

WOODBURY COUNTY
BRIDGE REPLACEMENT
BRFN-376-1(16)--39-97
LETTING DATE
Jan 21, 2026

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* RR.1	Erosion Control Legend and Symbol Information Sheet
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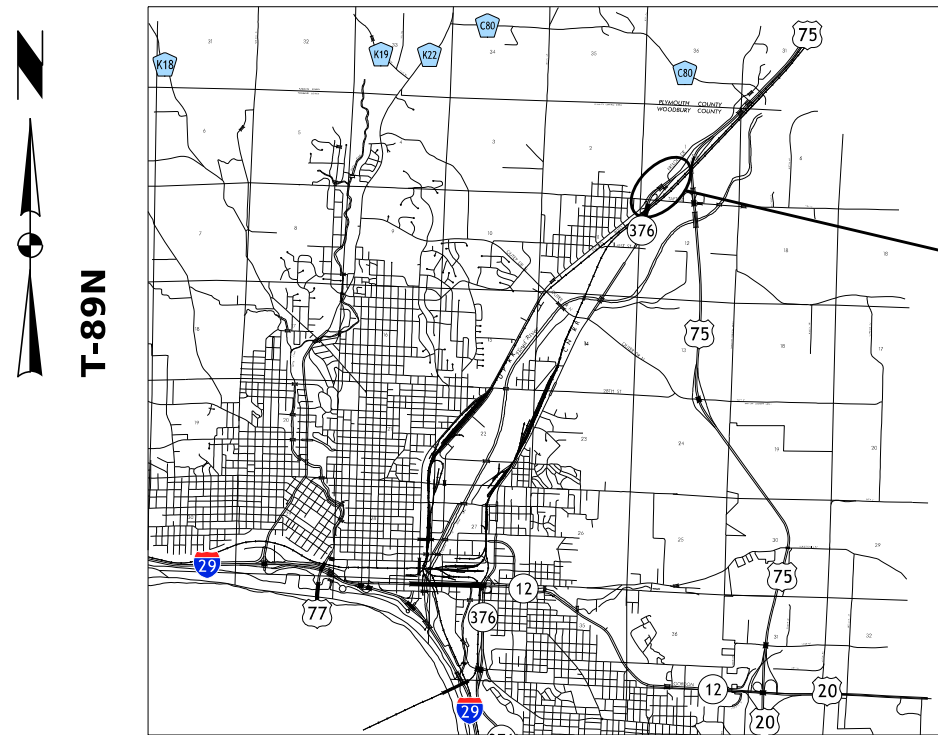


PLANS OF PROPOSED IMPROVEMENT ON THE
PRIMARY ROAD SYSTEM
WOODBURY COUNTY
BRIDGE REPLACEMENT
 Tributary to Floyd River 0.1 mi N
 of Co Rd D12 in Sioux City (SB)

SCALES: As Noted

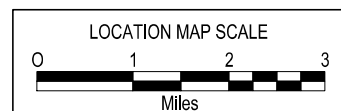
Refer to the Proposal Form for list of applicable specifications.

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



T-89N

R-47W



DESIGN DATA RURAL

2026	AADT	4300	V.P.D.
2046	AADT	5200	V.P.D.
2046	DHV	540	V.P.H.
	TRUCKS	6	%
	Total Design ESALs	--	

INDEX OF SEALS

SHEET NO.	NAME	TYPE
A.1	Brian T. Higginbotham	Primary Signature Block
V.1	Jonathan E. Peterson	Hydraulic Design

PRELIMINARY PLANS

Subject to change by final design.

D5 PLAN-Date: 10/25/24

REVISIONS

TOTAL

101

PROJECT IDENTIFICATION NUMBER

21-97-376-030

PROJECT NUMBER

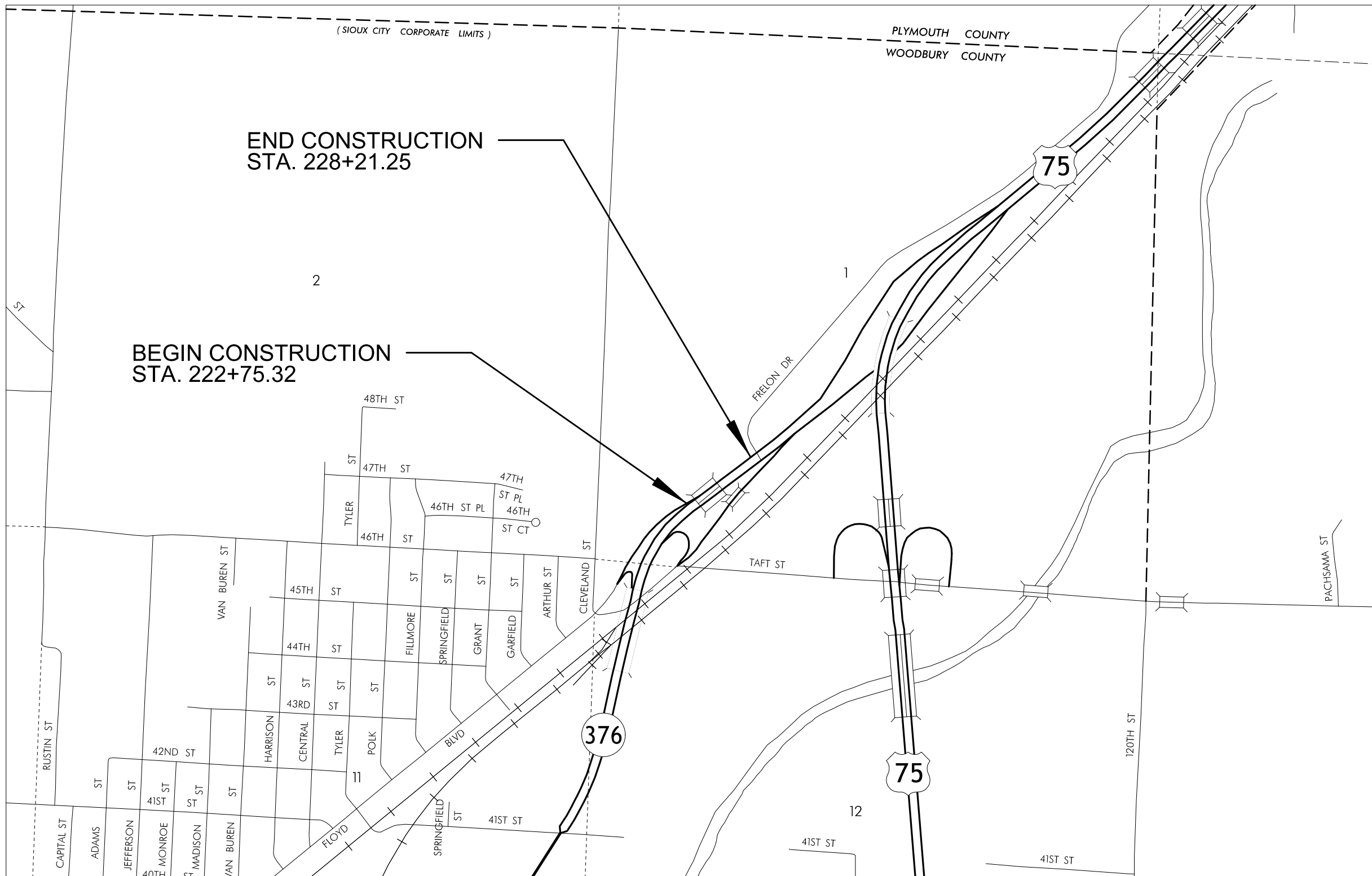
BRFN-376-1(16)--39-97

R.O.W. PROJECT NUMBER

NHSN-376-1(17)--2R-97

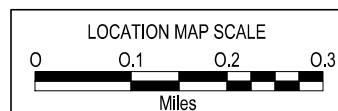
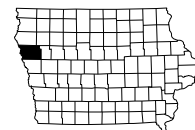
INDEX OF SHEETS

No.	DESCRIPTION
T Sheets	Earthwork Quantity Sheets
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U Sheets	500 Series, Mod.Stds. and Detail Sheets
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V Sheets	Bridge and Culvert Situation Plans
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W Sheets	Mainline Cross Sections
* W.1	Cross Sections Legend & Symbol Information Sheet
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* W.18 - 32	Detour Paving Cross Sections
X Sheets	Side Road Cross Sections
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* X.9 - 14	Channel Cross Sections
	* Color Plan Sheets

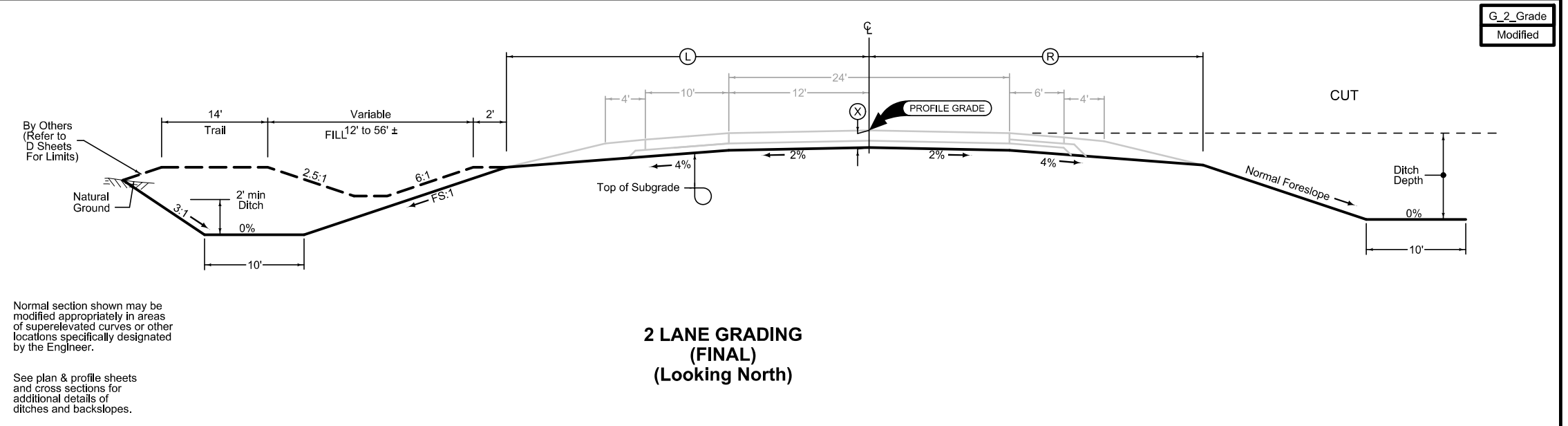


T-89N

R-47W



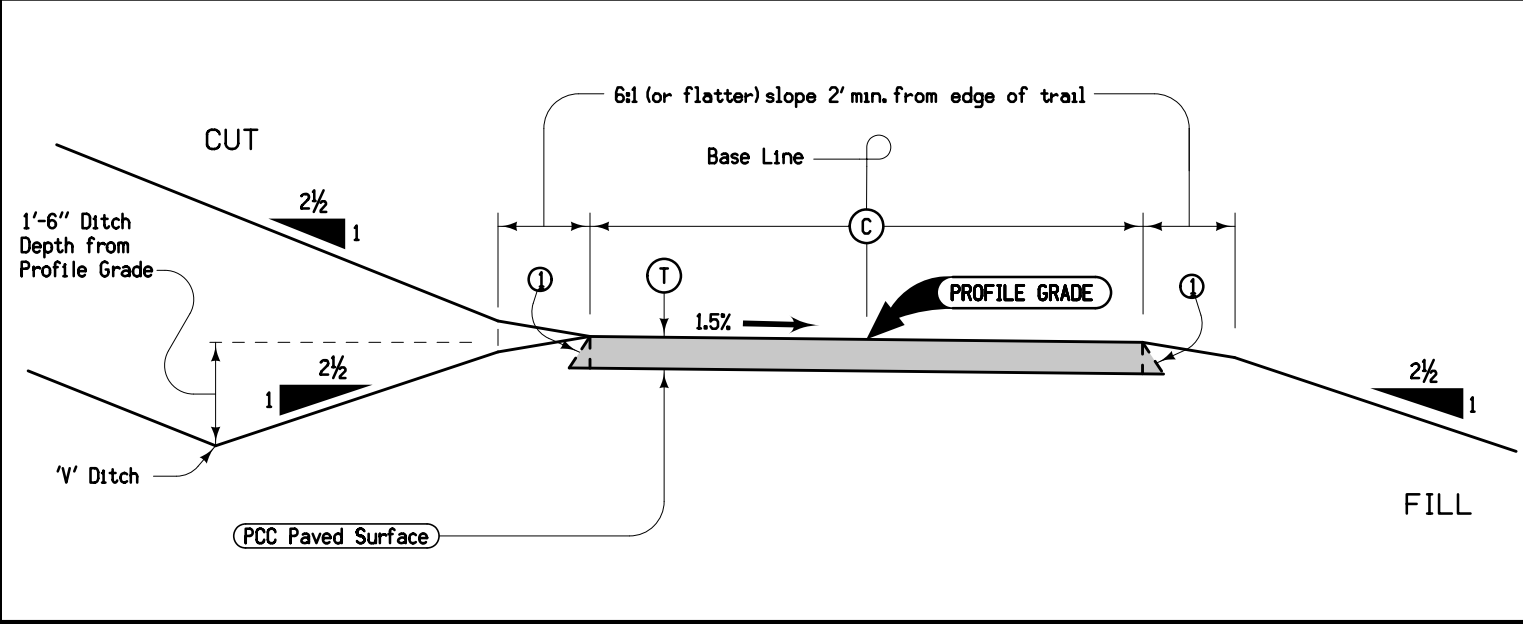
LOCATION		DIMENSIONS				
ROAD IDENTIFICATION	STATION TO STATION	Ⓘ Feet	Ⓙ Feet	Ⓧ Inches	FS	
IA 376	222+75.32	223+73.20	38	32	24	6
IA 376	223+73.20	224+30.83	40	33	24-30	6
IA 376	224+30.83	224+50.83	55.5	33	30-36	6
IA 376	225+41.67	225+61.67	55.5	33	36-30	6
IA 376	225+61.67	226+20.05	40	33	30-24	6
IA 376	226+20.05	226+68.77	40-42	33	24	6
IA 376	226+68.77	226+88.77	42	33-35	24	6
IA 376	226+88.77	228+21.27	38	36	24	6



G_2_Grade
Modified

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

See plan & profile sheets and cross sections for additional details of ditches and backslopes.



STATION TO STATION		PAVEMENT TYPE	Ⓒ Feet	Ⓓ Inches	'V' DITCH	
					Left	Right
2143+99.59	2145+44.89	PCC	10	6		
2146+75.92	2147+30.83	PCC	10	6		

Notes:
Bid item is "Recreational Trail".
① Nominal 1:1 slope (HMA only)

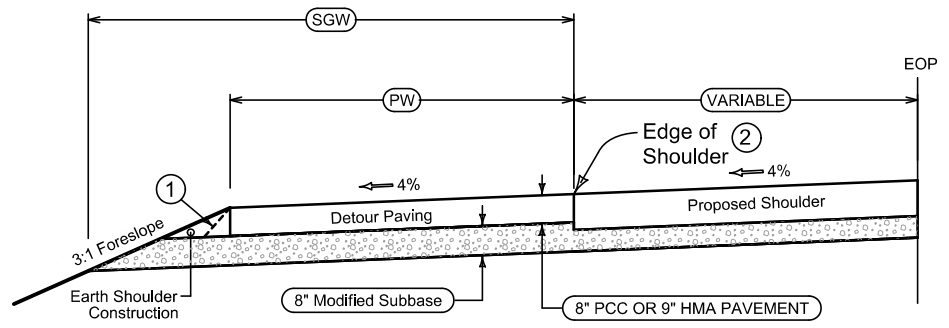
TYPICAL CROSS SECTION
RECREATIONAL TRAIL
PAVED SURFACE

7402
MODIFIED

LOCATION		DIMENSIONS						6" Special Backfill Tons/Station	Earth Shoulder Construction Station
ROAD IDENTIFICATION	STATION TO STATION	HMA			PCC				
		PW Feet	T Inches	SGW Feet	PW Feet	T Inches	SGW Feet		
IA 376	222+53.32	222+75.32	4.6-6.7	9	7.9-10	4.6-6.7	8	6.5-8.6	0.22
IA 376	222+75.32	223+04.47	6.7	9	10	6.7	8	8.6	0.29
IA 376	223+04.47	223+24.47	3.2	9	6.5	3.2	8	5.1	0.20
IA 376	223+79.08	223+73.20	3.2-5.2	9	6.5-8.5	3.2-5.6	8	5.1-7.1	0.47
IA 376	223+73.20	224+30.83	5.2	9	8.5	5.2	8	8.5	0.52
IA 376	225+61.67	226+19.31	5.2	9	8.5	5.2	8	8.5	0.58
IA 376	226+19.31	226+68.03	5.2-3.6	9	8.5-6.5	5.2-3.6	8	7.1-5.1	0.49
IA 376	226+68.03	226+88.03	3.2	9	6.5	3.2	8	5.1	0.20
IA 376	226+88.03	228+21.25	6.7	9	10	6.7	8	8.6	0.32

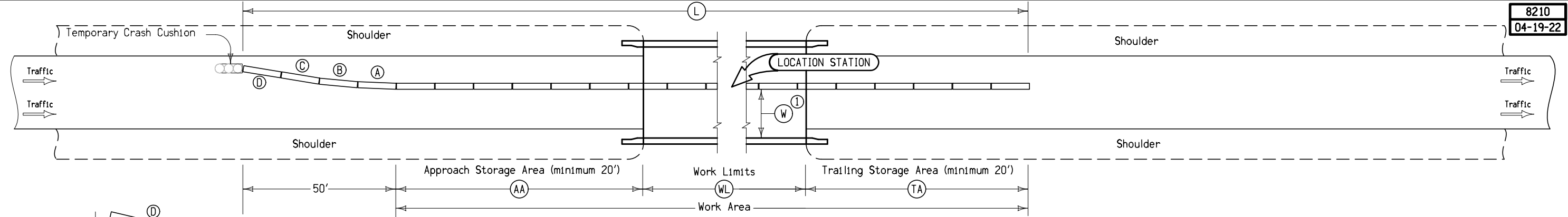
Quantity calculations based on vertical pavement edges.
Normal section shown may be modified appropriately in areas of superelevated curves or other locations specifically designated by the Engineer.

① Possible HMA 1:1 slope
② Refer to 2-P_Guard_Modified and 2_P_Alt



DETOUR PAVING

8210
04-19-22



BARRIER OFFSETS FOR FLARE SECTIONS

Station	Side	AA	WL	TA	L	Anchored	W ^①	Remarks
		Feet	Feet	Feet	Feet	X	Ft-Inches	
224+96.25	RT	20	160	20	250	X	14-6	Stage 1
224+96.25	LT	20	197.5	20	287.5		14-6	Stage 2
224+96.25	RT	20	335	20	425		14-6	Stage 2

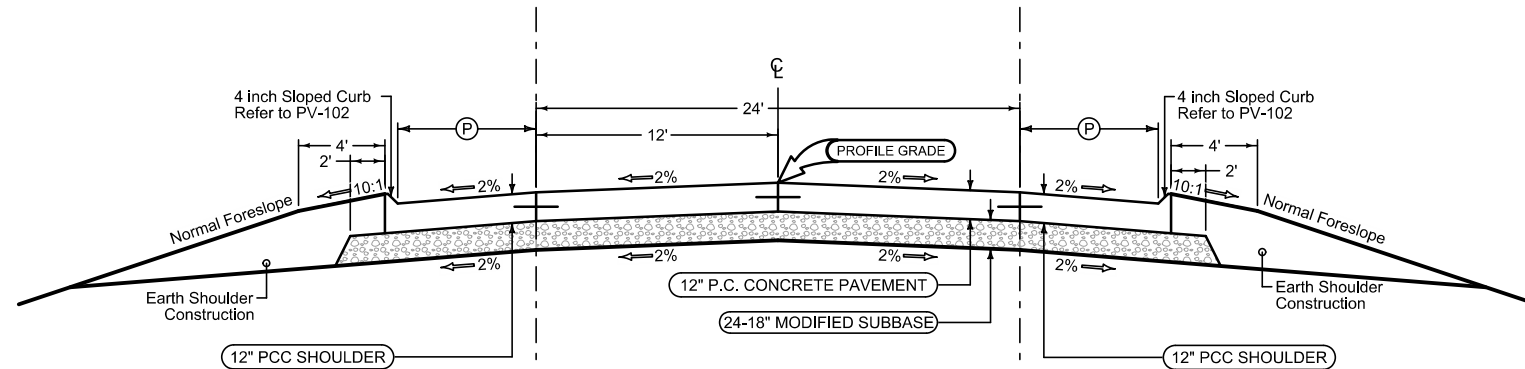
① Where W is less than 15'-6", install restricted width signing as per Standard Road Plan TC-81.

TEMPORARY CONCRETE BARRIER LAYOUT for One-Way Traffic

Full Depth PCC Shoulder

Shoulder Jointing:
 Longitudinal joint: BT-2, L-2 or KT-2
 Transverse joints: C at 20' spacing

2_P_FullPCC_MODIFIED		
STATION TO STATION	(P)	Feet
224+09.08	224+30.83	10.75
225+61.67	225+83.42	10.75



Refer to BR-205

Represents Single and Double Reinforced Section

Mainline Jointing:
 Transverse joints: CD at 20' spacing
 Longitudinal joint: L-2

2P_MODIFIED	
STATION TO STATION	
224+09.08	224+50.83
225+41.25	225+83.42

Full Depth PCC Shoulder

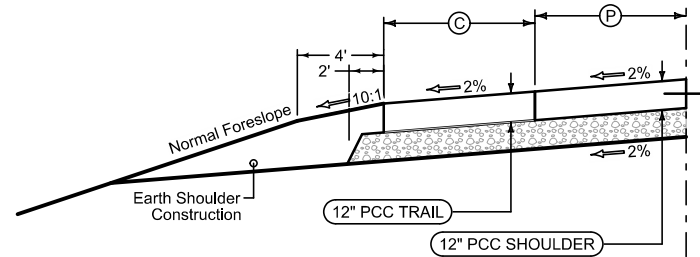
Shoulder Jointing:
 Longitudinal joint: BT-2, L-2 or KT-2
 Transverse joints: C at 20' spacing

2_P_FullPCC_MODIFIED		
STATION TO STATION	(P)	Feet
224+09.08	224+50.83	6.75
225+41.25	225+83.42	6.75

Full Depth PCC Shoulder & Trail

Shoulder Jointing:
 Longitudinal joint: BT-2, L-2 or KT-2
 Transverse joints: C at 20' spacing

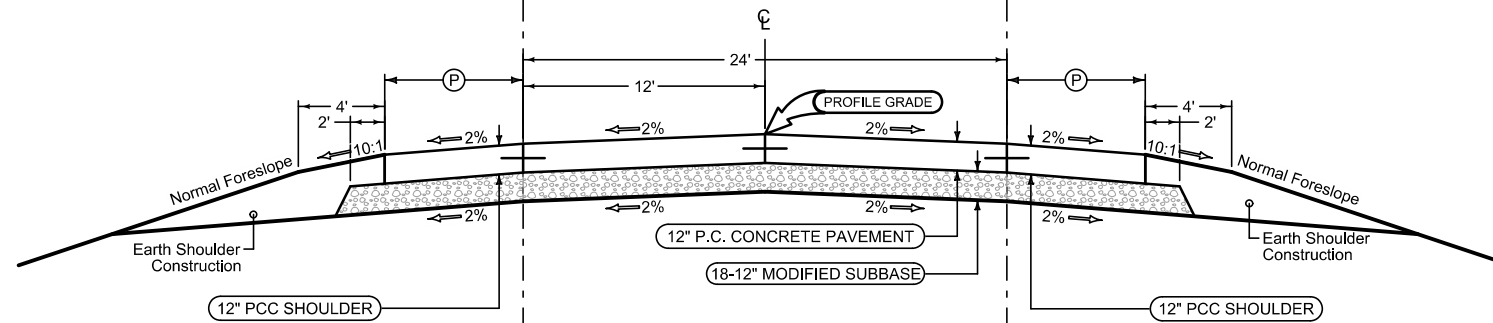
2_P_FullPCC_MODIFIED			
STATION TO STATION	(P)	(C)	Feet
224+30.83	224+50.83	11.5	15.5
225+41.25	225+61.67	11.5	15.5



Full Depth PCC Shoulder

Shoulder Jointing:
 Longitudinal joint: BT-2, L-2 or KT-2
 Transverse joints: C at 20' spacing

2_P_FullPCC_MODIFIED		
STATION TO STATION	(P)	Feet
223+79.08	224+09.08	11.5
225+83.42	226+13.42	11.5



Refer to BR-205

Represents Non-Reinforced Section

Mainline Jointing:
 Transverse joints: CD at 20' spacing
 Longitudinal joint: L-2

2P_MODIFIED	
STATION TO STATION	
223+79.08	224+09.08
225+83.42	226+13.42

Full Depth PCC Shoulder

Shoulder Jointing:
 Longitudinal joint: BT-2, L-2 or KT-2
 Transverse joints: C at 20' spacing

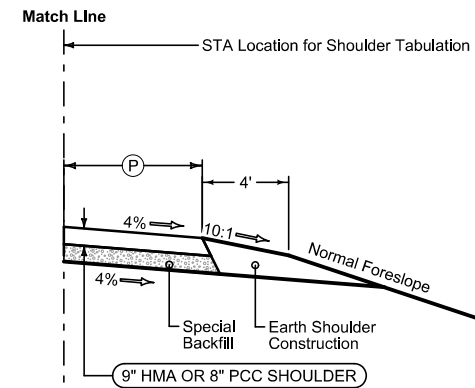
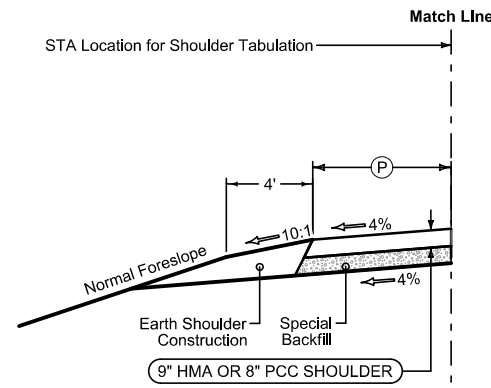
2_P_FullPCC_MODIFIED		
STATION TO STATION	(P)	Feet
223+79.08	224+09.08	7.5
225+83.42	226+13.42	7.5

Paved Shoulder at Guardrail

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

2_P_Guard_MODIFIED		
STATION TO STATION		(P) Feet
223+04.47	223+24.47	13.5
223+24.47	223+73.20	13.5-11.5
223+73.20	224+30.83	11.5
226+13.42	226+19.31	11.5
226+19.31	226+68.03	11.5-13.5
226+68.03	226+88.03	13.5

Refer to Detail 7156



Paved Shoulder at Guardrail

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

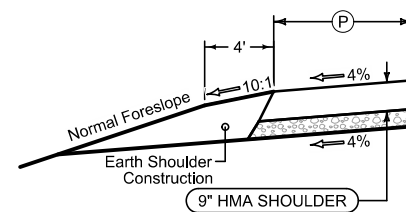
2_P_Guard_MODIFIED		
STATION TO STATION		(P) Feet
226+13.46	226+37.43	7.5
226+37.43	226+85.11	7.5-9.5
226+85.11	227+05.11	9.5

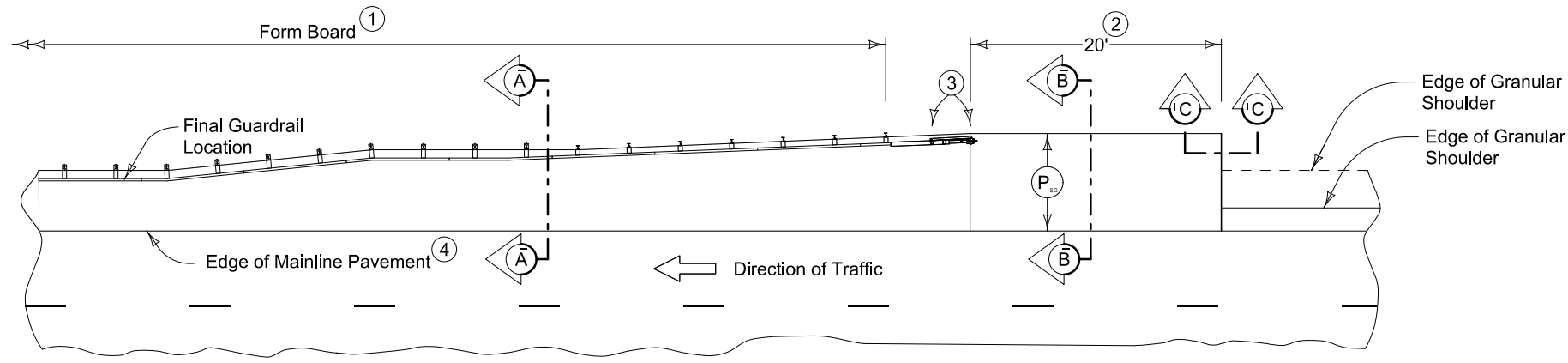
Refer to Detail 7156

Paved Shoulder Alternates

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

2_P_ALT_04-21-20		
STATION TO STATION		(P) Feet
222+75.32	223+04.47	10
226+88.03	228+21.25	10





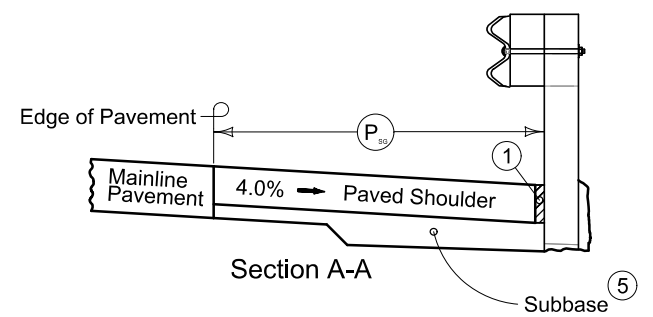
PLAN VIEW

Refer to Tab 2_P_Guard_ for details of Full and Partial Depth sections. Partial Depth 9" HMA Paved Shoulder at guardrail. 8" PCC may be substituted with the following jointing layout:

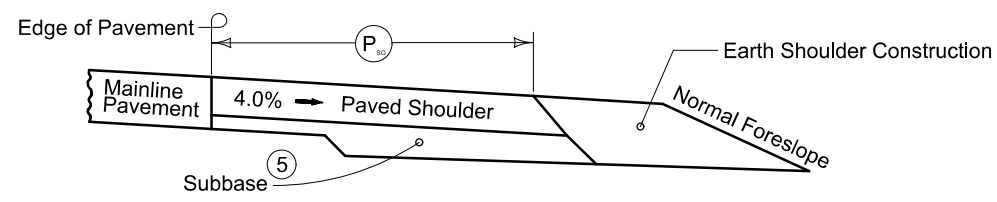
Match mainline pavement joint spacing. When mainline pavement is 8" or greater in thickness, place additional transverse 'C' joints in shoulder at mid-panel of the mainline pavement. Place longitudinal 'C' joint at P/2 from edge of mainline pavement when P is greater than 10' wide. Terminate longitudinal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



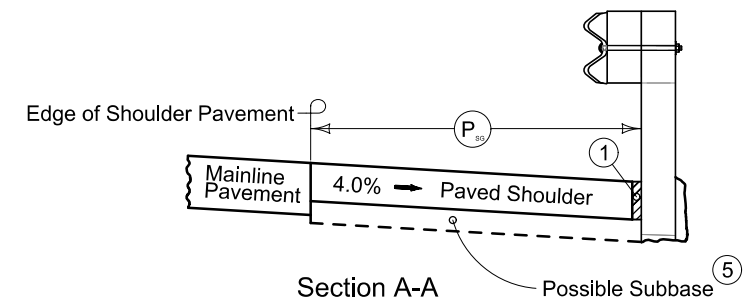
Section A-A



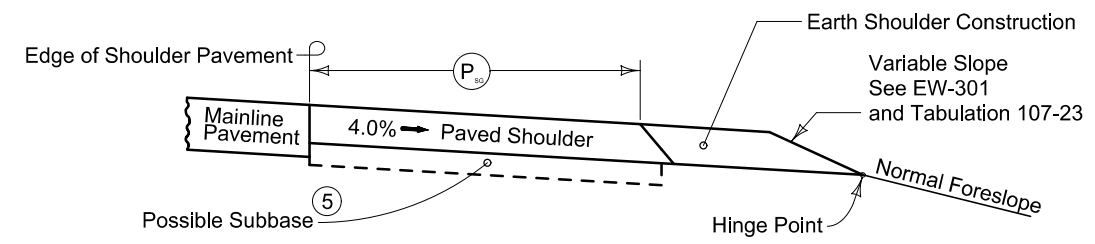
Section B-B

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' joint (per PV-101) for PCC shoulder. 'B' joint (per PV-101) for HMA shoulder.
- ⑤ Refer to other details in the plan.

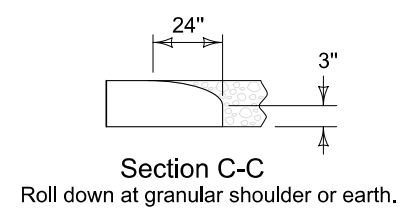


Section A-A



Section B-B

EXISTING SHOULDER



PAVED SHOULDER AT GUARDRAIL (GRANULAR SHOULDER ADJACENT TO MAINLINE)

100_01D
8/15/22

PROJECT DESCRIPTION

This project involves the replacement of the IA 376 bridge (Maint. No. 9799.2L376) over Tributary to Floyd River, 0.1 mile north of County Road D12 in Sioux City (SB) with a new 90' x 55'-5" 3-Span Concrete Slab Bridge. It includes placement of a connecting segment of a 10' wide multi-use recreational trail from the west side of the tributary, across the bridge to the east side of the tributary.

BRIDGE APPROACH SECTION

Refer to the BR Series.

* Not a bid item

Line No.	Bridge Station	End	Skew Ahead Left (Degrees)	Skew Ahead Right (Degrees)	(T) Thickness (IN)	Pay Length (FT)	Non-Reinf. Area (SY)	Single-Reinf. Area (SY)	Double-Reinf. Area (SY)	SRP Approach	SRP Abutment Type	SRP Abutting Pavement	Perforated * 4" Subdrain (LF)	Subdrain * Outlet (STA)	Subdrain * Outlet Side	Porous * Backfill (CY)	Class 'A' * Crushed Stone Backfill (CY)	Modified * Subbase (TON)	Polymer * Grid (SY)	Special * Backfill (TON)	Remarks
1.0	224+96.25	S			12.0	71.8	143.3	95.6	133.8	BR-205	Fixed	BR-211	55.0	223+89.08	Median	1.6	0.2	320.700	391.0		
2.0	224+96.25	N			12.0	71.8	143.3	95.6	133.8	BR-205	Fixed	BR-211	55.0	226+03.42	Median	1.6	0.2	320.700	391.0		
3.0							286.6	191.2	267.6												Total

STEEL BEAM GUARDRAIL AT CONCRETE BARRIER OR BRIDGE RAIL END SECTION

Possible Standards: BA-200, BA-201, BA-202, BA-205, BA-206, BA-209, BA-210, BA-211, BA-221, BA-225, BA-250, BA-260, LS-625, LS-626, LS-630, LS-635, SI-172, SI-173 and SI-211.

- (1) Lane(s) to which the obstacle is adjacent.
- (2) Not a bid item. Incidental to guardrail installation.

Line No.	Direction of Travel (1)	Side	Station	Offset (FT)	Barrier Transition Section	Barrier Transition Section (EA)	End Terminal	End Terminal Count (EA)	VT1 (LF)	VF (LF)	VT2 (LF)	ET (LF)	BA-211 Station	BA-211 (Type)	SI-211 (Type) (2)	Delineator SI-172 Type 1 (EA) (2)	Object Marker Type 2 (EA) (2)	Object Marker Type 3 Lt (EA)(2)	Object Marker Type 3 Rt (EA)(2)	Bolted End Anchor BA-202 (Type)	Bolted End Anchor BA-202 (EA)	Post Adapter BA-210 (EA)	Steel Beam Guardrail BA-200 (LF)	Remarks
1.0	SB	Outside	225+68.67	22.8	BA-201	1	BA-205	1	53.125	12.50		47.70							1	D	1		25.0	Div. 1
2.0	SB	Median	225+48.25	18.8	BA-201	1	BA-205	1	53.125	50.00		47.70						1		D	1		62.5	Div. 1
3.0	SB	Outside	224+23.83	22.8	BA-201	1	BA-205	1	53.125	12.50		47.70								D	1		25.0	Div. 2
4.0						3	3	3										1	1		3		112.5	Totals

SCOUR PROTECTION OR ROCK FLUME FOR BRIDGE END DRAIN

104_08A
8/15/22

Refer to Standard Road Plan DR-401 and DR-402

Line No.	Bridge Station	Bridge Corner	Distance DI-1 or DI-2 (FT)	Bridge End Drain Type	Special Ditch Control, Wood Excelsior Mat EC-101 (SQ)	Turf Reinforced Mat (TRM) Type 2 EC-104 (SQ)	Transition Mat EC-105 (SF)	Macadam Stone Base (TONS)	Engineering Fabric (SY)	Erosion Stone (TON)	Remarks
1.0	224+96.25	NW	61.5	DR-402	2.0			1.500	32.2	8.400	
2.0	224+96.25	NE	45.5	DR-402	2.0			1.500	18.7	17.900	
3.0				2	4.0			3.000	50.9	26.300	Total

SURVEY SYMBOLS

<p>AST, Above Ground Storage Tank BB, Billboard BBB, Bottom of Bridge Beam BCL, Bridge Centerline BD, Bridge Deck BIN, Grain Bin BL, Topo Breakline BLD, Building or Foundation BLS, Bridge Low Steel BM, Bench Mark BNK, Stream Bank BRG, Bridge C, Centerline BL of Road -ML or SR CAV, Cave CEL, Cell Phone Tower CIS, Cistern CON, Concrete or A/C Slab CP, Control Point CRP, Corporation Line CS, Curve Point CU, Back of Curb CUL, Culvert D, Centerline Draw or Stream -Down DAB, Drainage Area Boundary DIK, Centerline of Dike or Dam DTM, Photogrammetry Elv Control Check DU, Centerline Draw or Stream -Up EB, Electrical Box EG, Edge of Gravel Road ENP, Edge Paved Entrance and Park Lot ENT, Centerline BL of Entrance ENU, Edge Unpaved Entrance and Parking EP, Edge of Paved Roads -ML or SR EW, Edge of Water FCL, Chain Link and Security Fence FENO, FENO Monument FHD, Fire Hydrants FLG, Flag Poles FP, Filler Pipe FW, Wire Fence FWD, Wood Fence GDC, Guard Rail Cable GDL, Guard Rail Steel GP, Guard Post -Less Than 4 Posts GPR, Guard Post -4 or More Posts GR, Ground Shot GRV, Grave GU, Gutter In Front of Curb GV, Gas Valve HDG, Hedge Row HS, Hydric Soil -Wetlands HT, Electrical Highline Tower IN, Storm Sewer Intake INB, Storm Sewer Beehive Intake LC, Lot Corner LIN, Miscellaneous Line LP, L.P. Tank LUM, Luminaire MH, Utility Access -Manhole MIS, Miscellaneous MM, Mile Marker Post OUT, Tile Outlet PC, Curve Point PCP, Photo Control Point PCT, Photo Control Target PI, Tangent Point PIP, Pipe Culvert PL, Location of Photo -Wetlands PLG, Location of General Photo POC, Curve Point POST, Spiral Point</p>	<p>PR, Electric Riser Pole PRO, Profile Shot PT, Curve Point REF, Reference Tie Point RET, Retaining Walls RIP, Rip-Rap ROC, Rock Outcropping ROW, Right of Way Mark RR, Centerline of Railroad Tracks RRB, Railroad Signal Box RRF, Railroad Frog RRR, Railroad Rail RRS, Railroad Signal RRW, Railroad Switch RT, Radio Tower S, Soil Sampling Site -Wetlands SBR, Size of Bridge SC, Spiral Point SCR, Section Corner SEP, Septic Tank SF, Silt Fence -Wetlands SG, Staff Gauge -Wetlands SH, Paved Shoulder SHR, Shrub SI, Sign SL, Speed Limit Sign SLN, Section Line SLO, Silo SNK, Sink Hole SNP, Unpaved Shoulder SP, Stream Profile STP, Stump SWK, Sidewalk SWP, Swamp or Marsh TA, Tower Anchor TBO, Telephone Booth TCB, Traffic Signal Box TDC, Tree Deciduous TDL, Traffic Detection Loop TER, Terrace TEV, Evergreen Tree TFR, Tree Fruit TGP, Telegraph Pole TIL, Tile Line TLNL, Tree Line Left TLNR, Tree Line Right TOP, Top of Bridge Pier TPA, Telephone Pole Co. 1 TPB, Telephone Pole Co. 2 TPC, Telephone Pole Co. 3 TR, Telephone Riser Pole TRL, Trail TS, Spiral Point TSB, Telephone Switch Box TSG, Traffic Signal TSL, Traffic Signal and Luminare TV, Satellite TV Dish TVP, TV Pedestal TW, Top of Water UB, Utility Box UE, Utility Elevation UPH, Utility Pot Hole - Quality A UST, Underground Tank UV, Underground Utility Vault VS, Channel Cross Section WC, Wild Card -Misc. Field Shot WEL, Well WHD, Water Hydrant WHU, RV Water Hook Up WM, Wind Mill WND, Wind Turbine WV, Water Valve</p>
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SURVEYED UTILITY OWNER SYMBOLS

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

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

— F0	FO1D, FiberComm, L.C. - Quality D
— F02	FO2D, FiberComm, L.C. - Quality D
— SAN.	SA1D, City of Sioux City- Quality D
— T1	TL1D, CenturyLink - Quality D
— T2	TL2D, LongLines Broadband - Quality D
— W	WL1B, City of Sioux City- Quality A & D
⚡	Iowa Department of Transportation
⚡	PPA, MidAmerican-Elec

PLAN VIEW COLOR LEGEND OF PLAN AND PROFILE SHEETS

LINEWORK		Design Color No.	
Green	(2)		Existing Topographic Features and Labels
Blue	(1)		Proposed Alignment, Stationing, Tic Marks, and Alignment Annotation
Magenta	(5)		Existing Utilities
SHADING		Design Color No.	
Lavender	(9)		Temporary Pavement Shading
Yellow	(4)		Proposed Pavement Shading
Orange	(6)		Proposed Granular Shading
Orange	(70)		Proposed Shoulder Granular Shading
Yellow	(68)		Proposed Shoulder Paved Full Depth Shading
Yellow	(132)		Proposed Shoulder Paved Partial Depth Shading
Gray, Dark	(112)		Proposed Grade and Pave Shading "In conjunction with a paving project"
Brown, Light	(236)		Grading Shading
Orange, Light	(134)		Proposed Granular Entrance Shading
Yellow	(220)		Proposed Paved Entrance Shading
Tan	(8)		Proposed Sidewalk Shading
Blue, Light	(230)		Proposed Sidewalk Landing Shading
Pink	(11)		Proposed Sidewalk Ramp Shading
Green, Light	(225)		Existing Pavement Shading
Red	(3)		Proposed Structure Shading
Red	(3)		Delineates Restricted Areas

