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VW Sheets	Culvert Cross Sections
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PLANS OF PROPOSED IMPROVEMENT ON THE
PRIMARY ROAD SYSTEM
OSCEOLA COUNTY
Bridge-Unspecified
Drainage Ditch 2.6 mi N of Co Rd B14 (SB)

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	
22	
PROJECT IDENTIFICATION NUMBER	
23-72-060-030	
PROJECT NUMBER	
BRF-060-4(098)--38-72	
R.O.W. PROJECT NUMBER	
NHSX-060-4(099)--2R-72	

DESIGN DATA RURAL			
2028	AADT	5570	V.P.D.
2048	AADT	6450	V.P.D.
20 -	DHV	-	V.P.H.
TRUCKS		28	%
Total			
Design ESALs		-	

INDEX OF SEALS			
SHEET NO.	NAME	TYPE	BID QUANTITY SHEETS
A.1	Kelly C. Bell	Primary Signature Block	X
V.1	Heidi J. Lane	Hydraulic Design	X

PRELIMINARY PLANS

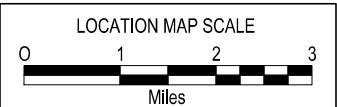
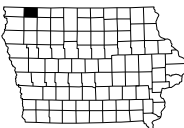
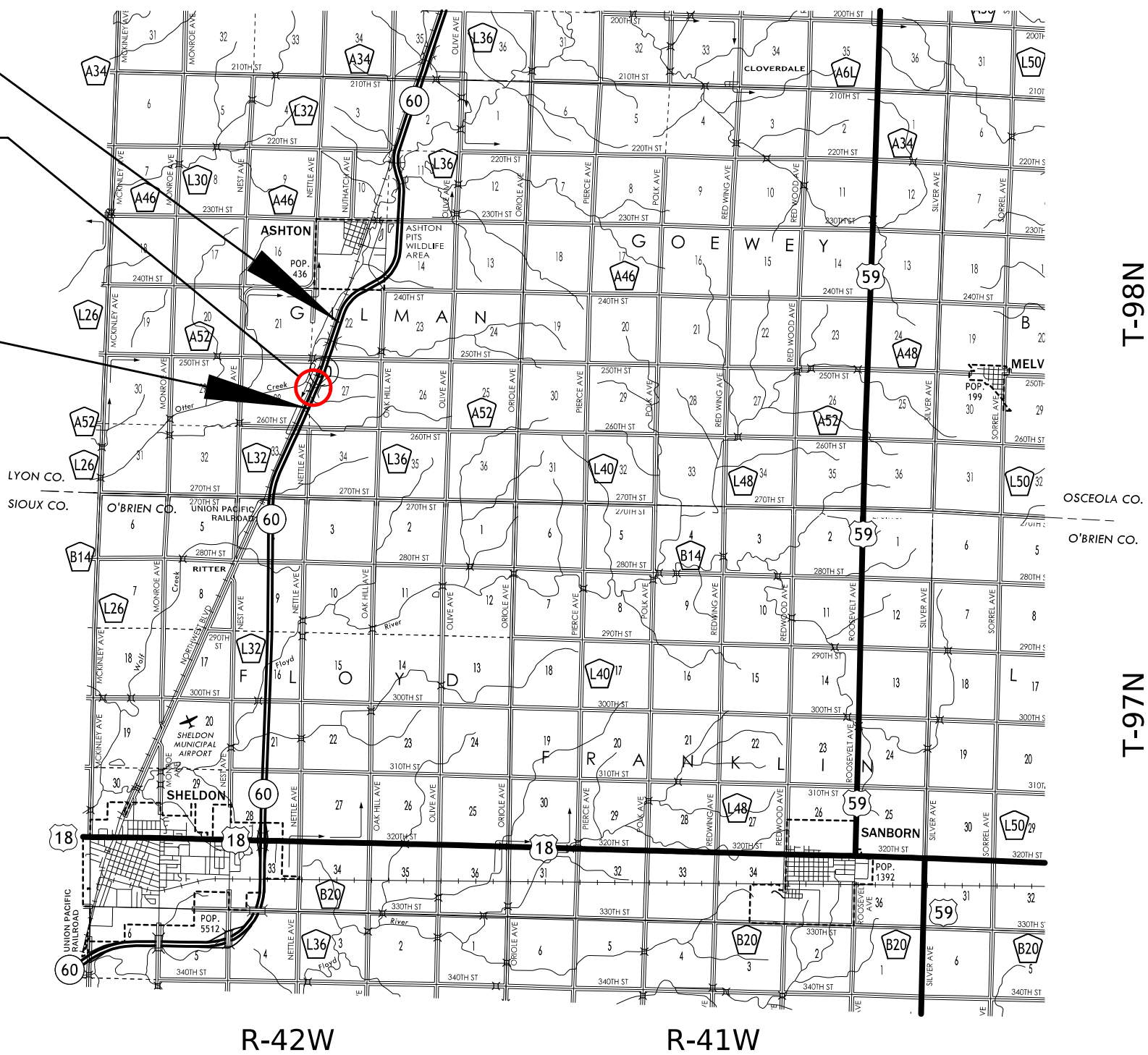
Subject to change by final design.

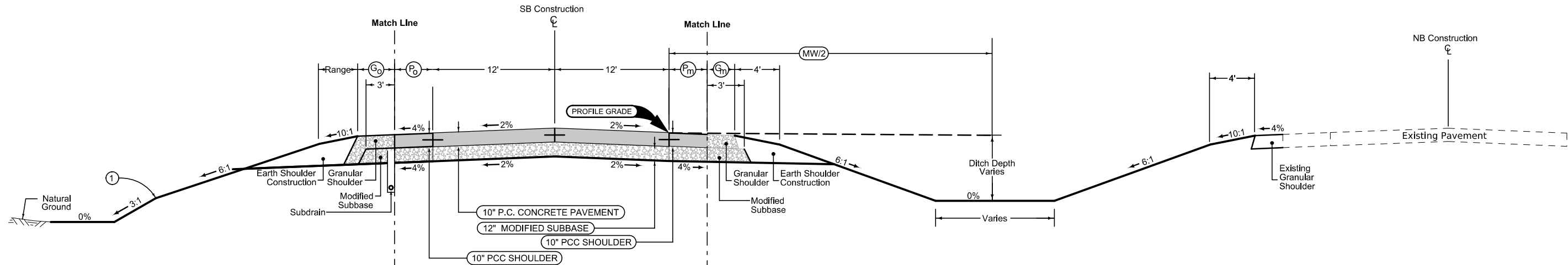
D5 PLAN - Date: 6-09-2026

END CROSSOVER
STA 2168+56.00

PROJECT LOCATION:
BRIDGE
IA-60 over Drainage Ditch
FHWA# 38520 (EXST)
MAINT. NO. 7241.0L060

BEGIN CROSSOVER
STA 2110+00.00





Full Depth PCC Combination Shoulder

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

4_C_FullPCC_04-15-25			
BEGIN STATION	END STATION	Ⓔ ₀ Feet	Ⓔ ₀ Feet
2121+25.00	2123+10.00	4	6

Section shown in the direction of stationing.

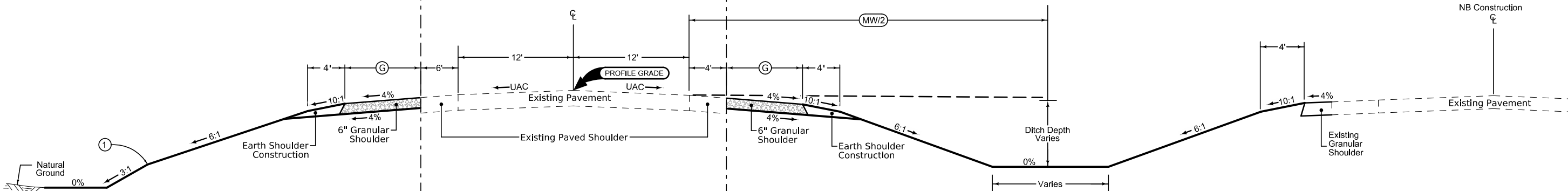
Mainline Jointing:
Transverse joints: CD at 17' spacing
Longitudinal joint: L-2

4DP_04-21-20			
Direction of Travel	BEGIN STATION	END STATION	MW Feet
SB	2121+25.00	2123+10.00	50

Full Depth PCC Combination Shoulder

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

4_C_FullPCC_MODIFIED			
BEGIN STATION	END STATION	Ⓔ _m Feet	Ⓔ _m Feet
2121+25.00	2123+10.00	4	2



Granular Shoulder

2_G_Modified		
STATION TO STATION		Ⓔ Feet
2120+55.00	2121+25.00	3.2
2123+10.00	2124+75.00	4

Section shown in the direction of stationing.

