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* D.2	US 59
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Highway Division

PLANS OF PROPOSED IMPROVEMENT ON THE

PRIMARY ROAD SYSTEM POTTAWATTAMIE COUNTY BRIDGE REPLACEMENT-PPCB

EAST BRANCH WEST NISHNABOTNA RIVER 1.0 MI S OF IA 83

SCALES: As Noted

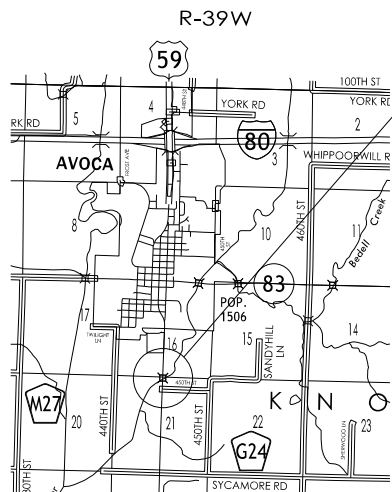
Refer to the Proposal Form for list of applicable specifications.

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

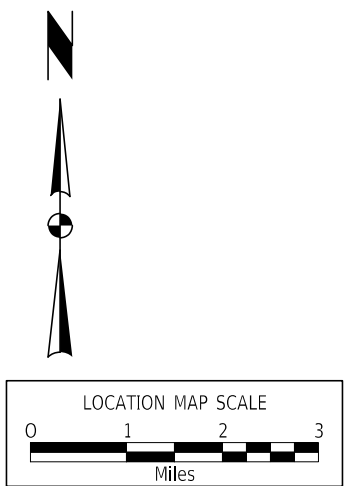


REVISIONS

TOTAL
..
PROJECT IDENTIFICATION NUMBER
18-78-059-010
PROJECT NUMBER
BRF-059-3(44)--38-78
R.O.W. PROJECT NUMBER
NHSN-059-3(45)--2R-78



Project Location
Ref Loc Sign 63.1
FHWA #43450



DESIGN DATA RURAL			
2023	AADT	2800	V.P.D.
2043	AADT	3100	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.

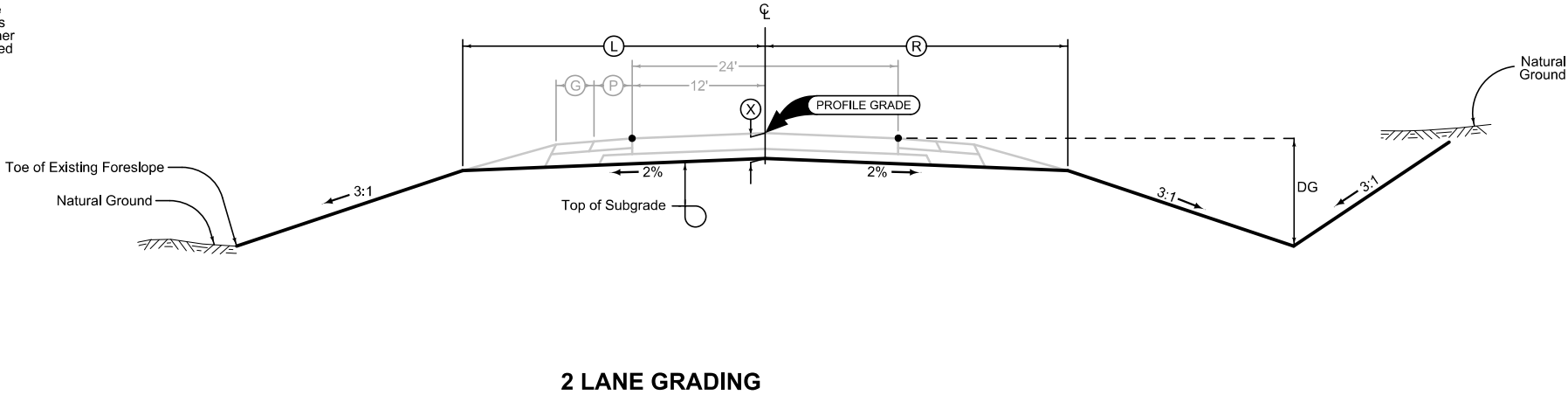
D5 PLAN – Date: 10-27-2021

Special

LOCATION			DIMENSIONS					BW Feet	
ROAD IDENTIFICATION	STATION TO STATION		Ⓕ Feet	Ⓜ Feet	Ⓧ Inches		Lt.	Rt.	
US 59	606+20.00	608+09.93	26.87'	26.87'	21.5				
US 59	611+58.39	613+50.00	26.87'	26.87'	21.5				

Normal section shown may be modified appropriately in areas of super-elevated curves or other locations specifically designated by the Engineer.

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



Full Depth PCC Shoulder

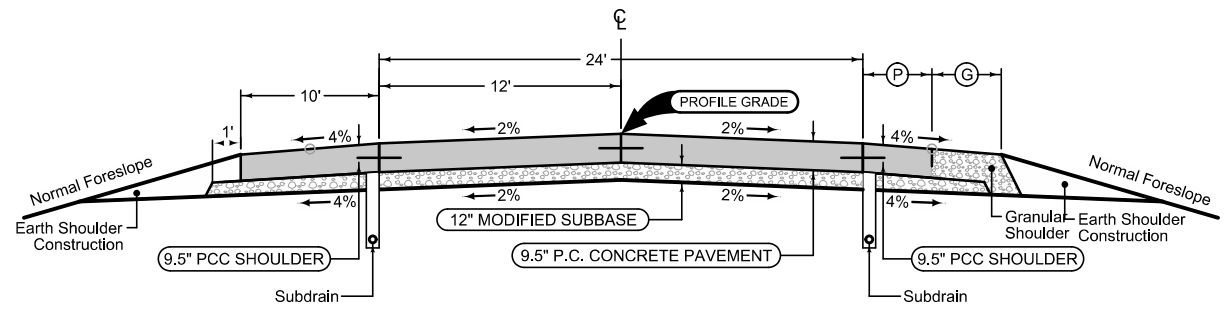
Shoulder Jointing:
 Longitudinal joint: BT-2, L-2 or KT-2
 Transverse joint: C at 17' Spacing

FullPCC_	
STATION TO STATION	
606+20.00	606+48.97
613+19.00	613+50.00

Full Depth PCC Combination Shoulder

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

2_C_FullPCC_4-20-21			
STATION TO STATION		Ⓟ Feet	Ⓞ Feet
606+20.00	606+48.97	6'	4'
613+19.00	613+50.00	6'	4'



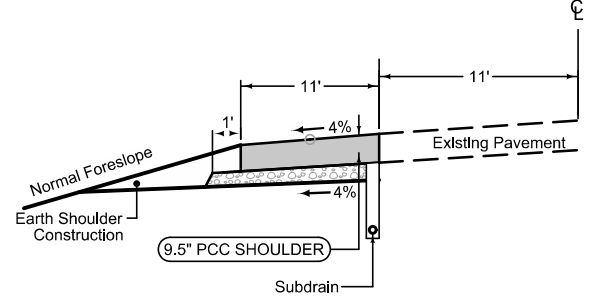
Mainline Jointing:
 Transverse joints: CD at 17' spacing
 Longitudinal joint: L-2

2P_10-19-10	
STATION TO STATION	
606+20.00	607+20.07
612+47.93	613+50.00

Full Depth PCC Shoulder

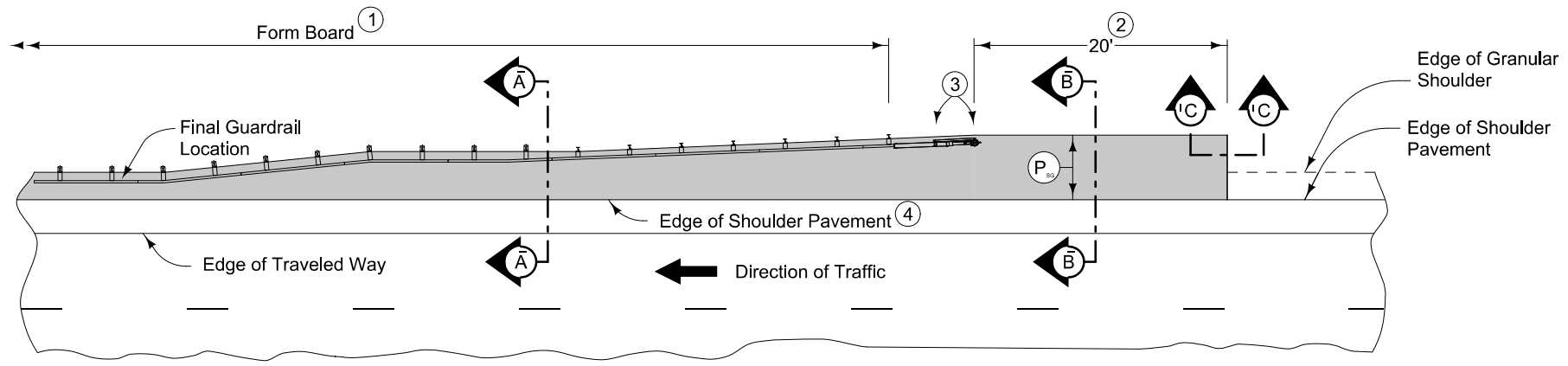
Shoulder Jointing:
 Longitudinal joint: BT-2, L-2 or KT-2
 Transverse joint: C at 17' Spacing

FullPCC_	
STATION TO STATION	
604+40.00	606+20.00
613+50.00	615+30.00



See Tab 100-24 or 100-25 for pavement quantities.
 See Tab 112-9 for shoulder quantities.

U.S. 59



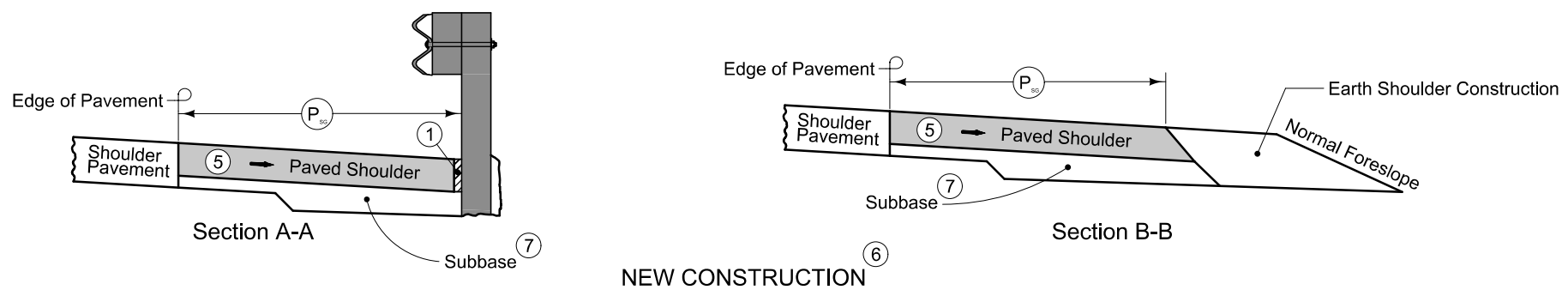
PLAN VIEW

9.5" HMA Paved Shoulder at guardrail. 9.5" 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.

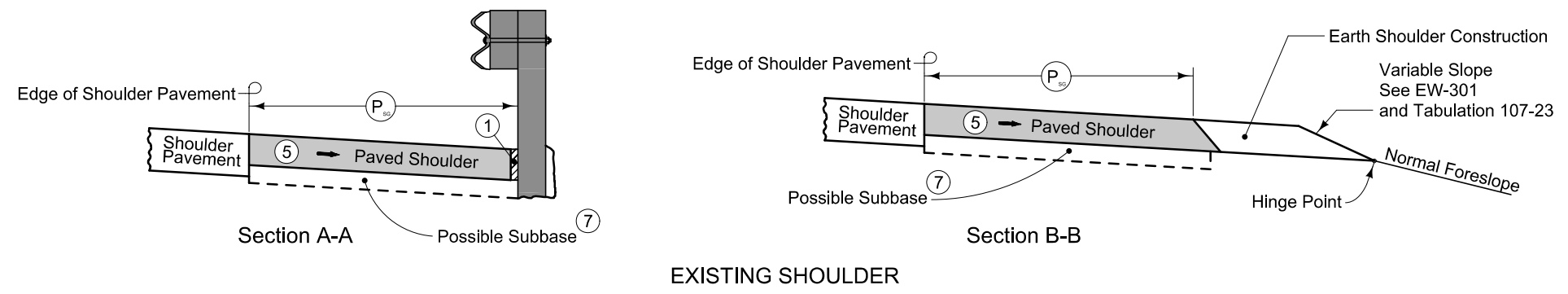
Compaction of HMA is required to face of guardrail post. Hand compaction will be allowed under guardrail. Removal and reinstallation of guardrail will be allowed with no additional payment.

Refer to Tabulation 112-9 for shoulder quantities.

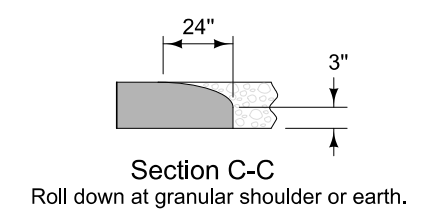


NEW CONSTRUCTION

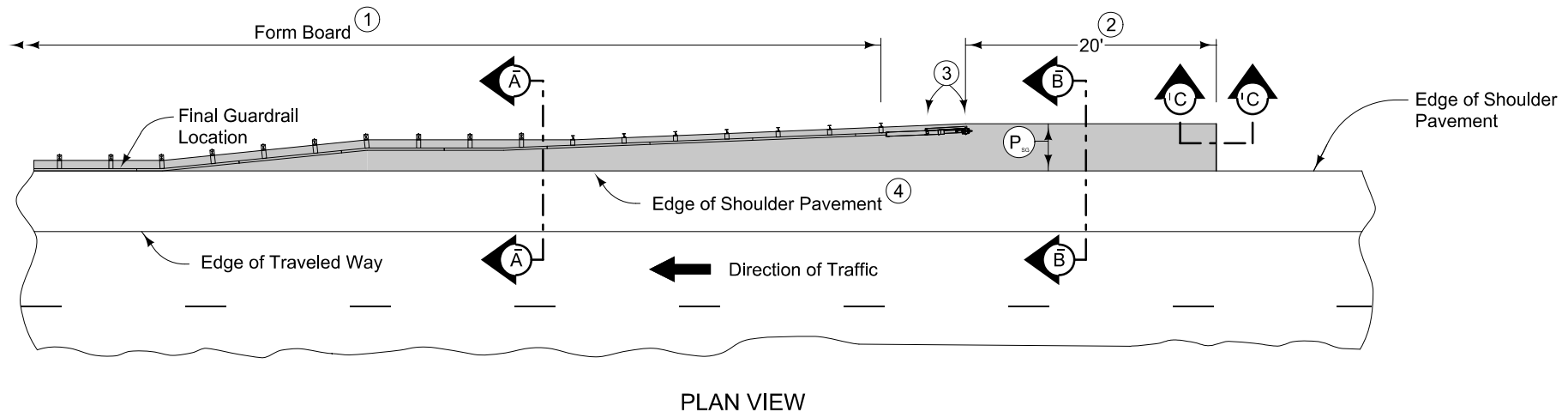
- ① PCC option only: When guardrail posts are installed prior to construction of PCC paved shoulder, fasten form board to the face of guardrail posts for the length shown.
- ② Continue paved shoulder 20 feet beyond the center of the first post.
- ③ Shoulder may be notched for first 2 posts or post sleeves may be installed through pavement. Do not drive posts through pavement.
- ④ 'KT' (per PV-102) joint for PCC shoulder. 'B' (per PV-102) joint for HMA shoulder.
- ⑤ Match shoulder slope.
- ⑥ The Contractor has the option to pave the paved shoulder at guardrail and the partial width paved shoulder as one operation.
- ⑦ Refer to other details in the plan.



