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PLANS OF PROPOSED IMPROVEMENT ON THE
PRIMARY ROAD SYSTEM
Plymouth COUNTY
 Bridge Replacement
 NB US 75 over small stream, 0.6 mi. south of Co Rd C60

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

30

PROJECT IDENTIFICATION NUMBER

24-75-075-030

PROJECT NUMBER

BRF-075-2(126)--38-75

R.O.W. PROJECT NUMBER

NHSN-075-2(127)--2R-75

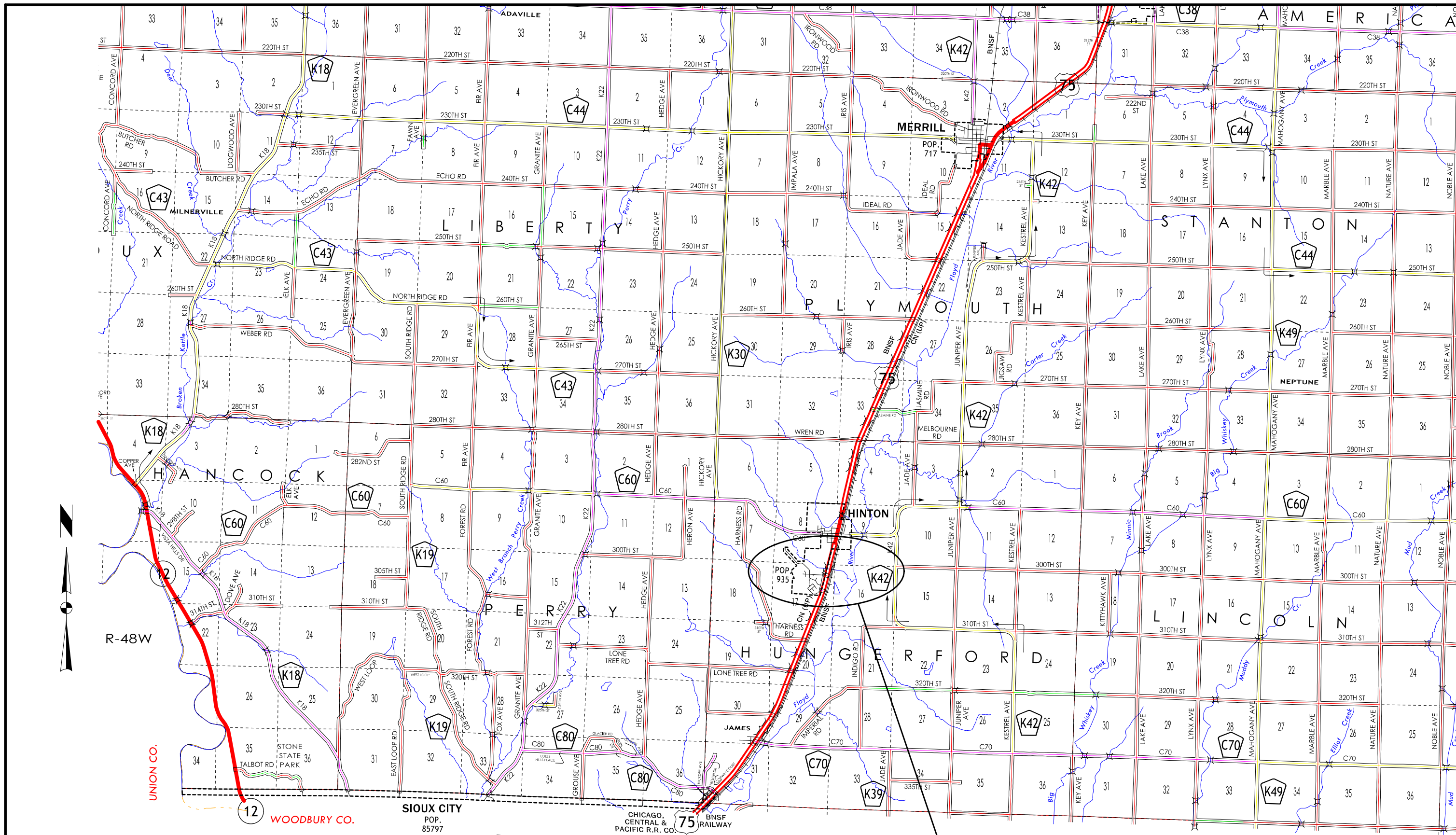
DESIGN DATA URBAN			
2024	AADT	15900	V.P.D.
2044	AADT	21200	V.P.D.
2044	DHV	2190	V.P.H.
	TRUCKS	17	%
	Total		
	Design ESALs	-	

INDEX OF SEALS			
SHEET NO.	NAME	TYPE	BID QUANTITY SHEETS
A.1	X	Primary Signature Block	X
V.1	Mark D. Werner	Hydraulic Design	X

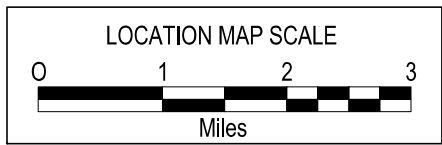
PRELIMINARY PLANS

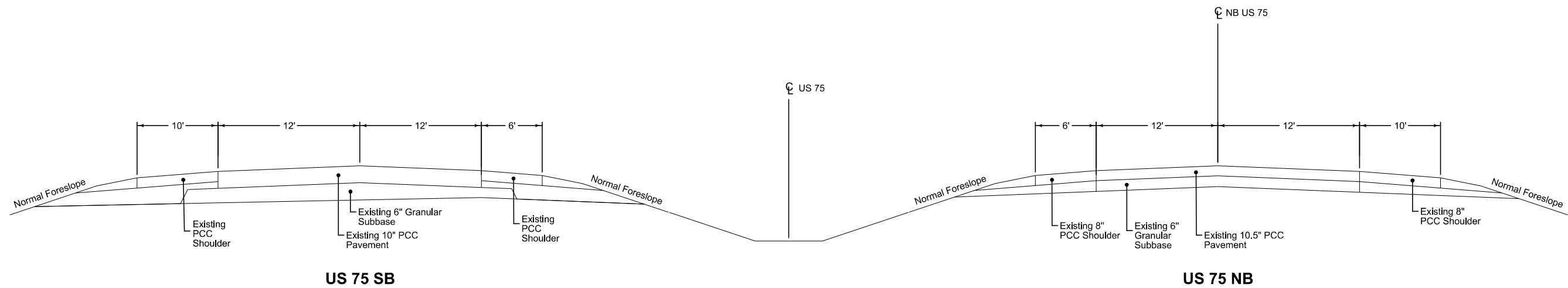
Subject to change by final design.

D5 PLAN - Date: 12-05-2025



**US 75 BRIDGE REPLACEMENT
FHWA NO. 039372**

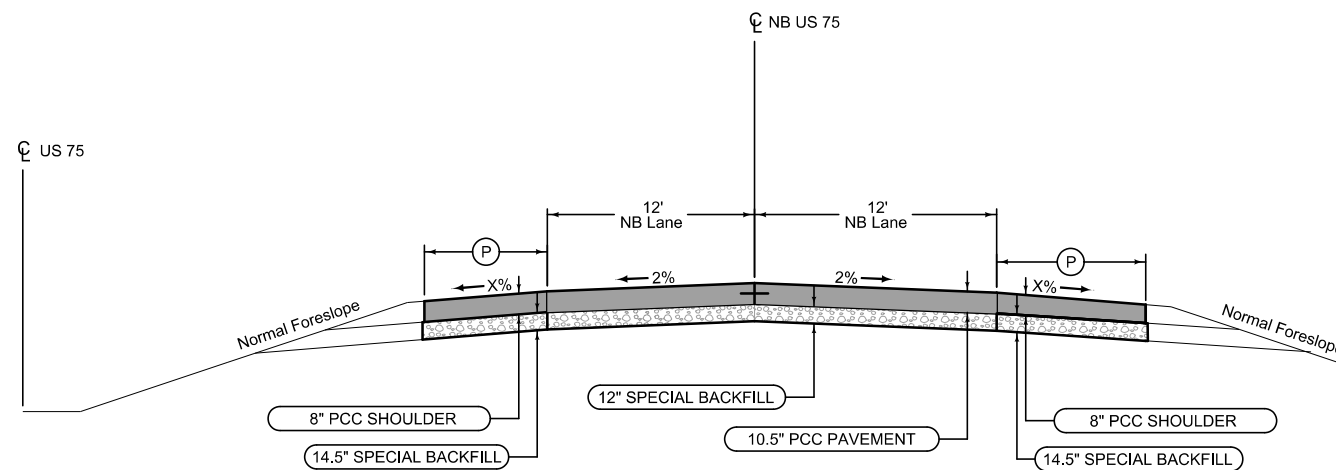




EXISTING US 75

Shoulder
 PCC Shoulder Jointing:
 Longitudinal joint: BT-1 or BT-5
 Transverse joints: C at 17' spacing

Direction of Travel	BEGIN STATION	END STATION	(P) Feet	(X) Slope
NB	234+22.44	234+55.00	6	-4%