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

4DP_04-21-20			
Direction of Travel	BEGIN STATION	END STATION	MW Feet
SB	2120+55.00	2121+25.00	50
NB	2123+10.00	2124+75.00	50

Granular Shoulder

2_G_Modified		
STATION TO STATION		Ⓔ Feet
2120+55.00	2121+25.00	2
2123+10.00	2124+75.00	2

① Refer to project plan and cross sections for specific location of foreslope change.

Normal section shown may be modified appropriately in locations specifically designated by the Engineer.

See Plan & Profile sheets and cross sections for additional details of ditches and backslopes.

See Tab 100-24 for pavement quantities.
See Tab 112-9 for shoulder quantities.

IA 60 Southbound

SURVEY SYMBOLS

	Interstate Highway Symbol		Septic Tank
	U.S. Highway Symbol		Cistern
	Iowa Highway Symbol		L.P. Gas Tank (No Footing)
	County Road Highway Symbol		Underground Storage Tank
	Evergreen Tree		Latrine
	Deciduous Tree		Satellite TV Dish
	Fruit Tree		Water Hook Up
	Shrub (Bushes)		Radio Tower
	Timber		Tower Anchor
	Hedge		Guardrail (Beam or Cable)
	Stump		Guard Post (one or two)
	Swamp		Guard Post (over two)
	Rock Outcrop		Filler Pipe
	Broken Concrete		Gas Valve
	Revetment (Rip Rap)		Water Valve
	Cemetery		Speed Limit Sign
	Grave		Mile Marker Post
	Cave		Sign
	Sink Hole		Traffic Signal Control Box
	Board Fence		Rail Road Signal Control Box
	Chain Link or Security Fence		Telephone Switch Box
	Wire Fence		Electric Box
	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)		

UTILITY LEGEND

SURVEYED UTILITY OWNER SYMBOLS

Sub-Surface Utility Mapping Quality Level is in accordance with C1/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

	FO1D, Iowa Communications Network - Quality D
	FO3D, Long Lines Broadband - Quality D
	EL1D, Osceola Electric Cooperative - Quality D
	WL1D, Osceola Rural Water - Quality D
	FO2D, Premier Communications - Quality D
	TL1D, Windstream Communications - Quality D
	FO4D, Zayo Group - Quality D
	ST1D, Osceola County Tile - 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.	Transparency
Pink, Dark	(13)		Temporary Pavement Shading 50%
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%
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%
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

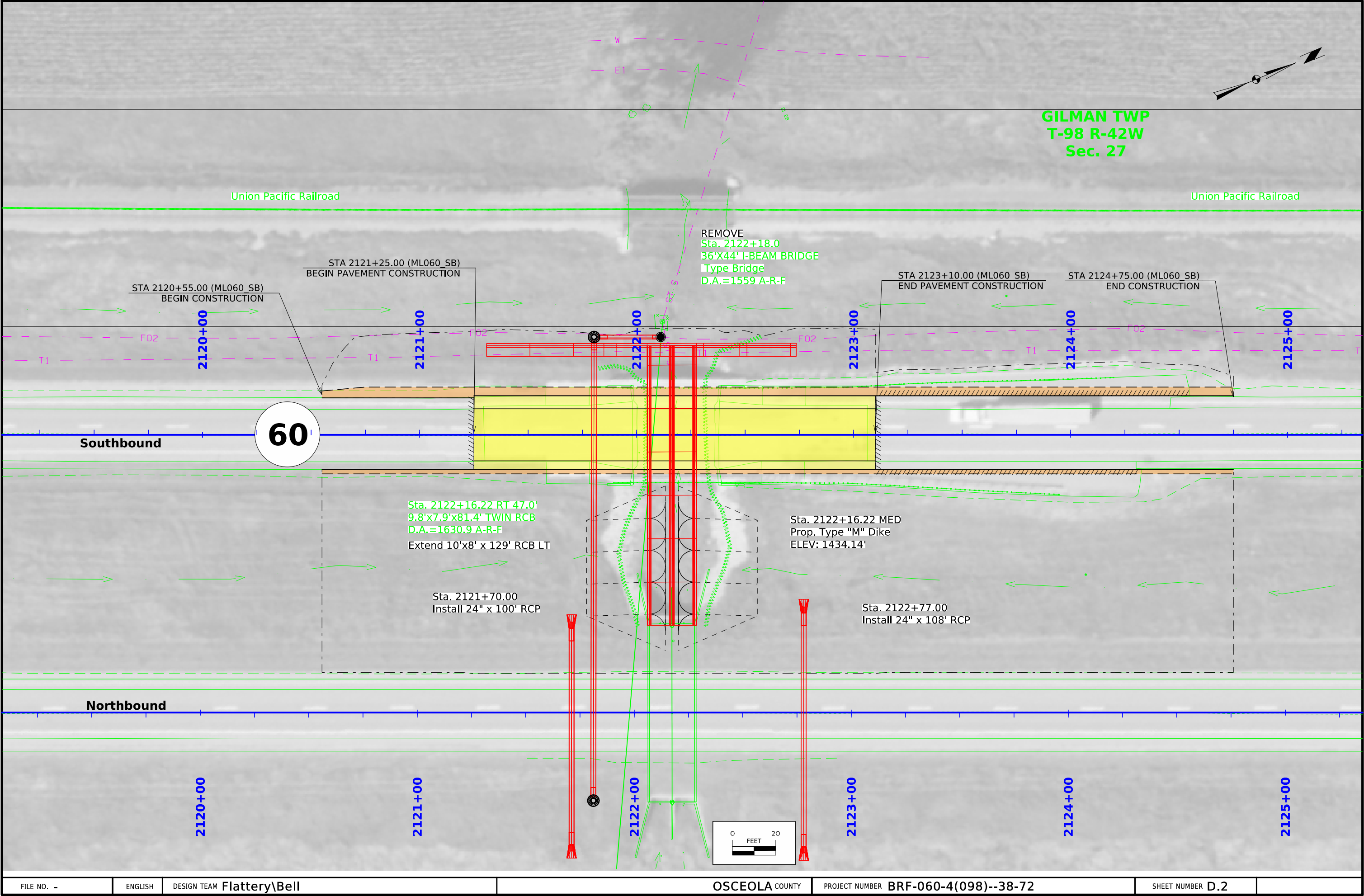
	Reference Point		Survey Line
	Station		Section Corner
	Ground Line Intercept		Saw Cut
	Guardrail		Trench Drain
	HighTension Cable Guardrail		Sheet Pile
	Pavement Removal		Clearing & Grubbing Area

