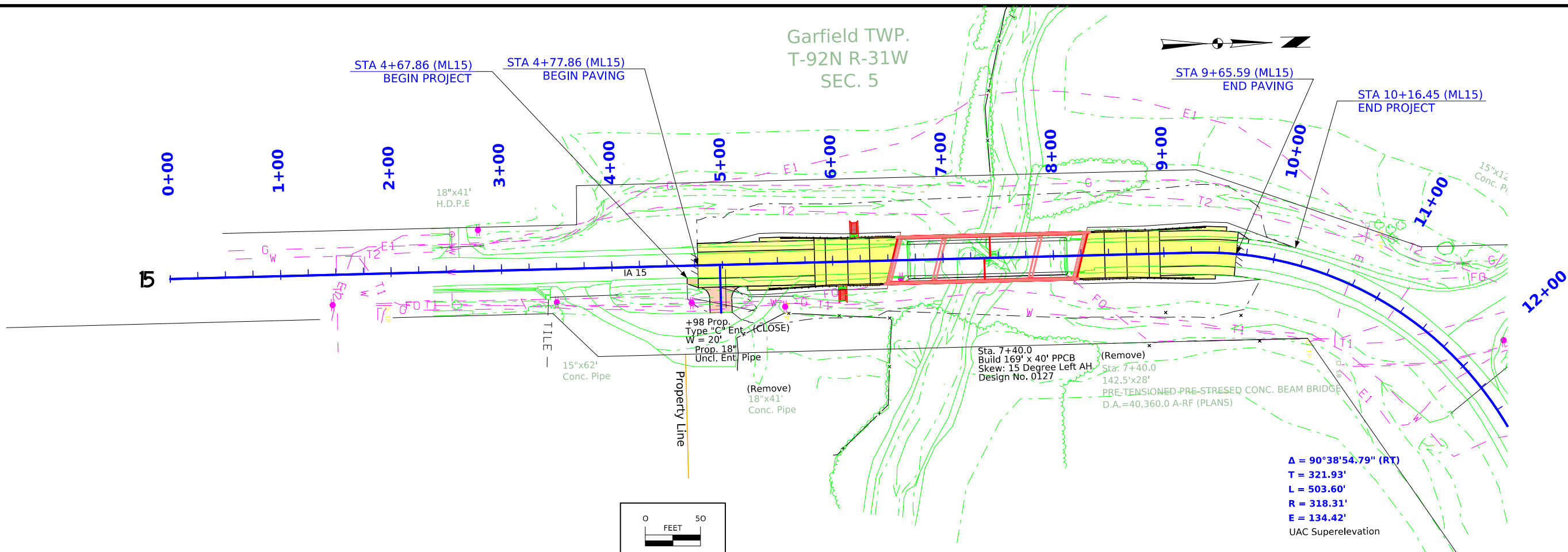
LINEWORK		Design Color No.	
Green	(10)		Existing Ground Line Profile
Blue	(1)		Proposed Profile and Annotation
Magenta	(5)		Existing Utilities
Blue, Light	(230)		Proposed Ditch Grades, Left
Black	(0)		Proposed Ditch Grades, Median
Rust	(14)		Proposed Ditch Grades, Right

- 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
 - C/A Access Control
 - Property Line

PLAN AND PROFILE LEGEND AND SYMBOL INFORMATION SHEET

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



Survey Information

SURVEY INDEX

Pocahontas County
BRF-015-1(13)--38-76
Pilot Creek at the N Jct Co Rd C26
PIN: 22-76-015-010
Type of Work: Bridge Replacement
Project Directory: 7601501022

Survey Personnel

Daniel Duncan – Survey Party Chief

Date(s) of Survey

Begin Date 09/20/2023
End Date 11/14/2023

General Information

This survey is for IA Hwy 15 Bridge replacement of the bridge that crosses Pilot Creek approximately 0.1 miles South of the Intersection of 460th Street and IA 15, on the North end of the town of Rolfe. This project is a Full Field DTM survey.

Utility Information

For logging data and other utility details see Utility Survey and Ownership Report in the Utility folder of the PrelimSurvey project directory.

Project Control

Coordinates were determined for primary project control points by conducting concurrent six-hour static observations. Post processing is constrained to nearby Iowa Real Time Network reference stations. For additional details of the control survey, contact the Preliminary Survey department.

PROJECT DATUM: NAD83(2011) for EPOCH 2010.00 (IaRTN 2019 ADJUSTMENT)
COORDINATE SYSTEM: IOWA REGIONAL COORDINATE SYSTEM ZONE 04
(U.S. SURVEY FOOT)
VERTICAL DATUM: NAVD88
GEOID MODEL: 2018u3

Alignment Information

The horizontal alignment for Iowa Hwy. 15 this survey is a retrace of As-built Plans No. F-1062(2). Survey stationing was equated to the plan center of bridge Sta. 7+40.0 and carried back and ahead without equation throughout the survey.

Survey stationing relates to as built plan stationing as follows:

PC Sta. 9+28.6 As-built Plans Project No. F-1062(2)
Survey PC Sta. 9+28.43

PI Sta. 12+51.4 As-built Plans Project No. F-1062(2)
Survey PI Sta. 12+50.37

PI Sta. 28+25.0 As-built Plans Project No. F-1062(2)
Survey PI Sta. 28+24.97

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) for EPOCH 2010.00 (IaRTN 2019 Adjustment) - Iowa RCS Zone 04 (U.S. Survey Foot)

VERT. DATUM: NAVD88 - Geoid Model: 2018u3

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

HORIZONTAL AND VERTICAL PROJECT CONTROL COORDINATE LISTING
 HORIZ. DATUM: NAD83(2011) for EPOCH 2010.00 (IaRTN 2019 Adjustment)
 Ia. Regional Coordinate System Zone 04 (U.S. Survey Foot)
 VERT. DATUM: NAVD88
 Geoid Model: 2018u3

Point Name	Northing	Easting	Elevation	Feature Definition - Description
76300CP1	8703287.7	14583961.29	1158.62	CP SET IDOT FENO MONUMENT 3 IN DEEP LOCATED .25MI NORTH OF 465TH STREET ON 300TH AVE IN THE NORTH DITCH
76300CP2	8704315.25	14584427.29	1182.6	CP SET IDOT FENO MONUMENT 3 IN DEEP LOCATED .1MI SOUTH OF 460TH STREET ON 300TH AVE IN THE EAST DITCH
760150085	8704205.29	14581936.62	1166.65	CP SET 5/8 X 40 RBR 3 IN DEEP LOCATED .25MI NORTH OF OAK STREET ON IA15 ON THE WEST SHOULDER
760150089	8704880.4	14582848.08	1183.48	CP FND IDOT ROW RAIL 6 IN ABOVE GROUND SET DIMPLE IN FLANGE LOCATED .3MI WEST OF THE 460TH STREET/300TH AVE INTERSECTION IN THE NORTH DITCH OF IA15

108_23A
8/15/22

TRAFFIC CONTROL PLAN

Traffic will be maintained by an off site detour.