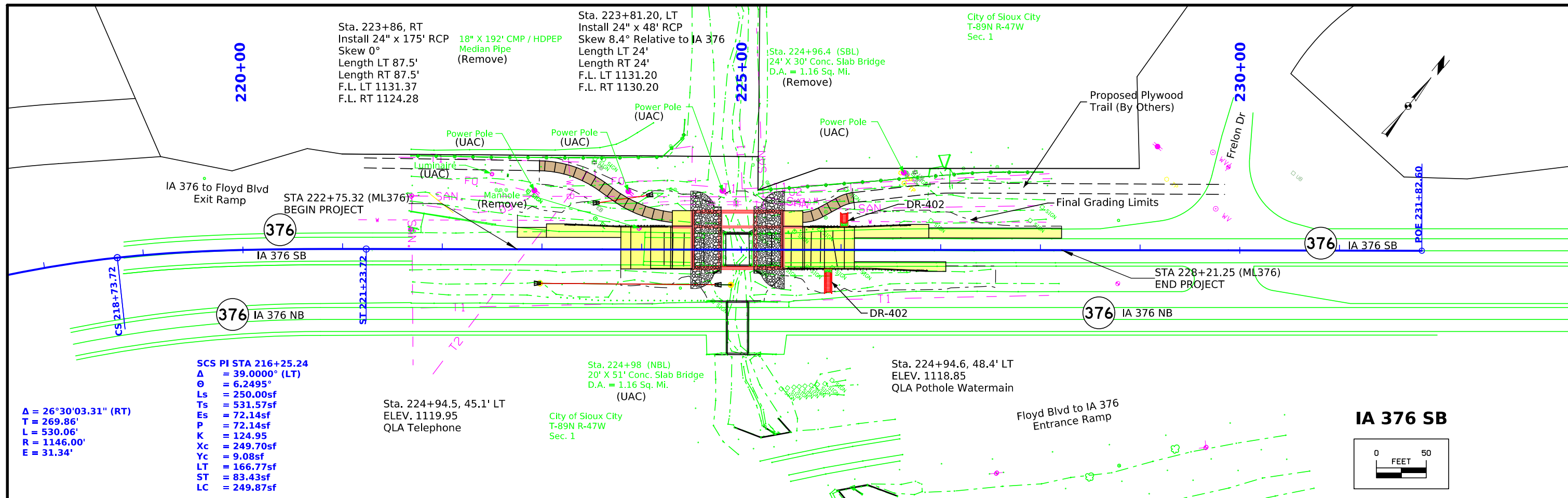
PROFILE VIEW COLOR LEGEND OF PLAN AND PROFILE SHEETS

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

<p>Reference Point Station Section Corner Ground Line Intercept Saw Cut Guardrail Trench Drain High Tension Cable Guardrail Sheet Pile Pavement Removal Clearing & Grubbing Area</p>	<p>Survey Line Section Corner Ground Line Intercept Saw Cut Guardrail Trench Drain High Tension Cable Guardrail Sheet Pile Pavement Removal Clearing & Grubbing Area</p>	<h3>RIGHT-OF-WAY LEGEND</h3> <p>▲ Proposed Right-of-Way △ Existing Right of Way ▲ Existing and Proposed Right-of-Way ▲ Easement and Existing Right-of-Way ○ Easement (Temporary) ● Easement C/A Access Control ⇄ Property Line</p>
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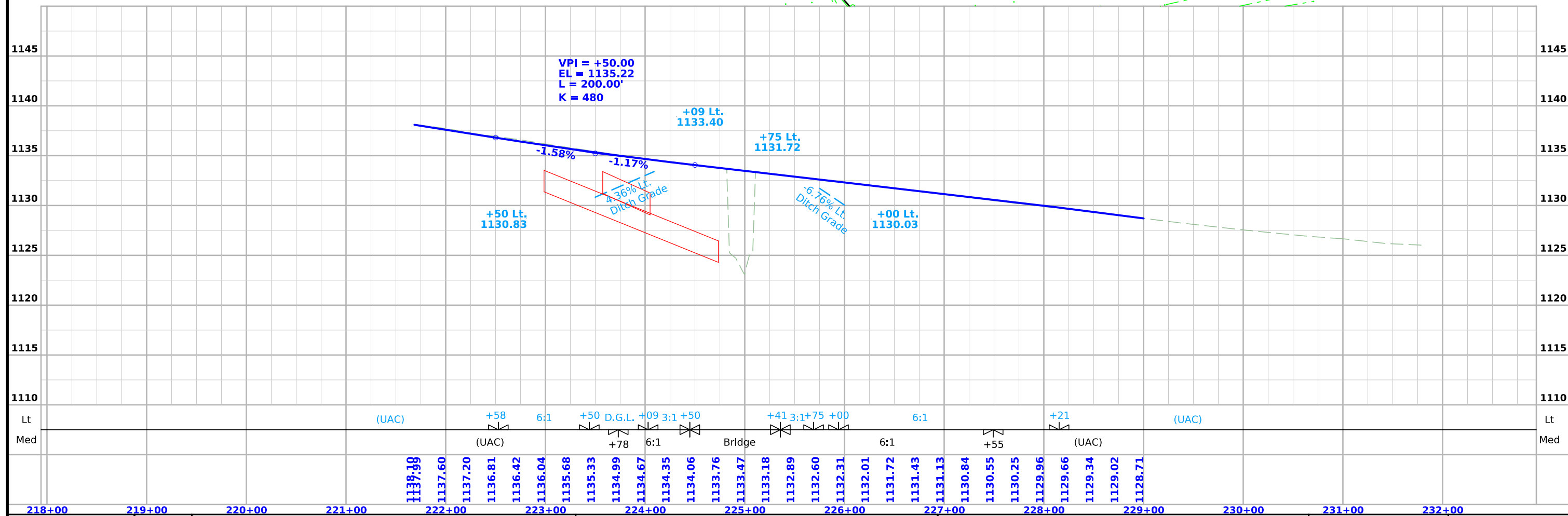
PLAN AND PROFILE LEGEND AND SYMBOL INFORMATION SHEET

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

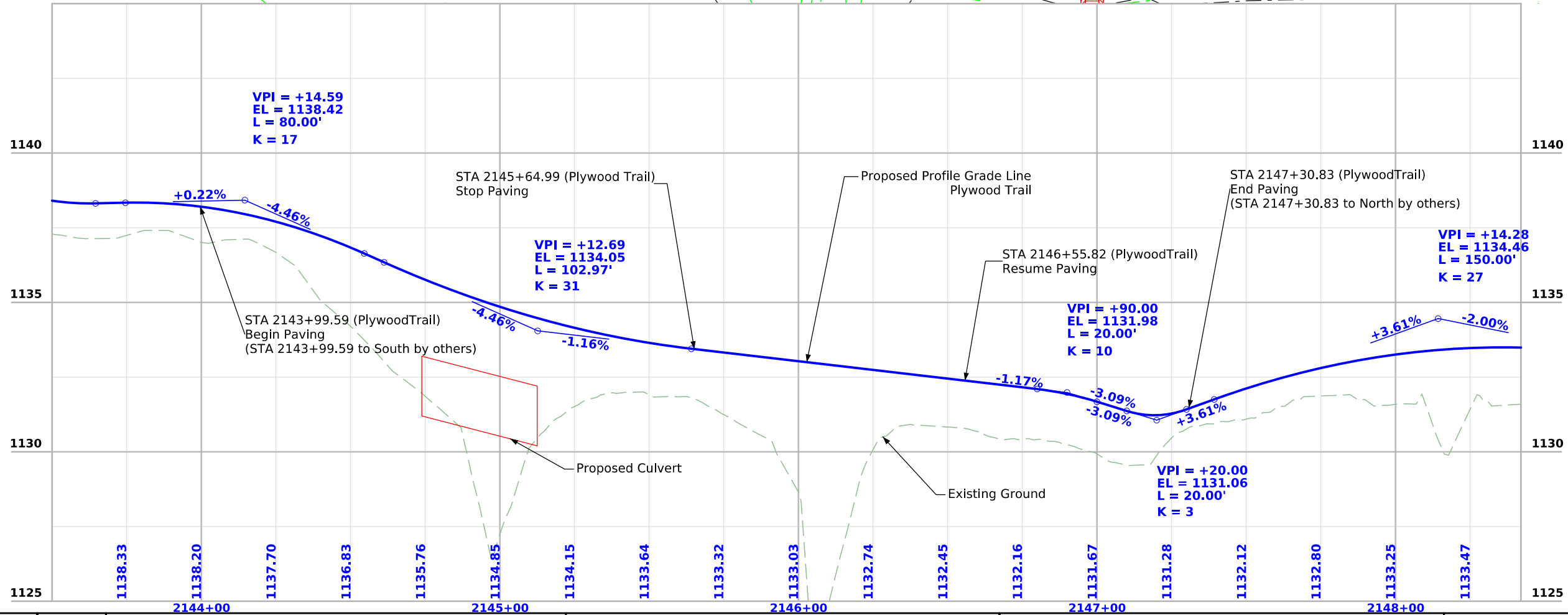
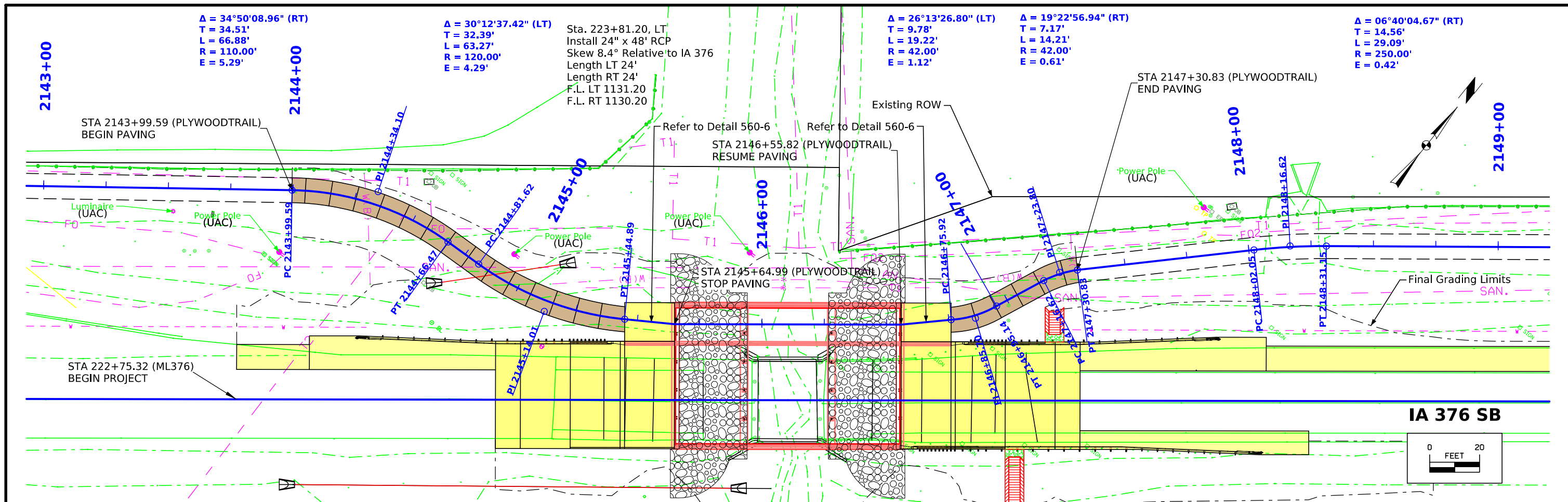


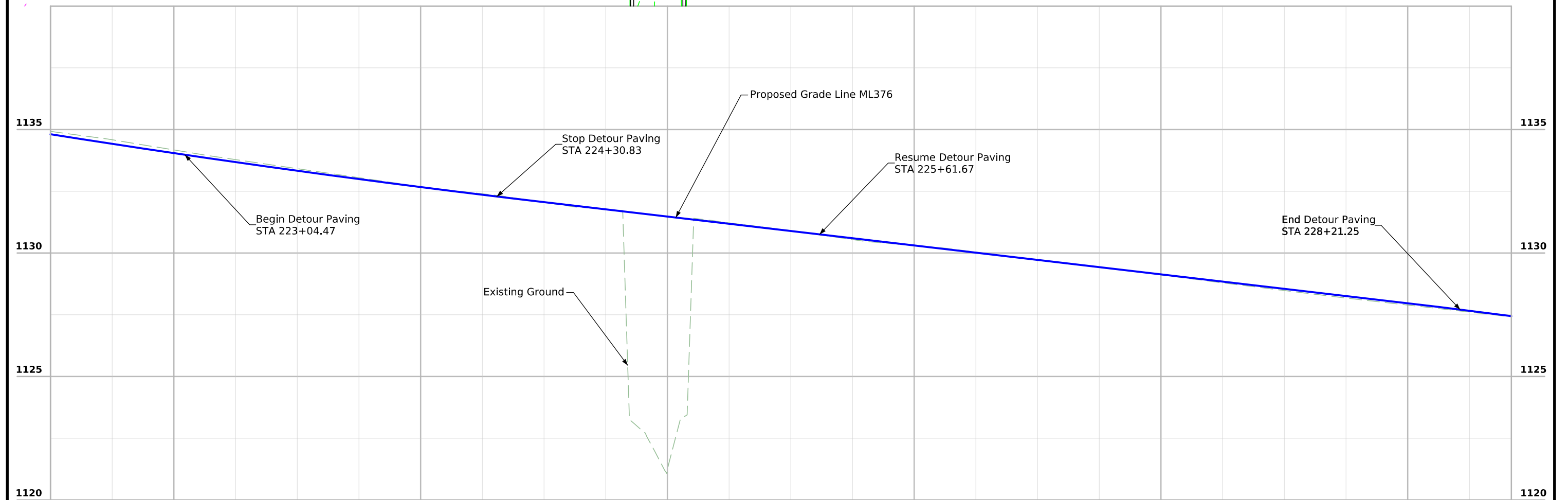
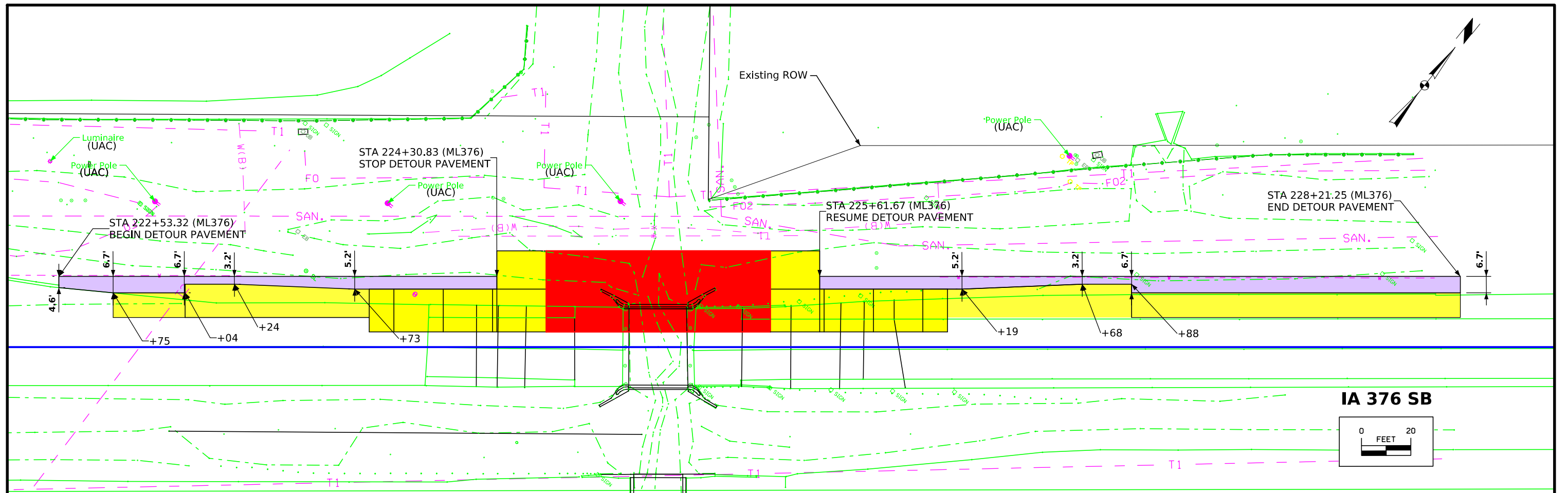
SCS PI STA 216+25.24
 $\Delta = 39.0000^\circ$ (LT)
 $\Theta = 6.2495^\circ$
 $L_s = 250.00sf$
 $T_s = 531.57sf$
 $E_s = 72.14sf$
 $P = 72.14sf$
 $K = 124.95$
 $X_c = 249.70sf$
 $Y_c = 9.08sf$
 $LT = 166.77sf$
 $ST = 83.43sf$
 $LC = 249.87sf$

$\Delta = 26^\circ 30' 03.31''$ (RT)
 $T = 269.86'$
 $L = 530.06'$
 $R = 1146.00'$
 $E = 31.34'$



FILE NO. 32670	ENGLISH	DESIGN TEAM Iowa DOT / HGM	WOODBURY COUNTY	PROJECT NUMBER BRFN-376-1(16)--39-97	SHEET NUMBER D.2
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Survey Information

SURVEY INDEX

County: Woodbury
PIN: 21-97-376-030

Project Number: BRFN-376-1(16)--39-97
Location: Tributary to Floyd River 0.1 mi N of
Co Rd D12 in Sioux City (SB)
Type of Work: 2001 – Bridge-Unspecified
Project Directory: 9737603021

Survey Personnel

Cory Welsh – Survey Party Chief
Nate Myers – Assistant Survey Party Chief

Date(s) of Survey

Original

Begin Date 09/19/2022
End Date 09/21/2022

Supplemental

Begin Date 12/06/23
End Date 12/06/23

General Information

Project datum and control information is provided by the HGM Associates Inc..
Measurement units for this survey are US survey feet. This survey is for IA Highway 376
Bridge Replacement over a Tributary to Floyd River 0.1 mi N of Co Rd D12 in Sioux City
(SB), in Woodbury County. This survey request was for a Full Field DTM survey for the
southbound bridge replacement only.

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 HPRTK Network (includes Iowa Real Time Network stations) reference stations
were utilized to obtain horizontal control on primary project control points. 60 epochs
were observed on each control point. NGS benchmark designation A 181
(PID=NM1918) was used for vertical control. This benchmark is located on the east side
of the Floyd River, south side of Dale Street and west of Expo Center Drive.

PROJECT DATUM: NAD83(2011) EPOCH 2010.00
VERTICAL DATUM: NAVD88
COORDINATE SYSTEM: IOWA REGIONAL COORDINATE SYSTEM ZONE 4
GEOID MODEL: G12AUS

Alignment Information

The horizontal alignment for IA 376 this survey is a retrace of As-built Plans No. 273
(21) Paving Plans (1956). Survey stationing was equated to the plan Bridge Sta.
224+96.4 and run back and ahead without equation throughout the survey. [The station
equation at S.T. Station 221+29.67 was not placed in the existing alignment.
MicroStation Connect would not accept the "add-length" equation to the alignment]. No
control was located from previous projects. Alignment bearing at the bridge is based on
centerline joints at the farthest limits of the SB roadway survey. Survey centerline does
not match centerline of the existing bridge deck, however, it appears to reside directly
upon the two center P-10A abutment piles.

Survey stationing relates to as built plan stationing as follows:

POB Sta. 208+94.04 Assumed

SCS PI Sta. 216++25.26 (216+31.22 with equation) As-built Plans Project No. 273 (21)

POT Sta. 224+96.4 As-built Plans Project No. 273 (21) Bridge Location Station – The
new Bridge location – 224+96.25 - Based on aligning with the transverse centerline of
the NB bridge.

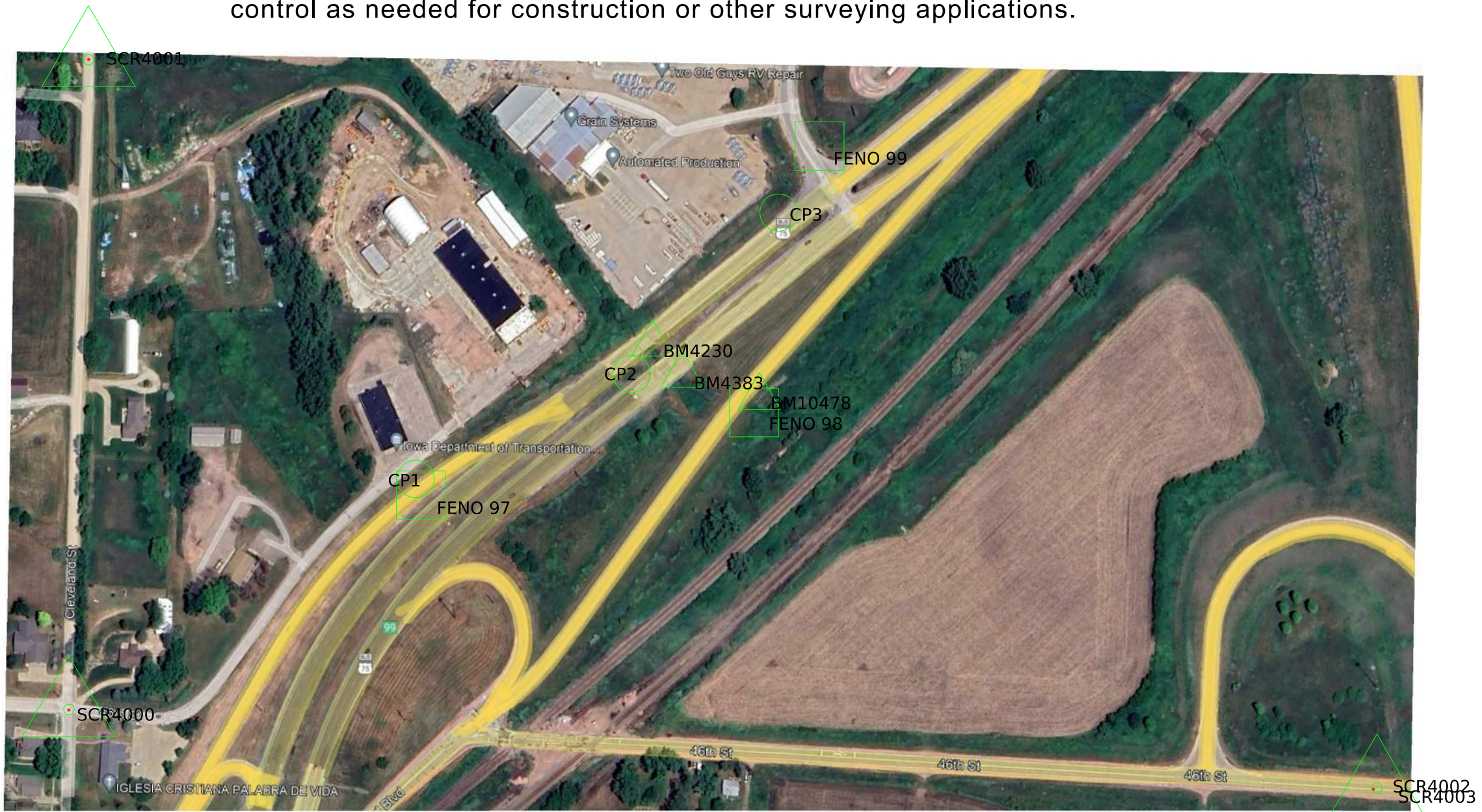
POE Sta. 231+82.62 End Alignment

Utility Information

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

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 4 (U.S. Survey Foot)

VERT. DATUM: NAVD88 - Geoid Model: G12AUS

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 4 (U.S. Survey Foot)
 VERT. DATUM: NAVD88
 Geoid Model: 12AUS

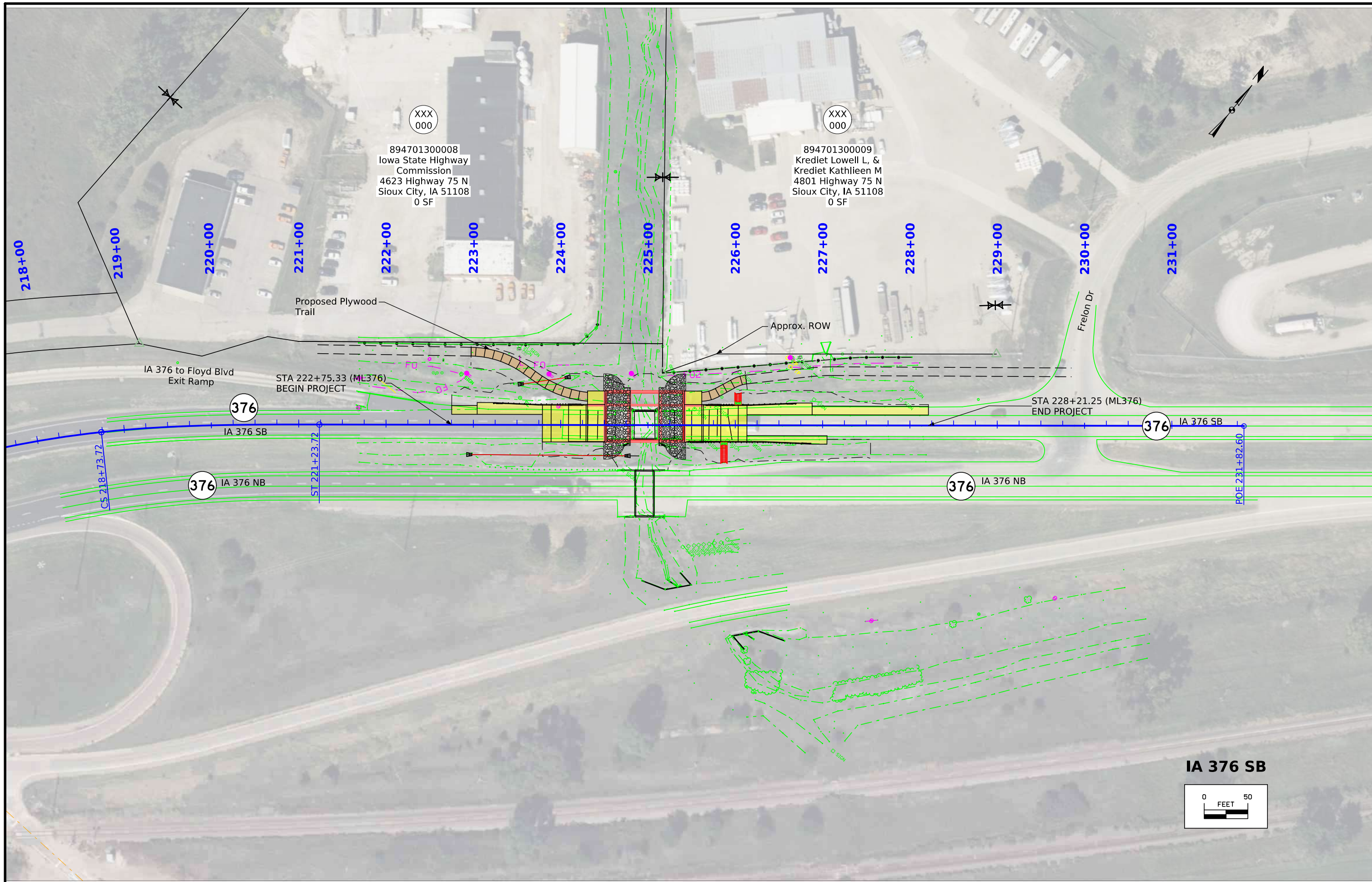
Point Name	Northing	Easting	Elevation	Code - Description
97	8609408.99	14091575.47	1142.18	FENO Monument Set
98	8609577.60	14092254.84	1126.23	FENO Monument Set
99	8610120.55	14092388.42	1125.42	FENO Monument Set
1	8609442.08	14091564.74	1142.96	Control Point 5/8 INCH REBAR SET
2	8609656.37	14092005.35	1131.29	Control Point 5/8 INCH REBAR SET
3	8609985.29	14092304.72	1127.78	Control Point 5/8 INCH REBAR SET
4000	8608971.74	14090858.15	1154.75	Section Corner - DRILLED HOLE IN MANHOLE RING
4001	8610296.95	14090898.10	1187.49	Section Corner - 1/2 INCH REBAR SET 0.1' DEEP
4002	8608811.71	14093524.51	1112.49	Section Corner - SURVEY MARKER BUTTON IN PCC
4003	8608811.81	14093524.61	1112.45	Section Corner - DRILLED HOLE WITH "X" IN PCC
4230	8609717.33	14092047.58	1134.05	BM - FOUND I.H.C. BUTTON
4383	8609654.16	14092108.30	1132.30	BM - FOUND I.H.C. BUTTON
10478	8609609.24	14092265.58	1127.13	BM DISC IN HEADWALL

ALIGNMENT COORDINATES

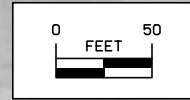
Line No.	Name	Location	Point on Tangent Station	Point on Tangent Y Northing	Point on Tangent X Easting	Begin Spiral Station	Begin Spiral Y Northing	Begin Spiral X Easting	Begin Curve Station	Begin Curve Y Northing	Begin Curve X Easting	Simple Curve PI or Master PI Station	Simple Curve PI or Master PI 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	10001	ML376	208+94.02	8608440.921	14091167.11															
2.0	10002	ML376				210+93.65	8608636.072	14091209.24				212+60.44	8608799.089	14091244.42				213+43.67	8608878.238	14091270.8
3.0	10003	ML376							213+43.67	8608878.238	14091270.8	216+13.52	8609134.255	14091356.11	218+73.72	8609325.304	14091546.69			
4.0	10004	ML376				218+73.72	8609325.304	14091546.69				219+57.15	8609384.368	14091605.62				221+23.72	8609488.912	14091735.55
5.0	10006	ML376	224+96.23	8609722.426	14092025.78															
6.0	10007	ML376	229+88.56	8610031.06	14092409.37															
7.0	10007	ML376	231+82.60	8610152.694	14092560.54															
8.0																				
9.0	20001	CH224	1223+28.88	8609851.654	14091921.5															
10.0	20002	CH224	1223+65.51	8609820.094	14091940.11															
11.0	20003	CH224	1223+84.85	8609805.461	14091952.75															
12.0	20004	CH224	1224+03.82	8609795.033	14091968.59															
13.0	20005	CH224	1224+37.36	8609768.264	14091988.81															
14.0	20006	CH224	1224+53.25	8609755.932	14091998.83															
15.0	20007	CH224	1225+19.75	8609704.12	14092040.51															
16.0	20008	CH224	1225+47.74	8609682.379	14092058.14															
17.0	20008	CH224	1226+00.12	8609641.616	14092091.04															
18.0																				
19.0	30001	PlywoodTrail	2125+68.53	8608402.399	14090870.25															
20.0	30002	PlywoodTrail	2126+31.42	8608460.265	14090845.62															
21.0	30003	PlywoodTrail	2131+49.06	8608977.729	14090859.08															
22.0	30004	PlywoodTrail							2133+06.28	8608961.469	14091015.46	2133+94.10	8608952.388	14091102.8	2134+65.17	8609024.108	14091153.48			
23.0	30006	PlywoodTrail	2137+11.14	8609224.994	14091295.41															
24.0	30007	PlywoodTrail	2138+18.09	8609308.912	14091361.71															
25.0	30008	PlywoodTrail	2139+25.04	8609385.271	14091436.59															
26.0	30009	PlywoodTrail	2140+52.18	8609471.161	14091530.33															
27.0	30010	PlywoodTrail							2141+91.81	8609536.724	14091653.61	2142+01.86	8609541.443	14091662.49	2142+11.86	8609547.63	14091670.41			
28.0	30012	PlywoodTrail							2143+99.59	8609663.098	14091818.36	2144+34.10	8609684.329	14091845.57	2144+66.47	8609686.216	14091880.03			
29.0	30014	PlywoodTrail							2144+81.62	8609687.044	14091895.15	2145+14.01	8609688.827	14091927.5	2145+44.89	8609706.641	14091954.55			
30.0	30016	PlywoodTrail	2145+64.99	8609717.619	14091971.38															
31.0	30017	PlywoodTrail	2146+55.82	8609774.56	14092042.15															
32.0	30018	PlywoodTrail							2146+75.92	8609788.654	14092056.48	2146+85.70	8609795.256	14092063.7	2146+95.14	8609804.369	14092067.25			
33.0	30020	PlywoodTrail							2147+16.62	8609824.19	14092075.54	2147+23.80	8609830.743	14092078.45	2147+30.83	8609835.955	14092083.38			
34.0	30022	PlywoodTrail							2148+02.05	8609886.65	14092133.41	2148+16.62	8609897	14092143.65	2148+31.15	8609906.09	14092155.03			

SPIRAL OR CIRCULAR CURVE DATA

Line No.	Name	Location	SCS	S	Ls	Ts	Es	Xc	Yc	L.T.	S.T.	C	T	L	R	E	Remarks
1.0	10003	ML376	39°00'00" LT	15'00"	250	531.575	72.142	249.703	9.082	166.771	83.428	26°30'04"	269.857	530.057	1146	31.344	
2.0																	
3.0	30004	PlywoodTrail										60°41'31"	87.815	158.892	150	23.815	
4.0	30010	PlywoodTrail										9°59'24"	10.051	20.05	115	0.438	
5.0	30012	PlywoodTrail										34°50'10"	34.51	66.88	110	5.286	
6.0	30014	PlywoodTrail										30°12'36"	32.39	63.273	120	4.294	
7.0	30018	PlywoodTrail										26°13'26"	9.783	19.223	42	1.124	
8.0	30020	PlywoodTrail										19°22'55"	7.173	14.208	42	0.608	
9.0	30022	PlywoodTrail										6°40'5"	14.564	29.094	250	0.424	



IA 376 SB



108_23A
8/15/22

TRAFFIC CONTROL PLAN

Traffic on IA 376 SB will remain open at all times.

There will be no off-site detour for IA 376 SB, a detour will be established by the contractor to access Frelon Dr. from IA 376.

One lane of traffic will be maintained utilizing lane and shoulder closures, and temporary pavement.

STAGING NOTES

The bridge will be constructed in three stages, maintaining at least one lane of southbound traffic. Access to the southbound Floyd Boulevard exit will be maintained through all phases of construction.

Place Road Closed signs on Southbound Frelon Drive at the F Street intersection prior to closure following Standard Road Plan TC-252. Road Closures also need to be placed at the S. Frelon Drive cross-over between NB and SB IA 376.

A Detour plan will be developed to direct IA 376 NB traffic to County Road C-80 for access to Frelon and advance signage for IA 376 SB will need to be placed directing Frelon Drive access to County Road C-80.

Stage 1 - Construction of Outside 31'-3" of Bridge

Stage 2 - Construction of Inside 24'-2" of Bridge

Stage 3 - Construction of Plywood Trail, Outside Foreslope and Guardrail

Stage 1A (Close Outside Shoulder)

- Close outside shoulder for construction of outside shoulder. Shoulder closure utilizes Standard Road Plan TC-402.
- Pave Full-Depth Paved Shoulder from Sta. 222+75.32 to Sta. 223+04.47 to accommodate ramp traffic during Stage 1.
- Excavation and paving shall be completed in a single work day using flaggers and TC-213.

Stage 1B (Close Outside Lane)

- Close the outside lane of IA 376 (SB) for partial Bridge removal and construction. The lane closure will utilize Standard Road Plan TC-421.
- Removal of a portion of the southbound outside lane and shoulder, a total of 13'-2" of the existing bridge. (a sawcut 1'-10" west of the centerline is required.)
- A 14'-6" traffic lane will be utilized on the remainder of the existing bridge.
- Temporary barrier rail (TBR) will be placed 6" from the sawcut. This will require anchoring into the existing bridge deck and pavement.
- 31'-3" of the outside of the bridge, proposed southbound full-depth paved shoulder, bridge approaches and the temporary pavement will be constructed. Omit curb on outside shoulders of bridge approach.

Stage 2 (Close Inside Lane)

- Traffic will be shifted to the full-depth shoulder and temporary pavement.
- A 14'-6" traffic lane will be utilized.
- TBR will be placed 3'-9" and 20'-1 1/2" from the median edge of the bridge.
- Close the inside lane of IA 376 (SB) for the bridge removal and construction of the bridge. Lane closure utilizes Standard Road Plan TC-421.
- The remainder of the existing bridge is removed.
- The remainder of the bridge, the median shoulder, median pipe and the proposed lanes will be constructed.

Stage 3 (Close Outside Shoulder)

- Shift IA 376 to the 2-(New) through lanes.
- Close outside shoulder for construction of Plywood Trail, outside foreslope and guardrail. Shoulder closure utilizes Standard Road Plan TC-402.
- Remove the Detour pavement and grading of the foreslopes, per detail 4311.
- The Plywood Trail pavement and cross pipe will be constructed.
- Install curb on the outside shoulder of the single and double reinforced panels of the two bridge approaches using dowelled curb.
- Steel Beam Guardrail and TL-4 Barrier rail will be installed along the outside shoulder.

**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

LINWORK	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

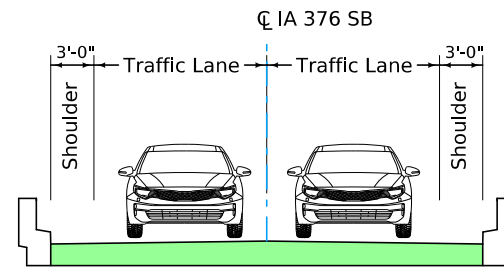
**PLAN VIEW PATTERN AND SYMBOL LEGEND
OF TRAFFIC CONTROL AND STAGING SHEETS**

	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

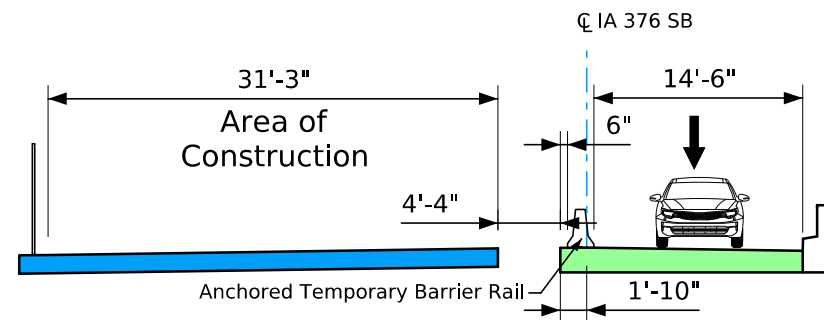
NOTE: Device spacing according to Standard Road Plans unless specifically dimensioned.