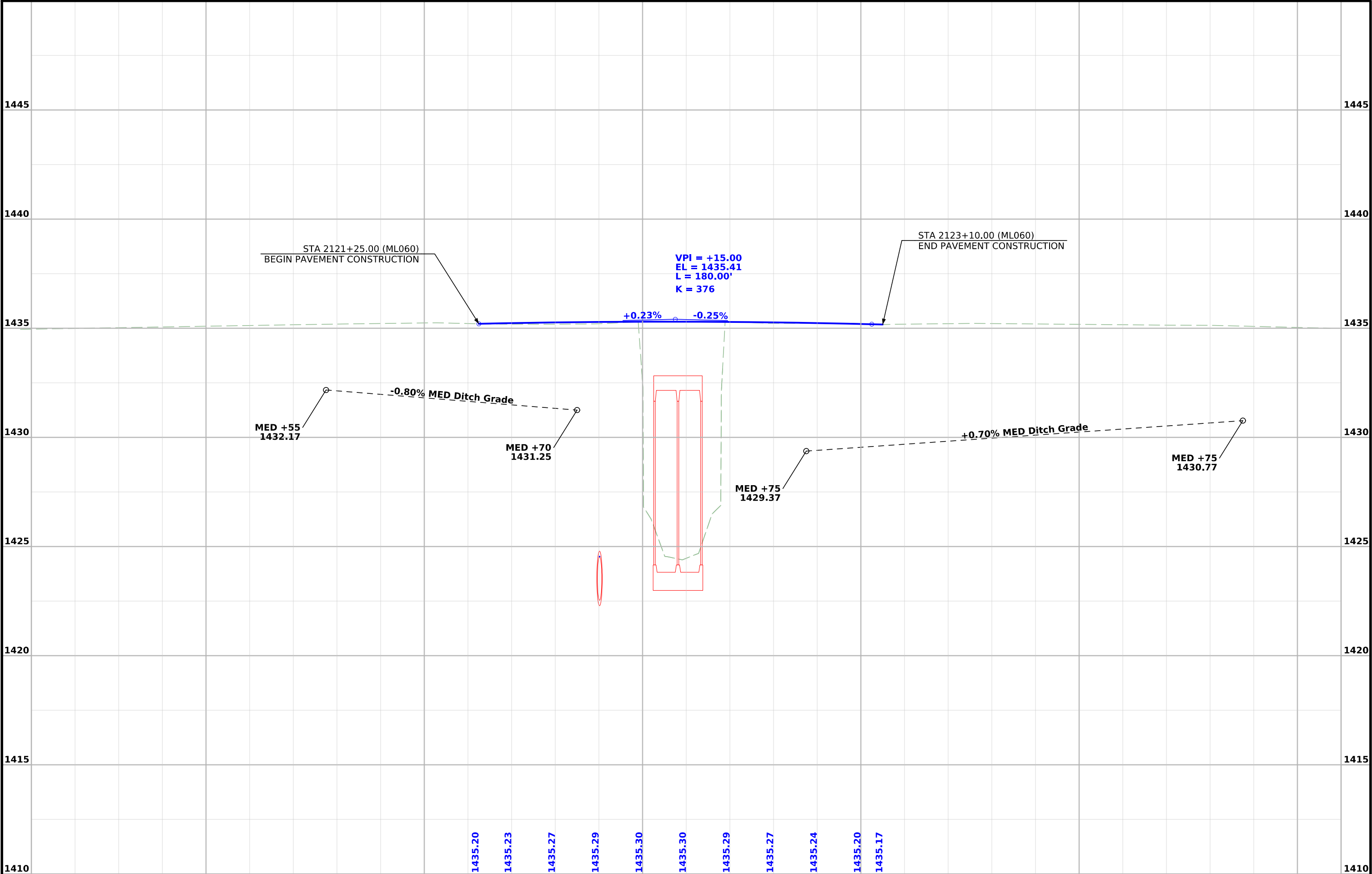
RIGHT-OF-WAY LEGEND

	Proposed Right-of-Way Symbol
	Proposed Right-of-Way Line
	Existing Right of Way
	Existing and Proposed Right-of-Way
	Easement and Existing Right-of-Way
	Easement (Temporary) Symbol
	Easement (Temporary) Line
	Easement
	C/A Access Control
	Property Line Symbol
	Property Line

PLAN AND PROFILE
LEGEND AND SYMBOL
INFORMATION SHEET

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





Survey Information

SURVEY INDEX

County: Osceola
Project Code: 23-72-060-030
Phase Number: BRF-060-4(098)--38-72
Location: Drainage Ditch 2.6 mi N of Co Rd B14 (SB)
Type of Work: Ditch-Unspecified
Project Directory: 7206003023

Survey Personnel

Daniel Duncan – Survey Party Chief

Date(s) of Survey

Begin Date 04/23/2024
End Date 8/07/2024

General Information

This survey is for IA Hwy 60 SB bridge over drainage ditch. 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 01
(U.S. SURVEY FOOT)
VERTICAL DATUM: NAVD88
GEOID MODEL: 2018u3

Alignment Information

SURMLA060

The horizontal alignment for Iowa Hwy 60 this survey is a best fit of Metric As-built Plans No. NHSX-60-4(31)—3H-72. Survey stationing was equated to the plan TS at Metric Sta. 648+67.507 and carried back without equation throughout the survey.

Survey stationing relates to as built plan stationing as follows:

TS Sta. 648+67.507 Metric As-built Plans Project NHSX-60-4(31)—3H-72
Converted to English TS Sta. 2128+19.48
Survey TS Sta. 2128+19.48

SURSBL060

The horizontal alignment for the south bound lanes of Iowa Hwy 60 this survey is a retrace of As-built Plans No. F-498(12). Survey stationing was equated to the plan PC at Sta. 2128+88.6 and carried back without equation throughout the survey.

Survey stationing relates to as built plan stationing as follows:

PC Sta. 2128+88.6 As-built Plans Project No. F-498(12)
Survey PC Sta. 2128+88.6

POT Sta. 2113+87.3 As-built Plans Project No. F-498(12)
Survey POT Sta. 2113+87.1

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 01 (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.

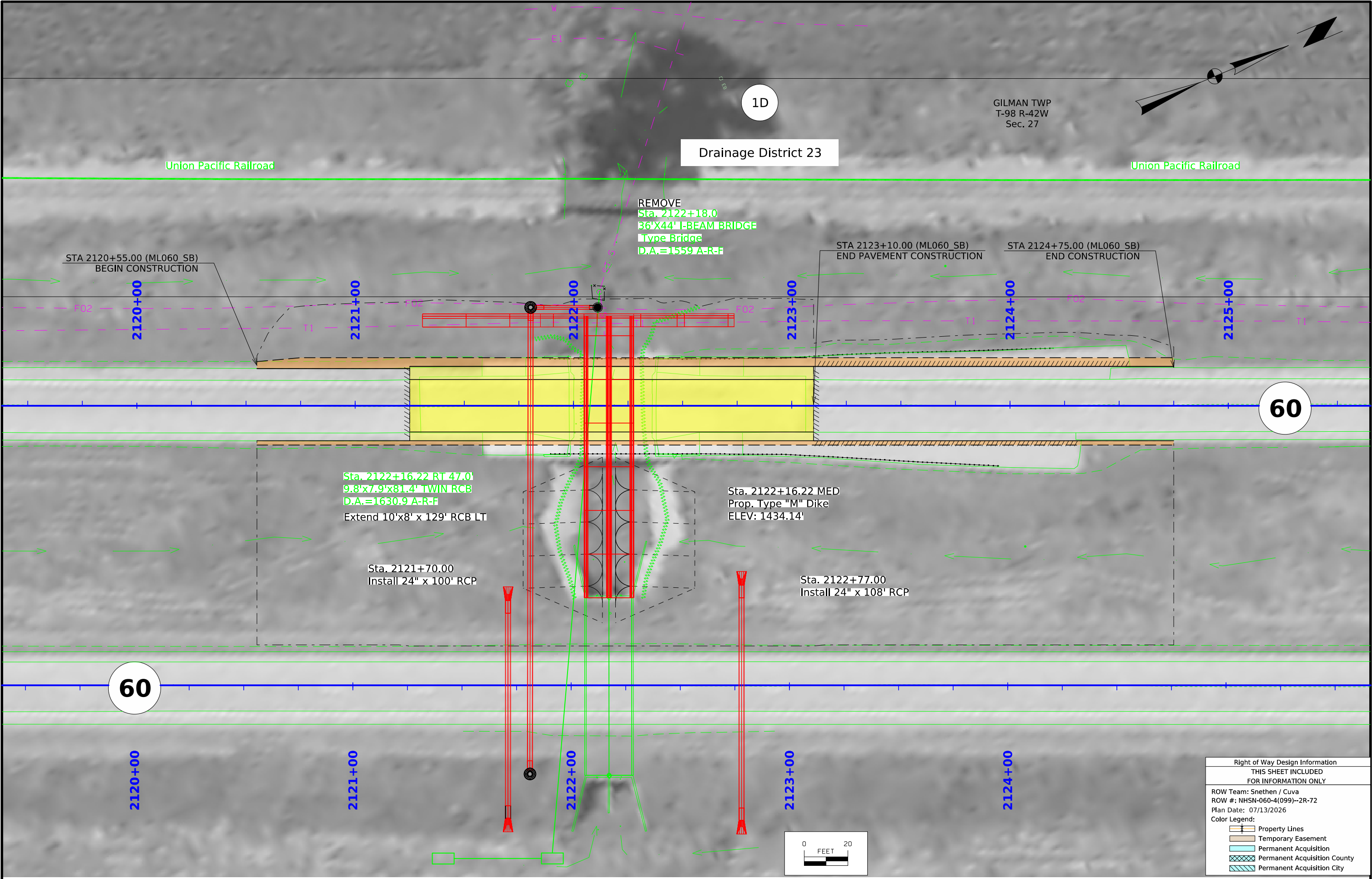
HORIZONTAL AND VERTICAL PROJECT CONTROL COORDINATE LISTING
HORIZ. DATUM: NAD83(2011) for EPOCH 2010.00 (IaRTN 2019 Adjustment)
Ia. Regional Coordinate System Zone 01 (U.S. Survey Foot)
VERT. DATUM: NAVD88
Geoid Model: 2018u3

Point Name	Northing	Easting	Elevation	Feature Code - Description
125	9630560.95	11353324.00	1428.34	CP FND CONC REF MON IN GOOD CONDITION (SEE METRIC AS-BUILT PLANS NHSX-60-4(31)--3H-72)
126	9632197.52	11353876.04	1436.22	CP FND CONC REF MON IN GOOD CONDITION (SEE METRIC AS-BUILT PLANS NHSX-60-4(31)--3H-72)
720600410	9629588.17	11353043.08	1433.38	CP SET FENO MON IN MEDIAN NORTH SIDE CROSSOVER
R016	9626772.62	11351630.24	1439.67	CP FND NGS SECOND ORDER CLASS 0 VERTICAL MARK IN GOOD CONDITION (SEE METRIC AS-BUILT PLANS NHSX-60-4(31)--3H-72)

[illegible][illegible][illegible][illegible]

NO ACCESS RIGHTS ARE TO BE ACQUIRED ON THIS PROJECT.

