HMA RESURFACING WITH MILLING
NHSN-018-2(139)--2R-71

LETTING DATE
DEC 17, 2024

O'BRIEN COUNTY

IOWA | DOT

PLANS OF PROPOSED IMPROVEMENT ON THE

PRIMARY ROAD SYSTEM
O'BRIEN COUNTY
HMA RESURFACING WITH MILLING

IN SHELDON, FROM B ST.
TO 0.3 MI E OF IA 60

SCALES: As Noted

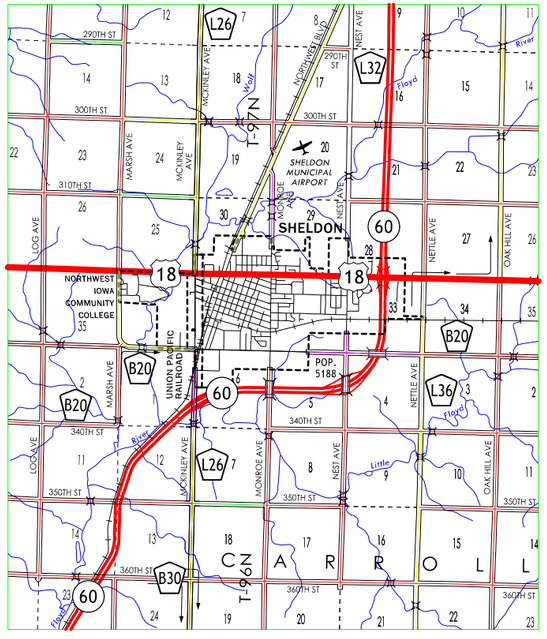
Refer to the Proposal Form for list of applicable specifications.

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.

REVISIONS

TOTAL	96
PROJECT IDENTIFICATION NUMBER	23-71-018-010
PROJECT NUMBER	NHSN-018-2(139)--2R-71
R.O.W. PROJECT NUMBER	NHSN-018-2(138)--2R-71



For Project Location Map
Refer to Sheet No. A.02

INDEX OF SHEETS

NOTE-
ADA Accessible Sidewalks project,
IDOT Project Number NHSN-018-2(137)--2R-71
is tied to this project

DESIGN DATA URBAN

2025	AADT	8,000	V.P.D.
2045	AADT	8,600	V.P.D.
20 –	DHV	–	V.P.H.
TRUCKS		8	%
Total Design ESALs		–	

LICENSED PROFESSIONAL ENGINEER
Jason A. Lastovica
19543
IOWA

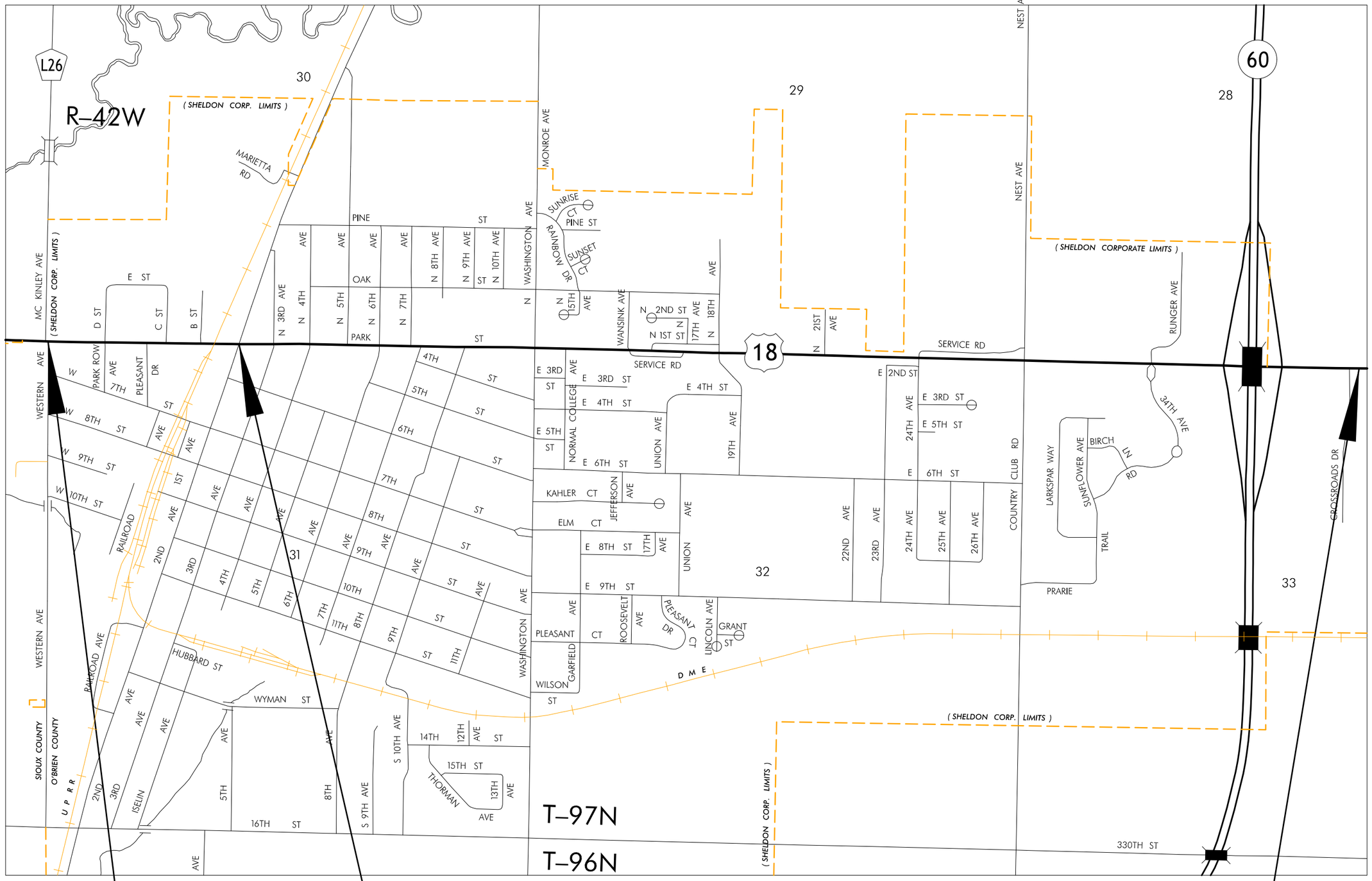
I hereby certify that this engineering document was prepared by me or under my direct personal supervision and that I am a duly licensed Professional Engineer under the laws of the State of Iowa.

Signature 09/30/2024 Date
Jason A. Lastovica
Printed or Typed Name

My license renewal date is December 31, 2024

Pages or sheets covered by this seal: A.1-2, B.1-3, C.1-33, D.1-28, G.1-2, J.1-4, L.1-13, R.1-3, W.1-8

FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT \ HR Green, Inc.	O'BRIEN COUNTY	PROJECT NUMBER NHSN-018-2(139)--2R-71	SHEET NUMBER A.1



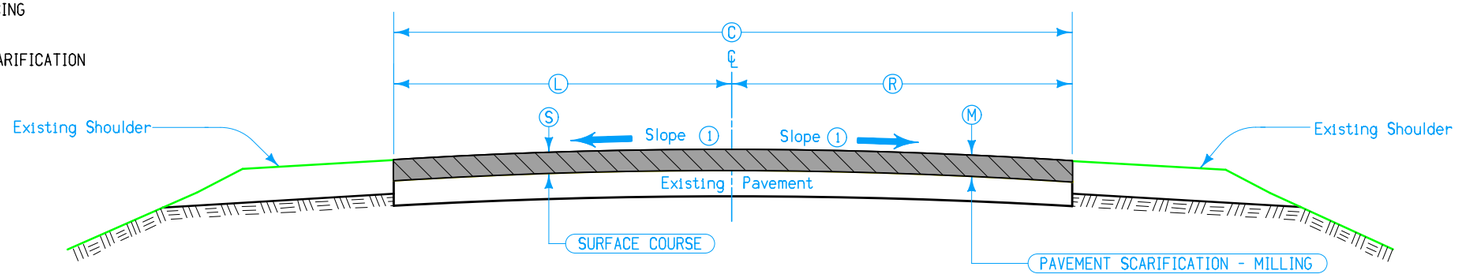
FILE NO.	ENGLISH	DESIGN TEAM **Iowa DOT / HR Green, Inc.**	**O'BRIEN** COUNTY	PROJECT NUMBER **NHSN-018-2(139)--2R-71**	SHEET NUMBER **A.2**

9:53:25 AM 9/29/2024 dbovee pw:\\projectwise.dot.int.lan:PWMain\Documents\Projects\7101801023\Design_(139)_HMA\CADD_Files\Sheet_Files\SHT_71018139_Z01_A01.dgn

2618
10-15-13

HMA RESURFACING

PAVEMENT SCARIFICATION



Notes:

Section shown in the direction of travel

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

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

Design Quantities Per Station								
Location			S	M	C	L	R	Remarks
Road Identification	Station To Station		Inches	Inches	Feet	Feet	Feet	
US HIGHWAY 18	167+58.68	168+09.88	1.5	1.5	38.8-39.4	19.2-19.3	19.6-20.1	

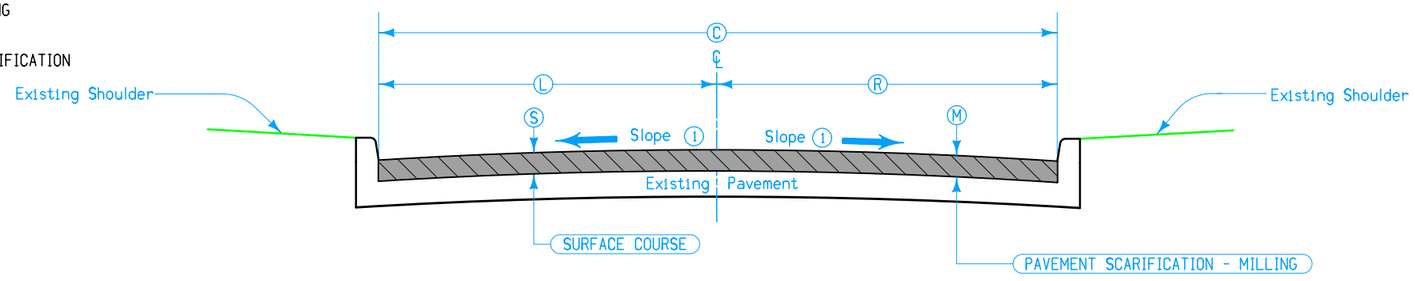
DESIGN RATES	
ITEM	RATE
Surface Course	145 lbs./cu. ft.
Tack Coat	0.05 gal./sq. yd.

(NON-CURBED SECTION) TYPICAL CROSS SECTION HMA RESURFACING & PAVEMENT SCARIFICATION

2618A
Modified

HMA RESURFACING

PAVEMENT SCARIFICATION



Notes:

Section shown in the direction of travel

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

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

Design Quantities Per Station								
Location			S	M	C	L	R	Remarks
Road Identification	Station To Station		Inches	Inches	Feet	Feet	Feet	
US HIGHWAY 18	121+91.71	137+16.08	1.5	1.5	44.0	22.0-21.5	22.0-22.5	
US HIGHWAY 18	137+16.08	138+35.45	1.5	1.5	42.0	21.3-21.4	20.7-20.6	
US HIGHWAY 18	138+35.45	154+25.62	1.5	1.5	43.8-43.2	21.4-21.8	22.4-21.4	
US HIGHWAY 18	154+25.62	155+03.80	1.5	1.5	41.3-41.6	21.8	19.5-19.8	
US HIGHWAY 18	155+03.80	164+28.75	1.5	1.5	43.5-43.6	21.8-21.0	21.7-22.6	
US HIGHWAY 18	164+28.75	164+66.39	1.5	1.5	41.8-42.0	19.2-19.4	22.6	
US HIGHWAY 18	164+66.39	165+01.19	1.5	1.5	40.3	19.5	20.8	
US HIGHWAY 18	165+01.19	165+06.60	1.5	1.5	42.1	19.5	22.6	
US HIGHWAY 18	165+06.60	165+14.83	1.5	1.5	44.7	21.4	23.3	
US HIGHWAY 18	165+14.83	166+91.41	1.5	1.5	42.8	21.4	21.4	
US HIGHWAY 18	166+91.41	167+58.68	1.5	1.5	38.8-39.4	19.7-19.2	19.4-19.6	

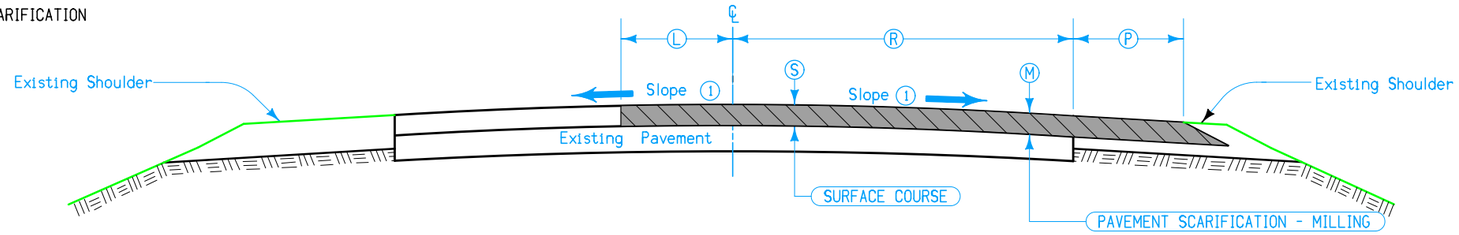
DESIGN RATES	
ITEM	RATE
Surface Course	145 lbs./cu. ft.
Tack Coat	0.05 gal./sq. yd.

(CURBED SECTION) TYPICAL CROSS SECTION HMA RESURFACING & PAVEMENT SCARIFICATION

2618B
Modified

HMA RESURFACING

PAVEMENT SCARIFICATION



Notes:

Section shown in the direction of travel

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

Design Quantities Per Station								
Location			S	M	P	L	R	Remarks
Road Identification	Station To Station		Inches	Inches	Feet	Feet	Feet	
US HIGHWAY 18	168+09.68	169+59.33	1.5	1.5	2.0-4.5	19.3-10.0	18.0	
US HIGHWAY 18	169+59.33	171+37.43	1.5	1.5	4.5-5.5	6.0	18.0	
US HIGHWAY 18	171+37.43	171+53.98	1.5	1.5	5.5-8.5	6.0	18.0	
US HIGHWAY 18	171+53.98	172+48.39	1.5	1.5	8.5-9.0	6.0	18.0	
US HIGHWAY 18	172+48.39	172+82.64	1.5	1.5	9.0-12.5	6.0	18.0	
US HIGHWAY 18	172+82.64	178+37.55	1.5	1.5	10.0-9.0	6.0	18.0	
US HIGHWAY 18	178+37.55	178+65.59	1.5	1.5	9.0-6.0	6.0	18.0	
US HIGHWAY 18	178+65.59	210+50.80	1.5	1.5	6.0	6.0	18.0	
US HIGHWAY 18	210+50.80	228+13.16	1.5	1.5	6.0	4.0	18.0	
US HIGHWAY 18	228+13.16	229+84.76	1.5	1.5	0.0	4.0	18.0	
US HIGHWAY 18	229+84.76	235+13.10	1.5	1.5	6.0	4.0	18.0-18.6	
US HIGHWAY 18	235+13.10	235+80.59	1.5	1.5	0.0	4.0	18.6	

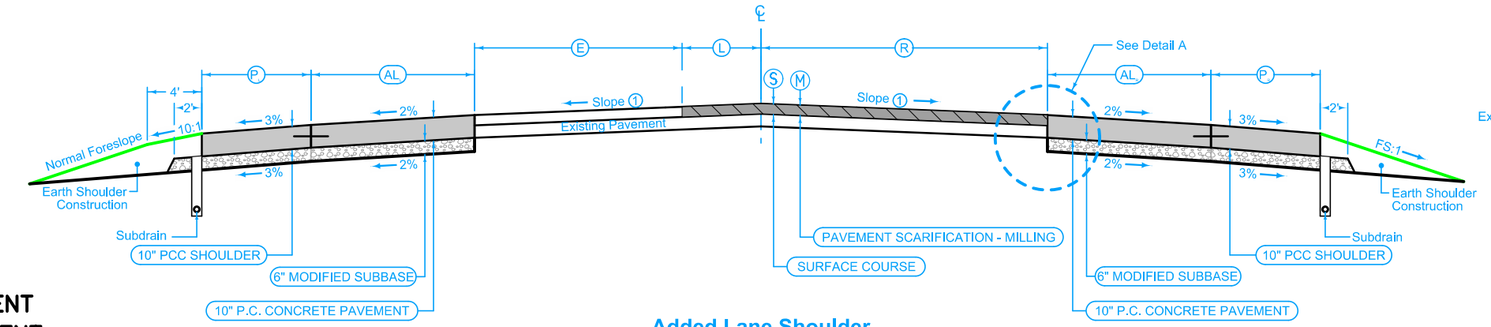
DESIGN RATES	
ITEM	RATE
Surface Course	145 lbs./cu. ft.
Tack Coat	0.05 gal./sq. yd.

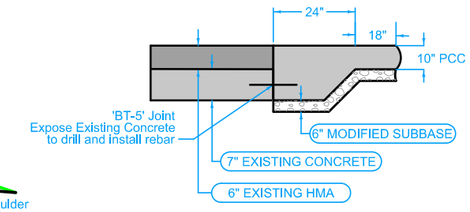
(PARTIAL OVERLAY + SHOULDER) TYPICAL CROSS SECTION HMA RESURFACING & PAVEMENT SCARIFICATION

HMA RESURFACING

PAVEMENT SCARIFICATION

(AUXILARY LANES) TYPICAL CROSS SECTION HMA RESURFACING & PAVEMENT SCARIFICATION + PCC PAVEMENT





DETAIL A
THICKENED EDGE

Added Lane Shoulder

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

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

LOCATION		DIMENSIONS									
STATION TO STATION		E Feet	L Feet	R Feet	P Feet	P Feet	AL Feet	AL Feet	FS Ratio	S Inches	M Inches
235+80.59	236+26.20	60.4-16.0	4.0	19.0	4.0	0.0	12.0-13.8	0.0	0	1.5	1.5
236+26.20	236+51.50	16.0	4.0	19.0	4.0	0.0	15.8-12.0	0.0	0	1.5	1.5
236+51.50	237+65.01	16.0	4.0	19.0	4.0	0.0	12.0	0.0	0	1.5	1.5
237+65.01	238+07.73	16.0	4.0	19.0	4.0	10.0	12.0	0.0	6:1	1.5	1.5
238+07.73	238+18.35	16.0	4.0	19.0	4.0	8.0	12.0	2.0	6:1	1.5	1.5
238+18.35	238+37.83	16.0	4.0	19.0	4.0	8.0	12.0-10.0	2.0	6:1	1.5	1.5
238+37.83	238+67.84	16.0	4.0	19.0	4.0	8.0-6.0	10.0-7.0	2.0-4.0	6:1	1.5	1.5
238+67.84	238+78.55	16.0	4.0	19.0	4.0	6.0	7.0-6.0	4.0-4.7	6:1	1.5	1.5
238+78.55	239+18.35	16.0	4.0	19.0	4.0	6.0	6.0-2.0	4.7-7.4	6:1	1.5	1.5
239+18.35	239+38.35	16.0	4.0	19.0	4.0-8.0	6.0	2.0	7.4-8.7	6:1	1.5	1.5
239+38.35	241+42.78	16.0	4.0	19.0	8.0	6.0	0.0	8.7-22.3	6:1-3:1	1.5	1.5
241+42.78	242+17.81	16.0	4.0	19.0	10.0	6.0	0.0	22.3-27.3	3:1	1.5	1.5
242+17.81	242+49.67	16.0	4.0	19.0	0.0	6.0-0.0	0.0	27.3-35.5	3:1-6:1	1.5	1.5
242+49.67	243+05.08	16.0	4.0	19.0	0.0	0.0	0.0	35.5-150.0	6:1	1.5	1.5
243+05.08	244+37.40	16.0	4.0	19.0-18.8	0.0	0.0	0.0	0.0	0	1.5	1.5
244+37.40	254+20.91	16.0 -0.0	4.0-3.3	25.0-23.0	0.0	0.0	0.0	0.0	0	1.5	1.5

①

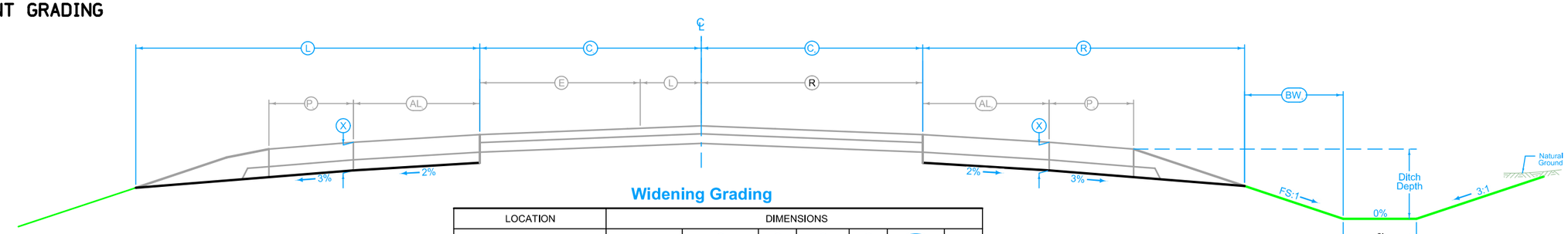
Notes:

Section shown in the direction of travel

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

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

(AUXILARY LANES) TYPICAL CROSS SECTION PCC PAVEMENT GRADING



Widening Grading

LOCATION		DIMENSIONS						
STATION TO STATION		L Feet	R Feet	C Feet	C Feet	X Inches	BW_R Feet	FS Ratio
235+80.59	236+51.50	50.0-18.0	0.0	20.0	19.0	16.0	0.0	0
236+51.50	237+64.97	18.0	0.0	20.0	19.0	16.0	0.0	0
237+64.97	238+18.35	18.0	12.0	20.0	19.0	16.0	21.6	6:1
238+18.35	238+67.83	18.0-13.0	12.0	20.0	19.0	16.0	21.6	6:1
238+67.83	238+78.36	13.0-10.0	12.0-14.7	20.0	19.0	16.0	21.6	6:1
238+78.36	240+15.27	10.0	14.7-23.9	20.0	19.0	16.0	21.6	6:1
240+15.27	240+25.13	10.0	23.9-24.5	20.0	19.0	16.0	21.6-16.0	6:1-3:1
240+25.13	241+42.90	10.0	24.5-32.3	20.0	19.0	16.0	16.0-8.0	3:1
241+42.90	242+15.72	0.0	32.3-37.2	20.0	19.0	16.0	8.0	3:1
242+15.72	242+30.17	0.0	37.2-38.0	20.0	19.0	16.0	8.0-0.0	3:1-6:1
242+30.17	243+05.08	0.0	38.0-150.0	20.0	19.0	16.0	0.0	6:1
243+05.08	244+37.40	0.0	0.0	20.0	19.0	16.0	0.0	0.0
244+37.40	254+20.91	0.0	0.0	20.0	25.0-23.0	16.0	0.0	0.0

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

ESTIMATED PROJECT QUANTITIES AND REFERENCE NOTES

Roadway Items : Roadway Items

City of Sheldon Items : City of Sheldon Participating Items

Item no.	Item Code	Item	Unit	Quantities Estimated			Estimate Reference Notes
				Roadway Items	City of Sheldon Items	Total	
1	2102-2710070	EXCAVATION, CLASS 10, ROADWAY AND BORROW	CY	650		650	A. Refer to the Typical Sections in the B Sheets and the W Sheets for locations and details. B. Item for excavation for the additional EB PCC turn lane construction at Crossroads Drive. C. Overhaul is incidental to roadway excavation on this project and will not be paid for separately.
2	2102-2713090	EXCAVATION, CLASS 13, WASTE	CY		200	200	A. Item for removal of additional excess material beneath the existing pavement for the PCC intersection reconstruction locations. B. Estimated at 6-inches in depth.
3	2105-8425005	TOPSOIL, FURNISH AND SPREAD	CY	310		310	A. Refer to the Typical Sections in the B Sheets. B. Item for embankment construction required for the additional EB PCC turn lane construction at Crossroads Drive. C. Topsoil placement shall be a uniform 6 inches deep over disturbed areas.
4	2115-0100000	MODIFIED SUBBASE	CY	430	200	630	A. Item for the PCC intersection reconstruction locations. B. Subbase material to be placed beneath the PCC pavement with a depth of 6-inches and extend 2-feet beyond the back of curb. A. Refer to Typical Sections in the B Sheets. B. Item for furnishing and placing material adjacent to the existing pavement for the PCC turn lanes at Crossroads Drive.
5	2122-5190010	PAVED SHOULDER, P.C. CONCRETE, 10 IN.	SY	751.3		751.3	A. Refer to the Typical Sections in the B Sheets and Tab. 112-09 in the C Sheets.
6	2123-7450000	SHOULDER CONSTRUCTION, EARTH	STA	1.2		1.2	A. Refer to Typical Sections in the B Sheets. B. Material for the earth shoulders to be considered incidental and will not be calculated separately. C. Requires a minimum of 4 inches of topsoil. Place according to Article 2105.03,B of the Standard Specifications.

Item no.	Item Code	Item	Unit	Quantities			Estimate Reference Notes
				Estimated			
				Roadway Items	City of Sheldon Items	Total	
7	2123-7450020	SHOULDER FINISHING, EARTH	STA	5.9	5.9	11.8	A. Item for backfilling behind the back of curb at the PCC Intersection reconstruction locations. B. Material for the earth shoulders to be considered incidental and will not be calculated separately. A. Item for backfilling behind the back of curb at the PCC intersection reconstruction locations. B. Material for the earth shoulders to be considered incidental and will not be calculated separately.
8	2213-2713300	EXCAVATION, CLASS 13, FOR WIDENING	CY	159		159	A. Refer to the Typical Sections in the B Sheets. B. Item for removal of additional excess material beneath the existing pavement for the WB PCC turn lane construction at Crossroads Drive. C. Estimated at 6-inches in depth.
9	2214-5145150	PAVEMENT SCARIFICATION	SY	49,952.3	69.8	50,022.1	A. Refer to Tab. 100-25 in the C Sheets. B. Item for extending the HMA runout to the south at 4th Avenue to the existing PCC pavement. A. Refer to Tab. 100-25 in the C Sheets. B. Loop Detectors in pavement are not active and do not need to be replaced with this project.
10	2301-1033100	STANDARD OR SLIP FORM PORTLAND CEMENT CONCRETE PAVEMENT, CLASS C, CLASS 3 DURABILITY, 10 IN.	SY	1,565.4	1,047.3	2,612.7	A. Refer to Tab. 100-24 in the C Sheets and the L Sheets for locations and details. B. Item for construction of turn lanes at US 18 and Crossroads Drive. A. Refer to Tab. 100-24 in the C Sheets and the L Sheets for locations and details. B. Item for intersection reconstruction areas.
11	2301-6911722	PORTLAND CEMENT CONCRETE PAVEMENT SAMPLES	LS	1		1	
12	2303-0003380	HOT MIX ASPHALT MIXTURE THIN LIFT SURFACE COURSE, 3/8 IN. MIX	TON	4,101.49		4,101.49	A. Refer to the Typical Sections in the B Sheets and Tab. 100-25 in the C Sheets. B. Item for mainline resurfacing only.