EXISTING SHOULDER



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

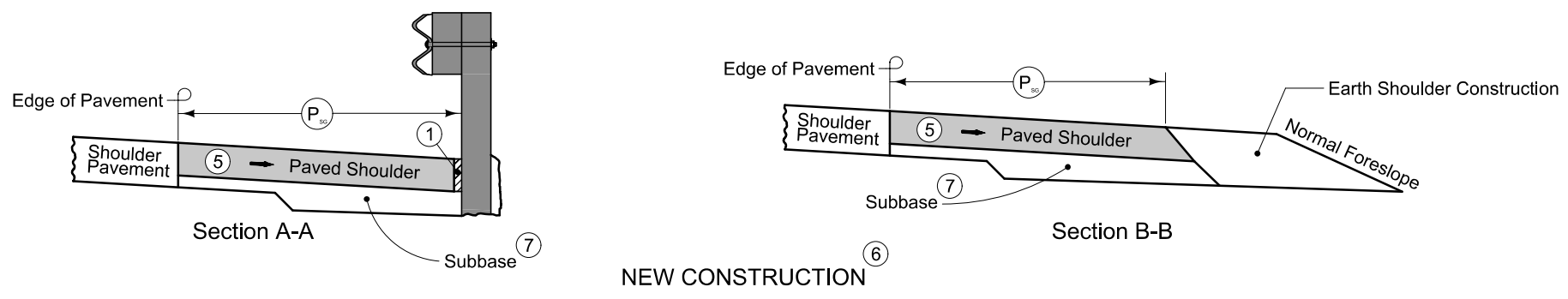


9.5" HMA Paved Shoulder at guardrail. 9.5" PCC may be substituted with the following jointing layout:

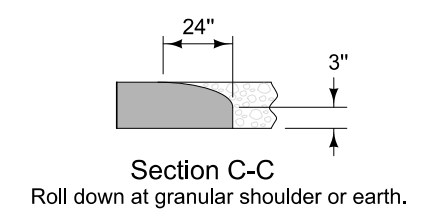
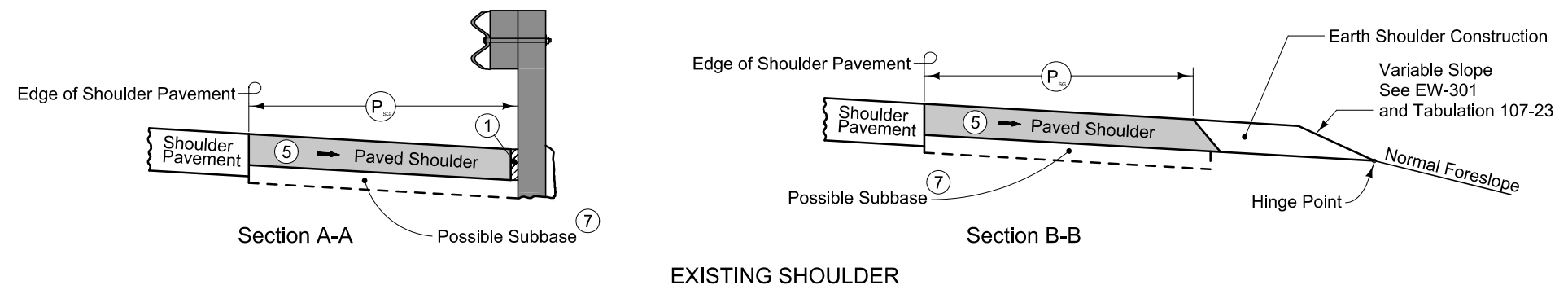
Match mainline pavement joint spacing. When mainline pavement is 8" or greater in thickness, place additional transverse 'C' joints in shoulder at mid-panel of the mainline pavement. Place longitudinal 'C' joint at P/2 from edge of mainline pavement when P is greater than 10' wide. Terminate longitudinal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

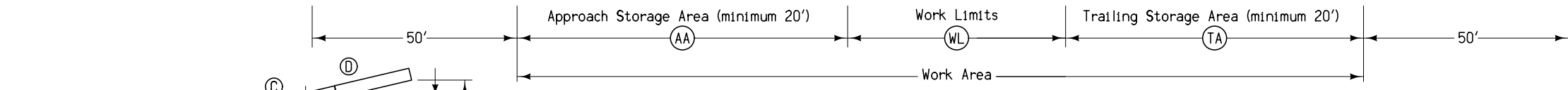
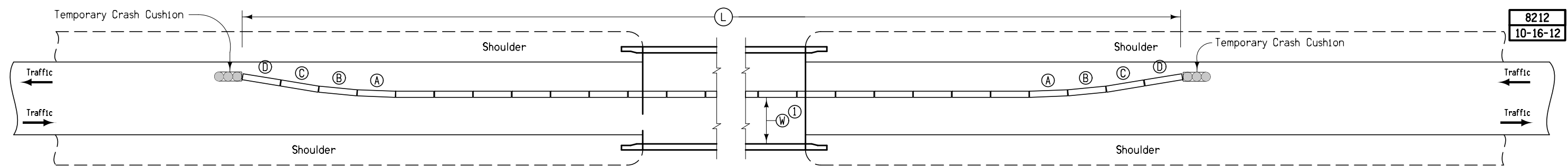
Refer to Tabulation 112-9 for shoulder quantities.



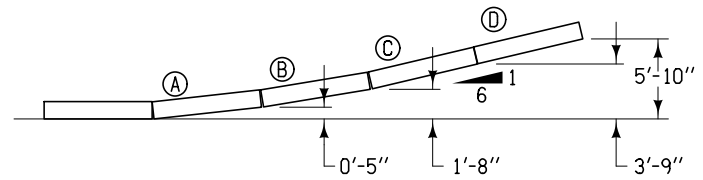
- ① PCC option only: When guardrail posts are installed prior to construction of PCC paved shoulder, fasten form board to the face of guardrail posts for the length shown.
- ② Continue paved shoulder 20 feet beyond the center of the first post.
- ③ Shoulder may be notched for first 2 posts or post sleeves may be installed through pavement. Do not drive posts through pavement.
- ④ 'KT' (per PV-102) joint for PCC shoulder. 'B' (per PV-102) joint for HMA 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.



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



① Where (W) is less than 14'-6", install restricted width signing as per Standard Road Plan TC-81.



BARRIER OFFSETS FOR FLARE SECTIONS

Station	Side	AA	WL	TA	L	Anchored	W	Remarks
		Feet	Feet	Feet	Feet	X	Ft-Inches	

**TEMPORARY CONCRETE BARRIER LAYOUT
for Two-Way Traffic**

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)
- Earth Dam or Dike (Proposed)
- Tile Outlet
- Edge of Water
- Existing Drainage
- Proposed Drainage
- Right of Way Rail or Lot Corner
- Concrete Monument
- Well
- Windmill
- Beehive Intake
- Existing Intake
- Proposed Intake
- Existing Utility Access (Manhole)
- Proposed 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

- F0 — AT&T
Lenny Vohs
1425 Oak Street
Kansas City, MO 64106
(816)275-4014
lv2121@att.com
- F02 — Windstream Communications
Jeff Hummel
708 Durant St.
Harlan, IA 51537
(712)755-5938
jeffery.s.hummel@windstream.com
- T2 —
- F03 — Walnut Communications
Terry McCarthy
510 Highland St.
Walnut, IA 51577
(712)784-4003
tmccarthy@walnutcommunications.com
- T3 —
- F04 — Farmers Mutual Telephone Company
Dennis Crawford
410 Broad Ave.
Stanton, IA 51573
(712)829-2111
dcrawford@fmtcnet.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.	
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

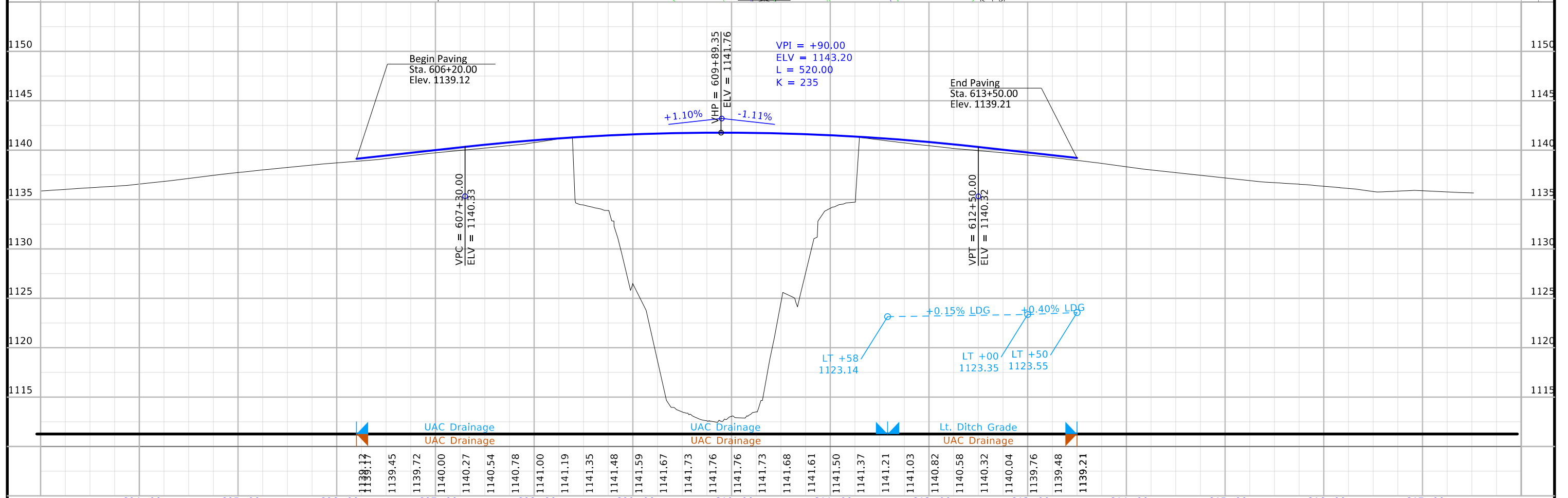
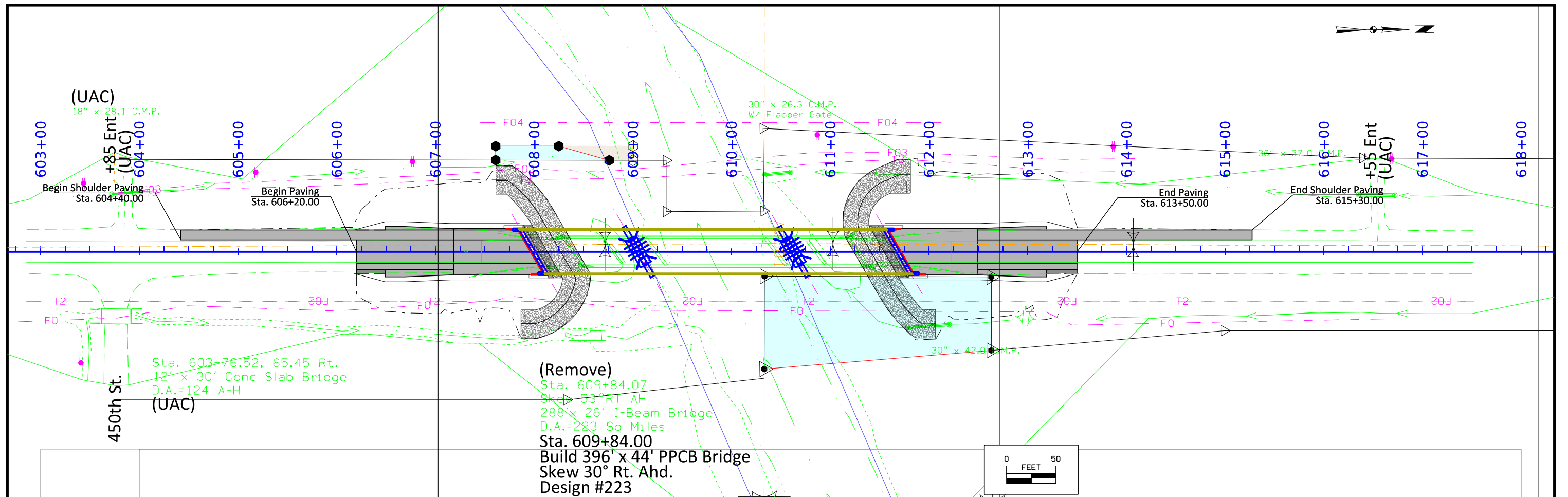
- Reference Point
- Station
- Survey Line
- Section Corner
- Ground Line Intercept
- Saw Cut
- Guardrail
- Trench Drain
- HighTension Cable Guardrail
- Sheet Pile
- Pavement Removal
- Clearing & Grubbing Area

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)



604+00	605+00	606+00	607+00	608+00	609+00	610+00	611+00	612+00	613+00	614+00	615+00	616+00	617+00
FILE NO. 32060	ENGLISH	DESIGN TEAM JIA DEWOLF					Pottawattamie COUNTY	PROJECT NUMBER BRF-059-3(44)--38-78			SHEET NUMBER D,2		

Survey Information

Pottawattamie County
BRF-059-3(44)--38-78
Location: East Branch West Nishnabotna River 1.0 mi S of IA 83
(Avoca) Type of Work: Bridge-Unspecified
Project Directory: 7805901018
PIN 18-78-059-010
Sap-0925.1

NGS mark designated H 147 (PID MJ0507) has a published Elev. of 1217.24
Survey Elev. = 1217.293

NGS mark designated R 146 (PID MJ0397) has a published Elev. of 1138.00
Survey Elev. = 1137.969

Horizontal Control

The project coordinate system for this survey is Iowa RCS Zone 6 (U.S. Survey Feet). This survey control is relative to IaRTN reference stations. IaRTN 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. C147, H147, R146, and F150 RESET.