ACCESS CONTROL PREVIOUSLY ACQUIRED.



108-23A
08-01-08

TRAFFIC CONTROL PLAN

Traffic on IA 60 shall be maintained at all times via existing median crossovers at Sta. 2110+00.00 & Sta. 2168+56.00.

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	

511 TRAVEL RESTRICTIONS												108-25 10-21-14
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
			No Travel Restrictions Expected									

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

NOTES:

Text

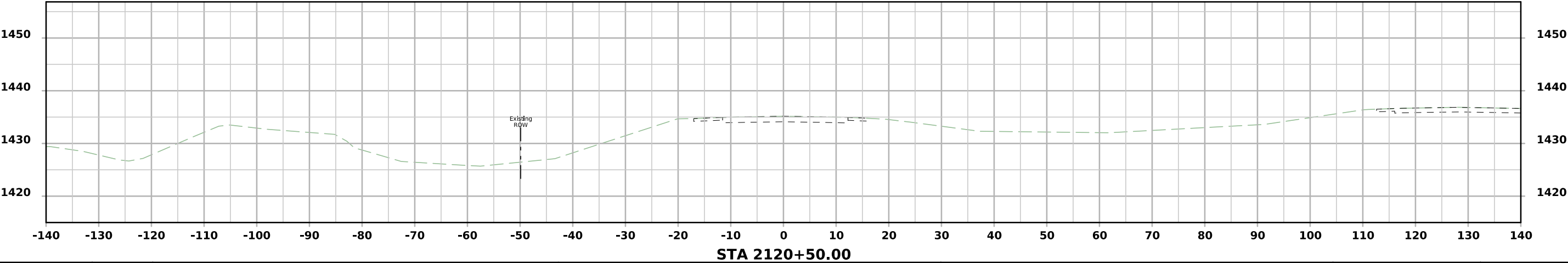
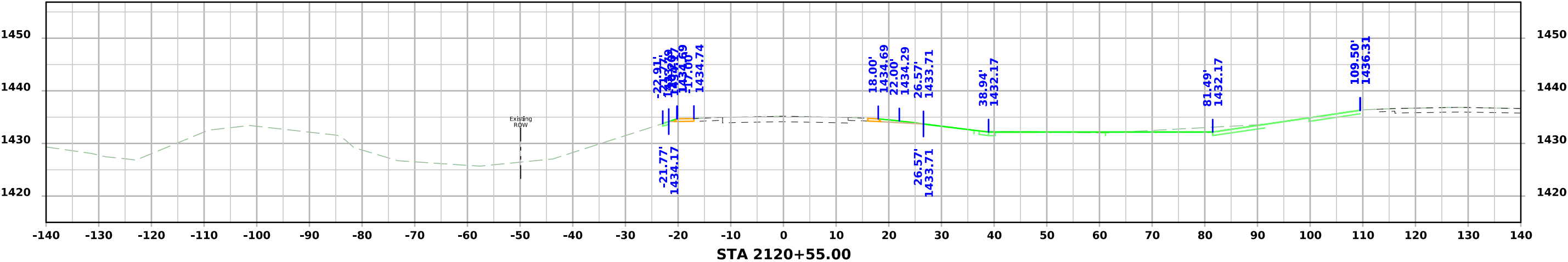
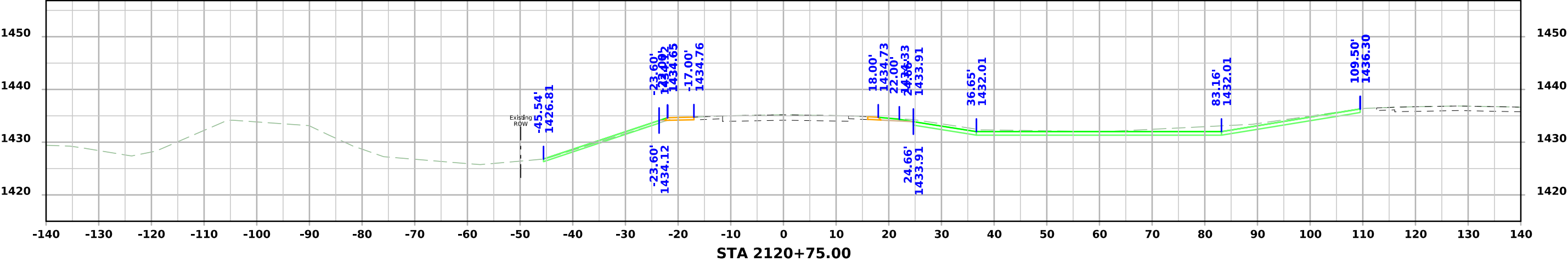
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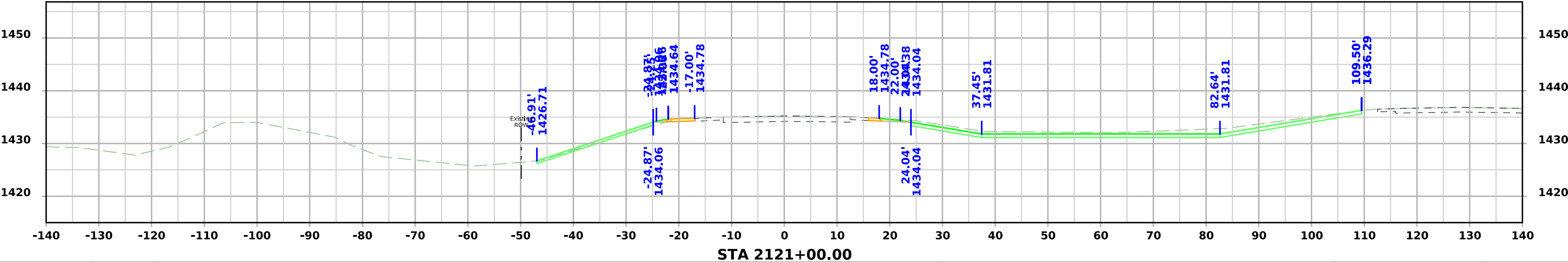
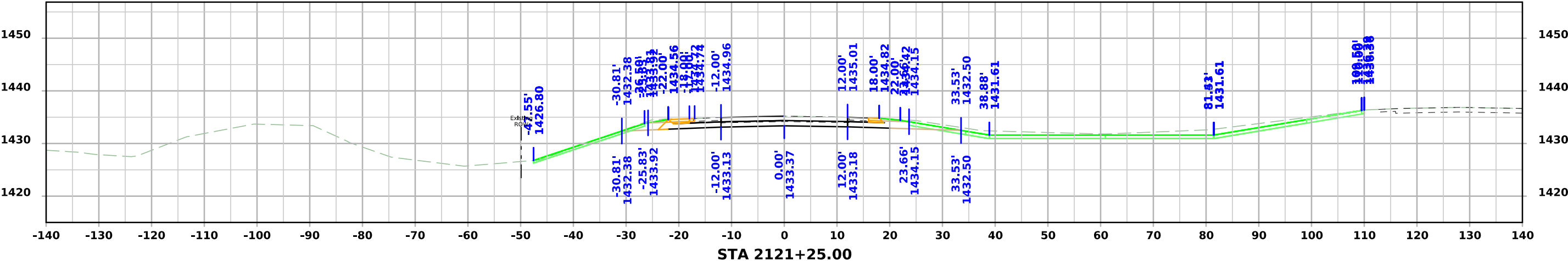
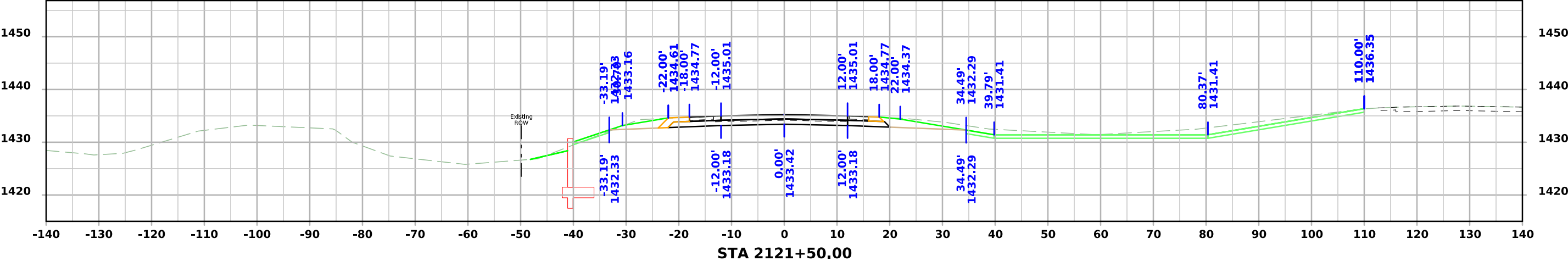
CROSS SECTIONS
LEGEND AND INFORMATION SHEET