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

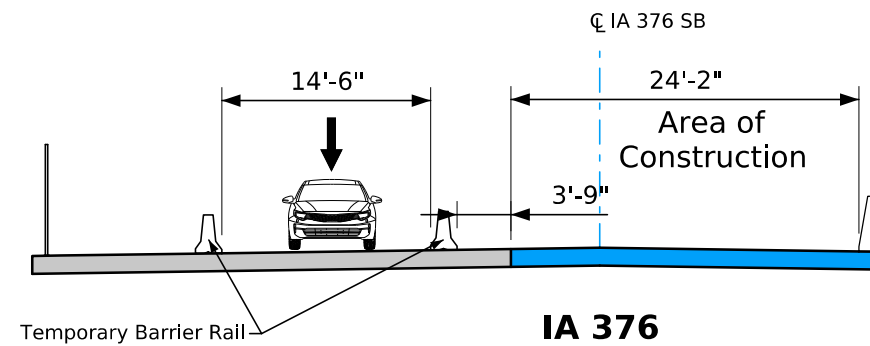
(COVERS SHEET SERIES J)



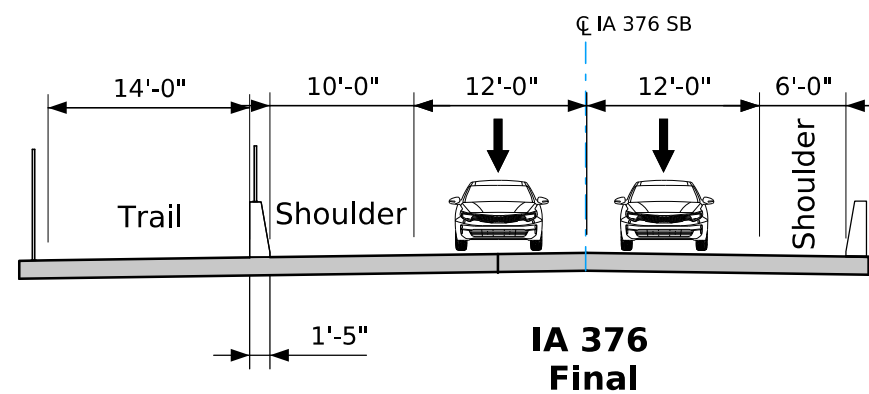
**IA 376
Existing Condition**



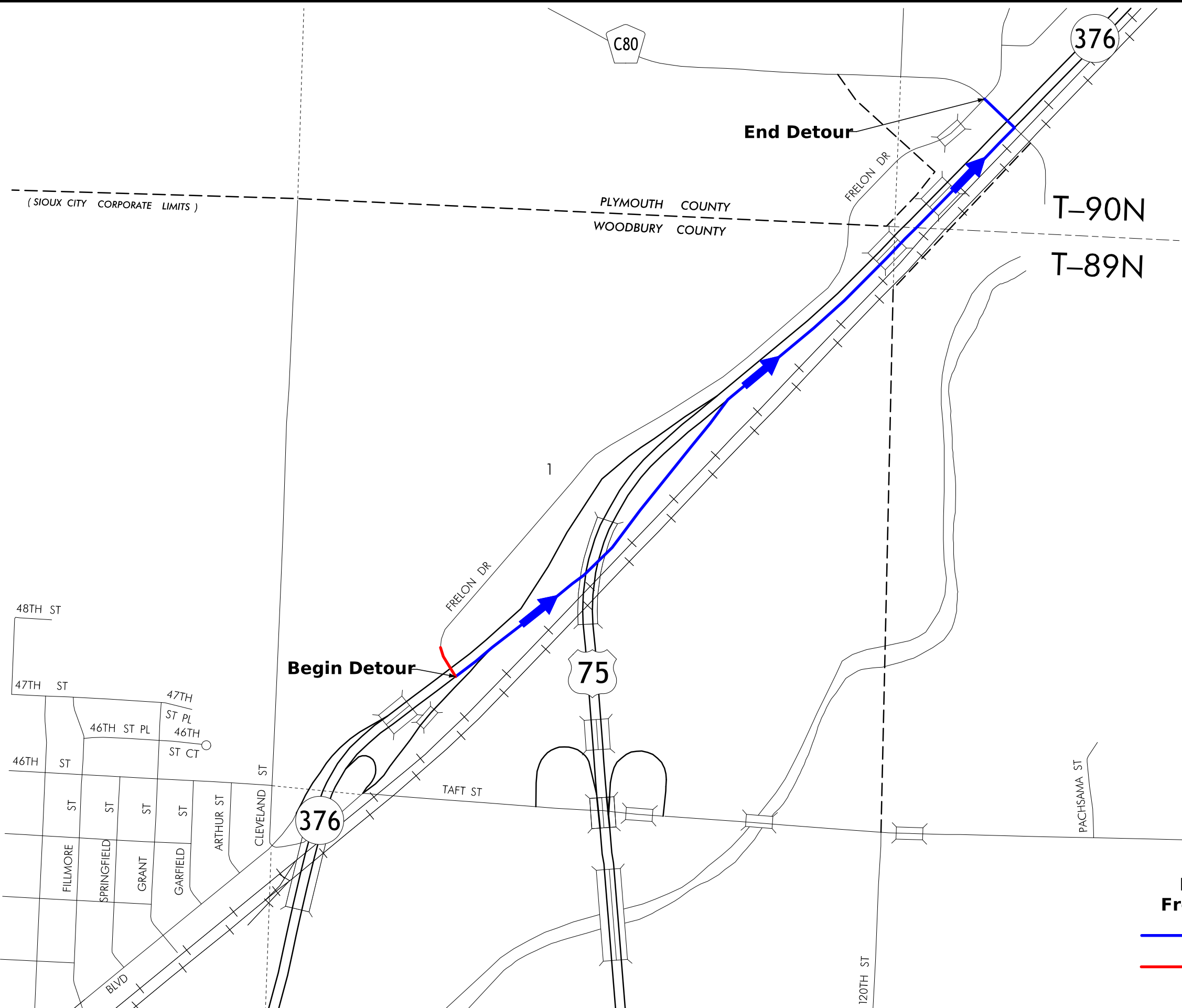
**IA 376
STAGE 1
Outside Lane Closure
Construct 31'-3" of Bridge**



**IA 376
STAGE 2
Traffic on Shoulder and Temporary Pavement
Construct 24'-2" of Bridge**



**IA 376
Final**

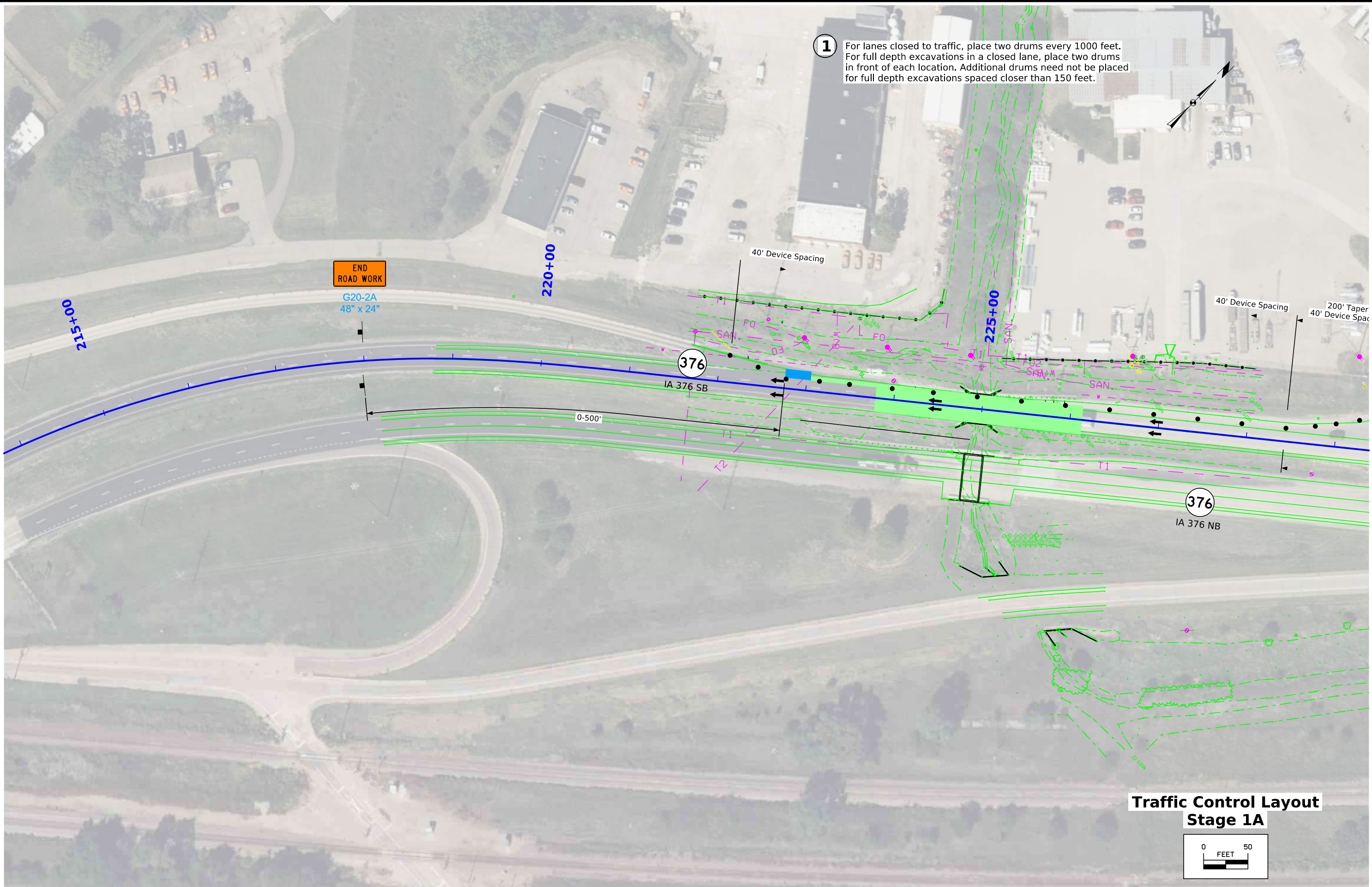


**Detour Route
Frelon Drive (NB)**

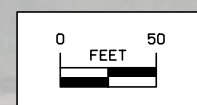
— **Detour Route**

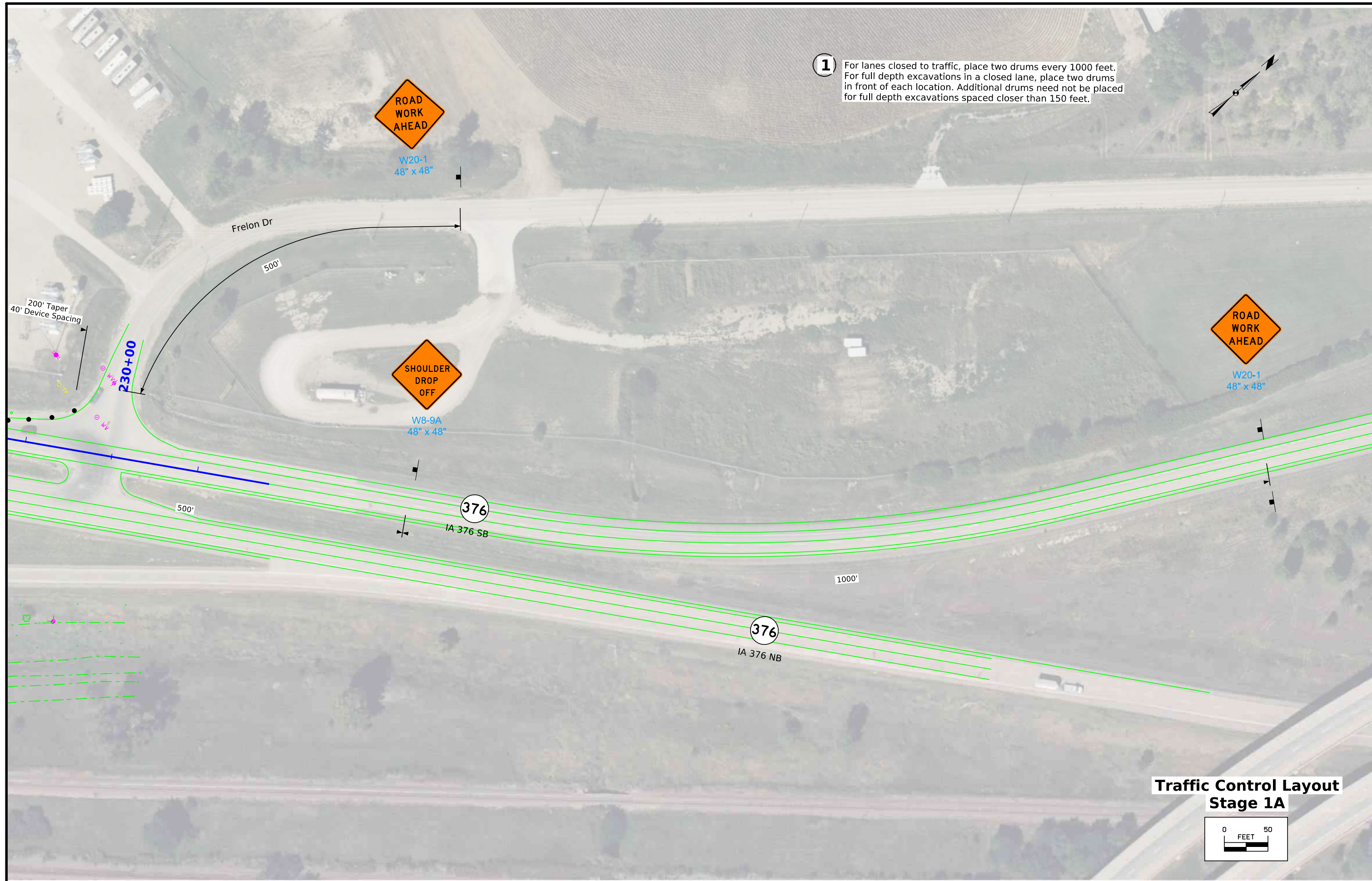
— **Road Closure**

1 For lanes closed to traffic, place two drums every 1000 feet. For full depth excavations in a closed lane, place two drums in front of each location. Additional drums need not be placed for full depth excavations spaced closer than 150 feet.



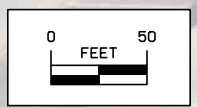
**Traffic Control Layout
Stage 1A**





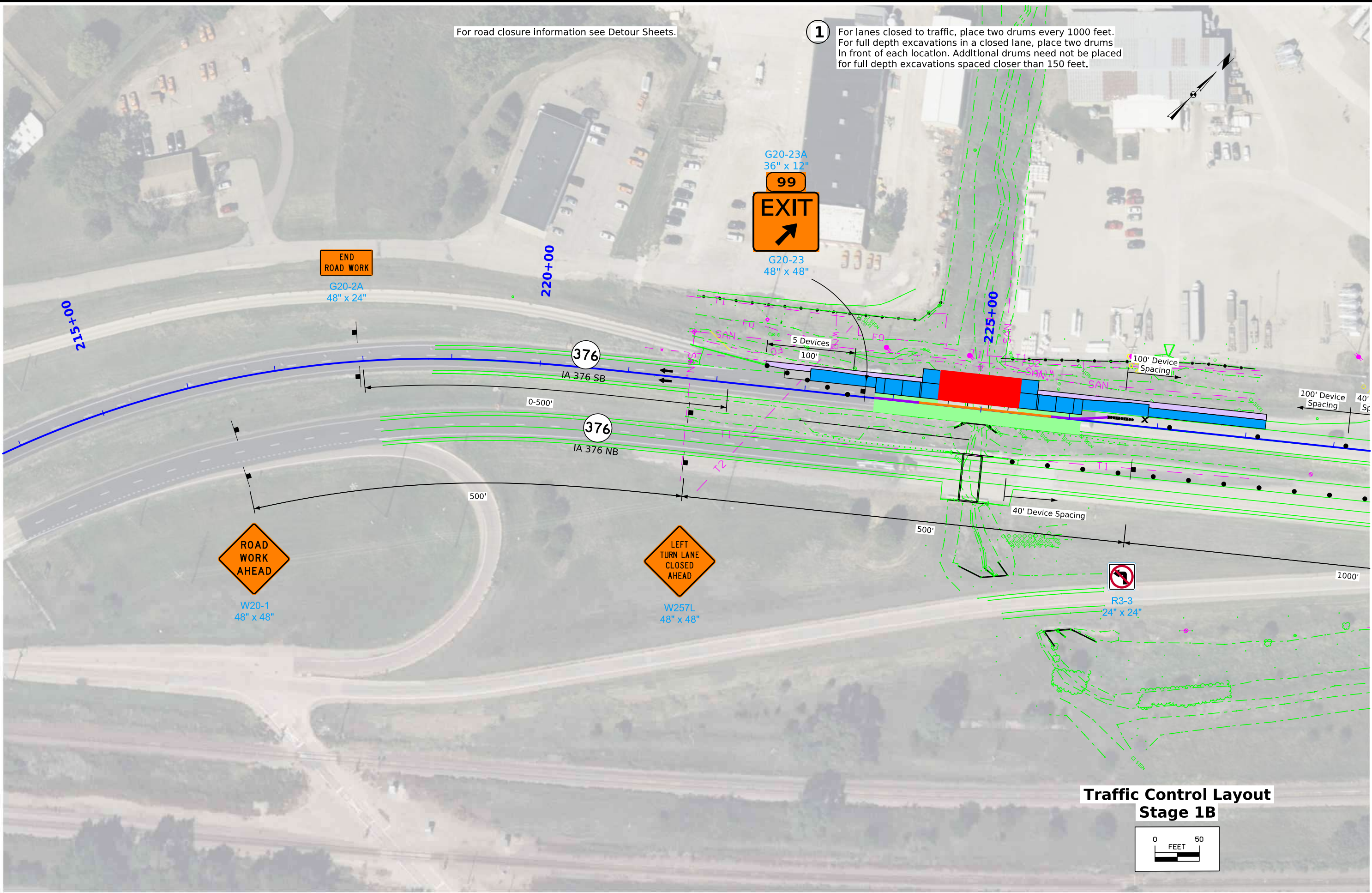
1 For lanes closed to traffic, place two drums every 1000 feet. For full depth excavations in a closed lane, place two drums in front of each location. Additional drums need not be placed for full depth excavations spaced closer than 150 feet.

**Traffic Control Layout
Stage 1A**

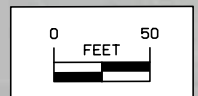


For road closure information see Detour Sheets.

1 For lanes closed to traffic, place two drums every 1000 feet. For full depth excavations in a closed lane, place two drums in front of each location. Additional drums need not be placed for full depth excavations spaced closer than 150 feet.



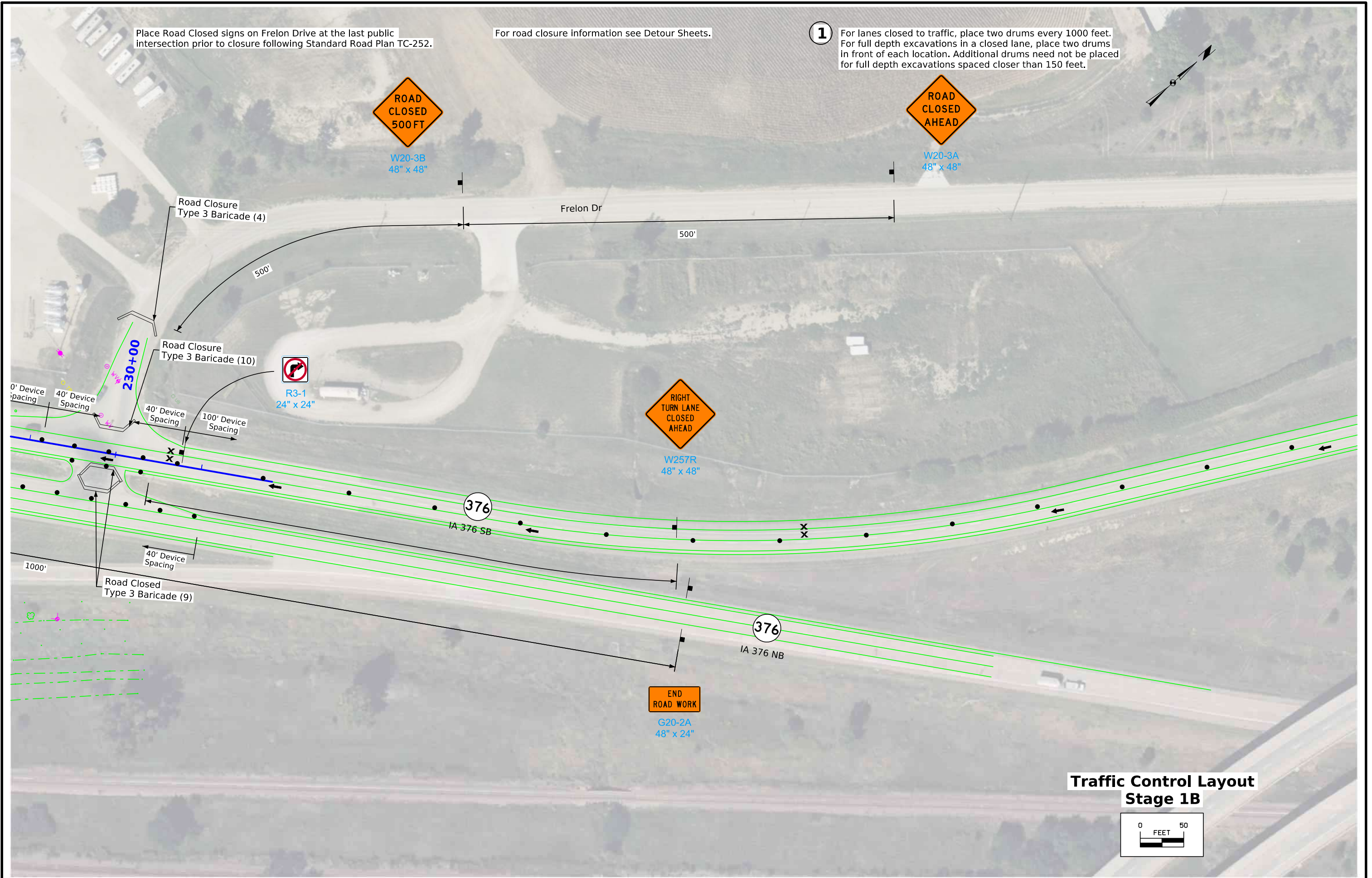
Traffic Control Layout Stage 1B



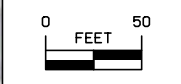
Place Road Closed signs on Frelon Drive at the last public intersection prior to closure following Standard Road Plan TC-252.

For road closure information see Detour Sheets.

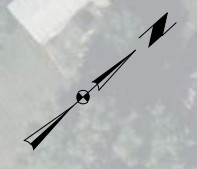
1 For lanes closed to traffic, place two drums every 1000 feet. For full depth excavations in a closed lane, place two drums in front of each location. Additional drums need not be placed for full depth excavations spaced closer than 150 feet.



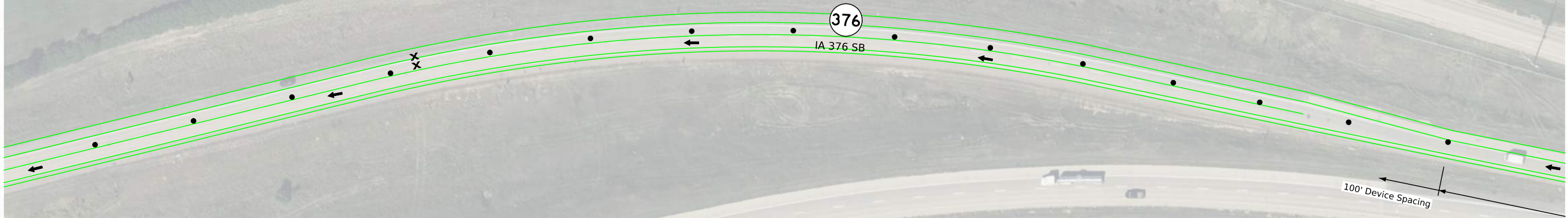
**Traffic Control Layout
Stage 1B**



1 For lanes closed to traffic, place two drums every 1000 feet. For full depth excavations in a closed lane, place two drums in front of each location. Additional drums need not be placed for full depth excavations spaced closer than 150 feet.



Frelon Dr

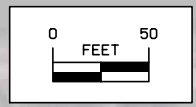


75 US 75 SB

75 US 75 NB

376
IA 376 NB

**Traffic Control Layout
Stage 1B**



1 For lanes closed to traffic, place two drums every 1000 feet. For full depth excavations in a closed lane, place two drums in front of each location. Additional drums need not be placed for full depth excavations spaced closer than 150 feet.



W20-1
48" x 48"



M1-6
30" x 24"

Frelon Dr



US 75 SB



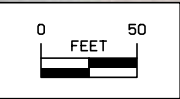
US 75 NB



IA 376 NB

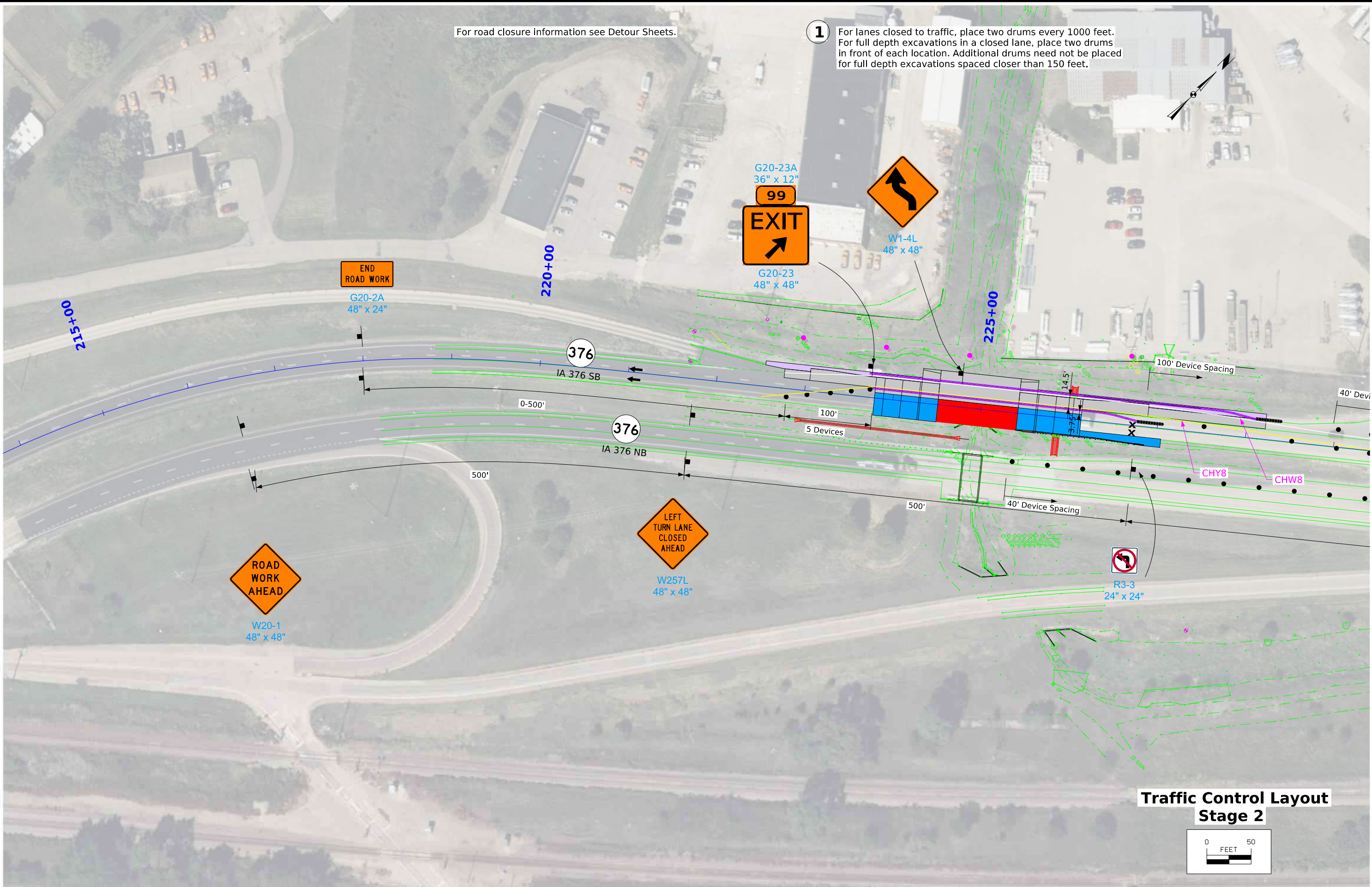
1000'

**Traffic Control Layout
Stage 1B**

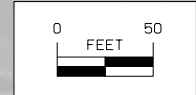


For road closure information see Detour Sheets.

1 For lanes closed to traffic, place two drums every 1000 feet. For full depth excavations in a closed lane, place two drums in front of each location. Additional drums need not be placed for full depth excavations spaced closer than 150 feet.



**Traffic Control Layout
Stage 2**



Place Road Closed signs on Frelon Drive at the last public intersection prior to closure following Standard Road Plan TC-252.

For road closure information see Detour Sheets.

1 For lanes closed to traffic, place two drums every 1000 feet. For full depth excavations in a closed lane, place two drums in front of each location. Additional drums need not be placed for full depth excavations spaced closer than 150 feet.



W20-3B
48" x 48"



W20-3A
48" x 48"

Frelon Dr

500'

Road Closed
Type 3 Baricade (4)

Road Closed
Type 3 Baricade (10)



R3-1
24" x 24"



W257R
48" x 48"

230+00

40' Device Spacing

40' Device Spacing

100' Device Spacing

376

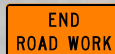
1000'

40' Device Spacing

Road Closed
Type 3 Baricade (9)

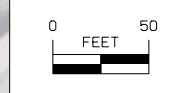
376

IA 376 NB

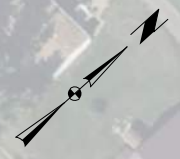


G20-2A
48" x 24"

Traffic Control Layout Stage 2



1 For lanes closed to traffic, place two drums every 1000 feet. For full depth excavations in a closed lane, place two drums in front of each location. Additional drums need not be placed for full depth excavations spaced closer than 150 feet.



Frelon Dr

376

IA 376 SB

100' Device Spacing

350' Merge Taper
50' Device Spacing

75

US 75 SB

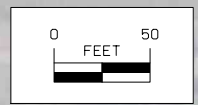
75

US 75 NB

376

IA 376 NB

**Traffic Control Layout
Stage 2**



1 For lanes closed to traffic, place two drums every 1000 feet. For full depth excavations in a closed lane, place two drums in front of each location. Additional drums need not be placed for full depth excavations spaced closer than 150 feet.



Frelon Dr



W1-4R
48" x 48"



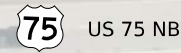
W20-1
48" x 48"



M1-6
30" x 24"

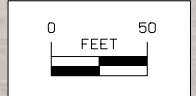
500'

1000'

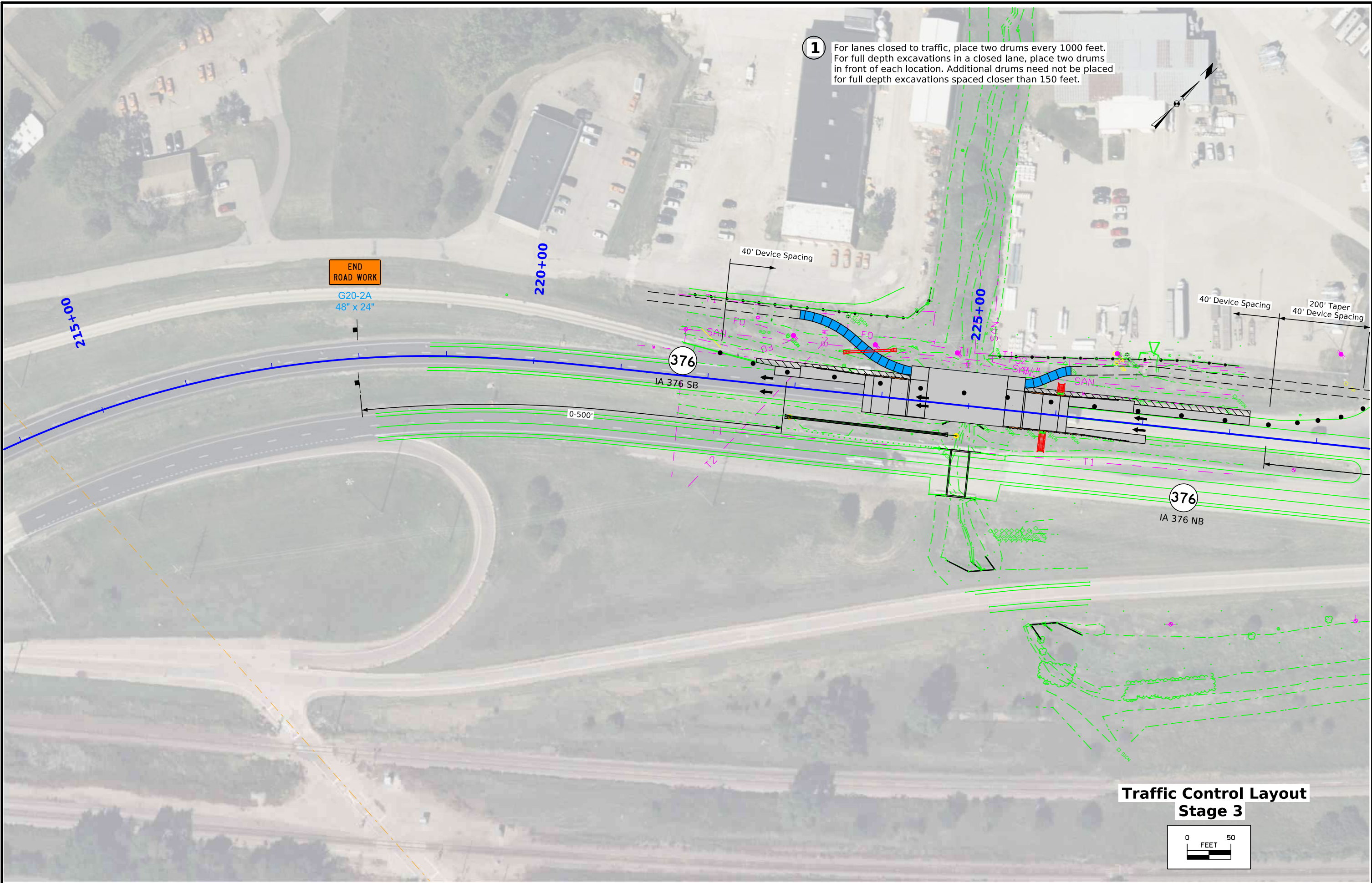


IA 376 NB

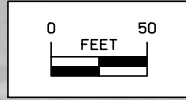
**Traffic Control Layout
Stage 2**



1 For lanes closed to traffic, place two drums every 1000 feet. For full depth excavations in a closed lane, place two drums in front of each location. Additional drums need not be placed for full depth excavations spaced closer than 150 feet.



**Traffic Control Layout
Stage 3**



1 For lanes closed to traffic, place two drums every 1000 feet. For full depth excavations in a closed lane, place two drums in front of each location. Additional drums need not be placed for full depth excavations spaced closer than 150 feet.



W20-1
48" x 48"

Frelon Dr

500'

200' Taper
40' Device Spacing

230+00



W8-9A
48" x 48"



W20-1
48" x 48"

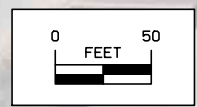
376
IA 376 SB

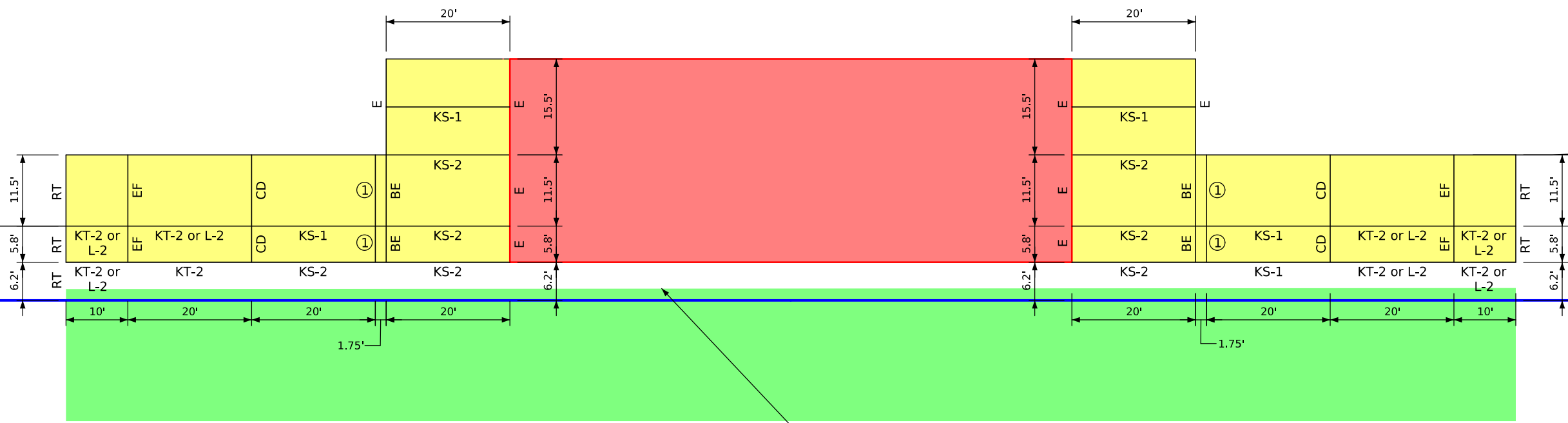
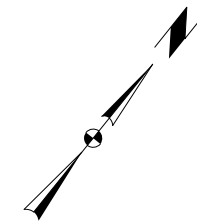
500'

1000'

376
IA 376 NB

**Traffic Control Layout
Stage 3**

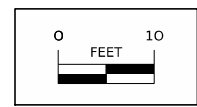


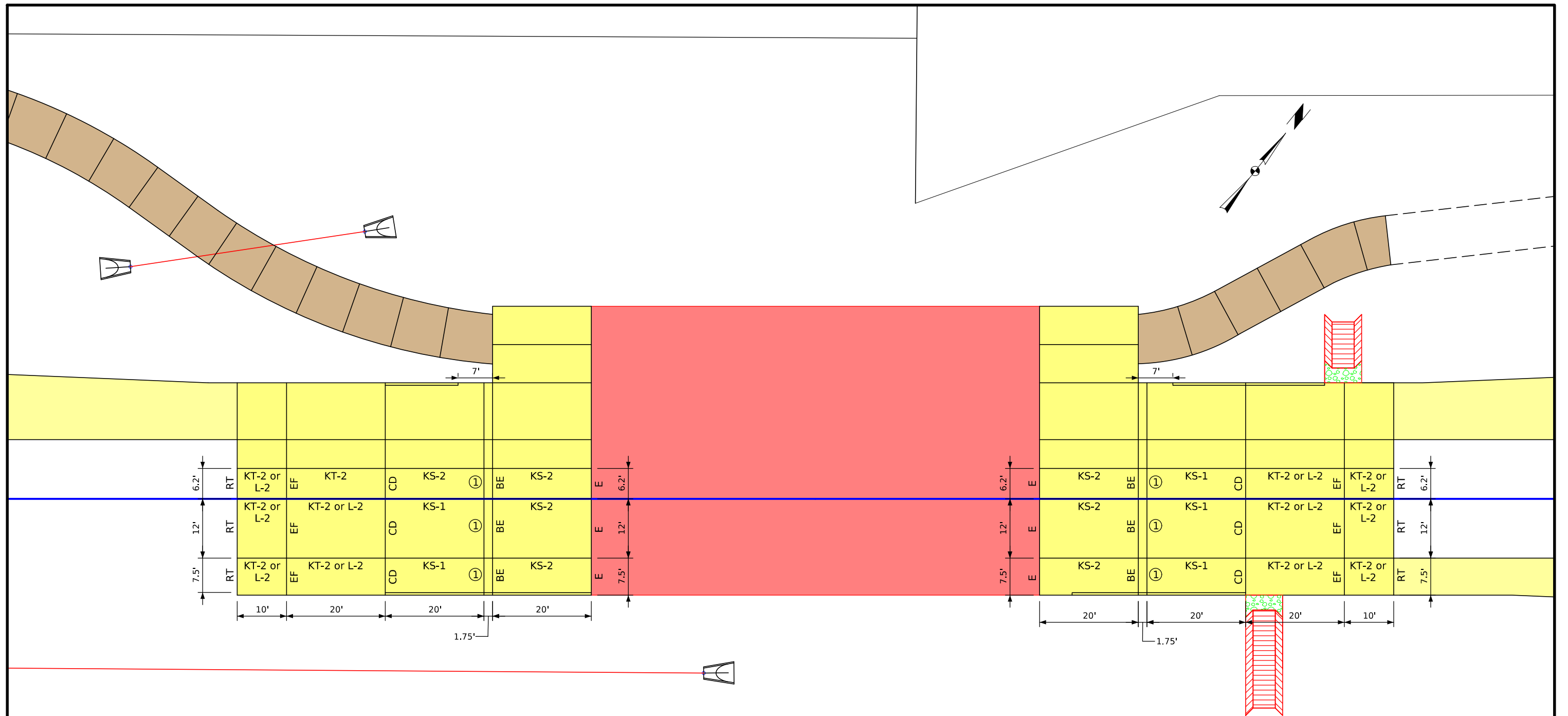


Stage 1 Cut

Refer to Detail HGM-1 on U sheets for Trail Approach details.
 ① ¼ inch Preformed Joint Filler and Seal Top.

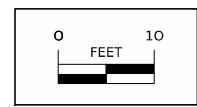
**IA 376 Stage 1
 Jointing Detail**





Refer to Detail HGM-1 on U sheets for Trail Approach details.
 ① ¼ inch Preformed Joint Filler and Seal Top.

IA 376 Stage 2 Jointing Detail



TABULATION OF SILT FENCES

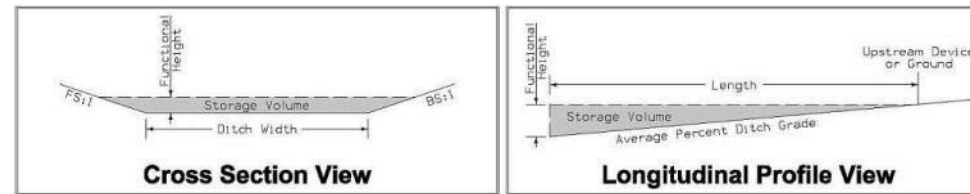
Refer to EC-201

100_17
8/15/22

Line No.	Station From	Station To	Side	Length (FT)	Remarks
1.0	222+72.00	222+81.00	Right	145.00	
2.0	222+97.00	224+68.00	Right	180.00	
3.0	223+67.00	224+64.00	Left	112.00	
4.0	225+06.00	226+32.00	Left	153.00	
5.0	225+18.00	226+16.00	Right	100.00	
6.0	226+18.00	227+66.00	Left	160.00	
7.0	226+32.00	228+27.00	Right	215.00	
8.0				1065.00	Total

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: $[0.5 * Spacing * (0.5 * H^2 * FS + DW * H + 0.5 * H^2 * BS)]$

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		Type 1	222+95.00	Right	20.0	2.0	20.0	6.0					
2.0		Type 1	223+44.00	Right	30.0	3.0	30.0	6.0					
3.0		Type 1	224+02.00	Median	30.0	3.0	30.0	6.0					
4.0		Type 1	224+42.00	Median	30.0	3.0	30.0	6.0					
5.0		Type 1	224+50.00	Right	15.0	1.5	15.0	3.0					
6.0		Type 1	225+43.00	Right	15.0	1.5	15.0	3.0					
7.0		Type 1	225+63.00	Left	15.0	1.5	15.0	6.0					
8.0		Type 1	226+12.00	Left	20.0	2.0	20.0	6.0					
9.0		Type 1	227+10.00	Right	20.0	2.0	20.0	6.0					
10.0		Type 1	227+13.00	Left	20.0	2.0	20.0	6.0					
11.0		Type 1	227+87.00	Left	20.0	2.0	20.0	6.0					
12.0		Type 1	228+55.00	Left	20.0	2.0	20.0	6.0					
13.0					255.0	26.0	255.0						Total

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

LINework	Design Color No.	Color	Description
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

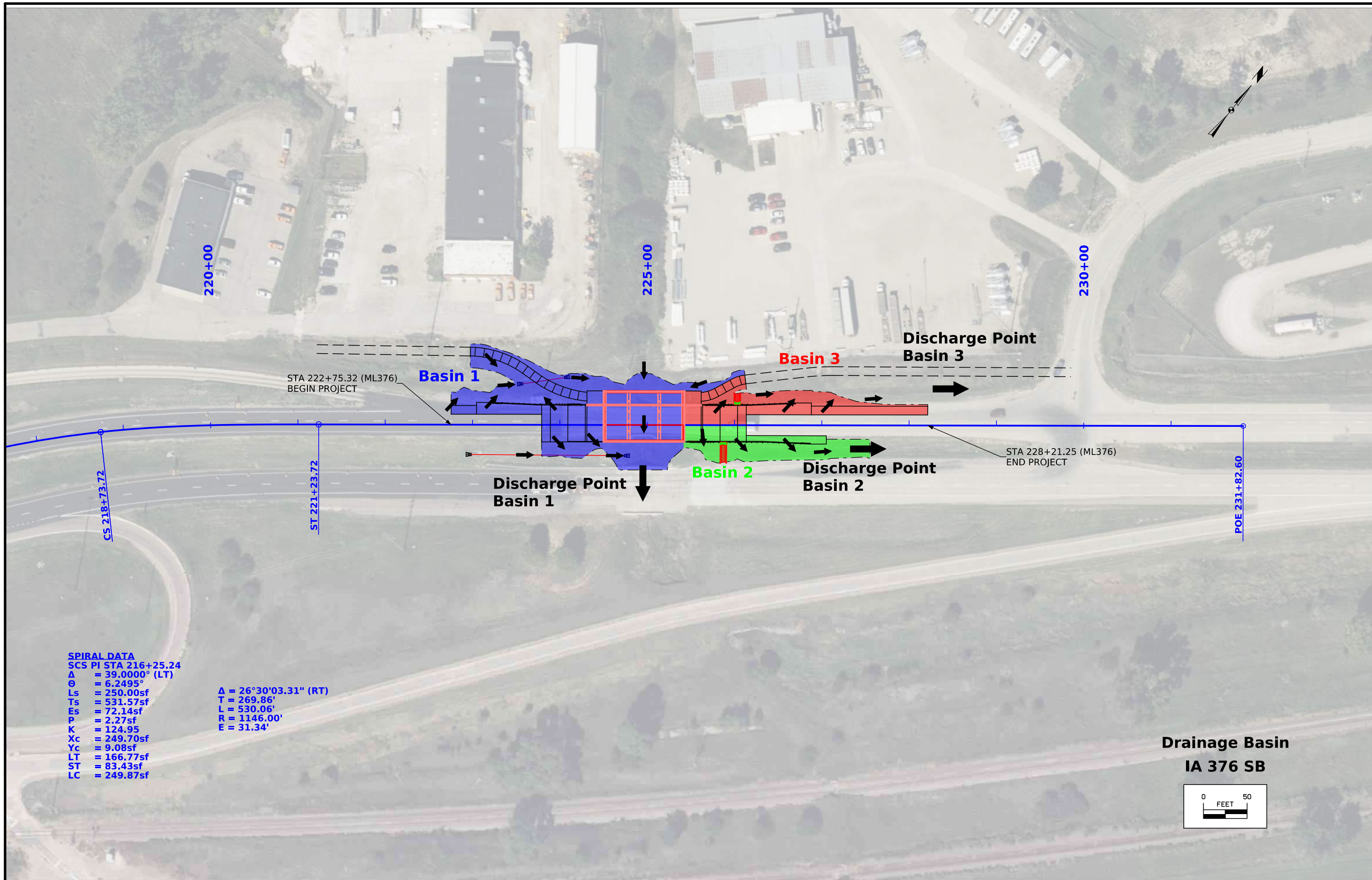
SHADING	Design Color No.	Color	Description	Transparency
Citron	(234)		Mulching, All Types	50%
Light Brown	(238)		Special Ditch Control, Wood Excelsior Mat	0%
Grass Green	(233)		8FT Mow Strip	50%
Red	(3)		Delineates Restricted Areas	0%

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

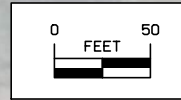
(COVERS SHEET SERIES R)