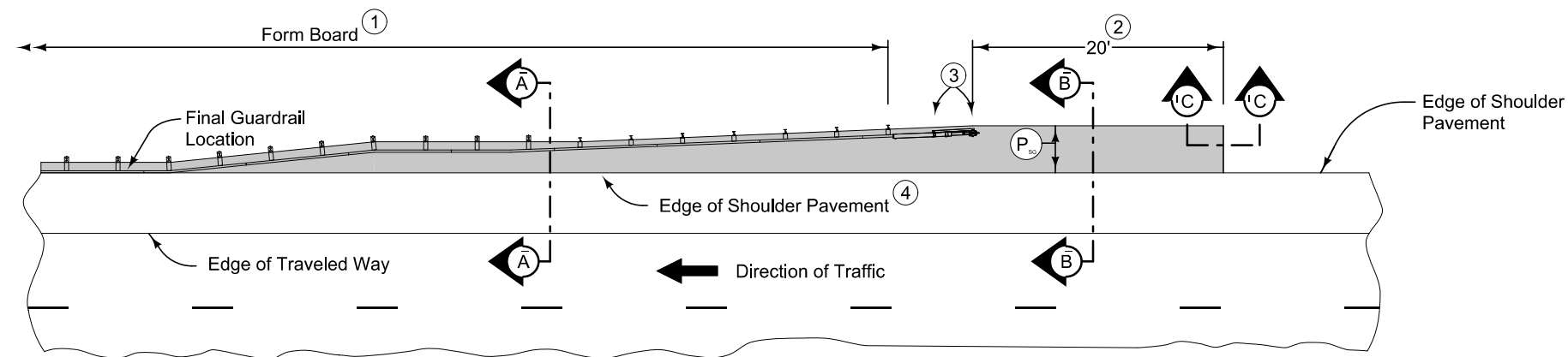
Mainline Jointing
 Longitudinal joint: L-2
 Transverse joints: CD at 17' spacing

Direction of Travel	BEGIN STATION	END STATION
NB	234+22.44	234+55.00

Shoulder
 PCC Shoulder Jointing:
 Longitudinal joint: BT-1 or BT-5
 Transverse joints: C at 17' spacing

Direction of Travel	BEGIN STATION	END STATION	(P) Feet	(X) Slope
NB	234+22.44	234+55.00	10	-4%

US 75 NB



PLAN VIEW

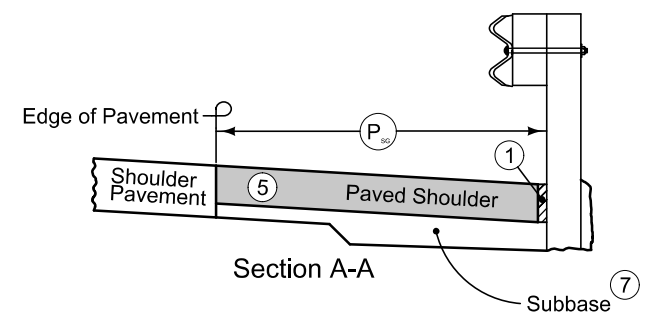
9" HMA Paved Shoulder at guardrail. 8" PCC may be substituted with the following jointing layout:

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.

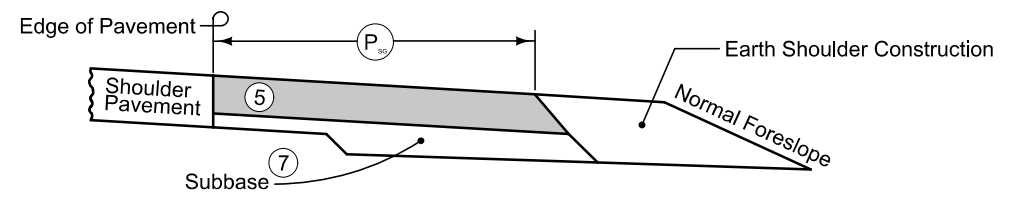
Compaction of HMA is required to face of guardrail post. Hand compaction will be allowed under guardrail. Removal and reinstallation of guardrail will be allowed with no additional payment.

Refer to Tabulation 112-9 for shoulder quantities.

- ① 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 'BT' (per PV-101) joint for PCC shoulder. 'B' (per PV-101) 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.

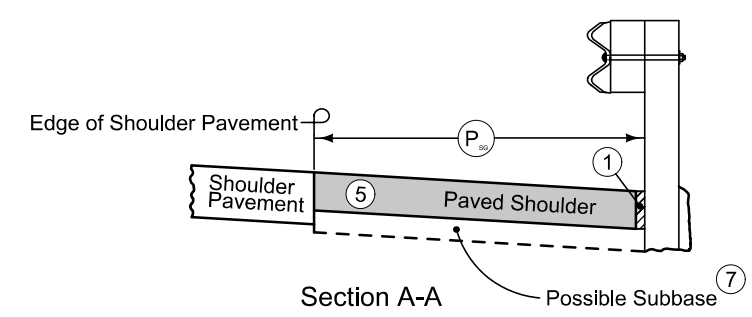


Section A-A

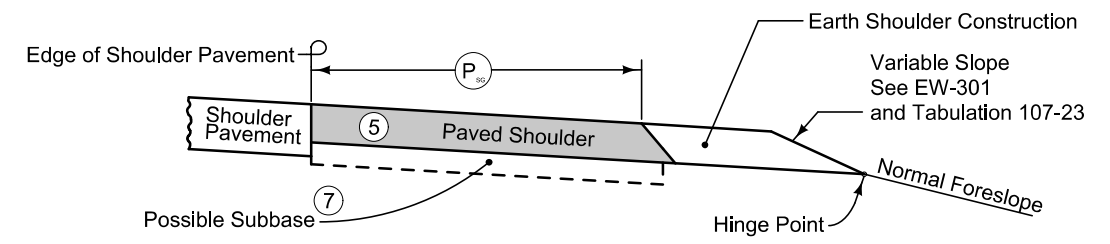


Section B-B

NEW CONSTRUCTION

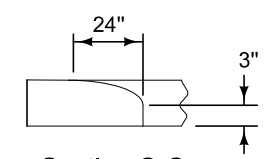


Section A-A



Section B-B

EXISTING SHOULDER



Section C-C

Roll down at granular shoulder or earth.

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

ESTIMATED PROJECT QUANTITIES

100_01A
3/24/25

Line No.	Item No.	Item Code	Item	Unit	Total	As Built Qty.
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100_01D
8/15/22

PROJECT DESCRIPTION

This Project involves the replacement of the northbound US 75 over a small stream, located 0.6 miles South of County Rd C60 (NB).

105_04
10/21/25

STANDARDS

The following Standards apply to construction work on this project.

Number	Date	Title
BA-200	04-15-25	Steel Beam Guardrail Components
BA-202	04-15-25	Steel Beam Guardrail Bolted End Anchor
BA-205	10-17-23	Steel Beam Guardrail Tangent End Terminal (MASH TL-3)
BA-209	10-15-24	Steel Beam Guardrail Barrier Transition Section (Mash Tl-3, 34in Mounting Height)
BA-250	10-21-25	Steel Beam Guardrail Installation at Concrete Barrier or Bridge End Post (MASH TL-3)
BR-205	10-21-25	Double Reinforced 12in Approach (Slab Bridge)
BR-211	10-21-25	Bridge Approach (Abutting PCC or Composite Pavement)
BR-213	10-19-21	Bridge Approach (Abutting Pavement)
DR-306	10-17-23	Precast Concrete Headwall for Subdrain Outlets
EC-201	04-20-21	Silt Fence
EC-204	10-19-21	Perimeter, Slope and Ditch Check Sediment Control Devices
EC-303	10-19-21	Stabilized Construction Entrance
EC-502	04-21-15	Seeding in Rural Areas
EW-202	04-19-16	Bridge Berm Grading without Recoverable Slope (Non-Barnroof Section)
EW-401	10-20-15	Temporary Stream Crossing, Causeway, or Equipment Pad
EW-402	04-18-17	Temporary Stream Diversion
EW-403	04-18-17	Temporary Erosion Control Measures
PM-110	10-15-24	Line Types
PV-101	10-21-25	Joints
PV-102	10-21-25	PCC Curb Details
SI-173	04-19-16	Object Markers

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 Sign
- TCB Traffic Signal Control Box
- RRB Rail Road Signal Control Box
- TSB Telephone Switch Box
- EB Electric Box

UTILITY LEGEND

- E1 *EL1D, City of Hinton - Quality D*
- G *GL1D, Mid-American Gas - Quality D*
- F0 *FO1D, Premier Communications - Quality D*
- F02 *FO2D, Lumen - Quality D*
- F03 *FO3D, Long Lines Broadband - Quality D*
- F04 *FO4D, Verizon - Quality D*
- F05 *FO5D, Zayo Group LLC - 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
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	(132)		Proposed Shoulder Paved Partial Depth Shading
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
Red	(3)		Proposed Structure Shading
Red	(3)		Delineates Restricted Areas