511 TRAVEL RESTRICTIONS

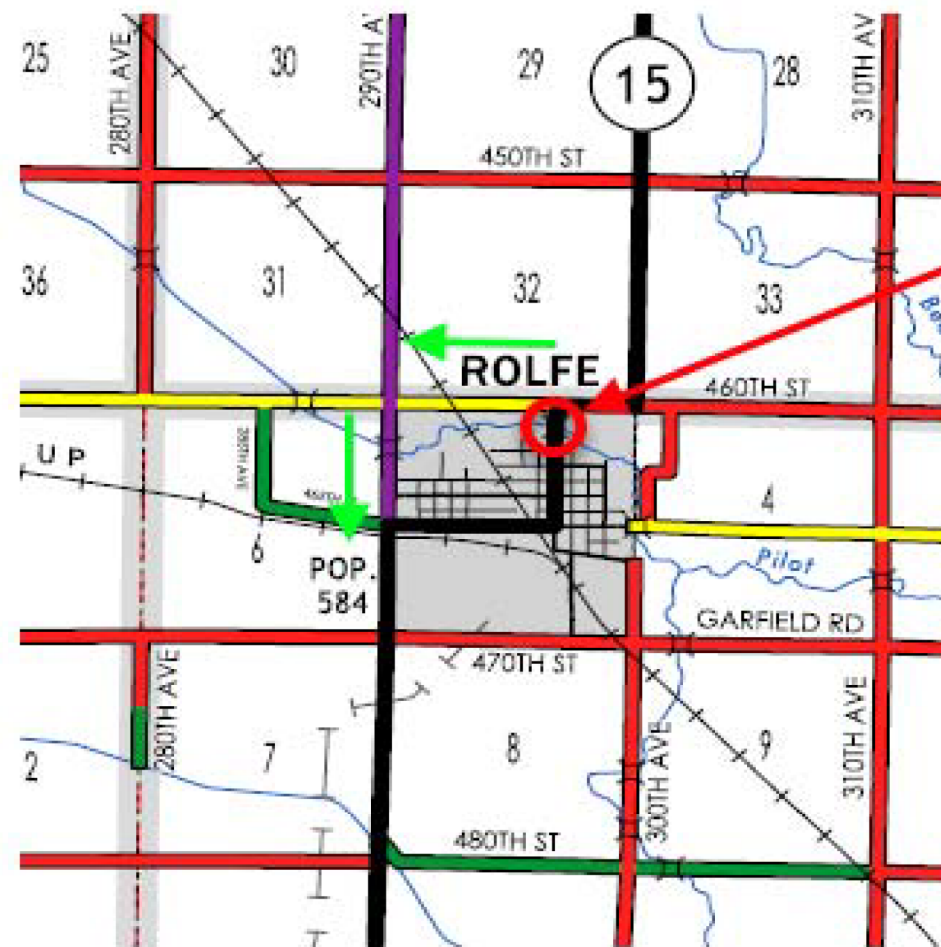
Line No.	Route	Direction	County	Location Description	Feature Crossed	Object Type	Maint. Bridge No. or Structure ID or FHWA No.	Type of Restriction	Existing Measurement	Construction Measurement	Construction Measurement as Signed	Projected As Built Measurement	Remarks
1.0	IA 15		Pocahontas					None					No Restrictions

111_01
10/14/22

COORDINATED OPERATIONS

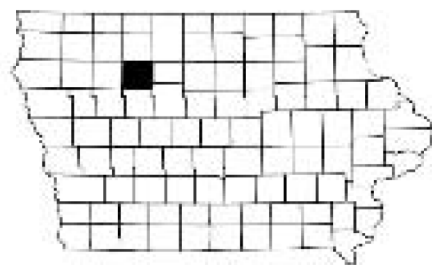
Other work in progress during the same period of time will include the construction of the projects listed. Coordinate operations with those of other contractors working within the same area.

Project	Type of Work
None Provided	



PROJECT LOCATION

← DETOUR



Pocahontas County
Pilot Creek at the N Jct Co Rd C26
BRF-015-1(013)- -38-76
PIN: 22-76-015-010

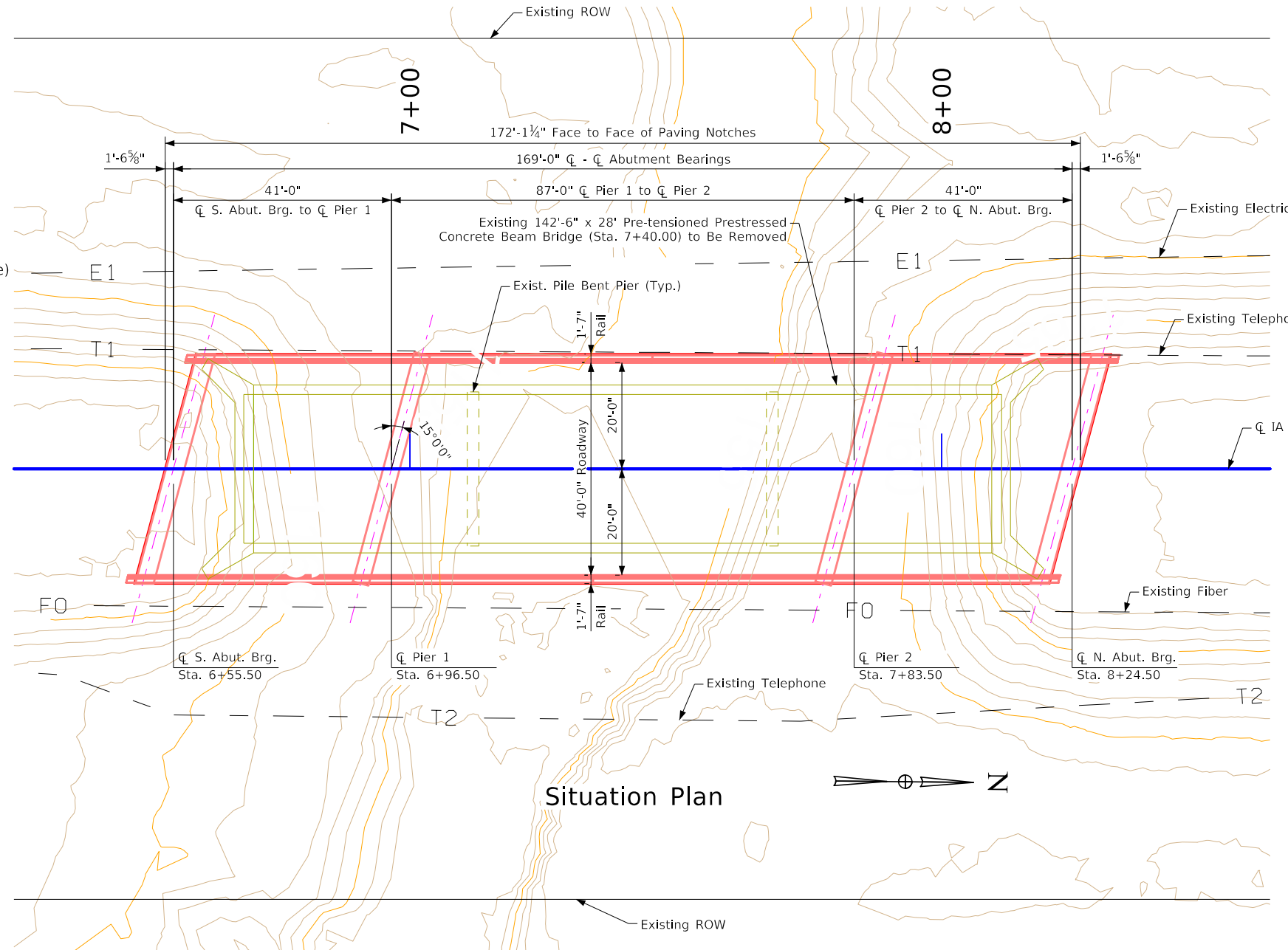
Utilities Legend:

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

- E1 — Alliant Energy (Electric)
- T2 — Northwest Communications (Telephone)
- F0 — Windstream Communications (Fiber)
- T1 — Windstream Communications (Telephone)



Hydraulic Data (Preliminary)

Drainage Area = 65.5 Sq. Mi.
 Stream Slope (HGL) = 3.4 Ft./Mi.
 Avg. Low Water Stage = ~1152.9

Q₅₀ = 2250 cfs
 Stage = 1161.17
 Channel Low Beam = ~1163.33 (TBD)
 Avg. Bridge Velocity = 3.5 fps

Q₁₀₀ = 2650 cfs
 Stage = 1161.54
 Operational Low Beam = ~1162.85 (TBD)
 Backwater = 0.62 Ft.
 Avg. Bridge Velocity = 3.8 fps
 100-yr Waterway Opening Area = 703 sf

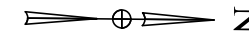
Q₂₀₀ = 3070 cfs
 Stage = 1161.90
 Calculated Design Scour = TBD

Q₅₀₀ = 3540 cfs
 Stage = 1162.27
 Avg. Bridge Velocity = 4.4 fps
 Calculated Check Scour = TBD

Roadway Overtop 1167.12 (>Q₅₀₀)
 Sta. ~6+50

Discharges from USGS SIR 2013-5086
 Regression Equations for Region 1

Situation Plan



General Notes:

--This design is for the replacement of the existing 142'-6 x 28' Prestressed Pretensioned Concrete Beam Bridge, Pocahontas Co. Design 556, FHWA No. 40310, Maint. No. 7606.6S015.

Design Notes:

--TL-4 Bridge Railing Proposed
 --Beam type - BTB
 --Pier type - Pile Bent (individually encased)
 --An Iowa DNR Flood Plain Permit is required. Preliminary Design will submit the application and place the permit in the PW Regulatory_Permits subdirectory folder upon receipt.

Plan Notes:

--Top of bridge deck at centerline roadway is 0.03' below the profile grade to account for deck cross slope and parabolic crown.
 --Class E revetment stone is embedded.
 --The bridge will be designed to withstand the applicable effects of ice and the horizontal stream loads and uplift forces associated with the Q₁₀₀ flood.

Location

IA 15 over Pilot Creek
 In City of Rolfe
 T-92N R-31W
 Section 5
 Garfield Township
 Pocahontas County
 FHWA No. 40311
 Bridge Maint. No. 7606.6S015
 Latitude 42.818936°
 Longitude -94.527898°

PRELIMINARY

Design For 15 Degree LA
**169'-0" x 40'-0" Prestensioned
 Concrete Beam Bridge**
 41'-0" End Spans 87'-0" Interior Span
Situation Plan
 STA. 7+40.00 (IA 15) Turn-In Date: Sept., 2026
Pocahontas County
 IOWA DEPARTMENT OF TRANSPORTATION
 Design No. 127 Design Sheet No. 1 of 1 FHWA No. 40311

CROSS SECTION VIEW COLOR LEGEND

Design Color No.	Feature	Design Color No.	Feature
Aggregate			
(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
Grading			
(8)	Revetment Class A	(128)	Boulder
(6)	Revetment Class B	(209)	Boulder Removed
(62)	Revetment Class C	(48)	Broken Weathered
(188)	Revetment Class D	(210)	Broken Weathered Removed
(28)	Revetment Class E	(3)	Core Out
(12)	Shoulder Special Backfill	(115)	Core Out Remove Only
(12)	Special Backfill	(195)	Core Out Remove and Replace
(20)	Subbase	(203)	Existing Pavement
(20)	Subbase Lower	(184)	Existing Pavement Remove Only
(20)	Subbase Upper	(200)	Existing Pavement Remove and Replace
(118)	Subgrade Treatment	(6)	Loam
Substrata			
(207)	HMA Base Course	(211)	Loam Removed
(207)	HMA Interim Course	(80)	Rock
(207)	HMA Surface Course	(212)	Rock Removed
(0)	Bridge	(4)	Select Sand
(0)	Barrier Concrete	(214)	Select Sand Removed
(0)	Barrier Concrete Footing	(3)	Shale
(0)	Curb Gutter	(215)	Shale Removed
(48)	Flowable Mortar	(10)	Topsoil
(0)	Median Concrete	(2)	Topsoil Remove Only
(0)	PCC Pavement	(4)	Topsoil Remove and Replace
(0)	Sidewalk	Unsuitable / Waste	
(0)	Existing Pavement	(3)	Unsuitable Type A
(209)	Shoulder HMA	(216)	Unsuitable Type A Removed
(0)	Shoulder PCC	(13)	Unsuitable Type B
(6)	Shoulder Granular	(217)	Unsuitable Type B Removed
(112)	Noise Wall	(11)	Unsuitable Type C
(112)	Noise Wall Footing	(218)	Unsuitable Type C Removed
(112)	Retaining Wall Back	(3)	Waste
(112)	Retaining Wall Back Excavate	(219)	Waste Removed
(112)	Retaining Wall Face		
(112)	Retaining Wall Front Excavate		
(112)	Retaining Wall Front Footing		
(112)	Retaining Wall MSE Gutter		
(112)	Retaining Wall Reinforced Earth		
Concrete			
Asphalt			
Bridge			
Shoulder			
Structural			