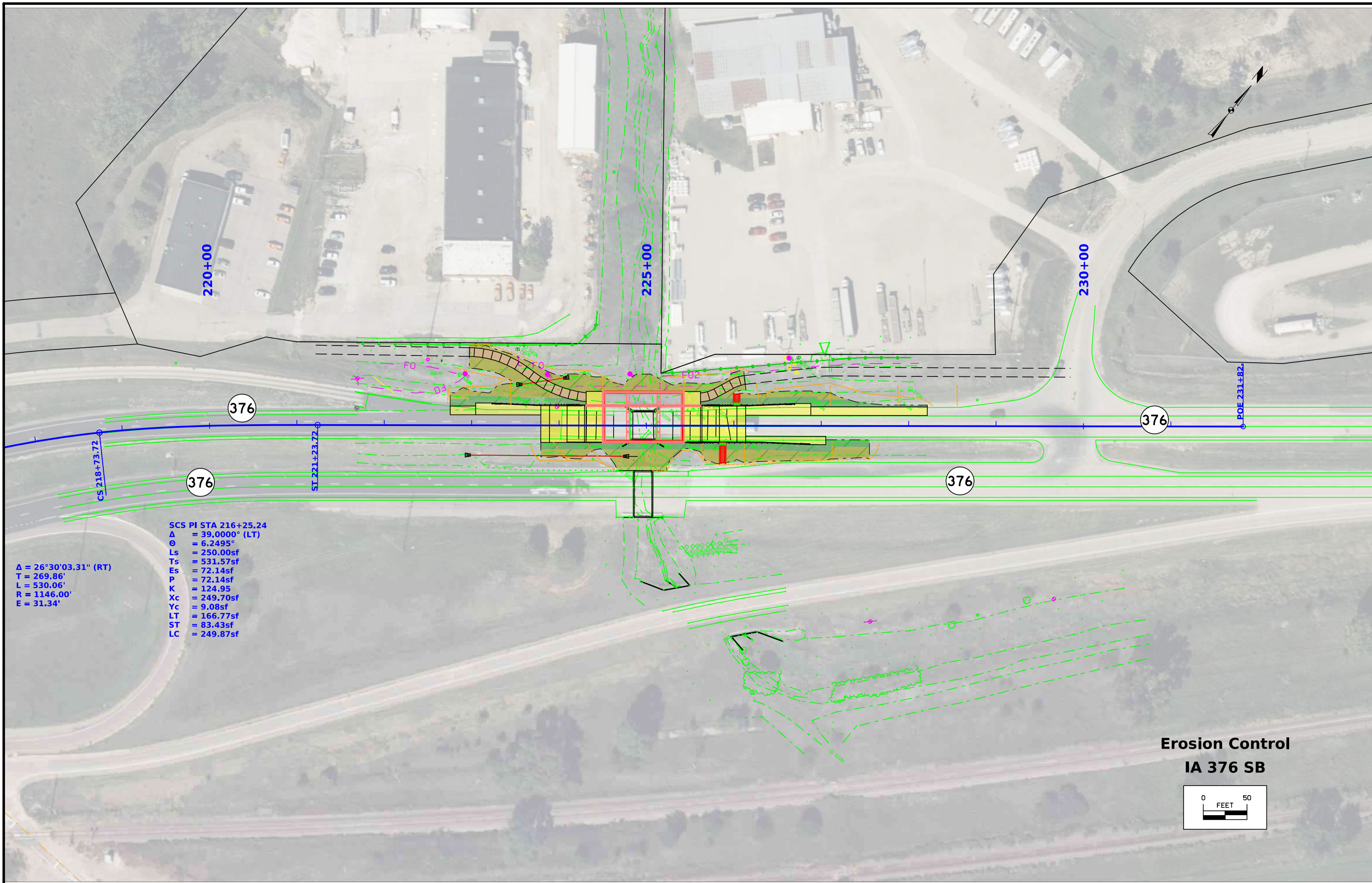


SPIRAL DATA
 SCS PI STA 216+25.24
 $\Delta = 39.0000^\circ$ (LT)
 $\theta = 6.2495^\circ$
 $L_s = 250.00sf$
 $T_s = 531.57sf$
 $E_s = 72.14sf$
 $P = 2.27sf$
 $K = 124.95$
 $X_c = 249.70sf$
 $Y_c = 9.08sf$
 $LT = 166.77sf$
 $ST = 83.43sf$
 $LC = 249.87sf$

$\Delta = 26^\circ 30' 03.31''$ (RT)
 $T = 269.86'$
 $L = 530.06'$
 $R = 1146.00'$
 $E = 31.34'$

Drainage Basin
IA 376 SB

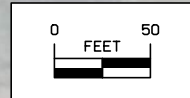




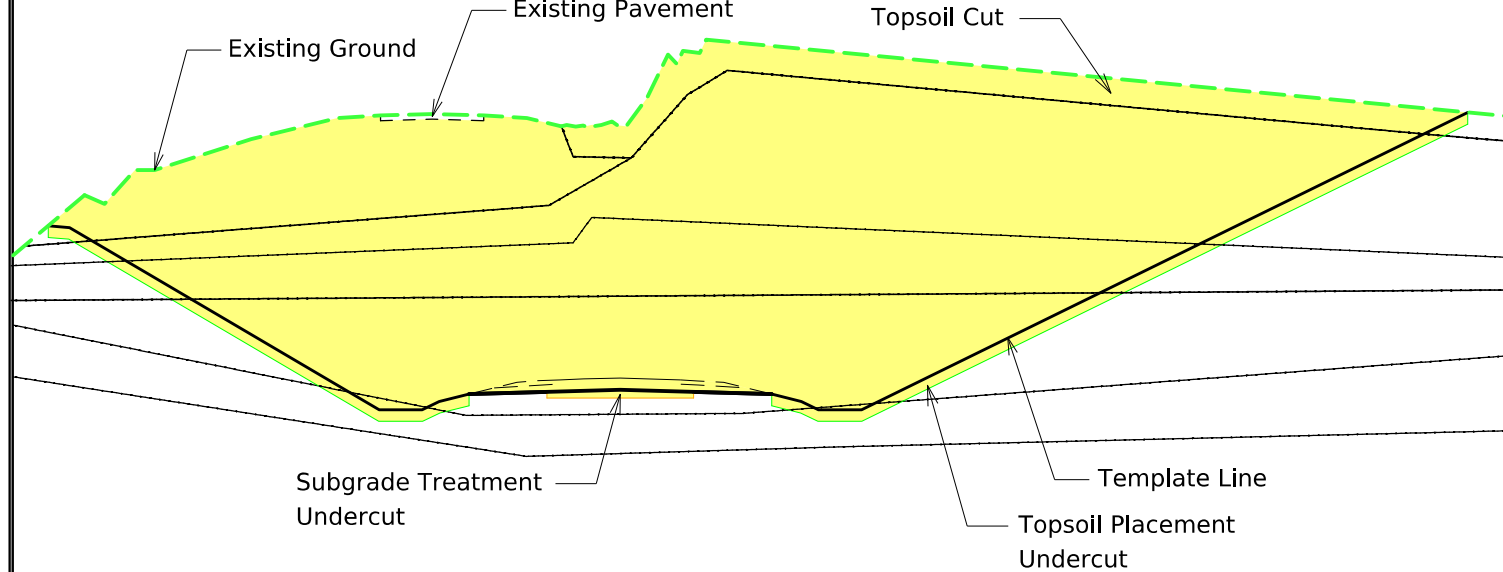
$\Delta = 26^{\circ}30'03.31''$ (RT)
 $T = 269.86'$
 $L = 530.06'$
 $R = 1146.00'$
 $E = 31.34'$

SCS PI STA 216+25.24
 $\Delta = 39.0000^{\circ}$ (LT)
 $\Theta = 6.2495^{\circ}$
 $Ls = 250.00sf$
 $Ts = 531.57sf$
 $Es = 72.14sf$
 $P = 72.14sf$
 $K = 124.95$
 $Xc = 249.70sf$
 $Yc = 9.08sf$
 $LT = 166.77sf$
 $ST = 83.43sf$
 $LC = 249.87sf$

Erosion Control
IA 376 SB



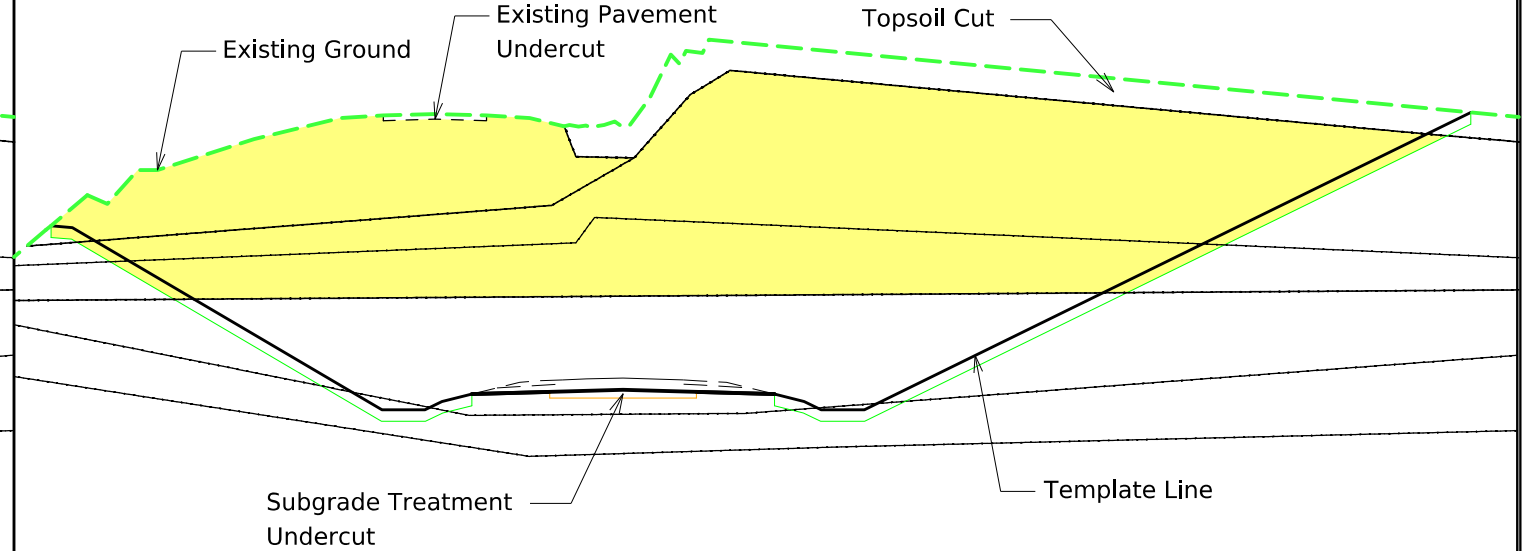
CUT SIDE Total Cut Unadjusted **RURAL**



Notes:

1. "Total Cut Unadjusted" Column includes all cut values in the Station Range based on Typical, Topsoil and Subgrade Treatment needs.
2. "Total Cut Unadjusted" does not include and Existing Pavement values inside or outside the cut template as shown on cross sections.
3. Tabulated Plowing and Shaping operations are included in the "Total Cut Unadjusted" values.

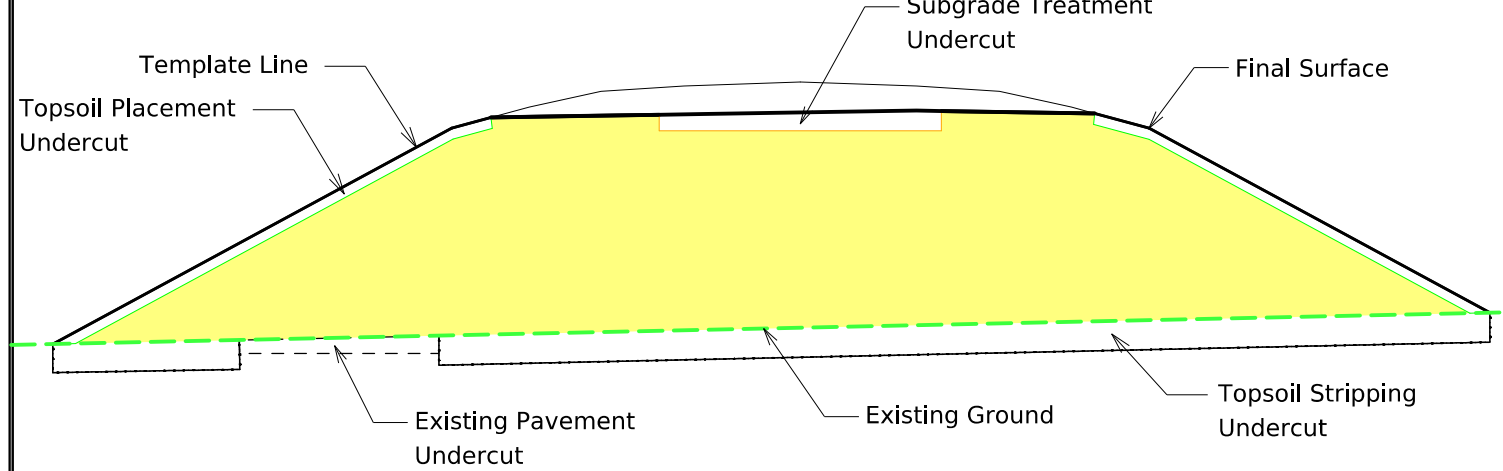
CUT SIDE Total Cut Adjusted



Notes:

1. "Total Cut Adjusted" Column includes all cut values usable as Class 10 material.
2. "Total Cut Adjusted" does not include and Existing Pavement , Existing Topsoil, or material to be wasted.

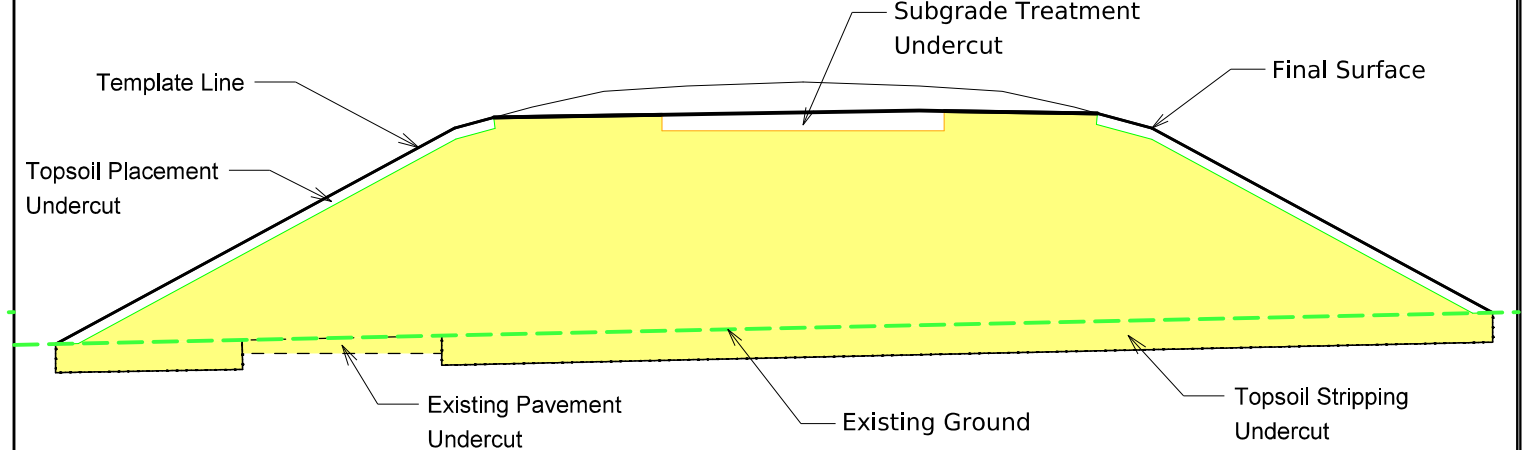
FILL SIDE Total Fill Unadjusted **RURAL**



Notes:

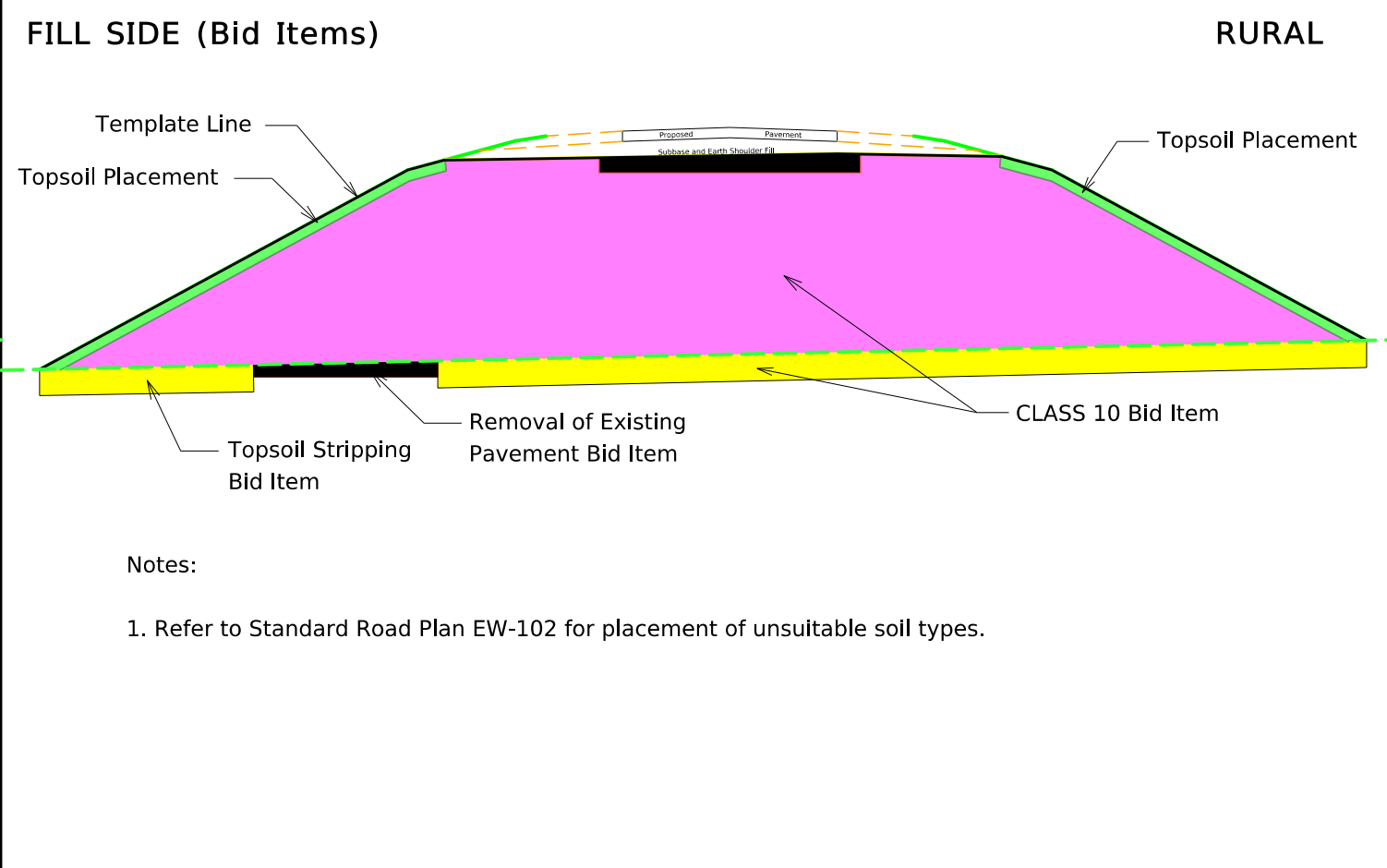
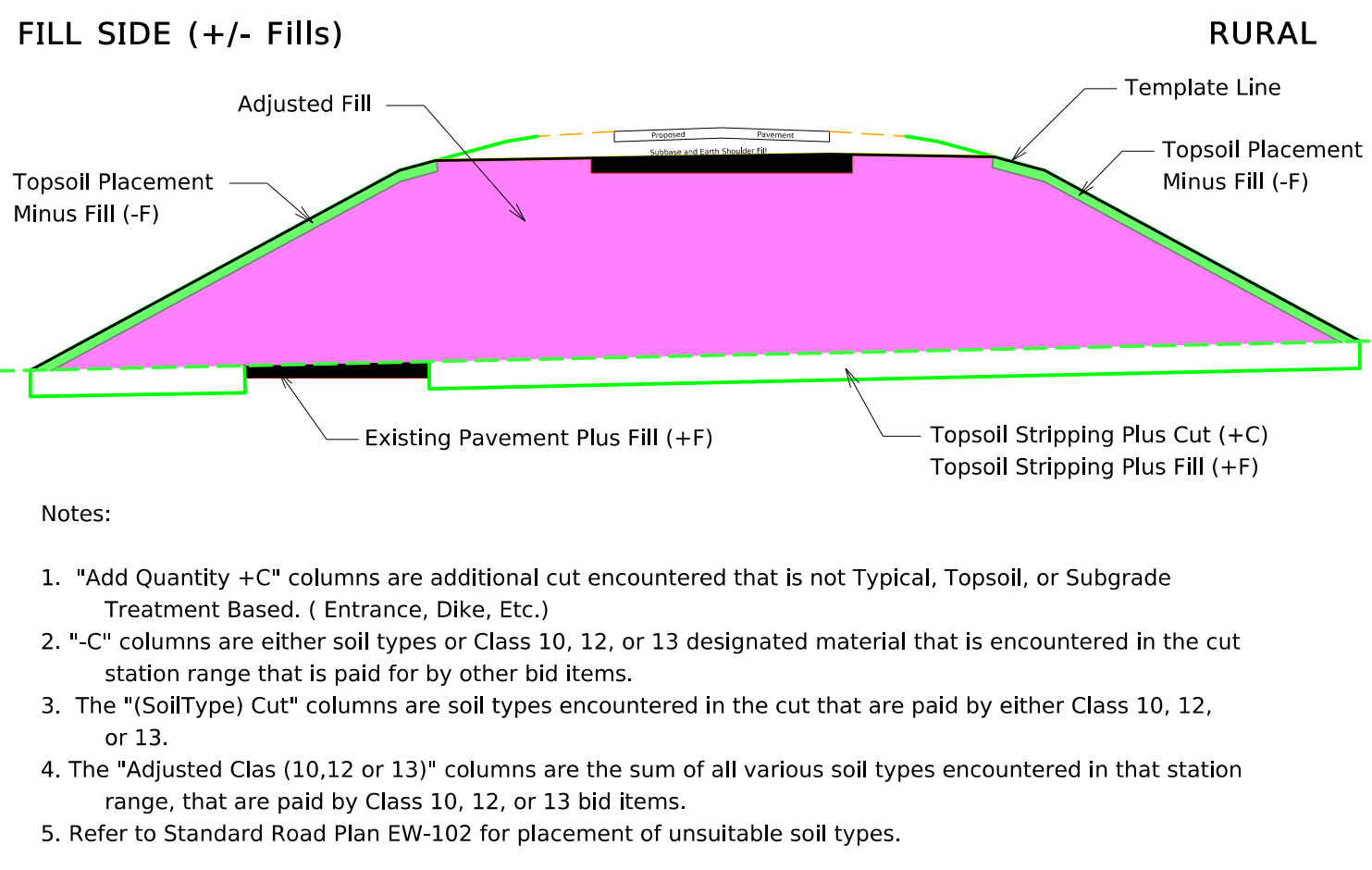
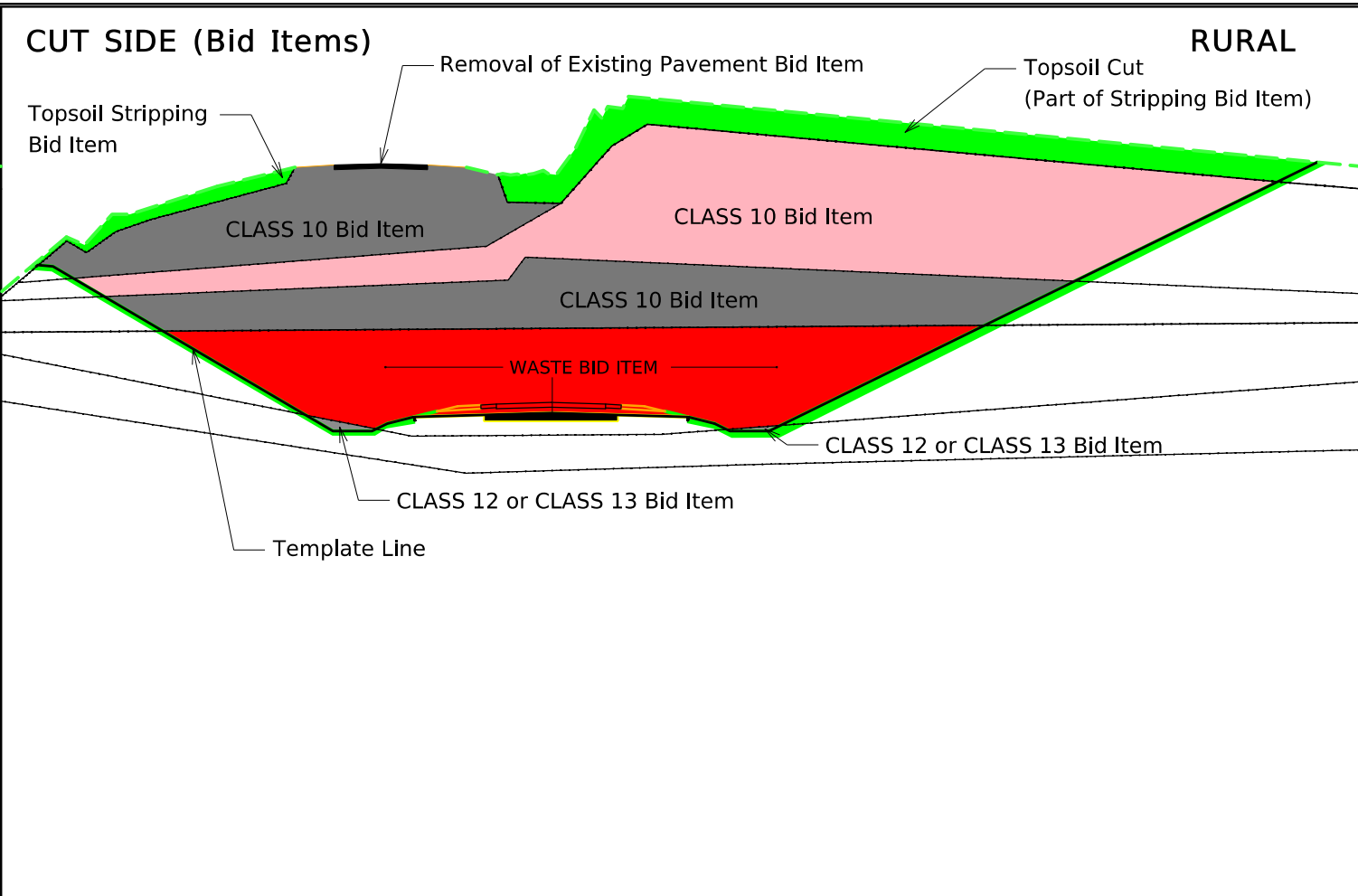
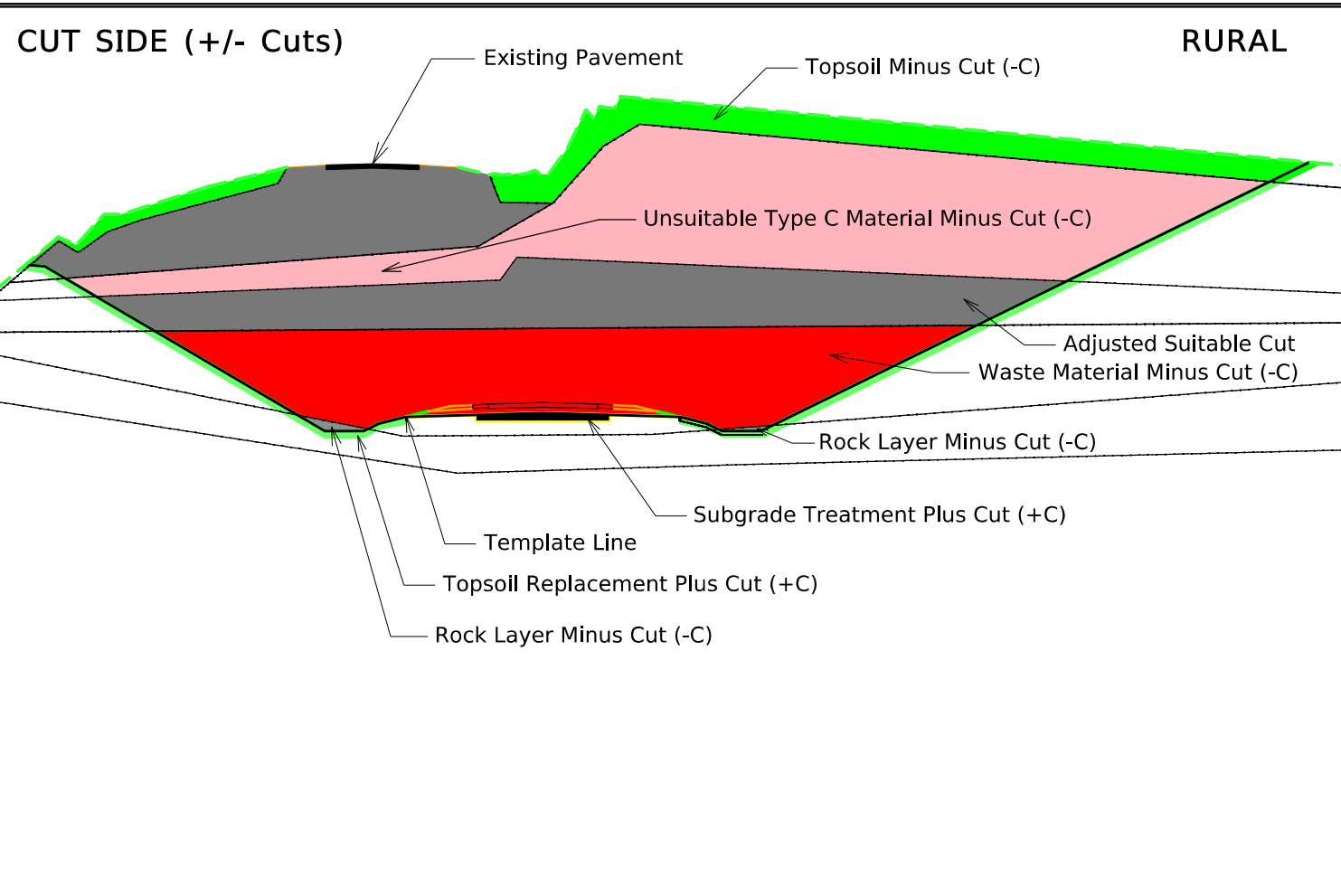
1. "Total Fill Unadjusted" Column includes all Class 10, 12, and 13 fill. This excludes the topsoil, subgrade treatment, subbase, new pavement, and shoulder fill needs in that station range.
2. "Total Fill Unadjusted" Column does not include adjustments for additional fill from cuts such as existing pavement removed, plowing and shaping operations, entrances, dikes, or topsoil stripping.

FILL SIDE Total Fill Adjusted



Notes:

1. "Total Fill Adjusted" Column includes all Class 10, 12, and 13 fill and adjustments for additional fill from cuts such as existing pavement, plowing and shaping operations, entrances, dikes, and topsoil stripping.
2. The available area to place unsuitable materials in the T Sheet tabulation does not include the undercut values from the topsoil stripping, existing pavement, or plowing and shaping



TABULATION OF TEMPLATE QUANTITIES AND ADJUSTMENTS

Station	Cut				Fill				Checks (EW-102)		Topsoil				[16]	[17]	[18]	[19]	[20]	[21]	[22]	
	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]	[13]	[14]	[15]							
	Total Cut Unadjusted Volume	Total Class 10 Unadjusted Volume	Topsoil Cut Volume	Total Cut Adjusted	Total Fill Unadjusted Volume	Existing Topsoil Stripping Undercut (+ Fill)	Total Fill Adjusted	Total Fill Adjusted w/ Weighted Average 1.3 Shrink Factor	Total Cut Adjusted Minus Fill w/ Shrink	Approx. Fill Vol. Below 5' & Above 20' w/ Shrink	Approx. Fill Volume Below 3' w/ Shrink	Topsoil Stripping Undercut Volume	Topsoil Placement Undercut Volume	Topsoil Placement With 1.4 Shrink Factor	Topsoil Stripping Minus Topsoil Placement w/Shrink							
ML376																						
222+75.32	165	23	165	23	11	165	176	229	-206	0	0	165	165	231	-66							
223+00.00	142	19	142	19	2	142	144	187	-168	0	0	142	142	199	-57							
223+25.00	198	15	198	15	0	198	198	258	-243	0	0	198	198	277	-79							
223+50.00	187	102	187	102	2	187	189	246	-144	0	0	187	187	262	-75							
223+75.00	154	116	154	116	60	154	214	279	-162	0	0	154	154	216	-62							
224+00.00	182	142	182	142	0	182	182	237	-95	0	0	182	182	256	-73							
224+25.00	187	0	187	0	5	187	193	250	-250	0	0	187	187	263	-75							
224+50.00	3	149	3	149	6	3	9	11	137	0	0	3	3	5	-1							
224+50.83	192	138	192	138	5	192	197	256	-118	0	0	192	192	269	-77							
225+41.67	36	109	36	109	1	36	37	48	61	0	0	36	36	51	-15							
225+50.00	169	100	169	100	2	169	171	222	-122	0	0	169	169	236	-68							
225+75.00	272	28	272	28	7	272	279	363	-334	0	0	272	272	381	-109							
226+00.00	323	31	323	31	11	323	333	434	-403	0	0	323	323	452	-129							
226+25.00	332	31	332	31	14	332	345	449	-417	0	0	332	332	464	-133							
226+50.00	325	27	325	27	6	325	331	431	-403	0	0	325	325	455	-130							
226+75.00	307	16	307	16	2	307	310	403	-387	0	0	307	307	430	-123							
227+00.00	283	16	283	16	1	283	284	370	-353	0	0	283	283	397	-114							
227+25.00	269	14	269	14	1	269	269	350	-337	0	0	269	269	376	-108							
227+50.00	139	14	139	14	1	139	140	182	-168	0	0	139	139	195	-56							
227+75.00	6	14	6	14	0	6	6	8	6	0	0	6	6	9	-3							
228+00.00	2	0	2	0	0	2	2	2	-2	0	0	2	2	2	-1							
228+21.26																						
ML376																						
Totals:	3,874	1,104	3,874	1,104	135	3,874	4,009	5,213	-4,110	0	0	3,874	3,874	5,425	-1,552							

TABULATION OF TEMPLATE QUANTITIES AND ADJUSTMENTS

Station	Cut				Fill					Checks (EW-102)		Topsoil				[16]	[17]	[18]	[19]	[20]	[21]	[22]
	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]	[13]	[14]	[15]							
	Total Cut Unadjusted Volume	Total Class 10 Unadjusted Volume	Topsoil Cut Volume	Total Cut Adjusted	Total Fill Unadjusted Volume	Existing Topsoil Stripping Undercut (+ Fill)	Total Fill Adjusted	Total Fill Adjusted w/ Weighted Average 1.3 Shrink Factor	Total Cut Adjusted Minus Fill w/ Shrink	Approx. Fill Vol. Below 5' & Above 20' w/ Shrink	Approx. Fill Volume Below 3' w/ Shrink	Topsoil Stripping Undercut Volume	Topsoil Placement Undercut Volume	Topsoil Placement With 1.4 Shrink Factor	Topsoil Stripping Minus Topsoil Placement w/Shrink							
PlywoodTrail																						
2143+99.59	4	1	4	1	41	4	45	58	-57	0	0	4	4	5	-2							
2144+00.00	196	0	196	0	79	196	275	357	-357	0	0	196	196	274	-78							
2144+25.00	193	0	193	0	95	193	288	375	-374	0	0	193	193	270	-77							
2144+50.00	230	0	230	0	77	230	307	399	-399	0	0	230	230	321	-92							
2144+75.00	232	0	232	0	3	232	235	306	-306	0	0	232	232	324	-93							
2145+00.00	227	0	227	0	4	227	231	300	-300	0	0	227	227	317	-91							
2145+25.00	94	0	94	0	19	94	113	147	-147	0	0	94	94	131	-38							
2145+44.89	0	0	0	0	9	0	9	11	-11	0	0	0	0	0	0							
2146+75.92	58	11	58	11	5	58	64	83	-72	0	0	58	58	82	-23							
2147+00.00	137	11	137	11	0	137	137	179	-167	0	0	137	137	192	-55							
2147+25.00	28	0	28	0	0	28	28	36	-36	0	0	28	28	39	-11							
2147+30.83																						
PlywoodTrail																						
Totals:	1,397	25	1,397	25	334	1,397	1,731	2,250	-2,226	0	0	1,397	1,397	1,956	-560							

TABULATION OF TEMPLATE QUANTITIES AND ADJUSTMENTS

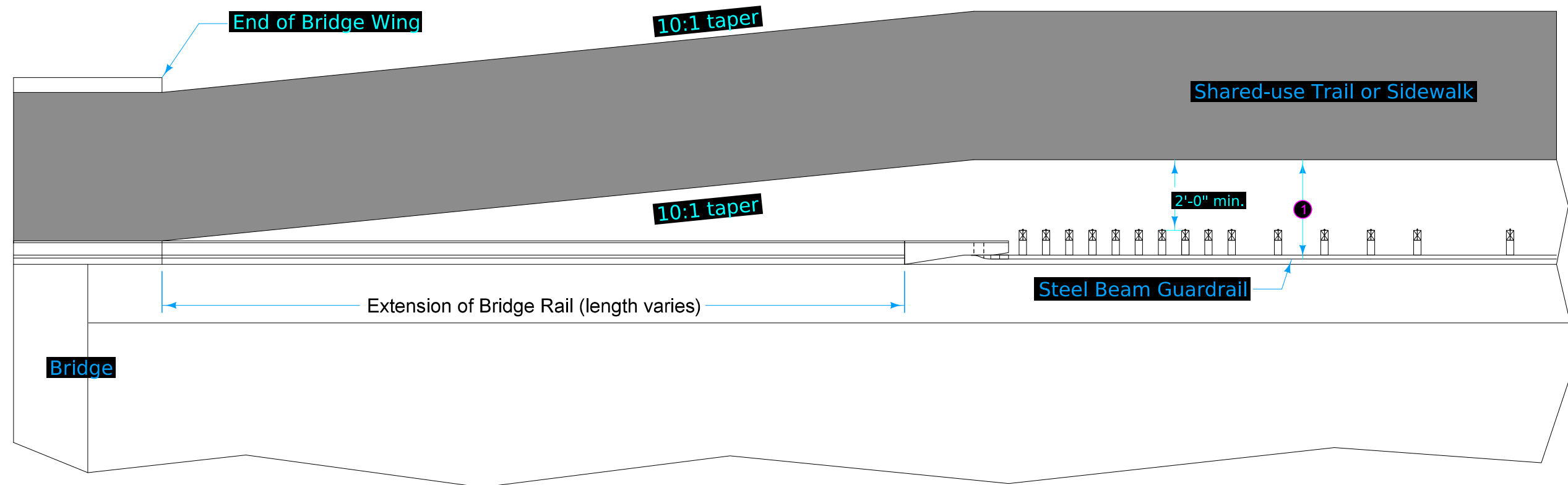
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	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]	[13]	[14]	[15]							
	Total Cut Unadjusted Volume	Total Class 10 Unadjusted Volume	Topsoil Cut Volume	Total Cut Adjusted	Total Fill Unadjusted Volume	Existing Topsoil Stripping Undercut (+ Fill)	Total Fill Adjusted	Total Fill Adjusted w/ Weighted Average 1.3 Shrink Factor	Total Cut Adjusted Minus Fill w/ Shrink	Approx. Fill Vol. Below 5' & Above 20' w/ Shrink	Approx. Fill Volume Below 3' w/ Shrink	Topsoil Stripping Undercut Volume	Topsoil Placement Undercut Volume	Topsoil Placement With 1.4 Shrink Factor	Topsoil Stripping Minus Topsoil Placement w/Shrink							
CULV224																						
1224+37.36	0	430	0	430	2		2	2	427	0	0	0	0	0	0							
1224+50.00	0	448	0	448	1		1	2	447	0	0	0	0	0	0							
1224+75.00	0	283	0	283	8		8	10	273	0	0	0	0	0	0							
1225+00.00	0	37	0	37	0		0	0	37	0	0	0	0	0	0							
1225+25.00	0	0	0	0	0		0	0	0	0	0	0	0	0	0							
1225+47.74	0	0	0	0	0		0	0	0	0	0	0	0	0	0							
CULV224 Totals:	0	1,199	0	1,199	12	0	12	15	1,184	0	0	0	0	0	0							

TABULATION OF TEMPLATE QUANTITIES AND ADJUSTMENTS

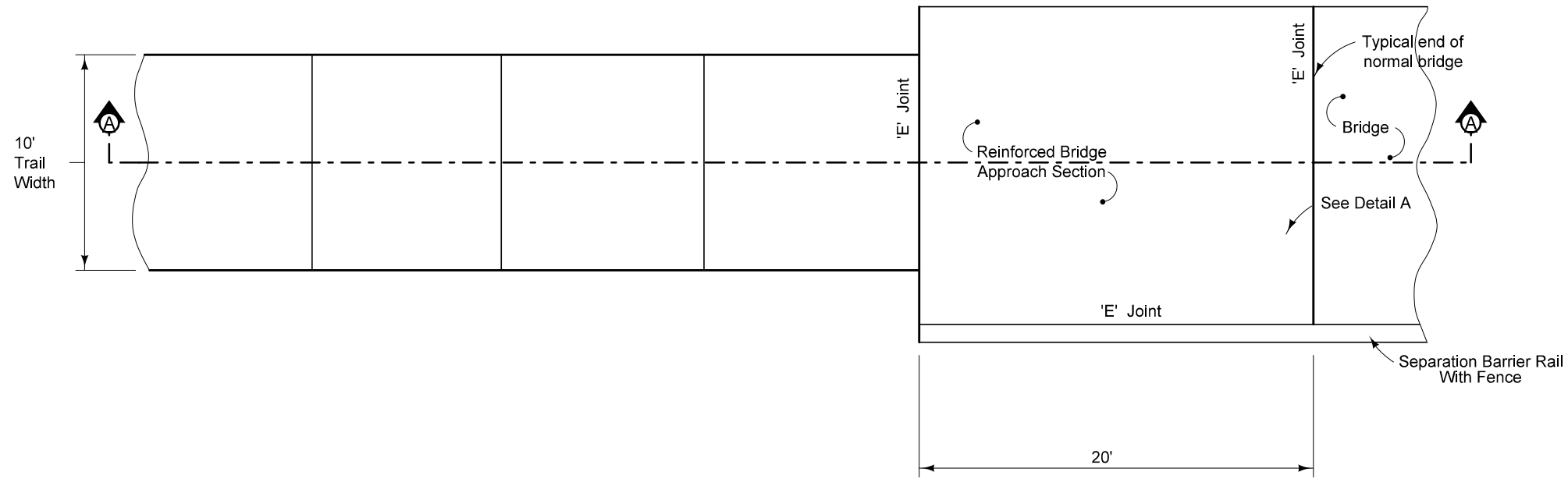
Station	Cut				Fill					Checks (EW-102)		Topsoil				[16]	[17]	[18]	[19]	[20]	[21]	[22]	
	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]	[13]	[14]	[15]								
	Total Cut Unadjusted Volume	Total Class 10 Unadjusted Volume	Topsoil Cut Volume	Total Cut Adjusted	Total Fill Unadjusted Volume	Existing Topsoil Stripping Undercut (+ Fill)	Total Fill Adjusted	Total Fill Adjusted w/ Weighted Average 1.3 Shrink Factor	Total Cut Adjusted Minus Fill w/ Shrink	Approx. Fill Vol. Below 5' & Above 20' w/ Shrink	Approx. Fill Volume Below 3' w/ Shrink	Topsoil Stripping Undercut Volume	Topsoil Placement Undercut Volume	Topsoil Placement With 1.4 Shrink Factor	Topsoil Stripping Minus Topsoil Placement w/Shrink								
Summary:																							
ML376	3,874	1,104	3,874	1,104	135	3,874	4,009	5,213	-4,110	0	0	3,874	3,874	5,425	-1,552								
PlywoodTrail	1,397	25	1,397	25	334	1,397	1,731	2,250	-2,226	0	0	1,397	1,397	1,956	-560								
CULV224	0	1,199	0	1,199	12	0	12	15	1,184	0	0	0	0	0	0								
Project Totals:	5,271	2,328	5,271	2,328	481	5,271	5,752	7,478	-5,152	0	0	5,271	5,271	7,381	-2,112								

1 Refer to table below for minimum distance between face of guardrail and edge of Shared-use Trail or Sidewalk.

Posted Speed Limit (mph)	Minimum Distance (feet)
<45	4
45 or greater	5



	REVISION	
	NEW	10-18-16
ROAD DESIGN DETAIL	560-6	
	SHEET 1 of 1	
REVISIONS: New.		
SHARED-USE TRAIL OR SIDEWALK BEHIND STEEL BEAM GUARDRAIL AT BRIDGE APPROACH		



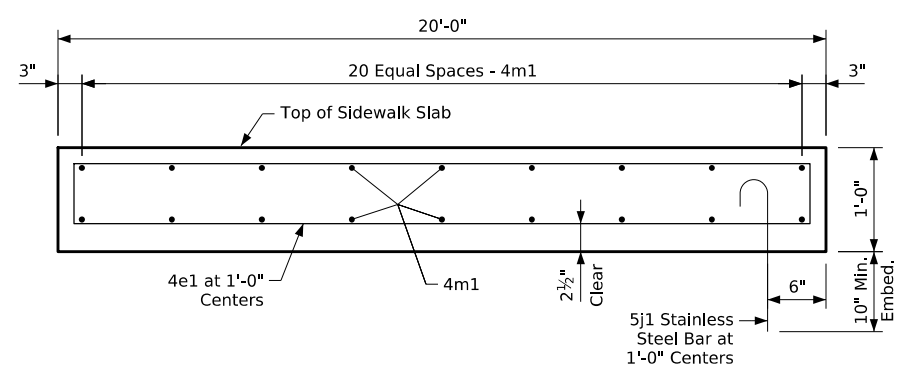
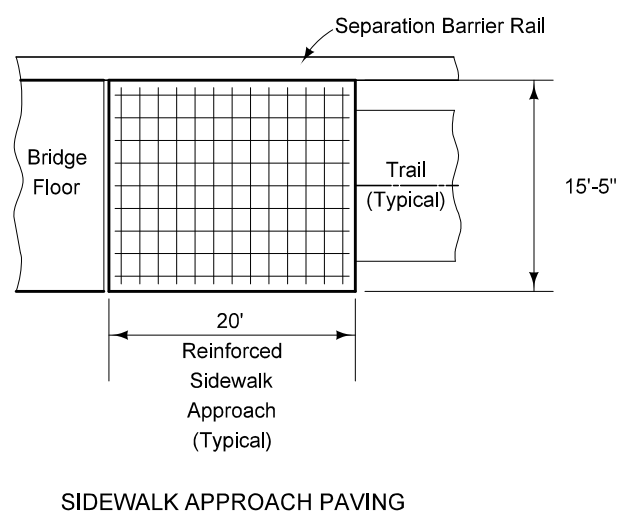
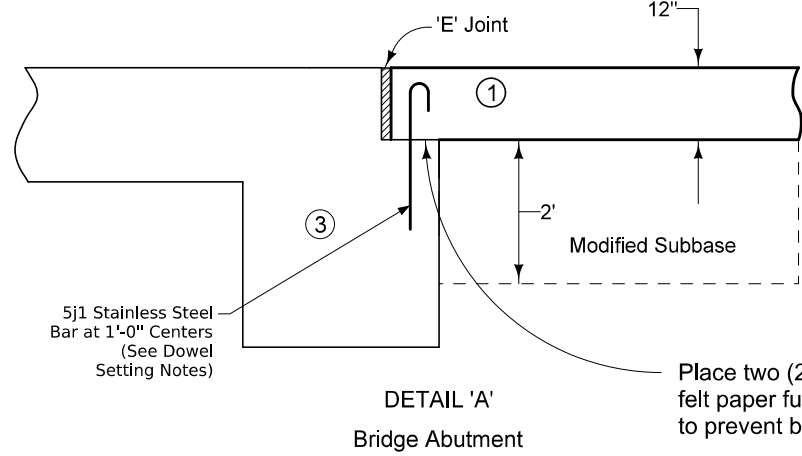
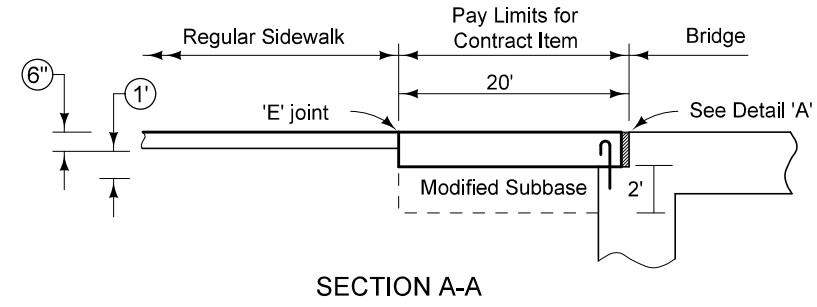
For joint details, see PV-101.