Alignment Information

The horizontal alignment for this survey is a retrace of As-built Plans No. F-554(3). Survey stationing was equated to the plan PI at STA 584+83.0 and run ahead without equation throughout the survey.

Survey stationing relates to as built plan stationing as follows:

PI Sta. 584+83.0 As-built Plans Project No. F-554(3)
Survey PI Sta. 584+83.0

PC Sta. 638+85.05 Project No. F-554(3)
Survey PC Sta. 638+82.67

Party Personnel

Clayton Henningsen- Survey Party Chief
Jason Arn- Survey Party Chief
Paul Harry- Asst. Party Chief

Date(s) of Survey

Begin Date 10/28/2019
End Date 11/28/2019

General Information

Measurement units for this survey are US survey feet. This survey is for proposed bridge reconstruction or removal US 59 over east branch of the West Nishnabotna River. Project datum and control information is provided by Design Survey Office. This project is a partial field DTM with photo.

Vertical Control

Vertical datum for this survey is NAVD88 (Computed using Geoid12b). GRS80 Ellipsoidal Height was computed at project Pts. C147, H147, R146, and F150 RESET by doing concurrent 6 hour static observations. The project control is relative to nearby Iowa RTN Base Stations.

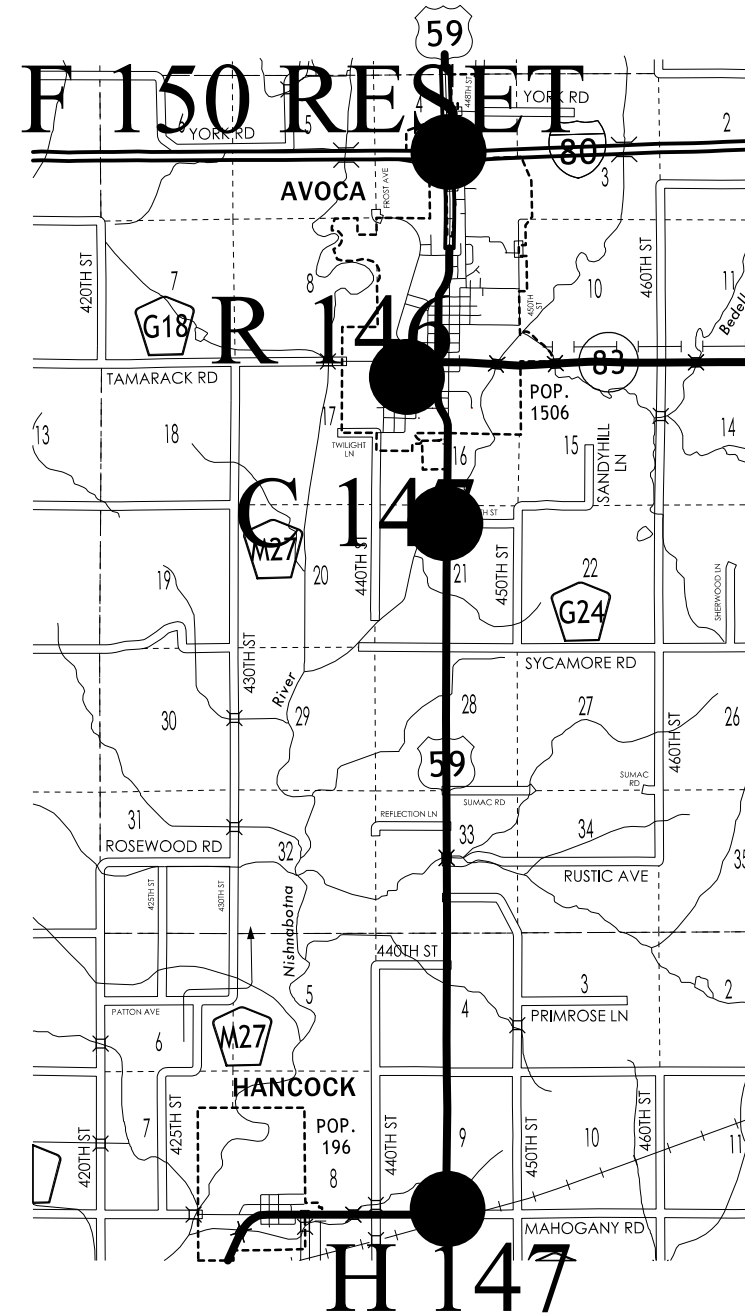
This survey observed 4 NGS GPS control with published NAVD88 heights to compare to local ground control:

NGS mark designated C 147 (PID MJ0513) has a published Elev. of 1129.39
Survey Elev. = 1129.384

NGS mark designated F 150 RESET (PID MJ0539) has a published Elev. of 1257.6
Survey Elev. = 1257.714

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 6

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

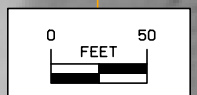
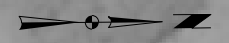
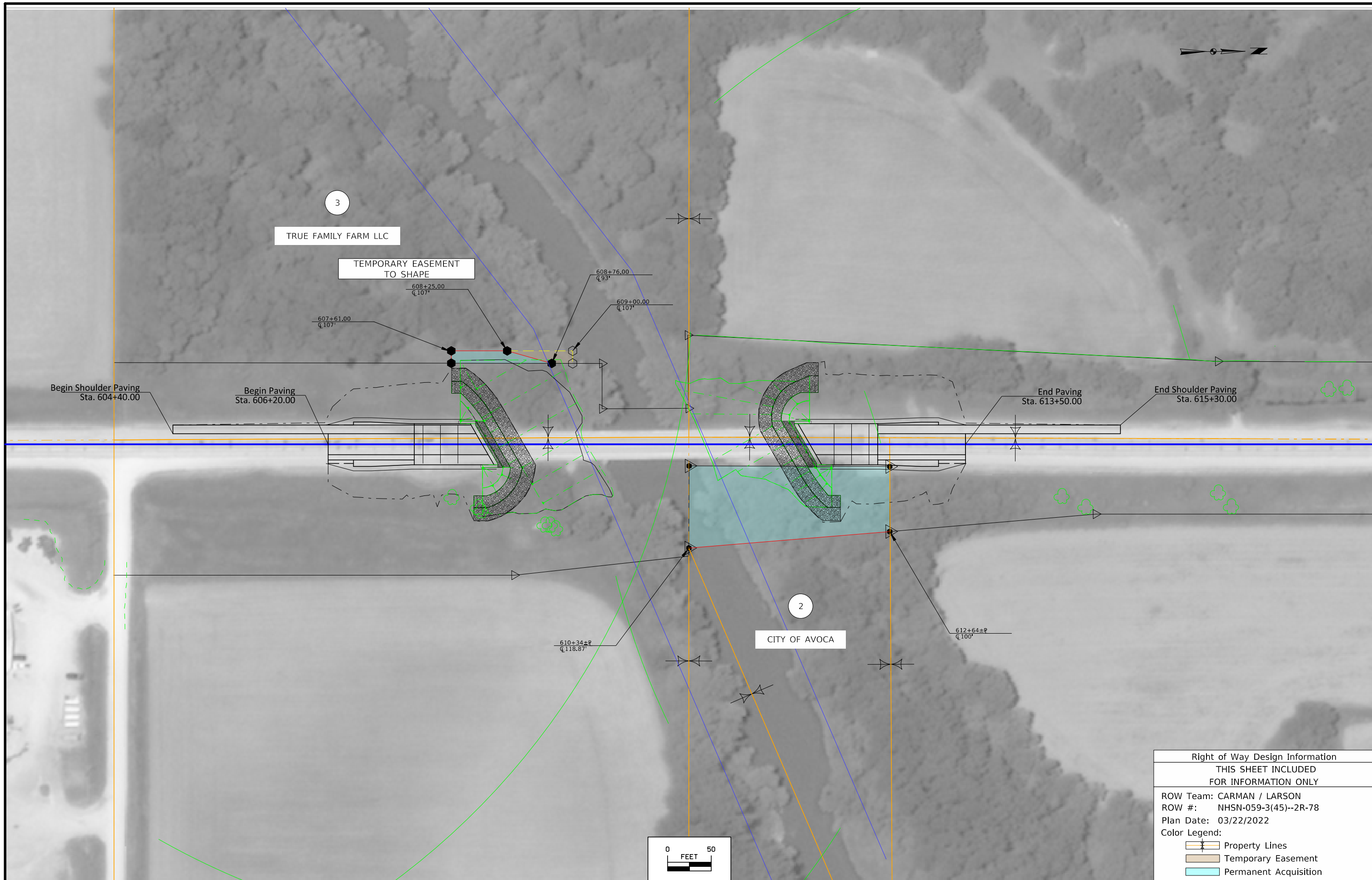
HORIZ. DATUM: NAD83(2011) EPOCH 2010.00

VERT. DATUM: NAVD88

1a. Regional Coordinate System Zone 6

Point Name	North Coordinate	East Coordinate	Elevation	Feature Code- Monument Description
F 150_RESET	7054938.778	16608734.350	1257.714	CP NGS PID MJ0539
C 147	7041188.707	16608611.705	1129.384	CP NGS PID MJ0513
H 147	7015792.334	16608699.286	1217.293	CP NGS PID MJ0507
R 146	7046604.111	16607193.827	1137.969	CP NGS PID MJ0397

NO ACCESS RIGHTS ARE TO BE ACQUIRED ON THIS PROJECT.



Right of Way Design Information	
THIS SHEET INCLUDED FOR INFORMATION ONLY	
ROW Team: CARMAN / LARSON	
ROW #: NHSN-059-3(45)--2R-78	
Plan Date: 03/22/2022	
Color Legend:	
Property Lines	
Temporary Easement	
Permanent Acquisition	

TRAFFIC CONTROL PLAN

1. US 59 traffic shall be maintained during construction through staging using traffic signals and lane closure.
2. The Contractor shall contact the following kayak/innertube rental business about the upcoming bridge work as soon as possible so they can plan accordingly:
 Name: Rubber Duck Outfitters
 Email: info@rubberduckoutfitters.com
 Waterbody: West Nishnabotna River
 Phone: 402-201-6776
 Street: 42926 Mahogany Road
 City: Hancock
 Zip: 51536
3. Use Iowa DNR's warning signage and requirements as stated and defined on roadway plan sheet J.9 to help paddling public avoid injury during removal and reconstruction of US 59 bridge. See chapter six on signage in "Developing Water Trails in Iowa" found at this link: <https://www.iowadnr.gov/things-to-do/canoeing-kayaking/water-trail-development> [iowadnr.gov] Additionally, based on the DNR Singage Requirements Addendum dated April 2, 2021.
4. Contractor shall notify John Wenck via e-mail at John.Wenck@dnr.iowa.gov when temporary channel obstruction is placed and removed so that hazard symbol can be added to the DNR's interactive river mapping system and removed once project is complete.
5. Contractor shall notify Conservation Officer Adam Gacke via e-mail at adam.gacke@dnr.iowa.gov or phone: 712-520-5570.
6. Contractor shall contact the owner of boat ramp, City of Avoca Parks and Recreation regarding sign placement and management: 712-250-3372
7. All construction debris shall be removed from the river channel when the temporary construction platform is removed.

STAGING NOTES

Stage 1 Construction:
 13'6" of proposed bridge to be built during stage 1. West side of the bridge will be built first.

Stage 1 Traffic:
 Traffic will be maintained using traffic signals and SB lane closure. Traffic will be placed on 15' of existing bridge through construction area.

Stage 2 Construction:
 Remaining 30'6" of proposed bridge to be built during stage 2.

Stage 2 Traffic:
 Traffic will be maintained using traffic signals and NB lane closure. Traffic will be placed on the 13'6" portion of the proposed bridge constructed in Stage 1. Traffic lane across proposed bridge will be 11' wide.

**CROSS SECTION VIEW COLOR LEGEND
OF TRAFFIC CONTROL AND STAGING SHEETS**

SHADING	Design Color No.	
Green, Light	(225)	Existing Pavement Shading
Gray, Light	(48)	Previously Constructed Pavement Shading
Gray, Med	(80)	Previously Constructed Granular Surface Shading
Blue, Light	(230)	Proposed Pavement Shading
Lavender	(9)	Temporary Pavement Shading
Brown, Med	(237)	Future Proposed Pavement Shading

**CROSS SECTION VIEW PATTERN AND SYMBOL LEGEND
OF TRAFFIC CONTROL AND STAGING SHEETS**

	Pavement Removal		Proposed Granular Shoulder
	Proposed Granular Subbase		Temporary Shoulder
	Proposed Special Backfill		Existing Shoulder Strengthening
	Temporary Barrier Rail		Permanent Barrier Rail
			Channelizing Device

PLAN VIEW COLOR LEGEND OF TRAFFIC CONTROL AND STAGING SHEETS

LINEWORK	Design Color No.	
Green	(2)	Existing Topographic Features and Labels
Magenta	(5)	Pavement Marking Call Outs
Blue	(1)	Proposed Alignment, Stationing, Tic Marks, and Alignment Annotation
Yellow	(4)	Pavement Markings, Yellow
Off White	(254)	Pavement Markings, White
Violet	(15)	Temporary barrier rail, Unpinned
Flush Orange	(228)	Temporary barrier rail, Pinned

SHADING	Design Color No.	
Green, Light	(225)	Existing Pavement Shading
Gray, Light	(48)	Previously Constructed Pavement Shading
Gray, Med	(80)	Proposed Granular Surface Shading
Gray, Med	(80)	Previously Constructed Granular Surface Shading
Blue, Light	(230)	Proposed Pavement Shading
Lavender	(9)	Temporary Pavement Shading
Brown, Light	(236)	Proposed Grading Limits Shading
Pink, Dark	(13)	Proposed MSE or CIP Wall Shading
Red	(3)	Proposed Bridge Shading and Sign Trusses
Black w/Gray, Light Fill	(0,48)	Previously Constructed Structure