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

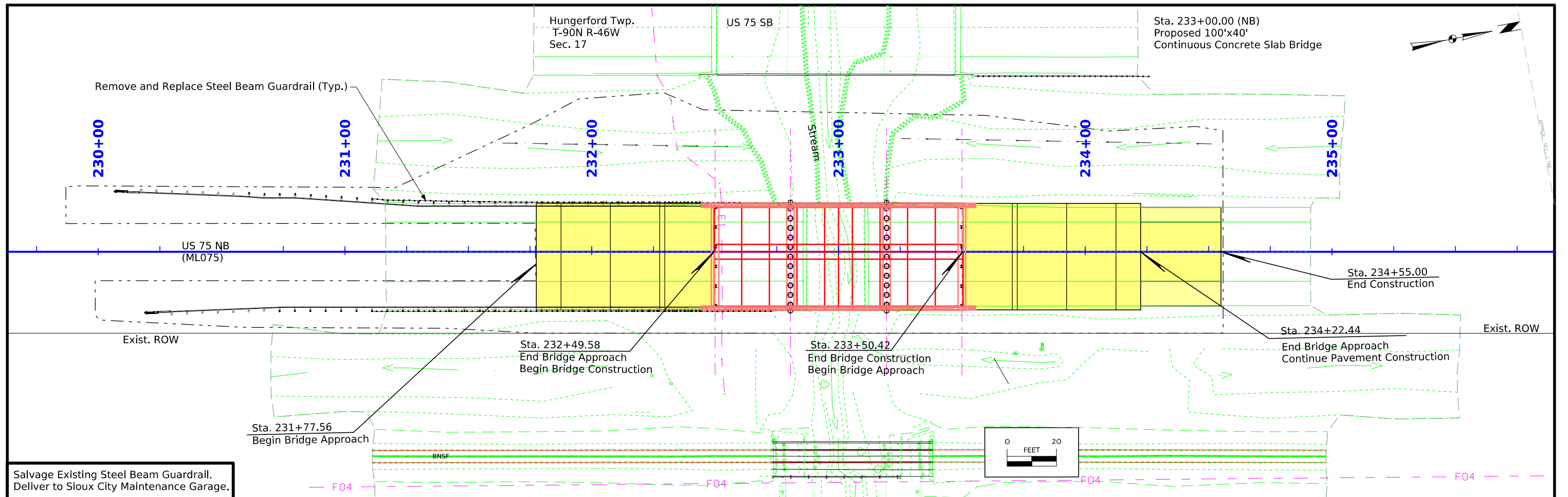
- Reference Point
- Station
- Survey Line
- Section Corner
- Ground Line Intercept
- Saw Cut
- Guardrail
- Trench Drain
- HighTension Cable Guardrail
- Sheet Pile
- Pavement Removal
- Clearing & Grubbing Area

RIGHT-OF-WAY LEGEND

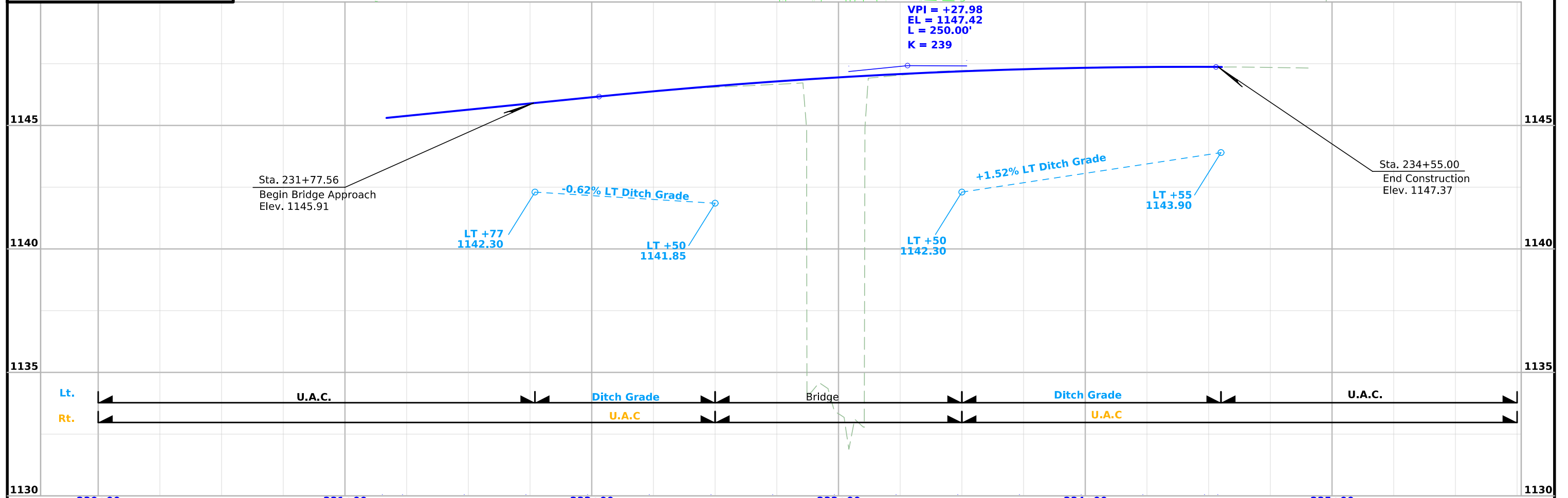
- Proposed Right-of-Way Symbol
- Proposed Right-of-Way Line
- Existing Right of Way
- Existing and Proposed Right-of-Way
- Easement and Existing Right-of-Way
- Easement (Temporary) Symbol
- Easement (Temporary) Line
- Easement
- C/A Access Control
- Property Line Symbol
- Property Line

PLAN AND PROFILE LEGEND AND SYMBOL INFORMATION SHEET

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



Salvage Existing Steel Beam Guardrail. Deliver to Sioux City Maintenance Garage.



Survey Information

SURVEY INDEX

County: Plymouth

PIN: 24-75-075-030

Project Number: BRF-075-21(126)--38-75, NHSN-075-2(127)--2R-75

Location: Stream 0.6 mi S of Co Rd C60m (NB)

Type of Work: Bridge - Unspecified

Project Directory: 7507503024

Survey Personnel

Dave Overman – Survey Party Chief

Lee Budde – Survey Party Chief

Eric Green – Professional Land Surveyor

Jimmy Michael – Survey Party Chief

Jason Flaherty – Survey Party Chief

Matthew Schneider – Assistant Survey Party Chief

Date(s) of Survey

Begin Date 02/26/2025

End Date 04/10/2025

General Information

This survey is a topographic survey for approximately 0.1 miles of US Highway 75 north bound bridge replacement. The corridor is approximately 0.50 miles southwest of Hinton, IA. 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

Nearby Iowa Real Time Network reference stations were utilized to validate and obtain horizontal and vertical control on two new primary project control points, and one existing project control point. Three five-minute observations were taken with a minimum two-hour time span between and used in a weighted average to obtain final coordinate values for the two new Feno monuments. Three-minute RTN and RTK validation observations were completed to check existing control point 125. 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 4

(U.S. SURVEY FOOT)

VERTICAL DATUM: NAVD88

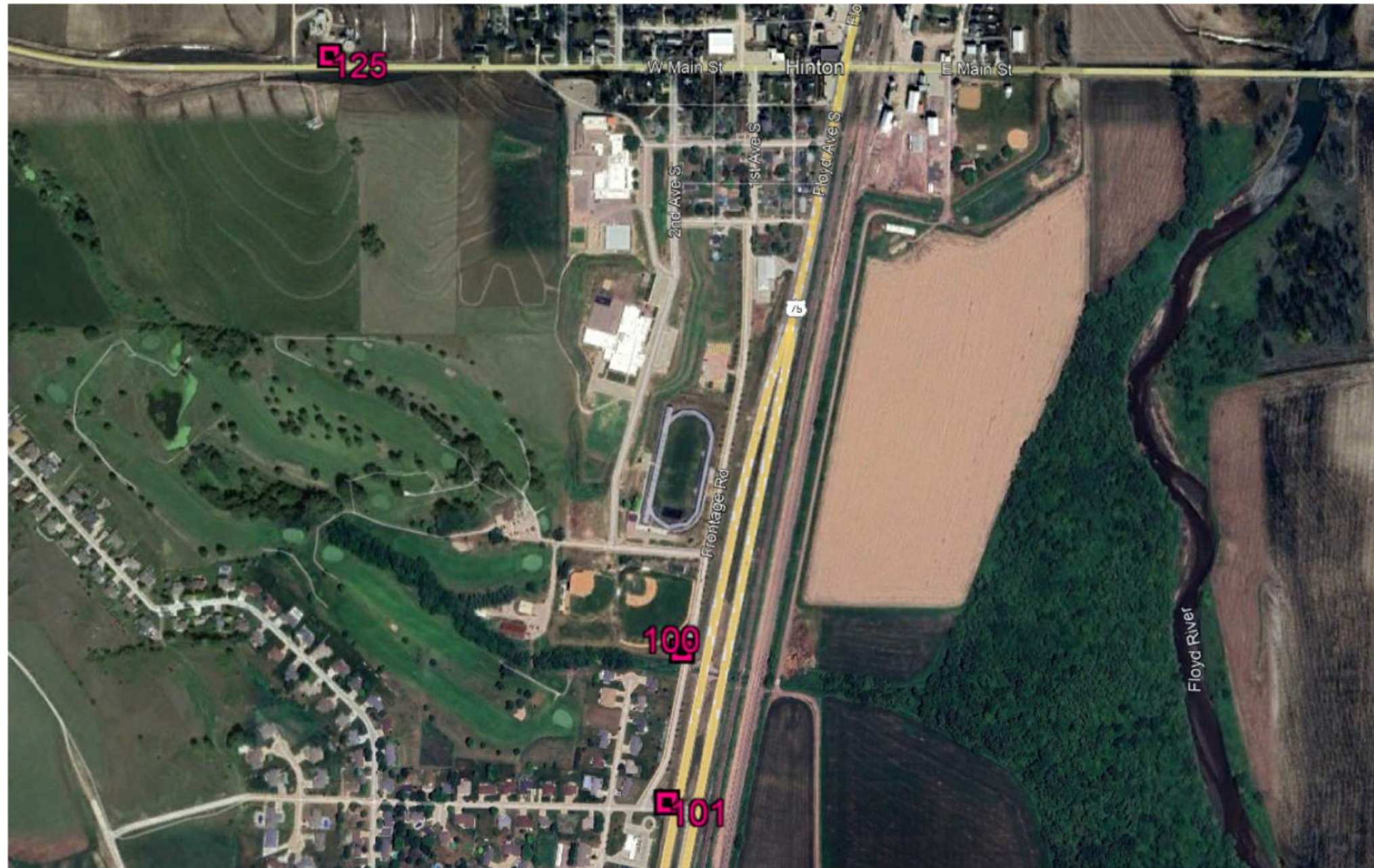
GEOID MODEL: 2018u3

Alignment Information

The horizontal alignment for U.S. Hwy 75 this survey is a District approved alignment from this 2021 project [666.5](#) referenced in [US 75 Grading.pdf](#) used on the recommendation of the Iowa DOT via email.