- ① Reinforced Bridge Approach Section.
- ② Reinforcing Bar.
- ③ Bridge Abutment.

Dowel Setting Notes:

The 5j1 bars shall be set as dowels in drilled holes. Holes are to be 10" deep. The dowels shall be installed in accordance with the Manufacturer's recommendations. The following systems shall be used as a bonding agent for the dowels:
 A. Polymer grout system in accordance with Article 2301.03, E, of the Standard Specifications.
 B. Hydraulic cement grout systems. Drilled holes are to be 2½ times the dowel diameter and are to be blown clean with compressed air immediately prior to placing grout. The hydraulic cement grout shall be one of those approved in Materials I.M. 491.13 and shall be used in accordance with the Manufacturer's recommendations.

PLAN



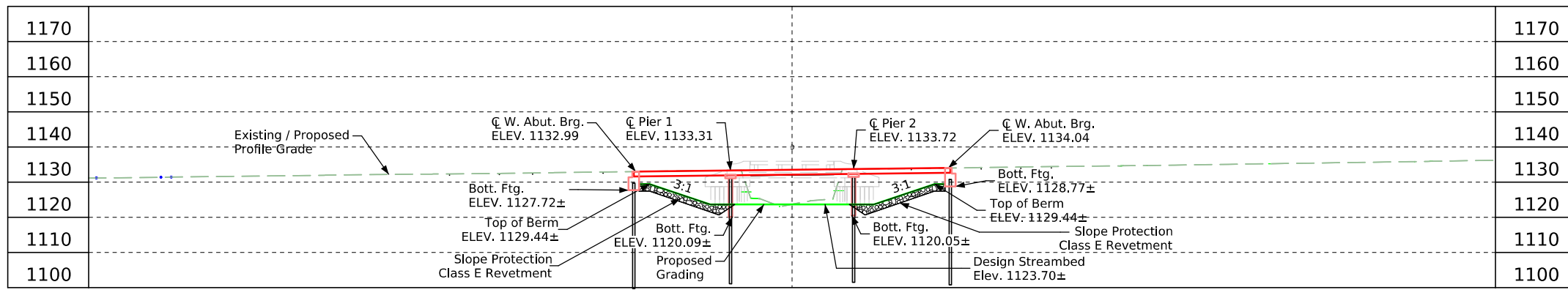
Longitudinal Section of Approach Sidewalk Slab

Possible Contract Item:
Trail Bridge Approach
 Possible Tabulation:
112-6

HGM	NEW	9-20-24
	HGM-1	
SHEET 1 of 1		

REVISIONS: New.

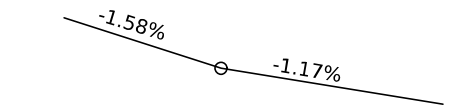
TRAIL BRIDGE APPROACH



BRG TSL Longitudinal Section Along Approach Roadway

Benchmark No. 4383
 Northing: 8609654.164
 Easting: 14092108.3
 Elev. 1132.3

Benchmark No. 10478
 Northing: 8609609.237
 Easting: 14092265.58
 Elev. 1137.129



VPI Sta. = 223+50.00
 VPI Elev. = 1135.223

VC = 200'

Proposed Profile Grade IA 376

Hydraulic Data

RIDB: Not Applicable
 Drainage Area = 1.16 Sq. Mi.
 Stream Slope (HGL) = 89.8 ft./Mi.
 Avg. Low Water Stage = 1123.70'

Operational Low Beam = 1130.87'
 Channel Low Beam = 1131.39'

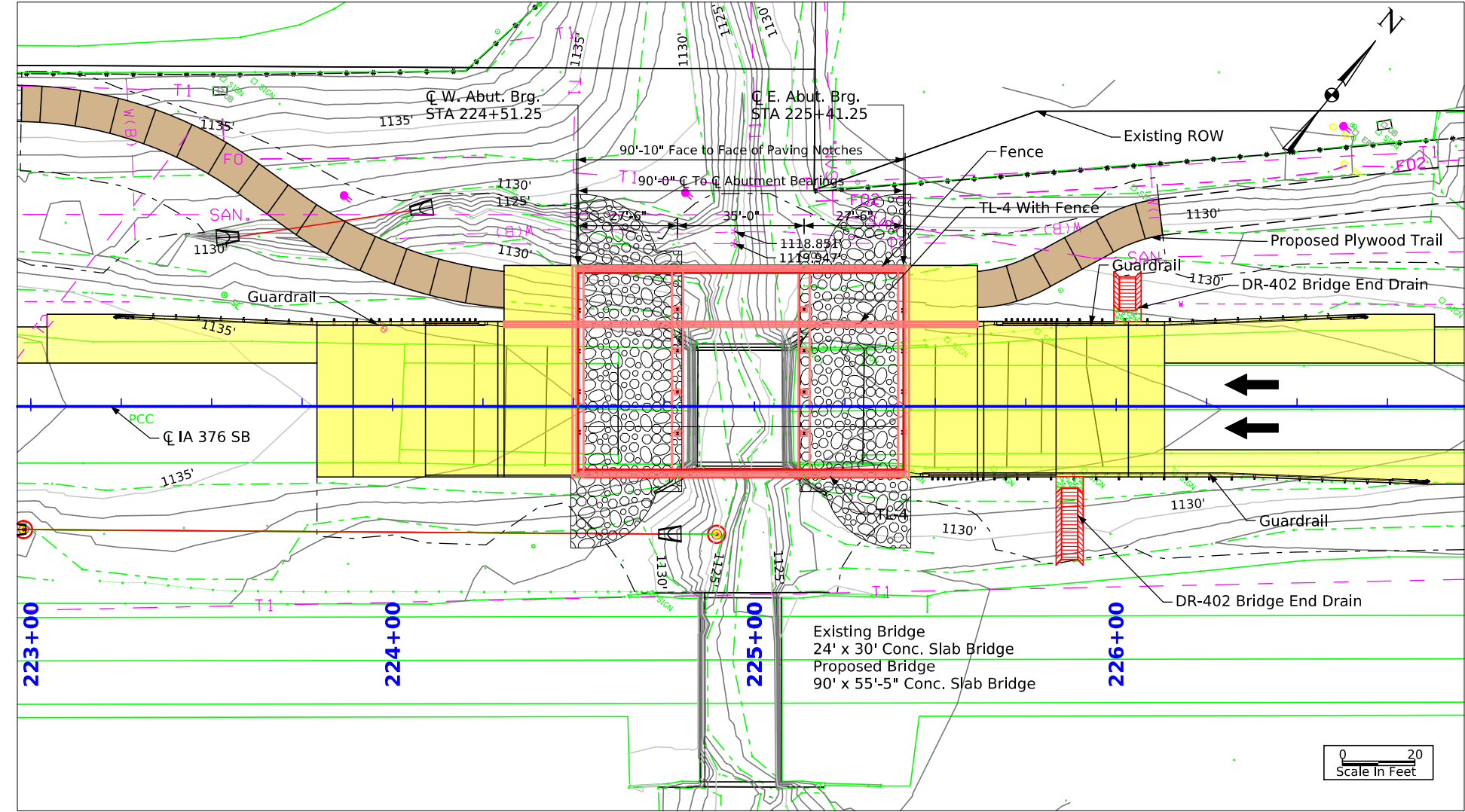
Q₅₀ (Design) = 1,372 cfs
 Stage = 1131.98'
 Operational Freeboard = -1.11 ft.
 Avg. Bridge Velocity = 2.45 fps

Q₁₀₀ = 1,693 cfs
 Stage = 1132.33'
 Operational Freeboard = -1.46 ft.
 Backwater = 0.11 ft.
 Avg. Bridge Velocity = 2.95 fps

Q Overtop = 2,000 cfs
 Stage = 1132.62'
 Calculated Check Scour = 1123.70'

Q₅₀₀ = 2,000 cfs
 Channel Freeboard = -1.65 ft.

Water surface elevations at this location are controlled by backwater from the downstream structures. Improved adjacent structures at this location will provide 1.71' of freeboard at Q₅₀ and 1.13' of freeboard at Q₁₀₀. With the grading in the area and proximity to surrounding structures a grade raise will not be utilized to achieve 3' of freeboard.



Situation Plan

Existing structures sheet pile wing walls shall be completely removed as a part of the bridge removal to eliminate conflicts.

This design is for the replacement of the existing 24' x 30' Conc. Slab Bridge

Location

IA 376 over Tributary to Floyd River
 0.1 mi N of Co Rd D12 in Sioux City (SB)
 T-88N R-47W
 Section 1
 City of Sioux City
 Woodbury County
 FHWA No. 53101
 Bridge Maint. No. 9799.2L376
 Asset ID No. 53100
 FRA No. N/A
 Latitude 42.55001792°
 Longitude -96.34733894°

Hydraulic Design

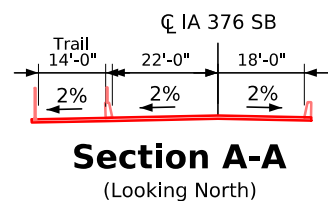
I hereby certify that this engineering document was prepared by me or under my direct personal supervision and that I am a duly licensed Professional Engineer under the laws of the State of Iowa.

Signature: *Jonathan E. Peterson* Date: 10-10-2024
 Printed or Typed Name: Jonathan E. Peterson
 My license renewal date is December 31, 2024

Pages or sheets covered by this seal: V.1-V.2



Construction shall be done in stages with at least one lane traffic maintained at all times in accordance with "Traffic Control Plan" note.
 TL-4 Bridge Railings Proposed
 P10L Piers Proposed, Individually Encased Pile



Traffic Estimate

2026 AADT	4300 V.P.D.
2046 AADT	5200 V.P.D.
2046 DHV	540 V.P.H.
TRUCKS	6 %
Total	--
Design ESALS	--

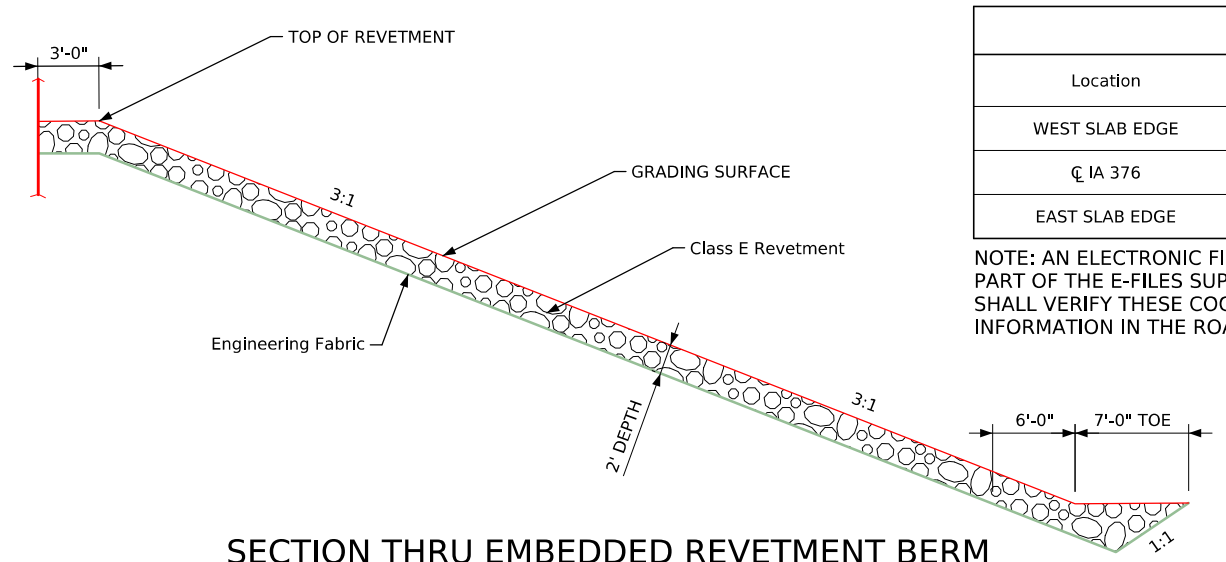
Utilities Note:

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

Design For 0° Skew
90'-0" x 55'-5" 3 Span Concrete Slab Bridge
 27'-6" End Spans 35'-0" Interior Span
Preliminary Situation Plan
 STA. 224+96.25 (IA 376) Turn-in Date: Oct. 2024
WOODBURY County
 IOWA DEPARTMENT OF TRANSPORTATION
 Design No. 1526 Design Sheet No. V.1 of 2 FHWA No. 53101



SECTION THRU EMBEDDED REVETMENT BERM

Bridge Coordinates				
Location	☐ S. ABUT BRG.	☐ PIER 1	☐ PIER 2	☐ N. ABUT BRG.
WEST SLAB EDGE	X=14091966.284 Y=8609724.617	X=14091987.710 Y=8609741.856	X=14092014.979 Y=8609763.796	X=14092036.405 Y=8609781.035
☐ IA 376	X=14091990.733 Y=8609694.321	X=14092012.158 Y=8609711.470	X=14092039.428 Y=8609733.410	X=14092060.853 Y=8609750.649
EAST SLAB EDGE	X=14092003.009 Y=8609678.973	X=14092024.435 Y=8609696.212	X=14092051.704 Y=8609718.152	X=14092073.130 Y=8609735.392

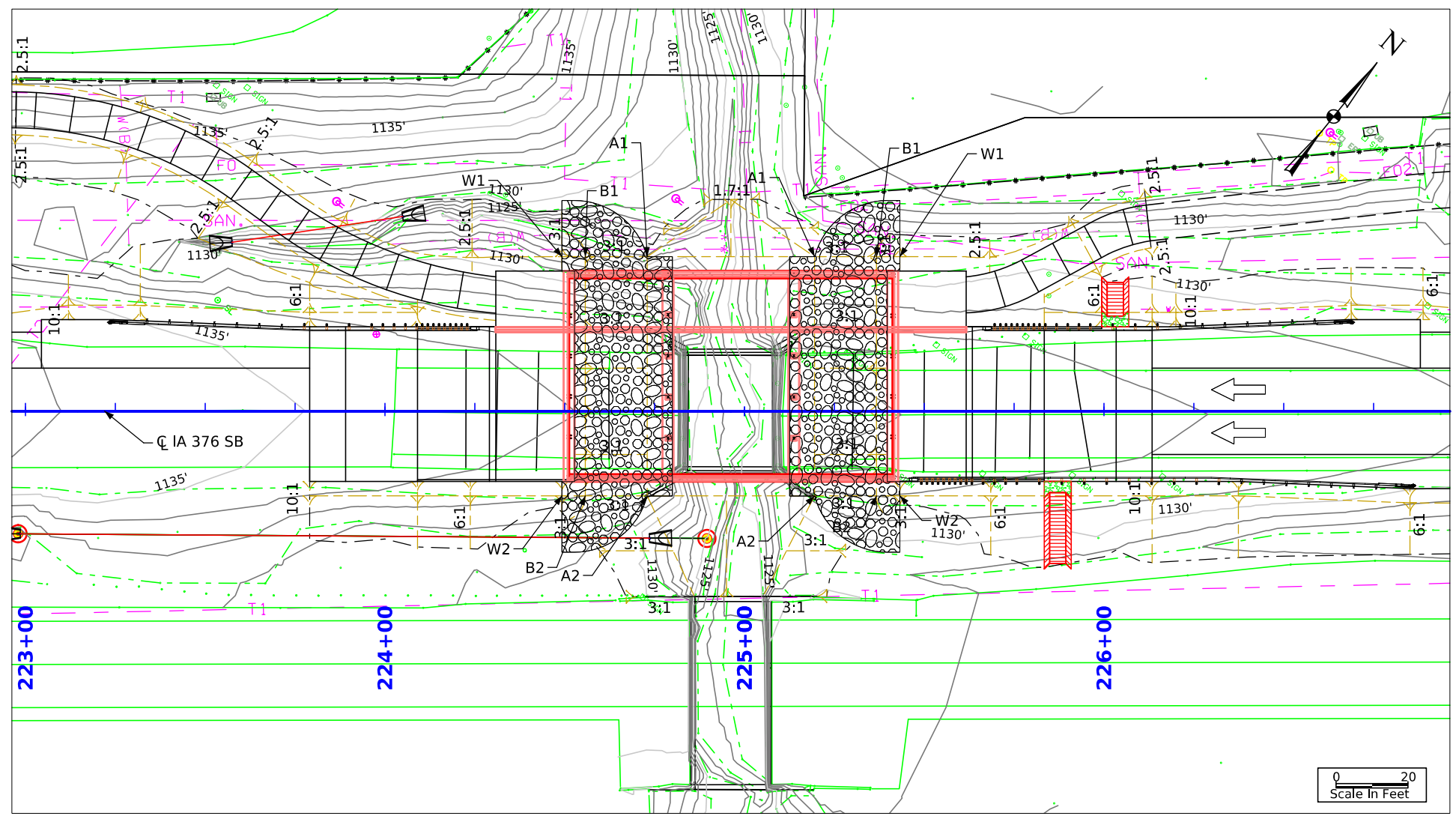
NOTE: AN ELECTRONIC FILE CONTAINING THE BRIDGE COORDINATE DATA IS AVAILABLE AS PART OF THE E-FILES SUPPLIED WITH THE CONTRACT DOCUMENTS. THE CONTRACTOR SHALL VERIFY THESE COORDINATES WITH THE PROJECT HORIZONTAL CONTROL INFORMATION IN THE ROAD PLANS.

Berm Slope Location Table						
Points	South Abutment			North Abutment		
	Station	Offset	Elev.	Station	Offset	Elev.
A1	224+72.94	43.00' LT	1123.70	225+19.52	43.00' LT	1123.70
A2	224+72.94	43.00' LT	1123.70	225+19.52	43.00' LT	1123.70
B1	224+55.73	43.00' LT	1129.44	225+36.73	43.00' LT	1129.44
B2	224+55.73	23.50' RT	1129.44	225+36.73	23.50' RT	1129.44
W1	224+49.26	23.50' RT	1132.88	225+43.24	23.50' RT	1131.79
W2	224+49.26	23.50' RT	1133.61	225+43.24	23.50' RT	1132.51

Berm slope elevations reflect the grading surface.

Estimated Berm Armoring Quantities				
Location	Revetment Class E (Ton)	Erosion Stone (Ton)	Engineering Fabric (SY)	Class 10 Channel Excavation (CY)
Berm Lining - South Abutment	253.5	0.0	268.0	178.7
Berm Lining - North Abutment	253.5	0.0	268.0	178.7
Totals	507.0	0.0	536.0	357.4

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.



Site Plan

Design For 0° Skew
90'-0" x 55'-5" 3 Span Concrete Slab Bridge
 27'-6" End Spans 35'-0" Interior Span
Bridge Preliminary Grading Plan
 STA. 224+96.25 (IA 376) Turn-in Date: Oct. 2024
WOODBURY County
 IOWA DEPARTMENT OF TRANSPORTATION
 Design No. 1526 Design Sheet No. V.2 of 2 FHWA/Asset 53101

CROSS SECTION VIEW COLOR LEGEND

Design Color No.	Feature	Design Color No.	Feature
Aggregate			
(64)	Choke Stone	(112)	Noise Wall
(42)	Engineering Fabric	(112)	Noise Wall Footing
(8)	Flooded Backfill	(112)	Retaining Wall Back
(92)	Macadam Stone	(112)	Retaining Wall Back Excavate
(20)	Modified	(112)	Retaining Wall Face
(12)	Plowing Shaping	(112)	Retaining Wall Front Excavate
(14)	Porous Backfill	(112)	Retaining Wall Front Footing
(8)	Revetment Class A	(112)	Retaining Wall MSE Gutter
(6)	Revetment Class B	(112)	Retaining Wall Reinforced Earth
(62)	Revetment Class C	Grading	
(188)	Revetment Class D	(8)	Behind Curb Cut
(28)	Revetment Class E	(6)	Granular
(12)	Shoulder Special Backfill	(13)	Granular Back Fill
(12)	Special Backfill	(48)	Rock Undercut
(20)	Subbase	(8)	Shoulder Earth Fill
(20)	Subbase Lower	(2)	Side Slopes
(20)	Subbase Upper	(226)	Side Slopes Dressing
(118)	Subgrade Treatment	Substrata	
Asphalt			
(207)	HMA Base Course	(128)	Boulder Substrata
(207)	HMA Interim Course	(48)	Broken Weathered Substrata
(207)	HMA Surface Course	(3)	Core Out Substrata
Concrete			
(0)	Barrier Concrete	(203)	Existing Pavement Substrata
(0)	Barrier Concrete Footing	(6)	Loam Substrata
(0)	Curb Gutter	(80)	Rock Substrata
(48)	Flowable Mortar	(4)	Select Sand Substrata
(0)	Median Concrete	(3)	Shale Substrata
(0)	PCC Pavement	(10)	Topsoil Substrata
(0)	Sidewalk	Unsuitable / Waste	
Shoulder			
(209)	Shoulder HMA	(3)	Unsuitable Type A
(0)	Shoulder PCC	(13)	Unsuitable Type B
(6)	Shoulder Granular	(11)	Unsuitable Type C
(3)		(3)	Waste
Existing			
(0)	Existing Pavement		

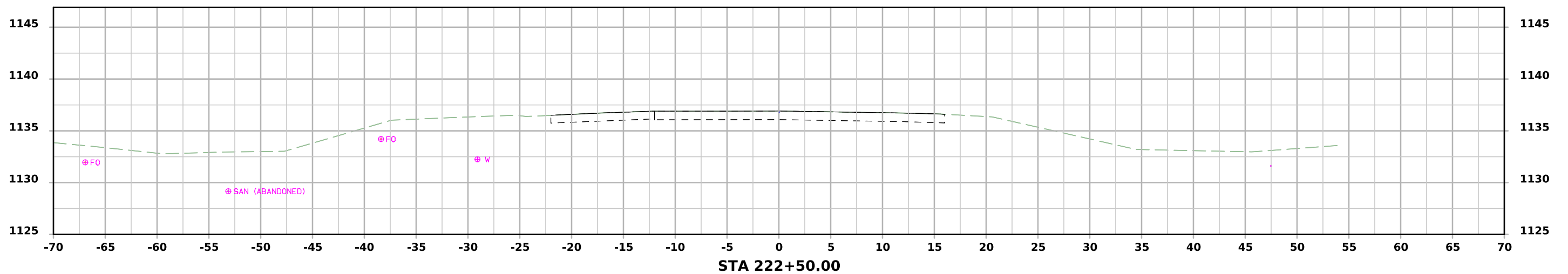
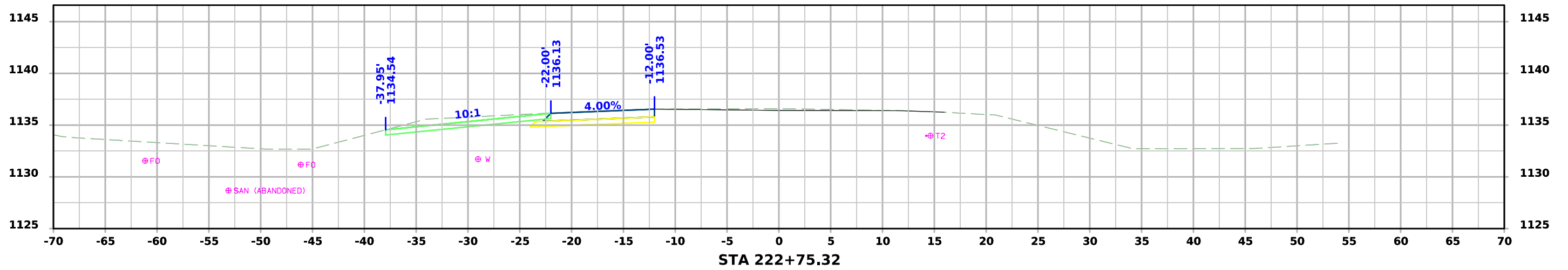
NOTES:

NOTES:

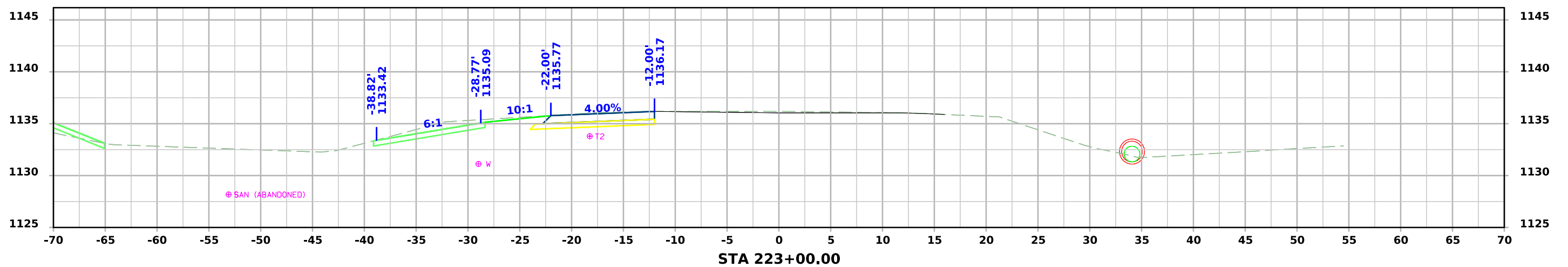
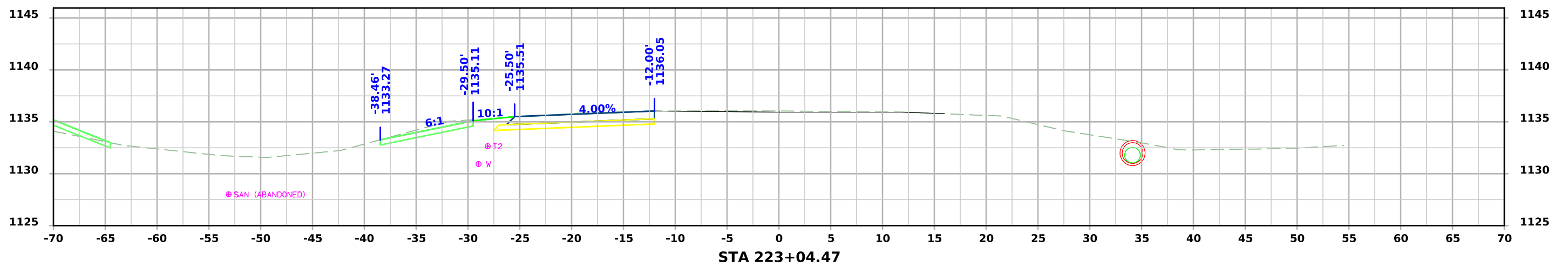
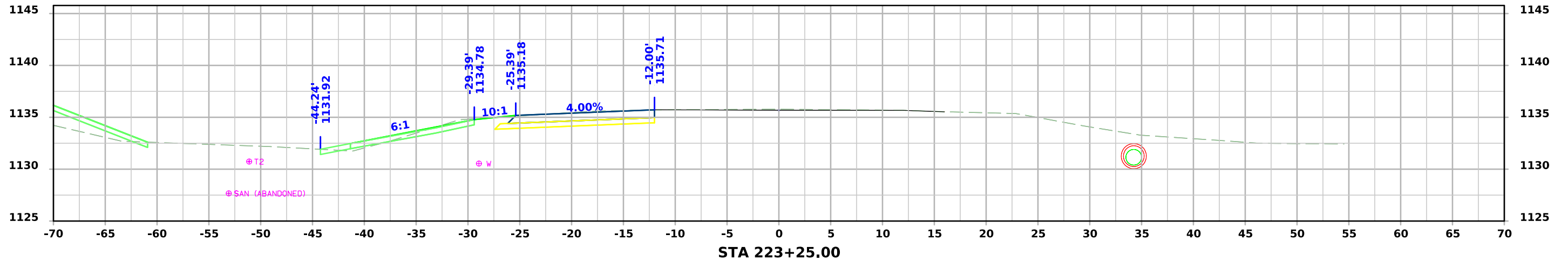
CROSS SECTIONS LEGEND AND INFORMATION SHEET

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

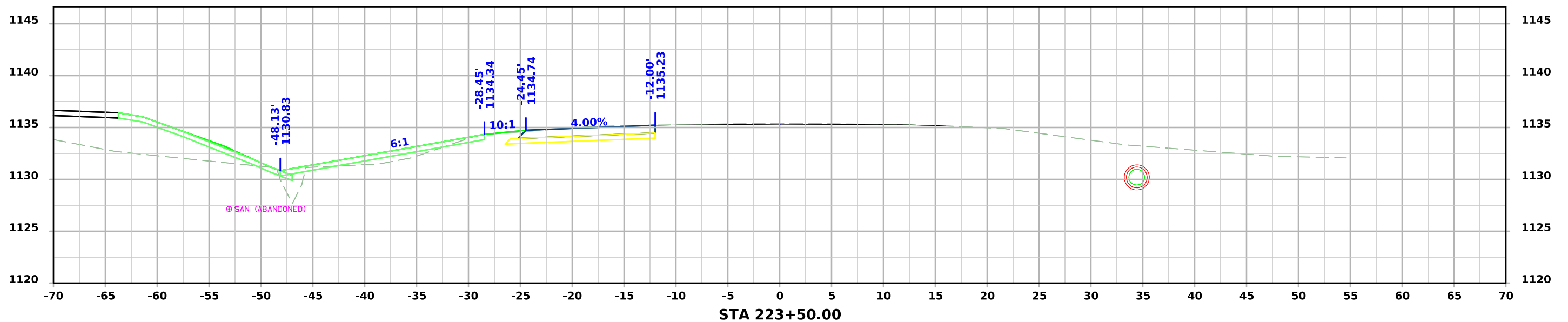
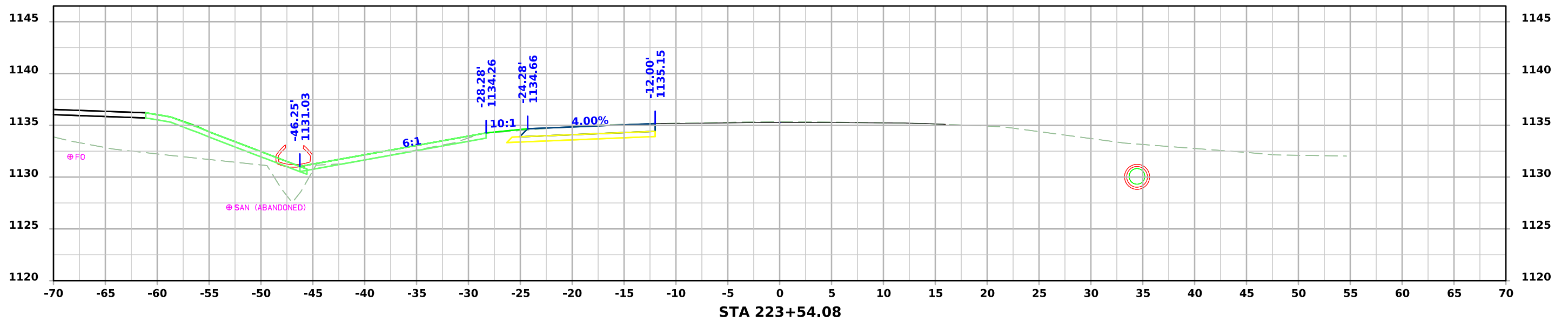
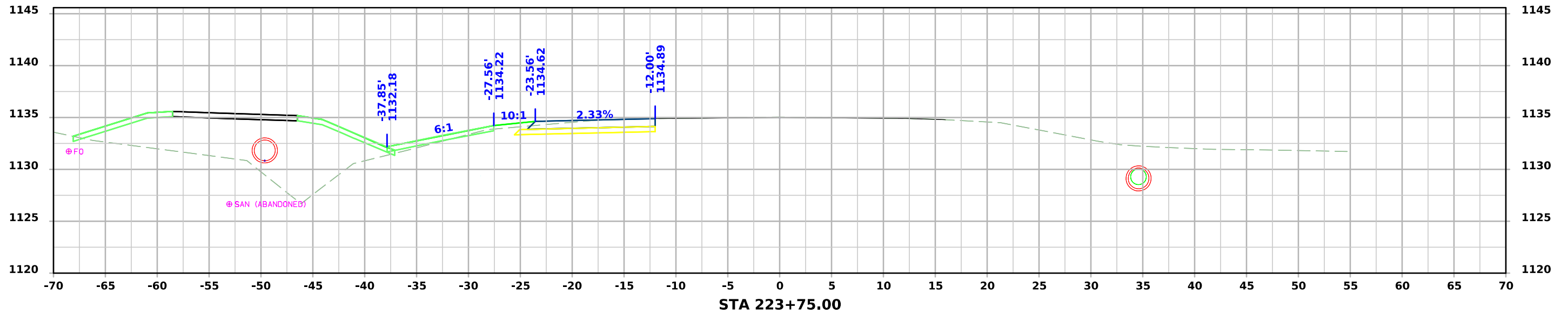
IA 376 Preliminary



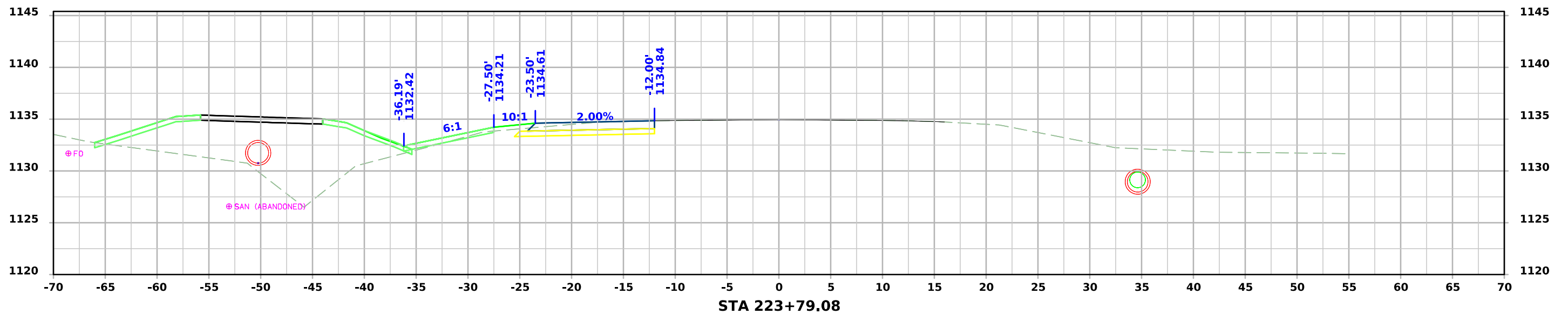
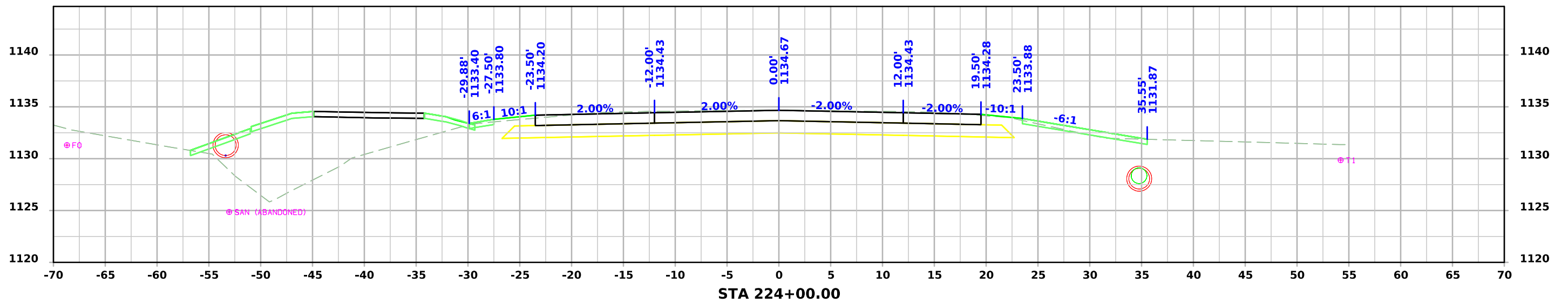
IA 376 Preliminary



