LETTING DATE 6/16/2026

PCC Pavement - Grade and New
HSIPX-030-5(328)--3L-64

MARSHALL COUNTY

INDEX OF SHEETS

No.	DESCRIPTION
A Sheets	**Title Sheets**
* A.1	Title Sheet and Location Map Sheet
B Sheets	**Typical Cross Sections and Details**
* B.1 - 4	Typical Cross Sections and Details
C Sheets	**Quantities and General Information**
C.1 - 5	Estimated Project Quantities & Reference Infromation
C.6 - 11	Tabulations
C.12	Standard Road Plans
D Sheets	**Mainline Plan and Profile Sheets**
* D.1	Plan & Profile Legend & Symbol Information Sheet
* D.2 - 3	"US 30"
E Sheets	**Side Road Plan and Profile Sheets**
* E.1	"Durham Ave. and 3rd Ave. SW
G Sheets	**Survey Sheets**
G.1 - 3	Reference Ties and Bench Marks
G.4	Horizontal Control Tabs.
J Sheets	**Traffic Control and Staging Sheets**
J.1	Traffic Control Plan,511 travel restrictions,Stg. Notes
* J.2 - 6	Side Road Detour Map
L Sheets	**Geometric, Staking and Jointing Sheets**
L.1 - 2	Geometric & Staking EB 30/3rd Ave SW
L.3 - 4	Geometric & Staking EB 30/Durham Ave
L.5	Edge Profiles EB 30/3rd Ave SW
L.6	Edge Profiles EB 30/Durham Ave
L.7 - 8	Jointing right turn lane Durham Ave
L.9 - 11	Jointing right turn lane 3rd Ave SW
N Sheets	**Traffic Signing Sheets**
N.1 - 25	Traffic Signing Sheets
P Sheets	**Lighting Layout Sheets**
P.1 - 7	Lighting Layout Sheet
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SPS Sheets	**Bridge and Culvert Plan Soils Sheets**
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T.1 - 2	Earthwork Legend
T.3	Earthwork Quantity Sheets
U Sheets	**500 Series, Mod.Stds. and Detail Sheets**
* U.1 - 6	Pavement Marking Details
* U.7	Pavement Removal - Clearing & Grubbing
V Sheets	**Bridge and Culvert Situation Plans**
V.1 - 4	Bridge and Culvert Situation Plans
W Sheets	**Mainline Cross Sections**
* W.1 - 22	Mainline Cross Sections
X Sheets	**Side Road Cross Sections**
* X.1 - 8	3rd Ave SW and Durham Ave. Cross Sections

* Color Plan Sheets

IOWA DOT

REVISIONS

TOTAL
124
PROJECT IDENTIFICATION NUMBER
25-64-030-020
PROJECT NUMBER
HSIPX-030-5(328)--3L-64
R.O.W. PROJECT NUMBER

PLANS OF PROPOSED IMPROVEMENT ON THE

PRIMARY ROAD SYSTEM

MARSHALL COUNTY

PCC Pavement - Grade and New

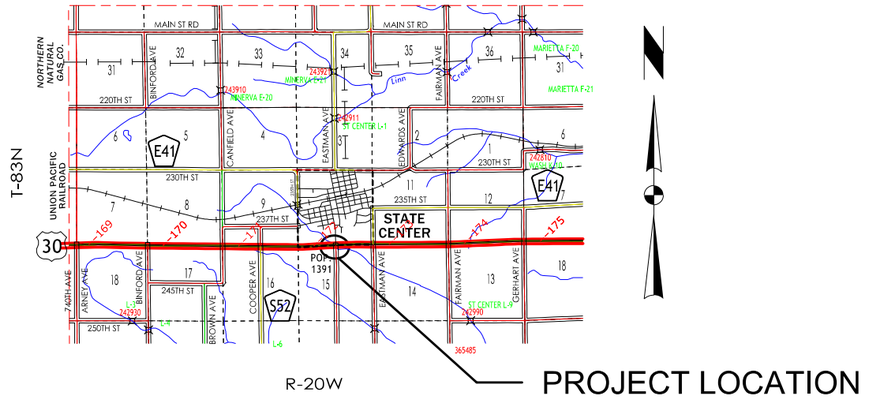
Durham Ave Intersection at State Cente

SCALES: As Noted

Refer to the Proposal Form for list of applicable specifications.

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

IOWA ONE CALL
1-800-292-8989
www.iowaonecall.com
811 Know what's below. Call before you dig.



US 30 DESIGN DATA RURAL			
2024	AADT	7000	V.P.D.
2044	AADT	9717	V.P.D.
20 –	DHV	–	V.P.H.
TRUCKS		15.21	%
Total Design ESALs		4,016,535	

LOCATION MAP SCALE
0 1 2 3
Miles

INDEX OF SEALS

SHEET NO.	NAME	TYPE	BID QUANTITY SHEETS
A.1	Jeremey J. Vortherms	Primary Signature Block	C.1 - C.6
N.1	Jason Hermann	Signing Plan	C.1 - C.6
P.1	Lane E. Ingram	Lighting Plan	P.4 - P.5
SPS.1	Xinyi Jiang	Bridge Plan Soils Sheets	SPS.1
V.1	Jacob J. Shaw	Structural Design	V.1
V.3	Brian J. Birkland	Hydraulic Design	C.1 - C.6, V.3

LICENSED PROFESSIONAL ENGINEER
Jeremey J. Vortherms
15310
IOWA

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

Signature — Date: 04-02-2026
Jeremey J. Vortherms
Printed or Typed Name

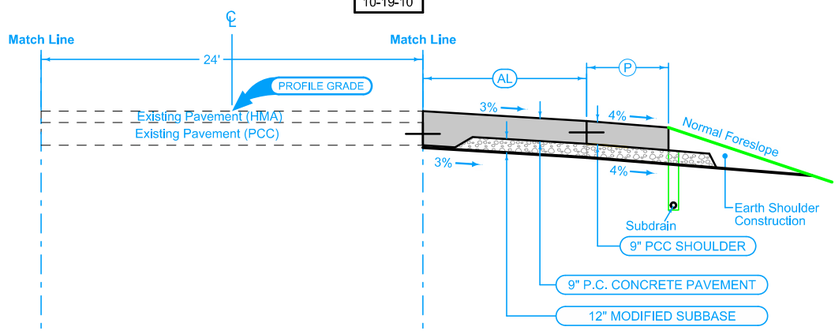
My license renewal date is December 31, 20 26

Pages or sheets covered by this seal: A.1, B.1-B.4, C.1-C.12, D.1-D.3, E.1-E.2, G.1-G.4, J.1-J.6, L.1-L.11, RC.1-RC.3, T.1-T.3, U.1-U.7, W.1-W.22, & X.1-X.8

FILE NO.	ENGLISH	DESIGN TEAM Vortherms/Tamrakar/Ringgenberg	MARSHALL COUNTY	PROJECT NUMBER HSIPX-030-5(328)--3L-64	SHEET NUMBER A.1

1:11:55 PM 4/2/2026 rringge pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\6403002025\DistrictDesign\HSIPX-030-5(328)_RightTurnLanes\CADDFiles\640305328_A01.dgn

2E_
10-19-10



Auxiliary Lane

Longitudinal joint: BT-3
Transverse joint: Match Mainline

Auxiliary Lane
Full Depth Shoulder

Shoulder Jointing:
Longitudinal joint: L-2
Transverse joints: Match Mainline

	4_AuxLane_PCC_ 04-15-25			2_AL_Shldr_FullPCC_ 04-15-25
Direction of Travel	BEGIN STATION	END STATION	(AL) Feet	(P) Feet
EB	2851+75.39	2865+91.36	Vari.	4.0

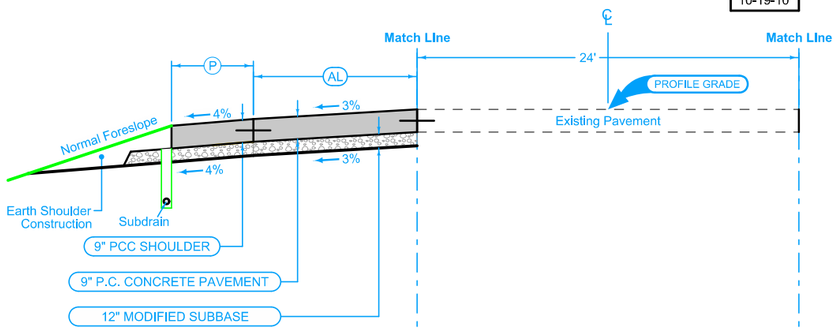
Refer to L Sheets for details
Refer to Tabulation 100-24 for Pavment Quantities
Refer to Tabulation 112-9 for Paved Shoulder Quantities

US 30 - Eastbound

FILE NO.	ENGLISH	DESIGN TEAM **Vortherms/Tamrakar/Ringgenberg**	**MARSHALL** COUNTY	PROJECT NUMBER **HSIPX-030-5(328)--3L-64**	SHEET NUMBER **B.1**

5:26:17 AM 4/1/2026 rringge pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\6403002025\DistrictDesign\HSIPX-030-5(328)_RightTurnLanes\CADDFiles\640305328_B01.dgn

2E_
10-19-10



Auxiliary Lane
Full Depth Shoulder

Shoulder Jointing:
Longitudinal joint: L-2 or BT-2
Transverse joints: Match Mainline

Auxiliary Lane

Longitudinal joint: BT-3
Transverse joint: Match Mainline

2_AL_Shldr_FullPCC_ 04-15-25			4_AuxLane_PCC_ 04-15-25	
(P) Feet	Direction of Travel	BEGIN STATION	END STATION	(AL) Feet
4.0	WB	2862+20.14	2876+62.77	Vari.

Refer to L Sheets for details
Refer to Tabulation 100-24 for Pavment Quantities
Refer to Tabulation 112-9 for Paved Shoulder Quantities

US 30 - Westbound

FILE NO.	ENGLISH	DESIGN TEAM **Vortherms/Tamrakar/Ringgenberg**	**MARSHALL** COUNTY	PROJECT NUMBER **HSIPX-030-5(328)--3L-64**	SHEET NUMBER **B.2**	

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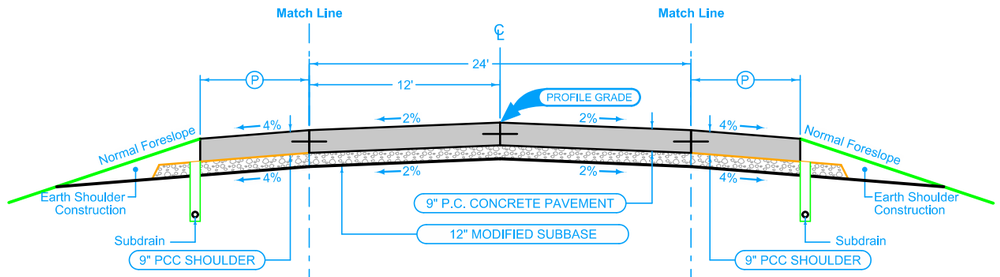


Full Depth PCC Shoulder

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

2_P_FullPCC_ 04-15-25		
STATION TO STATION		(P) Feet
12862+13.64	12863+73.36	4.0
12865+02.18	12867+49.71	4.0

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

2P_ 04-21-20	
STATION TO STATION	
12862+13.64	12864+01.40
12865+02.18	12867+50.48

Full Depth PCC Shoulder

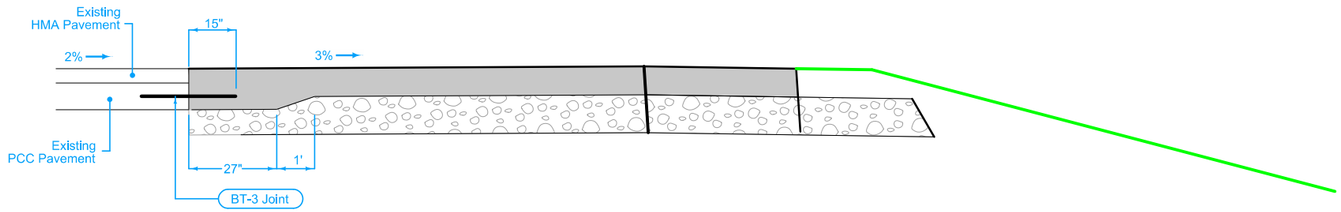
Shoulder Jointing:
Longitudinal joint: BT-2, or L-2
Transverse joints: C at 17' spacing

2_P_FullPCC_ 04-15-25		
(P) Feet	STATION TO STATION	
4.0	12862+13.64	12864+01.29
4.0	12865+31.51	12867+49.71

Refer to L Sheets for details
Refer to Tabulation 100-24 for Pavment Quantities
Refer to Tabulation 112-9 for Paved Shoulder Quantities

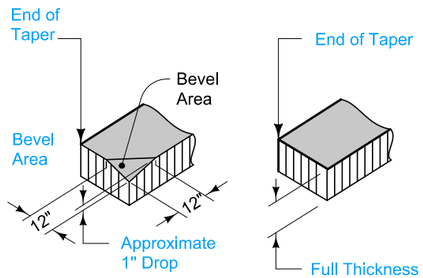
Durham Ave./ 3rd Ave SW

EDGE-1
SPECIAL



Thickened Edge
Tie-In Detail

7101
10-19-10

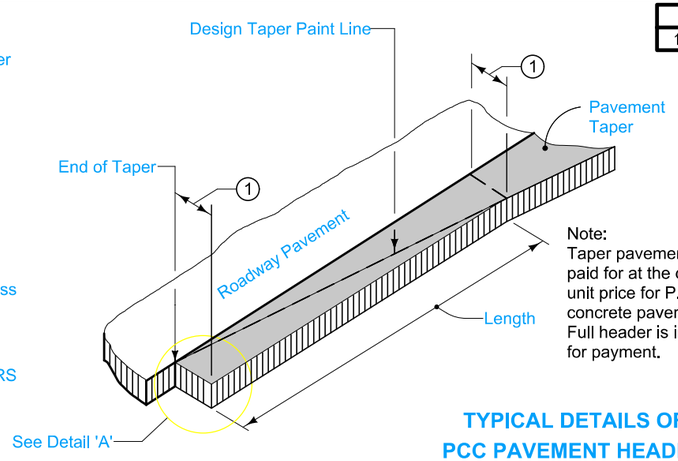


DETAIL 'A'

FOR
GRANULAR SHOULDERS

DETAIL 'A'

FOR
PAVED SHOULDERS

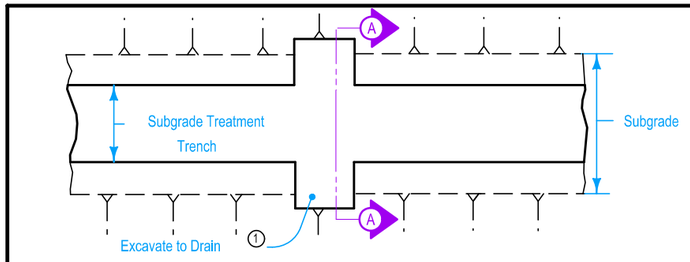


Note:
Taper pavement to be paid for at the contract unit price for P.C. concrete pavement. Full header is included for payment.

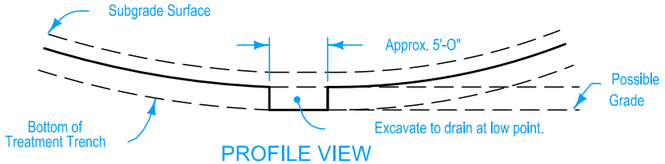
1 Normal width is 2'-0". Construct 4'-0" width when butting into 4' wide HMA shoulders (See Typical 7154A).

TYPICAL DETAILS OF PCC PAVEMENT HEADER

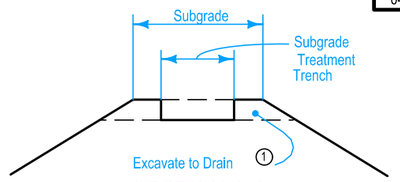
8301
04-20-04



PLAN VIEW



PROFILE VIEW



SECTION A-A

1 The contractor shall excavate a portion of subgrade as necessary to provide drainage for the treatment trench. When the subgrade treatment is granular soils, the contractor shall excavate a portion of the subgrade and backfill it with the granular soils every 300 feet.

This excavation shall be considered incidental.

TYPICAL DETAILS OF DRAIN FOR SUBGRADE TREATMENT TRENCH

FILE NO.	ENGLISH	DESIGN TEAM **Vortherms/Tamrakar/Ringgenberg**	**MARSHALL** COUNTY	PROJECT NUMBER **HSIPX-030-5(328)--3L-64**	SHEET NUMBER **B.4**

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ESTIMATED PROJECT QUANTITIES AND REFERENCE NOTES

Roadway Items : Roadway Items

Item no.	Item Code	Item	Unit	Quantities Estimated Roadway Items	Estimate Reference Notes
1	2101-0850001	CLEARING AND GRUBBING	ACRE	0.1	Refer to Tab. 110-17 on RC Sheets and Sheet U.10 for location. All material generated as a result of Clearing and Grubbing shall become the property of the contractor and must be disposed off site. All wood material must be disposed of according to Iowa Department of Agriculture and Land Stewardship Emerald Ash Borer Quarantine Order. For more information see www.iowatreepests.com.
2	2102-2710070	EXCAVATION, CLASS 10, ROADWAY AND BORROW	CY	169	Refer to Tab. 107-28 on T Sheets.
3	2102-2710090	EXCAVATION, CLASS 10, WASTE	CY	4,603	Refer to Tab. 107-28 on T Sheets. Dispose of excess material according to Article 1106.07 of the current specifications.
4	2104-2710020	EXCAVATION, CLASS 10, CHANNEL	CY	677.9	Refer to Sheet V.1. Dispose of excess material according to Article 1106.07 of the current specifications.
5	2105-8425015	TOPSOIL, STRIP, SALVAGE AND SPREAD	CY	5,907	Refer to Tab. 107-28 on the T Sheets and Tab. 103-10 on the C Sheets. Quantity will be computed on the basis of a uniform 12 inch cut, or the depth as specified in the contract documents over the area involved. Sufficient field measurements will be taken to assure reasonable conformity with the required depth of cut.
6	2107-0875100	COMPACTION WITH MOISTURE CONTROL	CY	130	Refer to Tab. 103-6 on C Sheets. Cubic yards shown on the contract documents as determined by the template fill volume. Shrinkage will not be included in the moisture control quantity.
7	2115-0100000	MODIFIED SUBBASE	CY	2,038.1	Refer to Tab. 100-24 on C Sheets and B Sheet Typicals.
8	2122-5190009	PAVED SHOULDER, P.C. CONCRETE, 9 IN.	SY	1,415.1	Refer to Tab. 112-9 on C Sheets.
9	2123-7450000	SHOULDER CONSTRUCTION, EARTH	STA	31.8	Refer to Tab. 112-9 on C Sheets. Requires 1428.6 cu. yds. for Earth Shoulder Fill. ---------- Requires a minimum of 4 inches of topsoil. Place according to Article 2105.03,B of the Standard Specifications.
10	2301-1033090	STANDARD OR SLIP FORM PORTLAND CEMENT CONCRETE PAVEMENT, CLASS C, CLASS 3 DURABILITY, 9 IN.	SY	6,114.3	Refer to Tab. 100-24 on C Sheets.
11	2301-7000110	PAYMENT ADJUSTMENT INCENTIVE/DISINCENTIVE FOR PCC PAVEMENT THICKNESS (BY SCHEDULE)	EACH	7,153.7	Calculation = 1.17 x SY of PCC

Item no.	Item Code	Item	Unit	Quantities Estimated Roadway Items	Estimate Reference Notes
12	2317-7000110	PAYMENT ADJUSTMENT INCENTIVE/DISINCENTIVE FOR PCC PAVEMENT SMOOTHNESS (BY SCHEDULE)	EACH	4,585.7	Calculation = 0.75 x SY of PCC
13	2401-6745355	REMOVAL OF CONCRETE FOOTINGS OF HIGHWAY SIGNS	EACH	8	Refer to Tabulation 190-62 for locations and details. This item shall consist of removal of concrete footings for steel breakaway sign support posts. Concrete footings or parts of concrete footings removed shall become the property of the Contractor, and shall be removed in accordance with Article 1104.08. Unless otherwise provided or ordered, concrete footings for steel breakaway sign support posts shall be removed 1 foot below natural ground surface. Where portions of the existing concrete footings lie wholly or in part within limits for a new structure (culvert, concrete footing, or other), they shall be removed as necessary to accommodate construction of the proposed structure. Holes remaining from the removal of concrete footings for steel breakaway sign support posts shall be backfilled with suitable earth to the original level or to the natural ground surface in accordance with Article 2402.09. Measurement: The Engineer will count each concrete footing for steel breakaway sign support post removed. Payment: For each concrete footing for steel breakaway sign support post removed, the Contractor shall be paid the contract unit price. This payment shall be full compensation for furnishing all material, equipment, and labor and for the performance of all work necessary for removal of the concrete footings from the project and for any backfilling made necessary by these operations.
14	2401-6750001	REMOVALS, AS PER PLAN	LS	1	Refer to Tab. 110-2 on C sheets for locations. Includes all work for removal and off-site disposal of 24"x39' concrete pipe. Removal of scheduled items shall be in accordance with Section 2401, of the Standard Specifications. Any damage to material not to be removed shall be the responsibility of the Contractor and repaired at no extra cost to the state.
15	2402-0425040	FLOODED BACKFILL	CY	75.1	Refer to Tab. 104-3 on C Sheets.
16	2402-2720100	EXCAVATION, CLASS 20, FOR ROADWAY PIPE CULVERT	CY	47.1	Refer to Tab. 104-3 on C Sheets.
17	2416-0100024	APRONS, CONCRETE, 24 IN. DIA.	EACH	1	Refer to Tab. 104-3 on C Sheets.
18	2416-0100036	APRONS, CONCRETE, 36 IN. DIA.	EACH	1	Refer to Tab. 104-3 on C Sheets.
19	2416-0100042	APRONS, CONCRETE, 42 IN. DIA.	EACH	2	
20	2416-1180024	CULVERT, CONCRETE ROADWAY PIPE, 24 IN. DIA.	LF	30	
21	2416-1180036	CULVERT, CONCRETE ROADWAY PIPE, 36 IN. DIA.	LF	24	
22	2416-1180042	CULVERT, CONCRETE ROADWAY PIPE, 42 IN. DIA.	LF	18	
23	2502-8212034	SUBDRAIN, LONGITUDINAL, (SHOULDER) 4 IN. DIA.	LF	3,544	Refer to Tab. 104-9 on C Sheets.

Item no.	Item Code	Item	Unit	Quantities Estimated Roadway Items	Estimate Reference Notes
24	2502-8221306	SUBDRAIN OUTLET, DR-306	EACH	21	
25	2507-3250005	ENGINEERING FABRIC	SY	1,008.4	Refer to Sheet V.1. Use material specified for embankment erosion control according to Article 4196.01, B, 3. Material will be measured in sq. yds. of actual area covered.
26	2507-6800032	REVETMENT, CLASS C	TON	1,084.7	Class C revetment shall meet the requirements of Article 4130. Refer to details on Sheet V.1.
27	2510-6745850	REMOVAL OF PAVEMENT	SY	3,415.5	Refer to Tabs.110-1 and 102-5 on C Sheets. Refer to Sheet U.7 for removal plan layout.
28	2519-4200020	REMOVAL AND REINSTALLATION OF FENCE, CHAIN LINK	LF	245	Item is for the removal and reinstallation of existing chain link fence to allow access to culvert inlet for placement of revetement. Any damage to material removed shall be the responsibility of the Contractor and repaired or replaced at no extra cost to the state.
29	2524-6765210	REMOVAL OF TYPE A SIGN ASSEMBLY	EACH	28	Refer to Tabulation 190-62 for location and details on N Sheets. This item for the removal of Type A Sign Assemblies, including the sign panels, sign brackets, supporting structures and hardware. Contractor shall carefully dismantle each sign assembly. Sign posts, brackets and hardware shall become property of the Contractor. Sign panels shall become property of the DOT and shall be delivered to the nearest DOT maintenance facility. All holes resulting from removal of post shall be filled level with the adjacent grade with backfill material conforming to the Standard Specifications. Measurement: The Engineer will count the number of sign assemblies removed. Payment: The Contractor will be paid the contract unit price for each sign assembly removed.
30	2524-6765220	REMOVAL OF TYPE B SIGN ASSEMBLY	EACH	2	Refer to Tabulation 190-62 for location and details on N Sheets. This item for the removal of Type B Sign Assemblies, including the sign panels, sign brackets, supporting structures and hardware. Contractor shall carefully dismantle each sign assembly. Sign posts, brackets and hardware shall become property of the Contractor. All holes resulting from removal of posts shall be filled level with the adjacent grade with backfill material conforming to the Standard Specifications. Measurement: The Engineer will count the number of sign assemblies removed. Payment: The Contractor will be paid the contract unit price for each sign assembly removed.
31	2524-9081275	CONCRETE FOOTING FOR BREAKAWAY SIGN POST, 2'-8" DIA. X 7'-6"	EACH	12	Refer to Tabulation(s) 190-50 (and 190-51) for details on N Sheets.
32	2524-9081290	CONCRETE FOOTING FOR BREAKAWAY SIGN POST, 2'-8" DIA. X 9'-0"	EACH	8	

Item no.	Item Code	Item	Unit	Quantities	Estimate Reference Notes
				Estimated	
				Roadway Items	
33	2524-9276010	PERFORATED SQUARE STEEL TUBE POSTS	LF	666	Refer to Tabulation(s) 190-50 and/or 190-51 for locations and details on N Sheets.
34	2524-9276027	PERFORATED SQUARE STEEL TUBE POST ANCHOR, TRIANGULAR SLIP BASE ASSEMBLY	EACH	44	Refer to Tabulation(s) 190-50 and/or 190-51 for locations and details on N Sheets.
35	2524-9281210	STEEL BREAKAWAY SIGN POSTS FOR TYPE A OR B SIGNS, W 8 X 21	LF	173.2	Refer to Tabulation 190-50 for locations and details on N Sheets.
36	2524-9325001	TYPE A SIGNS, SHEET ALUMINUM	SF	366.2	Refer to Tabulation 190-51 and 190-66 for locations and details on N Sheets.
37	2524-9380001	TYPE B SIGNS, EXTRUDED ALUMINUM STRUCTURAL PANEL	SF	158	Refer to Tabulation 190-50 for locations and details on N Sheets.
38	2526-8285010	CONSTRUCTION SURVEY, MONUMENT PRESERVATION	LS	1	The N¼ of Section 15-83N-20W shall be set back after construction and a U.S.P.L.S. corner certificate prepared and recorded. The coordinate basis is in the Iowa Regional Coordinate System, Zone 9 projection. N - 7840609.30 E - 19405277.89 Deliverables of the recorded U.S.P.L.S. corner certificate and ASCII point list shall be verified by the District 1 Land Surveyor
39	2526-8285040	CONSTRUCTION SURVEY, LOCATION SURVEY	LS	1	
40	2527-9263155	PRE-CUT SYMBOLS AND LEGENDS, PREFORMED THERMOPLASTIC MARKING MATERIAL	EACH	12	Refer to Tab. 108-29 on C Sheets.
41	2527-9263209	PAINTED PAVEMENT MARKINGS, WATERBORNE OR SOLVENT-BASED	STA	170.47	Refer to Tab. 108-22 on C Sheets.
42	2527-9270112	GROOVES CUT FOR PAVEMENT MARKINGS	STA	139.56	
43	2527-9270120	GROOVES CUT FOR SYMBOLS AND LEGENDS	EACH	12	Refer to Tab. 108-29 on C Sheets.
44	2528-2518000	SAFETY CLOSURE	EACH	4	Refer to Tab. 108-13A on C Sheets.
45	2528-8445110	TRAFFIC CONTROL	LS	1	Refer to Traffic Control Plan on J Sheets.
46	2528-9109020	TEMPORARY LANE SEPARATOR SYSTEM	LF	4,300	Refer to Traffic Control plans on J Sheets.
47	2528-9290050	PORTABLE DYNAMIC MESSAGE SIGN (PDMS)	CDAY	0	See Proposal.
48	2533-4980005	MOBILIZATION	LS	1	- -
49	2555-0000010	DELIVER AND STOCKPILE SALVAGED MATERIALS	LS	1	Refer to Tab. 110-13 on N Sheets.
50	2601-2636041	SEEDING AND FERTILIZING	ACRE	4.2	
51	2601-2636043	SEEDING AND FERTILIZING (RURAL)	ACRE	4.2	Seed and fertilize all areas 8 foot adjacent to the shoulder mainline, medians, and side according to Article 2601.03, C, 3, of the Standard Specifications.

Item no.	Item Code	Item	Unit	Quantities	Estimate Reference Notes
				Estimated	
				Roadway Items	
52	2602-0000020	SILT FENCE	LF	5,145	Refer to Tab. 100-17 on RC Sheets. The tabulation includes estimated locations for placement of "Silt Fence" to address erosion to be encountered during construction. Verify the specific locations with the Engineer prior to beginning placement. Bid item includes 25% additional quantity for field adjustments and replacements. See Standard Road Plan EC-201. The engineer may adjust silt fence locations to fit field conditions.
53	2602-0000030	SILT FENCE FOR DITCH CHECKS	LF	952.5	Refer to Tab 100-18 on RC Sheets. The tabulation includes estimated locations for placement of "Silt Fence for Ditch Checks" to address erosion to be encountered during construction. Verify the specific locations with the Engineer prior to beginning placement. Bid item includes 50% additional quantity for field adjustments and replacements. See Standard Road Plan EC-201. The engineer may adjust silt fence locations to fit field conditions.
54	2602-0000071	REMOVAL OF SILT FENCE OR SILT FENCE FOR DITCH CHECKS	LF	3,048.8	This item is included for silt fence and silt fence for ditch check removal required for staging reasons, removal to allow for replacement (replacement to be paid separately), or for areas that have achieved 70% permanent growth. Remove silt fence and posts after mulching or vegetation is established and approved by the engineer.
55	2602-0000101	MAINTENANCE OF SILT FENCE OR SILT FENCE FOR DITCH CHECK	LF	609.8	Refer to Tabs. 100-17 and 100-18 on RC Sheets. This item is included for clean-out and repair of the silt fence and silt fence for ditch checks during the project.
56	2602-0000320	PERIMETER AND SLOPE SEDIMENT CONTROL DEVICE, 20 IN. DIA.	LF	200	Item is included for temporary perimeter sediment control, inlet protection, and water velocity reduction on slopes or at locations to be determined during construction. Verify specific locations with the Engineer prior to beginning placement.
57	2602-0010010	MOBILIZATIONS, EROSION CONTROL	EACH	1	
58	2602-0010020	MOBILIZATIONS, EMERGENCY EROSION CONTROL	EACH	1	

100-1D
10-18-05

PROJECT DESCRIPTION

Project involves adding an offset right turn lane from westbound to 3rd Avenue Durham Ave. Project also includes, grading, pavement removals, traffic signs,

262-6
10-18-05

UTILITIES
(NOT A POINT 25 PROJECT)

This is NOT a POINT 25 project and is not subject to the provisions of IAC 761-115.25.

103-6
10-17-17

EMBANKMENT WITH MOISTURE CONTROL

Moisture Control is required for all Class 10 fill placed in all locations and depths. Stability berms placed outside the normal foreslope template and topsoil will not require Moisture Control.

281-1
10-18-16

SECTION 404 PERMIT AND CONDITIONS

Construct this project according to the requirements of U.S. Army Corps of Engineers Nationwide, Permit No. 14.
A copy of this permit is available from the Iowa DOT website (http://www.envpermits.iowadot.gov/). The U.S. Army Corps of Engineers reserves the right to visit the site without prior notice.

111-25
10-18-11

INDEX OF TABULATIONS

Tabulation	Tabulation Title	Sheet No.
C Sheets		
105-4	STANDARD ROAD PLANS	C.11
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102-5	EXISTING PAVEMENT	C.6
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104-9	LONGITUDINAL SUBDRAIN SHOULDER AND BACKSLOPE	C.10
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103-10	TOPSOIL STRIPPING AND PLACEMENT	C.8
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108-22	PAVEMENT MARKING LINE TYPES	C.9
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108-35	TEMPORARY LANE SEPARATOR SYSTEM	C.8
112-9	SHOULDERS	C.7

EXISTING PAVEMENT

No.	Location					Year	Type	Project Number	Surface		Base		Subbase		Removal		Coarse Aggregate			Reinforcement	Remarks
	County	Route	Dir. of Travel	Begin Ref. Loc. Sign	End Ref. Loc. Sign				Type	Depth IN	Type	Depth IN	Type	Depth IN	Type	Depth IN	Source	Type	Durability Class	Type	
	64	US-30	1	168.87	172.22	2012		NHSX-030-5(240)--3H-85	HMA	2	HMA	2									
	64	US-30	1	168.87	172.22	2012	W	NHSX-030-5(240)--3H-85	HMA	2	HMA	2	HMA	3							
	64	US-30	1	168.87	172.22	1963		F-1065(12)	PCC	10	GSB	4					FERGUSON	C.LST.	3	GND 1991	

110-1
04-16-13

REMOVAL OF PAVEMENT

Refer to Tabulation 102-5

* Not a Bid Item

Begin Station	End Station	Side	Pavement Type	Area SY	Saw Cut* LF	Remarks
2851+75.00	2865+91.66	Rt	PCC/HMA	629.6	1416.0	US 30 EB
2862+20.14	2876+62.70	Lt	PCC	2785.8	1442.5	US 30 WB/includes 3rd Ave SW and existing ramp.
				3415.5		

110-2
04-16-13

REMOVAL OF EXISTING STRUCTURES

Location	Description	Remarks
2865+34 (LT)	24" x 39' Conc. Pipe	In 3rd Ave WB turnlane. Pavement will also be removed See Sheet U.10 and Tab. 110-1 for pavement removal.

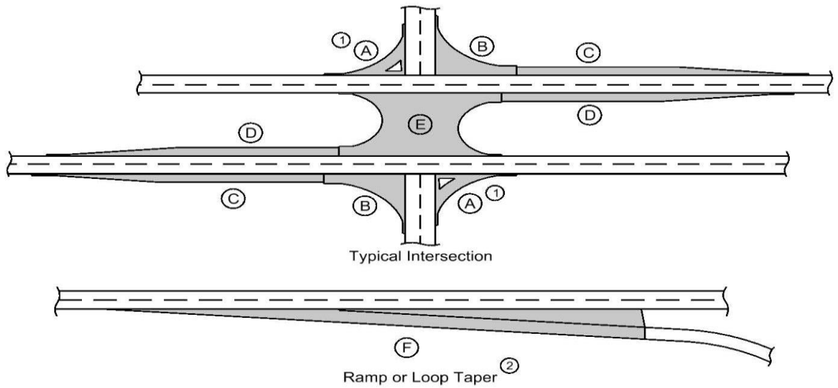
SHOULDERS

(1) Lane(s) to which the shoulder is adjacent.
(2) See Typ. 7156, 7157, or 7158.
(3) Bid Item.
(4) Applies only for Paved Shoulders constructed on project with existing granular shoulders.
(5) Bid Item. Typ. 7156, 7157, or 7158.
(6) Does not include shrink.

Calculations assume a HMA unit weight (lbs/cf) of 0, a Special Backfill unit weight (lbs/cf) of 140, and a Granular Shoulder unit weight (lbs/cf) of 140.

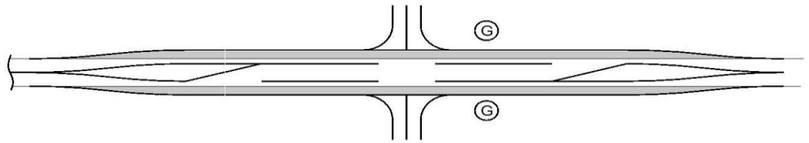
Location					Quantities																			
Road Identification	Direction Of Traffic (1)	Station to Station		Side	P Width	P_{SG} Width	G Width	L Length	Class 13 Excavation (4)	Hot Mix Asphalt		Binder	Paved Shoulder	"_" Paved Shoulder at Guardrail	Reinforced Paved Shoulder	Special Backfill				Subbase	Granular Shoulder		Earth Shoulder Construction Alternates			Remarks
																HMA Alternate		PCC Alternate					STA (3)	HMA	PCC	
					FT	FT (2)	FT	FT	CY (3)	TON	TON/STA	TONS	SY (3)	SY (5)	SY (3)	TON (3)	TON/STA	TON (3)	TON/STA	CY (3)	TON (3)	TON/STA		CY (6)	CY (6)	
US 30 RTL	EB	2851+75.39	2863+58.16	Rt	4.0			1182.8					525.7										11.8		262.8	
US 30 RTL	WB	2862+20.14	2862+93.52	Lt	4.0			73.4					32.6										0.7		16.3	
US 30 RTL	WB	2865+50.46	2876+62.72	Lt	4.0			1112.3					494.3										11.1			
Durham Ave	NB	12862+13.64	12863+73.00	Lt	4.0			159.4					70.8										1.6		35.4	
	NB	12862+13.64	12864+02.00	Rt	4.0			188.4					83.7										1.9		41.9	
3rd Ave SW	NB	12865+02.18	12867+50.84	Lt	4.0			248.7					110.5										2.5		55.3	
	NB	12865+31.55	12867+50.84	Rt	4.0			219.3					97.5										2.2		48.7	
							Totals	**3184.1**					**1415.1**										**31.8**		**460.4**	

PCC PAVEMENT

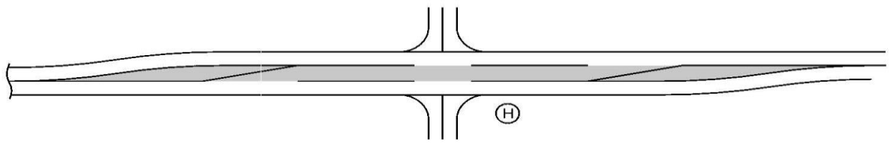


Typical Intersection

Ramp or Loop Taper (2)



Channelized Intersection
Widen Existing Roadway



Channelized Intersection
Reconstructed Roadway

(1) Does not include raised island area or curb. Refer to tabulation 112-4 for quantities.
(2) Refer to PV-410, PV-411, PV-412, and PV-414.
(3) Quantity includes Pavement Header.

Location				Mainline			Area (3)								Total Area By Pavement Thickness		Special Backfill	Modified Subbase	Granular Subbase	Remarks
Road Identification	Direction of Travel	Station to Station		Width	Length	Area	A (1)	B	C	D	E	F (2)	G	H	SY					
															9 IN	10½ IN				
				FT	FT	SY	SY	SY	SY	SY	SY	SY	SY	SY			TONS	CY	SY	
US 30 Offset Right turn lane	EB	2851+76.39	2865+93.00	Vari.	1416.6		429.4	491.4	1901.1						2821.9			940.6		
US 30 Offset Right turn lane	WB	2862+20.14	2876+62.72	Vari.	1442.6		532.4	559.7	1618.9						2711.0			903.7		
Durham Ave	NB/SB	12862+13.64	12864+01.40	12.0	187.8	250.3									250.3			83.4		
3rd Ave SW	NB/SB	12865+02.18	12867+50.48	12.0	248.3	331.1									331.1			110.4		
															6114.3			**2038.1**		

DRAINAGE STRUCTURE BY ROAD CONTRACTOR

Length of unclassified pipe calculated is based on using Reinforced Concrete Pipe.
* Not a bid item
(1) Diameter or equivalent diameter
(2) UNCL = Unclassified Pipe CMP = Corrugated Metal Pipe RCP = Reinforced Concrete Pipe LCP = Arch or Elliptical Low Clearance Pipe SARC = Steel Arch Pipe
(3) Backfill according to DR-101

Drainage Area	Location	Type	Size (1)	Kind Of Pipe (2)	Length New Const.	Bedding Class	Design Cover (H)	Camber* (DR-102)	Apron No.		Apron Guard* (DR-213)	Elbow* (DR-141)	Diaphragm* (DR-501)	Tee Section* (DR-142)	"D" Section* (DR-141)	Reducer*	Type 'C' Connections* (DR-122)		Connected Pipe Joint* (DR-121)	4" Perforated Subdrain*	Flow Line Elevations				Dimensions Lin. Ft. Total		Dimensions Lin. Ft. Extensions		Skew Ahead Degrees		Dike Rt.	Dike Location Station	Dike Top Elevation	Dike Type	Class 20	Flowable Mortar	Floodable* Backfill (A)	Porous* Backfill (B)	Flooded Backfill (3) (A+B)	Remarks
ACRE			IN		LF		FT	FT	IN	OUT	No.	No.	No.	No.	No.	No.	Type	No.	Type	FT	Lt.	Rt.	Other	Other	Lt.	Rt.	Lt.	Rt.	Lt.	Rt.	Lt.				CY	CY	CY	CY	CY	
25.0	2856+43.80		36	RCP	24				1													1036.75						24.0						24.0		29.1	2.4	31.5	
Med	2862+48.79		24	RCP	30					1					1							1026.11						30.0						15.6		31.1	2.3	33.4	
	12863+11.91		42	RCP	6				1												1022.77	1020.82				6.0								7.5		9.4	0.8	10.2	
	12863+11.91		42	RCP	12					1					1												12.0											Note
																																	47.1	**0.0**			**75.1**	

Note: See V Sheets for backfill material around pipe extension.

TOPSOIL STRIPPING AND PLACEMENT

Location				Topsoil Stripping Thickness	Topsoil Placement Thickness	Remarks
Road Identification	Dir. of Traffic	Begin Station	End Station	IN	IN	
US 30	EB/WB	2853+75.00	28754+00.00	12.0	8.0	

SAFETY CLOSURES

Refer to Section 2518 of the Standard Specifications

Station	Closure Type		Remarks
	Road Qty.	Hazard Qty.	
12861+50.00		1	
12868+60.00		1	

PROPOSED POSTED SPEED LIMIT

Road Identification	Begin Station	End Station	Proposed Posted Speed Limit			Remarks
			35 or less	40 - 45	over 45	
U.S. 30	2851+75.39	2865+91.36			X	EB Offset Right Turnlane
U.S. 30	2862+20.14	2876+62.77			X	WB Offset Right Turnlane

TEMPORARY LANE SEPARATOR SYSTEM

See TC-61

Station to Station		Length LF	Remarks
2853+50.00	2875+00.00	2150	WB Lanes
2853+50.00	2875+00.00	2150	EB Lanes
		4300	

PAVEMENT MARKING LINE TYPES

See PM-110

*BCY4 - Place on the same side of the roadway to match existing markings near the project.
**NPY4 - For estimating purposes only. No Passing Zone Lines will be located in the field.
***MNY4 - Factor of 1.00 as value includes number of 4-inch passes to cover median nose area.

ELW6: Edge Line Right (White) @ 1.00
BLW6: Broken Lane Line (White) @ 0.25
DLW6: Dotted Line (White) @ 0.33
ELY6: Edge Line Left (Yellow) @ 1.00
CHW10: Channelizing Line (White) @ 1.67
SLW6: Solid Lane Line (White) @ 1.00
SLW2: Stop Line (White) @ 4.00
YLW2: Yield Line (White) @ 1.15
DCY4: Double Centerline (Yellow) @ 1.34

Location							Length by Line Type (Unfactored)															
Road ID	Station to Station		Dir. of Travel	Marking Type	Side		ELW6	DLW6	CHW10	SLW2	DCY4	BLW6	ELY6	SLW6	YLW2							Remarks
					L	C	R	STA	STA	STA	STA	STA	STA	STA	STA	STA							
US 30 ML EB	2851+75.00	2868+00.00	EB	PAINTED PAVEMENT MARKING, WATERBORNE OR SOLVENT-BASED	X	X	X	16.25					16.25	16.25								
	2851+75.00	2868+00.00	EB	GROOVES CUT FOR PAVEMENT MARKINGS	X	X	X	16.25					16.25	16.25								
	2851+75.00	2857+50.00	EB	PAINTED PAVEMENT MARKING, WATERBORNE OR SOLVENT-BASED			X		5.75													
	2857+50.00	2864+25.00	EB	PAINTED PAVEMENT MARKING, WATERBORNE OR SOLVENT-BASED		X				18.00												
	2857+50.00	2864+25.00	EB	GROOVES CUT FOR PAVEMENT MARKINGS		X				18.00												
	2856+72.00	2865+44.00	EB	PAINTED PAVEMENT MARKING, WATERBORNE OR SOLVENT-BASED	X				3.00					5.68								
	2856+72.00	2865+44.00	EB	GROOVES CUT FOR PAVEMENT MARKINGS	X				3.00					5.68								
US 30 ML WB	2862+00.00	2876+75.00	WB	PAINTED PAVEMENT MARKING, WATERBORNE OR SOLVENT-BASED	X	X	X	14.75					14.75	14.75								
	2862+00.00	2876+75.00	WB	GROOVES CUT FOR PAVEMENT MARKINGS	X	X	X	14.75					14.75	14.75								
	2864+69.00	2871+24.00	WB	PAINTED PAVEMENT MARKING, WATERBORNE OR SOLVENT-BASED	X					18.00												
	2864+69.00	2871+24.00	WB	GROOVES CUT FOR PAVEMENT MARKINGS	X					18.00												
	2871+25.00	2876+75.00	WB	PAINTED PAVEMENT MARKING, WATERBORNE OR SOLVENT-BASED	X				5.50													
	2863+50.00	2868+10.00	WB	PAINTED PAVEMENT MARKING, WATERBORNE OR SOLVENT-BASED	X				2.52					1.82								
	2863+50.00	2868+10.00	WB	GROOVES CUT FOR PAVEMENT MARKINGS	X				2.52					1.82								
Durham Ave	12867+50.00	12865+00.00	BOTH	PAINTED PAVEMENT MARKING, WATERBORNE OR SOLVENT-BASED	X	X	X	5.00		1.60	1.00	1.00										
3rd Ave SW	12864+00.00	12862+15.00	BOTH	PAINTED PAVEMENT MARKING, WATERBORNE OR SOLVENT-BASED	x	x	x	3.70		2.00	1.00	2.35										
Median Yield	12864+38.00		BOTH	PAINTED PAVEMENT MARKING, WATERBORNE OR SOLVENT-BASED		X									0.16							
Median Yield	12864+38.00		BOTH	GROOVES CUT FOR PAVEMENT MARKINGS		X									0.16							
Median Yield	12864+63.00		BOTH	PAINTED PAVEMENT MARKING, WATERBORNE OR SOLVENT-BASED		X									0.16							
Median Yield	12864+63.00		BOTH	GROOVES CUT FOR PAVEMENT MARKINGS		X									0.16							
				Factored Total: PAINTED PAVEMENT MARKING, WATERBORNE OR SOLVENT-BASED				39.70	5.53	66.13	8.00	4.49	7.75	31.00	7.50	0.37	-	-	-	-	-	-	
				Factored Total: GROOVES CUT FOR PAVEMENT MARKINGS				31.00	1.82	60.12	-	-	7.75	31.00	7.50	0.37	-	-	-	-	-	-	
				Bid Quantity: 2527-9263209 - PAINTED PAVEMENT MARKING, WATERBORNE OR SOLVENT-BASED							**170.47**											
				Bid Quantity: 2527-9270112 - GROOVES CUT FOR PAVEMENT MARKINGS							**139.56**											

PAVEMENT MARKING SYMBOLS AND LEGENDS

Refer to PM-111

Road Identification	Location															SCHOOL	XING	STOP	AHEAD	ONLY	BIKE	LANE	EXIT	Groove Cuts	Remarks
	Station	Side	STAW	RTAW	LTAW	CSRW	CSLW	CSTW	CRLW	FERW	LLRW	RLRW	RRCW	BLSW	WCSW	WPSB	SCLW	XNGW	STPW	AHDW	ONLW	BIKW	LANW	XITW	EACH	
US 30 EB	2858+75.00	Rt		1																				1	
	2859+75.00	Rt																		1				1	
	2860+75.00	Rt		1																				1	
US 30 EB	2860+00.00	Lt			1																			1	
	2861+00.00	Lt																		1				1	
	2862+00.00	Lt			1																			1	
US 30 WB	2866+75.00	Lt		1																				1	
	2867+75.00	Lt																		1				1	
	2868+75.00	Lt		1																				1	
US 30 WB	2865+25.00	Rt			1																			**1**	
	2866+00.00	Rt																		1				1	
	2866+75.00	Rt			1																			1	
																							Grooves Cut	**12**	
				4	4															4			**Painted Symbols**	**12**	

LONGITUDINAL SUBDRAIN SHOULDER AND BACKSLOPE

Refer to Soils Sheets

* Not a bid item. Bridge berm quantities assume a trench depth of 24 inches.

Location						Longitudinal Subdrain (DR-303)							Subdrain Outlet				
Line No.	Road or Lane Identification	Station to Station		Side	Depth (D)	Shoulder		Backslope		Bridge Berm (EW-203 or EW-204)			DR-303, DR-305 or DR-306		Porous* Backfill	Class "A"* Crushed Stone	Remarks
						Size	Length	Size	Length	Standard Road Plan and Type	Size	Length	Station	Standard Road Plan and Type			
					IN	IN	FT	IN	FT		IN	FT			CY	CY	
1	EBL - RTL	2851+75.00	2853+75.00	RT	66.0	4.0	260.0						2851+75.00	DR-306	40.1		
2	EBL - RTL	2853+75.00	2858+75.00	RT	66.0	4.0	560.0						2853+75.00	DR-306	86.4		
													2853+75.00	DR-306			
3	EBL - RTL	2858+75.00	2863+75.00	RT	66.0	4.0	560.0						2858+75.00	DR-306	86.4		
													2863+75.00	DR-306			
4	EBL - RTL	2865+28.00	2865+93.00	RT	66.0	4.0	125.0						2865+28.00	DR-306	19.3		
													2865+93.00	DR-306			
5	WBL-RTL	2865+60.00	2870+60.00	LT	24.0	4.0	560.0						2865+60.00	DR-306	25.9		
													2870+60.00	DR-306			
6	WBL-RTL	2870+60.00	2870+10.00	LT	24.0	4.0	110.0						2870+60.00	DR-306	5.1		
													2870+10.00	DR-306			
7	WBL-RTL	2872+50.00	2876+50.00	LT	24.0	4.0	460.0						2872+50.00	DR-306	21.3		
													2876+50.00	DR-306			
8	DURHAM AVE	12862+14.00	12863+57.00	LT	24.0	4.0	203.0						12862+14.00	DR-306	9.4		
													12863+57.00	DR-306			
9	DURHAM AVE	12862+14.00	12863+32.00	RT	24.0	4.0	178.0						12862+14.00	DR-306	8.2		
													12863+32.00	DR-306			
10	3RD AVE SW	12865+18.00	12867+40.00	LT	24.0	4.0	282.0						12865+18.00	DR-306	13.1		
													12867+40.00	DR-306			
11	3RD AVE SW	12865+39.00	12867+25.00	RT	24.0	4.0	246.0						12865+39.00	DR-306	11.4		
													12867+25.00	DR-306			
otals							3544.0		0.0					DR-306 = 21	326.6	0.0	
LUMN.																	

STANDARDS

The following Standards apply to construction work on this project.

Number	Date	Title
BA-401	4/20/2021	Temporary Barrier Rail (Precast Concrete)
BA-500	4/20/2021	Temporary Crash Cushions Sand Barrel
DR-101	4/18/2017	Pipe Culvert (Bedding and Backfill)
DR-102	4/21/2015	Pipe Culvert (Cover and Camber)
DR-103	4/21/2015	Pipe Culvert (Installation Details)
DR-121	4/18/2023	Connected Pipe Joints
DR-201	10/17/2023	Concrete Aprons
DR-303	10/17/2017	Subdrains (Longitudinal)
DR-306	10/17/2023	Precast Concrete Headwall for Subdrain Outlets
DR-613	4/17/2018	Concrete Pipe with D Section
DR-621	4/18/2017	Pipe Extension
EC-201	4/20/2021	Silt Fence
EC-204	10/19/2021	Perimeter, Slope and Ditch Check Sediment Control Devices
EW-101	10/17/2017	Embankment and Rebuilding Embankments
EW-105	4/21/2015	Reshaping Slopes and Ditches
EW-110	10/20/2015	Ditch Blocks and Dikes
EW-401	10/20/2015	Temporary Stream Crossing, Causeway, or Equipment Pad
PM-110	10/15/2024	Line Types
PM-111	4/21/2020	Symbols and Legends
PM-115	10/15/2024	Grooving for Line Types
PM-116	4/16/2024	Grooving for Symbols and Legends
PM-120	10/15/2024	Stop Lines and Islands
PV-101	4/19/2022	Joints
SI-881	4/16/2019	Special Signs for Workzones
TC-1	10/15/2019	Work Not Affecting Traffic (Two-Lane or Multi-Lane)
TC-202	4/18/2023	Work Within 15 ft of Traveled Way
TC-402	4/18/2023	Work Within 15 ft of Traveled Way
TC-418	4/18/2023	Lane Closure on Divided Highway
TC-421	4/16/2024	Lane Closure with TBR
TC-433	10/17/2017	Pavement Marking Operations
PV-121	10-21-25	Jointing PCC Pavement Widening

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 - Quality D
- PPA, City of State Center
Jeff Robinson, Superintendent
scmu@partnercom.net
- E1 — EL1D, City of State Center - Quality D
Jeff Robinson, Superintendent
scmu@partnercom.net
- SAN. — SA1D, City of State Center- Quality D
Jeff Robinson, Superintendent
scmu@partnercom.net
- E2 — EL2D, Iowa DOT - Quality D
Jason Hermann
jason.hermann@iowadot.us
- W — WL1D, Iowa Regional Utility Association - Quality D
Jeff Robinson, Superintendent
scmu@partnercom.net
- FO — FO1D, Partner Communications - Quality D
Adam Wilkens, Outside Plant Manager
adamw@pcctel.net
641-569-3511
or
Jerry Broughton, Construction Supervisor
jbroughton@mediacomcc.com
(845) 587-2521

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

PLAN AND PROFILE LEGEND AND SYMBOL INFORMATION SHEET

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

FILE NO.	ENGLISH	DESIGN TEAM Vortherms/Tamrakar/Ringgenberg	MARSHALL COUNTY	PROJECT NUMBER HSIPX-030-5(328)--3L-64	SHEET NUMBER D.1

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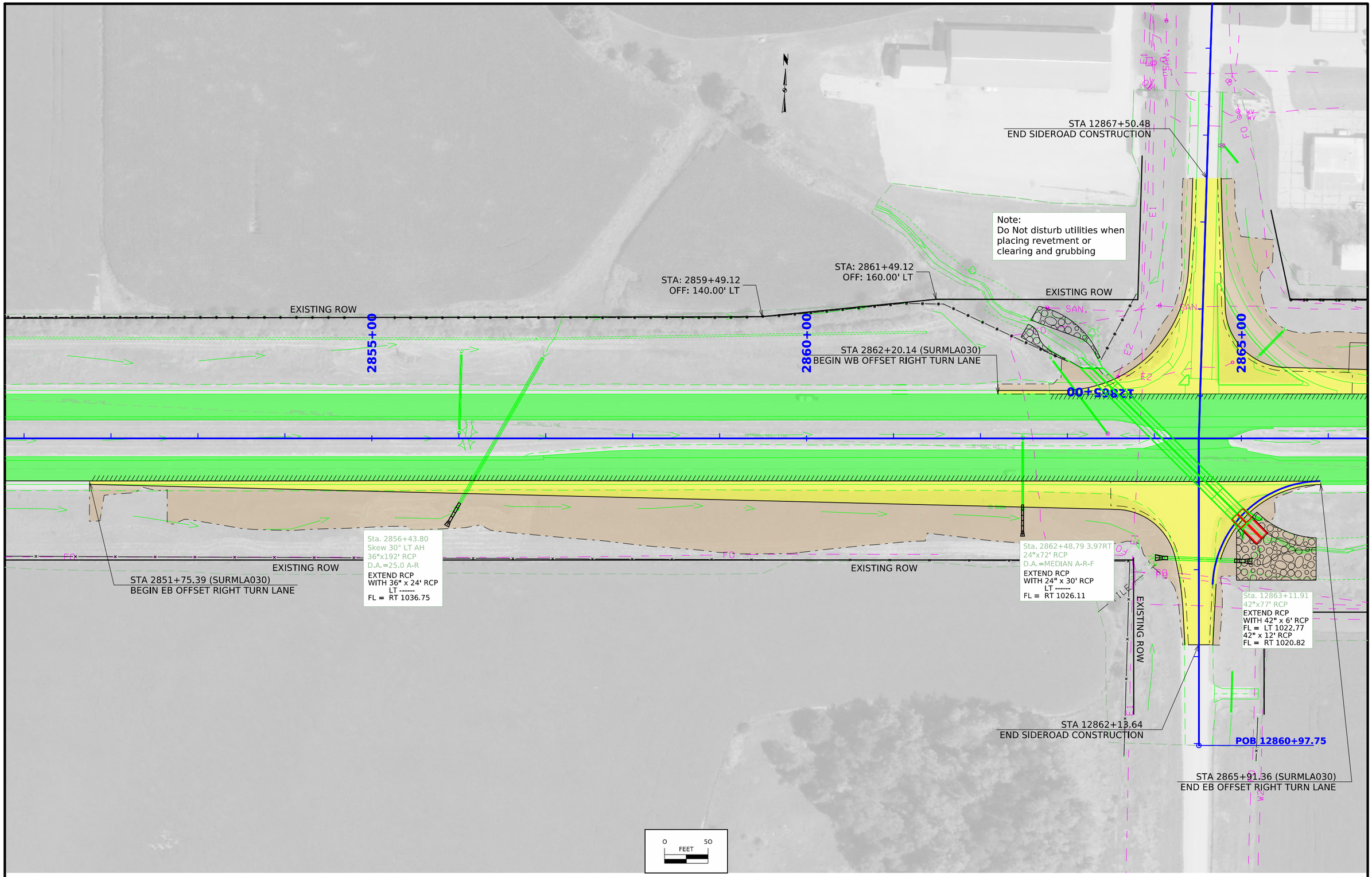

FILE NO. 98765	ENGLISH	DESIGN TEAM Vortherms/Tamrakar/Ringgenberg	MARSHALL COUNTY	PROJECT NUMBER HSIPX-030-5(328)--3L-64	SHEET NUMBER D.2	

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STA 12867+50.48
END SIDEROAD CONSTRUCTION

Note:
Do Not disturb utilities when placing revetment or clearing and grubbing

EXISTING ROW

EXISTING ROW

STA: 2872+26.72
OFF: 160.00' LT

STA 2876+62.77 (SURMLA030)
END WB OFFSET RIGHT TURN LANE

2865+00

2870+00

2875+00

Sta. 2862+48.79 3.97RT
24"x72' RCP
D.A.=MEDIAN A-R-F
EXTEND RCP
WITH 24" x 30' RCP
LT -----
FL = RT 1026.11

Sta. 12863+11.91
42"x77' RCP
EXTEND RCP
WITH 42" x 6' RCP
FL = LT 1022.77
42" x 12' RCP
FL = RT 1020.82

EXISTING ROW

EXISTING ROW

STA: 2872+98.26
OFF: 200.00' RT

STA 12862+13.64
END SIDEROAD CONSTRUCTION

POB 12860+97.75

STA 2865+91.36 (SURMLA030)
END EB OFFSET RIGHT TURN LANE

0 50
FEET

FILE NO.	ENGLISH	DESIGN TEAM Vortherms/Tamrakar/Ringgenberg	MARSHALL COUNTY	PROJECT NUMBER HSIPX-030-5(328)--3L-64	SHEET NUMBER D.3

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STA 12864+01.24 (GEO_SR_DURHAM_3RDAVE)
END DURHAM AVE CONSTRUCTION

STA 12862+13.64 (GEO_SR_DURHAM_3RDAVE)
BEGIN DURHAM AVE CONSTRUCTION

EXISTING ROW

TILE

STA 12865+02.19 (SURSR3RDAVESW)
BEGIN 3RD AVE SW CONSTRUCTION

EXISTING ROW

STA 12867+49.72 (SURSR3RDAVESW)
END 3RD AVE SW CONSTRUCTION

12865+00

12870+00

2865+00

POB 12860+97.75

POE 12872+63.24

OFF: 160.00' L

0 50
FEET

BEGIN SR DURHAM AVE
STA 12862+13.64
EL 1030.79

TIE TO EXISTING PAVEMENT
STA 12864+01.29
EL 1032.06

EXISTING PROFILE

-0.40%

+0.40%

+3.00%

VPI = +78.65
EL = 1030.53
L = 50.00'
K = 62

VPI = +61.60
EL = 1030.87
L = 40.00'
K = 15

1030.79
1030.74
1030.64
1030.58
1030.62
1030.72
1030.84
1031.28
1032.08

1045
1040
1035
1030
1025
1020
1015
1010
1005
1000

12860+00
12861+00
12862+00
12863+00
12864+00
12865+00
12866+00
12867+00
12868+00
12869+00
12870+00
12871+00
12872+00
12873+00

FILE NO.	ENGLISH	DESIGN TEAM Vortherms/Tamrakar/Ringgenberg	MARSHALL COUNTY	PROJECT NUMBER HSIPX-030-5(328)--3L-64	SHEET NUMBER E.1

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SURVEY INDEX
County: Marshall
PIN: 25-64-030-020
Project Number: HSIPX-030-5(328)—3L-64
Location: US Highway 30 and Durham Ave Intersection at State Center
Type of Work: Intersection Improvements
Project Directory: 6403002025

Survey Personnel

Daniel Duncan – Survey Party Chief
Paul Harry – Survey Party Chief
Bob Fredrickson– Assistant Survey Party Chief

Date(s) of Survey

Begin Date	02/05/2025
End Date	03/18/2025

General Information

This survey is for US Hwy 30 intersection(s) improvement at the Durham Ave intersection in State Center. This project is a Full Field DTM survey.