NOTES:

Text

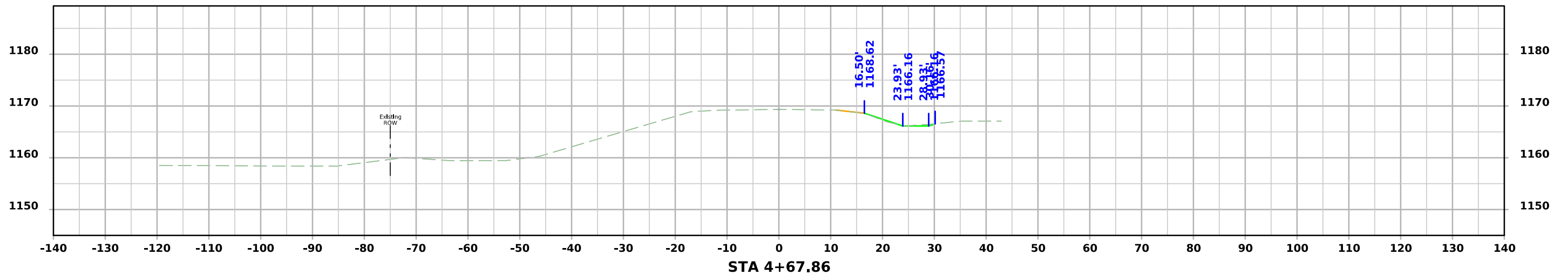
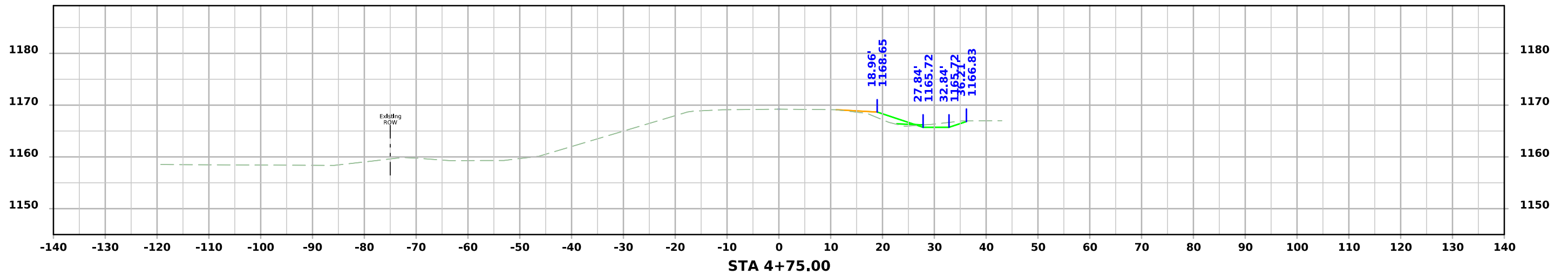
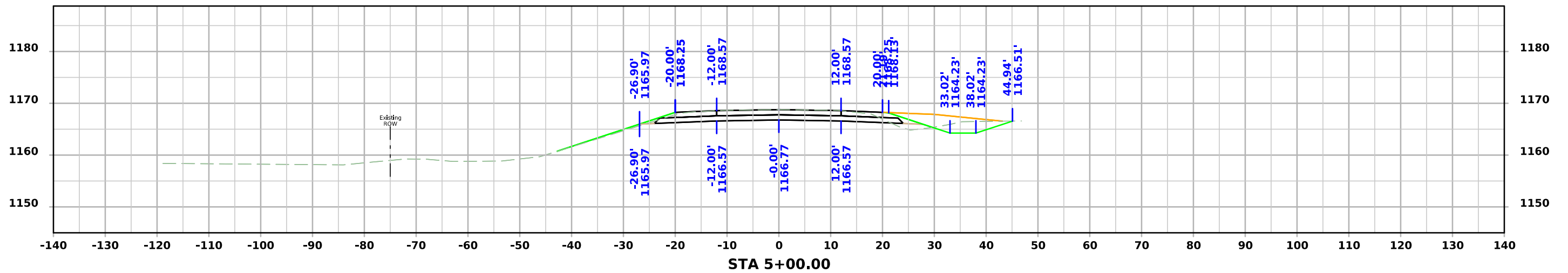
NOTES:

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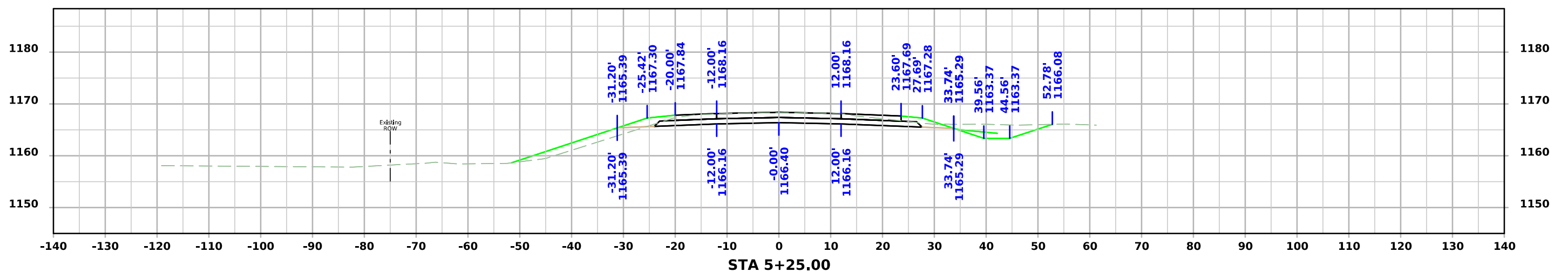
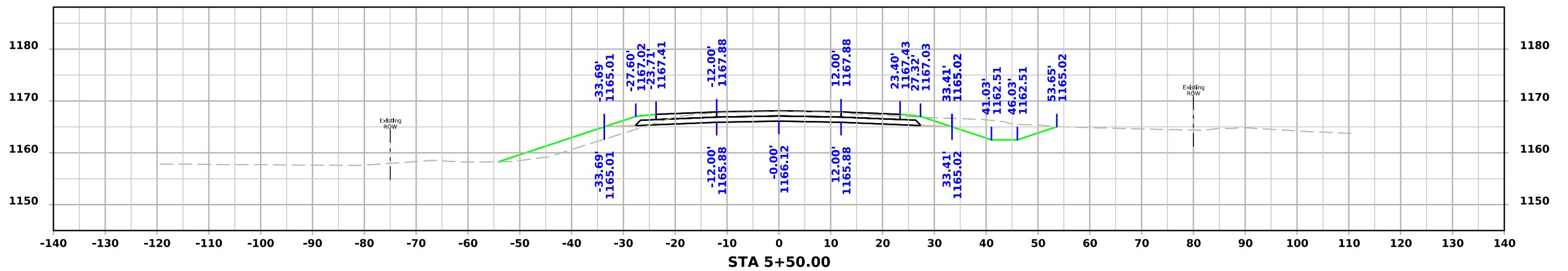
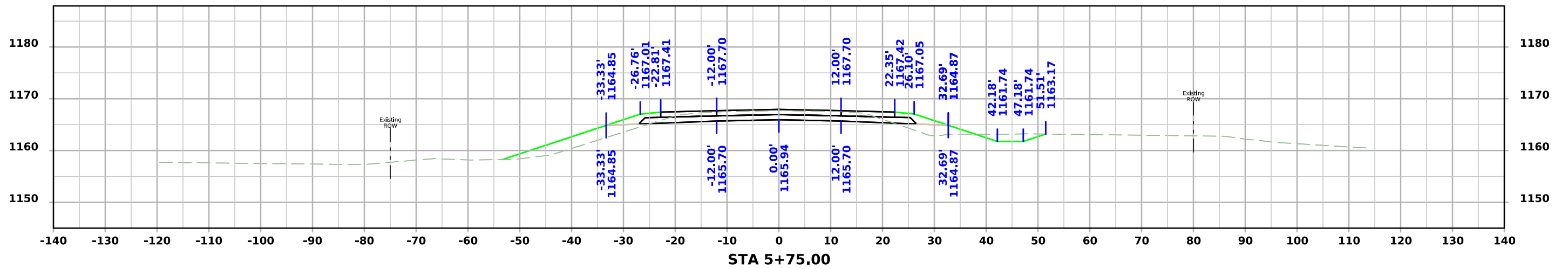
CROSS SECTIONS LEGEND AND INFORMATION SHEET

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

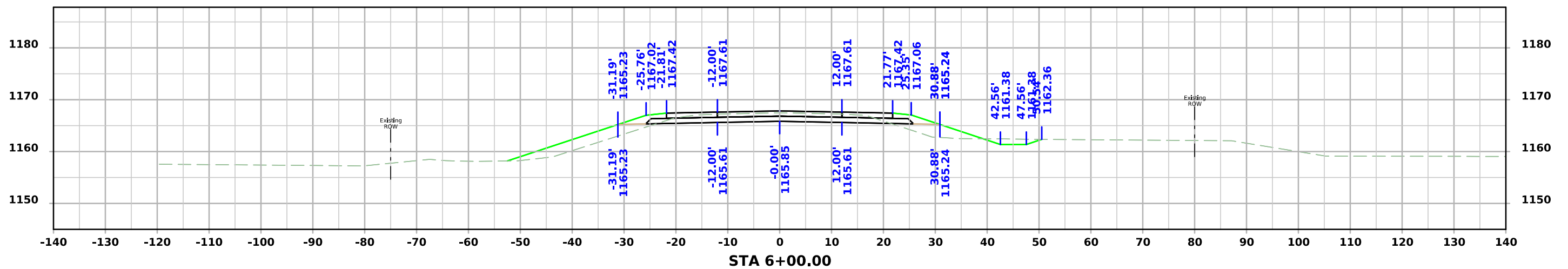
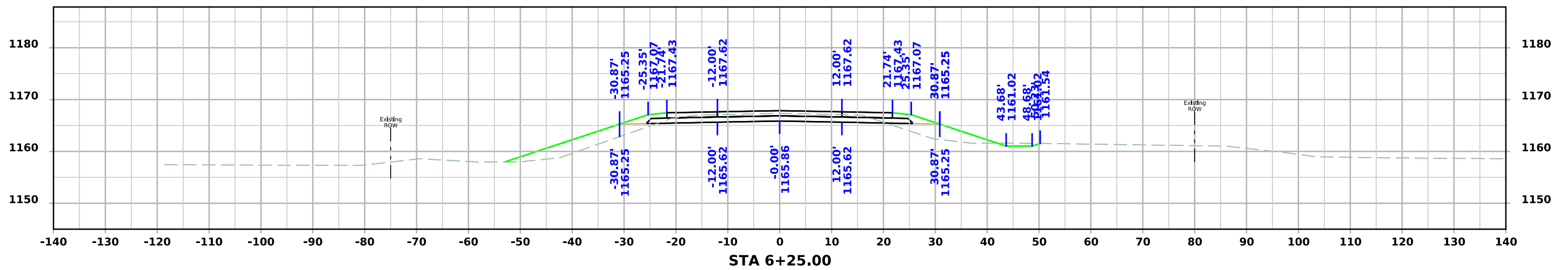
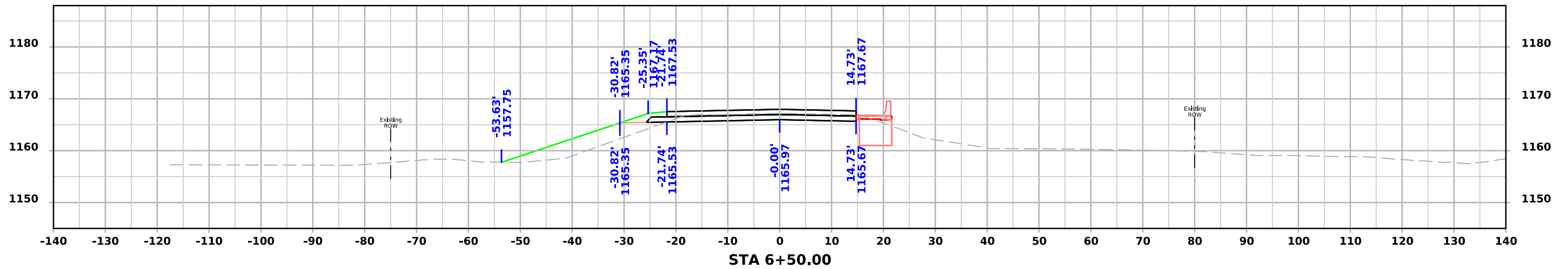
ML - IA15