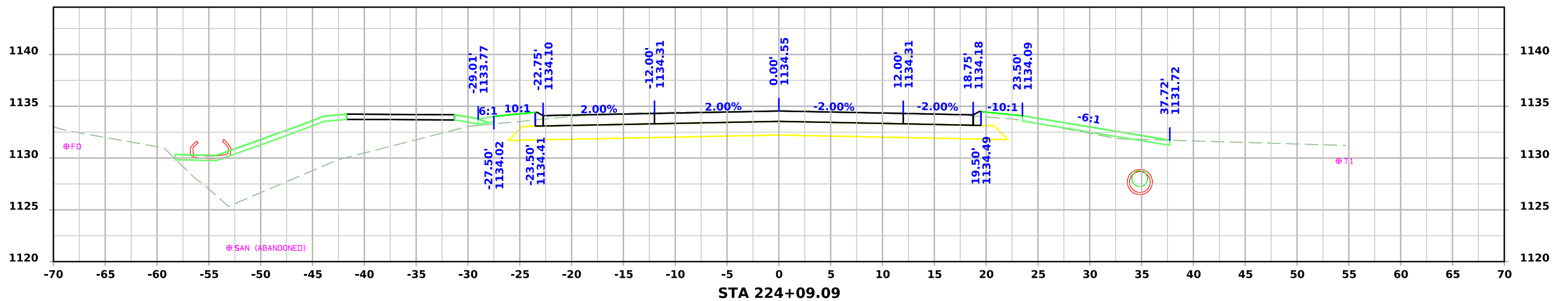
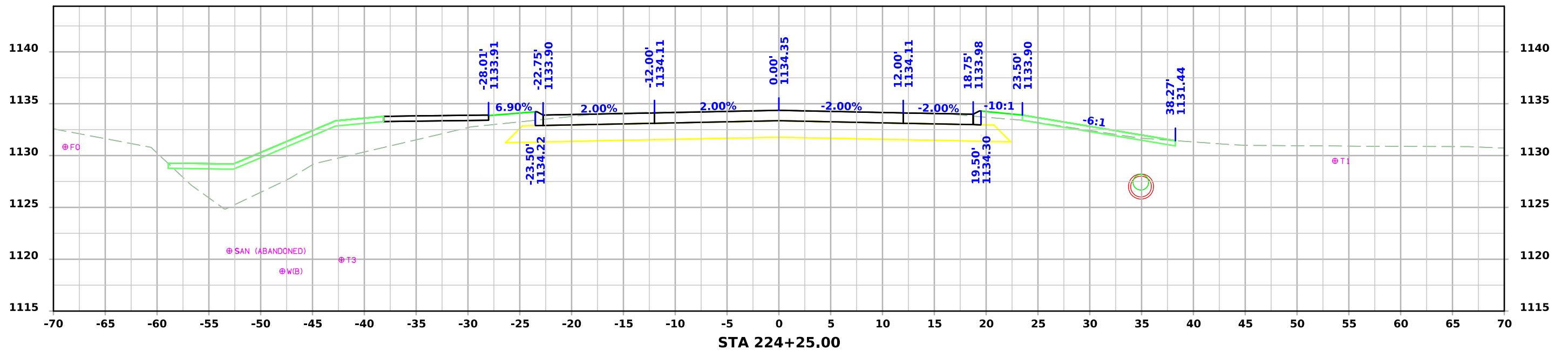
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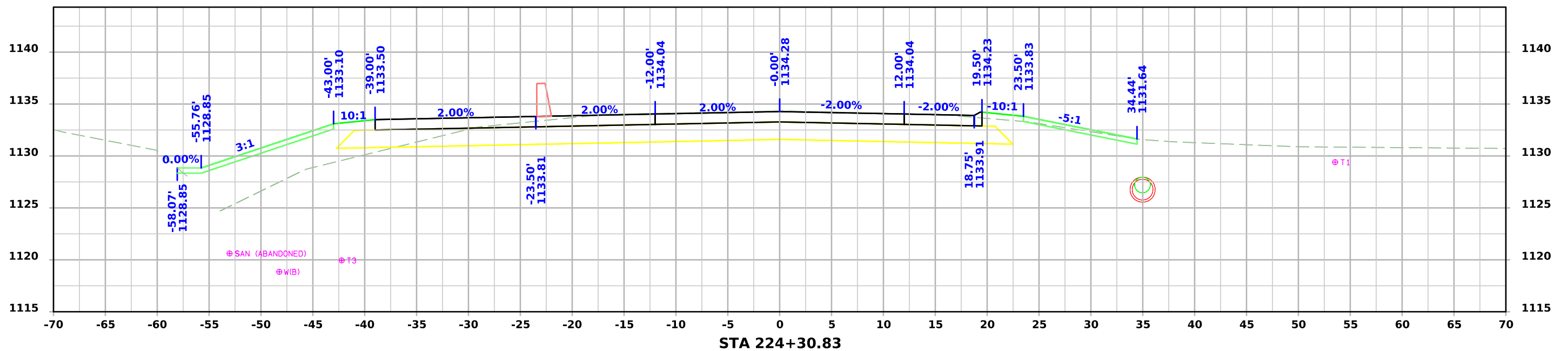
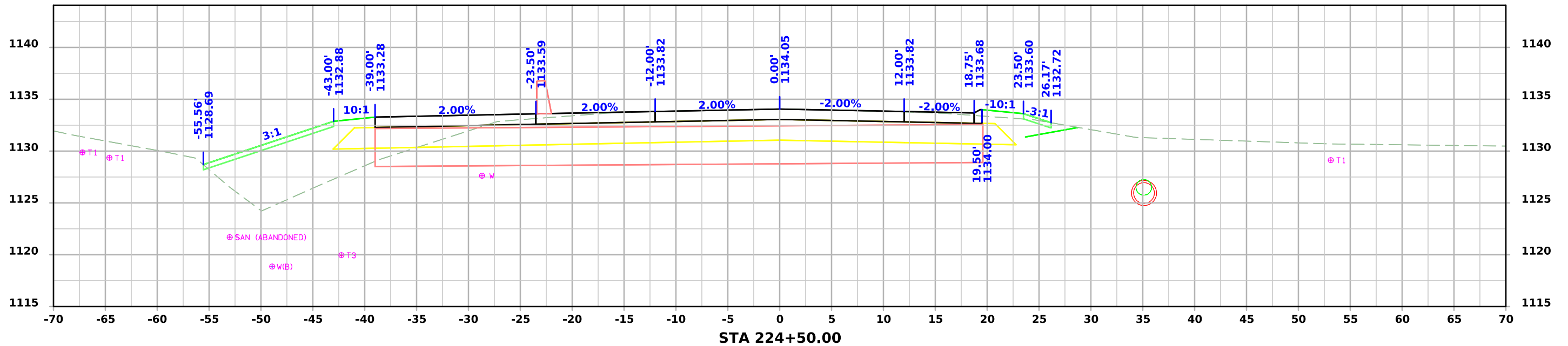
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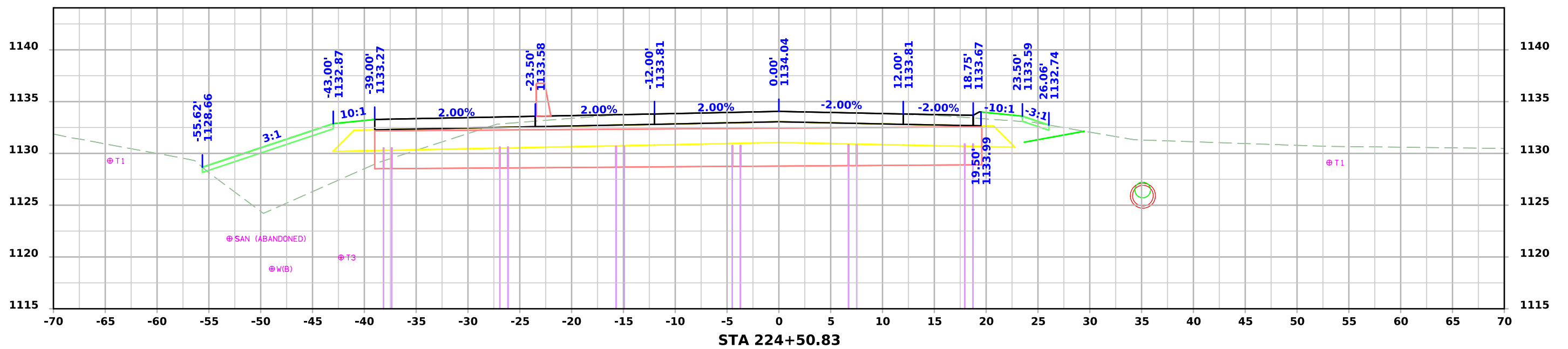
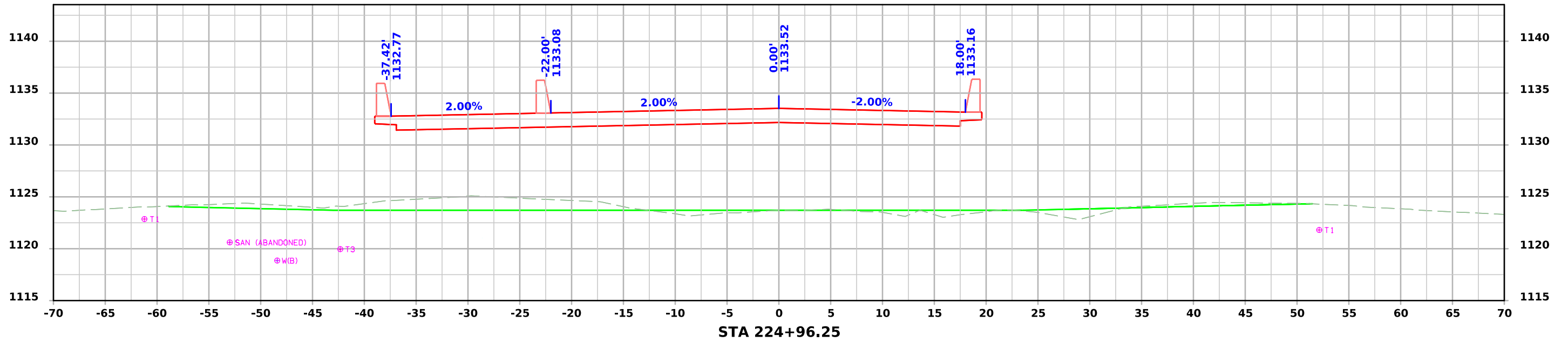
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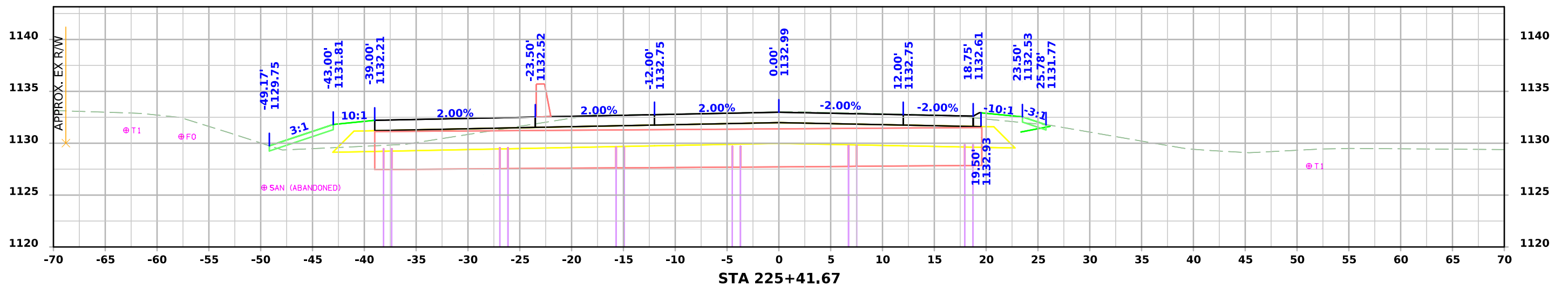
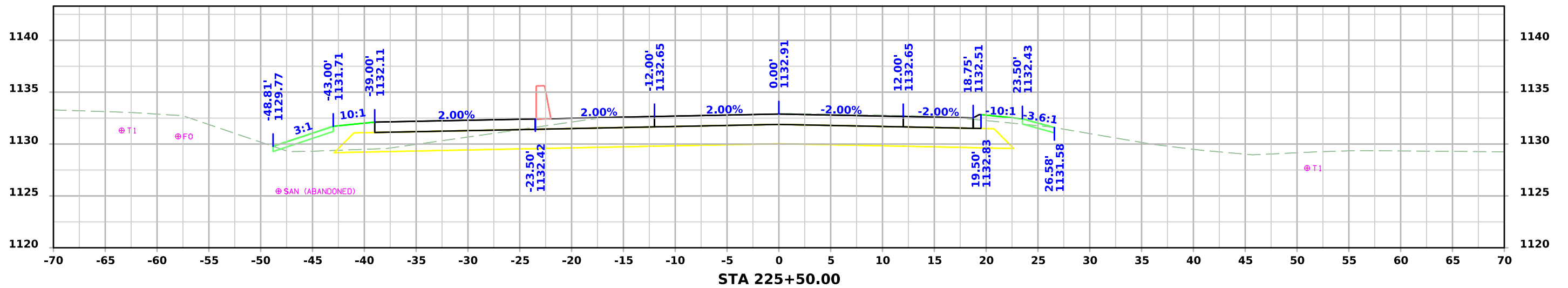
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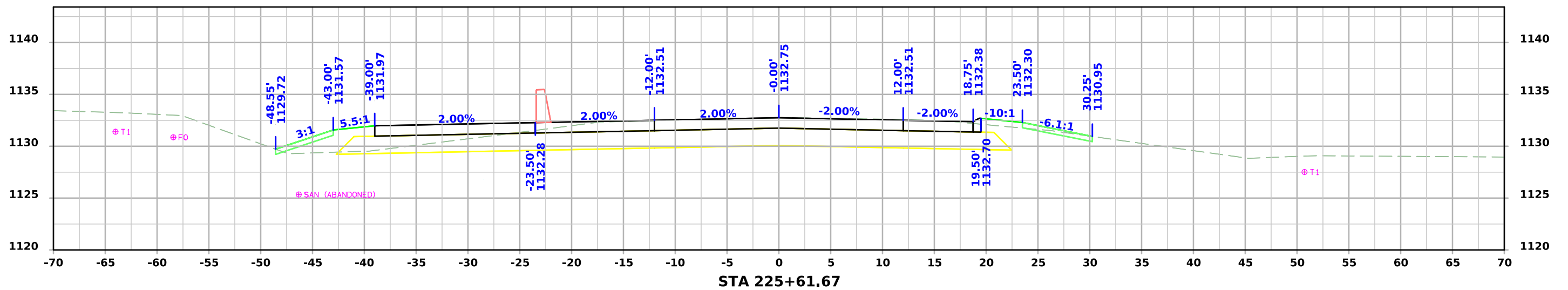
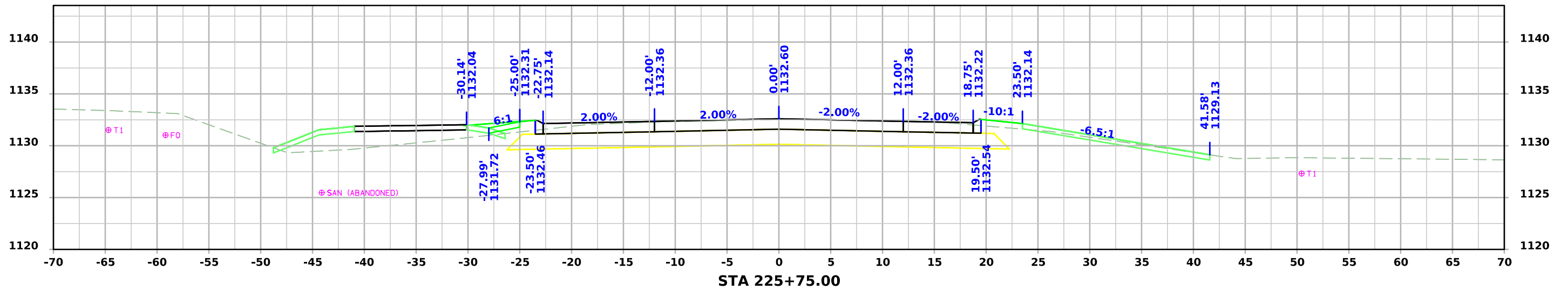
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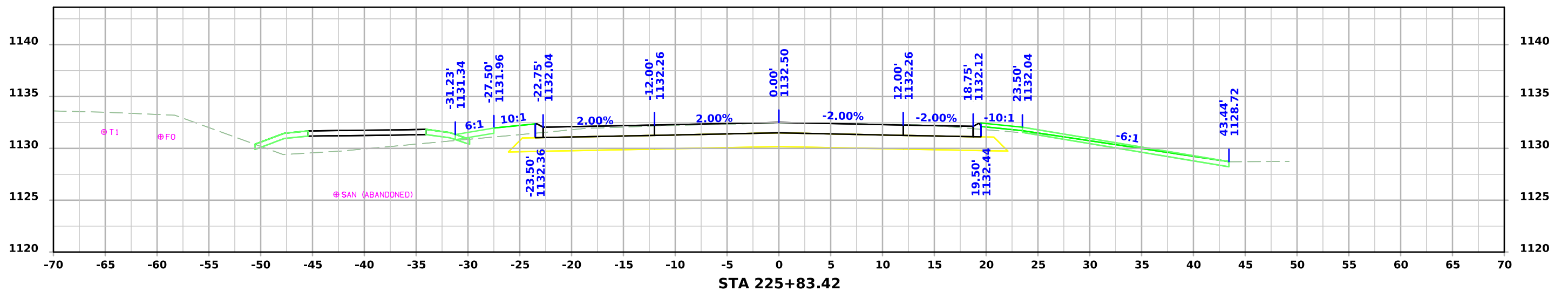
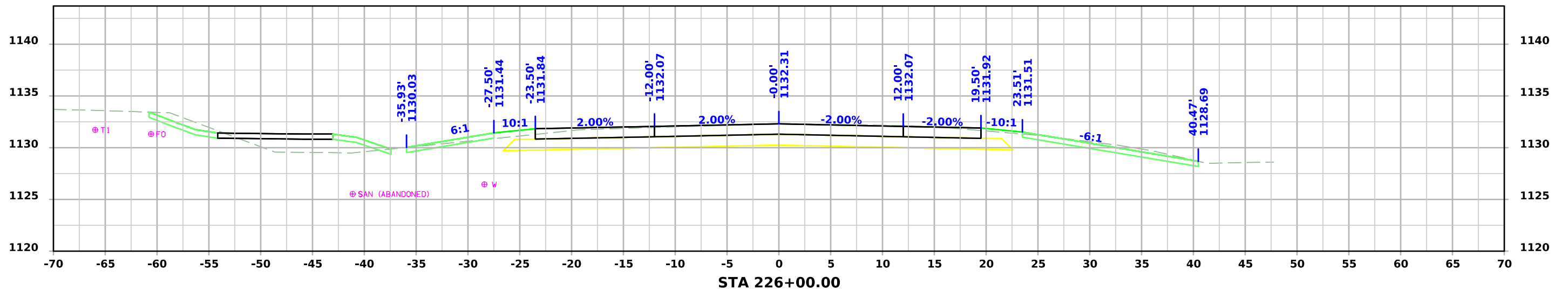
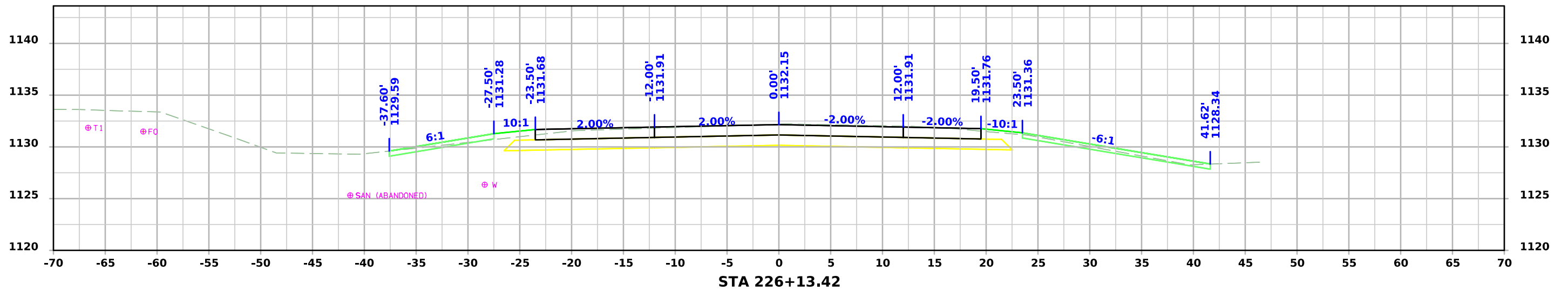
IA 376 Preliminary



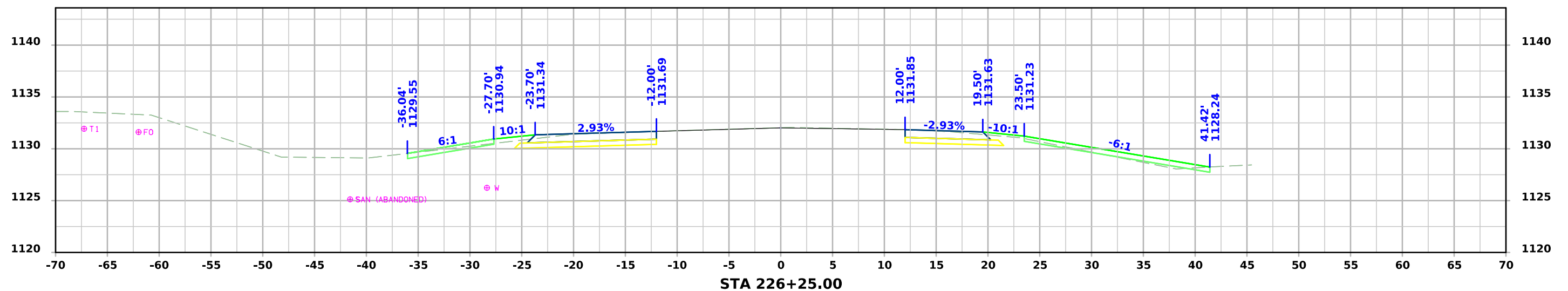
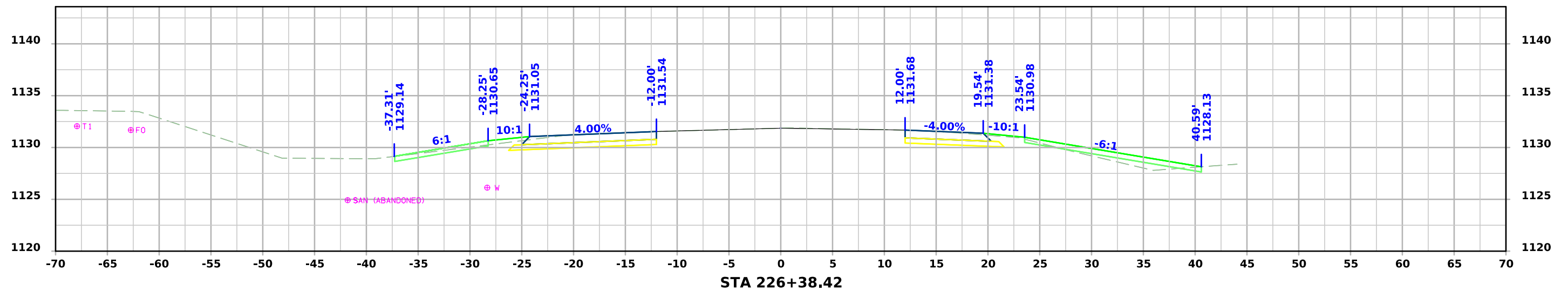
IA 376 Preliminary



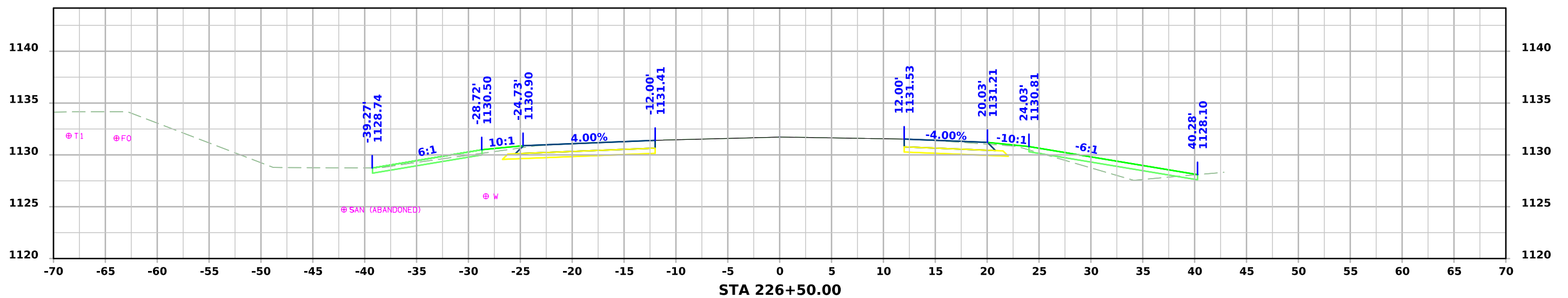
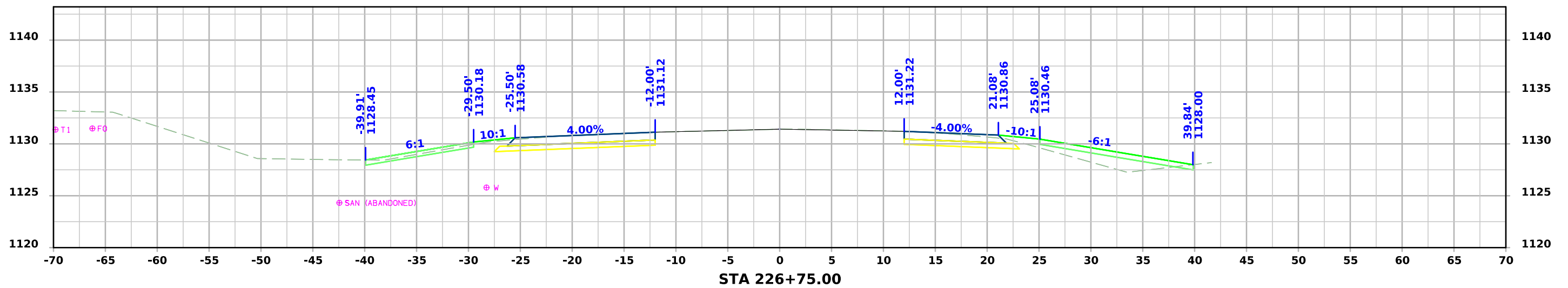
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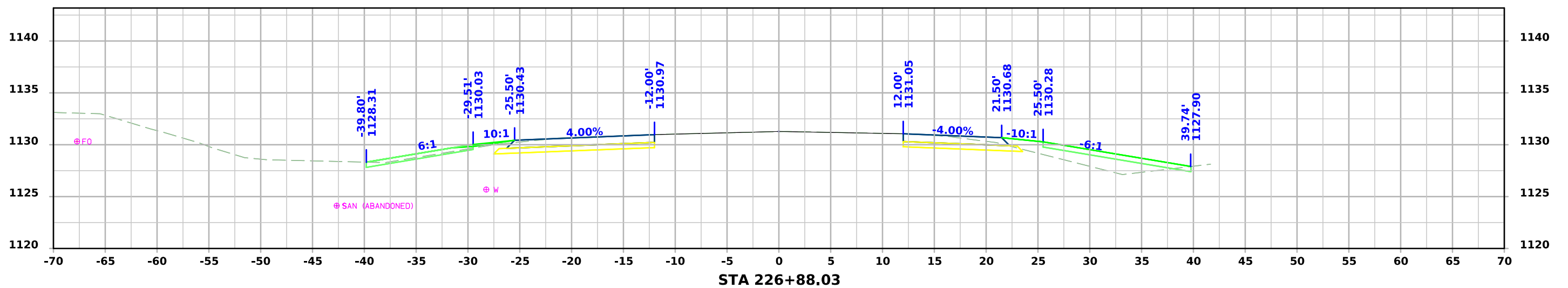
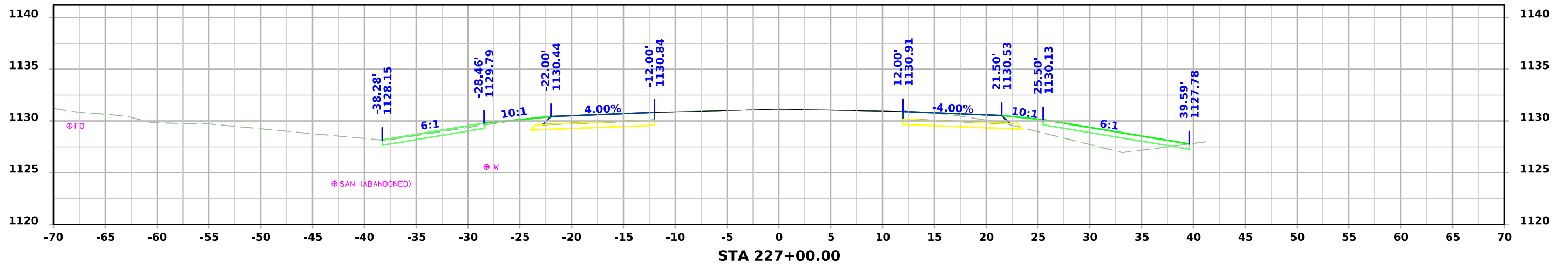
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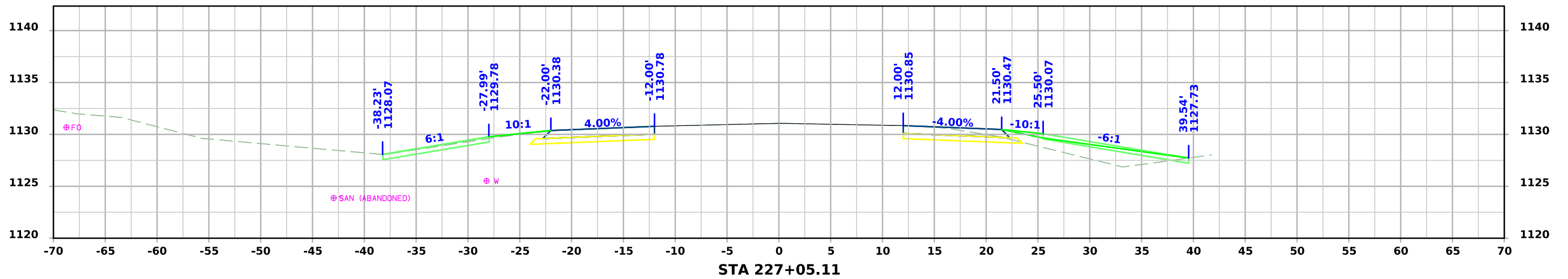
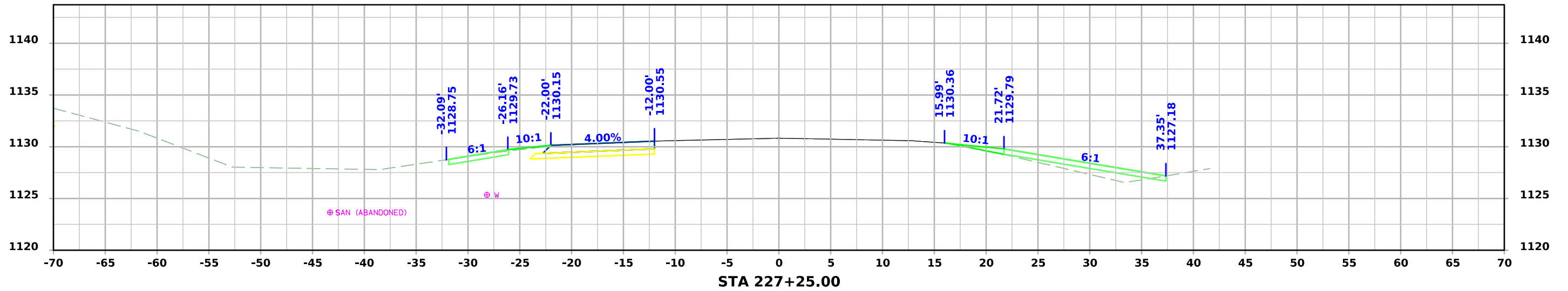
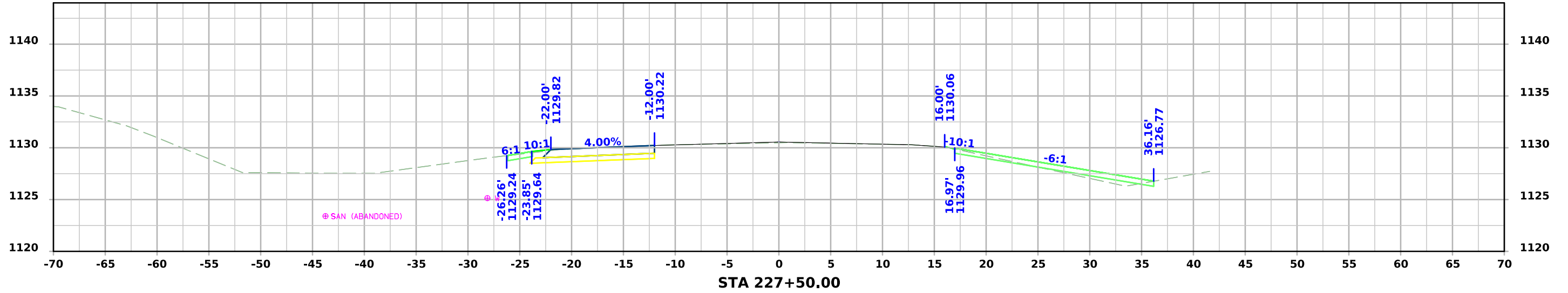
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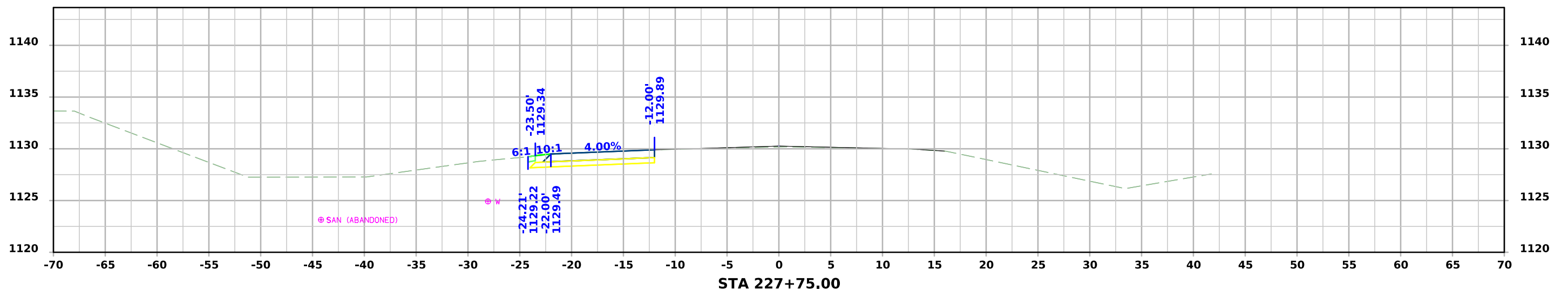
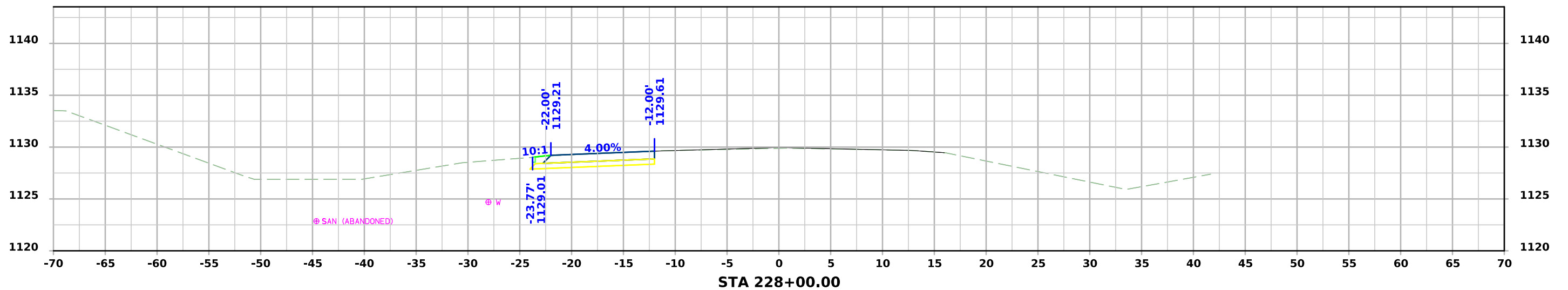
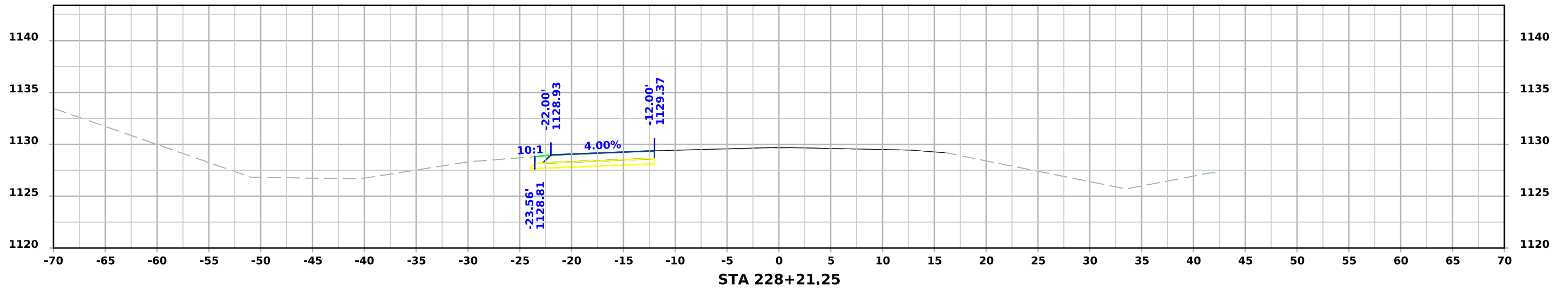
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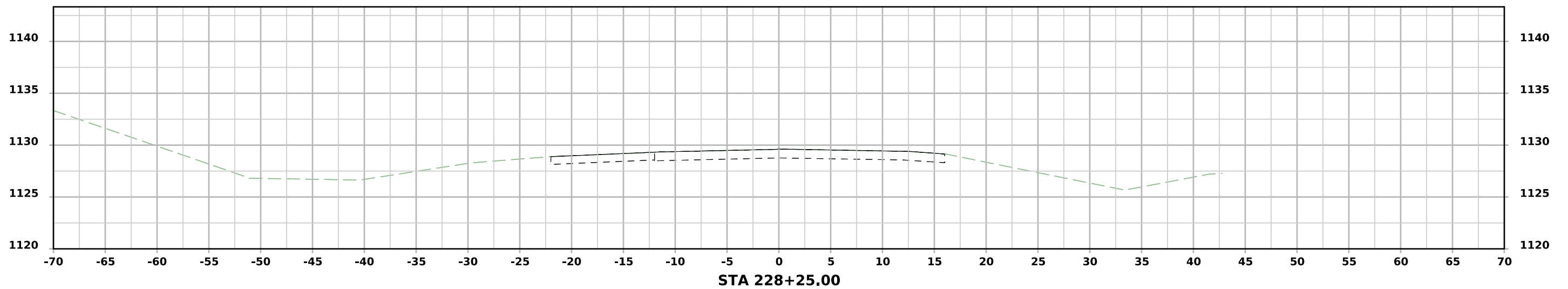
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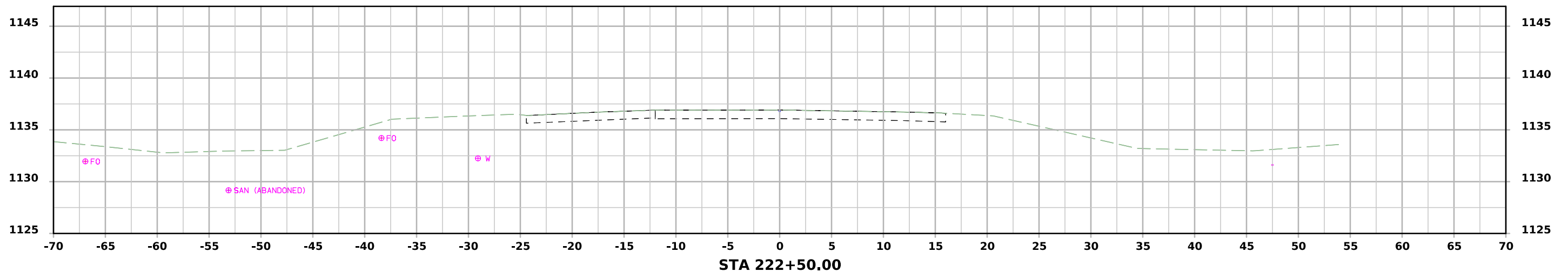
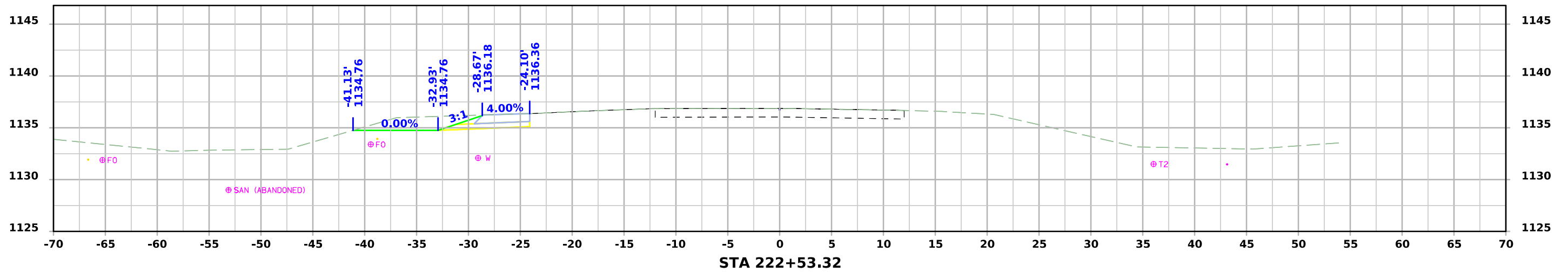
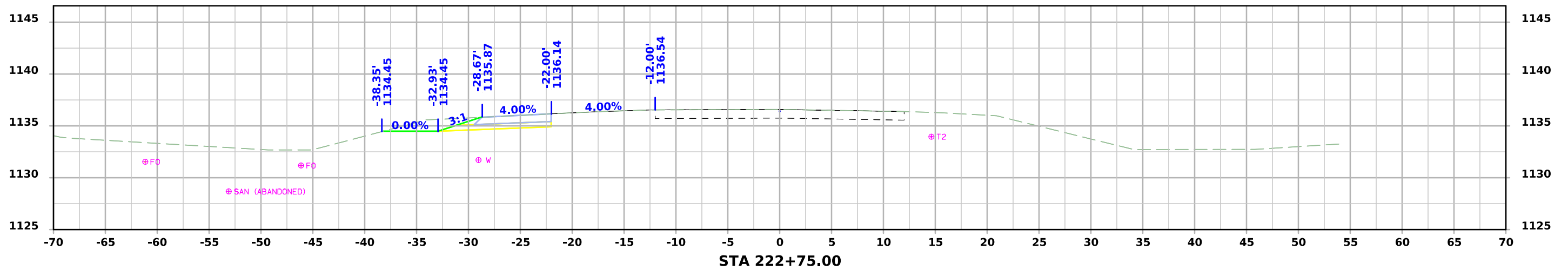
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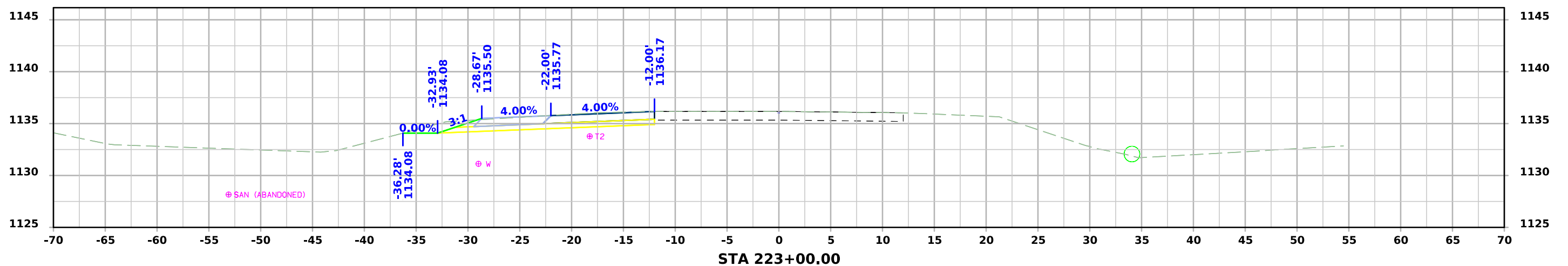
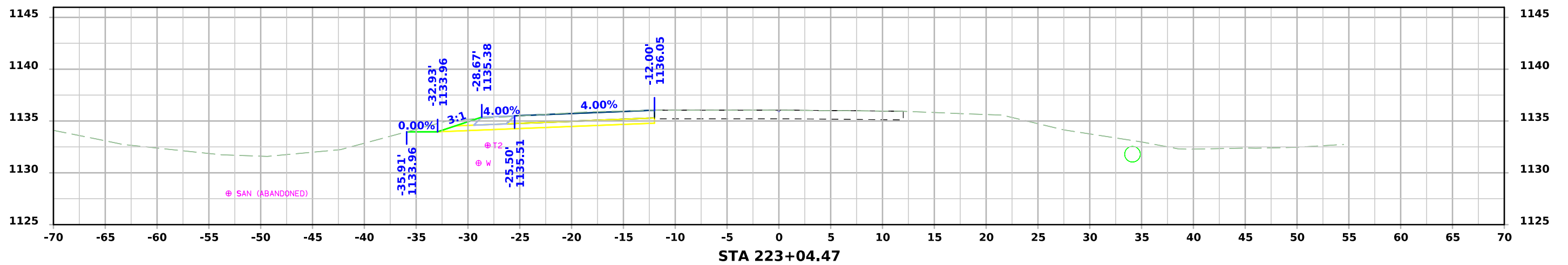
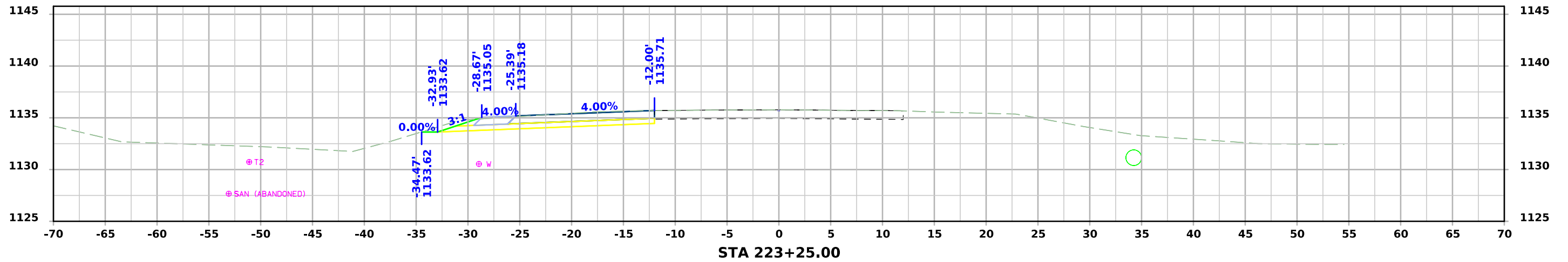
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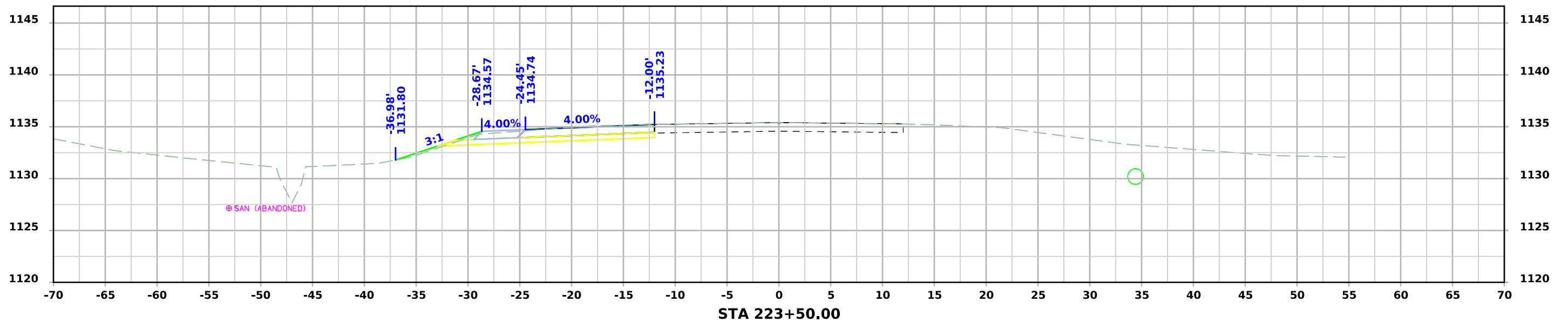
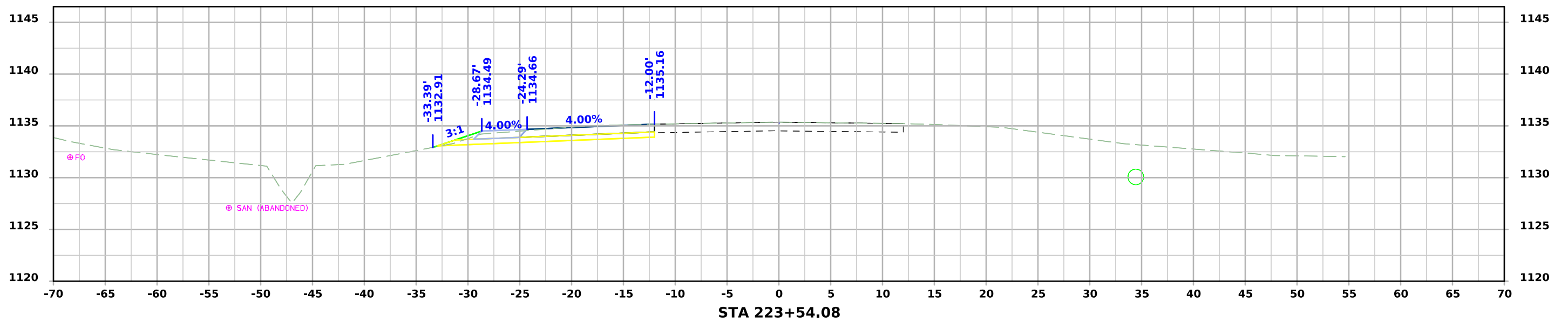
Preliminary Detour Pavement