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: 2018u2

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: 2018u2

Point Name	Northing	Easting	Elevation	Code-Description
100	8634515.55	14106593.39	1146.98	FENO SET MON 450 FT NORTH OF TITAN RD AND FRONTAGE RD WEST SIDE
101	8633808.72	14106513.38	1143.19	FENO SET MON NORTH OF TITAN RD AND WEST OF US75
125	8637478.50	14104870.10	1327.05	CP FND MONUMENT EXISTING 100FT N OF C60 2500 FT W OF HWY75

ALIGNMENT COORDINATES

Line No.	Name	Location	Point on Tangent Station	Point on Tangent Y Northing	Point on Tangent X Easting	Begin Spiral Station	Begin Spiral Y Northing	Begin Spiral X Easting	Begin Curve Station	Begin Curve Y Northing	Begin Curve X Easting	Simple Curve PI or Master PI Station	Simple Curve PI or Master PI Y Northing	Simple Curve PI or Master PI X Easting	End Curve Station	End Curve Y Northing	End Curve X Easting	End Spiral Station	End Spiral Y Northing	End Spiral X Easting
1.0	ML075	NB US 75	220+20.05	8633152.151	14106507.544															
2.0	ML075	NB US 75	263+46.15	8637377.504	14107435.76															

108_23A
8/15/22

TRAFFIC CONTROL PLAN

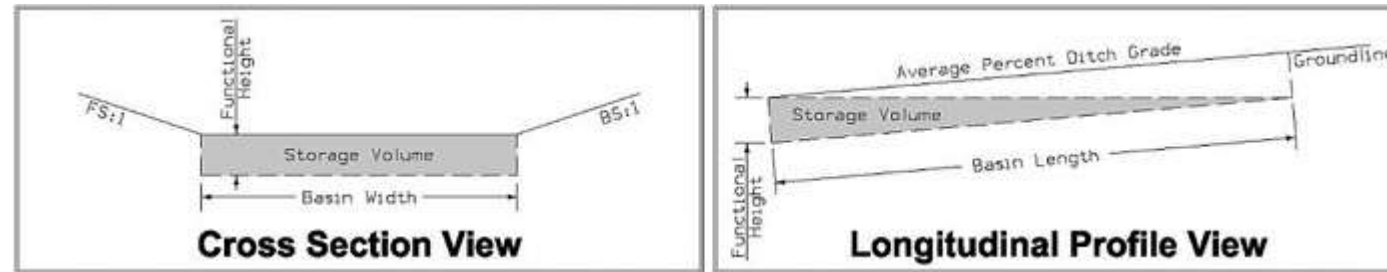
Northbound US 75 will be closed during construction and traffic will be shifted to the southbound lanes utilizing median crossovers to maintain one-lane traffic in each direction.

A detour route will not be required as traffic will be shifted to the southbound lanes utilizing median crossovers to maintain one-lane traffic in each direction. It is anticipated that all work on this project will be awarded to one prime contractor.

Project will be tied to Hinton reconstruction project NHSX-075-2(116)--3H-75. Schedule has been updated to coordinate both projects. Traffic control shall be part of tied Project NHSX-075-2(116)--3H-75.

SILT BASINS

Possible Standard: EW-403

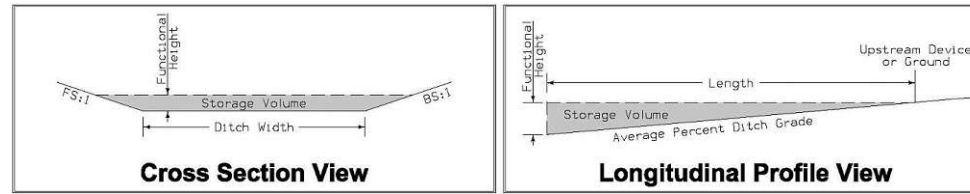


* The functional height used in the volume equation is 95% of effective height. Effective height is 3 feet as shown in EW-403.
 * Volume equation: $(0.5 * \text{Length} * (\text{Width} * \text{Height} + \text{Width} * (\text{Height} - \text{Length} * \text{Avg} \% \text{Slope})))$

Line No.	Basin No.	Station	Side	Installation (Each)	Removal (Each)	Basin Width (FT)	Basin Length (FT)	Height (FT)	Avg. % Slope	Volume (CF)	Remarks
1.0	1	232+30.00	Left	1.0	1.0	5.0	20.0	3.00	1.0	290.00	
2.0	1	233+75.00	Left	1.0	1.0	5.0	20.0	3.00	1.0	290.00	
Total:				2	2					580	

SILT FENCES FOR DITCH CHECKS

Possible Standard: EC-201



* The functional height used in the volume equation is 85% of effective height. Effective height is 1.58 feet as shown on EC-201.
* Volume equation: $[0.5 * \text{Spacing} * (0.5 * H^2 * FS + DW * H + 0.5 * H^2 * BS)]$

Line No.	Basin No.	Type	Station	Side	Installation (LF)	Maintenance (LF)	Removal (LF)	Foreslope (FS:1)	Backslope (BS:1)	Ditch Width (FT)	Avg. % Slope Ditch Grade	Volume (CF)	Remarks
1.0	1	Type 5	232+45.00	Left	60.0	6.0	60.0	3.0	3.0		0.5	852.08	
2.0	1	Type 5	233+55.00	Left	60.0	6.0	60.0	3.0	3.0		0.5	852.08	
Total:					120	12	120					1704.16	

PERIMETER AND SLOPE SEDIMENT CONTROL DEVICE

100_19
10/15/24

Possible Standards: EC-204

Line No.	Station From	Station To	Side	Sediment Control Device Type	Diameter Size	Length (LF)	Remarks
1.0	229+90.00	232+50.00	Left	Perimeter and Slope	12 inch	260.00	
2.0	230+00.00	232+50.00	Right	Perimeter and Slope	12 inch	250.00	
3.0	233+50.00	234+55.00	Left	Perimeter and Slope	12 inch	110.00	
4.0	233+50.00	234+55.00	Right	Perimeter and Slope	12 inch	110.00	
Total:						730	

STORMWATER DRAINAGE BASIN

Refer to EC Standards and 570s Details.

Line No.	Basin No.	Station From	Station To	Direction of Traffic	Side	Discharge Station	Discharge Direction	Total Disturbed Area (ACRES)	Disturbed Area with Storage Provided (ACRES)	Disturbed Area without Storage Provided (ACRES)	Best Management Practice	Total Storage Volume Provided (CF)	Total Storage Volume Required (CF)	Storage Volume Met	Remarks
1.0	1	229+86.00	234+55.00			233+00.00	SE	0.6	0.6		Silt Fence for Ditch Check (EC-201)	1704.00	2160.0		
2.0	1	229+86.00	234+55.00			233+00.00	SE	0.6	0.6		Silt Basin (EW-403)	580.00	2160.0		
3.0	1	229+86.00	234+55.00			233+00.00	SE	0.6	0.6			2284.00	2160.0	Yes	
4.0	2	230+00.00	232+50.00					0.1		0.1	Vegetated Buffer				

LINE STYLE LEGEND OF LANDSCAPE SHEETS

LINETYPE	Design Element
-----	Living Snow Fence Single Row
-----	Living Snow Fence Double Row
—————	Mechanical Edge

CELL LEGEND OF LANDSCAPE SHEETS

CELL	Design Element	Plant Diameter
⊕	Clearing	
⊙	Proposed Shrub	6 FT
⊙	Proposed Understory Tree	12 FT
⊙	Proposed Conifer Tree	18 FT
⊙	Proposed Overstory Tree	30 FT

PATTERN LEGEND OF LANDSCAPE SHEETS

	Brush Clearing		Spray Area
	Clearing & Grubbing		

LINE STYLE LEGEND OF EROSION CONTROL SHEETS

LINETYPE	Design Element
	Silt Fence
	Perimeter and Slope Sediment Control Device (9")
	Perimeter and Slope Sediment Control Device (12")
	Perimeter and Slope Sediment Control Device (20")
	Open-Throat Curb Intake Sediment Filter
	Concentrated Flow
	Rock Check and Rock Check Dam
	Sheet Flow

CELL LEGEND OF EROSION CONTROL SHEETS

CELL	Design Element
	Temporary Sediment Control basin
	Erosion Control for Circular Intake or Manhole Well
	Erosion Control for Rectangular Intake or Manhole Well
	Grate Intake Sediment Filter Bag
	Silt Basin
	Silt Fence Tail
	Stormwater Drainage Basin Discharge Point

PLAN VIEW COLOR LEGEND OF EROSION CONTROL SHEETS

LINWORK	Design Color No.	Design Element
Green	(2)	Existing Topographic Features and Labels
Blue	(1)	Proposed Alignment, Stationing, Tic Marks, and Alignment Annotation
Magenta	(5)	Existing Utilities
Black	(0)	Permanent Erosion Control Features
Blaze Orange	(222)	Temporary Erosion Control Features