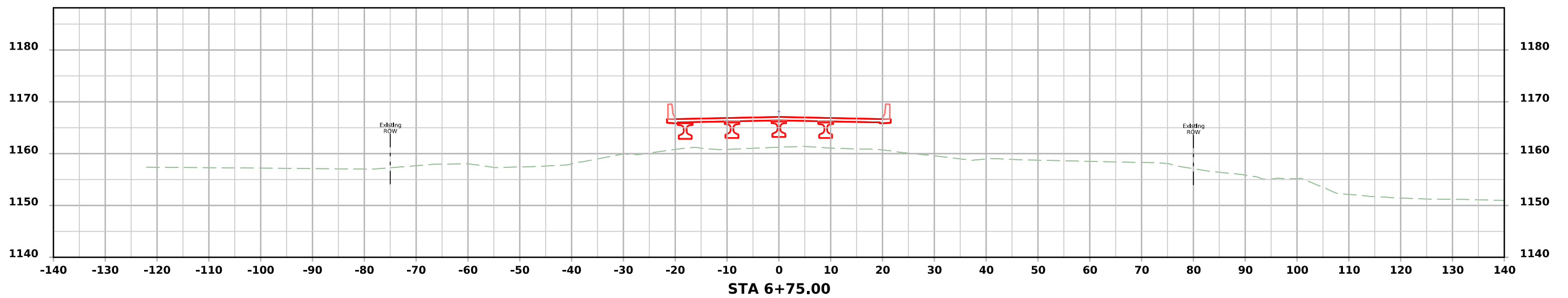
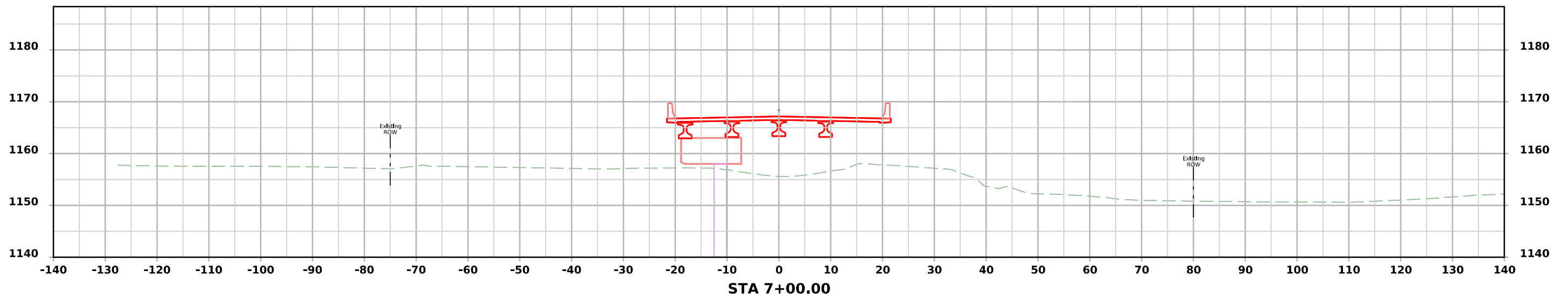
ML - IA15



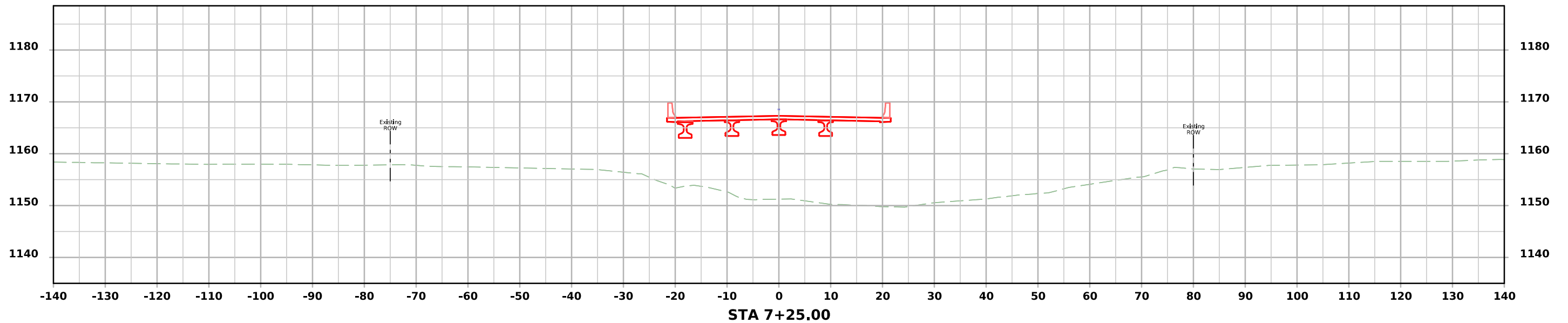
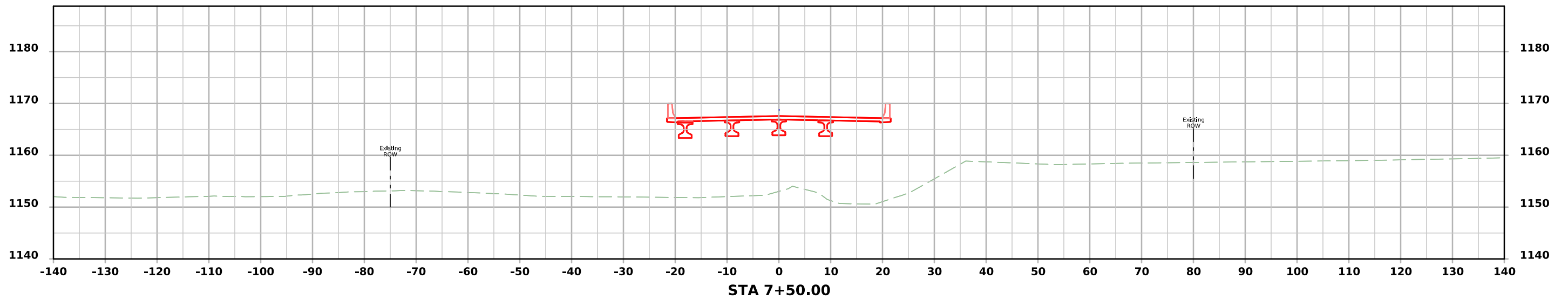
ML - IA15