Utility Information

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

Project Control

The Iowa Real Time Network reference stations were utilized to verify the published coordinates for the Survey Project Primary Control points. Three five-minute observations were taken with a minimum of two-hour time span between and used in a weighted average to verify the published coordinates. Once all control points were verified the published coordinates for GSVS122 were held and was occupied with the base for three -five minute base-rover observations with a minimum of two-hour time span between rounds and used a weighted average to obtain final coordinate values of the other control points (GSVS121, GSVS123, G029, CP1, CP2).
For additional details of the control survey, contact the Preliminary Survey department.

PROJECT DATUM: NAD83(2011) for EPOCH 2010.00 (IaRTN 2019 ADJUSTMENT)
COORDINATE SYSTEM: IOWA REGIONAL COORDINATE SYSTEM ZONE 09 (U.S. SURVEY FOOT)
VERTICAL DATUM: NAVD88
GEOID MODEL: 2018u3

Alignment Information

The horizontal alignment for U.S. Hwy 30 this survey is a retrace of As-built Plans No. NHSX-30-5(211)—35-85 and NHSX-30-5(214)—3H-64. Survey stationing was equated to the plan PC at Sta. 2837+11.63 and carried back and ahead without equation throughout the survey.

Survey stationing relates to as built plan stationing as follows:

POT Sta. 2760+43.61 As-built Plans Project No. NHSX-30-5(211)—35-85
Survey POT Sta. 2760+43.79

PC Sta. 2837+11.63.1 As-built Plans Project No. NHSX-30-5(211)—35-85
Survey PC Sta. 2837+11.63

PI Sta. 2840+24.48 As-built Plans Project No. NHSX-30-5(211)—35-85
Survey PI Sta. 2840+24.65

PI Sta. 2880+51.77 As-built Plans Project No. NHSX-30-5(211)—35-85
Survey PI Sta. 2880+51.83

PI Sta. 2903+72.85 As-built Plans Project No. NHSX-30-5(214)—3H-64
Survey PI Sta. 2903+72.94

The horizontal alignment for Marshall Co. Rte. 3rd Ave SW (Durham Ave) this survey is a retrace of As-built Plans No. NHSX-30-5(211)—35-85. Survey stationing was equated to the plan PI at Sta. POT 22890+74.43 and carried ahead without equation throughout the survey.

Survey stationing relates to as built plan stationing as follows:

POT Sta. 12864+51.13 As-built Plans Project No. NHSX-30-5(211)—35-85
Survey POT 12864+51.13

The horizontal alignment for Marshall Co. Rte. 6th Ave SE (Eastman Ave) this survey is a retrace of As-built Plans No. F-1055(3). Survey stationing was equated to the plan PI at Sta. POT 22890+74.43 and carried ahead without equation throughout the survey.

Survey stationing relates to as built plan stationing as follows:

POT Sta. 22890+74.43 As-built Plans Project No. NHSX-30-5(211)—35-85
Survey POT 22890+74.43

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 09 (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 09 (U.S. Survey Foot)
VERT. DATUM: NAVD88
Geoid Model: 2018u3

Point Name	Northing	Easting	Elevation	Code-Description
GSVS122	7840560.79	19407825.00	1045.10	CP FOUND NGS MONUMENT AS DESCRIBED
GSVS121	7840656.88	19402331.77	1069.19	CP FOUND NGS MONUMENT AS DESCRIBED
CP1	7839536.31	19405253.59	1041.46	CP SET FENO MONUMENT 2IN DEEP
G029	7840515.75	19410946.23	1060.40	CP FOUND FENO MONUMENT AS DESCRIBED
GSVS123	7840543.71	19413104.06	1059.46	CP FOUND NGS MONUMENT AS DESCRIBED
CP2	7841241.61	19405301.78	1037.52	CP SET FENO MONUMENT 2IN DEEP

ALIGNMENT COORDINATES

Name	Location	Point on Tangent			Begin Spiral			Begin Curve			Simple Curve PI or Master PI of SCS			End Curve			End Spiral		
		Station	Coordinates		Station	Coordinates		Station	Coordinates		Station	Coordinates		Station	Coordinates		Station	Coordinates	
			Y (Northing)	X (Easting)		Y (Northing)	X (Easting)		Y (Northing)	X (Easting)		Y (Northing)	X (Easting)		Y (Northing)	X (Easting)		Y (Northing)	X (Easting)
1	SURMLA030	2760+43.79	7840680.37	19394872.95															
2	SURMLA030							2837+11.63	7840557.29	19402539.81	2840+24.65	7840552.26	19402852.79	2843+37.55	7840562.63	19403165.64			
4	SURMLA030							2877+47.04	7840675.48	19406573.26	2880+51.83	7840685.57	19406877.89	2883+56.51	7840681.62	19407182.65			
6	SURMLA030							2900+72.94	7840659.32	19408898.93	2903+72.94	7840655.43	19409198.91	2906+72.94	7840655.12	19409498.91			
7	SURMLA030	2939+04.13	7840651.83	19412730.10															
1	ML_TAPER10030	+00.00	7840541.43	19404004.64															
1	ML_TAPER10030	11+83.12	7840551.75	19405187.72															
1	CUR10030							+00.00	7840551.75	19405187.72	+55.99	7840550.99	19405243.70	+96.19	7840497.10	19405258.89			
1	CUR10031							+00.00	7840497.10	19405258.89	+32.85	7840465.48	19405267.80	+65.51	7840432.75	19405270.67			
2	CUR10031	1+03.58	7840394.83	19405273.99															
1	TAPER10040	+00.00	7840395.63	19405297.98															
1	TAPER10040	+70.09	7840465.71	19405299.45															
1	CUR10040							+00.00	7840465.70	19405299.45	1+17.99	7840583.67	19405301.92	1+89.14	7840588.01	19405419.83			
1	CUR10020							+00.00	7840823.22	19405263.64	1+40.16	7840683.14	19405258.93	2+25.45	7840678.34	19405118.85			
1	TAPER10020	+00.00	7840876.41	19405265.43															
1	TAPER10020	+53.22	7840823.22	19405263.64															
1	SR_TAPER10010	+00.00	7840783.35	19405299.55															
1	SR_TAPER10010	1+49.30	7840932.33	19405289.78															
1	CUR10010							+00.00	7840713.26	19405375.09	+70.91	7840712.60	19405304.19	1+13.61	7840783.35	19405299.55			
1	ML_TAPER10010	+00.00	7840723.74	19406487.30															
1	ML_TAPER10010	11+12.26	7840713.26	19405375.09															

SPIRAL OR CIRCULAR CURVE DATA

Name	Location	ΔSCS	Horizontal Alignment Data												Remarks
			Spiral Data								Curve Data				
			θS	Ls	Ts	Es	Xc	Yc	L.T.	S.T.	ΔC	T	L	R	E
C1	SURMLA030										T1900xt	313.023	625.921	12732	3.847	
C2	SURMLA030										T1900xt	304.789	609.470	13222	3.512	
C3	SURMLA030										T1900xt	300.004	600.000	50136	0.898	
C1	CUR10030										73.484	55.989	96.190	75.000	18.593	
C1	CUR10031										10.725	32.853	65.513	350.000	1.538	
C1	CUR10040										86.696	117.992	189.141	125.000	46.893	
C1	CUR10020										86.117	140.163	225.453	150.000	55.294	
C1	CUR10010										86.788	70.909	113.605	75.000	28.214	

108-23A
08-01-08

TRAFFIC CONTROL PLAN

Traffic shall be maintained at all times on US with the following exception:
- Close outside US 30 Eastbound and Westbound lane for construction of proposed turn lanes.
Refer to Modified TC-418 for lane closure on divided highway.

During construction Durham Ave and 3rd Ave SW will have to be closed and traffic will be redirected along the designated detour route.

Contractor shall be responsible for the placing and maintaining of detour signing.

111-01
04-17-12

COORDINATED OPERATIONS

Other work in progress during the same period of time will include the construction of the projects listed. Coordinate operations with those of other contractors working within the same area.

Project	Type of Work
MPIN-080-1(722)121--0N-77	PCC Patching

108-25
10-21-14

511 TRAVEL RESTRICTIONS

Route	Direction	County	Location Description	Feature Crossed	Object Type	Maint. Bridge No., Structure ID, or FHWA No.	Type of Restriction	Existing Measurement	Construction Measurement	Construction Measurement as Signed	Projected As Built Measurement	Remarks
Durham Ave.	NB	Marshall	Durham Ave will be closed during construction	US 30	Traffic Control Device		Horizontal					
3rd Ave SW	SB	Marshall	3rd Ave SW will be closed during construction	US 30	Traffic Control Device		Horizontal					

102-15
08-01-08

TABULATION OF SPECIAL EVENTS

Event	Location	Date
State Center Rose Festival	State Center	June 18-21
RAGBRAI		July. 22
Iowa State vs SE Missouri	Ames	Sept. 5
Iowa State vs Bowling Green	Ames	Sept. 19
Iowa State vs Utah	Ames	Sept. 26
Iowa State vs West Virginia	Ames	Oct. 3
Iowa State vs BYU	Ames	Oct. 10
Iowa State vs Arizona	Ames	Oct. 24
Iowa State vs Okalahoma State	Ames	Oct. 31
Iowa State vs Baylor	Ames	Nov. 7
Iowa State vs Cincinnati	Ames	Nov. 14
Iowa State vs UCF	Ames	Nov. 21
Iowa State vs Kansas State	Ames	Nov. 28

108-26A
08-01-08

STAGING NOTES

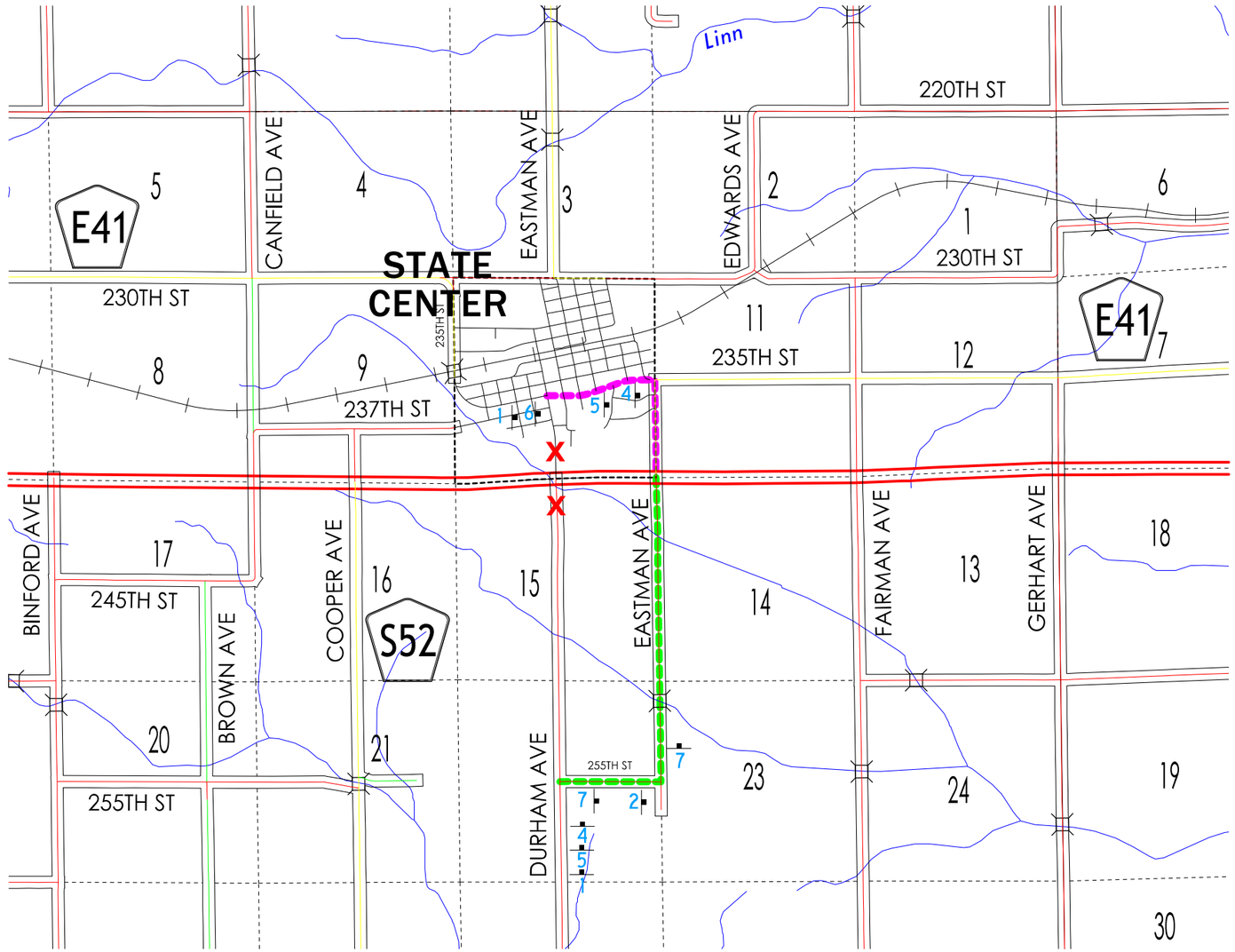
********** Stage 1 **********

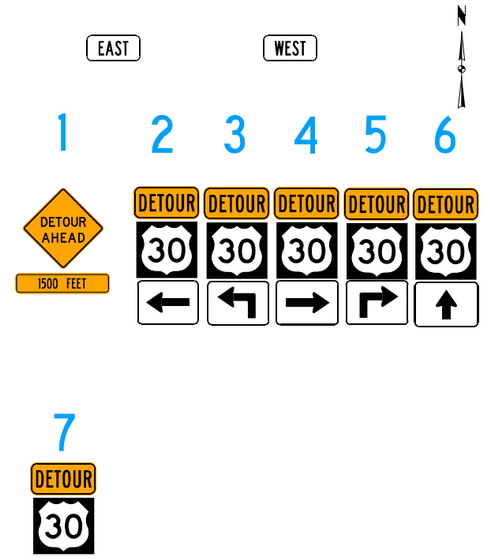
Traffic:
- Maintain traffic on existing inside lanes on US 30.
- Close Durham Ave. and 3rd Ave. SW.

Construction:
- Construct the right-turn lanes and the intersection connection to the side roads

********** Stage 2 **********

Traffic:
- All lanes on US 30 will be open to traffic.
- Durham Ave. and 3rd Ave. SW. will be open to traffic.





LEGEND	
DETOUR ROUTE FOR DURHAM AVENUE	
DETOUR ROUTE FOR 3RD AVE. SW	
Closed	X

FILE NO.	ENGLISH	DESIGN TEAM **Vortherms/Tamrakar/Ringgenberg**	**MARSHALL** COUNTY	PROJECT NUMBER **HSIPX-030-5(328)--3L-64**	SHEET NUMBER **J.2**

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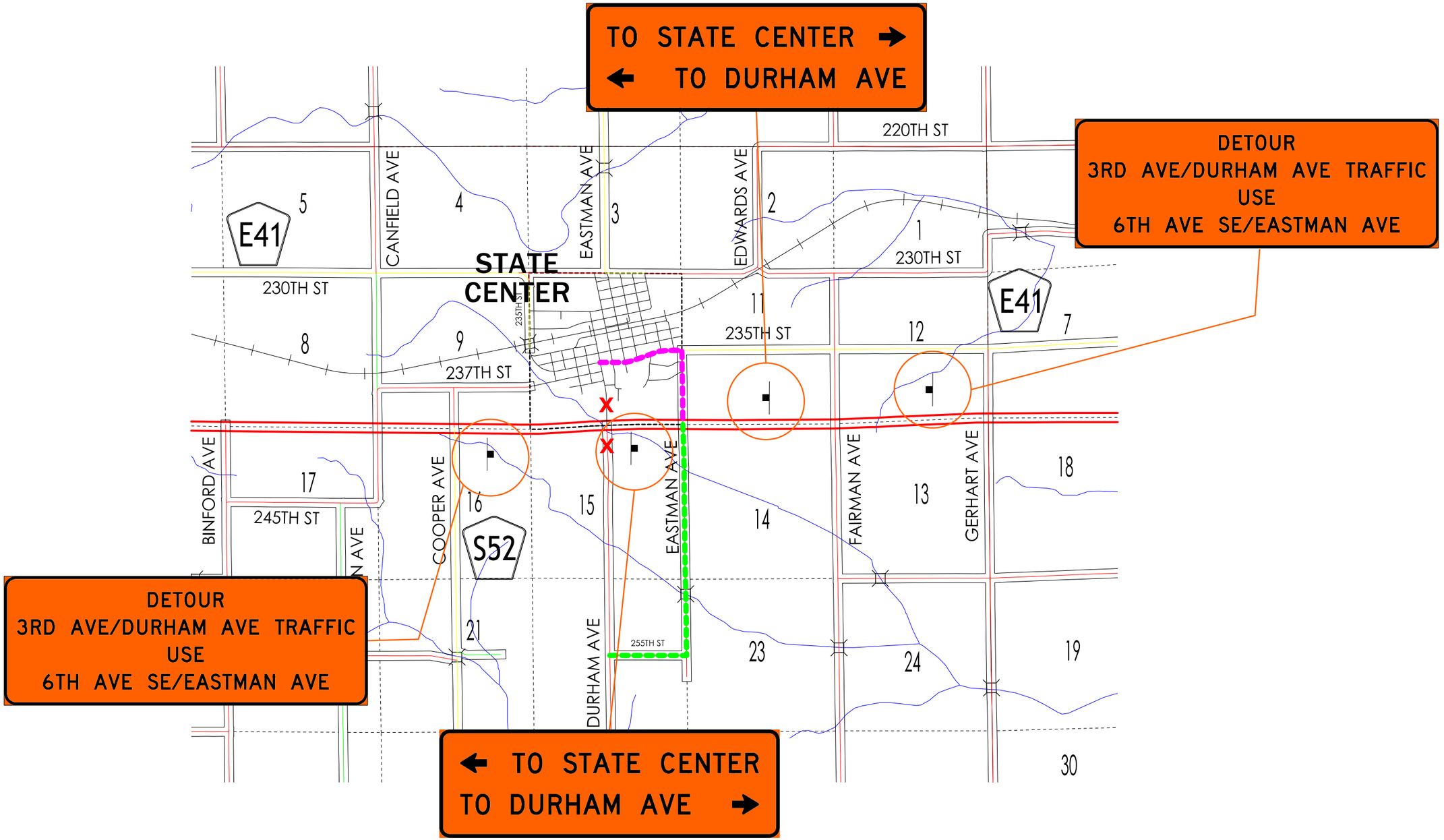
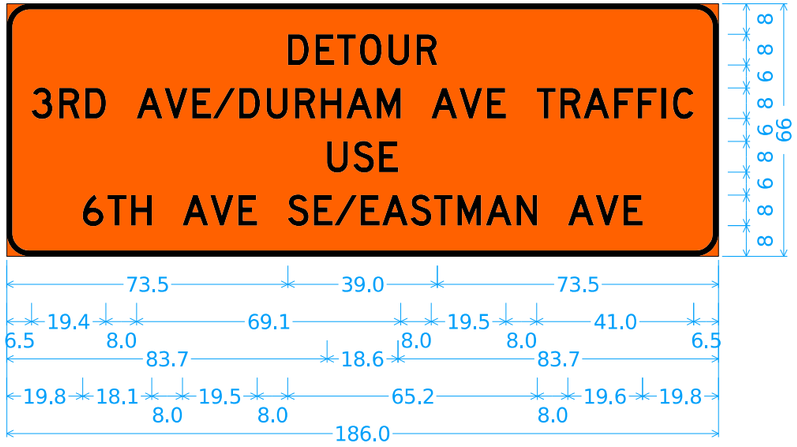


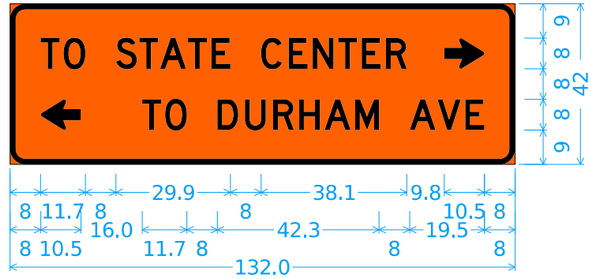
DETOUR SIGNING LAYOUT

FILE NO.	ENGLISH	DESIGN TEAM **Vortherms/Tamrakar/Ringgenberg**	**MARSHALL** COUNTY	PROJECT NUMBER **HSIPX-030-5(328)--3L-64**	SHEET NUMBER **J.3**

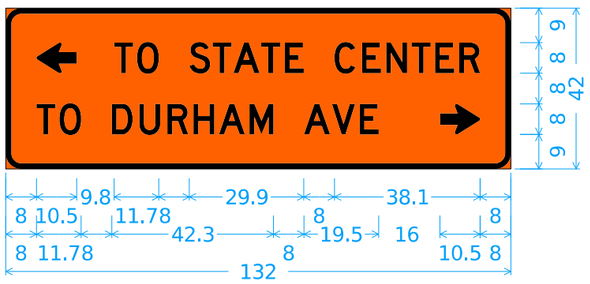
2:11:30 PM 3/16/2026 rringge pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\6403002025\DistrictDesign\HSIPX-030-5(328)_RightTurnLanes\CADDFiles\640305328_J02.dgn



6.0" Radius, 1.5" Border, Black on Orange;
"DETOUR", D 2K; "3RD AVE/DURHAM AVE TRAFFIC", D 2K;
"USE", D 2K; "6TH AVE SE/EASTMAN AVE", D 2K;

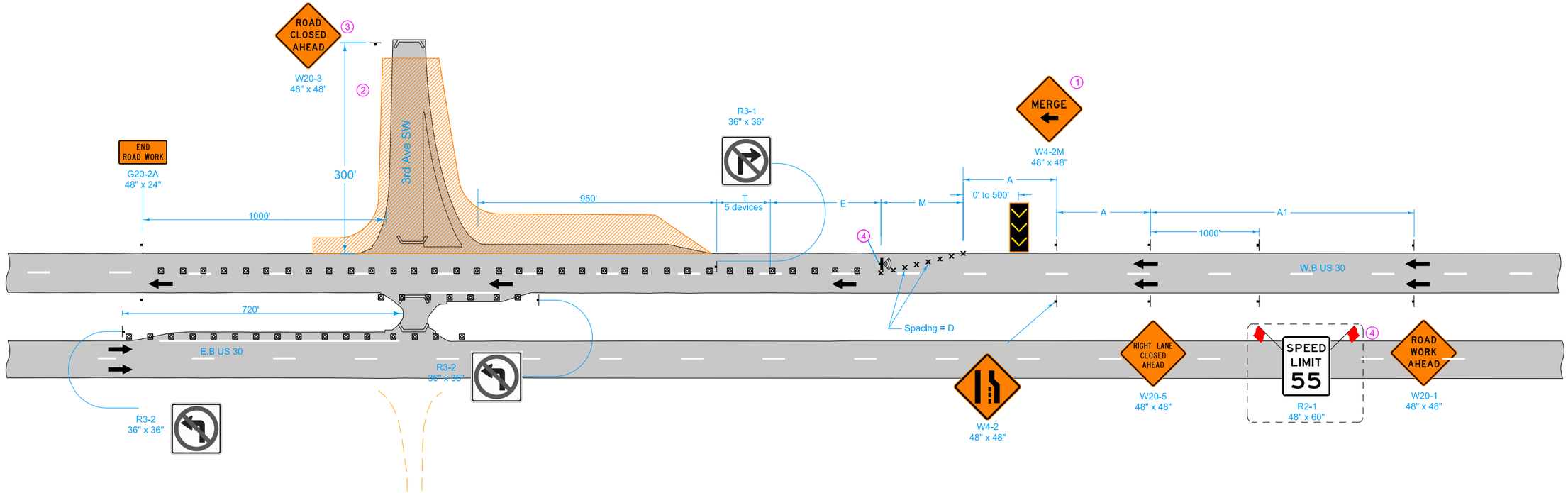


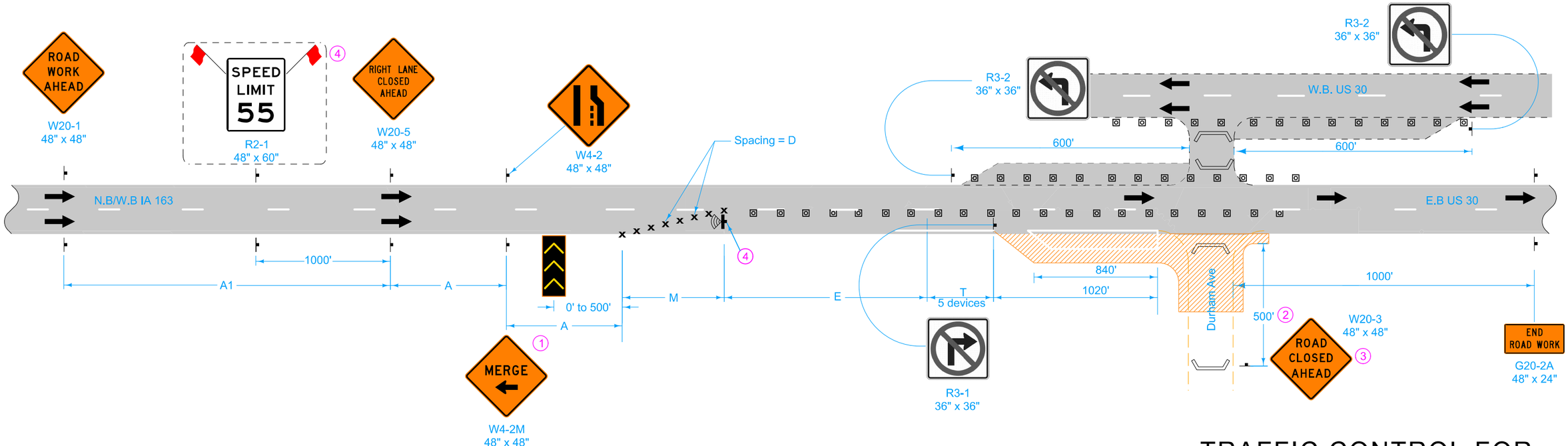
4.0" Radius, 1.5" Border, Black on Orange;
"TO STATE CENTER", D 2K; Arrow III-8S - 10.5" 0°;
Arrow III-8S - 10.5" 180°;
"TO DURHAM AVE", D 2K;



4.0" Radius, 1.5" Border, Black on Orange;
Arrow III-8S - 10.5" 180°;
"TO STATE CENTER", D 2K;
"TO DURHAM AVE", D 2K; Arrow III-8S - 10.5" 0°;

DETOUR SIGNING DETAILS





TRAFFIC CONTROL FOR OFFSET RIGHT TURN LANE

FILE NO.	ENGLISH	DESIGN TEAM **Vortherms/Tamrakar/Ringgenberg**	**MARSHALL** COUNTY	PROJECT NUMBER **HSIPX-030-5(328)--3L-64**	SHEET NUMBER **J.5**

2:11:51 PM 3/16/2026 rringge pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\6403002025\DistrictDesign\HSIPX-030-5(328)_RightTurnLanes\CADDFiles\640305328_J02.dgn

1. Refer to SI-881 for sign details.
2. Where side road speed limit is 40 mph or less, a distance of 200 feet is allowed.
3. Place a ROAD WORK AHEAD sign on the opposite side of the intersection in a similar location. Business 63 is to be closed. Utilize TC-252, Situation 6.
4. For roadways with a posted speed limit of 60 mph or greater before road work:

   Place SPEED LIMIT 55 signs prior to the lane closure as shown.

   When the length of closure is greater than 1 mile, install SPEED LIMIT 55 signs in the closed lane at 1-mile intervals.

   Remove or cover all existing signs that conflict with 55 mph speed limit while 55 mph speed limit is in effect.

   For traffic control zones lasting more than 4 hours, place a Speed Feedback Sign at the end of the merge taper.
5. For lanes closed to traffic, place two drums every 1000 feet. For full depth excavations in a closed lane, place two drums in front of each location. Additional drums need not be placed for full depth excavations spaced closer than 150 feet.
6. Traffic control devices should be offset from centerline by 2' to provide 14' through lane. This will assist with the over sized over weight vehicles
7. Extend safety fence for road closures 20' beyond outside edge of shoulders.

SPEED LIMIT (mph)*	A	D	E	M	T	A1
65-70	1000'	65'	800'	910'	100'	2000'

* Speed Limit refers to regulatory speed limit before road work.

LEGEND

- Direction Of Traffic
- Traffic Sign
- Drum
- Temporary Lane Separator System
- Speed Feedback Sign
- Arrow Board
- Work Area
- Safety Closure, See Tab 108-13A

Contract Item:
Traffic Control

Note:
Do Not disturb utilities when placing revetment or clearing and grubbing

STA 12867+50.00
END SIDEROAD CONSTRUCTION

Point Radius - CUR10020
ML STA: 2862+93.32 Lt.-201.00ft
= SR STA: 12866+47.22 Lt.-163.87ft

STA: 12866+80.00
OFF: 12.00' LT

STA: 12866+39.58
OFF: 14.06' LT

PT 2+23.24

POE 2+23.24

STA: 12866+01.84
OFF: 21.88' RT

Point Radius - 10010
ML STA: 2865+52.55 Lt.-152.40ft
=SR STA: 12866+06.55 Rt.96.73ft

RET B 3RDAVE

Δ = 85°16'12.77" (LT)
T = 138.10'
L = 223.24'
R = 150.00'
E = 53.89'

RET_A_3RDAVE

Δ = 86°52'31.85" (LT)
T = 71.02'
L = 113.72'
R = 75.00'
E = 28.29'

PT 1+13.72

STA: 2865+50.56
OFF: 77.42' LT

CUR10020

CUR10010

Special Shaping

2.0% 2.0%
12' 12'

2.0% 2.0%
12' 15.8'

3.0% 26.3'
Constant 3% Slope
3.0% 25.2'
Constant 3% Slope
3.0% 22.8'
Constant 3% Slope

STA: 2862+93.48
OFF: 51.00' LT

POB 0+00.00

PI 0+71.02

PI 1+38.19

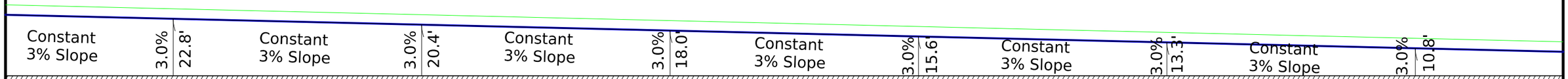
POB 12864+51.13

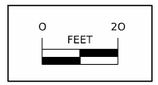
0 FEET 20

GEOMETRICS
WB RIGHT TURN LANE
3RD AVE SW

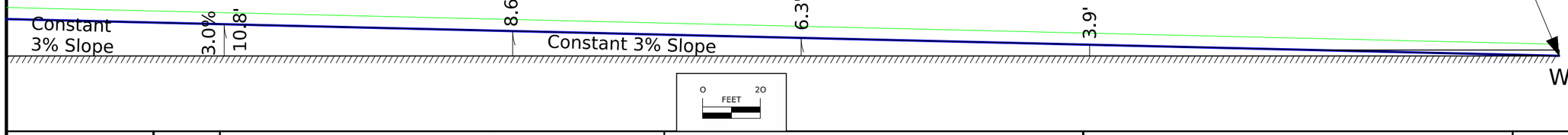
FILE NO. 98765	ENGLISH	DESIGN TEAM Vortherms/Tamrakar/Ringgenberg	MARSHALL COUNTY	PROJECT NUMBER HSIPX-030-5(328)--3L-64	SHEET NUMBER L.1

12:30:54 PM 4/15/2026 rringge pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\6403002025\DistrictDesign\HSIPX-030-5(328)_RightTurnLanes\CADDFiles\GEOM_640305328.dgn





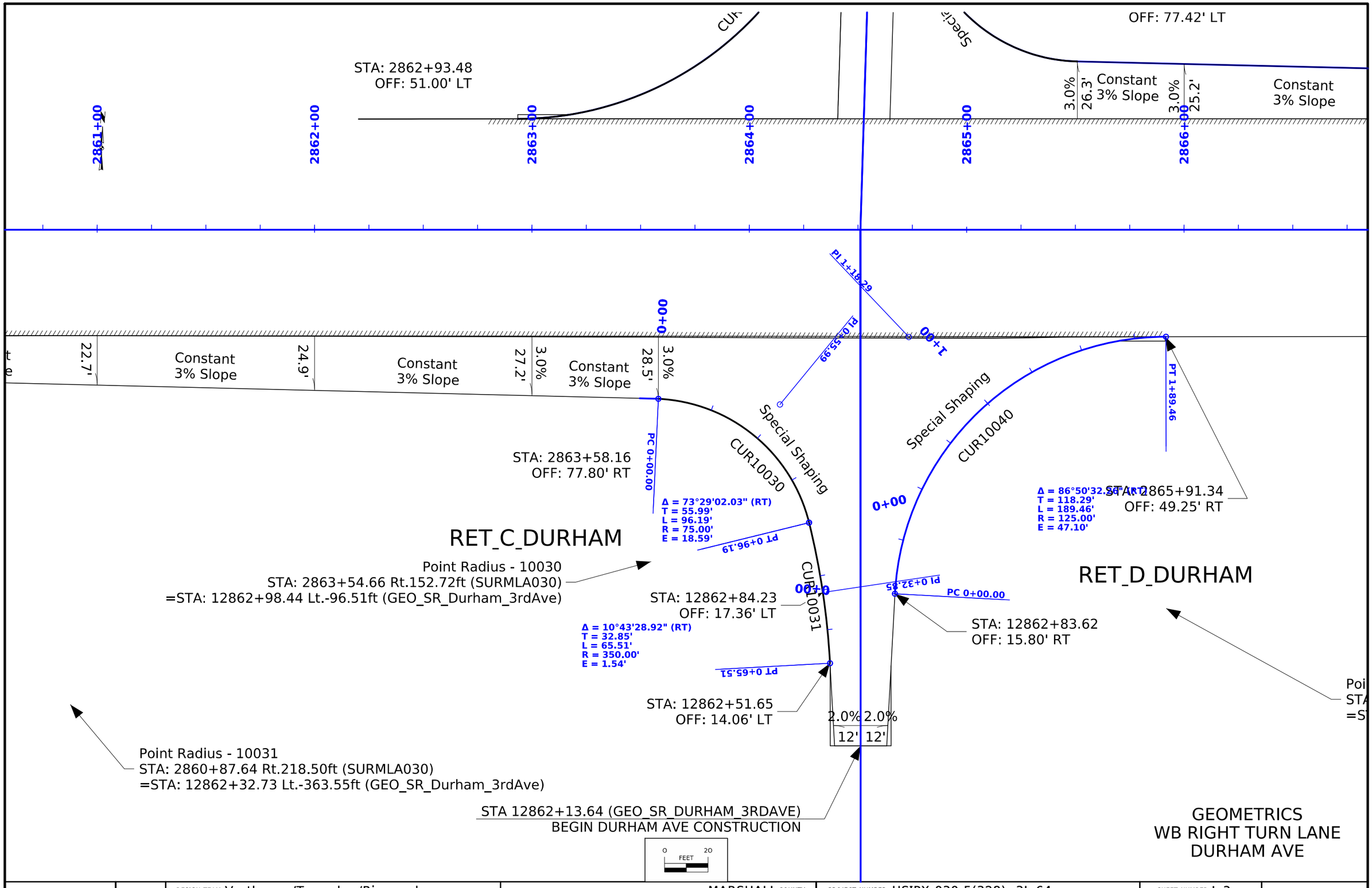
GEOMETRICS
WB RIGHT TURN LANE
3RD AVE SW



GEOMETRICS
WB RIGHT TURN LANE
3RD AVE SW

FILE NO.	ENGLISH	DESIGN TEAM Vortherms/Tamrakar/Ringgenberg	MARSHALL COUNTY	PROJECT NUMBER HSIPX-030-5(328)--3L-64	SHEET NUMBER L.2	

12:30:55 PM 4/15/2026 rringge pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\6403002025\DistrictDesign\HSIPX-030-5(328)_RightTurnLanes\CADDFiles\GEOM_640305328.dgn



FILE NO.	ENGLISH	DESIGN TEAM Vortherms/Tamrakar/Ringgenberg	MARSHALL COUNTY	PROJECT NUMBER HSIPX-030-5(328)--3L-64	SHEET NUMBER L.3

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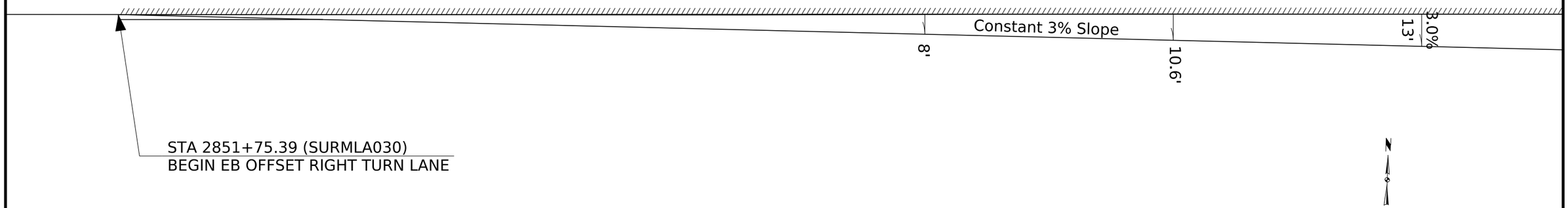
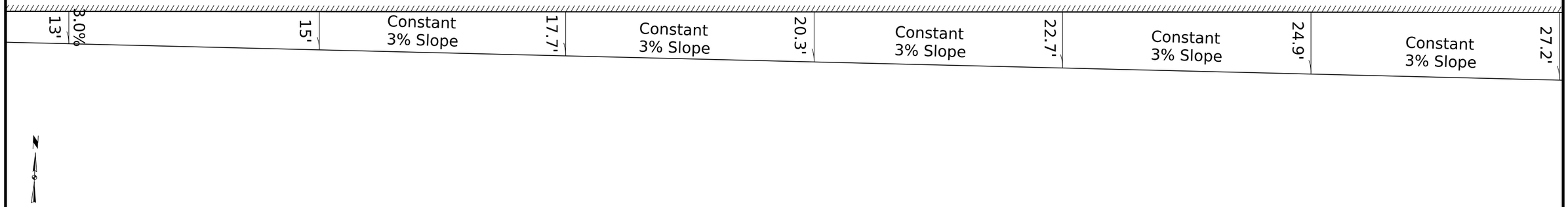


STA 2851+75.39 (SURMLA030)
BEGIN EB OFFSET RIGHT TURN LANE

N

0 20
FEET

GEOMETRICS
WB RIGHT TURN LANE
DURHAM AVE



N

0 20
FEET

GEOMETRICS
WB RIGHT TURN LANE
DURHAM AVE

FILE NO.	ENGLISH	DESIGN TEAM Vortherms/Tamrakar/Ringgenberg	MARSHALL COUNTY	PROJECT NUMBER HSIPX-030-5(328)--3L-64	SHEET NUMBER L.4	

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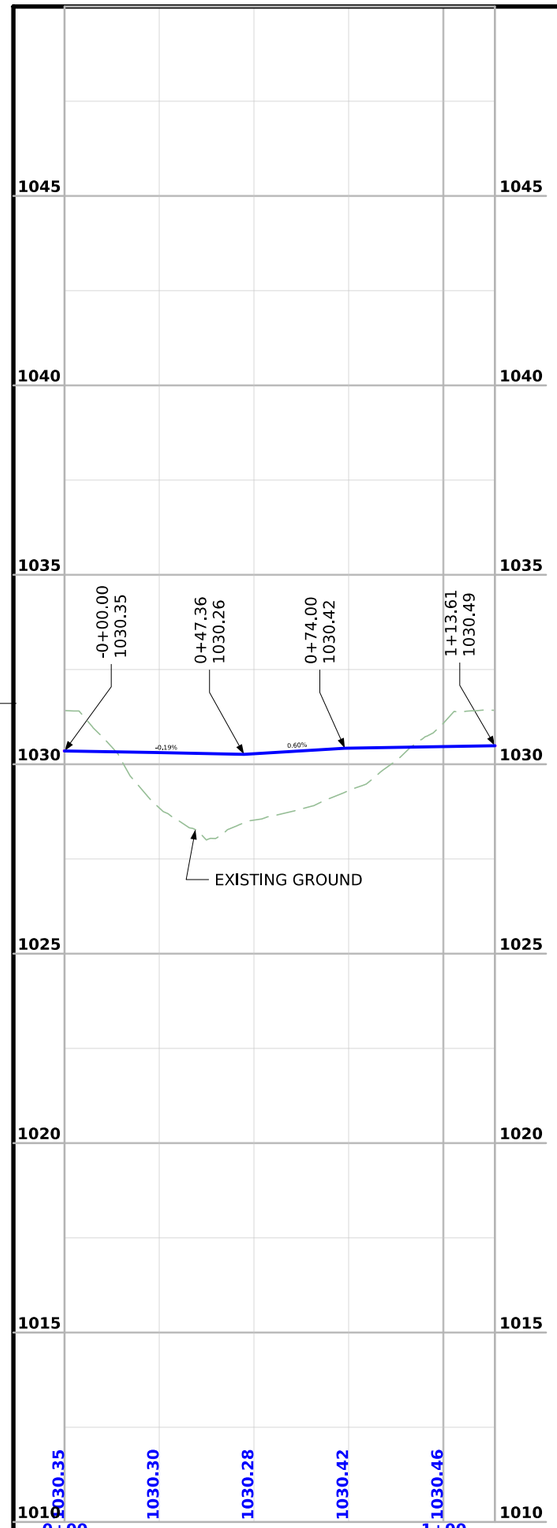
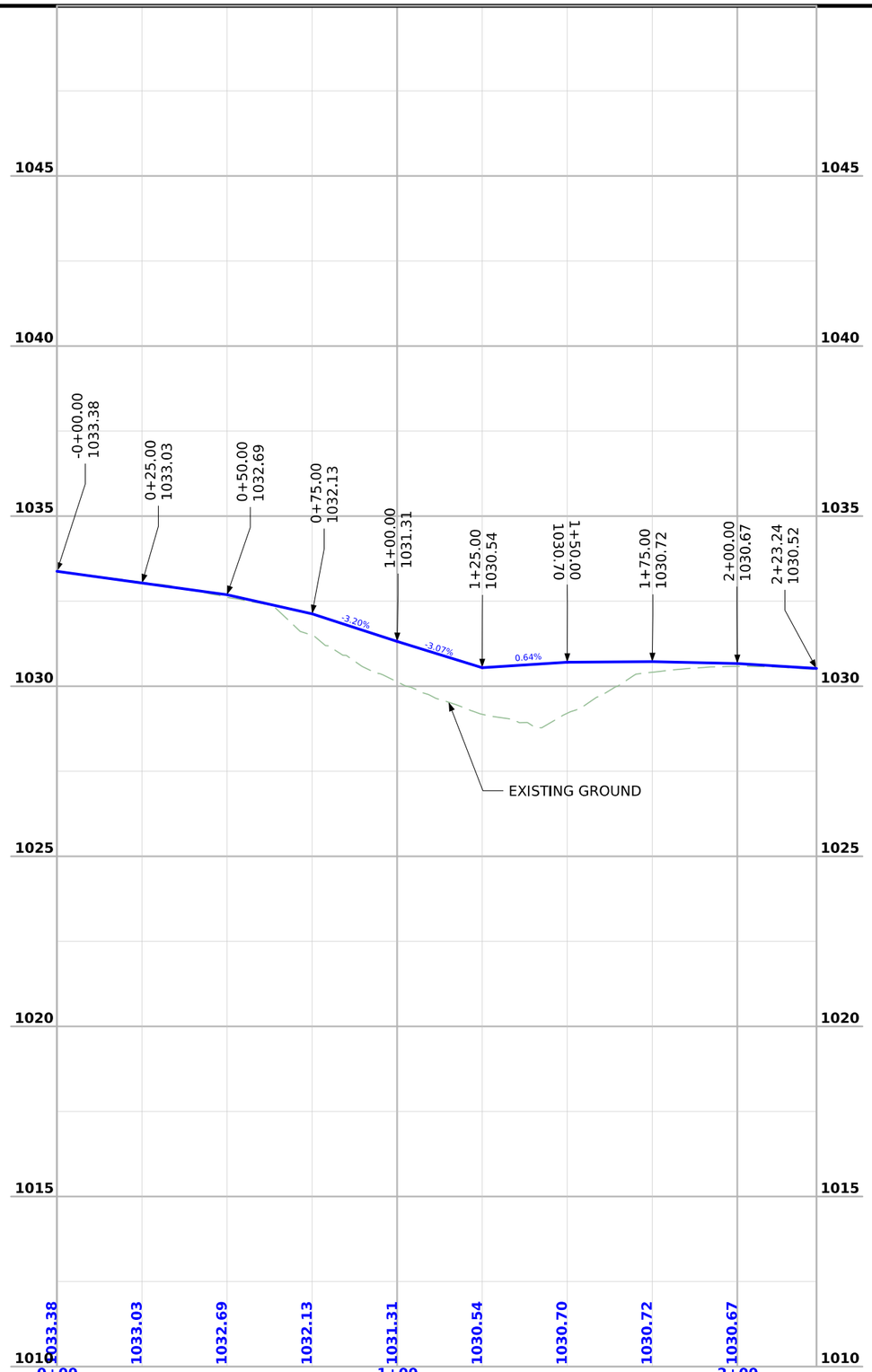


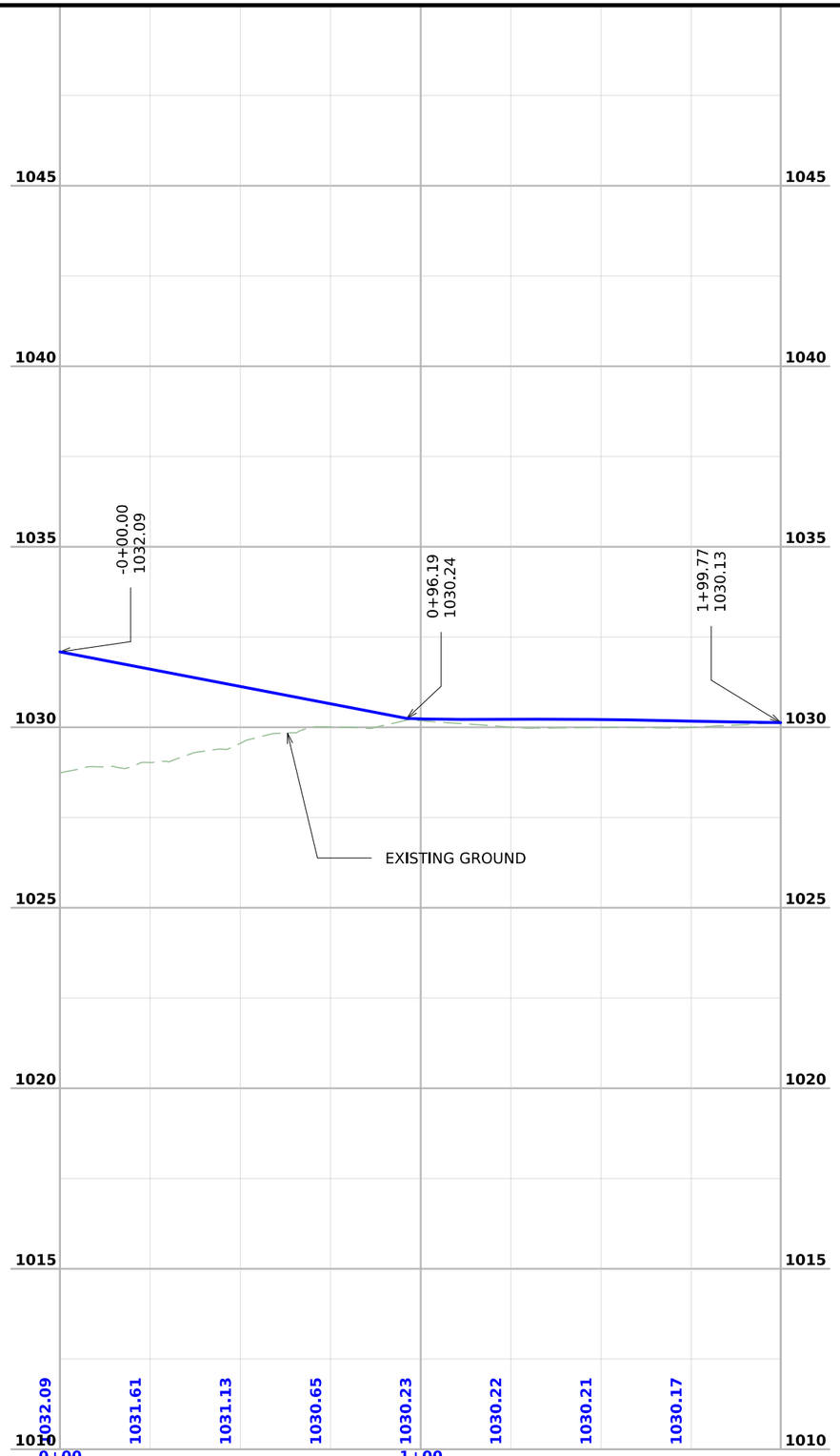
EDGE PROFILE
3RD AVE RET_A



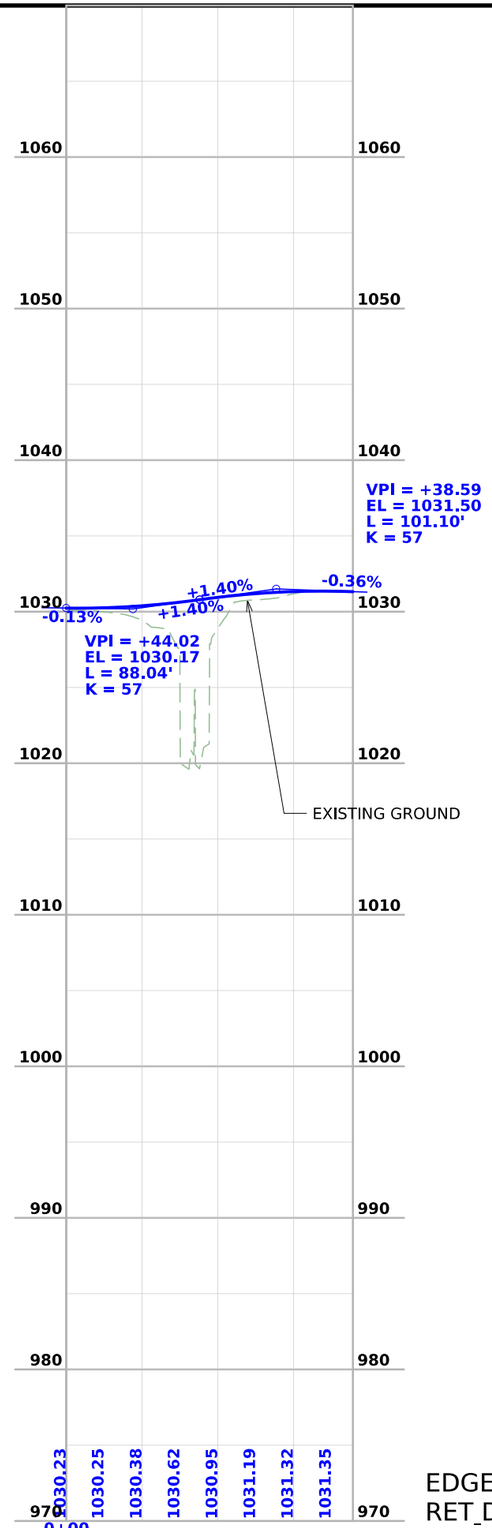
EDGE PROFILE
3RD AVE RET_B

FILE NO.	ENGLISH	DESIGN TEAM Vortherms/Tamrakar/Ringgenberg	MARSHALL COUNTY	PROJECT NUMBER HSIPX-030-5(328)--3L-64	SHEET NUMBER L.5

12:31:39 PM 4/15/2026 rringge pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\6403002025\DistrictDesign\HSIPX-030-5(328)_RightTurnLanes\CADDFiles\Cooridor Files\COR_6403035328_SR3RD.dgn



EDGE PROFILE
RET_C_DURHAM



EDGE PROFILE
RET_D_DURHAM

FILE NO.	ENGLISH	DESIGN TEAM Vortherms/Tamrakar/Ringgenberg	MARSHALL COUNTY	PROJECT NUMBER HSIPX-030-5(328)--3L-64	SHEET NUMBER L.6

