LETTING DATE **Dec 15 2026**

PCC Pavement - Grade and Pave
HSIPX-030-4(113)--3L-08

BOONE COUNTY

IOWA DOT

REVISIONS	TOTAL
	..

PROJECT IDENTIFICATION NUMBER
24-08-030-020
PROJECT NUMBER
HSIPX-030-4(113)--3L-08
R.O.W. PROJECT NUMBER
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PLANS OF PROPOSED IMPROVEMENT ON THE

PRIMARY ROAD SYSTEM
BOONE COUNTY
PCC Pavement - Grade and Pave

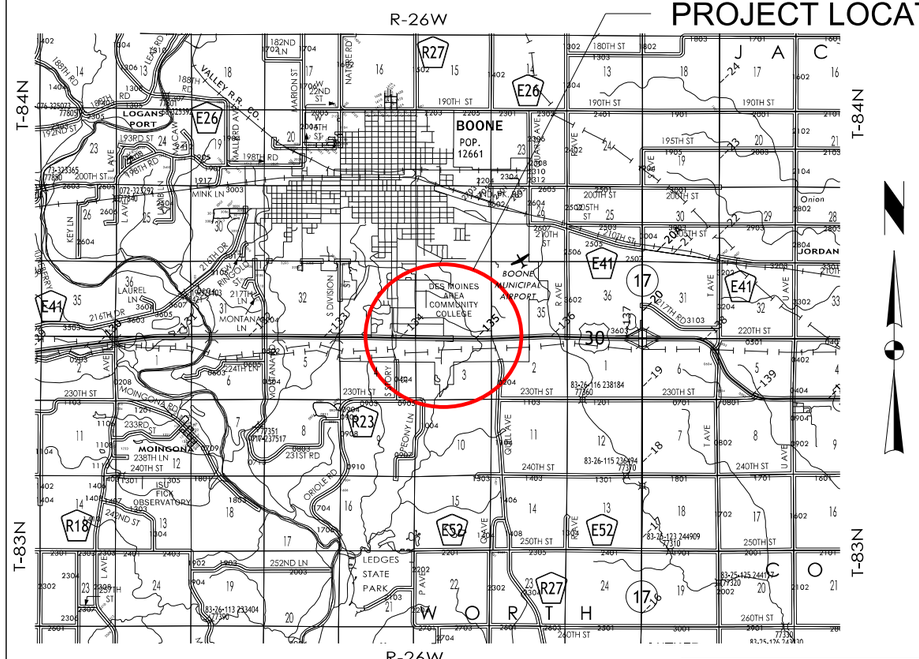
Linn St. and SE Marshall St.
Intersection in Boone
Location

SCALES: As Noted

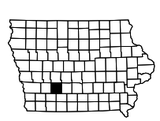
Refer to the Proposal Form for list of applicable specifications.

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

PROJECT LOCATION



LOCATION MAP SCALE
0 1 2 3
Miles



Concept Esimate ~$2.8 M
D2 (Staged) - ~$3.3 M

Schedule:

D3 - 08/02/2024
D5 - 11/15/2024
P9 - 04/16/2025
DM5 - 09/01/2026

INDEX OF SHEETS

No.	DESCRIPTION
A Sheets	**Title Sheets**
A.1	Title Sheet
A.2	Location Map Sheet
A.3 - 4	Concept
A.5 - 6	Design Criteria
B Sheets	**Typical Cross Sections and Details**
B.1 - 14	Typical Cross Sections and Details
D Sheets	**Mainline Plan and Profile Sheets**
* D.1	Plan & Profile Legend & Symbol Information Sheet
* D.2 - 7	US 30 P&PSheets
E Sheets	**Side Road Plan and Profile Sheets**
* E.1 - 6	SR and Roundabout P&P Sheets
F Sheets	**Detour or Temporary Pavement Sheets**
* F.1	Detour Plan and Profile Sheets
G Sheets	**Survey Sheets**
G.1 - 3	Reference Ties and Bench Marks
G.4 - 5	Horizontal Control Tab. & Super for all Alignments
H Sheets	**Right-of-Way Sheets**
J Sheets	**Traffic Control and Staging Sheets**
* J.1	Traffic Control & Staging Legend & Symbol Info. Sheet
J.2	Traffic Control Plan
J.3	Staging Notes Stage
* J.4 - 13	Staging
L Sheets	**Geometric, Staking and Jointing Sheets**
* L.1 - 4	Geometric details
* L.5	Staking details
* L.6	Jointing details
* L.7	Edge Profiles
U Sheets	**500 Series, Mod.Stds. and Detail Sheets**
* U.1	AutoTurn - Oversize vehicle - through traffic
W Sheets	**Mainline Cross Sections**
* W.1	Cross Sections Legend & Symbol Information Sheet
* W.2 - 17	US 30 EB Cross Sections
X Sheets	**Side Road Cross Sections**
* X.1 - 5	Side Road Cross Sections
Y Sheets	**Roundabout Cross Sections**
* Y.1 - 7	Ramp Cross Sections

* Color Plan Sheets

US 30 DESIGN DATA RURAL			
2019	AADT	12,066	V.P.D.
2047	AADT	14,325	V.P.D.
20	DHV	–	V.P.H.
TRUCKS		8	%
Total Design ESALs		–	

INDEX OF SEALS

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

PRELIMINARY PLANS

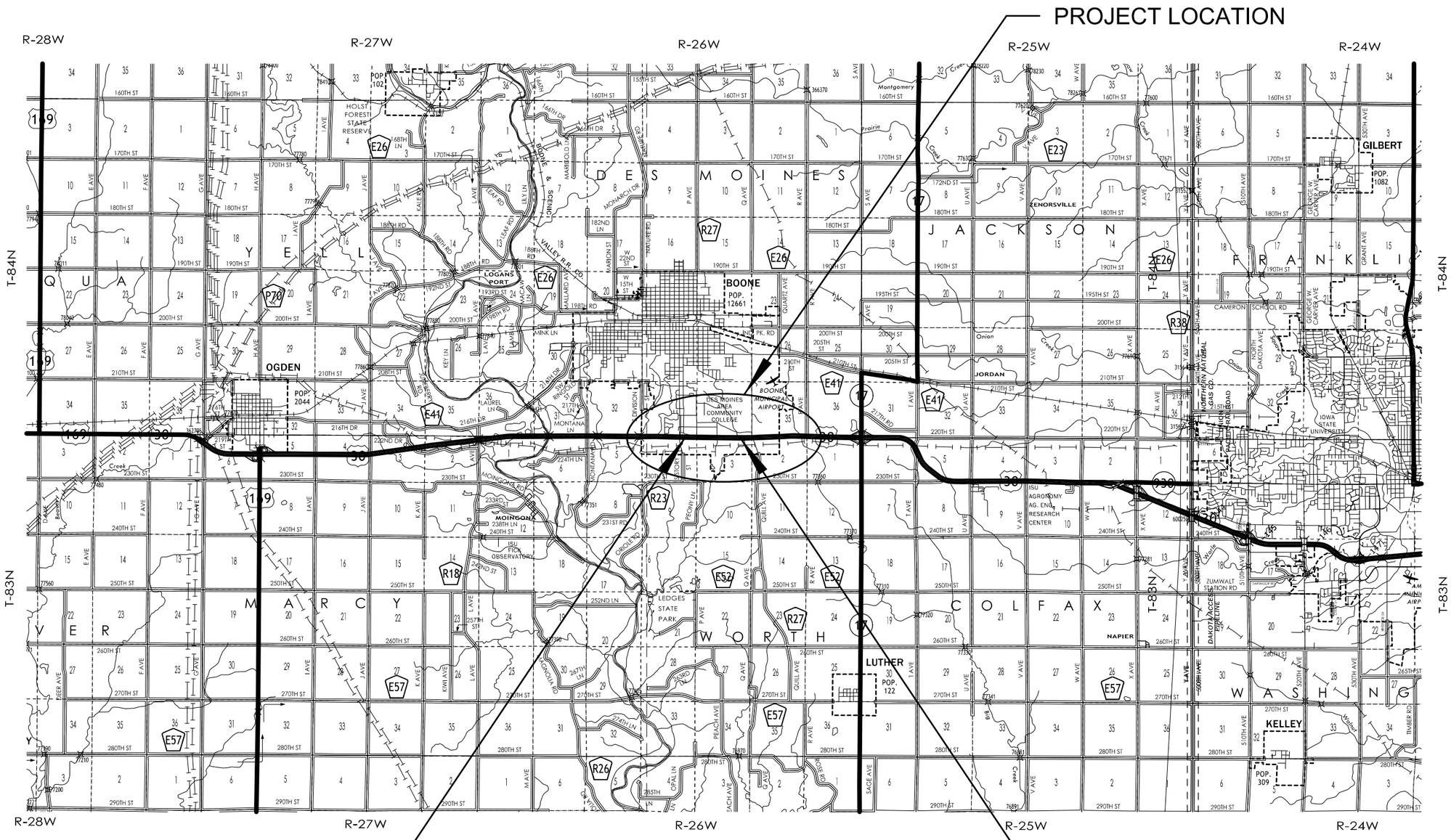
Subject to change by final design.

D2 PLAN - 06-25-2024

FILE NO.	ENGLISH	DESIGN TEAM **Rhoads\Tamrakar\Prindle**	**BOONE** COUNTY	PROJECT NUMBER **HSIPX-030-4(113)--3L-08**	SHEET NUMBER **A.1**

9:06:00 AM 6/13/2024 dtamrak pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\0803002024\Design\CADD_Files\Sheet_Files\SHT_08030113Z08_A01.dgn

BOONE COUNTY



LOCATION MAP SCALE
0 1 2 3
Miles

8

FILE NO.	ENGLISH	DESIGN TEAM **Rhoads\Tamrakar\Prindle**	**BOONE** COUNTY	PROJECT NUMBER **HSIPX-030-4(113)--3L-08**	SHEET NUMBER **A.2**

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FINAL PROJECT CONCEPT STATEMENT

Linn St and SE Marshall St Intersections in Boone Tama County

HSIPX-030-4(113)--3L-08
PIN: 24-08-030-020

Donna Matulac, PE
District 1 Office
December 13, 2023

I. STUDY AREA

A. Project Description

US 30 is a 4-lane roadway with a 45 mph speed limit. There is an existing at-grade intersection at both Linn Street and Marshall Street with only stop control on the side roads.

B. Need for Project

This project was identified through the US 30 Corridor Plan which looked at all intersections on US 30 in Boone County between R18/L Ave west of the Des Moines River to Lincoln Way / X Ave interchange on the east limit of the County. This was identified as a safety project consisting of closing the full access at Linn Street, converting this intersection to a right-in/right-out, and constructing a roundabout at the Marshall Street intersection.

Figure 1: *Project Location*

C. Traffic Estimates

2019 ADT was 12,066 vpd with 8% trucks. The 2047 ADT is projected to be 14,325 ADT with 8% trucks.

D. Access Control

Access rights will not be acquired for this project.

E. Crash History

During the five-year study period from January 1, 2018, through December 31, 2022, there were 30 crashes within the project area including 1 fatality. In 2023 there was an additional fatality in the corridor. 19 of the 30 crashes were related to failing to yield the right of way either from a stop or yield condition.

II. PROJECT CONCEPT

A. Feasible Alternatives – See attached exhibit

1. It is proposed to close the full at-grade access intersection at Linn Street and create a right-in/right-out access only. It is also proposed to construct a new roundabout at the Marshall Street intersection. Proposed work does not include the local roadway connections on the north side of US 30 other than what is needed to tie into Marshall Street. Traffic would be maintained during construction.

Estimated Project Cost

PCC Pavement – (11,000 SY @ $75/SY)	$ 825,000
Granular Subbase – (12,000 SY @ $10/SY)	$ 120,000
Paved Shoulder, HMA, 8” – (5,000 SY @ $60/SY)	$ 300,000
Special Backfill – (1,500 CY @ $35/CY)	$ 52,500
Earth Shoulder Construction – (75 STA @ $280/STA)	$ 21,000
Excavation, Class 10, Roadway and Borrow – (11,500 CY @ $10/CY)	$115,000
Subdrain, longitudinal – (6,000 LF @ $10/LF)	$ 60,000
Aprons, Concrete 24” – (8 each @ $2,500/each)	$ 20,000
Culvert, Concrete Roadway Pipe, 24" – (600 LF @ $150/LF)	$ 90,000
Topsoil, Strip Salvage and Spread – (6,000 CY @ $12/CY)	$ 72,000
Signing and Markers	$ 10,000
Traffic Control – 10%	$169,000
Mobilization – 10%	$169,000
Contingency – 30%	$610,000
Right-of-Way	$200,000
Total Estimated Project Costs	**$2,833,500**

B. Detour Analysis

US 30 will remain open to traffic with lane closures as needed.

C. Construction Sequence

It is anticipated that all work on this project will be awarded to one prime contractor. The Design Bureau will design the roundabout and all associated roadway items and the Bridges and Structures Bureau will design any needed drainage structures.

D. ADA Accommodations

There are no ADA facilities within the limits of this projects, and no new facilities will be added with this project.

E. Special Considerations

This will be a traffic critical project.

No railroads exist within the limits of this project.

Right of Way will be required for this project.

F. Program Status

This project will be listed, using SR funds, in the 2025-2029 Iowa Transportation Improvement Program, with $3,000,000 programmed in FY 2026.

G. Project Schedule:

Task Name	Description	Start	Finish
D00	Pre-Design Concept	06/09/2023	12/15/2023
TE0	Desktop Review	12/15/2023	01/19/2024
U00	Preliminary Utility Review	12/15/2023	01/19/2024
W00	Preliminary Wetland Review	12/15/2023	01/19/2024
D01	Survey Plan and Photogrammetry (DTM)	11/07/2023	03/01/2024
T01	Existing ROW, Property and Sections Lines in CADD	06/01/2023	05/03/2024
D02	Design Field Exam	04/15/2024	06/07/2024
A01	Approval of DOT Commission - Inclusion in 5-Year Program	06/11/2024	06/11/2024
D03	Plans for Preliminary Bridge	06/21/2024	07/12/2024
H00	Cultural Resources Assessment	07/12/2024	07/12/2024

H06	SHPO-State Historic Preservation Officer	07/12/2024	07/12/2024
NE10	PCE	06/24/2024	08/02/2024
B02	Drainage Design and Miscellaneous Layout to Office of Design	07/24/2024	10/11/2024
U02	Project Notification to Utilities	07/12/2024	10/11/2024
S02	Identification of Soils Related ROW Issues	08/30/2024	10/25/2024
AC5	Access Control Validation	10/07/2024	10/25/2024
D05	Plans to Right Of Way	08/22/2024	11/15/2024
F03	Final Regulated Materials Review	05/27/2024	12/20/2024
R01	Right Of Way Layout	02/06/2025	02/14/2025
R00	Plot Plans and Summary Sheets to District	02/14/2025	02/14/2025
P09	Public Information Meeting (PIM)	04/16/2025	04/16/2025
T02	Acquisition Plats and Legal Descriptions	09/04/2024	06/06/2025
U03	1st Plan Submital to Utilities	03/07/2025	06/06/2025
R02	Right Of Way Appraisal	08/14/2025	09/05/2025
R03	Right Of Way Negotiation	05/28/2024	12/05/2025
S03	Soils Design Complete	10/07/2025	01/09/2026
U04	2nd Plan Submittal to Utilities	02/09/2026	04/09/2026
R04	Right Of Way Acquisition	01/15/2026	06/05/2026
U06	Notice to Proceed to Utilities	05/08/2026	07/08/2026
P08	Pre-Construction Agreement	08/14/2026	08/14/2026
DM5	Design Methods Turn-In	09/01/2026	09/01/2026
U07	Utility Bid Attachment	09/07/2026	10/06/2026
U10	Utility clearance	10/06/2026	10/06/2026
D08	Final Grade and Pave Plans	11/28/2025	10/06/2026
L03	Letting-Combination Grade and Pave	12/15/2026	12/15/2026
C02	Construction Period (Field Work)	12/16/2026	11/19/2027
TD07	Preliminary Plan Turn-In	07/28/2026	07/28/2026
TD10	Final Signing Plans	06/02/2026	09/01/2026
L10	Letting-Traffic Signs	11/17/2026	11/17/2026
C02	Construction Period (Field Work)	11/18/2026	11/19/2027
TD07	Preliminary Plan Turn-In	07/28/2026	07/28/2026
TD11	Final Lighting Plans	06/02/2026	09/01/2026
L11	Letting-Lighting	11/17/2026	11/17/2026
C02	Construction Period (Field Work)	11/18/2026	11/19/2027

Cc: C. Purcell, M. Dell, M. A. Swenson, D. L. Newell, W. A. Sorenson, M. E. Ross, C. C. Poole, D. Stokes, K. Patel, C. Brakke, J. Bartholomew, D. Blue, S. Nielsen, M. Nop, V. Brewer, C, Davis, J. Hoskins, B. Adey, M. J. Kennerly, J. S. Nelson, J. Hart, K. Olson, D. E. Sprengeler, A. A. Welch, B. E. Azeltine, S. J. Gent, M. Collins, E. Engle, N. Cuva, D. L. Maifield, E. D. Gansen, W. Musgrove, J. Garton, A. Swisher, S. Nixon, G. Kretlow, K. D. Nicholson, C. Asberry, K. Brink, J. W. Laaser-Webb, E. C. Wright, J. Harris, B. D. Hofer, S. Anderson, J. Ellis, T. Quam, M. Buttz, J. Vortherms, D. Heeren, M. Ortiz-Pagan, J. Becker, S. Ebel, S. Passick, B. Ellis

Roadway				
PIN Number	24-08-030-020		**Submittal Date**	
Project Number	HSIPX-030-4(113)-3L-08			**Approval Date**
District	District 1	**Assistant District Engineer**		
County	BOONE	**or**		
Route	US-30	**Office Director**	Mike Kennerly	
Location	Linn St and SE Marshall St Intersections in Boone			
Work Type	Grade and New			
Segment Manager	Jason Holst			
Designer	Tom Rhoads/Devendra Tamrakar/Jason Prindle			

Design Manual Section 1C-1
Last Updated: 04-29-19

Rural Expressways (Rural Arterials)

Design Element		Preferred	Acceptable Criteria	Project Values
Design speed (mph)		70	50	50
Maximum superelevation rate (Refer to Section 2A-2)		6%	8%	6
Design lane width (ft)		12	12	12
Full depth paved width (ft)	Outside lane	12'	12	12
	Inside lane(s)	12	12	12
Right turn lane or an auxiliary lane (ft)		12	10	12
Left turn lane (ft)		12	10	12
Pavement cross-slope (on tangent sections)	Through lanes	2%, However, when adjacent lanes slope in the same direction, increase slope by 0.5% per lane up to 3%	1.5% minimum, 3% maximum	2
	Auxiliary and turn lanes	3%	3% maximum	3
	Crown break at centerline	4%	4% maximum	4
Shoulder cross-slope (on tangent sections)		4%	Shoulder cross-slope cannot be less than the adjacent lane, 6% max for paved or granular shoulders, 8% max for earth shoulders	4
Curb type (Refer to Section 3C-2)	Design speed = 50 or 55 mph	6-inch sloped	6-inch standard	6-inch sloped
	Design speed ≥ 60 mph	4-inch sloped	6-inch sloped	N/A
Foreslope (For fill areas greater than 40 ft, contact the Soils Design Section for assistance)	Adjacent to shoulder	10:1 for 4' then 6:1	3:1	10:1 for 4' then 6:1 to CZ
	Beyond standard ditch depth and design clear zone	3.5:1	3:1	3.5:1 (Or Flatter)
	Curbed roadways	2%	not steeper than 3:1	3.5:1 (Or Flatter)
Backslope (For cut areas greater than 25 feet, contact the Soils Design Section for assistance with backslope benches.)		3:1	2.5:1	3:1
Transverse Slopes	w/ drainage structures	8:1	6:1	8:1
	w/o drainage structures	10:1	6:1	10:1
Ditches (Refer to Section 3G-1)	Outside ditch (depth x width) (ft)	5 x 10	--	5 x 10
	Median ditch depth (ft)	4	2	UAC
Median width (ft) (Refer to Section 3E-1)		64	50	UAC
Bridge width—new*	Bridge length ≤ 200 ft	design lane widths + effective shoulder widths	design lane widths + effective shoulder wdths	N/A
	Bridge length > 200 ft	design lane widths + effective shoulder widths	design lane width + 4' right and left of the design lane widths	N/A
Bridge width—existing*		design lane widths + no less than 2 ft left and right	design lane widths + 2 ft left and right of the design lane widths	N/A
Vertical clearance (ft) (above lanes, shoulders and 25 feet left and right of the center of railroad tracks)	Over primary	16.5	16	N/A
	Over non-primary	16.5 at interchange locations, 15 at all other locations	14	N/A
	Over railroad	23.3	23.3	N/A
	Sign trusses and pedestrian crossings	17.5	17	N/A
Structural Capacity		Contact Office of Bridges and Structures	Contact Office of Bridges and Structures	N/A
Level of Service		B	B	B

*FHWA notification via email is required if acceptable criteria is not met on the NHS system (No formal design exception required)

Design year ADT = 14,325

Design Manual Section 1C-1
Last Updated: 04-29-19

Effective Shoulder Width and Type for Multilane Arterials

Preferred (Values shown in feet)					Acceptable (Values shown in feet)					Project Values
	Rural Roadways		Urban Roadways			Rural Roadways		Urban Roadways		
Auxiliary lanes or turn lanes with shoulders	6		6		Auxiliary lanes or turn lanes with shoulders	6		0		6
Turn lanes with curbs	6		See Section 3C-2			6		0		6
Expressways	Outside		Median Side		Expressways	Outside		Median Side		
	Effective Shoulder Width	Paved Width	Effective Shoulder Width	Paved Width		Effective Shoulder Width	Paved Width	Effective Shoulder Width	Paved Width	
Routes where bicycles are to be accommodated	10	10	6	6	Routes where bicycles are to be accommodated	8	4	4	4	Outside - 10 Paved Inside - 6 Paved
On roadways approaching urban areas (due to increased bike traffic)	10	10	6	6						
On all curves with a superelevation rate of 7.0% or greater	10	10	6	6	On all other Expressways (Multilane Arterials)	8	0*	4	4	
On roadways with design year ADT > 6500 vpd	10	6	6	6						
On all other Expressways (Multilane Arterials)	10	6	6	6						

*Requires safety edge-See Section 3C-6
Curbs should be located beyond the outer edge of the effective shoulder width in rural areas
Refer to Section 3C-2 for curb offsets in urban areas

Notes:

Roadway Design Speed (mph) =	50												
Design Manual Section 1C-1 Last Updated: 04-29-19	Design Criteria for High Speed Roadways												
Design Element			Preferred Criteria Design Speed, mph						Acceptable Criteria Design Speed, mph						Project Values
			50	55	60	65	70	75	50	55	60	65	70	75	
Stopping sight distance (ft) (Refer to Section 6D-1)			425	495	570	645	730	820	425	495	570	645	730	820	425
Minimum horizontal curve radius (ft) (Refer to Sections 2A-2 and 2A-3)	Method 5 superelevation and side friction distribution	e_{max} = 6%	833	060	1330	1660	2040	2500	833	1060	1330	1660	2040	2500	833
		e_{max} = 8%	--	--	--	--	--	--	758	960	1200	1480	1810	2210	N/A
Minimum vertical curve length (ft) (Refer to Section 2B-1)			150	165	180	195	210	225	150	165	180	195	210	225	150
Minimum rate of vertical curvature (K) (Refer to Section 2B-1)	crest vertical curves		84	114	151	193	247	312	84	114	151	193	247	312	84
	sag vertical curves	roadways without fixed-source lighting	96	115	136	157	181	206	96	115	136	157	181	206	N/A
		roadways with fixed-source lighting	96	115	136	157	181	206	54	66	78	91	106	121	96
Minimum gradient (%)	(Refer to Section 2B-1)		0.5						0.3% with a curb, 0.0% without a curb						0.30
Maximum gradient (%)	(Refer to Section 2B-1)	Urban roadways	4		3				7	6	6	--	--	--	N/A
		Rural roadways							5	5	4	4	4	4	4
		Interstates							5	5	4	4	4	4	N/A
Clear zone			See "Preferred Clear Zone" table in Section 8A-2						See "Acceptable Clear Zone" table in Section 8A-2						If 6:1 or Flatter Slopes - 22 feet If 4:1 or Flatter Slopes - 28 feet

Roundabout Design Criteria Documentation

Max Entering Design Speed	30 mph
Inscribed Circle Diameter (ICD)	200'
Circulatory Lane Widths	14' inside, 16' outside
Crown Location	Truck apron drains to the central island curb and gutter. Crown at 12' from inside lane of Roundabout
Entry Lane Width	US 30 - 12'-15' , Side Road - 14'-18'
Entry Radius	60' to 120'
Exit Lane Width	US 30 - 12'-15' , Side Road - 14'-18'
Exit Radius	>200'
Min. Central Island Diamater	75'
Apron Curb	4" Sloped
Outside Curb	6" Sloped***
Island Curb	6" Sloped
Jointing Approach	Isolated

QUESTIONS:

Road update regarding roundabout expert review from MSA.

District update on Daisy facility.

Does District want any of the removed pavement?

Existing shoulders are combination shoulders - 4-foot paved, 6-foot rock along the outside and 4-foot paved, 2-foot rock in the median. Does District want to match the existing shoulder type and width with this project?

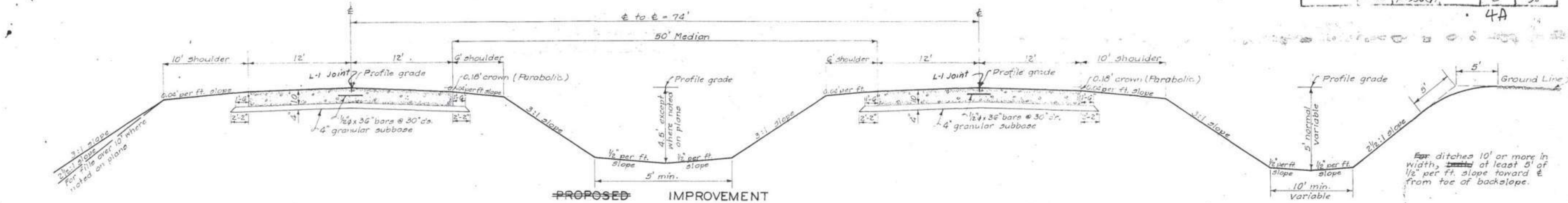
Will District coordinate the TCP checklist for this project?

Since this project will use safety funds, does FHWA need to be included on all letter distributions (e.g. the D2 letter)?

TYPICAL CROSS SECTIONS

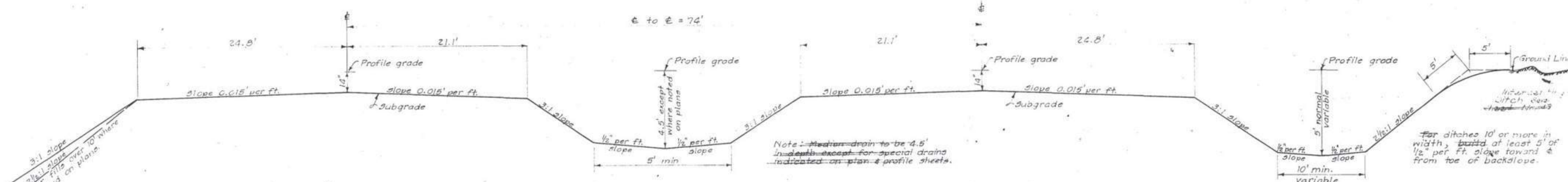
FED. ROAD DIV. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
	IOWA	F-936(7)		8	98

4A

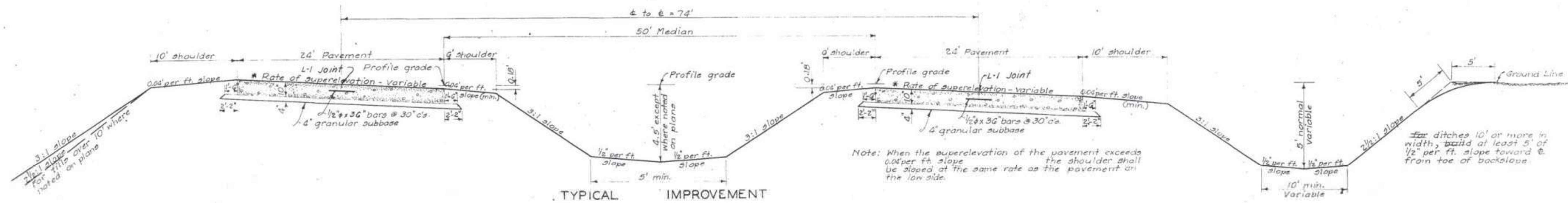


~~PROPOSED~~ IMPROVEMENT

STA. 826 + 28.25	TO	P.C. STA. 857 + 13.40	P.T. STA. 1017 + 24.88	TO	P.C. STA. 1053 + 64.65
P.T. STA. 863 + 13.40	TO	P.C. STA. 906 + 00.98	P.T. STA. 1062 + 47.99	TO	P.C. STA. 1099 + 57.42
P.T. STA. 912 + 18.58	TO	P.C. STA. 923 + 04.64	P.T. STA. 1105 + 70.74	TO	T.S. STA. 1157 + 67.90
P.T. STA. 929 + 04.76	TO	P.C. STA. 946 + 13.25	S.T. STA. 1181 + 90.40	TO	T.S. STA. 1190 + 33.43
P.T. STA. 952 + 25.00	TO	P.C. STA. 1010 + 74.80	S.T. STA. 1202 + 02.60	TO	T.S. STA. 1214 + 25.36

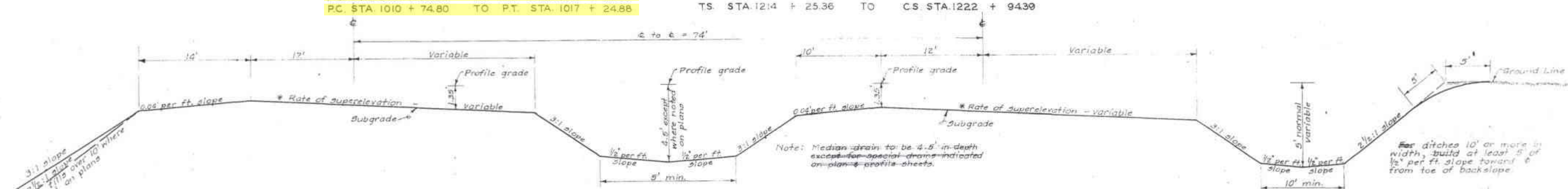


TYPICAL SUBGRADE



TYPICAL IMPROVEMENT

P.C. STA. 857 + 13.40	TO	P.T. STA. 863 + 13.40	P.C. STA. 1053 + 64.65	TO	P.T. STA. 1062 + 47.99
P.C. STA. 906 + 00.98	TO	P.T. STA. 912 + 18.58	P.C. STA. 1099 + 57.42	TO	P.T. STA. 1105 + 70.76
P.C. STA. 923 + 04.64	TO	P.T. STA. 929 + 04.76	T.S. STA. 1157 + 67.90	TO	S.T. STA. 1181 + 90.40
P.C. STA. 946 + 13.25	TO	P.T. STA. 952 + 25.00	T.S. STA. 1190 + 33.43	TO	S.T. STA. 1202 + 02.60
P.C. STA. 1010 + 74.80	TO	P.T. STA. 1017 + 24.88	T.S. STA. 1214 + 25.36	TO	C.S. STA. 1222 + 94.39



TYPICAL SUPERELEVATION SUBGRADE

Note: On superelevated curves the superelevation revolves on the inside edge of the pavement.

* See Sheet No. 7 for superelevation

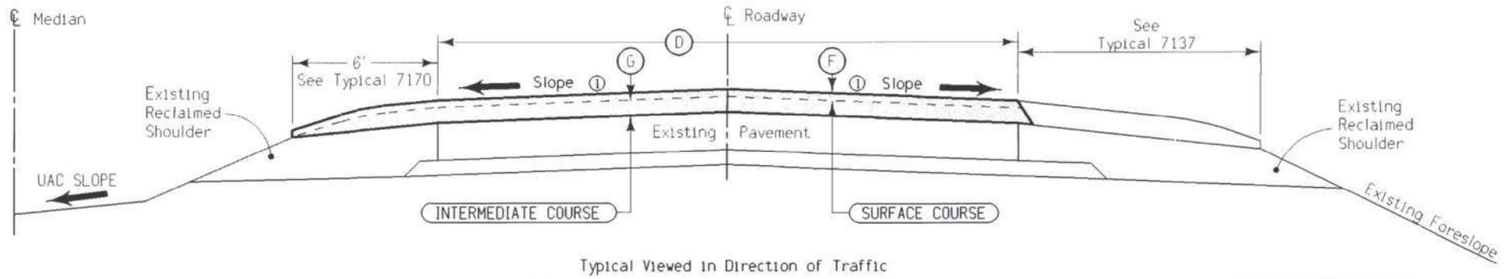
Boone Co. Proj. No. F-936(7) Sheet 4A

FILE NO. 98765	ENGLISH	DESIGN TEAM Rhoads\Tamrakar\Prindle	BOONE COUNTY	PROJECT NUMBER HSIPX-030-4(113)--3L-08	SHEET NUMBER B.1

11:46:04 AM 5/1/2024 jprindl pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\0803002024\Design\CADD_Files\Sheet_Files\SHT_08030113Z08_B01.dgn

2642
Special

HMA RESURFACING



Typical Viewed in Direction of Traffic

DESIGN RATES	
ITEM	RATE
Surface Course	145 lbs./cu. ft.
Intermediate Course	145 lbs./cu. ft.
Tack Coat	0.05 gal./sq. yd.

(A) EQUATION:
Sta. 2785+47.3 = Sta. 787+70.9

TABLE OF DESIGN QUANTITIES ③ Per Station

LOCATION			DIMENSIONS			TACK COAT	ASPHALT BINDER	HOT MIX ASPHALT Tons	
ROAD IDENTIFICATION	STATION TO STATION		(F)	(G)	(D)	Gallons ②	Tons	SURFACE	INTERMEDIATE
US 30 (EBL)	2750+00 (A)	860+13±	2.0"	2.5"	24.0'	33.64	5.44	36.42	59.08 ⑤
US 30 (WBL)	2750+00 (A)	860+13±	2.0"	2.5"	24.0'	33.64	5.44	36.42	59.08 ⑤

Notes:

① Finished slope shall match existing pavement except that the maximum allowable slope is 3.0%, minimum allowable slope is 2.0%. Section may be Modified as directed by the engineer through areas of special shaping.

Refer to tabulation listing of superelevated curves and Standard Road Plans for additional requirements through superelevated curves.

② Tack Coat estimated for 2 applications.

③ Rates include quantity for Median Shoulder.

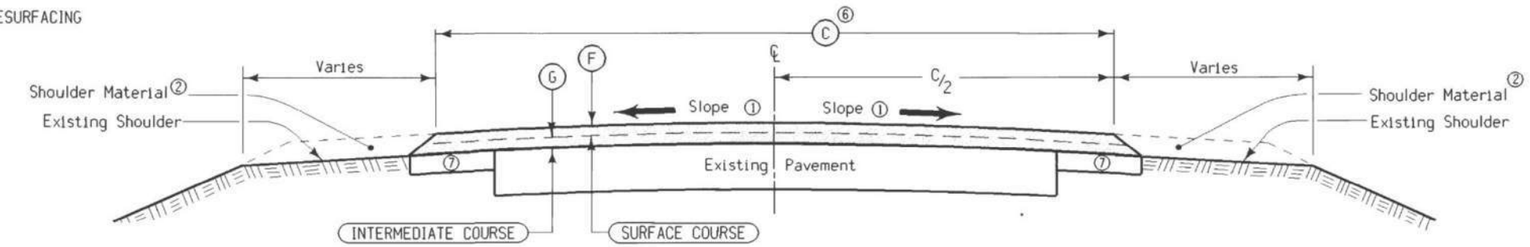
④ Refer to sheets L.01-L.07 for Paved Crossover details and quantities.

⑤ Includes 16.6 tons for crown correction from existing 1.5% slope to the proposed 2% slope.

TYPICAL CROSS SECTION FOR HMA RESURFACING

2602
Modified

HMA RESURFACING



Typical Viewed in Direction of Traffic

DESIGN RATES	
ITEM	RATE
Surface Course	145 lbs./cu. ft.
Intermediate Course	145 lbs./cu. ft.
Tack Coat	0.05 gal./sq. yd.

TABLE OF DESIGN QUANTITIES Per Station

LOCATION			(F)	(G)	(C)	TACK COAT	ASPHALT BINDER	HOT MIX ASPHALT (Tons)	
ROAD IDENTIFICATION	STATION TO STATION		Inches	Inches	Feet	Gallons ③	Tons	SURFACE	INTERMEDIATE
US 30 (EBL)	860+13±	1152+00 (A)	2.0	2.5	32.0	36.16	5.95	38.95	65.67 ⑤
US 30 (WBL)	860+13±	1152+00 (A)	2.0	2.5	32.0	36.16	5.95	38.95	65.67 ⑤

(A) EQUATION:
Sta. 1105+70.74 = Sta. 1105+63.98
Lengthens Line 6.76'

Notes:

① Finished slope shall match existing pavement except that the maximum allowable slope is 3.0%, minimum allowable slope is 2.0%. Section may be modified as directed by the Engineer through areas of special shaping.

Refer to tabulation listing of superelevated curves and Standard Road Plans for additional requirements through superelevated curves.

② Shoulder material as specified elsewhere in these plans; refer to Typicals 7151, 7151A, and 7170A.

③ Tack Coat estimated for 2 applications.

④ Refer to sheets L.01-L.07 for Paved Crossover details and quantities.

⑤ Includes 16.6 tons for crown correction of the existing 24' PCC pavement. (from existing 1.5% slope to the proposed 2% slope)

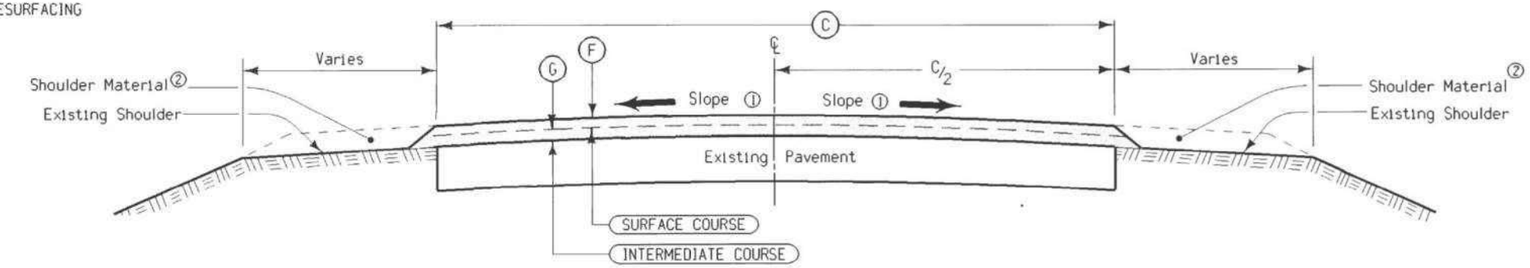
⑥ Width includes 24' pavement and 2-4' retrofit shoulders (refer to Typicals 7151 and 7151A on sheet B.08.

⑦ Proposed Retrofit Shoulder, refer to Typicals 7151 and 7151A on sheet B.08.

TYPICAL CROSS SECTION HMA RESURFACING

2602A
Modified

HMA RESURFACING



DESIGN RATES	
ITEM	RATE
Surface Course	145 lbs./cu. ft.
Intermediate Course	145 lbs./cu. ft.
Tack Coat	0.05 gal./sq. yd.

TABLE OF DESIGN QUANTITIES Per Station

LOCATION			(F)	(G)	(C)	TACK COAT	ASPHALT BINDER	HOT MIX ASPHALT (Tons)	
ROAD IDENTIFICATION	STATION TO STATION		Inches	Inches	Feet	Gallons ③	Tons	SURFACE	INTERMEDIATE
IA 17	634+45	645+03	1.5	1.5	24	27.08	3.44	21.86	38.69 ④
IA 17	645+93	648+26	1.5	1.5	30 (A)	33.76	4.07	27.30	44.13 ④
IA 17	652+40	654+72	1.5	1.5	30 (A)	33.76	4.07	27.30	44.13 ④
IA 17	655+36	665+75	1.5	1.5	24	27.08	3.44	21.86	38.69 ④

Notes:

① Finished slope shall match existing pavement except that the maximum allowable slope is 3.0%, minimum allowable slope is 2.0%. Section may be modified as directed by the Engineer through areas of special shaping.

Refer to tabulation listing of superelevated curves and Standard Road Plans for additional requirements through superelevated curves.

② Shoulder material as specified elsewhere in these plans.

③ Tack Coat estimated for 2 applications.

④ Includes 16.6 tons for crown correction of the existing 24' PCC pavement. (from existing 1.5% slope to the proposed 2% slope)

(A) Width includes 24' pavement and 2-3' shoulder strengthening.

TYPICAL CROSS SECTION HMA RESURFACING

DESIGN RATES	
ITEM	RATE
Surface Course	145 lbs./cu. ft.
Intermediate Course	145 lbs./cu. ft.
Tack Coat	0.05 gal./sq. yd.

HMA RESURFACING

Note:

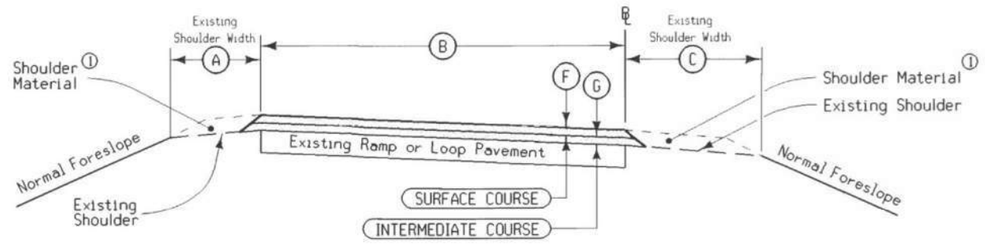
Normal section shown may be appropriately modified at areas specifically designated by the engineer, such as intersections or superelevated curves.

Section view is in the direction of traffic.

Refer to other drawings for details of shoulder design and construction.

① Shoulder material as specified elsewhere in these plans; refer to typical 7135 for "Type 'B' Granular Surfaced Shoulder".

2616
Modified



TYPICAL CROSS SECTION
HMA RESURFACING
RAMP or LOOP

TABLE OF DESIGN QUANTITIES Per Station

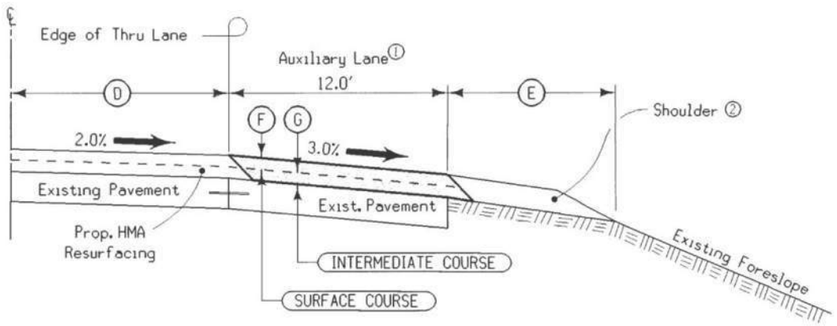
INTERCHANGE	STATION TO STATION		RAMP/ LOOP IDENT.	DENSITY 94%	DENSITY 95%	DENSITY 96%	(A) Feet	(B) Feet	(C) Feet	(G) Inches	(F) Inches	TACK COAT Gallons ③	ASPHALT BINDER Tons	HOT MIX ASPHALT Tons SURFACE	HOT MIX ASPHALT Tons INTERMEDIATE
IA 17	1522+66	1537+25	A	X			4	16.0	6	1.5	1.5	18.20	1.70	14.62	14.84
IA 17	2510+00	2524+84	B	X			4	16.0	6	1.5	1.5	18.20	1.70	14.62	14.84
IA 17	3511+05	3524+82	C	X			4	16.0	6	1.5	1.5	18.20	1.70	14.62	14.84
IA 17	4522+60	4535+95	D	X			4	16.0	6	1.5	1.5	18.20	1.70	14.62	14.84

HMA RESURFACING

2205
Modified

(A) Includes 120' Taper (10:1 Ratio)

LOCATION ROAD IDENTIFICATION	STATION TO STATION		SIDE	(D) Feet	(E) Feet	(F) Inches	(G) Inches
US 30 - EBL	2750+90±	2754+37± (A)	Lt.	12.0	6.0	2	2.5
US 30 - WBL	2752+32±	2755+80± (A)	Rt.	12.0	6.0	2	2.5
US 30 - WBL	891+90±	896+40± (A)	Lt.	12.0	6.0	2	2.5
US 30 - EBL	946+31±	950+57± (A)	Lt.	12.5	6.0	2	2.5
US 30 - WBL	947+80±	952+06± (A)	Rt.	12.5	6.0	2	2.5
US 30 - EBL	988+70±	992+73± (A)	Lt.	12.0	6.0	2	2.5
US 30 - WBL	990+90±	995+08± (A)	Rt.	12.0	6.0	2	2.5



Notes:

① Details shall be similar for construction on either side (by stationing) of roadway.

Pavement for auxiliary lane shall be constructed according to requirements specified for through roadway pavement.

② Refer to other drawings for details of shoulder design and construction.

③ Refer to sheets L.06, L.07 for details of resurfacing at paved median intersections.

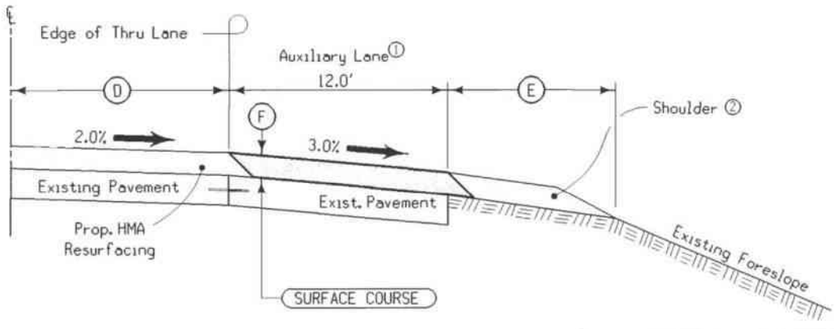
TYPICAL HALF SECTION
HMA RESURFACING
EXISTING AUXILIARY LANE

HMA RESURFACING

2205A
Modified

(A) Includes 120' Taper (10:1 Ratio)

LOCATION ROAD IDENTIFICATION	MILEPOST TO MILEPOST		SIDE	(D) Feet	(E) Feet	(F) Inches
US 30 - EBL (580 Ave.)	152.864	152.957 (A)	Lt.	12.0	6.0	2
US 30 - EBL (590 Ave.)	153.823	154.016 (A)	Lt.	12.0	6.0	2
US 30 - EBL (600 Ave.)	154.873	154.966 (A)	Lt.	12.0	6.0	2
US 30 - EBL (610 Ave.)	155.875	155.968 (A)	Lt.	12.0	6.0	2



Notes:

① Details shall be similar for construction on either side (by stationing) of roadway.

Pavement for auxiliary lane shall be constructed according to requirements specified for through roadway pavement.

② Refer to other drawings for details of shoulder design and construction.

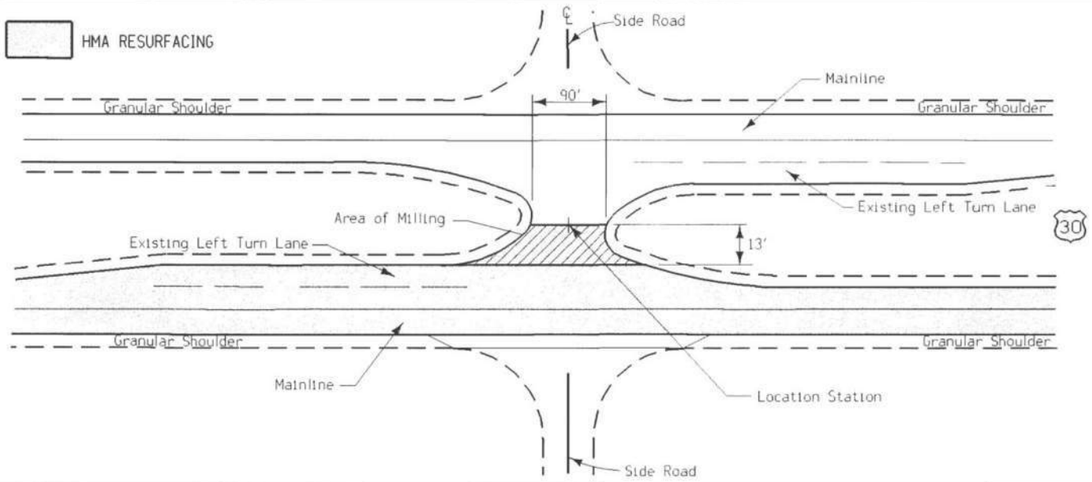
③ Refer to Typical INT-1 for details of resurfacing at paved median intersections.

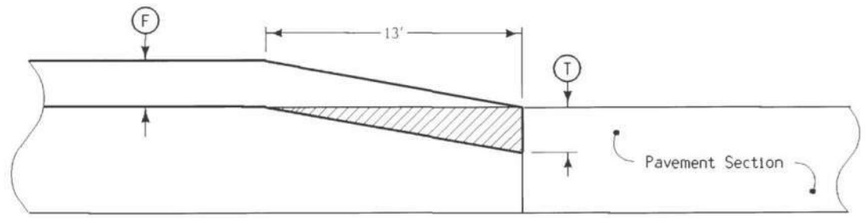
Division 3 - Story Co.
MP-30-1(702)151--76-85

TYPICAL HALF SECTION
HMA RESURFACING
EXISTING AUXILIARY LANE

INT-1

Not to Scale





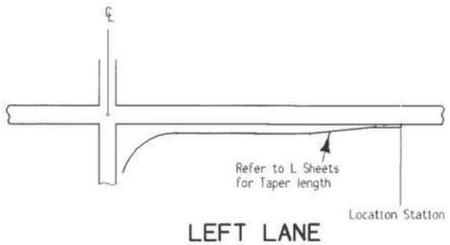
(F) Surface Course
(T) Milling

Location Station	(L) Feet	(S) Inches	(T) Inches
US 30 (580 Ave.)	100	2.0	2.0
US 30 (590 Ave.)	100	2.0	2.0
US 30 (600 Ave.)	100	2.0	2.0
US 30 (610 Ave.)	100	2.0	2.0

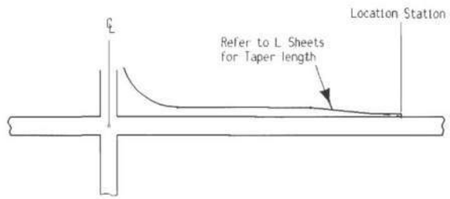
Division 3 - Story Co.
MP-30-1(702)151--76-85

EASTBOUND LANE
HMA RESURFACING DETAILS
Typical Intersection

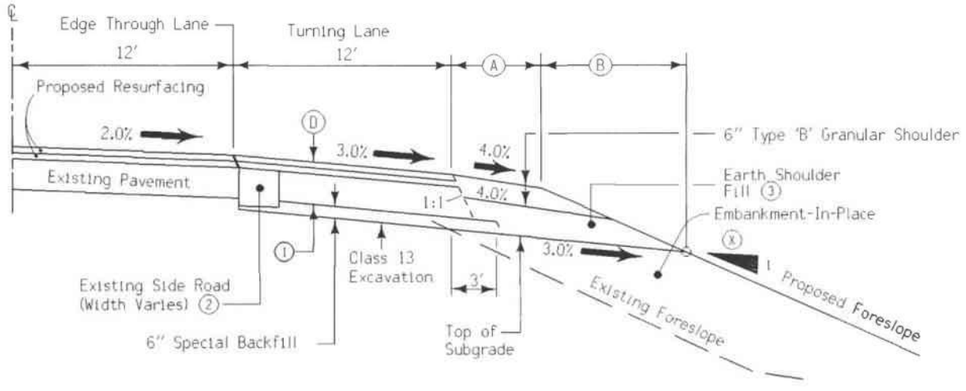
LRTL-1



LEFT LANE



RIGHT LANE



TYPICAL HALF SECTION
HMA LEFT/RIGHT TURNING LANE

(A) - Division 1
(B) - Division 2
(C) - 6:1 and /or 6:1/3:1 Barnroof (refer to cross sections)
(D) - 207 Cu. Yds. of cut is available
(E) - 83 Cu. Yds. of cut is available
(F) - 237 Cu. Yds. of cut is available
(G) - 287 Cu. Yds. of cut is available
(H) - 82 Cu. Yds. of cut is available
(I) - 256 Cu. Yds. of cut is available

Notes:
Normal section shown may be Modified appropriately in areas of superelevated curves or other locations specifically designated by the engineer.

See cross sections and sheets 0.01, 0.03-0.06 and L.01-L.05 for additional information.

(1) Pavement includes thickness of surface (2.0") and intermediate (2.5") plus base material.

(2) To be included with removal.

(3) Material to be included in the price bid for "Embankment-In-Place" and shaping to be bid as "Earth Shoulder Finishing".

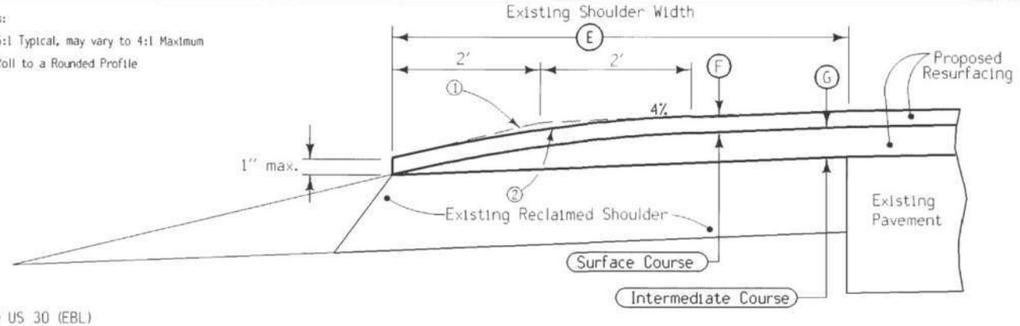
(4) Includes taper.