Item no.	Item Code	Item	Unit	Quantities			Estimate Reference Notes
				Estimated			
				Roadway Items	City of Sheldon Items	Total	
13	2303-1043500	HOT MIX ASPHALT HIGH TRAFFIC, SURFACE COURSE, 1/2 IN. MIX, NO SPECIAL FRICTION REQUIREMENT	TON	28.94	5.77	34.71	A. Refer to Tab. 100-25 in the C Sheets. B. Item for extending the HMA runout to the south at 4th Avenue to the existing PCC pavement. A. Refer to the Typical Sections in the B Sheets and Tab. 100-25 in the C Sheets. B. Item for side road runouts.
14	2303-1258284	ASPHALT BINDER, PG 58-28H, HIGH TRAFFIC	TON	1.74	0.35	2.09	A. Refer to Tab. 100-25 in the C Sheets. B. Item for extending the HMA runout to the south at 4th Avenue to the existing PCC pavement. A. Refer to the Typical Sections in the B Sheets and Tab. 100-25 in the C Sheets. B. Item for side road runouts.
15	2303-1264347	ASPHALT BINDER, PG 64-34E+, EXTREMELY HIGH TRAFFIC, 90% ELASTIC RECOVERY	TON	246.09		246.09	A. Refer to the Typical Sections in the B Sheets and Tab. 100-25 in the C Sheets. B. Item for mainline resurfacing only.
16	2303-6911000	HOT MIX ASPHALT PAVEMENT SAMPLES	LS	1		1	
17	2317-7000120	PAYMENT ADJUSTMENT INCENTIVE/DISINCENTIVE FOR HMA PAVEMENT SMOOTHNESS (BY SCHEDULE)	EACH	1		1	
18	2401-6745650	REMOVAL OF EXISTING STRUCTURES	LS	1		1	A. Item for removal and disposal of the existing RCP apron at Crossroads Drive. B. Method of Measurement: Lump Sum C. Basis of Payment: The Contractor shall be paid the lump sum contract price for all structures listed. This payment shall be full compensation for furnishing all material, equipment, and labor for the performance of all work necessary for removal of all the structures from the project.
19	2402-0425040	FLOODED BACKFILL	CY	22.7		22.7	A. Refer to Tab. 104-03 in the C Sheets for locations and details.
20	2402-2720100	EXCAVATION, CLASS 20, FOR ROADWAY PIPE CULVERT	CY	71.5		71.5	A. Refer to Tab. 104-03 in the C Sheets for locations and details.
21	2416-0100018	APRONS, CONCRETE, 18 IN. DIA.	EACH	1		1	A. Refer to Tab. 104-03 in the C Sheets for locations and details.

Item no.	Item Code	Item	Unit	Quantities			Estimate Reference Notes
				Estimated			
				Roadway Items	City of Sheldon Items	Total	
22	2416-1180018	CULVERT, CONCRETE ROADWAY PIPE, 18 IN. DIA.	LF	78		78	
23	2435-0600110	INTAKE ADJUSTMENT, MINOR	EACH		4	4	A. Item included to adjust the existing intakes at Park Row Avenue and Pleasant Drive. B. Contractor shall re-use the existing castings.
24	2502-8212036	SUBDRAIN, LONGITUDINAL, (SHOULDER) 6 IN. DIA.	LF	460		460	A. Refer to the Typical Sections in the B Sheets and Tab. 104-9A in the C Sheets for locations and details.
25	2502-8221306	SUBDRAIN OUTLET, DR-306	EACH	2		2	A. Refer to the Typical Sections in the B Sheets and Tab. 104-9A in the C Sheets for locations and details.
26	2506-4984000	FLOWABLE MORTAR	CY	10.5		10.5	A. Refer to Tab. 104-03 in the C Sheets for locations and details.
27	2510-6745850	REMOVAL OF PAVEMENT	SY	1,158.3	853.3	2,011.6	A. Refer to Tabs.110-1 and 102-5 in the C Sheets. A. Refer to Tabs.110-1 and 102-5 in the C Sheets. B. Item for removal of existing pavement and paved shoulder material for the Crossroads Drive turn-lane construction.
28	2524-6765010	REMOVE AND REINSTALL SIGN AS PER PLAN	EACH	3		3	A. Refer to Tab. 190-62 and Note 259-01 in the C Sheets for locations and details. B. Item included removal and reinstallation of the existing signs along US 18. C. Contractor shall re-use existing signs and steel posts. Contractor to provide new PSST anchor and all necessary hardware for installation per manufacturers recommendations. D. Signs damaged by the Contractor's activities shall be replaced at the Contractor's expense. Replacement materials, if required, shall be new. E. Method of Measurement: The Engineer will count each sign removed and reinstalled. F. Basis of Payment: For each sign removed and reinstalled, the Contractor shall be paid the contract unit price. This payment shall be full compensation for furnishing all materials, equipment, and labor required to remove and reinstall the signs.
29	2524-9276021	PERFORATED SQUARE STEEL TUBE POST ANCHOR, BREAK-AWAY SOIL INSTALLATION	EACH	4		4	A. Refer to Tab. 190-62 and Note 259-01 in the C Sheets for locations and details. B. Anchor tube shall be 2 1/2 in. x 2 1/2 in. x 48 in. steel tubing made from 7 gauge material.
30	2526-8285000	CONSTRUCTION SURVEY	LS	1		1	
31	2527-9263137	PAINTED SYMBOLS AND LEGENDS, WATERBORNE OR SOLVENT-BASED	EACH	158		158	A. Refer to Tab. 108-29 in the C Sheets.
32	2527-9263209	PAINTED PAVEMENT MARKINGS, WATERBORNE OR SOLVENT-BASED	STA	1,394.33		1,394.33	A. Refer to Tab. 108-22 in the C Sheets. B. Grooving only required for permanent pavement marking application.
33	2527-9270112	GROOVES CUT FOR PAVEMENT MARKINGS	STA	670.48		670.48	A. Refer to Tab. 108-22 in the C Sheets.

Item no.	Item Code	Item	Unit	Quantities			Estimate Reference Notes
				Estimated			
				Roadway Items	City of Sheldon Items	Total	
34	2527-9270120	GROOVES CUT FOR SYMBOLS AND LEGENDS	EACH	80		80	A. Refer to Tab. 108-29 in the C Sheets. B. Grooving only required for permanent Symbols and Legends.
35	2528-8445110	TRAFFIC CONTROL	LS	1		1	A. Refer to Traffic Control Plan and Staging Notes in the J Sheets.
36	2528-8445113	FLAGGERS	EACH	0		0	See Proposal.
37	2528-8445115	PILOT CARS	EACH	0		0	
38	2529-5070110	PATCHES, FULL-DEPTH FINISH, BY AREA	SY	330.7		330.7	A. Refer to Tab. 102-6C in the C Sheets.
39	2529-5070120	PATCHES, FULL-DEPTH FINISH, BY COUNT	EACH	35		35	
40	2533-4980005	MOBILIZATION	LS	1		1	- -
41	2599-9999005	('EACH' ITEM) FIRE HYDRANT ASSEMBLY, REMOVE AND RELOCATE	EACH		1	1	A. Refer to Sheet D.26 for locations and details. B. Method of Measurement: Each existing fire hydrant assembly removed and relocated will be counted. C. Basis of Payment: Payment will be the contract unit price for each fire hydrant assembly removed and relocated. Payment is full compensation for the fire hydrant, additional anchor pipe, barrel extensions sufficient to achieve proper bury depth of anchoring pipe and height of fire hydrant above finish grade, and components to connect the fire hydrant to the water main, including anchoring pipe, fittings, thrust blocks, and pea gravel or porous backfill material.
42	2601-2634105	MULCHING, BONDED FIBER MATRIX	ACRE	1.4		1.4	A. Bonded Fiber Matrix shall be applied as mulch for all areas designated as "Seeding and Fertilizing (Urban)" or "Stabilizing Crop - Seeding and Fertilizing (Urban)". B. Apply seed and fertilizer for the area to be covered before applying Bonded Fiber Matrix Mulch. C. Apply Bonded Fiber Matrix Mulch at a rate of a minimum of 3000 pounds per acre.
43	2601-2636044	SEEDING AND FERTILIZING (URBAN)	ACRE	0.7		0.7	A. For all disturbed areas or as directed by the Engineer. B. Seed and fertilizer for the area to be covered shall be applied before Bonded Fiber Matrix Hydraulic Mulch application. C. Prepare seedbed, fertilize, and seed according to Article 2601.03, C, 4 of the Standard Specifications. D. Use ground driven equipment.
44	2601-2642120	STABILIZING CROP - SEEDING AND FERTILIZING (URBAN)	ACRE	0.7		0.7	A. For temporary erosion control of all disturbed areas or as designated by the Engineer. B. Bonded Fiber Matrix (BFM) shall be applied as the mulch for all disturbed areas. C. Seed and fertilizer for the area to be covered shall be applied before the Bonded Fiber Matrix Hydraulic Mulch application. D. Seed and fertilize all urban disturbed areas according to Article 2601.03, C, 2, of the Standard Specifications.

Item no.	Item Code	Item	Unit	Quantities			Estimate Reference Notes
				Estimated			
				Roadway Items	City of Sheldon Items	Total	
45	2602-0000309	PERIMETER AND SLOPE SEDIMENT CONTROL DEVICE, 9 IN. DIA.	LF	1,850		1,850	A. Refer to the R Sheets for approximate locations. B. Item is included for temporary perimeter sediment control, inlet protection, and water velocity reduction on slopes or ditches at locations to be determined during construction. C. Verify specific locations with the Engineer prior to beginning placement. D. Use Perimeter and Slope Sediment Control Devices fabricated using wood excelsior.
46	2602-0000351	REMOVAL OF PERIMETER AND SLOPE OR DITCH CHECK SEDIMENT CONTROL DEVICE	LF	1,850		1,850	
47	2602-0010010	MOBILIZATIONS, EROSION CONTROL	EACH	5		5	
48	2602-0010020	MOBILIZATIONS, EMERGENCY EROSION CONTROL	EACH	5		5	

100_01D
8/15/22

PROJECT DESCRIPTION

This project involves HMA mill and fill within the existing HMA overlayed sections of US Highway 18 (Park Street / 320th Street) in Sheldon, Iowa.

The project also involves the construction of a new eastbound PCC turn lane on US 18 at Crossroads Drive and a new westbound PCC right turn lane to the IA 60 northbound entrance ramp.

The City of Sheldon has included the replacement of approach pavement at the following intersections with US 18:

Pleasant Drive, B Street, 6th Avenue, Washington Avenue, N. 1st Street, and east approach of the Service Road on the south side of US 18.

Also included are: PCC patching and pavement markings

STANDARDS

The following Standards apply to construction work on this project.

Number	Date	Title
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-104	4/19/2016	Depth of Cover Tables for Concrete and Corrugated Pipe
DR-121	4/18/2023	Connected Pipe Joints
DR-122	10/18/2016	Construction of Type 'C' Concrete Adaptors for Pipe Culvert Connections
DR-201	10/17/2023	Concrete Aprons
DR-213	10/18/2022	Pipe Apron Guard
DR-303	10/17/2017	Subdrains (Longitudinal)
DR-306	10/17/2023	Precast Concrete Headwall for Subdrain Outlets
DR-622	10/17/2017	Pipe Extension Horizontal Bend One or Both Ends
EC-204	10/19/2021	Perimeter
EW-101	10/17/2017	Embankment and Rebuilding Embankments
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
PM-210	10/15/2024	Separation in Two-Lane Roadway
PM-240	10/15/2024	Railroad Crossing on Two-Lane Roadway
PM-521	10/15/2024	Two-Lane Roadway with Right Turn Lanes
PM-522	10/15/2024	Two-Lane Roadway with Left Turn Lanes
PM-550	10/15/2024	Two-Lane Roadway with Two-Way Left Turn Lane
PR-103	10/17/2023	Full Depth PCC Patch with Dowels
PR-202	10/21/2014	Notches for Resurfacing (with or without Runout)
PV-101	4/19/2022	Joints
PV-102	4/21/2020	PCC Curb Details
PV-121	4/21/2015	Jointing PCC Pavement Widening
PV-202	4/21/2020	Hot Mix Asphalt Resurfacing
SI-101	4/19/2016	Locations - Type 'A' Signs
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-214	4/18/2023	Lane Closure with Flaggers for use with Pilot Car
TC-228	4/18/2023	Lane Closure Involving TWLTL
TC-233	10/17/2017	Pavement Marking Operations Two-Lane
TC-252	4/21/2020	Routes Closed to Traffic
TC-282	10/15/2019	Uneven Lanes
WM-101	10/18/2016	Thrust Blocks
WM-102	10/18/2016	Tracer System
WM-201	4/19/2022	Fire Hydrant Assembly

EXISTING PAVEMENT

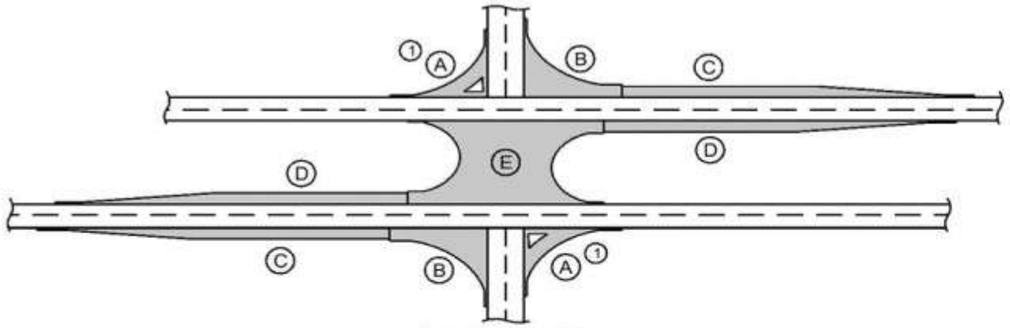
Line No.	County	Route	Direction of Travel	Begin Ref. Location Sign	End Ref. Location Sign	Year	Type	Project Number	Surface Type	Surface Depth (IN)	Base Type	Base Depth (IN)	Subbase Type	Subbase Depth (IN)	Removal Type	Removal Depth (IN)	Coarse Aggregate Source	Coarse Aggregate Type	Course Aggregate Durability Class	Reinforcement Type	Remarks
1.0	O'Brien	US 18	Both	41.71	42	2022	S	MP-018-3(707)42--76-71	HMA	2.0					SCR	2.0					
2.0	O'Brien	US 18	Both	41.71	42	1990		NA	AAC	3.0							GILMORE CITY	C.LST.			
3.0	O'Brien	US 18	Both	41.71	42	1965		F-43(16)	AAC	1.5	AAC	1.5					VANZEE ASHTO	GRAVEL			0.9M WIDENING 255MM
4.0	O'Brien	US 18	Both	41.71	42	1961	W	FN-43	PCC	10.0							HAWARDEN	GRAVEL			
5.0	O'Brien	US 18	Both	41.71	42	1933		NRH-NRM-43	PC7	7.0											
6.0	O'Brien	US 18	Both	42	43.18	2017	M	MP-000-3(723)0--76-00													HMA CRACK FILLING
7.0	O'Brien	US 18	Both	42	43.18	2013	S	NHSN-018-2(106)--2R-71	HMA	2.0											
8.0	O'Brien	US 18	Both	42	43.18	1986		FN-18-2(50)--21-71	AAC	1.5	BAC	1.5					ROHLIN	GRAVEL			
9.0	O'Brien	US 18	Both	42	43.18	1959	W	F-43(12)	AAC	3.0	RSB	8.0					GILMORE CITY	C.LST.			OUTSIDE LANES
10.0	O'Brien	US 18	Both	42	43.18	1959		F-43(12)	AAC	3.0							GILMORE CITY	C.LST.			INSIDE LANES
11.0	O'Brien	US 18	Both	42	43.18	1933		NRH-NRM-43	PC7	7.0							HAWARDEN	GRAVEL			INSIDE LANES
12.0	O'Brien	US 18	Both	43.18	44.43	2017	M	MP-000-3(723)0--76-00													HMA CRACK FILLING
13.0	O'Brien	US 18	Both	43.18	44.43	1986		FN-18-2(50)--21-71	AAC	1.5	BAC	1.5					ROHLIN	GRAVEL			
14.0	O'Brien	US 18	Both	43.18	44.43	1972		FN-18-2(23)--21-71	AAC	1.0	AAC	2.0					NO NAME	C.LST.			
15.0	O'Brien	US 18	Both	43.18	44.43	1920		FA-43A	PCC	7.0							DELL RAPIDS	QUARTZ	3		

FULL-DEPTH PATCHES

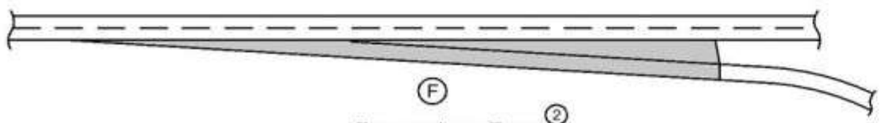
Line No.	Count	Station	Reference Location Sign	Lane	Length (FT)	Width (FT)	Patch Thickness (IN)	Patch Repair or Finish	PCC Patch Type	PCC Patch Quantity (SY)	HMA Patches (SY)	Composite HMA (TON)	Subbase Patches (PR-140) (SY)	Subbase Patch with 'EF' Joint (PR-101) (SY)	Patch Subdrain PR-101 or PR-140 (No.)	'CD' Joints (No.)	'CT' Joints (No.)	'EF' Joints PR-101 (No.)	Anchor Lugs Removal (No.)	Remarks
1.0	1	124+67.00		WB	6.0	12.0	10.0	Finish	PCC With Dowels (PR-103)	8.0										Field Sta. 35+19
2.0	1	124+67.00		Center	6.0	12.0	10.0	Finish	PCC With Dowels (PR-103)	8.0										Field Sta. 35+19
3.0	1	127+42.00		WB	6.0	12.0	10.0	Finish	PCC With Dowels (PR-103)	8.0										Field Sta. 37+94
4.0	1	127+42.00		EB	6.0	12.0	10.0	Finish	PCC With Dowels (PR-103)	8.0										Field Sta. 37+94
5.0	1	128+82.00		WB	6.0	12.0	10.0	Finish	PCC With Dowels (PR-103)	8.0										Field Sta. 39+34
6.0	1	129+22.00		WB	6.0	12.0	10.0	Finish	PCC With Dowels (PR-103)	8.0										Field Sta. 39+74
7.0	1	129+62.00		WB	6.0	12.0	10.0	Finish	PCC With Dowels (PR-103)	8.0										Field Sta. 40+14
8.0	1	130+32.00		WB	6.0	12.0	10.0	Finish	PCC With Dowels (PR-103)	8.0										Field Sta. 40+84
9.0	1	131+97.00		WB	6.0	12.0	10.0	Finish	PCC With Dowels (PR-103)	8.0										Field Sta. 42+49
10.0	1	132+42.00		WB	6.0	12.0	10.0	Finish	PCC With Dowels (PR-103)	8.0										Field Sta. 42+94
11.0	1	133+05.00		WB	6.0	12.0	10.0	Finish	PCC With Dowels (PR-103)	8.0										Field Sta. 43+57
12.0	1	140+42.00		EB	6.0	12.0	10.0	Finish	PCC With Dowels (PR-103)	8.0										Field Sta. 50+94
13.0	1	144+72.00		WB	12.0	12.0	10.0	Finish	PCC With Dowels (PR-103)	16.0										Field Sta. 55+24
14.0	1	146+42.00		WB	6.0	12.0	10.0	Finish	PCC With Dowels (PR-103)	8.0										Field Sta. 56+94
15.0	1	150+17.00		EB	6.0	12.0	10.0	Finish	PCC With Dowels (PR-103)	8.0										Field Sta. 60+69
16.0	1	157+32.00		WB	6.0	12.0	10.0	Finish	PCC With Dowels (PR-103)	8.0										Field Sta. 67+84
17.0	1	157+32.00		EB	6.0	12.0	10.0	Finish	PCC With Dowels (PR-103)	8.0										Field Sta. 67+84
18.0		161+64.00		EB	6.0	12.0	10.0	Finish	PCC With Dowels (PR-103)	8.0										Field Sta. 72+16
19.0	1	161+64.00		WB	6.0	12.0	10.0	Finish	PCC With Dowels (PR-103)	8.0										Field Sta. 72+16
20.0	1	162+17.00		EB	6.0	12.0	10.0	Finish	PCC With Dowels (PR-103)	8.0										Field Sta. 72+69
21.0	1	162+17.00		Center	6.0	12.0	10.0	Finish	PCC With Dowels (PR-103)	8.0										Field Sta. 72+69
22.0	1	163+63.00		EB	20.0	12.0	10.0	Finish	PCC With Dowels (PR-103)	26.7										Field Sta. 94+15
23.0	1	201+29.00		EB	6.0	12.0	10.0	Finish	PCC With Dowels (PR-103)	8.0										Field Sta. 111+81
24.0	1	202+42.00		EB	6.0	12.0	10.0	Finish	PCC With Dowels (PR-103)	8.0										Field Sta. 112+94
25.0	1	213+42.00		EB	6.0	12.0	10.0	Finish	PCC With Dowels (PR-103)	8.0										Field Sta. 123+94
26.0	1	216+14.00		Center	6.0	12.0	10.0	Finish	PCC With Dowels (PR-103)	8.0										Field Sta. 126+66
27.0	1	219+09.00		Center	6.0	12.0	10.0	Finish	PCC With Dowels (PR-103)	8.0										Field Sta. 129+61
28.0	1	219+09.00		EB	6.0	12.0	10.0	Finish	PCC With Dowels (PR-103)	8.0										Field Sta. 129+61
29.0	1	220+42.00		EB	6.0	12.0	10.0	Finish	PCC With Dowels (PR-103)	8.0										Field Sta. 130+94
30.0	1	220+82.00		Center	12.0	12.0	10.0	Finish	PCC With Dowels (PR-103)	16.0										Field Sta. 131+34
31.0	1	225+42.00		EB	15.0	12.0	10.0	Finish	PCC With Dowels (PR-103)	20.0										Field Sta. 135+94
32.0	1	230+72.00		EB	6.0	12.0	10.0	Finish	PCC With Dowels (PR-103)	8.0										Field Sta. 141+24
33.0	1	230+72.00		Center	6.0	12.0	10.0	Finish	PCC With Dowels (PR-103)	8.0										Field Sta. 141+24
34.0	1	231+77.00		EB	6.0	12.0	10.0	Finish	PCC With Dowels (PR-103)	8.0										Field Sta. 142+29
35.0	1	235+56.00		EB	6.0	12.0	10.0	Finish	PCC With Dowels (PR-103)	8.0										Field Sta. 146+08
36.0	1	235+56.00		Center	6.0	6.0	10.0	Finish	PCC With Dowels (PR-103)	4.0										Field Sta. 146+08
Total:	**35**									**330.7**										

NOTES:
1. Coordinate locations with District 3 staff during construction.

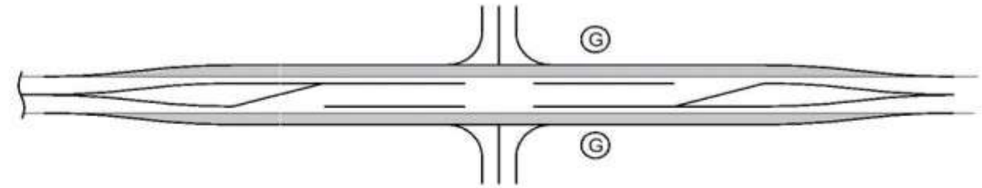
HMA PAVEMENT



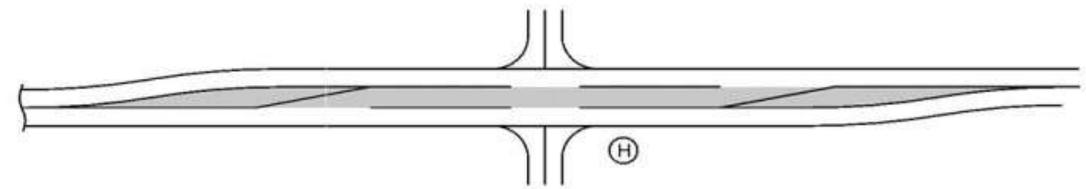
Typical Intersection



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.

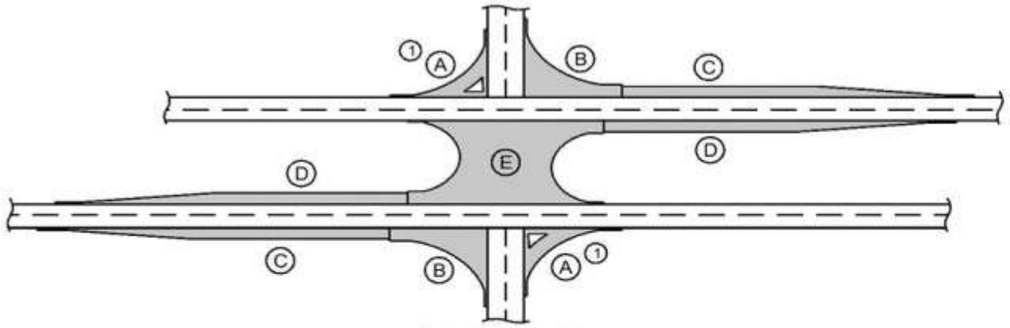
Line No.	Road Identification	Direction of Travel	Station From	Station To	Width (FT)	Length (FT)	Area (SY)	Area A(1) (SY)(3)	Area B (SY)(3)	Area C (SY)(3)	Area D (SY)(3)	Area E(2) (SY)(3)	Area F (SY)(3)	Area G (SY)(3)	Area H (SY)(3)	HMA Pavement Surface (TONS)	HMA Pavement Surface (SY)	HMA Pavement Intermediate (TONS)	HMA Pavement Intermediate (SY)	HMA Pavement Base (TONS)	HMA Pavement Base (SY)	Binder Surface (TONS)	Binder Intermediate (TONS)	Binder Base (TONS)	Polymer Grid (SY)	Special Backfill (TONS)	Modified Subbase (CY)	Granular Subbase (SY)	Pavement Scarification (SY)	Remarks
1.0	US 18	Both	121+90.70	168+09.88	43.0	4619.18	22229.83									1838.129	22229.83					110.288							22229.83	Div. 1
2.0	US 18	Both	168+09.88	169+59.33	36.0	149.45	598.33									49.474	598.33					2.968							598.33	Div. 1
3.0	US 18	Both	169+59.33	178+66.04	34.0	906.71	3285.86									271.700	3285.86					16.302							3285.86	Div. 1
4.0	US 18	Both	178+66.04	210+50.90	30.0	3184.86	10616.26									877.832	10616.26					52.670							10616.26	Div. 1
5.0	US 18	Both	210+50.90	228+13.53	28.0	20662.63	5483.71									453.434	5483.71					27.206							5483.71	Div. 1
6.0	US 18	Both	228+13.53	229+85.17	22.0	171.64	419.57									34.693	419.57					2.082							419.57	Div. 1
7.0	US 18	Both	229+85.17	235+13.40	28.0	528.23	1651.19									136.533	1651.19					8.192							1651.19	Div. 1
8.0	US 18	Both	235+13.40	244+37.77	22.5	924.37	2330.53									192.706	2330.53					11.562							2330.53	Div. 1
9.0	US 18	Both	244+37.77	254+20.82	28.0	983.05	2987.02									246.989	2987.02					14.819							2987.02	Div. 1
10.0	N 3rd Ave	Both	126+18.10	126+18.10			55.90									4.622	55.90					0.277							55.90	Div. 1
11.0	N 4th Ave	Both	130+07.48	130+07.48			53.40									4.416	53.40					0.265							53.40	Div. 1
12.0	4th Ave	Both	130+09.53	130+09.53			69.60									5.755	69.60					0.345							69.60	Div. 1
14.0	N 5th Ave	Both	134+24.28	134+24.28			52.30									4.325	52.30					0.260							52.30	Div. 1
15.0	N 6th Ave	Both	137+99.30	137+99.30			50.10									4.143	50.10					0.249							50.10	Div. 1
16.0	8th Ave	Both	146+84.60	146+84.60			68.70									5.681	68.70					0.341							68.70	Div. 1
																4130.432						247.826							49952.30	

Remarks Div. 1:

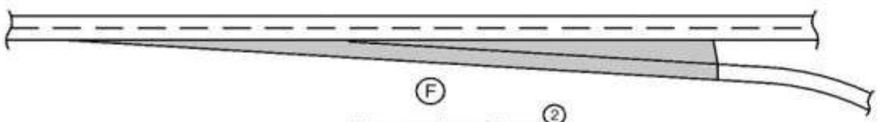
13.0	**4th Ave**	**Both**	**130+09.53**	**130+09.53**			**69.80**									**5.772**	**69.80**					**0.346**							**69.80**	Div. 2
																5.772						**0.346**							**69.8**	

Remarks Div. 2:

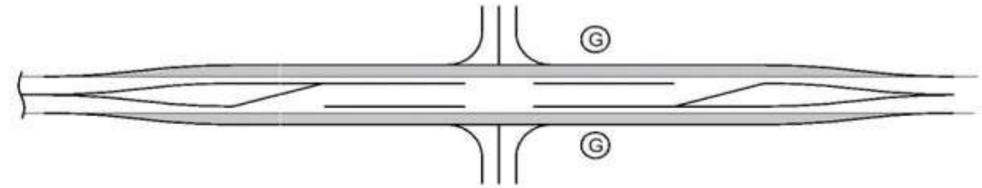
HMA PAVEMENT



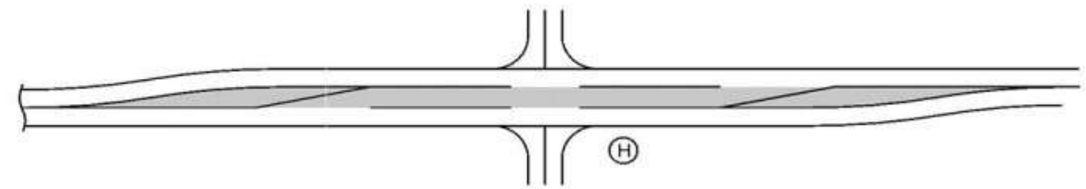
Typical Intersection



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.