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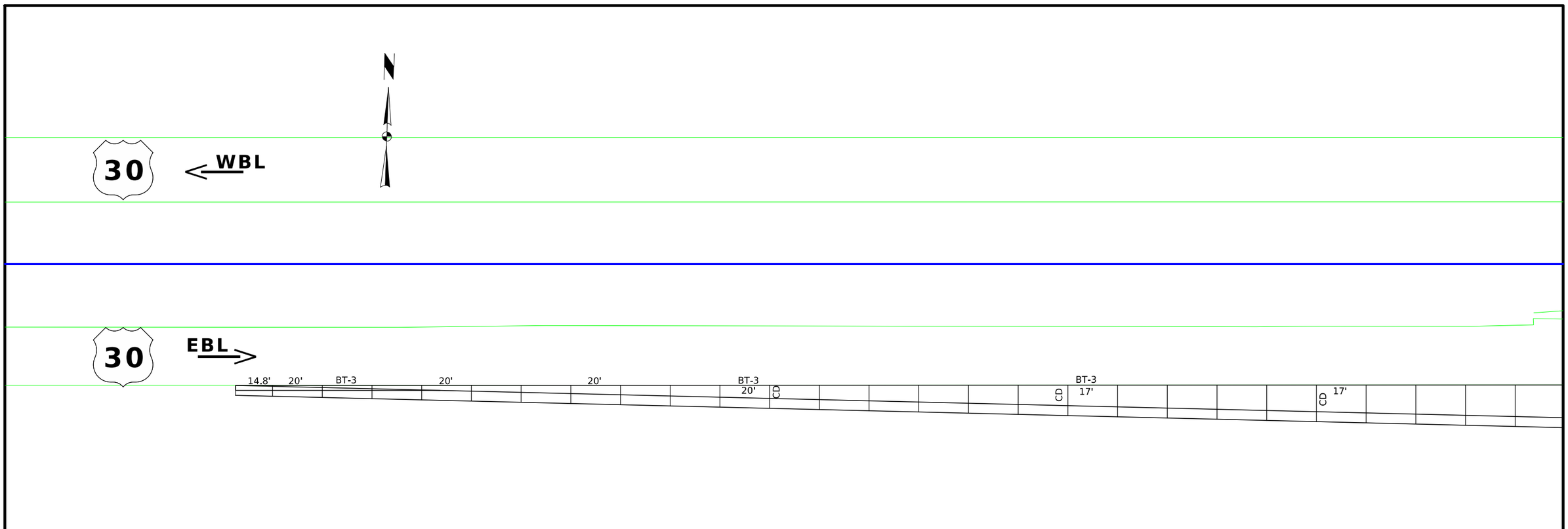
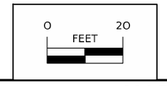
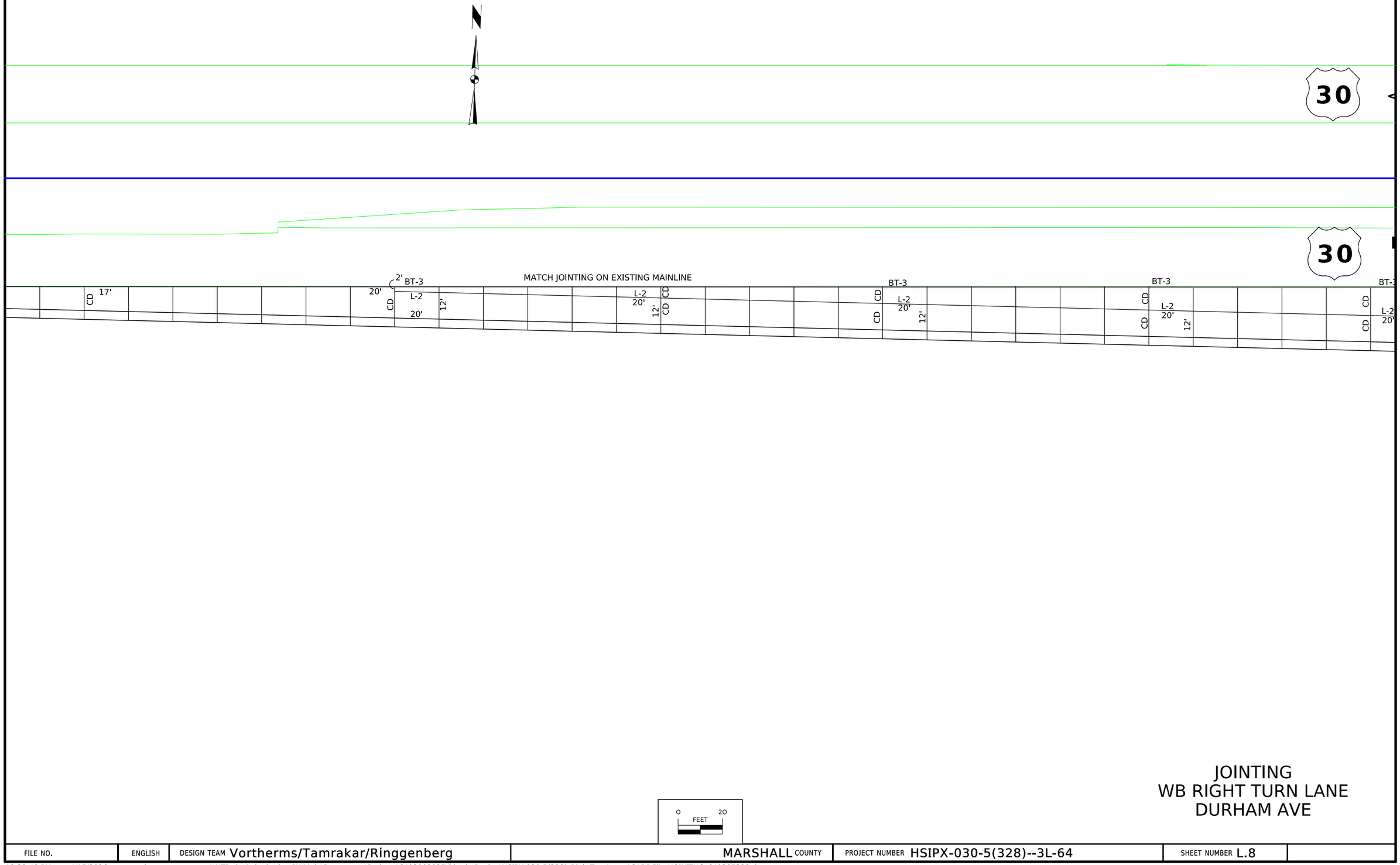




JOINTING
WB RIGHT TURN LANE
DURHAM AVE

FILE NO.	ENGLISH	DESIGN TEAM Vortherms/Tamrakar/Ringgenberg	MARSHALL COUNTY	PROJECT NUMBER HSIPX-030-5(328)--3L-64	SHEET NUMBER L.7	

12:32:48 PM 4/15/2026 rringge pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\6403002025\DistrictDesign\HSIPX-030-5(328)_RightTurnLanes\CADDFiles\JOINTING_640305328.dgn



JOINTING
WB RIGHT TURN LANE
DURHAM AVE

FILE NO.	ENGLISH	DESIGN TEAM Vortherms/Tamrakar/Ringgenberg	MARSHALL COUNTY	PROJECT NUMBER HSIPX-030-5(328)--3L-64	SHEET NUMBER L.8	

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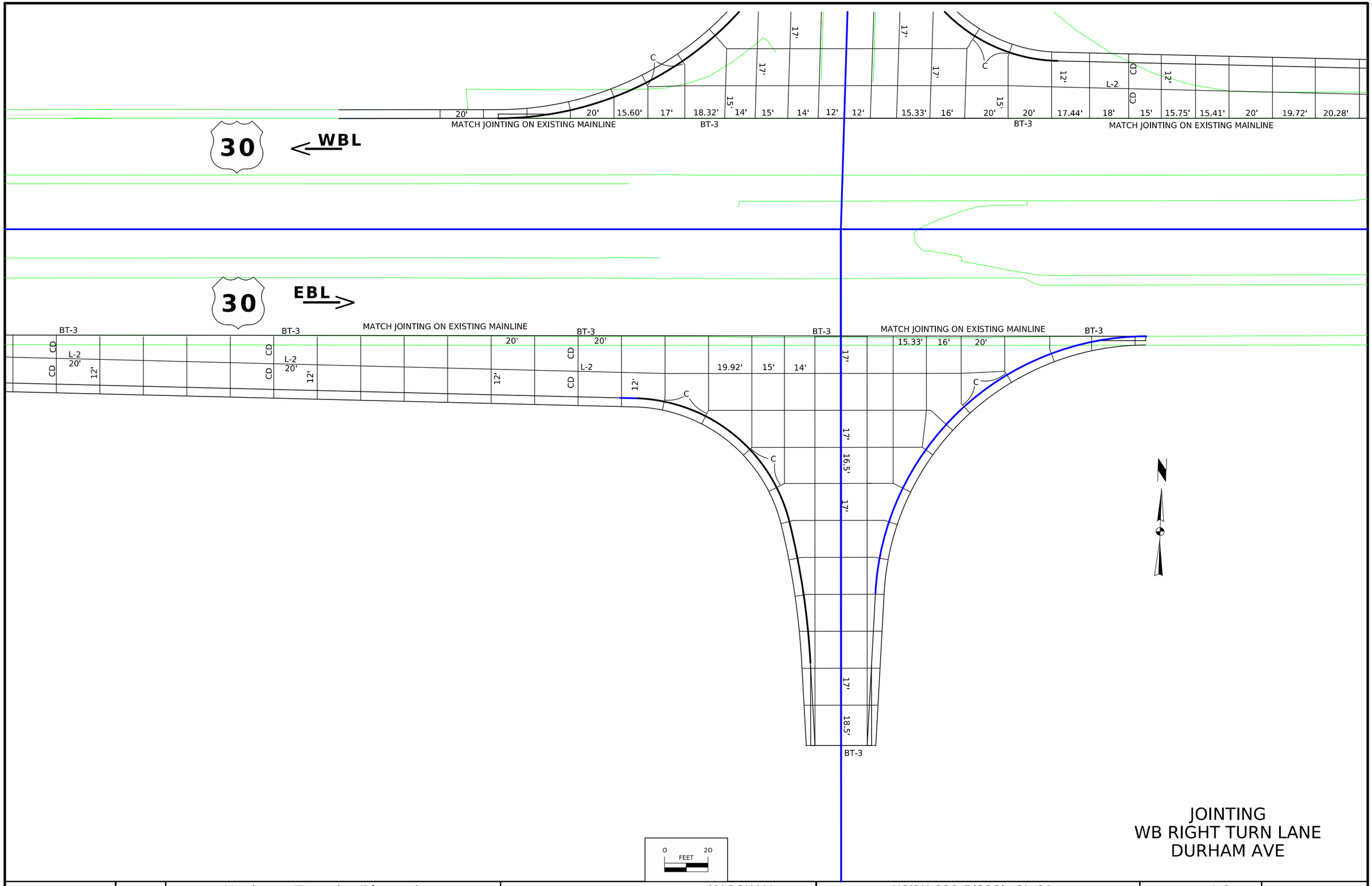

JOINTING
WB RIGHT TURN LANE
DURHAM AVE

FILE NO.	ENGLISH	DESIGN TEAM Vortherms/Tamrakar/Ringgenberg	MARSHALL COUNTY	PROJECT NUMBER HSIPX-030-5(328)--3L-64	SHEET NUMBER L.9

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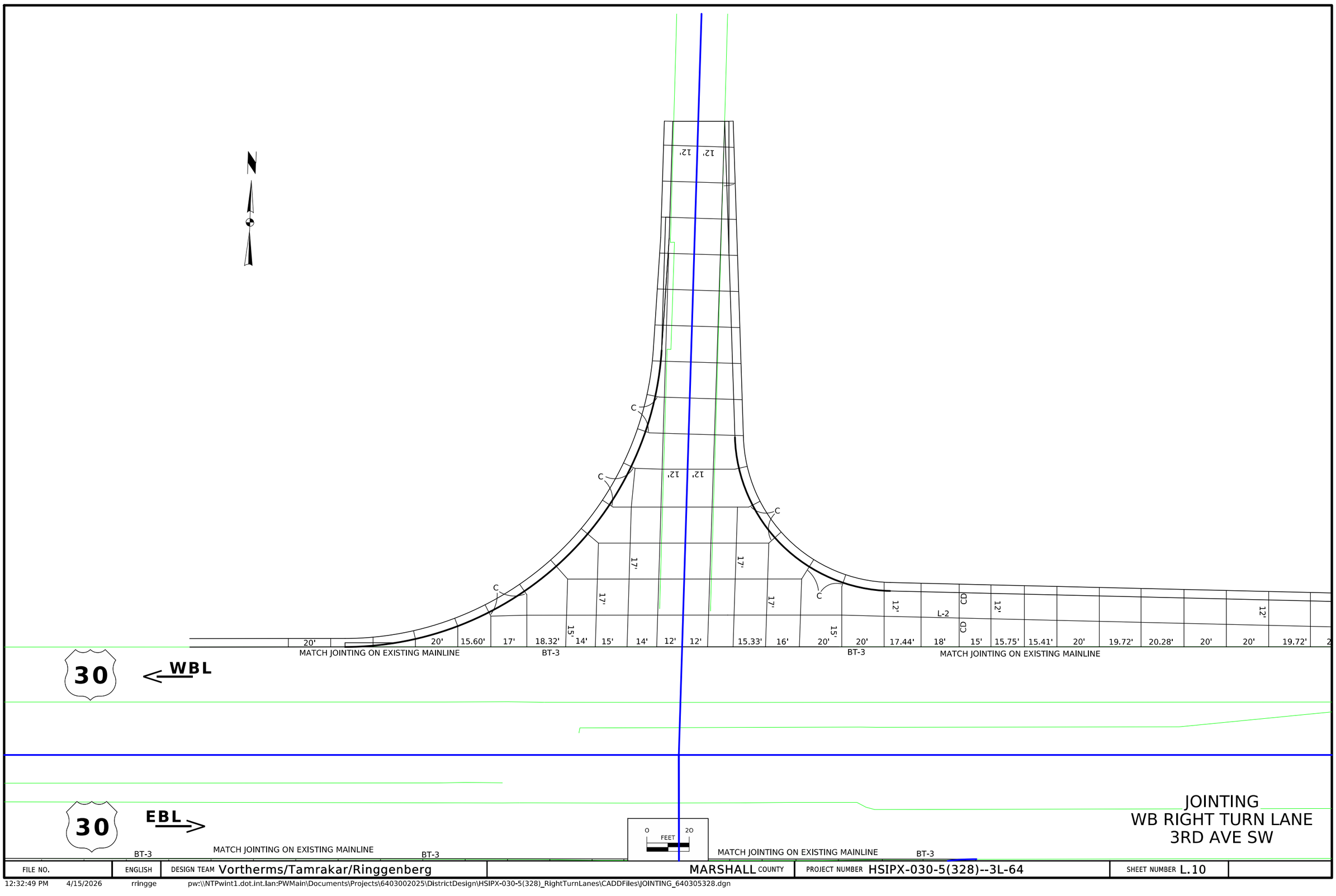
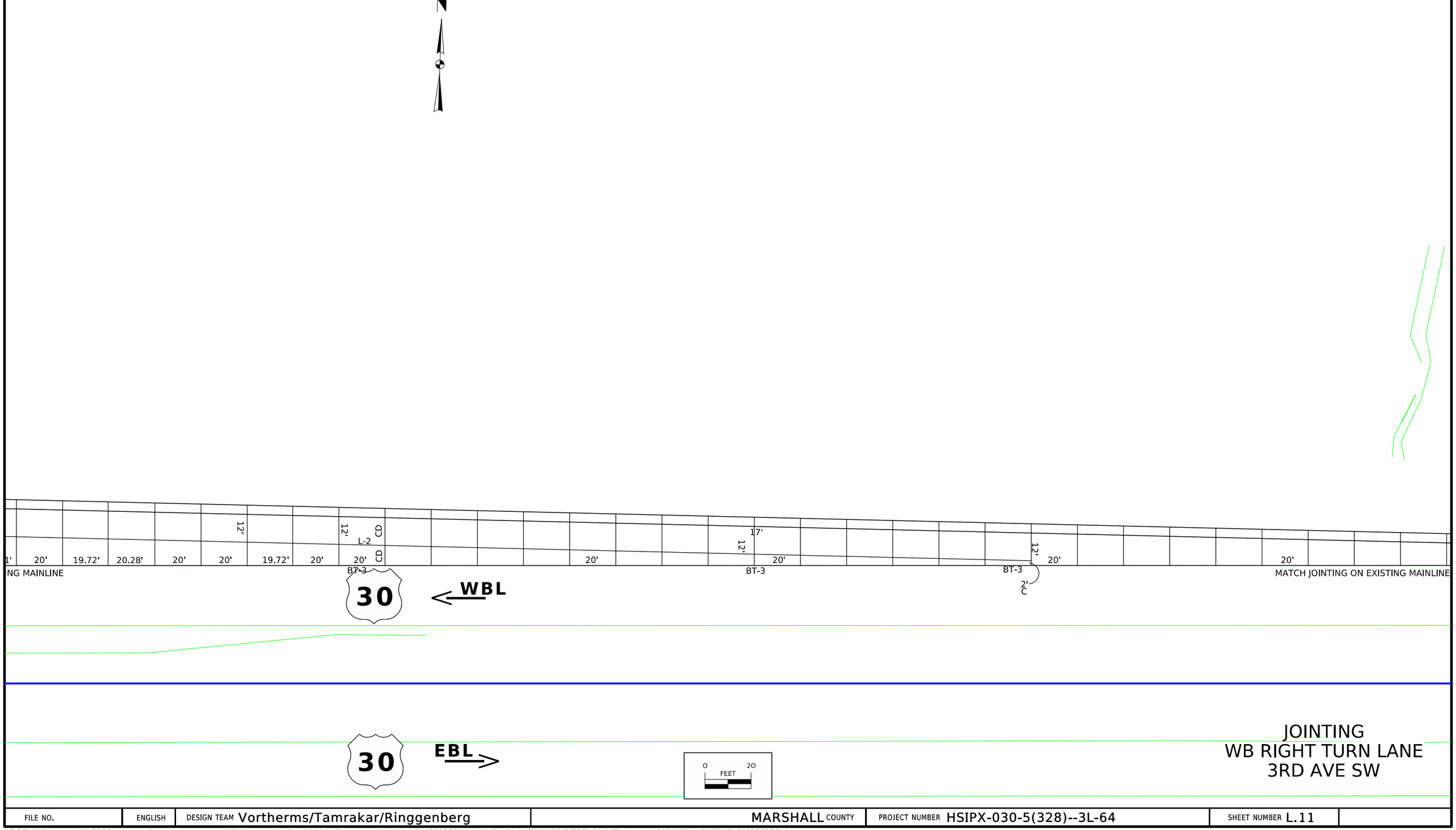


JOINTING
WB RIGHT TURN LANE
3RD AVE SW

FILE NO.	ENGLISH	DESIGN TEAM Vortherms/Tamrakar/Ringgenberg	MARSHALL COUNTY	PROJECT NUMBER HSIPX-030-5(328)--3L-64	SHEET NUMBER L.10

12:32:49 PM 4/15/2026 rringge pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\6403002025\DistrictDesign\HSIPX-030-5(328)_RightTurnLanes\CADDFiles\JOINTING_640305328.dgn



JOINTING
WB RIGHT TURN LANE
3RD AVE SW

FILE NO.	ENGLISH	DESIGN TEAM Vortherms/Tamrakar/Ringgenberg	MARSHALL COUNTY	PROJECT NUMBER HSIPX-030-5(328)--3L-64	SHEET NUMBER L.11

12:32:49 PM 4/15/2026 rringge pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\6403002025\DistrictDesign\HSIPX-030-5(328)_RightTurnLanes\CADDFiles\JOINTING_640305328.dgn

N

20'

20'

20'

20'

MATCH JOINTING ON EXISTING MAINLINE

BT-3

30

WBL

30

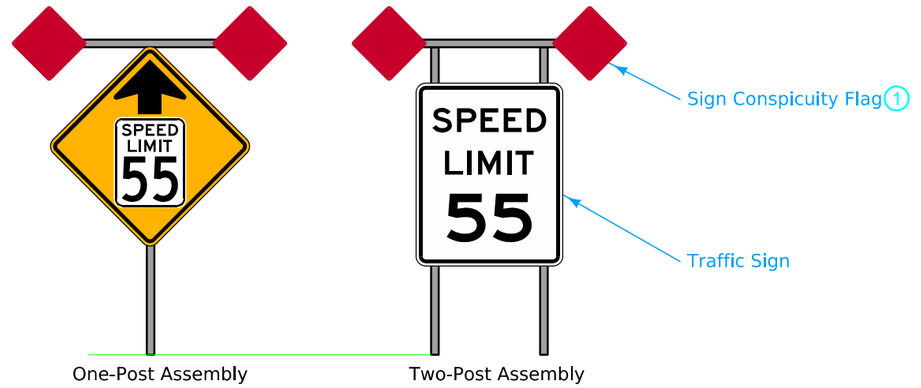
EBL

0 20
FEET

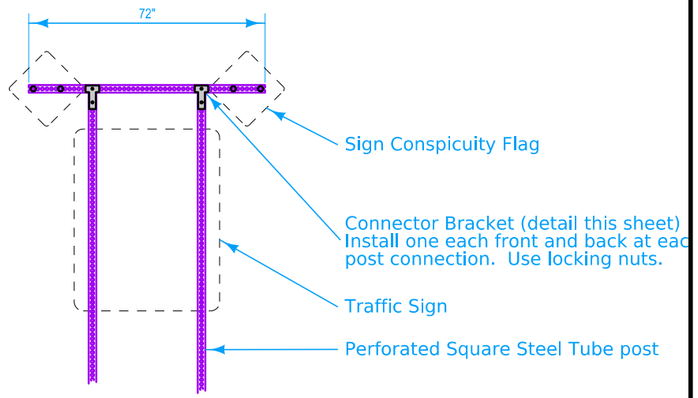
JOINTING
WB RIGHT TURN LANE
3RD AVE SW

FILE NO.	ENGLISH	DESIGN TEAM Vortherms/Tamrakar/Ringgenberg	MARSHALL COUNTY	PROJECT NUMBER HSIPX-030-5(328)--3L-64	SHEET NUMBER L.12

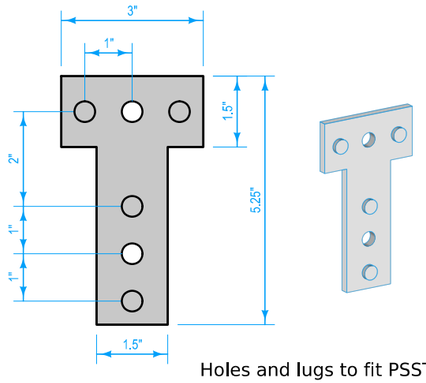
12:32:50 PM 4/15/2026 rringge pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\6403002025\DistrictDesign\HSIPX-030-5(328)_RightTurnLanes\CADDFiles\JOINTING_640305328.dgn



SAMPLE SIGN ASSEMBLIES



SIGN ASSEMBLY DETAIL



Holes and lugs to fit PSST post.

CONNECTOR BRACKET DETAIL

(1) Sign Conspicuity Flag signs to be retro reflective red sheeting (ASTM Type IV) on sheet aluminum. Sign blanks fabricated per Standard Road Plan SI-173 for 18" x 18" object marker.

Materials shall conform to Section 4186 of the Standard Specifications.

IOWA DOT

REVISION	
2	06-01-23

SIGN CONSPICUITY FLAGS

TT-901

TAS TYPICAL

REVISION: __

FOR INSTALLATION ON PERFORATED SQUARE STEEL TUBE POSTS

LICENSED PROFESSIONAL ENGINEER
Jason J. Hermann
27680
IOWA

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

Signature Jason Hermann Date 04/07/26

Jason Hermann
Printed or Typed Name

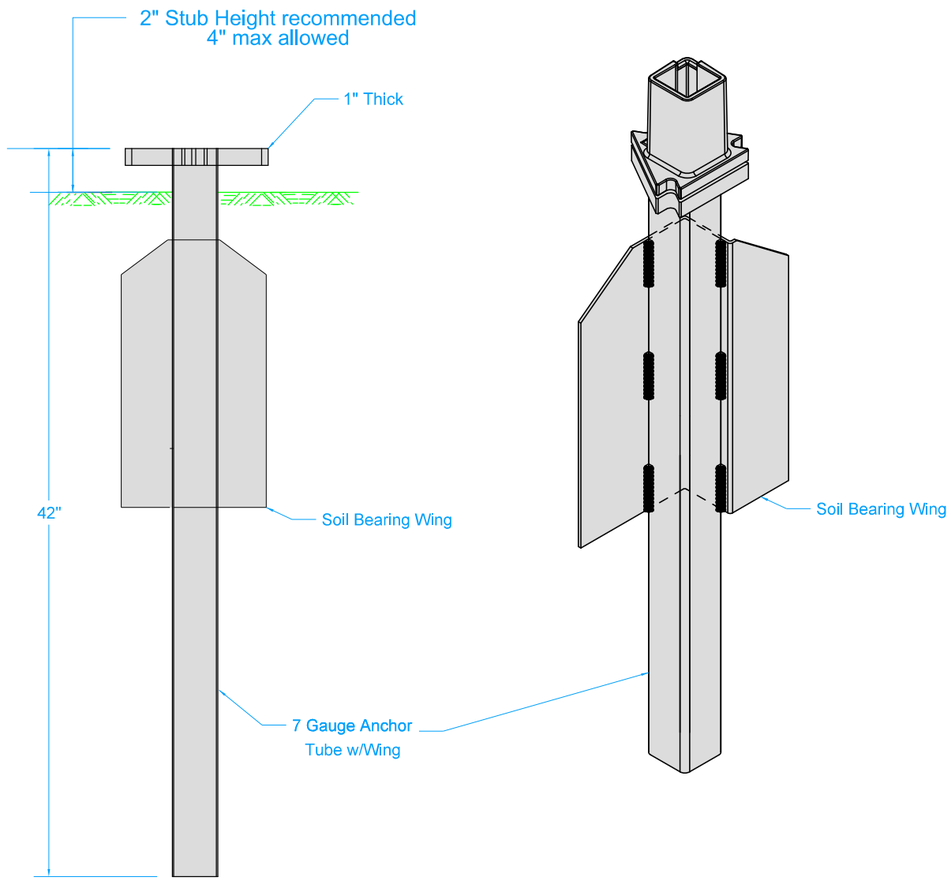
My license renewal date is December 31, 20 27

Pages or sheets covered by this seal: N.1-N.25

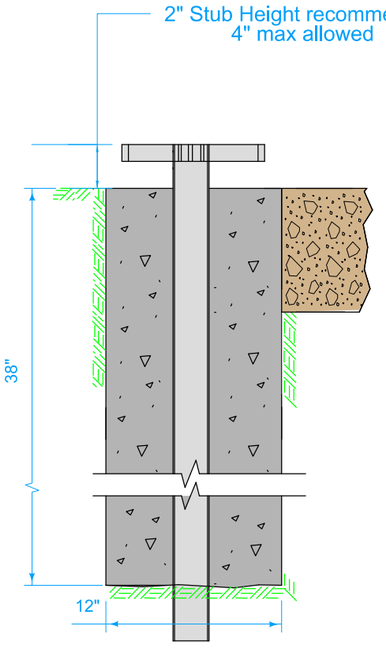
FILE NO. -	ENGLISH	DESIGN TEAM **Hermann\Stokes**	**MARSHALL** COUNTY	PROJECT NUMBER **HSIPX-030-5(328)--3L-64**	SHEET NUMBER **N.1**

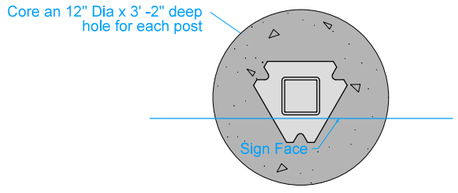
2:51:38 PM 3/19/2026 wstokes pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\6403002025\TrafficAndSafety_328_Signing\CADD Files\SHT_64030328_B1.dgn

TYPE 3 INSTALLATION
(TRIANGULAR SLIP BASE SOIL)



TYPE 4 INSTALLATION
(TRIANGULAR SLIP BASE CONCRETE)





IOWA DOT

REVISION	
-	00-00-00

■■■

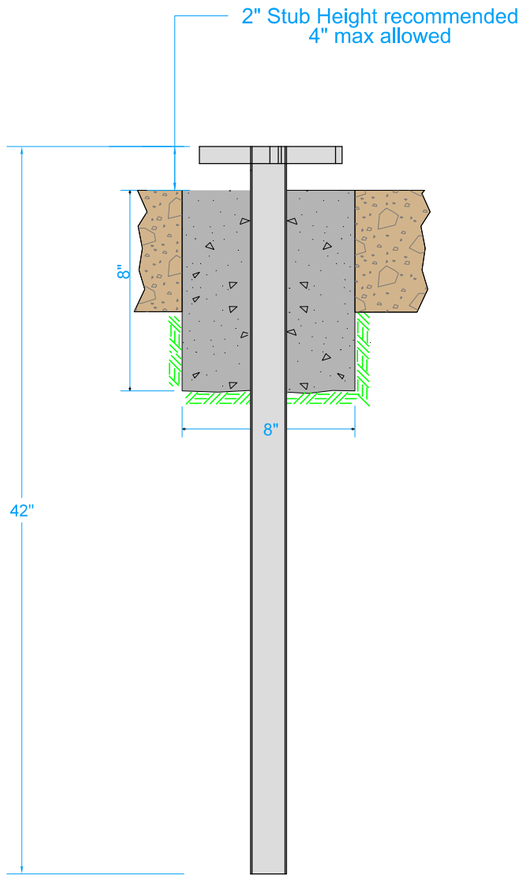
TAS STANDARD

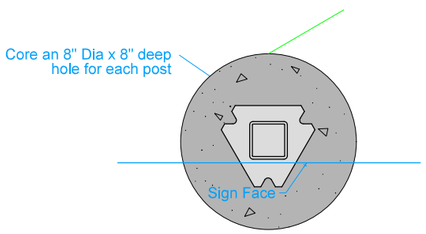
REVISION: __

Support Structures -
Perforated Square Steel Tube
Anchor and Post

(1)

TYPE 5 INSTALLATION
(TRIANGULAR SLIP BASE CONCRETE)





(1) Used in concrete islands.

IOWA DOT

REVISION	
-	00-00-00

■■■

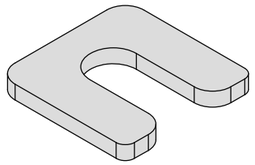
TAS STANDARD

REVISION: __

**Support Structures -
Perforated Square Steel Tube
Anchor and Post**

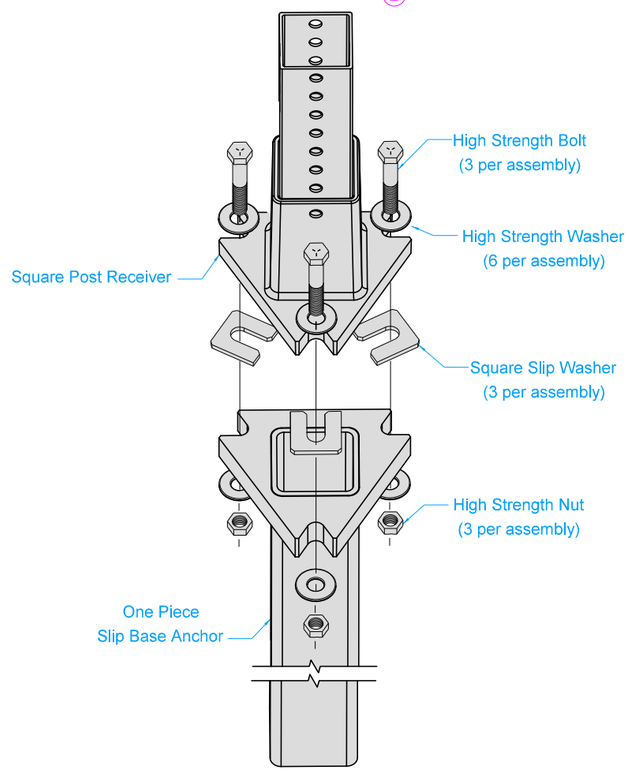
FILE NO. -	ENGLISH	DESIGN TEAM **Hermann\Stokes**	**MARSHALL** COUNTY	PROJECT NUMBER **HSIPX-030-5(328)--3L-64**	SHEET NUMBER **N.3**

1:04:16 PM 3/18/2026 wstokes pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\6403002025\TrafficAndSafety_328_Signing\CADD Files\SHT_64030328_B1.dgn



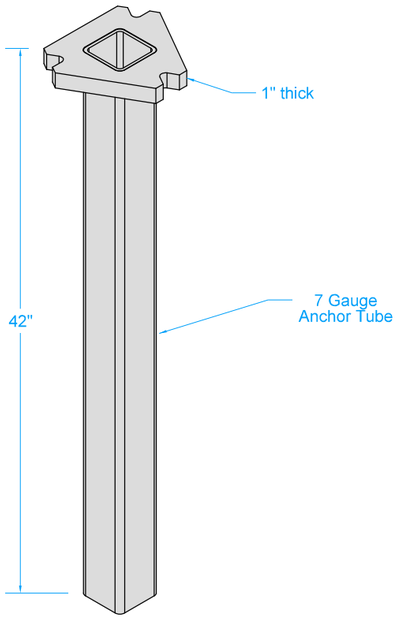
1 $\frac{3}{4}$" SQUARE X $\frac{3}{16}$" (1)
SQUARE SLIP WASHER

(2)



EXPLODED VIEW (1)
SLIP BASE, RECEIVER AND
CONNECTION HARDWARE

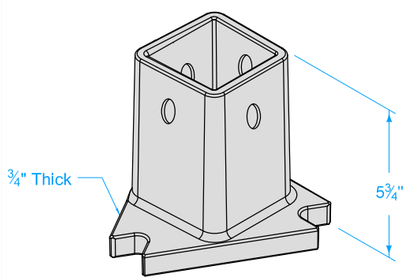
(1)
ONE PIECE
SLIP BASE ANCHOR



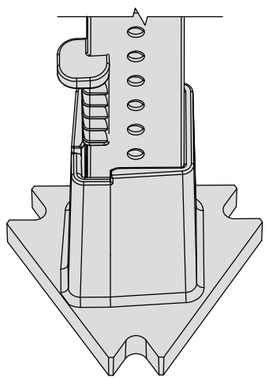
(1) Type III/IV installation

(2) Fastener size and installation procedure shall be according to manufacturer's recommendation.

OPTION 1



OPTION 2



2 $\frac{1}{2}$" SQUARE POST RECEIVER (1)

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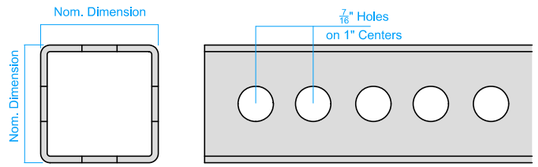
REVISION: __

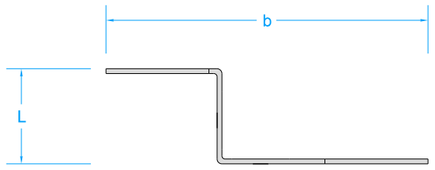
Support Structures - Perforated Square Steel Tube Anchor and Post

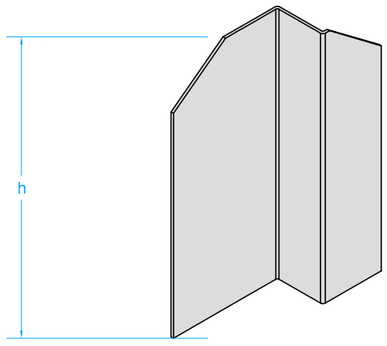
FILE NO. -	ENGLISH	DESIGN TEAM **Hermann\Stokes**	**MARSHALL** COUNTY	PROJECT NUMBER **HSIPX-030-5(328)--3L-64**	SHEET NUMBER **N.4**

1:04:16 PM 3/18/2026 wstokes pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\6403002025\TrafficAndSafety_328_Signing\CADD Files\SHT_64030328_B1.dgn

PERFORATED STEEL SQUARE TUBE POST DETAILS

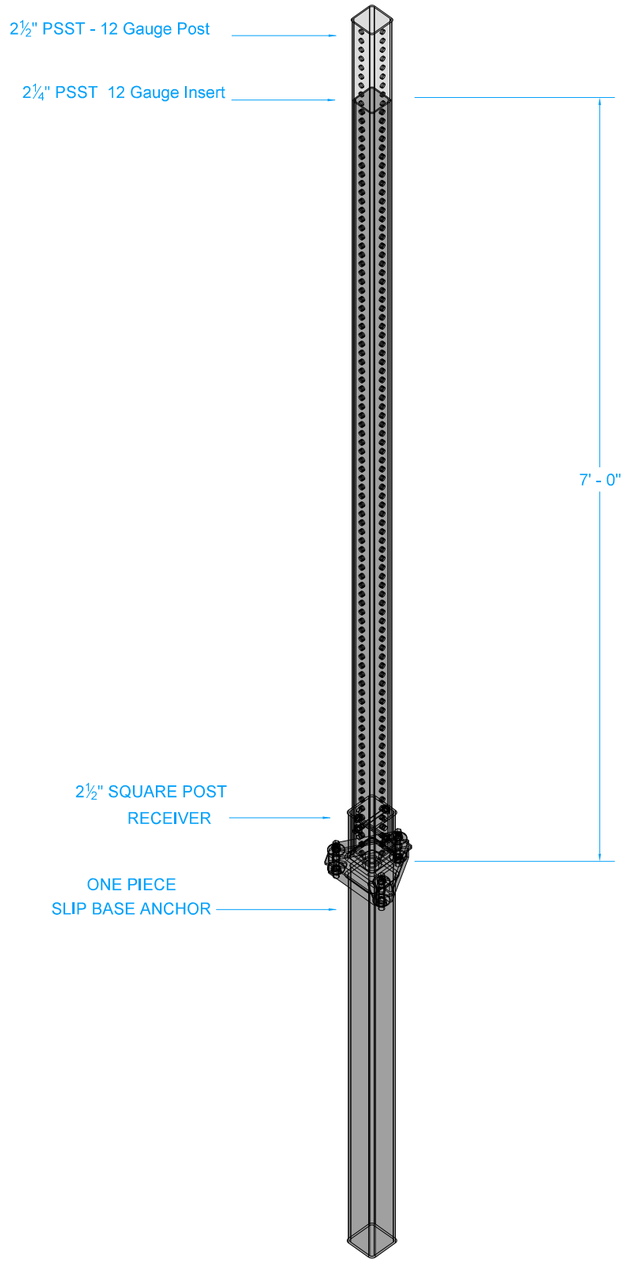




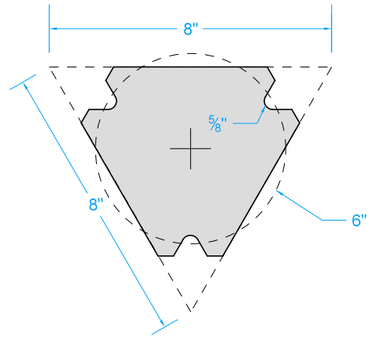


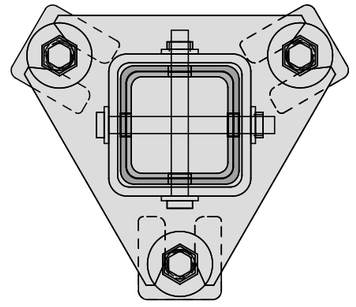
SOIL BEARING WING

SLIP BASE WITH NESTED PERFORATED SQUARE STEEL TUBE POST (1)



SLIP PLATE DIMENSIONS (1)





(1) Type III/IV installation only

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-	00-00-00

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Support Structures - Perforated Square Steel Tube Anchor and Post

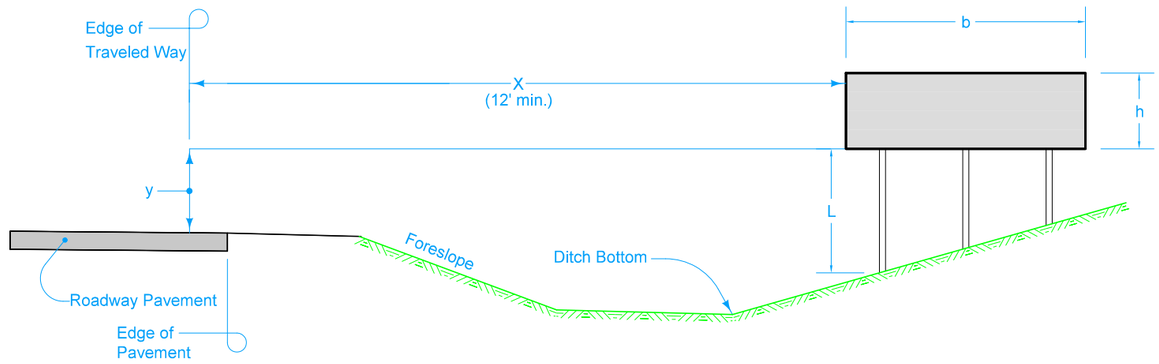
FILE NO. -	ENGLISH	DESIGN TEAM **Hermann\Stokes**	**MARSHALL** COUNTY	PROJECT NUMBER **HSIPX-030-5(328)--3L-64**	SHEET NUMBER **N.5**

1:04:17 PM 3/18/2026 wstokes pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\6403002025\TrafficAndSafety_328_Signing\CADD Files\SHT_64030328_B1.dgn

Note: The sign centroid is equivalent to L + h/2, (length of the longest post from the ground to the bottom of the sign plus the half the height of the sign.) and the Sign Area Yielding Design is the maximum area that the corresponding sign can have without failure. Sign Area is equivalent to b x h.

POST LOADING FOR PERFORATED SQUARE STEEL TUBE POSTS (1) (2)

SIGN CENTROID (FT)	SIGN AREA (SQ-FT) YIELDING DESIGN					
	TYPE 1 TYPE 2	TYPE 3/TYPE 4 (SLIP BASE REQUIRED)				
	2 ½" x 12ga	2 ½" x 12ga		2 ¼" x 12ga inserted into a 2 ½" x 12 ga		
	1 Post	2 Post	3 Post	1 Post	2 Post	3 Post
16.5	10.44	20.88	31.32	18.78	37.56	56.34
16	10.76	21.52	32.28	19.36	38.72	58.08
15.5	11.11	22.22	33.33	19.99	39.98	59.97
15	11.48	22.96	34.44	20.65	41.3	61.95
14.5	11.87	23.74	35.61	21.36	42.72	64.08
14	12.3	24.6	36.9	22.13	44.26	66.39
13.5	12.75	25.5	38.25	22.95	45.9	68.85
13	13.24	26.48	39.72	23.83	47.66	71.49
12.5	13.77	27.54	41.71	24.78	49.56	74.34
12	14.35	28.7	43.05	25.82	51.64	77.46
11.5	14.97	29.94	44.91	26.94	53.88	80.82
11	15.65	31.3	46.95	28.16	56.32	84.48
10.5	16.4	32.8	49.2	29.5	59	88.5
10	17.22	34.44	51.66	30.98	61.96	92.94
9.5	18.12	36.24	54.36	32.61	65.22	97.83
9	19.13	38.26	57.39	34.42	68.84	103.26
8.5	20.26	40.52	60.78	36.45	72.9	109.35
8	21.52	43.04	64.56	38.72	77.44	116.16



(1) Adapted from AASHTO Standard Specifications for - Highway Signs, Luminaires, and Traffic Signals. 6th Edition 2013. <Rev B 4/7/14>

(2) 90 MPH Wind Load

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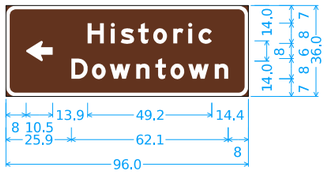
Support Structures - Perforated Square Steel Tube Anchor and Post

FILE NO. - | ENGLISH | DESIGN TEAM **Hermann\Stokes** | **MARSHALL** COUNTY | PROJECT NUMBER **HSIPX-030-5(328)--3L-64** | SHEET NUMBER **N.6**

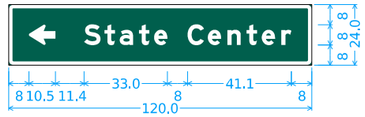
1:04:17 PM 3/18/2026 wstokes pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\6403002025\TrafficAndSafety_328_Signing\CADD Files\SHT_64030328_B1.dgn

30-64-172 M001



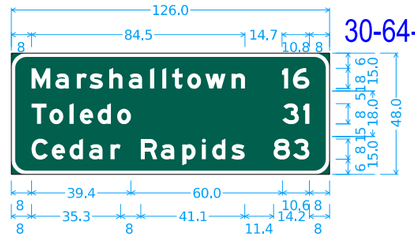
Expressway Destination 1 Line;
4.0" Radius, 1.5" Border, White on Brown;
Arrow III-8S - 10.5" 180°;
"Historic", E Mod 2K;
"Downtown", E Mod 2K;

30-64-172 M002



Expressway Destination 1 Line;
2.0" Radius, 1.5" Border, White on Green;
Arrow III-8S - 10.5" 180°;
"State Center", E Mod 2K;

30-64-172 M003



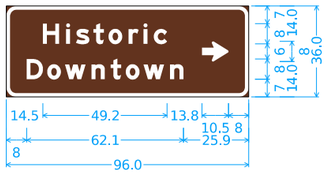
Expressway Mileage 3 Line;

6.0" Radius, 1.5" Border, White on Green;
"Marshalltown", E Mod 2K; "16", E Mod 2K;

6.0" Radius, 1.5" Border, White on Green;
"Toledo", E Mod 2K; "31", E Mod 2K;

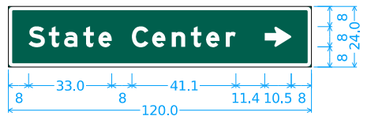
6.0" Radius, 1.5" Border, White on Green;
"Cedar Rapids", E Mod 2K; "83", E Mod 2K;

30-64-172 M101



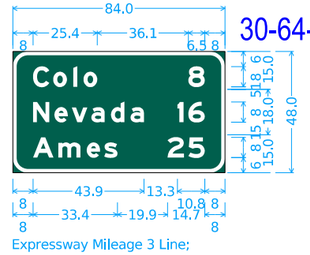
Expressway Destination 1 Line;
4.0" Radius, 1.5" Border, White on Brown;
"Historic", E Mod 2K;
"Downtown", E Mod 2K;
Arrow III-8S - 10.5" 0°;

30-64-172 M102



Expressway Destination 1 Line;
2.0" Radius, 1.5" Border, White on Green;
"State Center", E Mod 2K;
Arrow III-8S - 10.5" 0°;

30-64-172 M103



Expressway Mileage 3 Line;

6.0" Radius, 1.5" Border, White on Green;
"Colo", E Mod 2K;
"8", E Mod 2K;

6.0" Radius, 1.5" Border, White on Green;
"Nevada", E Mod 2K;
"16", E Mod 2K;

6.0" Radius, 1.5" Border, White on Green;
"Ames", E Mod 2K;
"25", E Mod 2K;

SIGN DETAILS
US 30

STANDARDS

The following Standards apply to construction work on this project.

Number	Date	Title
SI-101	04-19-16	Locations - Type 'A' Signs
SI-102	04-19-16	Locations - Type 'B' Signs
SI-112	04-19-16	Footings For Steel Breakaway Posts
SI-113	10-15-19	Support Structures - Steel Breakaway Posts
SI-121	10-16-18	Fabrication - Sign Legend Components
SI-123	10-20-20	Fabrication - Type 'B' Signs
SI-131	10-18-16	Installation - Type 'A' Signs
SI-132	04-17-18	Installation - Type 'B' Signs
SI-133	10-17-17	Installation - Type 'A' Sign Shim

111_25
4/21/26

INDEX OF TABULATIONS

Line No.	Tabulation	Tabulation Title	Sheet No.
1.0	105_04	STANDARD ROAD PLANS	N.8
2.0	111_25	INDEX OF TABULATIONS	N.9
3.0	190_50	MATERIALS FOR TYPE B SIGNS	N.10
4.0	190_51	MATERIALS FOR TYPE A SIGNS	N.11
5.0	190_62	EXISTING SIGNS TO BE REMOVED	N.12
6.0	190_66	SUMMARY OF TYPE A SIGNS	N.13

MATERIALS FOR TYPE 'B' SIGNS

Line No.	Number	Route	County	Exit Number	Road ID	Seq. No.	Dir of Travel	Sign Location Station	Fab Info	Sign Width (FT)	Sign Height (FT)	New Area (SF)	6 L (F	6 M (F	6 R (F	Perf. Sq. Steel L (FT)	Perf. Sq. Steel M (FT)	Perf. Sq. Steel R (FT)	Perf. Sq. Anchor Type	Anchor Quantity (EA)	W8x21 L (FT)	W8x21 M (FT)	W8x21 R (FT)	Footing 2'8"x7'6" (EA)	W12x26 L (FT)	W12x26 M1 (FT)	W12x26 M2 (FT)	W12x26 R (FT)	Footing 2'8"x9' (E A)	Install Type	Install Dim 'X'	Install Dim 'Y'	See Signing Notes	Remarks
1.0		30	64	172	M	001	EB	2851+00.00	NEW	8.0	3.0	24.0									14.1		13.9	2						1	30.0	7.0	IB PB	
2.0		30	64	172	M	002	EB	2855+00.00	NEW	10.0	2.0	20.0									13.3		14.5	2						1	30.0	7.0	IB PB	
3.0		30	64	172	M	003	EB	2875+50.00	NEW	10.5	4.0	42.0									16.1		16.6	2						1	30.0	7.0	IB PB	
4.0		30	64	172	M	101	WB	2879+75.00	NEW	8.0	3.0	24.0									14.1		13.7	2						1	30.0	7.0	IB PB	
5.0		30	64	172	M	102	WB	2874+00.00	NEW	10.0	2.0	20.0									13.9		13.5	2						1	30.0	7.0	IB PB	
6.0		30	64	172	M	103	WB	2855+50.00	NEW	7.0	4.0	28.0									15.3		14.2	2						1	30.0	7.0	IB PB	
Total:												**158**									**86.8**		**86.4**	**12**									

MATERIALS FOR TYPE 'A' SIGNS

Refer to SI-101, SI-111, SI-119 and N Sheets.

Line No.	Type A Signing Typicals	Sign Number	Dir. of Travel	Sign Location Station	Wood Posts (No.)	4 x 6 Leg 1 (FT)	4 x 6 Leg 2 (FT)	Perf. Sq. Steel Leg 1 (FT)	Perf. Sq. Steel Leg 2 (FT)	Perf. Sq. Steel Leg 3 (FT)	Perf. Sq. Anchor Type	Anchor Quantity (EA)	1 Rect. Tube	1 Rect. Tube	Rect. Tube Anch	Type A Bracket One Post	Type A Bracket Two Post	Type A Bracket Auxiliary	Type A Bracket (H)	Type A Bracket (F)	Type A Bracket (F1)	Install. Type	Install. Dim X (FT)	Install. Signing Notes	Remarks
1.0		W2-1	EB	2857+70.00				15.0		15.0	Slip	2										1	24.0	IA PP	ML30 - Sign Conspicuity Flags
2.0		W2-1	EB	2857+70.00				15.0		15.0	Slip	2										3	12.0	IA PP	ML30 - Sign Conspicuity Flags
3.0		R5-1A	WB	2860+00.00				14.0		14.0	Slip	2										1	24.0	IA PP	ML30
4.0		R5-1A	WB	2860+00.00				14.0		14.0	Slip	2										3	12.0	IA PP	ML30
5.0		R5-1	WB	2863+00.00					14.0		Slip	1										1	24.0	IA PP	ML30
6.0		R5-1	WB	2863+00.00					14.0		Slip	1										3	12.0	IA PP	ML30
7.0		M3-2	EB	2867+00.00				15.0		15.0	Slip	2										1	24.0	IA PP	ML30
8.0		M1-4	EB	2867+00.00																		1	24.0	IA	ML30
9.0		R2-1	EB	2872+00.00				16.0		16.0	Slip	2										1	30.0	IA PP	ML30
10.0		W2-1	WB	2871+30.00				15.0		15.0	Slip	2										1	24.0	IA PP	ML30 - Sign Conspicuity Flags
11.0		W2-1	WB	2871+30.00				15.0		15.0	Slip	2										3	12.0	IA PP	ML30 - Sign Conspicuity Flags
12.0		R5-1A	EB	2869+00.00				14.0		14.0	Slip	2										1	24.0	IA PP	ML30
13.0		R5-1A	EB	2869+00.00				14.0		14.0	Slip	2										3	12.0	IA PP	ML30
14.0		R5-1	EB	2866+00.00					14.0		Slip	1										1	24.0	IA PP	ML30
15.0		R5-1	EB	2866+00.00					14.0		Slip	1										3	12.0	IA PP	ML30
16.0		M3-4	WB	2862+00.00				15.0		15.0	Slip	2										1	24.0	IA PP	ML30
17.0		M1-4	WB	2862+00.00																		1	24.0	IA	ML30
18.0		R2-1	WB	2858+00.00				15.0		15.0	Slip	2										1	30.0	IA PP	ML30
19.0		R1-1	NB	12863+85.00				15.0		15.0	Slip	2										1	12.0	IA PP	Side Road
20.0		R6-1L	SB	12863+93.00				19.0		19.0	Concrete	2										3		IA PP	Install to Painted Island*
21.0		R6-1R	NB	12863+93.00																		3		IA	
22.0		R1-1	NB	12863+93.00																		3		IA	
23.0		R6-3	NB	12863+93.00																		3		IA	
24.0		R6-1R	SB	12864+55.00				16.0		16.0	Slip	2										1	12.0	IA PP	Median
25.0		R1-2	NB	12864+55.00																		1	12.0	IA	Median
26.0		R6-1L	NB	12865+50.00				14.0		14.0	Slip	2										1	18.0	IA PP	Side Road
27.0		R1-1	SB	12865+15.00				15.0		15.0	Slip	2										1	12.0	IA PP	Side Road
28.0		R6-1L	NB	12865+10.00				19.0		19.0	Concrete	2										3		IA PP	Install to Painted Island**
29.0		R6-1R	SB	12865+10.00																		3		IA	
30.0		R1-1	SB	12865+10.00																		3		IA	
31.0		R6-3	SB	12865+10.00																		3		IA	
32.0		R6-1R	NB	12864+50.00				16.0		16.0	Slip	2										1	12.0	IA PP	Median
33.0		R1-2	SB	12864+50.00																		1	12.0	IA	Median
34.0		R6-1L	SB	12863+50.00				14.0		14.0	Slip	2										1	18.0	IA PP	Side Road
Total:								**305**	**56**	**305**		**44**													

*Align assembly 2 ft to the right of left side of the painted island and 2 ft north of top line of the painted island

**Align assembly 2 ft to the right of left side of the painted island and 2 ft south of top line of the painted island

EXISTING SIGNS TO BE REMOVED

Line No.	Sign Number or Description	Location Station	Direction of Travel	Type 'A' Sign Assembly (RA) (EA)	Type 'B' Sign Assembly (RB) (EA)	Type 'A' Remove and Reinstall (RR) (EA)	Type 'B' Remove and Reinstall (RR) (EA)	Concrete Foundation (RF) (EA)	Support Structure & Foundation (RS) (EA)	Applicable Signing Notes	Remarks
1.0	Historic Downtown Left	2850+99.00	EB	1						RA	ML30
2.0	Crossroads	2853+51.00	EB	1						RA	ML30
3.0	Crossroads	2853+54.00	EB	1						RA	ML30
4.0	Destination Sign	2857+03.00	EB		1			2		RB RF	ML30
5.0	Wrong Way	2860+06.00	WB	1						RA	ML30
6.0	Wrong Way	2860+11.00	WB	1						RA	ML30
7.0	Durham Ave	2862+06.00	EB	1						RA	ML30
8.0	Do Not Enter	2863+14.00	WB	1						RA	ML30
9.0	Do not Enter	2863+19.00	WB	1						RA	ML30
10.0	East / US 30	2866+03.00	EB	1						RA	ML30
11.0	Speed Limit	2868+93.00	EB	1						RA	ML30
12.0	Mileage Sign	2875+43.00	EB		1			2		RB RF	ML30
13.0	Historic Downtown Right	2879+69.00	WB	1						RA	ML30
14.0	Crossroads	2876+19.00	WB	1						RA	ML30
15.0	Crossroads	2876+17.00	WB	1						RA	ML30
16.0	Destination Sign	2871+94.00	WB		1			2		RB RF	ML30
17.0	Wrong Way	2868+79.00	EB	1						RA	ML30
18.0	Wrong Way	2868+76.00	EB	1						RA	ML30
19.0	Durham Ave	2867+19.00	WB	1						RA	ML30
20.0	Do Not Enter	2865+32.00	EB	1						RA	ML30
21.0	Do Not Enter	2865+32.00	EB	1						RA	ML30
22.0	West / US 30	2862+34.00	WB	1						RA	ML30
23.0	Speed Limit	2859+98.00	WB	1						RA	ML30
24.0	Mileage Sign	2855+41.00	WB		1			2		RB RF	ML30
25.0	Stop Assembly	12863+60.00	NB	1						RA	Side Road
26.0	Yield Assembly	12864+49.00	NB	1						RA	Side Road
27.0	One Way	12865+31.00	NB	1						RA	Side Road
28.0	Yield Assembly	12866+41.00	NB	1						RA	Side Road
29.0	Stop	12865+34.00	SB	1						RA	Side Road
30.0	Stop Assembly	12865+18.00	SB	1						RA	Side Road
31.0	Yield Assembly	12864+55.00	SB	1						RA	Side Road
32.0	One Way	12863+65.00	SB	1						RA	Side Road
Total:				**28**	**4**			**8**			

190_66
9/29/23

SUMMARY OF TYPE 'A' SIGNS

Line No.	Sign Number	Non-Standard Sign Number or Name	Quantity (EA)	Size (IN)	Total Sign Area (SF)
1.0	M1-4		2	36 X 36	18.0
2.0	M3-2		1	30 X 18	3.8
3.0	M3-4		1	30 X 18	3.8
4.0	R1-1		4	48 X 48	64.0
5.0	R1-2		2	48 X 48 X 48	32.0
6.0	R2-1		2	48 X 60	40.0
7.0	R5-1		4	36 X 36	36.0
8.0	R5-1A		4	42 X 30	35.2
9.0		R6-1L	4	54 X 18	27.2
10.0		R6-1R	4	54 X 18	27.2
11.0	R6-3		2	36 X 30	15.0
12.0	W2-1		4	48 X 48	64.0
Total:					**366.2**

SIGNING NOTES

The following tolerances will be allowed on all signs:

Accumulation error of not greater than +/-0.50" per line of copy, not greater than +/-0.50" for spacing between lines of copy, and the margin between lines of copy and the inside edge of the sign border.

The following tolerances will be allowed on each letter or numeral:

nominal height	variation in height	variation in width
4" thru 12"	-1/8" to +3/8"	-1/4" to +1/4"
over 12"	-1/8" to +3/8"	-3/8" to +3/8"

Type B signs can be separated into two categories:
- Major Guide Signs.
- Minor Guide Signs.

Major Guide Signs include the advance and exit direction guide signs for an interchange or intersection.

Minor Guide Signs include all other guide signs such as NEXT EXIT signs, supplemental guide signs, logo signs, exit gore signs, post-interchange mileage signs, ramp destination signs, and ramp logo signs for an interchange, as well as destination signs along sideroads.

Type A signs are not separated into categories, but special consideration should be given to regulatory signs.

Do not remove Type B signs until replacement signs have been installed. If construction activities require the removal of a sign, the existing sign may be relocated to temporary posts, or a temporary plywood sign may be installed to replace the existing sign.

Existing non-regulatory Type A signs are NOT required to remain in place until installation of replacement signs. Existing regulatory Type A signs, particularly Stop signs, should not be removed until replacement signs are installed. Where a staged traffic control plan is contrary to this guidance, follow the direction of the traffic control plan.

Apply the following during the replacement or modification of signs:
- No more than one of the major guide signs for each direction of travel at an interchange out of service at any one time.
- No major guide sign out of service for more than 8 hours.
- No minor guide out of service for more than 24 hours.

Remove existing signs and posts within 24 hours following the installation of a new replacement sign.

In any case where the plans call for a new sign and posts to be installed at the same station location and offset as an existing sign, install the new posts at a minimum of either 5 ft ahead or behind the existing sign installation. Signs shall not be installed more than 25 ft ahead or behind the existing sign installation. Whenever posts for a replacement sign are erected directly in front of an existing sign, install the new replacement sign and remove the existing sign installation within 24 hours of the time that the new posts are erected.