(5) HMA 1M (ESAL) Base

						TOTAL QUANTITIES PER LOCATION								
LOCATION STATION	SIDE	(D)	(A)	(B)	(X)	HOT MIX ASPHALT COURSES Tons (4)			TACK COAT	ASPHALT BINDER	SPECIAL BACKFILL	CLASS 13 EXCAVATION	EMBANK-IN-PLACE	SHOULDER FINISHING	GRANULAR SHOULDER
		Inches	Feet	Feet		SURFACE	INTERMEDIATE	BASE (5)	Gallons	Tons	Tons	Cu.Yds.	Cu.Yds.	Stas.	Tons
(A) 2756+80 (WBL)	Rt.	10.0	6.0	9.30	(C)	24	29	67	44	7	84	24	230	1.6	49
(A) 806+11 (EBL)	Lt.	10.0	6.0	9.30	(C)	36	45	103	67	11	129	19	354	2.5	75
(A) 856+80 (EBL)	Lt.	10.0	6.0	9.30	(C)	36	45	104	68	11	130	30	357	2.5	76
(A) 863+45 (WBL)	Rt.	11.5	6.0	10.25	(C)	36	45	134	69	13	131	41	360	2.5	76
(A) 868+24 (WBL)	Lt.	11.5	6.0	10.25	(C)	112	140	413	211	39	405	326	3365 (D)	7.7	235
(B) 931+21 (EBL)	Lt.	10.0	6.0	9.30	(C)	36	45	103	67	11	129	60	185	2.5	75
(B) 962+25 (EBL)	Lt.	10.0	6.0	9.30	(C)	36	45	103	67	11	129	60	353	2.5	75
(B) 968+85 (WBL)	Rt.	10.0	6.0	9.30	(C)	36	45	103	68	11	130	60	185	2.5	75
(B) 972+60 (WBL)	Lt.	11.5	6.0	10.25	(C)	84	104	308	158	29	302	250	170 (E)	5.8	175
(B) 985+30 (EBL)	Rt.	11.5	6.0	10.25	(C)	73	91	270	138	26	265	229	85 (F)	5.0	154
(B) 998+65 (WBL)	Lt.	11.5	6.0	10.25	(C)	79	98	291	149	28	285	237	658 (G)	5.4	165
(B) 1012+20 (EBL)	Rt.	10.0	6.0	9.30	(C)	86	107	248	162	26	312	203	854	5.6	170
(B) 1012+40 (EBL)	Lt.	11.5	6.0	10.25	(C)	81	101	299	153	29	293	129	373 (H)	5.9	181
(B) 1023+10 (WBL)	Rt.	10.0	6.0	9.30	(C)	43	54	124	81	13	155	41	425	3.0	90
(B) 1026+80 (WBL)	Lt.	11.5	6.0	10.25	(C)	105	130	385	197	37	378	289	5148 (I)	7.2	219
(A) 1067+86 (EBL)	Lt.	10.0	6.0	9.30	(C)	36	45	103	68	11	129	30	354	2.5	75

7170
Special

Notes:
① 6:1 Typical, may vary to 4:1 Maximum
② Roll to a Rounded Profile



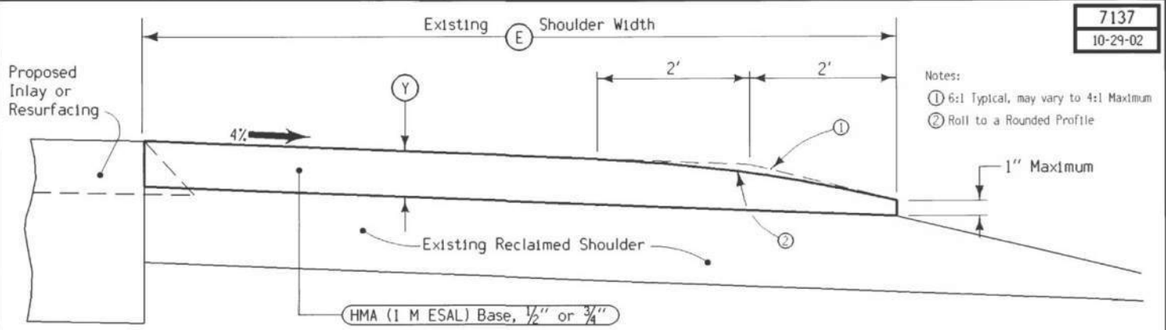
(A) US 30 (EBL)
(B) US 30 (WBL)

STATION TO STATION		(F) Inches	(G) Inches	(E) Feet
2750+00 (A)	2750+90	2.0	2.5	6.0
2753+60 (A)	806+11	2.0	2.5	6.0
810+50 (A)	819+43	2.0	2.5	6.0
826+62 (A)	856+80	2.0	2.5	6.0
2750+00 (B)	2753+00	2.0	2.5	6.0
2756+80 (B)	819+13	2.0	2.5	6.0
827+57 (B)	860+00	2.0	2.5	6.0

DESIGN RATES	
ITEM	RATE
Surface Course	145 lbs./cu. ft.
Intermediate Course	145 lbs./cu. ft.
Tack Coat	0.05 gal./sq. yd.

HMA SHOULDER RESURFACING (MEDIAN SHOULDER)

7137
10-29-02



Notes:
① 6:1 Typical, may vary to 4:1 Maximum
② Roll to a Rounded Profile

STATION TO STATION		RIGHT OR LEFT / INSIDE OR OUTSIDE	(Y) Inches	(E) Feet	TACK COAT Gallons	ASPHALT BINDER Tons	HOT MIX ASPHALT Tons
Eastbound Lane							
2750+00	819+43	Outside	4.5	10.0	11.12	2.65	44.24
826+62	860+00	Outside	4.5	10.0	11.12	2.65	44.24
Westbound Lane							
2750+00	819+13	Outside	4.5	10.0	11.12	2.65	44.24
827+57	860+00	Outside	4.5	10.0	11.12	2.65	44.24

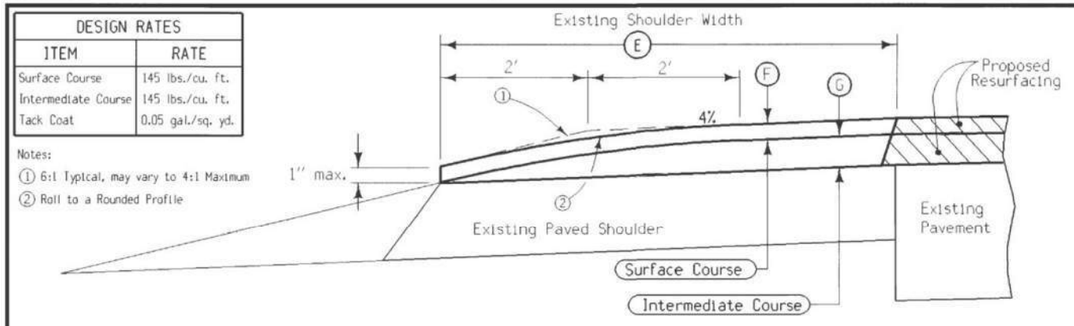
DESIGN RATES	
ITEM	RATE
Base Course	145 lbs./cu. ft.
Tack Coat	0.05 gal./sq. yd.

HMA (OUTSIDE) SHOULDER RESURFACING

7170A
Special

DESIGN RATES	
ITEM	RATE
Surface Course	145 lbs./cu. ft.
Intermediate Course	145 lbs./cu. ft.
Tack Coat	0.05 gal./sq. yd.

Notes:
① 6:1 Typical, may vary to 4:1 Maximum
② Roll to a Rounded Profile



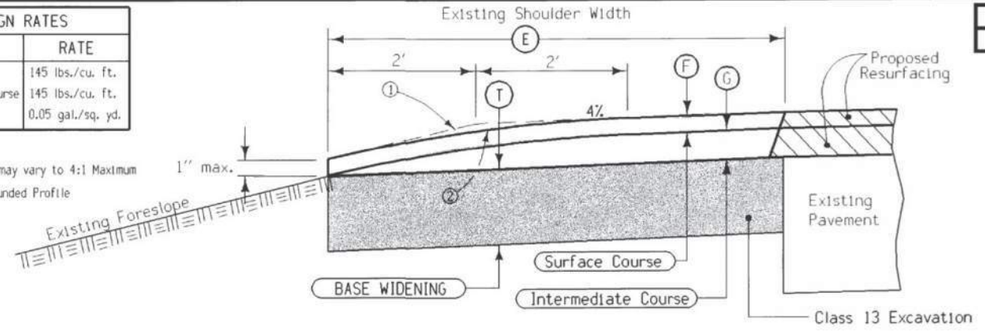
(A) US 30 (EBL)
(B) US 30 (WBL)
(C) Varies from 6' to 10'

TABLE OF DESIGN QUANTITIES — Per Location

STATION TO STATION		SIDE	(F) Inches	(G) Inches	(E) Feet	ASPHALT BINDER Tons	HOT MIX ASPHALT Tons SURFACE	HOT MIX ASPHALT Tons INTERMEDIATE
988+57 (A)	993+50	Median	2.0	2.5	6.0	1	12	8
988+56 (B)	997+00	Median	2.0	2.5	6.0	2	21	13
991+22 (A)	991+35	Outside	2.0	2.5	(C)	0.1	1	0.5
992+29 (A)	993+20	Outside	2.0	2.5	7.0	0.4	4	2
1018+77 (A)	1019+03	Outside	2.0	2.5	(C)	0.1	1	0.8
1019+99 (A)	1020+98	Outside	2.0	2.5	10.0	0.8	7	6
949+65 (B)	955+00	Outside	2.0	2.5	10.0	4	38	32
990+68 (B)	991+24	Outside	2.0	2.5	6.0	0.2	2	1
1017+43 (B)	1018+52	Outside	2.0	2.5	10.0	0.8	8	6

HMA SHOULDER RESURFACING (MEDIAN/OUTSIDE SHOULDER)

7170B
Special

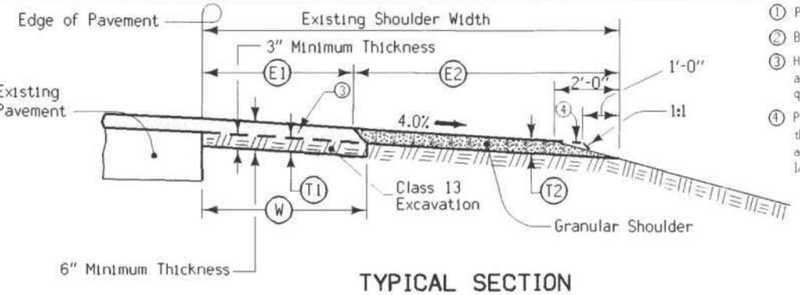


TYPICAL CROSS SECTION HMA PAVED SHOULDER RETURN

(A) East and west side of crossover, refer to L sheets.

TABLE OF DESIGN QUANTITIES — Per Location

LOCATION STATION	SIDE	(F) Inches	(G) Inches	(E) Feet	(T) Inches	ASPHALT BINDER Tons	HOT MIX ASPHALT Tons SURFACE	HOT MIX ASPHALT Tons INTERMEDIATE	HOT MIX ASPHALT Tons BASE	CLASS 13 EXCAVATION Cu. Yds.	REMARKS
2753+35 (A)	Median	2.0	2.5	6.0	5.5	2	7	3	18	9	Co. Rd. R18
860+13 (A)	Median	2.0	2.5	6.0	5.5	3	13	6	37	19	Montana Road
934+51 (A)	Median	2.0	2.5	6.0	5.5	4	14	6	40	21	Kate Shelley Dr.
949+19 (A)	Median	2.0	2.5	6.0	5.5	3	11	5	31	16	South Story St.
965+78 (A)	Median	2.0	2.5	6.0	5.5	3	13	6	38	19	South Linn St.
1019+23 (A)	Median	2.0	2.5	6.0	5.5	4	15	6	41	21	Snedden Dr./Quill Ave.
1071+16 (A)	Median	2.0	2.5	6.0	5.5	4	14	6	40	21	R Ave.

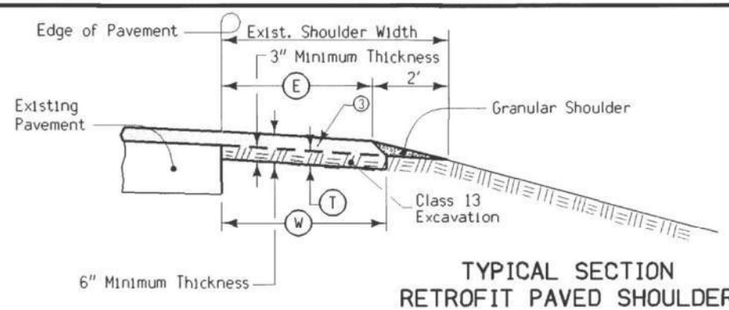


7151
Modified

① Per side per station.
② Bid Items.
③ HMA quantities above HMA base are included with mainline HMA quantities.
④ Place and compact material to the dashed lines; then blade and shape to foreslope that portion above the solid line in the outer 2' and roll with loaded truck tire.

TYPICAL SECTION RETROFIT PAVED SHOULDER

LOCATION				E1	E2	T1	T2	W	QUANTITIES ①				
ROAD IDENTIFICATION	STATION TO STATION		SIDE	Feet	Feet	Inches	Inches	Feet	HMA BASE ② WIDENING Tons	TACK COAT Gals.	ASPHALT BINDER Tons	GRANULAR SHOULDER ② Tons	CLASS 13 EXCAVATION Cu. Yds.
US 30 (EBL)	861+00	985+30	Outside	4.0	6.0	3.0	4.5	4.38	7.94	---	0.48	18	4.05
US 30 (EBL)	992+90	1012+30	Outside	4.0	6.0	3.0	4.5	4.38	7.94	---	0.48	18	4.05
US 30 (EBL)	1020+98	1104+90	Outside	4.0	6.0	3.0	4.5	4.38	7.94	---	0.48	18	4.05
US 30 (EBL)	1145+95	1152+00	Outside	4.0	6.0	3.0	4.5	4.38	7.94	---	0.48	18	4.05
US 30 (WBL)	868+24	947+25	Outside	4.0	6.0	3.0	4.5	4.38	7.94	---	0.48	18	4.05
US 30 (WBL)	955+00	964+50	Outside	4.0	6.0	3.0	4.5	4.38	7.94	---	0.48	18	4.05
US 30 (WBL)	972+60	990+70	Outside	4.0	6.0	3.0	4.5	4.38	7.94	---	0.48	18	4.05
US 30 (WBL)	991+24	992+32	Outside	4.0	6.0	3.0	4.5	4.38	7.94	---	0.48	18	4.05
US 30 (WBL)	998+00	1017+43	Outside	4.0	6.0	3.0	4.5	4.38	7.94	---	0.48	18	4.05
US 30 (WBL)	1024+00	1101+05	Outside	4.0	6.0	3.0	4.5	4.38	7.94	---	0.48	18	4.05
US 30 (WBL)	1142+35	1152+00	Outside	4.0	6.0	3.0	4.5	4.38	7.94	---	0.48	18	4.05

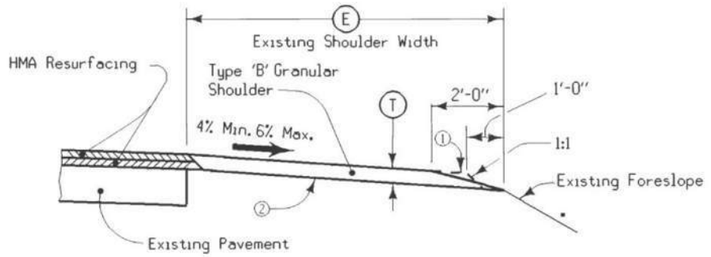


7151A
Modified

① Per side per station.
② Bid Items.
③ HMA quantities above HMA base are included with mainline HMA quantities.

TYPICAL SECTION RETROFIT PAVED SHOULDER

LOCATION				E	T	W	QUANTITIES ①				
ROAD IDENTIFICATION	STATION TO STATION		SIDE	Feet	Inches	Feet	HMA BASE ② WIDENING Tons	TACK COAT Gals.	ASPHALT BINDER Tons	GRANULAR SHOULDER ② Tons	CLASS 13 EXCAVATION Cu. Yds.
US 30 (EBL)	860+00	892+30	Inside	4.0	3.0	4.38	7.94	---	0.48	4	4.05
US 30 (EBL)	893+15	931+21	Inside	4.0	3.0	4.38	7.94	---	0.48	4	4.05
US 30 (EBL)	935+00	946+31	Inside	4.0	3.0	4.38	7.94	---	0.48	4	4.05
US 30 (EBL)	950+57	962+25	Inside	4.0	3.0	4.38	7.94	---	0.48	4	4.05
US 30 (EBL)	966+00	988+57	Inside	4.0	3.0	4.38	7.94	---	0.48	4	4.05
US 30 (EBL)	993+50	1012+40	Inside	4.0	3.0	4.38	7.94	---	0.48	4	4.05
US 30 (EBL)	1019+70	1067+86	Inside	4.0	3.0	4.38	7.94	---	0.48	4	4.05
US 30 (EBL)	1071+70	1152+00	Inside	4.0	3.0	4.38	7.94	---	0.48	4	4.05
US 30 (WBL)	863+45	891+90	Inside	4.0	3.0	4.38	7.94	---	0.48	4	4.05
US 30 (WBL)	896+40	934+00	Inside	4.0	3.0	4.38	7.94	---	0.48	4	4.05
US 30 (WBL)	935+00	965+00	Inside	4.0	3.0	4.38	7.94	---	0.48	4	4.05
US 30 (WBL)	968+85	988+56	Inside	4.0	3.0	4.38	7.94	---	0.48	4	4.05
US 30 (WBL)	997+00	1018+70	Inside	4.0	3.0	4.38	7.94	---	0.48	4	4.05
US 30 (WBL)	1023+10	1070+50	Inside	4.0	3.0	4.38	7.94	---	0.48	4	4.05
US 30 (WBL)	1071+70	1152+00	Inside	4.0	3.0	4.38	7.94	---	0.48	4	4.05



7135
10-02-01

Notes:
Quantities have been determined on the basis of a design weight of 140 lbs. per cubic foot.

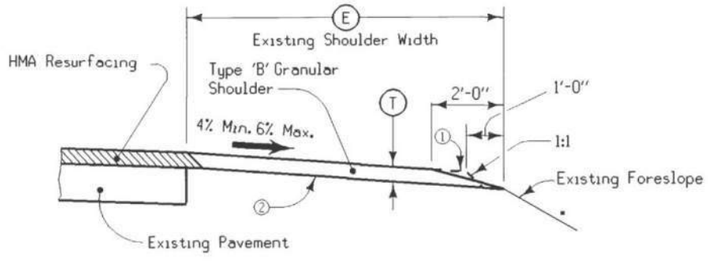
① Place and compact material to the dashed lines; then blade and shape to foreslope that portion above the solid line in the outer 2' and roll with loaded truck tire.
② Existing shoulder surface to be shaped to a uniform cross slope prior to placing granular shoulder material. Shape to ensure the thickness of the granular shoulder material is not less than the thickness of the resurfacing. Shaping shall be paid for in accordance with Section 2121 of the Standard Specifications.
③ Tons per side per station.

TYPICAL SECTION FOR TYPE 'B' GRANULAR SHOULDER

ADJACENT TO HOT MIX ASPHALT RESURFACING

LOCATION				TONS	T	E
ROAD IDENTIFICATION	STATION TO STATION		SIDE	③	Inches	Feet
US 30 (EBL)	2750+90	2753+00	Median	18	4.5	6.0
US 30 (WBL)	2753+60	2754+60	Median	18	4.5	6.0
US 30 (EBL)	891+90	892+30 (A)	Median	18	4.5	6.0
US 30 (EBL)	893+15	893+35 (A)	Median	18	4.5	6.0
US 30 (WBL)	893+35	896+40	Median	18	4.5	6.0
US 30 (EBL)	946+31	948+57	Median	18	4.5	6.0
US 30 (WBL)	947+25	948+80 (B)	Outside	30	4.5	10.0
US 30 (EBL)	947+80	948+57 (A)	Median	18	4.5	6.0
US 30 (EBL)	949+80	950+57 (A)	Median	18	4.5	6.0
US 30 (WBL)	949+80	952+06	Median	18	4.5	6.0
IA 17	634+45	642+95	Lt.	23	3.0	10.0
IA 17	645+08	648+73	Lt.	16	3.0	7.0
IA 17	651+92	655+17	Lt.	16	3.0	7.0
IA 17	657+62	665+75	Lt.	23	3.0	10.0
IA 17	634+45	643+08	Rt.	23	3.0	10.0
IA 17	645+03	648+73	Rt.	16	3.0	7.0
IA 17	651+92	655+36	Rt.	16	3.0	7.0
IA 17	657+44	665+75	Rt.	23	3.0	10.0
IA 17 Interchange - Ramp A	1523+57	1537+25 (C)	Lt.	13	3.0	6.0
IA 17 Interchange - Ramp A	1524+18	1534+90	Rt.	8	3.0	4.0
IA 17 Interchange - Ramp B	2511+80	2523+33	Lt.	8	3.0	4.0
IA 17 Interchange - Ramp B	2510+00	2523+83 (C)	Rt.	13	3.0	6.0
IA 17 Interchange - Ramp C	3511+05	3523+71 (D)	Lt.	13	3.0	6.0
IA 17 Interchange - Ramp C	3513+00	3523+30	Rt.	8	3.0	4.0
IA 17 Interchange - Ramp D	4524+16	4534+00	Lt.	8	3.0	4.0
IA 17 Interchange - Ramp D	4523+59	4535+95 (D)	Rt.	13	3.0	6.0
IA 17 Interchange Ramp Tapers (2-520' and 2-993' in length)			Both	18	4.5	6.0

(A) Radius Return
(B) Taper and Radius Return
(C) Plus 520' Taper
(D) Plus 993' Taper



7135C
Modified

Notes:
Quantities have been determined on the basis of a design weight of 140 lbs. per cubic foot.

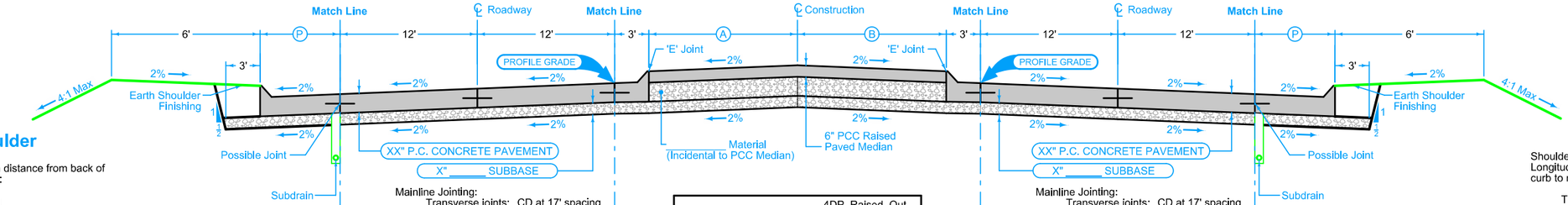
① Place and compact material to the dashed lines; then blade and shape to foreslope that portion above the solid line in the outer 2' and roll with loaded truck tire.
② Existing shoulder surface to be shaped to a uniform cross slope prior to placing granular shoulder material. Shape to ensure the thickness of the granular shoulder material is not less than the thickness of the resurfacing. Shaping shall be paid for in accordance with Section 2121 of the Standard Specifications.
③ Tons per side per station.

TYPICAL SECTION FOR TYPE 'B' GRANULAR SHOULDER

ADJACENT TO HOT MIX ASPHALT RESURFACING

LOCATION				TONS	T	E
ROAD IDENTIFICATION	MILEPOST TO MILEPOST		SIDE	③	Inches	Feet
US 30 (WBL)	151.38	151.92	Outside	16	2.0	10.0
US 30 (WBL)	151.38	151.92	Inside	9	2.0	6.0
US 30 (EBL)	152.19	154.18	Outside	16	2.0	10.0
US 30 (EBL)	152.19	154.18	Inside	9	2.0	6.0
US 30 (EBL)	154.19	156.00	Outside	16	2.0	10.0
US 30 (EBL)	154.19	156.00	Inside	9	2.0	6.0

Division 3 - Story Co.
MP-30-1(702)151--76-85



Curbed Shoulder

Shoulder jointing:
Longitudinal joint not required when distance from back of curb to nearest joint is less than 16':

Transverse: C at 15' spacing
Single pour: L-2
Staged : KT-2

1R_Curb_ 10-18-22

BEGIN STATION	END STATION	(P) Feet	Curb Type See PV-102
XXXX+XX.XX	XXXX+XX.XX	X.X	X" Sloped

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

BEGIN STATION	END STATION
XXXX+XX.XX	XXXX+XX.XX

4DP_Raised_Out_ 04-21-20

BEGIN STATION	END STATION	(A) Feet	(B) Feet
XXXX+XX.XX	XXXX+XX.XX	X	X

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

BEGIN STATION	END STATION
XXXX+XX.XX	XXXX+XX.XX

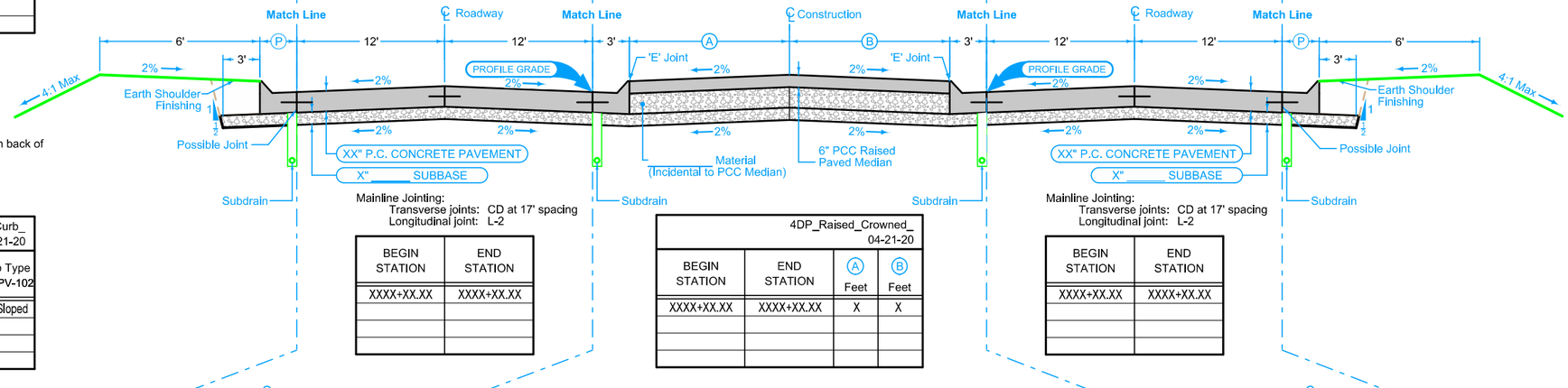
Curbed Shoulder

Shoulder jointing:
Longitudinal joint not required when distance from back of curb to nearest joint is less than 16':

Transverse: C at 15' spacing
Single pour: L-2
Staged : KT-2

1R_Curb_ 10-18-22

BEGIN STATION	END STATION	(P) Feet	Curb Type See PV-102
XXXX+XX.XX	XXXX+XX.XX	X	X" Sloped



Curbed Shoulder

Shoulder Jointing:
Longitudinal joint not required when distance from back of curb to nearest joint is less than 15':

Single pour: L-2
Staged : KT-2
Transverse: C at 17' spacing

2_Curb_ 04-21-20

STATION TO STATION		(P) Feet	Curb Type See PV-102
XXXX+XX.XX	XXXX+XX.XX	X.X	X" Sloped

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

BEGIN STATION	END STATION
XXXX+XX.XX	XXXX+XX.XX

4DP_Raised_Crowned_ 04-21-20

BEGIN STATION	END STATION	(A) Feet	(B) Feet
XXXX+XX.XX	XXXX+XX.XX	X	X

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

BEGIN STATION	END STATION
XXXX+XX.XX	XXXX+XX.XX

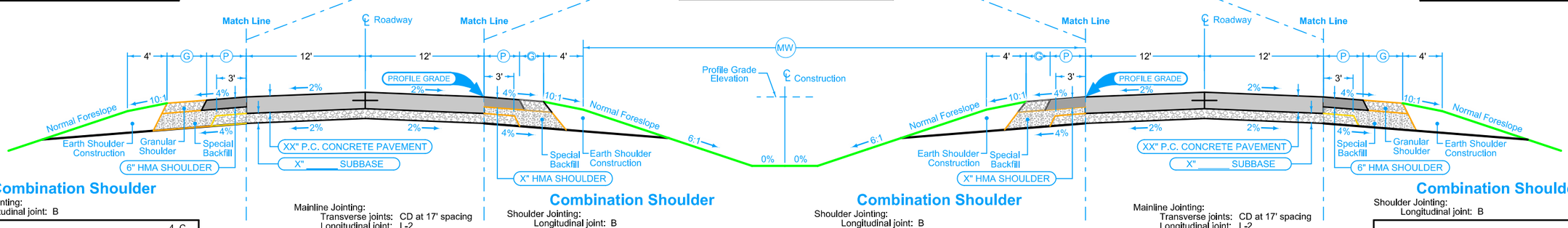
Curbed Shoulder

Shoulder Jointing:
Longitudinal joint not required when distance from back of curb to nearest joint is less than 15':

Single pour: L-2
Staged : KT-2
Transverse: C at 17' spacing

2_Curb_ 04-21-20

STATION TO STATION		(P) Feet	Curb Type See PV-102
XXXX+XX.XX	XXXX+XX.XX	X.X	X" Sloped



Combination Shoulder

Shoulder Jointing:
Longitudinal joint: B

4_C_ 04-21-20

Direction of Travel	BEGIN STATION	END STATION	(P) Feet	(G) Feet
X	XXXX+XX.XX	XXXX+XX.XX	X	X

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

BEGIN STATION	END STATION
XXXX+XX.XX	XXXX+XX.XX

Combination Shoulder

Shoulder Jointing:
Longitudinal joint: B

4_C_ 04-21-20

Direction of Travel	BEGIN STATION	END STATION	(P) Feet	(G) Feet
	XXXX+XX.XX	XXXX+XX.XX	X	X

Combination Shoulder

Shoulder Jointing:
Longitudinal joint: B

4_C_ 04-21-20

Direction of Travel	BEGIN STATION	END STATION	(P) Feet	(G) Feet
	XXXX+XX.XX	XXXX+XX.XX	X	X

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

BEGIN STATION	END STATION
XXXX+XX.XX	XXXX+XX.XX

Combination Shoulder

Shoulder Jointing:
Longitudinal joint: B

4_C_ 04-21-20

Direction of Travel	BEGIN STATION	END STATION	(P) Feet	(G) Feet
X	XXXX+XX.XX	XXXX+XX.XX	X	X

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

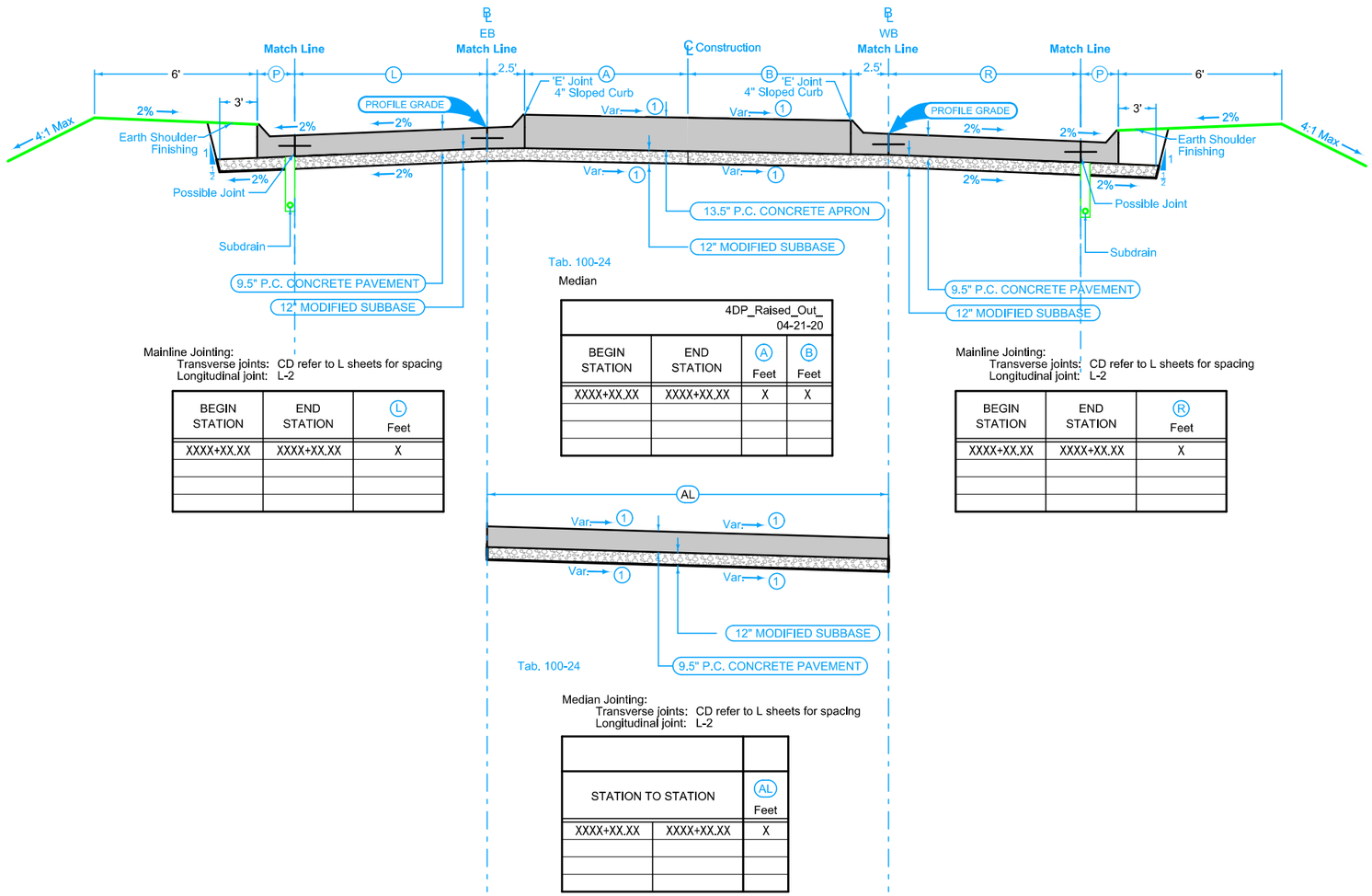
US 30

Curbed Shoulder

Shoulder Jointing:
Longitudinal joint not required when distance from back of curb to nearest joint is less than 15':

Single pour: L-2
Staged : KT-2
Transverse: CD refer to L sheets for spacing

			2_Curb_ 04-21-20
STATION TO STATION		(P) Feet	Curb Type See PV-102
XXXX+XX.XX	XXXX+XX.XX	X.X	X" Sloped



Mainline Jointing:
Transverse joints: CD refer to L sheets for spacing
Longitudinal joint: L-2

BEGIN STATION	END STATION	(L) Feet
XXXX+XX.XX	XXXX+XX.XX	X

		4DP_Raised_Out_ 04-21-20	
BEGIN STATION	END STATION	(A) Feet	(B) Feet
XXXX+XX.XX	XXXX+XX.XX	X	X

Mainline Jointing:
Transverse joints: CD refer to L sheets for spacing
Longitudinal joint: L-2

BEGIN STATION	END STATION	(R) Feet
XXXX+XX.XX	XXXX+XX.XX	X

Median Jointing:
Transverse joints: CD refer to L sheets for spacing
Longitudinal joint: L-2

STATION TO STATION		(AL) Feet
XXXX+XX.XX	XXXX+XX.XX	X

Curbed Shoulder

Shoulder Jointing:
Longitudinal joint not required when distance from back of curb to nearest joint is less than 15':

Single pour: L-2
Staged : KT-2
Transverse: CD refer to L sheets for spacing

			2_Curb_ 04-21-20
STATION TO STATION		(P) Feet	Curb Type See PV-102
XXXX+XX.XX	XXXX+XX.XX	X.X	X" Sloped

(1) Refer X-section for the cross slope

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

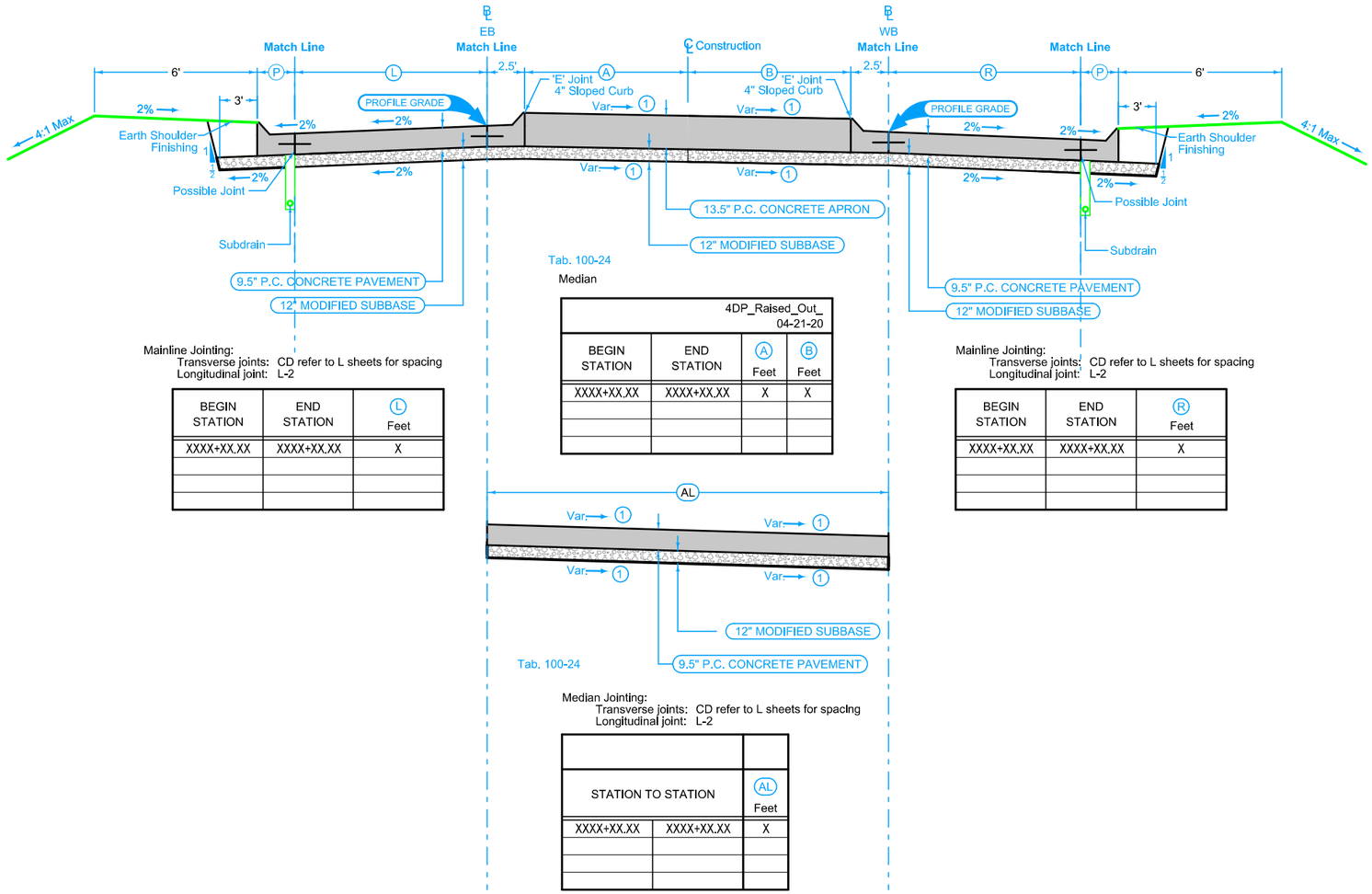
SE Marshall Street

Curbed Shoulder

Shoulder Jointing:
Longitudinal joint not required when distance from back of curb to nearest joint is less than 15':

Single pour: L-2
Staged : KT-2
Transverse: CD refer to L sheets for spacing

			2_Curb_ 04-21-20
STATION TO STATION		(P) Feet	Curb Type See PV-102
XXXX+XX.XX	XXXX+XX.XX	X.X	X" Sloped



Mainline Jointing:
Transverse joints: CD refer to L sheets for spacing
Longitudinal joint: L-2

BEGIN STATION	END STATION	(L) Feet
XXXX+XX.XX	XXXX+XX.XX	X

		4DP_Raised_Out_ 04-21-20	
BEGIN STATION	END STATION	(A) Feet	(B) Feet
XXXX+XX.XX	XXXX+XX.XX	X	X

Mainline Jointing:
Transverse joints: CD refer to L sheets for spacing
Longitudinal joint: L-2

BEGIN STATION	END STATION	(R) Feet
XXXX+XX.XX	XXXX+XX.XX	X

Median Jointing:
Transverse joints: CD refer to L sheets for spacing
Longitudinal joint: L-2

STATION TO STATION		(AL) Feet
XXXX+XX.XX	XXXX+XX.XX	X

Curbed Shoulder

Shoulder Jointing:
Longitudinal joint not required when distance from back of curb to nearest joint is less than 15':

Single pour: L-2
Staged : KT-2
Transverse: CD refer to L sheets for spacing

			2_Curb_ 04-21-20
STATION TO STATION		(P) Feet	Curb Type See PV-102
XXXX+XX.XX	XXXX+XX.XX	X.X	X" Sloped

(1) Refer X-section for the cross slope

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

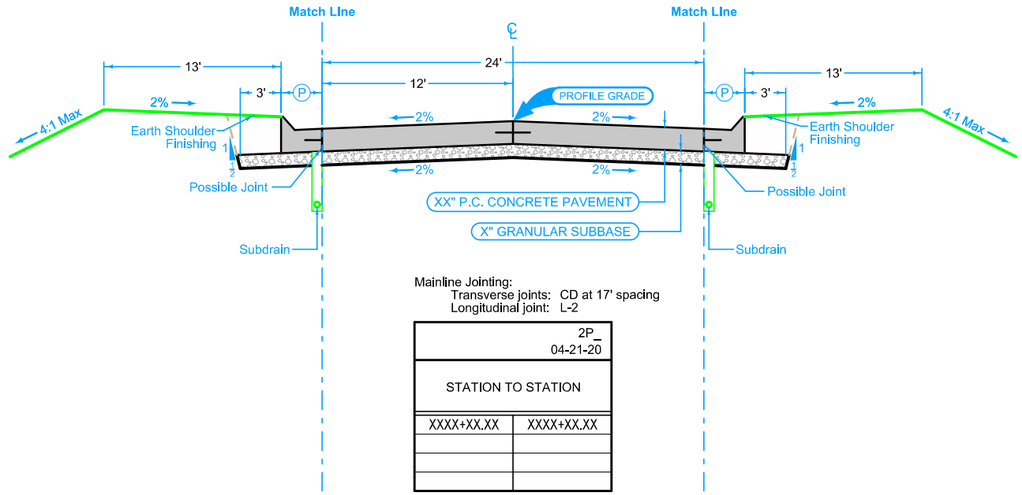
Crown Flair Drive

Curbed Shoulder

Shoulder Jointing:
Longitudinal joint not required when distance from back of curb to nearest joint is less than 15':

Single pour: L-2
Staged : KT-2
Transverse: C at 17' spacing

			2_Curb_ 04-21-20
STATION TO STATION		(P) Feet	Curb Type See PV-102
XXXX+XX.XX	XXXX+XX.XX	X.X	X" Sloped



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

	2P_ 04-21-20
STATION TO STATION	
XXXX+XX.XX	XXXX+XX.XX

Curbed Shoulder

Shoulder Jointing:
Longitudinal joint not required when distance from back of curb to nearest joint is less than 15':

Single pour: L-2
Staged : KT-2
Transverse: C at 17' spacing

			2_Curb_ 04-21-20
STATION TO STATION		(P) Feet	Curb Type See PV-102
XXXX+XX.XX	XXXX+XX.XX	X.X	X" Sloped

See Tab 100-24 or 100-25 for pavement quantities.

See Tab 112-9 for shoulder quantities.

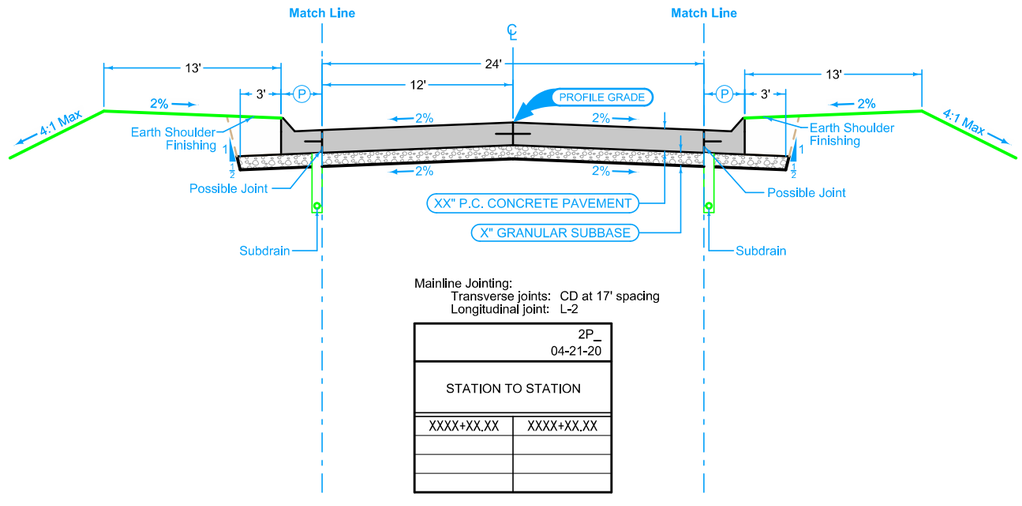
SE Marshall Street

Curbed Shoulder

Shoulder Jointing:
Longitudinal joint not required when distance from back of curb to nearest joint is less than 15':

Single pour: L-2
Staged : KT-2
Transverse: C at 17' spacing

			2_Curb_ 04-21-20
STATION TO STATION		(P) Feet	Curb Type See PV-102
XXXX+XX.XX	XXXX+XX.XX	X.X	X" Sloped



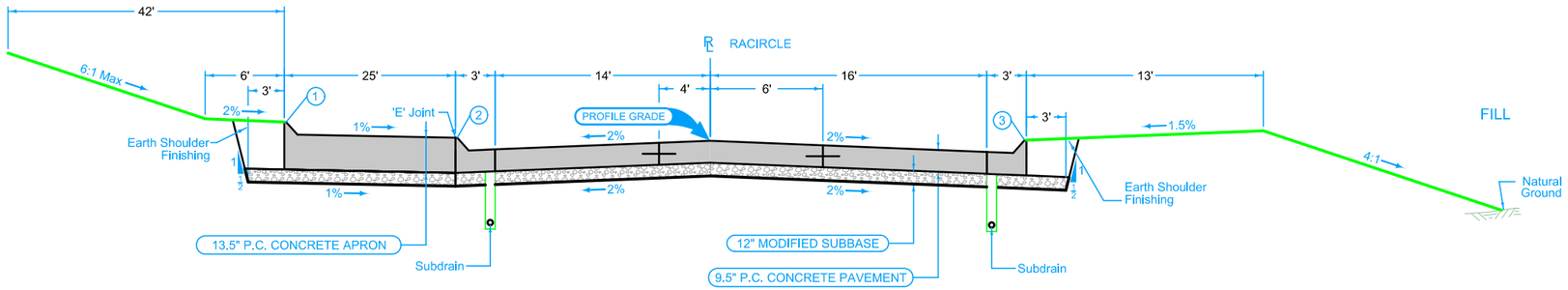
Mainline Jointing:
Transverse joints: CD at 17' spacing
Longitudinal joint: L-2

	2P_ 04-21-20
STATION TO STATION	
XXXX+XX.XX	XXXX+XX.XX

See Tab 100-24 or 100-25 for pavement quantities.

See Tab 112-9 for shoulder quantities.

Crown Flair Drive



(1) 6" Standard Curb

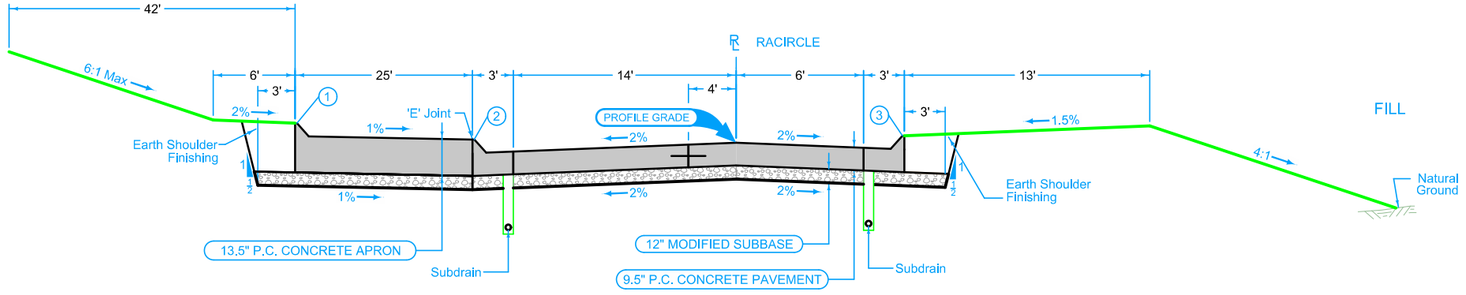
(2) 4" Sloped Curb

(3) 6" Sloped Curb

Note: See 'L' Sheets for Jointing Layout

Mainline Jointing:
Transverse joints: CD refer to L sheets for spacing
Longitudinal joint: L-2

LOCATION			(X) Feet
ROAD IDENTIFICATION	STATION TO STATION		
RACIRCLE	XXXX+XX.XX	XXXX+XX.XX	X.X
RACIRCLE	XXXX+XX.XX	XXXX+XX.XX	X.X



(1) 6" Standard Curb

(2) 4" Sloped Curb

(3) 6" Sloped Curb

Note: See 'L' Sheets for Jointing Layout

Mainline Jointing:
Transverse joints: CD refer to L sheets for spacing
Longitudinal joint: L-2

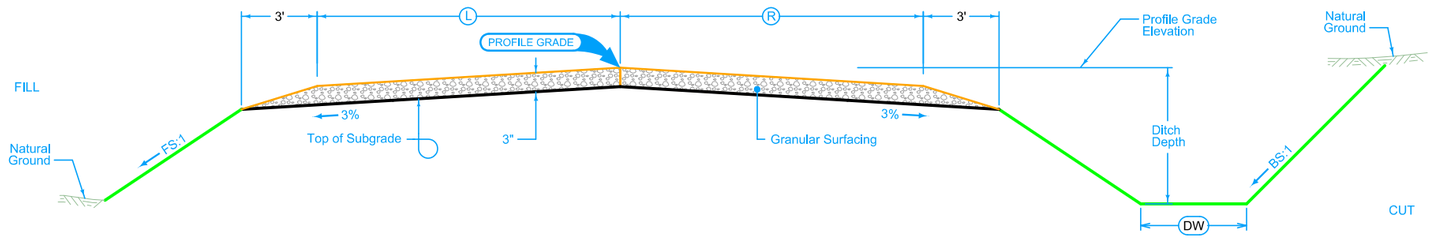
LOCATION			(X) Feet
ROAD IDENTIFICATION	STATION TO STATION		
RACIRCLE	XXXX+XX.XX	XXXX+XX.XX	X.X
RACIRCLE	XXXX+XX.XX	XXXX+XX.XX	X.X

See Tab 100-24 or 100-25 for pavement quantities.

See Tab 112-9 for shoulder quantities.

Roundabout

LOCATION			DIMENSIONS				
ROAD IDENTIFICATION	STATION TO STATION		(L)	(R)	FS	BS	(DW) Feet
SR 30	XXXX+XX.XX	XXXX+XX.XX	X	X	X	X	X



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.

GRADING AND GRANULAR SURFACING FOR PRIVATE DRIVES

G_2_GradeGran
Modified

FILE NO.	ENGLISH	DESIGN TEAM **Rhoads\Tamrakar\Prindle**	**BOONE** COUNTY	PROJECT NUMBER **HSIPX-030-4(113)--3L-08**	SHEET NUMBER **B.12**	

9:07:54 AM 6/25/2024 dtamrak pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\0803002024\Design\CADD_Files\Sheet_Files\SHT_08030113Z08_B01.dgn

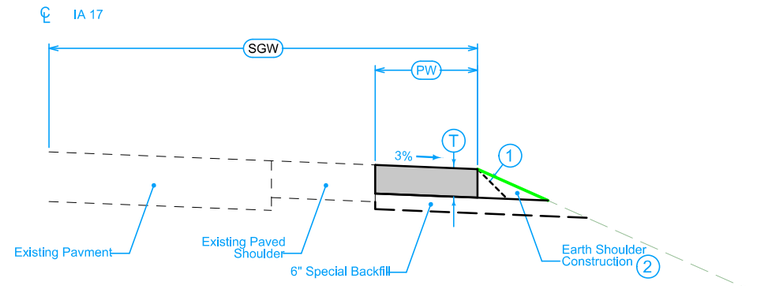
LOCATION			DIMENSIONS						6" Special Backfill	Earth Shoulder Construction	Class 13 Waste
ROAD IDENTIFICATION	STATION TO STATION		HMA			PCC					
			(PW) Feet	(T) Inches	(SGW) Feet	(PW) Feet	(T) Inches	(SGW) Feet	CY	Station	CY
US 30	XXXX+XX.XX	XXXX+XX.XX									
SR 30	XXXX+XX.XX	XXXX+XX.XX									

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

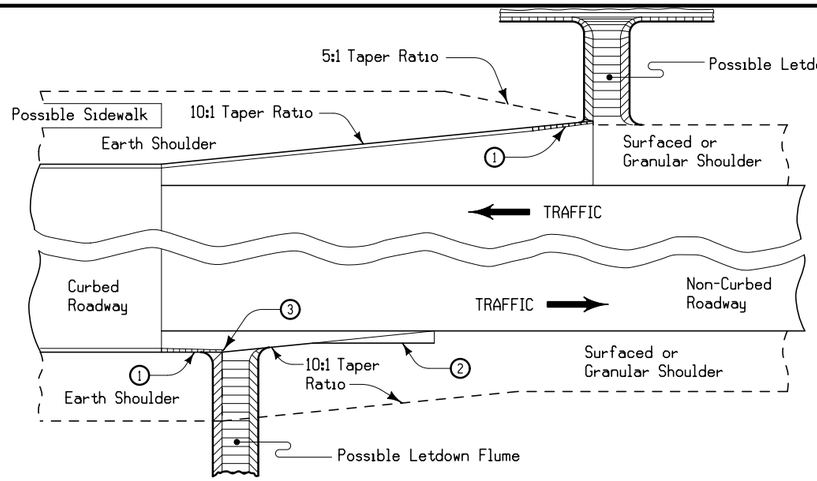
(2) Earth Shoulder Construction shall consist of the Class 13 Excavation material from adjacent Class 13 Excavation operation. Excess Class 13 material shall be hauled off.



DETOUR PAVING

D_Detour
Modified

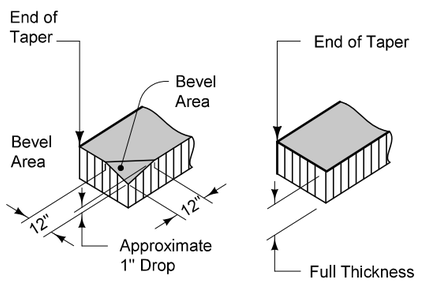
6147
10-20-15



1. Runout curb according to PV-102
2. End of Taper Details see Typical Detail 7101
3. End earth shoulder at the end of the curb transition when no flume is needed.

TRANSITION BETWEEN CURBED AND NON-CURBED ROADWAYS

7101
10-19-10



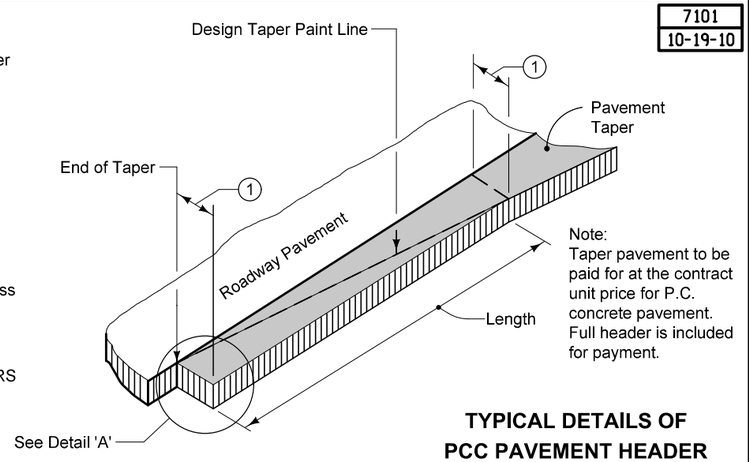
DETAIL 'A'

FOR
GRANULAR SHOULDERS

DETAIL 'A'

FOR
PAVED SHOULDERS

1. Normal width is 2'-0". Construct 4'-0" width when butting into 4' wide HMA shoulders (See Typical 7154A).



Note:
Taper pavement to be paid for at the contract unit price for P.C. concrete pavement. Full header is included for payment.