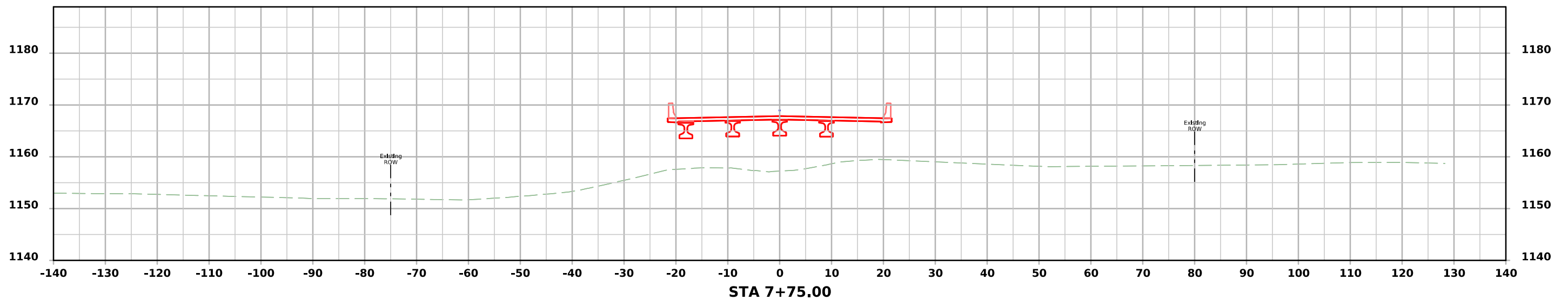
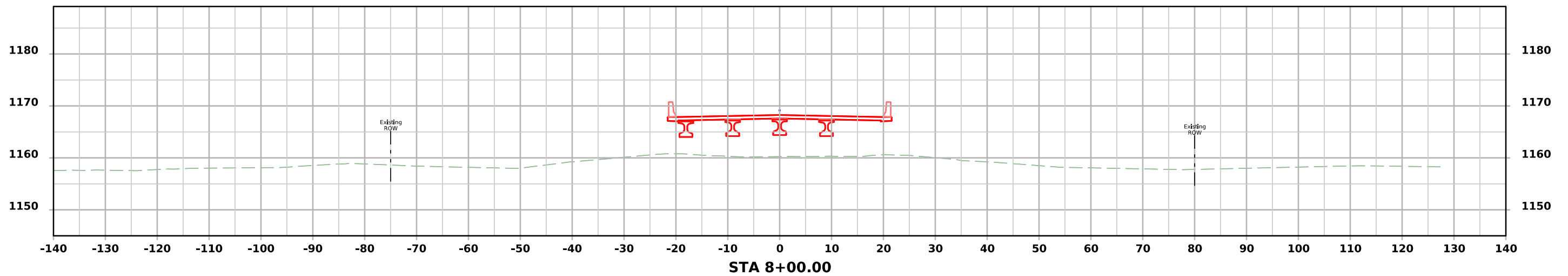
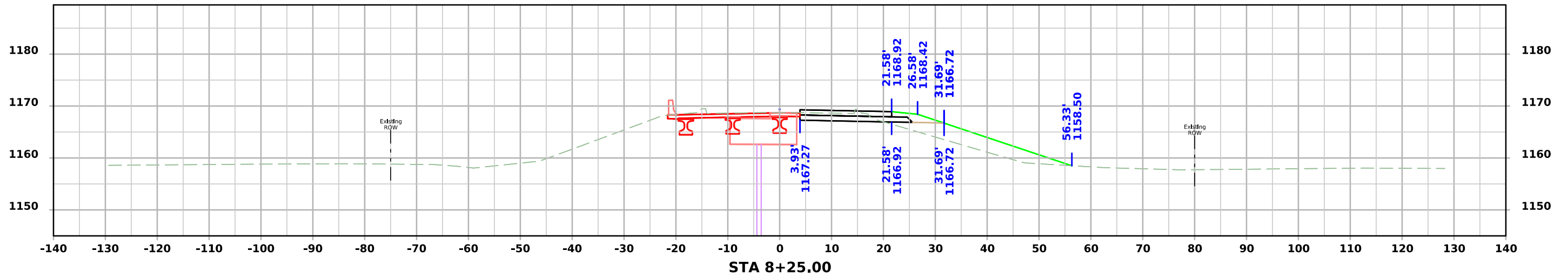
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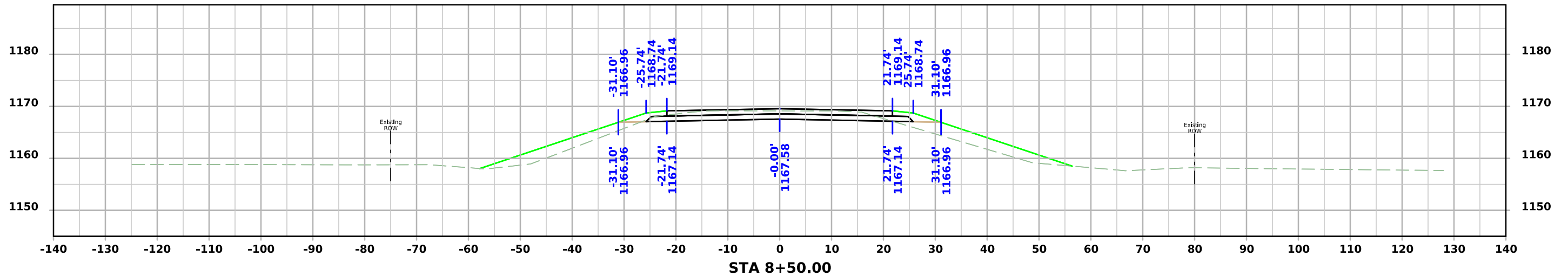
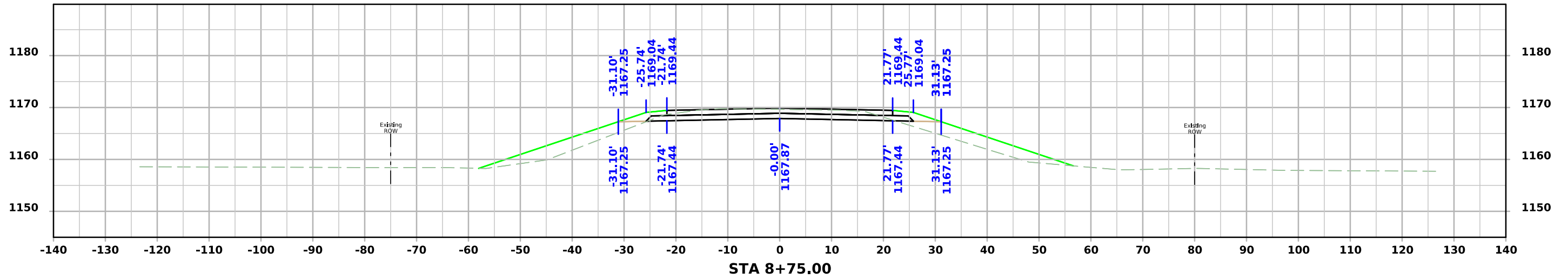