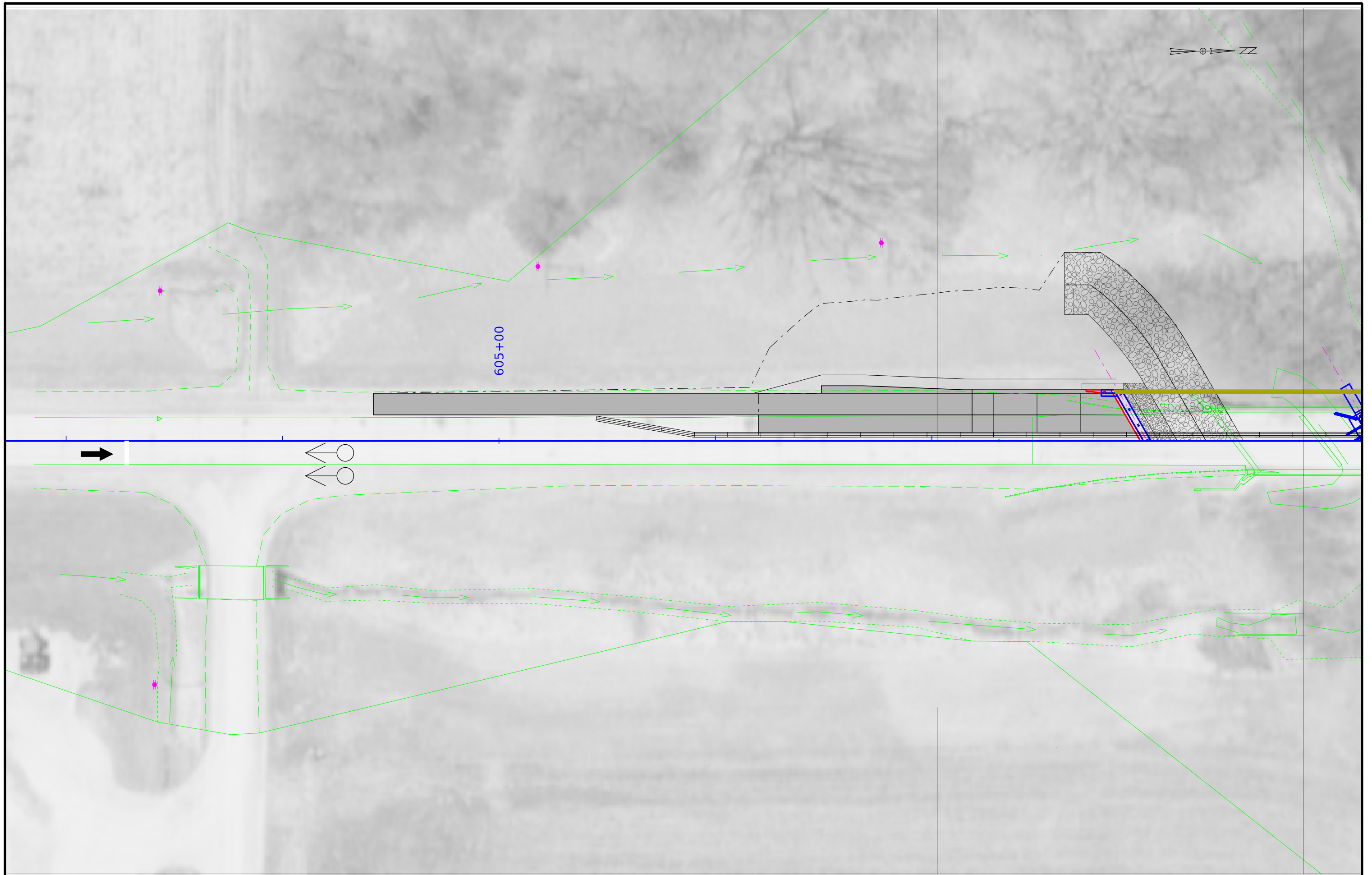
**PLAN VIEW PATTERN AND SYMBOL LEGEND
OF TRAFFIC CONTROL AND STAGING SHEETS**

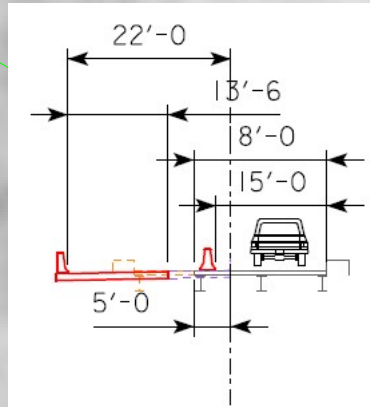
	Channelizing Device		Crash Cushion (Temp or Perm)
	Drum		Traffic Signal
	Temporary Lane Separator		Flagger
	Tubular Marker		Temporary Floodlighting
	Channelizer Marker		Traffic Sign
	Concrete Barrier Marker		Type III Barricade
	Delineator		Type A Warning Light
	Temporary Barrier Rail		Direction of Traffic
	Pavement Removal		Safety Closure
	Sand Barrel Layout		Lane Identification

NOTE: Device spacing according to Standard Road Plans unless specifically dimensioned.

**TRAFFIC CONTROL
AND
STAGING
LEGEND AND SYMBOL
INFORMATION SHEET**

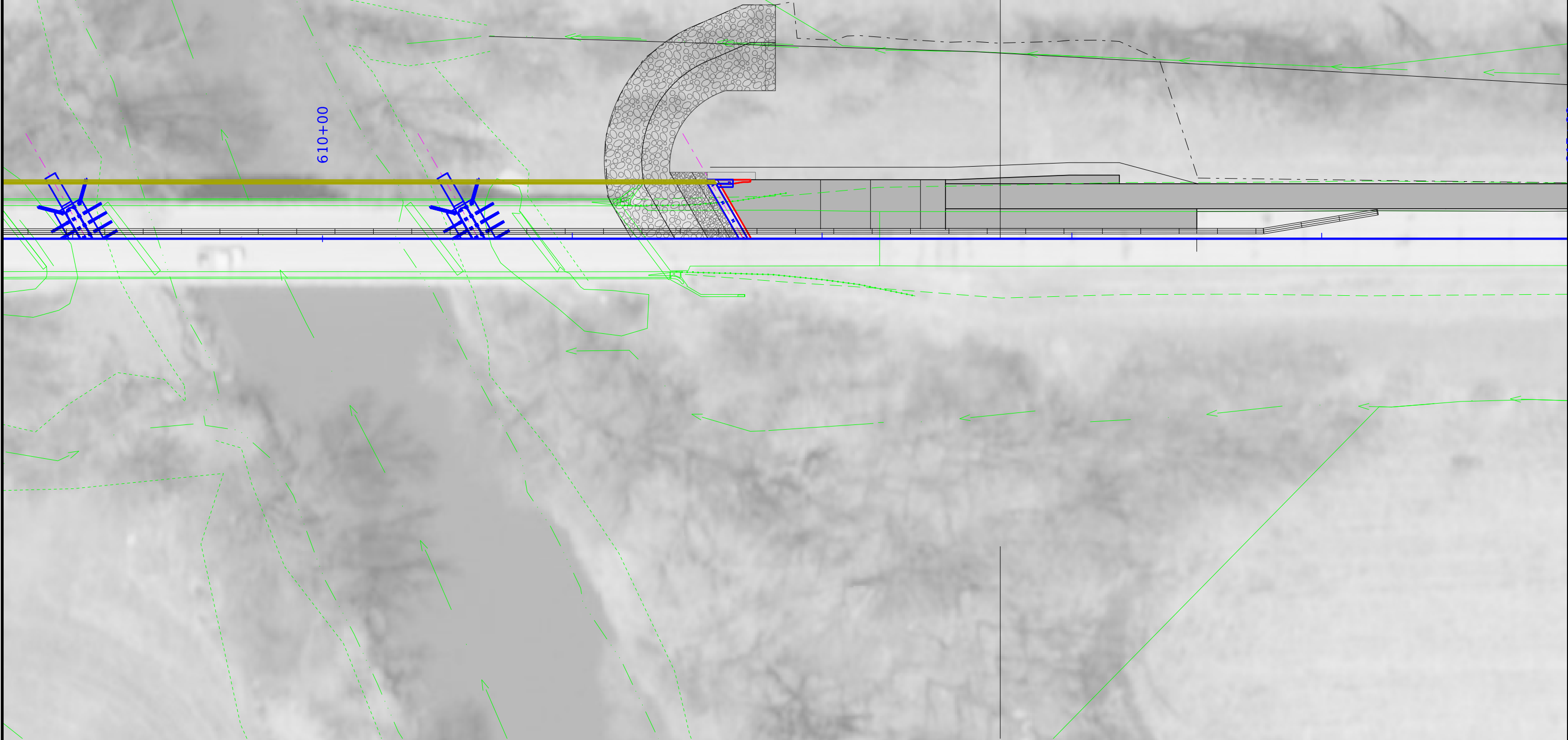
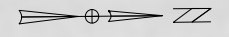
(COVERS SHEET SERIES J)

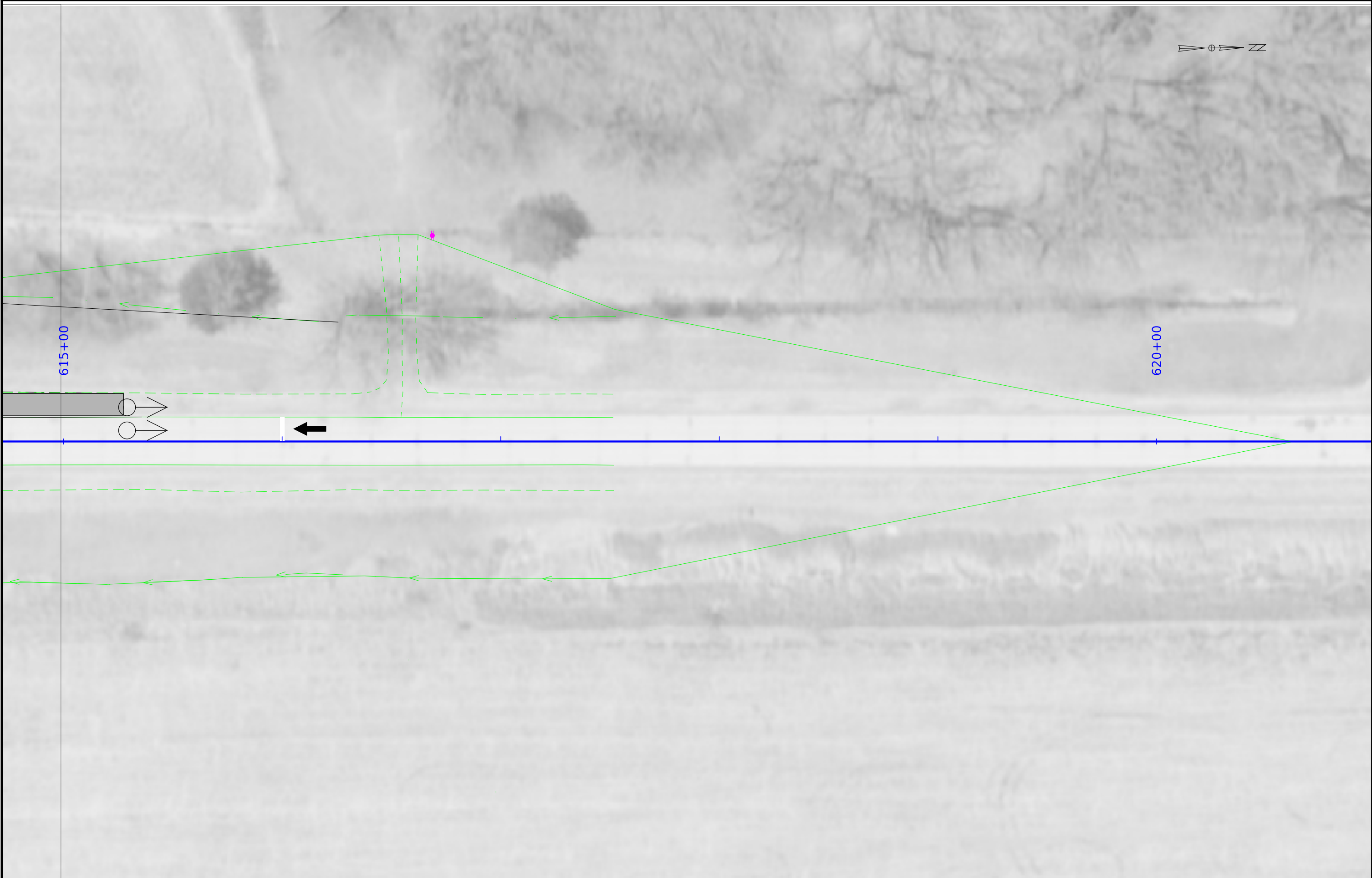
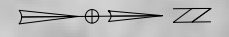