TYPICAL DETAILS OF PCC PAVEMENT HEADER

SURVEY SYMBOLS

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

PR, Electic 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, Trafic Detection Loop
TER, Terrace
TEV, Evergeen 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, Satelite 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

UTILITY LEGEND

— G —
GL1D, Alliant Energy Gas - Quality D
Billie Reid
billiereid@alliantenergy.com
319-786-3703

— E1 —
EL1D, Alliant Energy Elec - Quality D
Midland Power Cooperative Electric Distribution
ITC Midwest LLC Electric Transmission
Billie Reid
billiereid@alliantenergy.com
319-786-3703

Dan Kyle
dkyle@midlandpower.coop
515 370 1071

Chad Levi
clevi@itctransco.com
3198999969

— G2 —
GL2D, Black Hills Energy - Quality D
Brad Fleming
brad.fleming@blackhillscorp.com
402 660 0812

— FO —
FO1D, CenturyLink-Lumens - Quality D
Steve Parker
Steven.Parker4@lumen.com
507 358 1978

— T1 —
TL1D, CenturyLink-Lumens - Quality D
Steve Parker
Steven.Parker4@lumen.com
507 358 1978

— W —
WL1D, City of Boone - Quality D

— ST S —
ST1D, City of Boone - Quality D

— SAN. —
SA1D, City of Boone- Quality D

— FO2 —
FO2D, ICN-IDOT - Quality D
Jason Dale
Jason.Dale@iowadot.us
515-239-1995

— FO3 —
FO3D, ICN Network - Quality D
David Augspurger
daugspurger@icn.state.ia.us
515-725-4604

— FO4 —
FO4D, Jefferson Telephone Company - Quality D
Duane Russell
duane@jeffersontelecom.com
515 386 4705

— FO5 —
FO5D, Mediacom - Quality D
Jerry Broughton
jbroughton@mediacomcc.com
(845) 587-2521

— TV —
TV1D, Mediacom - Quality D
Jerry Broughton
jbroughton@mediacomcc.com
(845) 587-2521

— G3 —
GL3D, Northern Natural Gas - Quality D

— FO6 —
FO6D, Ogden Telephone - Quality D
Joel Munson
ogdentel@netins.net
515-275-2050

PLAN VIEW COLOR LEGEND OF PLAN AND PROFILE SHEETS

LINEWORK	Design Color No.		
Green	(2)		Existing Topographic Features and Labels
Blue	(1)		Proposed Alignment, Stationing, Tic Marks, and Alignment Annotation
Magenta	(5)		Existing Utilities
SHADING	**Design Color No.**		**Transparency**
Pink, Dark	(13)		Temporary Pavement Shading	50%
Yellow	(4)		Proposed Pavement Shading	50%
Orange	(6)		Proposed Granular Shading	50%
Orange	(70)		Proposed Shoulder Granular Shading	50%
Yellow	(68)		Proposed Shoulder Paved Full Depth Shading	50%
Yellow	(132)		Proposed Shoulder Paved Partial Depth Shading	50%
Brown, Light	(236)		Grading Shading	50%
Orange, Light	(134)		Proposed Granular Entrance Shading	50%
Yellow	(220)		Proposed Paved Entrance Shading	50%
Tan	(8)		Proposed Sidewalk Shading	50%
Blue, Light	(230)		Proposed Sidewalk Landing Shading	50%
Pink	(11)		Proposed Sidewalk Ramp Shading	50%
Red	(3)		Proposed Structure Shading	50%
Red	(3)		Delineates Restricted Areas	0%

PROFILE VIEW COLOR LEGEND OF PLAN AND PROFILE SHEETS

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

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

RIGHT-OF-WAY LEGEND

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

PLAN AND PROFILE LEGEND AND SYMBOL INFORMATION SHEET

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

FILE NO.	ENGLISH	DESIGN TEAM Rhoads\Tamrakar\Prindle	BOONE COUNTY	PROJECT NUMBER HSIPX-030-4(113)--3L-08	SHEET NUMBER D.1

10:03:29 AM 7/3/2024 dtamrak pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\0803002024\Design\CADD_Files\Sheet_Files\LGD_08030113Z08.dgn

960+00

965+00

970+00

Pavement Removal

Sta. 961+11.8
48"x153' RCP/FAIR
D.A.=65.9 AC.
FLAT

Sta. 967+03.6
24"x164' RCP/FAIR
D.A.=2.9 AC.
FLAT

0 50
FEET

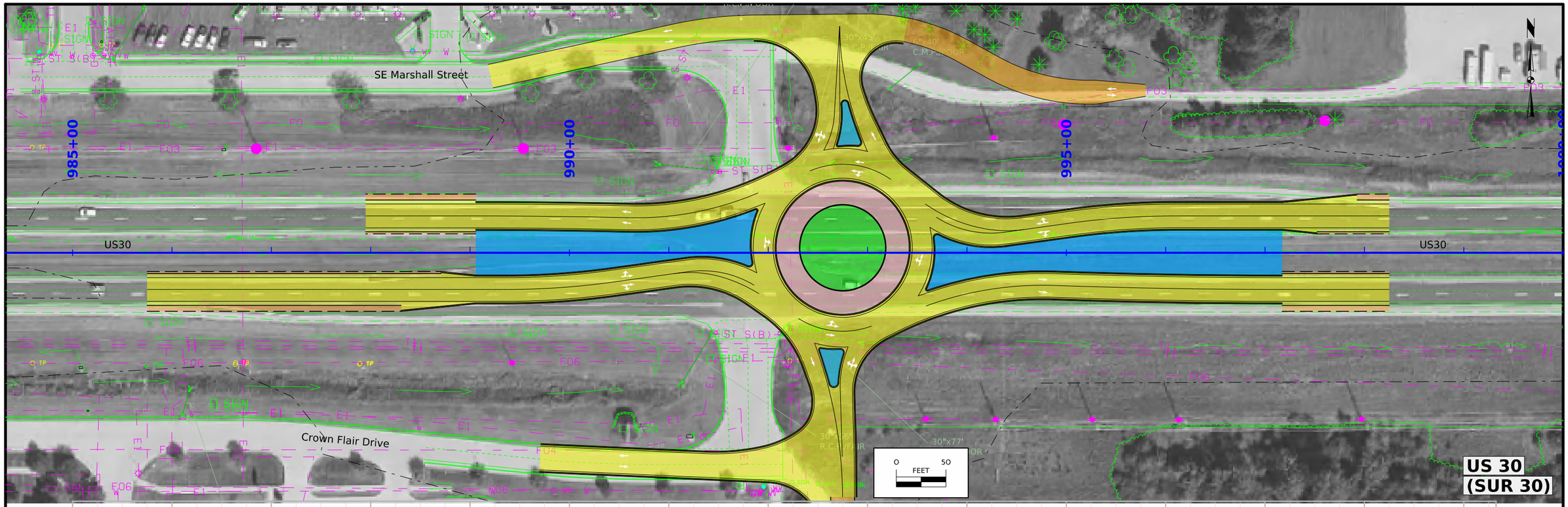
US 30 (Close Median)

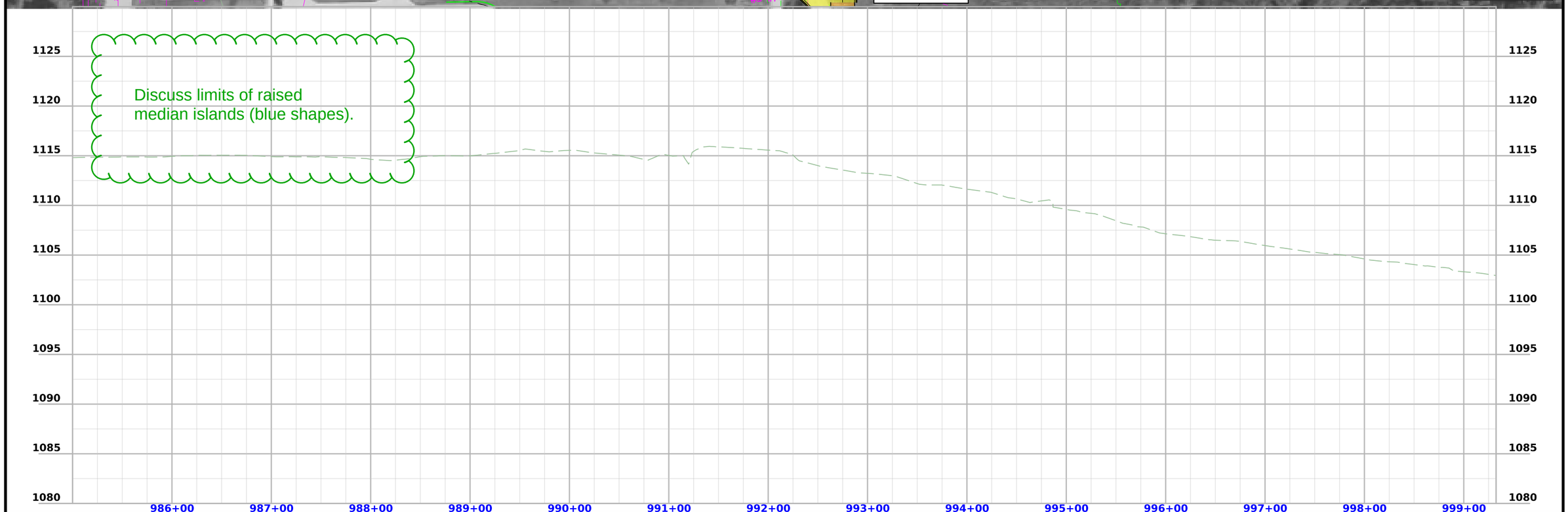
1125 1120 1115 1110 1105 1100 1095 1090 1085 1080

958+00 959+00 960+00 961+00 962+00 963+00 964+00 965+00 966+00 967+00 968+00 969+00 970+00 971+00 972+00

FILE NO.	ENGLISH	DESIGN TEAM Rhoads\Tamrakar\Prindle	BOONE COUNTY	PROJECT NUMBER HSIPX-030-4(113)--3L-08	SHEET NUMBER D.2	

11:32:36 AM 6/27/2024 dtamrak pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\0803002024\Design\CADD_Files\Sheet_Files\SHT_08030113Z08_D02.dgn





FILE NO.	ENGLISH	DESIGN TEAM Rhoads\Tamrakar\Prindle	BOONE COUNTY	PROJECT NUMBER HSIPX-030-4(113)--3L-08	SHEET NUMBER D.3

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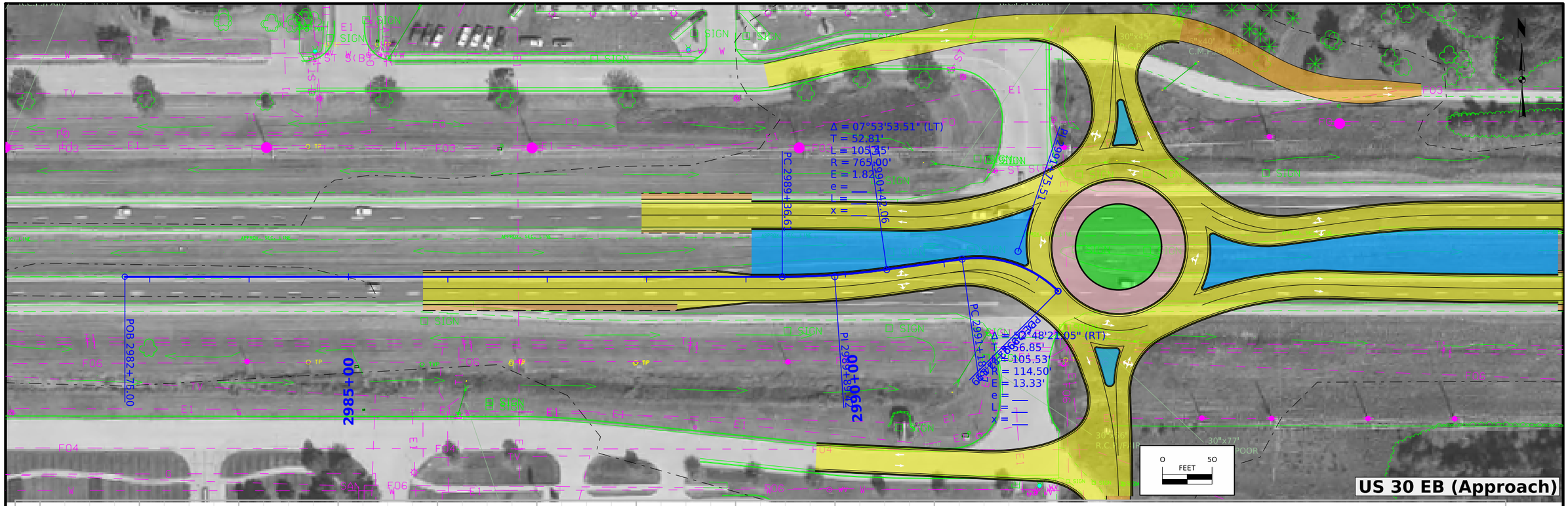

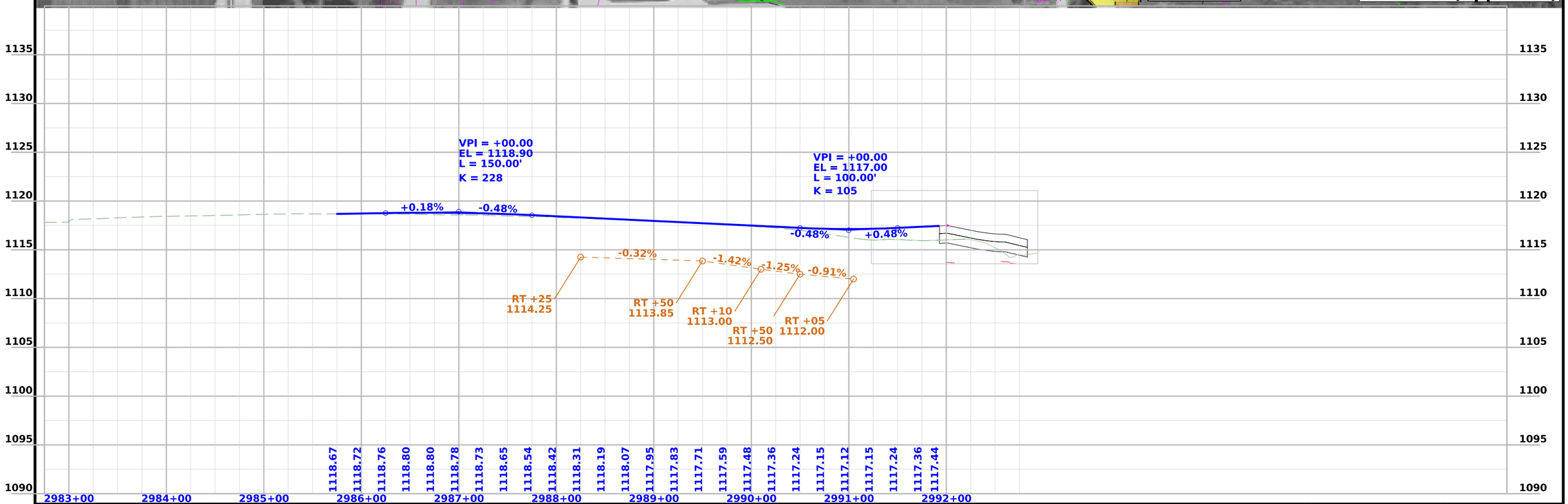

FILE NO.	ENGLISH	DESIGN TEAM Rhoads\Tamrakar\Prindle	BOONE COUNTY	PROJECT NUMBER HSIPX-030-4(113)--3L-08	SHEET NUMBER D.4

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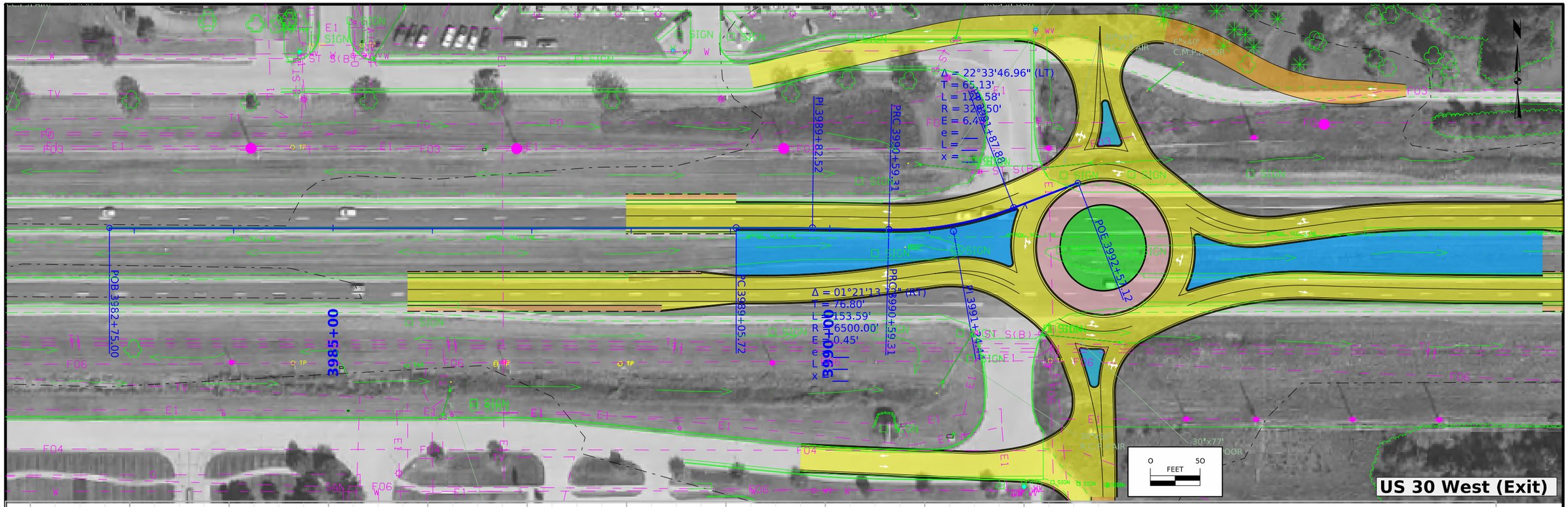

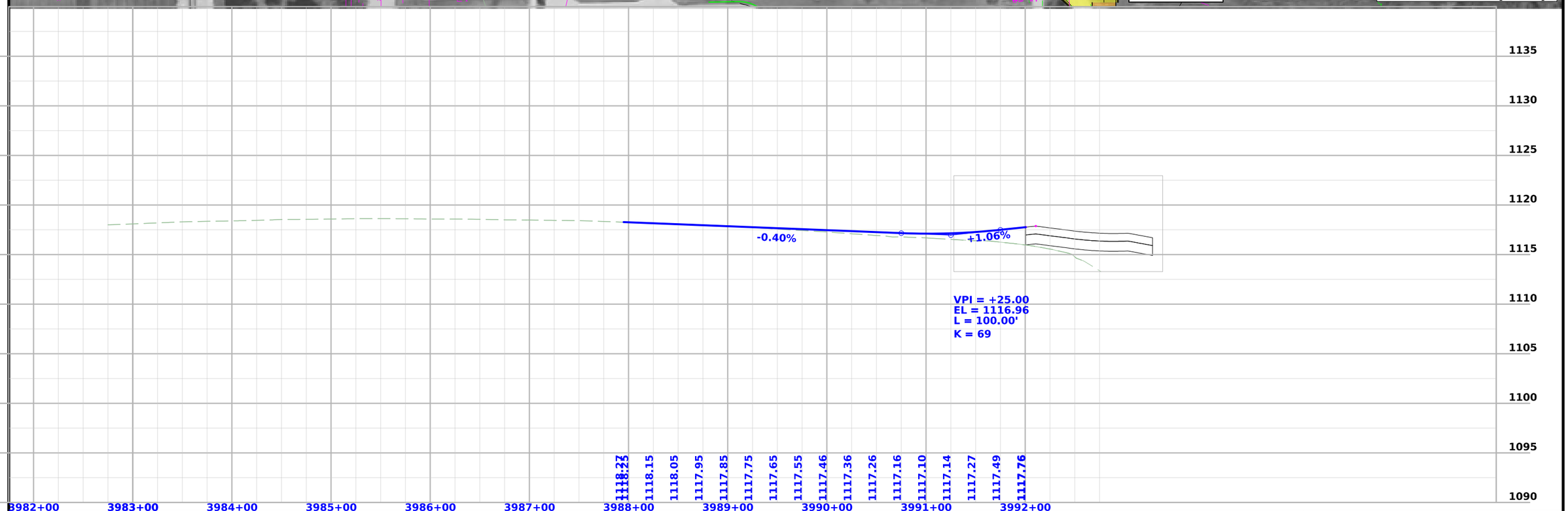

FILE NO.	ENGLISH	DESIGN TEAM Rhoads\Tamrakar\Prindle	BOONE COUNTY	PROJECT NUMBER HSIPX-030-4(113)--3L-08	SHEET NUMBER D.5

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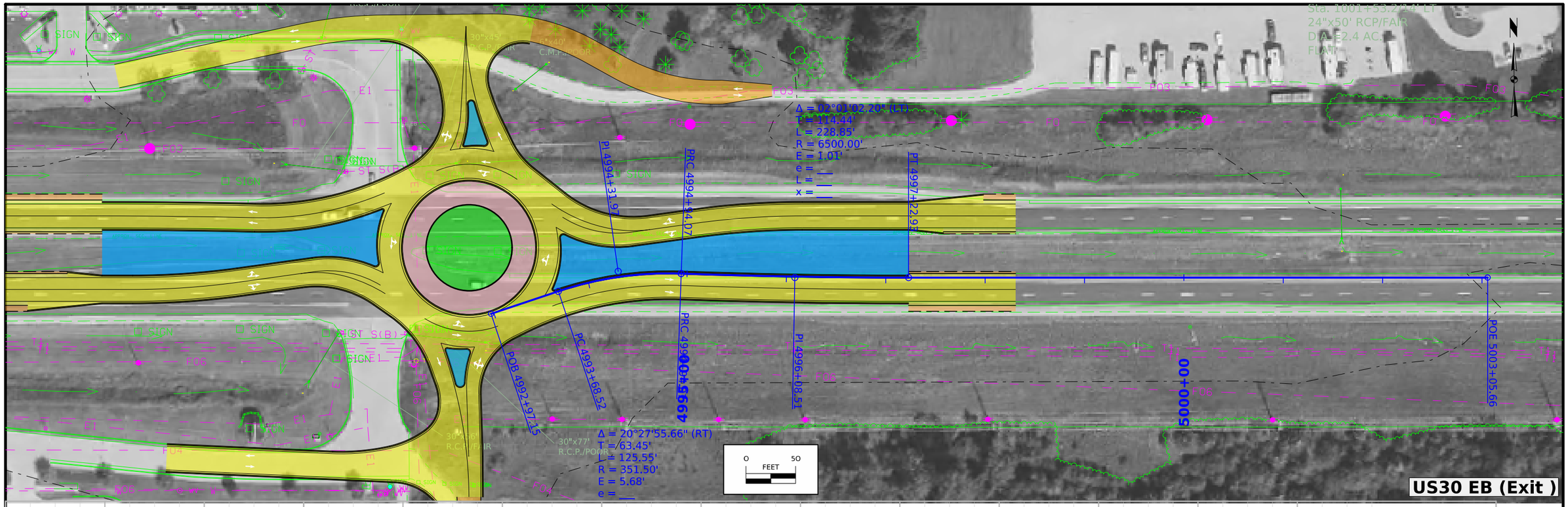

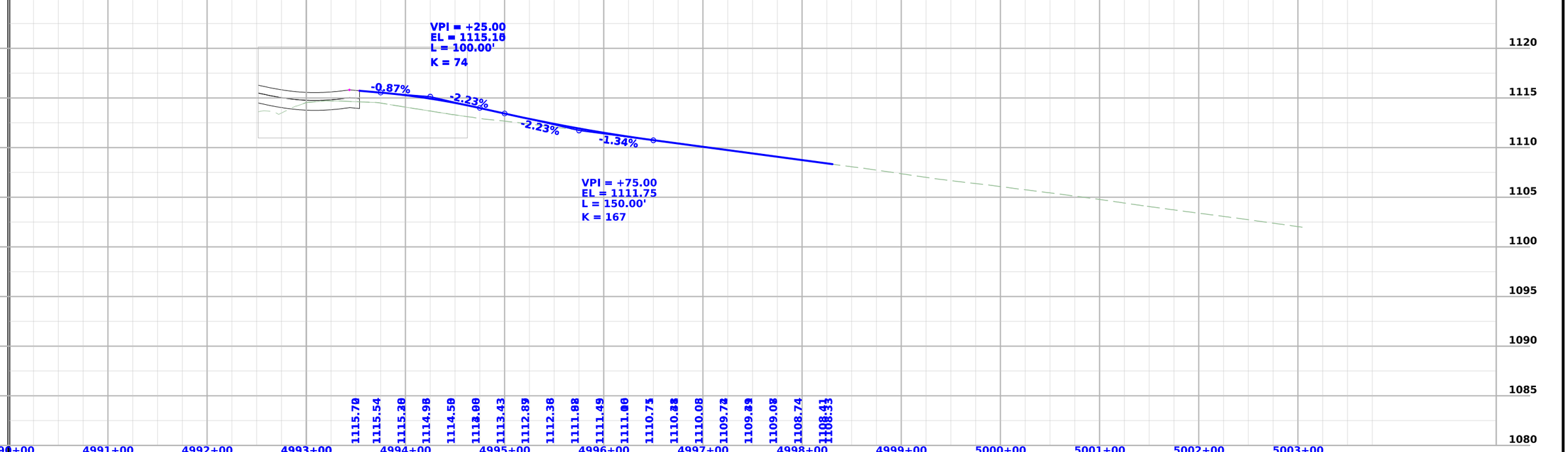

FILE NO.	ENGLISH	DESIGN TEAM Rhoads\Tamrakar\Prindle	BOONE COUNTY	PROJECT NUMBER HSIPX-030-4(113)--3L-08	SHEET NUMBER D.6

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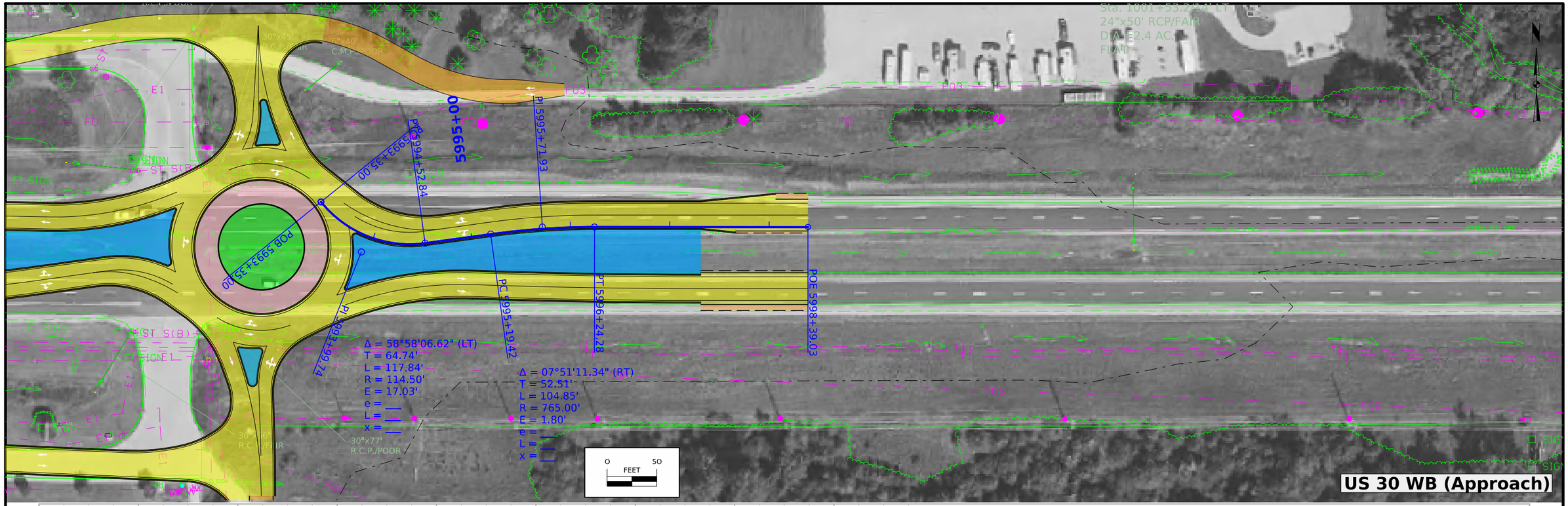
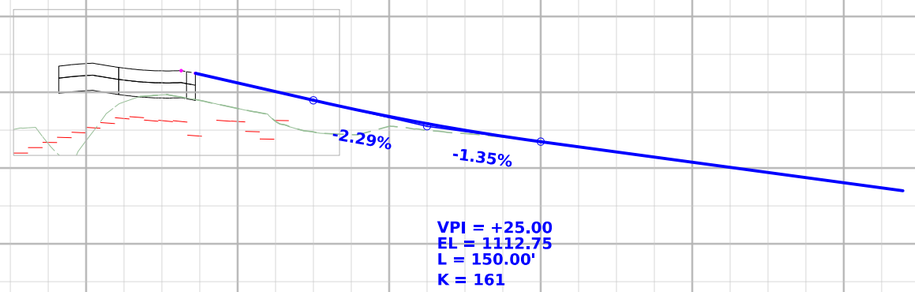


Δ = 58°58'06.62" (LT)
T = 64.74'
L = 117.84'
R = 114.50'
E = 17.03'
e = ___
L = ___
x = ___

Δ = 07°51'11.34" (RT)
T = 52.51'
L = 104.85'
R = 765.00'
E = 1.80'
e = ___
L = ___
x = ___

US 30 WB (Approach)



VPI = +25.00
EL = 1112.75
L = 150.00'
K = 161

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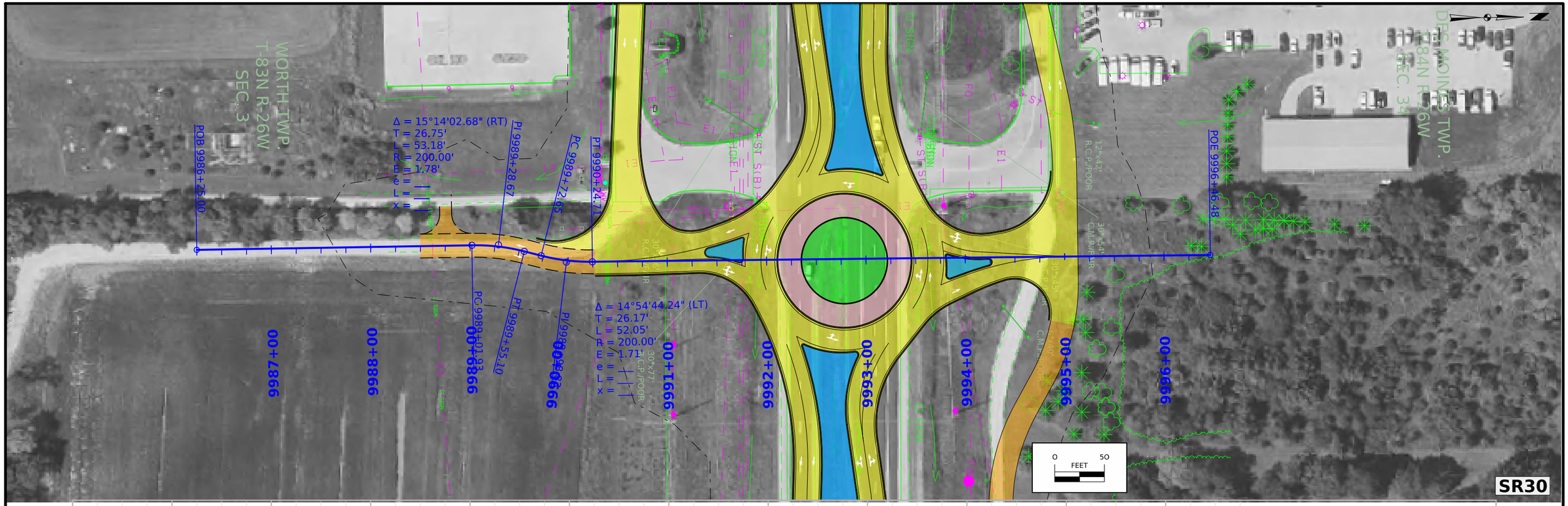
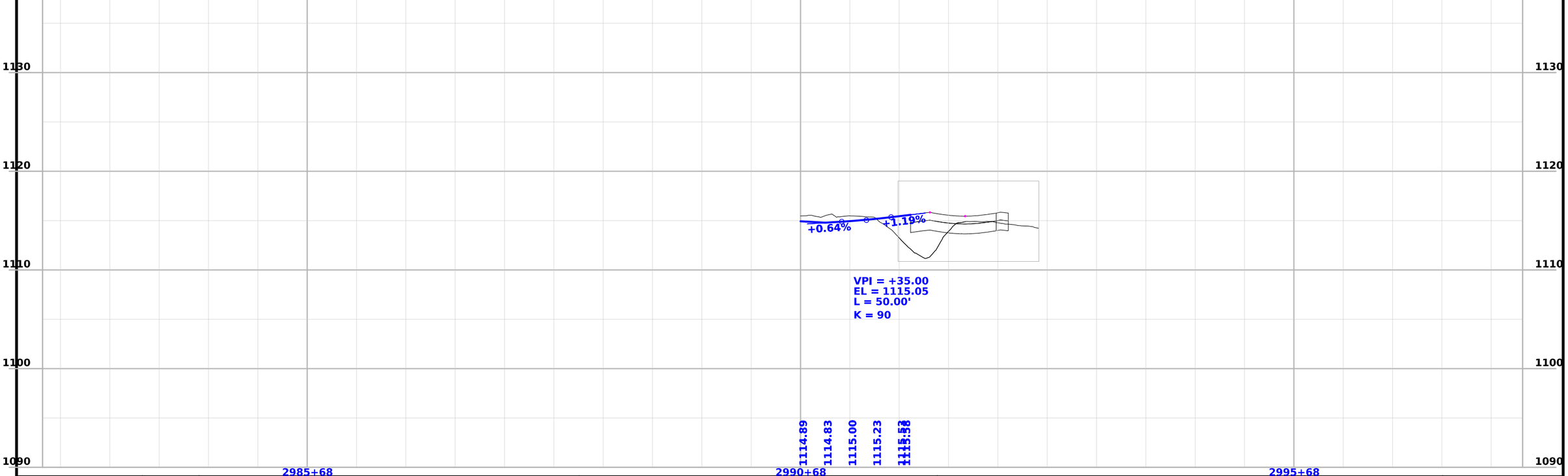


FILE NO.	ENGLISH	DESIGN TEAM Rhoads\Tamrakar\Prindle	BOONE COUNTY	PROJECT NUMBER HSIPX-030-4(113)--3L-08	SHEET NUMBER E.1

11:36:42 AM 6/26/2024 dtamrak pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\0803002024\Design\CADD_Files\Sheet_Files\SHT_08030113Z08_E01.dgn



FILE NO.	ENGLISH	DESIGN TEAM Rhoads\Tamrakar\Prindle	BOONE COUNTY	PROJECT NUMBER HSIPX-030-4(113)--3L-08	SHEET NUMBER E.2	

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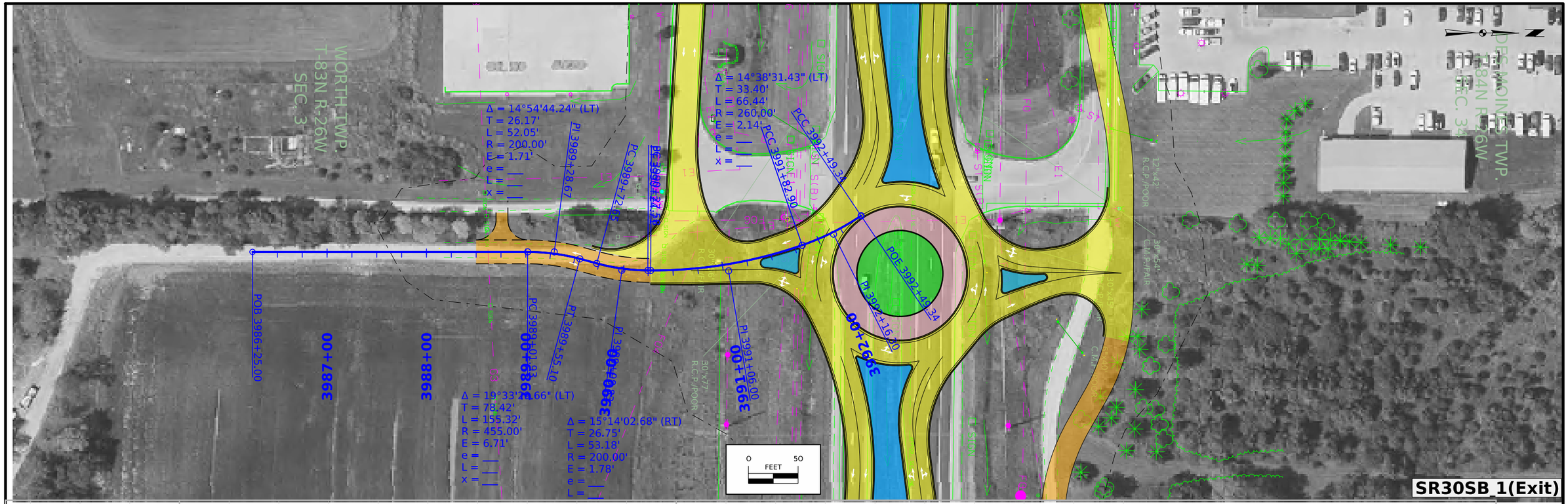
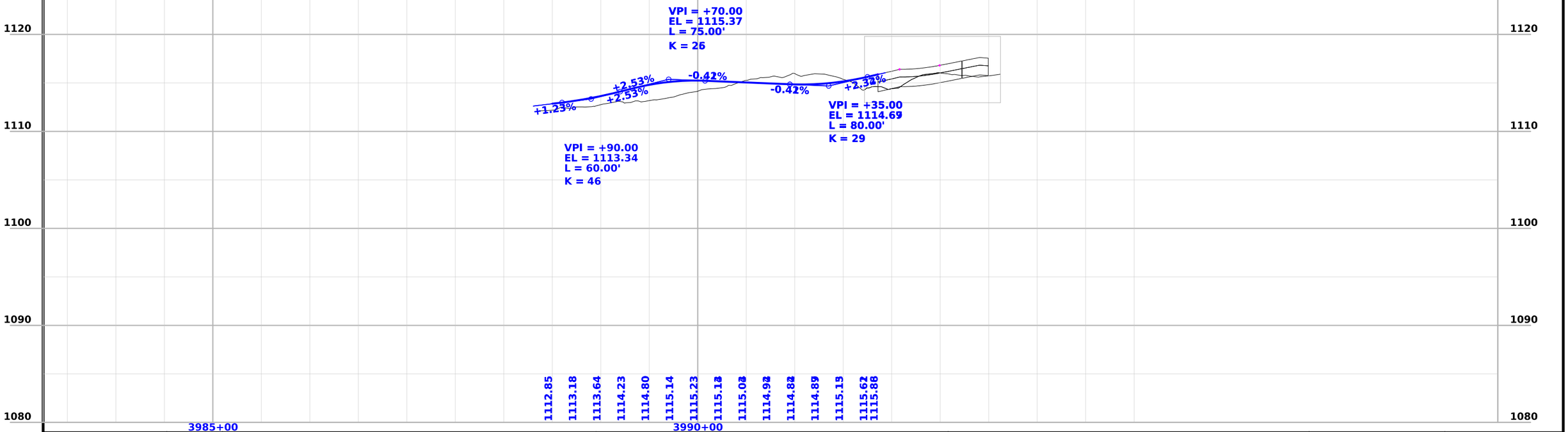
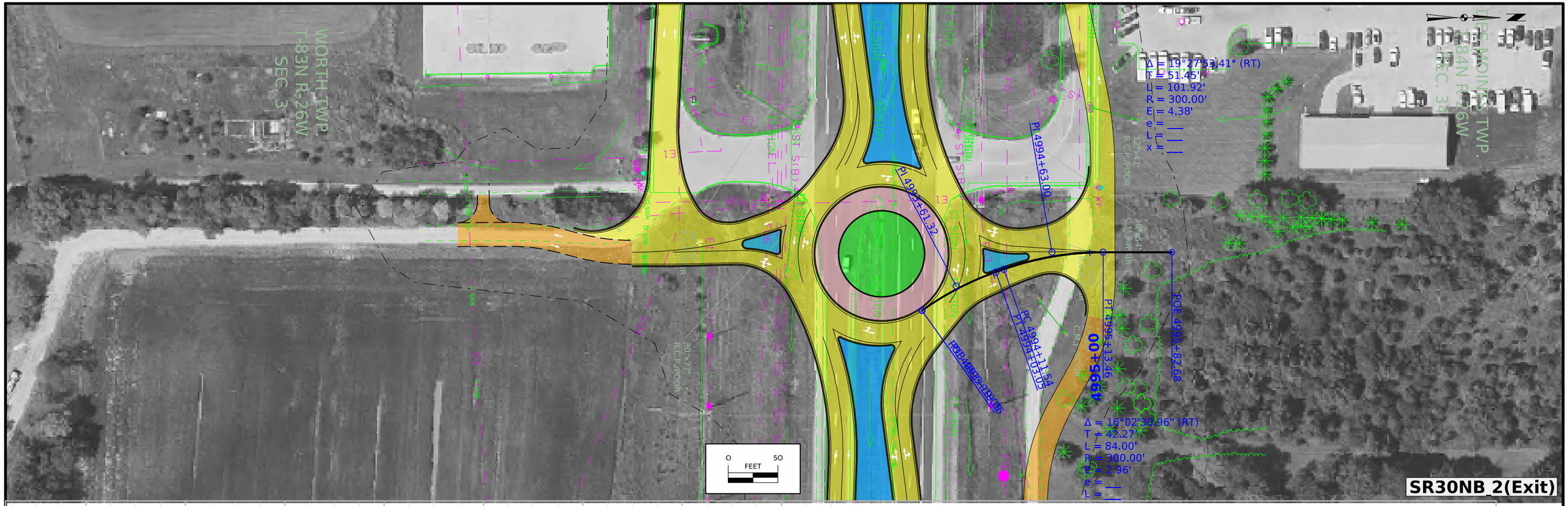




FILE NO.	ENGLISH	DESIGN TEAM Rhoads\Tamrakar\Prindle	BOONE COUNTY	PROJECT NUMBER HSIPX-030-4(113)--3L-08	SHEET NUMBER E.3

11:37:13 AM 6/26/2024 dtamrak pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\0803002024\Design\CADD_Files\Sheet_Files\SHT_08030113Z08_E03.dgn



FILE NO.	ENGLISH	DESIGN TEAM Rhoads\Tamrakar\Prindle	BOONE COUNTY	PROJECT NUMBER HSIPX-030-4(113)--3L-08	SHEET NUMBER E.4

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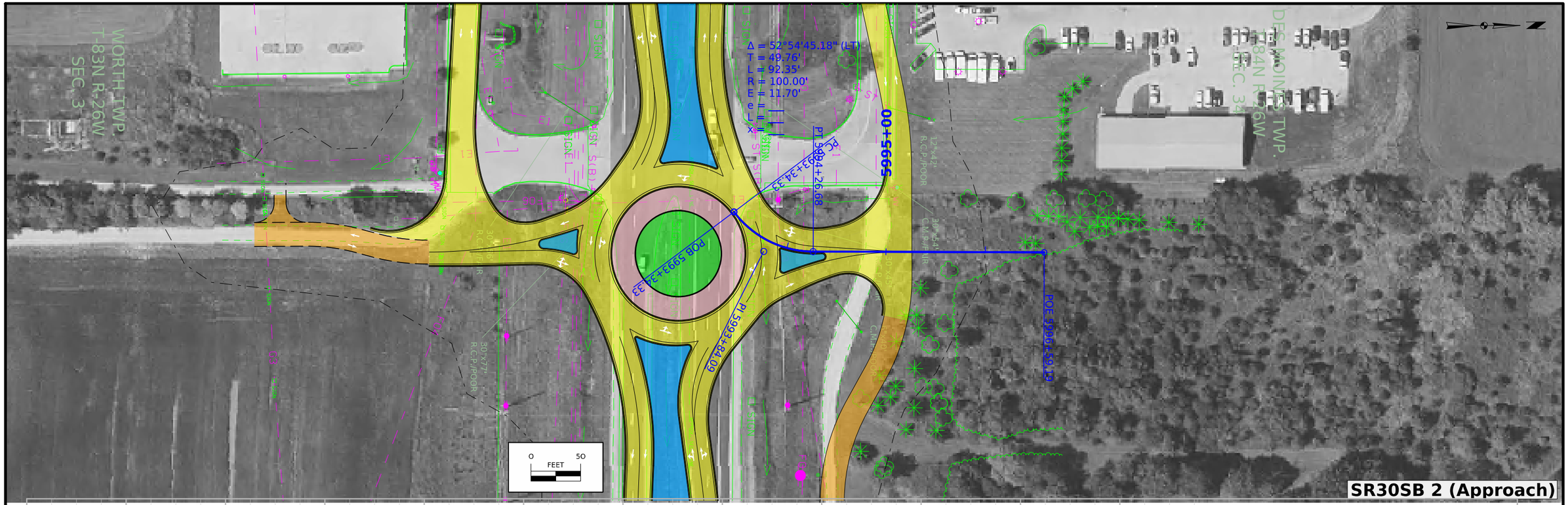

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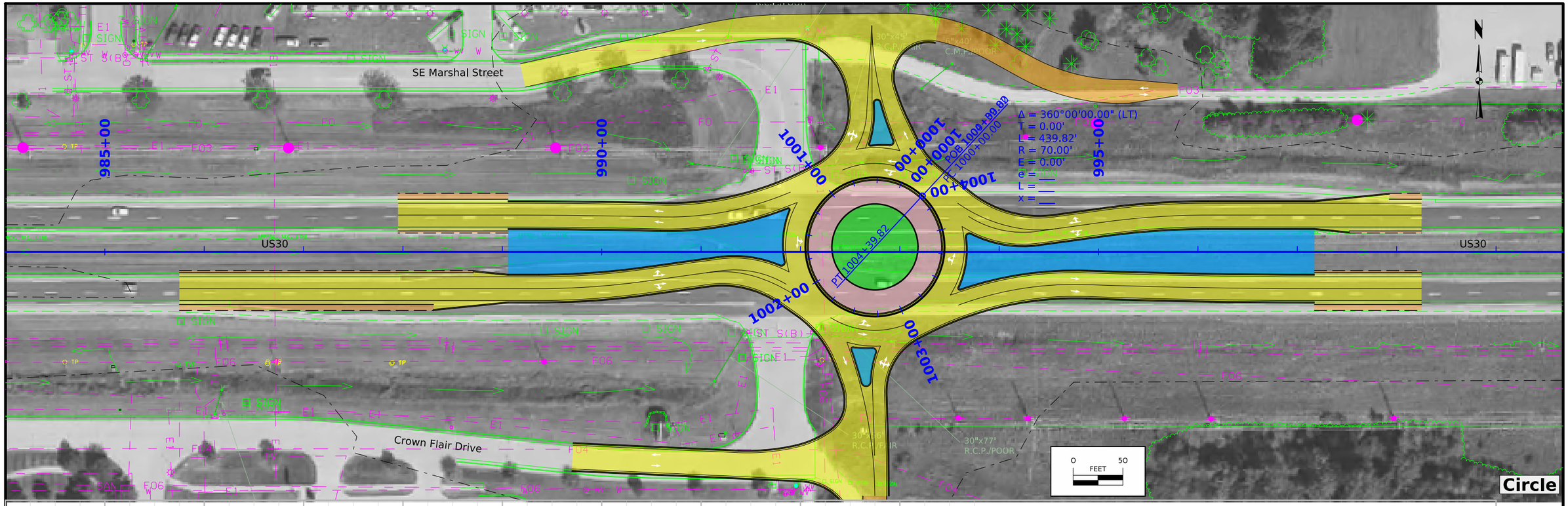
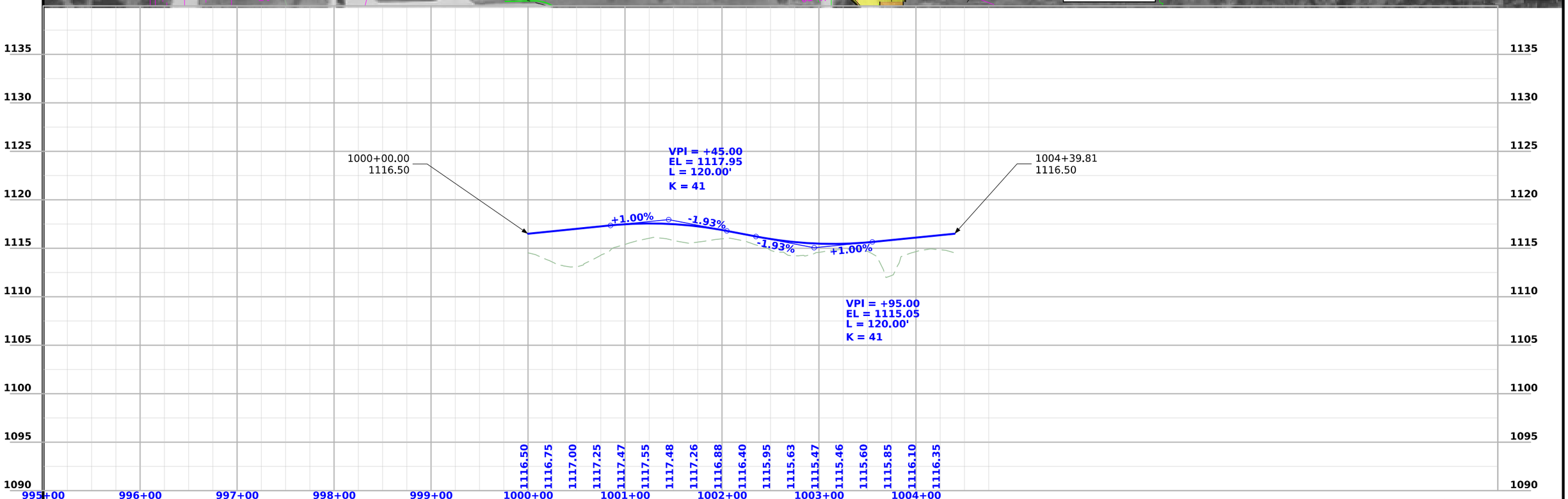




FILE NO.	ENGLISH	DESIGN TEAM Rhoads\Tamrakar\Prindle	BOONE COUNTY	PROJECT NUMBER HSIPX-030-4(113)--3L-08	SHEET NUMBER E.6

11:38:01 AM 6/26/2024 dtamrak pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\0803002024\Design\CADD_Files\Sheet_Files\SHT_08030113Z08_E06.dgn

SURVEY INDEX

County: Boone
PIN: 21-51-034-010
Project Number: NHSN-030-4(116)--2R-08
Location: US 30 from 0.2 miles E. of S. Story St. to Quill Ave.
Type of Work: Partial DTM Survey
Project Directory: 0803002024

Survey Personnel

Tom Hoyle – Lead Survey Technician
Brad Duffy – Survey Technician
Max Phillips - Survey Technician
Dave Ciskowski – Survey Technician

Date(s) of Survey

Begin Date	03/28/2024
End Date	05/23/2024

General Information

This survey is for US Hwy 30 from 0.2 mi E of South Story St. to Quill Ave. This survey includes portions of SE Marshall St. and Crown Flair Drive. This project is a Partial Field DTM, Project Control, Post Flight Photo control and SUE QLD.

Utility Information

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

Project Control

Nearby Iowa Real Time Network reference stations were utilized to obtain horizontal and vertical control on primary project control points. Between three and five (300 epoch) five-minute observations were taken with a minimum two-hour time span between and used in a weighted average to obtain final coordinate values.

A double run level loop was run through control points 1-4. The RTN derived elevations of control points 1 - 4 were held fixed. The estimated standard error of the observed height differences from the network adjustment was 0.0157 ft/mile.

NGS mark GSVS 080 (DP4534), CP4 was tied it's record orthometric height of 1109.56 is 0.034' lower than the elevation derived by this survey of 1109.594. NGS mark GSVS 081 (DP4535) was leveled through its record orthometric height of 1113.48 is 0.011' lower than the elevation derived by this survey of 1113.491. NGS mark GSVS 082 (DP4536), CP1 was tied it's record orthometric height of 1139.78 is 0.028' lower than the elevation derived by this survey of 1139.808. Due to the proximity of NGS mark GSVS 081 (DP4535) to a tree it was not used as a primary control point on this project.

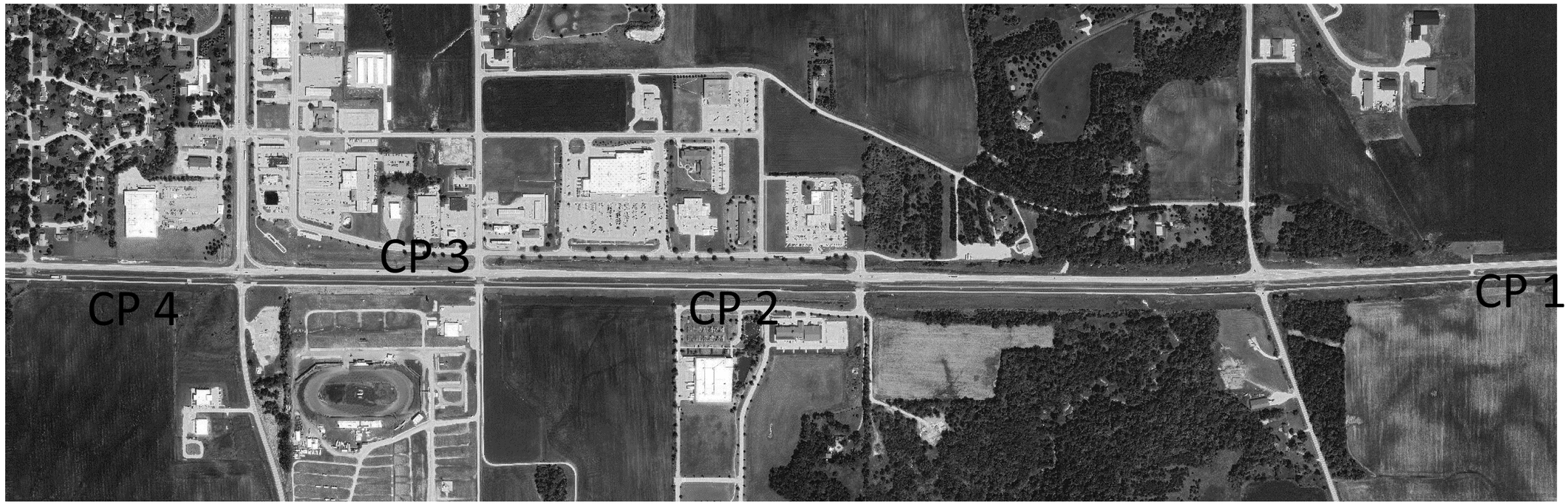
PROJECT DATUM: NAD83(2011) for EPOCH 2010.00 (IaRTN 2019 ADJUSTMENT)
COORDINATE SYSTEM: IOWA REGIONAL COORDINATE SYSTEM ZONE 8 (U.S. SURVEY FOOT)
VERTICAL DATUM: NAVD88
GEOID MODEL: 2018

Alignment Information

No alignment requested.