Line No.	Road Identification	Direction of Travel	Station From	Station To	Width (FT)	Length (FT)	Area (SY)	Area A(1) (SY)(3)	Area B (SY)(3)	Area C (SY)(3)	Area D (SY)(3)	Area E(2) (SY)(3)	Area F (SY)(3)	Area G (SY)(3)	Area H (SY)(3)	HMA Pavement Surface (TONS)	HMA Pavement Surface (SY)	HMA Pavement Intermediate (TONS)	HMA Pavement Intermediate (SY)	HMA Pavement Base (TONS)	HMA Pavement Base (SY)	Binder Surface (TONS)	Binder Intermediate (TONS)	Binder Base (TONS)	Polymer Grid (SY)	Special Backfill (TONS)	Modified Subbase (CY)	Granular Subbase (SY)	Pavement Scarification (SY)	Remarks
Total:																**4136.204**						**248.172**							**50022.1**	

102_16
8/15/22

NOTCHES AND RUNOUTS FOR RESURFACING

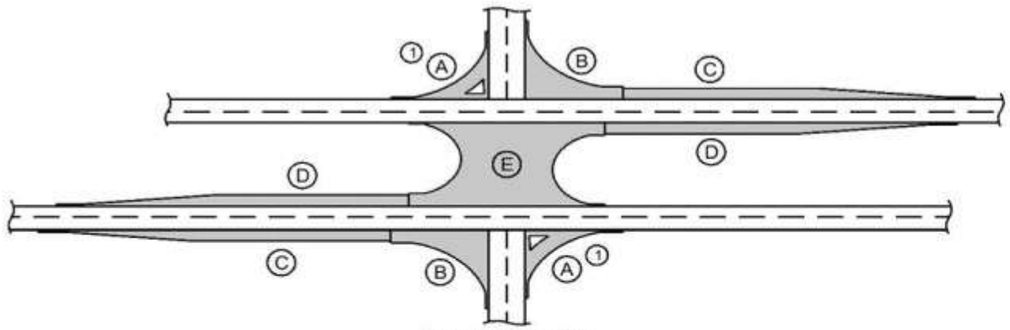
Refer to PR-201 and PR-202.

(1) Bid item. Applies only to Types 'N1' and 'N3' on PR-202. Refer to 100-25 for remaining values.

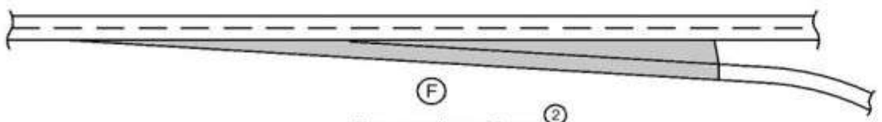
Line No.	Station	Type of Notch or Runout	S (IN)	I (IN)	DI (IN)	L (FT)	M (IN)	Pavement Scarification (SY) (1)	Remarks
1.0	126+18.10	Type N2	1.5				1.5	55.9	Div. 1
2.0	130+07.48	Type N2	1.5				1.5	53.4	Div. 1
3.0	130+09.53	Type N2	1.5				1.5	69.6	Div. 1
4.0	130+09.53	Type N2	1.5				1.5	69.8	Div. 2
5.0	134+24.28	Type N2	1.5				1.5	52.3	Div. 1
6.0	137+99.30	Type N2	1.5				1.5	50.1	Div. 1
7.0	146+84.60	Type N2	1.5				1.5	68.7	Div. 1
Total:								**419.8**	

NOTE: Pavement Scarification is included in the HMA quantities on Tab. 100-25

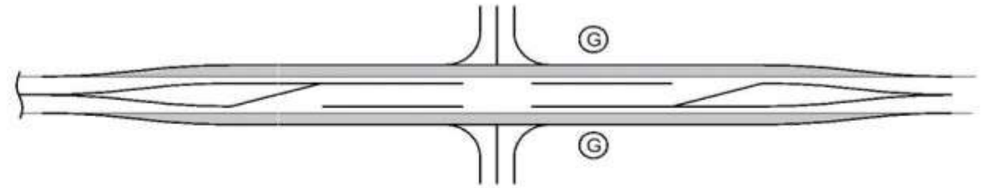
PCC PAVEMENT



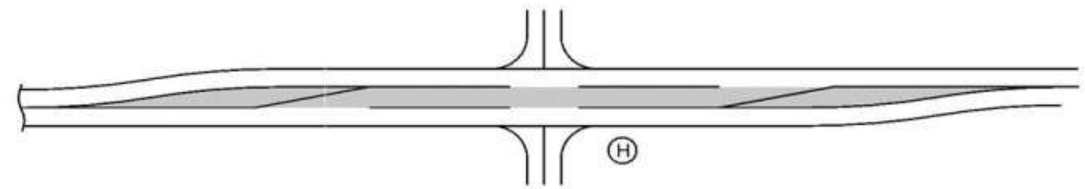
Typical Intersection



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.

Line No.	Road Identification	Direction of Travel	Station From	Station To	Width (FT)	Length (FT)	Area (SY)	Area A(1) (SY)(3)	Area B (SY)(3)	Area C (SY)(3)	Area D (SY)(3)	Area E (SY)(3)	Area F(2) (SY)(3)	Area G (SY)(3)	Area H (SY)(3)	Area by Thickness - Thickness(IN)	Area by Thickness - Area (SY)	Polymer Grid (SY)	Special Backfill (TON)	Modified Subbase (CY)	Granular Subbase (SY)	Remarks
1.0	US 18 (320th St)	EB	238+07.83	242+17.85		365.27				625.80						10.0	625.8					Div. 1
2.0	US 18 (320th St)	EB	242+17.85	243+06.67		88.82			517.90							10.0	517.9					Div. 1
3.0	US 18 (320th St)	WB	235+75.74	236+47.00		71.27			110.10							10.0	110.1					Div. 1
4.0	US 18 (320th St)	WB	236+47.00	239+38.35		291.35				311.60						10.0	311.6					Div. 1
																	1565.4					
Remarks Div. 1:																						
5.0	**Pleasant Dr**	**Right**	**112+14.89**	**112+70.89**		**56.00**	**121.18**									**10.0**	**121.2**					Div. 2
6.0	B Street	Left	117+81.16	118+65.15		83.99	81.80									10.0	81.8					Div. 2
7.0	6th Ave	Right	137+15.96	138+35.35		119.39	292.50									10.0	292.5					Div. 2
8.0	Washington Ave	Right	154+25.65	155+03.84		78.19	149.20									10.0	149.2					Div. 2
9.0	Wansink Ave	Left	164+28.64	165+06.49		77.85	163.80									10.0	163.8					Div. 2
10.0	N 1st Street	Left	166+91.76	167+58.69		66.93	139.00									10.0	139.0					Div. 2
11.0	Service Rd (East)	Right	170+29.91	171+09.91		80.00	99.80									10.0	99.8					Div. 2
																	1047.3					
Remarks Div. 2:																						
Total:																	**2612.7**					

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.
(7) Paved shoulder thickness specified in Remarks.
(8) Subbase type specified in Remarks.

Roadway Identification	Direction of Travel (1)	Station From	Station To	Side	P Width (FT)	P SG Width (2) (FT)	G Width (FT)	L Length (FT)	Class 13 Excavation (CY)(3)(4)	HMA (TON)	HMA (TON/ STA)	Binder (TONS)	Paved Shoulder (3) (SY)	Shoulder at Grdrail (5)(7)	Reinforced Paved Shoulder(3) (SY)	Special Backfill HMA Alt. (3) (TON)	Special Backfill HMA Alt. (TON/STA)	Special Backfill PCC Alt. (3) (TON)	Special Backfill PCC Alt. (TON/STA)	Polymer Grid (SY)	Subbase (3) (8) (CY)	Granular Shoulder (3) (TON)	Granular Shoulder (TON/STA)	Shoulder Const. Alt (3) (STA)	Shoulder Const. Alt HMA (6) (CY)	Shoulder Const. Alt PCC (6) (CY)	Remarks
US 18	EB	237+64.97	238+67.84	Right	10			102.87					97.6											1.03			
US 18	EB	238+67.84	242+49.67	Right	6			381.83					247.6											3.82			
US 18	WB	235+86.13	238+78.36	Right	4			292.23					134.5											2.92			
US 18	WB	238+78.36	241+42.78	Right	10			264.42					271.6											2.64			
Total:													**751.3**											**10.41**			

LONGITUDINAL SUBDRAIN SHOULDER

* Not a bid item.

Line No.	Road or Lane Identification	Station From	Station To	Side	Depth (IN) (D)	Subdrain Size (IN)	Length (FT)	Outlet Station	Outlet Type	Porous Backfill* (CY)	Remarks
1.0	US 18			Right	30.0	6.0	30.0	237+75.00	DR-306	2.8	
2.0	US 18	237+75.00	241+75.00	Right	30.0	6.0	430.0	241+75.00	DR-306	39.8	
Total:							**460**			**42.6**	

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 (ACRE)	Location	Type	Size (IN) (1)	Pipe Classification	Kind of Pipe (2)	Length New Const. (LF)	Length of total that is Trenchless	Bedding Class	Design Cover (H) (FT)	Camber* (DR-102) (FT)	Apron No. (IN)	Apron No. (OUT)	Apron Guard* (DR-213) (No.)	Elbow* (DR-141) (No.)	Diaphragm* (DR-501) (No.)	Tee Section* (DR-142) (No.)	"D" Section* (DR-141) (No.)	Reducer* (No.)	Type 'C' Conn.* (DR-122)	Type 'C' Conn.* (No.)	Connected Pipe Joint* (DR-121)	4" Perforated Subdrain* (FT)	Flow Line Elevation LT.	Flow Line Elevation RT.	Flow Line Elevation Other	Flow Line Elevation Other	Dimensions Lineal Feet Total (Left)	Dimensions Lineal Feet Total (Right)	Dimensions Lineal Feet Extensions	Dimensions Lineal Feet Extensions	Skew Ahead Degrees (Left)	Skew Ahead Degrees (Right)	Dike Location	Dike Station	Dike Elevation	Dike Type	Class 20 (CY)	Flowable Mortar	Floodable Backfill* (A)	Porous Backfill* (B)	Flooded Backfill(A+B)	Remarks
	242+73.31	DR-622	18.0	2000D	RCP	78.0		B	1.00		1		1						C-1	1	Type 3		1434.37		1433.20		130.75		84.00		11.0						71.5	10.5	17.1	5.6	22.7	
Total:						**78**					**1**																										**71.5**	**10.5**	**17.1**	**5.6**	**22.7**	

REMOVAL OF PAVEMENT

Refer to Tabulation 102-5.

* Not a bid item.

Line No.	Station From	Station To	Side	Pavement Type	Area (SY)	Saw Cut* (LF)	Remarks
1.0	236+37.35	241+42.76	Left	HMA Shoulder	544.2	457.6	Div. 1
2.0	237+65.00	242+46.19	Right	HMA Shoulder	321.2	487.0	Div. 1
3.0	242+46.19	243+06.67	Right	PCC	164.3	187.5	Div. 1
4.0	235+75.72	236+95.14	Left	PCC	128.6	150.0	Div. 1
					1158.3	1282.1	
Remarks Div. 1:							
5.0	**112+14.89**	**112+70.89**	**Right**	**Composite**	**121.2**	**92.5**	Div. 2
6.0	137+15.96	138+35.35	Right	PCC	292.5	154.9	Div. 2
7.0	154+25.65	155+03.84	Right	PCC	149.2	115.0	Div. 2
8.0	164+28.64	165+06.48	Left	PCC	151.4	113.3	Div. 2
9.0	166+91.74	167+58.69	Left	PCC	139.0	104.0	Div. 2
					853.3	**579.7**	
Remarks Div. 2:							
Total:					**2011.6**	**1861.8**	

110_02
8/15/22

REMOVAL OF EXISTING STRUCTURES

Line No.	Location	Description	Remarks
1.0	242+73.31	RCP Apron	Remove Existing 18 IN. RCP Apron

110_16
8/15/22

REMOVAL OF LIGHT POLES AND CONCRETE FOOTINGS

Line No.	No.	Station	Side	Offset (FT)	Removal Type	Remarks
1.0	1	242+82.68	Right	55.4	Light Pole and Concrete Footing	Remove and Reinstall (By Others)

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	Distance Guide Sign	237+93.30	Right			1				RR, PP	[1] [2]
2.0	Route Marker	239+02.78	Right			1				RR, PP	[1]
3.0	No Parking	241+23.62	Right			1				RR, PP	[1]
Total:						**3**					

[1] Install existing sign post assembly with new Perforated Square Steel Tube Post Anchor.
[2] Requires two (2) anchors.

PAVEMENT MARKING LINE TYPES

Line factors based on 6-inch wide continuous line.
*BCY4 - Place on the same side of the roadway to match existing markings near the project.
**NPY4 - Estimating purposes only. No Passing Zone Lines will be located in the field.
***MNY6 - Factor of 1.00 includes number of 6-inch passes to cover median nose area.

BCY4: Broken Centerline (Yellow) @ 0.17
BCY6: Broken Centerline (Yellow) @ 0.25
BLC6: Broken Line Contrast (White/Black) @ 0.50
BLW4: Broken Lane Line (White) @ 0.17
BLW6: Broken Lane Line (White) @ 0.25
CBW6: Crosswalk Bar (White) @ 10.00
CHW8: Channelizing Line (White) @ 1.33
CHW10: Channelizing Line (White) @ 1.67
CHY8: Channelizing Line (Yellow) @ 1.33
CHY10: Channelizing Line (Yellow) @ 1.67
CLW6: Crosswalk Line (White) @ 2.00
DCY4: Double Centerline (Yellow) @ 1.34
DCY6: Double Centerline (Yellow) @ 2.00
DDY4: Double Dotted Line (Yellow) @ 0.44
DDY6: Double Dotted Line (Yellow) @ 0.67
DLW4: Dotted Line (White) @ 0.22
DLW6: Dotted Line (White) @ 0.33
DLY4: Dotted Line (Yellow) @ 0.22
DLY6: Dotted Line (Yellow) @ 0.33
ELW4: Edge Line Right (White) @ 0.67
ELW6: Edge Line Right (White) @ 1.00
ELY4: Edge Line Left (Yellow) @ 0.67
ELY6: Edge Line Left (Yellow) @ 1.00
LDW8: Lane Drop (White) @ 0.33
LDW10: Lane Drop (White) @ 0.42
MNY6: Median Nose (Yellow) @ 1.00
NPY4: No Passing Zone Line (Yellow) @ 0.84
NPY6: No Passing Zone Line (Yellow) @ 1.25
RLW4: Ramp Edge Line Right (White) @ 0.67
RLW6: Ramp Edge Line Right (White) @ 1.00
RLY4: Ramp Edge Line Left (Yellow) @ 0.67
RLY6: Ramp Edge Line Left (Yellow) @ 1.00
SLW2: Stop Line (White) @ 4.00
SLW4: Solid Lane Line (White) @ 0.67
SLW6: Solid Lane Line (White) @ 1.00
SPW4: Sloped Curb 4" (White) @ 2.16
SPW6: Sloped Curb 6" (White) @ 2.28
SPY4: Sloped Curb 4" (Yellow) @ 2.16
SPY6: Sloped Curb 6" (Yellow) @ 2.28

Line No.	Road ID	Station From	Station To	Line Length (STA)	Lane	Marking Type	Groove Marking Needed?	Groove Qty. (STA)	CHW8 Factored (STA)	CHY8 Factored (STA)	DCY4 Factored (STA)	DCY6 Factored (STA)	ELW4 Factored (STA)	ELW6 Factored (STA)	ELY4 Factored (STA)	NPY4** Factored (STA)	NPY6** Factored (STA)	SLW2 Factored (STA)	SLW4 Factored (STA)	Remarks
1.0	Pleasant Dr	112+42.98	112+57.85	0.15	NB	Waterborne/Solvent Paint	Yes	0.60										0.60		[1]
2.0	B St	118+03.52	118+23.14	0.20	SB	Waterborne/Solvent Paint	Yes	0.80										0.80		[1]
5.0	US 18	121+75.80	121+75.80	0.24	EB	Waterborne/Solvent Paint	Yes	0.96										0.96		[1]
6.0	US 18	123+28.50	123+28.50	0.29	WB	Waterborne/Solvent Paint	Yes	1.16										1.16		[1]
7.0	N 3rd Ave	126+03.37	126+18.37	0.15	SB	Waterborne/Solvent Paint	Yes	0.60										0.60		[1]
8.0	3rd Ave	126+18.72	126+40.72	0.22	NB	Waterborne/Solvent Paint	Yes	0.88										0.88		[1]
9.0	N 4th Ave	129+93.04	130+08.71	0.16	SB	Waterborne/Solvent Paint	Yes	0.64										0.64		[1]
10.0	4th Ave	130+08.96	130+28.76	0.20	NB	Waterborne/Solvent Paint	Yes	0.80										0.80		[1]
11.0	N 5th Ave	134+10.05	134+25.79	0.16	SB	Waterborne/Solvent Paint	Yes	0.64										0.64		[1]
12.0	N 6th Ave	137+51.36	137+66.31	0.15	SB	Waterborne/Solvent Paint	Yes	0.60										0.60		[1]
13.0	6th Ave	137+66.20	137+85.80	0.20	NB	Waterborne/Solvent Paint	Yes	0.80										0.80		[1]
14.0	N 7th Ave	140+93.06	141+08.56	0.15	SB	Waterborne/Solvent Paint	Yes	0.60										0.60		[1]
15.0	7th Ave	142+10.54	142+27.54	0.17	NB	Waterborne/Solvent Paint	Yes	0.68										0.68		[1]
16.0	8th Ave	146+85.38	147+02.56	0.17	NB	Waterborne/Solvent Paint	Yes	0.68										0.68		[1]
17.0	N Washington Ave	154+46.47	154+61.97	0.15	SB	Waterborne/Solvent Paint	Yes	0.60										0.60		[1]
18.0	Washington Ave	154+63.33	154+78.19	0.15	NB	Waterborne/Solvent Paint	Yes	0.60										0.60		[1]
19.0	US 18	137+16.20	137+16.20	0.26	EB	Waterborne/Solvent Paint	Yes	1.04										1.04		[1]
20.0	US 18	138+22.02	138+22.02	0.26	WB	Waterborne/Solvent Paint	Yes	1.04										1.04		[1]
21.0	US 18	154+21.38	154+21.38	0.26	EB	Waterborne/Solvent Paint	Yes	1.04										1.04		[1]
22.0	US 18	154+99.44	154+99.44	0.26	WB	Waterborne/Solvent Paint	Yes	1.04										1.04		[1]
23.0	Normal College Ave	157+93.00	158+07.88	0.15	NB	Waterborne/Solvent Paint	Yes	0.60										0.60		[1]
24.0	Wansink Ave	164+53.67	164+68.95	0.15	SB	Waterborne/Solvent Paint	Yes	0.60										0.60		[1]
25.0	N 1st St	167+11.80	167+28.88	0.17	SB	Waterborne/Solvent Paint	Yes	0.68										0.68		[1]
26.0	N 18th Ave	174+43.13	174+58.27	0.15	SB	Waterborne/Solvent Paint	Yes	0.60										0.60		[1]
27.0	19th Ave	174+60.20	174+84.20	0.24	NB	Waterborne/Solvent Paint	Yes	0.96										0.96		[1]
28.0	US 18	174+25.16	174+25.16	0.40	EB	Waterborne/Solvent Paint	Yes	1.60										1.60		[1]
29.0	US 18	174+97.06	174+96.87	0.28	WB	Waterborne/Solvent Paint	Yes	1.12										1.12		[1]
30.0	N 1st St	174+21.87	174+21.96	0.15	EB	Waterborne/Solvent Paint	Yes	0.60										0.60		[1]
32.0	N 21st Ave	185+96.64	186+13.64	0.17	SB	Waterborne/Solvent Paint	Yes	0.68										0.68		[1]
33.0	24th Ave	196+27.21	196+46.26	0.19	NB	Waterborne/Solvent Paint	Yes	0.76										0.76		[1]
34.0	US 18	221+05.44	221+05.44	0.36	EB	Waterborne/Solvent Paint	Yes	1.44										1.44		[1]
35.0	US 18	222+31.42	222+31.42	0.33	WB	Waterborne/Solvent Paint	Yes	1.32										1.32		[1]
36.0	SB IA 60 Ramp	228+88.17	229+67.43	0.84	SB	Waterborne/Solvent Paint	Yes	3.36										3.36		[1]
37.0	NB IA 60 Ramp	235+34.44	236+12.04	0.84	NB	Waterborne/Solvent Paint	Yes	3.36										3.36		[1]
38.0	N Crossroads Dr	242+54.63	243+22.60	0.76	SB	Waterborne/Solvent Paint	Yes	3.04										3.04		[1]
39.0	Crossroads Dr	243+20.66	243+52.04	0.35	NB	Waterborne/Solvent Paint	Yes	1.40										1.40		[1]
41.0	US 18	123+28.60	124+08.57	0.80	EB	Waterborne/Solvent Paint	Yes	1.60				1.60								[1]
42.0	US 18	136+17.20	137+17.20	1.00	WB	Waterborne/Solvent Paint	Yes	2.00				2.00								[1]
43.0	US 18	138+21.02	139+21.02	1.00	EB	Waterborne/Solvent Paint	Yes	2.00				2.00								[1]
44.0	US 18	153+21.38	154+21.38	1.00	WB	Waterborne/Solvent Paint	Yes	2.00				2.00								[1]
45.0	US 18	154+99.50	156+49.50	1.50	EB	Waterborne/Solvent Paint	Yes	3.00				3.00								[1]
46.0	US 18	171+71.01	174+26.16	2.55	WB	Waterborne/Solvent Paint	Yes	5.10				5.10								[1]
47.0	US 18	174+97.06	177+47.06	2.50	EB	Waterborne/Solvent Paint	Yes	5.00				5.00								[1]

PAVEMENT MARKING LINE TYPES

Line factors based on 6-inch wide continuous line.
*BCY4 - Place on the same side of the roadway to match existing markings near the project.
**NPY4 - Estimating purposes only. No Passing Zone Lines will be located in the field.
***MNY6 - Factor of 1.00 includes number of 6-inch passes to cover median nose area.

BCY4: Broken Centerline (Yellow) @ 0.17
BCY6: Broken Centerline (Yellow) @ 0.25
BLC6: Broken Line Contrast (White/Black) @ 0.50
BLW4: Broken Lane Line (White) @ 0.17
BLW6: Broken Lane Line (White) @ 0.25
CBW6: Crosswalk Bar (White) @ 10.00
CHW8: Channelizing Line (White) @ 1.33
CHW10: Channelizing Line (White) @ 1.67
CHY8: Channelizing Line (Yellow) @ 1.33
CHY10: Channelizing Line (Yellow) @ 1.67
CLW6: Crosswalk Line (White) @ 2.00
DCY4: Double Centerline (Yellow) @ 1.34
DCY6: Double Centerline (Yellow) @ 2.00
DDY4: Double Dotted Line (Yellow) @ 0.44
DDY6: Double Dotted Line (Yellow) @ 0.67
DLW4: Dotted Line (White) @ 0.22
DLW6: Dotted Line (White) @ 0.33
DLY4: Dotted Line (Yellow) @ 0.22
DLY6: Dotted Line (Yellow) @ 0.33
ELW4: Edge Line Right (White) @ 0.67
ELW6: Edge Line Right (White) @ 1.00
ELY4: Edge Line Left (Yellow) @ 0.67
ELY6: Edge Line Left (Yellow) @ 1.00
LDW8: Lane Drop (White) @ 0.33
LDW10: Lane Drop (White) @ 0.42
MNY6: Median Nose (Yellow) @ 1.00
NPY4: No Passing Zone Line (Yellow) @ 0.84
NPY6: No Passing Zone Line (Yellow) @ 1.25
RLW4: Ramp Edge Line Right (White) @ 0.67
RLW6: Ramp Edge Line Right (White) @ 1.00
RLY4: Ramp Edge Line Left (Yellow) @ 0.67
RLY6: Ramp Edge Line Left (Yellow) @ 1.00
SLW2: Stop Line (White) @ 4.00
SLW4: Solid Lane Line (White) @ 0.67
SLW6: Solid Lane Line (White) @ 1.00
SPW4: Sloped Curb 4" (White) @ 2.16
SPW6: Sloped Curb 6" (White) @ 2.28
SPY4: Sloped Curb 4" (Yellow) @ 2.16
SPY6: Sloped Curb 6" (Yellow) @ 2.28

Line No.	Road ID	Station From	Station To	Line Length (STA)	Lane	Marking Type	Groove Marking Needed?	Groove Qty. (STA)	CHW8 Factored (STA)	CHY8 Factored (STA)	DCY4 Factored (STA)	DCY6 Factored (STA)	ELW4 Factored (STA)	ELW6 Factored (STA)	ELY4 Factored (STA)	NPY4** Factored (STA)	NPY6** Factored (STA)	SLW2 Factored (STA)	SLW4 Factored (STA)	Remarks
48.0	US 18	204+91.76	207+05.36	2.14	WB	Waterborne/Solvent Paint	Yes	4.28				4.28								[1]
49.0	US 18	208+24.76	210+24.76	2.00	EB	Waterborne/Solvent Paint	Yes	4.00				4.00								[1]
50.0	US 18	252+63.12	254+20.91	1.58	Center	Waterborne/Solvent Paint	Yes	3.16				3.16								[1]
53.0	US 18	123+28.60	125+84.33	2.56	EB	Waterborne/Solvent Paint	Yes	2.56						2.56						[1]
54.0	US 18	126+54.37	129+68.63	3.14	EB	Waterborne/Solvent Paint	Yes	3.14						3.14						[1]
55.0	US 18	130+39.78	133+92.27	3.52	EB	Waterborne/Solvent Paint	Yes	3.52						3.52						[1]
56.0	US 18	134+55.75	137+15.96	2.60	EB	Waterborne/Solvent Paint	Yes	2.60						2.60						[1]
57.0	US 18	138+22.02	141+70.68	3.49	EB	Waterborne/Solvent Paint	Yes	3.49						3.49						[1]
58.0	US 18	142+53.38	146+46.09	3.93	EB	Waterborne/Solvent Paint	Yes	3.93						3.93						[1]
59.0	US 18	147+21.42	154+21.38	7.00	EB	Waterborne/Solvent Paint	Yes	7.00						7.00						[1]
60.0	US 18	155+03.84	157+60.02	2.56	EB	Waterborne/Solvent Paint	Yes	2.56						2.56						[1]
61.0	US 18	158+22.59	171+88.41	13.66	EB	Waterborne/Solvent Paint	Yes	13.66						13.66						[1]
62.0	US 18	174+97.06	195+88.85	20.92	EB	Waterborne/Solvent Paint	Yes	20.92						20.92						[1]
63.0	US 18	196+63.28	207+05.36	10.42	EB	Waterborne/Solvent Paint	Yes	10.42						10.42						[1]
64.0	US 18	208+36.15	214+65.51	6.29	EB	Waterborne/Solvent Paint	Yes	6.29						6.29						[1]
65.0	US 18	215+23.68	221+05.44	5.82	EB	Waterborne/Solvent Paint	Yes	5.82						5.82						[1]
66.0	US 18	222+31.44	228+18.86	5.87	EB	Waterborne/Solvent Paint	Yes	5.87						5.87						[1]
67.0	US 18	229+85.35	235+13.40	5.28	EB	Waterborne/Solvent Paint	Yes	5.28						5.28						[1]
68.0	US 18	237+60.72	242+81.09	5.32	EB	Waterborne/Solvent Paint	Yes	5.32						5.32						[1]
69.0	US 18	243+72.02	254+20.91	10.49	EB	Waterborne/Solvent Paint	Yes	10.49						10.49						[1]
72.0	US 18	123+28.57	125+84.48	2.56	WB	Waterborne/Solvent Paint	Yes	2.56						2.56						[1]
73.0	US 18	126+54.52	129+68.78	3.14	WB	Waterborne/Solvent Paint	Yes	3.14						3.14						[1]
74.0	US 18	130+39.85	133+92.28	3.52	WB	Waterborne/Solvent Paint	Yes	3.52						3.52						[1]
75.0	US 18	134+55.82	137+34.79	2.79	WB	Waterborne/Solvent Paint	Yes	2.79						2.79						[1]
76.0	US 18	138+22.02	140+72.05	2.50	WB	Waterborne/Solvent Paint	Yes	2.50						2.50						[1]
77.0	US 18	141+29.43	154+21.38	12.92	WB	Waterborne/Solvent Paint	Yes	12.92						12.92						[1]
78.0	US 18	154+99.44	164+35.66	9.36	WB	Waterborne/Solvent Paint	Yes	9.36						9.36						[1]
79.0	US 18	165+01.21	167+00.26	1.99	WB	Waterborne/Solvent Paint	Yes	1.99						1.99						[1]
80.0	US 18	167+52.98	174+25.16	6.72	WB	Waterborne/Solvent Paint	Yes	6.72						6.72						[1]
81.0	US 18	174+97.06	180+75.64	5.79	WB	Waterborne/Solvent Paint	Yes	5.79						5.79						[1]
82.0	US 18	181+63.84	185+76.15	4.12	WB	Waterborne/Solvent Paint	Yes	4.12						4.12						[1]
83.0	US 18	186+54.42	195+89.07	9.35	WB	Waterborne/Solvent Paint	Yes	9.35						9.35						[1]
84.0	US 18	196+63.28	207+05.36	10.42	WB	Waterborne/Solvent Paint	Yes	10.42						10.42						[1]
85.0	US 18	208+49.18	214+65.51	6.16	WB	Waterborne/Solvent Paint	Yes	6.16						6.16						[1]
86.0	US 18	215+23.60	221+05.44	5.82	WB	Waterborne/Solvent Paint	Yes	5.82						5.82						[1]
87.0	US 18	222+31.89	227+22.27	4.90	WB	Waterborne/Solvent Paint	Yes	4.90						4.90						[1]
88.0	US 18	229+94.61	235+13.54	5.19	WB	Waterborne/Solvent Paint	Yes	5.19						5.19						[1]
89.0	US 18	236+07.16	242+54.83	6.48	WB	Waterborne/Solvent Paint	Yes	6.48						6.48						[1]
90.0	US 18	243+95.03	254+20.86	10.26	WB	Waterborne/Solvent Paint	Yes	10.26						10.26						[1]
91.0	US 18	123+28.57	124+08.57	0.80	WB	Waterborne/Solvent Paint	Yes	1.06	1.06											[1]
92.0	US 18	136+17.21	137+17.21	1.00	EB	Waterborne/Solvent Paint	Yes	1.33	1.33											[1]
93.0	US 18	138+21.02	139+21.02	1.00	WB	Waterborne/Solvent Paint	Yes	1.33	1.33											[1]
94.0	US 18	153+21.38	154+21.38	1.00	EB	Waterborne/Solvent Paint	Yes	1.33	1.33											[1]

PAVEMENT MARKING LINE TYPES

Line factors based on 6-inch wide continuous line.
*BCY4 - Place on the same side of the roadway to match existing markings near the project.
**NPY4 - Estimating purposes only. No Passing Zone Lines will be located in the field.
***MNY6 - Factor of 1.00 includes number of 6-inch passes to cover median nose area.