Where signs are located behind guardrail, locate the near edge of the sign a minimum of 3 ft behind the guardrail posts.

Unless noted otherwise, leave auxiliary panels, such as exit number panels, in place or reattach to the sign using the existing mounting hardware. Also, when replacing an existing logo sign with a new logo sign, remove the business logo panel(s) from the existing sign and attach to the new sign as directed by the Engineer. Do not damage the auxiliary or logo panels when removing and reattaching them. This work is incidental to other work and no separate payment will be made.

The following notes apply to the corresponding sign installations shown on the plan sheets and listed in the tabulations.

IB INSTALL NEW TYPE B SIGN
IA INSTALL NEW TYPE A SIGN

Install new signs at the location identified in the plans.

For installation of new signs on an existing sign support structure, refer to note (L).

For installation of new signs on existing posts:

- if the new sign is taller than the existing sign, furnish the necessary hardware to extend the sign above the posts.
  Refer to Standard Road Plan SI-132.

- if the new sign is shorter than the existing sign:

- for wood posts and perforated square tube posts, install the sign at the proper height and cut off the excess post length.

- for MASSH-400 and steel breakaway posts, install the sign at the top of the posts.

For plywood signs, no vertical splices are allowed in signs less than or equal to 10 ft wide. No horizontal splices are allowed in signs less than or equal to 4 ft tall.

Each new sign installed shall have a sticker applied to the back of the sign that shows the date the sign was installed. The Contractor shall supply the sticker for all contractor suppled signs. The DOT will supply date stickers on any signs supplied by the department.

Payment for installing Type A signs or Type B signs includes furnishing hardware for mounting, extending signs above existing posts, and cutting posts to length.

MS MODIFICATION OF EXISTING SIGNS

For removal and/or installation of logo panels, and other sign modifications.
Refer to the project plans and typical details for additional information.

SC SIGN COVER
For the installation or removal of temporary sign covers for the purposes of temporary traffic control. Sign covers shall completely cover the existing Sign. Care should be taken so that covers, fasteners, and installation practices do not damage the existing sign. Tape of any type shall not be applied to the sheeted face of the existing sign under any circumstances. Repair of damage to the existing sign caused by sign covers will be the responsibility of the Contractor.

SO OVERLAY TYPE B GUIDE SIGNS

MB INSTALL SPECIAL MOUNTING BRACKET

Install special mounting brackets at the locations identified in the plans. Refer to Tabulations 190-51 and/or 190-65.

PB INSTALL NEW BREAKAWAY STEEL POSTS AND FOOTING
PP INSTALL NEW PERFORATED SQUARE TUBE POSTS AND ANCHORS
PM INSTALL NEW MASSH-400 POSTS AND ANCHORS

Install new breakaway steel posts and footings, perforated square tube posts and anchors, or MASSH-400 posts and anchors at the locations identified in the plans. Refer to the Standard Road Plans, Typicals, and Tabulations 190-51 and 190-50 for post size and footing information.

New posts shall be installed in undisturbed soil. The new posts shall not be placed in the hole of removed posts.

Remove excess soil from footing hole. Do not spread soil on adjacent seeded or vegetated areas.

If note (RR) accompanies (PB), (PP), or (PM), install an existing sign on the new posts.

RR REMOVE AND REINSTALL SIGN AS PER PLAN

Do not remove existing major Type B guide signs on posts until the new posts are installed. Promptly remove sign and install at the new location.

Existing major Type B guide signs on overhead support structures, minor Type B guide signs, plywood signs, and Type A signs may be removed and stored. Transport the signs to a DOT storage area as designated by the Engineer. Transport the signs back to the job site when ready for installation at the new location.

Signs to be reinstalled shall not be stored for any length of time with the sheeted face in contact with the ground.

Replace signs damaged by the Contractor's activities at no additional cost to the Contracting Authority.

Payment for Remove and Reinstall Sign includes sign removal, delivery to and from the DOT storage area (if applicable), and reinstallation, including any hardware required for reinstallation. When noted in the plans, payment for delivery and stockpile of existing signs will be separate from the payment for Remove and Reinstall Sign.

RA REMOVAL OF TYPE A SIGN ASSEMBLY
RB REMOVAL OF TYPE B SIGN ASSEMBLY

Type A Sign Assembly consists of one or more signs installed on one or more posts, either directly mounted to the post or mounted to the post with special sign mounting brackets.

Type B Sign Assembly consists of the main sign, all auxiliary signs and brackets, and posts.

Unless stated otherwise in the plans, remove all posts with the signs and brackets.

Remove each sign assembly identified in the plans. Sign posts removed become the property of the Contractor. All other materials removed remain the property of the DOT.

For each sign assembly removed, disassemble each assembly before delivering to the DOT.

* For Type A sign assemblies, unbolt all signs, special mounting brackets, and posts from each other.
* For Type B assemblies, unbolt all extruded aluminum panels, brackets, and posts from each other. Do not damage the disassembled materials.

When the plans call for the removal of posts, the entire existing post shall be removed. The post shall not be broken off or cut off at the ground line. Place backfill in holes remaining from the removal of posts and restore to the surrounding conditions.

SIGNING NOTES

Deliver the removed signs, special sign mounting brackets, and extruded aluminum panels to a DOT storage area, as designated by the Engineer.

The concrete footings for steel posts are not considered part of the sign assembly. Refer to note RF for concrete footing removal.

Payment for Removal of Type A Sign Assembly or Removal of Type B Sign Assembly includes sign assembly removal and disassembly, post removal (if applicable), delivery to the DOT storage area, placing backfill in holes, and restoration of the surrounding conditions.

RF REMOVE EXISTING CONCRETE FOOTING FOR STEEL POST

Remove existing concrete footings to a depth of at least 1 ft below the natural groundline. Place backfill in holes remaining from removal and restore to the normal surrounding conditions. This work is incidental to other work and no separate payment will be made.

RS REMOVE EXISTING TYPE B SIGN SUPPORT STRUCTURE

The following are considered Type B Sign Support Structures:

- Overhead sign trusses and foundations
- Cantilever sign trusses and foundations
- Bridge-mounted brackets

Unless stated otherwise in the plans, existing overhead trusses, cantilever trusses, and bridge brackets which are removed become the property of the Contractor. If stated in the plans, deliver overhead trusses, cantilever trusses, and bridge brackets to a DOT storage area, as designated by the Engineer.

Payment for Removal of Sign Support Structure and Foundation includes sign support structure removal, delivery to the DOT storage area (if applicable), and restoration of the surrounding conditions. Removal of the foundation includes removal of the stem to a minimum of 1 ft below the natural groundline.

L MODIFY SIGN SUPPORT ANGLES NEEDED TO INSTALL SIGNS ON EXISTING SIGN SUPPORT STRUCTURES

Refer to the sign support structure details for information on the required angle brackets.

Provided all specifications are met, the existing sign support angles may be reused. Install existing sign support angles to be reused only on the sign support structure from which they were removed.

Sign support angles removed and not reused become the property of the Contractor.

259_01
9/28/22

SIGNING NOTES

When reusing the existing sign support angles with a shorter replacement sign, the sign support angles may need to be trimmed. Refer to the sign support details to determine if and where to trim the sign support angles.

Do not use existing fasteners. Use new U-Bolts, stainless steel bolts and nuts to install the existing or new sign support angles to the sign support structure.

Removal of existing sign support angles is incidental to removal of the sign.

Reinstalling and/or modifying existing sign support angles; furnishing and installing new sign support angles (if required); and furnishing and installing new fasteners is incidental to work associated with Type B signs.

SIGN INSTALLATION QUALITY CONTROL NOTES

Post lengths have been derived from the proposed grading cross sections. Verify post lengths in the field prior to ordering or fabrication.

Slight differences between the design template and the actual conditions should be expected. These variations should be resolved by doing some localized shaping and grading. Obtain material needed to meet the site requirements of SI-112 from the excavation and/or the area immediately adjacent to the work. Ensure reshaping work does not substantially change foreslopes or the drainage in the vicinity of the sign.

Significant differences between the plan design and the actual field conditions shall be resolved in this manner:

Survey the location and draw the actual template on the cross section. Recalculate each post length and compare to the maximum allowable leg length. If all of the maximum leg lengths are less than or equal to the maximum allowable leg length, then the proposed post design will be sufficient. If any leg is greater than the maximum allowable leg length, then submit the cross section with the actual template drawn (including offsets and elevation from the survey shown) to the Engineer. The Engineer may forward this information to the Engineer of Record in order to complete a new post design.

Install the footings, stub posts, and posts according to the tolerances shown on the applicable SI Series Standard Road Plans.

Footing construction is the controlling activity that substantially affects the quality of the site installation. Verify the elevation difference between the stubs is exactly the same as the elevation difference between the post lengths. If the Engineer requests, submit documentation detailing the site cross section in order to verify site installation.

2840+00
2845+00
2850+00
2855+00
2860+00
2865+00
2870+00
12865+00
12870+00
240th St
30
U.A.C.
Mile Marker 172
STA. 2848+23(SURMLA030)
REMOVE
Crossroads
PSST
STA. 2853+51(SURMLA030)
REMOVE
Mileage Sign
Steel Breakaway Posts
STA. 2855+41(SURMLA030)
REMOVE
Speed Limit 65
Wood Posts
STA. 2859+98(SURMLA030)
REMOVE
Do Not Enter
PSST
STA. 2863+19(SURMLA030)
REMOVE
West/US 30
PSST
STA. 2862+34(SURMLA030)
REMOVE
Yield Assembly
Wood Post
STA. 12864+55(GEO_SR_Durham_3rdAve)
REMOVE
Stop Assembly
Steel Post
STA. 12865+18(GEO_SR_Durham_3rdAve)
REMOVE
Stop
Steel Post
STA. 12865+34(GEO_SR_Durham_3rdAve)
REMOVE
Yield/Do Not Enter
PSST
STA. 12866+41(GEO_SR_Durham_3rdAve)
REMOVE
One Way
Wood Post
STA. 12865+31(GEO_SR_Durham_3rdAve)
REMOVE
Do Not Enter
Wood Posts
STA. 2865+32(SURMLA030)
REMOVE
Durham Ave
Wood Posts
STA. 2867+19(SURMLA030)
U.A.C.
Mile Marker 172
STA. 2848+22(SURMLA030)
REMOVE
Historic Downtown Left
PSST
STA. 2850+99(SURMLA030)
REMOVE
Crossroads
PSST
STA. 2853+54(SURMLA030)
REMOVE
Destination Sign
Breakaway Posts
STA. 2857+03(SURMLA030)
REMOVE
One Way
PSST
STA. 2860+11(SURMLA030)
REMOVE
Wrong Way
PSST
STA. 2860+96(SURMLA030)
REMOVE
Durham Ave
Wood Posts
STA. 2862+06(SURMLA030)
REMOVE
Do Not Enter
Wood Post
STA. 2863+14(SURMLA030)
REMOVE
One Way
Wood Post
STA. 12863+64(GEO_SR_Durham_3rdAve)
REMOVE
Yield/One Way
PSST
STA. 12864+49(GEO_SR_Durham_3rdAve)
REMOVE
Stop Assembly
Wood Posts
STA. 12863+60(GEO_SR_Durham_3rdAve)
REMOVE
East/US 30
Wood Post
STA. 2866+03(SURMLA030)
REMOVE
Do Not Enter
PSST
STA. 2865+32(SURMLA030)
0
100
FEET
REMOVALS
US 30

FILE NO. -	ENGLISH	DESIGN TEAM Hermann\Stokes	MARSHALL COUNTY	PROJECT NUMBER HSIPX-030-5(328)--3L-64	SHEET NUMBER N.16	

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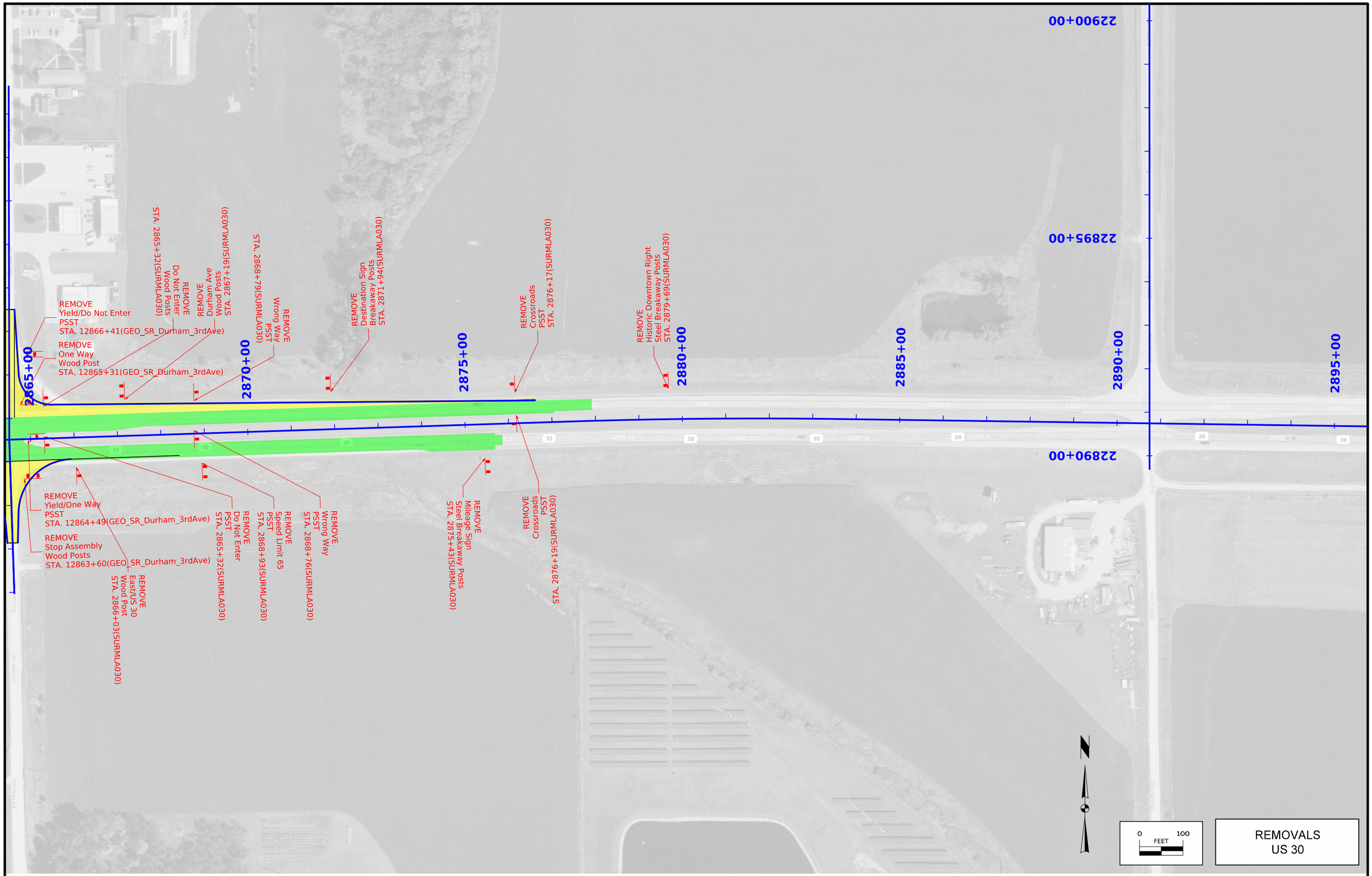

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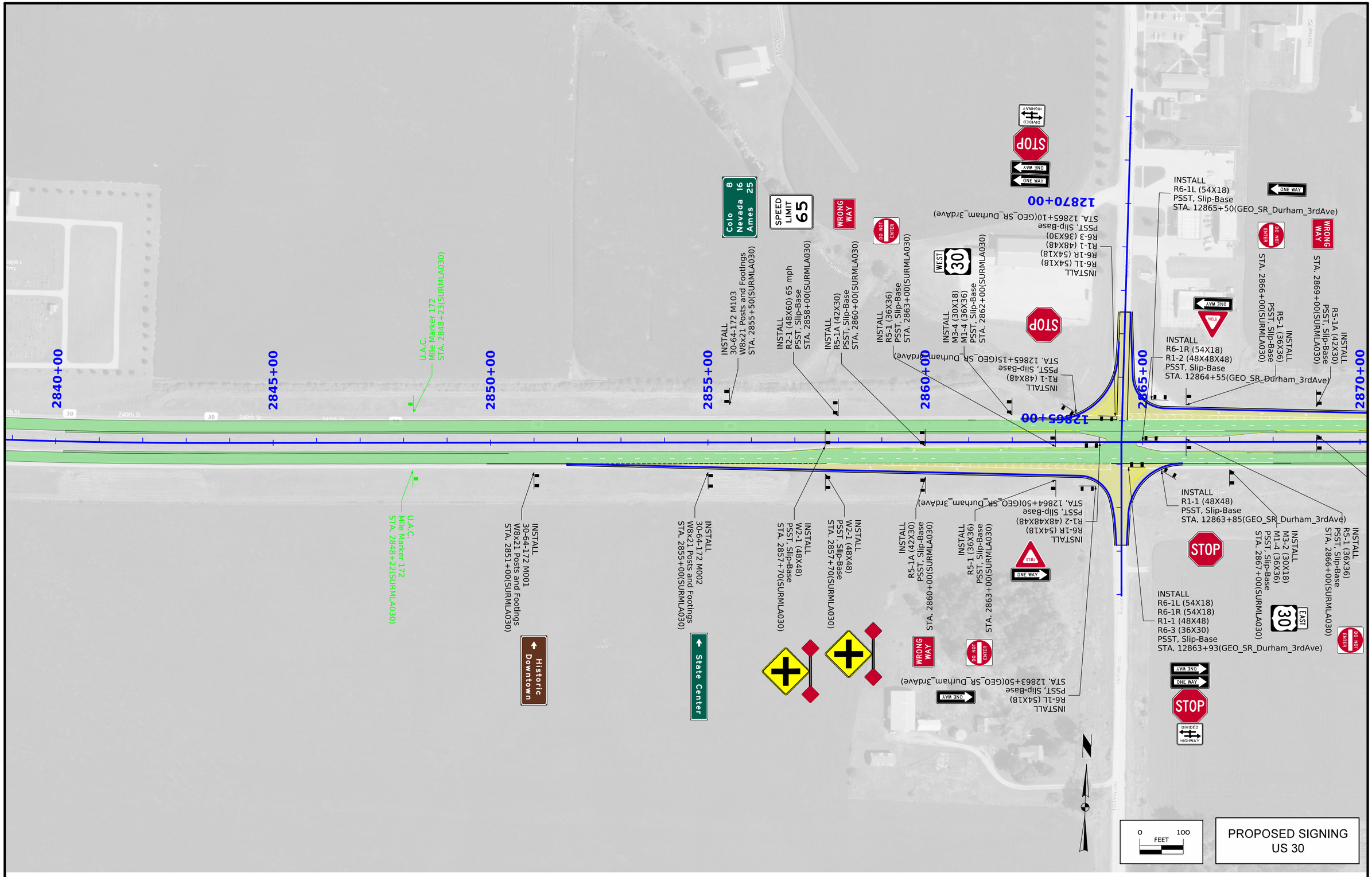

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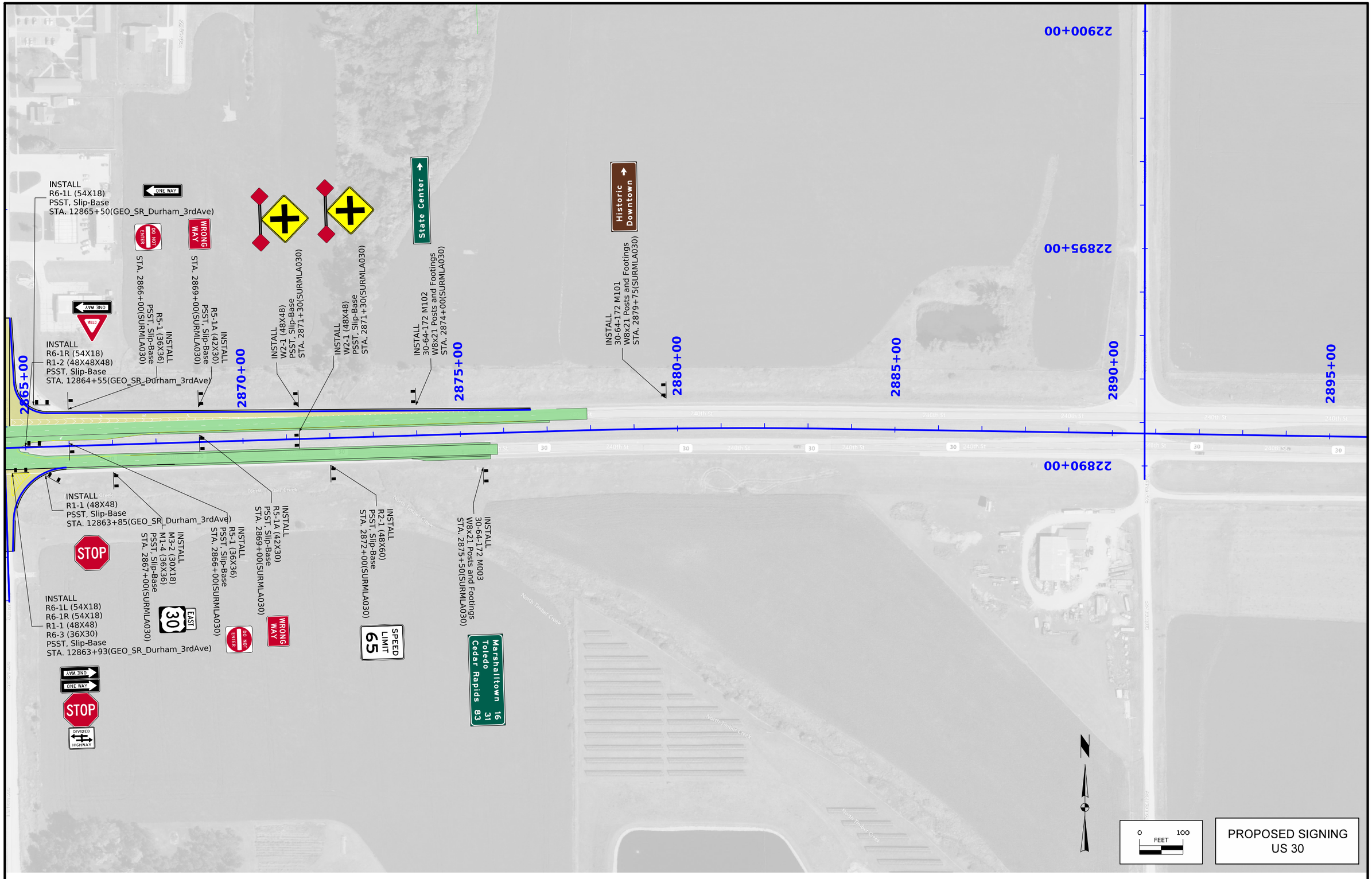

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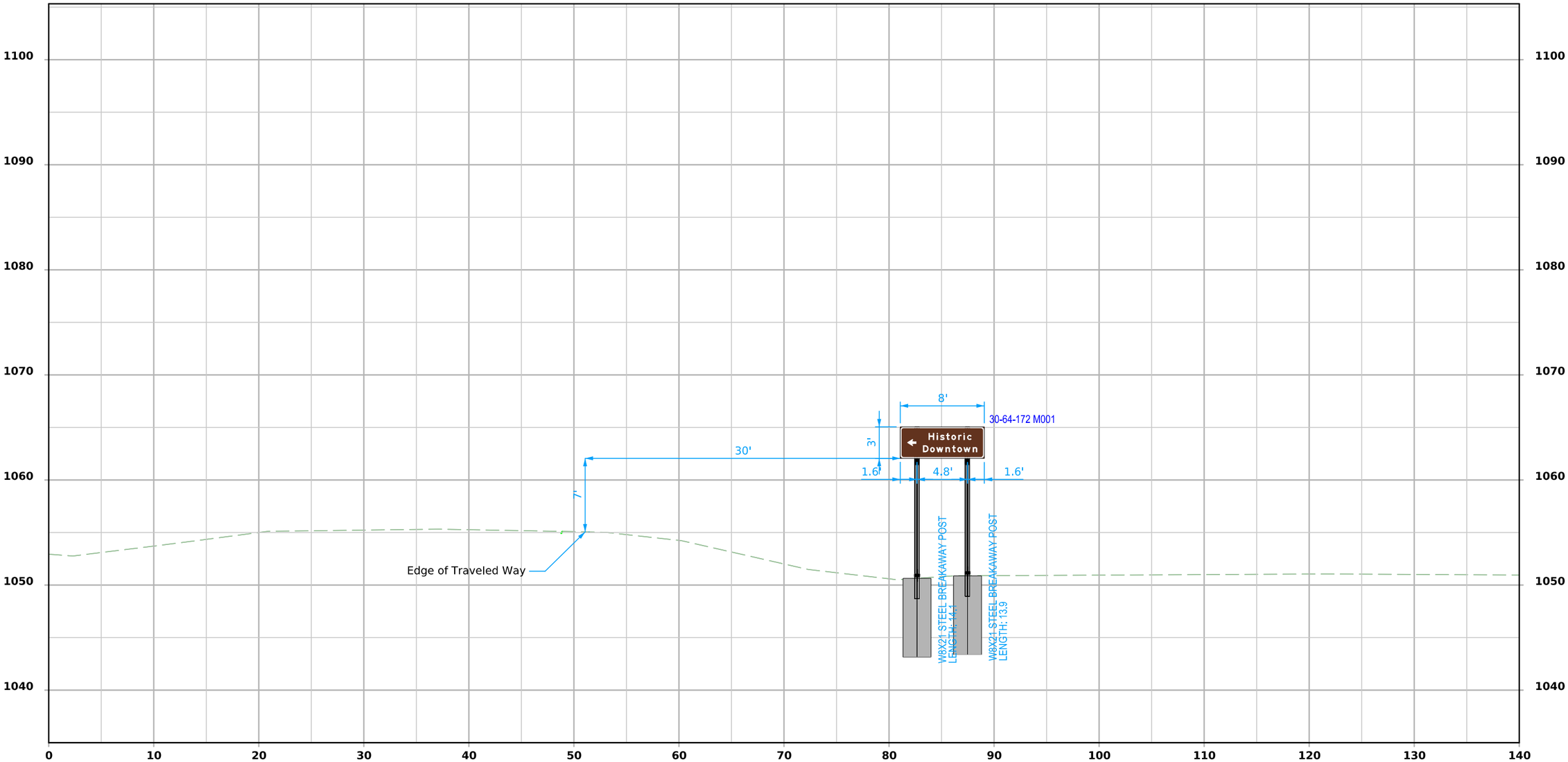

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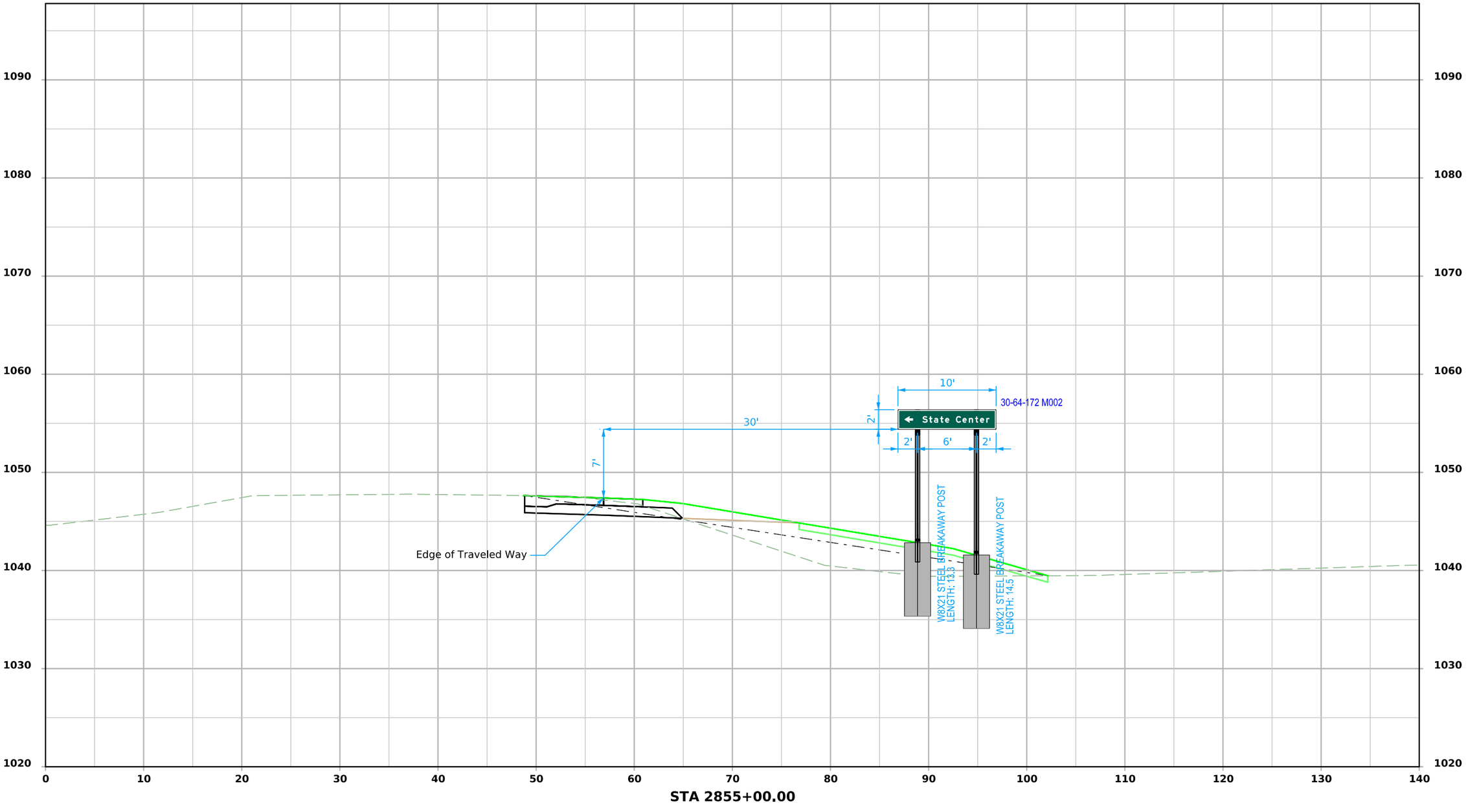

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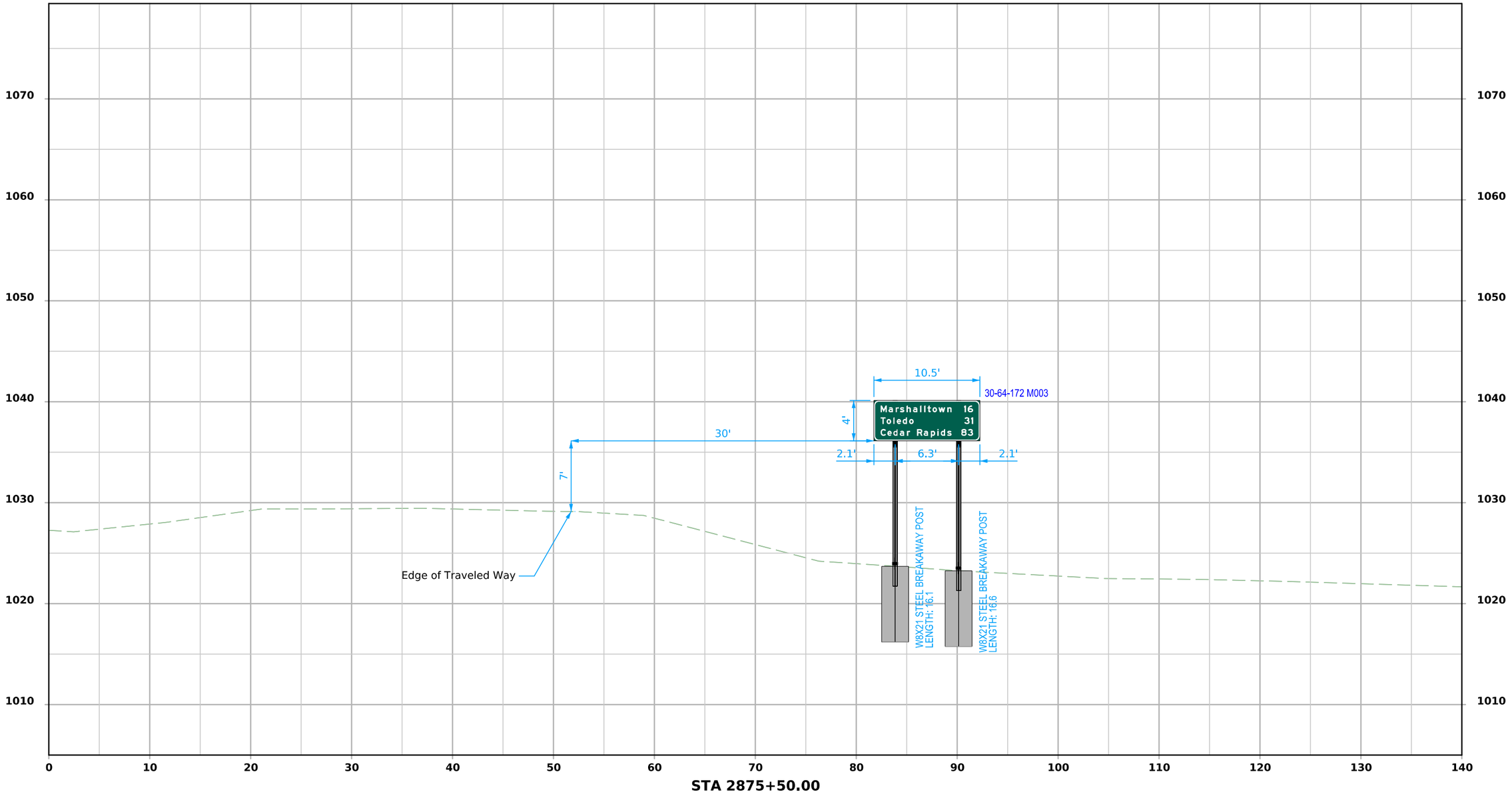

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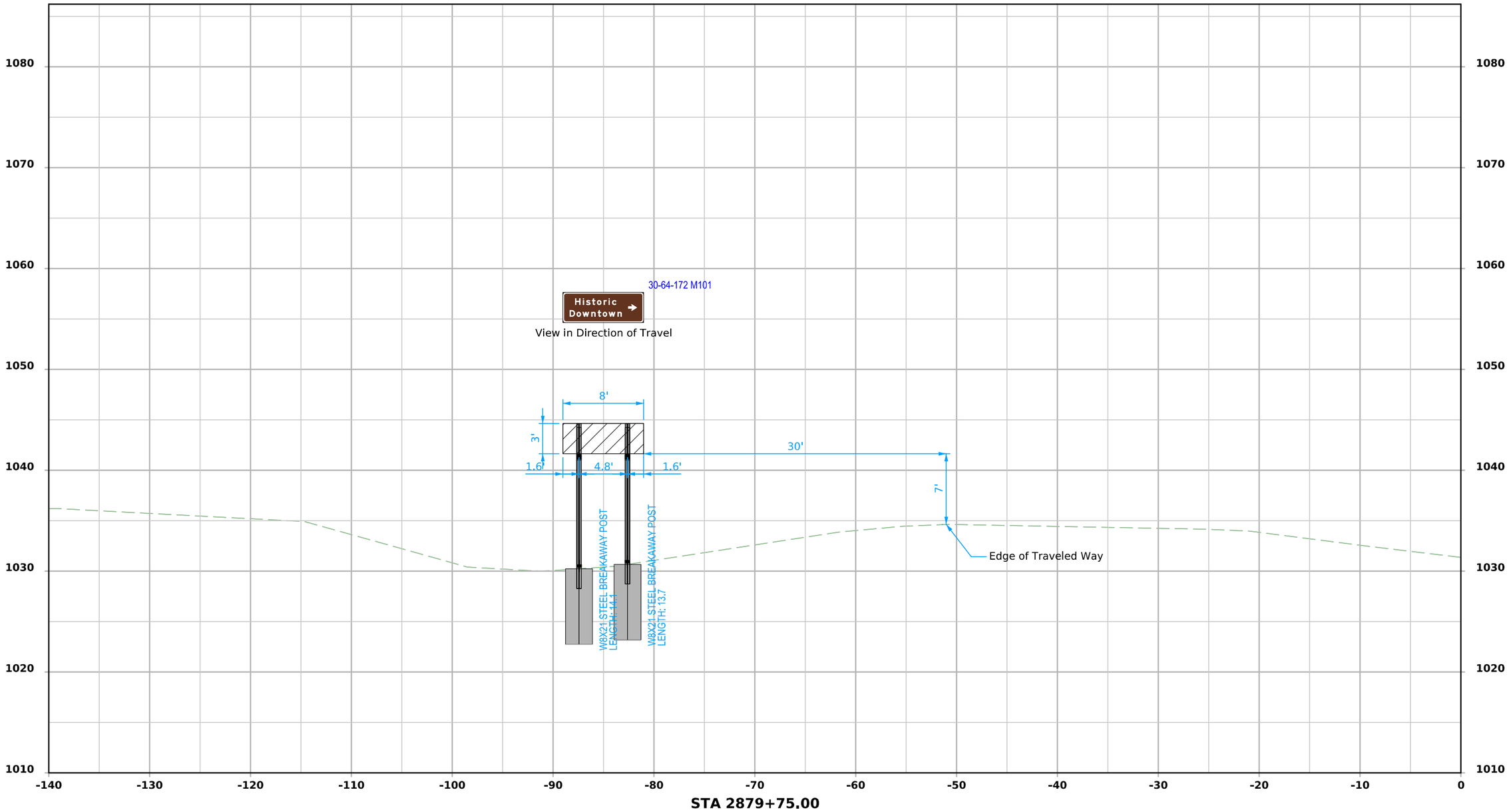

STA 2879+75.00

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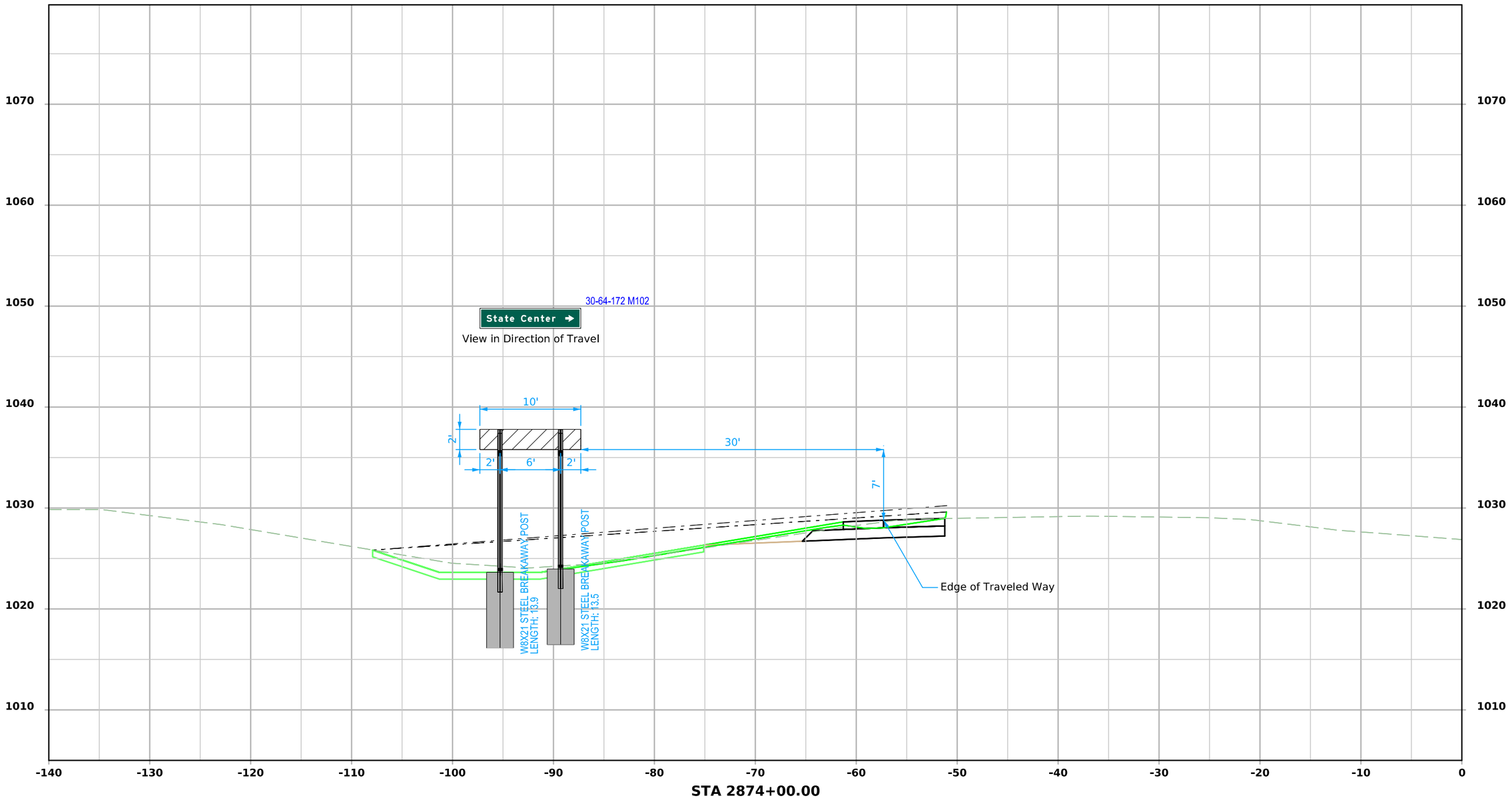

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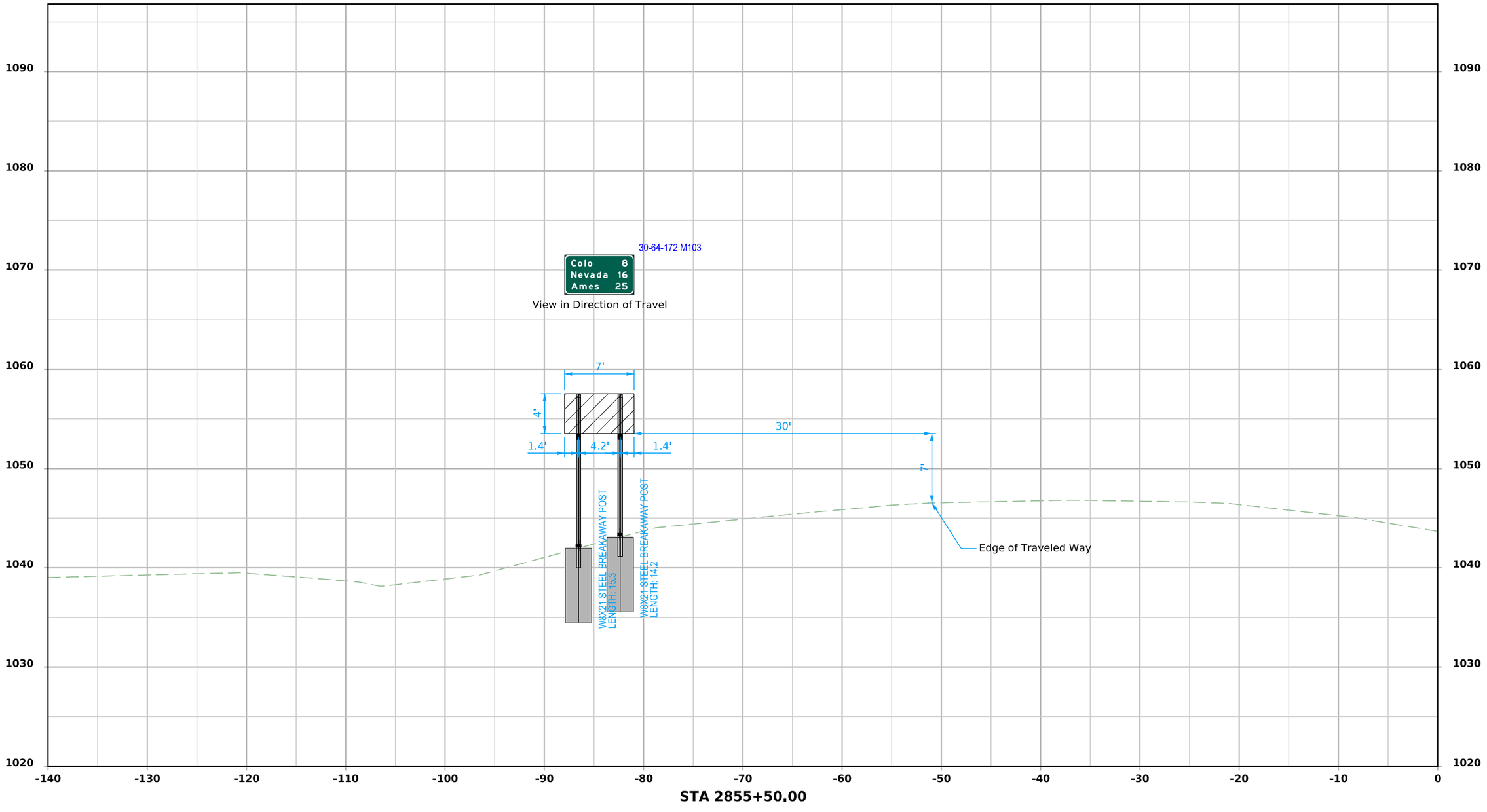

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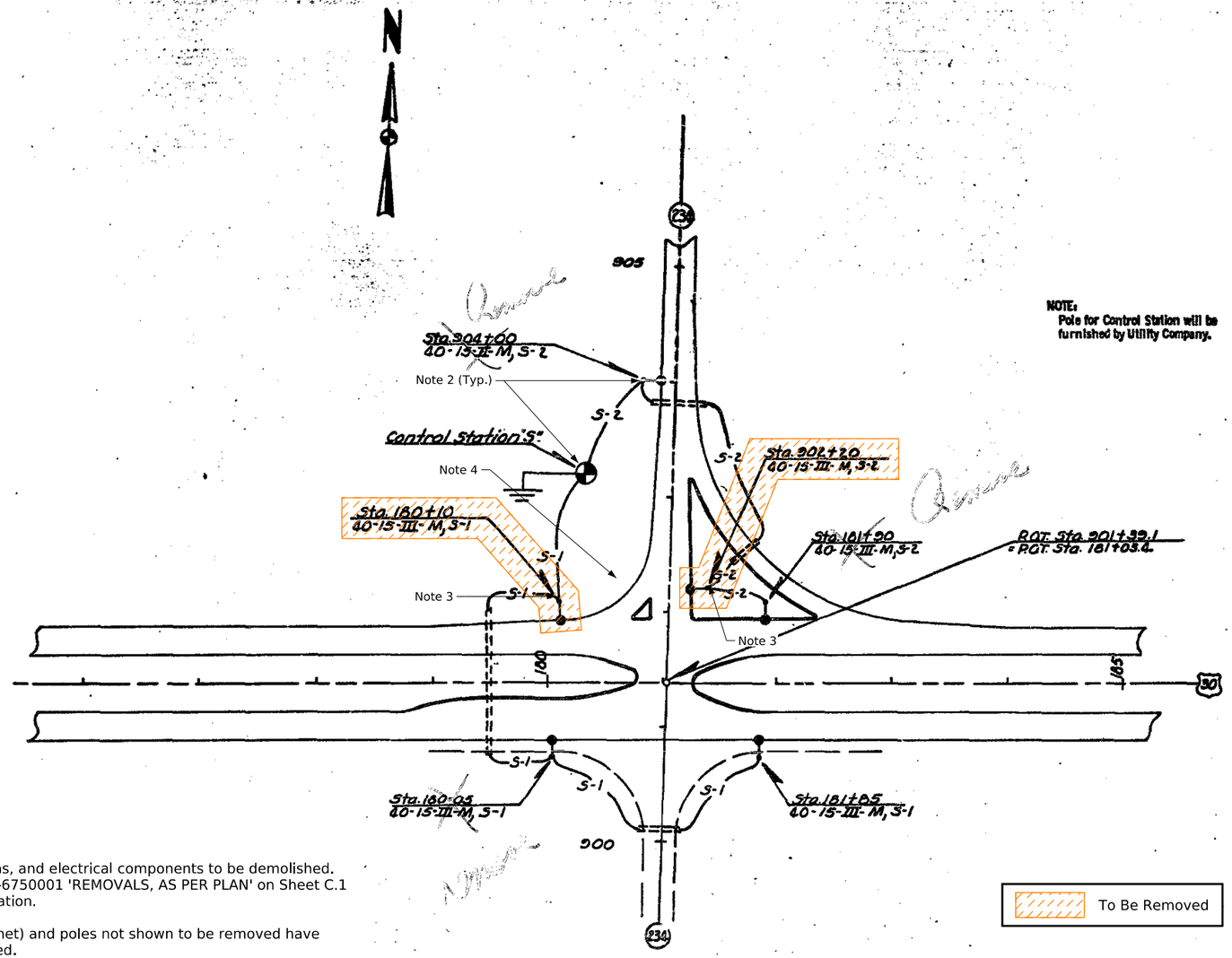


NOTE:
Pole for Control Station will be furnished by Utility Company.

Revised 6/8/79
to Gen. Agreement
74-0,4-047

Notes:

1. For poles, foundations, and electrical components to be demolished. See Item Code 2401-6750001 'REMOVALS, AS PER PLAN' on Sheet C.1 for additional information.
2. Control station (cabinet) and poles not shown to be removed have already been removed.
3. Pole shown to be removed at station 180+10 is maintained by State Center Municipal Utilities (SCMU) and has three cameras operated by State Center Police Department (SCPD). Pole shown to be removed at station 902+20 is maintained by SCMU and has four cameras operated by SCPD. Coordinate with utility for disconnection of power and with SCPD for them to remove their cameras before pole is removed.
4. Pole (not shown) was installed in 2025 when the advanced warning system was installed and contains 2 cameras operated by the IDOT.

To Be Removed

Electrical Design

LICENSED PROFESSIONAL ENGINEER
Lane E. Ingram
P17368
IOWA

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

Signature — Date: 04/03/2026
Lane E. Ingram
Printed or Typed Name

My license renewal date is December 31, 2026

Pages or sheets covered by this seal: P.1–P.7

HIGHWAY LIGHTING LAYOUT
INTERSECTION OF
U. S. NO. 30 AND IA. NO. 234

Lighting Removals

ET-1

FILE NO. 89

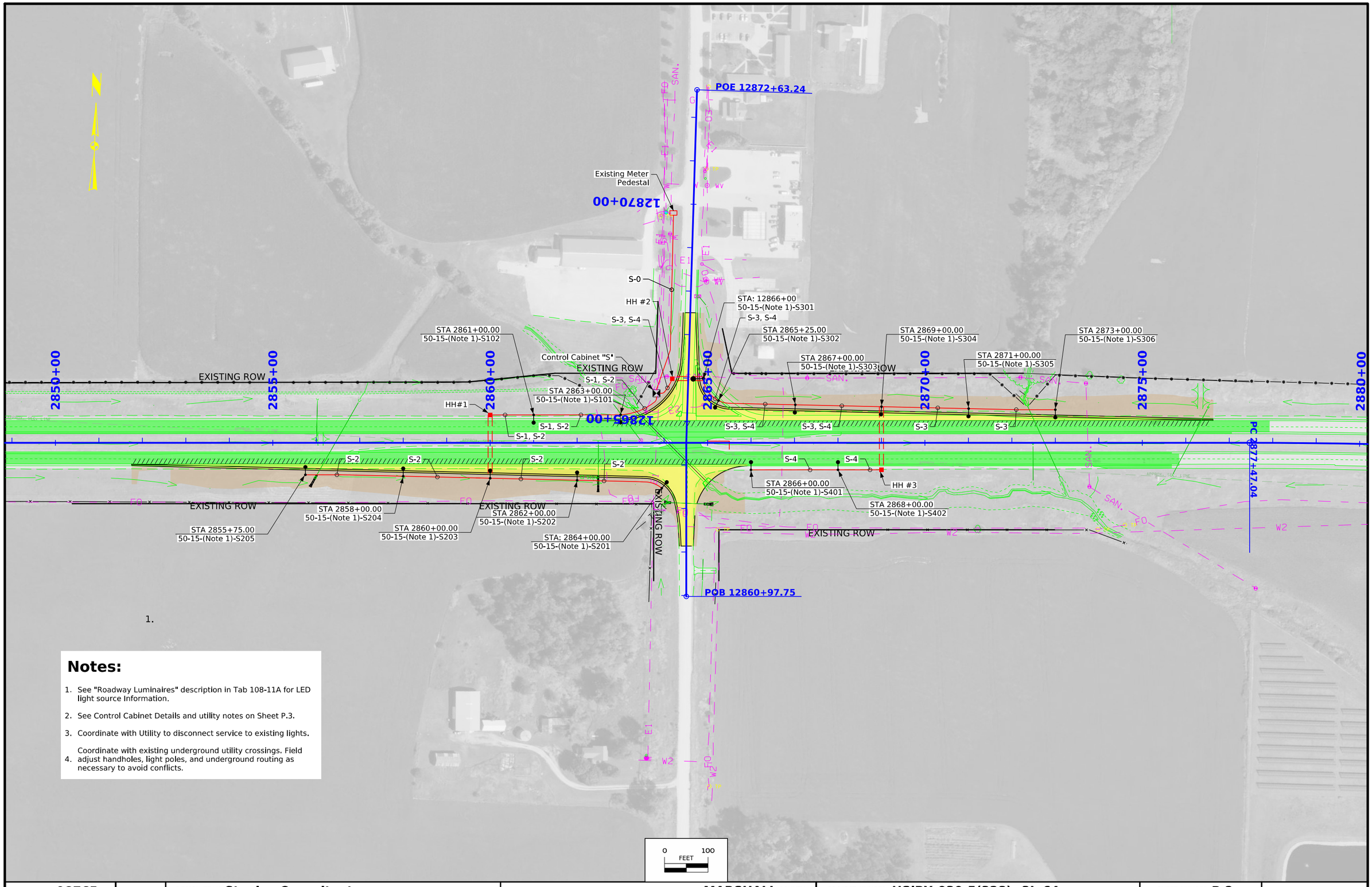
Marshall COUNTY

PROJECT NUMBER	STATE	FED. ROAD DIST. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
F1.-30-5(6)--21-64	IOWA	8		5	20

Note: Drawing is included from old plan set and may not be accurate.

FILE NO. 98765	ENGLISH	DESIGN TEAM Stanley Consultants	MARSHALL COUNTY	PROJECT NUMBER HSIPX-030-5(328)--3L-64	SHEET NUMBER P.1

13:21:34 04/03/2026 10313 pw:\\projectwise.dot.int.lan:PWMain\Documents\Projects\6403002025\TrafficAndSafety_Stanley_Lighting\CADD Files\SHT_640305328_P01.dgn



1.

Notes:

1. See "Roadway Luminaires" description in Tab 108-11A for LED light source Information.
2. See Control Cabinet Details and utility notes on Sheet P.3.
3. Coordinate with Utility to disconnect service to existing lights.
4. Coordinate with existing underground utility crossings. Field adjust handholes, light poles, and underground routing as necessary to avoid conflicts.

FILE NO. 98765	ENGLISH	DESIGN TEAM Stanley Consultants	MARSHALL COUNTY	PROJECT NUMBER HSIPX-030-5(328)--3L-64	SHEET NUMBER P.2

13:21:56 04/03/2026 10313 pw:\\projectwise.dot.int.lan:PWMain\Documents\Projects\6403002025\TrafficAndSafety_Stanley_Lighting\CADD Files\SHT_640305328_P01.dgn

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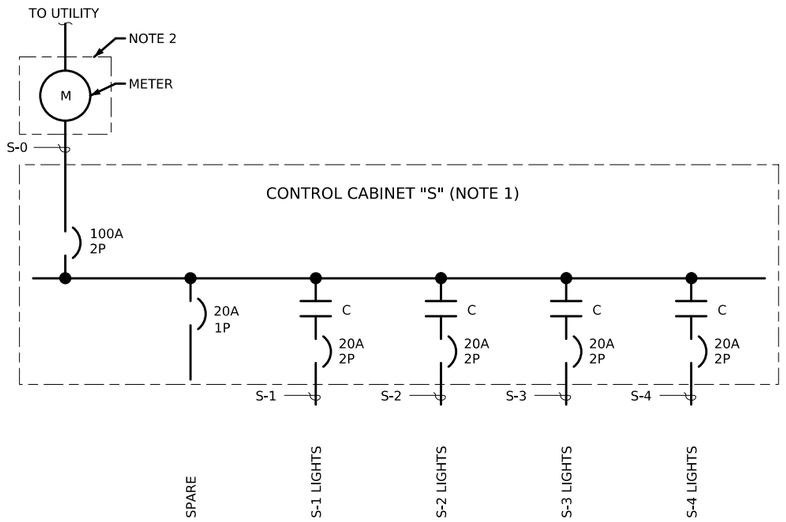

CABINET "S" ONE-LINE DIAGRAM

NOTE:

1. Pad-mounted Control Cabinet to be based on LI-152 with photocell, contactor, and as shown on drawings. Coordinate final location of control cabinet with Utility and Engineer.