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 08 (U.S. Survey Foot)

VERT. DATUM: NAVD88 - Geoid Model: 2018u3

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

HORIZONTAL AND VERTICAL PROJECT CONTROL COORDINATE LISTING

HORIZ. DATUM: NAD83(2011) for EPOCH 2010.00 (IaRTN 2019 Adjustment)
Ia. Regional Coordinate System Zone 08 (U.S. Survey Foot)

VERT. DATUM: NAVD88
Geoid Model: 2018u3

Point Name	Northing	Easting	Elevation	Code-Description
CP1	7650237.6520	18464179.2860	1139.81	CP FOUND NGS STATION GSVS 082 0.27 MILES E OF QUILL AVE. 69.2' S OF THE CL OF US 30 EB LANES 140' E OF AN ELEC BOW WITH METER 69' W OF A PP 12' N OF A WITNESS POST.
CP2	7650126.9530	18458761.6880	1113.21	FENO SET FENO MONUMENT FLUSH WITH GOUND SURFACE 0.6 MILES EAST SOUTH STORY ST. 120' SOUTH OF THE CL OF THE US 30 EB LANES 78.7' SE OF A PP 36.5' E OF A LIGHT POLE 7.2' N OF CROWN FLAIR DR BACK OF CURB.
CP3	7650481.0610	18456632.8400	1109.03	FENO SET FENO MONUMENT FLUSH WITH GROUND SURFACE 0.2 MILES EAST SOUTH STORY ST. 139' NORTH OF THE CL OF THE US 30 WB LANES 161.3' NW OF A PP 33.2' S OF A MH LID ON AN INLET 28.6' S OF SE MARSHALL ST. BACK OF CURB.
CP4	7650241.0810	18454626.3000	1109.59	CP FOUND NGS STATION GSVS 080 0.2 MILES WEST SOUTH STORY ST. 62.6' S OF THE CL OF US 30 EB LANES 73' WNW OF A PP 46.4' SE OF MP 133.70 10' N OF A WITNESS POST.

ALIGNMENT COORDINATES

Line No.	Name	Location	Poin 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	RETD							4000.000 R1	76501+28.72	18460080.89	4037.756 R1	76501+66.46	18460080.09	4067.399 R1	76501+83.52	18460113.78				
1.0	RETC							3000.000 R1	76502+37.57	18459902.34	3039.475 R1	76502+42.61	18459941.49	3075.194 R1	76502+19.55	18459973.53				
1.0	ML30							90606.553	76503+55.36	18451402.59	90915.364	76503+52.35	18451711.38	91224.153	76503+55.74	18452020.18				
1.0	ML30WB_1	398275.000 R1	76503+06.10	18459070.4																
1.0	ML30EB_2	499297.150 R1	76502+09.67	18460091.65																
1.0	ML30EB_1	298275.000 R1	76502+56.10	18459069.91																
1.0	ML30WB_2							599335.000 R1	76503+21.04	18460130.6	599399.739 R1	76502+70.25	18460170.73	599452.843 R1	76502+78.45	18460234.95				
1.0	SR30	998625.000 R1	76496+24.78	18460049.68																
1.0	SR30SB_1	398625.000 R1	76496+24.78	18460049.68																
1.0	SR30NB_1	299068.260 R1	76500+66.21	18460067.71																
1.0	SR30NB_2							499319.050 R1	76503+16.73	18460127.29	499361.324 R1	76503+51.23	18460102.87	499403.045 R1	76503+91.14	18460088.93				
1.0	SR30SB_2							599334.330 R1	76503+32.42	18460028.33	599384.093 R1	76503+62.15	18460068.24	599426.680 R1	76504+11.92	18460068.58				
1.0	RETA							1000.000 R1	76503+07.17	18460250.56	1047.029 R1	76503+01.20	18460203.91	1088.883 R1	76503+30.81	18460167.37				
1.0	RETB							2000.000 R1	76504+24.41	18460043.94	2026.644 R1	76503+98.09	18460048.07	2050.148 R1	76503+77.38	18460031.31				
2.0	SR30SB_2	599659.191 R1	76506+44.42	18460070.2																
2.0	SR30NB_1							299136.013 R1	76501+33.94	18460066.28	299190.070 R1	76501+87.99	18460065.13	299235.127 R1	76502+18.55	18460109.72				
2.0	SR30SB_1							398901.926 R1	76499+01.70	18460049.13	398928.672 R1	76499+28.45	18460049.07	398955.103 R1	76499+54.27	18460056.05				
2.0	SR30							998901.926 R1	76499+01.70	18460049.13	998928.672 R1	76499+28.45	18460049.07	998955.103 R1	76499+54.27	18460056.05				
2.0	ML30EB_1							298936.610 R1	76502+49.61	18459731.48	298989.421 R1	76502+49.09	18459784.29	299042.065 R1	76502+55.83	18459836.67				
2.0	ML30EB_2							499368.522 R1	76502+31.59	18460159.58	499431.974 R1	76502+51.08	18460219.96	499494.074 R1	76502+48.22	18460283.35				
2.0	ML30WB_1							398905.720 R1	76502+99.91	18459701.09	398982.516 R1	76502+99.16	18459777.88	399059.305 R1	76502+96.59	18459854.64				
2.0	RETB							2050.148 R1	76503+77.38	18460031.31	2058.304 R1	76503+71.04	18460026.18	2066.386 R1	76503+66.04	18460019.73				
3.0	RETC							3096.284 R1	76502+07.23	18459990.64	3129.443 R1	76501+87.86	18460017.55	3160.520 R1	76501+56.54	18460028.46				
3.0	RETD							4075.210 R1	76501+87.04	18460120.75	4160.559 R1	76502+25.59	18460196.89	4242.138 R1	76502+21.75	18460282.16				
3.0	RETB							2066.386 R1	76503+66.04	18460019.73	2069.930 R1	76503+63.88	18460016.93	2073.462 R1	76503+62.13	18460013.85				
3.0	ML30WB_1							399059.305 R1	76502+96.59	18459854.64	399124.437 R1	76502+94.41	18459919.73	399187.881 R1	76503+17.38	18459980.68				
3.0	ML30							92308.116	76503+67.63	18453104.07	92608.207	76503+70.93	18453404.15	92908.235	76503+63.54	18453704.15				
3.0	ML30EB_2							499494.074 R1	76502+48.22	18460283.35	499608.513 R1	76502+43.07	18460397.67	499722.927 R1	76502+41.95	18460512.11				
3.0	ML30WB_2							599519.424 R1	76502+86.89	18460300.99	599571.932 R1	76502+93.55	18460353.08	599624.277 R1	76502+93.03	18460405.59				
3.0	SR30NB_2							499411.543 R1	76503+99.17	18460086.13	499462.998 R1	76504+47.75	18460069.17	499513.461 R1	76504+99.20	18460069.37				
3.0	RETA							1129.277 R1	76503+56.24	18460135.98	1146.369 R1	76503+67.00	18460122.7	1162.887 R1	76503+82.45	18460115.4				
4.0	SR30NB_2	499582.677 R1	76505+68.42	18460069.63																
4.0	SR30							998972.652 R1	76499+71.21	18460060.63	998998.826 R1	76499+96.48	18460067.45	999024.705 R1	76500+22.65	18460067.55				
4.0	SR30SB_1							398972.652 R1	76499+71.21	18460060.63	398998.826 R1	76499+96.48	18460067.45	399024.705 R1	76500+22.65	18460067.55				
4.0	ML30WB_2	599839.026 R1	76502+90.89	18460620.32																
4.0	ML30EB_1							299118.667 R1	76502+65.62	18459912.65	299175.513 R1	76502+72.88	18459969.03	299224.194 R1	76502+32.35	18460008.89				
4.0	ML30EB_2	500305.657 R1	76502+36.23	18461094.81																
4.0	ML30WB_1	399257.119 R1	76503+41.79	18460045.47																
4.0	RETB							2073.462 R1	76503+62.13	18460013.85	2158.189 R1	76503+20.24	18459940.2	2238.613 R1	76503+23.07	18459855.52				
5.0	ML30							94615.653	76503+21.53	18455411.05	94921.533	76503+14.00	18455716.84	95227.403	76503+11.00	18456022.7				
5.0	SR30	999646.480 R1	76506+44.42	18460069.81																
6.0	SR30SB_1							399027.581 R1	76500+25.53	18460067.56	399106.002 R1	76501+03.95	18460067.84	399182.898 R1	76501+77.94	18460041.86				
7.0	SR30SB_1							399182.898 R1	76501+77.94	18460041.86	399216.301 R1	76502+09.46	18460030.79	399249.341 R1	76502+37.15	18460012.12				
7.0	ML30							101074.912	76502+53.63	18461869.93	101400	76502+50.44	18462195	101724.912	76502+65.75	18462519.73				
8.0	ML30	105805.433	76504+57.87	18466595.73																

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
	C4	ML30										3.261◆	325.088	650	11421.359	4.626	
	C1	ML30EB_1										7.898◆	52.811	105.455	765	1.821	
	C1	ML30										1.186◆	308.811	617.6	29824.175	1.599	
	C2	ML30										2.039◆	300.092	600.12	16864.182	2.67	
	C3	ML30										0.848◆	305.881	611.75	41333.989	1.132	
	C1	ML30WB_1										1.354◆	76.796	153.585	6500	0.454	
	C2	ML30EB_1										52.806◆	56.846	105.527	114.5	13.335	
	C2	ML30WB_1										22.563◆	65.132	128.576	326.5	6.433	
	C1	ML30EB_2										20.465◆	63.452	125.552	351.5	5.681	
	C2	ML30EB_2										2.017◆	114.438	228.853	6500	1.007	
	C1	ML30WB_2										58.969◆	64.739	117.843	114.5	17.035	
	C2	ML30WB_2										7.853◆	52.509	104.853	765	1.8	
	C1	SR30										15.234◆	26.746	53.177	200	1.78	
	C2	SR30										14.912◆	26.175	52.054	200	1.706	
	C1	SR30NB_1										56.788◆	54.057	99.114	100	13.675	
	C1	SR30SB_1										15.234◆	26.746	53.177	200	1.78	
	C2	SR30SB_1										14.912◆	26.175	52.054	200	1.706	
	C3	SR30SB_1										19.558◆	78.421	155.317	455	6.709	
	C4	SR30SB_1										14.642◆	33.404	66.444	260	2.137	
	C1	SR30NB_2										16.042◆	42.274	83.995	300	2.964	
	C2	SR30NB_2										19.465◆	51.455	101.918	300	4.381	
	C1	SR30SB_2										52.913◆	49.763	92.35	100	11.698	
	C1	RETA										46.297◆	47.029	88.883	110	9.631	
	C2	RETA										25.677◆	17.092	33.611	75	1.923	
	C1	RETC										43.083◆	39.475	75.194	100	7.509	
	C2	RETC										35.052◆	33.159	64.236	105	5.111	
	C1	RETD										64.362◆	37.756	67.399	60	10.891	
	C2	RETD										29.429◆	85.349	166.928	325	11.02	

CROSS SECTION VIEW COLOR LEGEND OF TRAFFIC CONTROL AND STAGING SHEETS

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

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

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

PLAN VIEW COLOR LEGEND OF TRAFFIC CONTROL AND STAGING SHEETS

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

SHADING	Design Color No.	
Green, Light	(225)	Existing Pavement Shading
Gray, Light	(48)	Previously Constructed Pavement Shading
Gray, Med	(6)	Proposed Granular Surface Shading
Gray, Med	(80)	Previously Constructed Granular Surface Shading
Blue, Light	(230)	Proposed Pavement Shading
Pink, Dark	(13)	Temporary Pavement Shading
Brown, Light	(236)	Proposed Grading Limits Shading
Cyan	(7)	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	1	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)

FILE NO.	ENGLISH	DESIGN TEAM Rhoads\Tamrakar\Prindle	BOONE COUNTY	PROJECT NUMBER HSIPX-030-4(113)--3L-08	SHEET NUMBER J.1	

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108_23A
8/15/22

TRAFFIC CONTROL PLAN

Maintain a single lane of traffic on US-30 in each direction for the duration of the project.

Some movements between Marshall Street, Crown Flair Drive, and US-30 will be restricted during construction.

Maintain access for all property owners adjacent to the project at all times.

108_26A
8/15/22

STAGING NOTES

Stage 1 Work - Construct temporary median widening along westbound US-30.

Stage 1 Traffic Control - The inside lane of westbound US-30 and the median crossing at the US-30/Marshall Street/Crown Flair Drive intersection will be closed.

Stage 2 Work - Construct temporary widening along the outside of eastbound and westbound US-30 and Crown Flair Drive. Construct temporary entrance between eastbound US-30 and Crown Flair Drive. Construct the north most portion of the roundabout and the westbound lane of Marshall Street.

Stage 2 Traffic Control - The outside lane of westbound US-30, the outside lane of eastbound US-30, the entrance from westbound US-30 to Marshall Street, and the US-30/Marshall Street/Crown Flair Drive intersection will be closed. The Crown Flair Drive intersection will be restricted to right-in, right-out operations at the existing intersection location. Westbound US-30 traffic wishing to access Crown Flair Drive will need to perform and u-turn maneuver at the US-30/Story Street intersection.

Stage 3 Work - Construct temporary median widening along eastbound US-30. Construct the middle portion of the roundabout and the new southern leg of the Crown Flair Drive intersection.

Stage 3 Traffic Control - The inside lane of eastbound and westbound US-30, the entrance from westbound US-30 to Marshall Street, and the US-30/Marshall Street/Crown Flair Drive intersection will be closed. The Crown Flair Drive intersection will be restricted to right-in, right-out operations at the existing intersection location. Westbound US-30 traffic wishing to access Crown Flair Drive will need to perform and u-turn maneuver at the US-30/Story Street intersection.

Stage 4 Work - Construct the south most portion of the roundabout and the remaining portion of Crown Flair Drive.

Stage 4 Traffic Control - The construction on westbound US-30 and the Marshall Street intersection is complete. Traffic on westbound US-30 and Marshall Street is returned to normal operations. The outside lane of eastbound US-30, the existing Crown Flair Drive entrance, and the US-30/Marshall Street/Crown Flair Drive intersection will be closed. The Crown Flair Drive intersection will be restricted to right-in, right-out operations at the temporary intersection location. Westbound US-30 traffic wishing to access Crown Flair Drive will need to perform and u-turn maneuver at the US-30/Story Street intersection.

Stage 5 Work - Construct remaining curb and roundabout center island.

Stage 5 Traffic Control - The inside lanes for eastbound and westbound US-30 will be closed. All other traffic is returned to normal operations.

Stage 6 - Project is substantially complete. All traffic is returned to normal operations, except for any short duration closures needed to perform final pavement markings.

925+00
930+00
935+00
940+00
945+00
950+00

END ROAD WORK
G20-2A
48" x 24"

ROAD WORK AHEAD
W20-1
48" x 48"

SPEED LIMIT 40
R2-1
48" x 60"

0 100 FEET

Stage 1

955+00
960+00
965+00
970+00
975+00
980+00

0 100 FEET

Stage 1

FILE NO.	ENGLISH	DESIGN TEAM Rhoads\Tamrakar\Prindle	BOONE COUNTY	PROJECT NUMBER HSIPX-030-4(113)--3L-08	SHEET NUMBER J.4

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985+00
990+00
995+00
1000+00
1005+00
1010+00
0 100 FEET
Stage 1
MERGE
W4-2M
48" x 48"
LEFT LANE CLOSED AHEAD
W20-5
48" x 48"
1015+00
1020+00
1025+00
SPEED LIMIT 40
R2-1
48" x 60"
1030+00
ROAD WORK AHEAD
W20-1
48" x 48"
1035+00
1040+00
END ROAD WORK
G20-2A
48" x 24"
0 100 FEET
Stage 1

FILE NO.	ENGLISH	DESIGN TEAM Rhoads\Tamrakar\Prindle	BOONE COUNTY	PROJECT NUMBER HSIPX-030-4(113)--3L-08	SHEET NUMBER J.5	

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920+00
925+00
930+00
935+00
940+00
945+00
950+00

END ROAD WORK
G20-2A
48" x 24"

ROAD WORK AHEAD
W20-1
48" x 48"

SPEED LIMIT 40
R2-1
48" x 60"

0 100 FEET

Stage 2

950+00
955+00
960+00
965+00
970+00
975+00
980+00

0 100 FEET

Stage 2

FILE NO.	ENGLISH	DESIGN TEAM Rhoads\Tamrakar\Prindle	BOONE COUNTY	PROJECT NUMBER HSIPX-030-4(113)--3L-08	SHEET NUMBER J.6

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980+00
985+00
990+00
995+00
1000+00
1005+00
1010+00

0 100 FEET

Stage 2

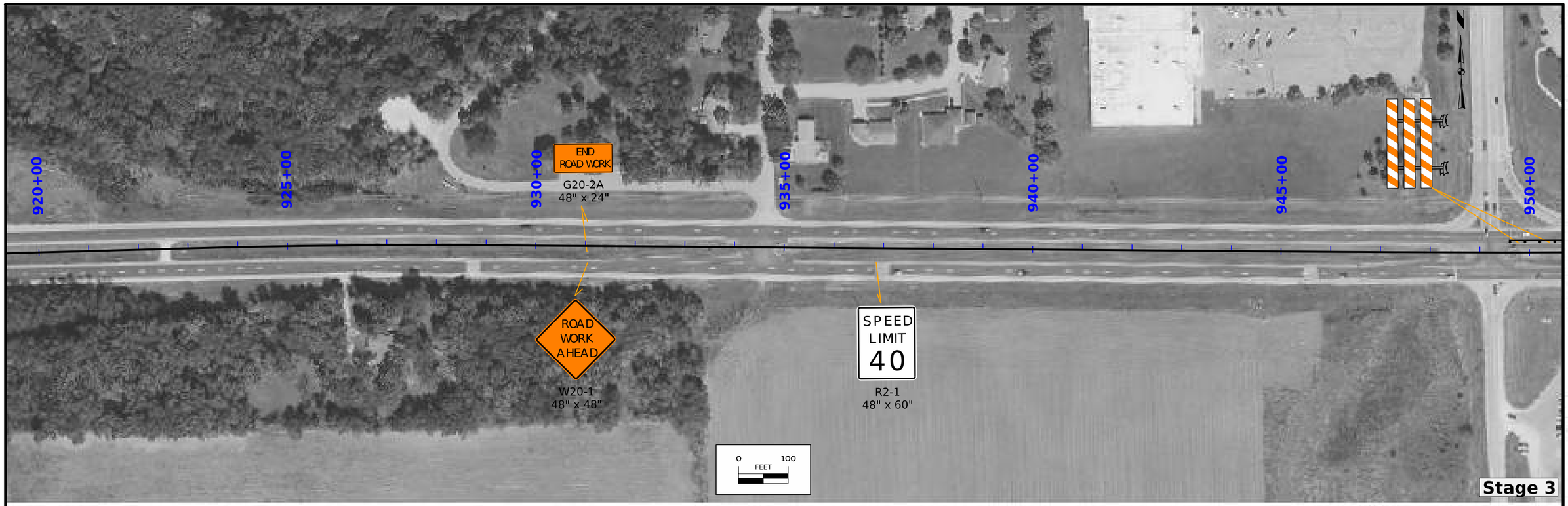
1010+00
MERGE
W4-2M
48" x 48"
1015+00
RIGHT LANE CLOSED AHEAD
W20-5
48" x 48"
1020+00
1025+00
SPEED LIMIT 40
R2-1
48" x 60"
1030+00
ROAD WORK AHEAD
W20-1
48" x 48"
1035+00
1040+00

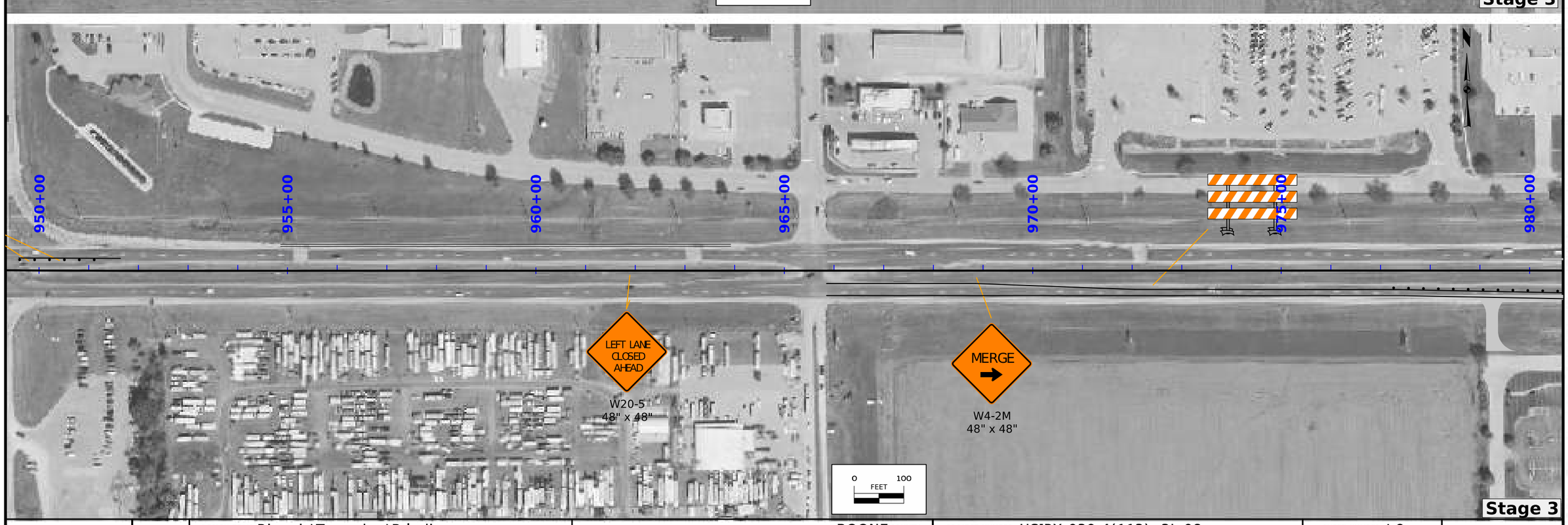
0 100 FEET

Stage 2

FILE NO.	ENGLISH	DESIGN TEAM Rhoads\Tamrakar\Prindle	BOONE COUNTY	PROJECT NUMBER HSIPX-030-4(113)--3L-08	SHEET NUMBER J.7

8:37:16 AM 6/12/2024 dtamrak pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\0803002024\Design\CADD_Files\Sheet_Files\SHT_08030113Z08_J_Stage 2.dgn





FILE NO.	ENGLISH	DESIGN TEAM Rhoads\Tamrakar\Prindle	BOONE COUNTY	PROJECT NUMBER HSIPX-030-4(113)--3L-08	SHEET NUMBER J.8

8:37:29 AM 6/12/2024 dtamrak pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\0803002024\Design\CADD_Files\Sheet_Files\SHT_08030113Z08_J Stage 3.dgn

980+00
985+00
990+00
995+00
1000+00
1005+00
1010+00

MERGE

W4-2M
48" x 48"

0 100
FEET

Stage 3

1010+00
1015+00
1020+00
1025+00
1030+00
1035+00
1040+00

LEFT LANE CLOSED AHEAD

W20-5
48" x 48"

SPEED LIMIT 40

R2-1
48" x 60"

ROAD WORK AHEAD

W20-1
48" x 48"

END ROAD WORK

G20-2A
48" x 24"

0 100
FEET

Stage 3

FILE NO.	ENGLISH	DESIGN TEAM Rhoads\Tamrakar\Prindle	BOONE COUNTY	PROJECT NUMBER HSIPX-030-4(113)--3L-08	SHEET NUMBER J.9

8:37:30 AM 6/12/2024 dtamrak pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\0803002024\Design\CADD_Files\Sheet_Files\SHT_08030113Z08_J Stage 3.dgn

920+00
925+00
930+00
935+00
940+00
945+00
950+00

END ROAD WORK
G20-2A
48" x 24"

ROAD WORK AHEAD
W20-1
48" x 48"

SPEED LIMIT 40
R2-1
48" x 60"

RIGHT LANE CLOSED AHEAD
W20-5
48" x 48"

0 FEET 100

Stage 4

950+00
955+00
960+00
965+00
970+00
975+00
980+00

MERGE
W4-2M
48" x 48"

0 FEET 100

Stage 4

FILE NO.	ENGLISH	DESIGN TEAM Rhoads\Tamrakar\Prindle	BOONE COUNTY	PROJECT NUMBER HSIPX-030-4(113)--3L-08	SHEET NUMBER J.10

8:37:41 AM 6/12/2024 dtamrak pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\0803002024\Design\CADD_Files\Sheet_Files\SHT_08030113Z08_J_Stage 4.dgn

980+00
985+00
990+00
995+00
1000+00
1005+00
1010+00

0 100
FEET

Stage 4

1010+00
1015+00
1020+00
1025+00
1030+00
1035+00
1040+00

SPEED LIMIT 40
R2-1
48" x 60"

ROAD WORK AHEAD
W20-1
48" x 48"

END ROAD WORK
G20-2A
48" x 24"

0 100
FEET

Stage 4

FILE NO.	ENGLISH	DESIGN TEAM Rhoads\Tamrakar\Prindle	BOONE COUNTY	PROJECT NUMBER HSIPX-030-4(113)--3L-08	SHEET NUMBER J.11

8:37:42 AM 6/12/2024 dtamrak pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\0803002024\Design\CADD_Files\Sheet_Files\SHT_08030113Z08_J_Stage 4.dgn

920+00
925+00
930+00
935+00
940+00
945+00
950+00

END ROAD WORK
G20-2A
48" x 24"

ROAD WORK AHEAD
W20-1
48" x 48"

SPEED LIMIT 40
R2-1
48" x 60"

0 100 FEET

Stage 5

950+00
955+00
960+00
965+00
970+00
975+00
980+00

LEFT LANE CLOSED AHEAD
W20-5
48" x 48"

MERGE
W4-2M
48" x 48"

0 100 FEET

Stage 5

FILE NO.	ENGLISH	DESIGN TEAM Rhoads\Tamrakar\Prindle	BOONE COUNTY	PROJECT NUMBER HSIPX-030-4(113)--3L-08	SHEET NUMBER J.12	

8:37:53 AM 6/12/2024 dtamrak pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\0803002024\Design\CADD_Files\Sheet_Files\SHT_08030113Z08_J_Stage 5.dgn

980+00
985+00
990+00
995+00
1000+00
1005+00
1010+00

MERGE
W4-2M
48" x 48"

0 100
FEET

Stage 5

1010+00
1015+00
1020+00
1025+00
1030+00
1035+00
1040+00

LEFT LANE CLOSED AHEAD
W20-5
48" x 48"

SPEED LIMIT 40
R2-1
48" x 60"

ROAD WORK AHEAD
W20-1
48" x 48"

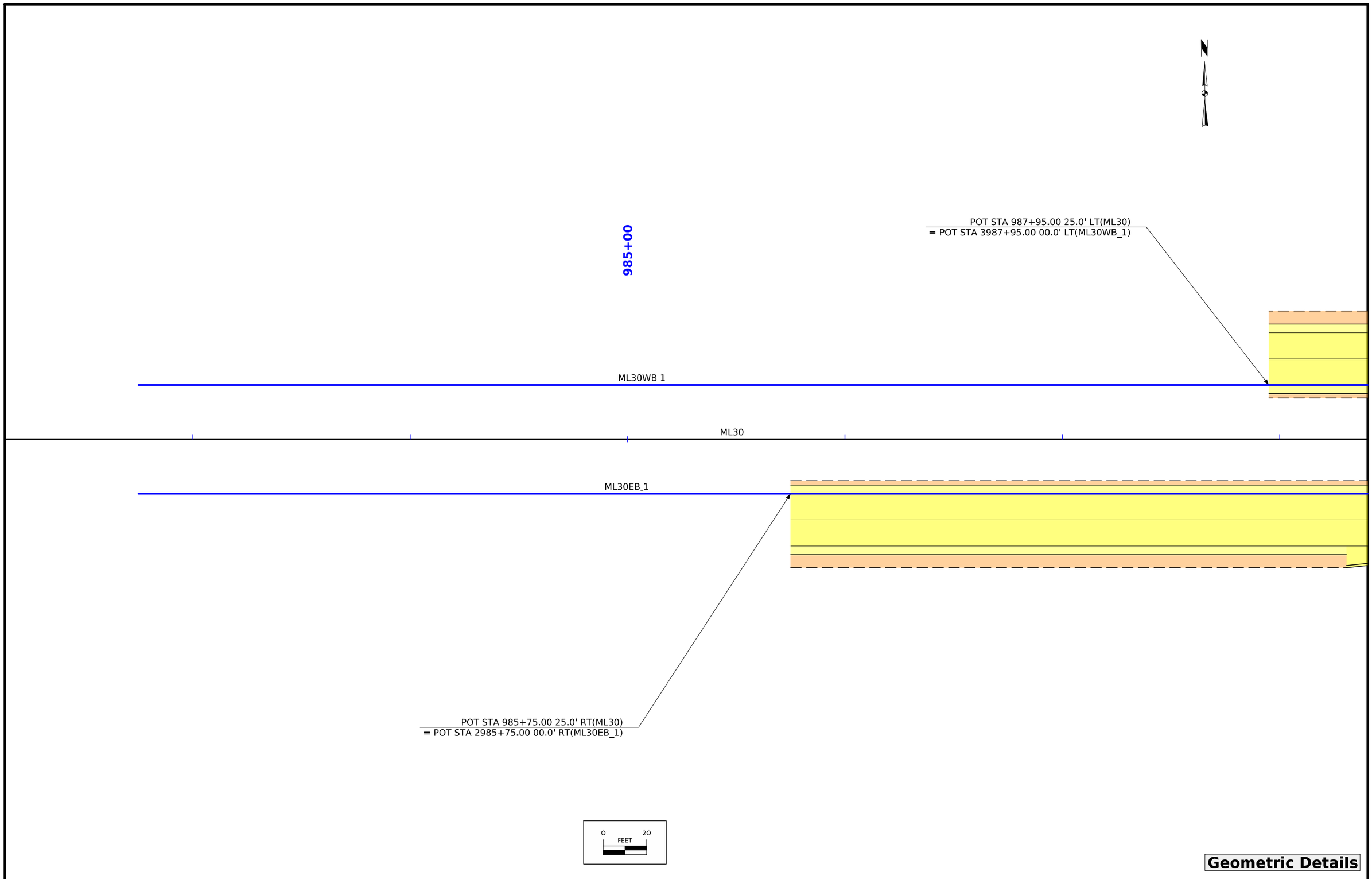
END ROAD WORK
G20-2A
48" x 24"

0 100
FEET

Stage 5

FILE NO.	ENGLISH	DESIGN TEAM Rhoads\Tamrakar\Prindle	BOONE COUNTY	PROJECT NUMBER HSIPX-030-4(113)--3L-08	SHEET NUMBER J.13

8:37:55 AM 6/12/2024 dtamrak pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\0803002024\Design\CADD_Files\Sheet_Files\SHT_08030113Z08_J_Stage 5.dgn



Geometric Details

FILE NO.	ENGLISH	DESIGN TEAM Rhoads\Tamrakar\Prindle	BOONE COUNTY	PROJECT NUMBER HSIPX-030-4(113)--3L-08	SHEET NUMBER L.1

2:31:33 PM 6/6/2024 dtamrak pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\0803002024\Design\CADD_Files\Sheet_Files\SHT_08030113Z08_L01.dgn

STA 20+66.39 (RETB)
Radius 50'

STA 20+50.15 (RETB)
Radius 60'

STA 20+77.14 (RETB)
Radius 70'

STA 5994+39.01 24.7' LT(SR30SB_2)
=STA 20+00.00 00.0' LT(RETB)

STA 11+29.28 (RETA)
= Radius 75.0'

STA 3992+00.55 00.0' RT(ML30WB_1)
=STA 1001+25.86 20.0'RT(RACIRCLE)

STA 3991+89.99 2.5' RT(ML30WB_1)
=STA 1001+33.96 24.0' RT(RACIRCLE)

STA 4993+84.79 21.60' RT(SR30NB_2)
= STA 11+62.89 00.0' RT(RETA)

STA 5993+72.19 00.0' RT(ML30WB_2)
=STA 1003+98.45 20.0' RT(RACIRCLE)

STA 989+05.72 59.0' LT(ML30)
=STA 3989+05.72 34.0' LT(ML30WB_1)

STA 990+59.92 49.7' LT(ML30)
=STA 3990+59.31 26.5' LT(ML30WB_1)

990+00

STA 3991+89.27 2.5' RT (ML30WB_1)
=STA 1001+33.44 25.7' RT(RACIRCLE)

STA 3991+89.28 3.45' RT(ML30WB_1)
=STA 1001+33.96 25.0' RT(RACIRCLE)
Radius 1'

SR30SB_2

SR30NB_2

RETB

RETA

ML30WB_1

R- 114.5'

R- 102.5'

R- 150'

POT STA 2991+18.67
12.0' RT(ML30EB_1)

STA 5993+81.24 7.2' RT(ML30WB_2)
=STA 1003+89.59 22.5' RT(RACIRCLE)

STA 4993+64.26 00.0' 4.2'LT(ML30EB_2)
=STA 1003+50.48 24.0' RT(RACIRCLE)

STA 1003+89.67
25.5' RT(RACIRCLE)
Radius 3'

STA 1003+50.48
25.5' RT(RACIRCLE)
Radius 1'

ML30

10:1 Taper

ML30EB_1

10:1 Taper

STA 2991+80.96
2.5' LT(ML30EB_1)

STA 989+05.72 22.50' RT(ML30)
= STA 2989+05.72 2.5' LT(ML30EB_1)

STA 2991+80.96 5.5' LT(ML30EB_1)
=STA 1001+73.66 25.5' RT (RACIRCLE)
Radius 3'

RETC

RETD

STA 989+05.72 51.5' RT(ML30)
= STA 2989+05.72 26.5' RT(ML30EB_1)

STA 1001+73.66
22.5' RT(RACIRCLE)

STA 4993+53.72 00.0' RT(ML30EB_2)
=STA 1003+42.40 20.0' RT (RACIRCLE)

STA 2991+04.86 26.5' RT(ML30EB_1)
=STA 30+00.00 00.0' RT(RETC)

STA 2991+92.18 (ML30EB_1)
= STA 1001+82.33 20.0' RT(RACIRCLE)

STA 988+70.72 19.0' RT(ML30)
=STA 2988+70.72 6.0' LT(ML30EB_1)

STA 3991+66.44 19.45' LT(SR30SB_1)
=STA 31+60.52 00.0' LT(RETC)

STA 4993+64.99 2.5' LT(ML30EB_2)
=STA 1003+49.96 25.71' RT(RACIRCLE)

SR30SB_1

SR30NB_1

STA 30+75.19 (RETC)
= Radius 100'

STA 40+67.40 (RETD)
= Radius 60'

STA 30+96.28 (RETC)
= Radius 105'

STA 988+30.72 59.00' RT(ML30)
=STA 2988+30.72 34.0' RT(ML30EB_1)

STA 2991+30.48 14.5' RT(SR30NB_1)
= STA 40+00.00 00.0' RT(RETD)

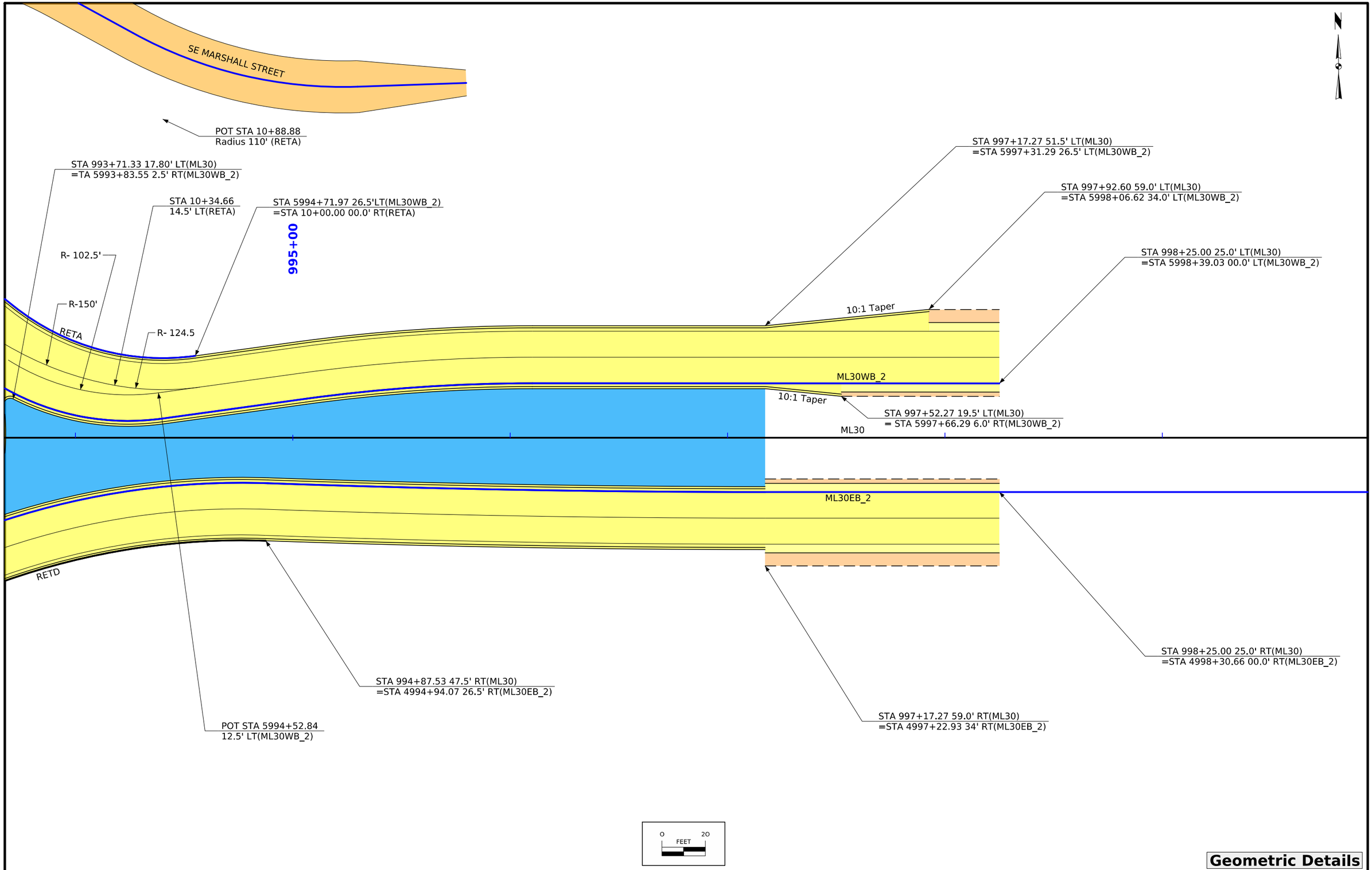
STA 3990+94.31 133.22' LT(SR30SB_1)
=STA 21+45.99 00.0' LT(RETB_CROWN)

0 20
FEET

Geometric Details

FILE NO.	ENGLISH	DESIGN TEAM Rhoads\Tamrakar\Prindle	BOONE COUNTY	PROJECT NUMBER HSIPX-030-4(113)--3L-08	SHEET NUMBER L.2

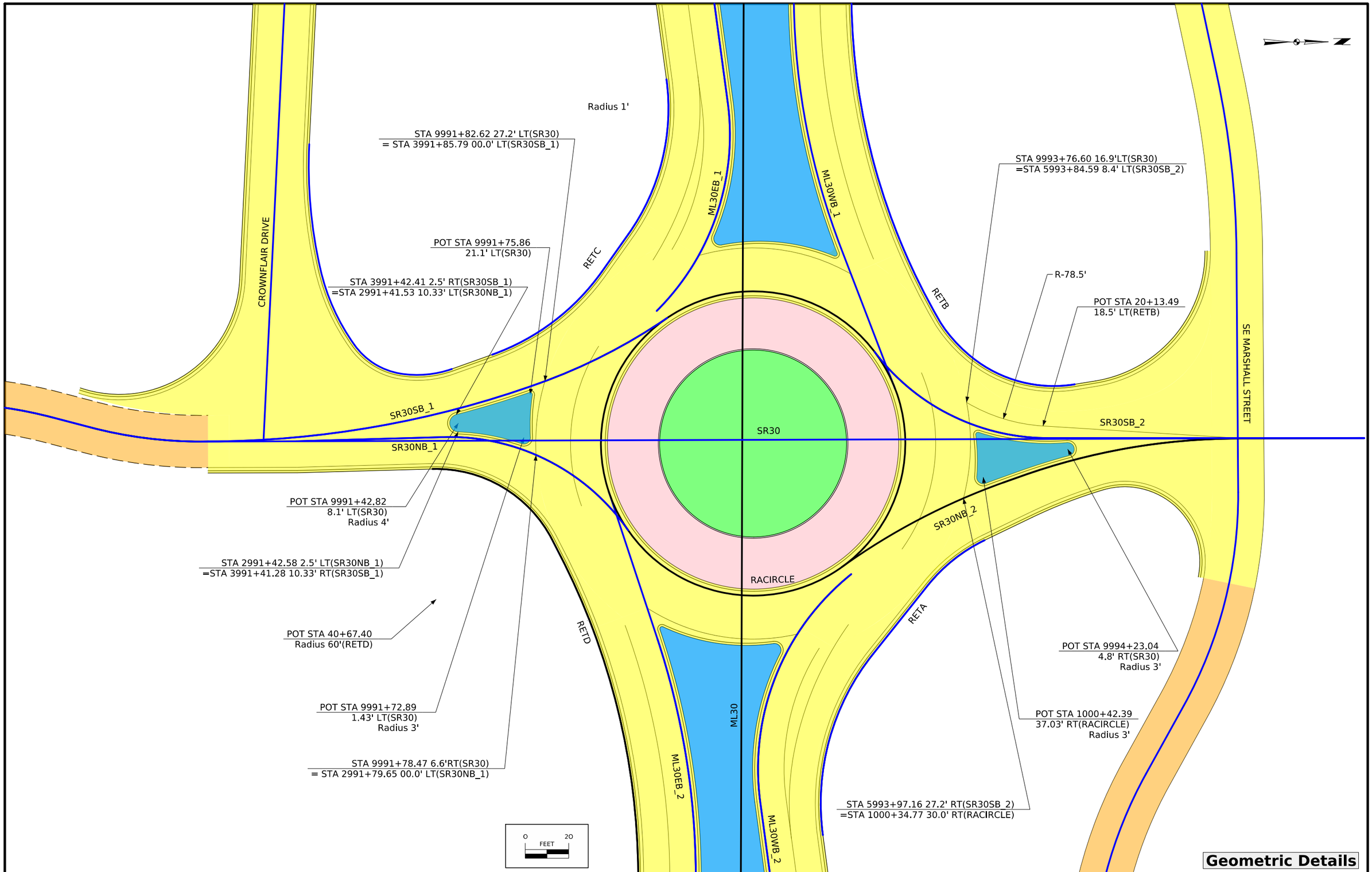
2:31:37 PM 6/6/2024 dtamrak pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\0803002024\Design\CADD_Files\Sheet_Files\SHT_08030113Z08_L01.dgn



Geometric Details

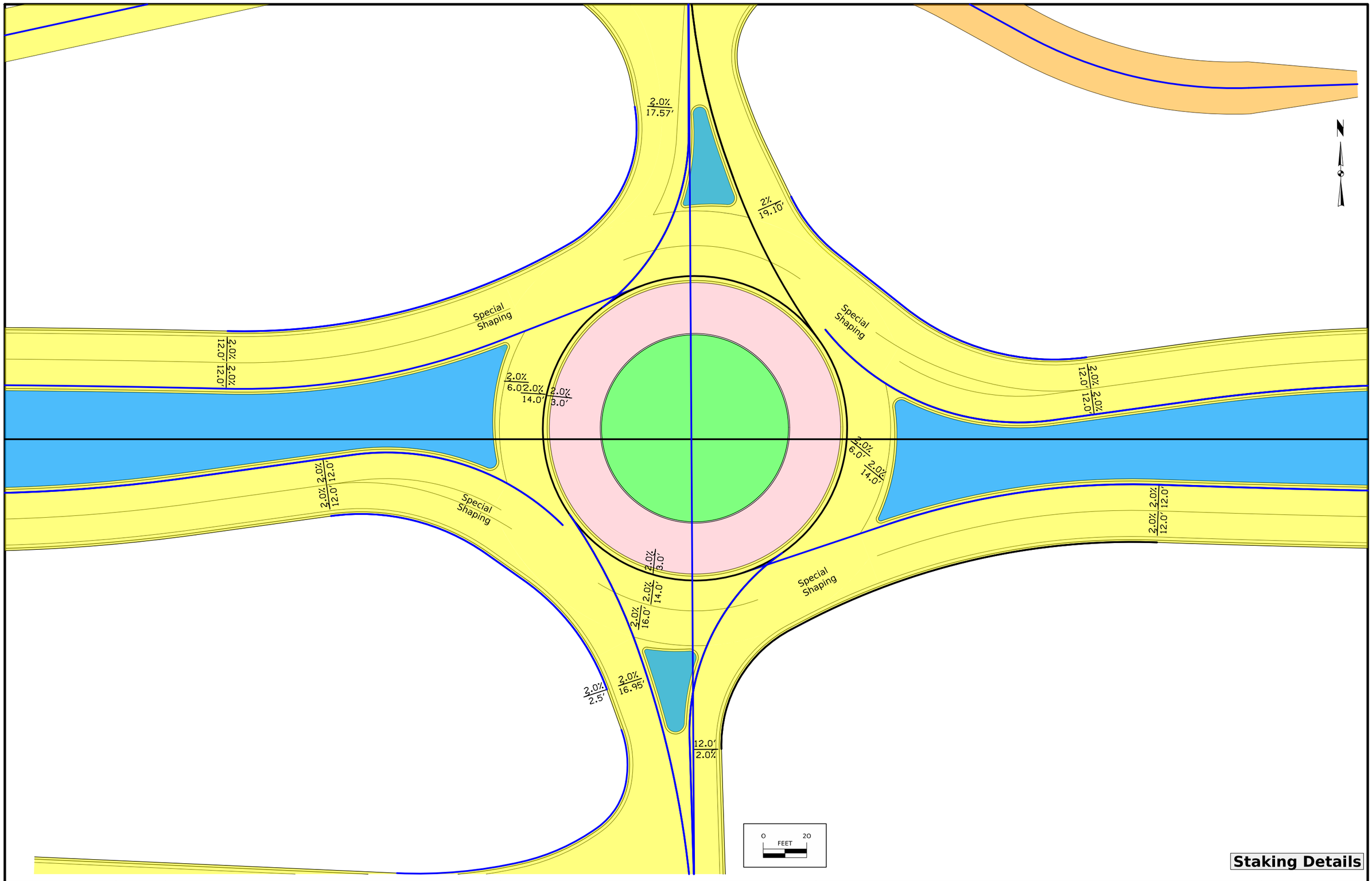
FILE NO.	ENGLISH	DESIGN TEAM Rhoads\Tamrakar\Prindle	BOONE COUNTY	PROJECT NUMBER HSIPX-030-4(113)--3L-08	SHEET NUMBER L.3

2:31:40 PM 6/6/2024 dtamrak pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\0803002024\Design\CADD_Files\Sheet_Files\SHT_08030113Z08_L01.dgn



FILE NO.	ENGLISH	DESIGN TEAM Rhoads\Tamrakar\Prindle	BOONE COUNTY	PROJECT NUMBER HSIPX-030-4(113)--3L-08	SHEET NUMBER L.4	

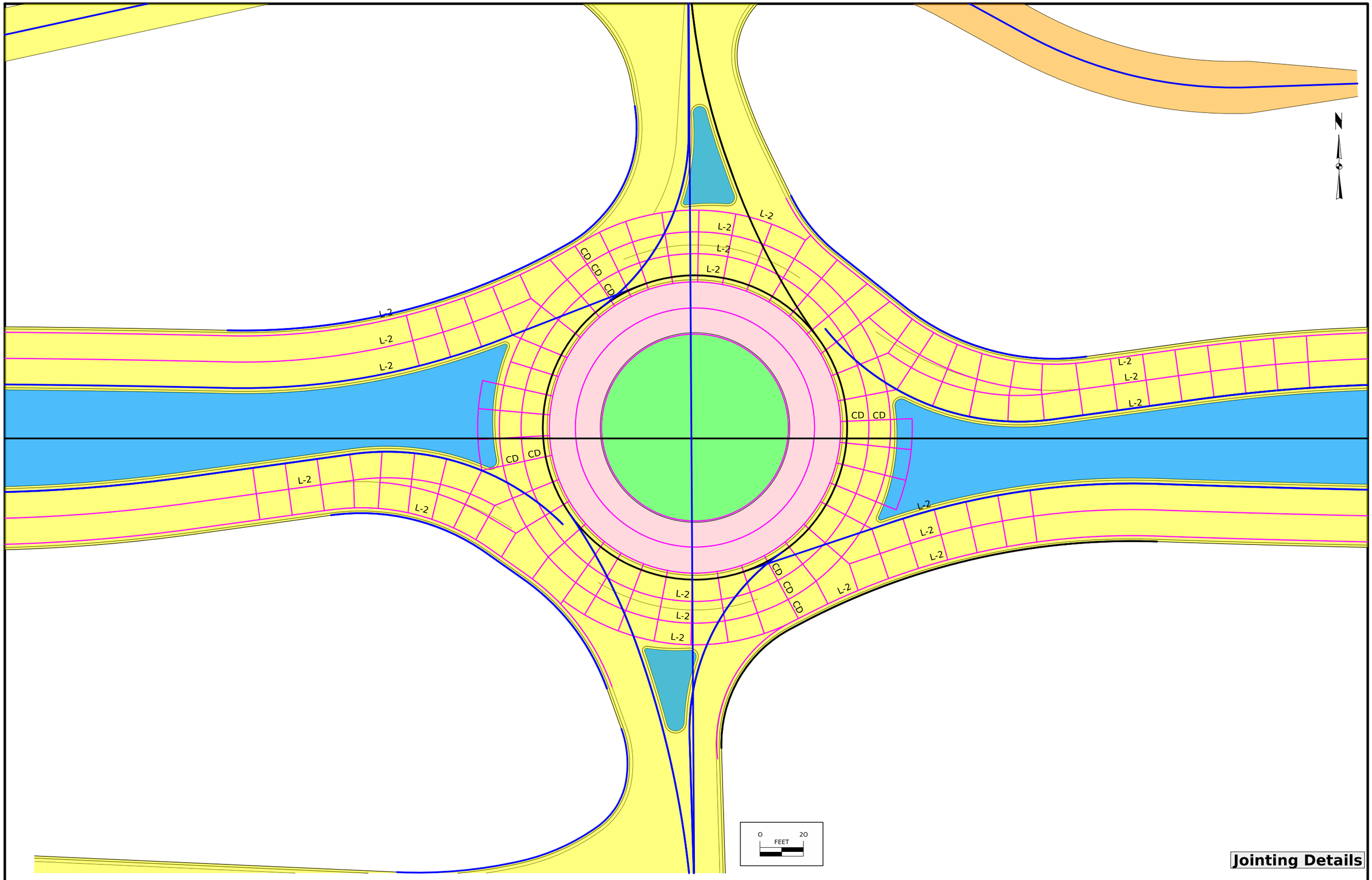
4:19:26 PM 6/6/2024 dtamrak pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\0803002024\Design\CADD_Files\Sheet_Files\SHT_08030113Z08_L04.dgn



Staking Details

FILE NO.	ENGLISH	DESIGN TEAM Rhoads\Tamrakar\Prindle	BOONE COUNTY	PROJECT NUMBER HSIPX-030-4(113)--3L-08	SHEET NUMBER L.5

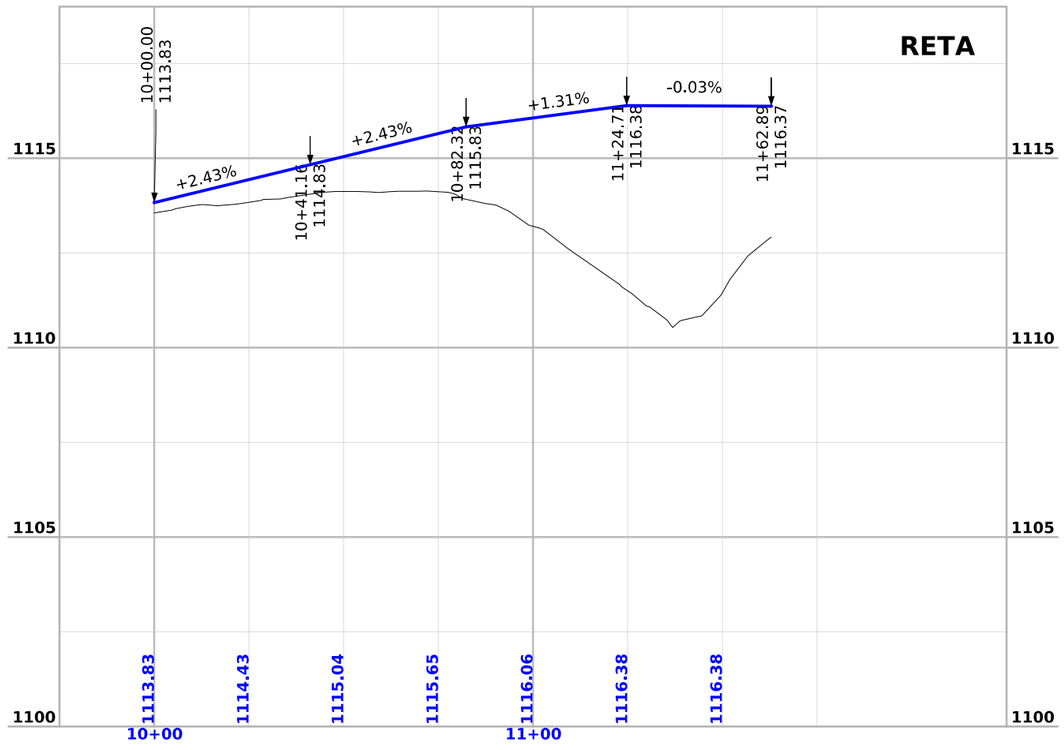
2:45:08 PM 6/10/2024 dtamrak pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\0803002024\Design\CADD_Files\Sheet_Files\SHT_08030113Z08_L05.dgn