BCY4: Broken Centerline (Yellow) @ 0.17
BCY6: Broken Centerline (Yellow) @ 0.25
BLC6: Broken Line Contrast (White/Black) @ 0.50
BLW4: Broken Lane Line (White) @ 0.17
BLW6: Broken Lane Line (White) @ 0.25
CBW6: Crosswalk Bar (White) @ 10.00
CHW8: Channelizing Line (White) @ 1.33
CHW10: Channelizing Line (White) @ 1.67
CHY8: Channelizing Line (Yellow) @ 1.33
CHY10: Channelizing Line (Yellow) @ 1.67
CLW6: Crosswalk Line (White) @ 2.00
DCY4: Double Centerline (Yellow) @ 1.34
DCY6: Double Centerline (Yellow) @ 2.00
DDY4: Double Dotted Line (Yellow) @ 0.44
DDY6: Double Dotted Line (Yellow) @ 0.67
DLW4: Dotted Line (White) @ 0.22
DLW6: Dotted Line (White) @ 0.33
DLY4: Dotted Line (Yellow) @ 0.22
DLY6: Dotted Line (Yellow) @ 0.33
ELW4: Edge Line Right (White) @ 0.67
ELW6: Edge Line Right (White) @ 1.00
ELY4: Edge Line Left (Yellow) @ 0.67
ELY6: Edge Line Left (Yellow) @ 1.00
LDW8: Lane Drop (White) @ 0.33
LDW10: Lane Drop (White) @ 0.42
MNY6: Median Nose (Yellow) @ 1.00
NPY4: No Passing Zone Line (Yellow) @ 0.84
NPY6: No Passing Zone Line (Yellow) @ 1.25
RLW4: Ramp Edge Line Right (White) @ 0.67
RLW6: Ramp Edge Line Right (White) @ 1.00
RLY4: Ramp Edge Line Left (Yellow) @ 0.67
RLY6: Ramp Edge Line Left (Yellow) @ 1.00
SLW2: Stop Line (White) @ 4.00
SLW4: Solid Lane Line (White) @ 0.67
SLW6: Solid Lane Line (White) @ 1.00
SPW4: Sloped Curb 4" (White) @ 2.16
SPW6: Sloped Curb 6" (White) @ 2.28
SPY4: Sloped Curb 4" (Yellow) @ 2.16
SPY6: Sloped Curb 6" (Yellow) @ 2.28

Line No.	Road ID	Station From	Station To	Line Length (STA)	Lane	Marking Type	Groove Marking Needed?	Groove Qty. (STA)	CHW8 Factored (STA)	CHY8 Factored (STA)	DCY4 Factored (STA)	DCY6 Factored (STA)	ELW4 Factored (STA)	ELW6 Factored (STA)	ELY4 Factored (STA)	NPY4** Factored (STA)	NPY6** Factored (STA)	SLW2 Factored (STA)	SLW4 Factored (STA)	Remarks
95.0	US 18	154+99.49	156+49.44	1.50	WB	Waterborne/Solvent Paint	Yes	2.00	2.00											[1]
96.0	US 18	172+76.16	174+26.16	1.50	EB	Waterborne/Solvent Paint	Yes	2.00	2.00											[1]
97.0	US 18	172+91.29	174+26.16	1.35	EB	Waterborne/Solvent Paint	Yes	1.80	1.80											[1]
98.0	US 18	174+97.06	176+47.06	1.50	WB	Waterborne/Solvent Paint	Yes	2.00	2.00											[1]
99.0	US 18	206+05.36	207+05.36	1.00	EB	Waterborne/Solvent Paint	Yes	1.33	1.33											[1]
100.0	US 18	208+24.76	209+24.76	1.00	WB	Waterborne/Solvent Paint	Yes	1.33	1.33											[1]
101.0	US 18	219+04.60	221+15.44	2.11	EB	Waterborne/Solvent Paint	Yes	2.81	2.81											[1]
102.0	US 18	219+04.60	221+15.44	2.11	EB	Waterborne/Solvent Paint	Yes	2.81	2.81											[1]
103.0	US 18	222+31.42	223+81.42	1.50	WB	Waterborne/Solvent Paint	Yes	2.00	2.00											[1]
104.0	US 18	222+31.42	223+81.42	1.50	WB	Waterborne/Solvent Paint	Yes	2.00	2.00											[1]
105.0	US 18	229+94.61	231+76.61	1.82	WB	Waterborne/Solvent Paint	Yes	2.42	2.42											[1]
106.0	US 18	233+50.00	234+82.26	1.32	EB	Waterborne/Solvent Paint	Yes	1.76	1.76											[1]
107.0	US 18	236+07.63	238+18.02	2.10	WB	Waterborne/Solvent Paint	Yes	2.79	2.79											[1]
108.0	US 18	239+87.83	242+72.01	2.84	EB	Waterborne/Solvent Paint	Yes	10.29	10.29											[1]
109.0	US 18	240+56.82	242+56.93	2.00	EB	Waterborne/Solvent Paint	Yes	2.66	2.66											[1]
110.0	US 18	238+18.35	242+00.00	1.64	WB	Waterborne/Solvent Paint	Yes	2.18	2.18											[1]
111.0	US 18	243+62.17	244+62.17	1.00	WB	Waterborne/Solvent Paint	Yes	1.33	1.33											[1]
112.0	US 18	243+72.30	250+34.00	18.69	WB	Waterborne/Solvent Paint	Yes	24.86	24.86											[1]
113.0	US 18	217+14.60	221+05.44	9.27	Center	Waterborne/Solvent Paint	Yes	12.33		12.33										[1]
114.0	US 18	222+31.44	229+20.07	18.87	Center	Waterborne/Solvent Paint	Yes	25.10		25.10										[1]
115.0	US 18	230+26.61	234+82.26	12.88	Center	Waterborne/Solvent Paint	Yes	17.13		17.13										[1]
116.0	US 18	235+89.45	242+56.99	27.30	Center	Waterborne/Solvent Paint	Yes	36.31		36.31										[1]
117.0	US 18	243+72.02	252+63.12	36.82	Center	Waterborne/Solvent Paint	Yes	48.97		48.97										[1]
118.0	US 18	124+08.57	125+84.33	1.76	EB	Waterborne/Solvent Paint	Yes	2.20									2.20			[1]
119.0	US 18	126+54.37	129+68.78	3.14	EB	Waterborne/Solvent Paint	Yes	3.93									3.93			[1]
120.0	US 18	130+39.78	133+92.28	3.52	EB	Waterborne/Solvent Paint	Yes	4.40									4.40			[1]
121.0	US 18	134+55.75	135+66.20	1.10	EB	Waterborne/Solvent Paint	Yes	1.38									1.38			[1]
122.0	US 18	139+21.02	140+72.05	1.51	EB	Waterborne/Solvent Paint	Yes	1.89									1.89			[1]
123.0	US 18	141+29.36	141+70.68	0.41	EB	Waterborne/Solvent Paint	Yes	0.51									0.51			[1]
124.0	US 18	142+53.38	146+46.09	3.93	EB	Waterborne/Solvent Paint	Yes	4.91									4.91			[1]
125.0	US 18	147+21.42	152+72.37	5.51	EB	Waterborne/Solvent Paint	Yes	6.89									6.89			[1]
126.0	US 18	156+49.44	157+60.02	1.11	EB	Waterborne/Solvent Paint	Yes	1.39									1.39			[1]
127.0	US 18	158+22.59	164+35.66	6.13	EB	Waterborne/Solvent Paint	Yes	7.66									7.66			[1]
128.0	US 18	165+01.21	166+99.95	1.99	EB	Waterborne/Solvent Paint	Yes	2.49									2.49			[1]
129.0	US 18	167+52.84	170+45.21	2.92	EB	Waterborne/Solvent Paint	Yes	3.65									3.65			[1]
130.0	US 18	171+08.02	171+71.01	0.63	EB	Waterborne/Solvent Paint	Yes	0.79									0.79			[1]
131.0	US 18	177+47.06	180+75.57	3.29	EB	Waterborne/Solvent Paint	Yes	4.11									4.11			[1]
132.0	US 18	181+63.94	185+76.15	4.12	EB	Waterborne/Solvent Paint	Yes	5.15									5.15			[1]
133.0	US 18	186+54.42	195+88.85	9.34	EB	Waterborne/Solvent Paint	Yes	11.68									11.68			[1]
134.0	US 18	196+63.28	204+91.76	8.28	EB	Waterborne/Solvent Paint	Yes	10.35									10.35			[1]
135.0	US 18	210+24.76	214+65.51	4.41	EB	Waterborne/Solvent Paint	Yes	5.51									5.51			[1]
136.0	US 18	215+23.60	217+14.62	1.91	EB	Waterborne/Solvent Paint	Yes	2.39									2.39			[1]
137.0	US 18	124+78.56	125+84.48	1.06	WB	Waterborne/Solvent Paint	Yes	1.33									1.33			[1]

PAVEMENT MARKING LINE TYPES

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***MNY6 - Factor of 1.00 includes number of 6-inch passes to cover median nose area.

BCY4: Broken Centerline (Yellow) @ 0.17
BCY6: Broken Centerline (Yellow) @ 0.25
BLC6: Broken Line Contrast (White/Black) @ 0.50
BLW4: Broken Lane Line (White) @ 0.17
BLW6: Broken Lane Line (White) @ 0.25
CBW6: Crosswalk Bar (White) @ 10.00
CHW8: Channelizing Line (White) @ 1.33
CHW10: Channelizing Line (White) @ 1.67
CHY8: Channelizing Line (Yellow) @ 1.33
CHY10: Channelizing Line (Yellow) @ 1.67
CLW6: Crosswalk Line (White) @ 2.00
DCY4: Double Centerline (Yellow) @ 1.34
DCY6: Double Centerline (Yellow) @ 2.00
DDY4: Double Dotted Line (Yellow) @ 0.44
DDY6: Double Dotted Line (Yellow) @ 0.67
DLW4: Dotted Line (White) @ 0.22
DLW6: Dotted Line (White) @ 0.33
DLY4: Dotted Line (Yellow) @ 0.22
DLY6: Dotted Line (Yellow) @ 0.33
ELW4: Edge Line Right (White) @ 0.67
ELW6: Edge Line Right (White) @ 1.00
ELY4: Edge Line Left (Yellow) @ 0.67
ELY6: Edge Line Left (Yellow) @ 1.00
LDW8: Lane Drop (White) @ 0.33
LDW10: Lane Drop (White) @ 0.42
MNY6: Median Nose (Yellow) @ 1.00
NPY4: No Passing Zone Line (Yellow) @ 0.84
NPY6: No Passing Zone Line (Yellow) @ 1.25
RLW4: Ramp Edge Line Right (White) @ 0.67
RLW6: Ramp Edge Line Right (White) @ 1.00
RLY4: Ramp Edge Line Left (Yellow) @ 0.67
RLY6: Ramp Edge Line Left (Yellow) @ 1.00
SLW2: Stop Line (White) @ 4.00
SLW4: Solid Lane Line (White) @ 0.67
SLW6: Solid Lane Line (White) @ 1.00
SPW4: Sloped Curb 4" (White) @ 2.16
SPW6: Sloped Curb 6" (White) @ 2.28
SPY4: Sloped Curb 4" (Yellow) @ 2.16
SPY6: Sloped Curb 6" (Yellow) @ 2.28

Line No.	Road ID	Station From	Station To	Line Length (STA)	Lane	Marking Type	Groove Marking Needed?	Groove Qty. (STA)	CHW8 Factored (STA)	CHY8 Factored (STA)	DCY4 Factored (STA)	DCY6 Factored (STA)	ELW4 Factored (STA)	ELW6 Factored (STA)	ELY4 Factored (STA)	NPY4** Factored (STA)	NPY6** Factored (STA)	SLW2 Factored (STA)	SLW4 Factored (STA)	Remarks
138.0	US 18	126+54.37	129+68.78	3.14	WB	Waterborne/Solvent Paint	Yes	3.93									3.93			[1]
139.0	US 18	130+39.78	133+92.28	3.52	WB	Waterborne/Solvent Paint	Yes	4.40									4.40			[1]
140.0	US 18	134+55.75	135+66.20	1.10	WB	Waterborne/Solvent Paint	Yes	1.38									1.38			[1]
141.0	US 18	139+71.02	140+72.05	1.01	WB	Waterborne/Solvent Paint	Yes	1.26									1.26			[1]
142.0	US 18	141+29.36	141+70.68	0.41	WB	Waterborne/Solvent Paint	Yes	0.51									0.51			[1]
143.0	US 18	142+53.38	146+46.09	3.93	WB	Waterborne/Solvent Paint	Yes	4.91									4.91			[1]
144.0	US 18	147+21.42	152+72.37	5.51	WB	Waterborne/Solvent Paint	Yes	6.89									6.89			[1]
145.0	US 18	157+10.02	157+60.02	0.50	WB	Waterborne/Solvent Paint	Yes	0.63									0.63			[1]
146.0	US 18	158+22.59	164+35.66	6.13	WB	Waterborne/Solvent Paint	Yes	7.66									7.66			[1]
147.0	US 18	165+01.21	166+99.95	1.99	WB	Waterborne/Solvent Paint	Yes	2.49									2.49			[1]
148.0	US 18	167+52.84	170+45.21	2.92	WB	Waterborne/Solvent Paint	Yes	3.65									3.65			[1]
149.0	US 18	171+08.02	171+71.01	0.63	WB	Waterborne/Solvent Paint	Yes	0.79									0.79			[1]
150.0	US 18	177+47.06	180+75.57	3.29	WB	Waterborne/Solvent Paint	Yes	4.11									4.11			[1]
151.0	US 18	181+63.94	185+76.15	4.12	WB	Waterborne/Solvent Paint	Yes	5.15									5.15			[1]
152.0	US 18	186+54.42	195+88.85	9.34	WB	Waterborne/Solvent Paint	Yes	11.68									11.68			[1]
153.0	US 18	196+63.28	204+91.76	8.28	WB	Waterborne/Solvent Paint	Yes	10.35									10.35			[1]
154.0	US 18	210+24.76	214+65.51	4.41	WB	Waterborne/Solvent Paint	Yes	5.51									5.51			[1]
155.0	US 18	215+23.60	217+14.62	1.91	WB	Waterborne/Solvent Paint	Yes	2.39									2.39			[1]
								670.48	73.42	139.84		32.14		226.86			160.3	37.92		

Remarks [1]:

1.2	**Pleasant Dr**	**112+42.98**	**112+57.85**	**0.15**	**NB**	**Waterborne/Solvent Paint**	**No**											**0.60**		[2]
2.2	B St	118+03.52	118+23.14	0.20	SB	Waterborne/Solvent Paint	No											0.80		[2]
5.2	US 18	121+75.80	121+75.80	0.24	EB	Waterborne/Solvent Paint	No											0.96		[2]
6.2	US 18	123+28.50	123+28.50	0.29	WB	Waterborne/Solvent Paint	No											1.16		[2]
6.4	US 18	123+28.50	123+28.50	0.29	WB	Waterborne/Solvent Paint	No											1.16		[2]
7.2	N 3rd Ave	126+03.37	126+18.37	0.15	SB	Waterborne/Solvent Paint	No											0.60		[2]
8.2	3rd Ave	126+18.72	126+40.72	0.22	NB	Waterborne/Solvent Paint	No											0.88		[2]
9.2	N 4th Ave	129+93.04	130+08.71	0.16	SB	Waterborne/Solvent Paint	No											0.64		[2]
10.2	4th Ave	130+08.96	130+28.76	0.20	NB	Waterborne/Solvent Paint	No											0.80		[2]
10.4	4th Ave	130+08.96	130+28.76	0.20	NB	Waterborne/Solvent Paint	No											0.80		[2]
11.2	N 5th Ave	134+10.05	134+25.79	0.16	SB	Waterborne/Solvent Paint	No											0.64		[2]
12.2	N 6th Ave	137+51.36	137+66.31	0.15	SB	Waterborne/Solvent Paint	No											0.60		[2]
13.2	6th Ave	137+66.20	137+85.80	0.20	NB	Waterborne/Solvent Paint	No											0.80		[2]
14.2	N 7th Ave	140+93.06	141+08.56	0.15	SB	Waterborne/Solvent Paint	No											0.60		[2]
15.2	7th Ave	142+10.54	142+27.54	0.17	NB	Waterborne/Solvent Paint	No											0.68		[2]
16.2	8th Ave	146+85.38	147+02.56	0.17	NB	Waterborne/Solvent Paint	No											0.68		[2]
17.2	N Washington Ave	154+46.47	154+61.97	0.15	SB	Waterborne/Solvent Paint	No											0.60		[2]
18.2	Washington Ave	154+63.33	154+78.19	0.15	NB	Waterborne/Solvent Paint	No											0.60		[2]
19.2	US 18	137+16.20	137+16.20	0.26	EB	Waterborne/Solvent Paint	No											1.04		[2]
19.4	US 18	137+16.20	137+16.20	0.26	EB	Waterborne/Solvent Paint	No											1.04		[2]
20.2	US 18	138+22.02	138+22.02	0.26	WB	Waterborne/Solvent Paint	No											1.04		[2]
20.4	US 18	138+22.02	138+22.02	0.26	WB	Waterborne/Solvent Paint	No											1.04		[2]

PAVEMENT MARKING LINE TYPES

Line factors based on 6-inch wide continuous line.
*BCY4 - Place on the same side of the roadway to match existing markings near the project.
**NPY4 - Estimating purposes only. No Passing Zone Lines will be located in the field.
***MNY6 - Factor of 1.00 includes number of 6-inch passes to cover median nose area.

BCY4: Broken Centerline (Yellow) @ 0.17
BCY6: Broken Centerline (Yellow) @ 0.25
BLC6: Broken Line Contrast (White/Black) @ 0.50
BLW4: Broken Lane Line (White) @ 0.17
BLW6: Broken Lane Line (White) @ 0.25
CBW6: Crosswalk Bar (White) @ 10.00
CHW8: Channelizing Line (White) @ 1.33
CHW10: Channelizing Line (White) @ 1.67
CHY8: Channelizing Line (Yellow) @ 1.33
CHY10: Channelizing Line (Yellow) @ 1.67
CLW6: Crosswalk Line (White) @ 2.00
DCY4: Double Centerline (Yellow) @ 1.34
DCY6: Double Centerline (Yellow) @ 2.00
DDY4: Double Dotted Line (Yellow) @ 0.44
DDY6: Double Dotted Line (Yellow) @ 0.67
DLW4: Dotted Line (White) @ 0.22
DLW6: Dotted Line (White) @ 0.33
DLY4: Dotted Line (Yellow) @ 0.22
DLY6: Dotted Line (Yellow) @ 0.33
ELW4: Edge Line Right (White) @ 0.67
ELW6: Edge Line Right (White) @ 1.00
ELY4: Edge Line Left (Yellow) @ 0.67
ELY6: Edge Line Left (Yellow) @ 1.00
LDW8: Lane Drop (White) @ 0.33
LDW10: Lane Drop (White) @ 0.42
MNY6: Median Nose (Yellow) @ 1.00
NPY4: No Passing Zone Line (Yellow) @ 0.84
NPY6: No Passing Zone Line (Yellow) @ 1.25
RLW4: Ramp Edge Line Right (White) @ 0.67
RLW6: Ramp Edge Line Right (White) @ 1.00
RLY4: Ramp Edge Line Left (Yellow) @ 0.67
RLY6: Ramp Edge Line Left (Yellow) @ 1.00
SLW2: Stop Line (White) @ 4.00
SLW4: Solid Lane Line (White) @ 0.67
SLW6: Solid Lane Line (White) @ 1.00
SPW4: Sloped Curb 4" (White) @ 2.16
SPW6: Sloped Curb 6" (White) @ 2.28
SPY4: Sloped Curb 4" (Yellow) @ 2.16
SPY6: Sloped Curb 6" (Yellow) @ 2.28

Line No.	Road ID	Station From	Station To	Line Length (STA)	Lane	Marking Type	Groove Marking Needed?	Groove Qty. (STA)	CHW8 Factored (STA)	CHY8 Factored (STA)	DCY4 Factored (STA)	DCY6 Factored (STA)	ELW4 Factored (STA)	ELW6 Factored (STA)	ELY4 Factored (STA)	NPY4** Factored (STA)	NPY6** Factored (STA)	SLW2 Factored (STA)	SLW4 Factored (STA)	Remarks
21.2	US 18	154+21.38	154+21.38	0.26	EB	Waterborne/Solvent Paint	No											1.04		[2]
21.4	US 18	154+21.38	154+21.38	0.26	EB	Waterborne/Solvent Paint	No											1.04		[2]
22.2	US 18	154+99.44	154+99.44	0.26	WB	Waterborne/Solvent Paint	No											1.04		[2]
22.4	US 18	154+99.44	154+99.44	0.26	WB	Waterborne/Solvent Paint	No											1.04		[2]
23.2	Normal College Ave	157+93.00	158+07.88	0.15	NB	Waterborne/Solvent Paint	No											0.60		[2]
24.2	Wansink Ave	164+53.67	164+68.95	0.15	SB	Waterborne/Solvent Paint	No											0.60		[2]
25.2	N 1st St	167+11.80	167+28.88	0.17	SB	Waterborne/Solvent Paint	No											0.68		[2]
26.2	N 18th Ave	174+43.13	174+58.27	0.15	SB	Waterborne/Solvent Paint	No											0.60		[2]
27.2	19th Ave	174+60.20	174+84.20	0.24	NB	Waterborne/Solvent Paint	No											0.96		[2]
28.2	US 18	174+25.16	174+25.16	0.40	EB	Waterborne/Solvent Paint	No											1.60		[2]
28.4	US 18	174+25.16	174+25.16	0.40	EB	Waterborne/Solvent Paint	No											1.60		[2]
29.2	US 18	174+97.06	174+96.87	0.28	WB	Waterborne/Solvent Paint	No											1.12		[2]
29.4	US 18	174+97.06	174+96.87	0.28	WB	Waterborne/Solvent Paint	No											1.12		[2]
30.2	N 1st St	174+21.87	174+21.96	0.15	EB	Waterborne/Solvent Paint	No											0.60		[2]
32.2	N 21st Ave	185+96.64	186+13.64	0.17	SB	Waterborne/Solvent Paint	No											0.68		[2]
33.2	24th Ave	196+27.21	196+46.26	0.19	NB	Waterborne/Solvent Paint	No											0.76		[2]
34.2	US 18	221+05.44	221+05.44	0.36	EB	Waterborne/Solvent Paint	No											1.44		[2]
34.4	US 18	221+05.44	221+05.44	0.36	EB	Waterborne/Solvent Paint	No											1.44		[2]
35.2	US 18	222+31.42	222+31.42	0.33	WB	Waterborne/Solvent Paint	No											1.32		[2]
35.4	US 18	222+31.42	222+31.42	0.33	WB	Waterborne/Solvent Paint	No											1.32		[2]
36.2	SB IA 60 Ramp	228+88.17	229+67.43	0.84	SB	Waterborne/Solvent Paint	No											3.36		[2]
37.2	NB IA 60 Ramp	235+34.44	236+12.04	0.84	NB	Waterborne/Solvent Paint	No											3.36		[2]
38.2	N Crossroads Dr	242+54.63	243+22.60	0.76	SB	Waterborne/Solvent Paint	No											3.04		[2]
39.2	Crossroads Dr	243+20.66	243+52.04	0.35	NB	Waterborne/Solvent Paint	No											1.40		[2]
41.2	US 18	123+28.60	124+08.57	0.80	EB	Waterborne/Solvent Paint	No				1.07									[2]
41.4	US 18	123+28.60	124+08.57	0.80	EB	Waterborne/Solvent Paint	No				1.07									[2]
42.2	US 18	136+17.20	137+17.20	1.00	WB	Waterborne/Solvent Paint	No				1.34									[2]
42.4	US 18	136+17.20	137+17.20	1.00	WB	Waterborne/Solvent Paint	No				1.34									[2]
43.2	US 18	138+21.02	139+21.02	1.00	EB	Waterborne/Solvent Paint	No				1.34									[2]
43.4	US 18	138+21.02	139+21.02	1.00	EB	Waterborne/Solvent Paint	No				1.34									[2]
44.2	US 18	153+21.38	154+21.38	1.00	WB	Waterborne/Solvent Paint	No				1.34									[2]
44.4	US 18	153+21.38	154+21.38	1.00	WB	Waterborne/Solvent Paint	No				1.34									[2]
45.2	US 18	154+99.50	156+49.50	1.50	EB	Waterborne/Solvent Paint	No				2.01									[2]
45.4	US 18	154+99.50	156+49.50	1.50	EB	Waterborne/Solvent Paint	No				2.01									[2]
46.2	US 18	171+71.01	174+26.16	2.55	WB	Waterborne/Solvent Paint	No				3.42									[2]
46.4	US 18	171+71.01	174+26.16	2.55	WB	Waterborne/Solvent Paint	No				3.42									[2]
47.2	US 18	174+97.06	177+47.06	2.50	EB	Waterborne/Solvent Paint	No				3.35									[2]
47.4	US 18	174+97.06	177+47.06	2.50	EB	Waterborne/Solvent Paint	No				3.35									[2]
48.2	US 18	204+91.76	207+05.36	2.14	WB	Waterborne/Solvent Paint	No				2.87									[2]
48.4	US 18	204+91.76	207+05.36	2.14	WB	Waterborne/Solvent Paint	No				2.87									[2]
49.2	US 18	208+24.76	210+24.76	2.00	EB	Waterborne/Solvent Paint	No				2.68									[2]
49.4	US 18	208+24.76	210+24.76	2.00	EB	Waterborne/Solvent Paint	No				2.68									[2]
50.2	US 18	252+63.12	254+20.91	1.58	Center	Waterborne/Solvent Paint	No				2.12									[2]

PAVEMENT MARKING LINE TYPES

Line factors based on 6-inch wide continuous line.
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**NPY4 - Estimating purposes only. No Passing Zone Lines will be located in the field.
***MNY6 - Factor of 1.00 includes number of 6-inch passes to cover median nose area.