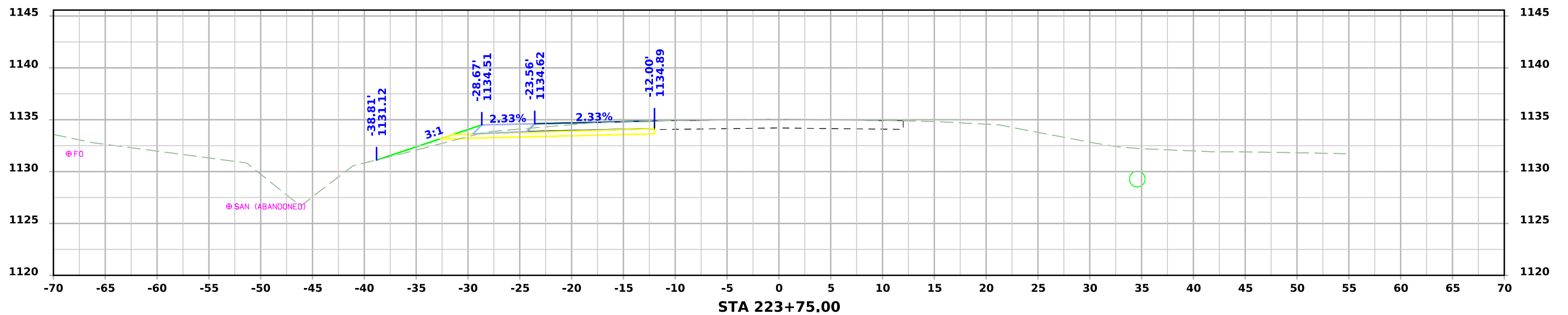
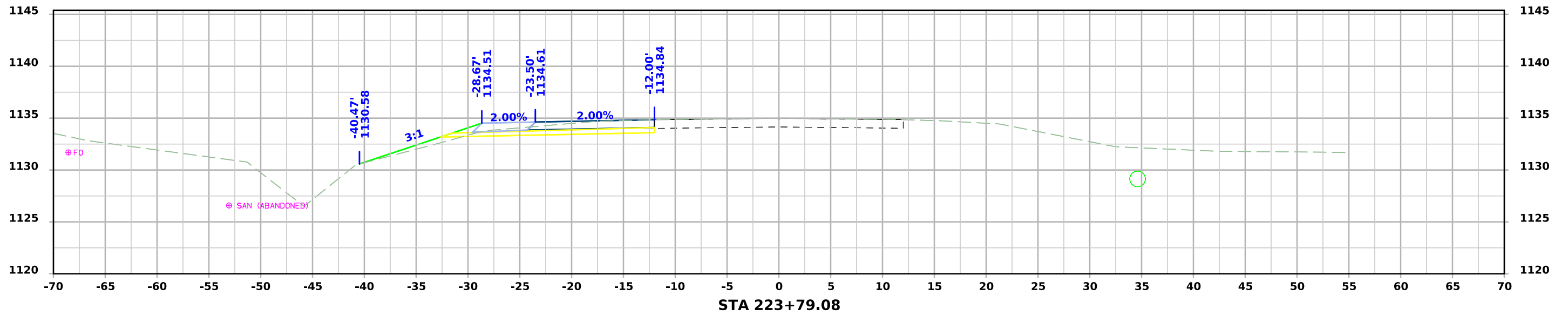
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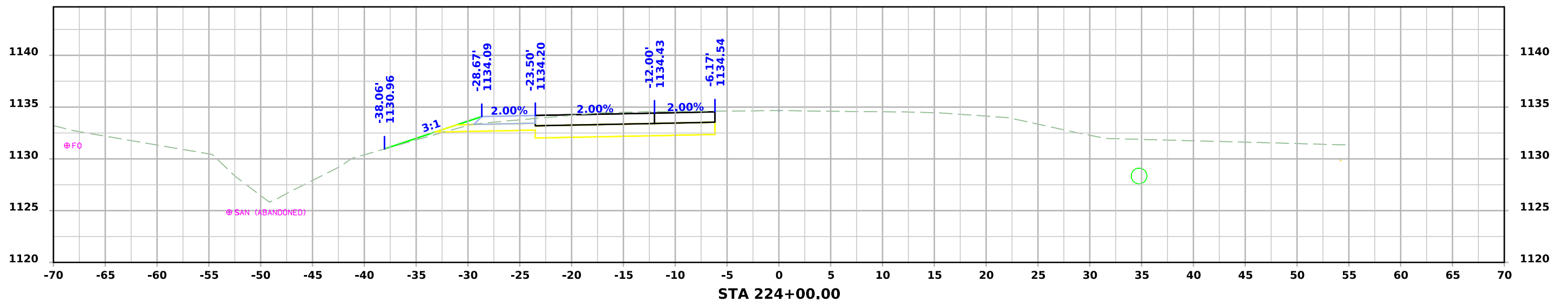
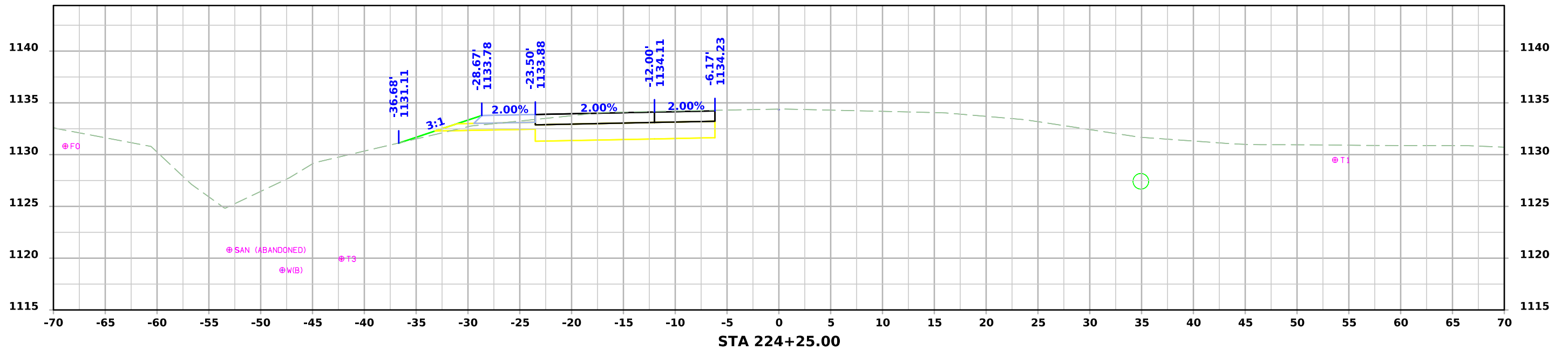
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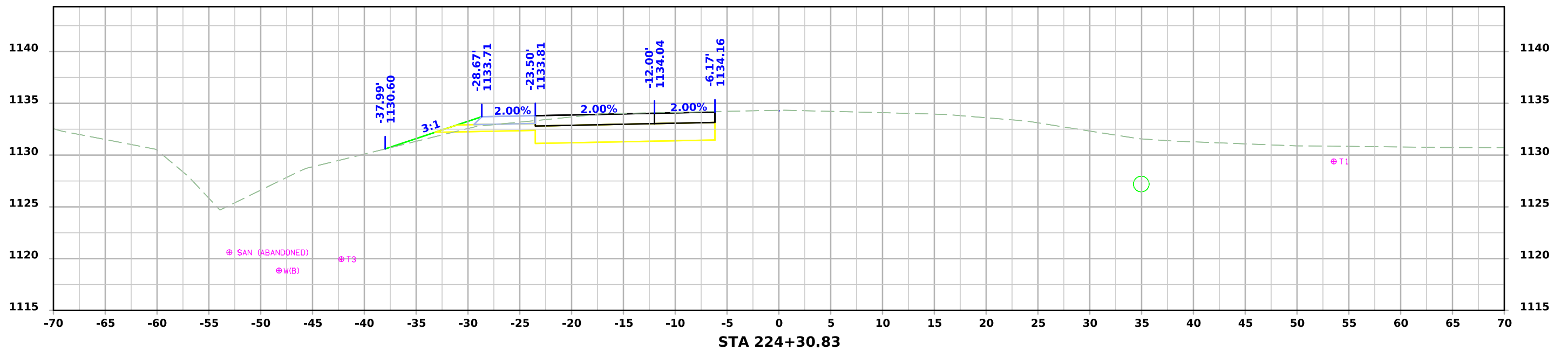
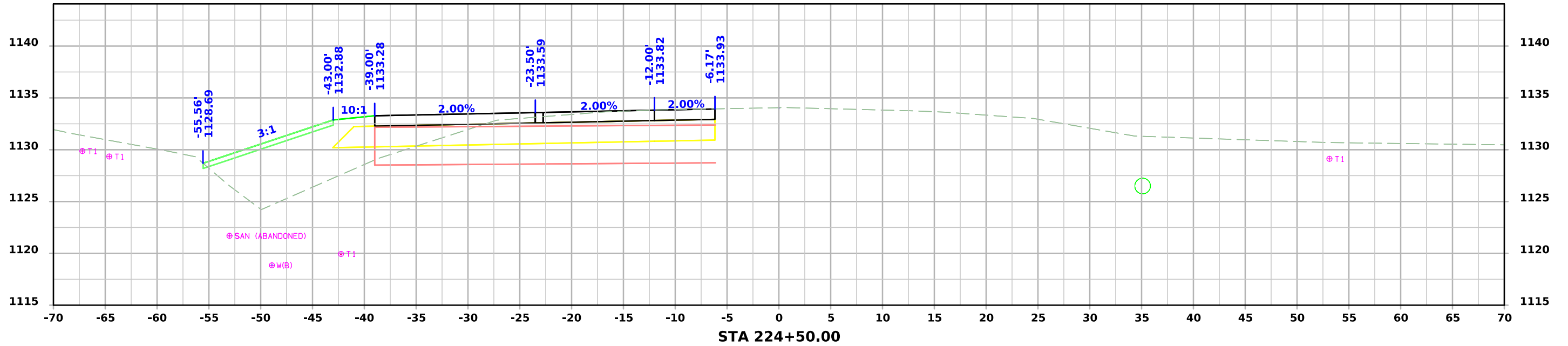
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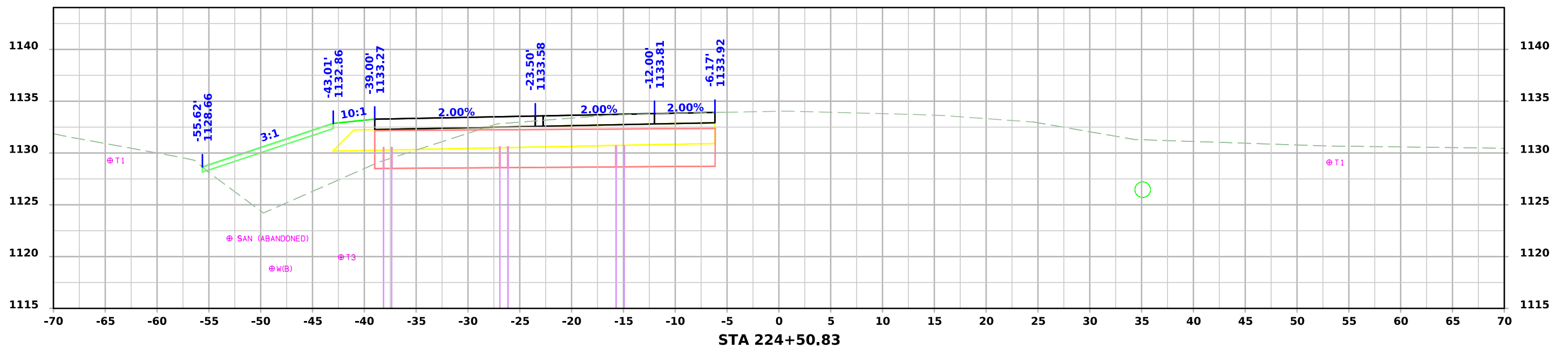
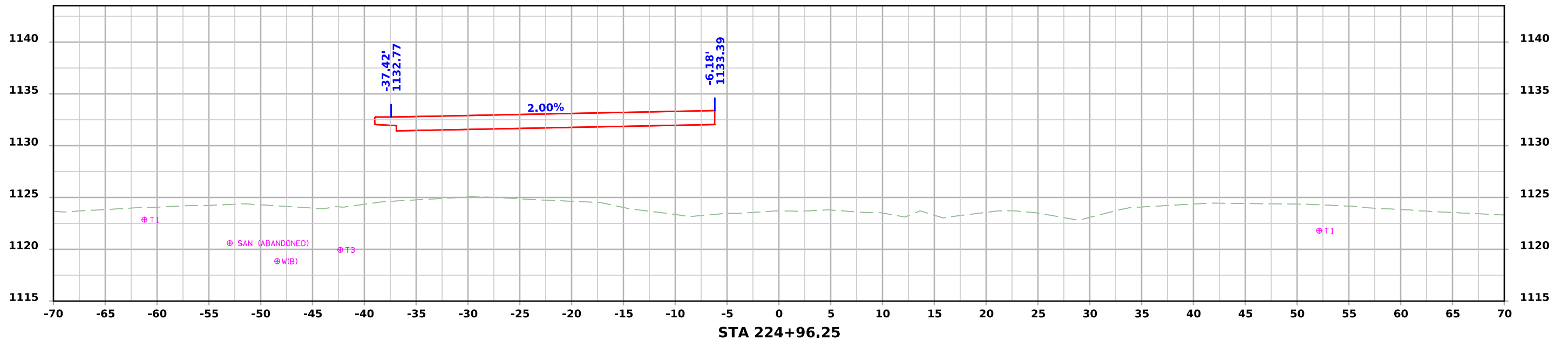
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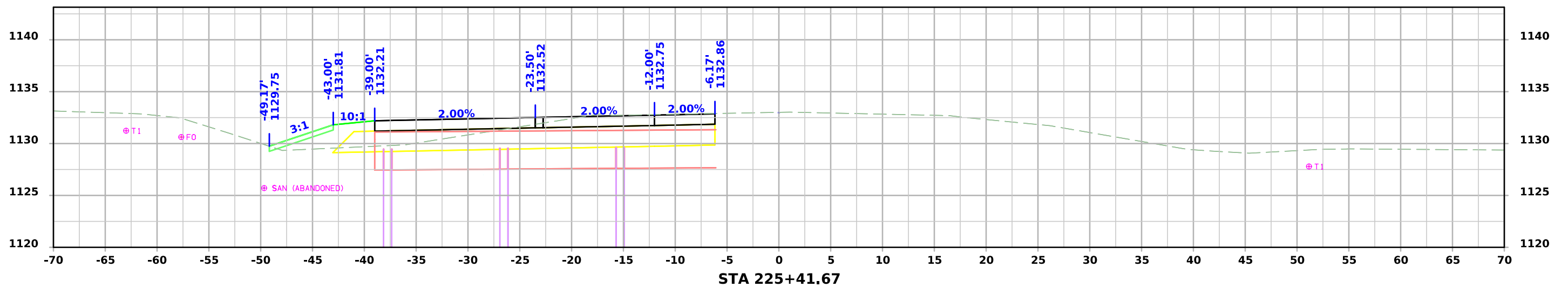
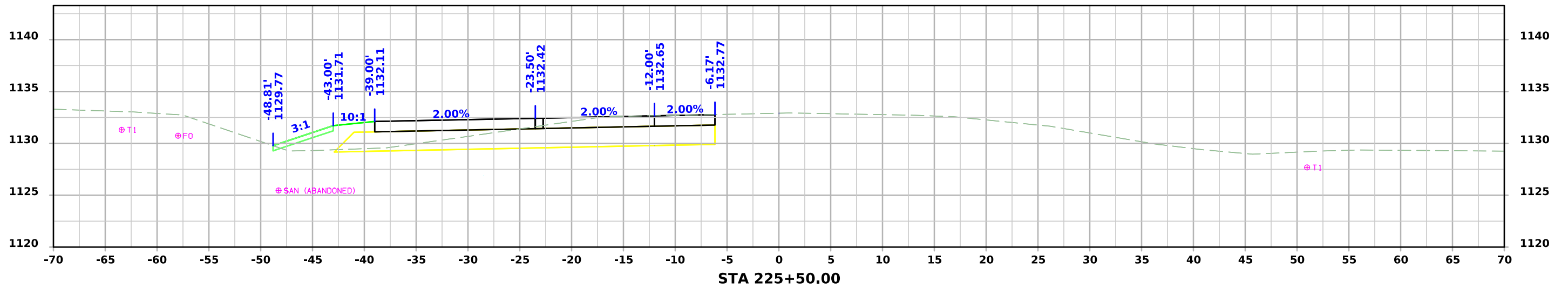
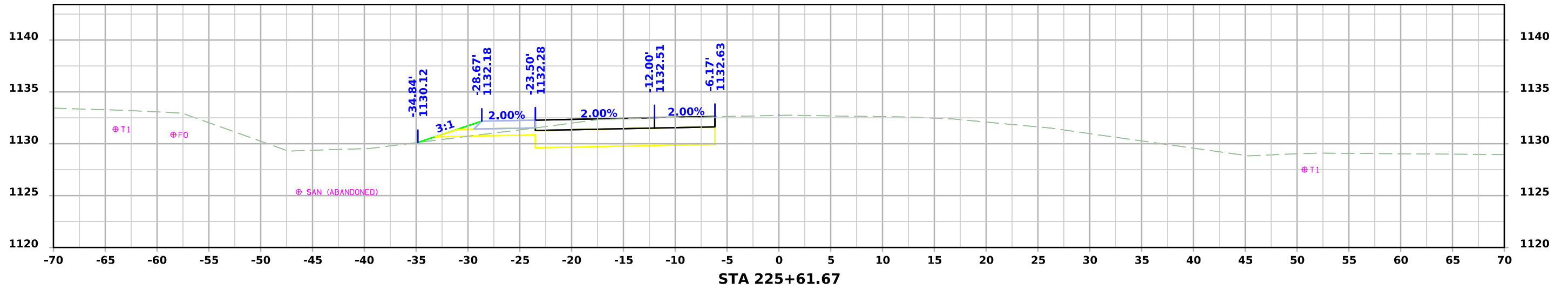
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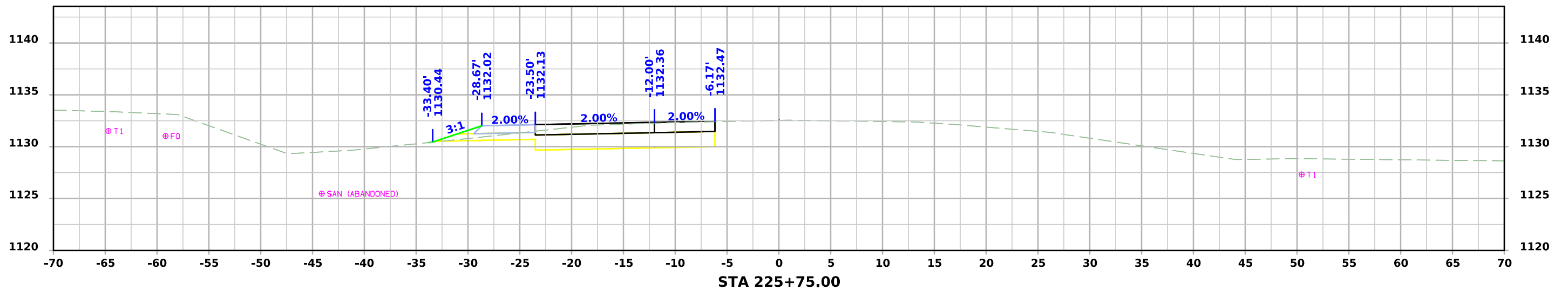
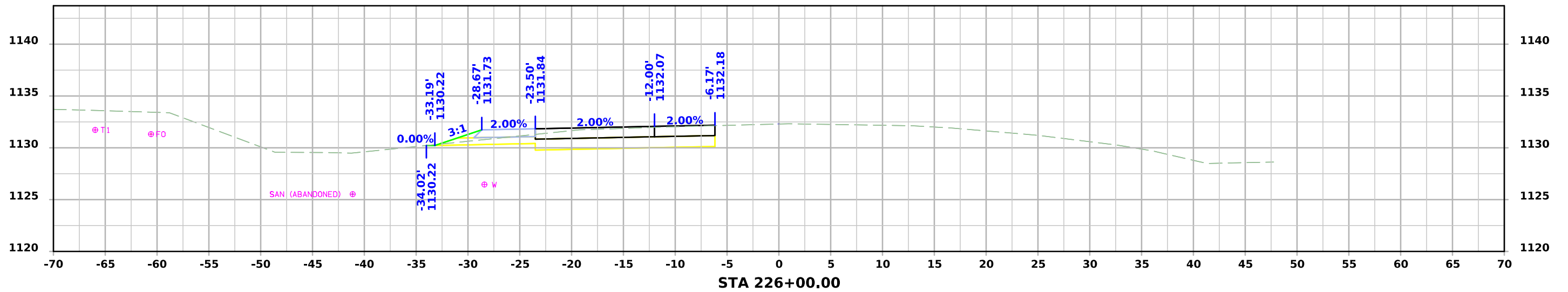
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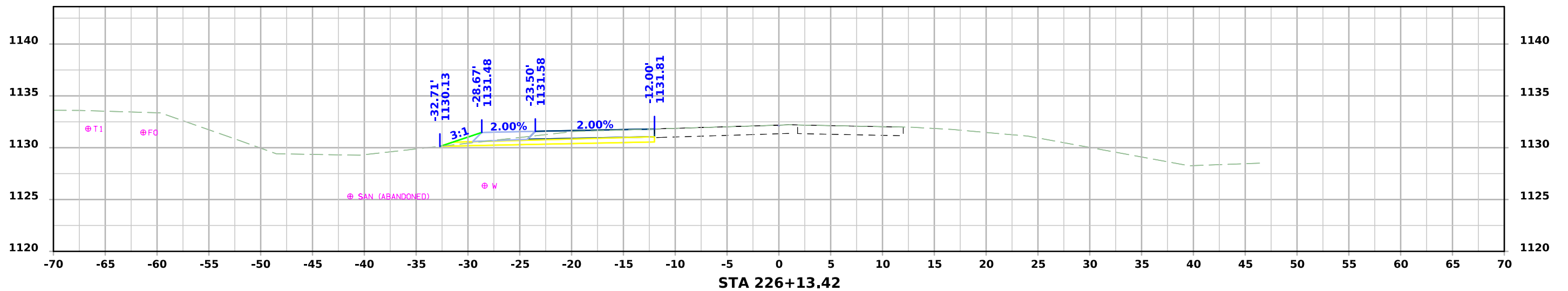
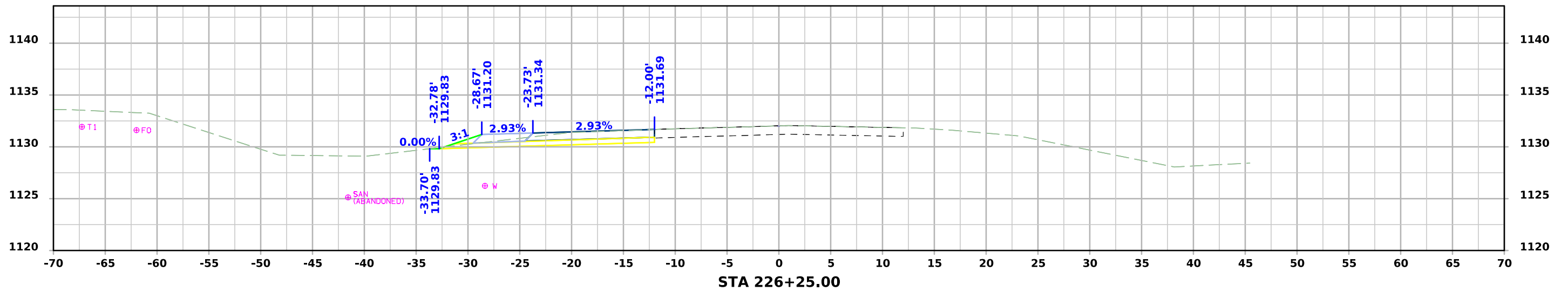
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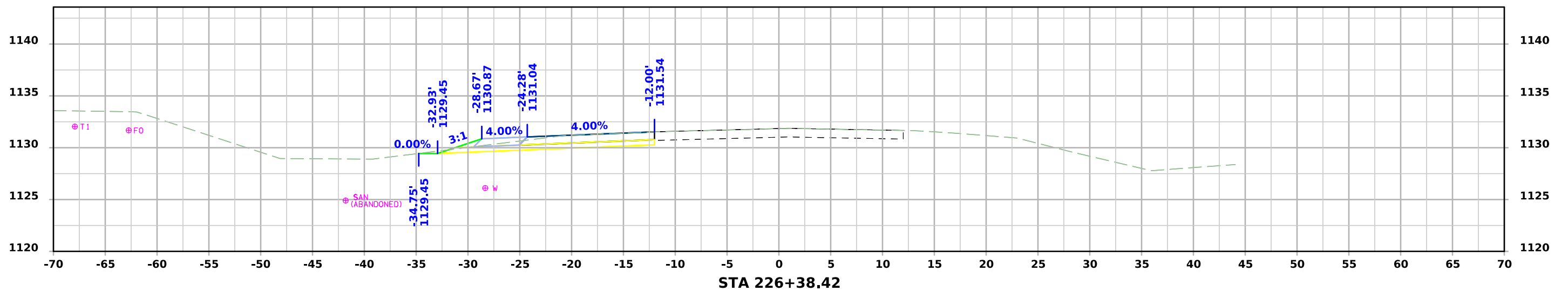
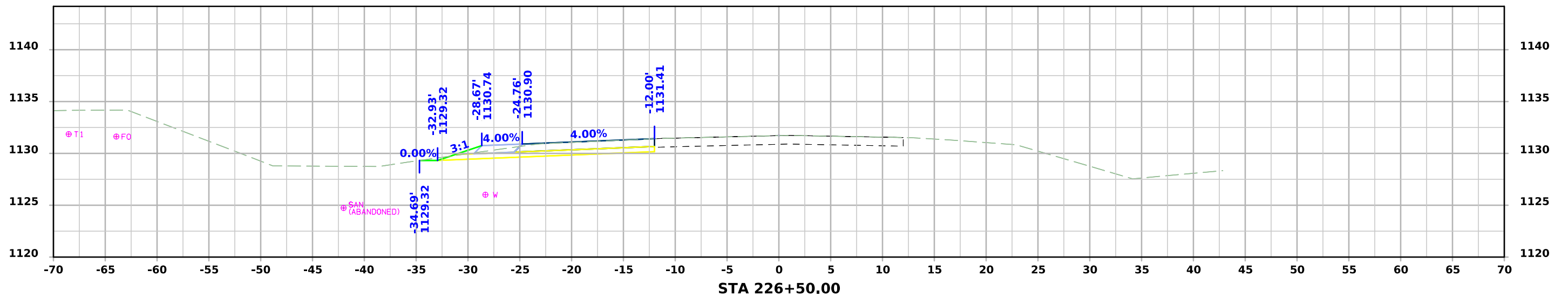
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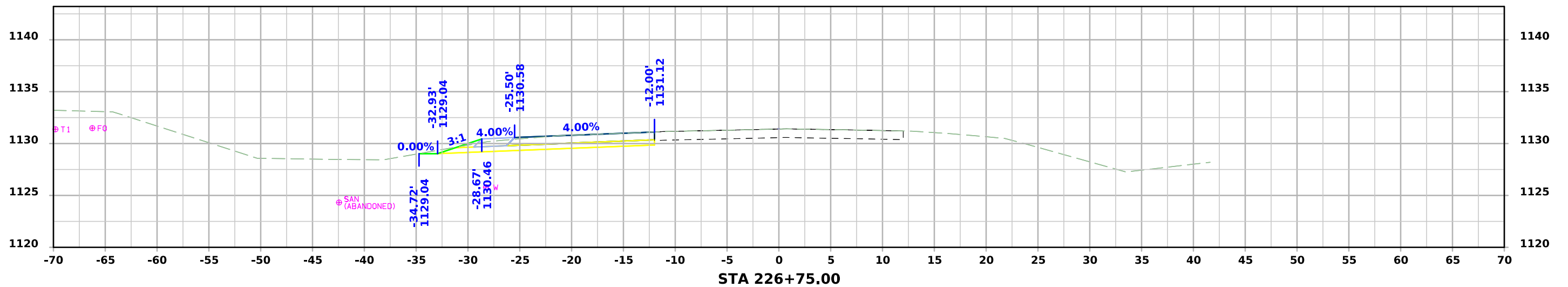
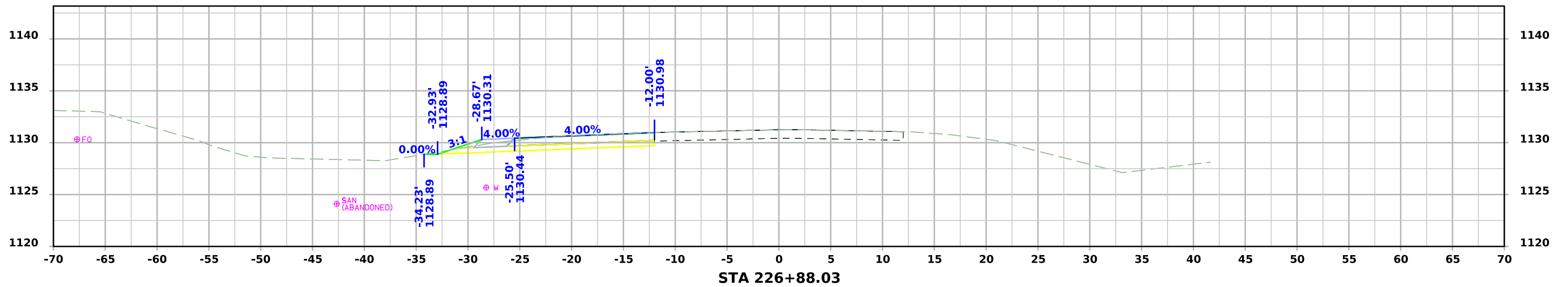
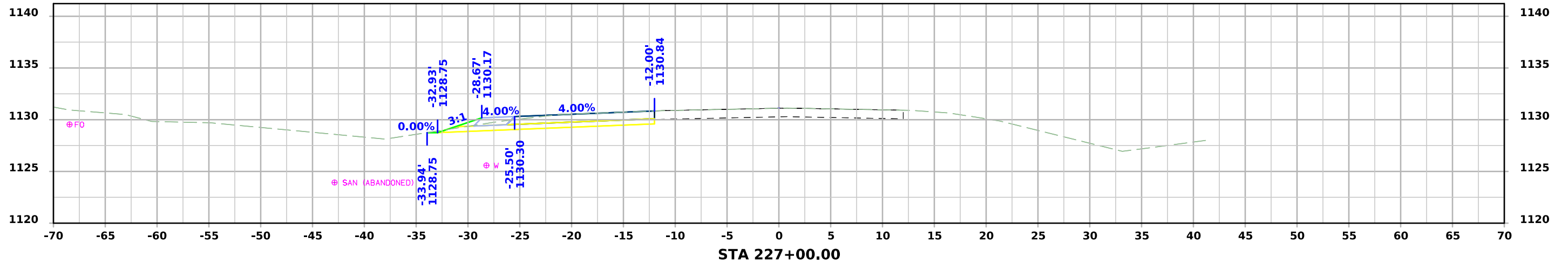
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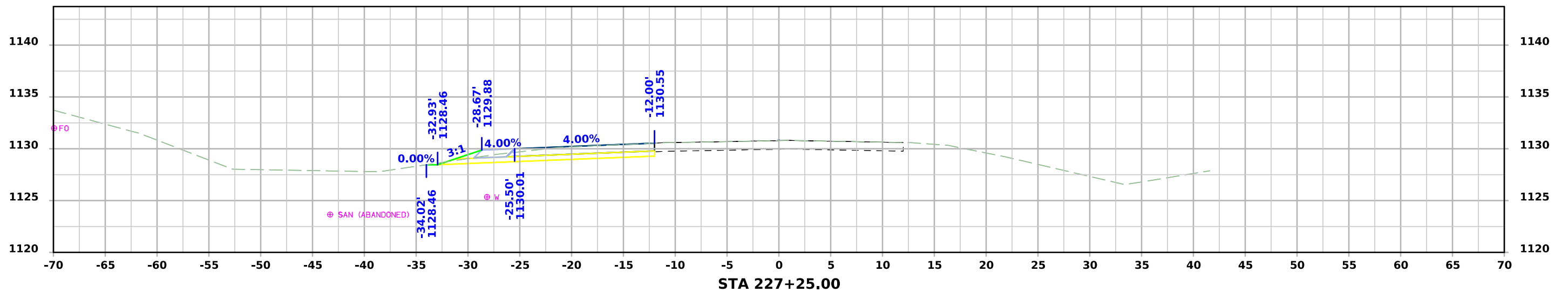
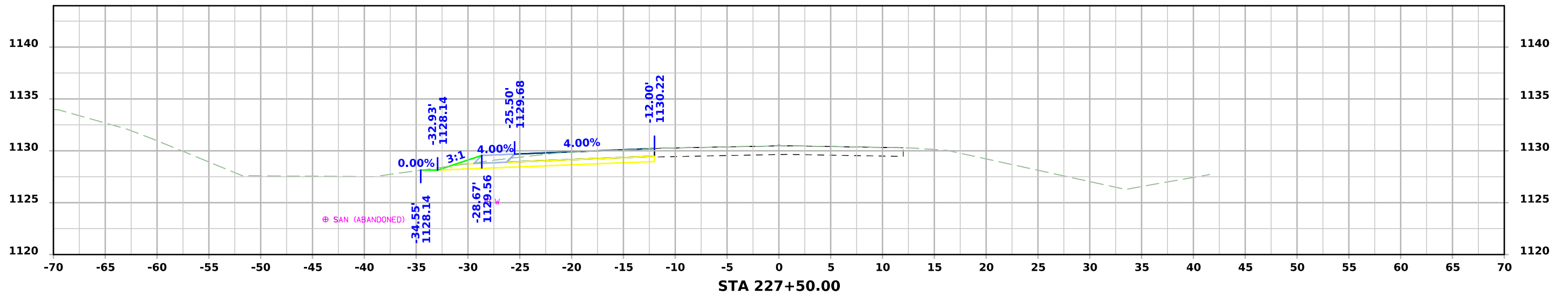
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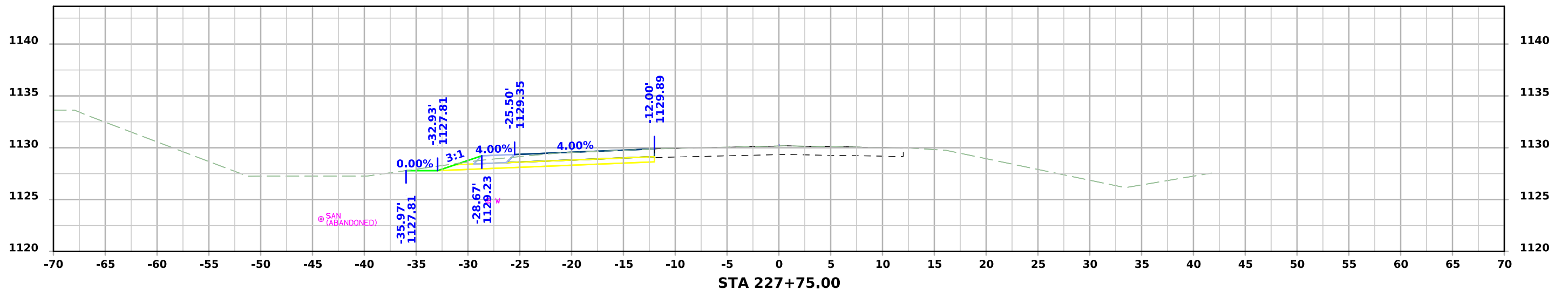
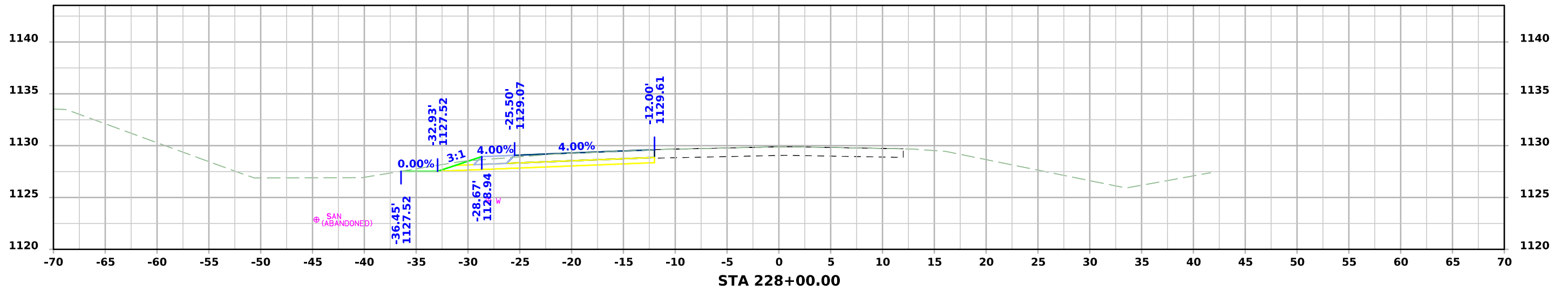
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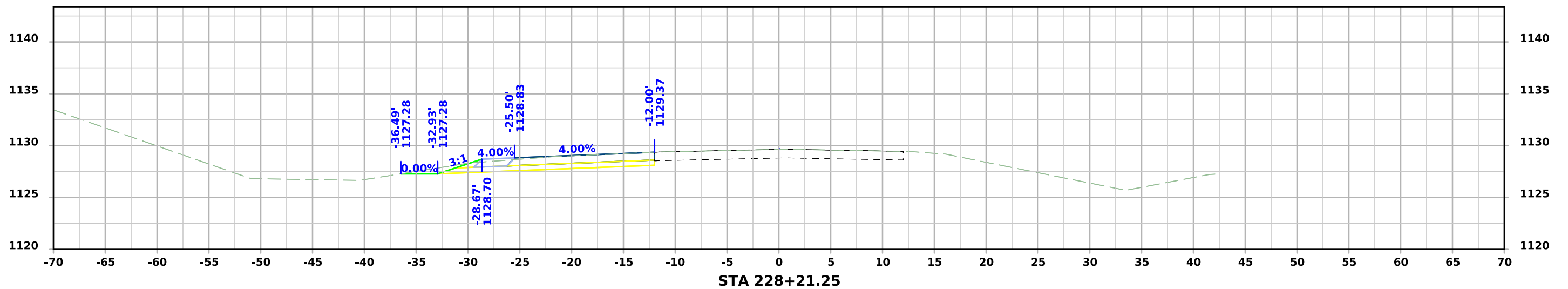
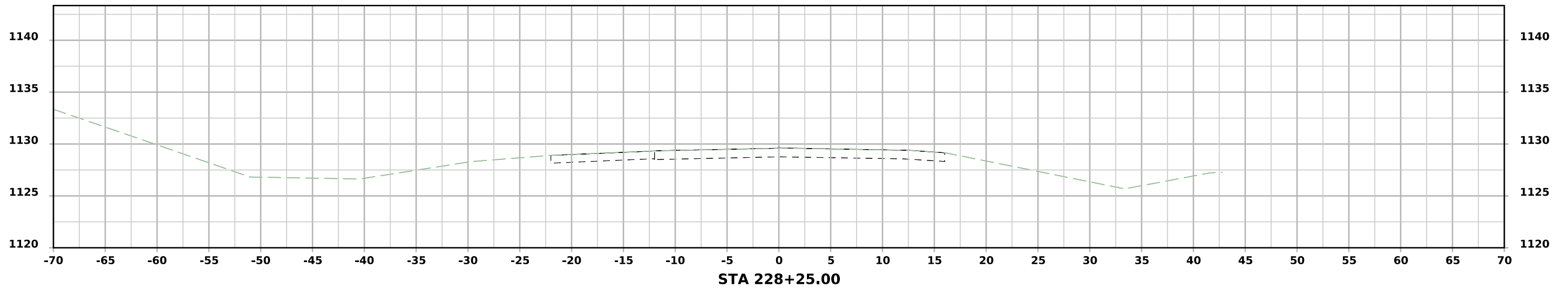
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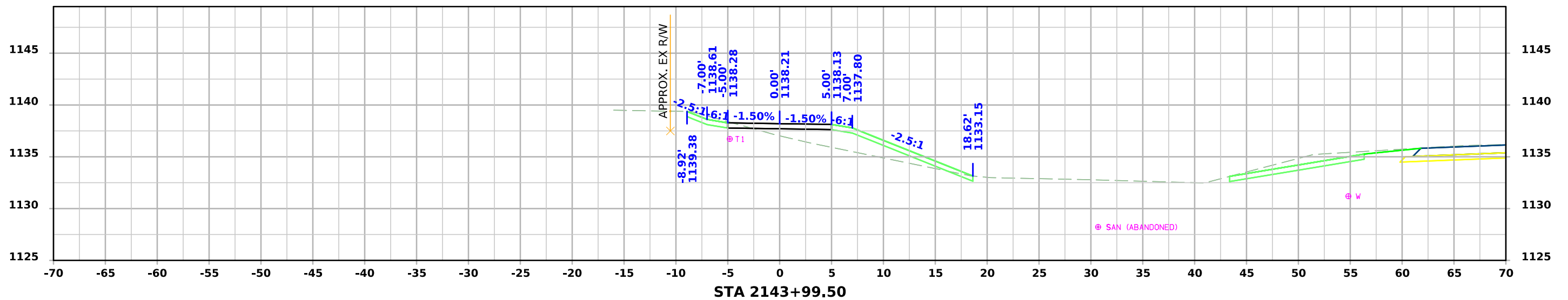
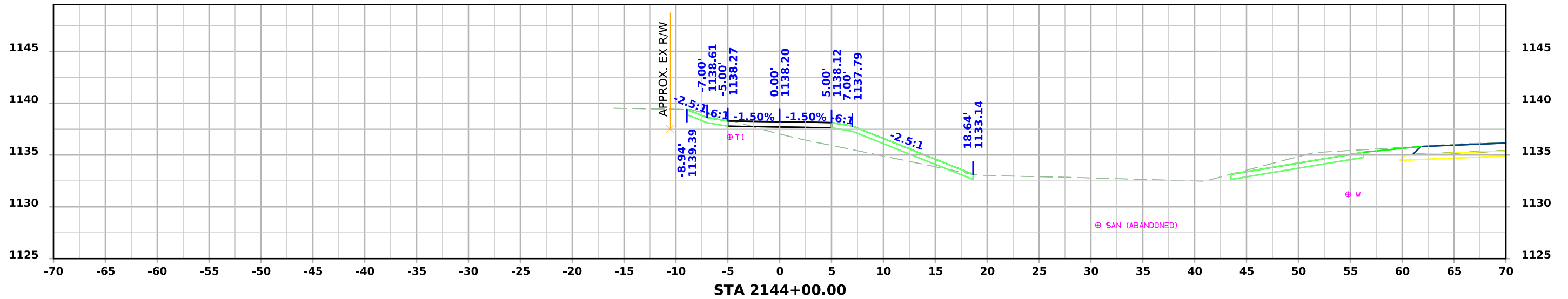
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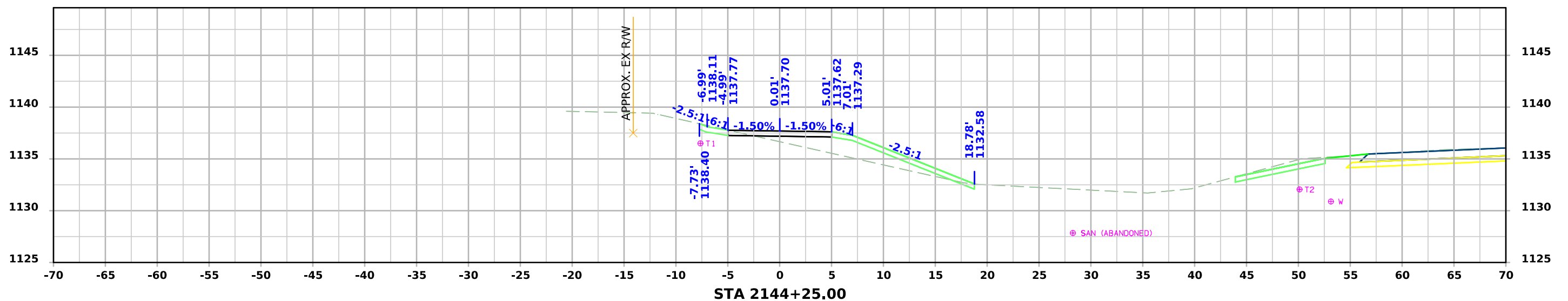
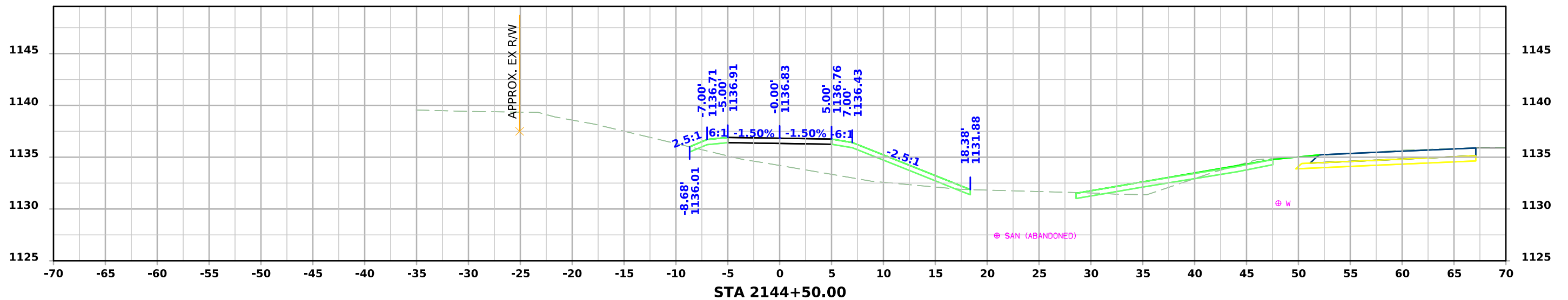
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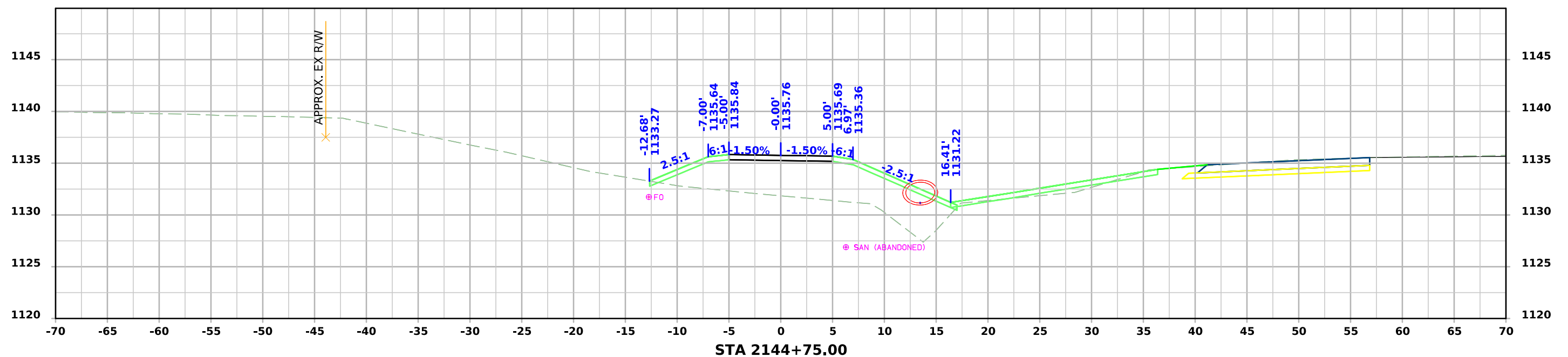
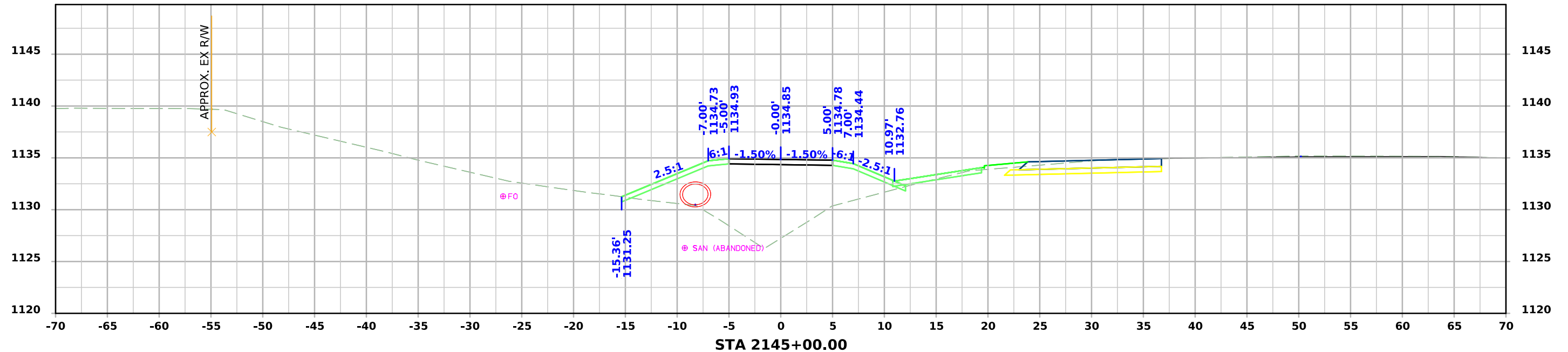
Plywood Trail