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

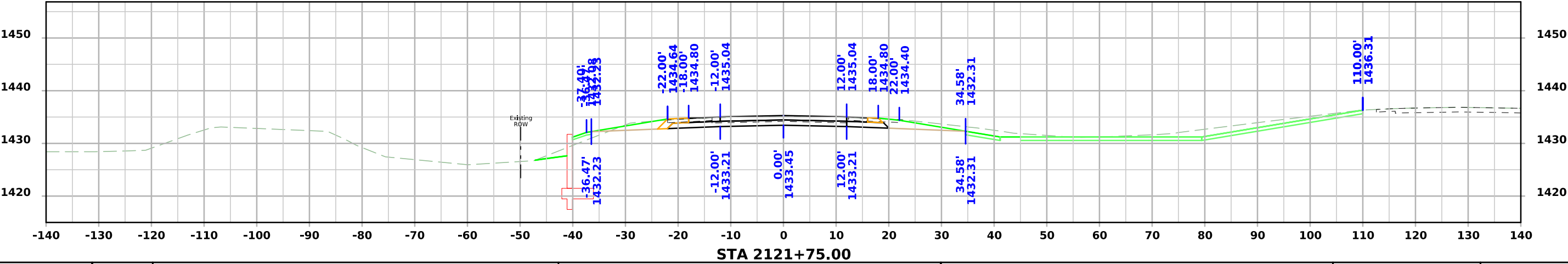
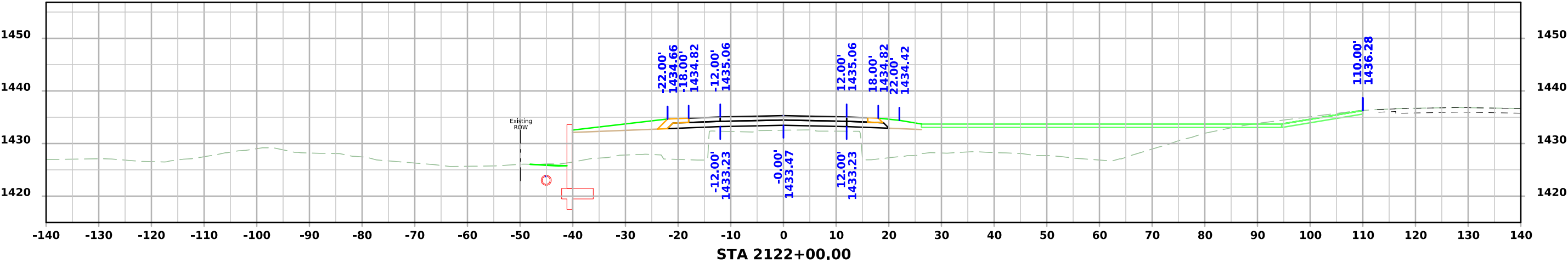
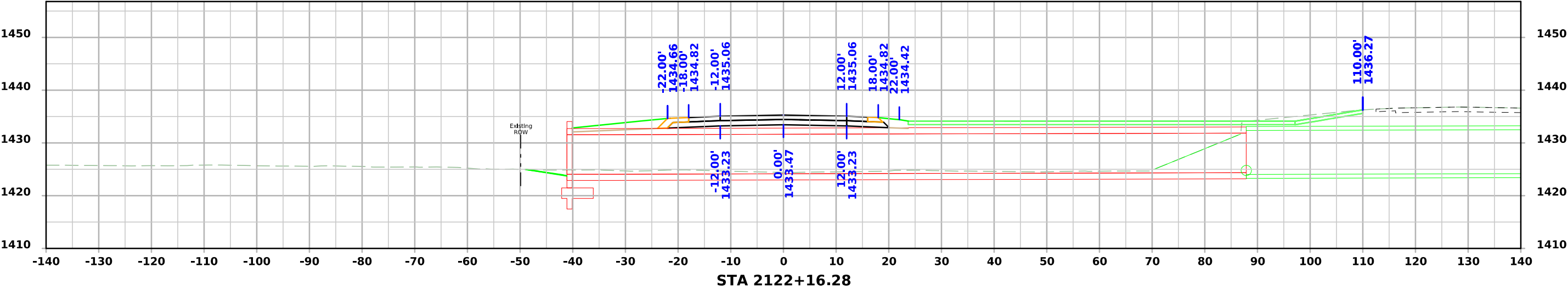
IA 60