2. Meter pedestal is existing. See Sheet P.2 for location.

ESTIMATED PROJECT QUANTITIES AND REFERENCE NOTES

Lighting : Division 1
Delivery and Stockpile : Division 2

Item no.	Item Code	Item	Unit	Quantities			Estimate Reference Notes
				Estimated			
				Lighting	Delivery and Stockpile	Total	
1	2401-6745359	REMOVAL OF CONCRETE FOUNDATIONS OF LIGHT POLES	EACH	2		2	Remove concrete foundations of poles to be removed to 2 foot below new finished grade and backfill with dirt at locations shown on P.1. Disposal of construction material wastes shall comply with applicable state and local waste disposal regulations. In the event of a conflict with other governmental laws, rules and regulations, the more restrictive laws, rules or regulations shall apply. METHOD OF MEASUREMENT: The engineer will count the number of concrete foundations removed. BASIS OF PAYMENT: The contractor will be paid the contract unit price for each concrete foundation removed. This payment shall be considered full compensation for furnishing all labor, equipment and materials required for removing existing foundations as specified.
2	2401-6745765	REMOVAL OF LIGHT POLES	EACH	2		2	Remove existing light poles, mast-arms, luminaires, associated hardware, and other existing parts as applicable to this project. Light poles, bases, mast-arms, and luminaires are to be salvaged and delivered to the State Center Municipal Utilities per Item 2555-0000010 'DELIVER AND STOCKPILE SALVAGED MATERIALS' and Tab 110- 13. Coordinate with State Center Police Department (SCPD) for them to remove their cameras before poles are removed. Point of contact for SCPD is Chief Jon Thomas, jthomas@statecenterpolice.org, (515) 612-4121. All other miscellaneously removed materials shall be disposed of in compliance with the applicable state and local waste disposal regulations. in the event of a conflict with other governmental laws, rules and regulations, the more restrictive laws, rules or regulations shall apply. METHOD OF MEASUREMENT: The engineer will verify that all materials have been removed. BASIS OF PAYMENT: The contractor will be paid the contract unit price for removal. This payment shall be considered full compensation for furnishing all labor and equipment to remove the materials, as specified.
3	2401-6750001	REMOVALS, AS PER PLAN	LS	1		1	Remove existing handholes, cables, conduit (where exposed), and other existing parts as applicable to this project. All removed materials shall be disposed of in compliance with the applicable state and local waste disposal regulations. In the event of a conflict with other governmental laws, rules and regulations, the more restrictive laws, rules or regulations shall apply. METHOD OF MEASUREMENT: The Engineer will verify that all materials have been removed. BASIS OF PAYMENT: The Contractor will be paid the contract unit price for removal. This payment shall be considered full compensation for furnishing all labor and equipment to remove the materials, as specified.
4	2523-0000100	LIGHTING POLES	EACH	15		15	Provide and install Lighting Poles as per Standard Road Plans, Standard Specifications, and as detailed on the P-Sheets. Refer to Tab 108-11A, Highway Lighting Data, for additional information regarding light poles and luminaires. NOTE: Two poles have two mast arms and two LED heads.
5	2523-0000200	ELECTRICAL CIRCUITS	LF	3,249		3,249	Bid to include 600-volt fuses at 3 amperes for luminaire supply (L-1 connectors) and 10 amperes for tap circuit protection (Y-1 connectors) located in the junction boxes or handholes. Included are (22) type Y-1 connectors, (2) type Y-3 connectors, (10) type L-1 connectors, and (18) type L-2 connectors. L-2 connectors in circuits with conductor sizes that do not fit standard connector to be split bolt connectors with waterproof covering. Electrical circuit length is calculated from plan dimensions as the linear, one- way length of both new and existing embedded conduits. No allowance has been added to this quantity. Allowances have been added to all wire and cable quantities listed in Tab 108-12.
6	2523-0000310	HANDHOLES AND JUNCTION BOXES	EACH	3		3	All handholes shall be Standard Road Plan LI-103, Type I.

Item no.	Item Code	Item	Unit	Quantities			Estimate Reference Notes
				Estimated			
				Lighting	Delivery and Stockpile	Total	
7	2523-0000400	CONTROL CABINET	EACH	1		1	Each control cabinet shall be constructed per Standard Road Plan LI-152, Standard Specifications for pad-mounted control cabinets, and modified as shown on drawings. Also refer to the P Sheets for additional information. Method of measurement will be by count of each control cabinet installed. Payment is full compensation for furnishing all labor, equipment, and materials required to install and commission each control cabinet including concrete equipment pad.
8	2555-0000010	DELIVER AND STOCKPILE SALVAGED MATERIALS	LS		1	1	Refer to Tab. 110-13 and Item 2401-6745765 'Removal of Light Poles'. Existing bases, light poles, mast-arms, luminaires to be salvaged and delivered to the State Center Municipal Utilities Building located at 105 9th Ave NW, State Center, IA 50247. Point of contact is City of State Center; Electric Superintendent: Jesse Toyne scmu@partnercom.net; (641) 485-5993. NOTE: Take care not to damage LED heads. METHOD OF MEASUREMENT: The Engineer will verify that all light poles, mast-arms, luminaires have been delivered and stockpiled. BASIS OF PAYMENT: The Contractor will be paid the contract unit price for delivery and stockpiling. This payment shall be considered full compensation for furnishing all labor and equipment to deliver and stockpile the materials, as specified. NOTE: Coordinate with State Center Police Department for them to remove their cameras before removing poles.
9	2599-9999010	('LUMP SUM' ITEM) REFURBISH AND INSPECT METER PEDESTAL	LS	1		1	Existing IOWA DOT Meter Pedestal. Contractor shall be responsible for adding a new 100A, 2P circuit breaker to the existing meter pedestal. Remove accumulated dirt, debris, and insects, report any damaged equipment to the Engineer, and return the meter pedestal to service. METHOD OF MEASUREMENT: The Engineer will count the number of meter pedestal returned to service. BASIS OF PAYMENT: The contractor will be paid the contract unit price for each meter pedestal returned to service. This payment shall be considered full compensation for furnishing all labor, equipment, and materials required to clean and inspect each control cabinet as specified and return the meter pedestal to service.

108_11A
8/15/22

HIGHWAY LIGHTING DATA

ELECTRICAL SERVICE:

State Center Municipal Utilities provides secondary service (120/240 volts, single phase) for the existing service at US30and Durham Ave Intersection. It shall be the contractor's responsibility to make the necessary contacts with the utility company regarding the electrical service.

Contact information is:

City of State Center; Electric Superintendent: Jesse Toyne scmu@partnercom.net; (641) 485-5993

ROADWAY LUMINAIRES:

Contractor shall be responsible for supplying and installing light emitting diode (LED) luminaires as described. LED luminaires shall be Cooper Lighting (Archeon Contemporary Size 3 'ARCH3-120-740-U-T2R-AP-10K-PR'), American Electric Lighting (Autobahn 'ATB0 P305 R2 MVOLT 4K'), or Lumec (Roadfocus 'RFM-150W60LED-4K-G2-R2M-UNV-GY3'). All luminaires shall be provided with 7-pin photocontrol receptacle and shorting cap (not currently listed in order numbers).

No substitutes will be allowed.

105_04
4/21/26

STANDARDS

The following Standards apply to construction work on this project.

Number	Date	Title
LI-101	10/21/2014	Light Pole Location
LI-103	10/21/2025	Conduit and Precast Handholes
LI-141	10/21/2014	Electrical Installation (Roadway Ducts)
LI-142	4/21/2015	Electrical Installation (Bases)
LI-152	10/21/2014	Control Cabinet (Pad-Mounted)
LI-201	4/18/2017	Light Pole Foundation
LI-210	10/21/2014	Transformer Base (Cast Aluminum)
TC-1	10/15/2019	Work Not Affecting Traffic (Two-Lane or Multi-Lane)
TC-202	4/18/2023	Work Within 15 ft of Traveled Way
TC-213	4/18/2023	Lane Closure with Flaggers
TC-402	4/18/2023	Work Within 15 ft of Traveled Way
TC-418	4/18/2023	Lane Closure on Divided Highway

108_12
8/15/22

WIRE, CABLE AND CONNECTORS

Line No.	Circuit Number	Connector Type	Quantity (EA)	Connector Type	Quantity (EA)	Connector Type	Quantity (EA)	Connector Type	Quantity (EA)	Phase Line Size (AWG)	Quantity (LF)	Phase Line Size (AWG)	Quantity (LF)	Phase Line Size (AWG)	Quantity (LF)	Phase Line Size (AWG)	Quantity (LF)	Ground Size (AWG)	Quantity (LF)	Remarks
1.0																				
2.0	S-0											#2	1290.0					#6	430.0	
3.0																				
4.0	S-1	Y-1	2			L-1	2			#10	300.0					#8	760.0	#6	420.0	
5.0	S-2	Y-1	8	Y-3	2	L-1	4	L-2	4	#10	750.0					#8	3070.0	#6	1295.0	
6.0	S-3	Y-1	10			L-1	2	L-2	2	#10	900.0					#8	2348.0	#6	1284.0	
7.0	S-4	Y-1	2			L-1	2	L-2	12	#10	300.0			#6	2268.0			#6	536.0	

108_02
10/24/24

ELECTRICAL DUCTS

Line No.	Location	Conduit Type	Diameter (IN)	Length (FT)	Remarks
1.0	Meter Pedestal	RGS	2.0	10.0	Bottom Riser
2.0					
3.0	Control Cab S	RGS	2.0	30.0	Bottom Riser
4.0					
5.0	Circuit S-0	Plastic	2.0	420.0	Circuit Ducts
6.0	Circuit S-1	Plastic	2.0	310.0	Circuit Ducts
7.0	Circuit S-2	Plastic	2.0	925.0	Circuit Ducts
8.0	Circuit S-3	Plastic	2.0	901.0	Circuit Ducts
9.0	Circuit S-4	Plastic	2.0	300.0	Circuit Ducts
10.0					
11.0	STA 286600	Rigid PVC	2.0	73.0	Rdway Crossing 3rd Ave
12.0	STA 286000	Rigid PVC	2.0	130.0	Rdway Crossing US30
13.0	STA 286800	Rigid PVC	2.0	150.0	Rdway Crossing US30

108_01
8/15/22

LIGHTING INSTALLATIONS

Line No.	Location No.	Station	LI-101 Type	A	E (FT)	LI-201 Type	Remarks
1.0	S-101	2863+00.00				A	T-Base/LI-210
2.0	S-102	2861+00.00	1	6	10.0	A	T-Base/LI-210
3.0	S-201	2864+00.00	1	6	10.0	A	T-Base/LI-210
4.0	S-202	2862+00.00	1	6	10.0	A	T-Base/LI-210
5.0	S-203	2860+00.00	1	6	10.0	A	T-Base/LI-210
6.0	S-204	2858+00.00	1	6	10.0	A	T-Base/LI-210
7.0	S-205	2855+75.00	1	6	10.0	A	T-Base/LI-210
8.0	S-301	12866+00.00	1	6	10.0	A	T-Base/LI-210
9.0	S-302	2865+25.00	1	6	10.0	A	T-Base/LI-210
10.0	S-303	2867+00.00	1	6	10.0	A	T-Base/LI-210
11.0	S-304	2869+00.00	1	6	10.0	A	T-Base/LI-210
12.0	S-305	2871+00.00	1	6	10.0	A	T-Base/LI-210
13.0	S-306	2873+00.00	1	6	10.0	A	T-Base/LI-210
14.0	S-401	2866+00.00	1	6	10.0	A	T-Base/LI-210
15.0	S-402	2868+00.00	1	6	10.0	A	T-Base/LI-210

110_16
8/15/22

REMOVAL OF LIGHT POLES AND CONCRETE FOOTINGS

Line No.	No.	Station	Side	Offset (FT)	Removal Type	Remarks
1.0		180+10.00			Light Pole and Concrete Footing	See P.1 and Removal Items on P.4
2.0		902+20.00			Light Pole and Concrete Footing	See P.1 and Removal Items on P.4

110_13
8/15/22

DELIVERY AND STOCKPILING

Line No.	Item Description	Quantity	Quantity Units	Delivery Location	Contact Name	Contact Number	Remarks
1.0	Light pole, mast-arm,	2	EACH	State Center	City of State Center;		Pay Item is LS
2.0	and luminaire			Municipal Utilities	Elect Superintendent		
3.0				Building. Located at:	Jesse Toyne	641-485-5993	
4.0				105 9th Ave NW	scmu@partnercom.net		
5.0				State Center, IA 50247			

POLLUTION PREVENTION PLAN

This project is regulated by the requirements of the Iowa Department of Natural Resources (DNR) National Pollutant Discharge Elimination System (NPDES) General Permit No. 2 OR an Iowa Department of Natural Resources (DNR) National Pollutant Discharge Elimination System (NPDES) individual storm water permit. The Contractor shall carry out the terms and conditions of this permit and the Pollution Prevention Plan (PPP).

This Base PPP includes information on Roles and Responsibilities, Project Site Description, Controls, Maintenance Procedures, Inspection Requirements, Non-Storm Water Controls, Potential Sources of Off Right-of-Way Pollution, and Definitions. This plan references other documents rather than repeating the information contained in the documents. A copy of this Base Pollution Prevention Plan, amended as needed during construction, will be readily available for review.

All contractors shall conduct their operations in a manner that controls pollutants, minimizes erosion, and prevents sediments from entering waters of the state and leaving the highway right-of-way. The Contractor shall be responsible for compliance and implementation of the PPP for their entire contract. This responsibility shall be further shared with subcontractors whose work is a source of potential pollution as defined in this PPP.

I. ROLES AND RESPONSIBILITES
- A. Designer:
  1. Prepares Base PPP included in the project plan.
  2. Prepares Notice of Intent (NOI) submitted to Iowa DNR.
  3. Is signature authority on the Base PPP. If consultant designed, signature from Contracting Authority is also required.
- B. Contractor:
  1. Signs a co-permittee certification statement adhering to the requirements of the NPDES permit and this PPP. All co-permittees are legally required under the Clean Water Act and the Iowa Administrative Code to ensure compliance with the terms and conditions of this PPP.
  2. Designates a Water Pollution Control Manager (WPCM), who has the duties and responsibilities as defined in Section 2602 of the Standard Specifications.
  3. Submits an Erosion Control Implementation Plan (ECIP) and ECIP updates according to Section 2602 of the Standard Specifications.
  4. Installs and maintains appropriate controls. This work may be subcontracted as documented through Subcontractor Request Forms (Form 830231).
  5. Supervises and implements good housekeeping practices according to Paragraph III, C, 2.
  6. Conducts joint required inspections of the site with inspection staff. When Contractor is not mobilized on site, Contractor may delegate this responsibility to a trained or certified subcontractor. Contracting Authority also may waive joint inspection requirement during winter shutdown. In both circumstances, WPCM (or trained or certified delegate from the Contractor) is still responsible to review and sign inspection reports.
  7. Complies with training and certification requirements of Section 2602 of the Standard Specifications.
  8. Submits amended PPP site map according to Section 2602 of the Standard Specifications.
- C. Subcontractors:
  1. Sign a co-permittee certification statement adhering to the requirements of the NPDES permit and this PPP if: responsible for sediment or erosion controls; involved in land disturbing activities; or performing work that is a source of potential pollution as defined in this PPP. Subcontracted work items are identified in Subcontractor Request Forms (Form 830231). All co-permittees are legally required under the Clean Water Act and the Iowa Administrative Code to ensure compliance with the terms and conditions of this PPP.
  2. Implement good housekeeping practices according to Paragraph III, C, 2.
- D. RCE/Project Engineer:
  1. Is Project Storm Water Manager.
  2. Takes actions necessary to ensure compliance with storm water requirements including, where appropriate, issuing stop work orders, and directing additional inspections at construction project sites that are experiencing problems with achieving permit compliance.
  3. Orders the taking of measures to cease, correct, prevent, or minimize the consequences of non-compliance with the storm water requirements of the Applicable Permit.
  4. Supervises all work necessary to meet storm water requirements at the Project, including work performed by contractors and subcontractors.
  5. Requires employees, contractors, and subcontractors to take appropriate responsive action to comply with storm water requirements, including requiring any such person to cease or correct a violation of storm water requirements, and to order or recommend such other actions as necessary to meet storm water requirements.
  6. Is familiar with the Project PPP and storm water site map.
  7. Is the point of contact for the Project for regulatory officials, Inspector, contractors, and subcontractors regarding storm water requirements.
  8. Is signature authority on Notice of Discontinuation.
  9. Maintains an up-to-date record of contractors, subcontractors, and subcontracted work items through Subcontractor Request Forms (Form 830231).
  10. Makes information to determine permit compliance available to the DNR upon their request.
- E. Inspector:
  1. Updates PPP through fieldbook entries and storm water site inspection reports if there is a change in design, construction, operation, or maintenance which has a significant effect on the discharge of pollutants from the project.
  2. Makes information to determine permit compliance available to the DNR upon their request.
  3. Conducts joint required inspections of the site with the contractor/subcontractor.
  4. Completes an inspection report after each inspection.
  5. Is signature authority on storm water inspection reports.

II. PROJECT SITE DESCRIPTION
- A. This Pollution Prevention Plan (PPP) is for the construction of a *Describe Type of Facility*.
- B. This PPP covers approximately *Provide # Of Acres* acres with an estimated *Provide # of Acres* acres being disturbed. The portion of the PPP covered by this contract has *Provide # of Acres* acres disturbed.
- C. The PPP is located in an area of *Provide # of Types Of Soil Association* soil association (*Provide Soil Association Type or* *Types*). The estimated weighted average runoff coefficient number for this PPP after completion will be *Provide runoff coefficient Number*.
- D. Storm Water Site Map - Multiple sources of information comprise the base storm water site map including:
  1. Drainage Patterns – Plan and Profile sheets and Situation plans.
  2. Proposed Slopes – Cross Sections.
  3. Areas of Soil Disturbance – Construction limits shown on Plan and Profile sheets.
  4. Location of Structural Controls – Tabulations in C sheets.
  5. Locations of Non-structural Controls – Tabulations in C sheets.
  6. Locations of Stabilization Practices – Generally within construction limits shown on Plan and Profile sheets.
  7. Surface Waters (including wetlands) – Project Location Map and Plan and Profile sheets.
  8. Locations where Storm Water is Discharged – Plan and Profile sheets.

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10-20-20

POLLUTION PREVENTION PLAN

- E. The base storm water site map is amended by contract modifications and progress payments (fieldbook entries) of completed erosion control work. Also, due to project phasing, erosion and sediment controls shown on project plans may not be installed until needed, based on site conditions. For example, silt fence ditch checks will typically not be installed until the ditch has been installed. Installed locations may also be modified from tabulation locations by field staff. Installed locations will be documented by fieldbook entries and amended PPP site map.
- F. Runoff from this work will flow into *List Outlets for Runoff*.

III. CONTROLS
- A. The Contractor's ECIP specified in Article 2602.03 of the Standard Specifications for accomplishment of storm water controls should clearly describe the intended sequence of major activities, and for each activity define the control measure and the timing during the construction process that the measure will be implemented.
- B. Preserve vegetation in areas not needed for construction.
- C. Sections 2601 and 2602 of the Standard Specifications define requirements to implement erosion and sediment control measures. Actual quantities used and installed locations may vary from the Base PPP and amendment of the plan will be documented via fieldbook entries, amended PPP site map, or by contract modification. Additional erosion and sediment control items may be required as determined by the inspector and/or contractor during storm water site inspections. If the work involved is not applicable to any contract items, the work will be paid for according to Article 1109.03 paragraph B of the Standard Specifications.
  1. EROSION AND SEDIMENT CONTROLS
     a. Stabilization Practices
        1) Site plans will ensure that existing vegetation or natural buffers are preserved where attainable and disturbed portions of the site will be stabilized.
        2) Initialize stabilization of disturbed areas immediately after clearing, grading, excavating, or other earth disturbing activities have:
           a) Permanently ceased on any portion of the site, or
           b) Temporarily ceased on any portion of the site and will not resume for a period exceeding 14 calendar days.
        3) Staged permanent and/or temporary stabilizing seeding and mulching shall be completed as the disturbed areas are completed. Incomplete areas shall be stabilized according to paragraph III, C, 1, a, 2, b above.
        4) Permanent and Temporary Stabilization practices to be used for this project are located in the Estimated Project Quantities (100-0A, 100-1A, or 100-1C) and Estimate Reference Information (100-4A) located in the C sheets. Typical drawings detailing construction of the practices to be used on this project are referenced in the Standard Road Plans Tabulation (105-4) in the C sheets.
        5) Preservation of existing vegetation within right-of-way or easements will act as vegetative buffer strips.
        6) Preservation of topsoil: Bid items to be used for this project are located in the Estimated Project Quantities (100-0A, 100-1A, or 100-1C) and Estimate Reference Information (100-4A) located in the C sheets. Additional information may be found in Tabulations in the C or T sheets or is referenced in Section 2105 of Standard Specifications.
     b. Structural Practices
        1) Structural practices will be implemented to divert flows from exposed soils and detain or otherwise limit runoff and the discharge of pollutants from exposed areas of the site. Additionally, structural practices may include: silt basins that provide 3600 cubic feet of storage per acre drained or equivalent sediment controls, outlet structures that withdraw water from surface when discharging basins, and controls to direct storm water to vegetated areas.
        2) Structural practices to be used for this project are located in the Estimated Project Quantities (100-0A, 100-1A, or 100-1C) and Estimate Reference Information (100-4A) located in the C sheets, as well as all other item specific Tabulations. Typical drawings detailing construction of the devices to be used on this project can be found in the B sheets or are referenced in the Standard Road Plans Tabulation (105-4) located in the C sheets.
     c. Storm Water Management
        Measures shall be installed during the construction process to control pollutants in storm water discharges that will occur after construction operations have been completed. This may include velocity dissipation devices at discharge locations and along length of outfall channel as necessary to provide a non-erosion velocity flow from structure to water course. If included with this project, these items are located in the Estimated Project Quantities (100-0A, 100-1A, or 100-1C) and Estimate Reference Information (100-4A) located in the C sheets, as well as all other item specific Tabulations. Typical drawings detailing construction of the practices to be used on this project are referenced in the Standard Road Plans Tabulation (105-4) in the C sheets. The installation of these devices may be subject to Section 404 of the Clean Water Act.
  2. OTHER CONTROLS
     Contractor disposal of unused construction materials and construction material wastes shall comply with applicable state and local waste disposal, sanitary sewer, or septic system regulations. In the event of a conflict with other governmental laws, rules and regulations, the more restrictive applicable laws, rules or regulations shall apply.
     a. Vehicle Entrances and Exits - Construct and maintain entrances and exits to prevent tracking of sediments onto roadways.
     b. Material Delivery, Storage and Use - Implement practices to prevent discharge of construction materials during delivery, storage, and use.
     c. Stockpile Management - Install controls to reduce or eliminate pollution of storm water from stockpiles of soil and paving.
     d. Waste Disposal - Do not discharge any materials, including building materials, into waters of the state, except as authorized by a Section 404 permit.
     e. Spill Prevention and Control - Implement chemical spill and leak prevention and response procedures to contain and clean up spills and prevent material discharges to the storm drain system and waters of the state.
     f. Concrete Residuals and Washout Wastes - Waste shall not be discharged to a surface water and is not allowed to adversely affect a water of the state. Designate temporary concrete washout facilities for rinsing out concrete trucks. Provide directions to truck drivers where designated washout facilities are located. Designated washout areas should be located at least 50 feet away from storm drains, streams or other water bodies. Care should be taken to ensure these facilities do not overflow during storm events.
     g. Concrete Grooving/Grinding Slurry – Do not discharge slurry to a waterbody or storm drain. Slurry may be applied on foreslopes or removed from the project.
     h. Vehicle and Equipment Storage and Maintenance Areas - Perform on site fueling and maintenance in accordance with all environment laws such as proper storage of onsite fuels and proper disposal of used engine oil or other fluids on site. Employ washing practices that prevent contamination of surface and ground water from wash water. Wash waters must be treated in a sediment basin or alternative control that provides equivalent or better treatment prior to discharge.
     i. Litter Management - Ensure employees properly dispose of litter. Minimize exposure of trash if exposure to precipitation or storm water would result in a discharge of pollutants.
     j. Dewatering – Properly treat water to remove suspended sediment before it re-enters a waterbody or discharges off-site. Measures are also to be taken to prevent scour erosion at dewatering discharge point.
  3. APPROVED STATE OR LOCAL PLANS
     During the course of this construction, it is possible that situations will arise where unknown materials will be encountered. When such situations are encountered, they will be handled according to all federal, state, and local regulations in effect at the time.

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10-20-20

POLLUTION PREVENTION PLAN

IV. MAINTENANCE PROCEDURES

The Contractor is required to maintain all temporary erosion and sediment control measures in proper working order, including cleaning, repairing, or replacing them throughout the contract period. This shall begin when the features have lost 50% of their capacity.

V. INSPECTION REQUIREMENTS

A. Inspections shall be made jointly by the Contractor and the Contracting Authority's inspector at least once every seven calendar days. Storm water site inspections will include:
   1. Date of the inspection.
   2. Summary of the scope of the inspection.
   3. Name and qualifications of the personnel making the inspection.
   5. Review of erosion and sediment control measures within disturbed areas for the effectiveness in preventing impacts to receiving waters.
   6. Major observations related to the implementation of the PPP.
   7. Identification of corrective actions required to maintain or modify erosion and sediment control measures.

B. Include storm water site inspection reports in the amended PPP. Incorporate any additional erosion and sediment control measures determined as a result of the inspection. Immediately begin corrective actions on all deficiencies found within 3 calendar days of the inspection and complete within 7 calendar days following the inspection. If it is determined that making the corrections less than 72 hours after the inspection is impracticable, it should be documented why it is impracticable and indicate an estimated date by which the corrections will be made.

VI. NON-STORM WATER DISCHARGES

This includes subsurface drains (i.e. longitudinal and standard subdrains) and slope drains. The velocity of the discharge from these features may be controlled by the use of headwalls or blocks, Class A stone, erosion stone or other appropriate materials. This also includes uncontaminated groundwater from dewatering operations, which will be controlled as discussed in Section III of the PPP.

VII. POTENTIAL SOURCES OF OFF RIGHT-OF-WAY (ROW) POLLUTION

Silts, sediment, and other forms of pollution may be transported onto highway right-of-way (ROW) as a result of a storm event. Potential sources of pollution located outside highway ROW are beyond the control of this PPP. Pollution within highway ROW will be conveyed and controlled per this PPP.

VIII. DEFINITIONS

A. Base PPP - Initial Pollution Prevention Plan.
B. Amended PPP - Base PPP amended during construcion. May include Plan Revisions or Contract Modifications for new items, storm water site inspection reports, fieldbook entries made by the inspector, amended PPP site map by the Contractor, ECIP, NOI, co-permittee certifications, and Subcontractor Request Forms. Items amending the PPP are stored electronically and are readily available upon request.
C. Fieldbook Entries – This contains the inspector’s daily diary and bid item postings.
D. Controls - Methods, practices, or measures to minimize or prevent erosion, control sedimentation, control storm water, or minimize contaminants from other types of waste or materials. Also called Best Management Practices (BMPs).
E. Signature Authority - Representative authorized to sign various storm water documents.

CERTIFICATION STATEMENT

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Signature

Printed or Typed Name

Signature

Printed or Typed Name

110-17
04-18-17

CLEARING AND GRUBBING

Location		Work and Material Type	Trees, Stumps, and Logs and Down Timber Material Diameters												All Other Materials		Estimated Quantities			Remarks
Station to Station or Ref. Loc. Sign to Ref. Loc. Sign or Description	Direction of Travel		3"-6"	>6"-9"	>9"-12"	>12"-15"	>15"-18"	>18"-24"	>24"-30"	>30"-36"	>36"-42"	>42"-48"	>48"-60"	>60"-72"	>72"	Length	Width	Units	Area	Herbicide Application	
																FT	FT	Units	Acres	Each	
2862+52 to 2863+60± (inlet side)	WBL	Trees - Clearing and Grubbing																	0.1		

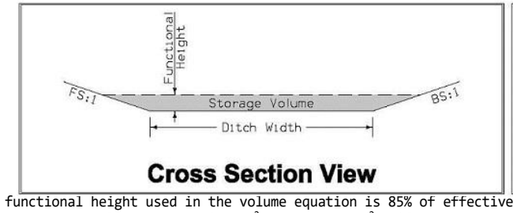
TABULATION OF SILT FENCES

Refer to EC-201

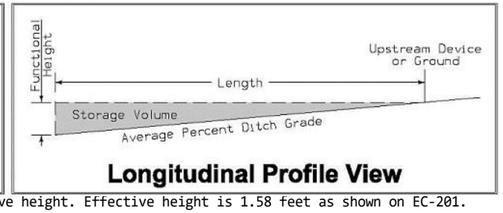
Location			Length	Remarks
Begin Station	End Station	Side	LF	
2851+50.00	2853+50.00	Rt	220.0	ML 30 EB
2853+50.00	2855+50.00	Rt	220.0	ML 30 EB
2855+50.00	2857+50.00	Rt	220.0	ML 30 EB
2857+50.00	2859+50.00	Rt	220.0	ML 30 EB
2859+50.00	2861+50.00	Rt	220.0	ML 30 EB
2861+50.00	2863+50.00	Rt	220.0	ML 30 EB
2864+88.00	2865+93.00	Rt	150.0	ML 30 EB
2862+00.00	2863+00.00	Lt	120.0	ML 30 WB
2863+00.00	2863+90.00	Lt	110.0	ML 30 WB
2864+90.00	2865+50.00	Lt	80.0	ML 30 WB
2865+50.00	2867+50.00	Lt	220.0	ML 30 WB
2867+50.00	2869+50.00	Lt	220.0	ML 30 WB
2869+50.00	2871+50.00	Lt	220.0	ML 30 WB
2871+50.00	2873+50.00	Lt	220.0	ML 30 WB
2873+50.00	2875+50.00	Lt	220.0	ML 30 WB
2875+50.00	2877+00.00	Lt	170.0	ML 30 WB
12862+00.00	12862+90.00	Lt	110.0	Durham Ave.
12862+50.00	12863+00.00	Rt	70.0	Durham Ave.
12865+60.00	12866+50.00	Lt	110.0	3rd Ave SW
12866+50.00	12867+50.00	Lt	120.0	3rd Ave SW
12866+00.00	12866+50.00	Rt	70.0	3rd Ave SW
12866+50.00	12867+50.00	Rt	120.0	3rd Ave SW
	Bid Quantity		**5145.0**	
	ıance Quantity		**514.5**	
	ıoval Quantity		**2572.5**	

SILT FENCES FOR DITCH CHECKS

Possible Standard: EC-201



Cross Section View



Longitudinal Profile View

* The functional height used in the volume equation is 85% of effective height. Effective height is 1.58 feet as shown on EC-201.

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

Basin No.	Type	Location		Bid Items			Stormwater Storage Volume Summary					Remarks
		Station	Side	Installation	Maintenance	Removal	Foreslope	Backslope	Ditch Width	Avg.% Slope	Volume*	
				LF	LF	LF	FS:1	BS:1	FT	Ditch Grade	CF	
1		2856+50.00	Rt	25.0			6.0	3.0	10.0	1.5%	1077.3	
1		2857+50.00	Rt	25.0			6.0	3.0	10.0	1.5%	1077.3	
1		2858+50.00	Rt	25.0			6.0	3.0	10.0	1.5%	1077.3	
1		2859+50.00	Rt	25.0			6.0	3.0	10.0	1.5%	1077.3	
1		2860+50.00	Rt	25.0			6.0	3.0	10.0	1.5%	1077.3	
1		2861+50.00	Rt	25.0			6.0	3.0	10.0	1.5%	1077.3	
1		2862+50.00	Rt	25.0			6.0	3.0	10.0	1.5%	1077.3	
1		2863+50.00	Rt	25.0			6.0	3.0	10.0	1.5%	1077.3	
1		12862+25.00	Lt	25.0			3.0	3.0	10.0	1.5%	942.0	
1		12862+75.00	Lt	25.0			3.0	3.0	10.0	1.5%	942.0	
1		12863+25.00	Lt	25.0			3.0	3.0	10.0	1.5%	942.0	
1		12862+25.00	Rt	25.0			3.0	3.0	10.0	1.5%	942.0	
1		12862+75.00	Rt	25.0			3.0	3.0	10.0	1.5%	942.0	
1		12863+25.00	Rt	25.0			3.0	3.0	10.0	1.5%	942.0	
1		12867+50.00	Lt	25.0			3.0	3.0	5.0	1.5%	606.3	
1		12866+50.00	Lt	25.0			3.0	3.0	5.0	1.5%	606.3	
1		12865+50.00	Lt	25.0			3.0	3.0	5.0	1.5%	606.3	
1		12866+75.00	Rt	25.0			3.0	3.0	5.0	1.5%	606.3	
1		12865+75.00	Rt	25.0			3.0	3.0	5.0	1.5%	606.3	
1		2865+50.00	Lt	40.0			6.0	3.0	10.0	1.5%	1077.3	
1		2866+50.00	Lt	40.0			6.0	3.0	10.0	1.5%	1077.3	
1		2872+00.00	Lt	40.0			6.0	3.0	10.0	1.5%	1077.3	
1		2872+75.00	Lt	40.0			6.0	3.0	10.0	1.5%	1077.3	
				952.5	**95.3**	**476.3**						

STORMWATER DRAINAGE BASIN AND STORAGE

Refer to EC Standards and 570s Details.

Drainage Basin Location						Summary of Stormwater Storage							Remarks
Basin No.	Station to Station		Side	Discharge Point		Total Disturbed Area	Disturbed Area with Storage Provided	Disturbed Area without Storage Provided	Best Management Practice	Total Storage Volume Provided	Total Storage Volume Required	Storage Volume Met?	
				Station	Side	Acres	Acres	Acres		CF	CF	Yes/No	
1	2853+88.00	2864+50.00	Rt	12863+12.00	Rt	6.6	6.6	0.0	Silt Fence for Ditch Check (EC-201)	21611.6	23760.0	Yes	
									Silt Fence for Shallow Ditch or No Ditch (EC-201)				

THIS SHEET IS INCLUDED TO SHOW SOIL INFORMATION.
DETAILS AND NOTES SHOWN ELSEWHERE IN THESE PLANS SHALL BE USED FOR STRUCTURE CONSTRUCTION.

"Install a 1-foot thick Working Blanket directly below the RCB culvert, extending to within 3 feet of each proposed curtain wall, and a distance of at least 2 feet beyond the sides of the proposed culvert measured from the inside face. The Working Blanket shall consist of Granular Material for Blanket. Engineering fabric shall be used as a separator between the Working Blanket and Granular Leveling Material. The Working Blanket may also be altered or deleted if determined to be unnecessary at the time of construction. Refer to the "Working Blanket Coordinate Table"for approximate plan limits."

Working Blanket Coordinate Table		
Point	Station	Offset
A	2865+02.37	RT.78
B	2865+32.04	RT.107
C	2865+15.75	RT.124
D	2864+86.09	RT.94

GEOTECHNICAL DESIGN

LICENSED PROFESSIONAL ENGINEER
XINYI JIANG
P29458
IOWA

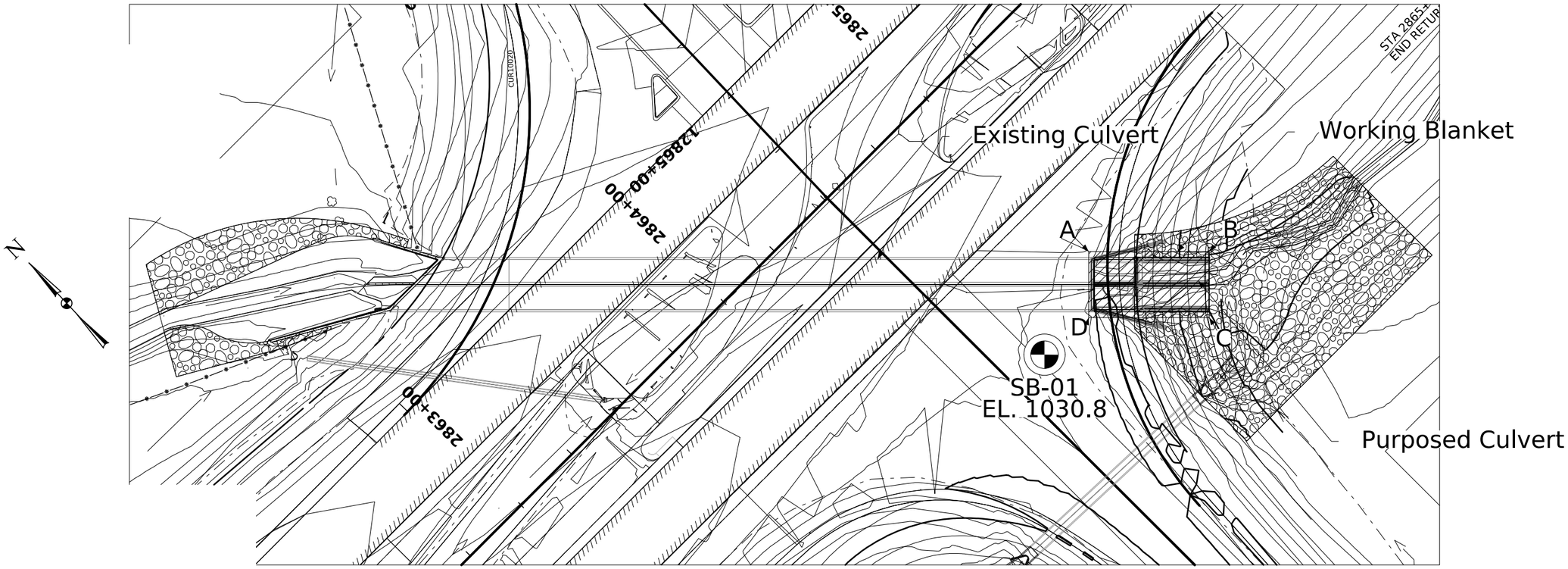
I hereby certify that this engineering document was prepared by me or under my direct personal supervision and that I am a duly licensed Professional Engineer under the laws of the State of Iowa.

Signature 2-27-2026 Date

Xinyi Jiang
Printed or Typed Name

My license renewal date is December 31, 2026

Pages or sheets covered by this seal: SPS 1 & 2



Situation Plan

0 20
Scale In Feet

Location:

US 30 Over North Timber Creek
T-83N R-20W
Section 10 & 15
State Center Township
Marshall County
Maint. No. 6472.3B030
Asset ID No. 901050
Latitude: 42.007673
Longitude: -93.165174

Design For 45 Degree RA

Twin 8'x8' Reinforced Concrete Box Culvert Extension

Soil Profile Sheet

STA. 2864+08.59 (US 30)

Marshall County

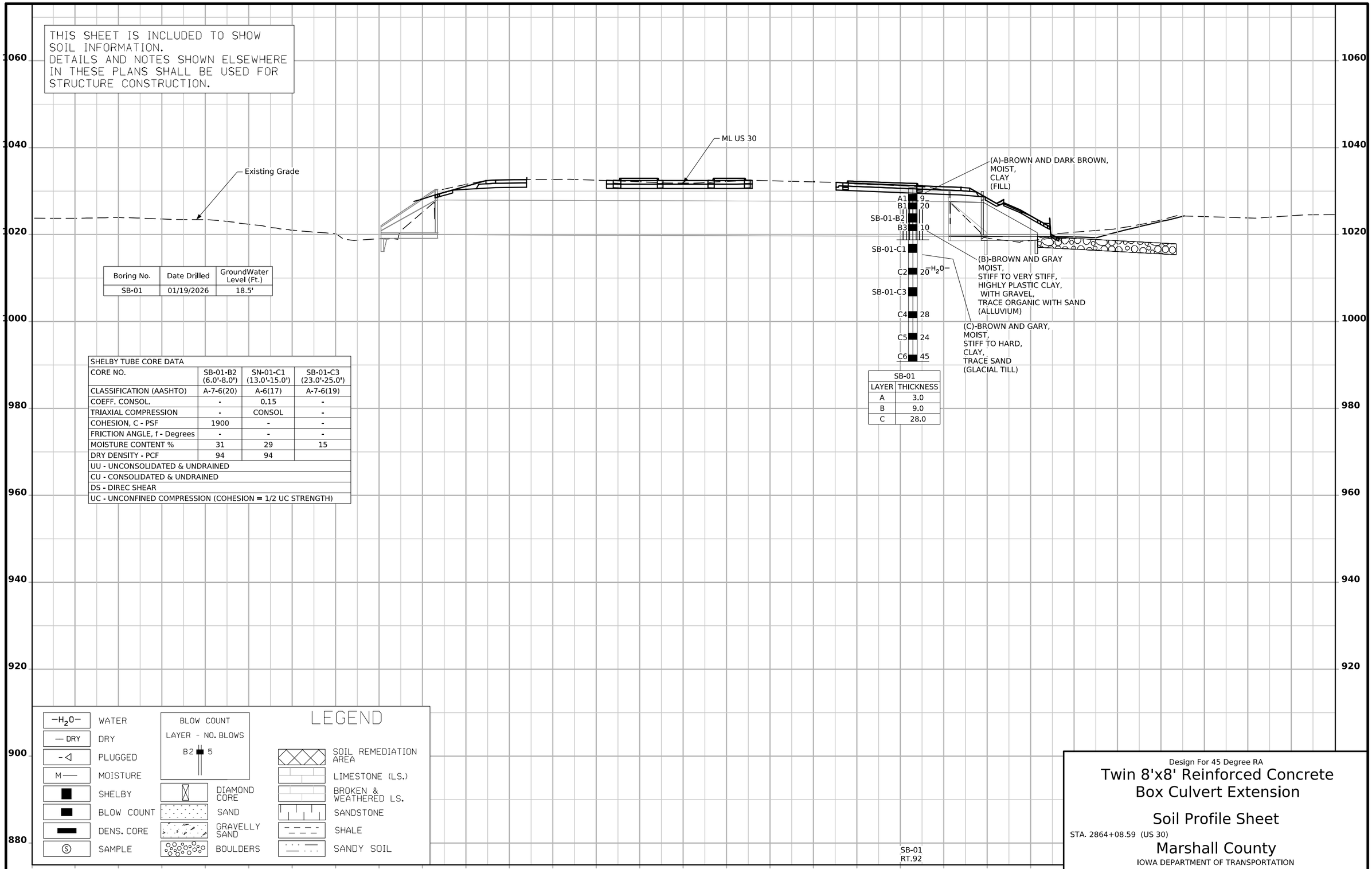
IOWA DEPARTMENT OF TRANSPORTATION

Design No. 126 | Design Sheet No. 1 of 2 | FHWA/Asset 901050

FILE NO. 32901	ENGLISH	DESIGN TEAM WHKS & Co. / Braun Intertec	Marshall COUNTY	PROJECT NUMBER HSIPX-030-5(328)--3L-64	SHEET NUMBER SPS.1

9:37:25 AM 2/27/2026 DRivers pw:\\projectwise.dot.int.lan:PWMain\Documents\Projects\6403002025\Soils\Braun\B01 Backup_SHT_64030328_TSL_WHKS_0126_901050_Z09.dgn

THIS SHEET IS INCLUDED TO SHOW SOIL INFORMATION.
DETAILS AND NOTES SHOWN ELSEWHERE IN THESE PLANS SHALL BE USED FOR STRUCTURE CONSTRUCTION.



Boring No.	Date Drilled	GroundWater Level (Ft.)
SB-01	01/19/2026	18.5'

SB-01	
LAYER	THICKNESS
A	3.0
B	9.0
C	28.0

SHELBY TUBE CORE DATA			
CORE NO.	SB-01-B2 (6.0'-8.0')	SN-01-C1 (13.0'-15.0')	SB-01-C3 (23.0'-25.0')
CLASSIFICATION (AASHTO)	A-7-6(20)	A-6(17)	A-7-6(19)
COEFF. CONSOL.	-	0.15	-
TRIAXIAL COMPRESSION	-	CONSOL	-
COHESION, C - PSF	1900	-	-
FRICTION ANGLE, f - Degrees	-	-	-
MOISTURE CONTENT %	31	29	15
DRY DENSITY - PCF	94	94	
UU - UNCONSOLIDATED & UNDRAINED			
CU - CONSOLIDATED & UNDRAINED			
DS - DIREC SHEAR			
UC - UNCONFINED COMPRESSION (COHESION = 1/2 UC STRENGTH)			

LEGEND

$-H_2O-$	WATER	BLOW COUNT LAYER - NO. BLOWS B2 5	
— DRY	DRY		SOIL REMEDIATION AREA
-◁	PLUGGED		LIMESTONE (LS.)
M——	MOISTURE	DIAMOND CORE	BROKEN & WEATHERED LS.
■	SHELBY	SAND	SANDSTONE
■	BLOW COUNT	GRAVELLY SAND	SHALE
▬	DENS. CORE	BOULDERS	SANDY SOIL
Ⓢ	SAMPLE		

Design For 45 Degree RA

Twin 8'x8' Reinforced Concrete Box Culvert Extension

Soil Profile Sheet

STA. 2864+08.59 (US 30)

Marshall County

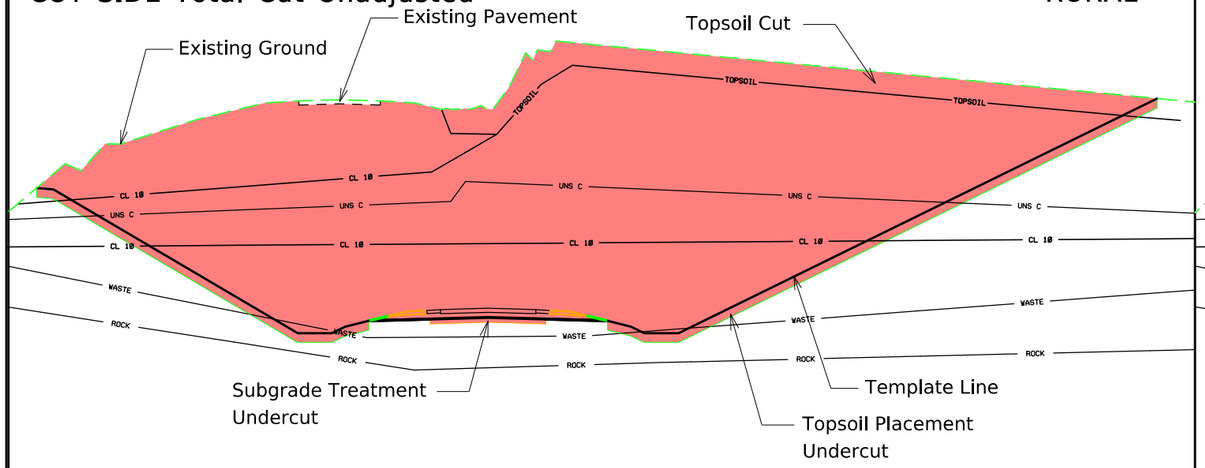
IOWA DEPARTMENT OF TRANSPORTATION

Design No. 126 | Design Sheet No. 2 of 2 | FHWA/Asset 901050

FILE NO. 32901	ENGLISH	DESIGN TEAM WHKS & Co. / Braun Intertec	Marshall COUNTY	PROJECT NUMBER HSIPX-030-5(328)--3L-64	SHEET NUMBER SPS.2

9:37:33 AM 2/27/2026 DRivers pw:\\projectwise.dot.int.lan:PWMain\Documents\Projects\6403002025\Soils\Braun\B01 Backup_SHT_64030328_TSL_WHKS_0126_901050_Z09.dgn

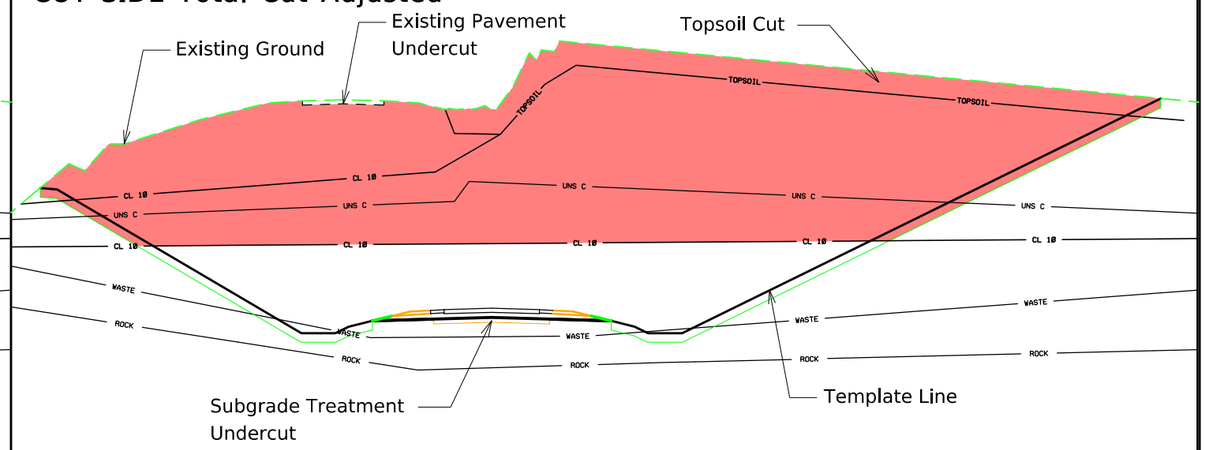
CUT SIDE Total Cut Unadjusted — RURAL



Notes:

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

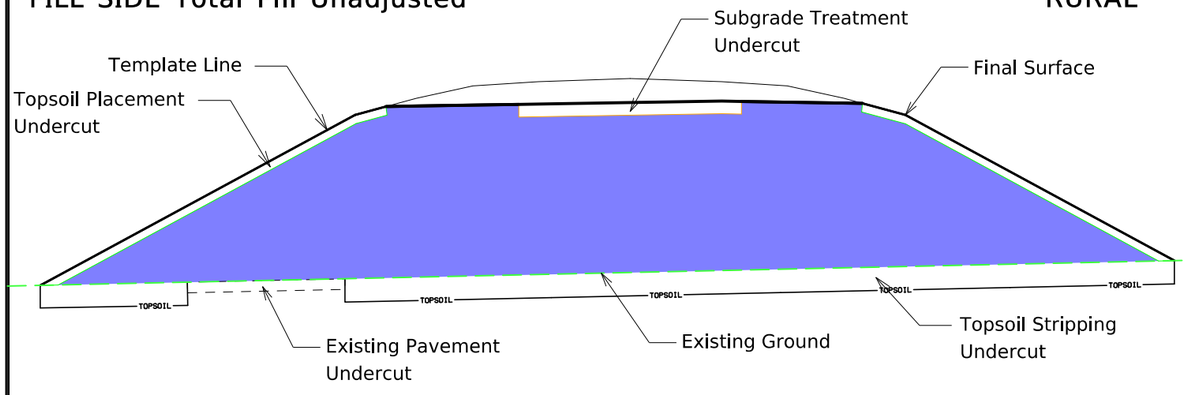
CUT SIDE Total Cut Adjusted



Notes:

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

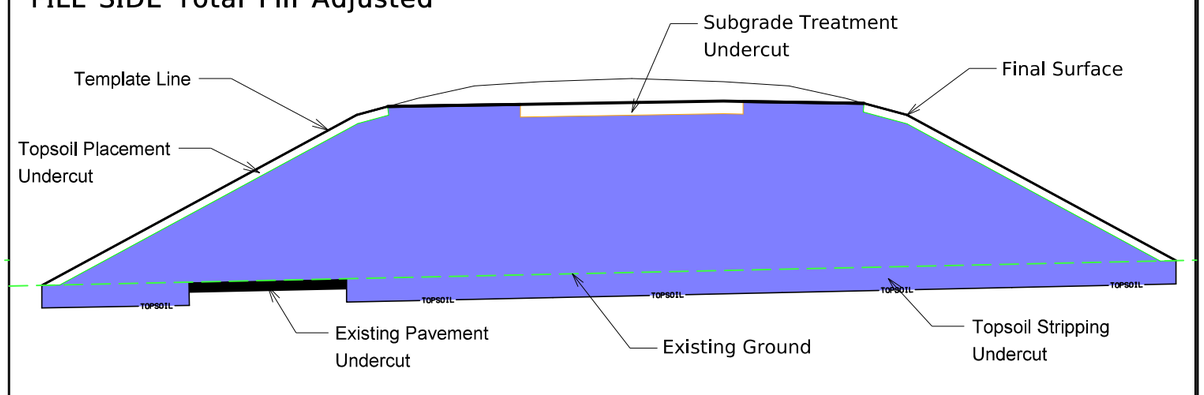
FILL SIDE Total Fill Unadjusted — RURAL



Notes:

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

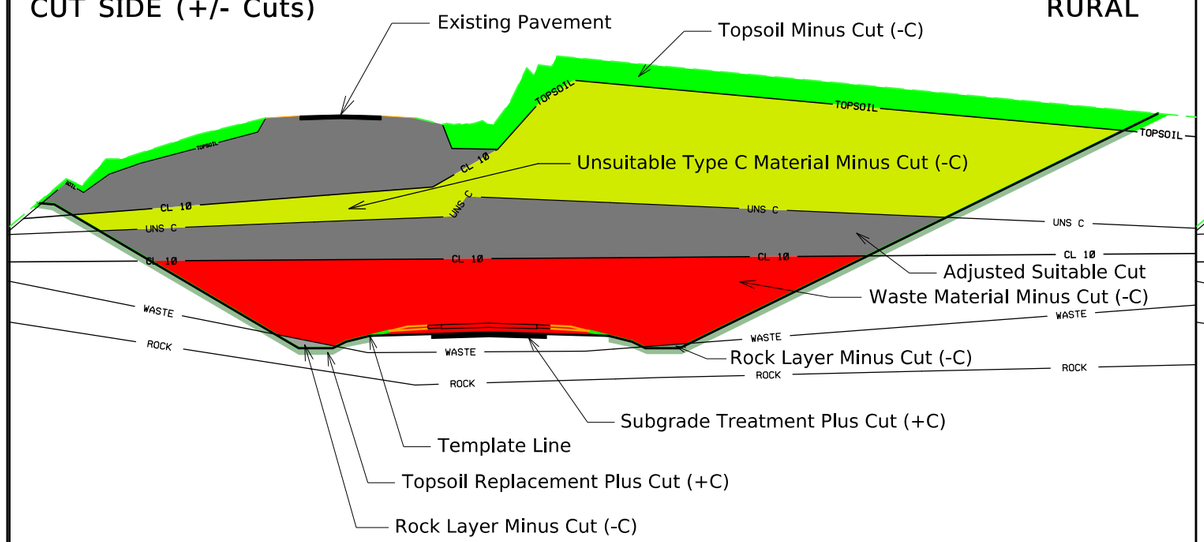
FILL SIDE Total Fill Adjusted



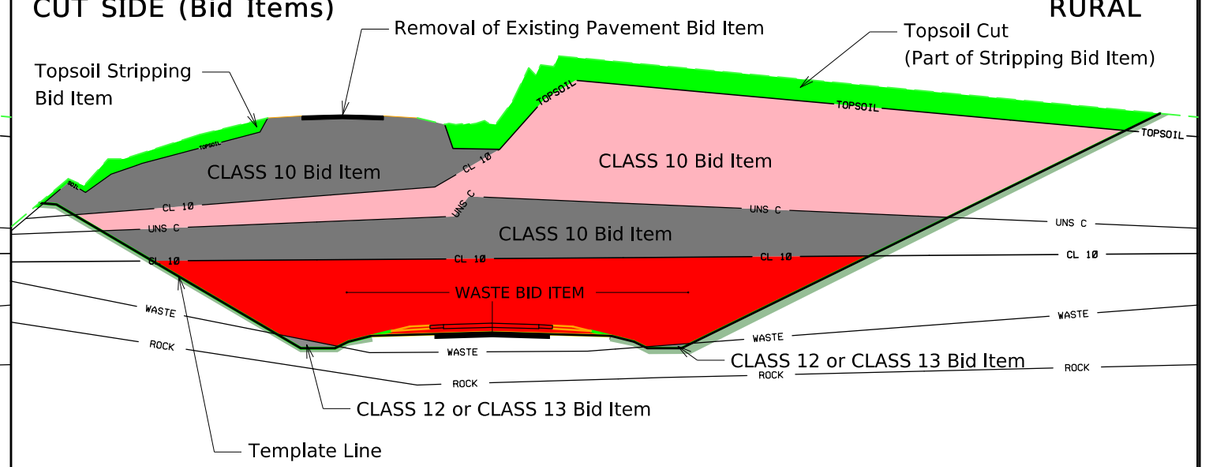
Notes:

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

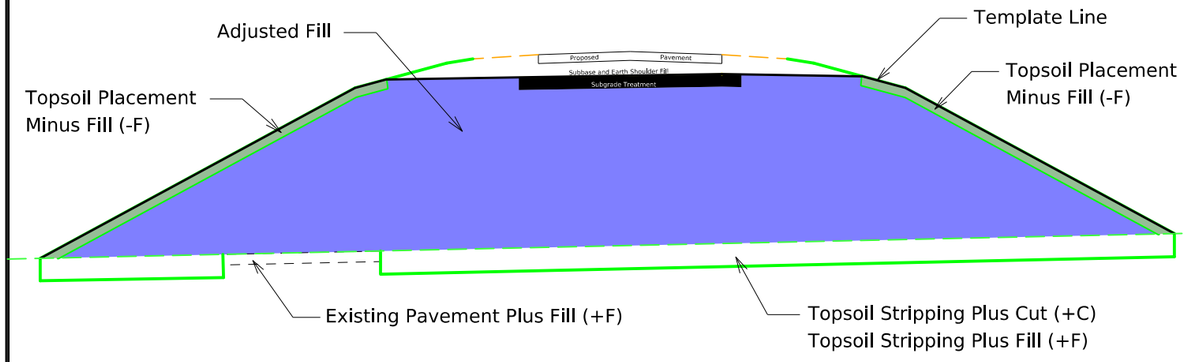
CUT SIDE (+/- Cuts) — RURAL



CUT SIDE (Bid Items) — RURAL



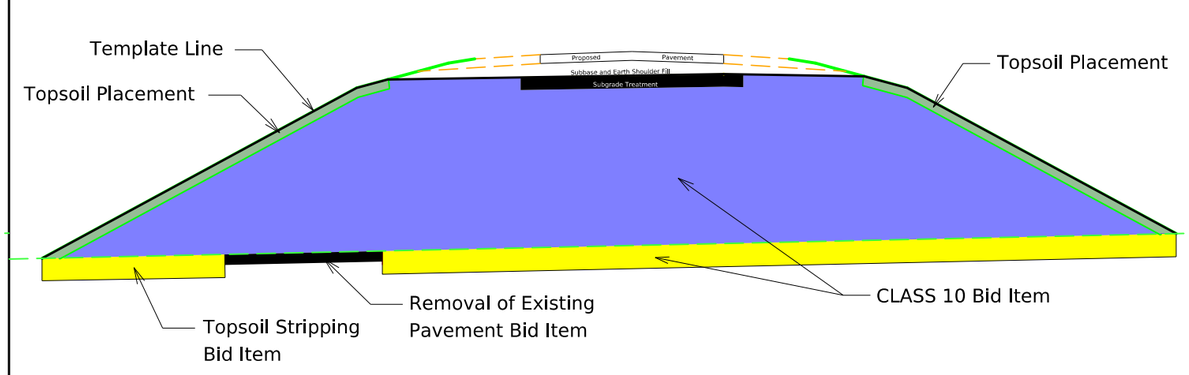
FILL SIDE (+/- Fills) — RURAL



Notes:

1. "Add Quantity +C" columns are additional cut encountered that is not Typical, Topsoil, or Subgrade Treatment Based. (Entrance, Dike, Etc.)
2. "-C" columns are either soil types or Class 10, 12, or 13 designated material that is encountered in the cut station range that is paid for by other bid items.
3. The "(SoilType) Cut" columns are soil types encountered in the cut that are paid by either Class 10, 12, or 13.
4. The "Adjusted Clas (10,12 or 13)" columns are the sum of all various soil types encountered in that station range, that are paid by Class 10, 12, or 13 bid items.
5. Refer to Standard Road Plan EW-102 for placement of unsuitable soil types.