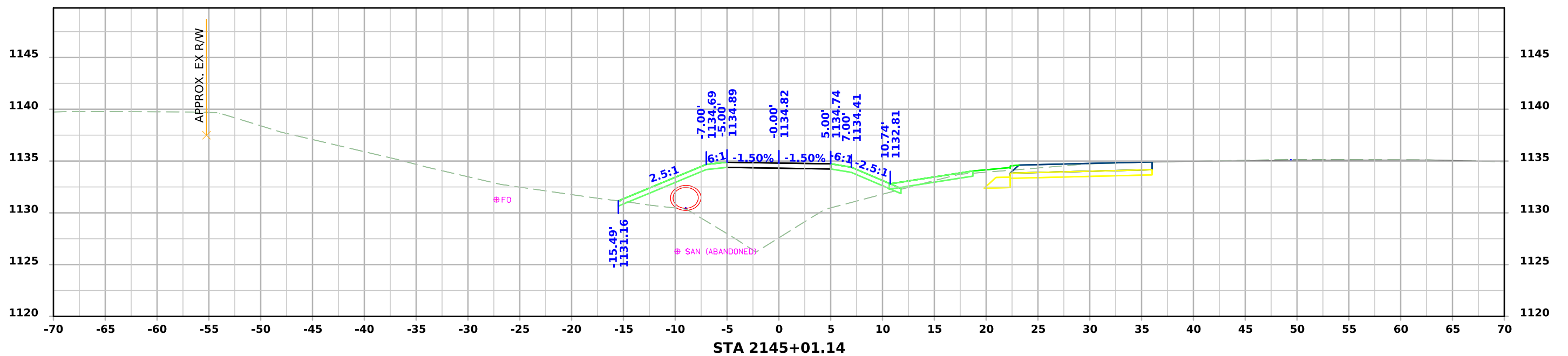
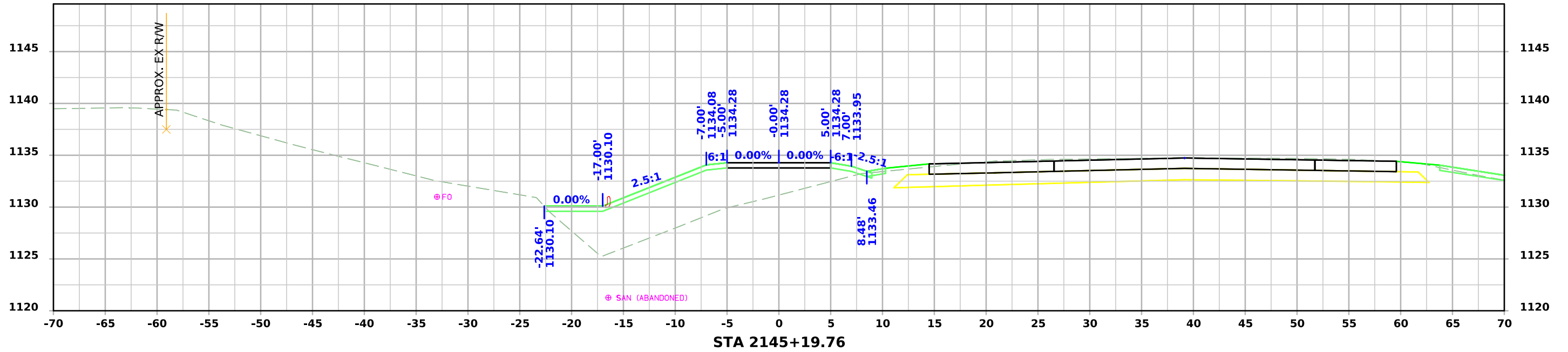
Plywood Trail



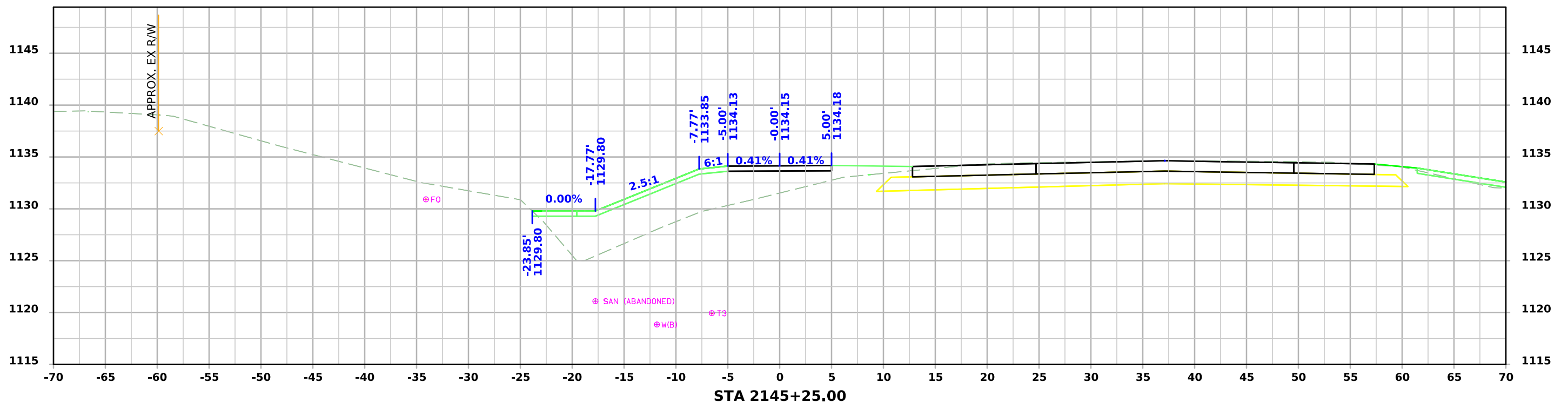
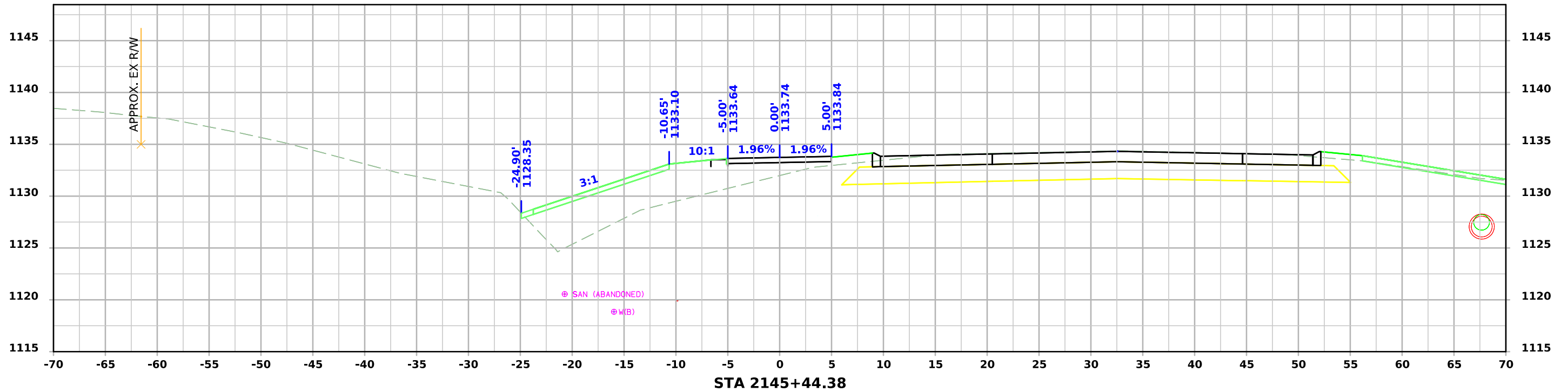
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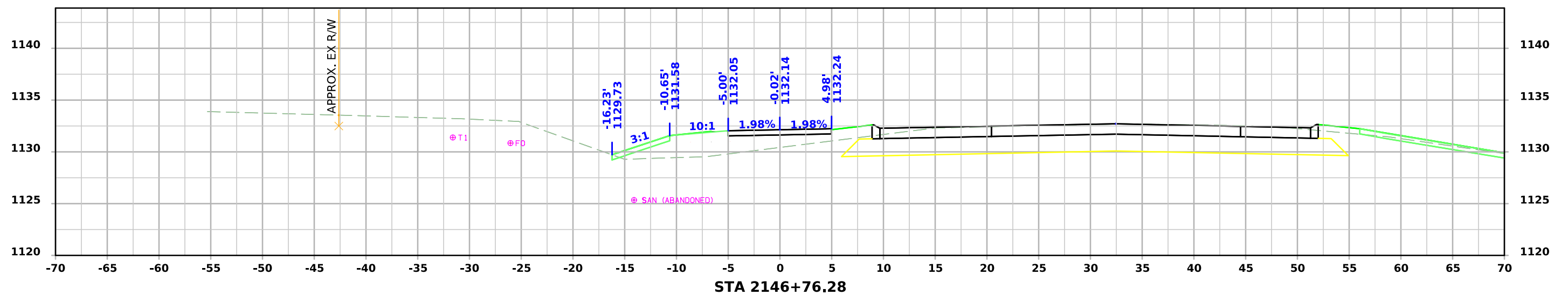
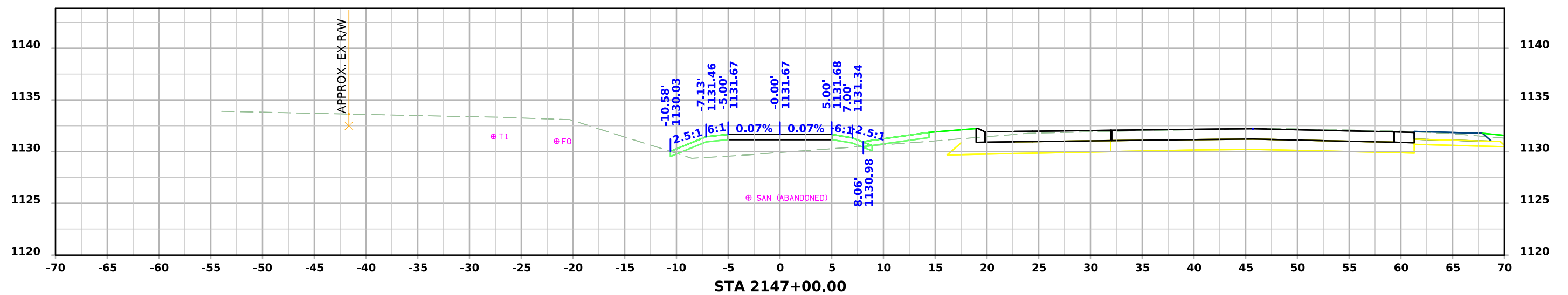
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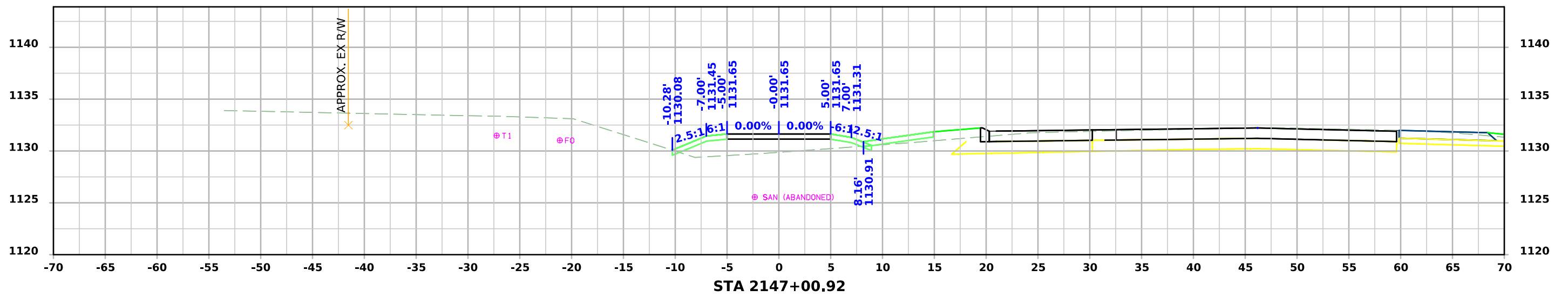
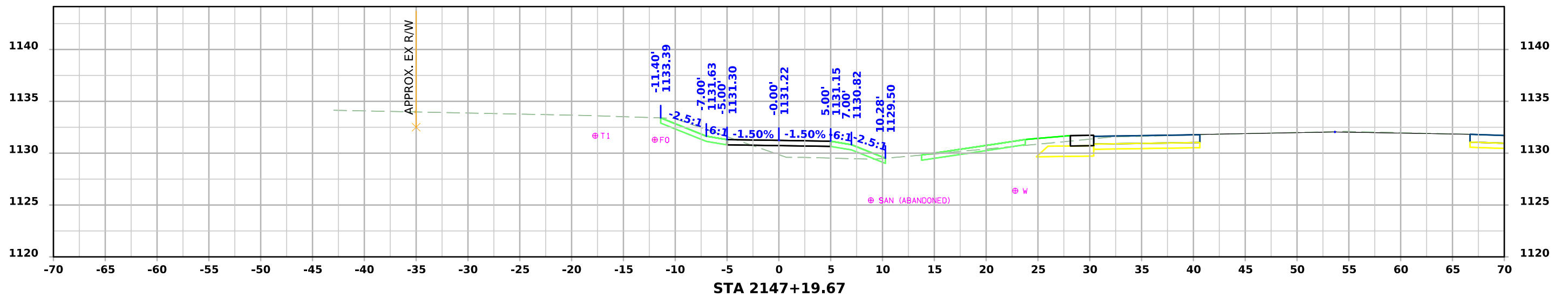
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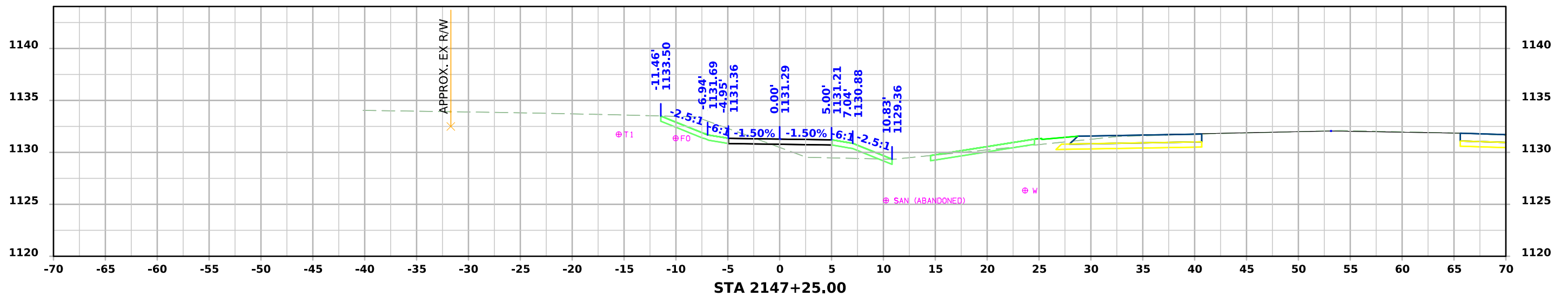
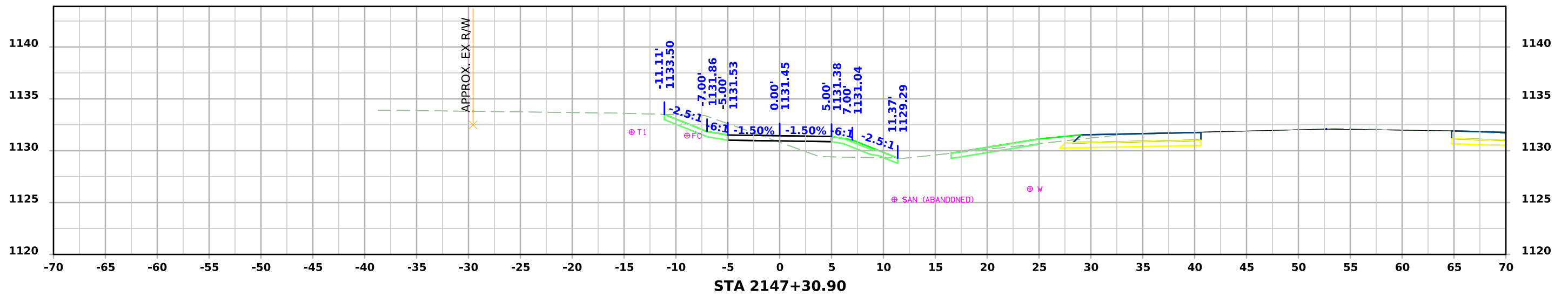
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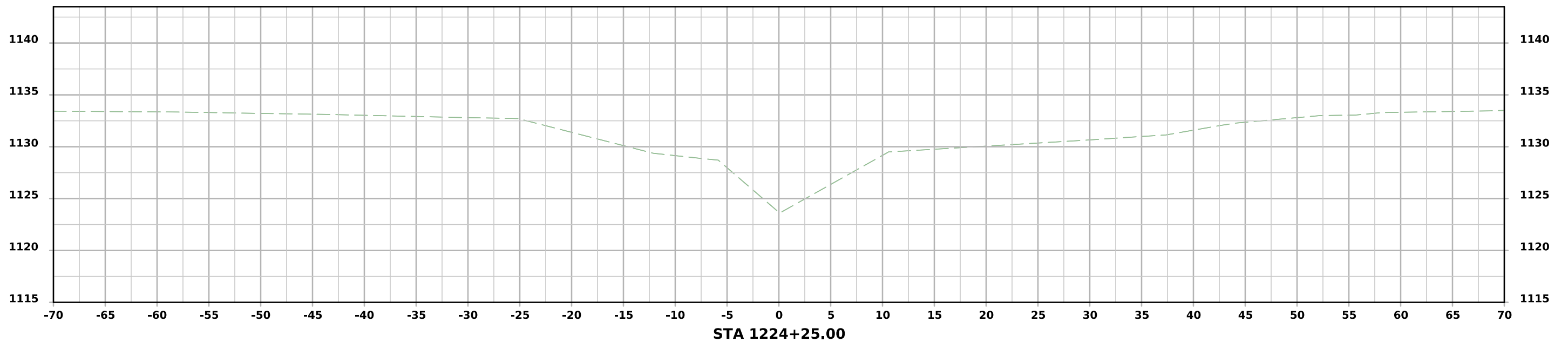
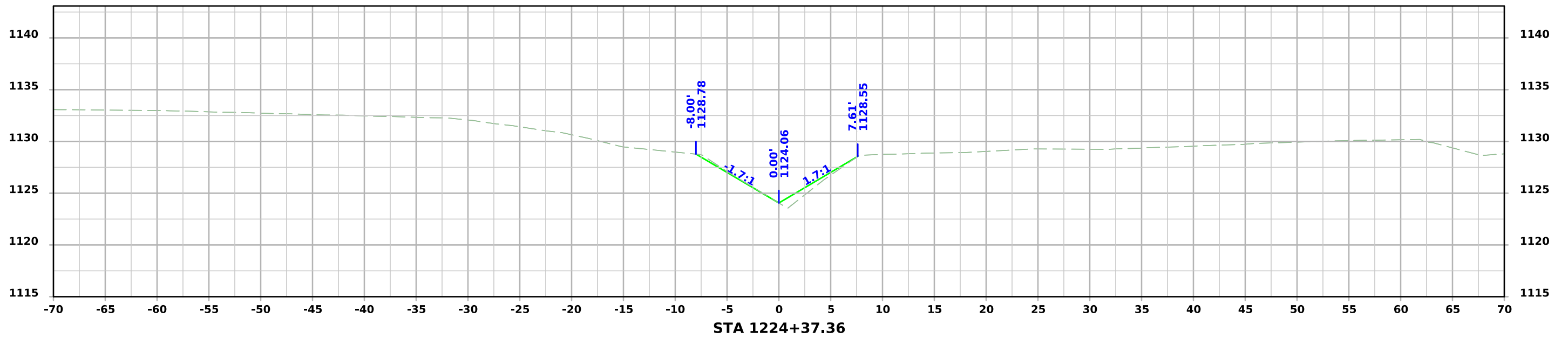
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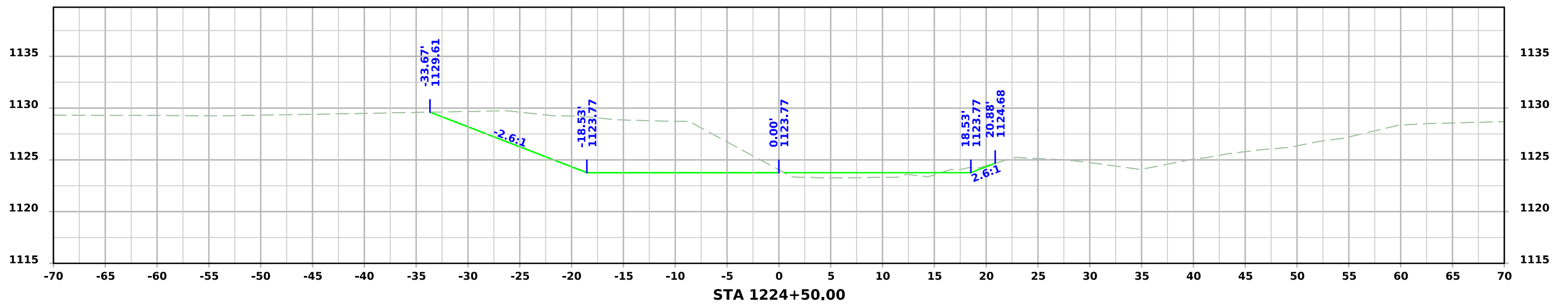
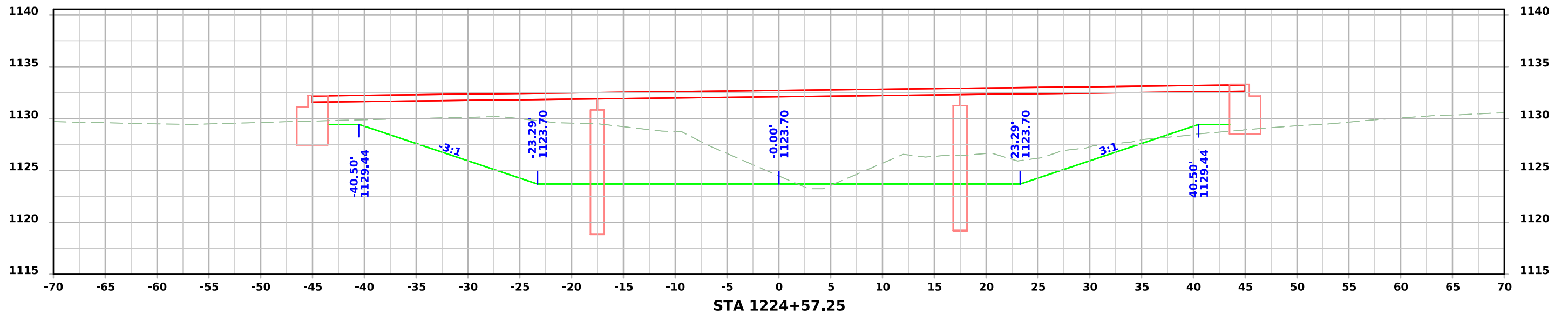
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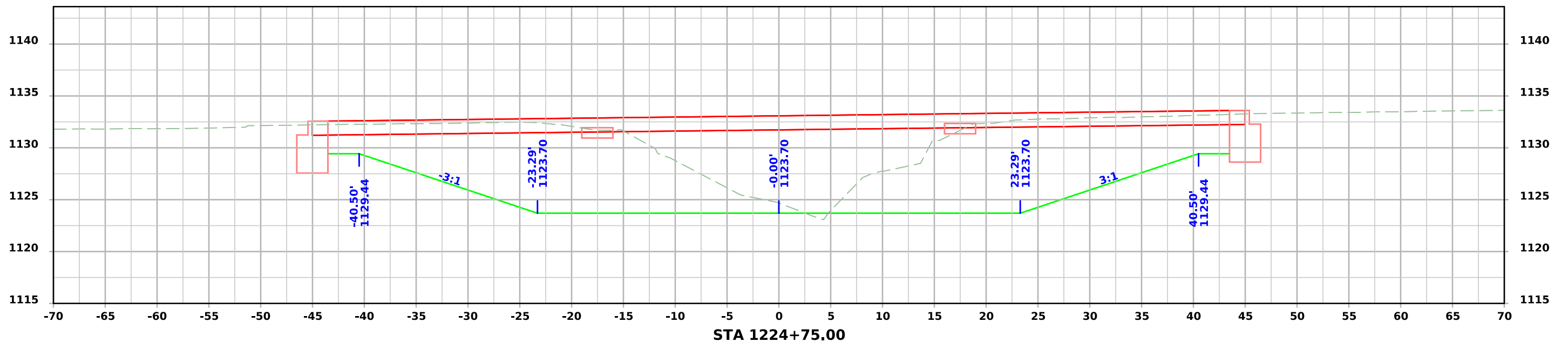
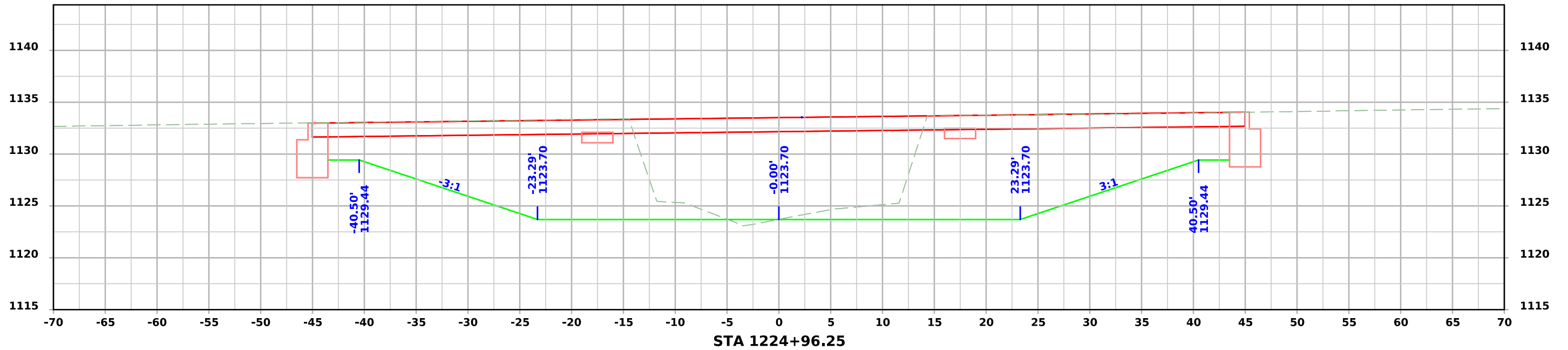
Channel Grading



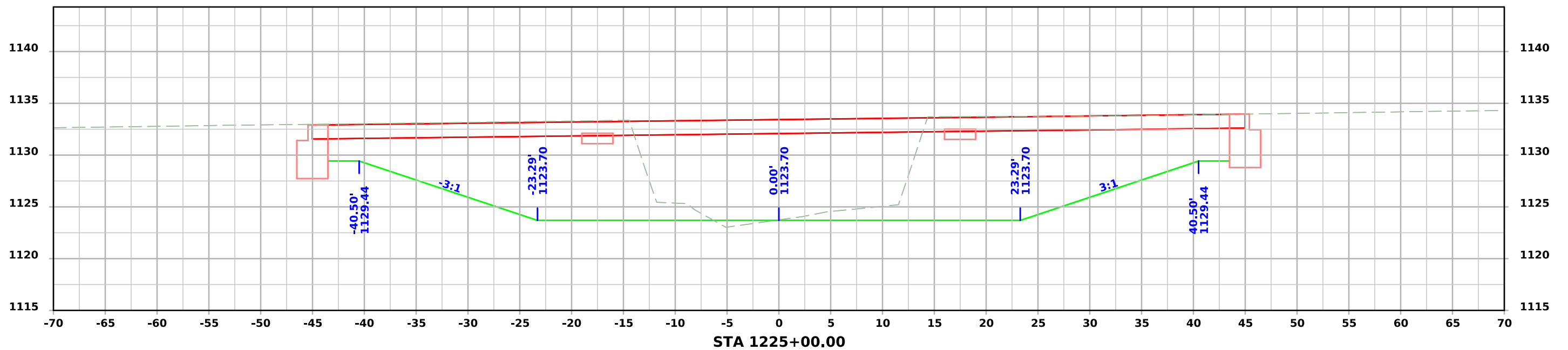
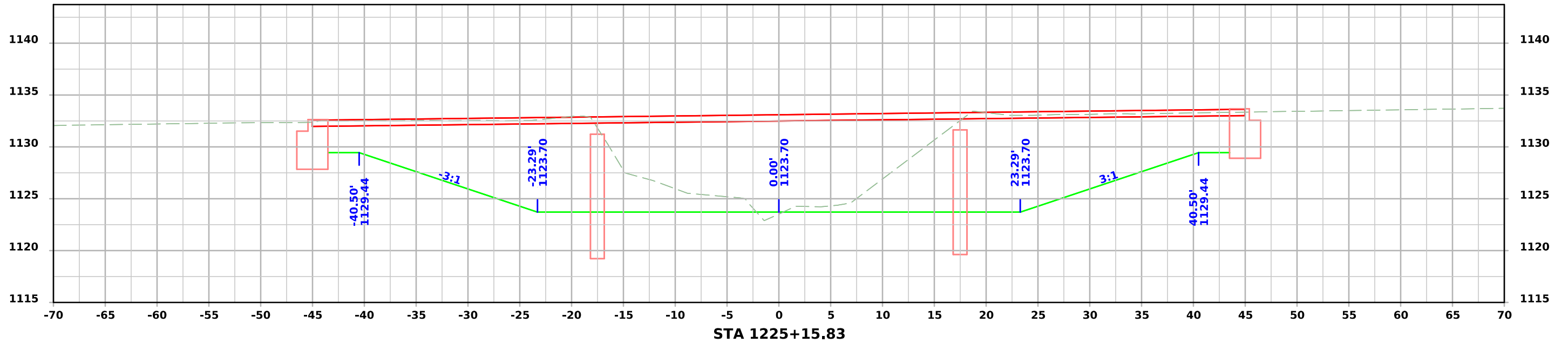
Channel Grading



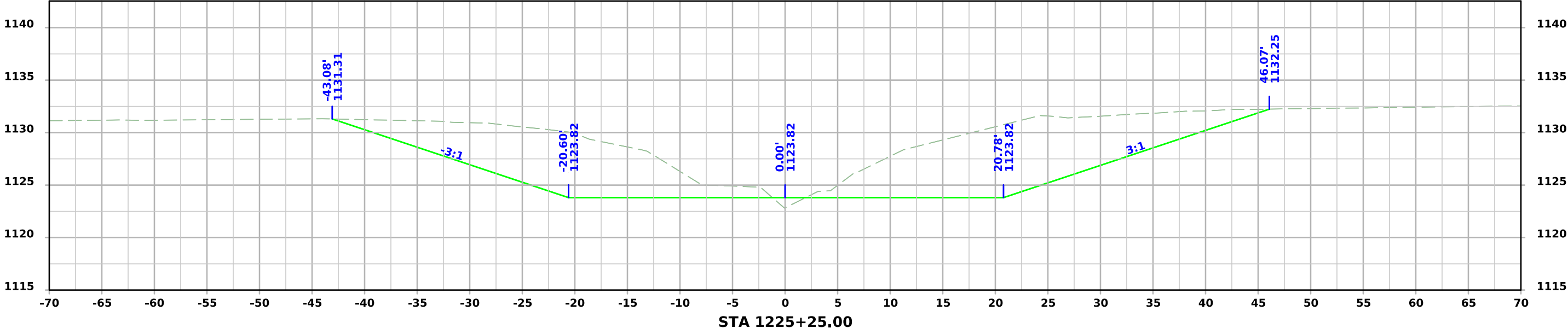
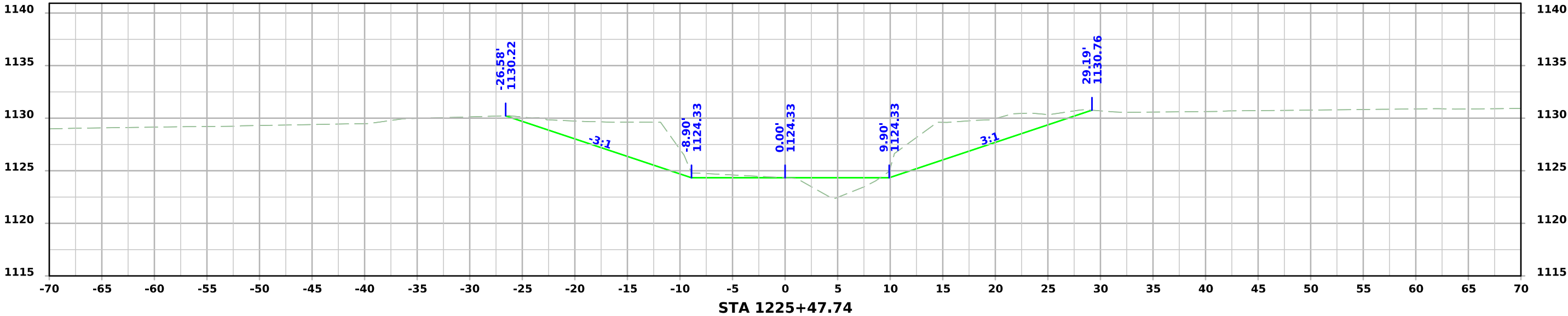
Channel Grading



Channel Grading



Channel Grading



Channel Grading