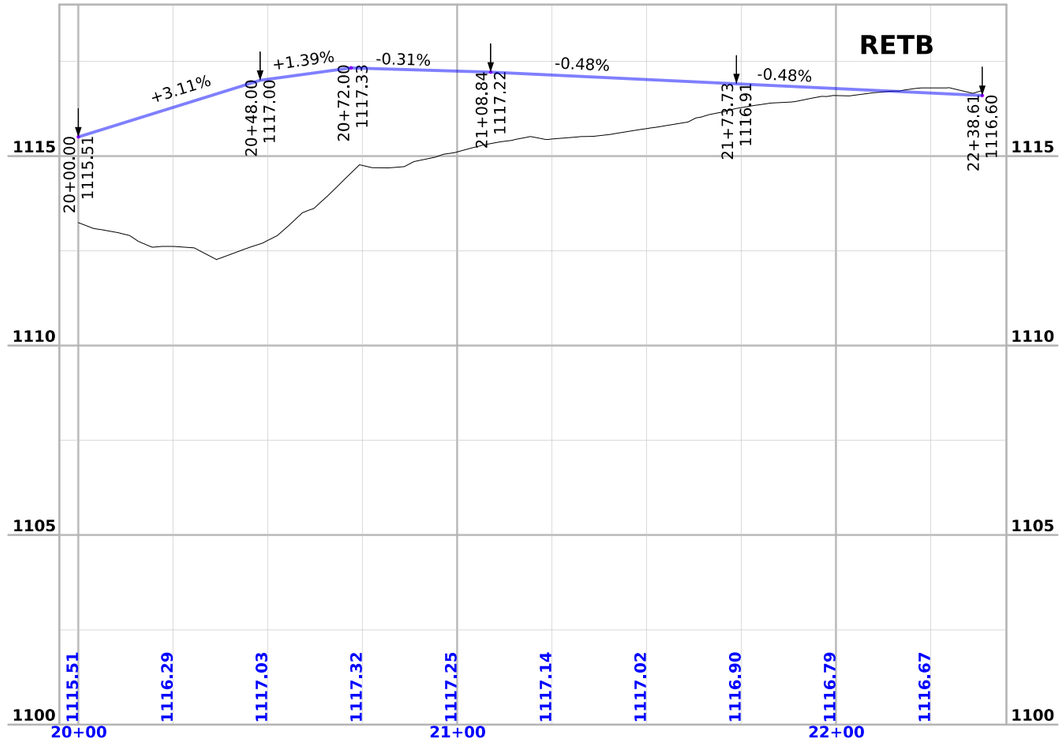


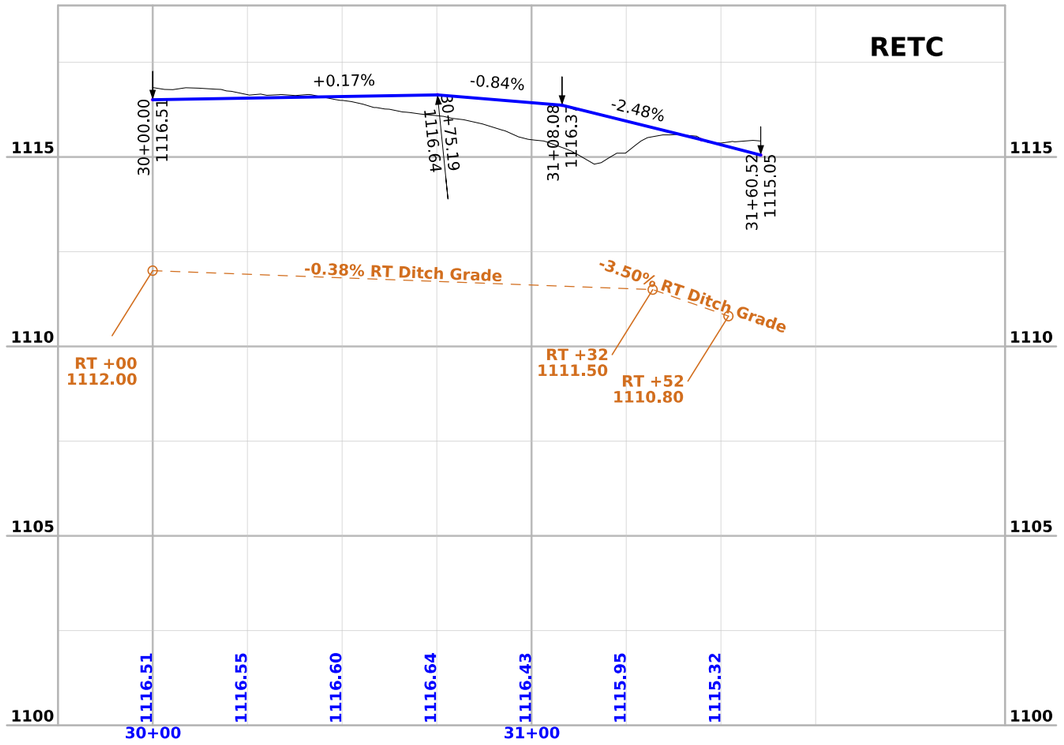
Jointing Details

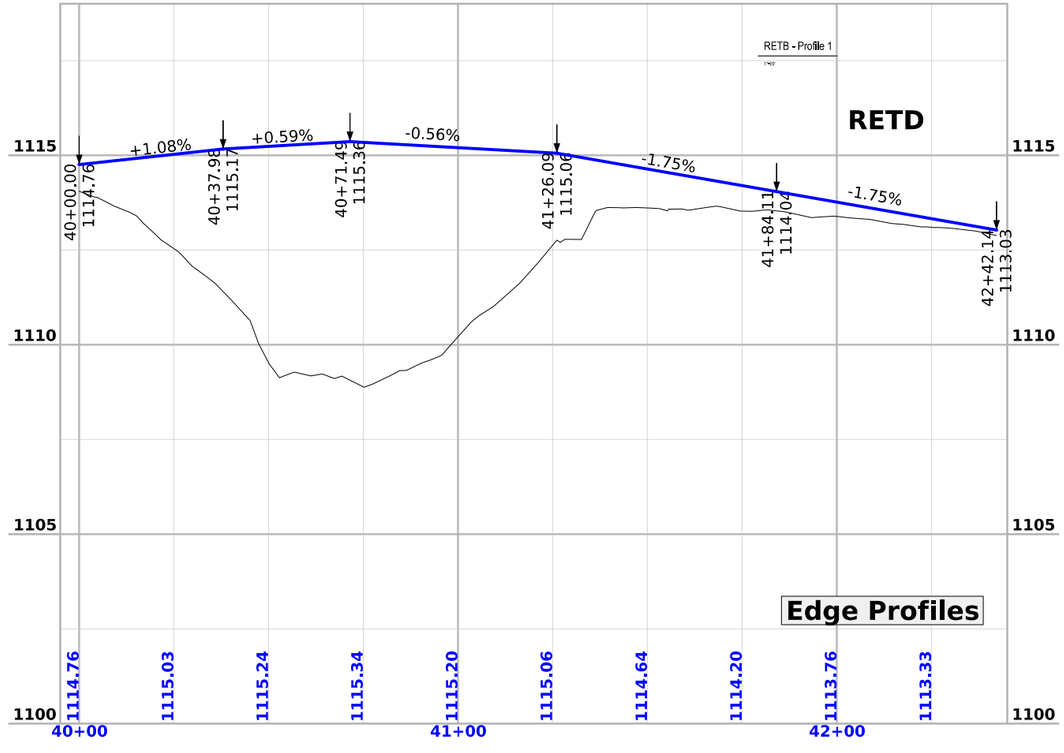
FILE NO.	ENGLISH	DESIGN TEAM Rhoads\Tamrakar\Prindle	BOONE COUNTY	PROJECT NUMBER HSIPX-030-4(113)--3L-08	SHEET NUMBER L.6

8:20:09 AM 6/12/2024 dtamrak pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\0803002024\Design\CADD_Files\Sheet_Files\SHT_08030113Z08_L06.dgn







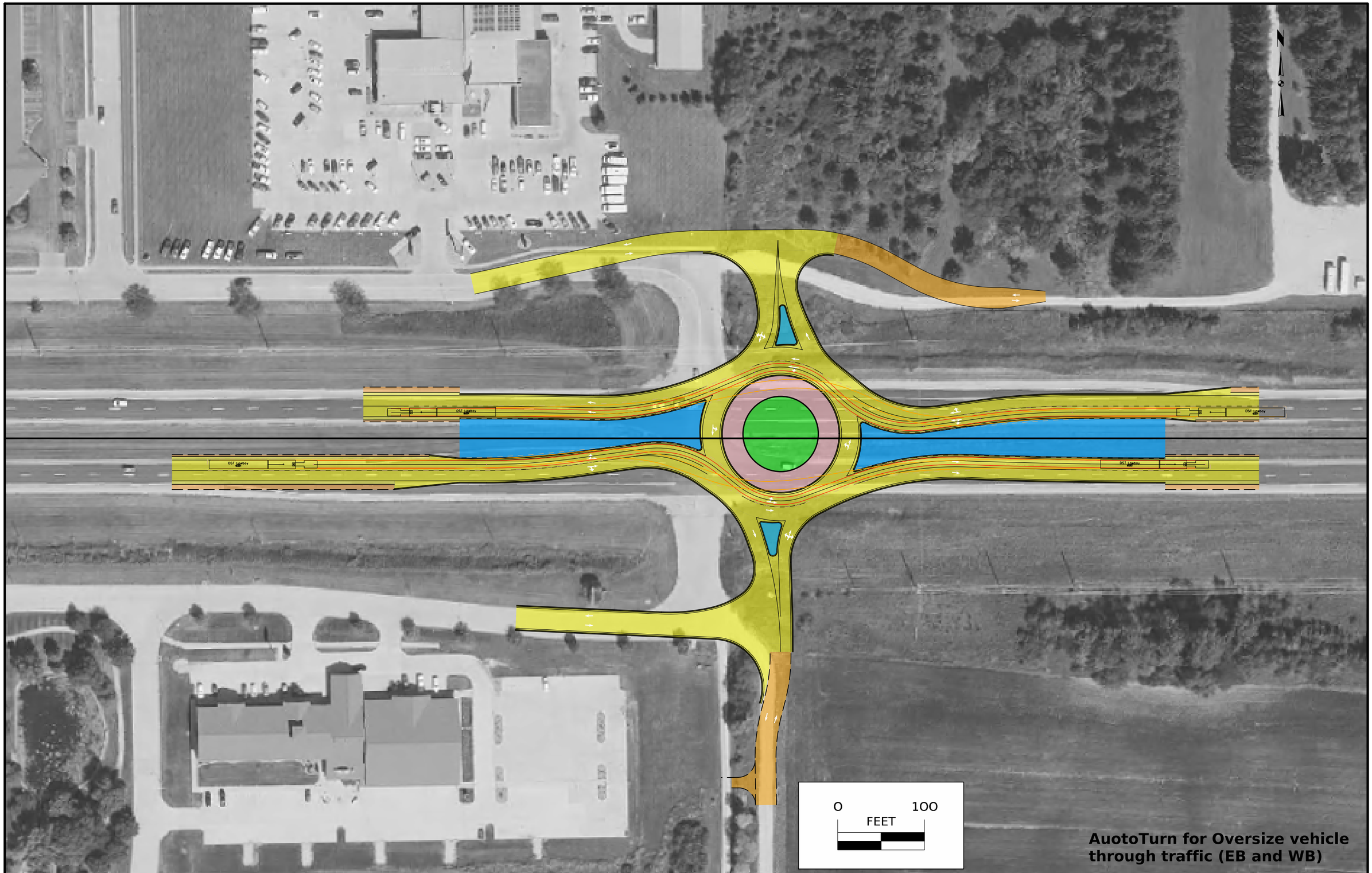


FILE NO.	ENGLISH	DESIGN TEAM Rhoads\Tamrakar\Prindle	BOONE COUNTY	PROJECT NUMBER HSIPX-030-4(113)--3L-08	SHEET NUMBER L.7

10:31:33 AM 6/11/2024 dtamrak pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\0803002024\Design\CADD_Files\Sheet_Files\SHT_08030113Z08_L07.dgn

RETC - Profile 1

RETD - Profile 1



AuotoTurn for Oversize vehicle through traffic (EB and WB)

FILE NO.	ENGLISH	DESIGN TEAM Rhoads\Tamrakar\Prindle	BOONE COUNTY	PROJECT NUMBER HSIPX-030-4(113)--3L-08	SHEET NUMBER U.1	

10:03:41 AM 6/14/2024 dtamrak pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\0803002024\Design\CADD_Files\Sheet_Files\SHT_08030113Z08_U01.dgn

CROSS SECTION VIEW COLOR LEGEND

Design Color No.	Feature
Aggregate	
(64)	Choke Stone
(42)	Engineering Fabric
(8)	Flooded Backfill
(92)	Macadam Stone
(20)	Modified
(12)	Plowing Shaping
(14)	Porous Backfill
(8)	Revetment Class A
(6)	Revetment Class B
(62)	Revetment Class C
(188)	Revetment Class D
(28)	Revetment Class E
(12)	Shoulder Special Backfill
(12)	Special Backfill
(20)	Subbase
(20)	Subbase Lower
(20)	Subbase Upper
(118)	Subgrade Treatment
Asphalt	
(207)	HMA Base Course
(207)	HMA Interim Course
(207)	HMA Surface Course
Bridge	
(0)	Bridge
Concrete	
(0)	Barrier Concrete
(0)	Barrier Concrete Footing
(0)	Curb Gutter
(48)	Flowable Mortar
(0)	Median Concrete
(0)	PCC Pavement
(0)	Sidewalk
Existing	
(0)	Existing Pavement
Shoulder	
(209)	Shoulder HMA
(0)	Shoulder PCC
(6)	Shoulder Granular
Structural	
(112)	Noise Wall
(112)	Noise Wall Footing
(112)	Retaining Wall Back
(112)	Retaining Wall Back Excavate
(112)	Retaining Wall Face
(112)	Retaining Wall Front Excavate
(112)	Retaining Wall Front Footing
(112)	Retaining Wall MSE Gutter
(112)	Retaining Wall Reinforced Earth

Design Color No.	Feature
Grading	
(8)	Behind Curb Cut
(6)	Granular
(13)	Granular Back Fill
(48)	Rock Undercut
(8)	Shoulder Earth Fill
(2)	Side Slopes
(226)	Side Slopes Dressing
Substrata	
(128)	Boulder
(209)	Boulder Removed
(48)	Broken Weathered
(210)	Broken Weathered Removed
(3)	Core Out
(115)	Core Out Remove Only
(195)	Core Out Remove and Replace
(203)	Existing Pavement
(184)	Existing Pavement Remove Only
(200)	Existing Pavement Remove and Replace
(6)	Loam
(211)	Loam Removed
(80)	Rock
(212)	Rock Removed
(4)	Select Sand
(214)	Select Sand Removed
(3)	Shale
(215)	Shale Removed
(10)	Topsoil
(2)	Topsoil Remove Only
(4)	Topsoil Remove and Replace
Unsuitable / Waste	
(3)	Unsuitable Type A
(216)	Unsuitable Type A Removed
(13)	Unsuitable Type B
(217)	Unsuitable Type B Removed
(11)	Unsuitable Type C
(218)	Unsuitable Type C Removed
(3)	Waste
(219)	Waste Removed

NOTES:

Text

NOTES:

Text

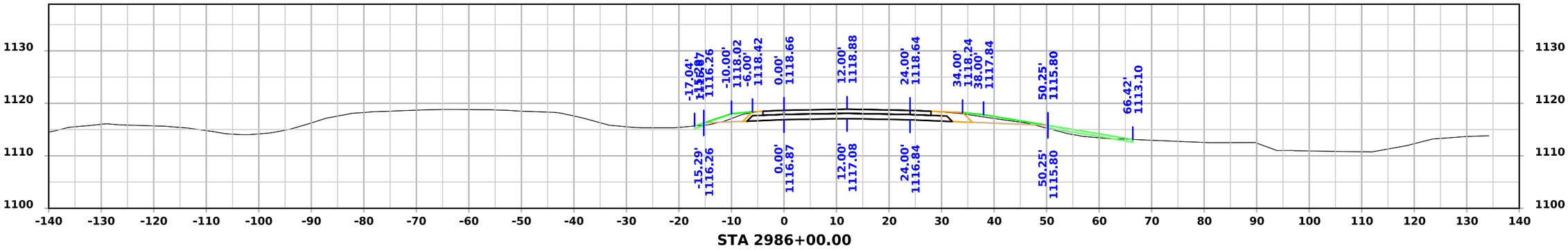
CROSS SECTIONS
LEGEND AND INFORMATION SHEET

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

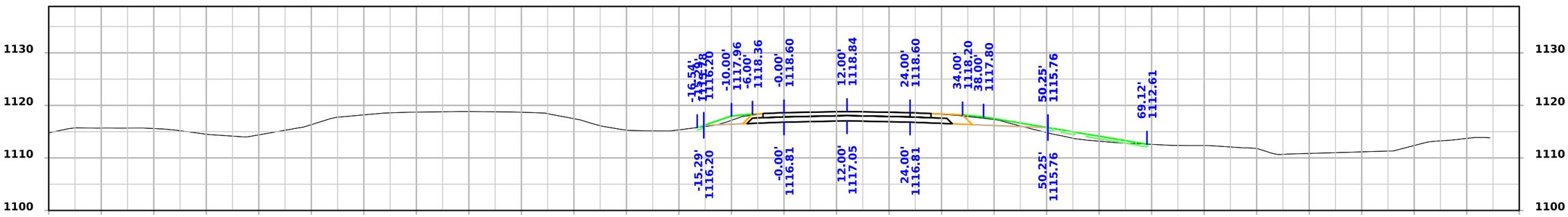
FILE NO.	ENGLISH	DESIGN TEAM Rhoads\Tamrakar\Prindle	BOONE COUNTY	PROJECT NUMBER HSIPX-030-4(113)--3L-08	SHEET NUMBER W.1

10:11:46 AM 6/12/2024 dtamrak pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\0803002024\Design\CADD_Files\Sheet_Files\LGD_08030113Z08.dgn

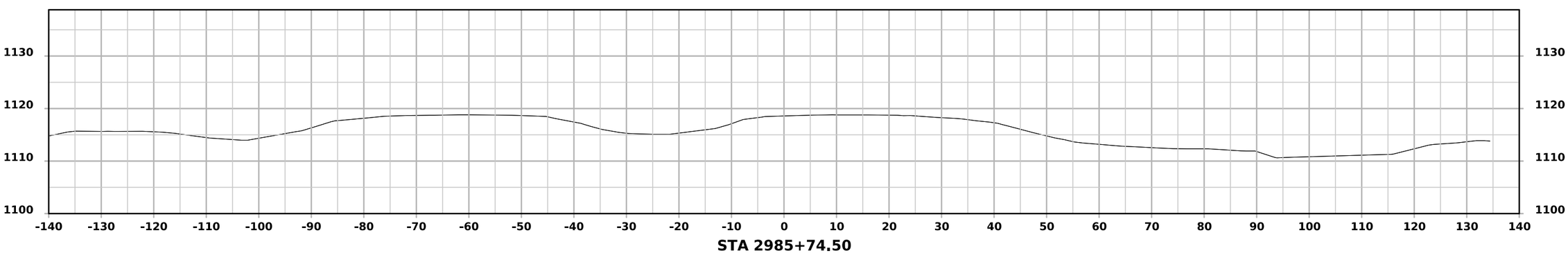
ML30EB_1



STA 2986+00.00



STA 2985+75.00

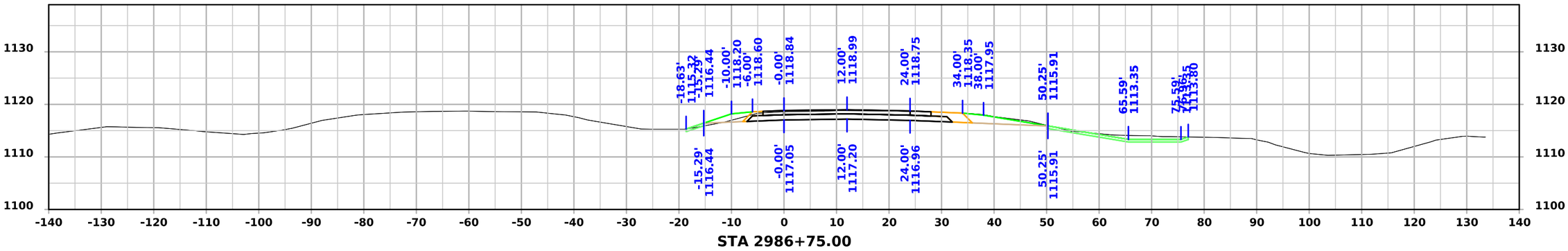


STA 2985+74.50

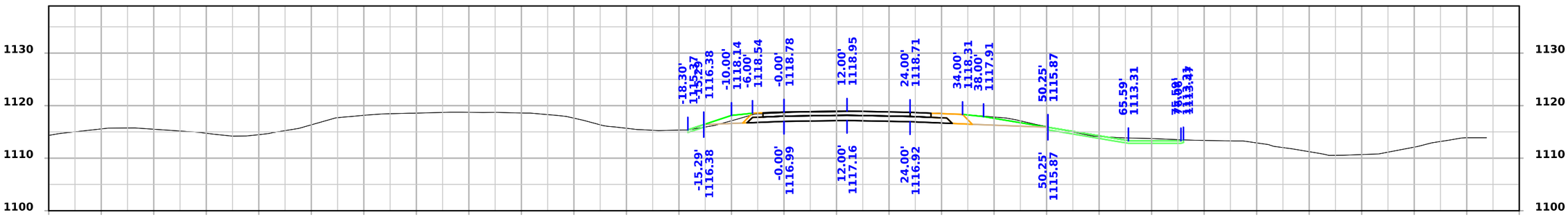
FILE NO.	ENGLISH	DESIGN TEAM Rhoads\Tamrakar\Prindle	BOONE COUNTY	PROJECT NUMBER HSIPX-030-4(113)--3L-08	SHEET NUMBER W.2	

10:12:11 AM 6/12/2024 dtamrak pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\0803002024\Design\CADD_Files\Sheet_Files\SHT_08030113Z08_W02.dgn

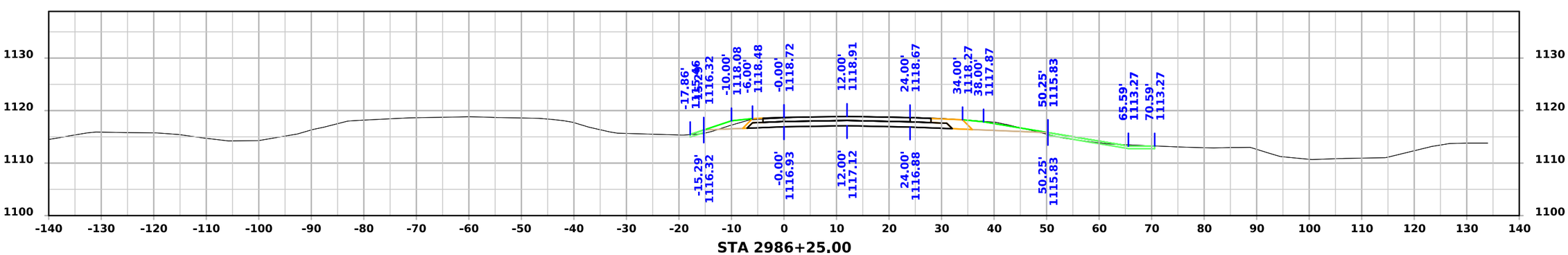
ML30EB_1



STA 2986+75.00



STA 2986+50.00

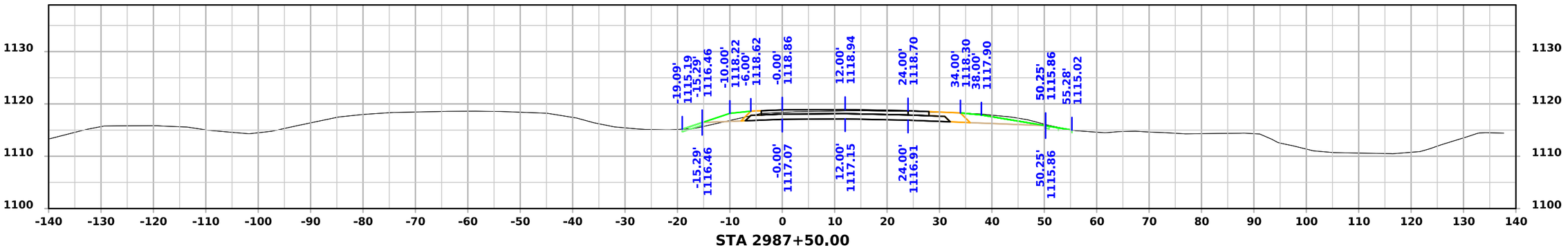


STA 2986+25.00

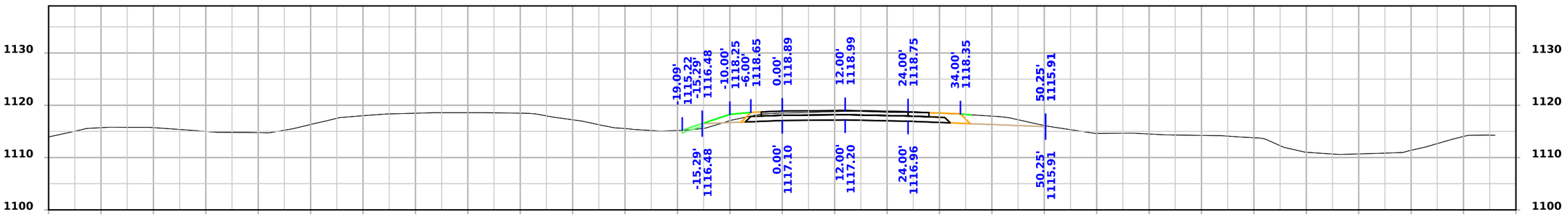
FILE NO.	ENGLISH	DESIGN TEAM Rhoads\Tamrakar\Prindle	BOONE COUNTY	PROJECT NUMBER HSIPX-030-4(113)--3L-08	SHEET NUMBER W.3	

10:12:12 AM 6/12/2024 dtamrak pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\0803002024\Design\CADD_Files\Sheet_Files\SHT_08030113Z08_W02.dgn

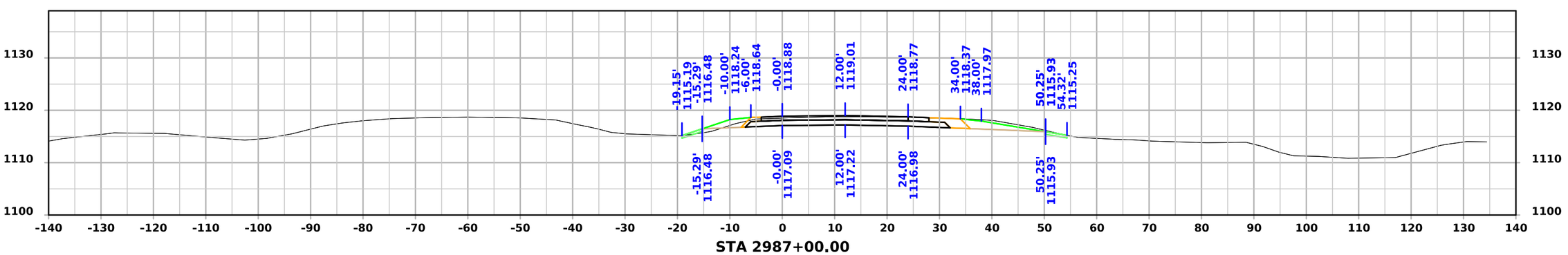
ML30EB_1



STA 2987+50.00



STA 2987+25.00

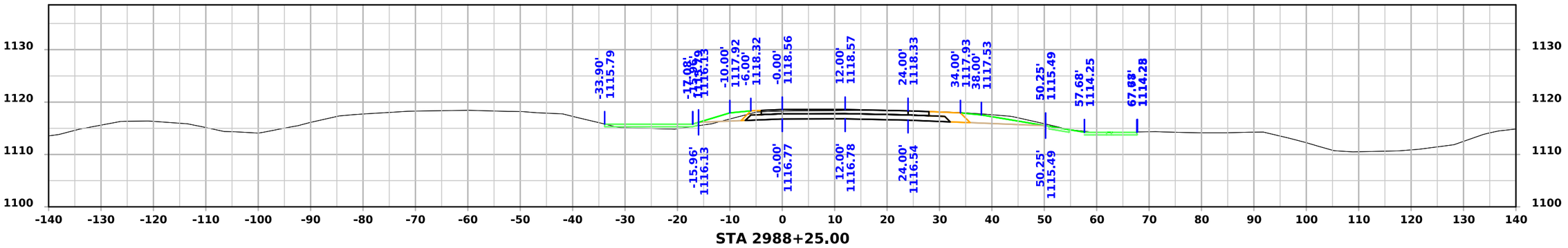


STA 2987+00.00

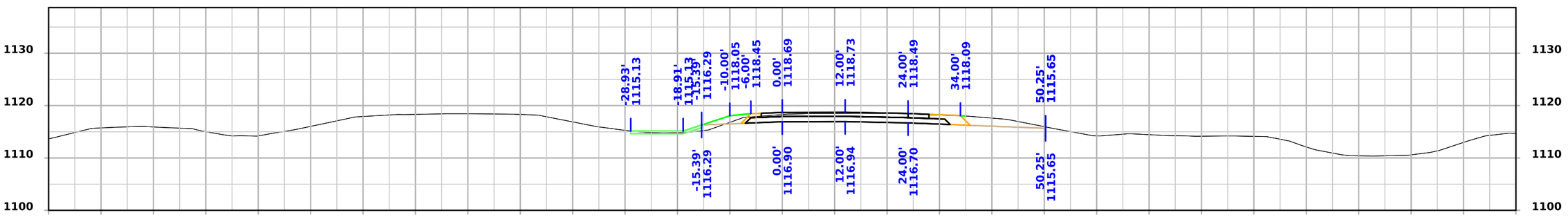
FILE NO.	ENGLISH	DESIGN TEAM Rhoads\Tamrakar\Prindle	BOONE COUNTY	PROJECT NUMBER HSIPX-030-4(113)--3L-08	SHEET NUMBER W.4	

10:12:13 AM 6/12/2024 dtamrak pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\0803002024\Design\CADD_Files\Sheet_Files\SHT_08030113Z08_W02.dgn

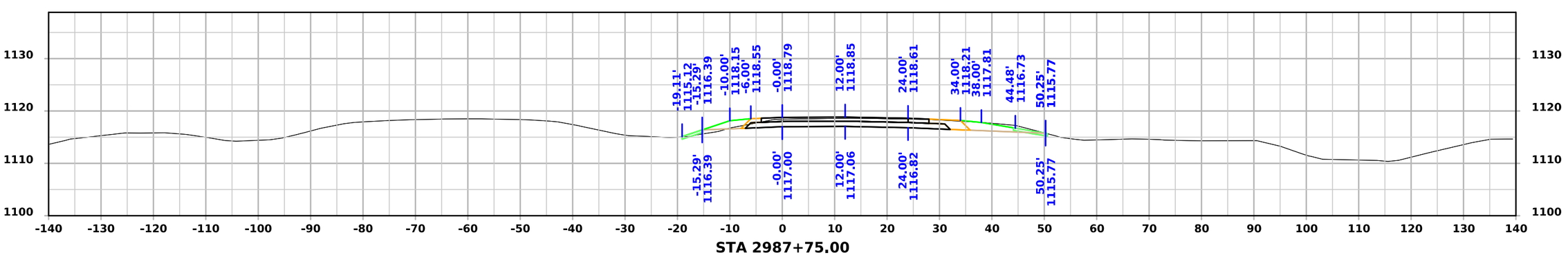
ML30EB_1



STA 2988+25.00



STA 2988+00.00

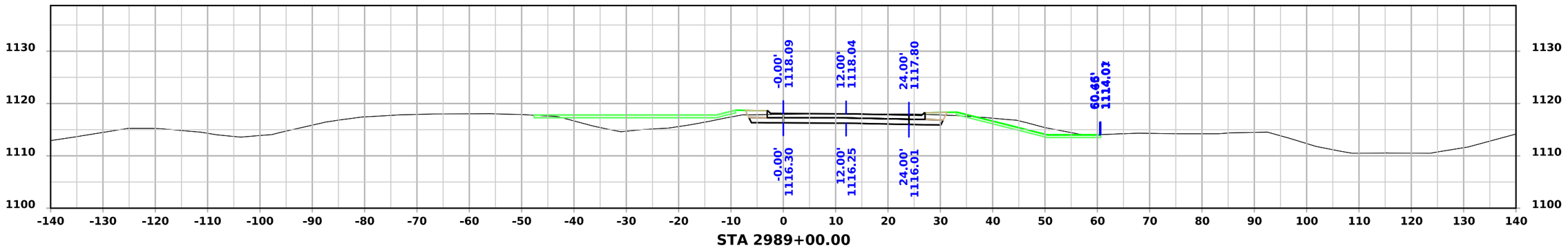


STA 2987+75.00

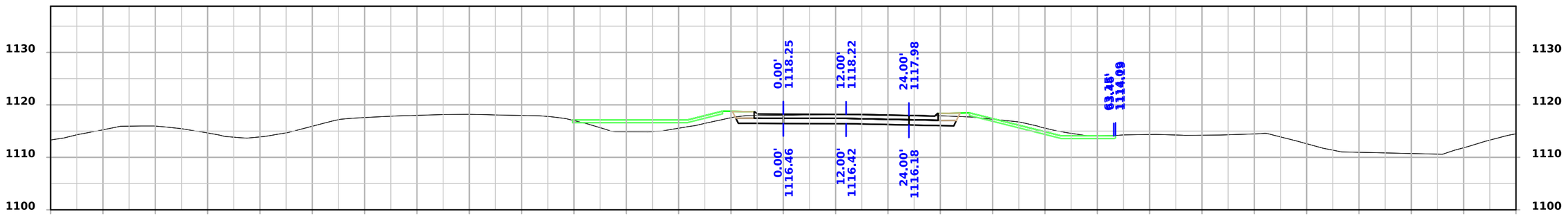
FILE NO.	ENGLISH	DESIGN TEAM Rhoads\Tamrakar\Prindle	BOONE COUNTY	PROJECT NUMBER HSIPX-030-4(113)--3L-08	SHEET NUMBER W.5

10:12:14 AM 6/12/2024 dtamrak pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\0803002024\Design\CADD_Files\Sheet_Files\SHT_08030113Z08_W02.dgn

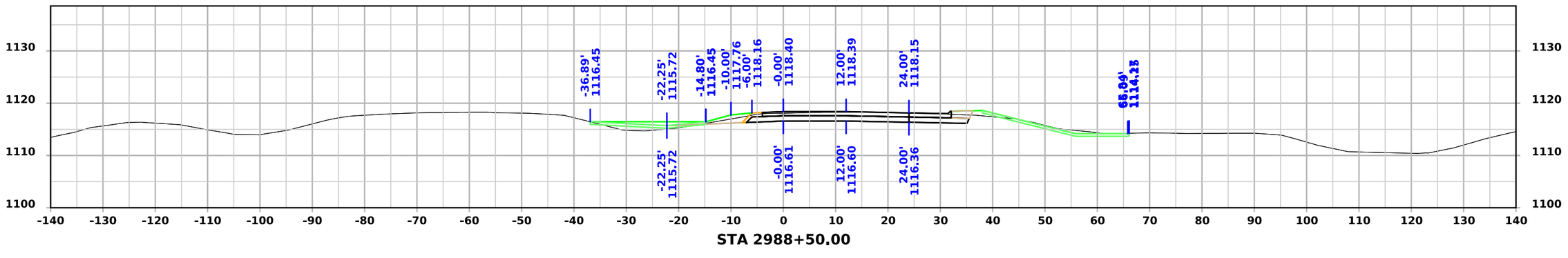
ML30EB_1



STA 2989+00.00



STA 2988+75.00

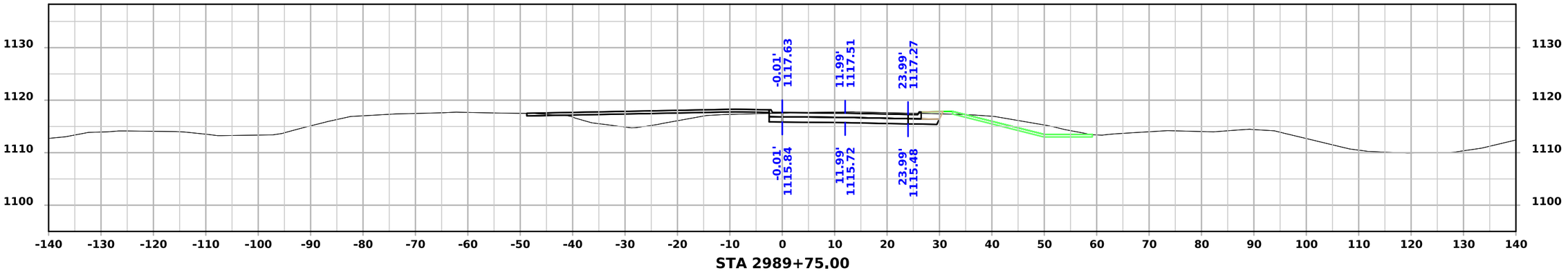


STA 2988+50.00

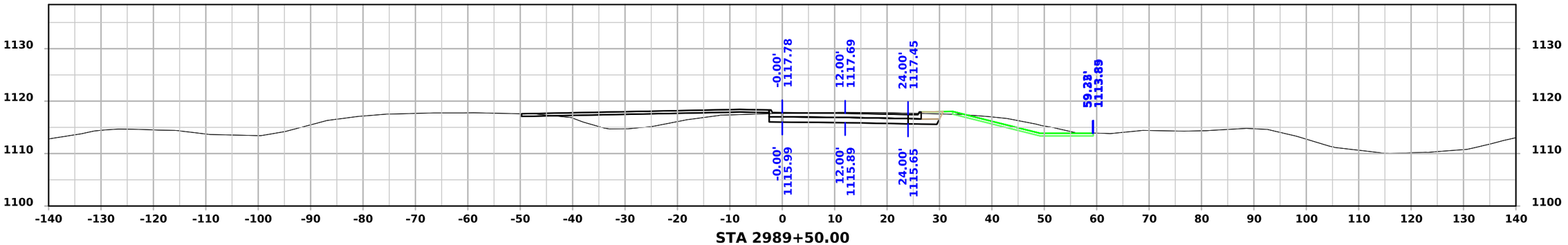
FILE NO.	ENGLISH	DESIGN TEAM Rhoads\Tamrakar\Prindle	BOONE COUNTY	PROJECT NUMBER HSIPX-030-4(113)--3L-08	SHEET NUMBER W.6

10:12:16 AM 6/12/2024 dtamrak pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\0803002024\Design\CADD_Files\Sheet_Files\SHT_08030113Z08_W02.dgn

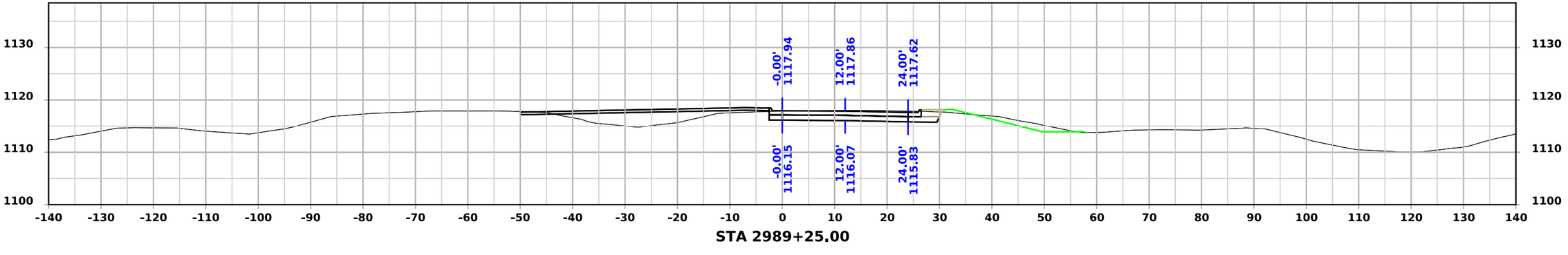
ML30EB_1



STA 2989+75.00



STA 2989+50.00

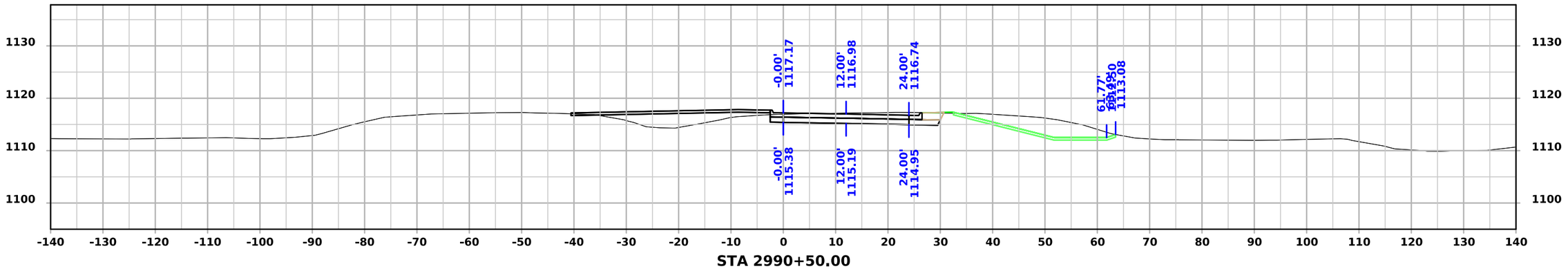


STA 2989+25.00

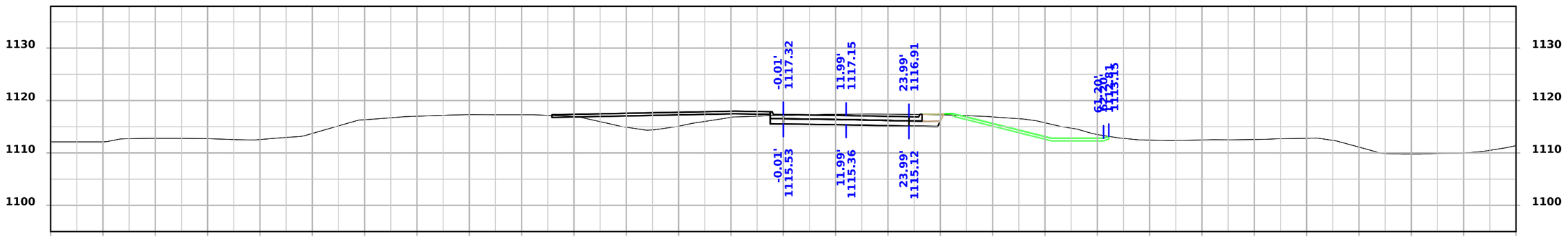
FILE NO.	ENGLISH	DESIGN TEAM Rhoads\Tamrakar\Prindle	BOONE COUNTY	PROJECT NUMBER HSIPX-030-4(113)--3L-08	SHEET NUMBER W.7	

10:12:17 AM 6/12/2024 dtamrak pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\0803002024\Design\CADD_Files\Sheet_Files\SHT_08030113Z08_W02.dgn

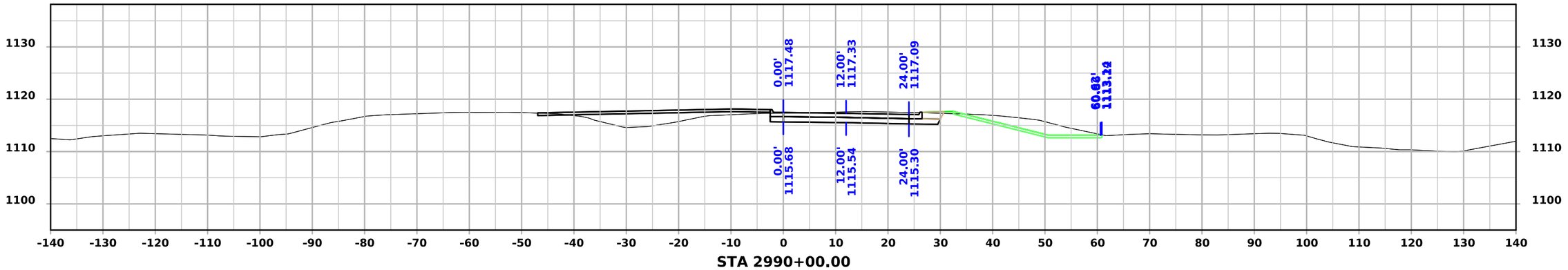
ML30EB_1



STA 2990+50.00



STA 2990+25.00

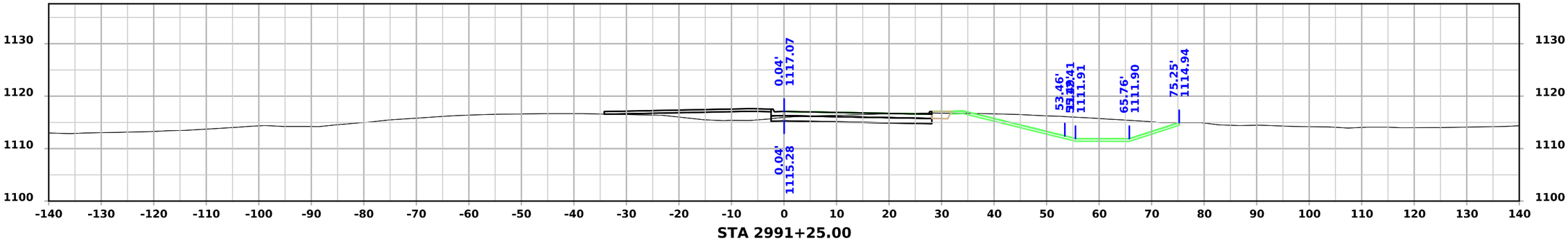


STA 2990+00.00

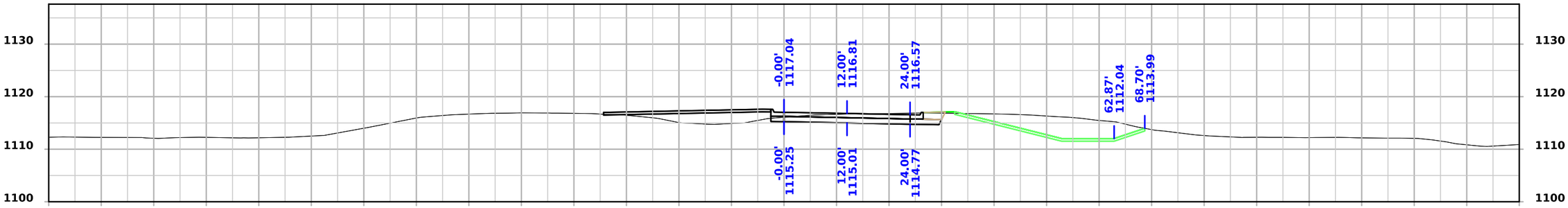
FILE NO.	ENGLISH	DESIGN TEAM Rhoads\Tamrakar\Prindle	BOONE COUNTY	PROJECT NUMBER HSIPX-030-4(113)--3L-08	SHEET NUMBER W.8

10:12:18 AM 6/12/2024 dtamrak pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\0803002024\Design\CADD_Files\Sheet_Files\SHT_08030113Z08_W02.dgn

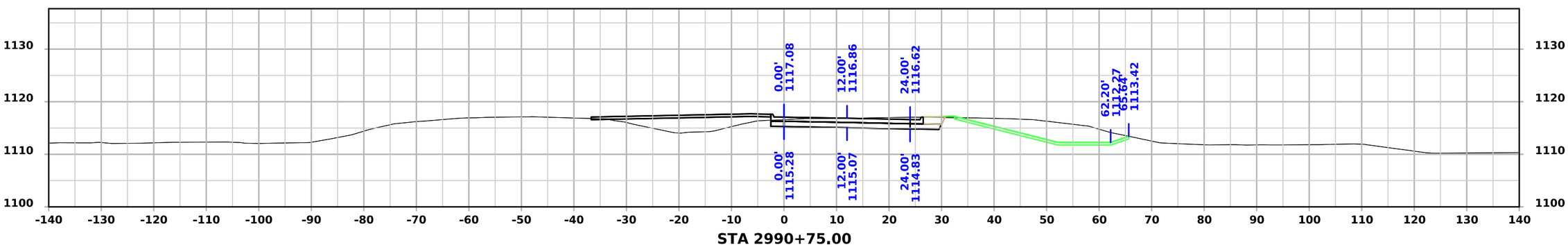
ML30EB_1



STA 2991+25.00



STA 2991+00.00

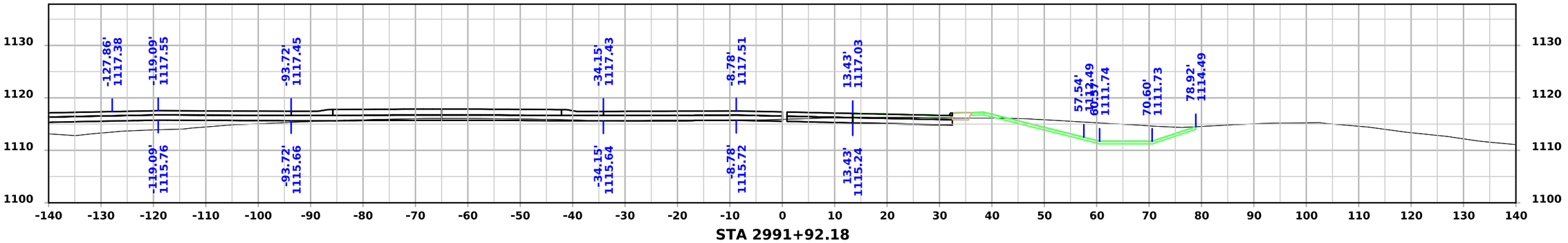


STA 2990+75.00

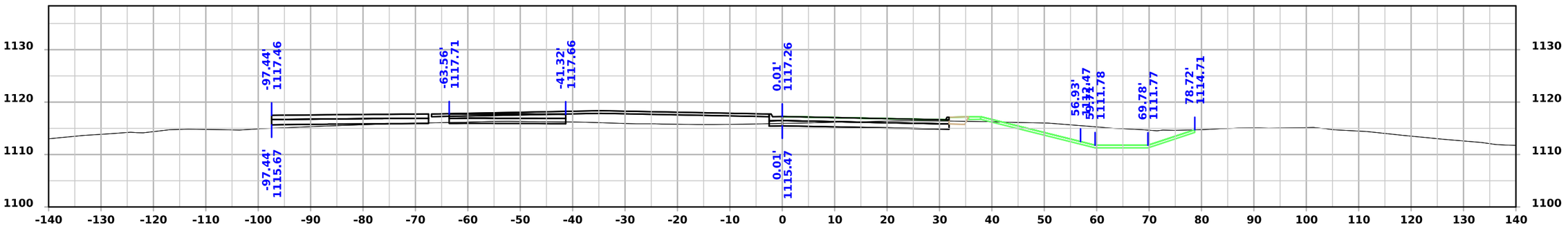
FILE NO.	ENGLISH	DESIGN TEAM Rhoads\Tamrakar\Prindle	BOONE COUNTY	PROJECT NUMBER HSIPX-030-4(113)--3L-08	SHEET NUMBER W.9

10:12:19 AM 6/12/2024 dtamrak pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\0803002024\Design\CADD_Files\Sheet_Files\SHT_08030113Z08_W02.dgn

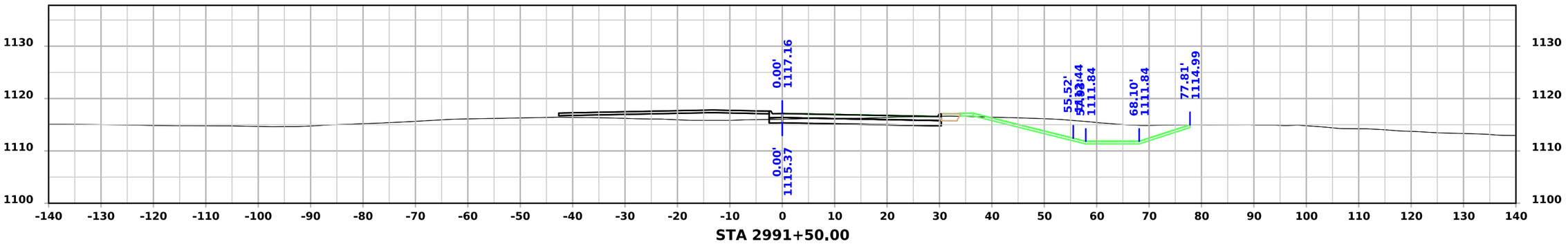
ML30EB_1



STA 2991+92.18



STA 2991+75.00

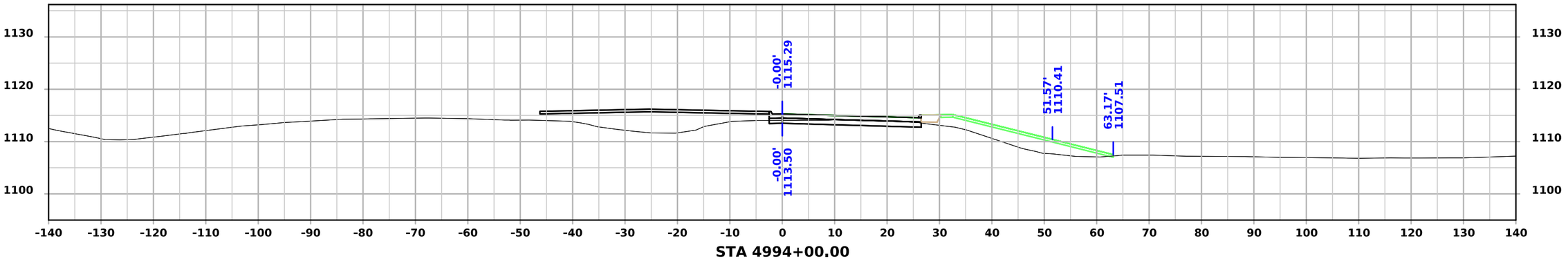


STA 2991+50.00

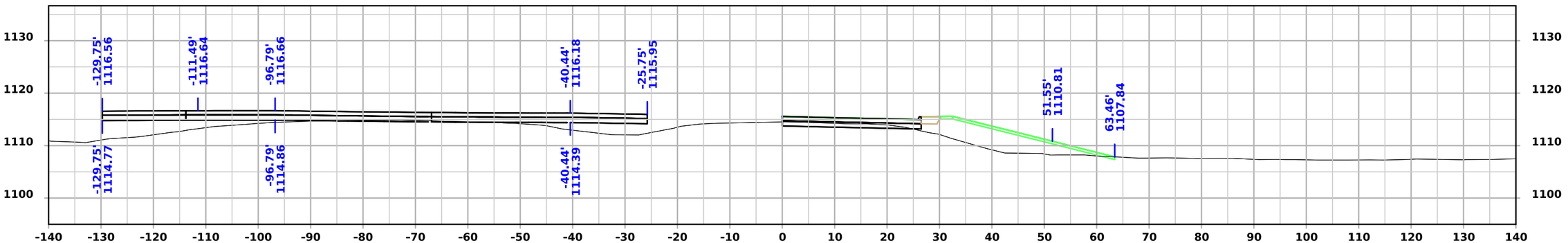
FILE NO.	ENGLISH	DESIGN TEAM Rhoads\Tamrakar\Prindle	BOONE COUNTY	PROJECT NUMBER HSIPX-030-4(113)--3L-08	SHEET NUMBER W.10

10:12:20 AM 6/12/2024 dtamrak pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\0803002024\Design\CADD_Files\Sheet_Files\SHT_08030113Z08_W02.dgn