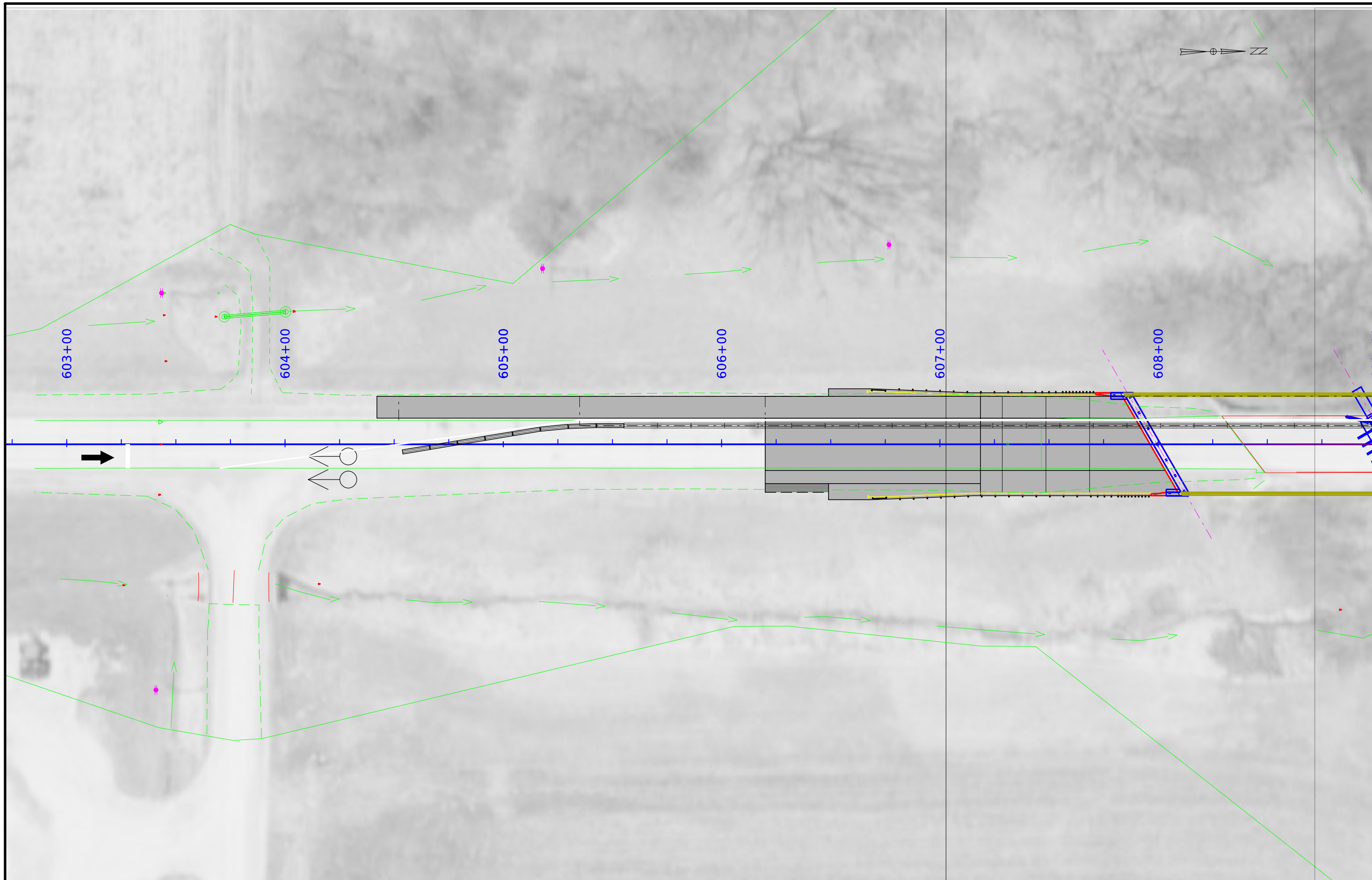


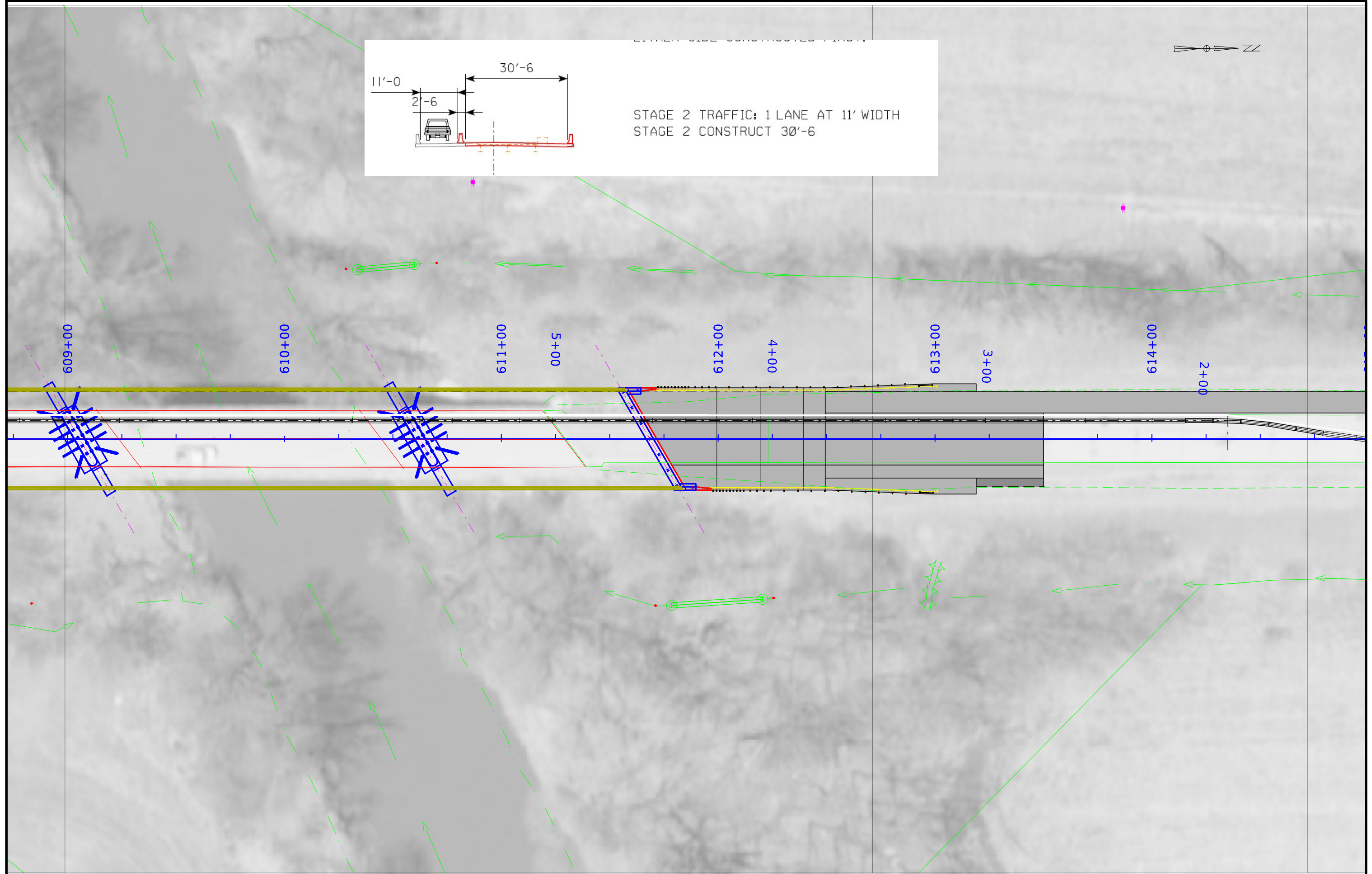
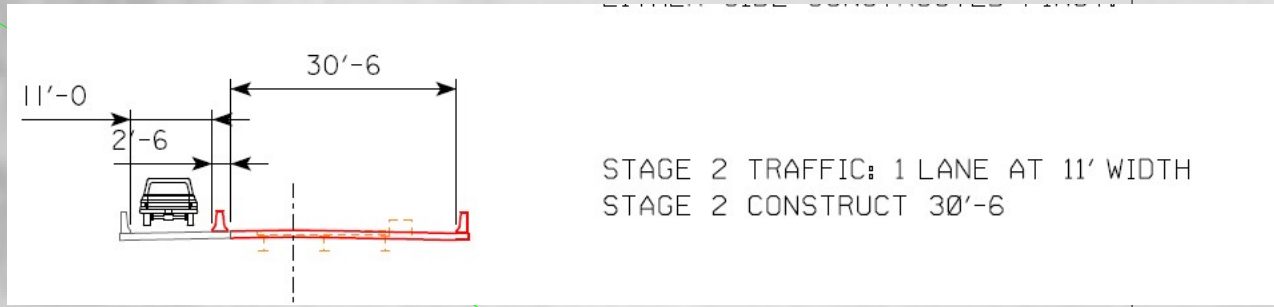
STAGE 1 TRAFFIC: 1 LANE AT 15' WIDTH
 STAGE 1 CONSTRUCT: 13'-6

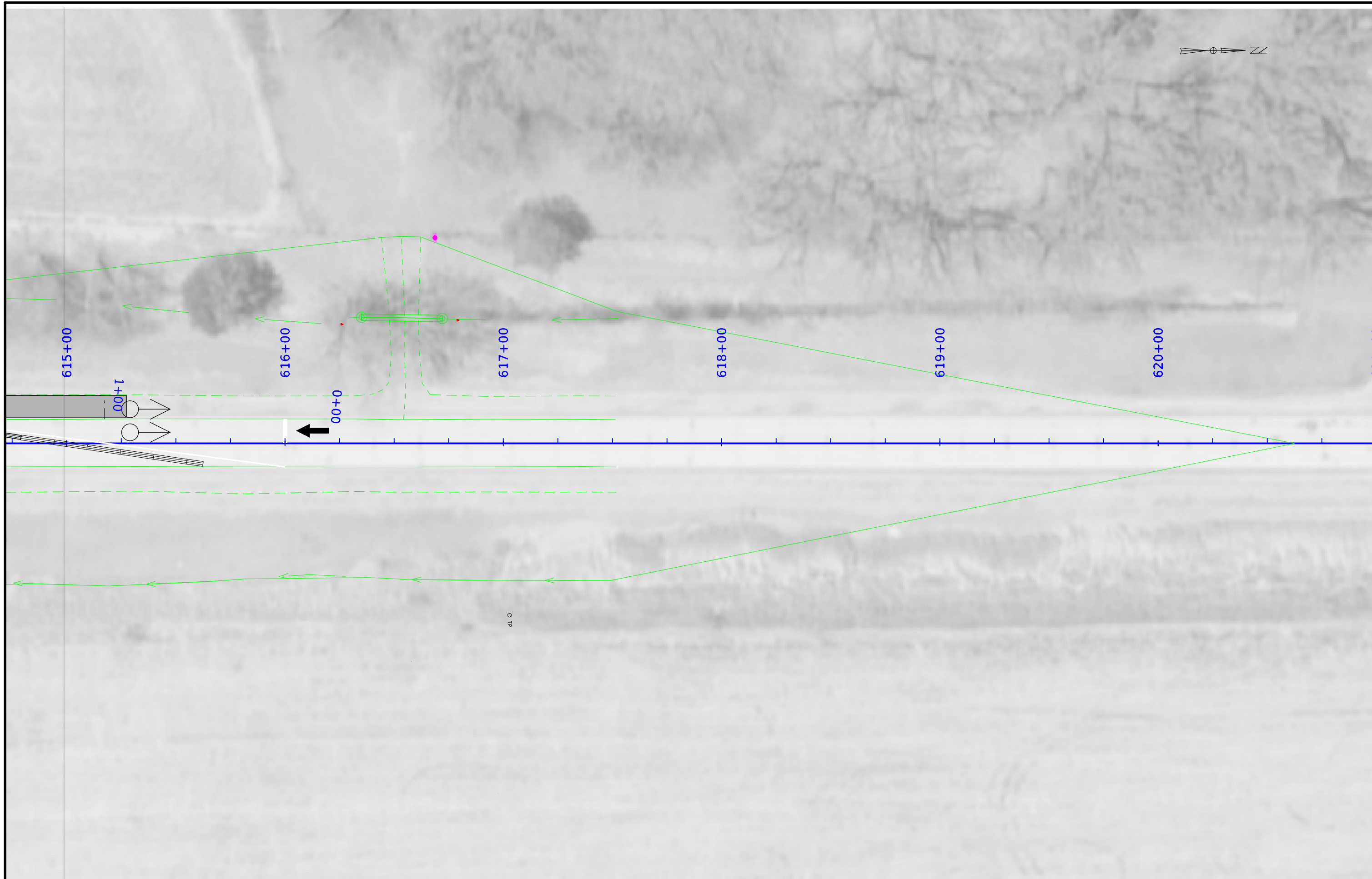
NOTE: ACTUAL STAGING ORDER TO BE DETERMINED. THE BRIDGES ARE SYMMETRICAL, AND THE STAGING CONCEPT SHOULD WORK WITH EITHER SIDE CONSTRUCTED FIRST.











O TP

3" Letterheight
2" Letterheight

Warning
Bridge Construction
Downstream 1.6 mi
No Thru Traffic

30" x 18"

6" Letterheight

Danger

4" Letterheight

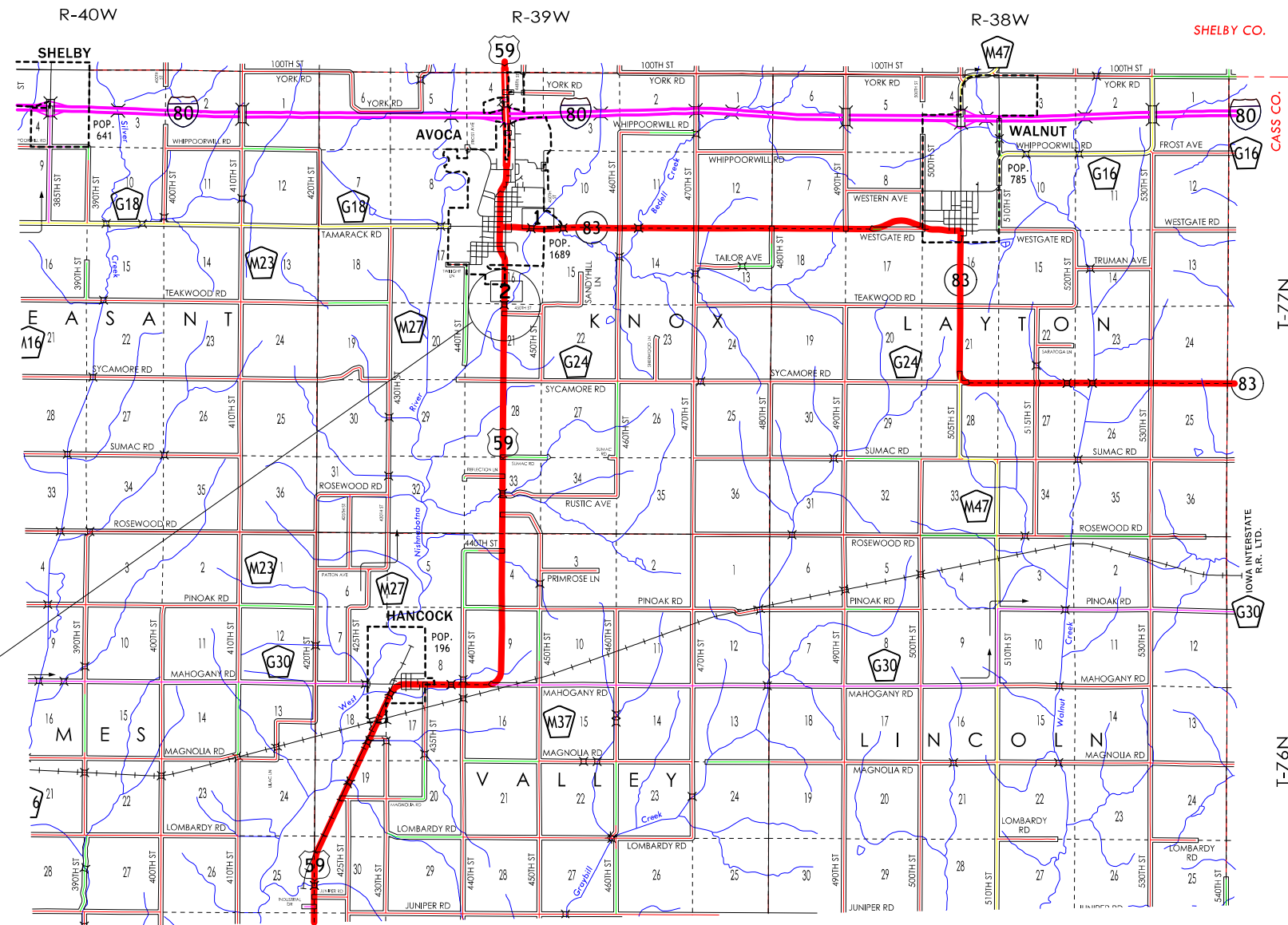
No Thru Traffic

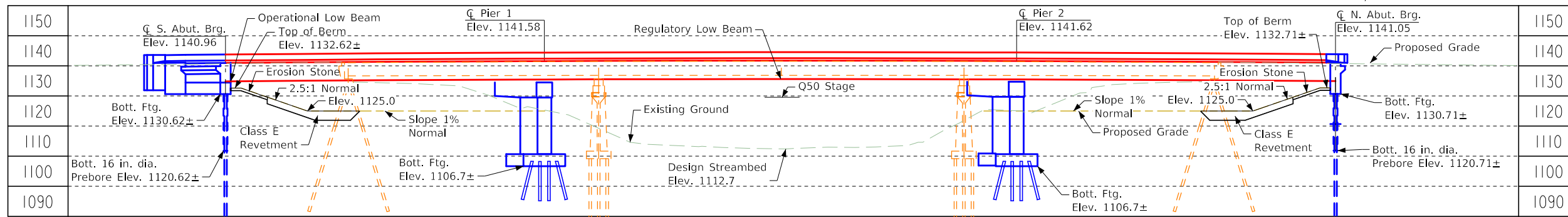
42" x 24"

Paddling Route Signage Coordination

- 1 Place sign facing parking lot from Eddington Park Access.
- 2 Place sign high on the bank just upstream of construction site within right-of-way.