BCY4: Broken Centerline (Yellow) @ 0.17
BCY6: Broken Centerline (Yellow) @ 0.25
BLC6: Broken Line Contrast (White/Black) @ 0.50
BLW4: Broken Lane Line (White) @ 0.17
BLW6: Broken Lane Line (White) @ 0.25
CBW6: Crosswalk Bar (White) @ 10.00
CHW8: Channelizing Line (White) @ 1.33
CHW10: Channelizing Line (White) @ 1.67
CHY8: Channelizing Line (Yellow) @ 1.33
CHY10: Channelizing Line (Yellow) @ 1.67
CLW6: Crosswalk Line (White) @ 2.00
DCY4: Double Centerline (Yellow) @ 1.34
DCY6: Double Centerline (Yellow) @ 2.00
DDY4: Double Dotted Line (Yellow) @ 0.44
DDY6: Double Dotted Line (Yellow) @ 0.67
DLW4: Dotted Line (White) @ 0.22
DLW6: Dotted Line (White) @ 0.33
DLY4: Dotted Line (Yellow) @ 0.22
DLY6: Dotted Line (Yellow) @ 0.33
ELW4: Edge Line Right (White) @ 0.67
ELW6: Edge Line Right (White) @ 1.00
ELY4: Edge Line Left (Yellow) @ 0.67
ELY6: Edge Line Left (Yellow) @ 1.00
LDW8: Lane Drop (White) @ 0.33
LDW10: Lane Drop (White) @ 0.42
MNY6: Median Nose (Yellow) @ 1.00
NPY4: No Passing Zone Line (Yellow) @ 0.84
NPY6: No Passing Zone Line (Yellow) @ 1.25
RLW4: Ramp Edge Line Right (White) @ 0.67
RLW6: Ramp Edge Line Right (White) @ 1.00
RLY4: Ramp Edge Line Left (Yellow) @ 0.67
RLY6: Ramp Edge Line Left (Yellow) @ 1.00
SLW2: Stop Line (White) @ 4.00
SLW4: Solid Lane Line (White) @ 0.67
SLW6: Solid Lane Line (White) @ 1.00
SPW4: Sloped Curb 4" (White) @ 2.16
SPW6: Sloped Curb 6" (White) @ 2.28
SPY4: Sloped Curb 4" (Yellow) @ 2.16
SPY6: Sloped Curb 6" (Yellow) @ 2.28

Line No.	Road ID	Station From	Station To	Line Length (STA)	Lane	Marking Type	Groove Marking Needed?	Groove Qty. (STA)	CHW8 Factored (STA)	CHY8 Factored (STA)	DCY4 Factored (STA)	DCY6 Factored (STA)	ELW4 Factored (STA)	ELW6 Factored (STA)	ELY4 Factored (STA)	NPY4** Factored (STA)	NPY6** Factored (STA)	SLW2 Factored (STA)	SLW4 Factored (STA)	Remarks
50.4	US 18	252+63.12	254+20.91	1.58	Center	Waterborne/Solvent Paint	No				2.12									[2]
53.2	US 18	123+28.60	125+84.33	2.56	EB	Waterborne/Solvent Paint	No						1.72							[2]
53.4	US 18	123+28.60	125+84.33	2.56	EB	Waterborne/Solvent Paint	No						1.72							[2]
54.2	US 18	126+54.37	129+68.63	3.14	EB	Waterborne/Solvent Paint	No						2.10							[2]
54.4	US 18	126+54.37	129+68.63	3.14	EB	Waterborne/Solvent Paint	No						2.10							[2]
55.2	US 18	130+39.78	133+92.27	3.52	EB	Waterborne/Solvent Paint	No						2.36							[2]
55.4	US 18	130+39.78	133+92.27	3.52	EB	Waterborne/Solvent Paint	No						2.36							[2]
56.2	US 18	134+55.75	137+15.96	2.60	EB	Waterborne/Solvent Paint	No						1.74							[2]
56.4	US 18	134+55.75	137+15.96	2.60	EB	Waterborne/Solvent Paint	No						1.74							[2]
57.2	US 18	138+22.02	141+70.68	3.49	EB	Waterborne/Solvent Paint	No						2.34							[2]
57.4	US 18	138+22.02	141+70.68	3.49	EB	Waterborne/Solvent Paint	No						2.34							[2]
58.2	US 18	142+53.38	146+46.09	3.93	EB	Waterborne/Solvent Paint	No						2.63							[2]
58.4	US 18	142+53.38	146+46.09	3.93	EB	Waterborne/Solvent Paint	No						2.63							[2]
59.2	US 18	147+21.42	154+21.38	7.00	EB	Waterborne/Solvent Paint	No						4.69							[2]
59.4	US 18	147+21.42	154+21.38	7.00	EB	Waterborne/Solvent Paint	No						4.69							[2]
60.2	US 18	155+03.84	157+60.02	2.56	EB	Waterborne/Solvent Paint	No						1.72							[2]
60.4	US 18	155+03.84	157+60.02	2.56	EB	Waterborne/Solvent Paint	No						1.72							[2]
61.2	US 18	158+22.59	171+88.41	13.66	EB	Waterborne/Solvent Paint	No						9.15							[2]
61.4	US 18	158+22.59	171+88.41	13.66	EB	Waterborne/Solvent Paint	No						9.15							[2]
62.2	US 18	174+97.06	195+88.85	20.92	EB	Waterborne/Solvent Paint	No						14.02							[2]
62.4	US 18	174+97.06	195+88.85	20.92	EB	Waterborne/Solvent Paint	No						14.02							[2]
63.2	US 18	196+63.28	207+05.36	10.42	EB	Waterborne/Solvent Paint	No						6.98							[2]
63.4	US 18	196+63.28	207+05.36	10.42	EB	Waterborne/Solvent Paint	No						6.98							[2]
64.2	US 18	208+36.15	214+65.51	6.29	EB	Waterborne/Solvent Paint	No						4.21							[2]
64.4	US 18	208+36.15	214+65.51	6.29	EB	Waterborne/Solvent Paint	No						4.21							[2]
65.2	US 18	215+23.68	221+05.44	5.82	EB	Waterborne/Solvent Paint	No						3.90							[2]
65.4	US 18	215+23.68	221+05.44	5.82	EB	Waterborne/Solvent Paint	No						3.90							[2]
66.2	US 18	222+31.44	228+18.86	5.87	EB	Waterborne/Solvent Paint	No						3.93							[2]
66.4	US 18	222+31.44	228+18.86	5.87	EB	Waterborne/Solvent Paint	No						3.93							[2]
67.2	US 18	229+85.35	235+13.40	5.28	EB	Waterborne/Solvent Paint	No						3.54							[2]
67.4	US 18	229+85.35	235+13.40	5.28	EB	Waterborne/Solvent Paint	No						3.54							[2]
68.2	US 18	237+60.72	242+81.09	5.32	EB	Waterborne/Solvent Paint	No						3.56							[2]
68.4	US 18	237+60.72	242+81.09	5.32	EB	Waterborne/Solvent Paint	No						3.56							[2]
69.2	US 18	243+72.02	254+20.91	10.49	EB	Waterborne/Solvent Paint	No						7.03							[2]
69.4	US 18	243+72.02	254+20.91	10.49	EB	Waterborne/Solvent Paint	No						7.03							[2]
72.2	US 18	123+28.57	125+84.48	2.56	WB	Waterborne/Solvent Paint	No						1.72							[2]
72.4	US 18	123+28.57	125+84.48	2.56	WB	Waterborne/Solvent Paint	No						1.72							[2]
73.2	US 18	126+54.52	129+68.78	3.14	WB	Waterborne/Solvent Paint	No						2.10							[2]
73.4	US 18	126+54.52	129+68.78	3.14	WB	Waterborne/Solvent Paint	No						2.10							[2]
74.2	US 18	130+39.85	133+92.28	3.52	WB	Waterborne/Solvent Paint	No						2.36							[2]
74.4	US 18	130+39.85	133+92.28	3.52	WB	Waterborne/Solvent Paint	No						2.36							[2]
75.2	US 18	134+55.82	137+34.79	2.79	WB	Waterborne/Solvent Paint	No						1.87							[2]
75.4	US 18	134+55.82	137+34.79	2.79	WB	Waterborne/Solvent Paint	No						1.87							[2]

PAVEMENT MARKING LINE TYPES

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*BCY4 - Place on the same side of the roadway to match existing markings near the project.
**NPY4 - Estimating purposes only. No Passing Zone Lines will be located in the field.
***MNY6 - Factor of 1.00 includes number of 6-inch passes to cover median nose area.

BCY4: Broken Centerline (Yellow) @ 0.17
BCY6: Broken Centerline (Yellow) @ 0.25
BLC6: Broken Line Contrast (White/Black) @ 0.50
BLW4: Broken Lane Line (White) @ 0.17
BLW6: Broken Lane Line (White) @ 0.25
CBW6: Crosswalk Bar (White) @ 10.00
CHW8: Channelizing Line (White) @ 1.33
CHW10: Channelizing Line (White) @ 1.67
CHY8: Channelizing Line (Yellow) @ 1.33
CHY10: Channelizing Line (Yellow) @ 1.67
CLW6: Crosswalk Line (White) @ 2.00
DCY4: Double Centerline (Yellow) @ 1.34
DCY6: Double Centerline (Yellow) @ 2.00
DDY4: Double Dotted Line (Yellow) @ 0.44
DDY6: Double Dotted Line (Yellow) @ 0.67
DLW4: Dotted Line (White) @ 0.22
DLW6: Dotted Line (White) @ 0.33
DLY4: Dotted Line (Yellow) @ 0.22
DLY6: Dotted Line (Yellow) @ 0.33
ELW4: Edge Line Right (White) @ 0.67
ELW6: Edge Line Right (White) @ 1.00
ELY4: Edge Line Left (Yellow) @ 0.67
ELY6: Edge Line Left (Yellow) @ 1.00
LDW8: Lane Drop (White) @ 0.33
LDW10: Lane Drop (White) @ 0.42
MNY6: Median Nose (Yellow) @ 1.00
NPY4: No Passing Zone Line (Yellow) @ 0.84
NPY6: No Passing Zone Line (Yellow) @ 1.25
RLW4: Ramp Edge Line Right (White) @ 0.67
RLW6: Ramp Edge Line Right (White) @ 1.00
RLY4: Ramp Edge Line Left (Yellow) @ 0.67
RLY6: Ramp Edge Line Left (Yellow) @ 1.00
SLW2: Stop Line (White) @ 4.00
SLW4: Solid Lane Line (White) @ 0.67
SLW6: Solid Lane Line (White) @ 1.00
SPW4: Sloped Curb 4" (White) @ 2.16
SPW6: Sloped Curb 6" (White) @ 2.28
SPY4: Sloped Curb 4" (Yellow) @ 2.16
SPY6: Sloped Curb 6" (Yellow) @ 2.28

Line No.	Road ID	Station From	Station To	Line Length (STA)	Lane	Marking Type	Groove Marking Needed?	Groove Qty. (STA)	CHW8 Factored (STA)	CHY8 Factored (STA)	DCY4 Factored (STA)	DCY6 Factored (STA)	ELW4 Factored (STA)	ELW6 Factored (STA)	ELY4 Factored (STA)	NPY4** Factored (STA)	NPY6** Factored (STA)	SLW2 Factored (STA)	SLW4 Factored (STA)	Remarks
76.2	US 18	138+22.02	140+72.05	2.50	WB	Waterborne/Solvent Paint	No						1.68							[2]
76.4	US 18	138+22.02	140+72.05	2.50	WB	Waterborne/Solvent Paint	No						1.68							[2]
77.2	US 18	141+29.43	154+21.38	12.92	WB	Waterborne/Solvent Paint	No						8.66							[2]
77.4	US 18	141+29.43	154+21.38	12.92	WB	Waterborne/Solvent Paint	No						8.66							[2]
78.2	US 18	154+99.44	164+35.66	9.36	WB	Waterborne/Solvent Paint	No						6.27							[2]
78.4	US 18	154+99.44	164+35.66	9.36	WB	Waterborne/Solvent Paint	No						6.27							[2]
79.2	US 18	165+01.21	167+00.26	1.99	WB	Waterborne/Solvent Paint	No						1.33							[2]
79.4	US 18	165+01.21	167+00.26	1.99	WB	Waterborne/Solvent Paint	No						1.33							[2]
80.2	US 18	167+52.98	174+25.16	6.72	WB	Waterborne/Solvent Paint	No						4.50							[2]
81.2	US 18	174+97.06	180+75.64	5.79	WB	Waterborne/Solvent Paint	No						3.88							[2]
82.2	US 18	181+63.84	185+76.15	4.12	WB	Waterborne/Solvent Paint	No						2.76							[2]
83.2	US 18	186+54.42	195+89.07	9.35	WB	Waterborne/Solvent Paint	No						6.26							[2]
84.2	US 18	196+63.28	207+05.36	10.42	WB	Waterborne/Solvent Paint	No						6.98							[2]
85.2	US 18	208+49.18	214+65.51	6.16	WB	Waterborne/Solvent Paint	No						4.13							[2]
86.2	US 18	215+23.60	221+05.44	5.82	WB	Waterborne/Solvent Paint	No						3.90							[2]
87.2	US 18	222+31.89	227+22.27	4.90	WB	Waterborne/Solvent Paint	No						3.28							[2]
88.2	US 18	229+94.61	235+13.54	5.19	WB	Waterborne/Solvent Paint	No						3.48							[2]
89.2	US 18	236+07.16	242+54.83	6.48	WB	Waterborne/Solvent Paint	No						4.34							[2]
89.4	US 18	236+07.16	242+54.83	6.48	WB	Waterborne/Solvent Paint	No						4.34							[2]
90.2	US 18	243+95.03	254+20.86	10.26	WB	Waterborne/Solvent Paint	No						6.87							[2]
91.2	US 18	123+28.57	124+08.57	0.80	WB	Waterborne/Solvent Paint	No												0.54	[2]
91.4	US 18	123+28.57	124+08.57	0.80	WB	Waterborne/Solvent Paint	No												0.54	[2]
92.2	US 18	136+17.21	137+17.21	1.00	EB	Waterborne/Solvent Paint	No												0.67	[2]
92.4	US 18	136+17.21	137+17.21	1.00	EB	Waterborne/Solvent Paint	No												0.67	[2]
93.2	US 18	138+21.02	139+21.02	1.00	WB	Waterborne/Solvent Paint	No												0.67	[2]
93.4	US 18	138+21.02	139+21.02	1.00	WB	Waterborne/Solvent Paint	No												0.67	[2]
94.2	US 18	153+21.38	154+21.38	1.00	EB	Waterborne/Solvent Paint	No												0.67	[2]
94.4	US 18	153+21.38	154+21.38	1.00	EB	Waterborne/Solvent Paint	No												0.67	[2]
95.2	US 18	154+99.49	156+49.44	1.50	WB	Waterborne/Solvent Paint	No												1.01	[2]
95.4	US 18	154+99.49	156+49.44	1.50	WB	Waterborne/Solvent Paint	No												1.01	[2]
96.2	US 18	172+76.16	174+26.16	1.50	EB	Waterborne/Solvent Paint	No												1.01	[2]
96.4	US 18	172+76.16	174+26.16	1.50	EB	Waterborne/Solvent Paint	No												1.01	[2]
97.2	US 18	172+91.29	174+26.16	1.35	EB	Waterborne/Solvent Paint	No												0.90	[2]
97.4	US 18	172+91.29	174+26.16	1.35	EB	Waterborne/Solvent Paint	No												0.90	[2]
98.2	US 18	174+97.06	176+47.06	1.50	WB	Waterborne/Solvent Paint	No												1.01	[2]
98.4	US 18	174+97.06	176+47.06	1.50	WB	Waterborne/Solvent Paint	No												1.01	[2]
99.2	US 18	206+05.36	207+05.36	1.00	EB	Waterborne/Solvent Paint	No												0.67	[2]
100.0	US 18	208+24.76	209+24.76	1.00	WB	Waterborne/Solvent Paint	No												0.67	[2]
101.2	US 18	219+04.60	221+15.44	2.11	EB	Waterborne/Solvent Paint	No												1.41	[2]
101.4	US 18	219+04.60	221+15.44	2.11	EB	Waterborne/Solvent Paint	No												1.41	[2]
102.2	US 18	219+04.60	221+15.44	2.11	EB	Waterborne/Solvent Paint	No												1.41	[2]
102.4	US 18	219+04.60	221+15.44	2.11	EB	Waterborne/Solvent Paint	No												1.41	[2]
106.2	US 18	233+50.00	234+82.26	1.32	EB	Waterborne/Solvent Paint	No												0.88	[2]

PAVEMENT MARKING LINE TYPES

Line factors based on 6-inch wide continuous line.
*BCY4 - Place on the same side of the roadway to match existing markings near the project.
**NPY4 - Estimating purposes only. No Passing Zone Lines will be located in the field.
***MNY6 - Factor of 1.00 includes number of 6-inch passes to cover median nose area.

BCY4: Broken Centerline (Yellow) @ 0.17
BCY6: Broken Centerline (Yellow) @ 0.25
BLC6: Broken Line Contrast (White/Black) @ 0.50
BLW4: Broken Lane Line (White) @ 0.17
BLW6: Broken Lane Line (White) @ 0.25
CBW6: Crosswalk Bar (White) @ 10.00
CHW8: Channelizing Line (White) @ 1.33
CHW10: Channelizing Line (White) @ 1.67
CHY8: Channelizing Line (Yellow) @ 1.33
CHY10: Channelizing Line (Yellow) @ 1.67
CLW6: Crosswalk Line (White) @ 2.00
DCY4: Double Centerline (Yellow) @ 1.34
DCY6: Double Centerline (Yellow) @ 2.00
DDY4: Double Dotted Line (Yellow) @ 0.44
DDY6: Double Dotted Line (Yellow) @ 0.67
DLW4: Dotted Line (White) @ 0.22
DLW6: Dotted Line (White) @ 0.33
DLY4: Dotted Line (Yellow) @ 0.22
DLY6: Dotted Line (Yellow) @ 0.33
ELW4: Edge Line Right (White) @ 0.67
ELW6: Edge Line Right (White) @ 1.00
ELY4: Edge Line Left (Yellow) @ 0.67
ELY6: Edge Line Left (Yellow) @ 1.00
LDW8: Lane Drop (White) @ 0.33
LDW10: Lane Drop (White) @ 0.42
MNY6: Median Nose (Yellow) @ 1.00
NPY4: No Passing Zone Line (Yellow) @ 0.84
NPY6: No Passing Zone Line (Yellow) @ 1.25
RLW4: Ramp Edge Line Right (White) @ 0.67
RLW6: Ramp Edge Line Right (White) @ 1.00
RLY4: Ramp Edge Line Left (Yellow) @ 0.67
RLY6: Ramp Edge Line Left (Yellow) @ 1.00
SLW2: Stop Line (White) @ 4.00
SLW4: Solid Lane Line (White) @ 0.67
SLW6: Solid Lane Line (White) @ 1.00
SPW4: Sloped Curb 4" (White) @ 2.16
SPW6: Sloped Curb 6" (White) @ 2.28
SPY4: Sloped Curb 4" (Yellow) @ 2.16
SPY6: Sloped Curb 6" (Yellow) @ 2.28

Line No.	Road ID	Station From	Station To	Line Length (STA)	Lane	Marking Type	Groove Marking Needed?	Groove Qty. (STA)	CHW8 Factored (STA)	CHY8 Factored (STA)	DCY4 Factored (STA)	DCY6 Factored (STA)	ELW4 Factored (STA)	ELW6 Factored (STA)	ELY4 Factored (STA)	NPY4** Factored (STA)	NPY6** Factored (STA)	SLW2 Factored (STA)	SLW4 Factored (STA)	Remarks
106.4	US 18	233+50.00	234+82.26	1.32	EB	Waterborne/Solvent Paint	No												0.88	[2]
107.2	US 18	236+07.63	238+18.02	2.10	WB	Waterborne/Solvent Paint	No												1.41	[2]
108.2	US 18	239+87.83	242+72.01	2.84	EB	Waterborne/Solvent Paint	No												5.19	[2]
109.2	US 18	240+56.82	242+56.93	2.00	EB	Waterborne/Solvent Paint	No												1.34	[2]
110.2	US 18	238+18.35	242+00.00	1.64	WB	Waterborne/Solvent Paint	No												1.10	[2]
111.2	US 18	243+62.17	244+62.17	1.00	WB	Waterborne/Solvent Paint	No												0.67	[2]
112.2	US 18	243+72.30	250+34.00	18.69	WB	Waterborne/Solvent Paint	No												12.52	[2]
113.2	US 18	217+14.60	221+05.44	9.27	Center	Waterborne/Solvent Paint	No								6.21					[2]
113.4	US 18	217+14.60	221+05.44	9.27	Center	Waterborne/Solvent Paint	No								6.21					[2]
114.2	US 18	222+31.44	229+20.07	18.87	Center	Waterborne/Solvent Paint	No								12.64					[2]
114.4	US 18	222+31.44	229+20.07	18.87	Center	Waterborne/Solvent Paint	No								12.64					[2]
115.2	US 18	230+26.61	234+82.26	12.88	Center	Waterborne/Solvent Paint	No								8.63					[2]
115.4	US 18	230+26.61	234+82.26	12.88	Center	Waterborne/Solvent Paint	No								8.63					[2]
116.2	US 18	235+89.45	242+56.99	27.30	Center	Waterborne/Solvent Paint	No								18.29					[2]
116.4	US 18	235+89.45	242+56.99	27.30	Center	Waterborne/Solvent Paint	No								18.29					[2]
117.2	US 18	243+72.02	252+63.12	36.82	Center	Waterborne/Solvent Paint	No								24.67					[2]
117.4	US 18	243+72.02	252+63.12	36.82	Center	Waterborne/Solvent Paint	No								24.67					[2]
118.2	US 18	124+08.57	125+84.33	1.76	EB	Waterborne/Solvent Paint	No									1.48				[2]
118.4	US 18	124+08.57	125+84.33	1.76	EB	Waterborne/Solvent Paint	No									1.48				[2]
119.2	US 18	126+54.37	129+68.78	3.14	EB	Waterborne/Solvent Paint	No									2.64				[2]
119.4	US 18	126+54.37	129+68.78	3.14	EB	Waterborne/Solvent Paint	No									2.64				[2]
120.2	US 18	130+39.78	133+92.28	3.52	EB	Waterborne/Solvent Paint	No									2.96				[2]
120.4	US 18	130+39.78	133+92.28	3.52	EB	Waterborne/Solvent Paint	No									2.96				[2]
121.2	US 18	134+55.75	135+66.20	1.10	EB	Waterborne/Solvent Paint	No									0.92				[2]
121.4	US 18	134+55.75	135+66.20	1.10	EB	Waterborne/Solvent Paint	No									0.92				[2]
122.2	US 18	139+21.02	140+72.05	1.51	EB	Waterborne/Solvent Paint	No									1.27				[2]
122.4	US 18	139+21.02	140+72.05	1.51	EB	Waterborne/Solvent Paint	No									1.27				[2]
123.2	US 18	141+29.36	141+70.68	0.41	EB	Waterborne/Solvent Paint	No									0.34				[2]
123.4	US 18	141+29.36	141+70.68	0.41	EB	Waterborne/Solvent Paint	No									0.34				[2]
124.2	US 18	142+53.38	146+46.09	3.93	EB	Waterborne/Solvent Paint	No									3.30				[2]
124.4	US 18	142+53.38	146+46.09	3.93	EB	Waterborne/Solvent Paint	No									3.30				[2]
125.2	US 18	147+21.42	152+72.37	5.51	EB	Waterborne/Solvent Paint	No									4.63				[2]
125.4	US 18	147+21.42	152+72.37	5.51	EB	Waterborne/Solvent Paint	No									4.63				[2]
126.2	US 18	156+49.44	157+60.02	1.11	EB	Waterborne/Solvent Paint	No									0.93				[2]
126.4	US 18	156+49.44	157+60.02	1.11	EB	Waterborne/Solvent Paint	No									0.93				[2]
127.2	US 18	158+22.59	164+35.66	6.13	EB	Waterborne/Solvent Paint	No									5.15				[2]
127.4	US 18	158+22.59	164+35.66	6.13	EB	Waterborne/Solvent Paint	No									5.15				[2]
128.2	US 18	165+01.21	166+99.95	1.99	EB	Waterborne/Solvent Paint	No									1.67				[2]
128.4	US 18	165+01.21	166+99.95	1.99	EB	Waterborne/Solvent Paint	No									1.67				[2]
129.2	US 18	167+52.84	170+45.21	2.92	EB	Waterborne/Solvent Paint	No									2.45				[2]
129.4	US 18	167+52.84	170+45.21	2.92	EB	Waterborne/Solvent Paint	No									2.45				[2]
130.2	US 18	171+08.02	171+71.01	0.63	EB	Waterborne/Solvent Paint	No									0.53				[2]
130.4	US 18	171+08.02	171+71.01	0.63	EB	Waterborne/Solvent Paint	No									0.53				[2]

PAVEMENT MARKING LINE TYPES

Line factors based on 6-inch wide continuous line.
*BCY4 - Place on the same side of the roadway to match existing markings near the project.
**NPY4 - Estimating purposes only. No Passing Zone Lines will be located in the field.
***MNY6 - Factor of 1.00 includes number of 6-inch passes to cover median nose area.