FILL SIDE (Bid Items) — RURAL



Notes:

1. Refer to Standard Road Plan EW-102 for placement of unsuitable soil types.

FILE NO.	ENGLISH	DESIGN TEAM Vortherms/Tamrakar/Ringgenberg	MARSHALL COUNTY	PROJECT NUMBER HSIPX-030-5(328)--3L-64	SHEET NUMBER T.2

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Refer to Standard Road Plans EW-101 and EW-102.

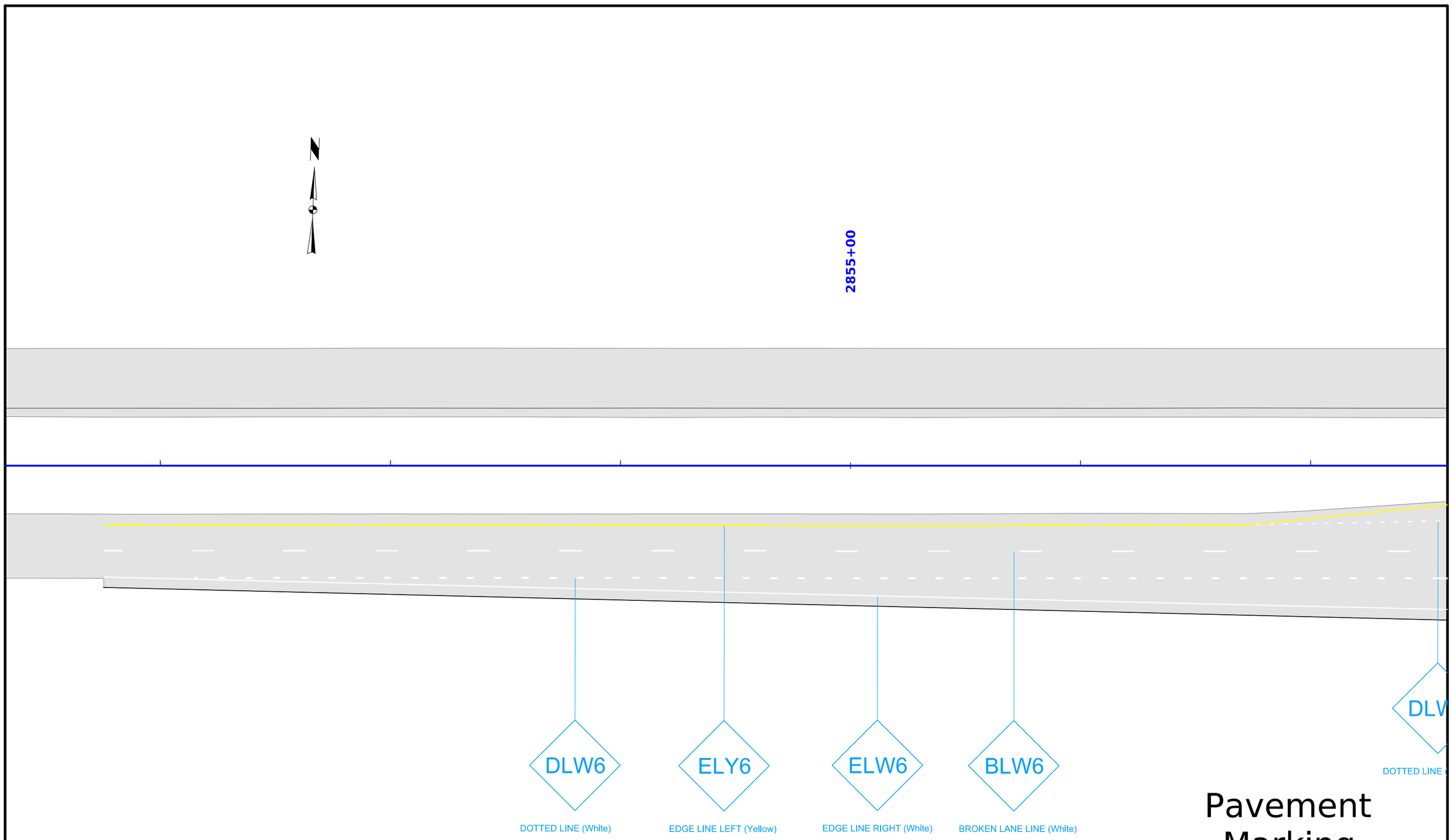
TABULATION OF TEMPLATE QUANTITIES AND ADJUSTMENTS

107-28
04-21-15

Station	Cut				Fill				Checks (EW-102)		Topsoil											
	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]	[13]	[14]	[15]	[16]	[17]	[18]	[19]	[20]	[21]	[22]
	Total Cut Unadjusted Volume	Total Class 10 Unadjusted Volume	Topsoil Cut Volume	Total Cut Adjusted	Total Fill Unadjusted Volume	Total Fill Adjusted	Total Fill Adjusted w/ Weighted Average 1.3 Shrink Factor	Total Cut Adjusted Minus Fill w/ Shrink	Approx. Fill Vol. Below 5' & Above 20' w/ Shrink	Approx. Fill Volume Below 3' w/ Shrink	Topsoil Stripping Undercut Volume	Topsoil Placement Undercut Volume	Topsoil Placement With 1.4 Shrink Factor	Topsoil Stripping Minus Topsoil Placement w/Shrink								
2851+00.00																						
2851+50.00																						
2852+00.00	25	10	15	10	0	0	0	10	0	0	15	32	44	-30								
2852+50.00	47	22	24	22	0	0	0	22	0	0	24	32	45	-21								
2853+00.00	72	19	53	19	0	0	0	19	0	0	53	33	46	6								
2853+50.00	107	13	93	13	0	0	0	14	0	0	93	35	49	45								
2854+00.00	116	13	103	13	0	0	0	13	0	0	103	29	41	62								
2854+50.00	117	14	104	14	0	0	0	14	0	0	104	32	45	59								
2855+00.00	114	14	100	14	0	0	0	14	0	0	100	26	36	65								
2855+50.00	116	14	102	14	0	0	0	14	0	0	102	25	35	67								
2856+00.00	117	14	103	14	0	0	0	14	0	0	103	27	38	65								
2856+50.00	119	14	105	14	0	0	0	14	0	0	105	32	46	60								
2857+00.00	140	26	113	26	0	0	0	26	0	0	113	30	42	71								
2857+50.00	172	51	122	51	0	0	0	51	0	0	122	27	38	84								
2858+00.00	217	87	130	87	0	0	0	87	0	0	130	21	29	101								
2858+50.00	275	136	139	136	0	0	0	136	0	0	139	49	68	71								
2859+00.00	337	189	148	189	0	0	0	189	0	0	148	9	12	136								
2859+50.00	378	224	154	224	0	0	0	224	0	0	154	23	33	122								
2860+00.00	362	209	153	209	0	0	0	209	0	0	153	10	14	139								
2860+50.00	287	140	146	140	0	0	0	141	0	0	146	43	60	86								
2861+00.00	198	61	137	61	0	0	0	61	0	0	137	47	66	72								
2861+50.00	144	20	123	20	0	0	0	21	0	0	123	42	59	64								
2862+00.00	134	15	119	15	0	0	0	15	0	0	119	39	55	64								
2862+50.00	160	20	139	20	0	0	0	20	0	0	139	37	52	88								
2863+00.00	266	87	179	87	0	0	0	87	0	0	179	23	32	148								
2863+50.00	280	121	159	121	6	6	7	113	0	0	159	33	47	113								
2864+00.00	300	171	129	171	6	6	7	163	0	0	129	45	63	66								
2864+50.00	897	825	72	825	0	0	0	825	0	0	72	35	49	23								
2865+00.00	1,171	979	192	979	59	59	77	903	0	0	192	44	62	130								
2865+50.00	757	462	295	462	59	59	77	385	0	0	295	40	56	240								
2866+00.00	376	229	147	229	0	0	0	229	0	0	147	36	50	97								
2866+50.00	163	56	107	56	0	0	0	56	0	0	107	56	79	29								
2867+00.00	143	23	120	23	0	0	0	23	0	0	120	53	74	47								
2867+50.00	134	23	111	23	0	0	0	23	0	0	111	49	69	43								
2868+00.00	132	22	111	22	0	0	0	22	0	0	111	33	47	64								
2868+50.00	132	21	111	21	0	0	0	21	0	0	111	38	53	58								
2869+00.00	133	20	112	20	0	0	0	20	0	0	112	39	54	58								
2869+50.00	135	21	114	21	0	0	0	21	0	0	114	27	38	76								
2870+00.00	134	21	112	21	0	0	0	21	0	0	112	32	45	68								
2870+50.00	130	21	109	21	0	0	0	21	0	0	109	28	40	70								
2871+00.00	129	23	106	23	0	0	0	23	0	0	106	54	76	30								
2871+50.00	128	24	104	24	0	0	0	24	0	0	104	0	0	105								
2872+00.00	124	21	103	21	0	0	0	21	0	0	103	0	0	103								
2872+50.00	117	16	101	16	0	0	0	16	0	0	101	29	40	61								
2873+00.00	112	13	99	13	0	0	0	13	0	0	99	34	48	51								
2873+50.00	117	15	102	15	0	0	0	15	0	0	102	102	143	-41								
2874+00.00	125	20	105	20	0	0	0	20	0	0	105	18	25	81								
2874+50.00	131	24	107	24	0	0	0	25	0	0	107	29	41	66								
2875+00.00	140	30	110	30	0	0	0	30	0	0	110	39	55	55								
2875+50.00	148	37	111	37	0	0	0	37	0	0	111	47	66	46								
2876+00.00	162	56	106	56	0	0	0	56	0	0	106	31	43	63								
2876+50.00	148	51	97	51	0	0	0	51	0	0	97	30	42	55								
2877+00.00	62	16	46	16	0	0	0	16	0	0	46	25	35	12								
2851+00.00																						
Totals:	10,679	4,772	5,907	4,772	130	130	169	4,606	0	0	5,907	1,727	2,419	3,490								

Excavation, Class 10, Roadway & Borrow [7]	**169**
Topsoil, Strip, Salvage & Spread [11]	**5,907**
Excavation, Class 10, Waste [4]-[7]	**4,603**

FILE NO. | DESIGN TEAM **Vortherms\Tamraker\Ringgenberg** | **MARSHALL** COUNTY | PROJECT NUMBER **HSIPX-030-5(328)--3L-64** | SHEET NUMBER **T.3**



Pavement Marking Details

FILE NO.	ENGLISH	DESIGN TEAM Vortherms/Tamrakar/Ringgenberg	MARSHALL COUNTY	PROJECT NUMBER HSIPX-030-5(328)--3L-64	SHEET NUMBER U.1

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2860+00

ELY6

SLW6

EDGE LINE LEFT (Yellow)

SOLID LANE LINE (White)

ELW6

CHW10

EDGE LINE RIGHT (White)

CHANNELIZING LINE (White)

Pavement Marking Details

FILE NO.	ENGLISH	DESIGN TEAM Vortherms/Tamrakar/Ringgenberg	MARSHALL COUNTY	PROJECT NUMBER HSIPX-030-5(328)--3L-64	SHEET NUMBER U.2	

8:48:49 AM 4/29/2026 rringge pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\6403002025\DistrictDesign\HSIPX-030-5(328)_RightTurnLanes\CADDFiles\PVTMRK_640305328.dgn

Pavement Marking Details

CHW10
CHANNELIZING LINE (Yellow)

ELY6
EDGE LINE LEFT (Yellow)

BLW6
BROKEN LANE LINE (White)

SLW2
STOP LINE (White)

DLW6
DOTTED LINE (White)

CHW10
CHANNELIZING LINE (White)

SLW6
SOLID LANE LINE (White)

ELY6
EDGE LINE LEFT (Yellow)

ELW6
EDGE LINE RIGHT (White)

12865+00

2865+00

DCY6
DOUBLE CENTERLINE (Yellow)

YLW2
YIELD LINE (White)

ELY6
EDGE LINE LEFT (Yellow)

DLW6
DOTTED LINE (White)

SLW2
STOP LINE (White)

BLW6
BROKEN LANE LINE (White)

CHW10
CHANNELIZING LINE (White)

ELW6
EDGE LINE RIGHT (White)

DCY6
DOUBLE CENTERLINE (Yellow)

CHW10
CHANNELIZING LINE (Yellow)

FILE NO.	ENGLISH	DESIGN TEAM Vortherms/Tamrakar/Ringgenberg	MARSHALL COUNTY	PROJECT NUMBER HSIPX-030-5(328)--3L-64	SHEET NUMBER U.3	

8:48:49 AM 4/29/2026 rringge pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\6403002025\DistrictDesign\HSIPX-030-5(328)_RightTurnLanes\CADDFiles\PVTMRK_640305328.dgn

DCY6

DOUBLE CENTERLINE (Yellow)

ELW6

EDGE LINE RIGHT (White)

CHW10

CHANNELIZING LINE (Yellow)

ELY6

EDGE LINE LEFT (Yellow)

BLW6

BROKEN LANE LINE (White)

SLW2

STOP LINE (White)

DLW6

DOTTED LINE (White)

2865+00

CHW10

CHANNELIZING LINE (White)

SLW6

SOLID LANE LINE (White)

ELY6

EDGE LINE LEFT (Yellow)

ELW6

EDGE LINE RIGHT (White)

DLW6

DOTTED LINE (White)

12865+00

DCY6

DOUBLE CENTERLINE (Yellow)

YLW2

YIELD LINE (White)

ELY6

EDGE LINE LEFT (Yellow)

SLW2

DLW6

Pavement Marking Details

FILE NO.	ENGLISH	DESIGN TEAM Vortherms/Tamrakar/Ringgenberg	MARSHALL COUNTY	PROJECT NUMBER HSIPX-030-5(328)--3L-64	SHEET NUMBER U.4

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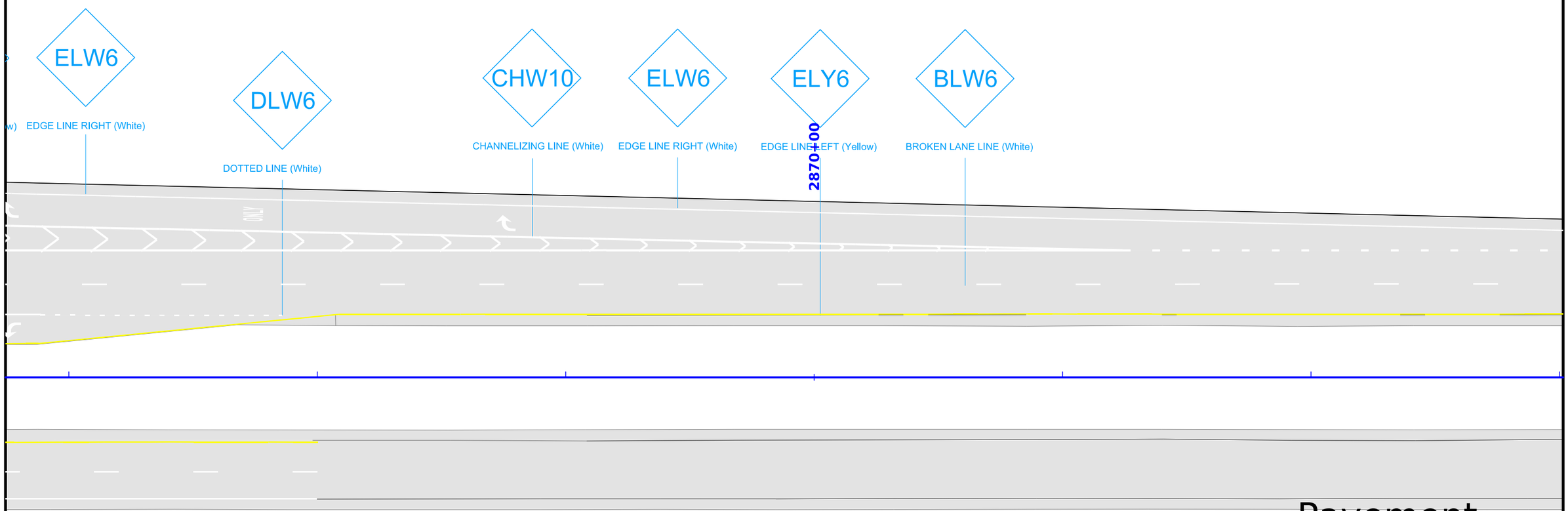

Pavement Marking Details

FILE NO.	ENGLISH	DESIGN TEAM Vortherms/Tamrakar/Ringgenberg	MARSHALL COUNTY	PROJECT NUMBER HSIPX-030-5(328)--3L-64	SHEET NUMBER U.5

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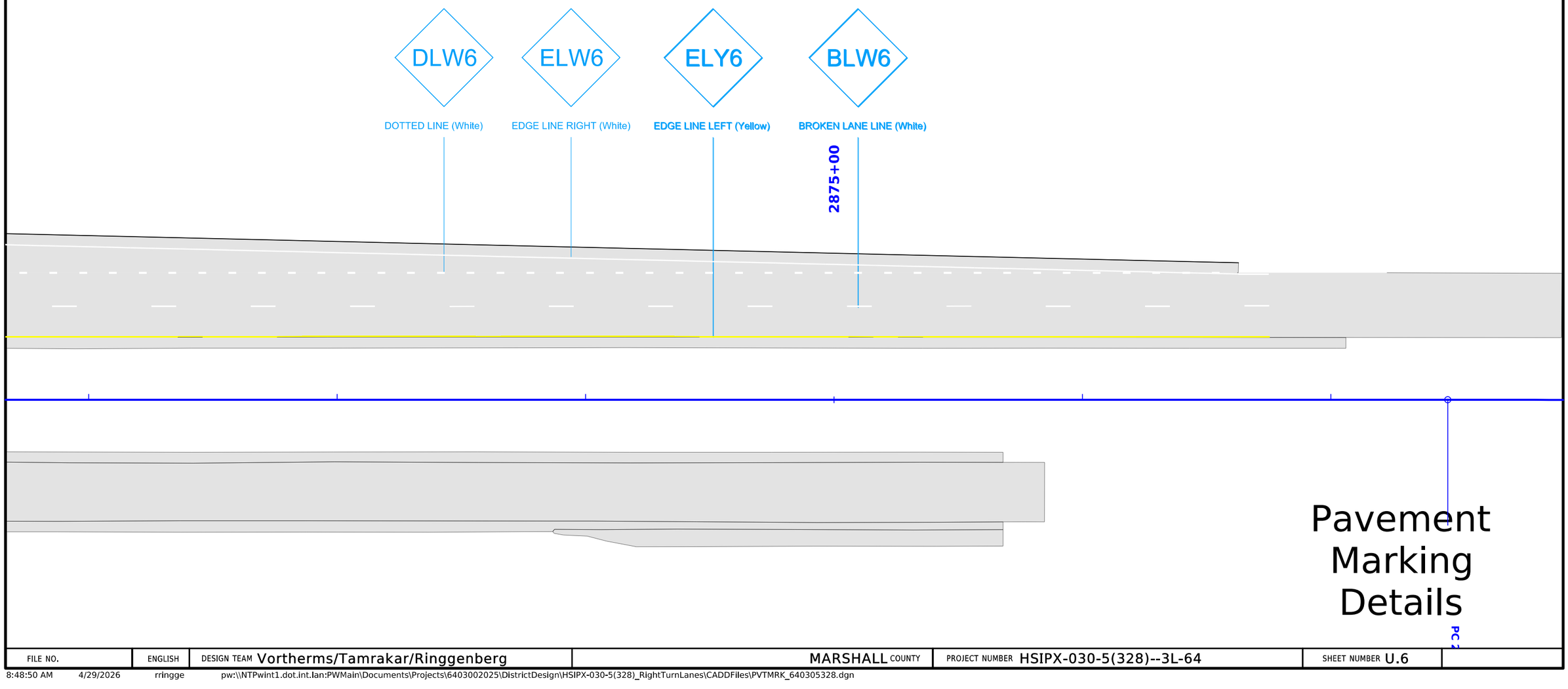

Pavement Marking Details

FILE NO.	ENGLISH	DESIGN TEAM Vortherms/Tamrakar/Ringgenberg	MARSHALL COUNTY	PROJECT NUMBER HSIPX-030-5(328)--3L-64	SHEET NUMBER U.6	

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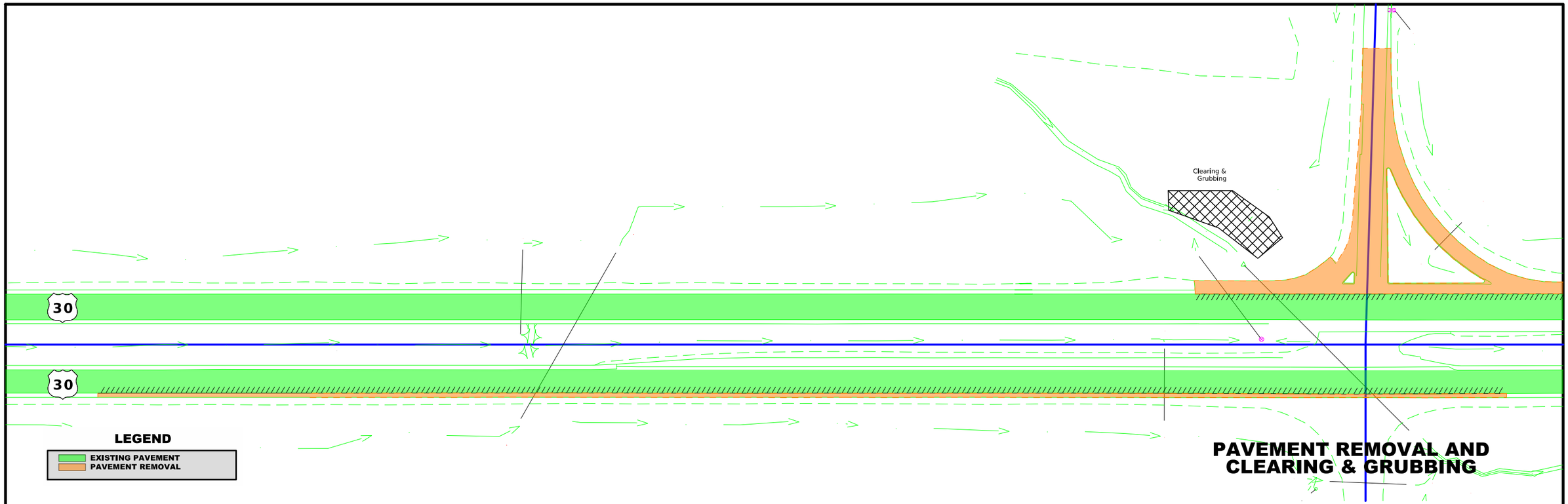
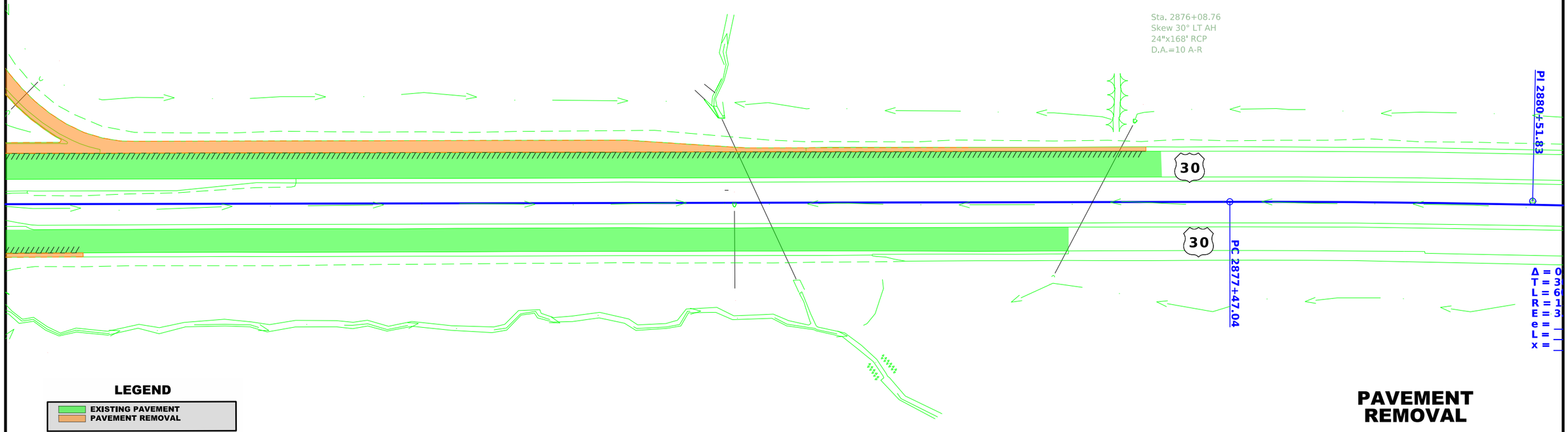


PAVEMENT REMOVAL AND CLEARING & GRUBBING



PAVEMENT REMOVAL

FILE NO.	ENGLISH	DESIGN TEAM Vortherms/Tamrakar/Ringgenberg	MARSHALL COUNTY	PROJECT NUMBER HSIPX-030-5(328)--3L-64	SHEET NUMBER U.7

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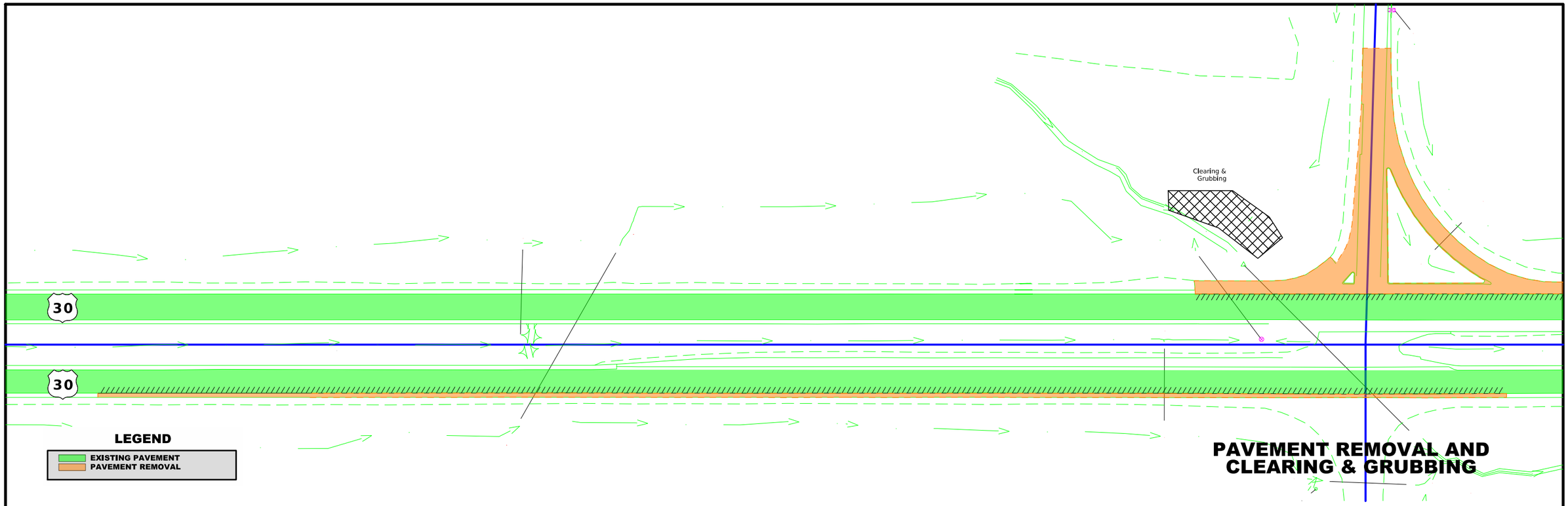
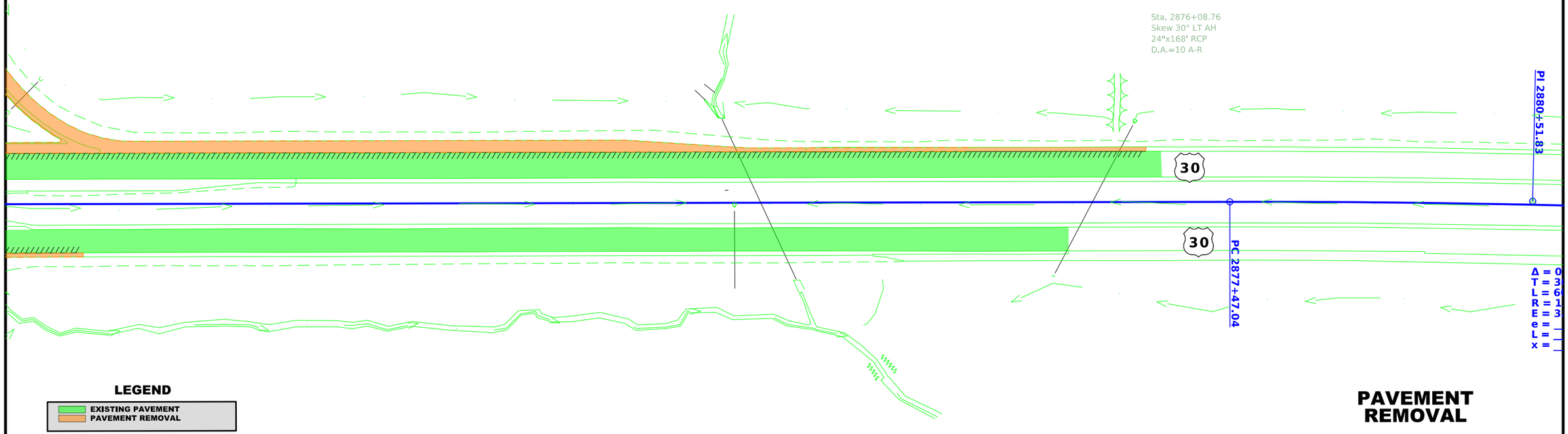


PAVEMENT REMOVAL AND CLEARING & GRUBBING



PAVEMENT REMOVAL

FILE NO.	ENGLISH	DESIGN TEAM Vortherms/Tamrakar/Ringgenberg	MARSHALL COUNTY	PROJECT NUMBER HSIPX-030-5(328)--3L-64	SHEET NUMBER U.7

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ESTIMATED CULVERT QUANTITIES

ITEM NO.	ITEM CODE	ITEM	UNIT	DESIGN NO. 126	AS-BUILT QTY.
1	2401-6750001	Removals, As Per Plan	LS	1.0	
2	2402-2720000	Excavation, Class 20	CY	87	
3	2402-3825025	Granular Material for Blanket	CY	28	
4	2403-0100020	Structural Concrete (RCB Culvert)	CY	60.2	
5	2404-7775000	Reinforcing Steel	LB	9176	

CULVERT ESTIMATE REFERENCE INFORMATION

ITEM NO.	ITEM CODE	DESCRIPTION
1	2401-6750001	**Removals, As Per Plan**
		Includes all work for removal and off-site disposal of portions of the existing culvert headwall and parapet. Removal of scheduled items shall be in accordance with Section 2401, of the Standard Specifications. Any damage to material not to be removed shall be the responsibility of the Contractor and repaired at no extra cost to the State.
2	2402-2720000	**Excavation, Class 20**
		Includes filling and compacting low areas around proposed culvert. Includes excavation necessary for "Granular Material for Blanket". Quantity should be reduced by 28 CY in the event that the working blanket is deleted.
3	2402-3825025	**Granular Material for Blanket**
		Granular material shall be in accordance with Section 4118 of the Standard Specifications. Includes 28 CY for a working blanket. The working blanket may be deleted if determined to be unnecessary at the time of construction.
4	2403-0100020	**Structural Concrete (RCB Culvert)**

5	2404-7775000	**Reinforcing Steel**
		Includes cost of setting 5z1 dowels in drilled holes.

Specifications:

Design:
AASHTO LRFD Bridge Design Specifications, 8th Ed., Series of 2017.

Construction:
Iowa Department of Transportation Standard Specifications for Highway and Bridge Construction, current series, plus applicable General Supplemental Specifications, Developmental Specifications, Supplemental Specifications and Special Provisions

Design Stresses:

Design stresses for the following materials are in accordance with the AASHTO LRFD Bridge Design Specifications, 8th Ed., Series of 2017:
Reinforcing steel in accordance with AASHTO LRFD Section 5, Grade 60.
Concrete in accordance with AASHTO LRFD Section 5, f'c = 4.0 ksi.

Standards:
For details and notes not shown refer to the following Iowa D.O.T. - Highway Standards:

Standard	Issued	Revised
** TWRCB G3-20	07-2020	--
TWRCB 8-8-20	07-2020	--
TWPWH 0-1-20	07-2020	--
TWPWH 0-2-20	07-2020	08-2022
TWPWH 0-3-20	07-2020	--
TWPWH 0-4-20	07-2020	--
TWPWH 0-5-20	07-2020	--
TWPWH 0-8-20	07-2020	--

** Note: "Top Slab Construction Joint Detail" does not apply.

Summary of Reinforcing Steel

Location	Quantity	Total
Headwall 0° Skew	1 @ 5,180	5,180
14'-0" Barrel Extension	1 @ 3,840	3,840
5z1 x 2'-6" Dowel Bars	1 @ 156	156
	Total (LB)	9,176

Concrete Placement Quantities

Location	Footing	Walls	Slab	Total
Headwall 0° Skew	1 @ 21.4	1 @ 12.0	* 1 @ 2.0	35.4
14'-0" Barrel Extension	1 @ 8.9	1 @ 8.8	1 @ 7.1	24.8
Total (CY)	30.3	20.8	9.1	60.2

* Includes parapet and top of wingwall.

Note:
Roadway quantities shown elsewhere in these plans.

Design History at This Site
(Includes This Design)

Des. No.	Type of Work
2559	Original Design
289	Culvert Extension
126	Culvert Extension

Structural Design

LICENSED PROFESSIONAL ENGINEER
Jacob J. Shaw
23827
IOWA

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

Signature — Date: 2/27/2026
Jacob J. Shaw
Printed or Typed Name

My license renewal date is December 31, 2026

Pages or sheets covered by this seal: V.1 Thru V.4

whks
engineers + planners + land surveyors

Design For 45 Degree RA

Twin 8'x8' Reinforced Concrete Box Culvert Extension

Estimated Quantities

STA. 2864+08.59 (US 30)
Turn-in Date: March 2026

Marshall County

IOWA DEPARTMENT OF TRANSPORTATION

Design No. 126 | Design Sheet No. 1 of 4 | Asset No. 901050

General Notes:

It is the intent of this design to extend the existing Twin 8'x8'x235'-2" reinforced concrete box culvert.

Electronic copies of original design plans are available to the Contractor as part of the e-files supplied with the contract documents. Dimensions shown on these plans are based on design plans (Original Design No. 2559 & Culvert Extension Design No. 289).

Faint lines on plans indicate existing structure.

Utility companies and municipalities whose facilities are shown on the plans or known to be within the construction limits shall be notified by the Contractor of the construction starting date.

The R.C.B. culvert extension sections are designed for HL-93 live load and earth fills of 2 feet. This design is based on Load and Resistance Factor Design, according to the 2017 AASHTO LRFD Bridge Design Specifications.

Vertical earth pressure, EV=0.120 kcf.

Horizontal earth pressure, EHmax = 0.060 kcf max, EHmin = 0.030 kcf.

The RCB culvert sections are designed for Class 1 Exposure conditions.

The Contractor may submit alternate frost trough dimensions for approval. Any additional costs due to change in the frost trough dimensions is to be paid for by the Contractor.

Floor of barrel is to be finished smooth. Sides of footing are to be formed to ensure correct line and grade.

The permissible construction joint at the top of the walls may be lowered at the Contractor's option with Engineer's approval.

The vertical bars in the walls may be spliced above the footing at the Contractor's option as follows:

Bar Size Number	4	5	6	7	8	9
Minimum Splice Length	20"	24"	29"	34"	38"	47"

This splice, if used will be at the Contractor's expense.

Metal bar chairs spaced at not over 3'-0" C-C in either direction are to be used to support all slab and floor steel as outlined in the Standard Specifications.

The reinforcement supplied for this structure shall be Grade 60 in accordance with the Standard Specifications. The design stresses are based on ASTM A706 Grade 60 reinforcement. Reinforcing bar clearances will be as follows:

Edge clearances: 2" except
- Top of floor: 2¼" to near transverse reinforcing bar
- Bottom of floor: 3½" to near transverse reinforcing bar

End clearances:
- Vertical top: 2"
- Vertical bottom: 3" or 3½" if overall height of the culvert is not to a full inch
- Transverse: 2"

All reinforcing bars and bars noted as dowels supplied for this structure shall be deformed reinforcement unless otherwise noted or shown.

Class 20 excavation material unsuitable for backfilling shall be disposed of in a manner that will leave the site in a neat condition.

It shall be the Culvert Contractor's responsibility to provide sites for excess excavated material. No payment for overhaul will be allowed for material hauled to these sites.

The price bid for "Removals as Per Plan" shall include the cost for removals of portions of the existing culvert, and the setting of the dowel reinforcing bars into existing concrete.

All dimensions and details shown on these plans pertinent to new construction in relation to existing portions of the structure shall be verified in the field by the Contractor before starting construction.

The removal of the existing culvert shall be at the front face of the existing parapet. Removals shall be on a vertical plane parallel with the front face of the existing parapet, and to the width of the floor of the proposed extension. The walls shall be cut normal to the barrel walls and as shown on the "Part Removal Plan". The removal line shall be initiated with a 2½"± deep saw cut on the top and both sides of each wall, and across the top of the floor. This saw cut should cut thru any existing longitudinal reinforcing thereby facilitating a neat non-spalled break line. The parapets shall be removed down to an elevation 1"± above the top of the existing slab. Any existing parapet vertical bars exposed during parapet removal shall be cut off flush with the parapet removal line and painted with two coats of zinc rich paint.

All removals shall be carefully accomplished and any concrete damaged by the Contractor that is not to be removed shall be repaired by the Contractor at no extra cost to the state. Removals shall be in accordance with Section 2401 of the Standard Specifications.

The proposed culvert extension shall abut against the front face of the existing parapet. 5z1 x 2'-6" dowel reinforcing bars with a 10" minimum embedment into existing concrete shall be set around the entire periphery of the existing culvert. 5z1 dowel reinforcing bars shall be centered in the existing slab, walls and floor. 5z1 dowel reinforcing bars shall be at 1'-0" maximum spacing C-C of dowels. 5z1 dowel reinforcing bars shall be set with polymer grout in accordance with Article 2301.03, e, of the Standard Specifications, and current Supplemental Specifications of the Iowa D.O.T. Highway Division.

The roadway will be open to traffic during construction.

Since the highway will not be closed to traffic during this construction, the Contractor may feel temporary shoring (sheet pile or other) is necessary to ensure that the shoulder will not slough in while culvert is being extended. However, if for any reason such shoring is deemed necessary, the Contractor shall submit the shoring plan to the Engineer for approval. Cost of shoring, if required, will be considered incidental to construction and no direct payment will be made. Therefore, all material used for shoring shall remain the property of the Contractor. In addition to the requirements noted above, Article 1107.07, of the Standard Specifications, still applies.

Keyway dimensions shown on the plans are based on nominal dimensions unless stated otherwise. In addition, the bevel used on the keyway shall be limited to a maximum of 10 degrees from vertical.

These bridge plans label all reinforcing steel with English notation (5a1 is ⅝ inch diameter bar). English reinforcing steel received in the field may display the following "Bar Designation". The "Bar Designation" is the stamped impression on the reinforcing bars, and is equivalent to the bar diameter in millimeters.

English Size	3	4	5	6	7	8	9	10	11
Bar Designation	10	13	16	19	22	25	29	32	36

Traffic will be maintained at all times in accordance with the traffic control plans shown in these plans.

Any dimensional transition required between existing structure and the extension shall be made in the first 1'-0" of new work.

When de-watering presents a problem for placing the curtain walls as detailed, alternate methods such as steel sheet pile and precast concrete walls may be approved but at no additional cost. The Contractor is to submit to the Engineer for approval complete drawings of the proposed curtain wall alternate before beginning construction.

All construction joints shall be formed with a beveled keyway.

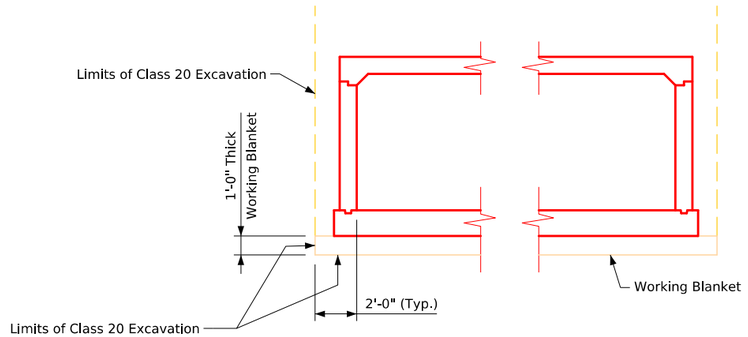
All beveled keyways shall be centered.

Keyway size shall be 2"x4".

All dimensions are in feet and inches unless otherwise noted or shown.

See current Standard Specifications regarding concrete form removal.

The Class 20 excavation quantity is based on the assumption that at the start of culvert construction, the existing groundline shown on the "Situation Plan" for this design has remained undisturbed and no roadway fill has been placed.



Working Blanket/Excavation Details

Working blanket shall terminate 3'-0 short of the curtain wall.

Pollution Prevention Plan shown elsewhere in these plans.

Traffic Control Plan

The roadway will be open to thru traffic. Refer to the Traffic Control Plan shown elsewhere in these plans.

whks
engineers + planners + land surveyors

Design For 45 Degree RA

Twin 8'x8' Reinforced Concrete Box Culvert Extension

General Notes

STA. 2864+08.59 (US 30)

Turn-in Date: March 2026

Marshall County

IOWA DEPARTMENT OF TRANSPORTATION

Design No. 126 | Design Sheet No. 2 of 4 | Asset No. 901050

FILE NO. 32901	ENGLISH	DESIGN TEAM JS/NL/DA	Marshall COUNTY	PROJECT NUMBER HSIPX-030-5(328)--3L-64	SHEET NUMBER V.2

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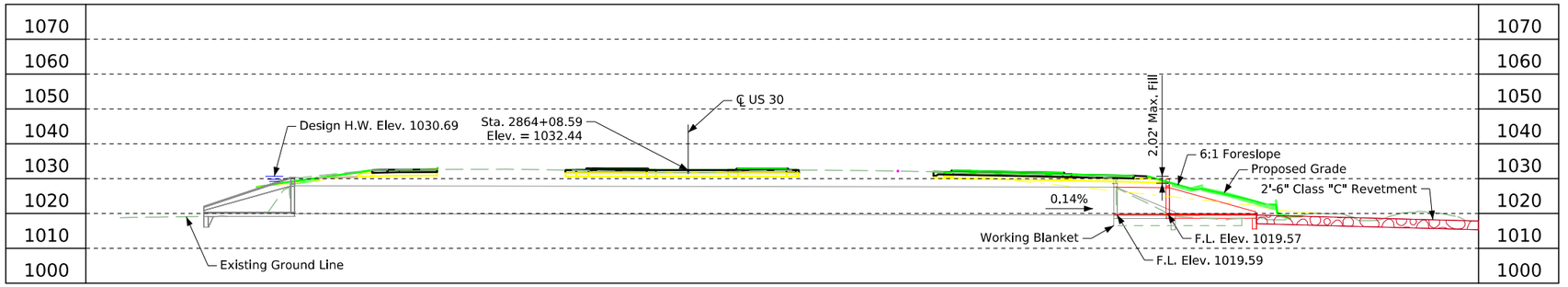
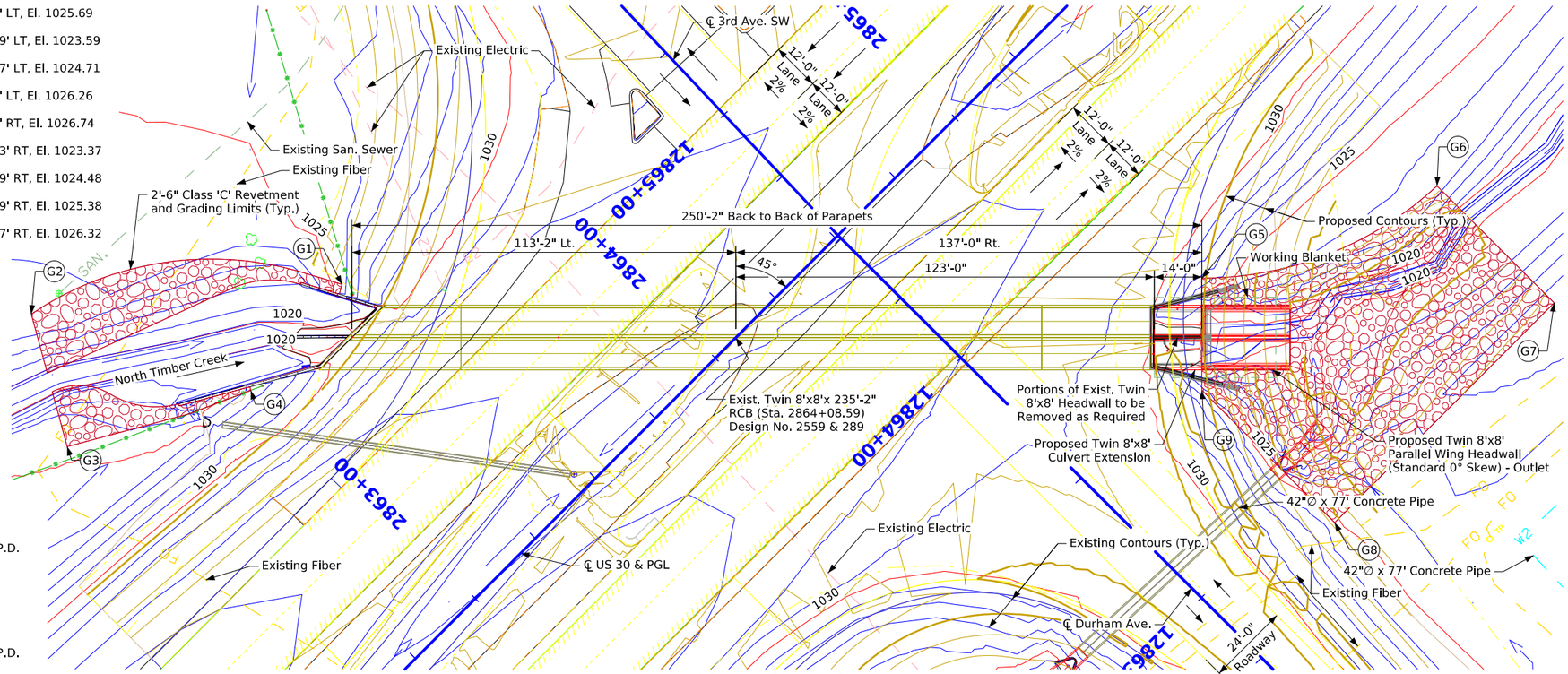


Longitudinal Section Along ℄ Culvert

Design Fill = 2'-0"
Anticipated Settlement = <1"

Grading Control /Revetment Layout:

- (G1) Sta. 2863+37.77, 93.12' LT, El. 1025.69
- (G2) Sta. 2862+66.92, 151.69' LT, El. 1023.59
- (G3) Sta. 2862+46.74, 116.67' LT, El. 1024.71
- (G4) Sta. 2862+96.64, 90.10' LT, El. 1026.26
- (G5) Sta. 2865+17.92, 84.76' RT, El. 1026.74
- (G6) Sta. 2865+86.03, 114.53' RT, El. 1023.37
- (G7) Sta. 2865+86.03, 163.29' RT, El. 1024.48
- (G8) Sta. 2864+94.56, 163.29' RT, El. 1025.38
- (G9) Sta. 2864+94.56, 108.07' RT, El. 1026.32



Situation Plan

Traffic Data

US30
2024 AADT 7,000 V.P.D.
TRUCKS 15 %

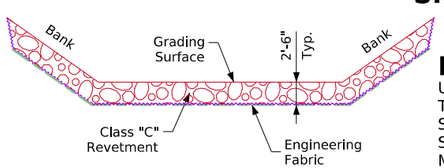
Traffic Data

Durham Avenue
2021 AADT 180 V.P.D.
TRUCKS 1 %

Estimated Revetment Quantities Included With Road Plans

Location	Revetment Class "C" (Ton)	Engineering Fabric (SY)	CL. 10 Channel Excavation (CY)
Inlet	256.5	288.1	160.3
Outlet	828.3	720.2	517.7
Totals	1084.7	1008.4	677.9

Excavation quantity calculated from grading surface. Excavation quantity is for embedded revetment core out only, and does not include excavation to the grading surface. Excavation quantity to the grading surface is determined by Road Design and included in the Road Plans. Quantities shown for information only. See Road Sheets.



Outlet Protection

Location:

US 30 Over North Timber Creek
T-83N R-20W
Section 10 & 15
State Center Township
Marshall County
Maint. No. 6472.3B030
City of State Center
Asset ID No. 901050
Latitude: 42.007673
Longitude: -93.165174

Hydraulic Design

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

LICENSED PROFESSIONAL ENGINEER — Brian J. Birkland 17375 — IOWA

Signature: Brian J. Birkland — Date: 2-23-2026
Printed or Typed Name: Brian J. Birkland
My license renewal date is December 31, 2026
Pages or sheets covered by this seal: V.3

U.A.C.

Profile Grade - ℄ US 30

-1.5 % -0.13%
VPI = 1+24.84
Elev. = 1030.93
L = 50'

Profile Grade - ℄ Durham Ave.

Hydraulic Data

RIDB: NA
Drainage Area = 1.57 Sq. Mi.
Site Stream Slope = 0.20%

Hydrology based on the USDA NRCS TR-55 method

Overtopping of 3rd Ave. SW
Overtopping El. = 1030.52
(Existing 3rd Ave. P.G. low point)

Proposed 3rd Ave. SW profile grade shall be at or below existing profile grade to meet a no-rise condition of upstream headwater.

US 30 edge of shoulder encroachment occurs at El. 1031.5, after overtopping 3rd Ave. SW

Q_{25} = 1,110 cfs
Headwater (HW) Elevation = 1028.51
Exit Velocity = 10.5 fps

Q_{50} (Design) = 1,360 cfs
Headwater (HW) Elevation = 1030.69
(without 3rd Ave. SW overtopping)
Exit Velocity = 12.0 fps

General Notes:

--This design is for the extension of the existing Twin 8'x8'x235'-2" Reinforced Concrete Box Culvert, Marshall County Design No. 2559 & 289, Asset ID No. 901050.

Plan Notes:

--Headwall shall be placed level.
--Revetment stone is embedded.
--Faint lines indicate existing contours.

Utilities Note:

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

General Utility Symbols:

E - Electric Line
SAN. - Sanitary Sewer
FO - Fiber Optic Line
W2 - Water Line

Design For 45 Degree RA

Twin 8'x8' Reinforced Concrete Box Culvert Extension

Situation Plan

STA. 2864+08.59 (US 30)
Turn-in Date: March 2026

Marshall County
IOWA DEPARTMENT OF TRANSPORTATION

Design No. 126 | Design Sheet No. 3 of 4 | Asset No. 901050

FILE NO. 32901	ENGLISH	DESIGN TEAM JS/NL/DA	Marshall COUNTY	PROJECT NUMBER HSIPX-030-5(328)--3L-64	SHEET NUMBER V.3

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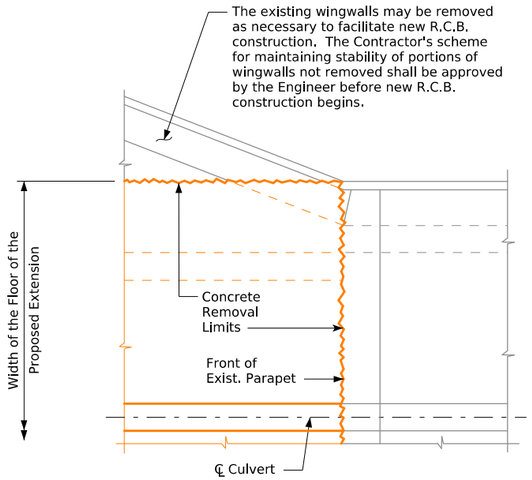
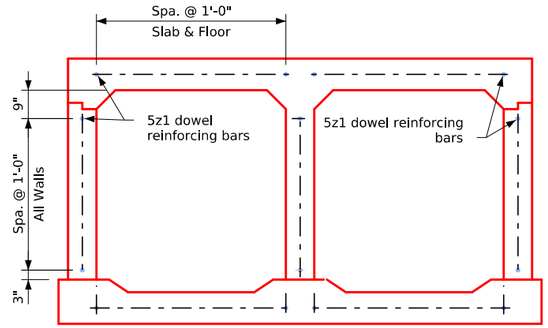


Part Removal Plan

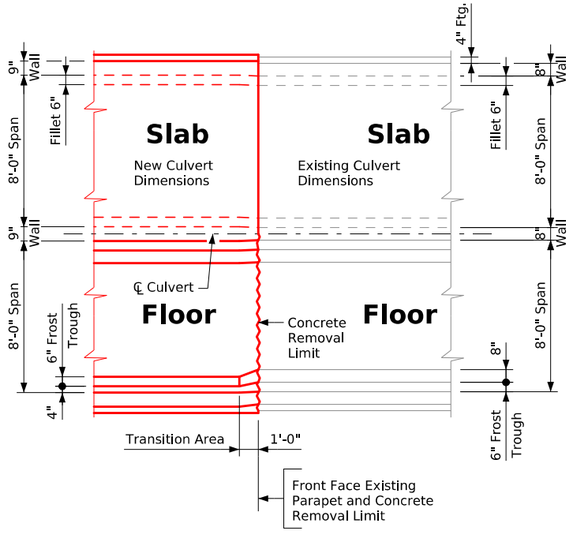


Section Near Twin Extension

(Showing spacing of 5z1 dowel reinforcing bars)

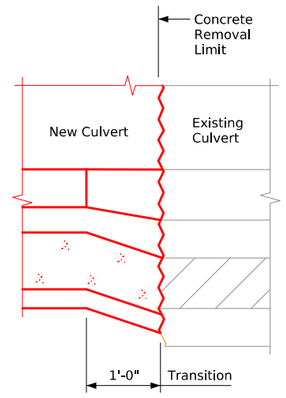
Reinforcing Bar List - One Extension

Bar	Location	Shape	No.	Length	Weight
5z1	Dowel Reinforcing Bars	——	60	2'-6"	156



Concrete Transition Details

(Plan View)



New barrel concrete thicknesses shall be maintained minimally when transitioning to meet existing barrel interior surfaces. Outside concrete surfaces do not have to be transitioned to match existing surfaces.