Project Location





G1=+1.104% G2=-1.109%

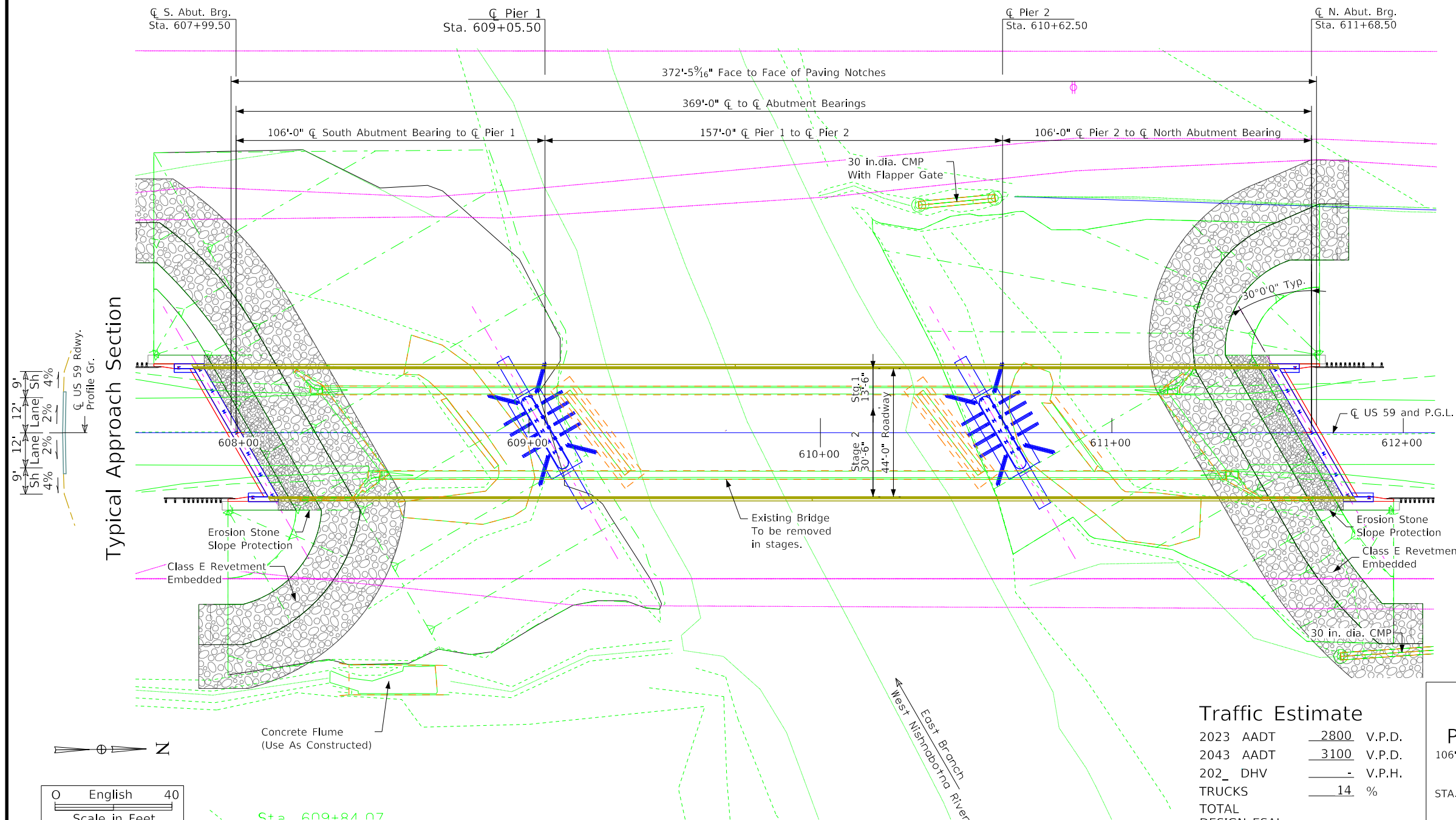
VPI Sta. = 609+90.000
VPI Elev. = 1143.200
VC = 520.000'

Proposed Profile
Grade US59

Notes:

1. Top of bridge deck crown '0.03' below profile grade.
2. Skewed portion of existing bridge not shown for clarity.

Longitudinal Section Along Centerline Approach Roadway



Hydraulic Data

Drainage Area = 223 Sq. Mi.
Stream Slope = 4.2 Ft./Mi.
Ave. Low Water Stage = 1114.7

Q₂₅ = 14,700 cfs
Stage = 1128.7

Q₅₀ = 17,300 cfs
Stage = 1129.6
Regulatory Low Beam = 1135.2
Backwater = 0.5 Ft.
Avg. Bridge Velocity = 7.5 fps

Q₁₀₀ = 20,200 cfs
Stage = 1130.3
Operational Low Beam = 1134.38
Backwater = 0.8 Ft.

Q₂₀₀ = 23,200 cfs
Stage = 1130.9
Calculated Design Scour = 1092.8

Q₅₀₀ = 26,300 cfs
Stage = 1131.4
Calculated Check Scour = 1091.6

Q₀₁ = 11,300 cfs
Roadway Overtop Elev. 1133.8
Sta. 649+76
(Note per IDNR request for the regulatory hydraulic analysis, all of the design flows were assumed to pass through the bridge.)

Location

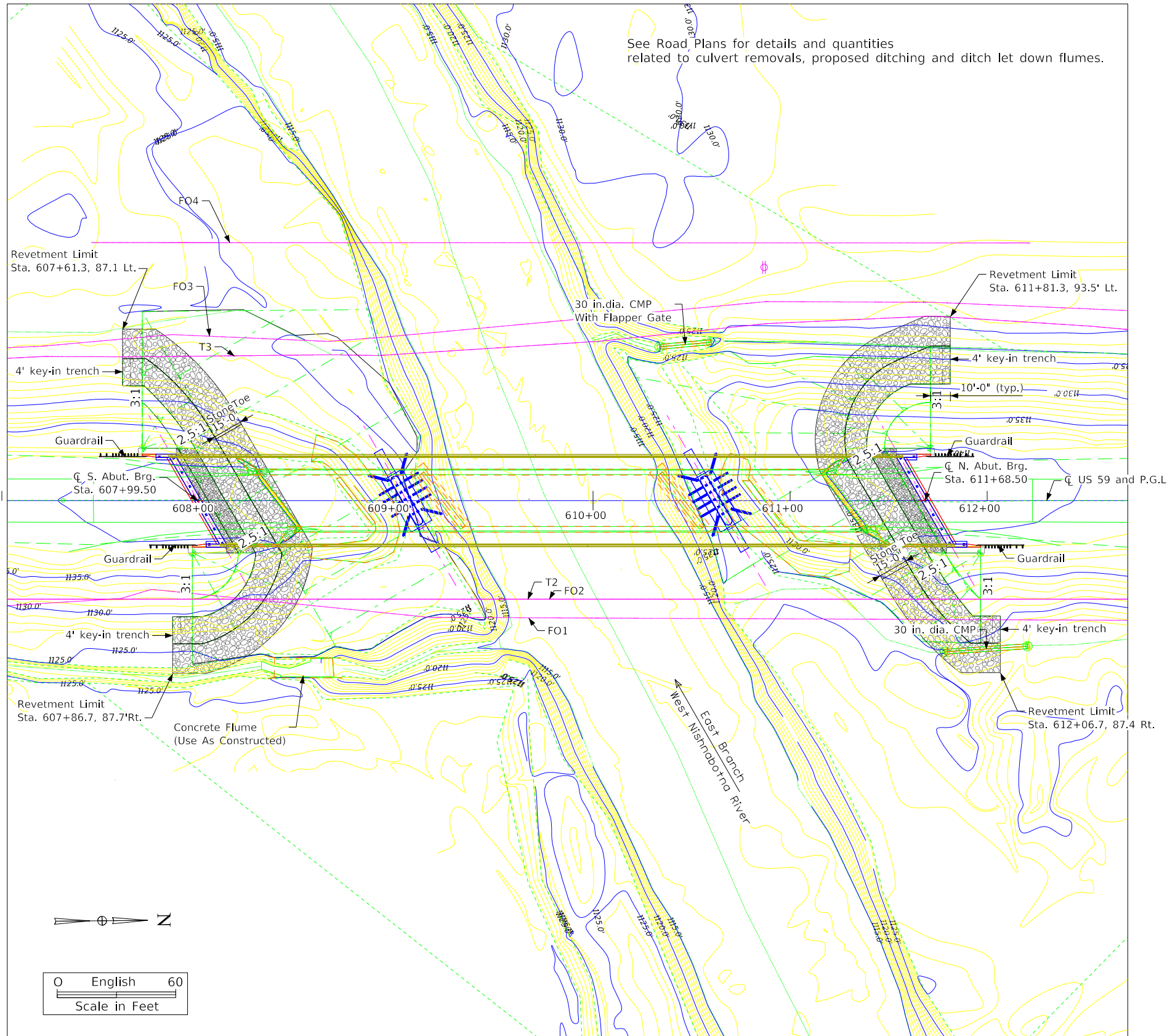
US 59 over East Branch
West Nishnabotna River
T-77N R-39W
Section 16/21
Knox Township
Pottawattamie County
FHWA No. 43451
Bridge Maint. No. 7863.1S059
Latitude 41.461879°
Longitude -95.336822°
Preliminary

Traffic Estimate

2023 AADT	2800	V.P.D.
2043 AADT	3100	V.P.D.
202_ DHV	-	V.P.H.
TRUCKS	14	%
TOTAL DESIGN ESALS	-	

Design For 30° Skew (R.A.)
**369'-0 x 44'-0 Pretensioned,
Prestressed, Concrete Beam Bridge**
106'-0 End Spans 157'-0 Interior Span
Situation Plan
STA. 609+84.00 (US 59) Letting Date December 20, 2022
Pottawattamie County
IOWA DEPARTMENT OF TRANSPORTATION
Design No. 223 Design Sheet No. 001 of ### FHWA No. 043451

Situation Plan



Berm Slope Location Table

Points	South Abutment			North Abutment		
	Station	Offset	Elev.	Station	Offset	Elev.
A1	608+11.35	26.58' Lt.	1125.00	611+28.03	26.58' Lt.	1125.00
A2	608+42.04	26.58' Rt.	1125.00	611+56.40	26.58' Rt.	1125.00
B1	607+89.35	26.58' Lt.	1132.62	611+47.96	26.58' Lt.	1132.71
B2	608+20.04	26.58' Rt.	1132.62	611+78.65	26.58' Rt.	1132.71
W1	607+71.30	26.58' Lt.	1140.16	611+71.30	26.58' Lt.	1140.47
W2	607+96.70	26.58' Rt.	1140.38	611+96.70	26.58' Rt.	1140.26

Berm slope elevations reflect the grading surface.

General Notes: (To be incorporated into the General Notes of the final plan set. The designer shall delete from the final TSL.)

1. This design is for the replacement of the existing 288' x 26' Continuous I-Beam bridge, Pottawattamie Design Nos. 4129 and 4950, FHWA No. 43450, Maintenance No. 7863.1S059.

Plan Notes:

1. Class E revetment is embedded.

Designer Notes: (Designer notes are intended to inform the final designer of design decisions and other requirements. The final designer shall delete these notes from the final TSL.)

Proposed staging concept is to construct the west side bridge as Stage 1 and the east side bridge as Stage 2. Verify the proposed staging with Road Design before initiating final bridge design. Coordinate any proposed changes to the staged construction widths.

The District has requested that one conduit be placed in each barrier rail.

TSS TL-4 bridge railing proposed.

Due to the large drainage area, a T-Pier is proposed. The width assumed in the hydraulic model was 5 ft.

An Iowa DNR Flood Plain permit is required. Preliminary Design will submit the application and place a copy of the permit within the PW Regulatory_Permits subdirectory folder upon receipt.

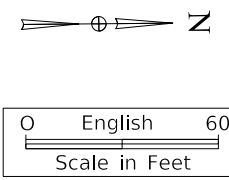
Requirements for a State Water Trail are applicable. Signage, plan notes, and bid items shall be addressed by the Design Bureau and included in the Road Plans.

Beam Type BTE.

Utilities Legend:

- FO1 - Fiber Optic
- FO2 - Fiber Optic
- FO3 - Fiber Optic
- FO4 - Fiber Optic
- T2 - Telephone Line
- T3 - Telephone Line
- ⊕ - Utility Pole

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



Site Plan

Preliminary

Design For 30° Skew (R.A.)