BCY4: Broken Centerline (Yellow) @ 0.17
BCY6: Broken Centerline (Yellow) @ 0.25
BLC6: Broken Line Contrast (White/Black) @ 0.50
BLW4: Broken Lane Line (White) @ 0.17
BLW6: Broken Lane Line (White) @ 0.25
CBW6: Crosswalk Bar (White) @ 10.00
CHW8: Channelizing Line (White) @ 1.33
CHW10: Channelizing Line (White) @ 1.67
CHY8: Channelizing Line (Yellow) @ 1.33
CHY10: Channelizing Line (Yellow) @ 1.67
CLW6: Crosswalk Line (White) @ 2.00
DCY4: Double Centerline (Yellow) @ 1.34
DCY6: Double Centerline (Yellow) @ 2.00
DDY4: Double Dotted Line (Yellow) @ 0.44
DDY6: Double Dotted Line (Yellow) @ 0.67
DLW4: Dotted Line (White) @ 0.22
DLW6: Dotted Line (White) @ 0.33
DLY4: Dotted Line (Yellow) @ 0.22
DLY6: Dotted Line (Yellow) @ 0.33
ELW4: Edge Line Right (White) @ 0.67
ELW6: Edge Line Right (White) @ 1.00
ELY4: Edge Line Left (Yellow) @ 0.67
ELY6: Edge Line Left (Yellow) @ 1.00
LDW8: Lane Drop (White) @ 0.33
LDW10: Lane Drop (White) @ 0.42
MNY6: Median Nose (Yellow) @ 1.00
NPY4: No Passing Zone Line (Yellow) @ 0.84
NPY6: No Passing Zone Line (Yellow) @ 1.25
RLW4: Ramp Edge Line Right (White) @ 0.67
RLW6: Ramp Edge Line Right (White) @ 1.00
RLY4: Ramp Edge Line Left (Yellow) @ 0.67
RLY6: Ramp Edge Line Left (Yellow) @ 1.00
SLW2: Stop Line (White) @ 4.00
SLW4: Solid Lane Line (White) @ 0.67
SLW6: Solid Lane Line (White) @ 1.00
SPW4: Sloped Curb 4" (White) @ 2.16
SPW6: Sloped Curb 6" (White) @ 2.28
SPY4: Sloped Curb 4" (Yellow) @ 2.16
SPY6: Sloped Curb 6" (Yellow) @ 2.28

Line No.	Road ID	Station From	Station To	Line Length (STA)	Lane	Marking Type	Groove Marking Needed?	Groove Qty. (STA)	CHW8 Factored (STA)	CHY8 Factored (STA)	DCY4 Factored (STA)	DCY6 Factored (STA)	ELW4 Factored (STA)	ELW6 Factored (STA)	ELY4 Factored (STA)	NPY4** Factored (STA)	NPY6** Factored (STA)	SLW2 Factored (STA)	SLW4 Factored (STA)	Remarks
131.2	US 18	177+47.06	180+75.57	3.29	EB	Waterborne/Solvent Paint	No									2.76				[2]
131.4	US 18	177+47.06	180+75.57	3.29	EB	Waterborne/Solvent Paint	No									2.76				[2]
132.2	US 18	181+63.94	185+76.15	4.12	EB	Waterborne/Solvent Paint	No									3.46				[2]
132.4	US 18	181+63.94	185+76.15	4.12	EB	Waterborne/Solvent Paint	No									3.46				[2]
133.2	US 18	186+54.42	195+88.85	9.34	EB	Waterborne/Solvent Paint	No									7.85				[2]
133.4	US 18	186+54.42	195+88.85	9.34	EB	Waterborne/Solvent Paint	No									7.85				[2]
134.2	US 18	196+63.28	204+91.76	8.28	EB	Waterborne/Solvent Paint	No									6.96				[2]
134.4	US 18	196+63.28	204+91.76	8.28	EB	Waterborne/Solvent Paint	No									6.96				[2]
135.2	US 18	210+24.76	214+65.51	4.41	EB	Waterborne/Solvent Paint	No									3.70				[2]
135.4	US 18	210+24.76	214+65.51	4.41	EB	Waterborne/Solvent Paint	No									3.70				[2]
136.2	US 18	215+23.60	217+14.62	1.91	EB	Waterborne/Solvent Paint	No									1.60				[2]
136.4	US 18	215+23.60	217+14.62	1.91	EB	Waterborne/Solvent Paint	No									1.60				[2]
137.2	US 18	124+78.56	125+84.48	1.06	WB	Waterborne/Solvent Paint	No									0.89				[2]
137.4	US 18	124+78.56	125+84.48	1.06	WB	Waterborne/Solvent Paint	No									0.89				[2]
138.2	US 18	126+54.37	129+68.78	3.14	WB	Waterborne/Solvent Paint	No									2.64				[2]
138.4	US 18	126+54.37	129+68.78	3.14	WB	Waterborne/Solvent Paint	No									2.64				[2]
139.2	US 18	130+39.78	133+92.28	3.52	WB	Waterborne/Solvent Paint	No									2.96				[2]
139.4	US 18	130+39.78	133+92.28	3.52	WB	Waterborne/Solvent Paint	No									2.96				[2]
140.2	US 18	134+55.75	135+66.20	1.10	WB	Waterborne/Solvent Paint	No									0.92				[2]
140.4	US 18	134+55.75	135+66.20	1.10	WB	Waterborne/Solvent Paint	No									0.92				[2]
141.2	US 18	139+71.02	140+72.05	1.01	WB	Waterborne/Solvent Paint	No									0.85				[2]
141.4	US 18	139+71.02	140+72.05	1.01	WB	Waterborne/Solvent Paint	No									0.85				[2]
142.2	US 18	141+29.36	141+70.68	0.41	WB	Waterborne/Solvent Paint	No									0.34				[2]
142.4	US 18	141+29.36	141+70.68	0.41	WB	Waterborne/Solvent Paint	No									0.34				[2]
143.2	US 18	142+53.38	146+46.09	3.93	WB	Waterborne/Solvent Paint	No									3.30				[2]
143.4	US 18	142+53.38	146+46.09	3.93	WB	Waterborne/Solvent Paint	No									3.30				[2]
144.2	US 18	147+21.42	152+72.37	5.51	WB	Waterborne/Solvent Paint	No									4.63				[2]
144.4	US 18	147+21.42	152+72.37	5.51	WB	Waterborne/Solvent Paint	No									4.63				[2]
145.2	US 18	157+10.02	157+60.02	0.50	WB	Waterborne/Solvent Paint	No									0.42				[2]
145.4	US 18	157+10.02	157+60.02	0.50	WB	Waterborne/Solvent Paint	No									0.42				[2]
146.2	US 18	158+22.59	164+35.66	6.13	WB	Waterborne/Solvent Paint	No									5.15				[2]
146.4	US 18	158+22.59	164+35.66	6.13	WB	Waterborne/Solvent Paint	No									5.15				[2]
147.2	US 18	165+01.21	166+99.95	1.99	WB	Waterborne/Solvent Paint	No									1.67				[2]
147.4	US 18	165+01.21	166+99.95	1.99	WB	Waterborne/Solvent Paint	No									1.67				[2]
148.2	US 18	167+52.84	170+45.21	2.92	WB	Waterborne/Solvent Paint	No									2.45				[2]
148.4	US 18	167+52.84	170+45.21	2.92	WB	Waterborne/Solvent Paint	No									2.45				[2]
149.2	US 18	171+08.02	171+71.01	0.63	WB	Waterborne/Solvent Paint	No									0.53				[2]
150.2	US 18	177+47.06	180+75.57	3.29	WB	Waterborne/Solvent Paint	No									2.76				[2]
151.2	US 18	181+63.94	185+76.15	4.12	WB	Waterborne/Solvent Paint	No									3.46				[2]
152.2	US 18	186+54.42	195+88.85	9.34	WB	Waterborne/Solvent Paint	No									7.85				[2]
153.2	US 18	196+63.28	204+91.76	8.28	WB	Waterborne/Solvent Paint	No									6.96				[2]
154.2	US 18	210+24.76	214+65.51	4.41	WB	Waterborne/Solvent Paint	No									3.70				[2]
155.2	US 18	215+23.60	217+14.62	1.91	WB	Waterborne/Solvent Paint	No									1.60				[2]

PAVEMENT MARKING LINE TYPES

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***MNY6 - Factor of 1.00 includes number of 6-inch passes to cover median nose area.

BCY4: Broken Centerline (Yellow) @ 0.17
BCY6: Broken Centerline (Yellow) @ 0.25
BLC6: Broken Line Contrast (White/Black) @ 0.50
BLW4: Broken Lane Line (White) @ 0.17
BLW6: Broken Lane Line (White) @ 0.25
CBW6: Crosswalk Bar (White) @ 10.00
CHW8: Channelizing Line (White) @ 1.33
CHW10: Channelizing Line (White) @ 1.67
CHY8: Channelizing Line (Yellow) @ 1.33
CHY10: Channelizing Line (Yellow) @ 1.67
CLW6: Crosswalk Line (White) @ 2.00
DCY4: Double Centerline (Yellow) @ 1.34
DCY6: Double Centerline (Yellow) @ 2.00
DDY4: Double Dotted Line (Yellow) @ 0.44
DDY6: Double Dotted Line (Yellow) @ 0.67
DLW4: Dotted Line (White) @ 0.22
DLW6: Dotted Line (White) @ 0.33
DLY4: Dotted Line (Yellow) @ 0.22
DLY6: Dotted Line (Yellow) @ 0.33
ELW4: Edge Line Right (White) @ 0.67
ELW6: Edge Line Right (White) @ 1.00
ELY4: Edge Line Left (Yellow) @ 0.67
ELY6: Edge Line Left (Yellow) @ 1.00
LDW8: Lane Drop (White) @ 0.33
LDW10: Lane Drop (White) @ 0.42
MNY6: Median Nose (Yellow) @ 1.00
NPY4: No Passing Zone Line (Yellow) @ 0.84
NPY6: No Passing Zone Line (Yellow) @ 1.25
RLW4: Ramp Edge Line Right (White) @ 0.67
RLW6: Ramp Edge Line Right (White) @ 1.00
RLY4: Ramp Edge Line Left (Yellow) @ 0.67
RLY6: Ramp Edge Line Left (Yellow) @ 1.00
SLW2: Stop Line (White) @ 4.00
SLW4: Solid Lane Line (White) @ 0.67
SLW6: Solid Lane Line (White) @ 1.00
SPW4: Sloped Curb 4" (White) @ 2.16
SPW6: Sloped Curb 6" (White) @ 2.28
SPY4: Sloped Curb 4" (Yellow) @ 2.16
SPY6: Sloped Curb 6" (Yellow) @ 2.28

Line No.	Road ID	Station From	Station To	Line Length (STA)	Lane	Marking Type	Groove Marking Needed?	Groove Qty. (STA)	CHW8 Factored (STA)	CHY8 Factored (STA)	DCY4 Factored (STA)	DCY6 Factored (STA)	ELW4 Factored (STA)	ELW6 Factored (STA)	ELY4 Factored (STA)	NPY4** Factored (STA)	NPY6** Factored (STA)	SLW2 Factored (STA)	SLW4 Factored (STA)	Remarks
								670.48	**73.42**	**139.84**	**43.08**	**32.14**	**257.94**	**226.86**	**140.88**	**188.5**	**160.3**	**49.52**	**43.93**	
Remarks [2]:																				
Total:								**670.48**	**73.42**	**139.84**	**43.08**	**32.14**	**257.94**	**226.86**	**140.88**	**188.5**	**160.3**	**87.44**	**43.93**	

[1] Permanent pavement markings to be applied after grooving.
[2] Temporary pavement markings to be applied immediately after pavement scarification and HMA surface course.

PAVEMENT MARKING SYMBOLS AND LEGENDS

Refer to PM-111

1.0	US 18	113+71.25	Right	RRCW	1	[1]
2.0	US 18	121+49.92	Left	RRCW	1	[1]
3.0	US 18	123+55.61	Median	LTAW	2	[2]
4.0	US 18	124+05.61	Median	LTAW	2	[2]
5.0	US 18	128+00.83	Median	LTAW	2	[2]
6.0	US 18	128+18.43	Median	LTAW	2	[2]
7.0	US 18	132+13.49	Median	LTAW	2	[2]
8.0	US 18	132+31.09	Median	LTAW	2	[2]
9.0	US 18	135+04.43	Median	LTAW	2	[2]
10.0	US 18	135+22.03	Median	LTAW	2	[2]
11.0	US 18	136+41.40	Median	LTAW	2	[2]
12.0	US 18	136+91.40	Median	LTAW	2	[2]
13.0	US 18	138+46.82	Median	LTAW	2	[2]
14.0	US 18	138+96.82	Median	LTAW	2	[2]
15.0	US 18	143+34.47	Median	LTAW	2	[2]
16.0	US 18	143+52.07	Median	LTAW	2	[2]
17.0	US 18	145+43.51	Median	LTAW	2	[2]
18.0	US 18	145+61.11	Median	LTAW	2	[2]
19.0	US 18	147+89.70	Median	LTAW	2	[2]
20.0	US 18	148+07.31	Median	LTAW	2	[2]
21.0	US 18	150+77.40	Median	LTAW	2	[2]
22.0	US 18	150+95.00	Median	LTAW	2	[2]
23.0	US 18	153+46.57	Median	LTAW	2	[2]
24.0	US 18	153+96.57	Median	LTAW	2	[2]
25.0	US 18	155+26.04	Median	LTAW	2	[2]
26.0	US 18	155+76.05	Median	LTAW	2	[2]
27.0	US 18	159+44.78	Median	LTAW	2	[2]
28.0	US 18	159+62.38	Median	LTAW	2	[2]
29.0	US 18	163+14.90	Median	LTAW	2	[2]
30.0	US 18	163+32.50	Median	LTAW	2	[2]
31.0	US 18	165+87.93	Median	LTAW	2	[2]
32.0	US 18	166+05.49	Median	LTAW	2	[2]
33.0	US 18	167+85.05	Median	LTAW	2	[2]
34.0	US 18	168+02.65	Median	LTAW	2	[2]
35.0	US 18	173+25.35	Median	LTAW	2	[2]
36.0	US 18	174+00.35	Median	LTAW	2	[2]
37.0	US 18	173+25.35	Right	RTAW	2	[2]
38.0	US 18	174+00.35	Right	RTAW	2	[2]
39.0	US 18	175+23.55	Median	LTAW	2	[2]
40.0	US 18	175+98.55	Median	LTAW	2	[2]
41.0	US 18	179+03.86	Median	LTAW	2	[2]
42.0	US 18	179+21.47	Median	LTAW	2	[2]
43.0	US 18	183+53.87	Median	LTAW	2	[2]
44.0	US 18	183+71.47	Median	LTAW	2	[2]
45.0	US 18	188+80.96	Median	LTAW	2	[2]
46.0	US 18	188+98.57	Median	LTAW	2	[2]
47.0	US 18	193+30.96	Median	LTAW	2	[2]
48.0	US 18	193+48.57	Median	LTAW	2	[2]
49.0	US 18	198+33.56	Median	LTAW	2	[2]
50.0	US 18	198+51.16	Median	LTAW	2	[2]
51.0	US 18	202+83.56	Median	LTAW	2	[2]
52.0	US 18	203+01.16	Median	LTAW	2	[2]
53.0	US 18	206+04.54	Median	LTAW	2	[2]
54.0	US 18	206+79.54	Median	LTAW	2	[2]
55.0	US 18	208+50.58	Median	LTAW	2	[2]

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PAVEMENT MARKING SYMBOLS AND LEGENDS

Refer to PM-111

Line No.	Roadway Identification	Station	Side	Pavement Symbol	Quantity (EA)	Remarks
56.0	US 18	209+25.58	Median	LTAW	2	[2]
57.0	US 18	212+15.63	Median	LTAW	2	[2]
58.0	US 18	212+33.28	Median	LTAW	2	[2]
59.0	US 18	220+04.37	Median	LTAW	2	[2]
60.0	US 18	220+79.98	Median	LTAW	2	[2]
61.0	US 18	220+04.38	Right	RTAW	2	[2]
62.0	US 18	220+79.99	Right	RTAW	2	[2]
63.0	US 18	222+58.40	Left	RTAW	2	[2]
64.0	US 18	223+33.50	Left	RTAW	2	[2]
65.0	US 18	222+58.41	Median	LTAW	2	[2]
66.0	US 18	223+33.51	Median	LTAW	2	[2]
67.0	US 18	230+53.58	Median	LTAW	2	[2]
68.0	US 18	231+28.68	Median	LTAW	2	[2]
69.0	US 18	233+80.18	Median	LTAW	2	[2]
70.0	US 18	234+55.28	Median	LTAW	2	[2]
71.0	US 18	236+58.62	Left	RTAW	2	[2]
72.0	US 18	237+33.57	Median	RTAW	2	[2]
73.0	US 18	241+54.97	Median	LTAW	2	[2]
74.0	US 18	242+29.93	Median	LTAW	2	[2]
75.0	US 18	241+55.32	Right	RTAW	2	[2]
76.0	US 18	242+30.13	Right	RTAW	2	[2]
77.0	US 18	243+88.10	Median	LTAW	2	[2]
78.0	US 18	244+45.61	Median	LTAW	2	[2]
79.0	US 18	244+33.64	Left	RTAW	2	[2]
80.0	US 18	245+09.03	Left	RTAW	2	[2]
Total:					**158**	

[1] Railroad Crossing Symbols to be applied with final pavement markings after grooving.
[2] Temporary Turn Arrow Symbols to be applied immediately after HMA surface course.
Permanent Turn Arrow Symbols to be applied with final pavement markings after grooving.

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. This guideline may not apply if the traffic control plans have sufficient temporary signing.

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. 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. The Engineer may approve reducing this distance to a minimum of 1 ft where field conditions warrant.

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.

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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 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 that 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 steel posts, install the sign at the top of the posts.

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

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

MS MODIFY EXISTING SIGN

Modify the copy on the existing sign as shown in the plans.

Deliver existing copy which is removed to a DOT storage area within 50 mi, as designated by the Engineer.

Install the new copy as needed to make sign modifications.

Payment for Modification of Existing Sign includes removal of existing copy and installation of new copy.

MB INSTALL SPECIAL MOUNTING BRACKET

Install special mounting brackets at the locations identified in the plans. Refer to Tabulations 190-10, 190-51, and/or 190-65.

PW INSTALL NEW WOOD POSTS
PB INSTALL NEW BREAKAWAY STEEL POSTS AND FOOTING
PP INSTALL NEW PERFORATED SQUARE TUBE POSTS AND ANCHORS

Install new wood posts, breakaway steel posts and footings, or perforated square tube posts and anchors at the locations indicated in the plans. Refer to Tabulations 190-51 and 190-50 for post size and footing information.

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

RR REMOVE AND REINSTALL SIGN:

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 within 50 mi, as designated by the Engineer. Transport the signs back to the job site when ready for installation at the new location.

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 the DOT storage area (if applicable), and reinstallation.

RA REMOVE TYPE A SIGN ASSEMBLY
RB REMOVE TYPE B SIGN ASSEMBLY

Type A Sign Assembly consists of one or more signs installed on one or more wood 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

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signs and brackets, and the wood or steel 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.

Disassemble each sign assembly removed 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.

Place backfill in holes remaining from the removal of wood posts and restore to the normal surrounding conditions.

Deliver the removed signs, special sign mounting brackets, and extruded aluminum panels to a DOT storage area within 50 mi, 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 1 ft below ground. 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 truss and foundation,
- Cantilevered sign truss and foundation, or
- Bridge mounted brackets.

For removal purposes, wood and steel post are not considered Type B Support Structures.

Unless stated otherwise in the plans, existing overhead trusses, cantilevered trusses, and bridge brackets which are removed become the property of the Contractor. If stated in the plans, deliver overhead trusses, cantilevered trusses, and bridge brackets to a DOT storage area within 50 mi, 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.

L MODIFTY SIGN SUPPORT ANGLES NEEDED TO INSTALL SIGNS ON EXISTING SIGN SUPPORTS 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.

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 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

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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. Field verify post lengths.

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-113 from the footing excavation and/or the area immediately adjacent to the footing. Ensure reshaping work does not substantially change foreslopes or the drainage in the vicinity of the sign.

Significant differences between the design template and the actual field conditions need to 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 on to the design Engineer in order to complete a new post design.

Install the footings, stub posts, and posts according to the following tolerances:

-elevation difference from the edge of pavement to the bottom of the sign within 6 inches of the dimension shown.

-elevation difference of less than 2 inches between the top of the highest post and the lowest post at a site.

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 field shots in order to verify site installation.

SURVEY SYMBOLS

- Interstate Highway Symbol
- U.S. Highway Symbol
- Iowa Highway Symbol
- County Road Highway Symbol
- Evergreen Tree
- Deciduous Tree
- Fruit Tree
- Shrub (Bushes)
- Timber
- Hedge
- Stump
- Swamp
- Rock Outcrop
- Broken Concrete
- Revetment (Rip Rap)
- Cemetery
- Grave
- Cave
- Sink Hole
- Board Fence
- Chain Link or Security Fence
- Wire Fence
- Terrace
- Earth Dam or Dike (Existing)
- Tile Outlet
- Edge of Water
- Existing Drainage
- Right of Way Rail or Lot Corner
- Concrete Monument
- Well
- Windmill
- Beehive Intake
- Existing Intake
- Existing Utility Access (Manhole)
- Fire Hydrant
- WH Water Hydrant (Rural)
- Septic Tank
- Cistern
- L.P. Gas Tank (No Footing)
- Underground Storage Tank
- Latrine
- Satellite TV Dish
- WHU Water Hook Up
- RT Radio Tower
- TA Tower Anchor
- Guardrail (Beam or Cable)
- GP Guard Post (one or two)
- Guard Post (over two)
- FP Filler Pipe
- GV Gas Valve
- WV Water Valve
- SL Speed Limit Sign
- MM Mile Marker Post
- SIGN Sign
- TCB Traffic Signal Control Box
- RRB Rail Road Signal Control Box
- TSB Telephone Switch Box
- EB Electric Box

UTILITY LEGEND

(CLECIA) WINDSTREAM ENTERPRISE
Company name : WINDSTREAM ENTERPRISE
Design contact: CLEC LOCATE DESK
Phone: 8009413430
Email: wci.clec.locate@windstream.com

(CTLIA01) CENTURYLINK
Company name : CENTURYLINK
Design contact: SADIE HULL
Phone: 9185470147
Email: sadie.hull@lumen.com

(ICN) IOWA COMMUNICATIONS NETWORK
Company name : IOWA COMMUNICATIONS NETWORK
Design contact: DAVE AUGSPURGER
Phone: 5157254604
Email: icnoutsideplantiowaonecall@iowa.gov

(LBIA07) LONG LINES BROADBAND
Company name : LONG LINES BROADBAND
Design contact: Miles Patton
Phone: 7122715550
Email: miles.patton@longlines.biz

(MAFR2) MIDAMER-FIBER
Company name : MIDAMER-FIBER
Design contact: Telecom On Call
Phone: 5152812313
Email: telecomoncall@midamerican.com

(MD5E) MIDAMER-ELEC
Company name : MIDAMER-ELEC
Design contact: PETER ROOS
Phone: 7122777675
Email: pmroos@midamerican.com

(MD5G) MIDAMER-GAS
Company name : MIDAMER-GAS
Design contact: Heather Murphy
Phone: 7125486157
Email: HRMURPHY@MIDAMERICAN.COM

(MFS) WINDSTREAM COMMUNICATIONS
Company name : WINDSTREAM COMMUNICATIONS
Design contact: LOCATE DESK
Phone: 8002891901
Email: LOCATE.DESK@WINDSTREAM.COM

(NT3) PREMIER COMMUNICATIONS
Company name : PREMIER COMMUNICATIONS
Design contact: Jake Van Roekel
Phone: 7127223451
Email: jakevr@mypremieronline.com

(OCR) OSCEOLA COUNTY RURAL WATER
Company name : OSCEOLA COUNTY RURAL WATER
Design contact: Douglas Westerman
Phone: 7127356795
Email: orwsdoug@windstream.net

(SDC) SHELDON, CITY OF
Company name : SHELDON, CITY OF
Design contact: Todd Uhl
Phone: 7123244651
Email: tuhl@cityofsheldon.com

(SSD) SHELDON COMMUNITY SCHOOL
Company name : SHELDON COMMUNITY SCHOOL
Design contact: KASEY TRAMPEL
Phone: 7123242445
Email: KASEY.TRAMPEL@SHELDONSCHOOLS.COM

(W25) IOWA DEPARTMENT OF TRANSPORTATION
Company name : IOWA DEPARTMENT OF TRANSPORTATION
Design contact: LANCE SCHLUMBOHM
Phone: 7122610053
Email: LANCE.SCHLUMBOHM@DOT.IOWA.GOV

(ZAY) ZAYO GROUP LLC
Company name : ZAYO GROUP LLC
Design contact: STEVEN SENGER
Phone: 6122108036
Email: ZAYO.RELO.IOWA@ZAYO.COM

PLAN VIEW COLOR LEGEND OF PLAN AND PROFILE SHEETS

LINEWORK	Design Color No.	
Green	(2)	Existing Topographic Features and Labels
Blue	(1)	Proposed Alignment, Stationing, Tic Marks, and Alignment Annotation
Magenta	(5)	Existing Utilities
SHADING	**Design Color No.**	
Lavender	(9)	Temporary Pavement Shading
Gray, Dark	(112)	Proposed HMA Pavement Shading
Orange	(6)	Proposed Granular Shading
Orange	(70)	Proposed Shoulder Granular Shading
Yellow	(132)	Proposed Shoulder Paved Partial Depth Shading
Brown, Light	(236)	Grading Shading
Orange, Light	(134)	Proposed Granular Entrance Shading
Gray, Light	(48)	Proposed PCC Shading (Entrances, Side Roads, Auxiliary Lanes, and Full Depth PCC Shoulder)
Tan	(8)	Proposed Sidewalk Shading
Blue, Light	(230)	Proposed Sidewalk Landing Shading
Pink	(11)	Proposed Sidewalk Ramp Shading
Green, Light	(225)	Existing Pavement Shading
Red	(3)	Proposed Structure Shading
Red	(3)	Delineates Restricted Areas

PROFILE VIEW COLOR LEGEND OF PLAN AND PROFILE SHEETS

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

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

RIGHT-OF-WAY LEGEND

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

FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT / HR Green, Inc.	O'BRIEN COUNTY	PROJECT NUMBER NHSN-018-2(139)--2R-71	SHEET NUMBER D.2

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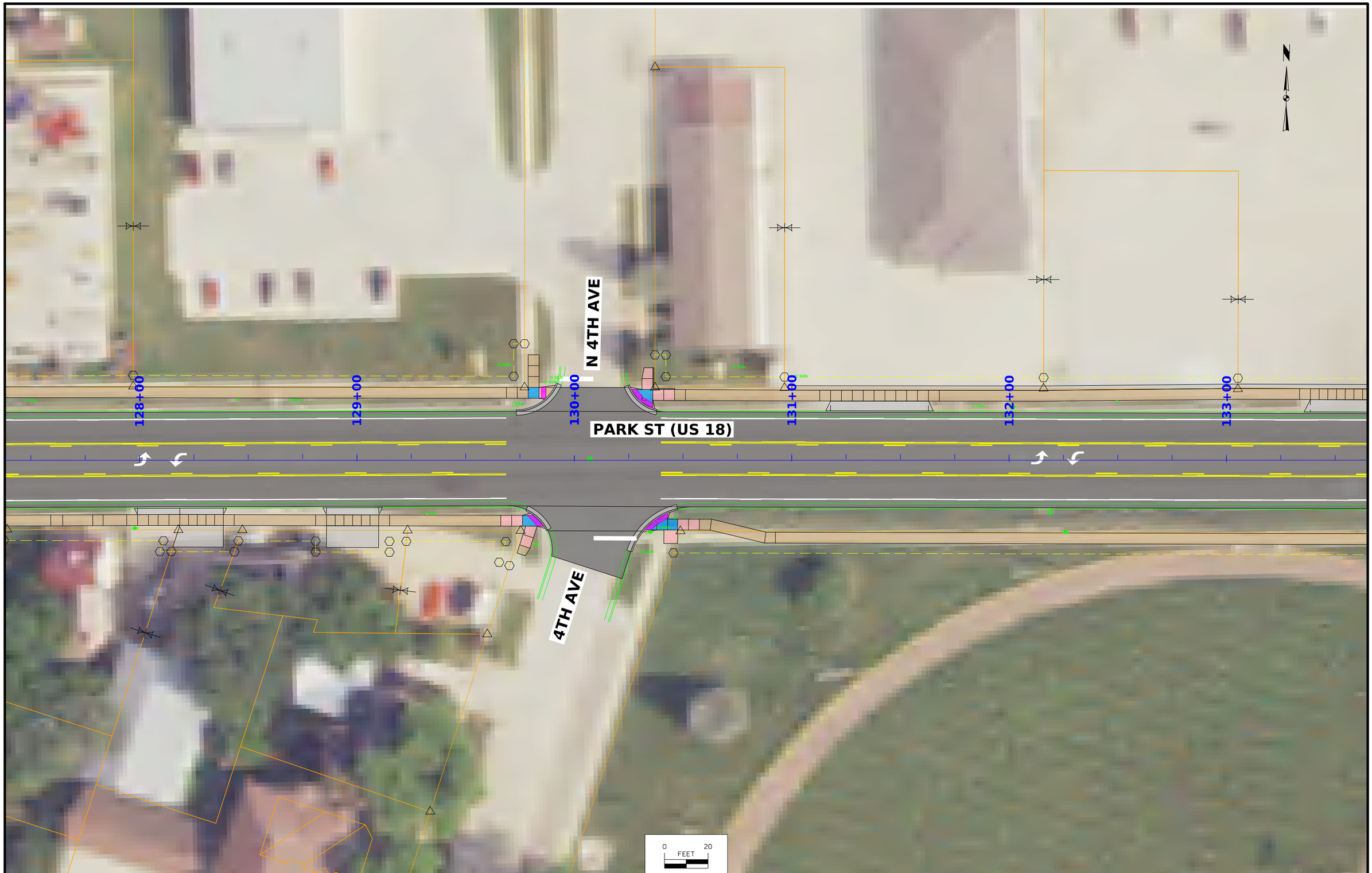