Concrete Transition Details

(Exterior Wall Transition Shown - Typical for Slab)

whks
engineers + planners + land surveyors

Design For 45 Degree RA

Twin 8'x8' Reinforced Concrete Box Culvert Extension

Miscellaneous Details

STA. 2864+08.59 (US 30)

Turn-in Date: March 2026

Marshall County

IOWA DEPARTMENT OF TRANSPORTATION

Design No. 126 Design Sheet No. 4 of 4 Asset No. 901050

FILE NO. 32901	ENGLISH	DESIGN TEAM JS/NL/DA	Marshall COUNTY	PROJECT NUMBER HSIPX-030-5(328)--3L-64	SHEET NUMBER V.4

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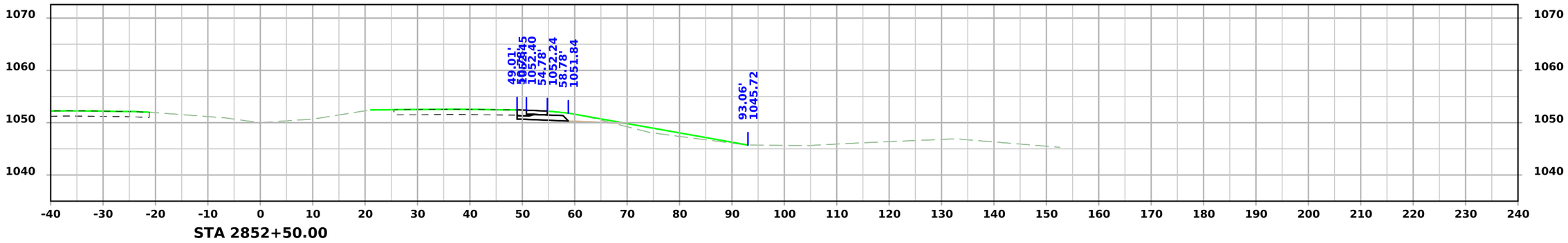
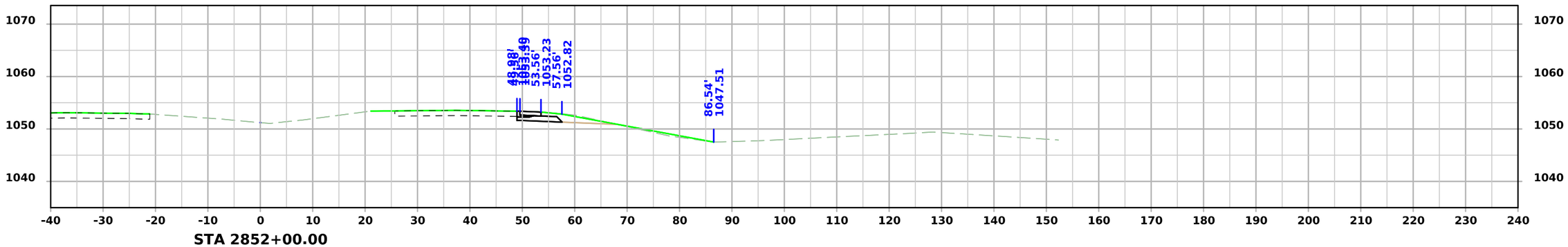
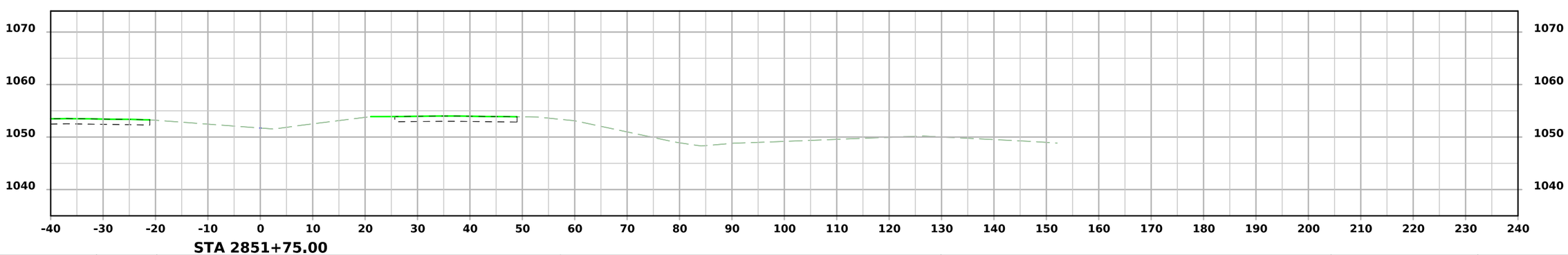
US 30 DURHAM AVE
RIGHT TURNLANE







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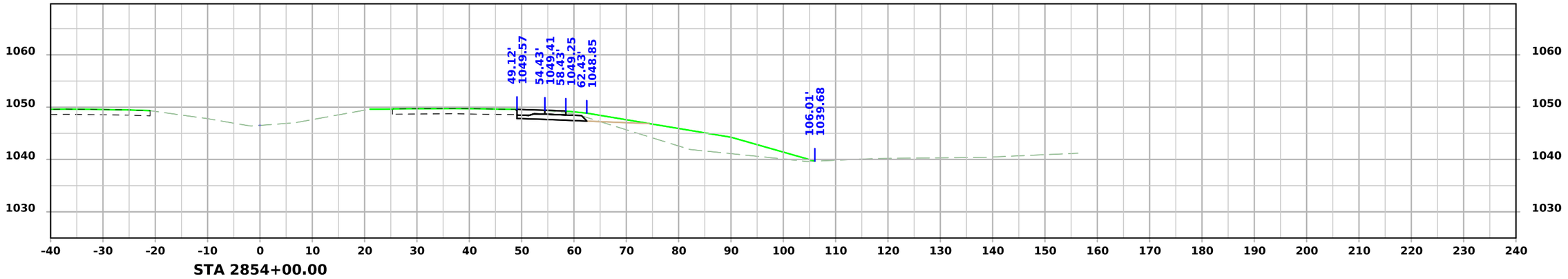
US 30 DURHAM AVE
RIGHT TURNLANE



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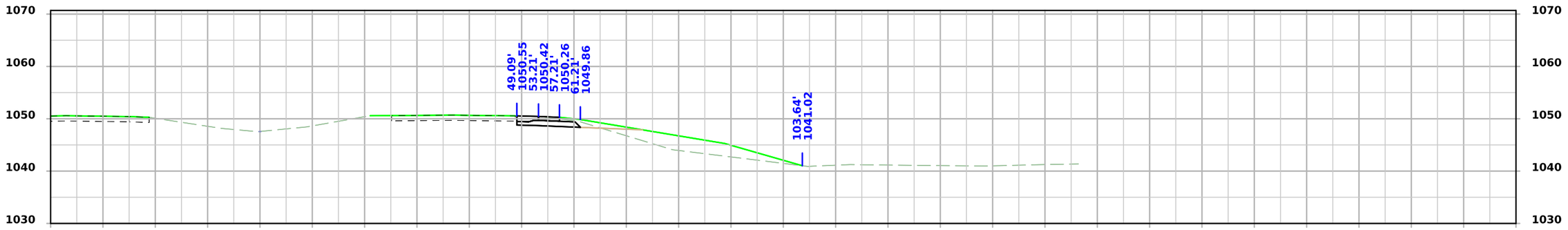

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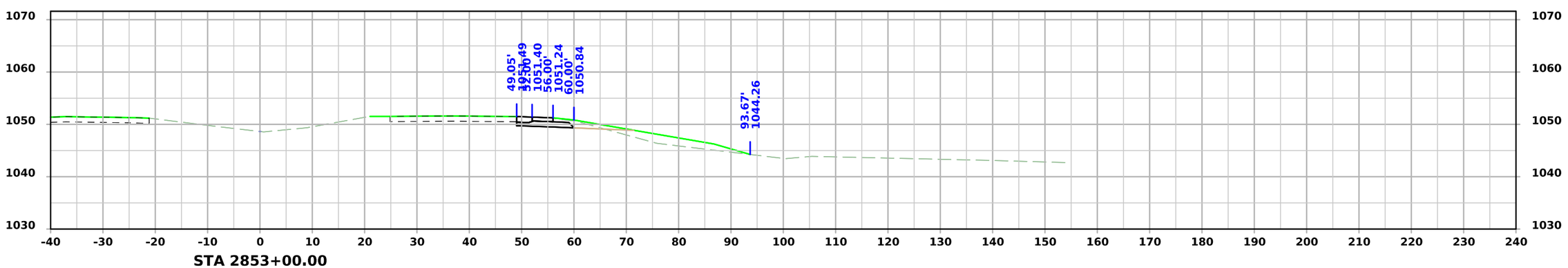

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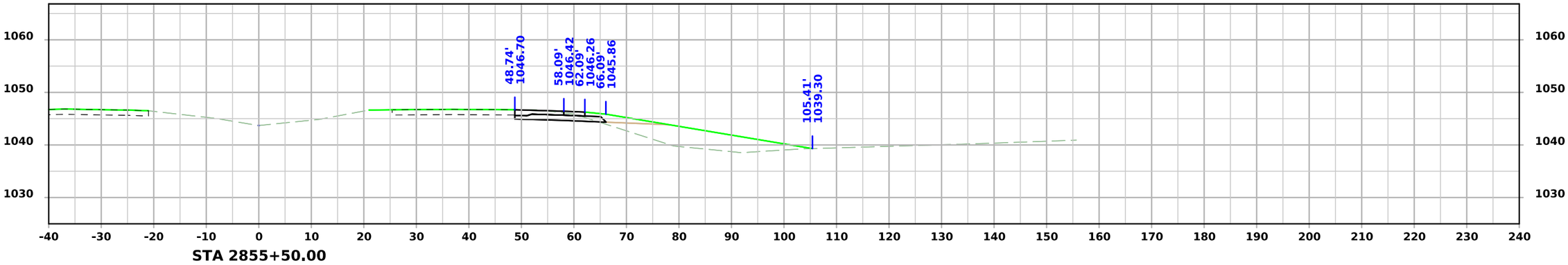
US 30 DURHAM AVE
RIGHT TURNLANE



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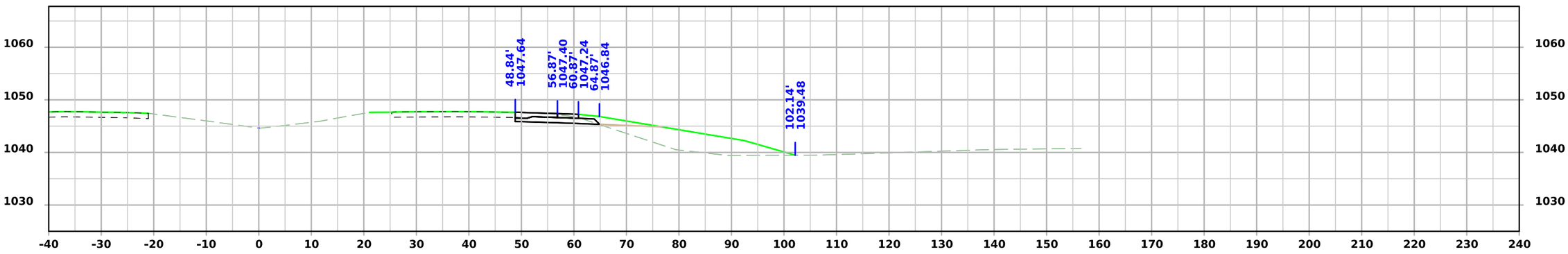

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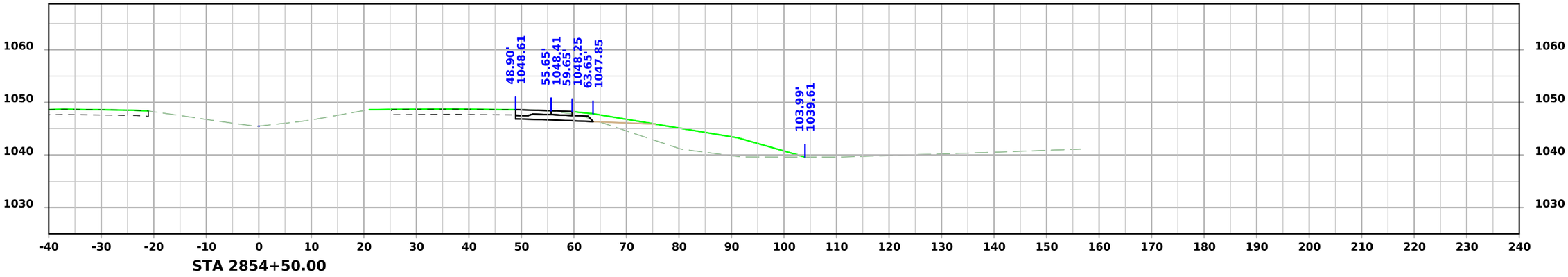

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FILE NO.	ENGLISH	DESIGN TEAM Vortherms/Tamrakar/Ringgenberg	MARSHALL COUNTY	PROJECT NUMBER HSIPX-030-5(328)--3L-64	SHEET NUMBER W.3

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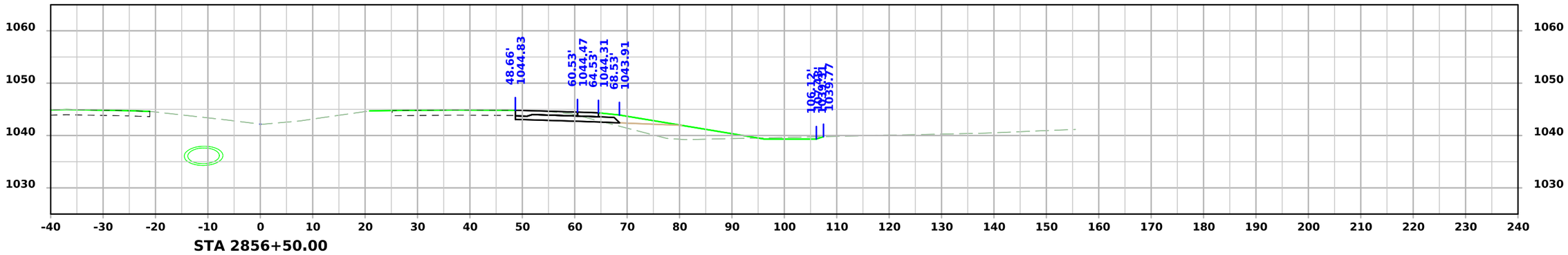
US 30 DURHAM AVE
RIGHT TURNLANE



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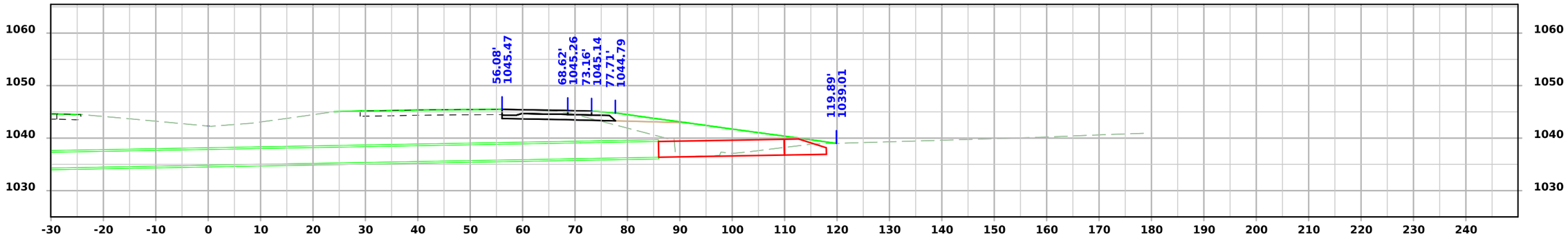

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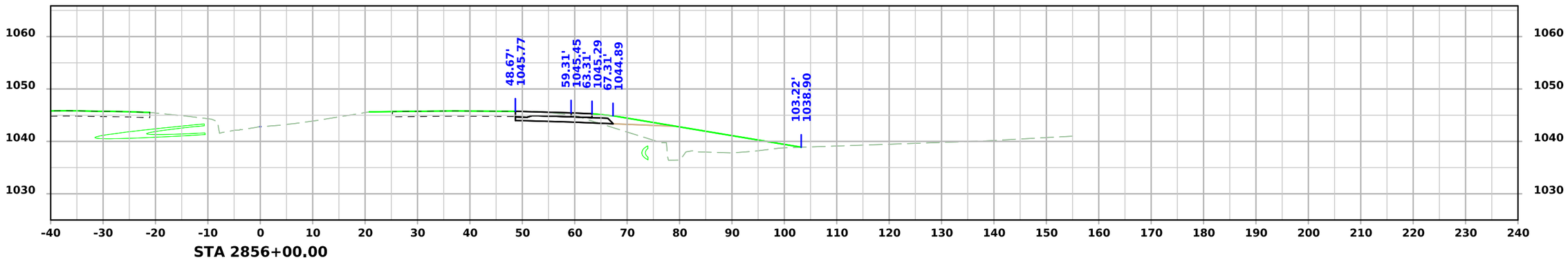

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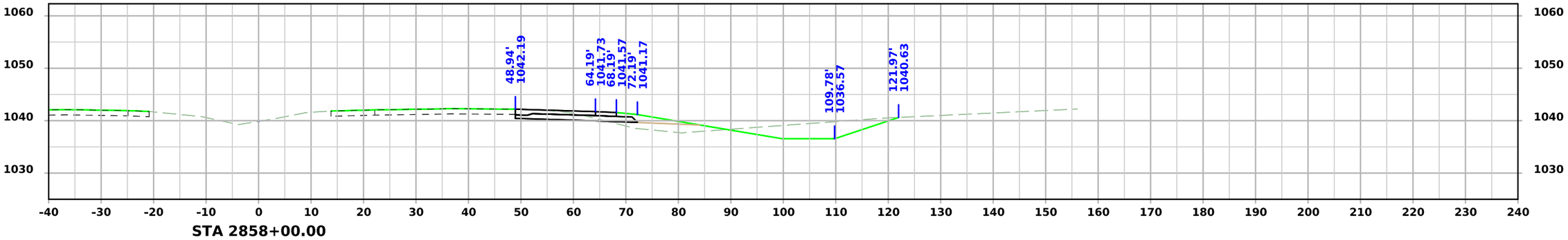
US 30 DURHAM AVE
RIGHT TURNLANE



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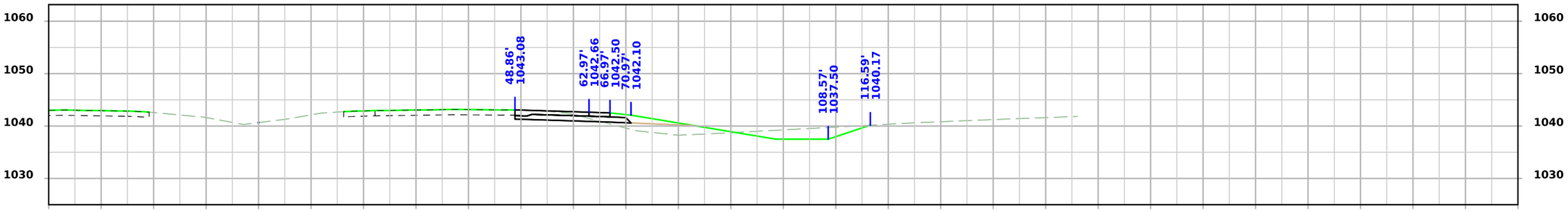

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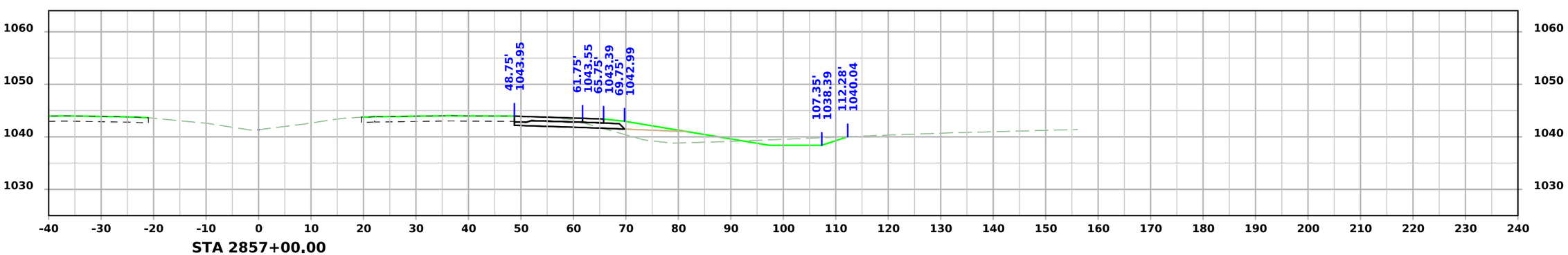

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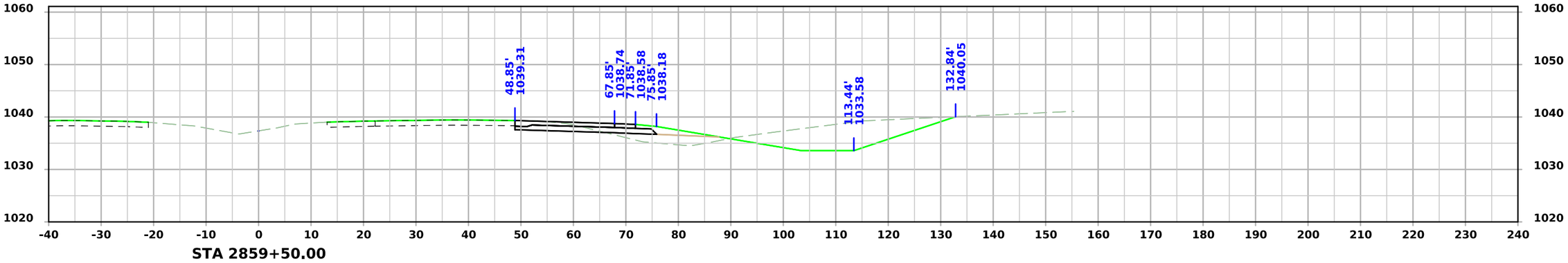
US 30 DURHAM AVE
RIGHT TURNLANE



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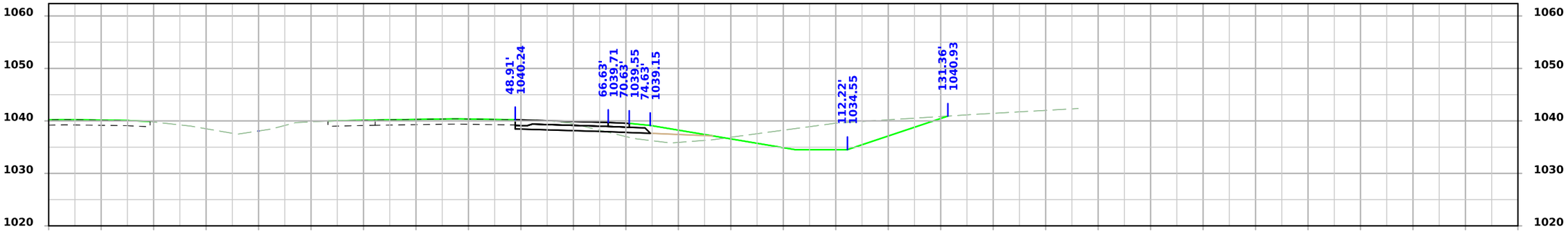

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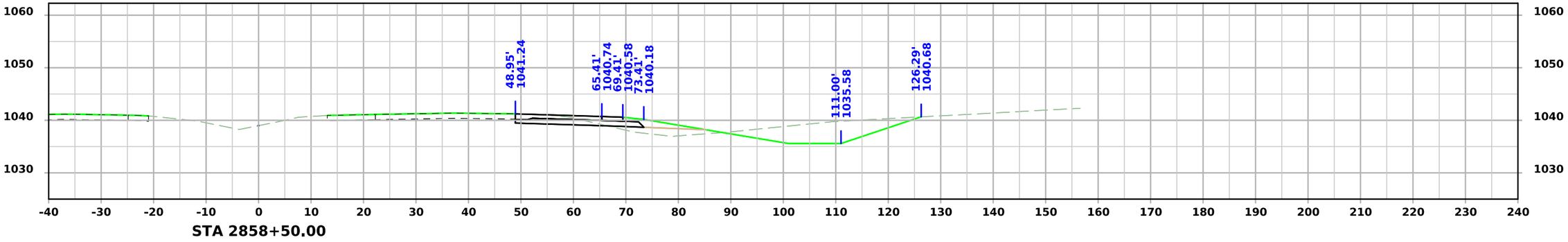

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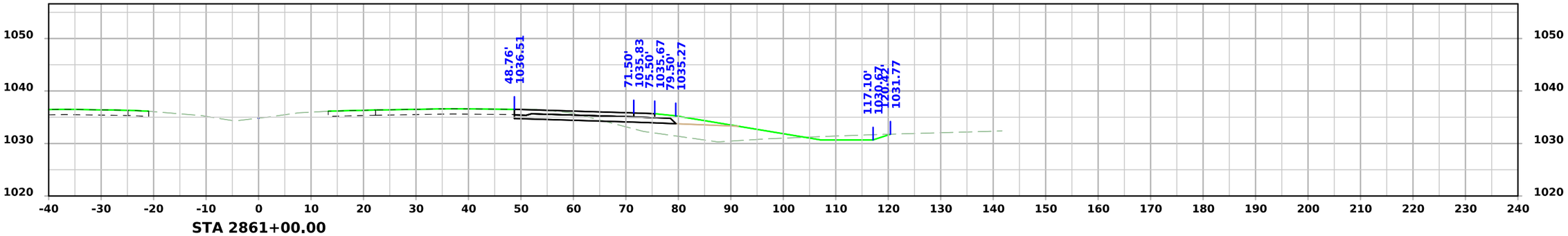
US 30 DURHAM AVE
RIGHT TURNLANE



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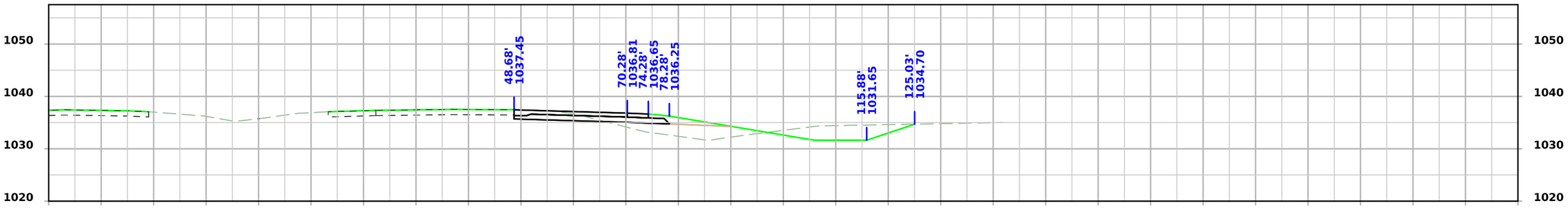

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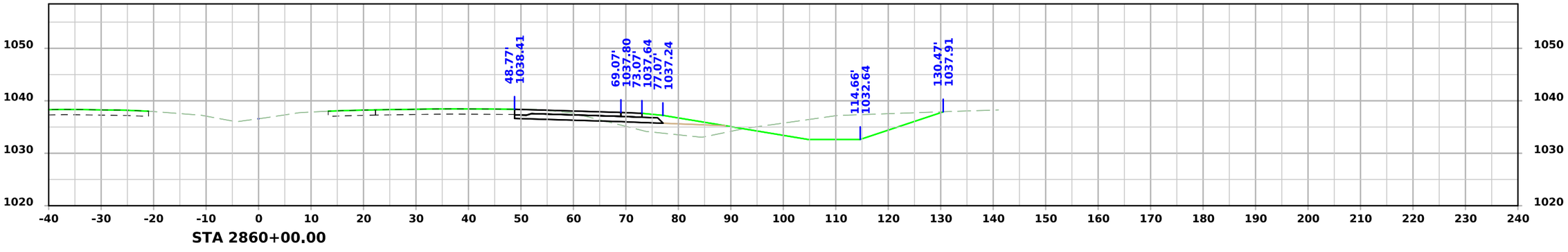

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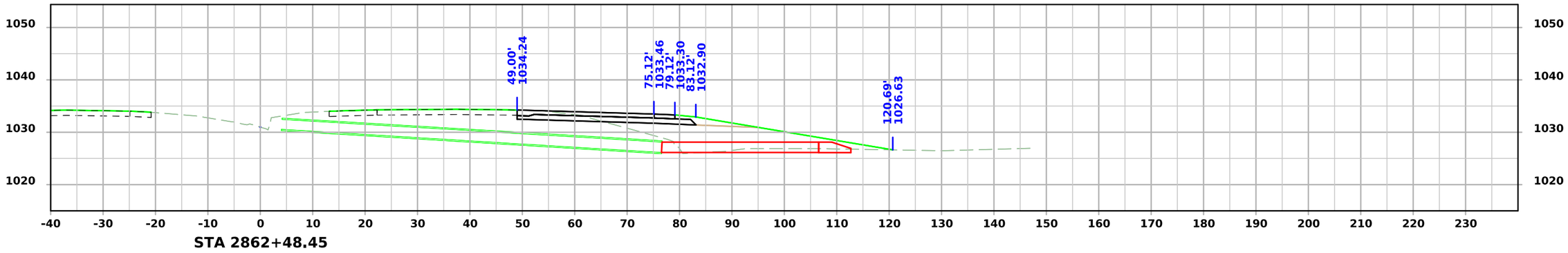
US 30 DURHAM AVE
RIGHT TURNLANE



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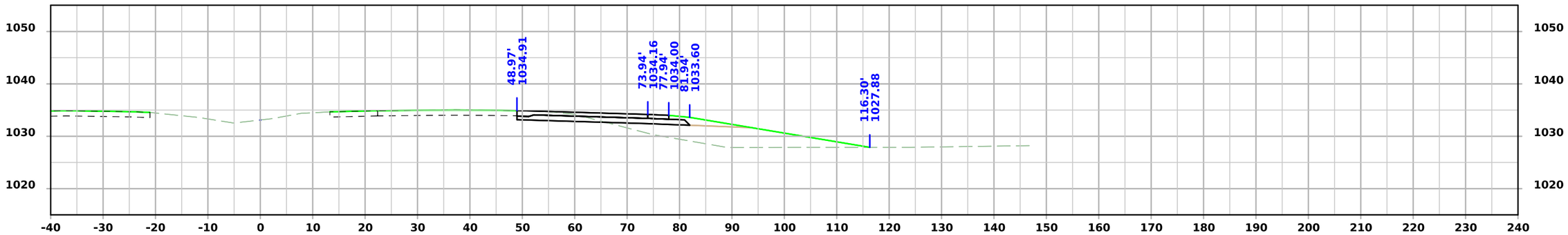

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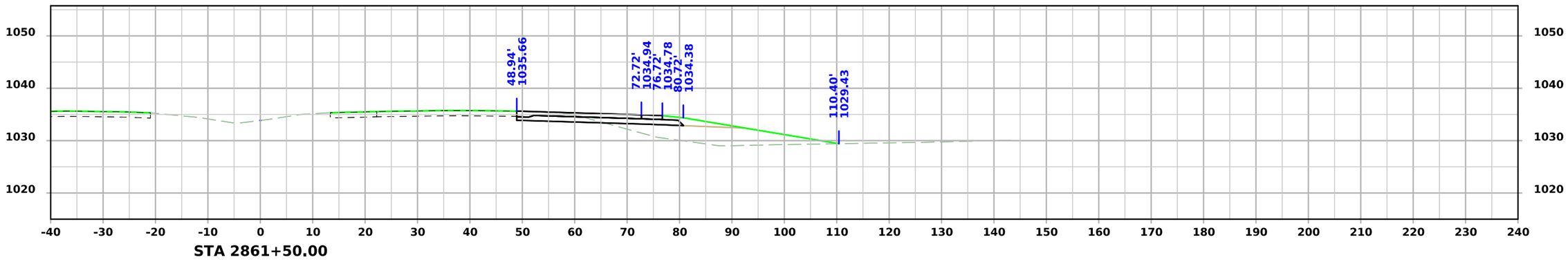

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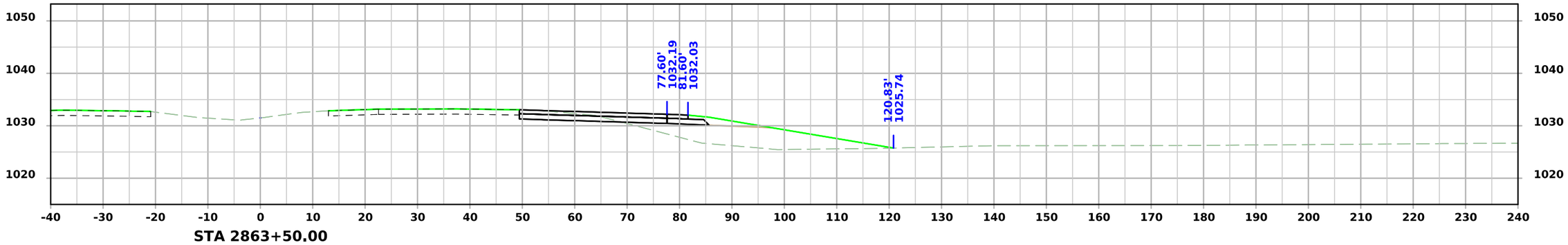
US 30 DURHAM AVE
RIGHT TURNLANE



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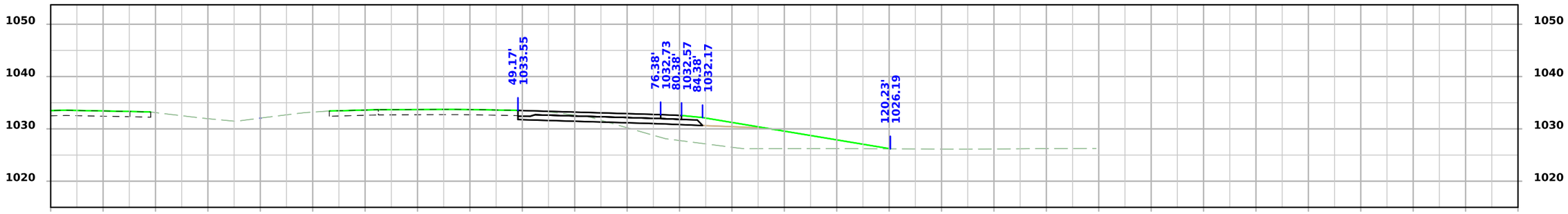

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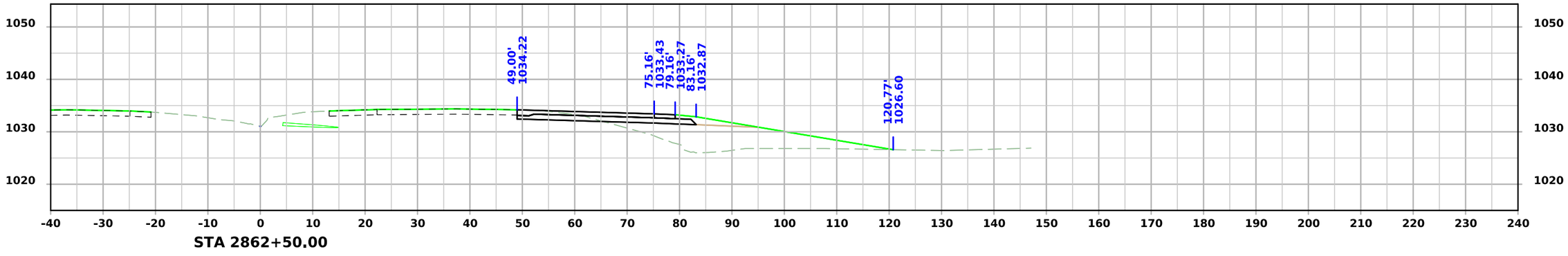

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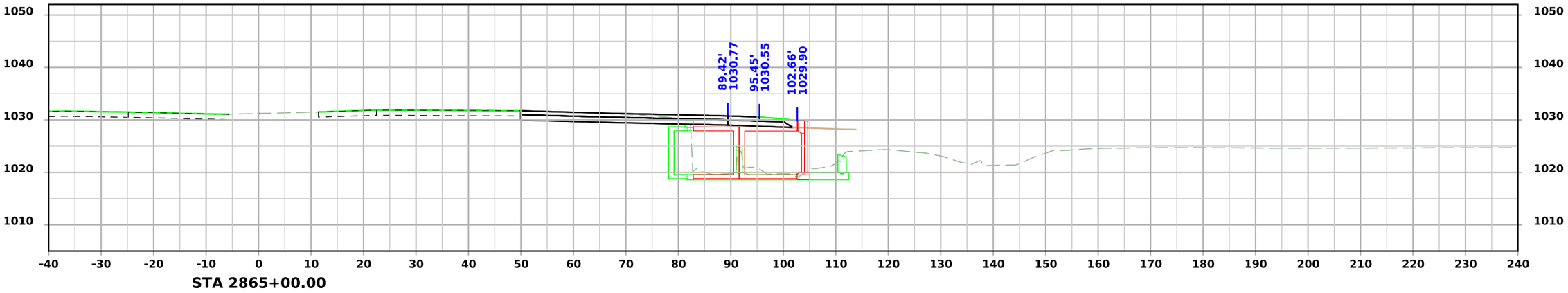
US 30 DURHAM AVE
RIGHT TURNLANE



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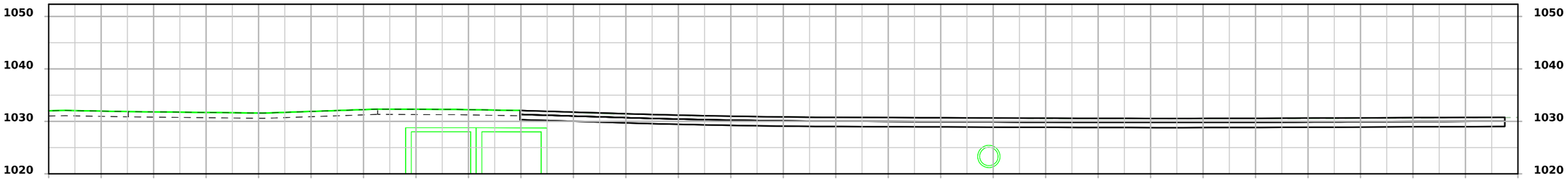

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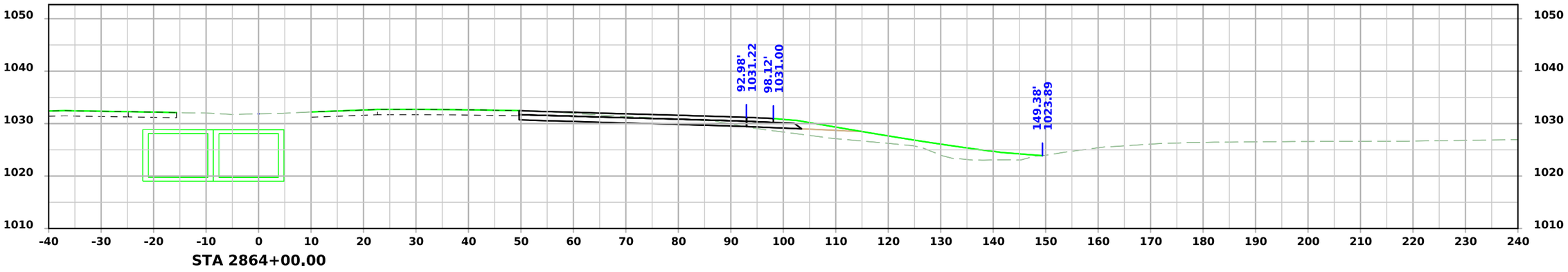

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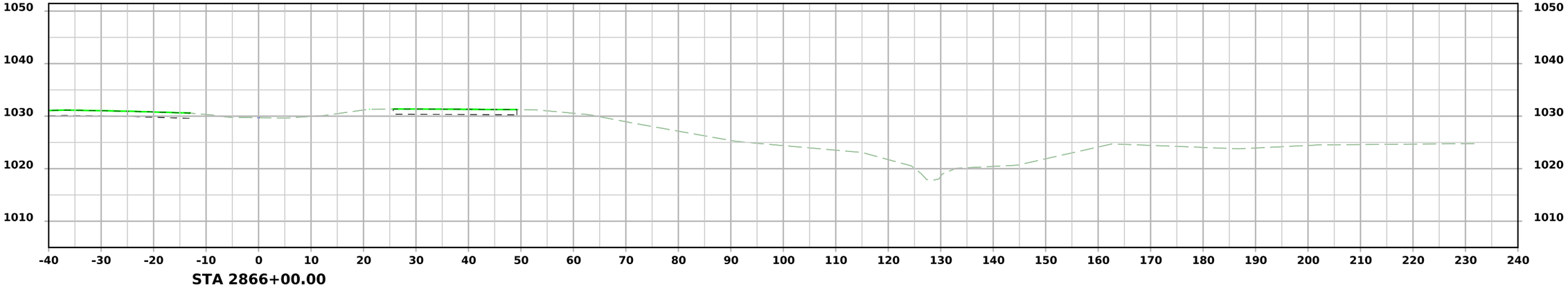
US 30 DURHAM AVE
RIGHT TURNLANE



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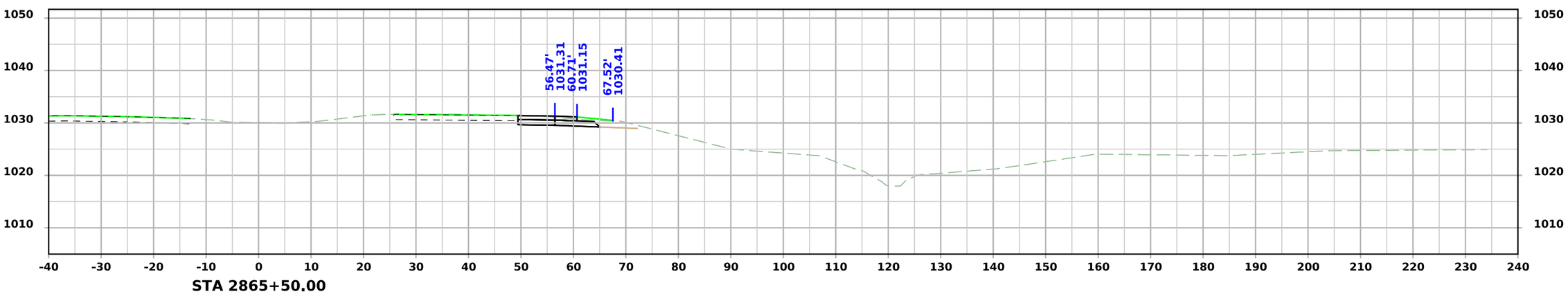

STA 2865+50.00

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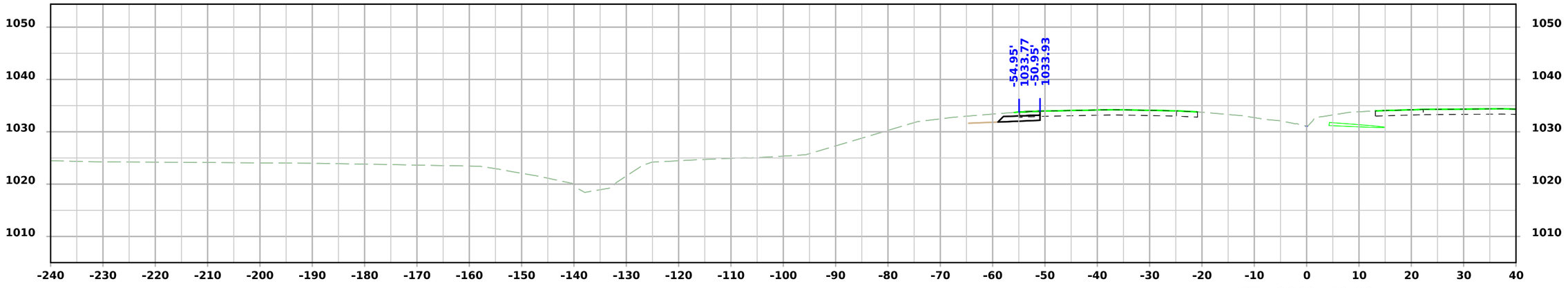
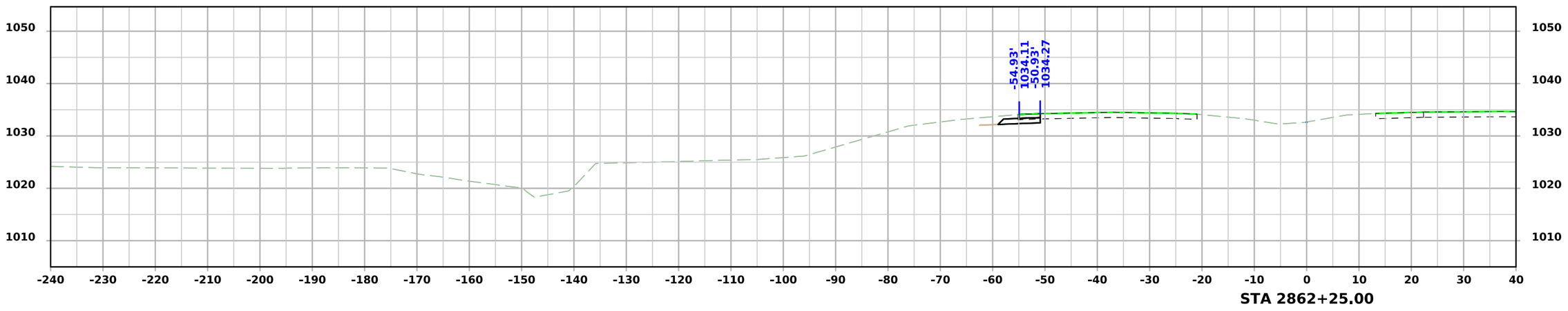
US 30 3RD AVE SW
RIGHT TURNLANE



STA 2862+50.00

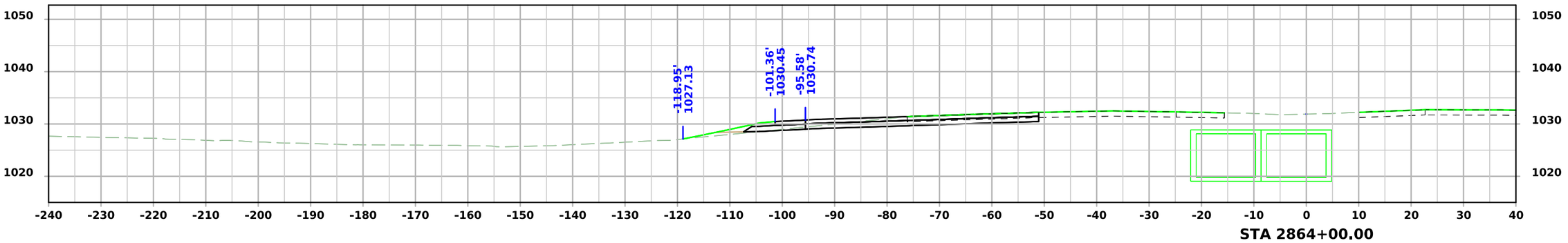


STA 2862+25.00

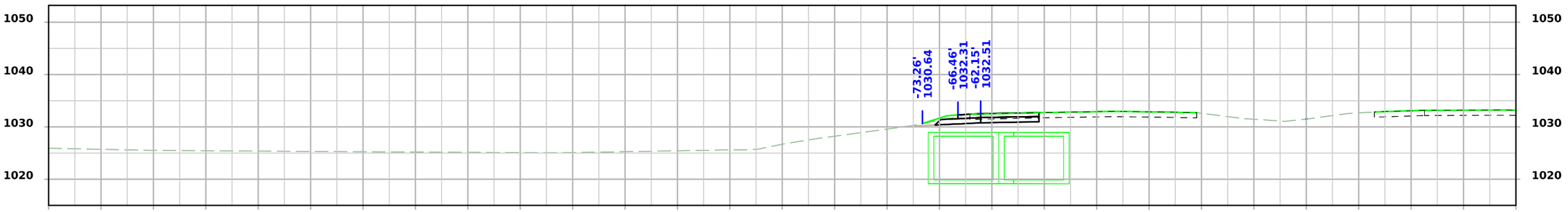
FILE NO.	ENGLISH	DESIGN TEAM Vortherms/Tamrakar/Ringgenberg	MARSHALL COUNTY	PROJECT NUMBER HSIPX-030-5(328)--3L-64	SHEET NUMBER W.12

2:39:52 PM 4/1/2026 rringge pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\6403002025\DistrictDesign\HSIPX-030-5(328)_RightTurnLanes\CADDFiles\640305328_W01.dgn

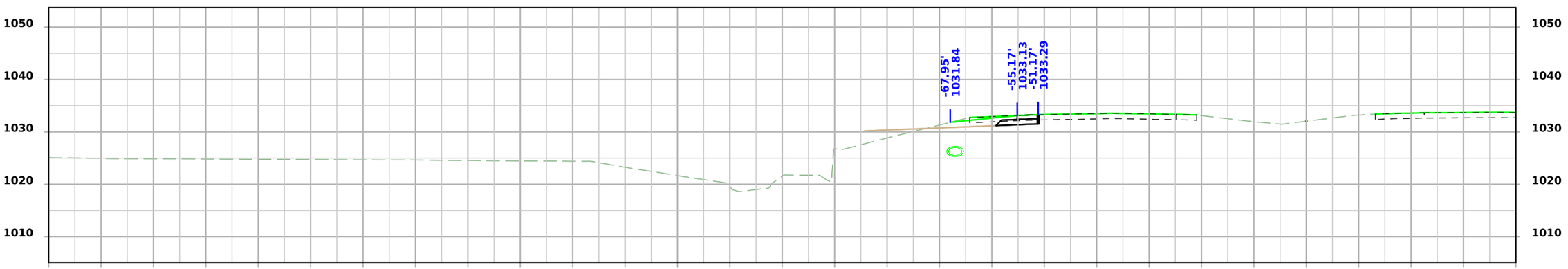
US 30 3RD AVE SW
RIGHT TURNLANE



STA 2864+00.00



STA 2863+50.00

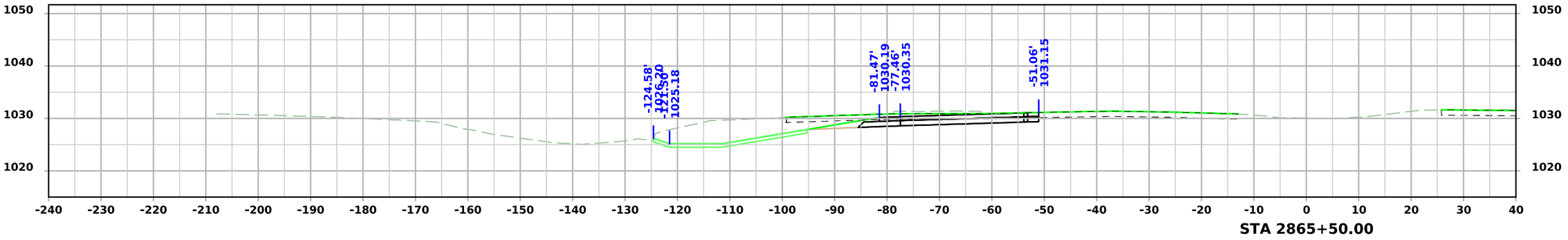


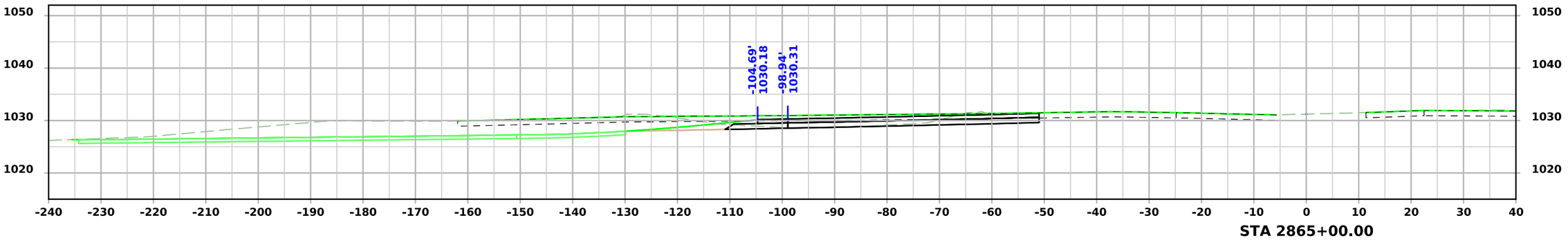
STA 2863+00.00

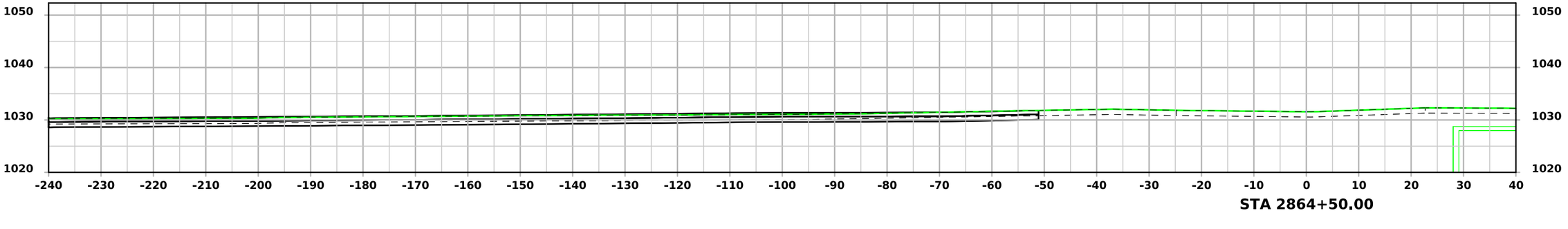
FILE NO.	ENGLISH	DESIGN TEAM Vortherms/Tamrakar/Ringgenberg	MARSHALL COUNTY	PROJECT NUMBER HSIPX-030-5(328)--3L-64	SHEET NUMBER W.13

2:39:52 PM 4/1/2026 rringge pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\6403002025\DistrictDesign\HSIPX-030-5(328)_RightTurnLanes\CADDFiles\640305328_W01.dgn

US 30 3RD AVE SW
RIGHT TURNLANE



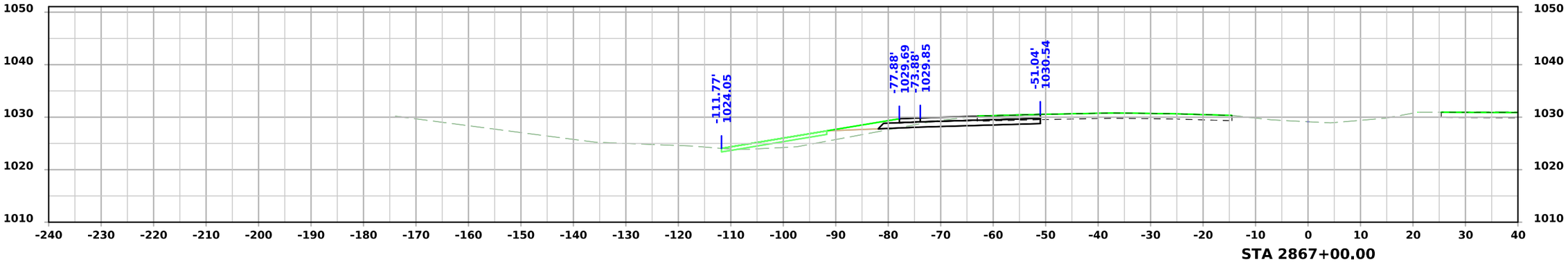




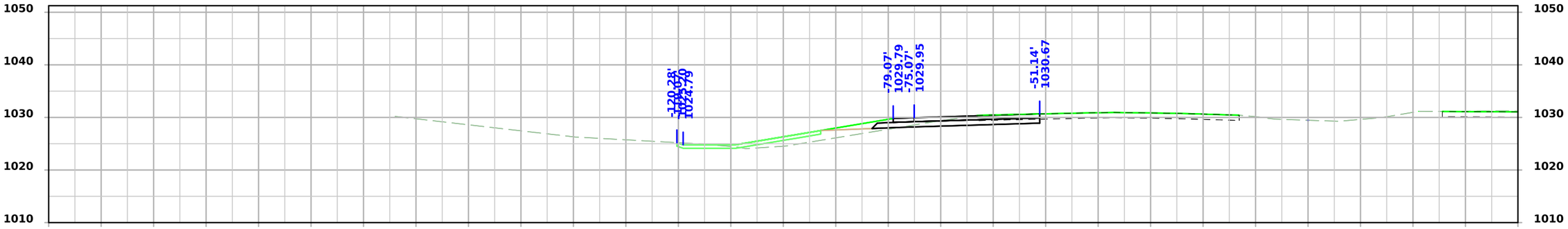
FILE NO.	ENGLISH	DESIGN TEAM Vortherms/Tamrakar/Ringgenberg	MARSHALL COUNTY	PROJECT NUMBER HSIPX-030-5(328)--3L-64	SHEET NUMBER W.14

2:39:53 PM 4/1/2026 rringge pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\6403002025\DistrictDesign\HSIPX-030-5(328)_RightTurnLanes\CADDFiles\640305328_W01.dgn

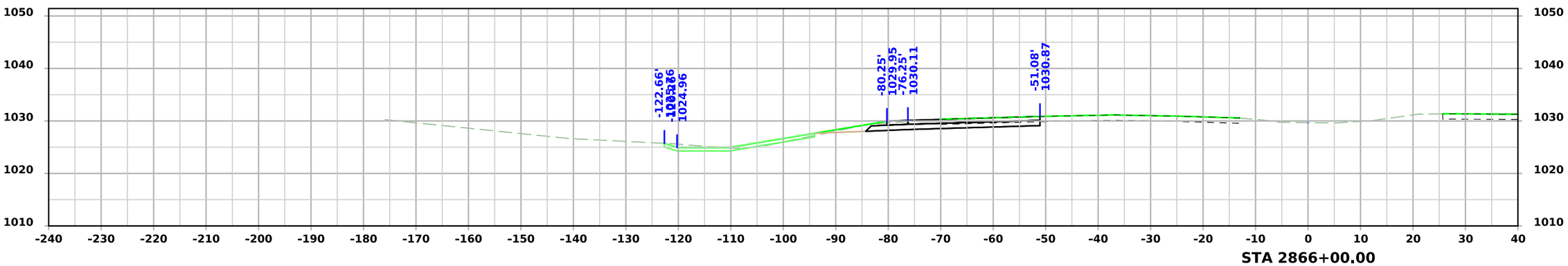
US 30 3RD AVE SW
RIGHT TURNLANE



STA 2867+00.00



STA 2866+50.00

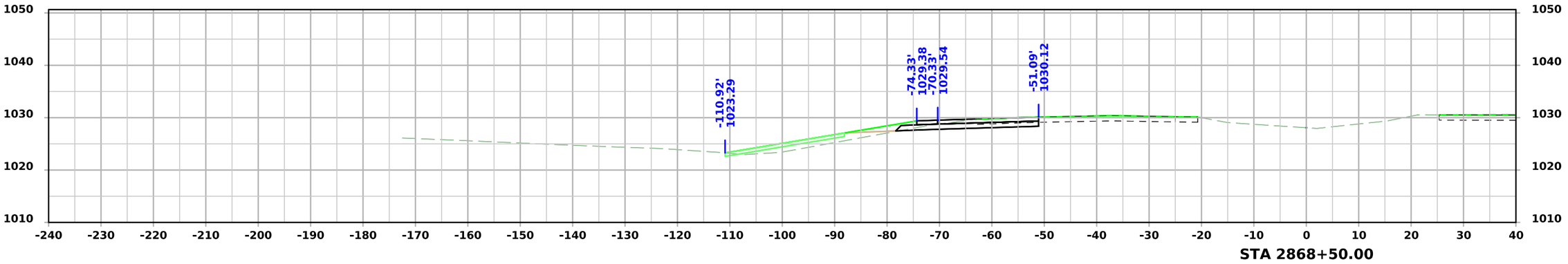


STA 2866+00.00

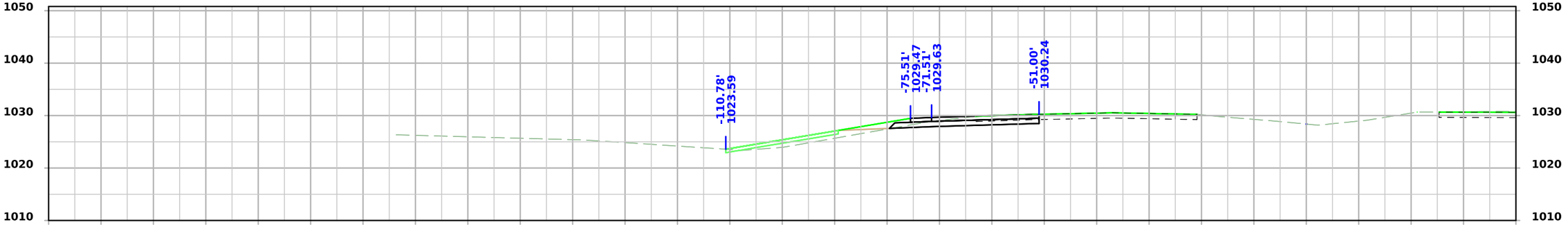
FILE NO.	ENGLISH	DESIGN TEAM Vortherms/Tamrakar/Ringgenberg	MARSHALL COUNTY	PROJECT NUMBER HSIPX-030-5(328)--3L-64	SHEET NUMBER W.15