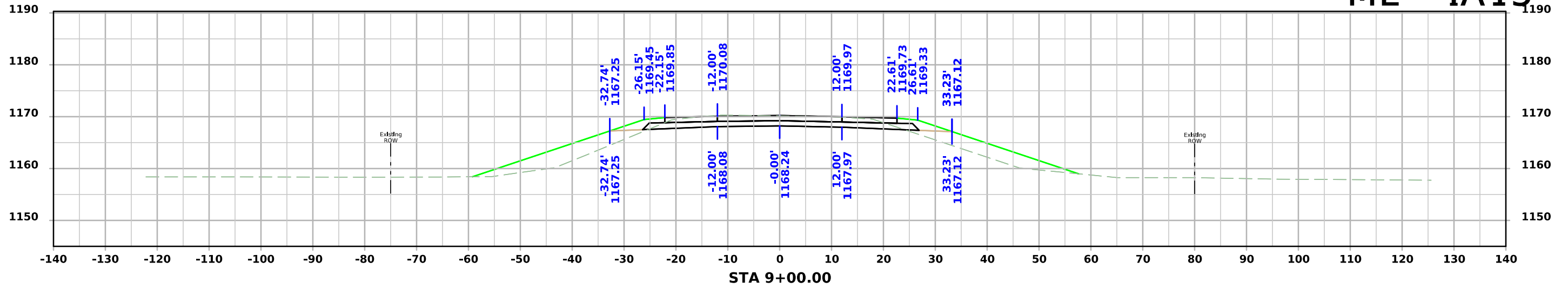
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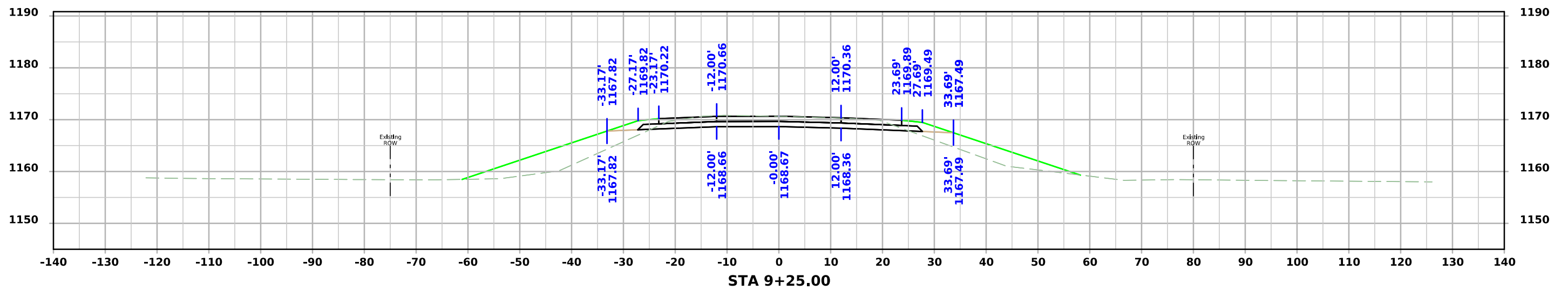
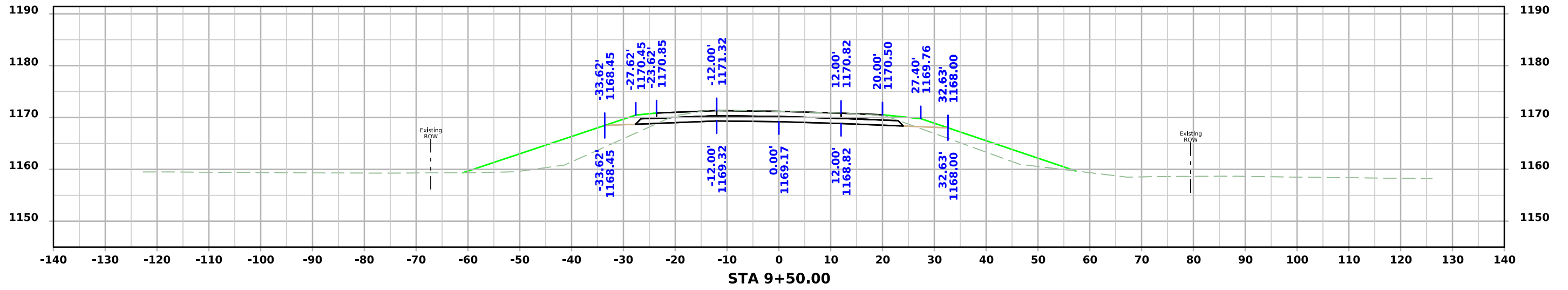
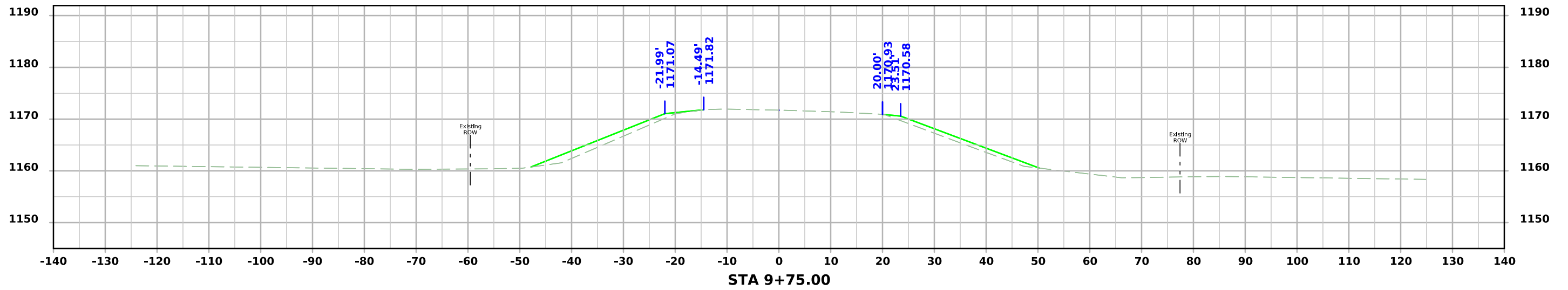
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