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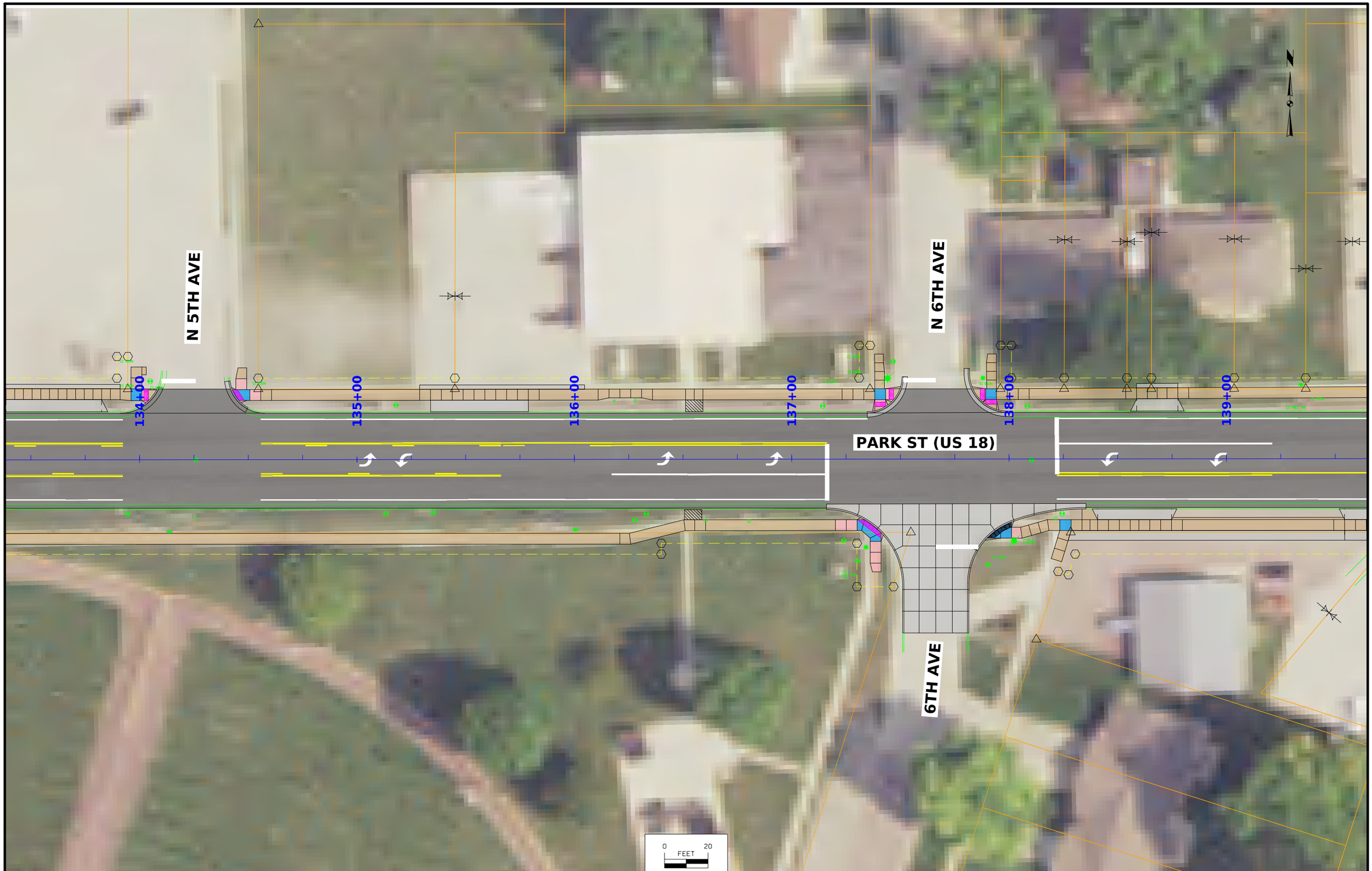

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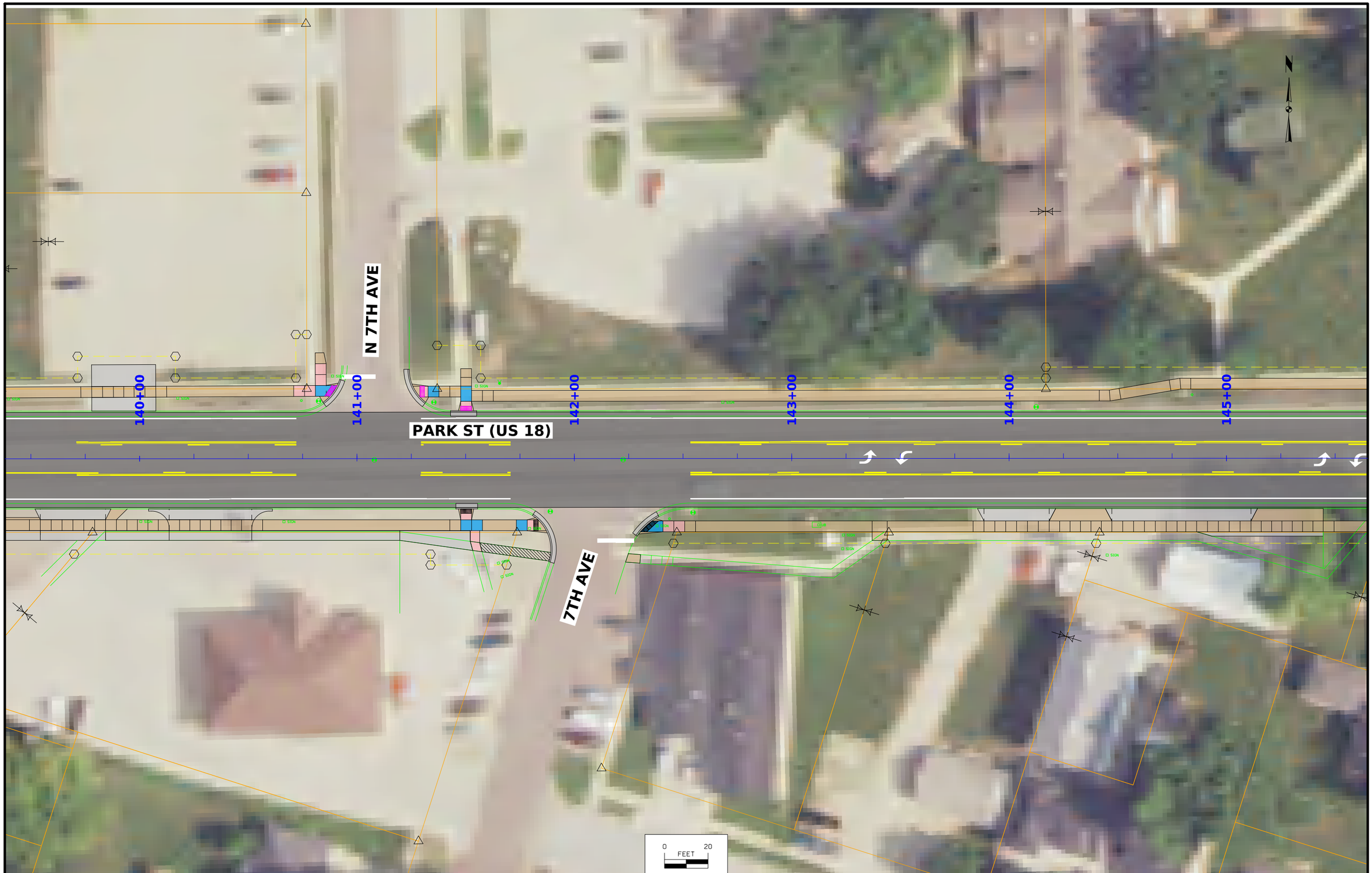

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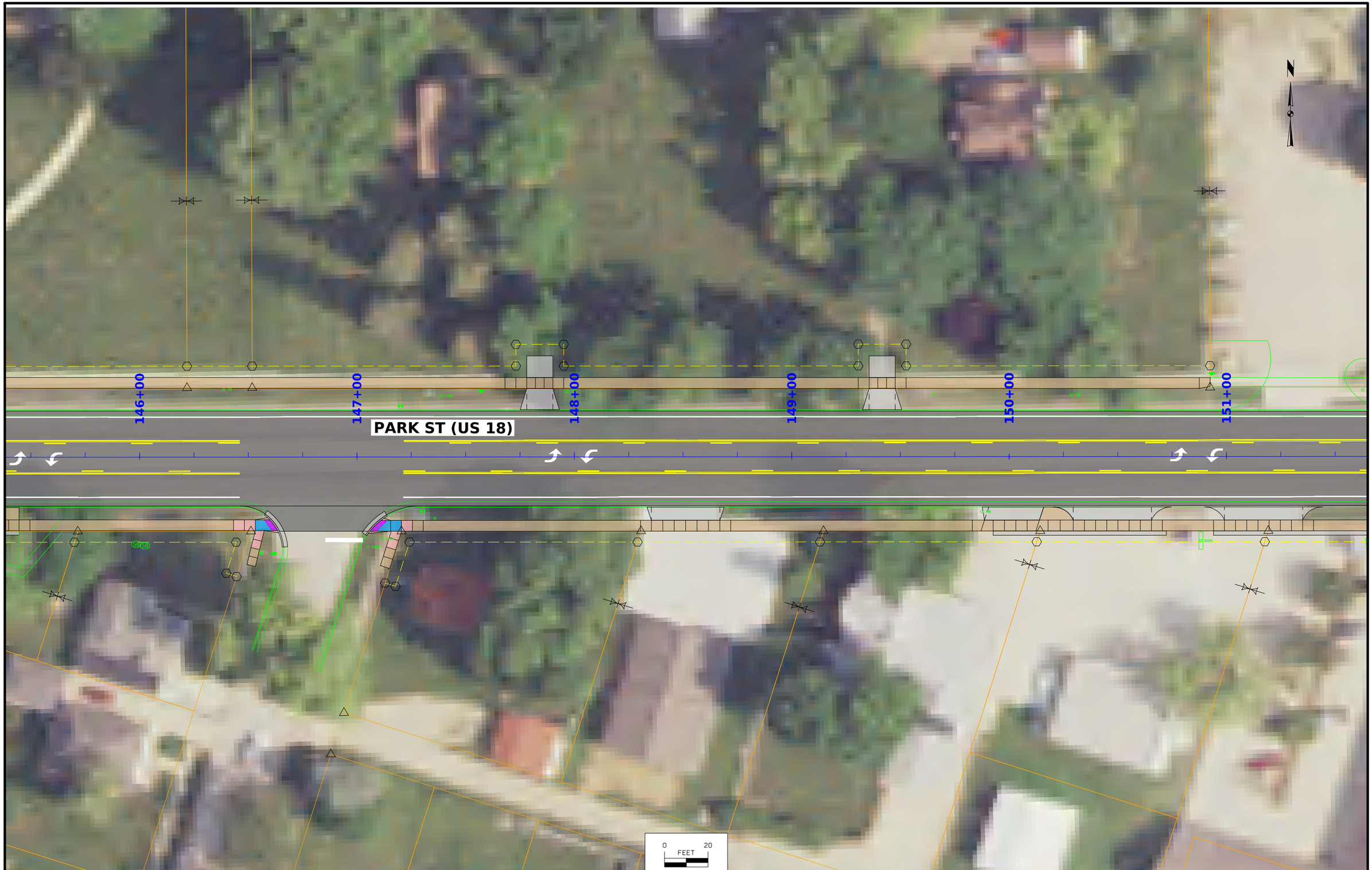

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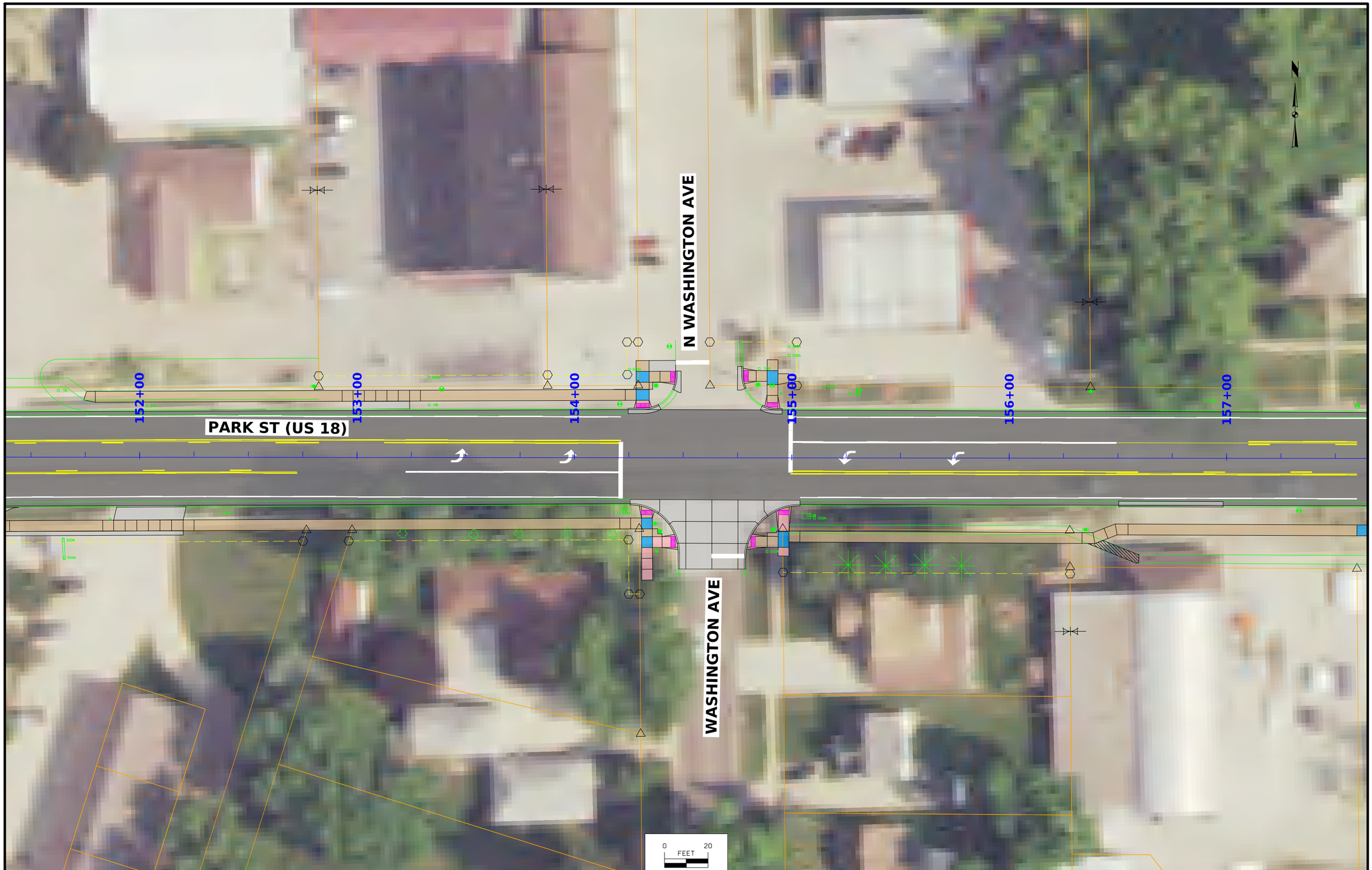

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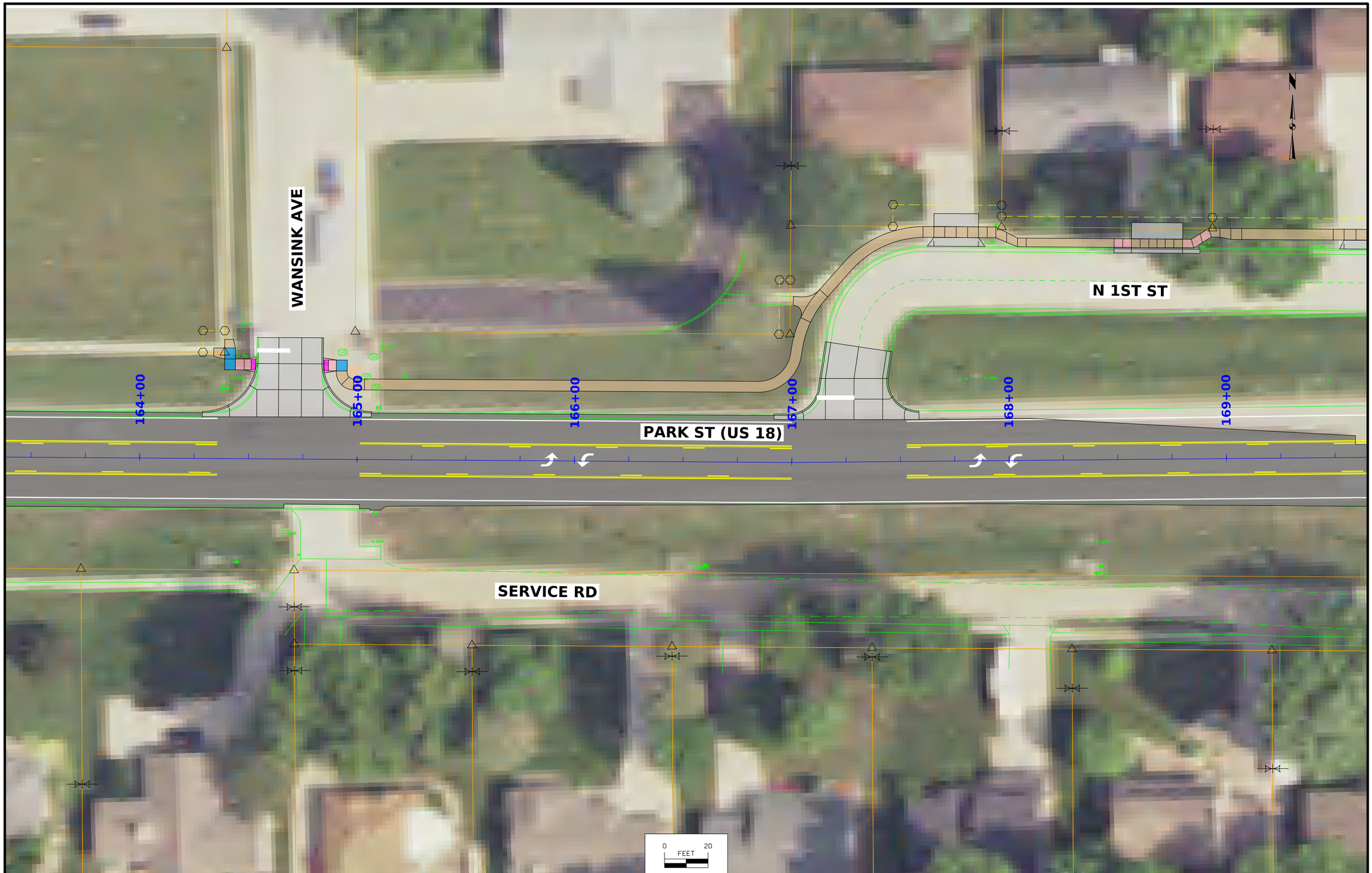

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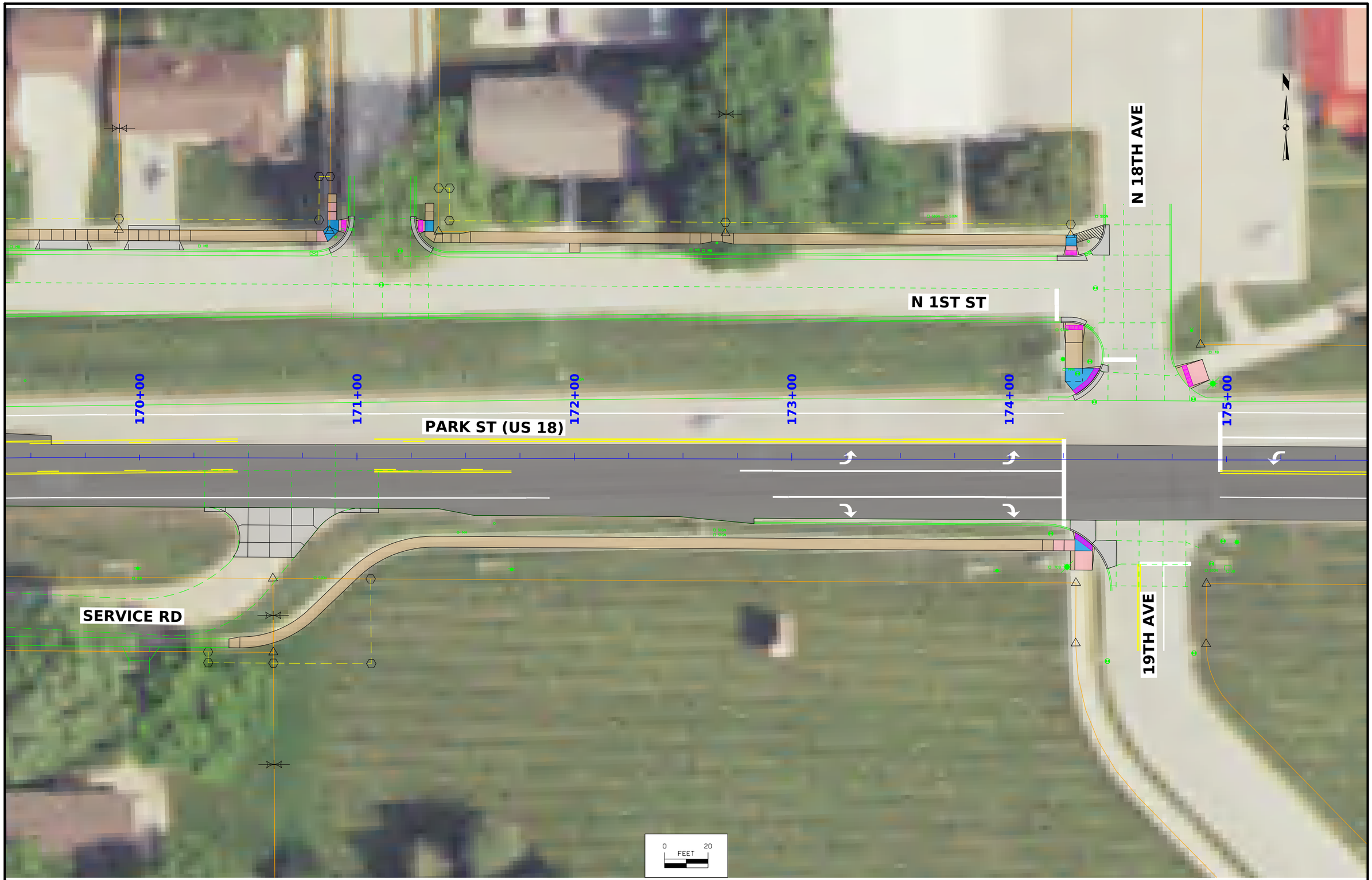

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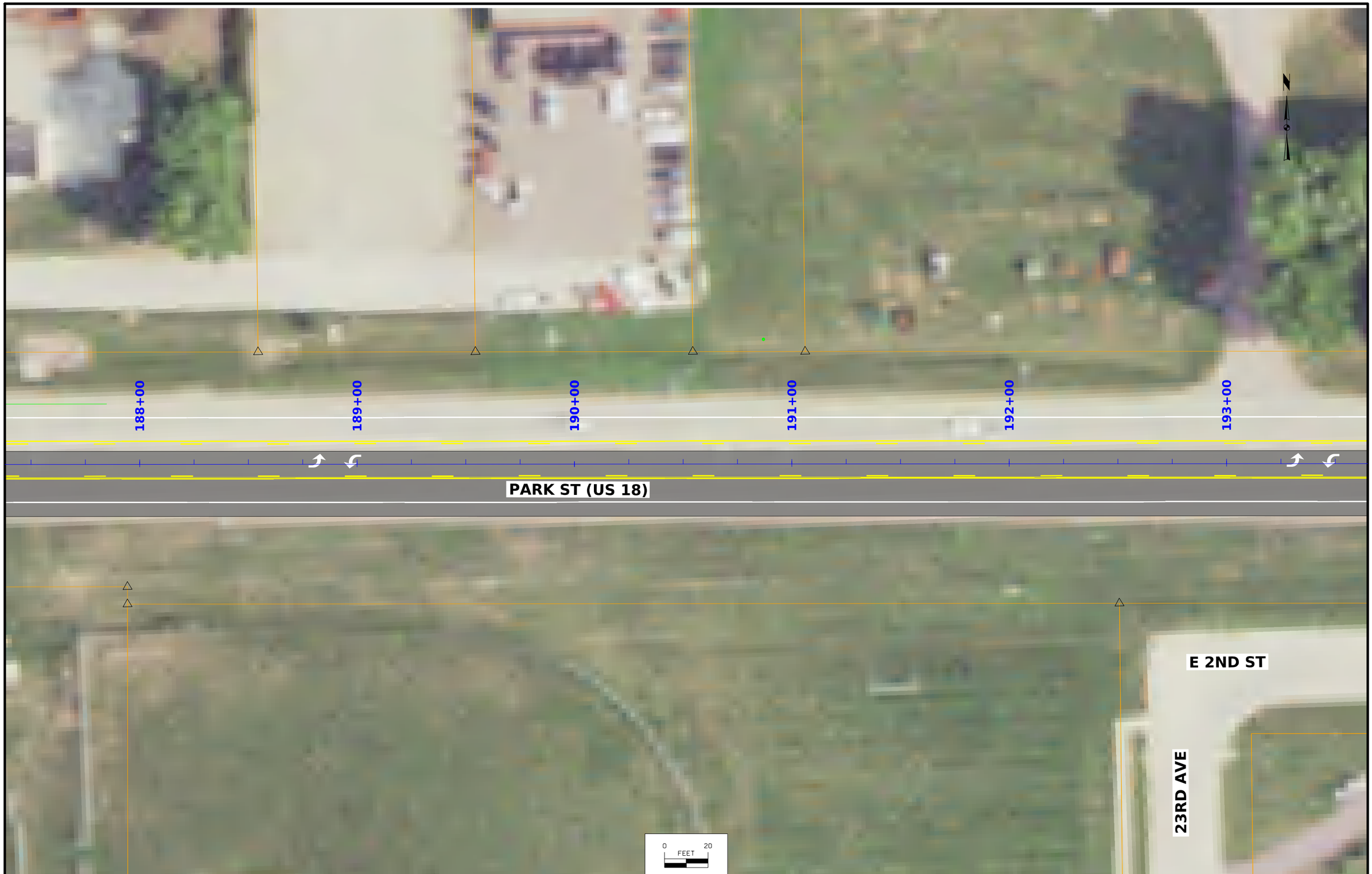

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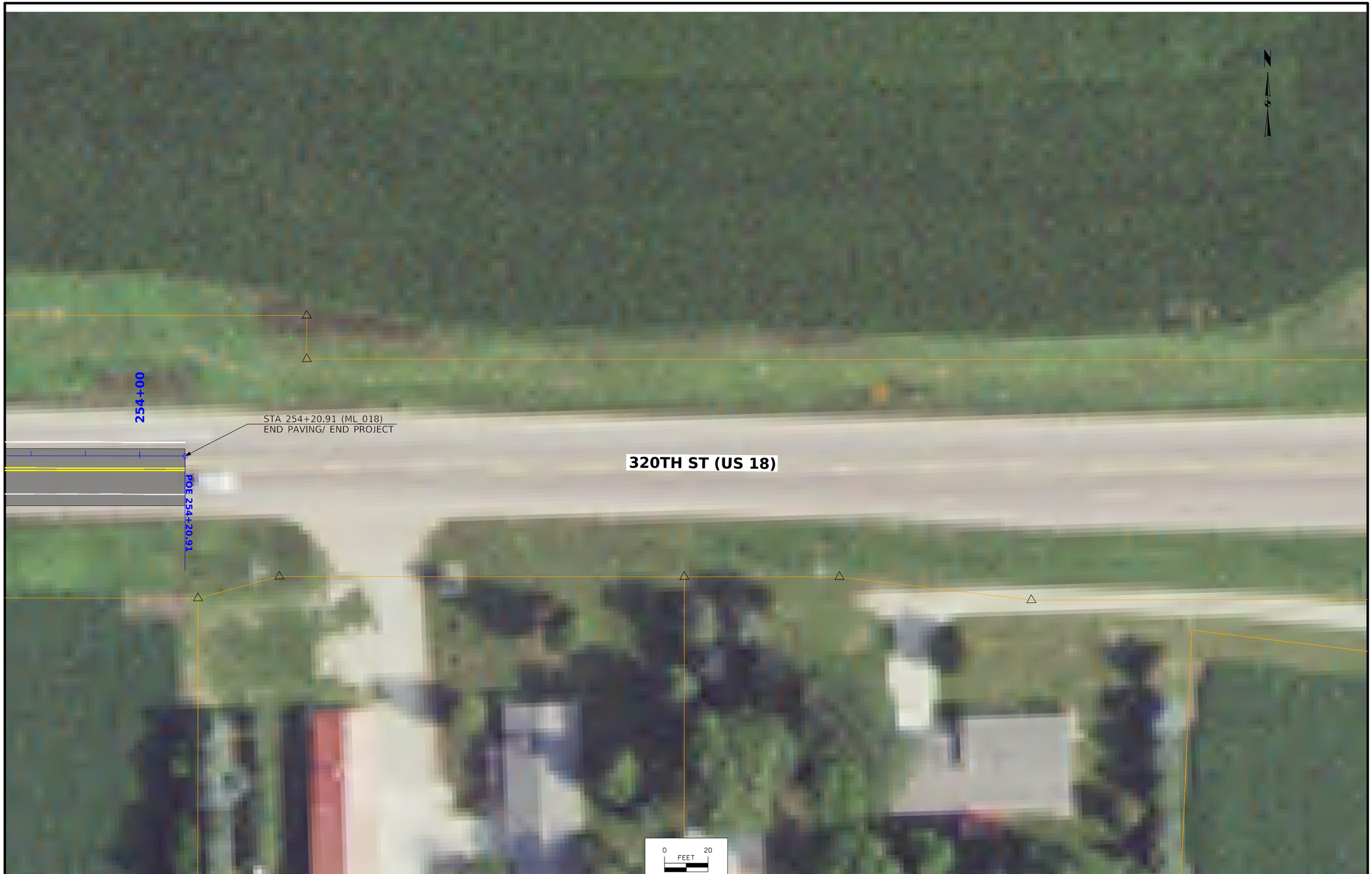

FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT / HR Green, Inc.	O'BRIEN COUNTY	PROJECT NUMBER NHSN-018-2(139)--2R-71	SHEET NUMBER D.28

Survey Information
County: O'Brien
Project Number: NHSN-018-2(137)--2R-71
Location: In Sheldon (ADA - District 3)
Type of Work: PCC Sidewalk/Trail

NOTE: The information included in this sheet is to enable locating ADA horizontal only stake points. Any other use of this information exceeds the intent of it. This information is provided to promote the efficient use of the Iowa Real-Time Network (IaRTN) with Global Navigation Satellite System (GNSS) equipment configured to the project coordinate system to stake out horizontal design point locations. Use of the IaRTN with GNSS equipment is used in place of survey control marks at the project site. The IaRTN reference stations are in essence the project control marks.