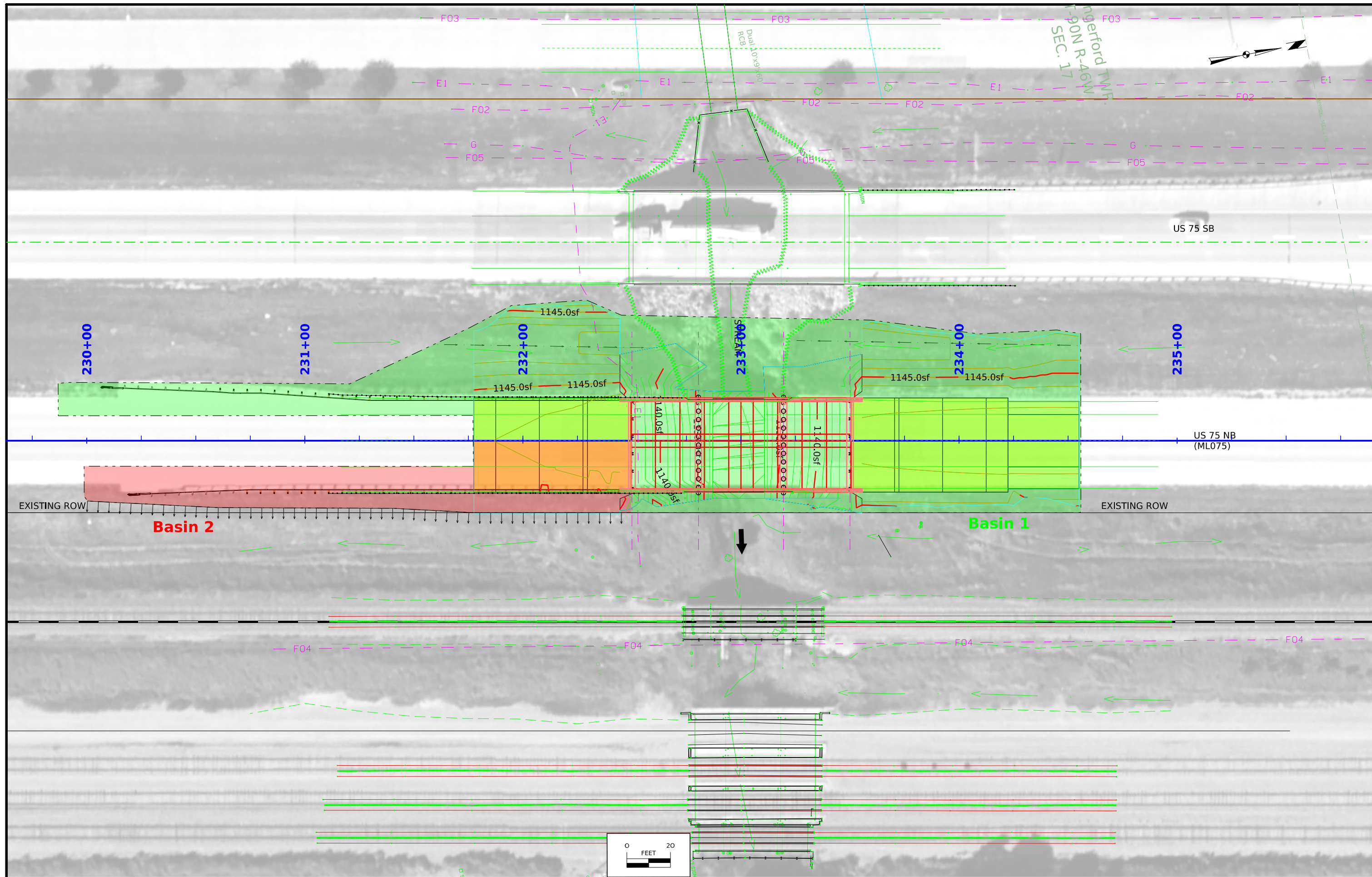
SHADING	Design Color No.	Design Element	Transparency
Citron	(234)	Mulching, All Types	50%
Light Brown	(238)	Special Ditch Control, Wood Excelsior Mat	0%
Grass Green	(233)	8FT Mow Strip	50%
Red	(3)	Delineates Restricted Areas	0%

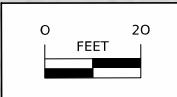
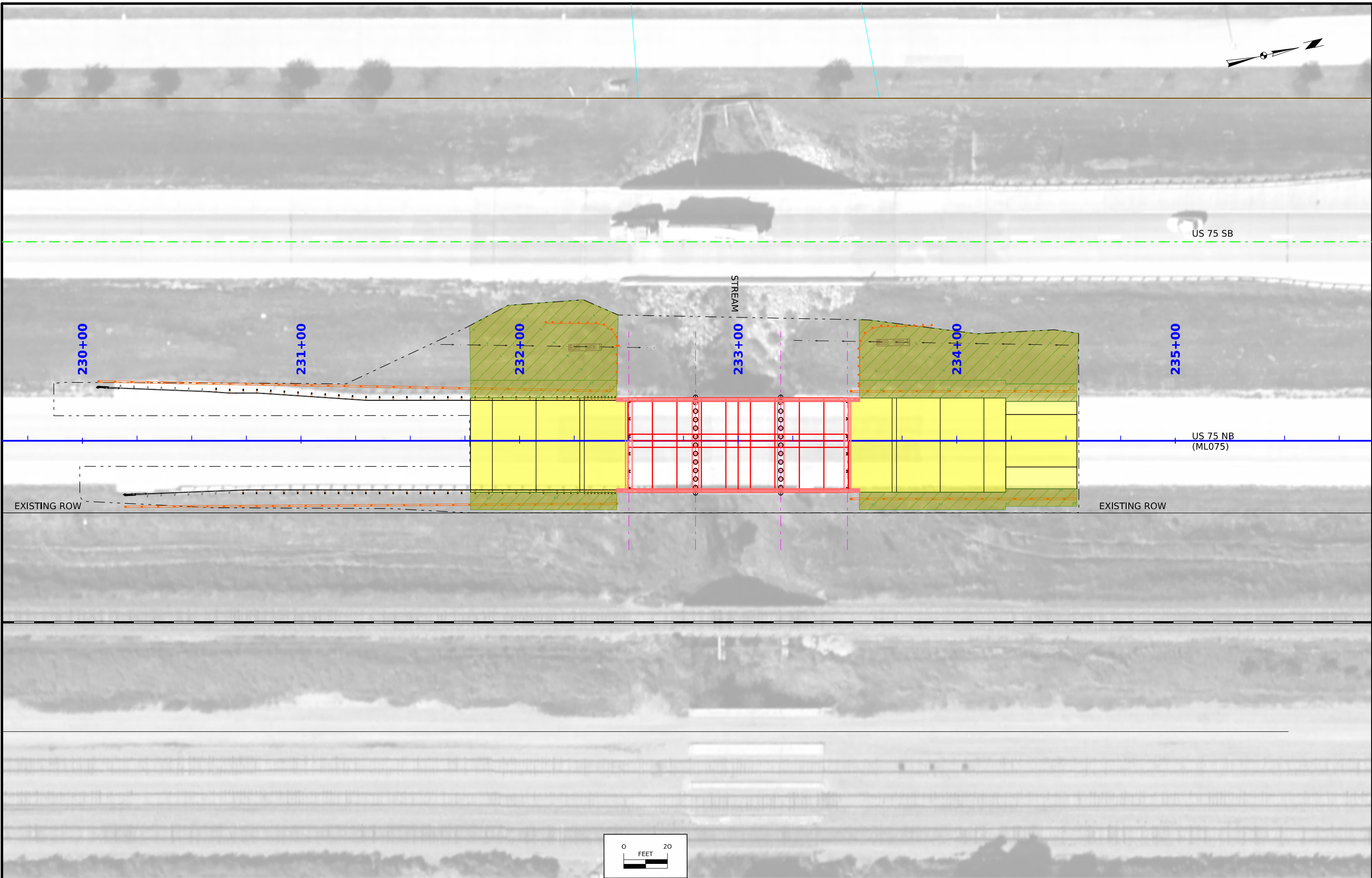
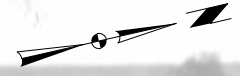
PATTERN LEGEND OF EROSION CONTROL SHEETS

	Seeding and Fertilizing		Turf Reinforcement Mat Type 1
	Seeding and Fertilizing (Rural)		Turf Reinforcement Mat Type 2
	Seeding and Fertilizing (Urban)		Turf Reinforcement Mat Type 3
	Native Grass Seeding		Turf Reinforcement Mat Type 4
	Salt Tolerant Seeding		Slope Protection, Wood Excelsior Mat
	Wetland Grass Seeding		Transition Mat
	Wildflower Seeding		Rock Features, Permanent
	Sodding		Rock Features, Temporary

EROSION CONTROL LEGEND AND SYMBOL INFORMATION SHEET

(COVERS SHEET SERIES R)







US 75 SB

US 75 NB
(ML075)