369'-0 x 44'-0 Pretensioned, Prestressed, Concrete Beam Bridge

106'-0 End Spans 157'-0 Interior Span

Situation Plan- Site

STA. 609+84.00 (US 59) Letting Date December 20, 2022

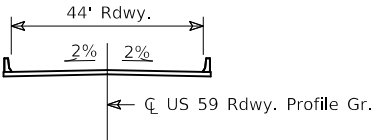
Pottawattamie County

IOWA DEPARTMENT OF TRANSPORTATION

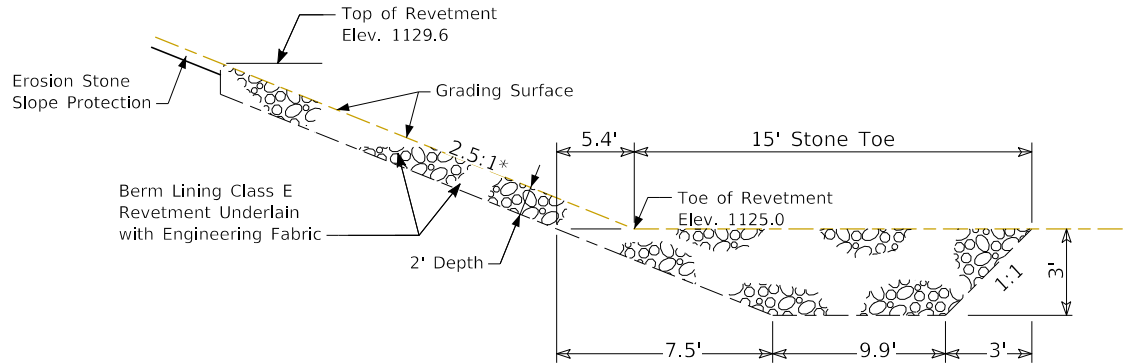
Design No. 223 Design Sheet No. 002 of ### FHWA No. 043451

Estimated Berm Armoring Quantities				
Location	Revetment Cl. E (Ton)	Erosion Stone (Ton)	Engineering Fabric (SY)	Excavation (CY)
Stone Toe - South Abutment	556.5	0.0	440.8	347.8
Berm Lining - South Abutment	311.5	30.4	407.3	213.7
Stone Toe - North Abutment	566.9	0.0	448.9	354.3
Berm Lining - North Abutment	332.2	31.0	427.8	227.0
Totals	1767.1	61.4	1724.8	1142.8

Excavation quantity calculated from grading surface.



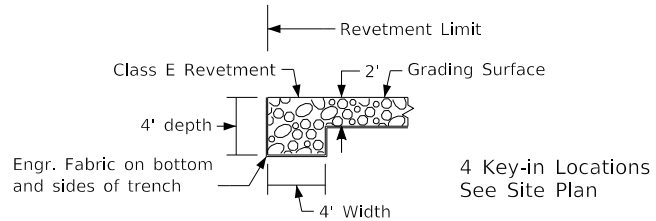
Typical Bridge Section



*Varies to 3:1


(Not to Scale)

Section Thru Embedded Revetment Berm



Typical Section Thru Key-in Trench

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.

Patricia G. Schwarz 8-30-2021
 Signature Date
 Patricia G. Schwarz
 Printed or Typed Name
 My license renewal date is December 31, 2022.

Pages or sheets covered by this seal: 1-3

Preliminary

Design For 30° Skew (R.A.)

**369'-0 x 44'-0 Pretensioned,
Prestressed, Concrete Beam Bridge**

106'-0 End Spans 157'-0 Interior Span

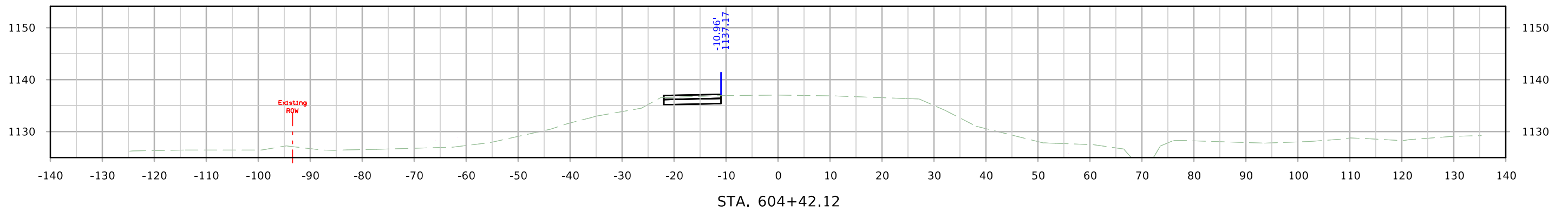
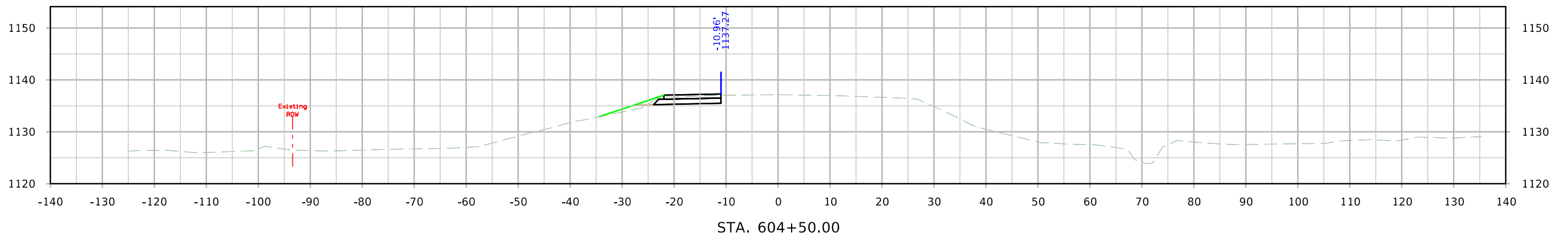
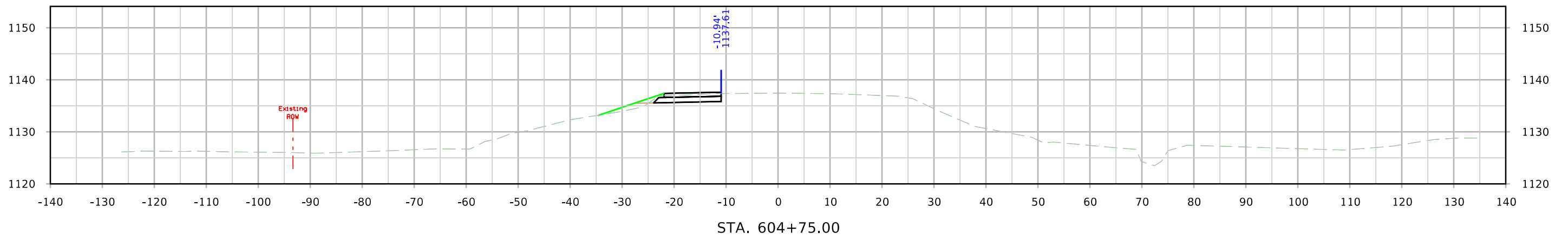
Situation Plan- Misc.

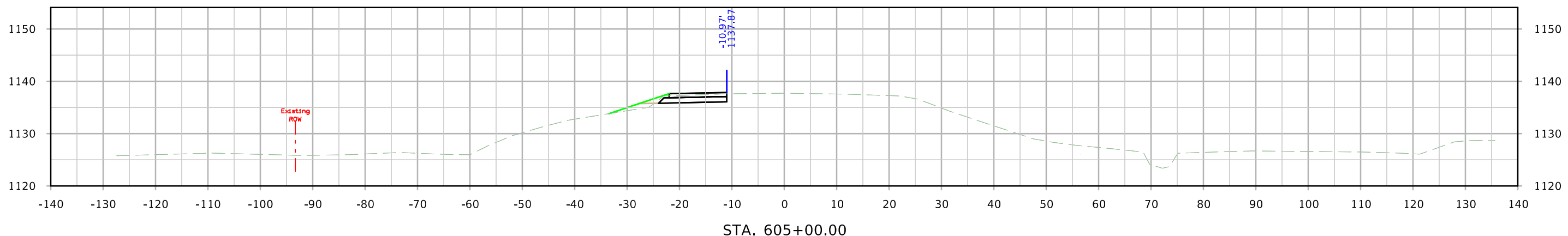
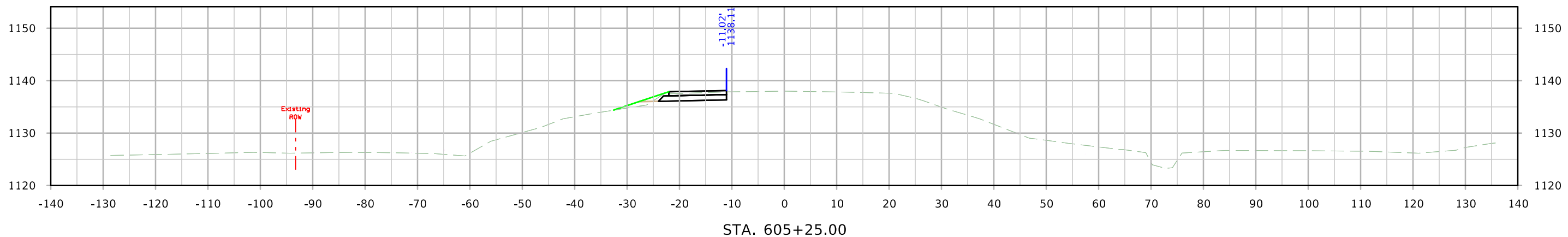
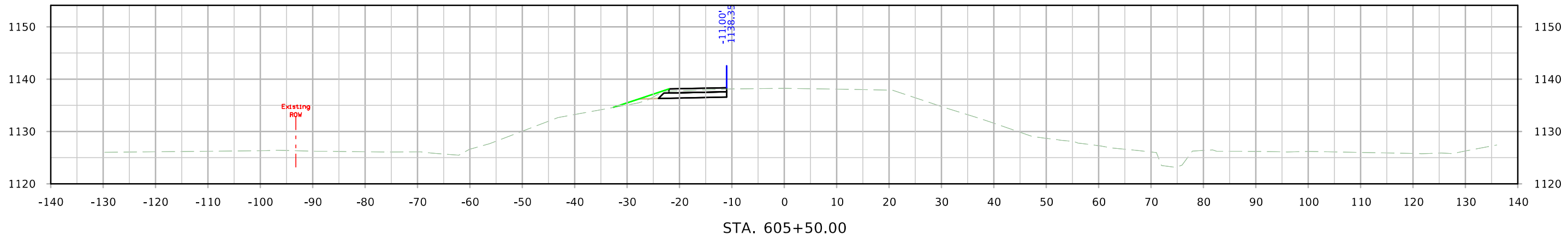
STA. 609+84.00 (US 59) Letting Date December 20, 2022

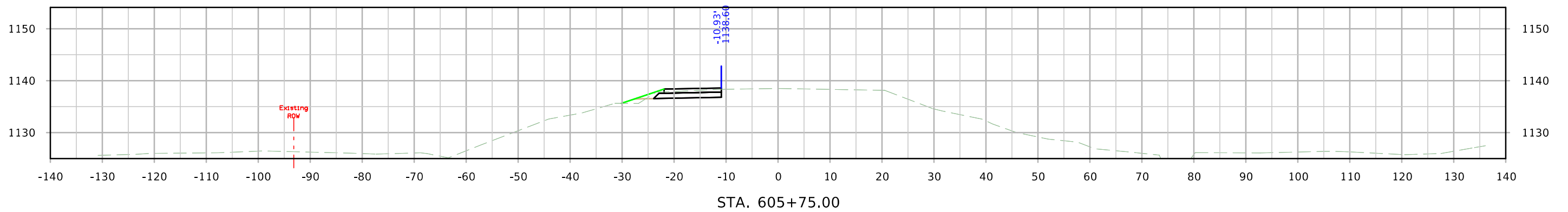
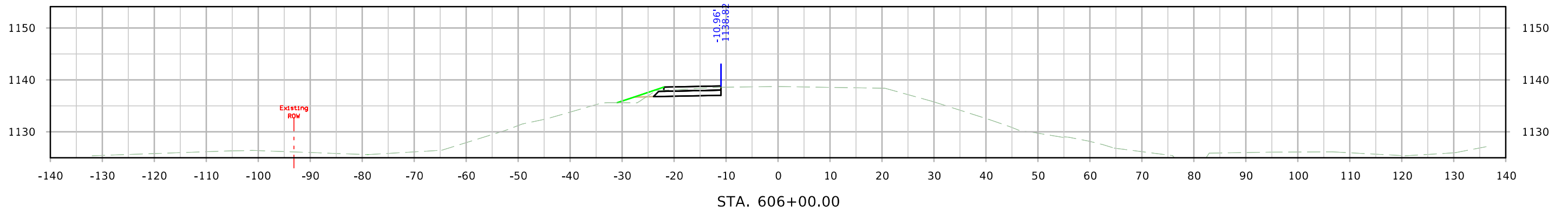
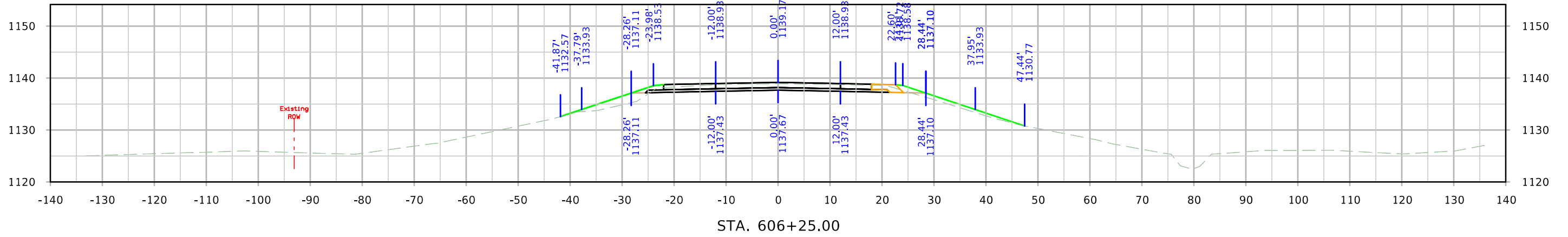
Pottawattamie County