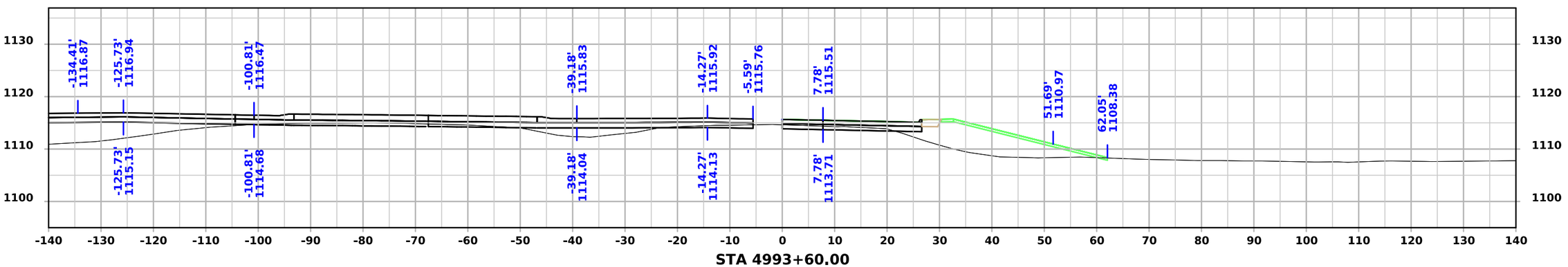
ML30EB



STA 4994+00.00



STA 4993+75.00

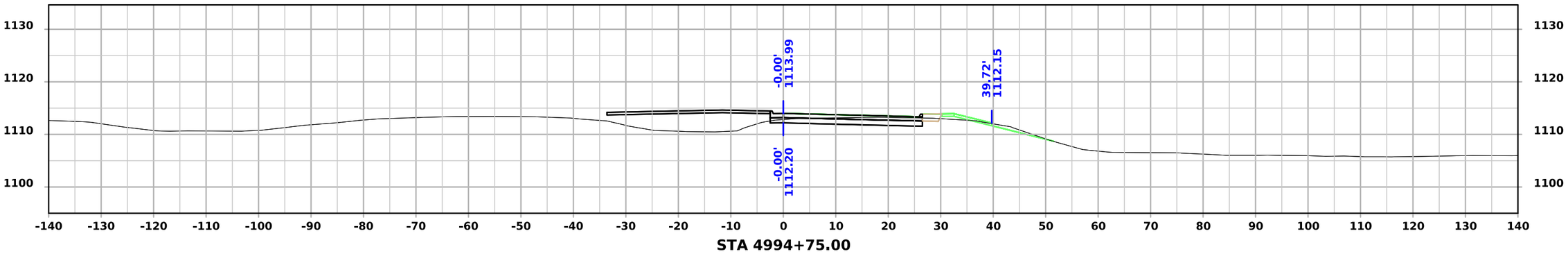


STA 4993+60.00

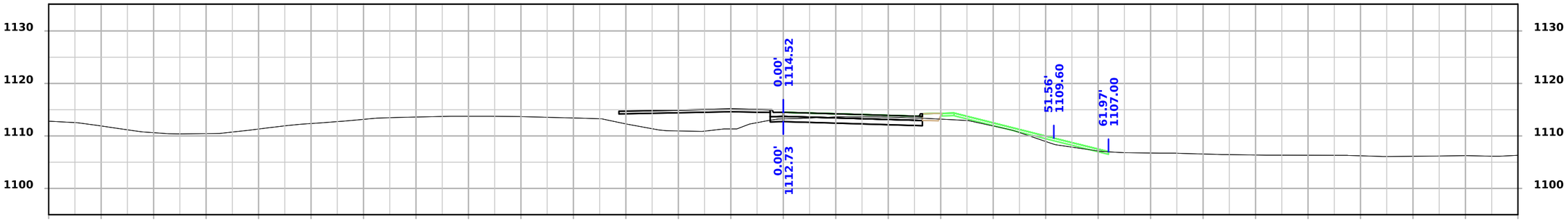
FILE NO.	ENGLISH	DESIGN TEAM Rhoads\Tamrakar\Prindle	BOONE COUNTY	PROJECT NUMBER HSIPX-030-4(113)--3L-08	SHEET NUMBER W.11

9:54:35 AM 6/24/2024 dtamrak pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\0803002024\Design\CADD_Files\Sheet_Files\SHT_08030113Z08_W11.dgn

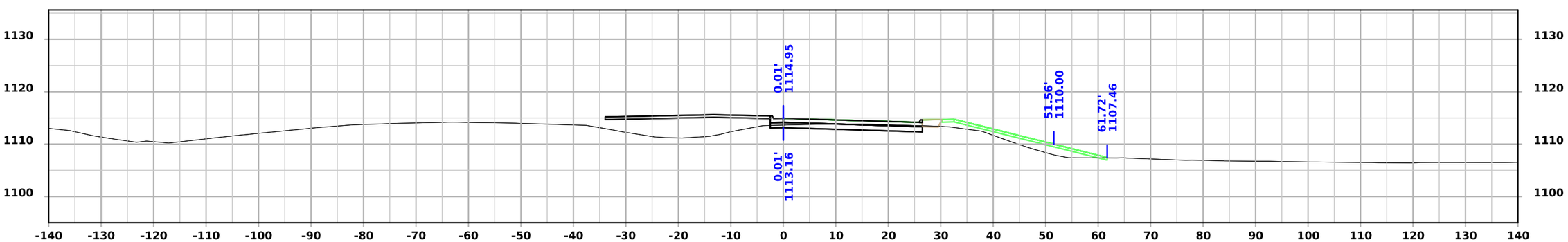
ML30EB



STA 4994+75.00



STA 4994+50.00

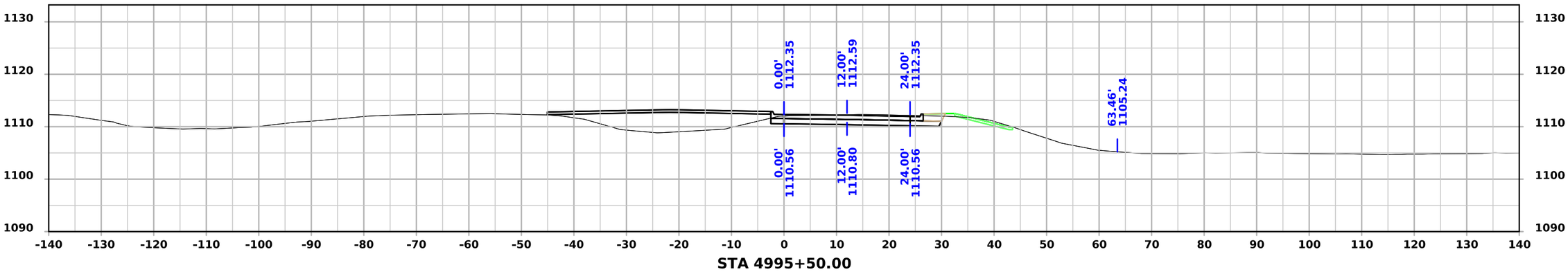


STA 4994+25.00

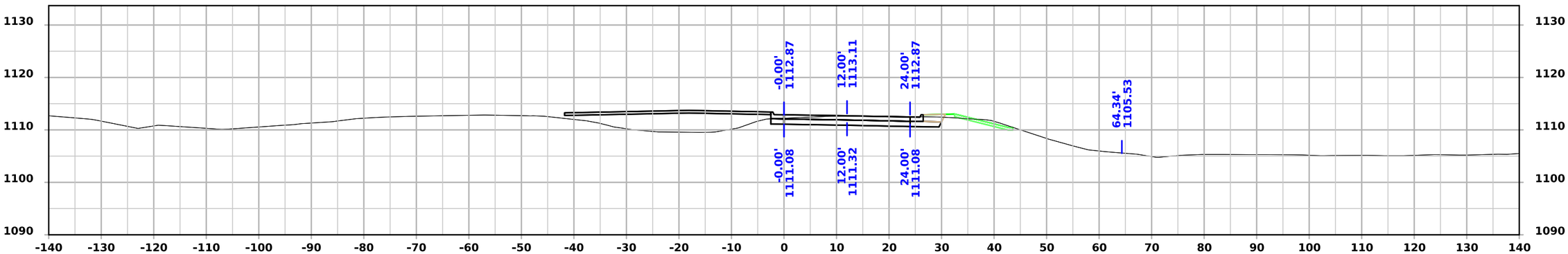
FILE NO.	ENGLISH	DESIGN TEAM Rhoads\Tamrakar\Prindle	BOONE COUNTY	PROJECT NUMBER HSIPX-030-4(113)--3L-08	SHEET NUMBER W.12

9:54:37 AM 6/24/2024 dtamrak pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\0803002024\Design\CADD_Files\Sheet_Files\SHT_08030113Z08_W11.dgn

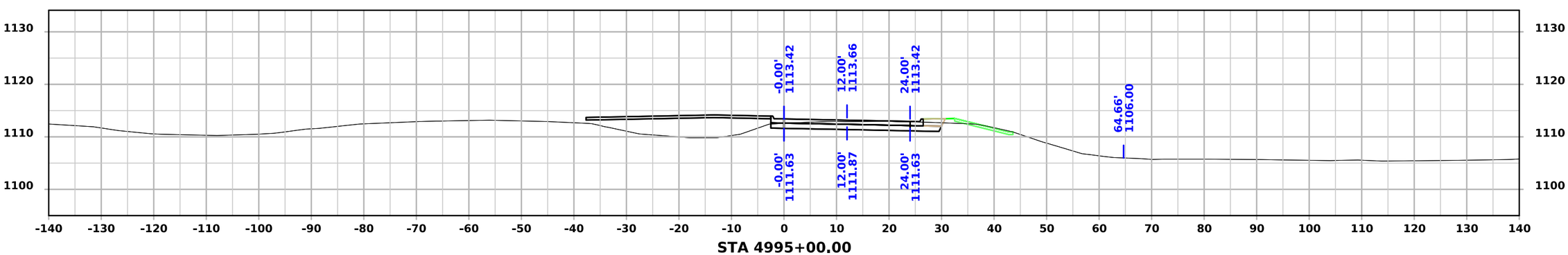
ML30EB



STA 4995+50.00



STA 4995+25.00

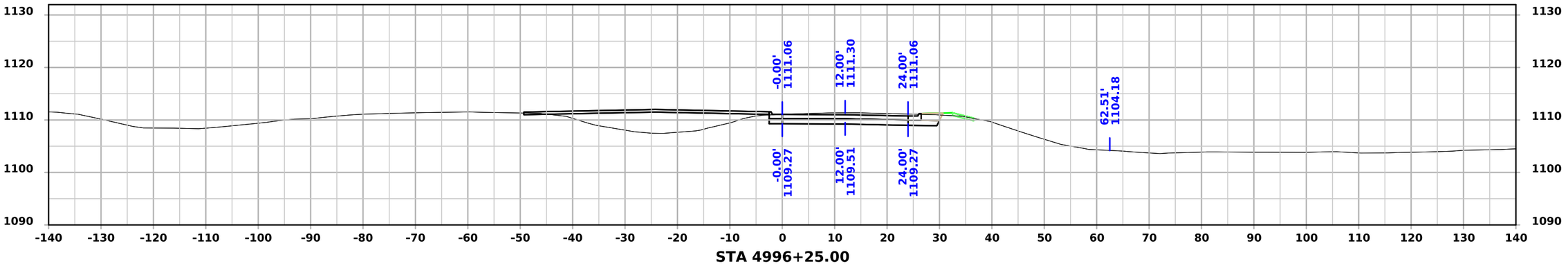


STA 4995+00.00

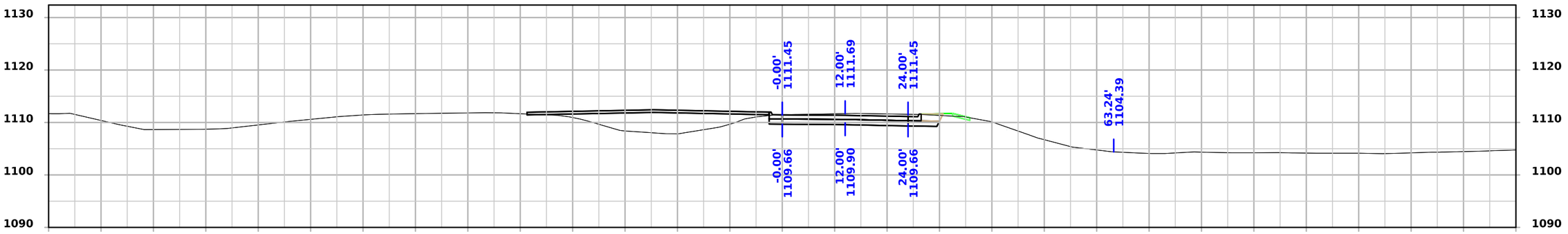
FILE NO.	ENGLISH	DESIGN TEAM Rhoads\Tamrakar\Prindle	BOONE COUNTY	PROJECT NUMBER HSIPX-030-4(113)--3L-08	SHEET NUMBER W.13

9:54:38 AM 6/24/2024 dtamrak pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\0803002024\Design\CADD_Files\Sheet_Files\SHT_08030113Z08_W11.dgn

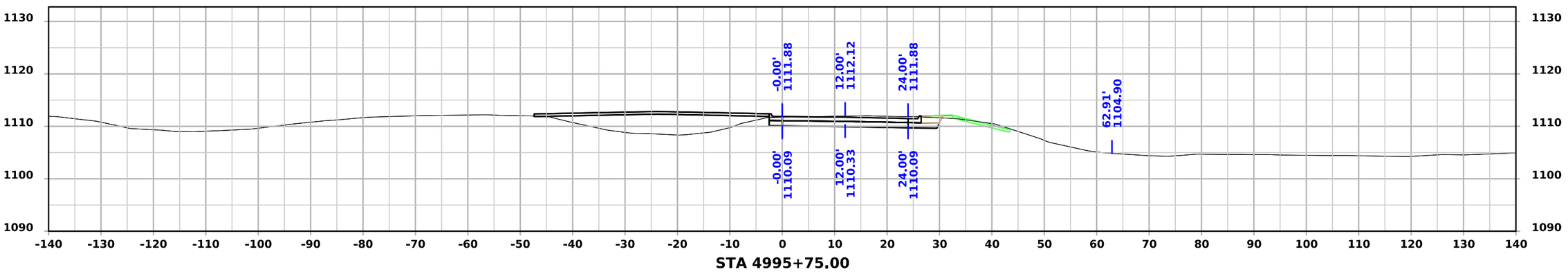
ML30EB



STA 4996+25.00



STA 4996+00.00

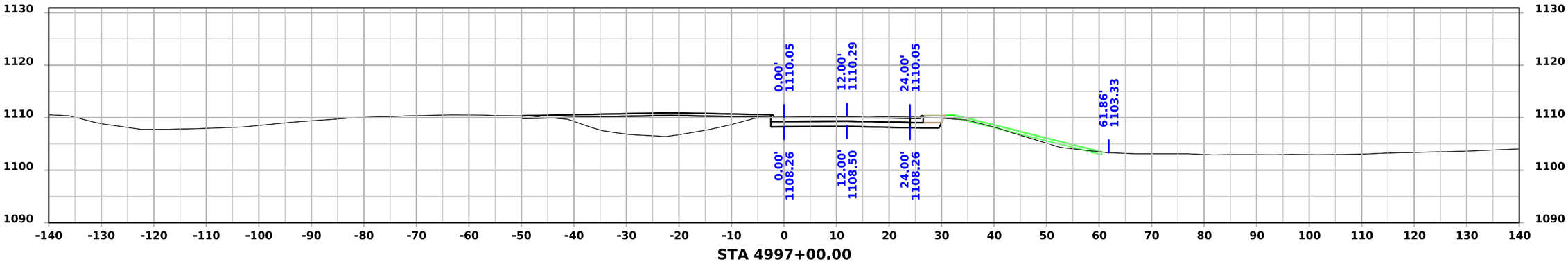


STA 4995+75.00

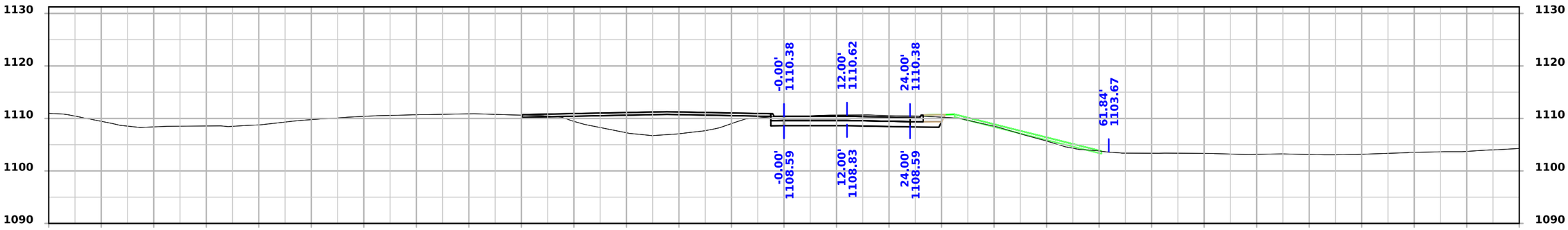
FILE NO.	ENGLISH	DESIGN TEAM Rhoads\Tamrakar\Prindle	BOONE COUNTY	PROJECT NUMBER HSIPX-030-4(113)--3L-08	SHEET NUMBER W.14

9:54:40 AM 6/24/2024 dtamrak pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\0803002024\Design\CADD_Files\Sheet_Files\SHT_08030113Z08_W11.dgn

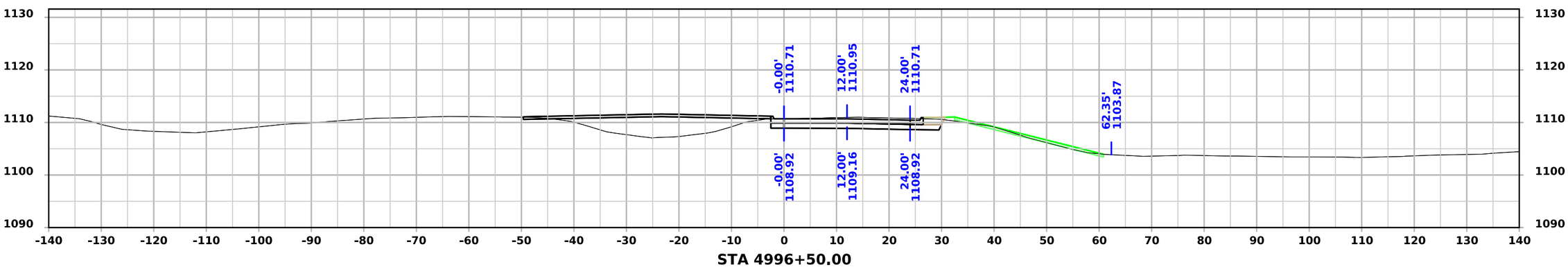
ML30EB



STA 4997+00.00



STA 4996+75.00

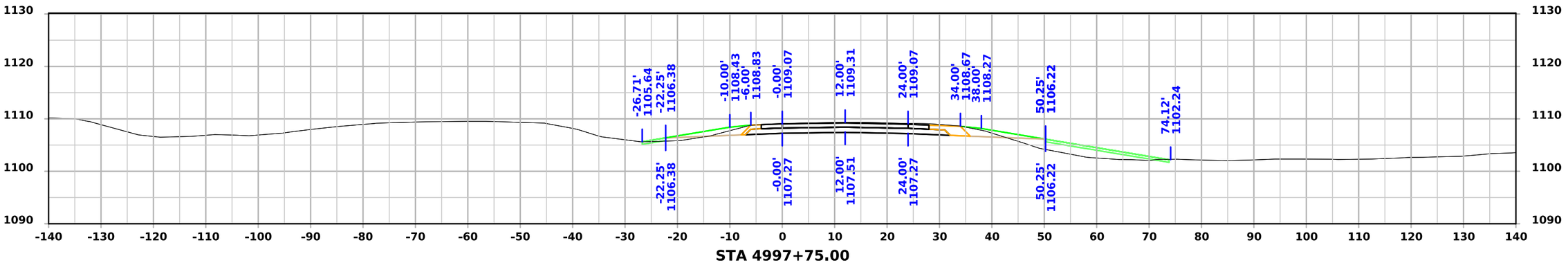


STA 4996+50.00

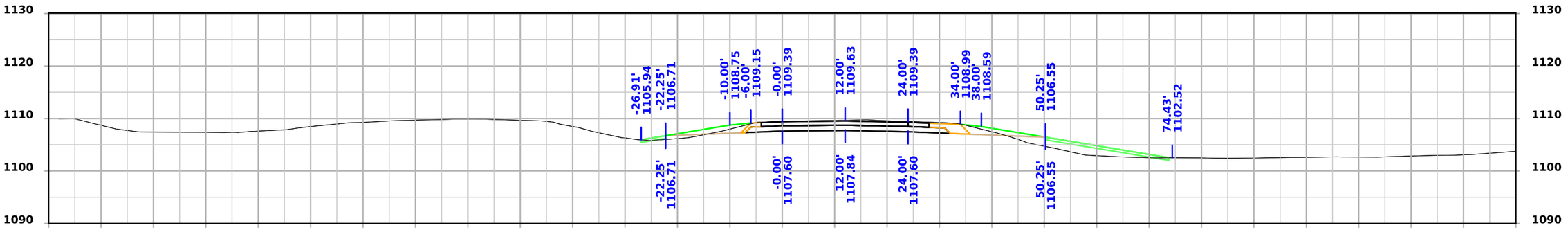
FILE NO.	ENGLISH	DESIGN TEAM Rhoads\Tamrakar\Prindle	BOONE COUNTY	PROJECT NUMBER HSIPX-030-4(113)--3L-08	SHEET NUMBER W.15	

9:54:41 AM 6/24/2024 dtamrak pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\0803002024\Design\CADD_Files\Sheet_Files\SHT_08030113Z08_W11.dgn

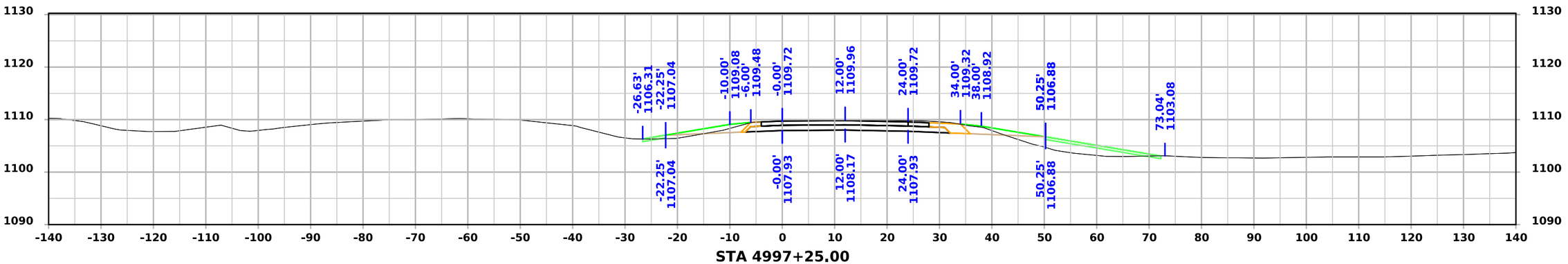
ML30EB



STA 4997+75.00



STA 4997+50.00

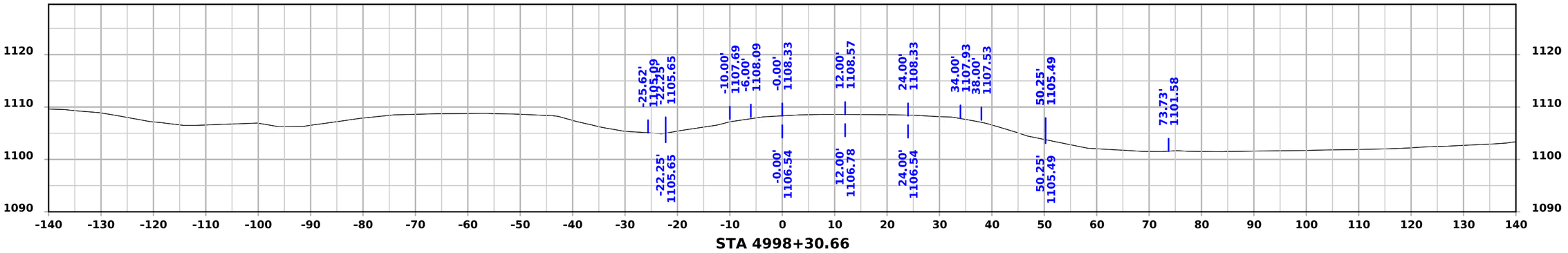


STA 4997+25.00

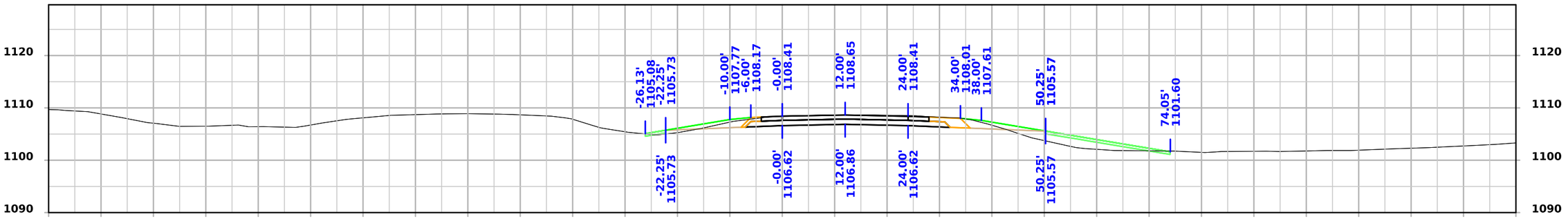
FILE NO.	ENGLISH	DESIGN TEAM Rhoads\Tamrakar\Prindle	BOONE COUNTY	PROJECT NUMBER HSIPX-030-4(113)--3L-08	SHEET NUMBER W.16

9:54:43 AM 6/24/2024 dtamrak pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\0803002024\Design\CADD_Files\Sheet_Files\SHT_08030113Z08_W11.dgn

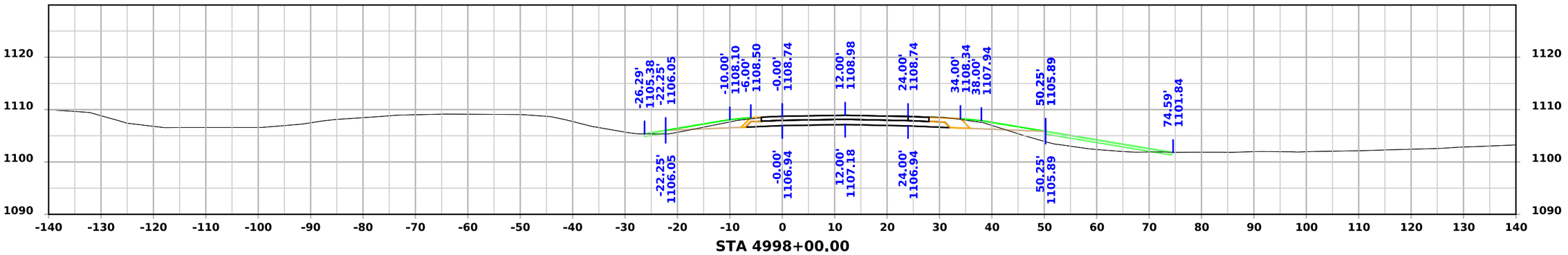
ML30EB



STA 4998+30.66



STA 4998+25.00

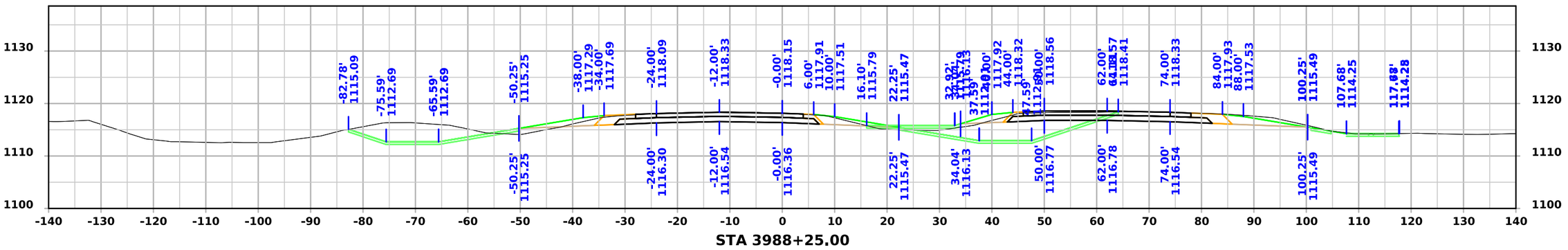


STA 4998+00.00

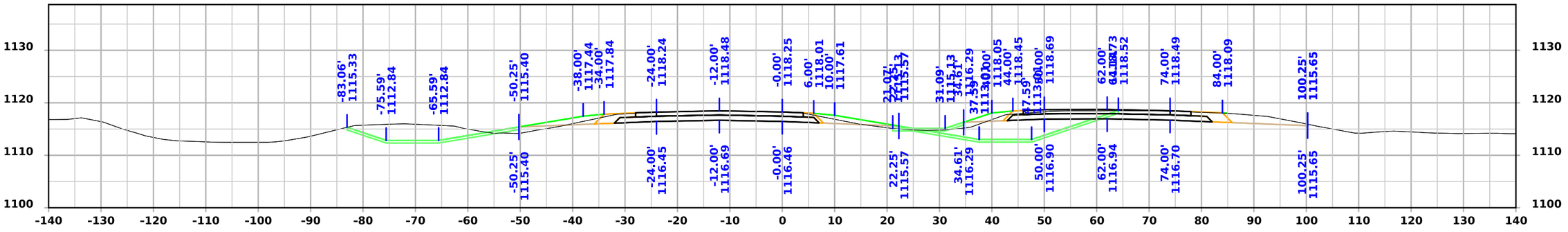
FILE NO.	ENGLISH	DESIGN TEAM Rhoads\Tamrakar\Prindle	BOONE COUNTY	PROJECT NUMBER HSIPX-030-4(113)--3L-08	SHEET NUMBER W.17

9:54:44 AM 6/24/2024 dtamrak pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\0803002024\Design\CADD_Files\Sheet_Files\SHT_08030113Z08_W11.dgn

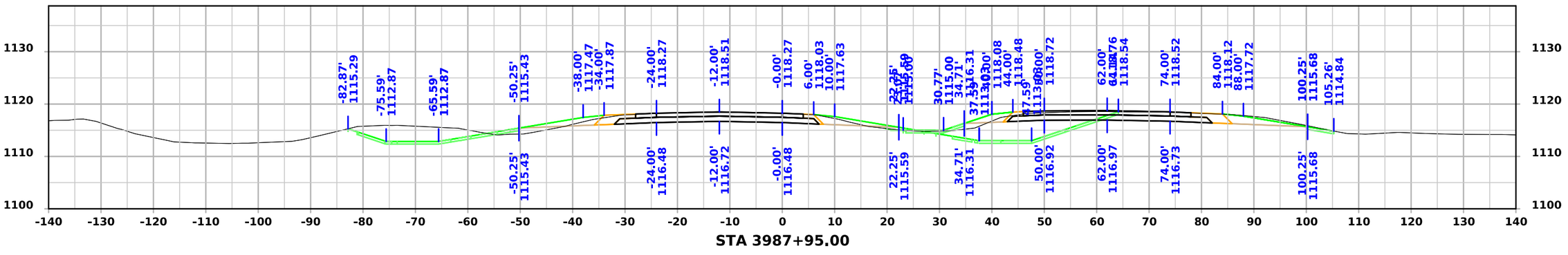
US30 WB_1



STA 3988+25.00



STA 3988+00.00

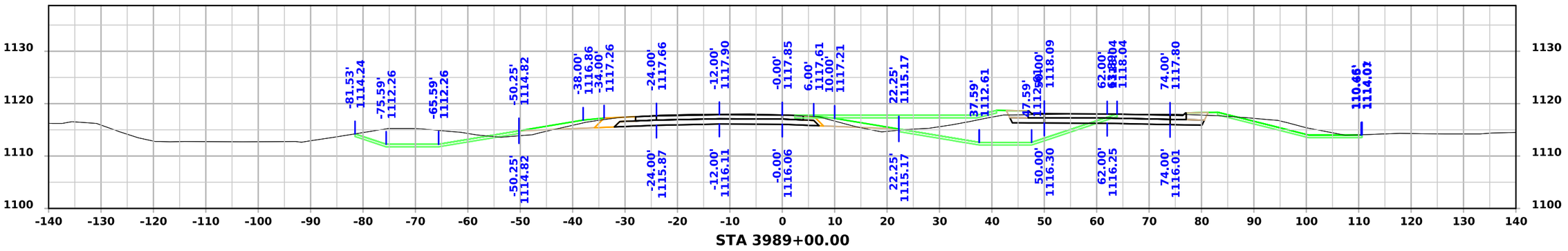


STA 3987+95.00

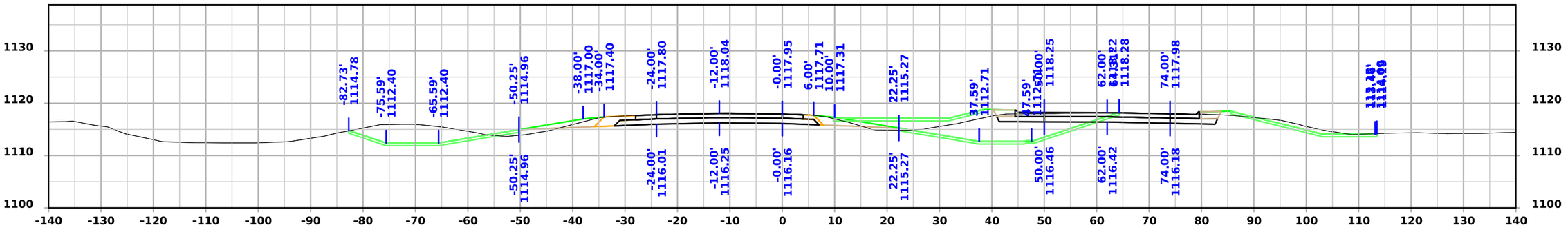
FILE NO.	ENGLISH	DESIGN TEAM Rhoads\Tamrakar\Prindle	BOONE COUNTY	PROJECT NUMBER HSIPX-030-4(113)--3L-08	SHEET NUMBER W.18	

10:31:34 AM 6/28/2024 dtamrak pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\0803002024\Design\CADD_Files\Sheet_Files\SHT_08030113Z08_W18.dgn

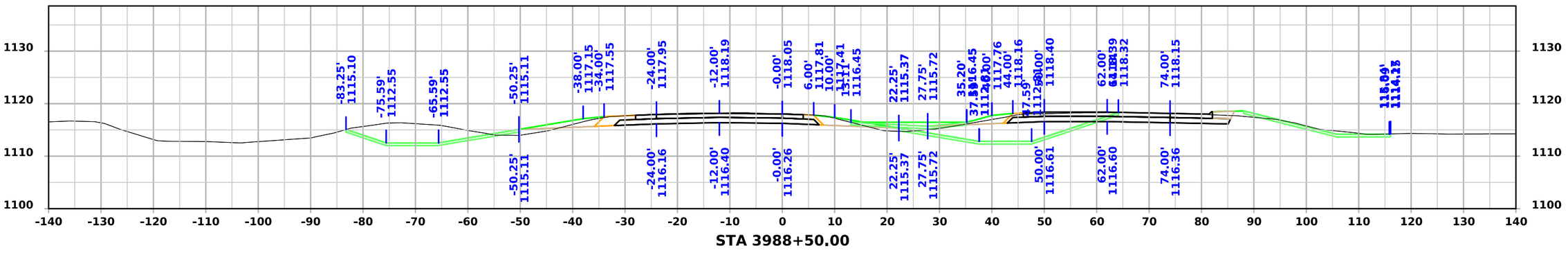
US30 WB_1



STA 3989+00.00



STA 3988+75.00

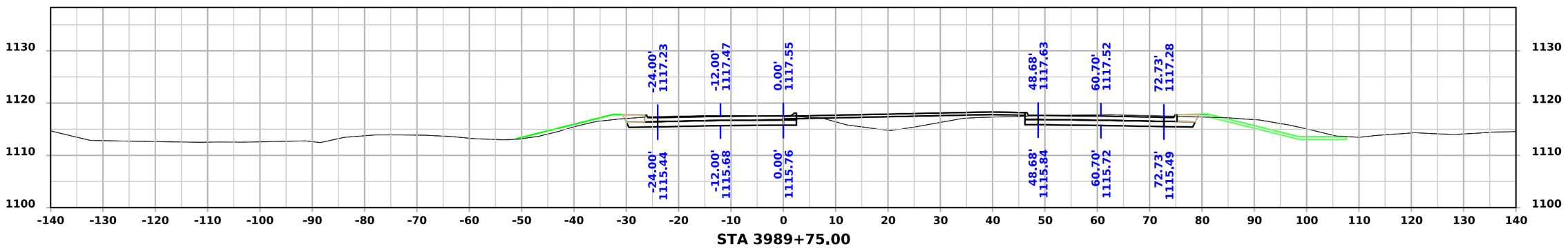


STA 3988+50.00

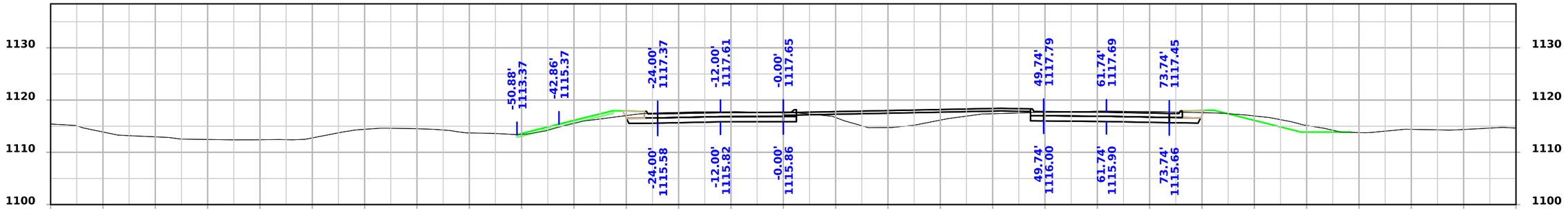
FILE NO.	ENGLISH	DESIGN TEAM Rhoads\Tamrakar\Prindle	BOONE COUNTY	PROJECT NUMBER HSIPX-030-4(113)--3L-08	SHEET NUMBER W.19	

10:31:37 AM 6/28/2024 dtamrak pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\0803002024\Design\CADD_Files\Sheet_Files\SHT_08030113Z08_W18.dgn

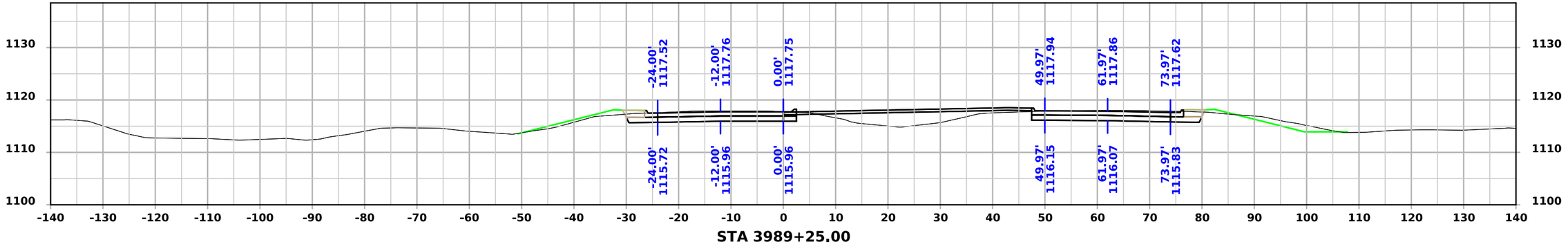
US30 WB_1



STA 3989+75.00



STA 3989+50.00

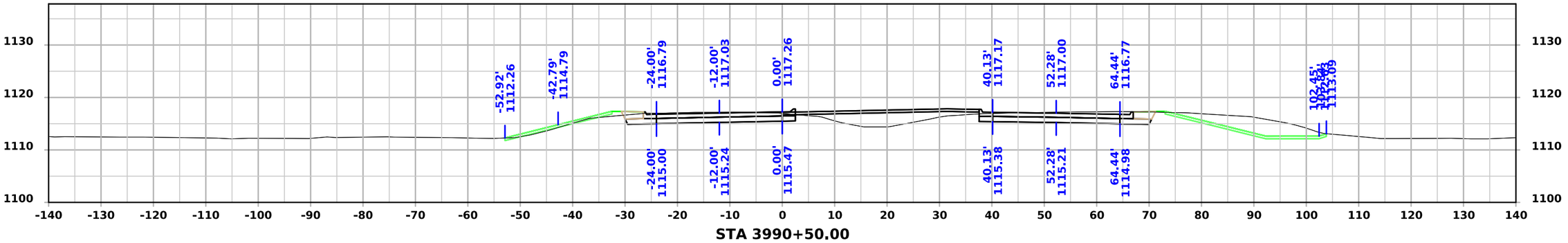


STA 3989+25.00

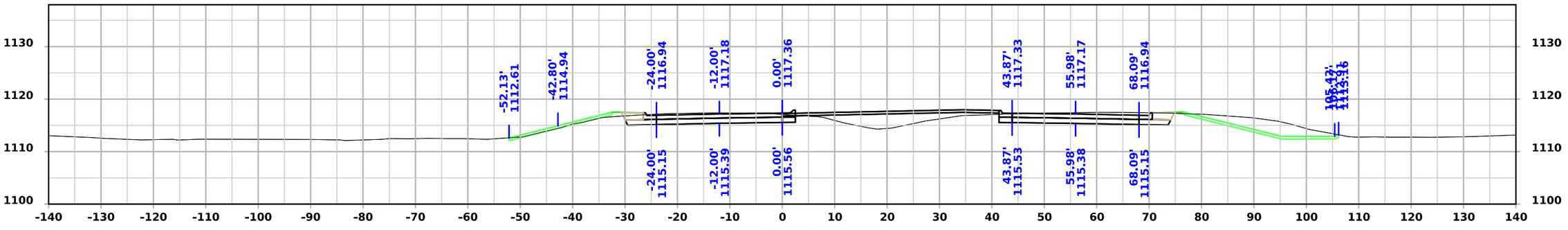
FILE NO.	ENGLISH	DESIGN TEAM Rhoads\Tamrakar\Prindle	BOONE COUNTY	PROJECT NUMBER HSIPX-030-4(113)--3L-08	SHEET NUMBER W.20	

10:31:38 AM 6/28/2024 dtamrak pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\0803002024\Design\CADD_Files\Sheet_Files\SHT_08030113Z08_W18.dgn

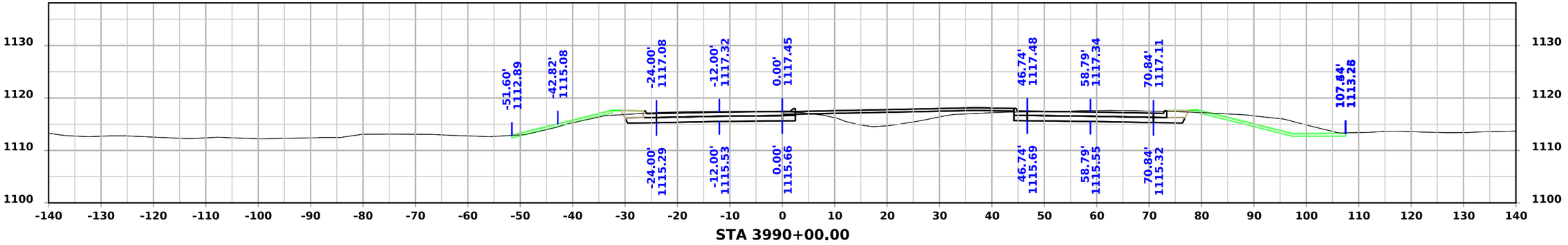
US30 WB_1



STA 3990+50.00



STA 3990+25.00

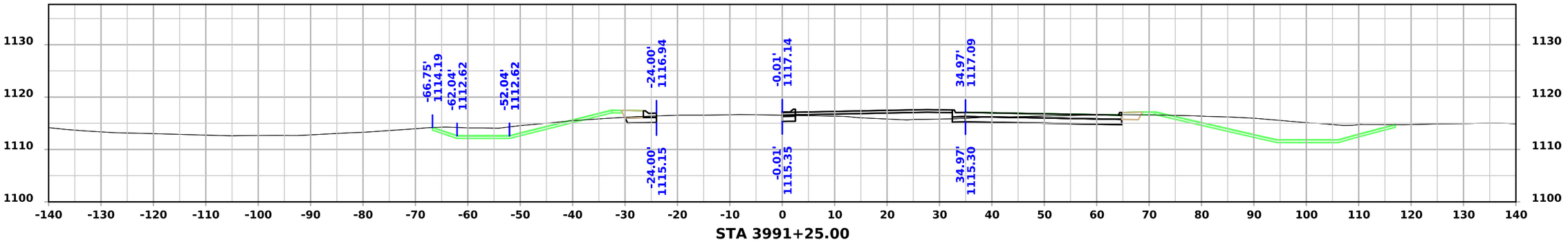


STA 3990+00.00

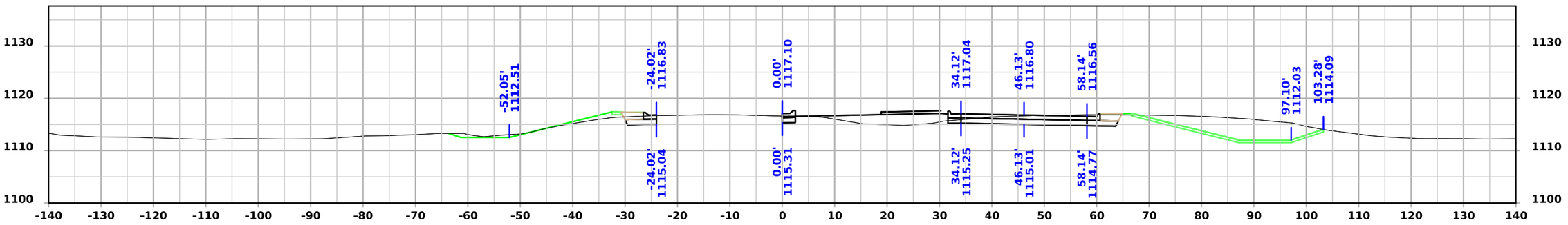
FILE NO.	ENGLISH	DESIGN TEAM Rhoads\Tamrakar\Prindle	BOONE COUNTY	PROJECT NUMBER HSIPX-030-4(113)--3L-08	SHEET NUMBER W.21

10:31:40 AM 6/28/2024 dtamrak pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\0803002024\Design\CADD_Files\Sheet_Files\SHT_08030113Z08_W18.dgn

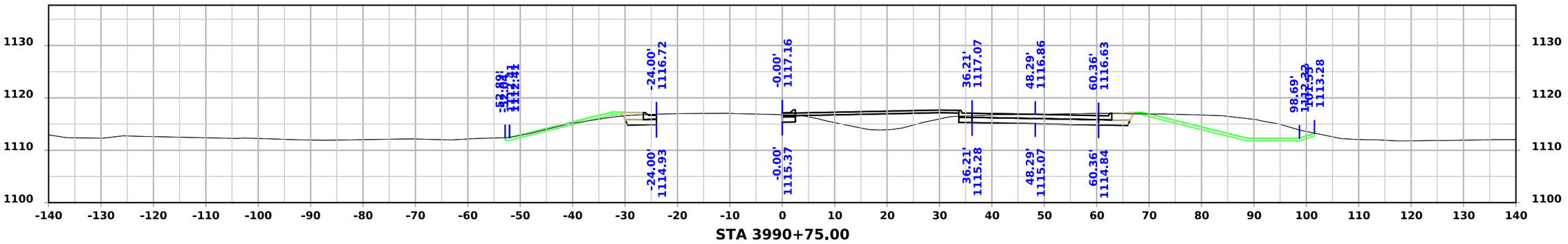
US30 WB_1



STA 3991+25.00



STA 3991+00.00

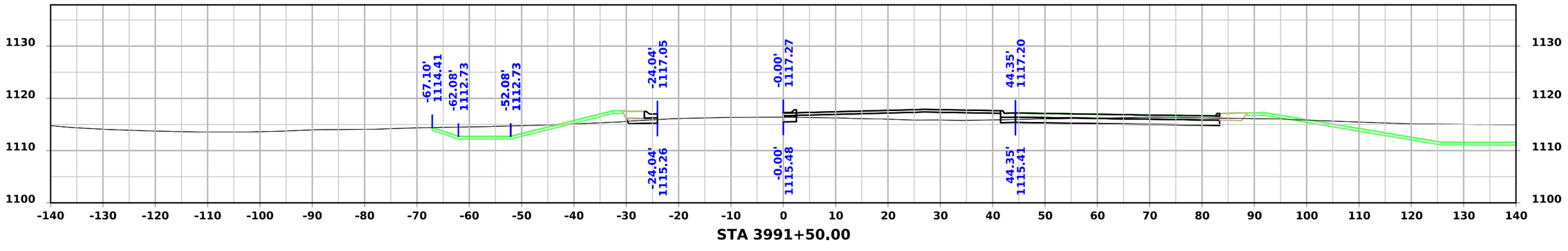


STA 3990+75.00

FILE NO.	ENGLISH	DESIGN TEAM Rhoads\Tamrakar\Prindle	BOONE COUNTY	PROJECT NUMBER HSIPX-030-4(113)--3L-08	SHEET NUMBER W.22

10:31:41 AM 6/28/2024 dtamrak pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\0803002024\Design\CADD_Files\Sheet_Files\SHT_08030113Z08_W18.dgn

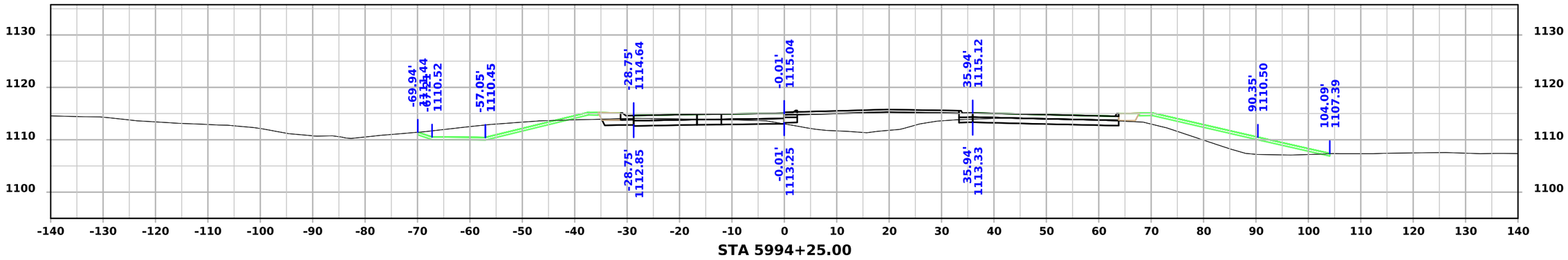
US30 WB_1



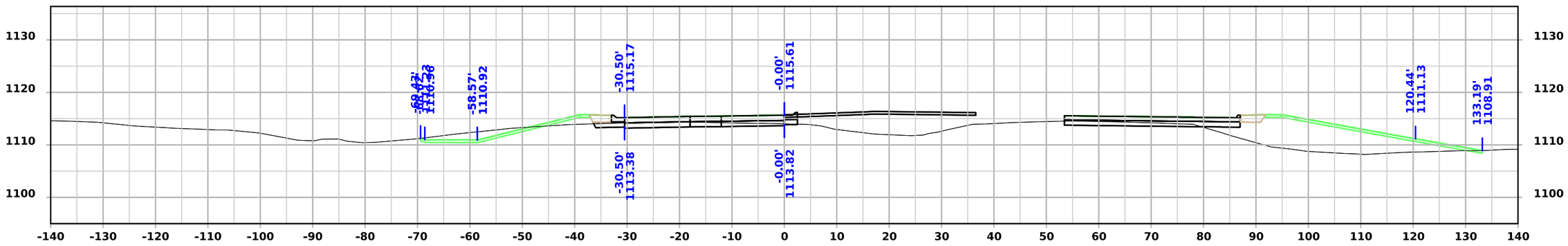
FILE NO.	ENGLISH	DESIGN TEAM Rhoads\Tamrakar\Prindle	BOONE COUNTY	PROJECT NUMBER HSIPX-030-4(113)--3L-08	SHEET NUMBER W.23

10:31:43 AM 6/28/2024 dtamrak pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\0803002024\Design\CADD_Files\Sheet_Files\SHT_08030113Z08_W18.dgn

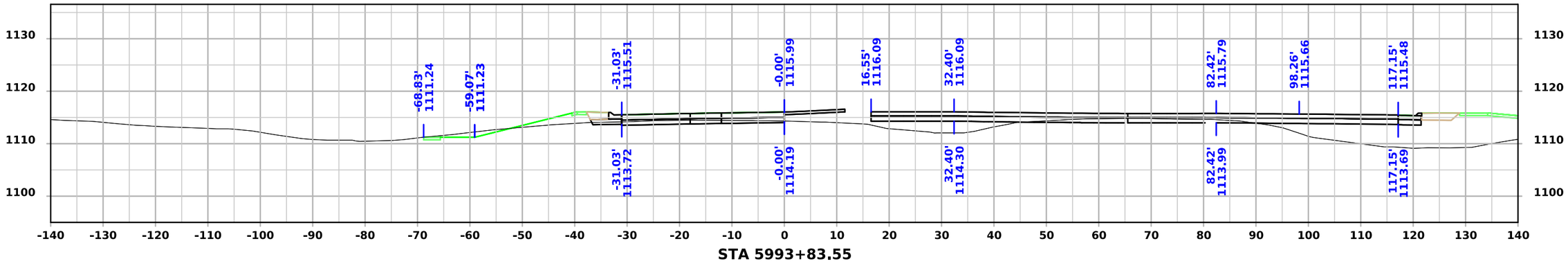
US30 WB_2



STA 5994+25.00



STA 5994+00.00

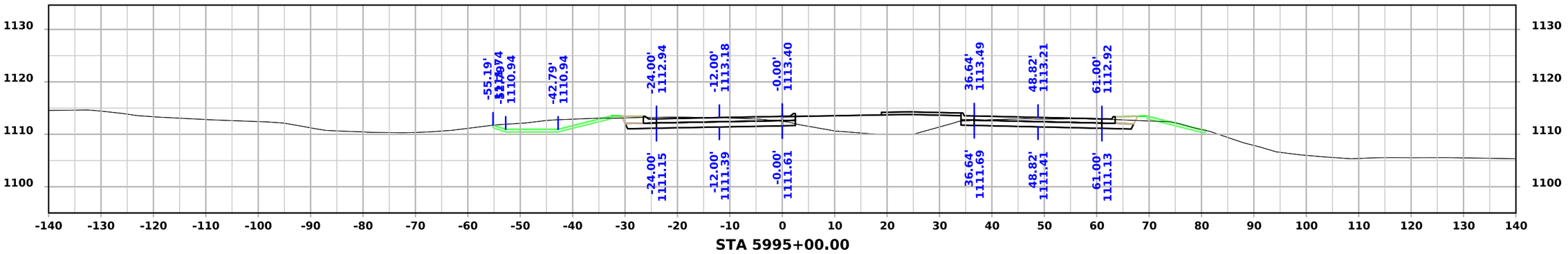


STA 5993+83.55

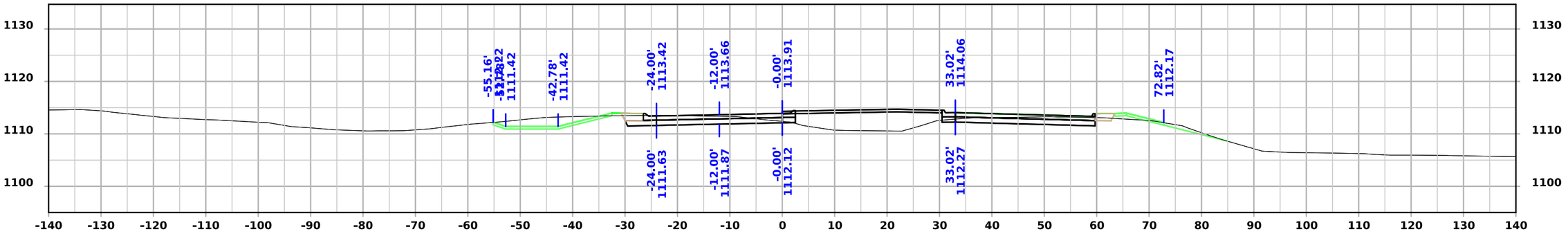
FILE NO.	ENGLISH	DESIGN TEAM Rhoads\Tamrakar\Prindle	BOONE COUNTY	PROJECT NUMBER HSIPX-030-4(113)--3L-08	SHEET NUMBER W.24