229+00

230+00

231+00

232+00

233+00

234+00

STA: 230+06.32
OFF: 24.37' LT

STA: 230+57.96
OFF: 22.29' LT

STA: 230+67.32
OFF: 21.67' LT

STA: 230+79.82
OFF: 21.67' LT

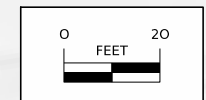
STA: 231+29.71
OFF: 18.34' LT

Location Station
STA: 232+44.50
OFF: 18.86' LT

STA: 230+18.68
OFF: 24.66' RT

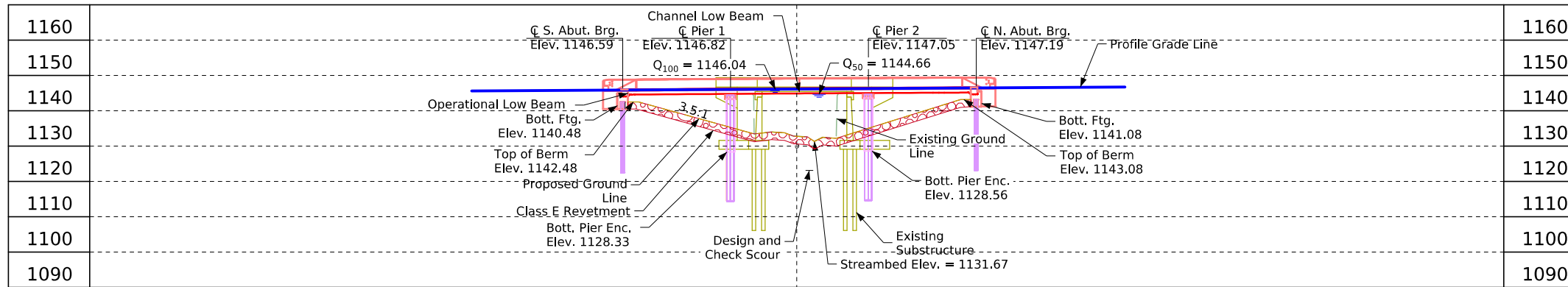
STA: 230+75.61
OFF: 22.34' RT

Location Station
STA: 232+44.50
OFF: 22.86' RT

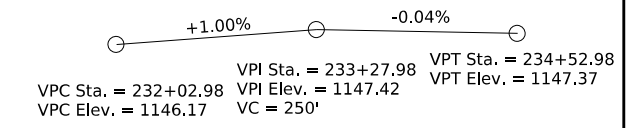


Guardrail Layout
NB US 75

BENCH MARK NO. CP100: N:8634515.55 E:14106593.39; ELEV. 1146.98
 FENO SET MON 450 FT NORTH OF TITAN RD AND FRONTAGE RD WEST SIDE



Longitudinal Section Along C N.B. US 75



Proposed Profile Grade N.B. US 75

Hydraulic Data

Drainage Area = 2.66 sq. mi.
 Stream Slope (HGL) = 64.1 ft./mi.
 Avg. Low Water Stage = 1132.17

$Q_{50} = 2,120$ cfs
 Stage = 1144.66
 Channel Low Beam = 1145.06
 Avg. Bridge Velocity = 6.76 fps
 Freeboard = 0.40 ft

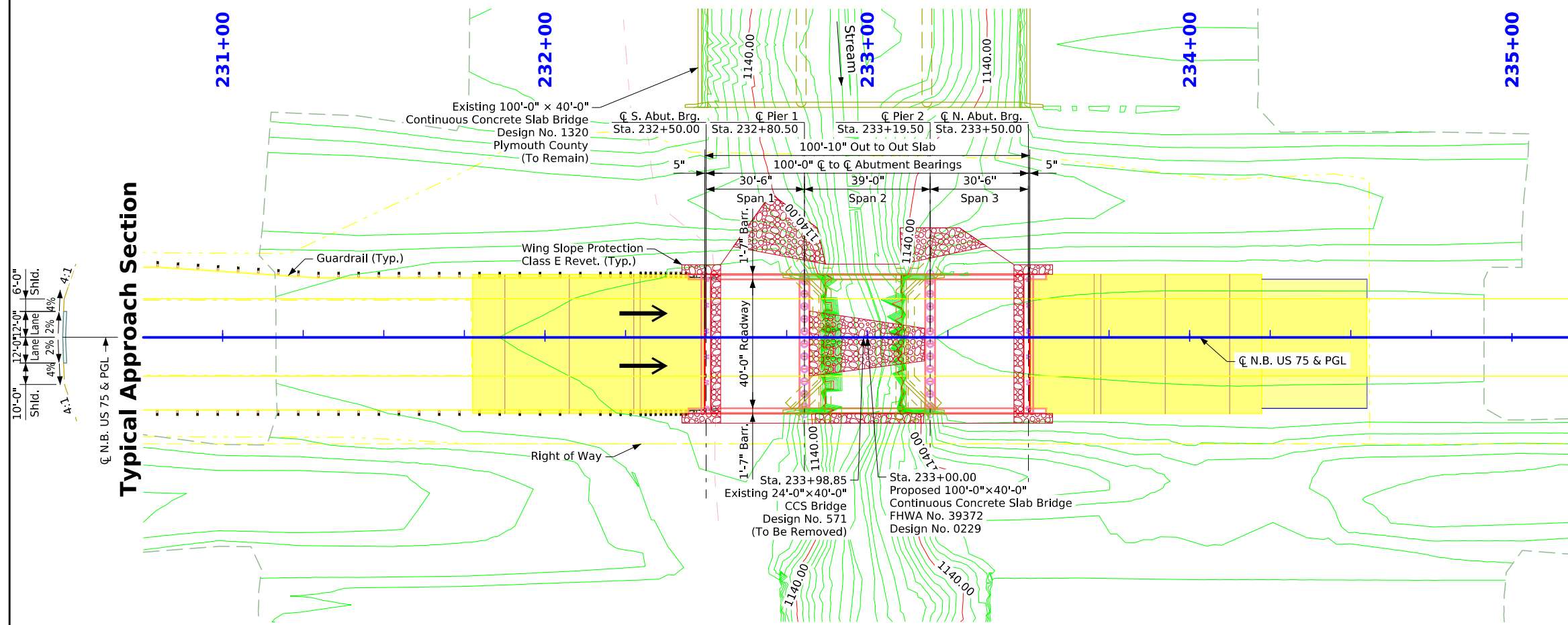
$Q_{100} = 2,590$ cfs
 Stage = 1146.04
 Operational Low Beam = 1144.69
 Backwater = 1.19 Ft.
 Avg. Bridge Velocity = 7.20 fps

$Q_{200} = 3,080$ cfs
 Stage = 1146.35
 Calculated Design and Check Scour = 1123.9

$Q_{500} = 3,680$ cfs
 Stage = 1146.80
 Avg. Bridge Velocity = 9.07 fps

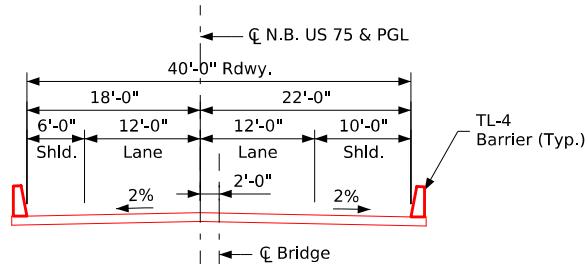
Notes

Top of bridge slab at C N.B. US 75 is 0.03' below the profile grade to account for parabolic crown.
 All units are in feet unless otherwise noted.
 Standard Bridge Index J44.
 Pier Type - P10L Type 3
 Foundation type to be confirmed during final design.
 Berm slope to be determined during final design.
 TL-4 Single Slope Bridge Railing proposed.



Typical Approach Section

Situation Plan



Typical Bridge Section
(Looking North)

Location

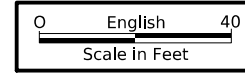
N.B. US 75 over Stream
 T-90N R-46W
 Section 17
 Hungerford Township
 Plymouth County
 FHWA No. 39372
 Bridge Maint. No. 7504.9R075
 Latitude 42.618377°
 Longitude -96.294201°

Utilities Legend:

— E1 — - Electric Line - City of Hinton

Traffic Estimate

2022 AADT 7,450 V.P.D.
 TRUCKS 18 %



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.

Mark D. Werner 10-23-2025
 Signature Mark D. Werner Date

Printed or Typed Name
 My license renewal date is December 31, 2025

Pages or sheets covered by this seal: V.1

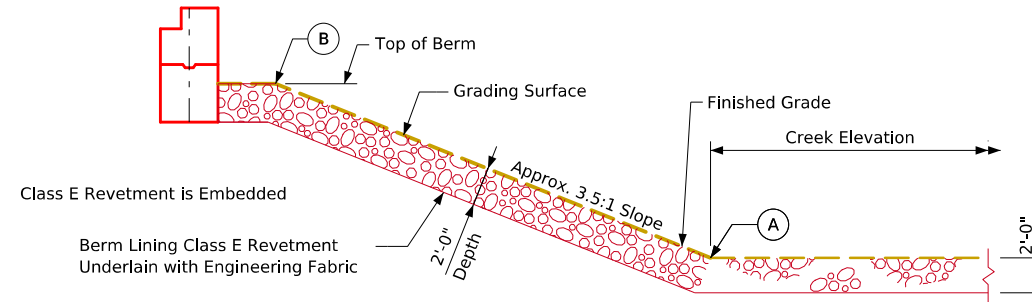
Design For 0° Skew
100'-0" x 40'-0" Continuous Concrete Slab Bridge