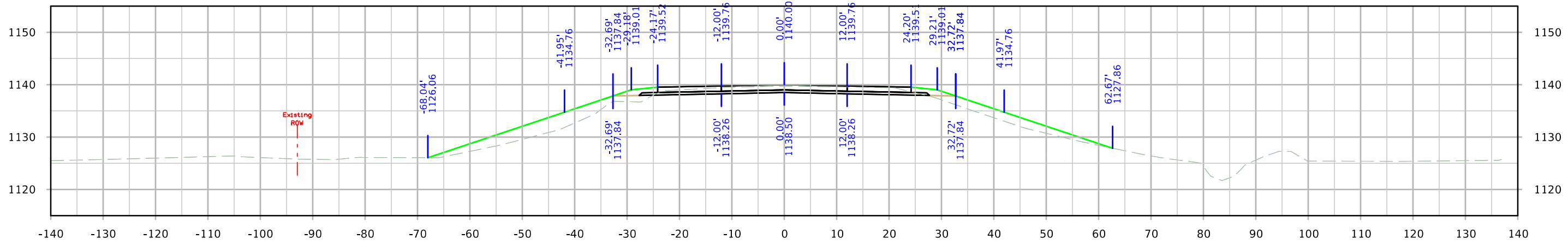
IOWA DEPARTMENT OF TRANSPORTATION

Design No. 223 Sheet No. 003 of ### FHWA No. 43451

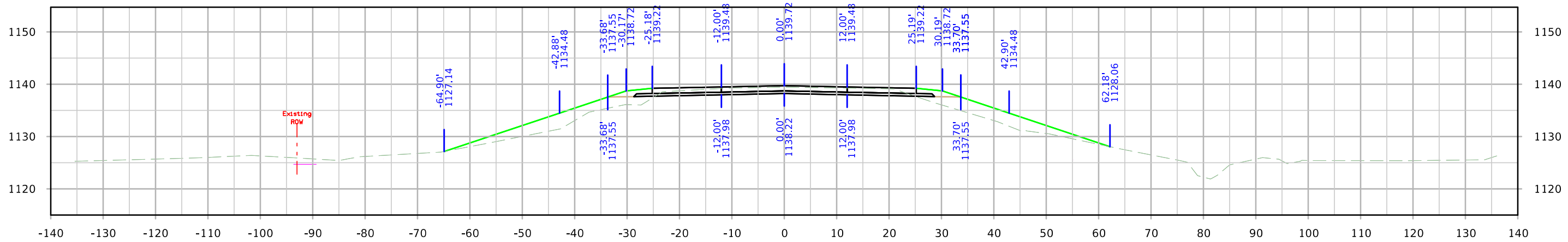




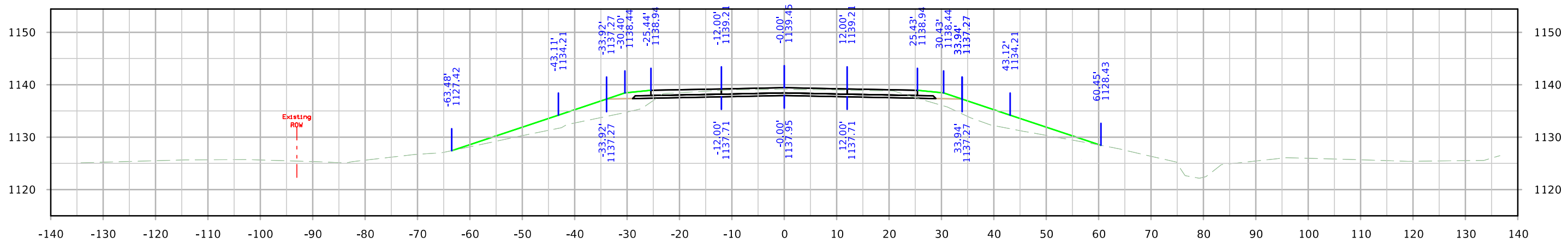




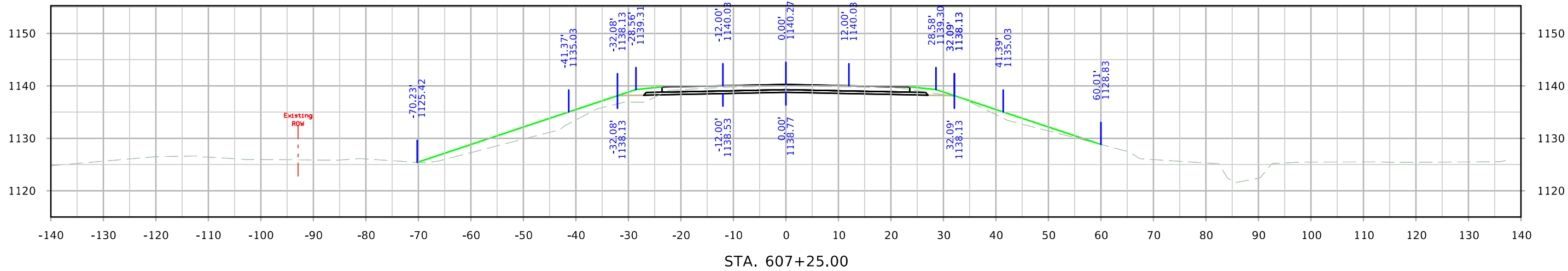
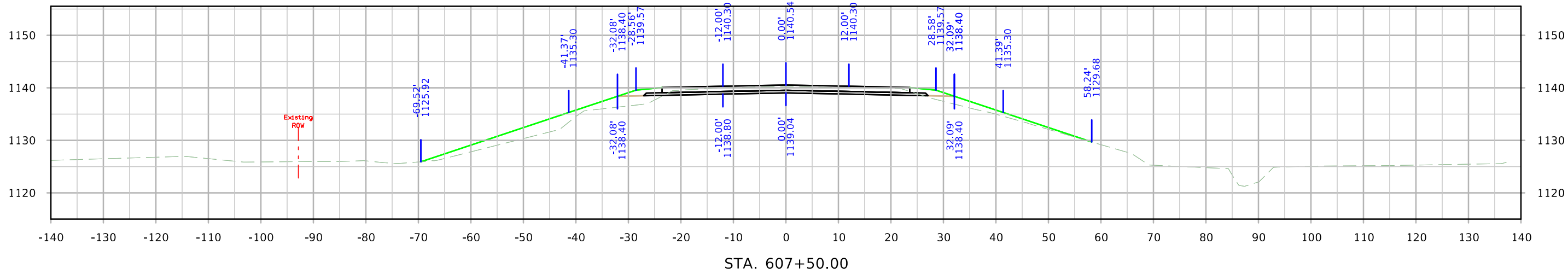
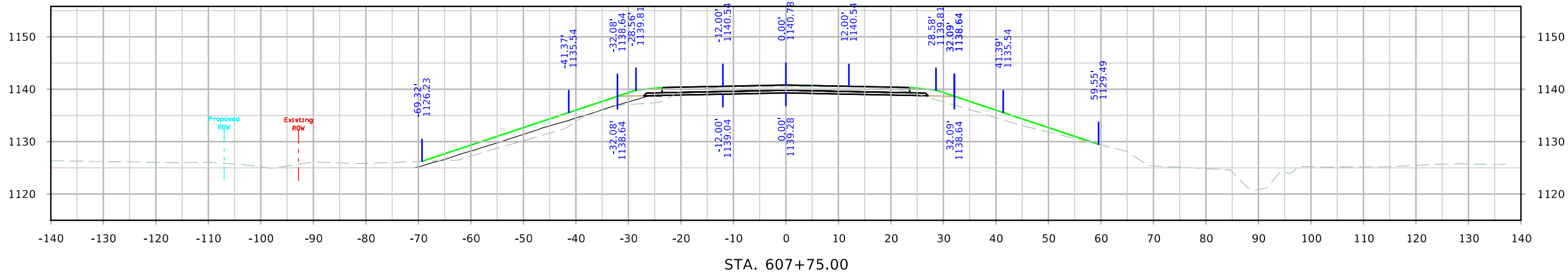
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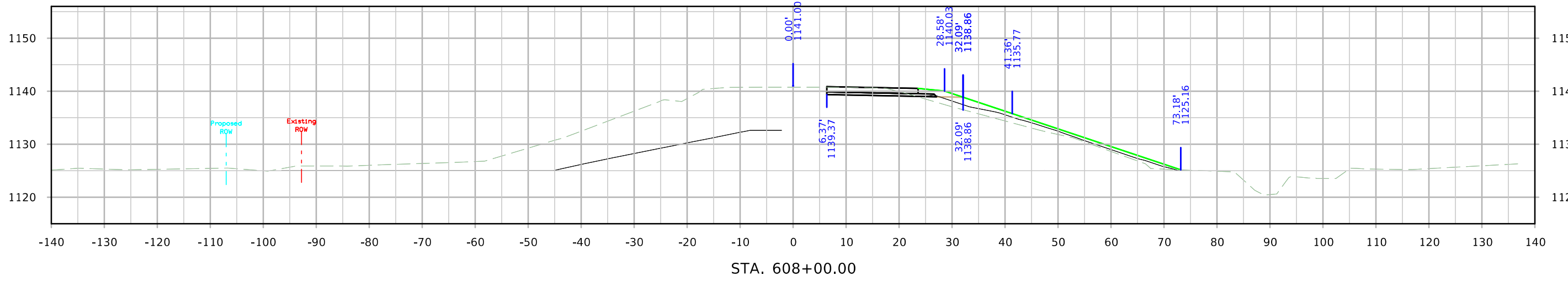
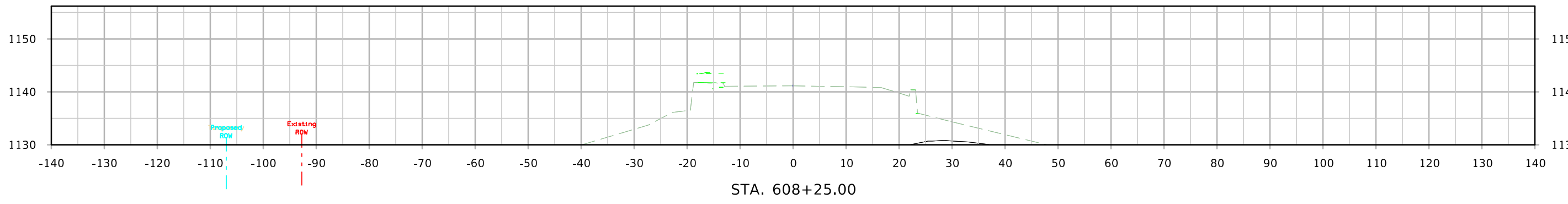
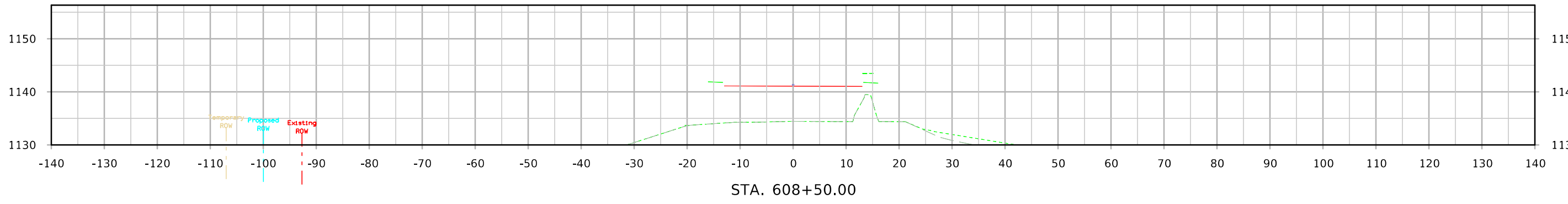


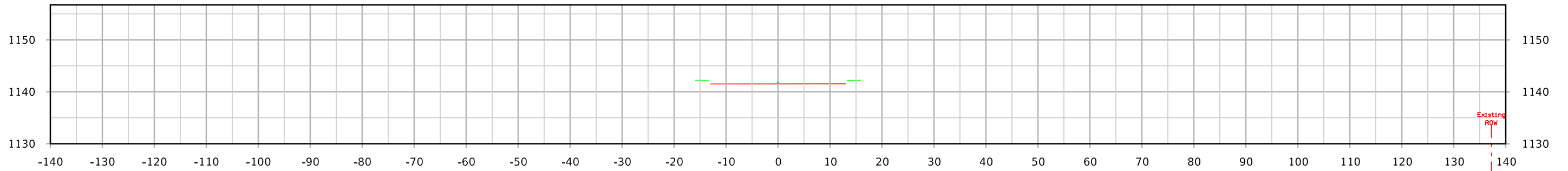
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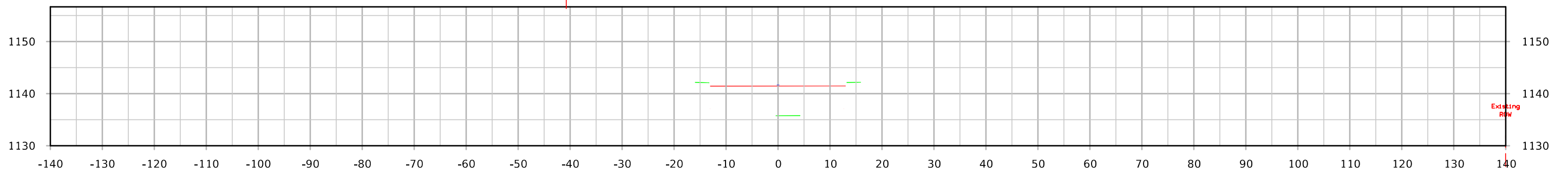
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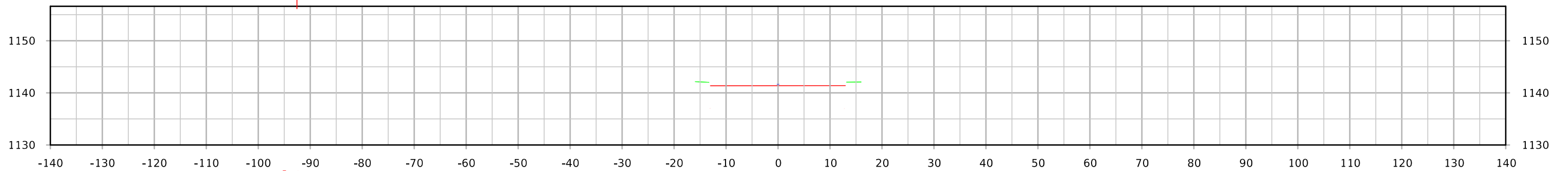




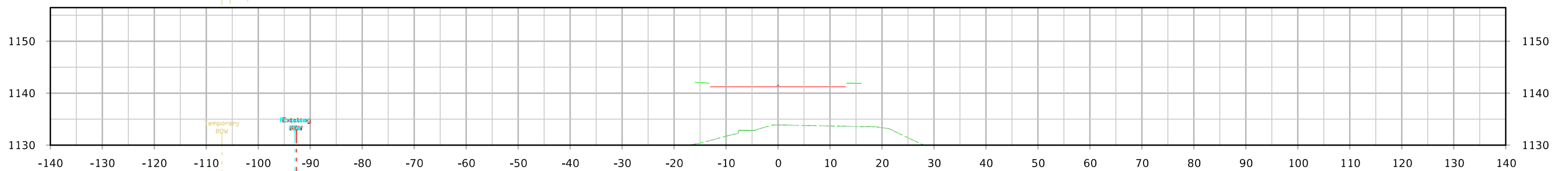
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STA. 609+25.00



STA. 609+00.00



STA. 608+75.00