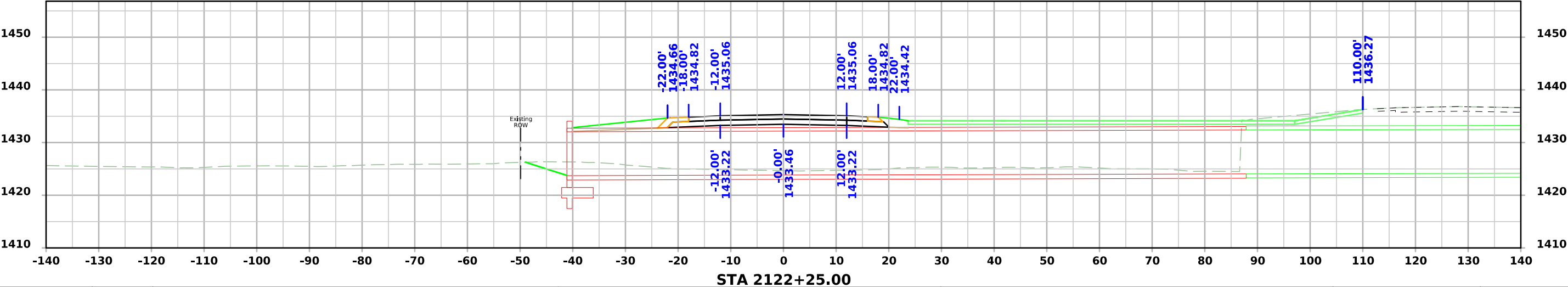
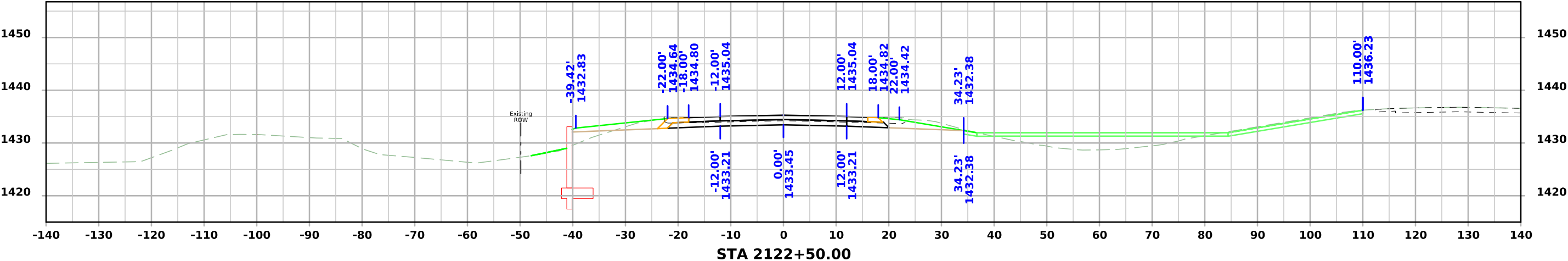
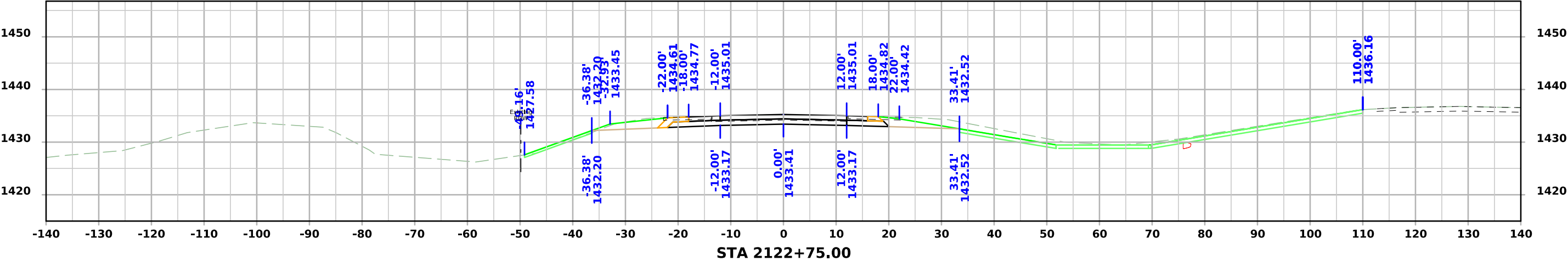
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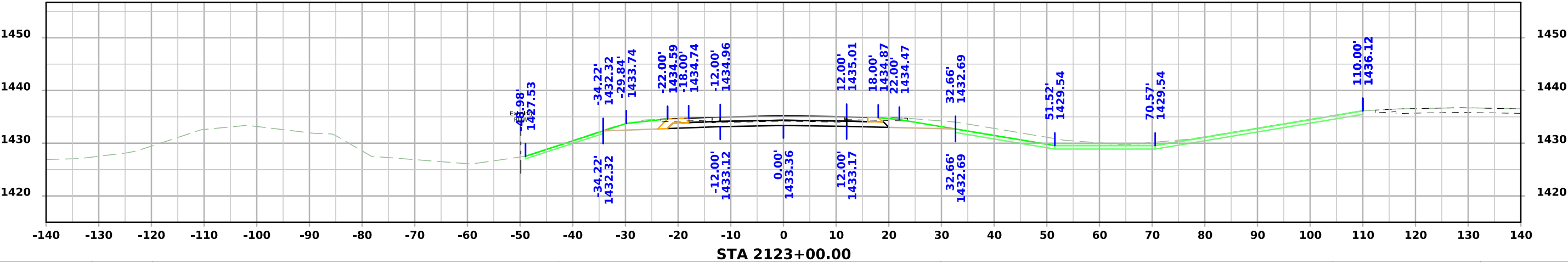
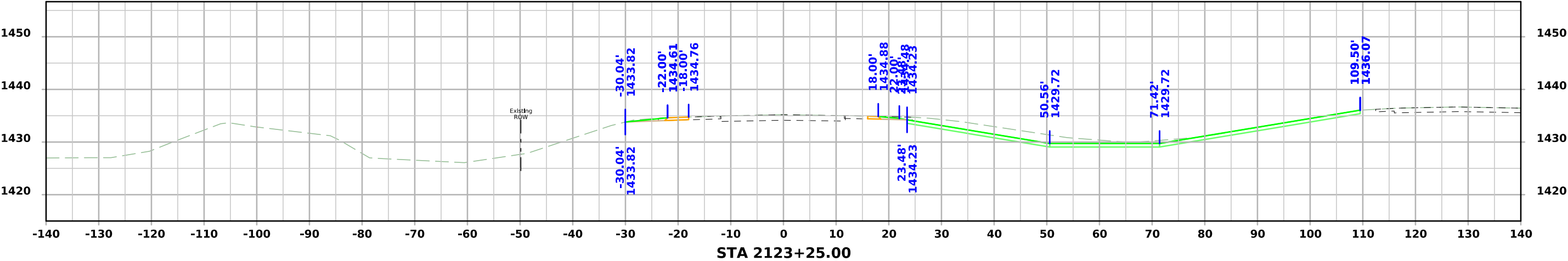
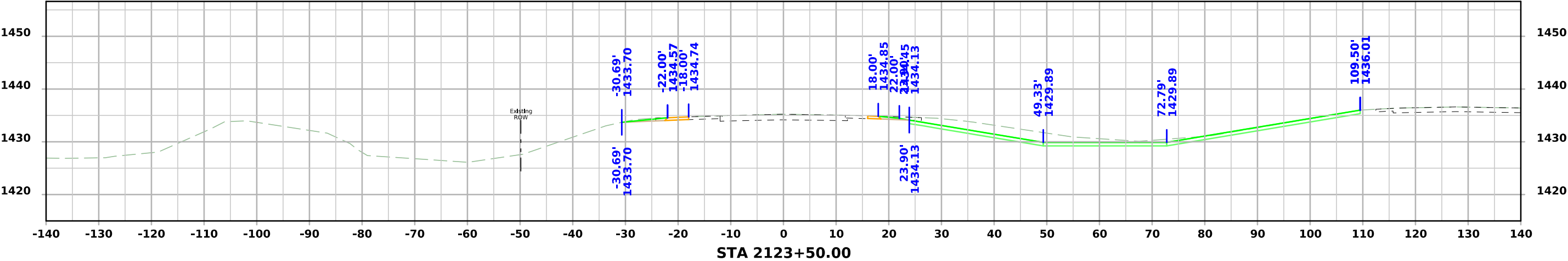
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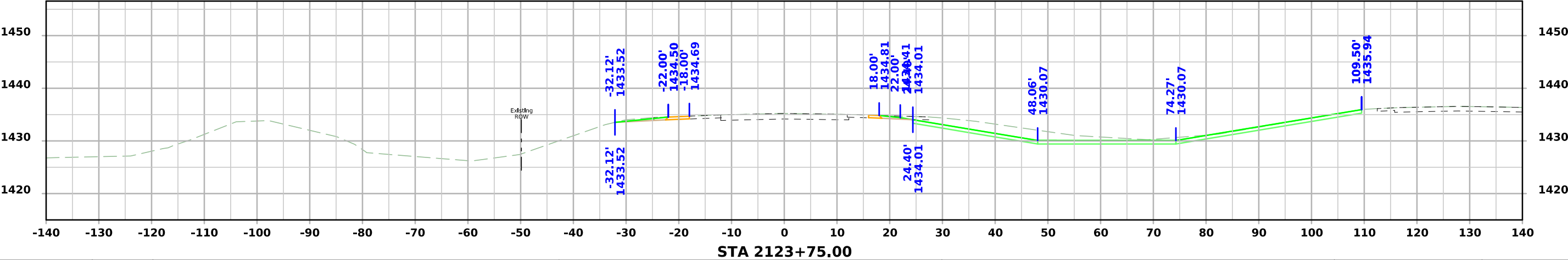
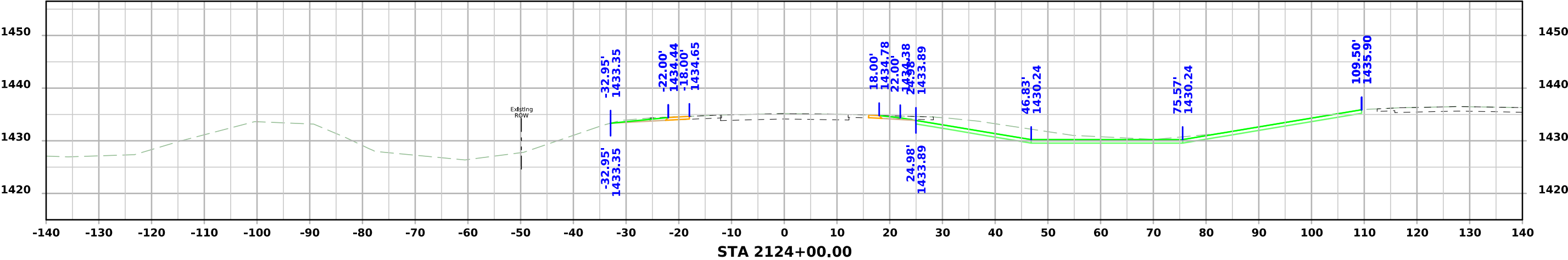
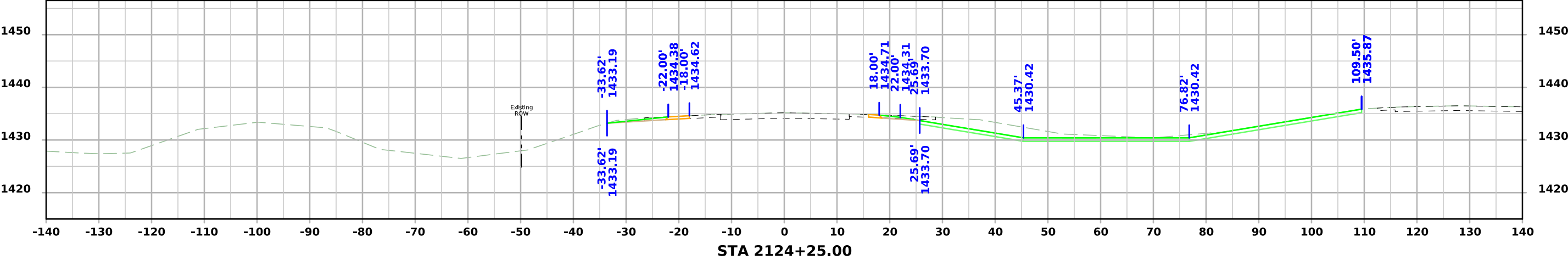
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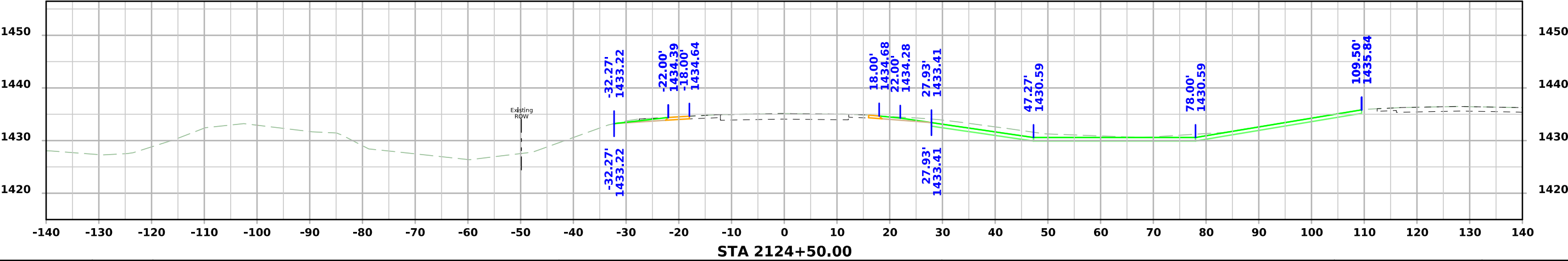
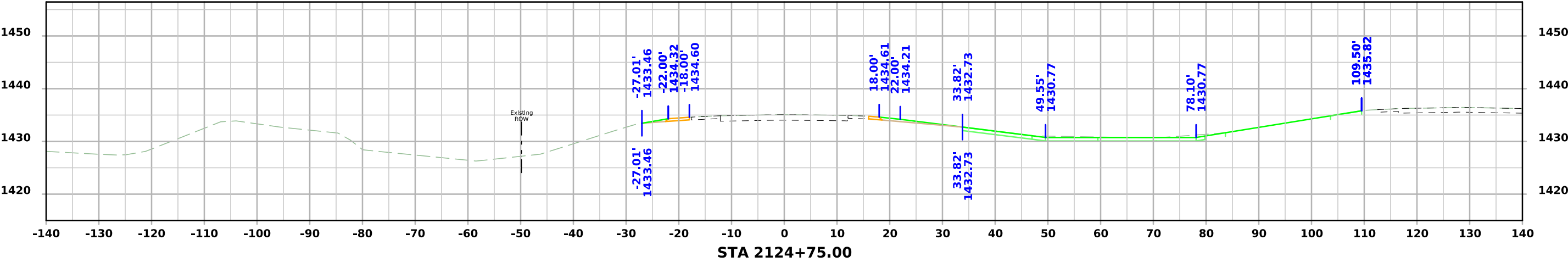
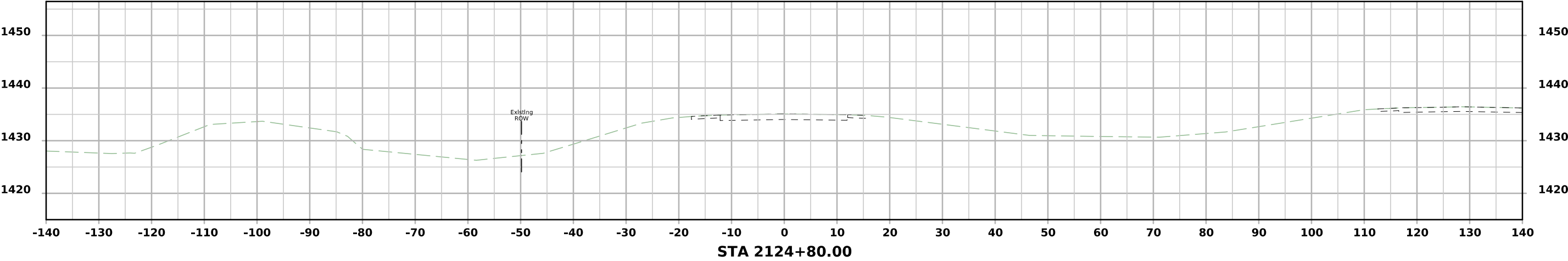
IA 60