7:51:23 AM 7/1/2024 dtamrak pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\0803002024\Design\CADD_Files\Sheet_Files\SHT_08030113Z08_W24.dgn

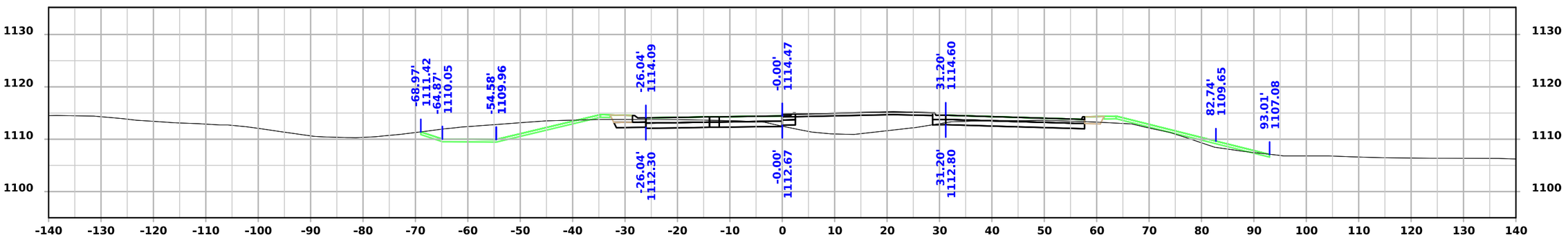
US30 WB_2



STA 5995+00.00



STA 5994+75.00

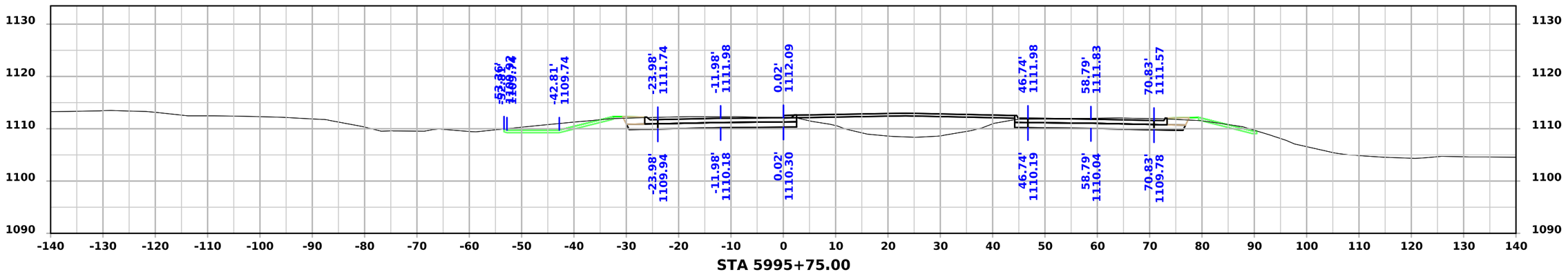


STA 5994+50.00

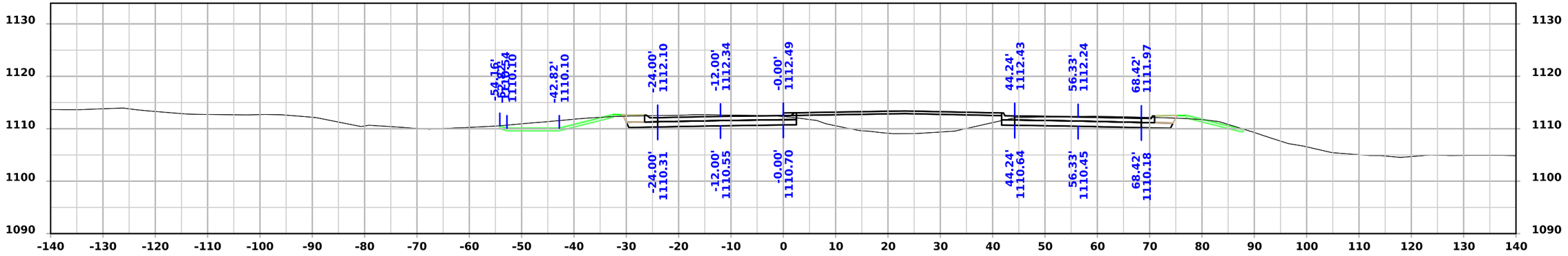
FILE NO.	ENGLISH	DESIGN TEAM Rhoads\Tamrakar\Prindle	BOONE COUNTY	PROJECT NUMBER HSIPX-030-4(113)--3L-08	SHEET NUMBER W.25

7:51:26 AM 7/1/2024 dtamrak pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\0803002024\Design\CADD_Files\Sheet_Files\SHT_08030113Z08_W24.dgn

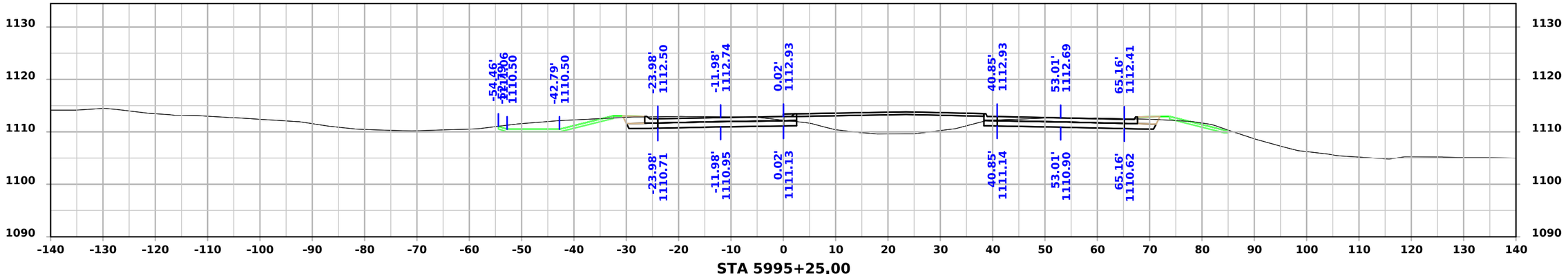
US30 WB_2



STA 5995+75.00



STA 5995+50.00

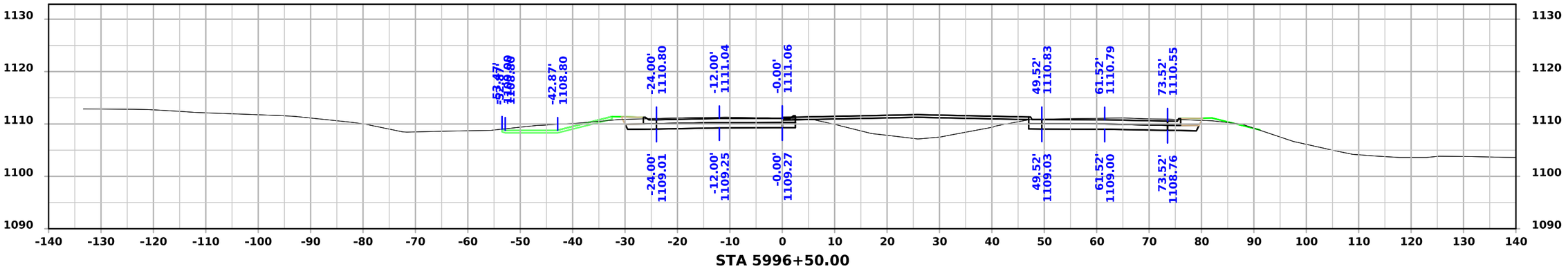


STA 5995+25.00

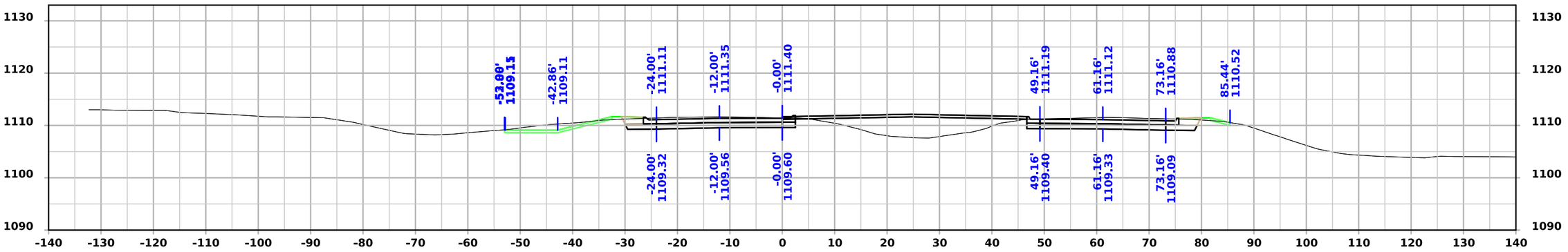
FILE NO.	ENGLISH	DESIGN TEAM Rhoads\Tamrakar\Prindle	BOONE COUNTY	PROJECT NUMBER HSIPX-030-4(113)--3L-08	SHEET NUMBER W.26

7:51:27 AM 7/1/2024 dtamrak pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\0803002024\Design\CADD_Files\Sheet_Files\SHT_08030113Z08_W24.dgn

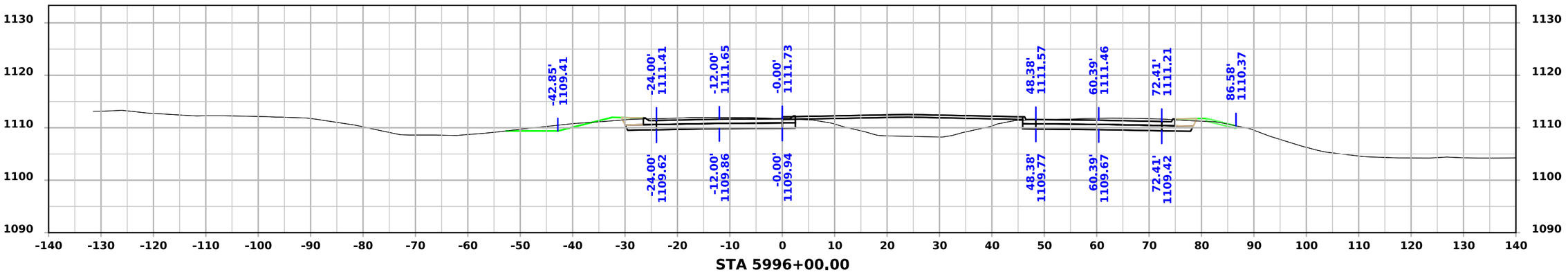
US30 WB_2



STA 5996+50.00



STA 5996+25.00

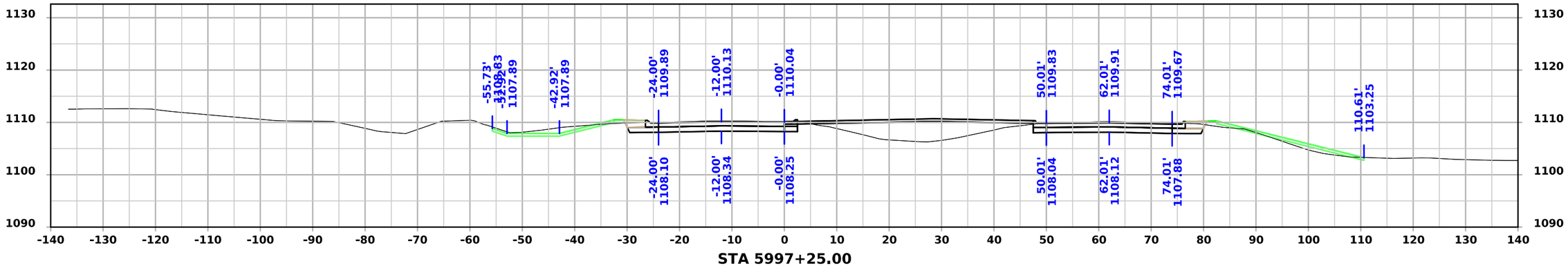


STA 5996+00.00

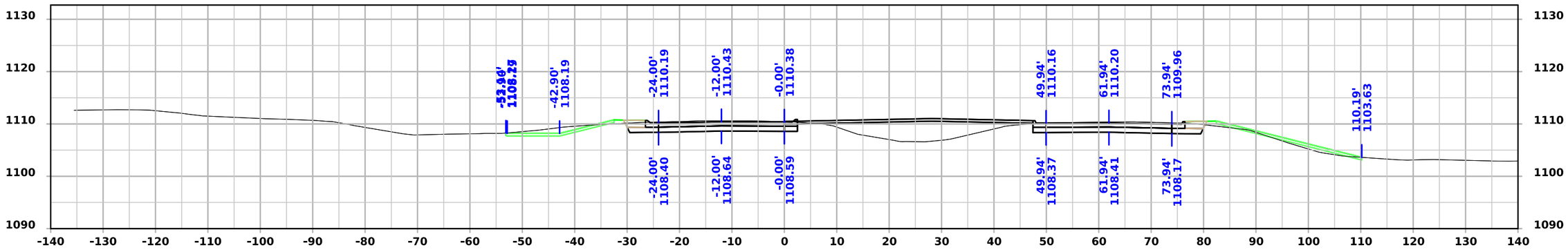
FILE NO.	ENGLISH	DESIGN TEAM Rhoads\Tamrakar\Prindle	BOONE COUNTY	PROJECT NUMBER HSIPX-030-4(113)--3L-08	SHEET NUMBER W.27

7:51:29 AM 7/1/2024 dtamrak pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\0803002024\Design\CADD_Files\Sheet_Files\SHT_08030113Z08_W24.dgn

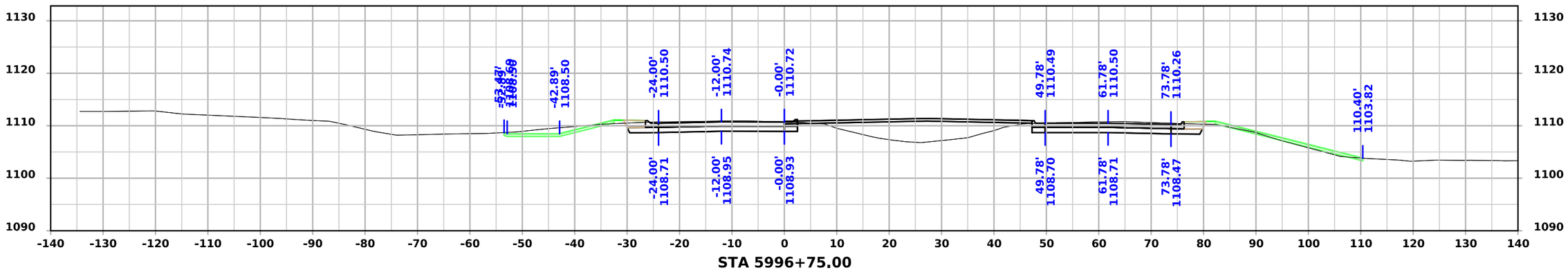
US30 WB_2



STA 5997+25.00



STA 5997+00.00

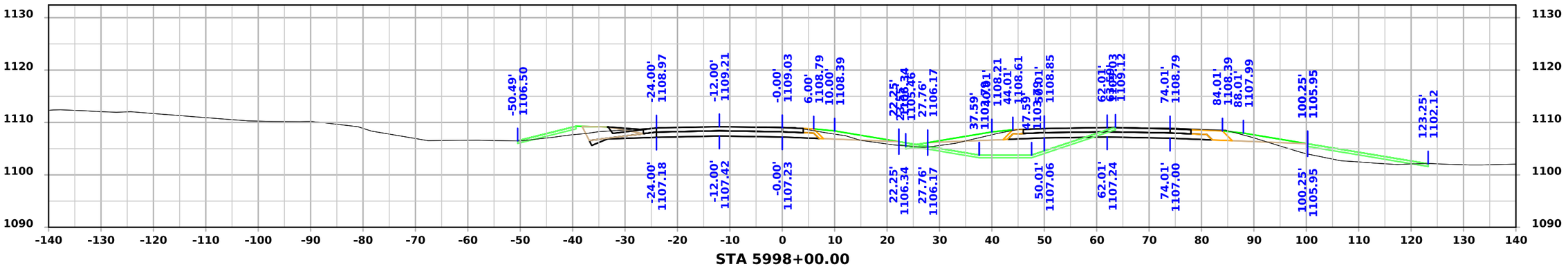


STA 5996+75.00

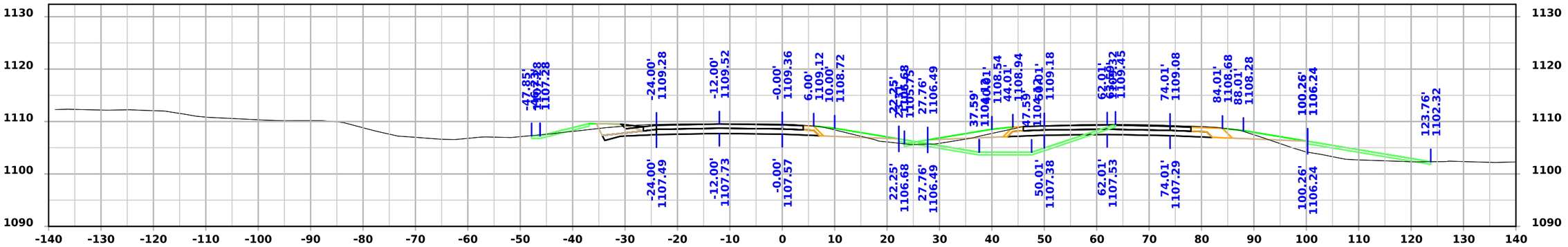
FILE NO.	ENGLISH	DESIGN TEAM Rhoads\Tamrakar\Prindle	BOONE COUNTY	PROJECT NUMBER HSIPX-030-4(113)--3L-08	SHEET NUMBER W.28

7:51:30 AM 7/1/2024 dtamrak pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\0803002024\Design\CADD_Files\Sheet_Files\SHT_08030113Z08_W24.dgn

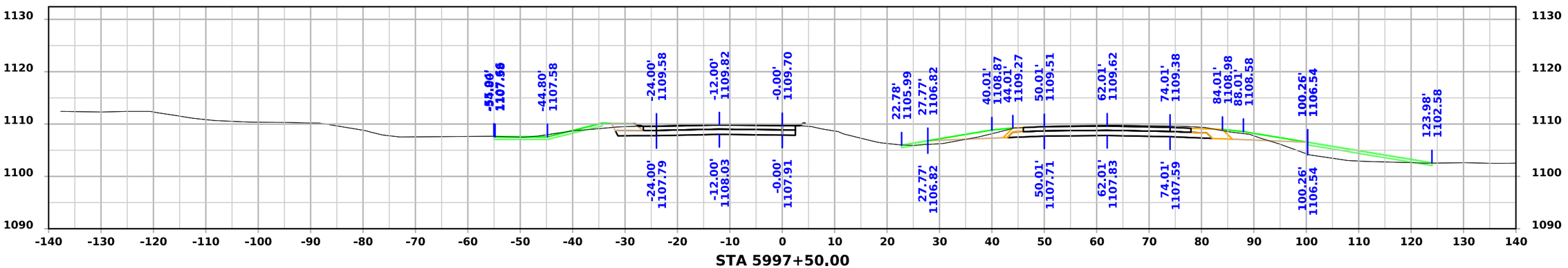
US30 WB_2



STA 5998+00.00



STA 5997+75.00

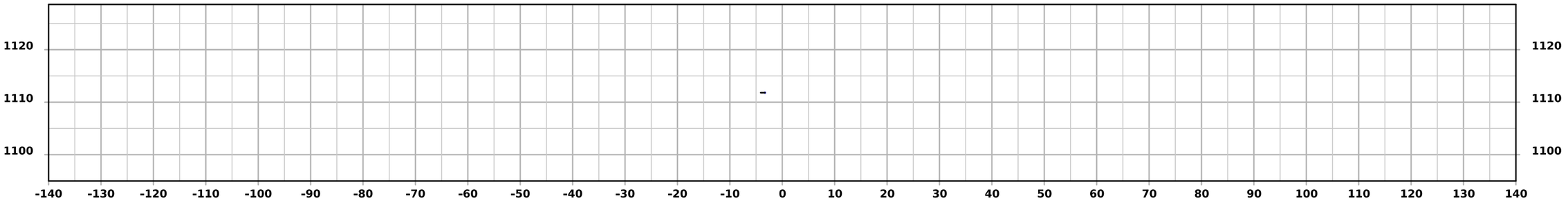


STA 5997+50.00

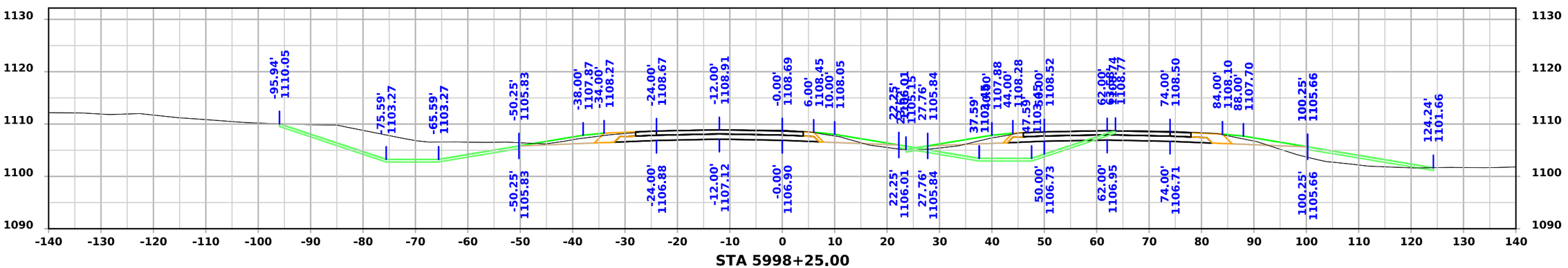
FILE NO.	ENGLISH	DESIGN TEAM Rhoads\Tamrakar\Prindle	BOONE COUNTY	PROJECT NUMBER HSIPX-030-4(113)--3L-08	SHEET NUMBER W.29

7:51:33 AM 7/1/2024 dtamrak pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\0803002024\Design\CADD_Files\Sheet_Files\SHT_08030113Z08_W24.dgn

US30 WB_2



STA 5998+39.03

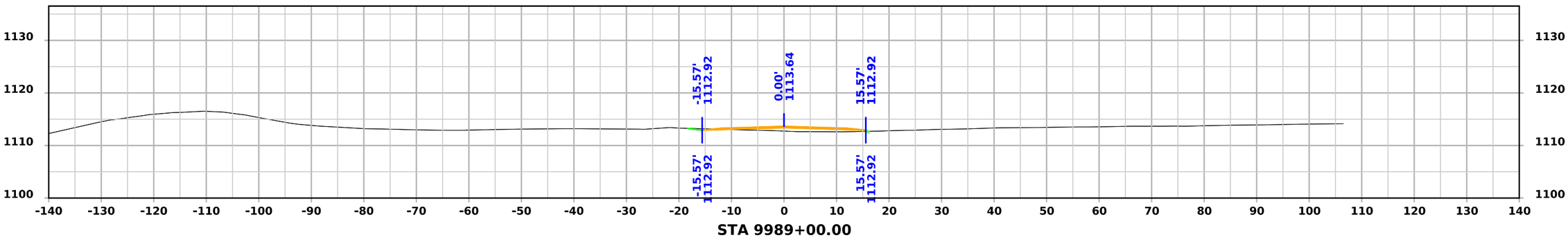


STA 5998+25.00

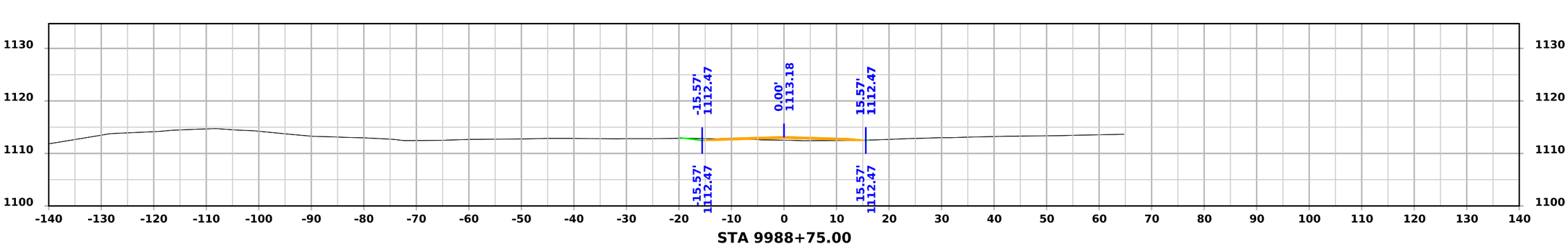
FILE NO.	ENGLISH	DESIGN TEAM Rhoads\Tamrakar\Prindle	BOONE COUNTY	PROJECT NUMBER HSIPX-030-4(113)--3L-08	SHEET NUMBER W.30

7:51:34 AM 7/1/2024 dtamrak pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\0803002024\Design\CADD_Files\Sheet_Files\SHT_08030113Z08_W24.dgn

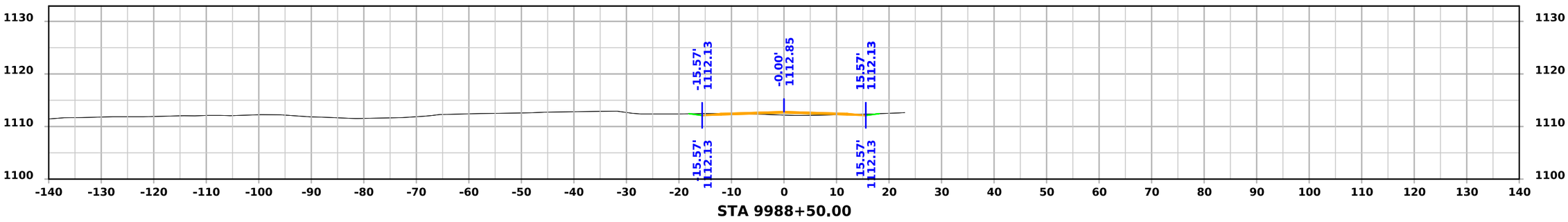
SR30



STA 9989+00.00



STA 9988+75.00

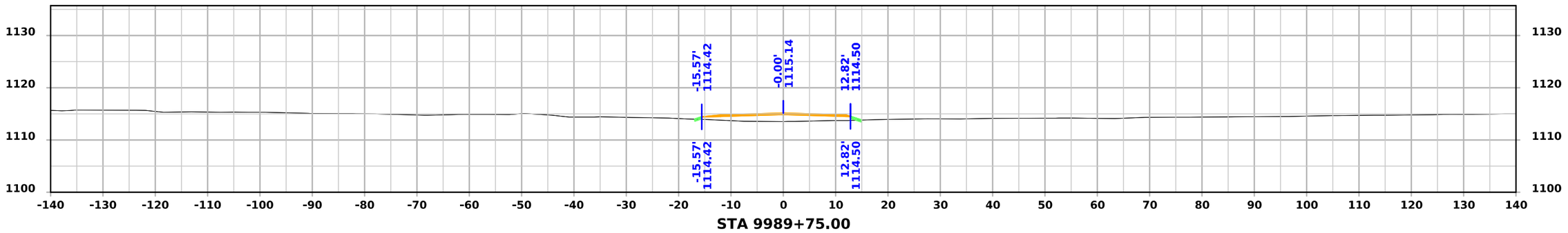


STA 9988+50.00

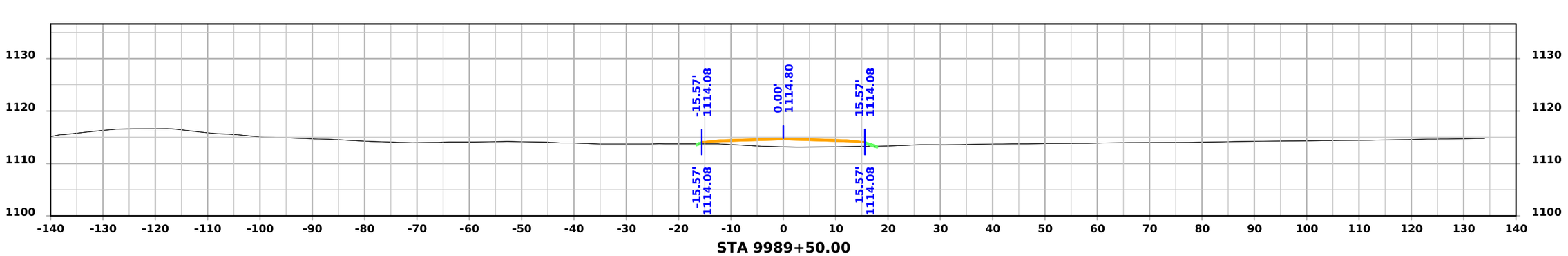
FILE NO.	ENGLISH	DESIGN TEAM Rhoads\Tamrakar\Prindle	BOONE COUNTY	PROJECT NUMBER HSIPX-030-4(113)--3L-08	SHEET NUMBER X.1

10:33:03 AM 6/12/2024 dtamrak pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\0803002024\Design\CADD_Files\Sheet_Files\SHT_08030113Z08_X1.dgn

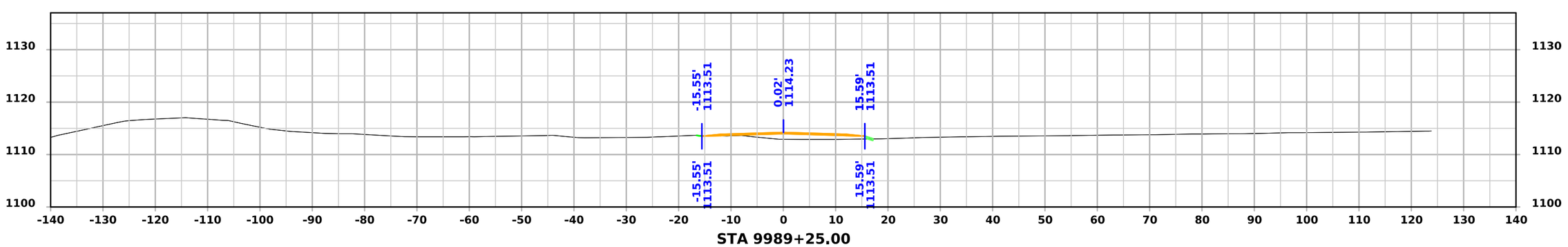
SR30



STA 9989+75.00



STA 9989+50.00

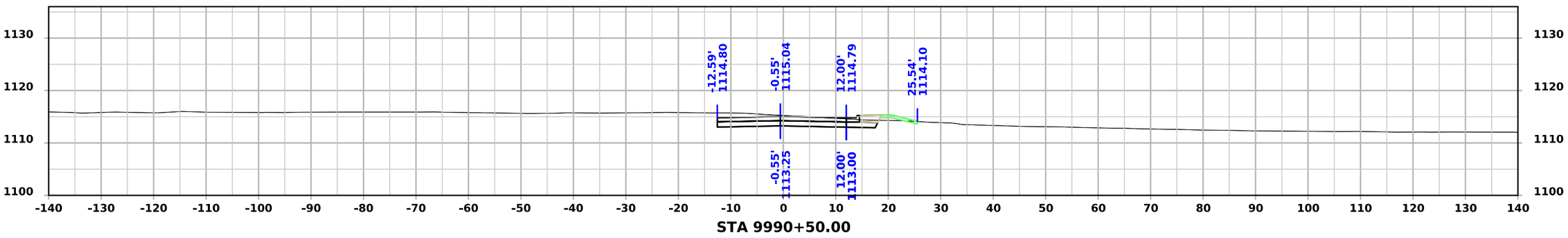


STA 9989+25.00

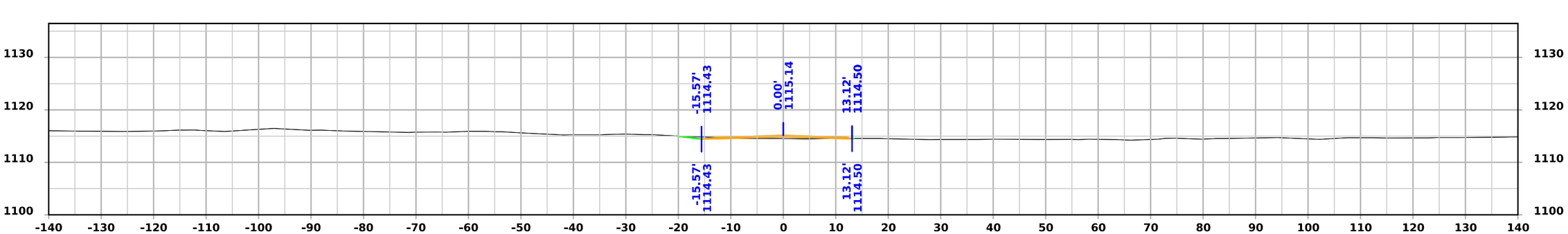
FILE NO.	ENGLISH	DESIGN TEAM Rhoads\Tamrakar\Prindle	BOONE COUNTY	PROJECT NUMBER HSIPX-030-4(113)--3L-08	SHEET NUMBER X.2	

10:33:06 AM 6/12/2024 dtamrak pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\0803002024\Design\CADD_Files\Sheet_Files\SHT_08030113Z08_X1.dgn

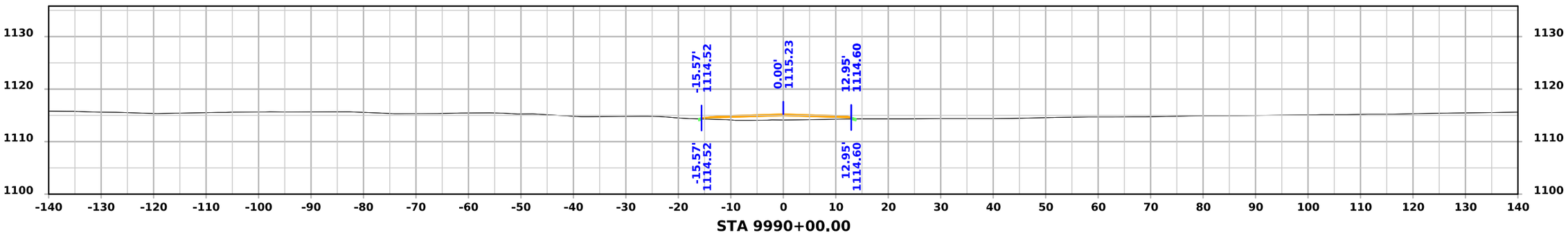
SR30



STA 9990+50.00



STA 9990+25.00

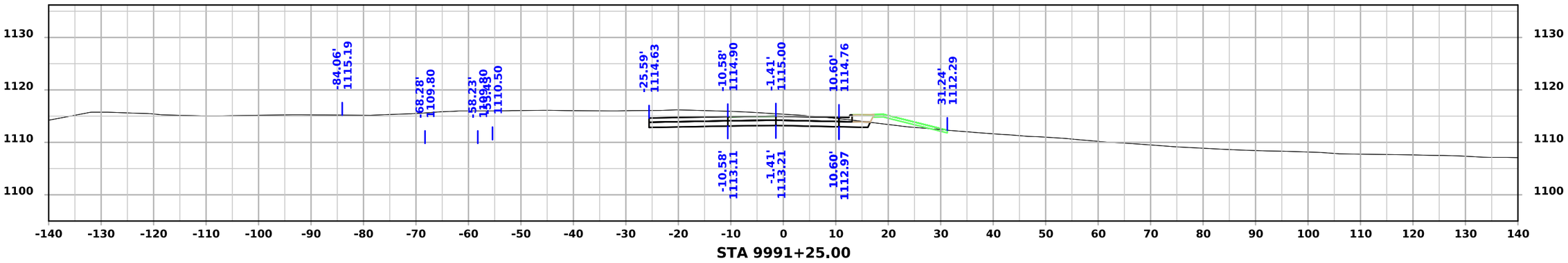


STA 9990+00.00

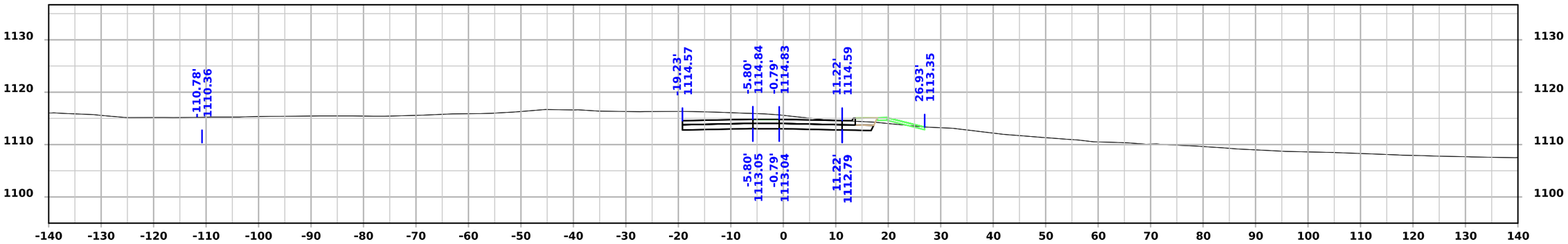
FILE NO.	ENGLISH	DESIGN TEAM Rhoads\Tamrakar\Prindle	BOONE COUNTY	PROJECT NUMBER HSIPX-030-4(113)--3L-08	SHEET NUMBER X.3

10:33:07 AM 6/12/2024 dtamrak pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\0803002024\Design\CADD_Files\Sheet_Files\SHT_08030113Z08_X1.dgn

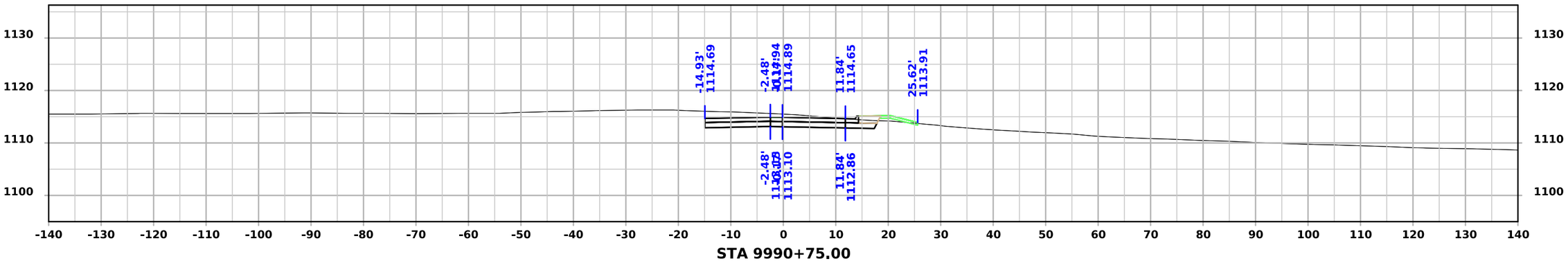
SR30



STA 9991+25.00



STA 9991+00.00

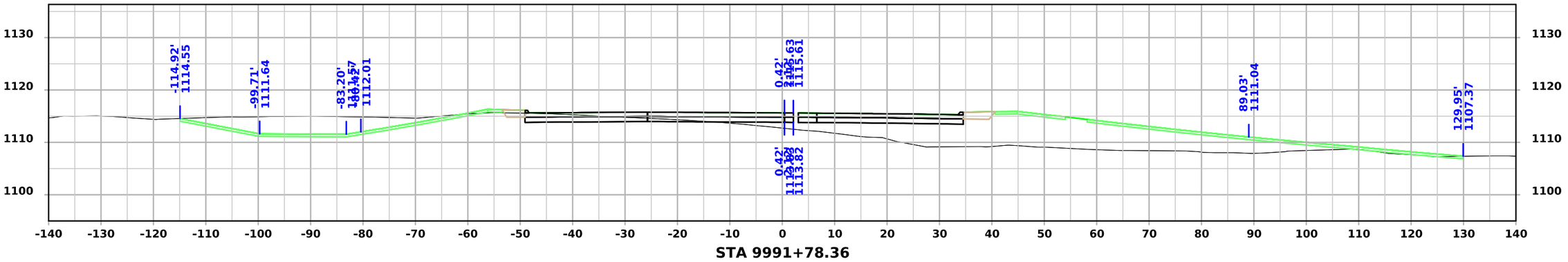


STA 9990+75.00

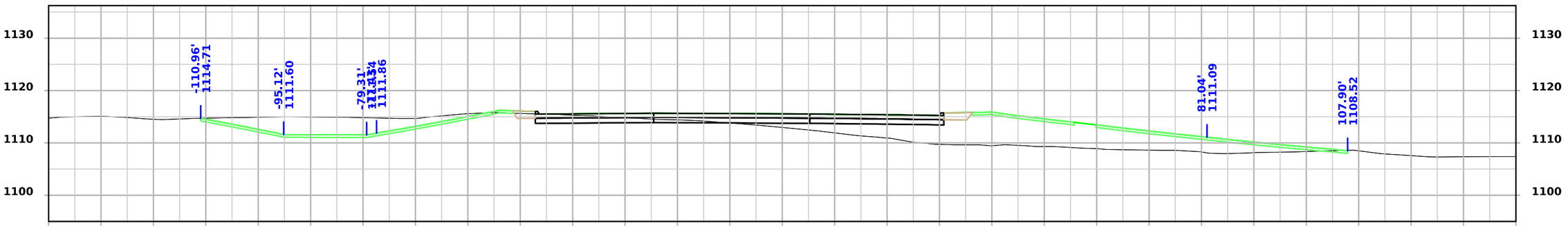
FILE NO.	ENGLISH	DESIGN TEAM Rhoads\Tamrakar\Prindle	BOONE COUNTY	PROJECT NUMBER HSIPX-030-4(113)--3L-08	SHEET NUMBER X.4

10:33:09 AM 6/12/2024 dtamrak pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\0803002024\Design\CADD_Files\Sheet_Files\SHT_08030113Z08_X1.dgn

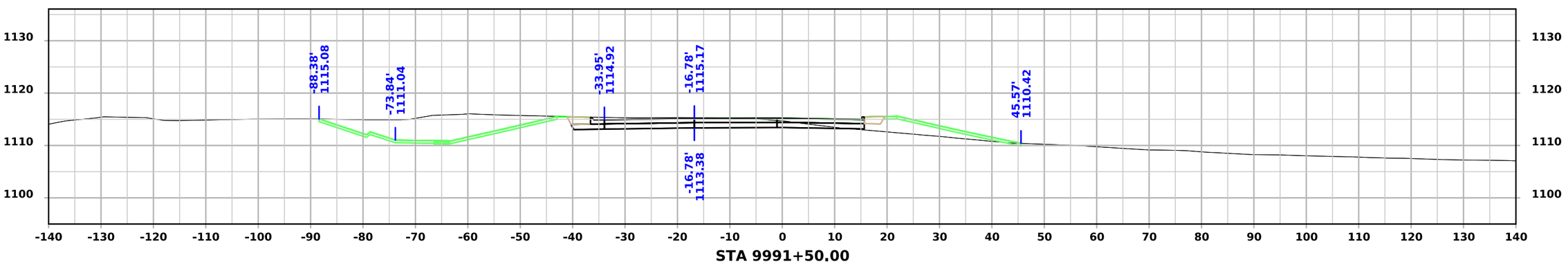
SR30



STA 9991+78.36



STA 9991+75.00

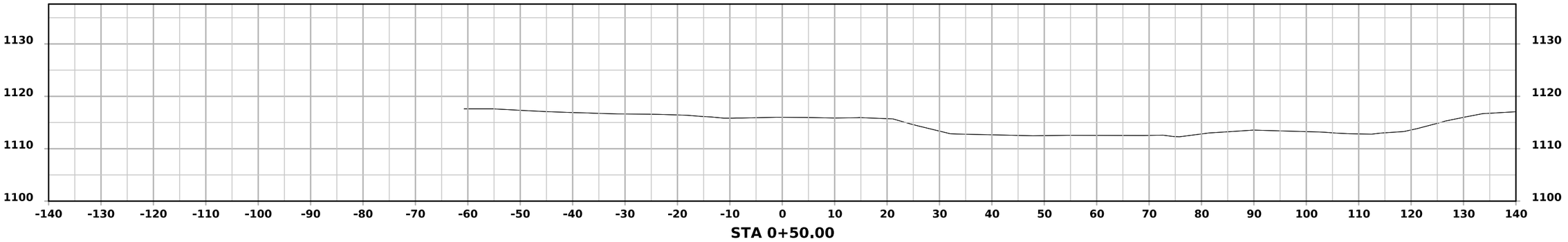


STA 9991+50.00

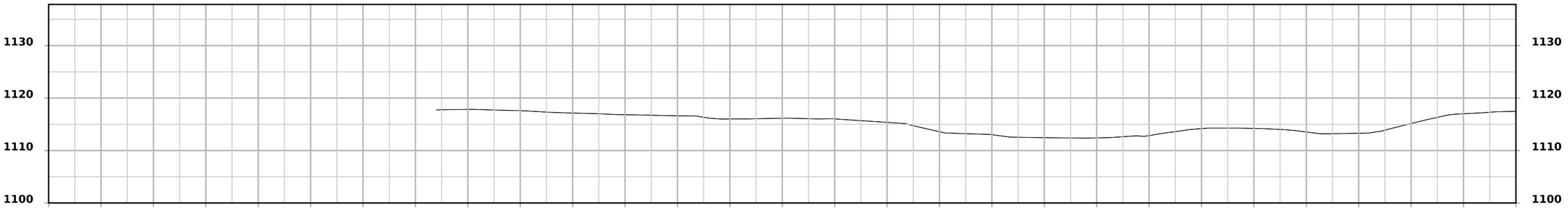
FILE NO.	ENGLISH	DESIGN TEAM Rhoads\Tamrakar\Prindle	BOONE COUNTY	PROJECT NUMBER HSIPX-030-4(113)--3L-08	SHEET NUMBER X.5

10:33:11 AM 6/12/2024 dtamrak pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\0803002024\Design\CADD_Files\Sheet_Files\SHT_08030113Z08_X1.dgn

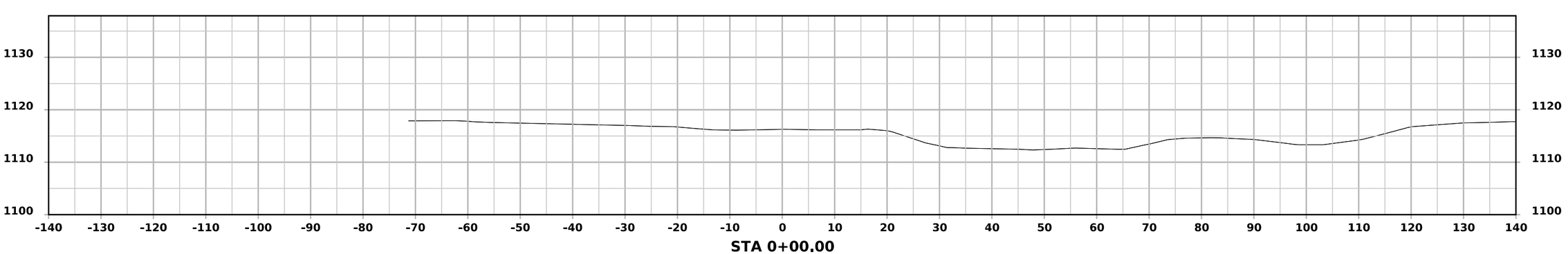
SE Marshall Street



STA 0+50.00



STA 0+25.00

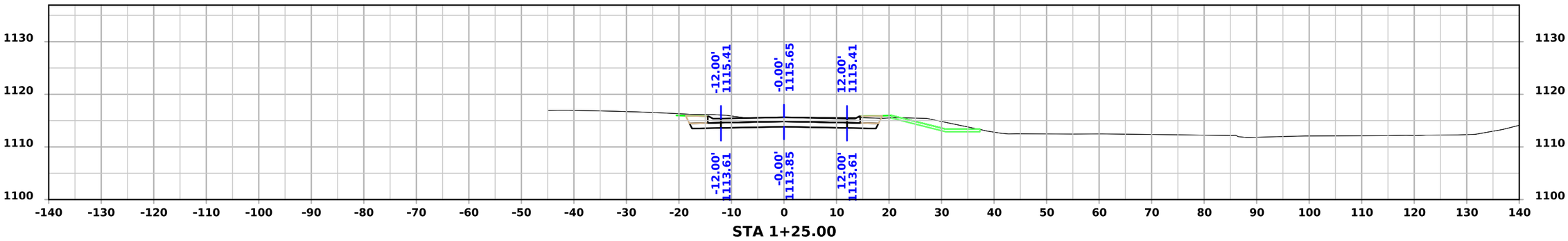


STA 0+00.00

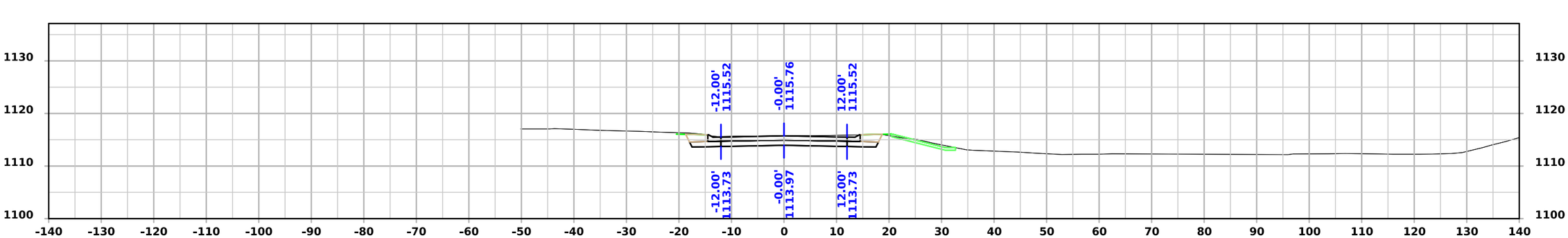
FILE NO.	ENGLISH	DESIGN TEAM Rhoads\Tamrakar\Prindle	BOONE COUNTY	PROJECT NUMBER HSIPX-030-4(113)--3L-08	SHEET NUMBER X.6	

10:44:45 AM 6/28/2024 dtamrak pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\0803002024\Design\CADD_Files\Sheet_Files\SHT_08030113Z08_X6.dgn

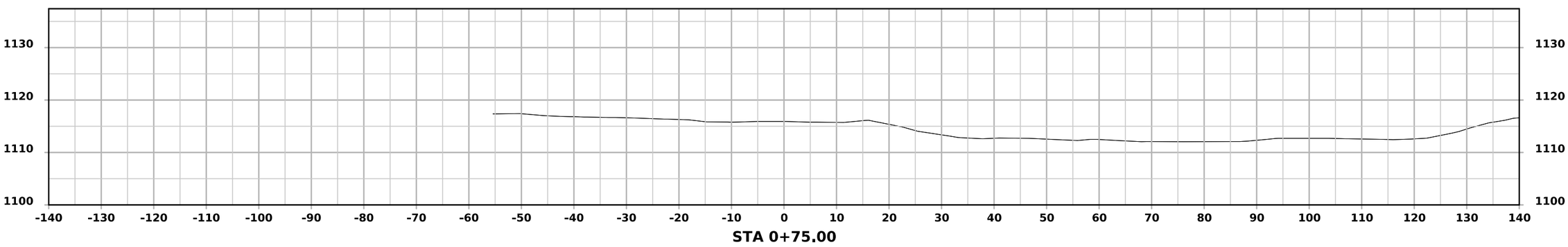
SE Marshall Street



STA 1+25.00



STA 1+00.00

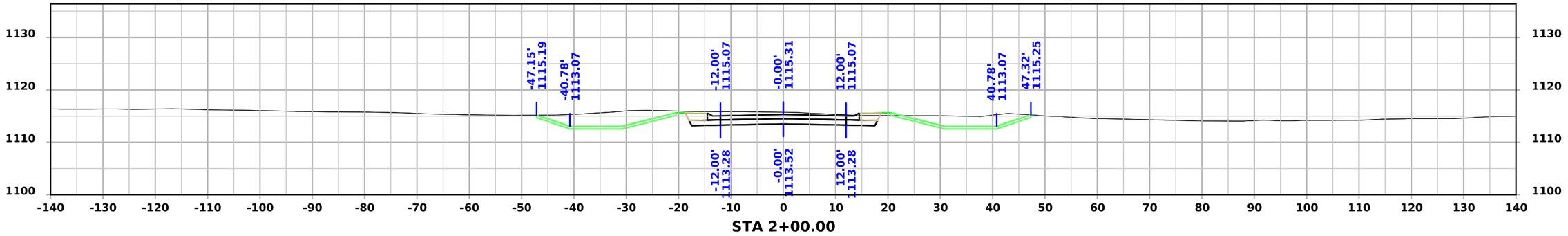


STA 0+75.00

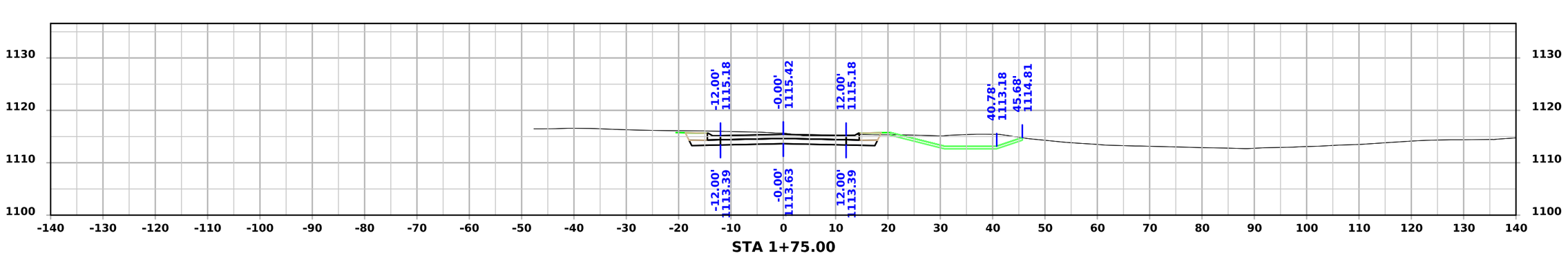
FILE NO.	ENGLISH	DESIGN TEAM Rhoads\Tamrakar\Prindle	BOONE COUNTY	PROJECT NUMBER HSIPX-030-4(113)--3L-08	SHEET NUMBER X.7	

10:44:46 AM 6/28/2024 dtamrak pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\0803002024\Design\CADD_Files\Sheet_Files\SHT_08030113Z08_X6.dgn