2:39:54 PM 4/1/2026 rringge pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\6403002025\DistrictDesign\HSIPX-030-5(328)_RightTurnLanes\CADDFiles\640305328_W01.dgn

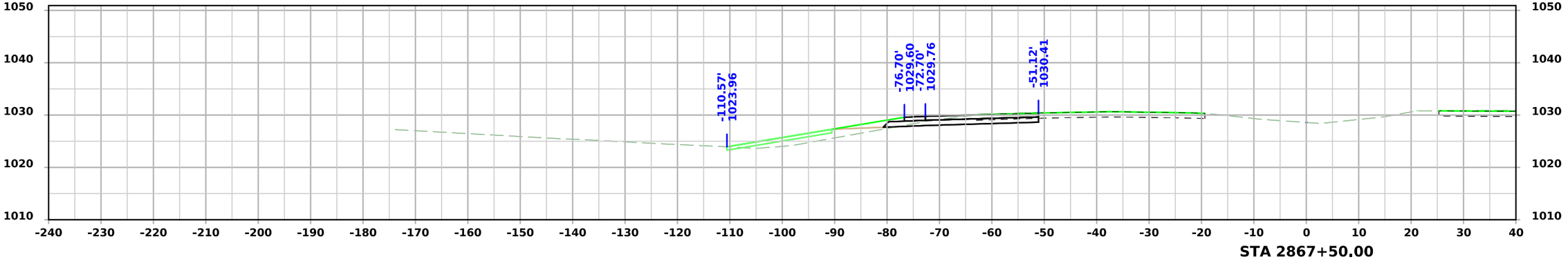
US 30 3RD AVE SW
RIGHT TURNLANE



STA 2868+50.00



STA 2868+00.00

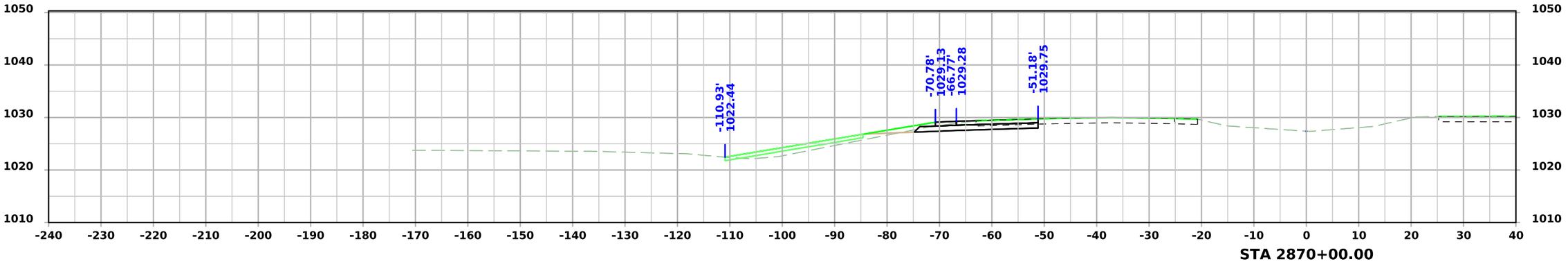


STA 2867+50.00

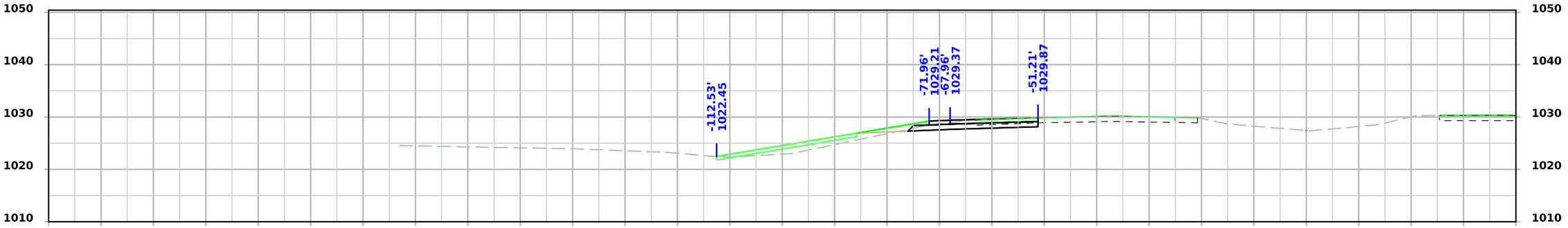
FILE NO.	ENGLISH	DESIGN TEAM Vortherms/Tamrakar/Ringgenberg	MARSHALL COUNTY	PROJECT NUMBER HSIPX-030-5(328)--3L-64	SHEET NUMBER W.16

2:39:55 PM 4/1/2026 rringge pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\6403002025\DistrictDesign\HSIPX-030-5(328)_RightTurnLanes\CADDFiles\640305328_W01.dgn

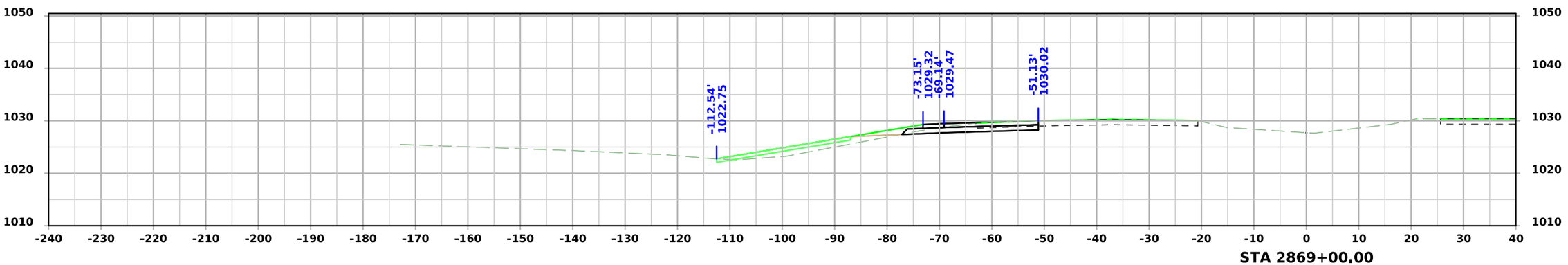
US 30 3RD AVE SW
RIGHT TURNLANE



STA 2870+00.00



STA 2869+50.00

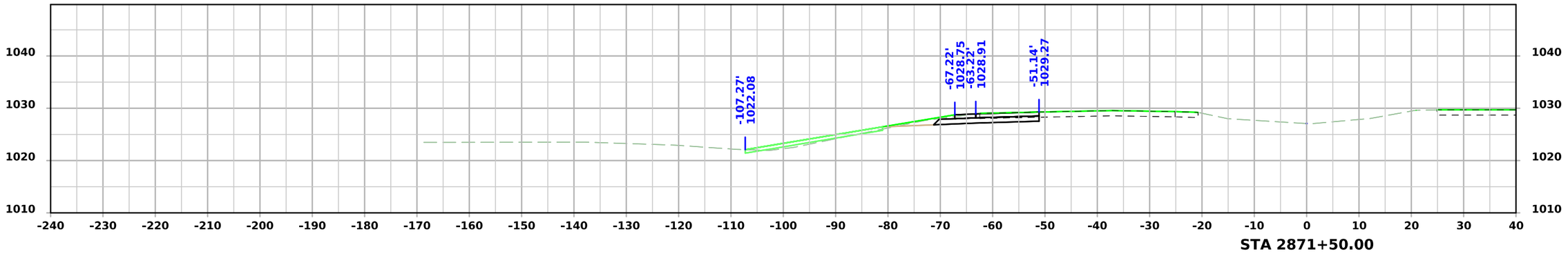


STA 2869+00.00

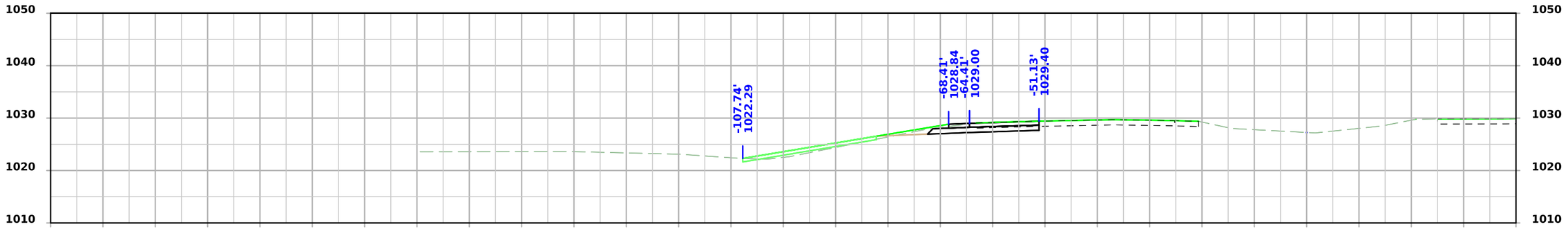
FILE NO.	ENGLISH	DESIGN TEAM Vortherms/Tamrakar/Ringgenberg	MARSHALL COUNTY	PROJECT NUMBER HSIPX-030-5(328)--3L-64	SHEET NUMBER W.17

2:39:56 PM 4/1/2026 rringge pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\6403002025\DistrictDesign\HSIPX-030-5(328)_RightTurnLanes\CADDFiles\640305328_W01.dgn

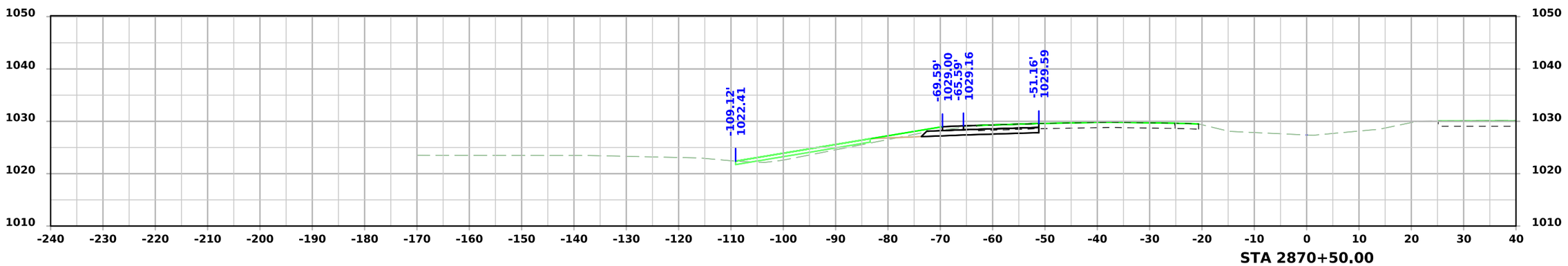
US 30 3RD AVE SW
RIGHT TURNLANE



STA 2871+50.00



STA 2871+00.00

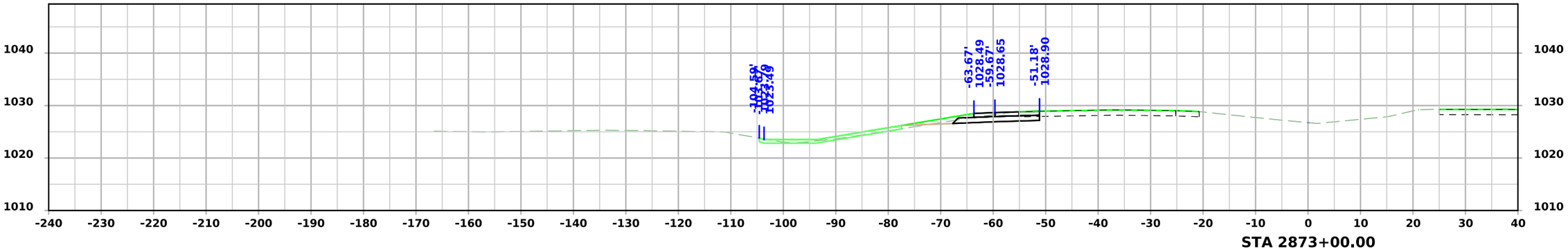


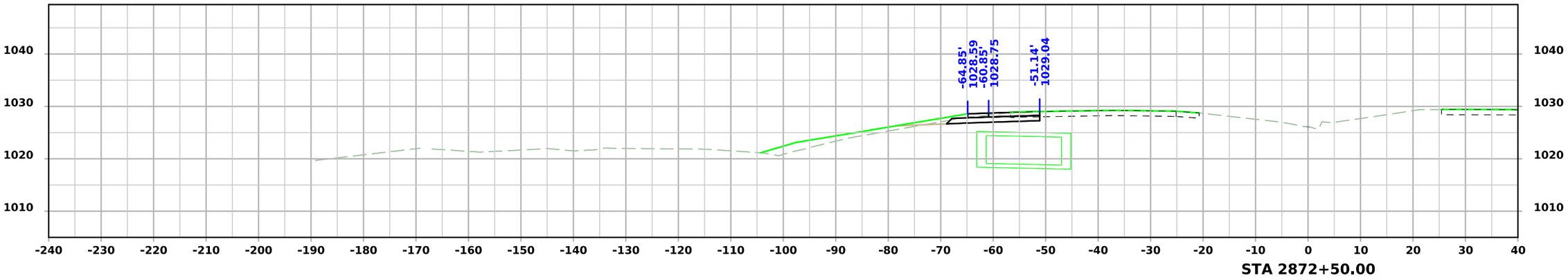
STA 2870+50.00

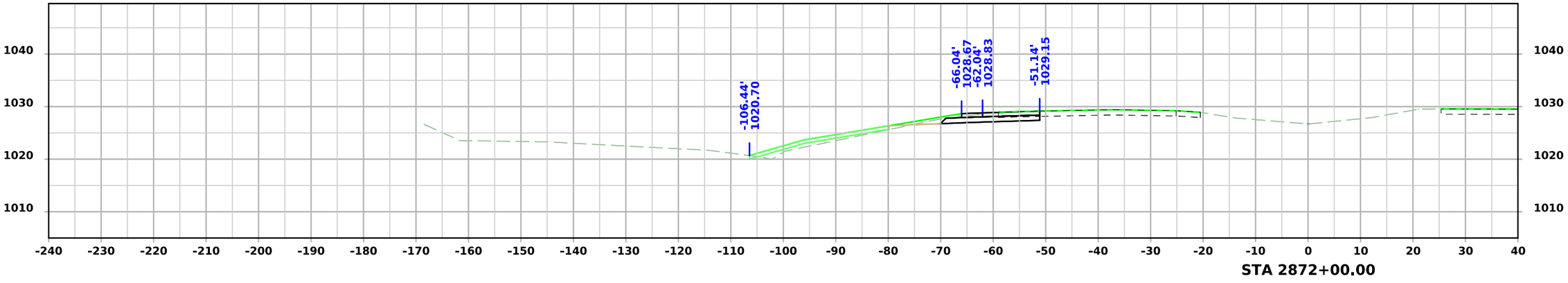
FILE NO.	ENGLISH	DESIGN TEAM Vortherms/Tamrakar/Ringgenberg	MARSHALL COUNTY	PROJECT NUMBER HSIPX-030-5(328)--3L-64	SHEET NUMBER W.18

2:39:57 PM 4/1/2026 rringge pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\6403002025\DistrictDesign\HSIPX-030-5(328)_RightTurnLanes\CADDFiles\640305328_W01.dgn

US 30 3RD AVE SW
RIGHT TURNLANE



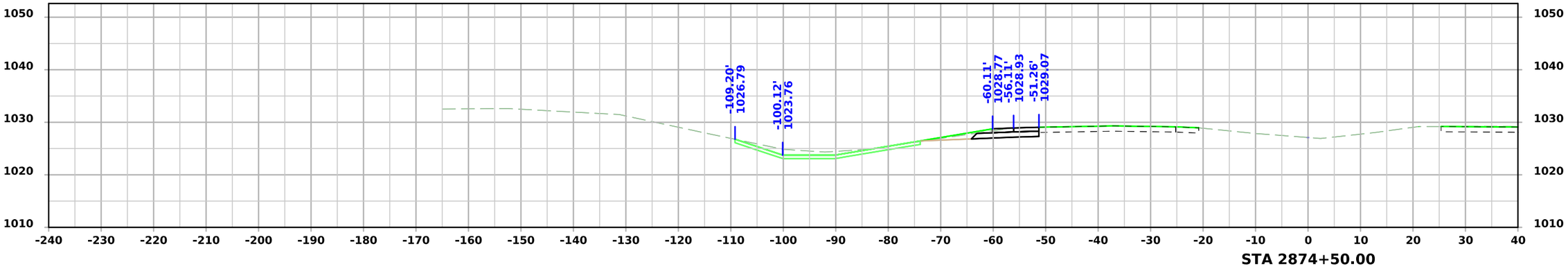




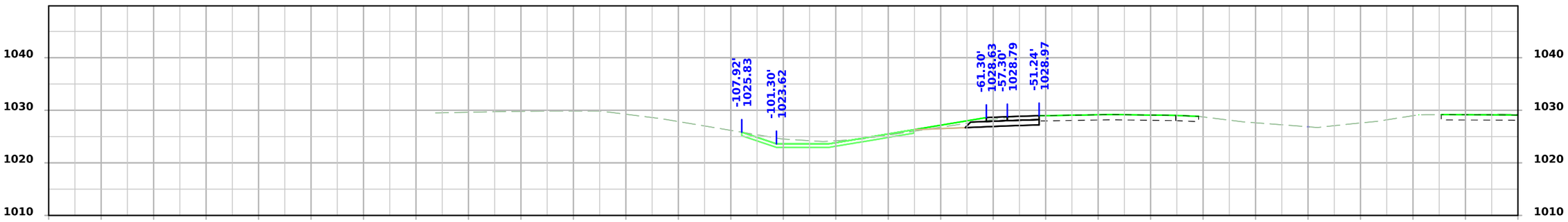
FILE NO.	ENGLISH	DESIGN TEAM Vortherms/Tamrakar/Ringgenberg	MARSHALL COUNTY	PROJECT NUMBER HSIPX-030-5(328)--3L-64	SHEET NUMBER W.19

2:39:58 PM 4/1/2026 rringge pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\6403002025\DistrictDesign\HSIPX-030-5(328)_RightTurnLanes\CADDFiles\640305328_W01.dgn

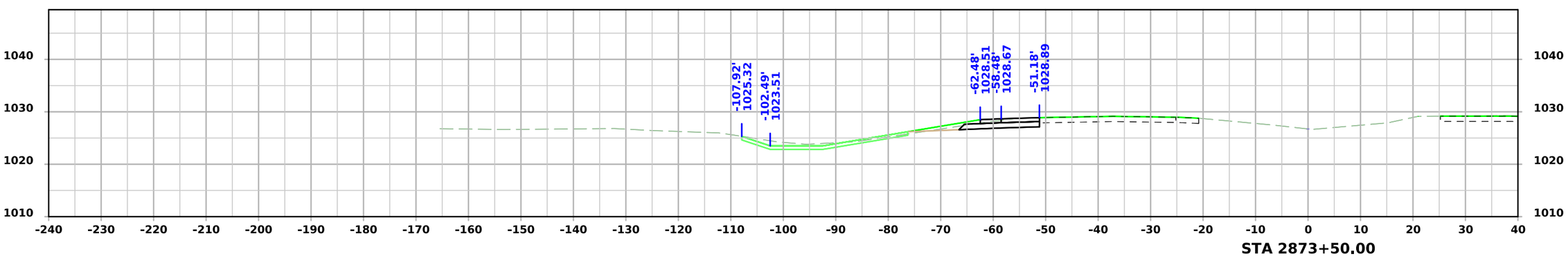
US 30 3RD AVE SW
RIGHT TURNLANE



STA 2874+50.00



STA 2874+00.00

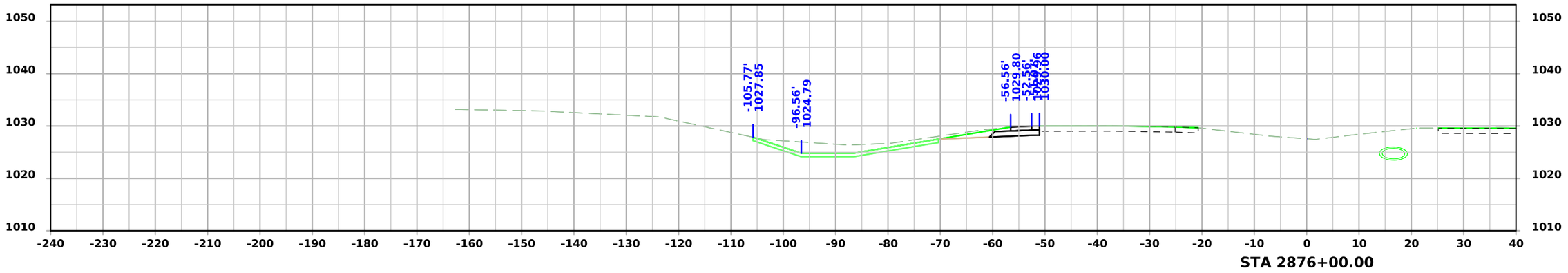


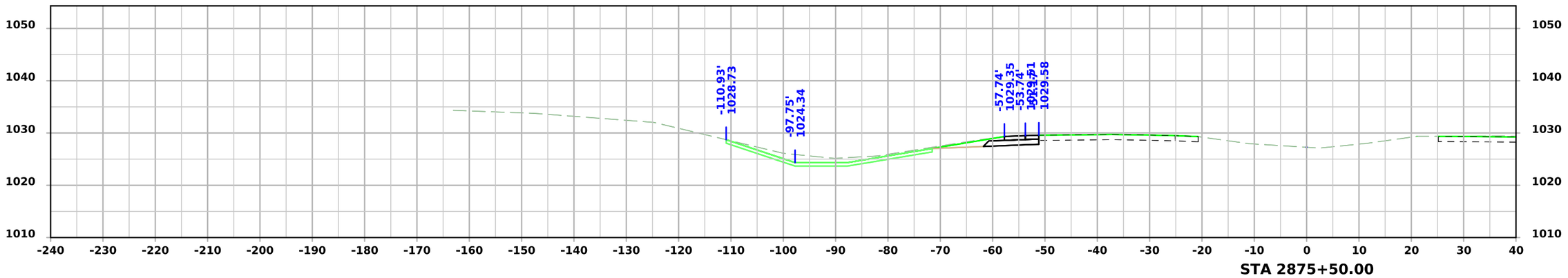
STA 2873+50.00

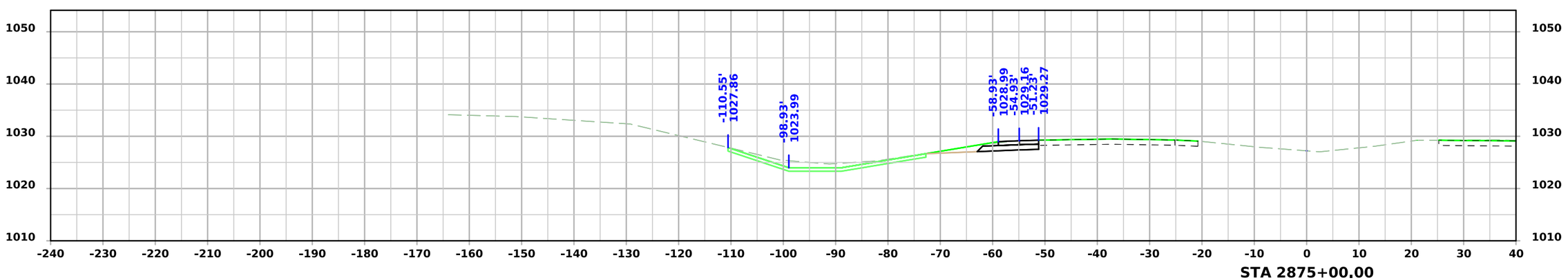
FILE NO.	ENGLISH	DESIGN TEAM Vortherms/Tamrakar/Ringgenberg	MARSHALL COUNTY	PROJECT NUMBER HSIPX-030-5(328)--3L-64	SHEET NUMBER W.20

2:39:59 PM 4/1/2026 rringge pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\6403002025\DistrictDesign\HSIPX-030-5(328)_RightTurnLanes\CADDFiles\640305328_W01.dgn

US 30 3RD AVE SW
RIGHT TURNLANE



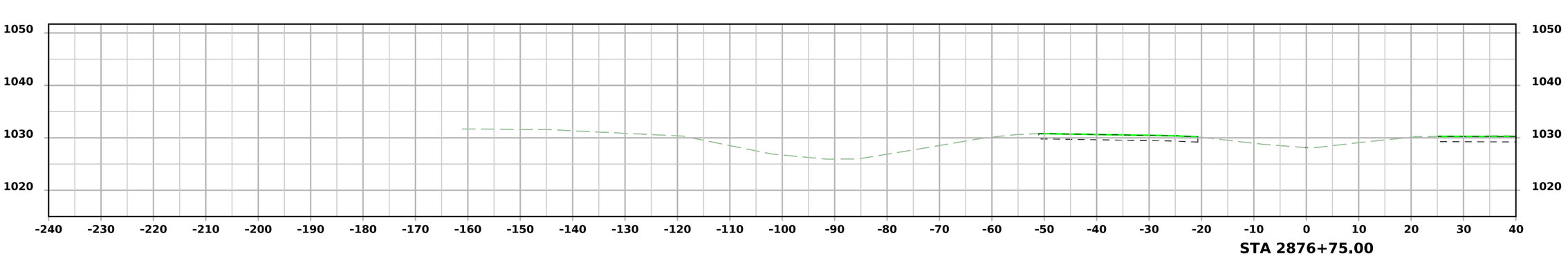


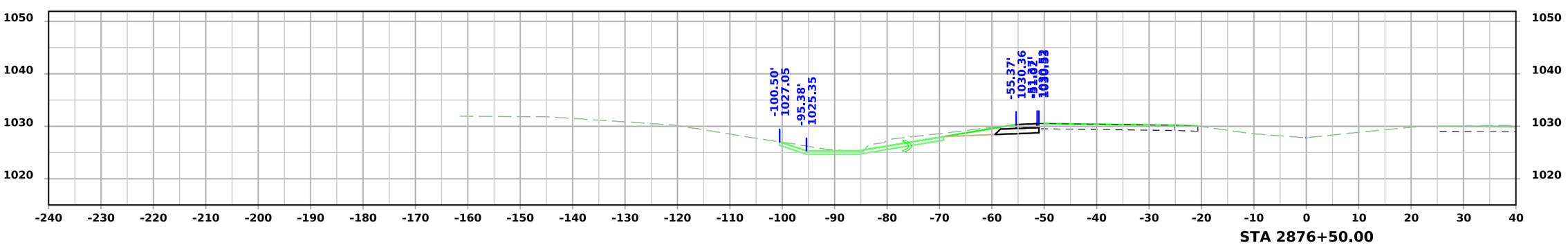


FILE NO.	ENGLISH	DESIGN TEAM Vortherms/Tamrakar/Ringgenberg	MARSHALL COUNTY	PROJECT NUMBER HSIPX-030-5(328)--3L-64	SHEET NUMBER W.21

2:40:00 PM 4/1/2026 rringge pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\6403002025\DistrictDesign\HSIPX-030-5(328)_RightTurnLanes\CADDFiles\640305328_W01.dgn

US 30 3RD AVE SW
RIGHT TURNLANE

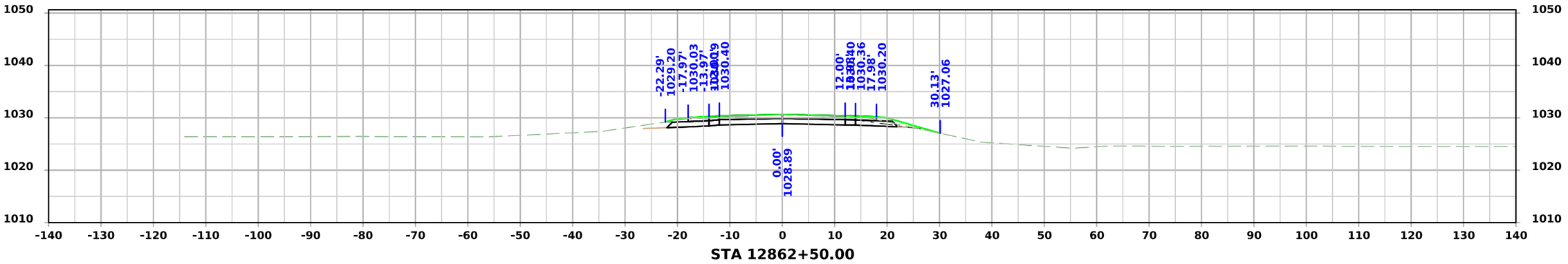




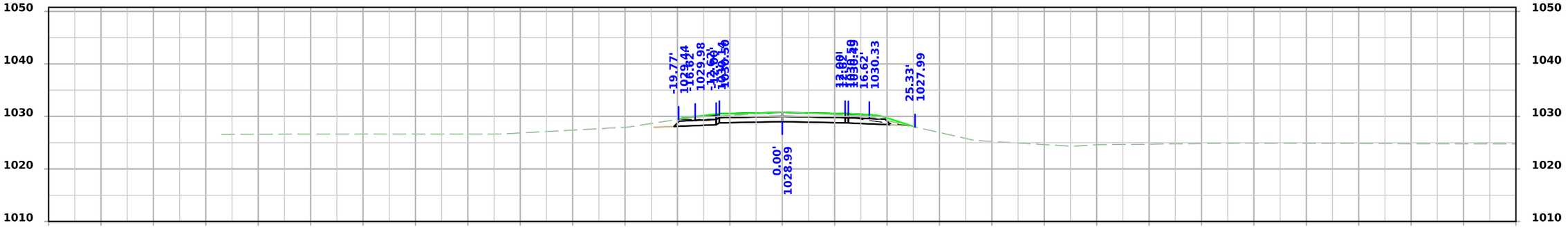
FILE NO.	ENGLISH	DESIGN TEAM Vortherms/Tamrakar/Ringgenberg	MARSHALL COUNTY	PROJECT NUMBER HSIPX-030-5(328)--3L-64	SHEET NUMBER W.22

2:40:01 PM 4/1/2026 rringge pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\6403002025\DistrictDesign\HSIPX-030-5(328)_RightTurnLanes\CADDFiles\640305328_W01.dgn

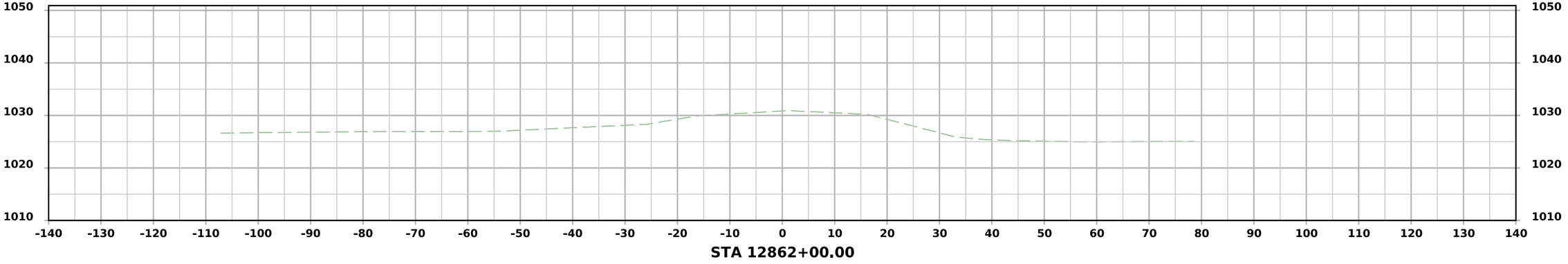
SR-DURHAM AVE



STA 12862+50.00



STA 12862+25.00

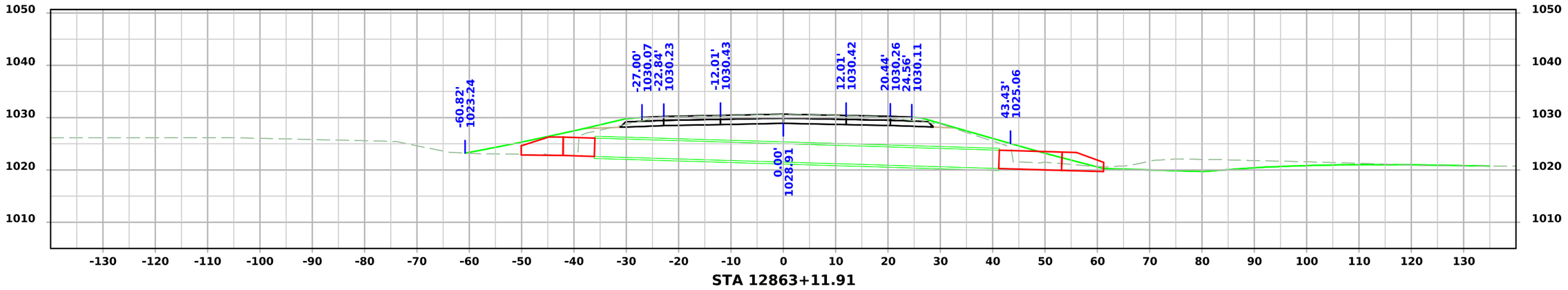


STA 12862+00.00

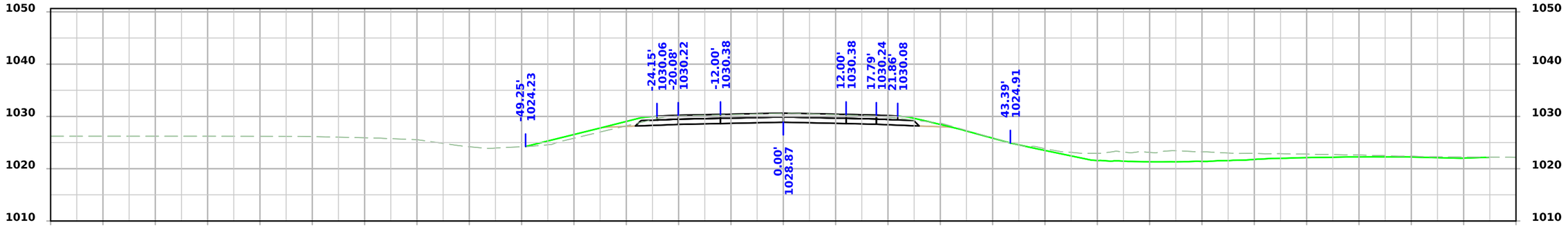
FILE NO.	ENGLISH	DESIGN TEAM Vortherms/Tamrakar/Ringgenberg	MARSHALL COUNTY	PROJECT NUMBER HSIPX-030-5(328)--3L-64	SHEET NUMBER X.1	

3:29:31 PM 4/1/2026 rringge pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\6403002025\DistrictDesign\HSIPX-030-5(328)_RightTurnLanes\CADDFiles\640305328_X1.dgn

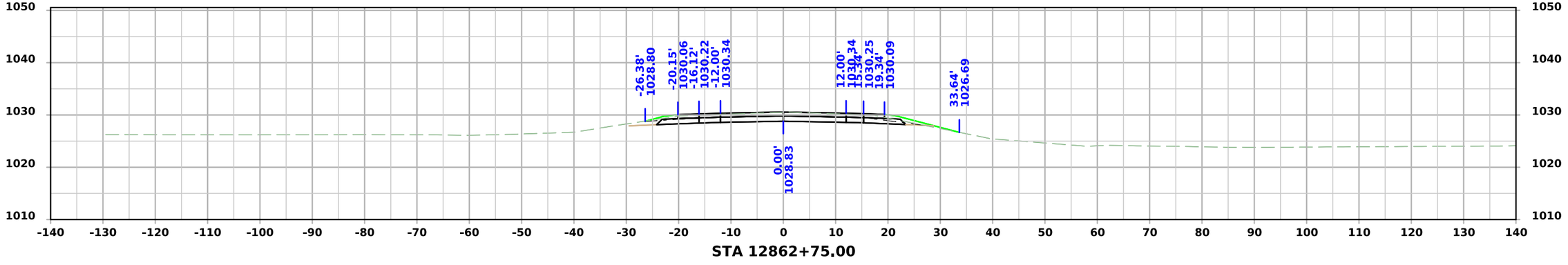
SR-DURHAM AVE



STA 12863+11.91



STA 12863+00.00

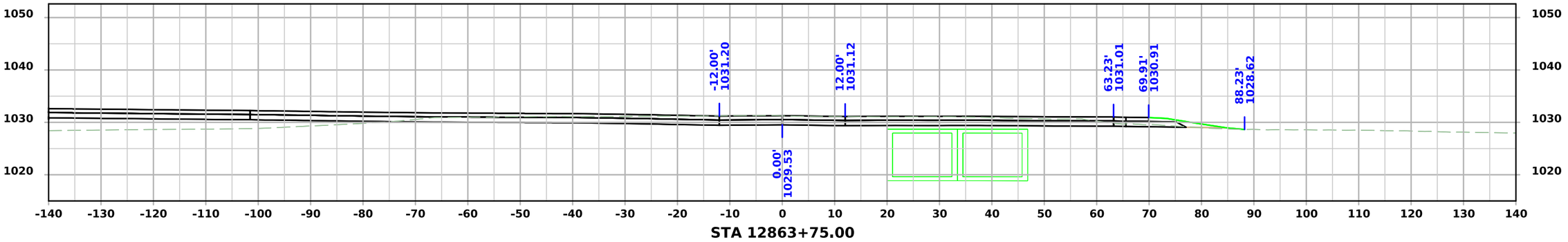


STA 12862+75.00

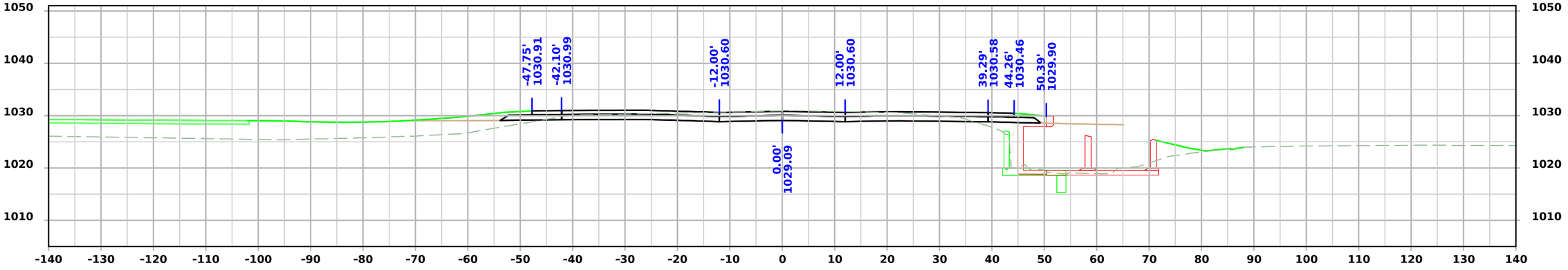
FILE NO.	ENGLISH	DESIGN TEAM Vortherms/Tamrakar/Ringgenberg	MARSHALL COUNTY	PROJECT NUMBER HSIPX-030-5(328)--3L-64	SHEET NUMBER X.2

3:29:32 PM 4/1/2026 rringge pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\6403002025\DistrictDesign\HSIPX-030-5(328)_RightTurnLanes\CADDFiles\640305328_X1.dgn

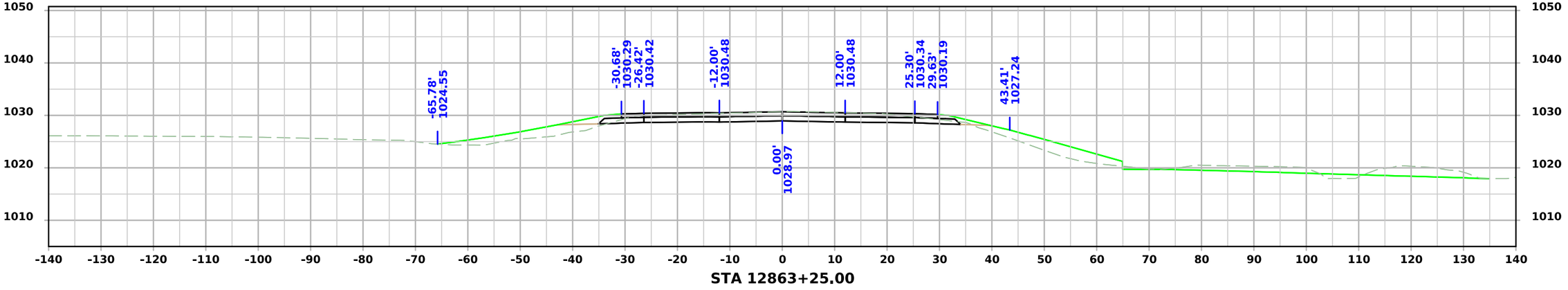
SR-DURHAM AVE



STA 12863+75.00



STA 12863+50.00

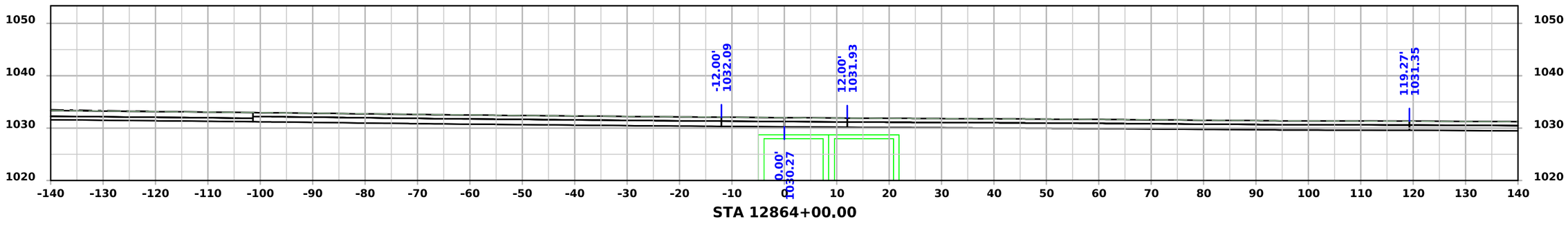


STA 12863+25.00

FILE NO.	ENGLISH	DESIGN TEAM Vortherms/Tamrakar/Ringgenberg	MARSHALL COUNTY	PROJECT NUMBER HSIPX-030-5(328)--3L-64	SHEET NUMBER X.3	

3:29:32 PM 4/1/2026 rringge pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\6403002025\DistrictDesign\HSIPX-030-5(328)_RightTurnLanes\CADDFiles\640305328_X1.dgn

SR-DURHAM AVE

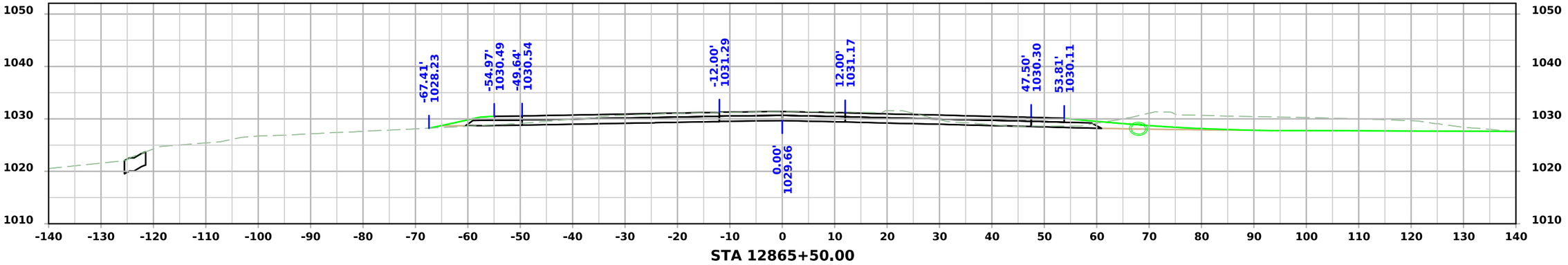


STA 12864+00.00

FILE NO.	ENGLISH	DESIGN TEAM Vortherms/Tamrakar/Ringgenberg	MARSHALL COUNTY	PROJECT NUMBER HSIPX-030-5(328)--3L-64	SHEET NUMBER X.4

3:29:33 PM 4/1/2026 rringge pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\6403002025\DistrictDesign\HSIPX-030-5(328)_RightTurnLanes\CADDFiles\640305328_X1.dgn

SR-3RD AVE SW



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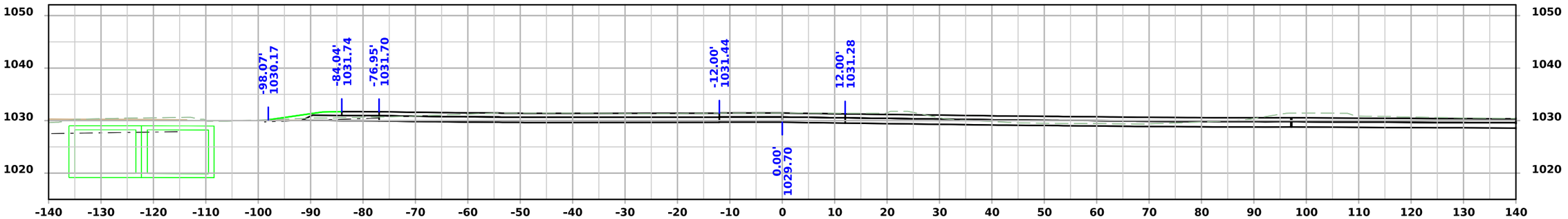

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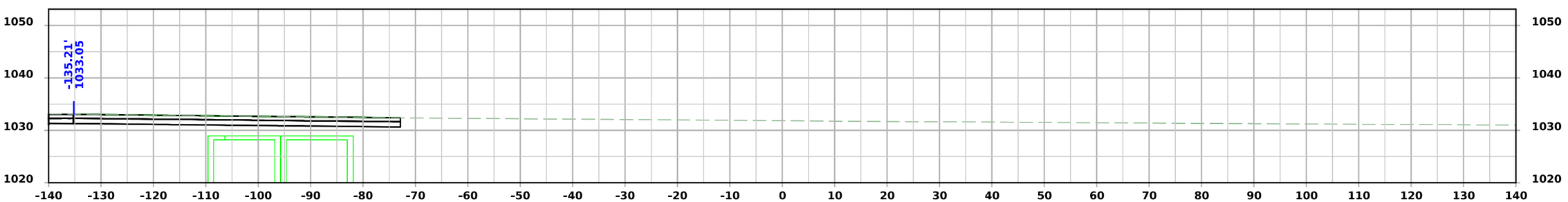

STA 12865+00.00

FILE NO.	ENGLISH	DESIGN TEAM Vortherms/Tamrakar/Ringgenberg	MARSHALL COUNTY	PROJECT NUMBER HSIPX-030-5(328)--3L-64	SHEET NUMBER X.5	

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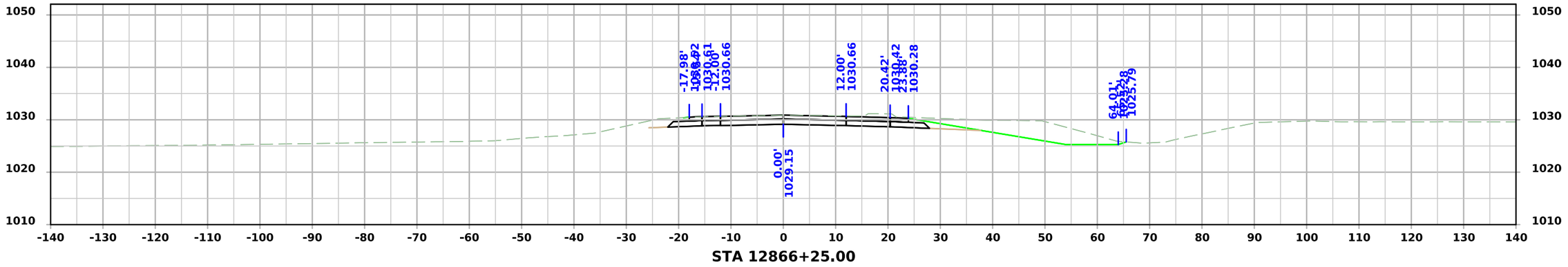
SR-3RD AVE SW



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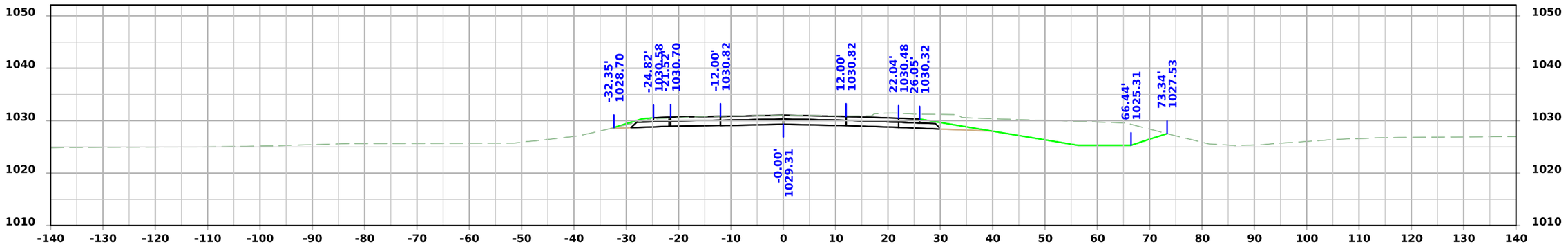

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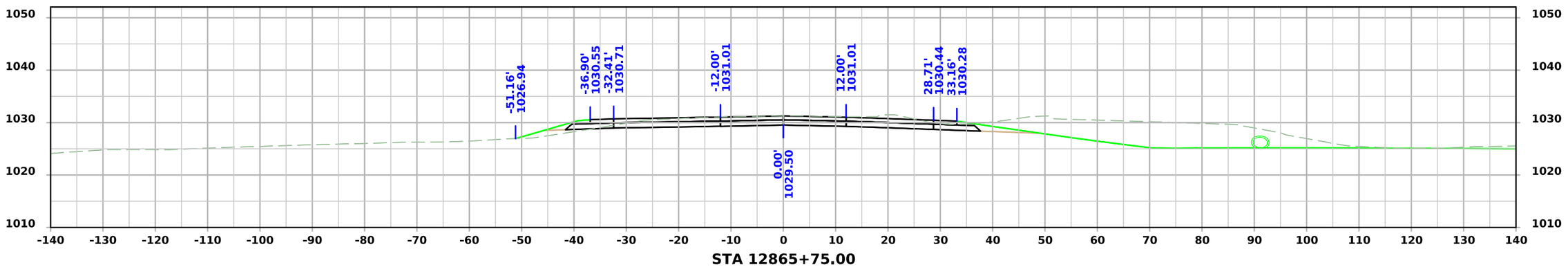

STA 12865+75.00

FILE NO.	ENGLISH	DESIGN TEAM Vortherms/Tamrakar/Ringgenberg	MARSHALL COUNTY	PROJECT NUMBER HSIPX-030-5(328)--3L-64	SHEET NUMBER X.6

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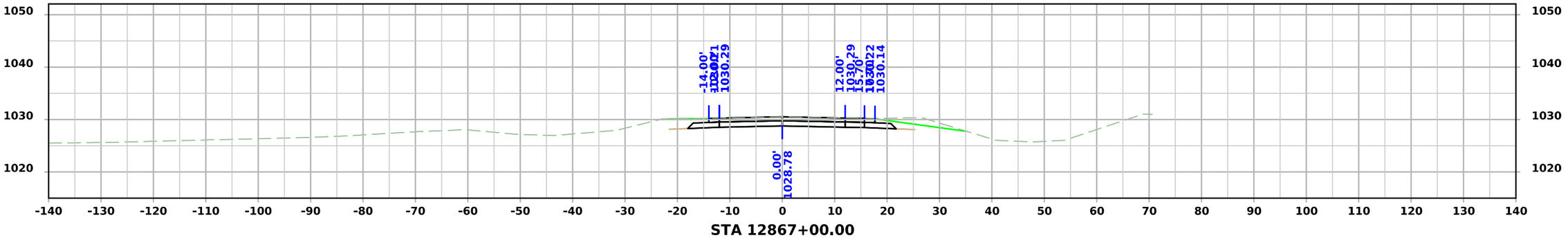
SR-3RD AVE SW



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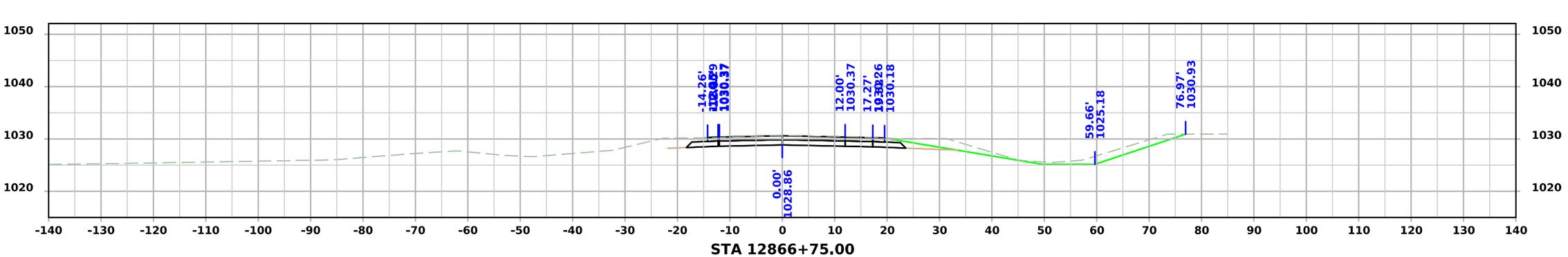

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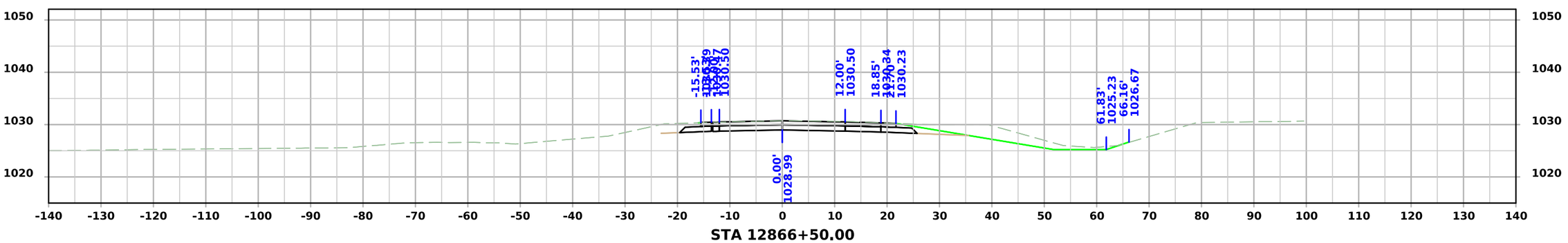

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FILE NO.	ENGLISH	DESIGN TEAM Vortherms/Tamrakar/Ringgenberg	MARSHALL COUNTY	PROJECT NUMBER HSIPX-030-5(328)--3L-64	SHEET NUMBER X.7

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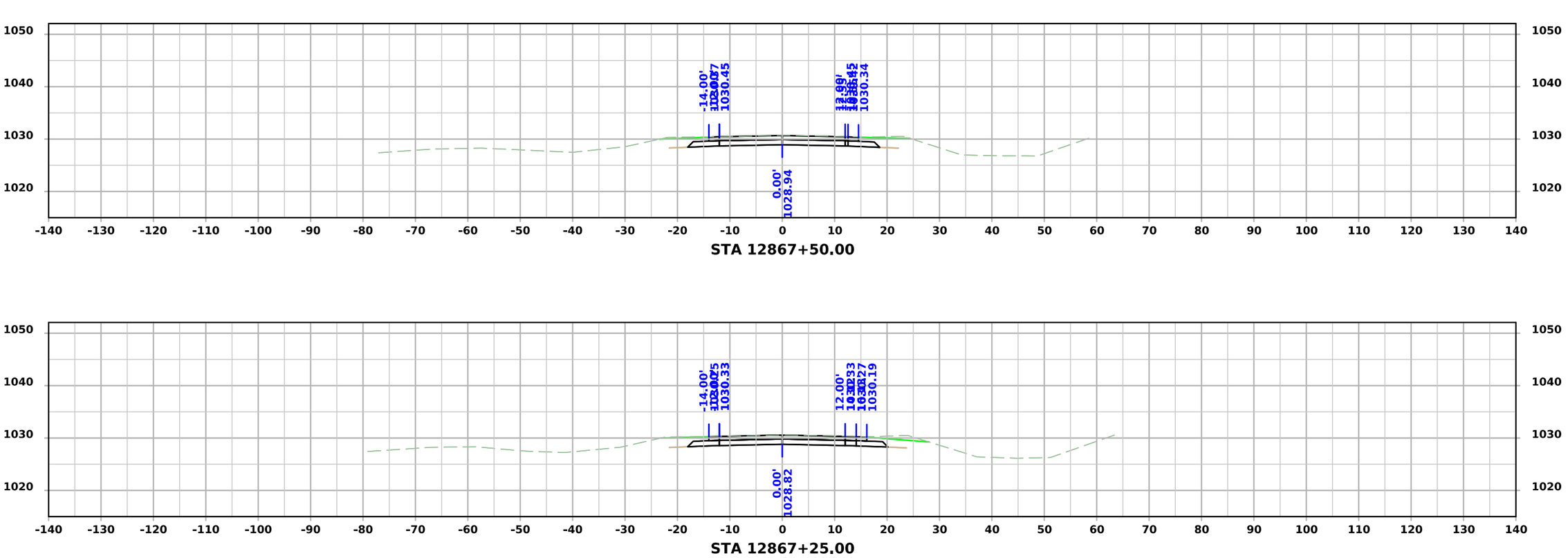
SR-3RD AVE SW



STA 12867+50.00

STA 12867+25.00

FILE NO.	ENGLISH	DESIGN TEAM Vortherms/Tamrakar/Ringgenberg	MARSHALL COUNTY	PROJECT NUMBER HSIPX-030-5(328)--3L-64	SHEET NUMBER X.8

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