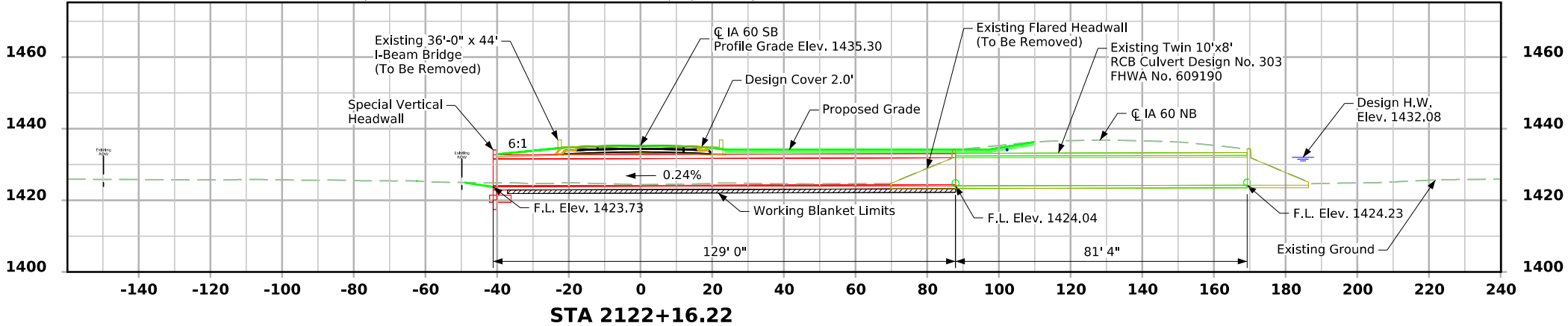
IA 60



IA 60



Control Point: 125,CP FND CONC REF MON IN GOOD CONDITION (SEE METRIC AS-BUILT PLANS NHSX-60-4(31)--3H-72) N.9630560.954, E.11353323.999, Elev. 1428.335,



General Notes:

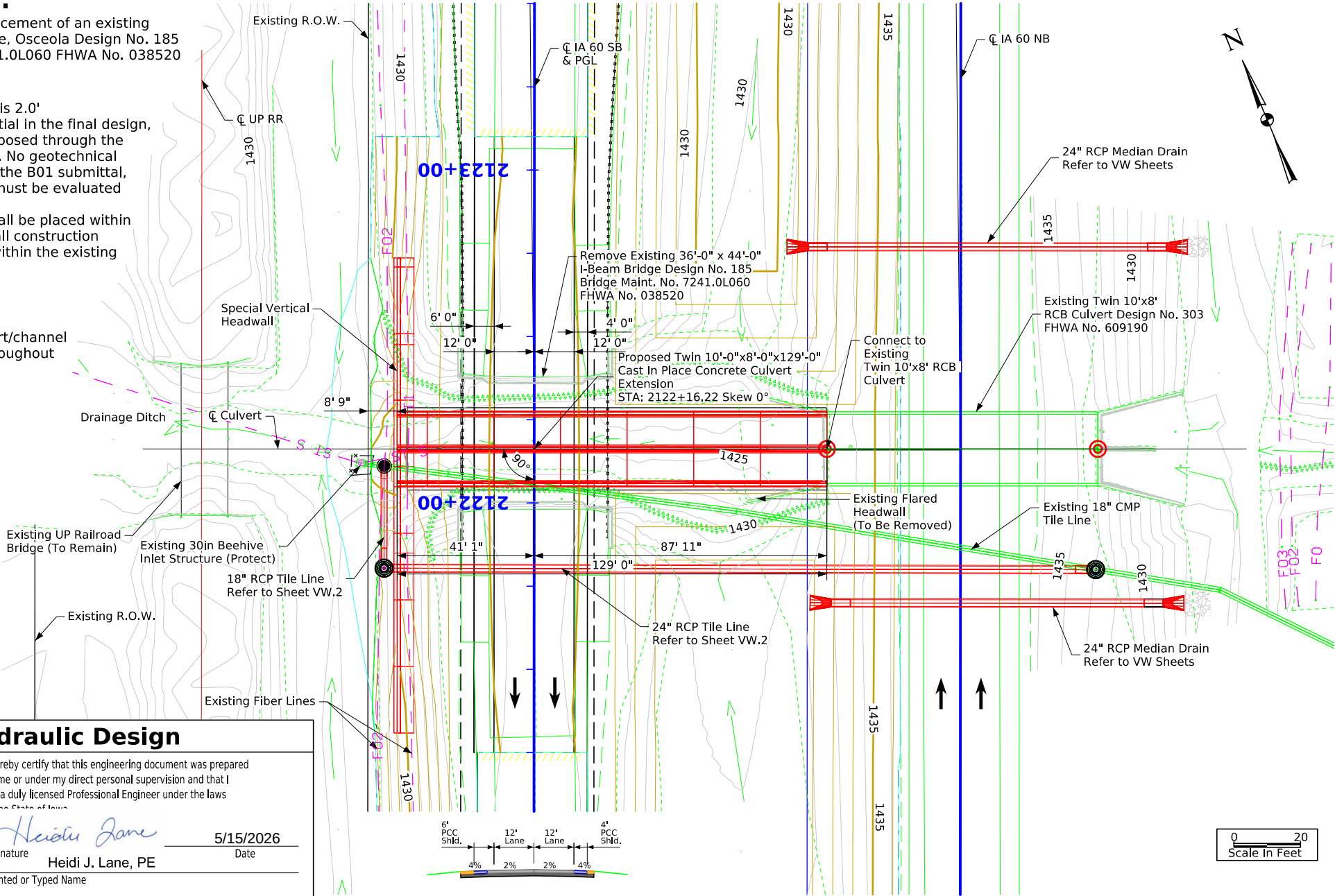
This design is for the replacement of an existing 36'x44' steel I-beam bridge, Osceola Design No. 185 Bridge Maintenance No. 7241.0L060 FHWA No. 038520

Design Notes:

- Design fill for this C.I.P. is 2.0'
- Verify settlement potential in the final design, as up to 10' of fill is proposed through the existing bridge opening. No geotechnical data was provided with the B01 submittal, so settlement impacts must be evaluated in final design.
- Construction fencing shall be placed within the existing ROW, and all construction activities shall remain within the existing ROW.

Plan Notes:

- Drainage through culvert/channel must be maintained throughout construction.



Hydraulic Data

RIDB: Not Applicable
Drainage Area = 2.51 sq Miles
Stream Slope = 28.80 Ft./Mi.
Q₅₀ = 1168 cfs
HW Elev. = 1432.08
Exit Velocity = 3.82 fps

Q₁₀₀ = 1425 cfs
HW Elev. = 1433.18
Exit Velocity = 4.28 fps

Location

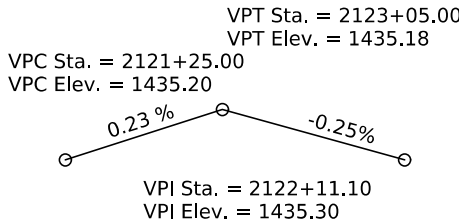
IA 60 Over Drainage Ditch
T-98N R-42W
Section 27
Gilman Township
Osceola County
FHWA No. 609190
Bridge Maint. No. 7241.0L060
Latitude 43.280739°
Longitude -95.801611°

Utilities Note:

Utilities shown on this sheet are for information only. See Road Design sheets for utility information.

General Utility Symbols:

E - Electric Line
G - Gas Line
SAN. - Sanitary Sewer
T - Telephone Line
W - Water Line
FO - Fiber Optic Line
GHP - Gas High Pressure
ST S - Storm Sewer
TV - TV
● - Power Poles



Traffic Estimate

2028 AADT	5570 V.P.D.
2048 AADT	6450 V.P.D.
TRUCKS	28 %

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: Heidi J. Lane, PE
Date: 5/15/2026

Printed or Typed Name: Heidi J. Lane, PE
My license renewal date is December 31, 2027

Pages or sheets covered by this seal: V.1

Situation Plan

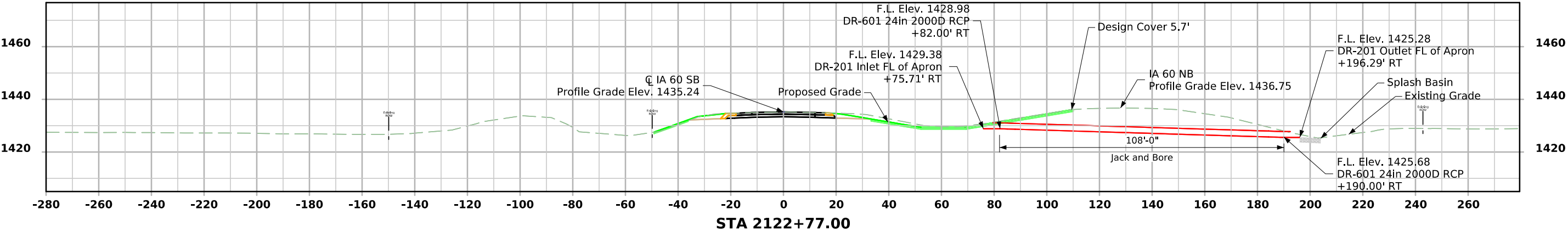
Twin 10'x8' Reinforced Concrete Box Culvert Extension

Situation Plan - C.I.P.

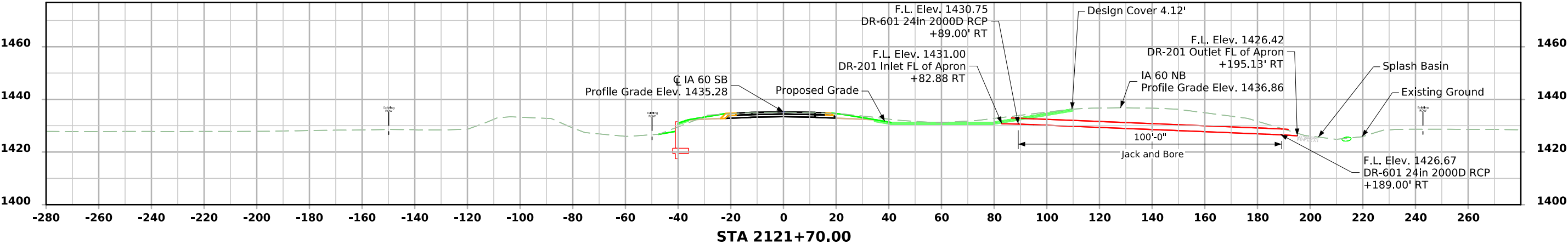
STA. 2122+16.22 (IA 60)
Turn-in Date: Feb 2026
Osceola County
IOWA DEPARTMENT OF TRANSPORTATION
Design No. 0128 Design Sheet No. 1 of 1 FHWA/Asset 609190

ML - IA60

Trenchlessly install culvert prior to extension of RCB to provide positive median drainage during RCB construction. Stationing in culvert labels are measured from C IA 60 SB.



Trenchlessly install culvert prior to extension of RCB to provide positive median drainage during RCB construction. Stationing in culvert labels are measured from C IA 60 SB.



ML - IA60