30'-6" End Spans 39'-0" Interior Span

Situation Plan

STA. 233+00.00 (N.B. US 75) Turn-in Date: Aug. 2025

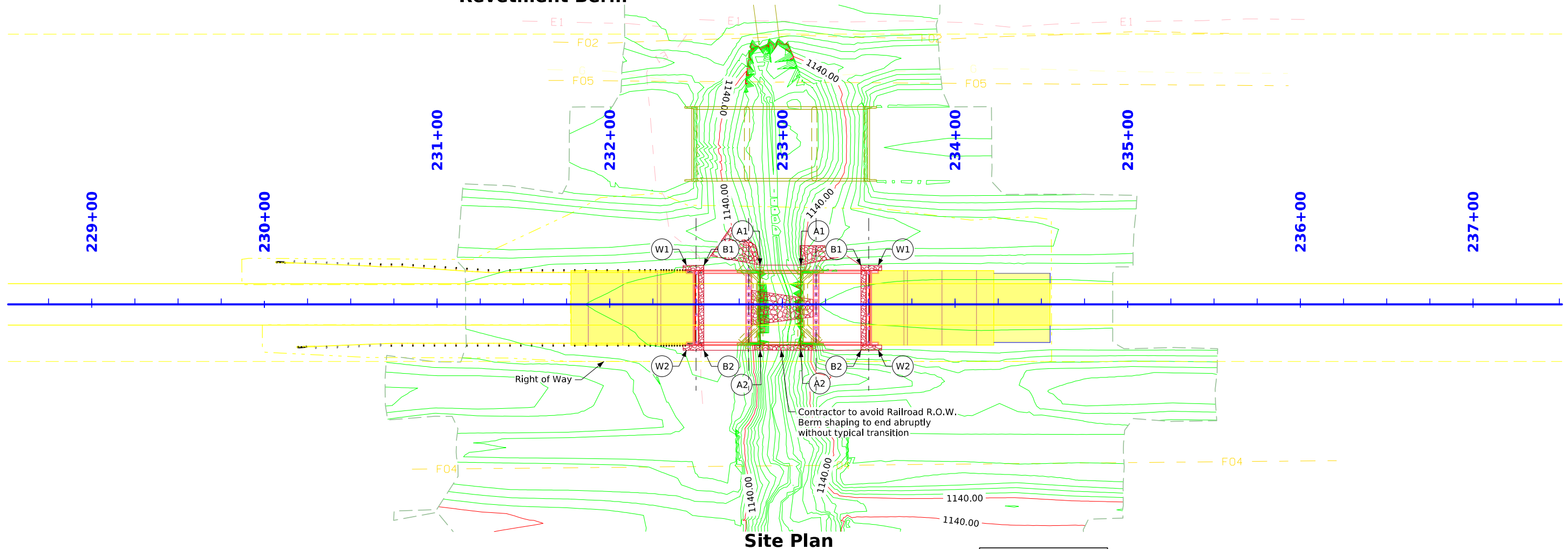
Plymouth County
 IOWA DEPARTMENT OF TRANSPORTATION
 Design No. 0229 Design Sheet No. 1 of 2 FHWA No. 39372



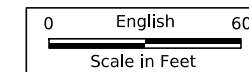
Section Thru Embedded Revetment Berm

Points	South Abutment			North Abutment		
	Station	Offset	Elev.	Station	Offset	Elev.
A1	232+87.00	22.58' LT	1133.00	233+11.00	22.58' LT	1133.00
A2	232+87.00	26.58' RT	1133.00	233+11.00	26.58' RT	1133.00
B1	232+54.50	22.58' LT	1142.48	233+45.50	22.58' LT	1143.08
B2	232+54.50	26.58' RT	1142.48	233+45.50	26.58' RT	1143.08
W1	232+44.50	22.58' LT	1146.09	233+55.50	22.58' LT	1146.74
W2	232+44.50	26.58' RT	1145.93	233+55.50	26.58' RT	1146.58

Berm slope elevations reflect the grading surface.



Site Plan



Estimated Berm Armoring Quantities

Location	Revetment CL. E (Ton)	Erosion Stone (Ton)	Engineering Fabric (SY)	CL. 10 Channel Excavation (CY)
Berm Lining - South	330		375	220
Berm Lining - North	330		375	220
Totals	660		750	440

Excavation quantity calculated from grading surface. Excavation quantity if for embedded revetment core out only, and does not include excavation to the grading surface. Excavation quantity to the grading surface is determined by Road Design and included in the Road Plans. Density used for Class E quantity calculations is 1.5 T/cy.

General Notes

This design is for the replacement of the existing 24'-0" x 40'-0" Concrete Slab Bridge, Plymouth Design No. 571, FHWA 39371, Maint. No. 7504.9R075.

To maintain existing vertical profile and consistency with recently replaced S.B. bridge, desired 3' of freeboard will not be obtained for this project.

The bridge does not meet Iowa DOT's desired (operational or channel) freeboard per BDM 3.2.2.4. Final design aspects in the BDM related to inundation required. The bridge will be designed to withstand the applicable effects of ice and the horizontal stream loads and uplift forces associated with the Q₁₀₀.

There is a potential for conflicts with existing foundations. The existing abutment wingwalls could potentially interfere with the proposed piers.

Design For 0° Skew
100'-0" x 40'-0" Continuous Concrete Slab Bridge
 30'-6" End Spans 39'-0" Interior Span
Site Plan
 STA. 233+00.00 (N.B. US 75) Turn-in Date: Aug. 2025
Plymouth County
 IOWA DEPARTMENT OF TRANSPORTATION
 Design No. 0229 Design Sheet No. 2 of 2 FHWA No. 39372

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
(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			
(207)	HMA Base Course	(6)	Loam
(207)	HMA Interim Course	(211)	Loam Removed
(207)	HMA Surface Course	(80)	Rock
Bridge			
(0)	Bridge	(212)	Rock Removed
Concrete			
(0)	Barrier Concrete	(4)	Select Sand
(0)	Barrier Concrete Footing	(214)	Select Sand Removed
(0)	Curb Gutter	(3)	Shale
(48)	Flowable Mortar	(215)	Shale Removed
(0)	Median Concrete	(10)	Topsoil
(0)	PCC Pavement	(2)	Topsoil Remove Only
(0)	Sidewalk	(4)	Topsoil Remove and Replace
Unsuitable / Waste			
(0)	Existing Pavement	(3)	Unsuitable Type A
Shoulder			
(209)	Shoulder HMA	(216)	Unsuitable Type A Removed
(0)	Shoulder PCC	(13)	Unsuitable Type B
(6)	Shoulder Granular	(217)	Unsuitable Type B Removed
Structural			
(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		

NOTES:

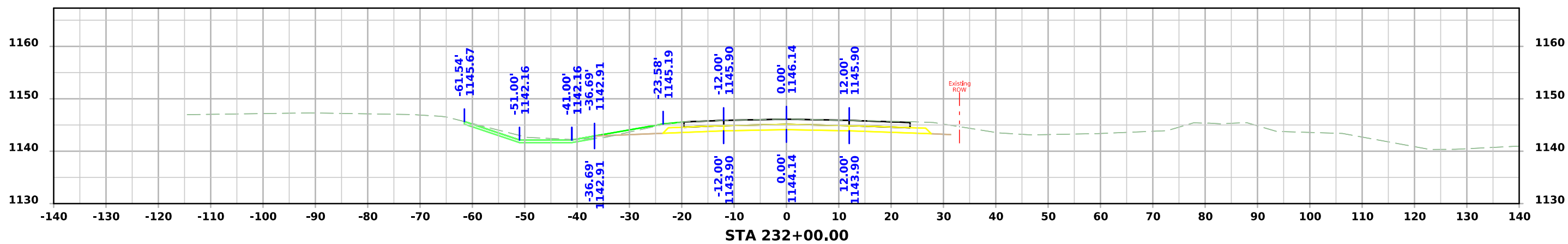
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NOTES:

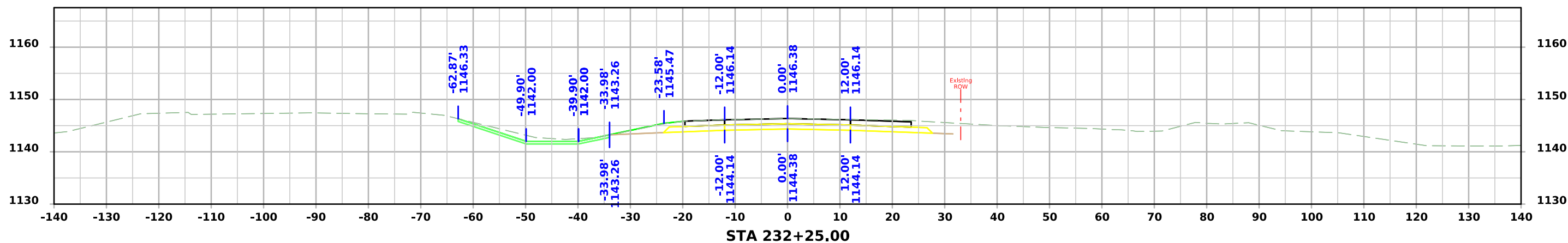
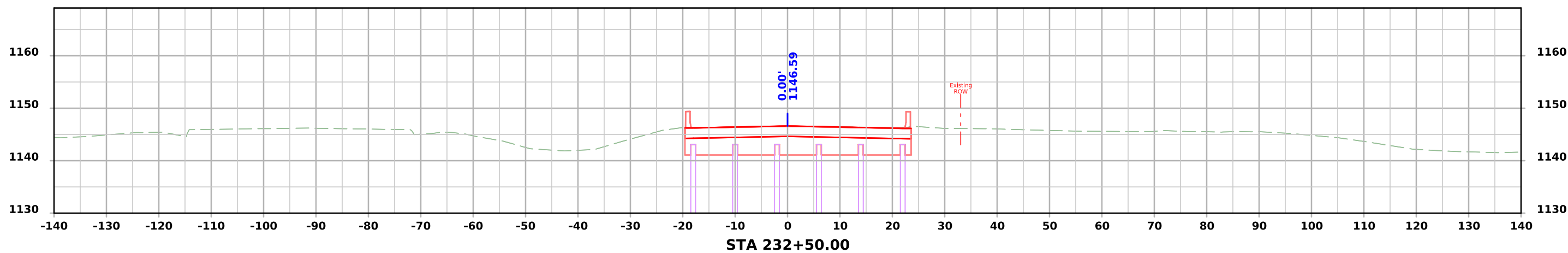
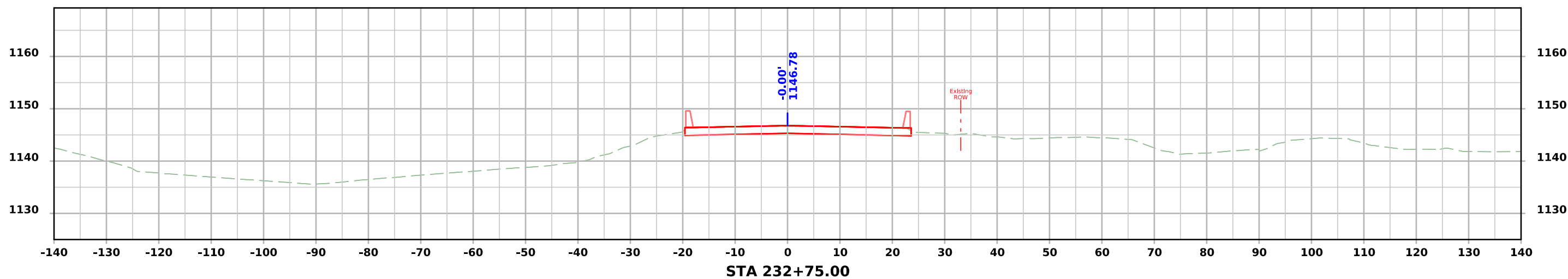
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CROSS SECTIONS LEGEND AND INFORMATION SHEET

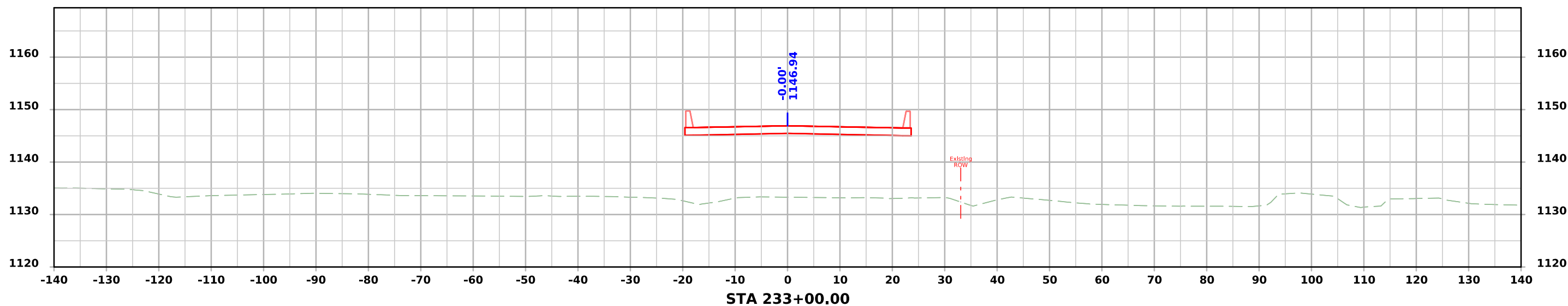
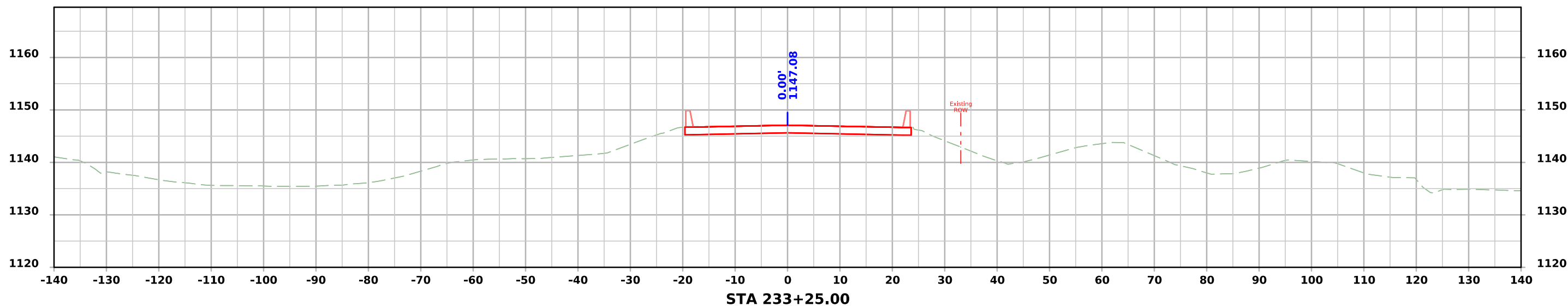
(COVERS SHEET SERIES W, X, Y, & Z)



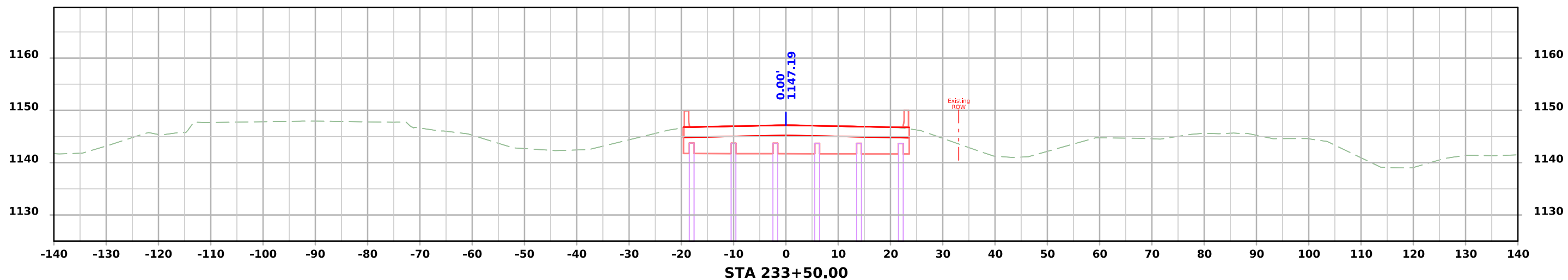
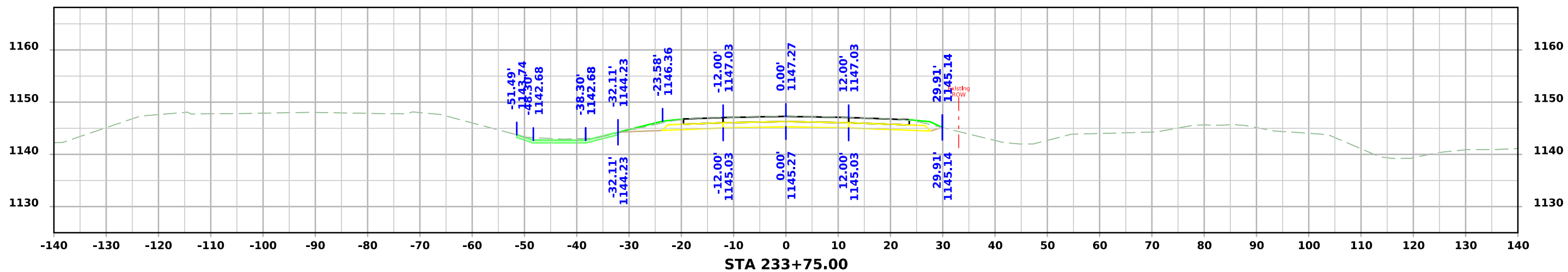
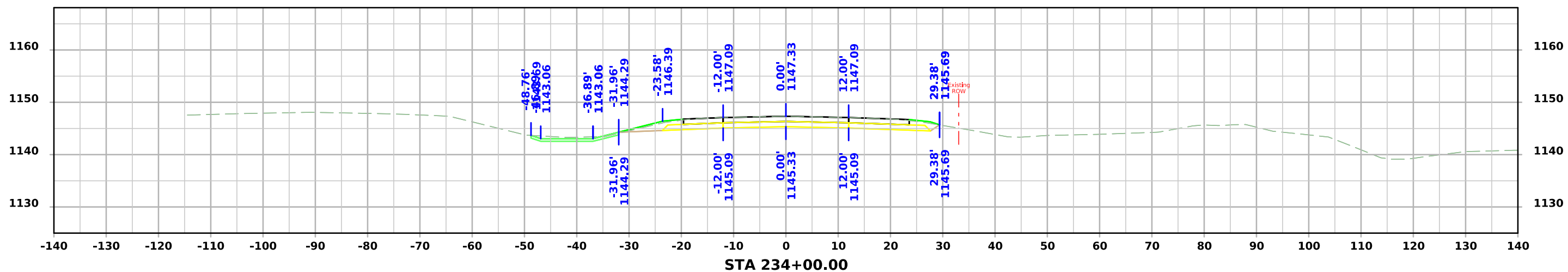
US 75



US 75



US 75



US 75