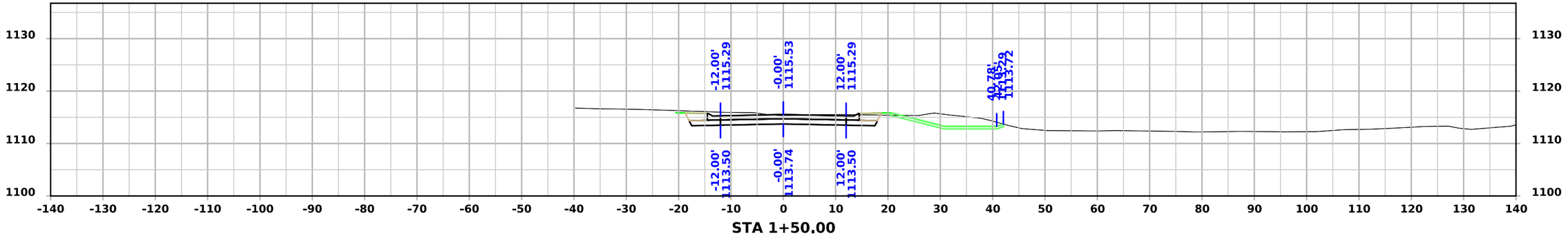
SE Marshall Street



STA 2+00.00



STA 1+75.00

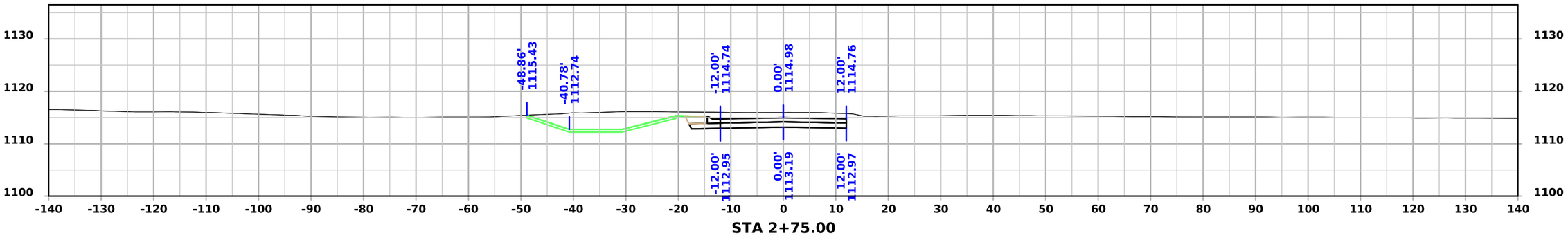


STA 1+50.00

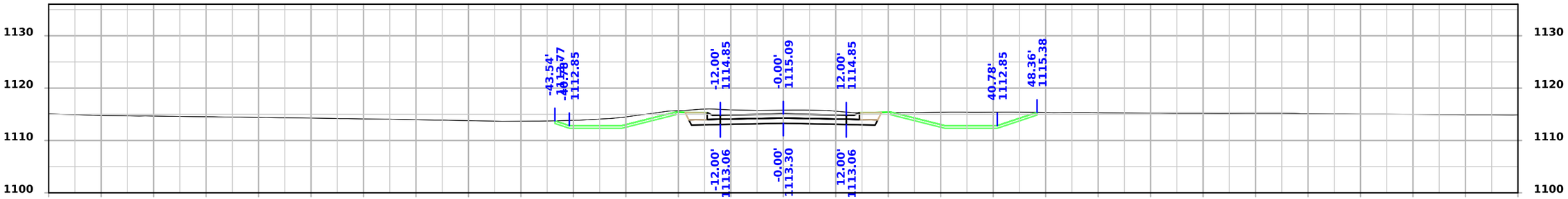
FILE NO.	ENGLISH	DESIGN TEAM Rhoads\Tamrakar\Prindle	BOONE COUNTY	PROJECT NUMBER HSIPX-030-4(113)--3L-08	SHEET NUMBER X.8

10:44:49 AM 6/28/2024 dtamrak pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\0803002024\Design\CADD_Files\Sheet_Files\SHT_08030113Z08_X6.dgn

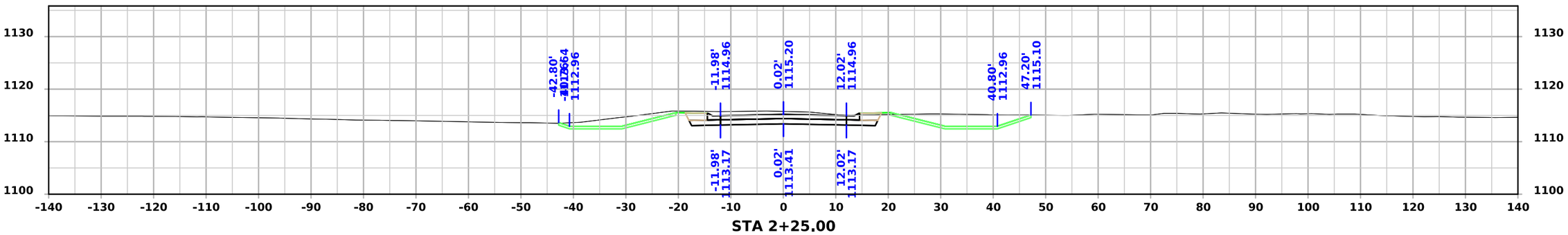
SE Marshall Street



STA 2+75.00



STA 2+50.00

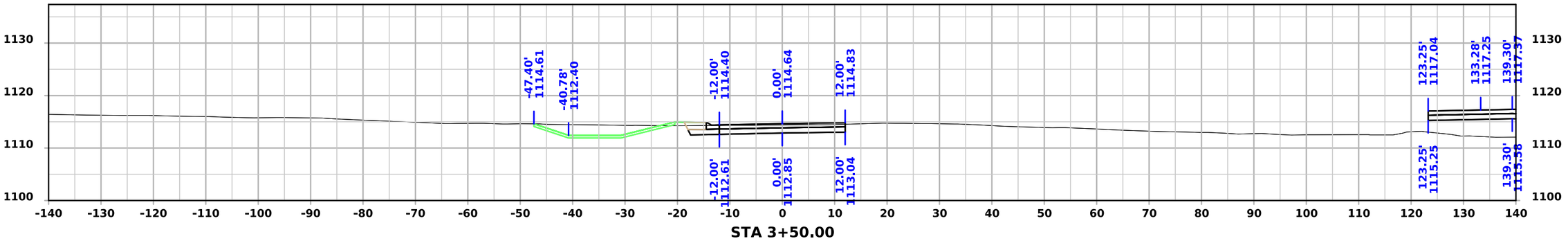


STA 2+25.00

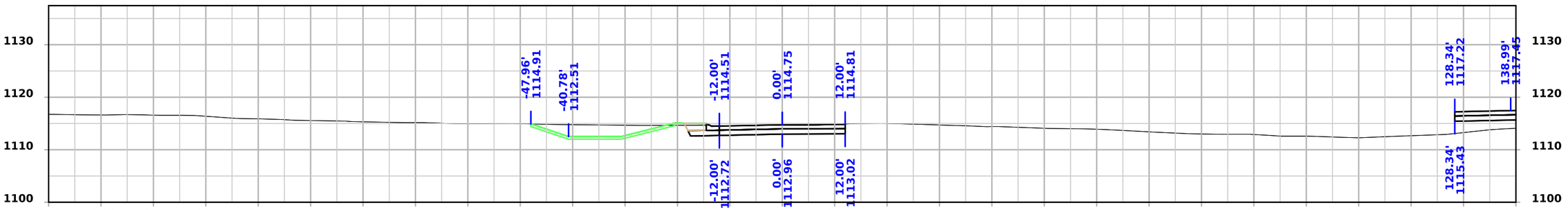
FILE NO.	ENGLISH	DESIGN TEAM Rhoads\Tamrakar\Prindle	BOONE COUNTY	PROJECT NUMBER HSIPX-030-4(113)--3L-08	SHEET NUMBER X.9

10:44:50 AM 6/28/2024 dtamrak pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\0803002024\Design\CADD_Files\Sheet_Files\SHT_08030113Z08_X6.dgn

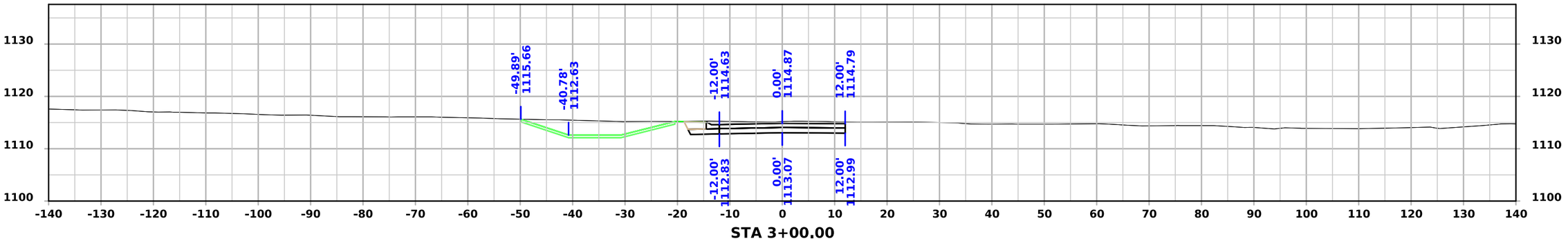
SE Marshall Street



STA 3+50.00



STA 3+25.00

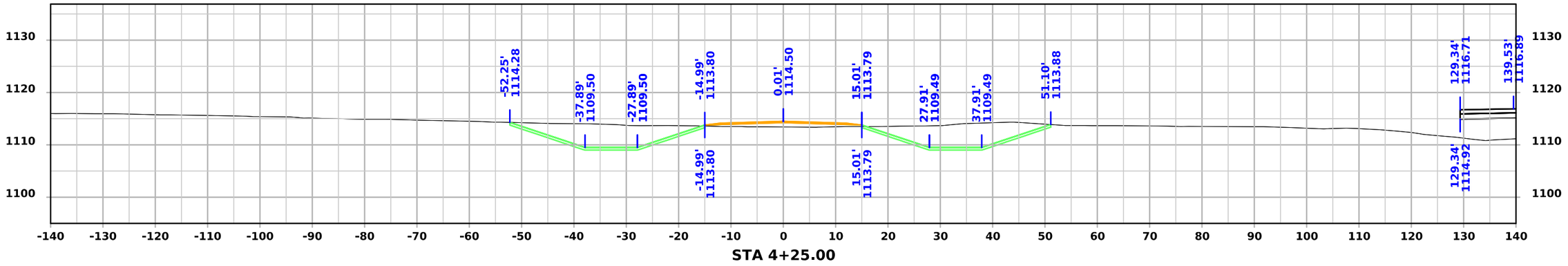


STA 3+00.00

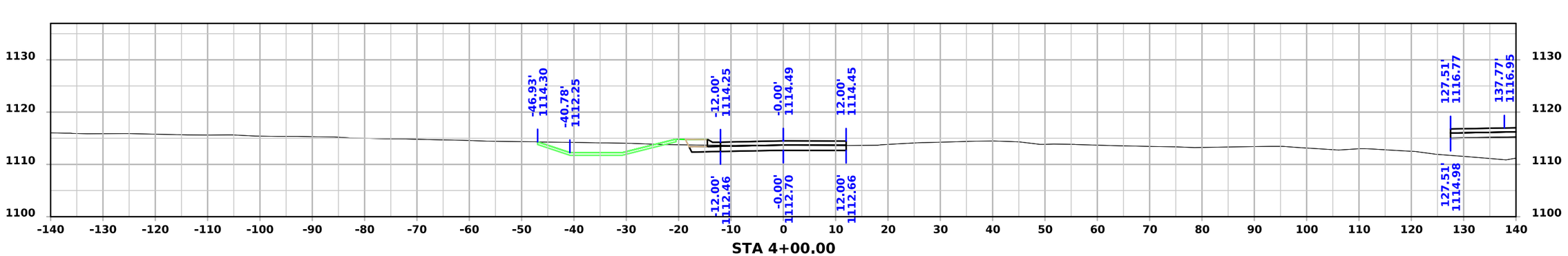
FILE NO.	ENGLISH	DESIGN TEAM Rhoads\Tamrakar\Prindle	BOONE COUNTY	PROJECT NUMBER HSIPX-030-4(113)--3L-08	SHEET NUMBER X.10

10:44:52 AM 6/28/2024 dtamrak pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\0803002024\Design\CADD_Files\Sheet_Files\SHT_08030113Z08_X6.dgn

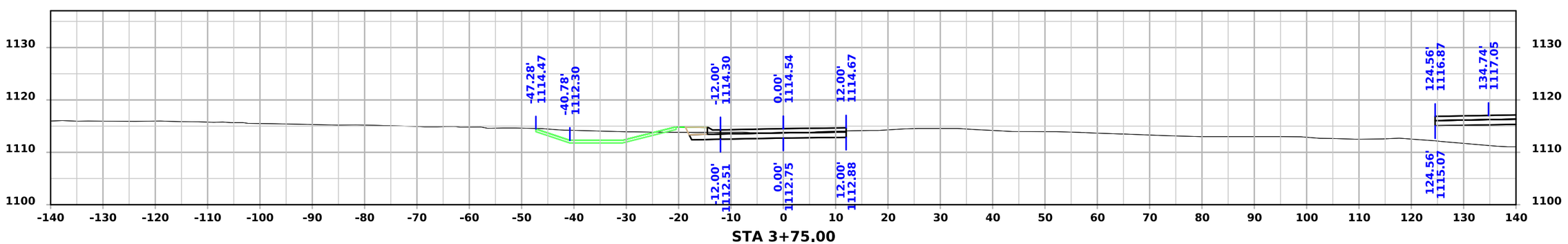
SE Marshall Street



STA 4+25.00



STA 4+00.00

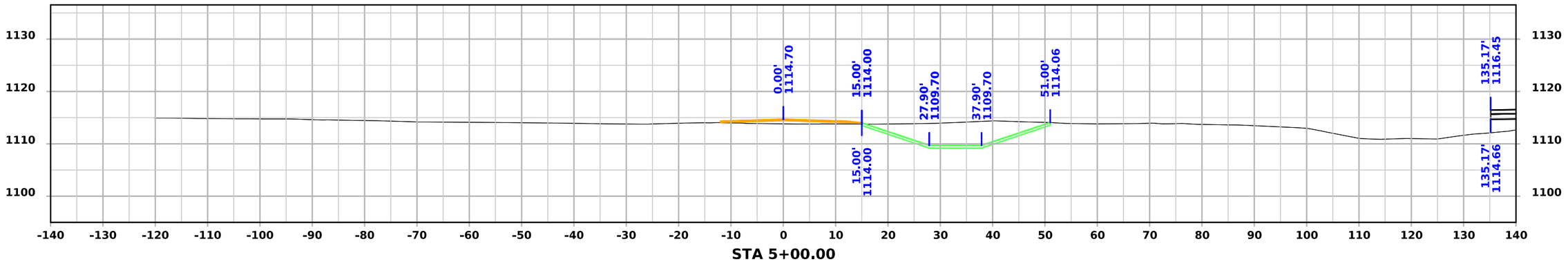


STA 3+75.00

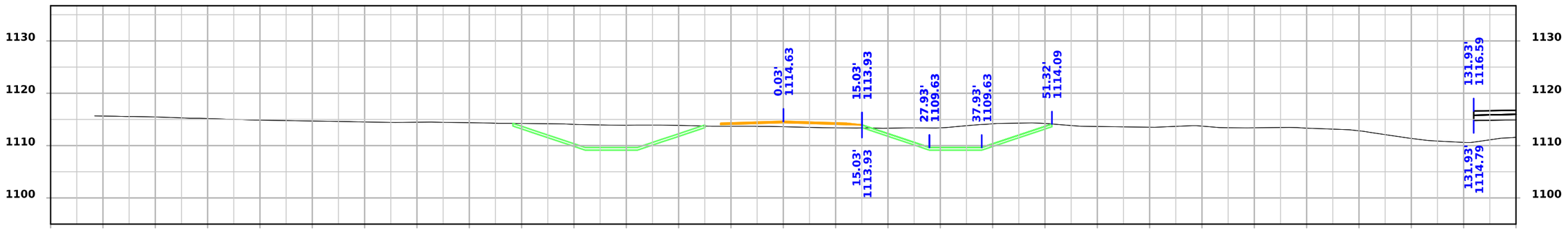
FILE NO.	ENGLISH	DESIGN TEAM Rhoads\Tamrakar\Prindle	BOONE COUNTY	PROJECT NUMBER HSIPX-030-4(113)--3L-08	SHEET NUMBER X.11

10:44:54 AM 6/28/2024 dtamrak pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\0803002024\Design\CADD_Files\Sheet_Files\SHT_08030113Z08_X6.dgn

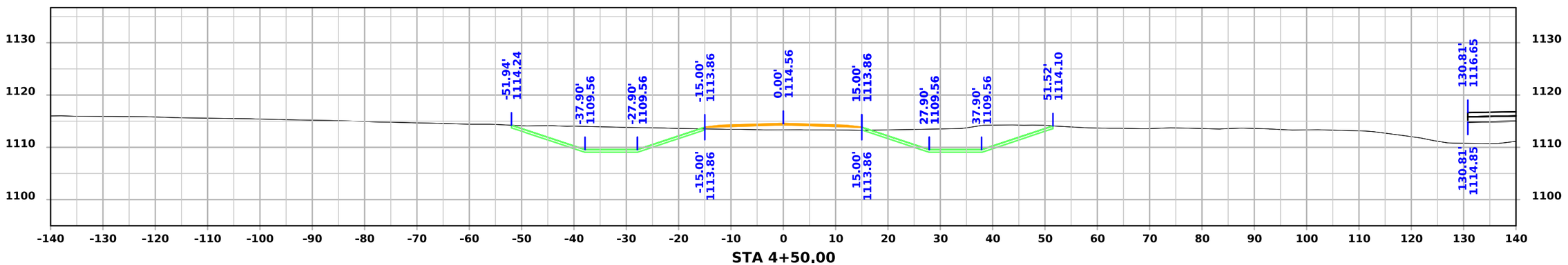
SE Marshall Street



STA 5+00.00



STA 4+75.00

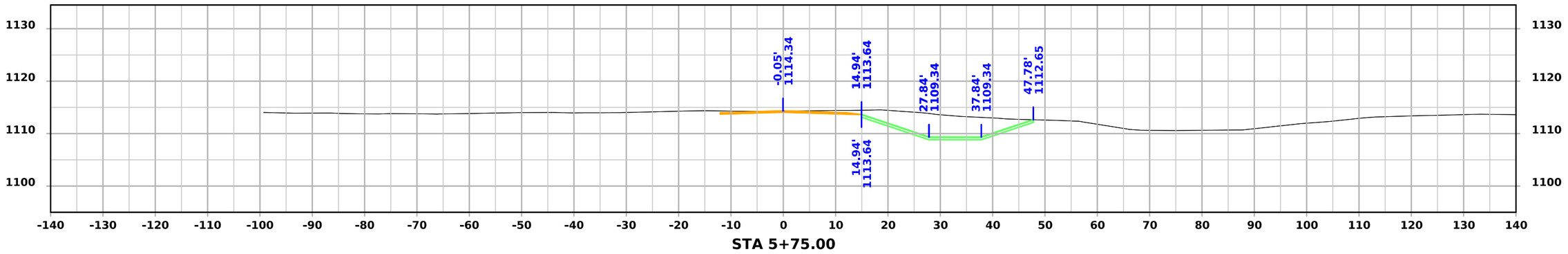


STA 4+50.00

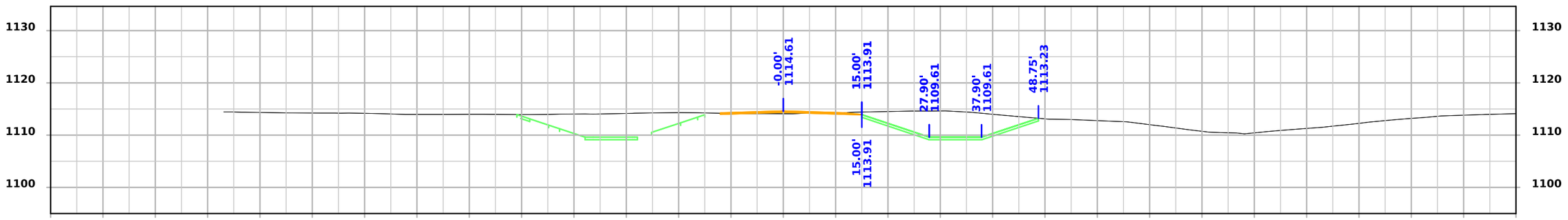
FILE NO.	ENGLISH	DESIGN TEAM Rhoads\Tamrakar\Prindle	BOONE COUNTY	PROJECT NUMBER HSIPX-030-4(113)--3L-08	SHEET NUMBER X.12

10:44:56 AM 6/28/2024 dtamrak pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\0803002024\Design\CADD_Files\Sheet_Files\SHT_08030113Z08_X6.dgn

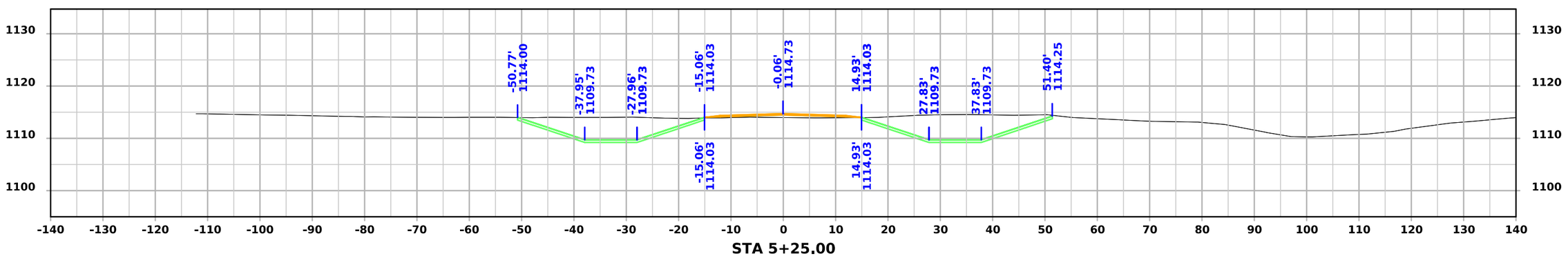
SE Marshall Street



STA 5+75.00



STA 5+50.00

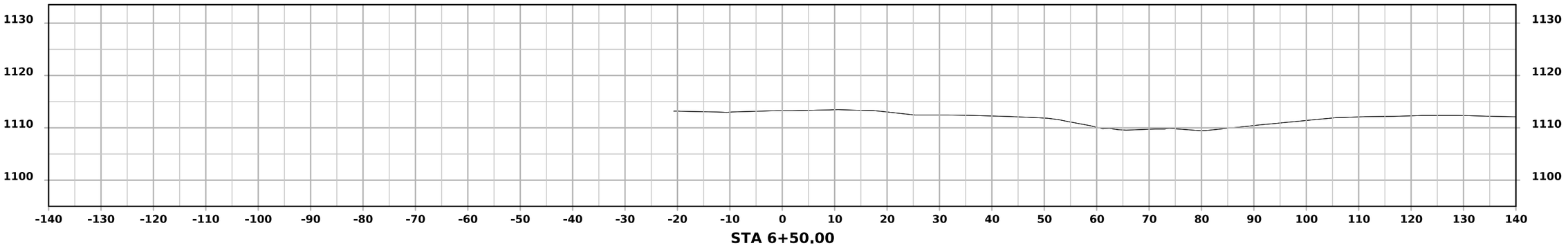


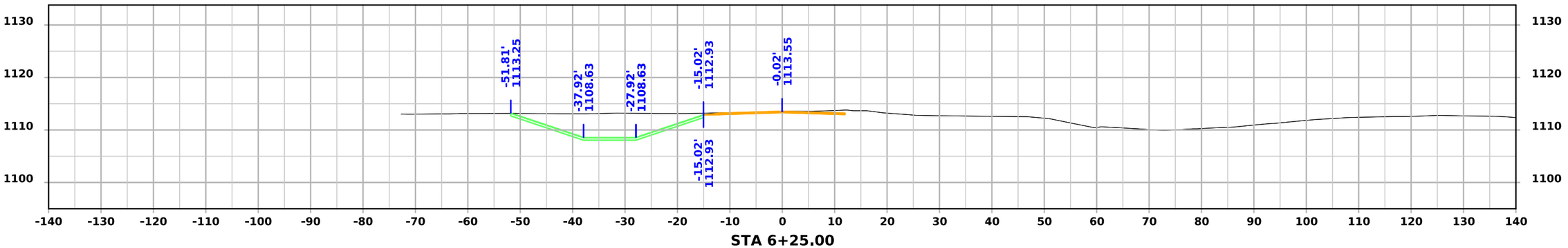
STA 5+25.00

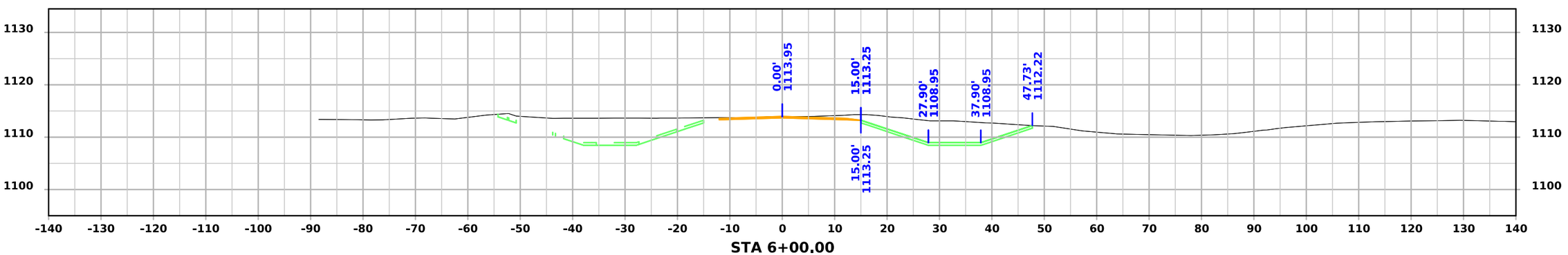
FILE NO.	ENGLISH	DESIGN TEAM Rhoads\Tamrakar\Prindle	BOONE COUNTY	PROJECT NUMBER HSIPX-030-4(113)--3L-08	SHEET NUMBER X.13

10:44:58 AM 6/28/2024 dtamrak pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\0803002024\Design\CADD_Files\Sheet_Files\SHT_08030113Z08_X6.dgn

SE Marshall Street



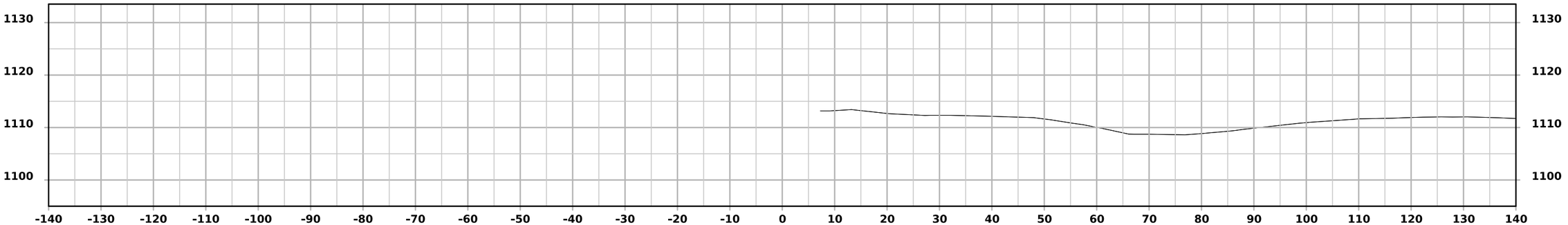




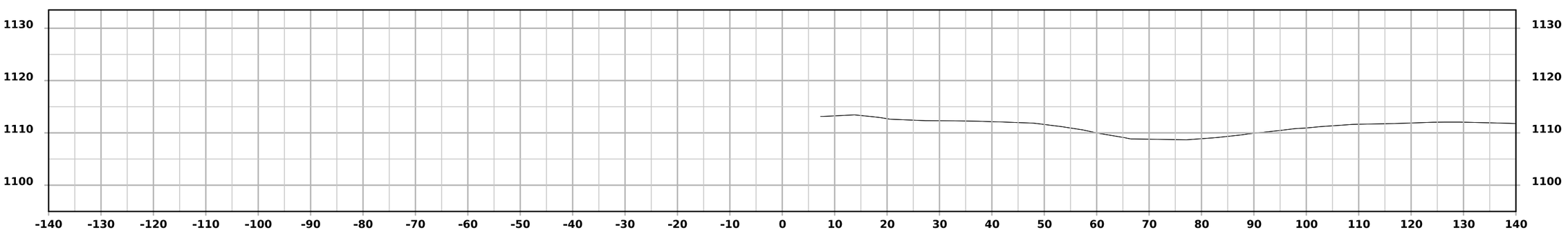
FILE NO.	ENGLISH	DESIGN TEAM Rhoads\Tamrakar\Prindle	BOONE COUNTY	PROJECT NUMBER HSIPX-030-4(113)--3L-08	SHEET NUMBER X.14

10:45:00 AM 6/28/2024 dtamrak pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\0803002024\Design\CADD_Files\Sheet_Files\SHT_08030113Z08_X6.dgn

SE Marshall Street



STA 6+77.09

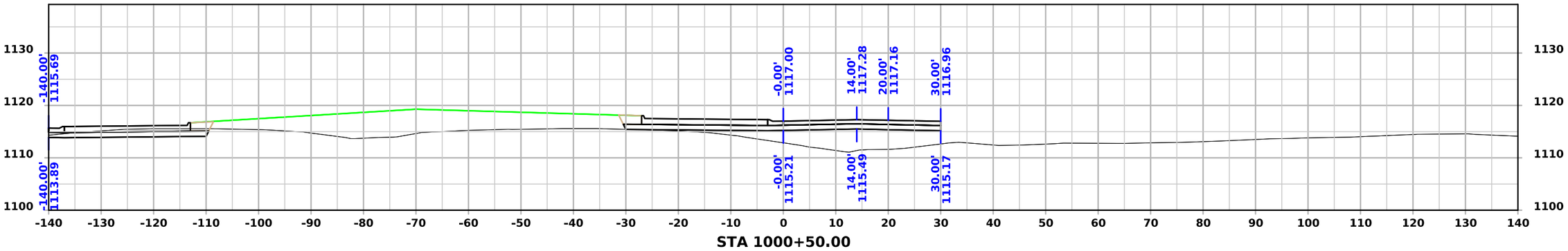


STA 6+75.00

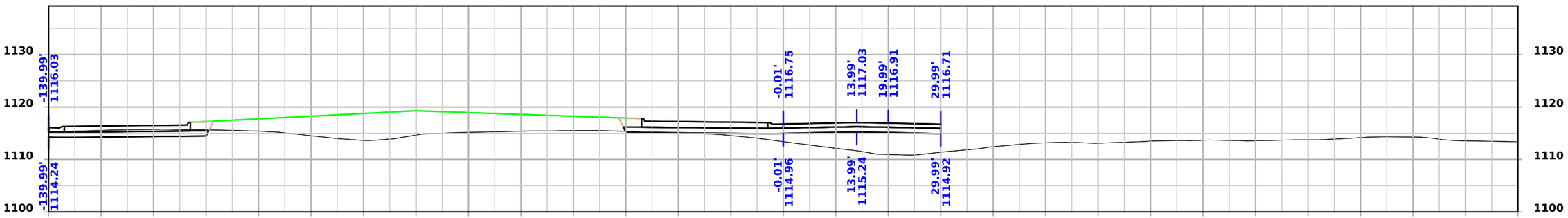
FILE NO.	ENGLISH	DESIGN TEAM Rhoads\Tamrakar\Prindle	BOONE COUNTY	PROJECT NUMBER HSIPX-030-4(113)--3L-08	SHEET NUMBER X.15	

10:45:02 AM 6/28/2024 dtamrak pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\0803002024\Design\CADD_Files\Sheet_Files\SHT_08030113Z08_X6.dgn

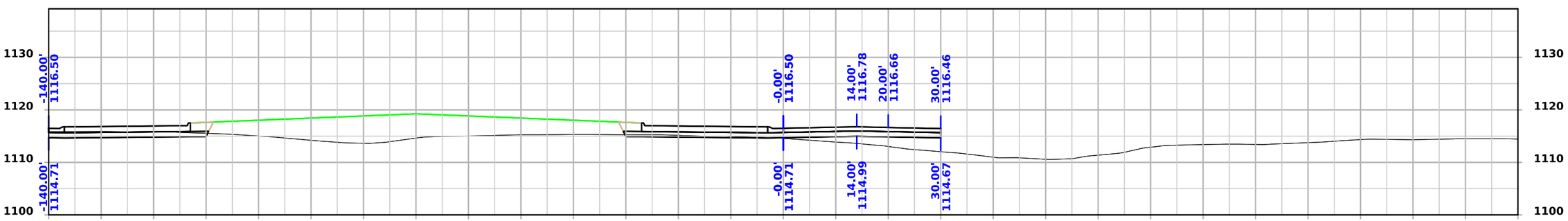
RA Circle



STA 1000+50.00



STA 1000+25.00

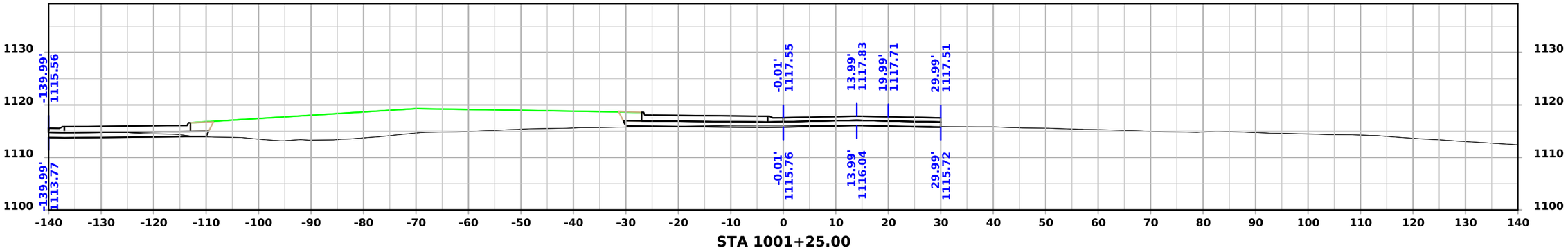


STA 1000+00.00

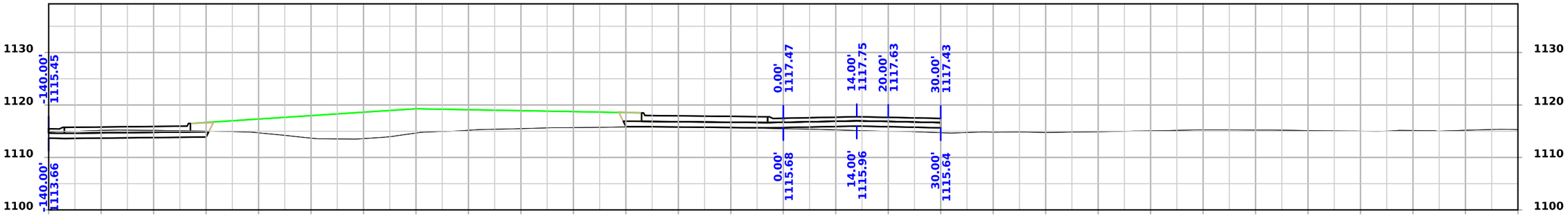
FILE NO.	ENGLISH	DESIGN TEAM Rhoads\Tamrakar\Prindle	BOONE COUNTY	PROJECT NUMBER HSIPX-030-4(113)--3L-08	SHEET NUMBER Y.1	

11:10:54 AM 6/12/2024 dtamrak pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\0803002024\Design\CADD_Files\Sheet_Files\SHT_08030113Z08_Y1.dgn

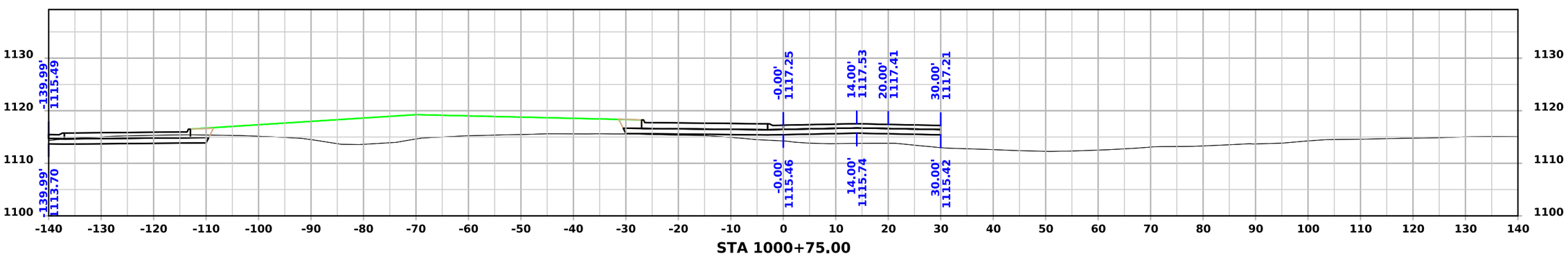
RA Circle



STA 1001+25.00



STA 1001+00.00

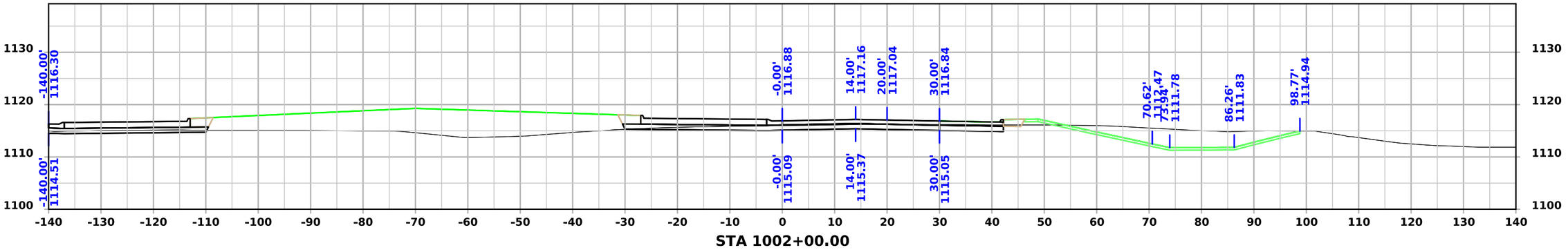


STA 1000+75.00

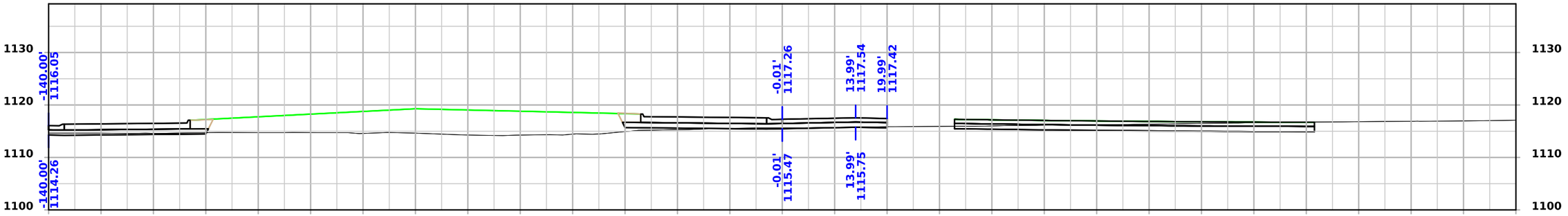
FILE NO.	ENGLISH	DESIGN TEAM Rhoads\Tamrakar\Prindle	BOONE COUNTY	PROJECT NUMBER HSIPX-030-4(113)--3L-08	SHEET NUMBER Y.2	

11:10:57 AM 6/12/2024 dtamrak pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\0803002024\Design\CADD_Files\Sheet_Files\SHT_08030113Z08_Y1.dgn

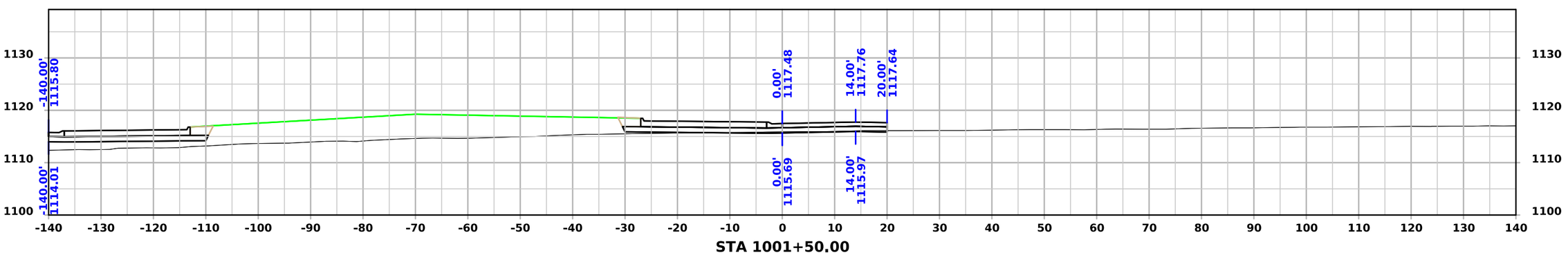
RA Circle



STA 1002+00.00



STA 1001+75.00

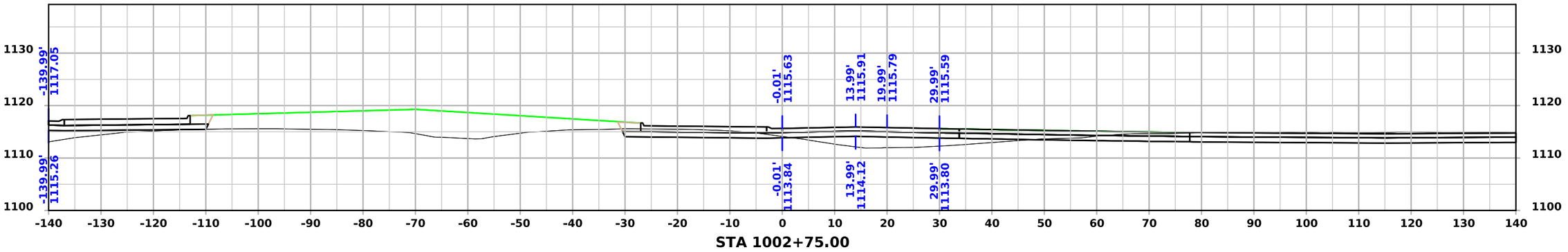


STA 1001+50.00

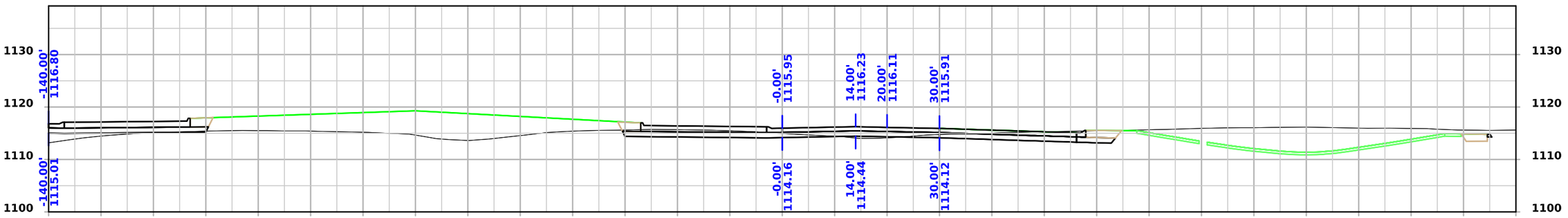
FILE NO.	ENGLISH	DESIGN TEAM Rhoads\Tamrakar\Prindle	BOONE COUNTY	PROJECT NUMBER HSIPX-030-4(113)--3L-08	SHEET NUMBER Y.3	

11:10:59 AM 6/12/2024 dtamrak pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\0803002024\Design\CADD_Files\Sheet_Files\SHT_08030113Z08_Y1.dgn

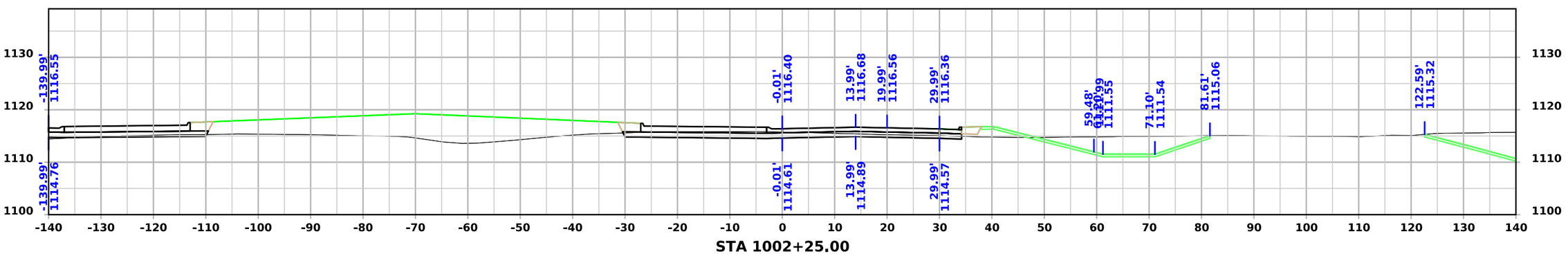
RA Circle



STA 1002+75.00



STA 1002+50.00

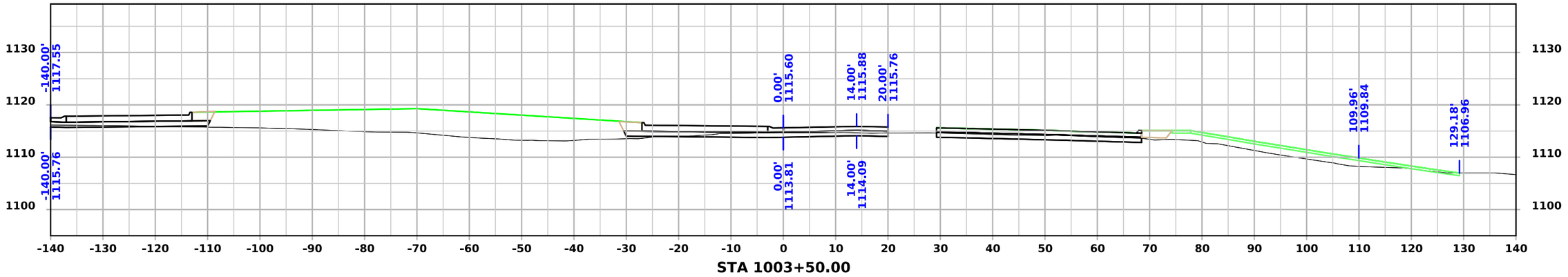


STA 1002+25.00

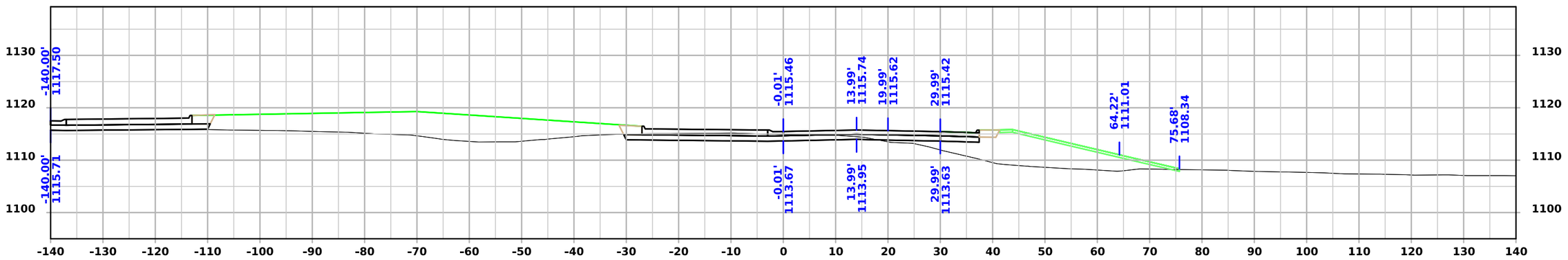
FILE NO.	ENGLISH	DESIGN TEAM Rhoads\Tamrakar\Prindle	BOONE COUNTY	PROJECT NUMBER HSIPX-030-4(113)--3L-08	SHEET NUMBER Y.4	

11:11:01 AM 6/12/2024 dtamrak pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\0803002024\Design\CADD_Files\Sheet_Files\SHT_08030113Z08_Y1.dgn

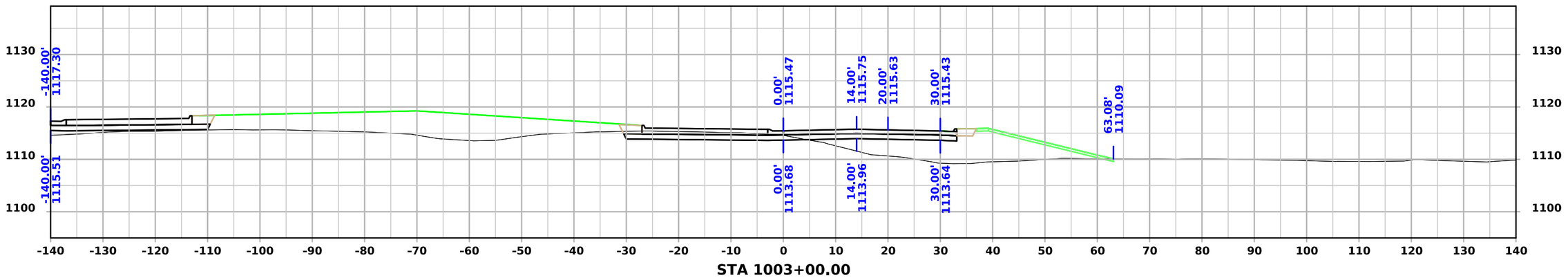
RA Circle



STA 1003+50.00



STA 1003+25.00



STA 1003+00.00

FILE NO.	ENGLISH	DESIGN TEAM Rhoads\Tamrakar\Prindle	BOONE COUNTY	PROJECT NUMBER HSIPX-030-4(113)--3L-08	SHEET NUMBER Y.5	

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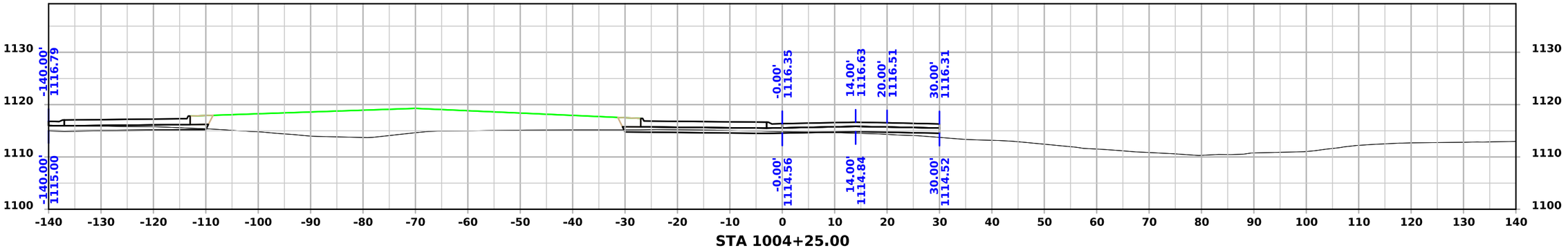
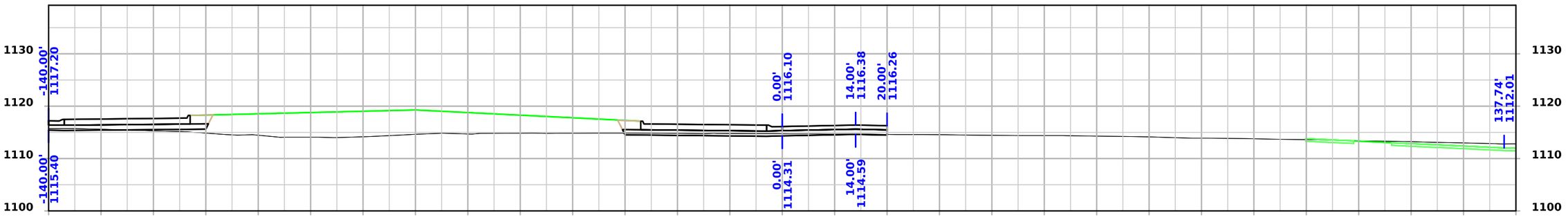
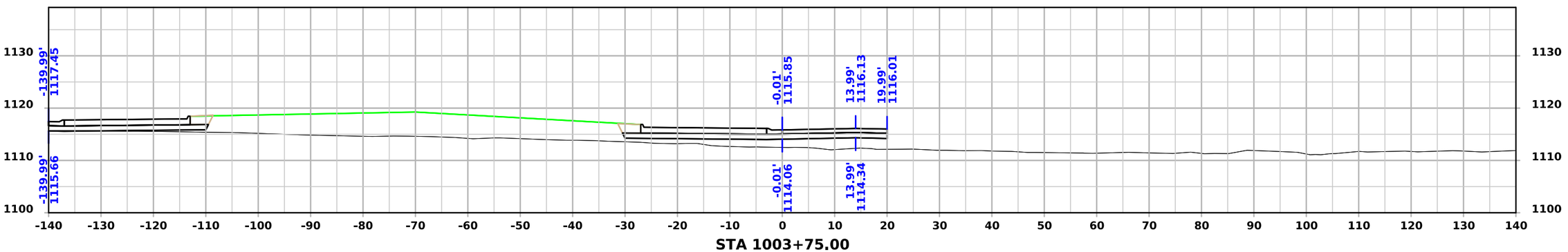
RA Circle



STA 1004+25.00



STA 1004+00.00



STA 1003+75.00

FILE NO.	ENGLISH	DESIGN TEAM Rhoads\Tamrakar\Prindle	BOONE COUNTY	PROJECT NUMBER HSIPX-030-4(113)--3L-08	SHEET NUMBER Y.6

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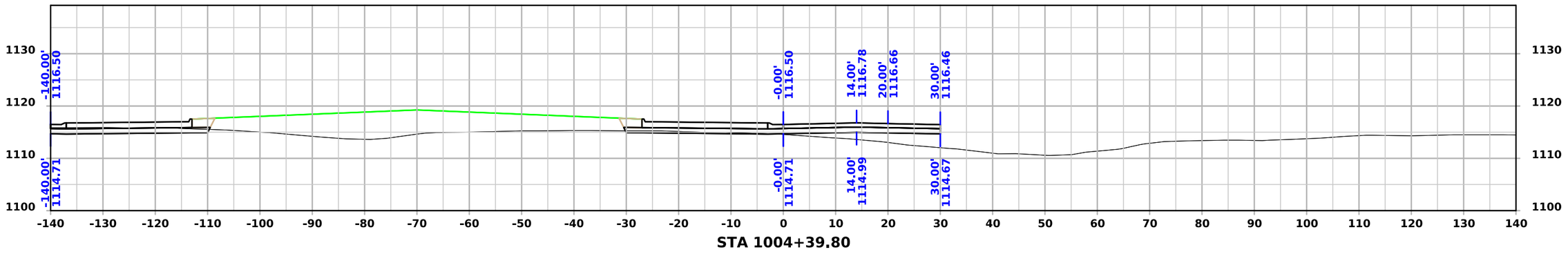
RA Circle



STA 1004+39.80

FILE NO.	ENGLISH	DESIGN TEAM Rhoads\Tamrakar\Prindle	BOONE COUNTY	PROJECT NUMBER HSIPX-030-4(113)--3L-08	SHEET NUMBER Y.7

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