The project datum for this survey is NAD83(2011) for Epoch 2010.00 (IaRTN 2019 Adjustment). The geographic coordinate system used to perform the pre-design survey is Iowa Regional Coordinate System Zone 01 (U.S. Survey Foot). This coordinate system was used for design and must be configured into GNSS equipment to stake points for this project. Two local marks were used during the pre-design survey to validate GNSS equipment results. These marks can be used to validate results while staking design points.

ELEVATION NOTE: ADA construction requires laying out plan slopes from the gutter line of the roadway. Therefore elevation datum for each ADA ramp is the gutter. Because elevation datum to be used is an existing topogrphic feature at the date of construction a predetermined elevation of that feature or local benchmark elevations are irrelevent and not included with this information.

Validation Point 300
Description SET 5/8 RE ROD
IaRCS ZONE 01
N=9595500.906
E=11345683.13

Validation Point 301
Description SET 5/8 RE ROD
IaRCS ZONE 01
N=9595454.316
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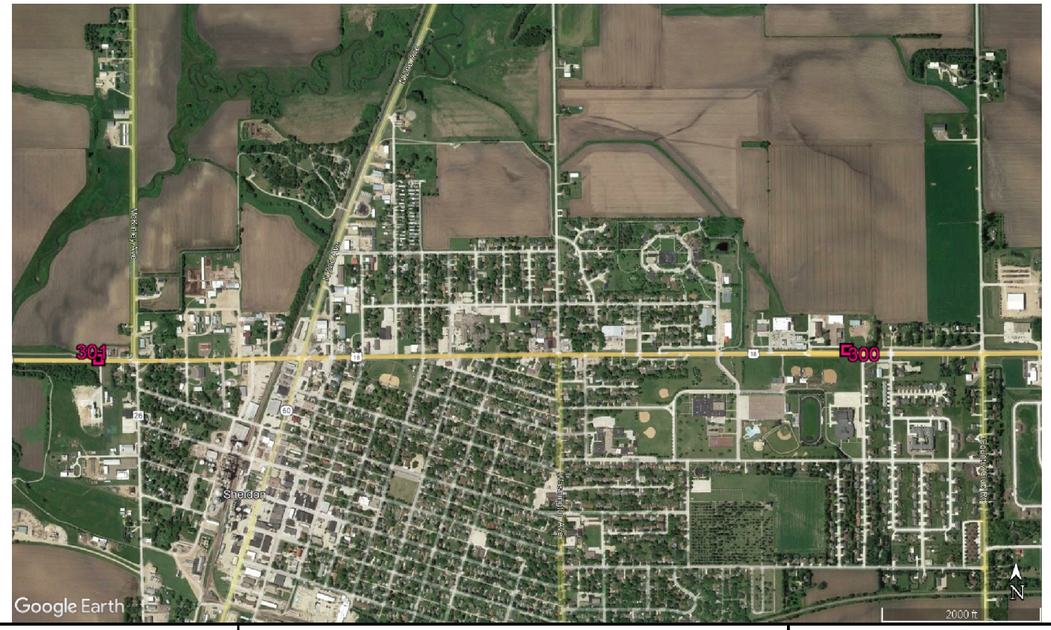

FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT / HR Green, Inc.	O'BRIEN COUNTY	PROJECT NUMBER NHSN-018-2(139)--2R-71	SHEET NUMBER G.1

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ALIGNMENT COORDINATES

Line No.	Name	Location	Poin on Tangent Station	Point on Tangent Y Northing	Point on Tangent X Easting	Begin Spiral Station	Begin Spiral Y Northing	Begin Spiral X Easting	Begin Curve Station	Begin Curve Y Northing	Begin Curve X Easting	Simple Curve PI or Master PI Station	Simple Curve PI or Master PI Y Northing	Simple Curve PI or Master PI X Easting	End Curve Station	End Curve Y Northing	End Curve X Easting	End Spiral Station	End Spiral Y Northing	End Spiral X Easting
1.0	PI											100+00.00	9595419.705	11336596.188						
2.0	PI											103+62.40	9595414.802	11336958.551						
3.0	PI											105+66.19	9595415.751	11337162.340						
4.0	PI											107+99.73	9595418.709	11337395.865						
5.0	PI											111+21.49	9595422.212	11337717.605						
6.0	PI											118+16.74	9595431.187	11338412.792						
7.0	PI											118+74.29	9595431.875	11338470.339						
8.0	PI											120+43.06	9595434.755	11338639.084						
9.0	PI											121+75.80	9595436.339	11338771.817						
10.0	PI											123+04.38	9595437.968	11338900.386						
11.0	PI											124+51.54	9595439.812	11339047.540						
12.0	PI											129+71.46	9595445.520	11339567.426						
13.0	PI											133+87.81	9595447.462	11339983.773						
14.0	PI											138+63.43	9595449.862	11340459.382						
15.0	PI											143+60.11	9595452.310	11340956.058						
16.0	PI											152+29.42	9595456.260	11341825.359						
17.0	PI											159+33.52	9595455.052	11342529.457						
18.0	PI											167+00.03	9595450.711	11343295.957						
19.0	PI											169+59.33	9595453.396	11343555.246						
20.0	PI											174+29.94	9595453.396	11344025.855						
21.0	PI											175+66.03	9595452.441	11344161.945						
22.0	PI											179+34.29	9595449.855	11344530.194						
23.0	PI											186+46.08	9595446.007	11345241.973						
24.0	PI											186+74.72	9595445.852	11345270.607						
25.0	PI											195+03.85	9595441.339	11346099.724						
26.0	PI											203+24.77	9595438.505	11346920.639						
27.0	PI											207+36.34	9595435.650	11347332.202						
28.0	PI											208+27.19	9595435.019	11347423.046						
29.0	PI											213+69.60	9595431.256	11347965.443						
30.0	PI											219+79.45	9595428.969	11348575.289						
31.0	PI											226+04.08	9595426.172	11349199.913						
32.0	PI											229+86.60	9595423.748	11349582.425						
33.0	PI											232+69.58	9595423.748	11349865.414						
34.0	PI											236+23.46	9595422.269	11350219.286						
35.0	PI											241+70.29	9595421.541	11350766.114						
36.0	PI											246+38.59	9595420.264	11351234.415						

108_23A
8/15/22

TRAFFIC CONTROL PLAN

1. Through traffic shall be maintained on US 18 at all times.

2. The following sideroads may be closed for reconstruction:
   Pleasant Drive, B Street, 6th Avenue, Washington Street, Wansink Avenue, 1st Street, Service Road (East Connection)

3. Access to all properties shall be maintained at all times.

4. The following Special Events are expected to take place in the vicinity of this project:
   a. Risefest, June 20-21, 2025
   b. Fireworks Celebration, July 3, 2025
   c. Celebration Days, August 28 - September 1, 2025

   NOTE: The Contractor shall be responsible for contacting City officials prior to the event to confirm dates and plan not to work on those dates. The Contractor shall allow normal traffic operations within the City of Sheldon for the duration of the Special Event.

5. If necessary to complete sideroad pavement replacement; lane closures and street closures shall be in accordance with TC-212 and TC-252. Safety Closures pr Type III barricades placed to protect work areas will not be counted of paid for separately. No special easements are provided other than those shown on the H Sheets in Project NHSN-018-2(137)--2R-71. The Contractor shall access the work areas from the streetside.

6. The Contractor shall coordinate Traffic Control with other projects in the area.

7. Contractor to maintain all current traffic control conditions with temporary signage, as required, until permanent signage has been reinstalled.

108_26A
8/15/22

STAGING NOTES

Sequence of Construction:
A General sequence of construction is suggested below:

1. Construct EB and WB turn lanes at Crossroads Drive.
2. Perform Full-Depth Patching.
3. Perform Pavement Scarification.
4. Complete HMA Resurfacing.
5. Perform Side Road Reconstruction.
6. Perform Curb and Gutter Replacement.
7. Place Permanent Pavement markings and open all lanes to traffic.
8. In project areas with proposed ADA pedestrian ramp work, the Contractor is strongly advised to first complete any other work (especially HMA resurfacing) which may negatively impact the proposed final elevations and tolerances for pedestrian ramps, sidewalks, and associated street crossing paths.

511 TRAVEL RESTRICTIONS

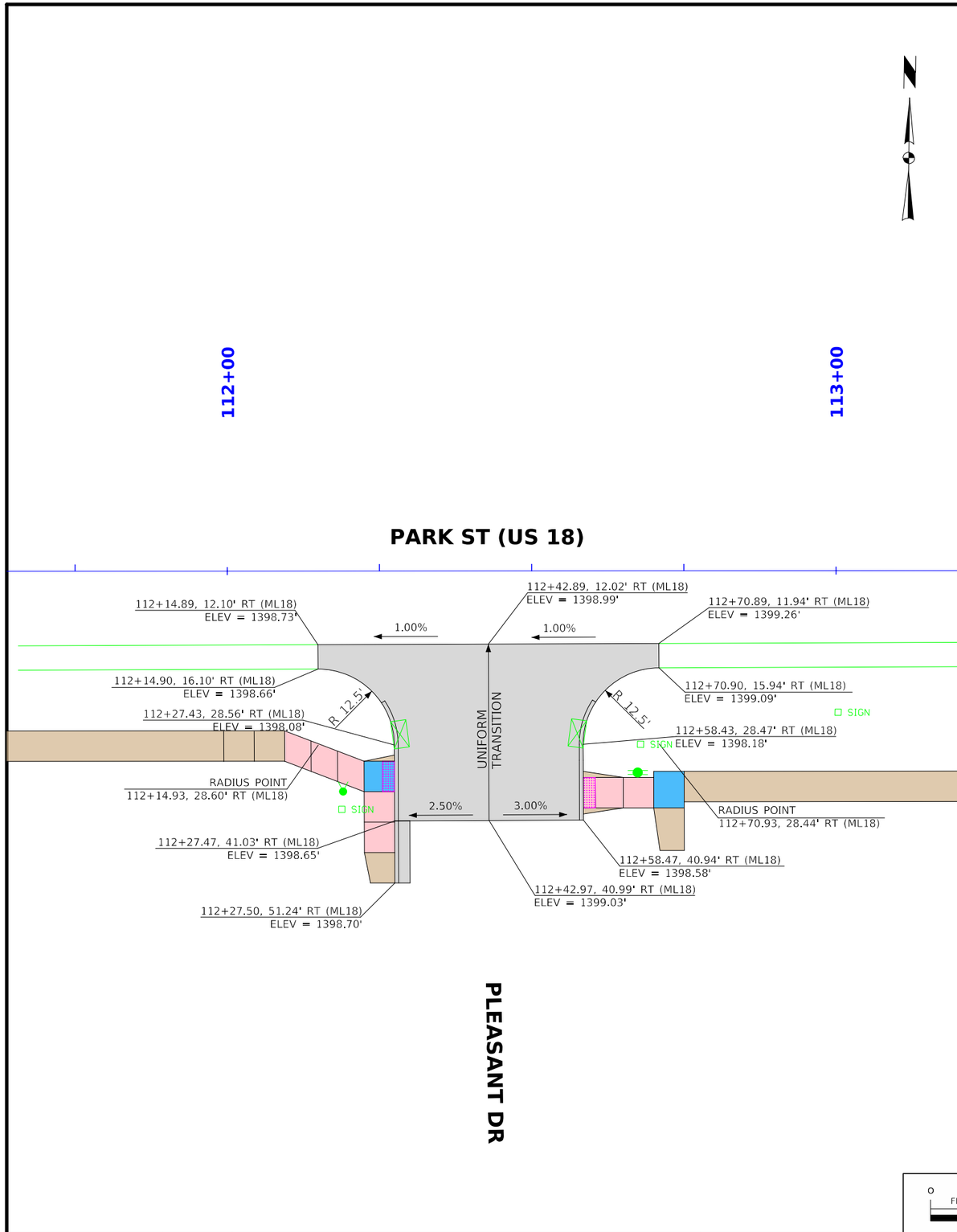
Line No.	Route	Direction	County	Location Description	Feature Crossed	Object Type	Maint. Bridge No. or Structure ID or FHWA No.	Type of Restriction	Existing Measurement	Construction Measurement	Construction Measurement as Signed	Projected As Built Measurement	Remarks
1.0	US 18	Both	O'Brien	NONE EXPECTED				None					

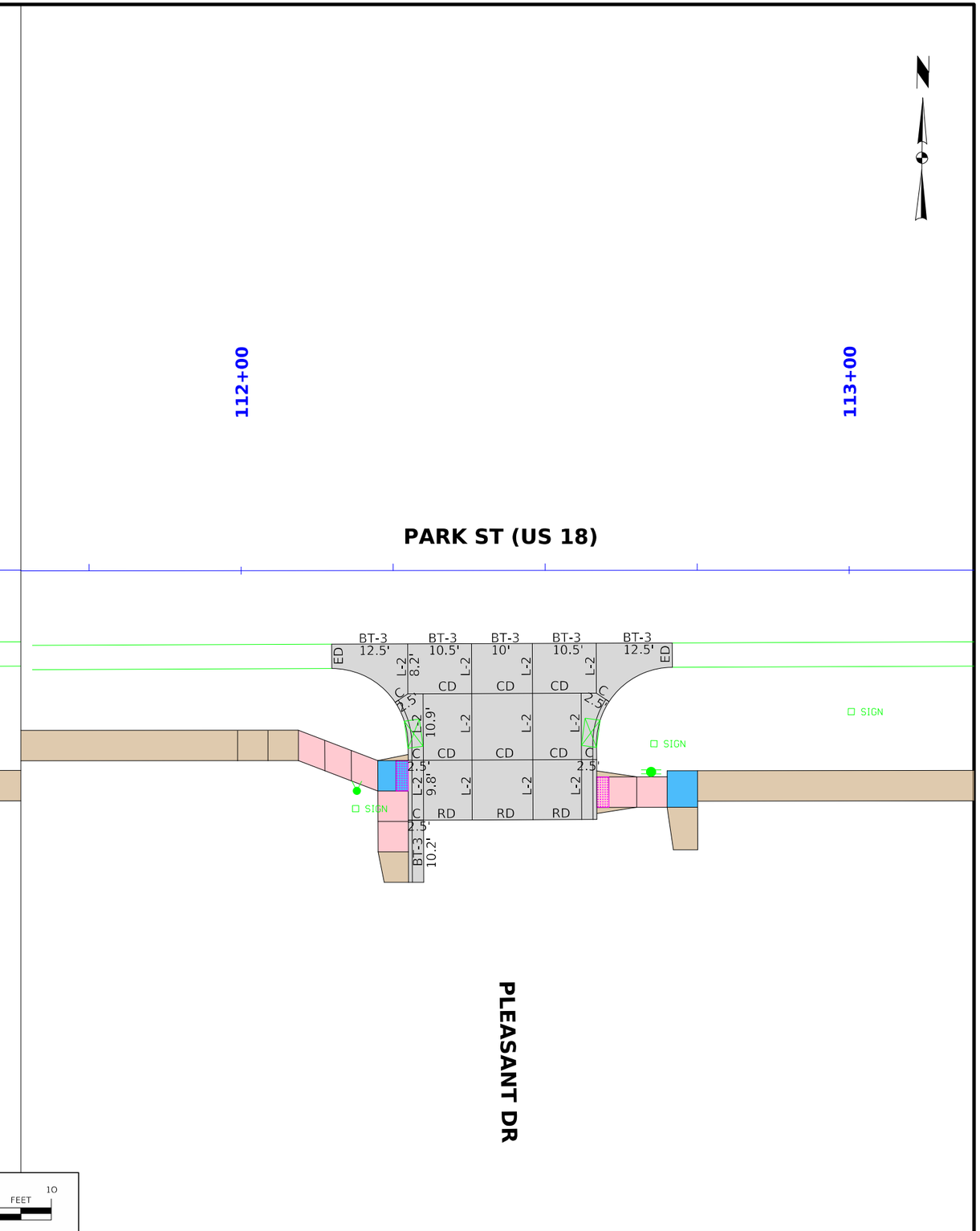
111_01
10/14/22

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
NHSN-018-2(137)--2R-71	PCC Sidewalk/Trail
Western Avenue (City Project)	US 18 to 330th Street





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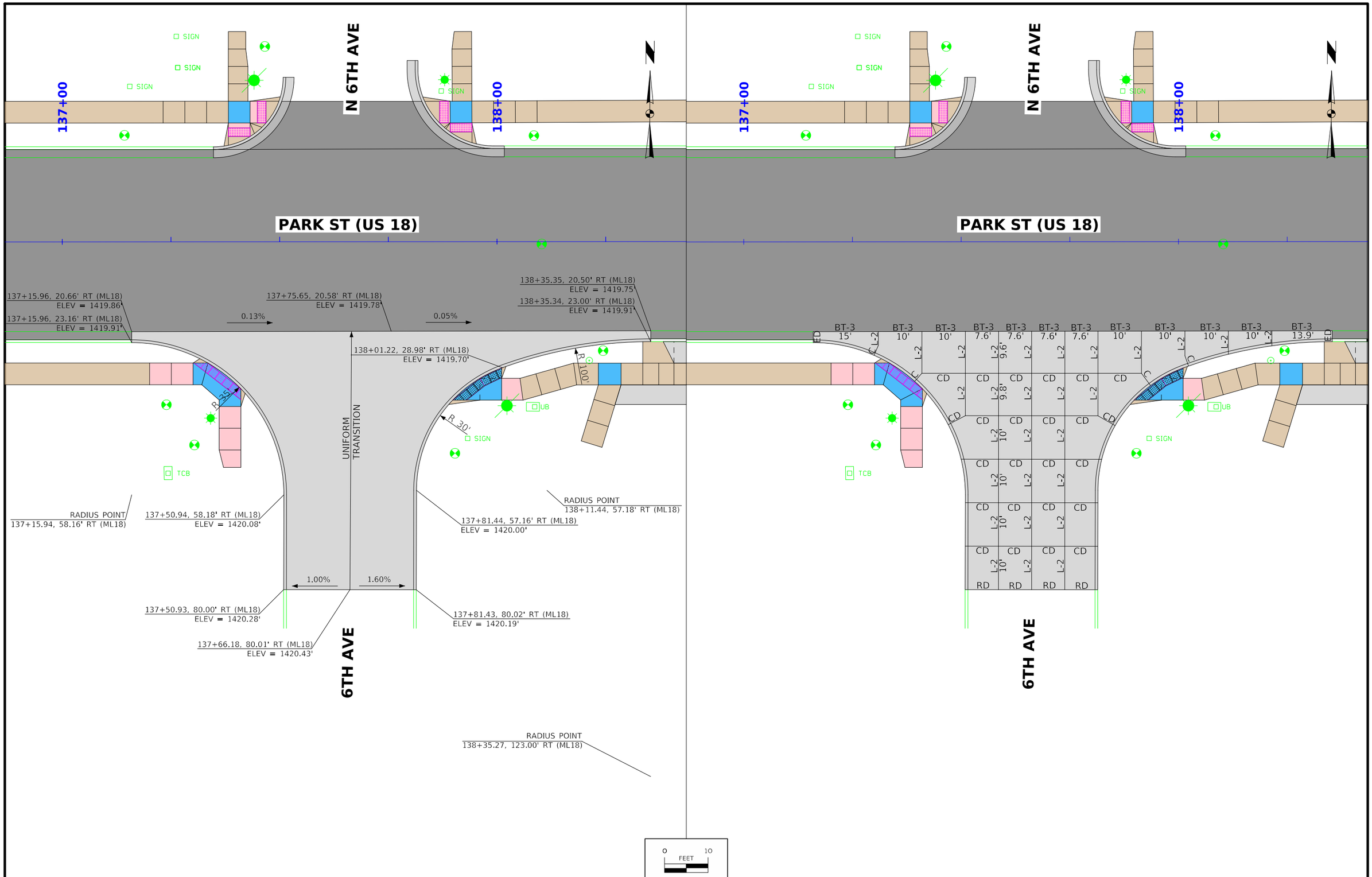

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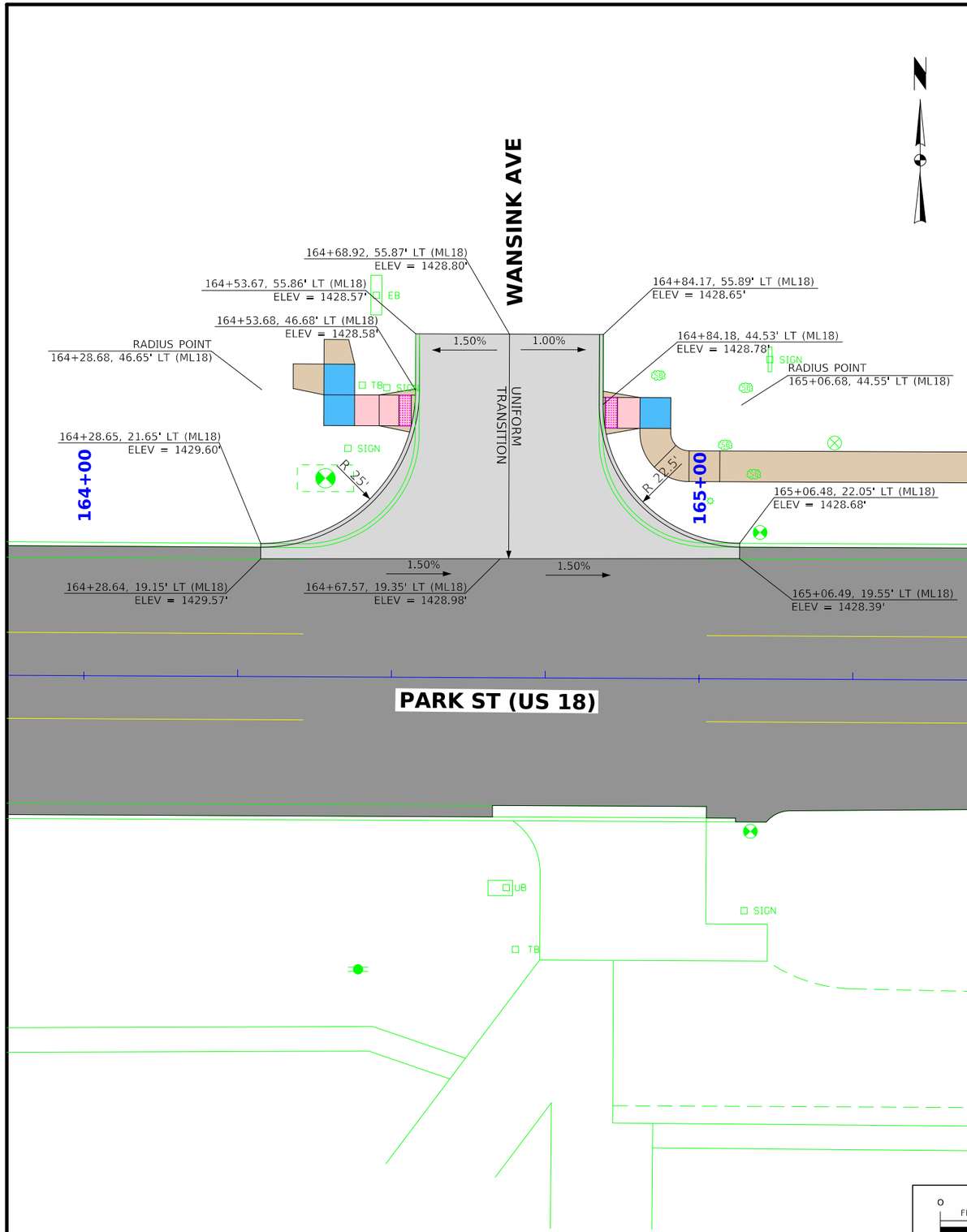

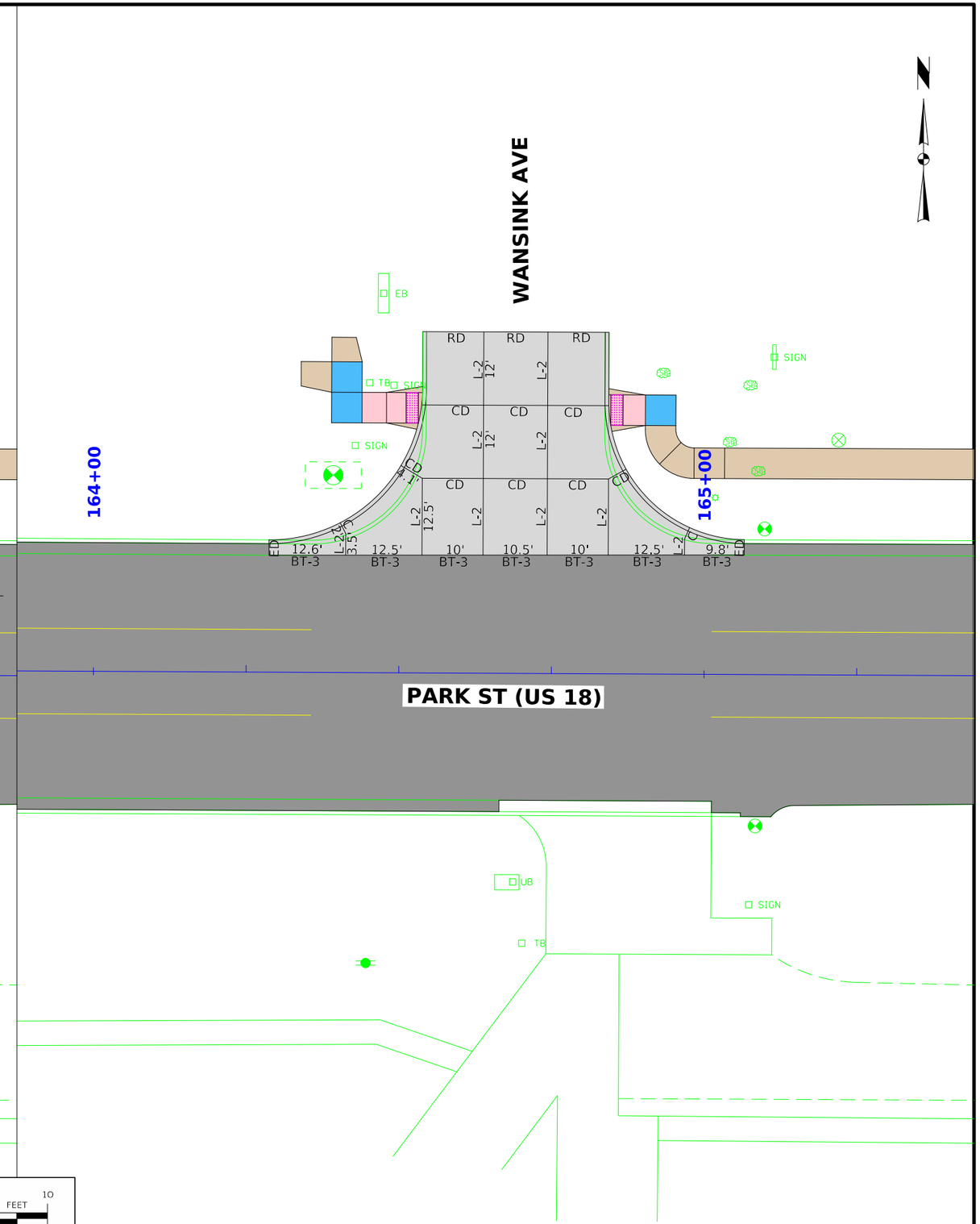

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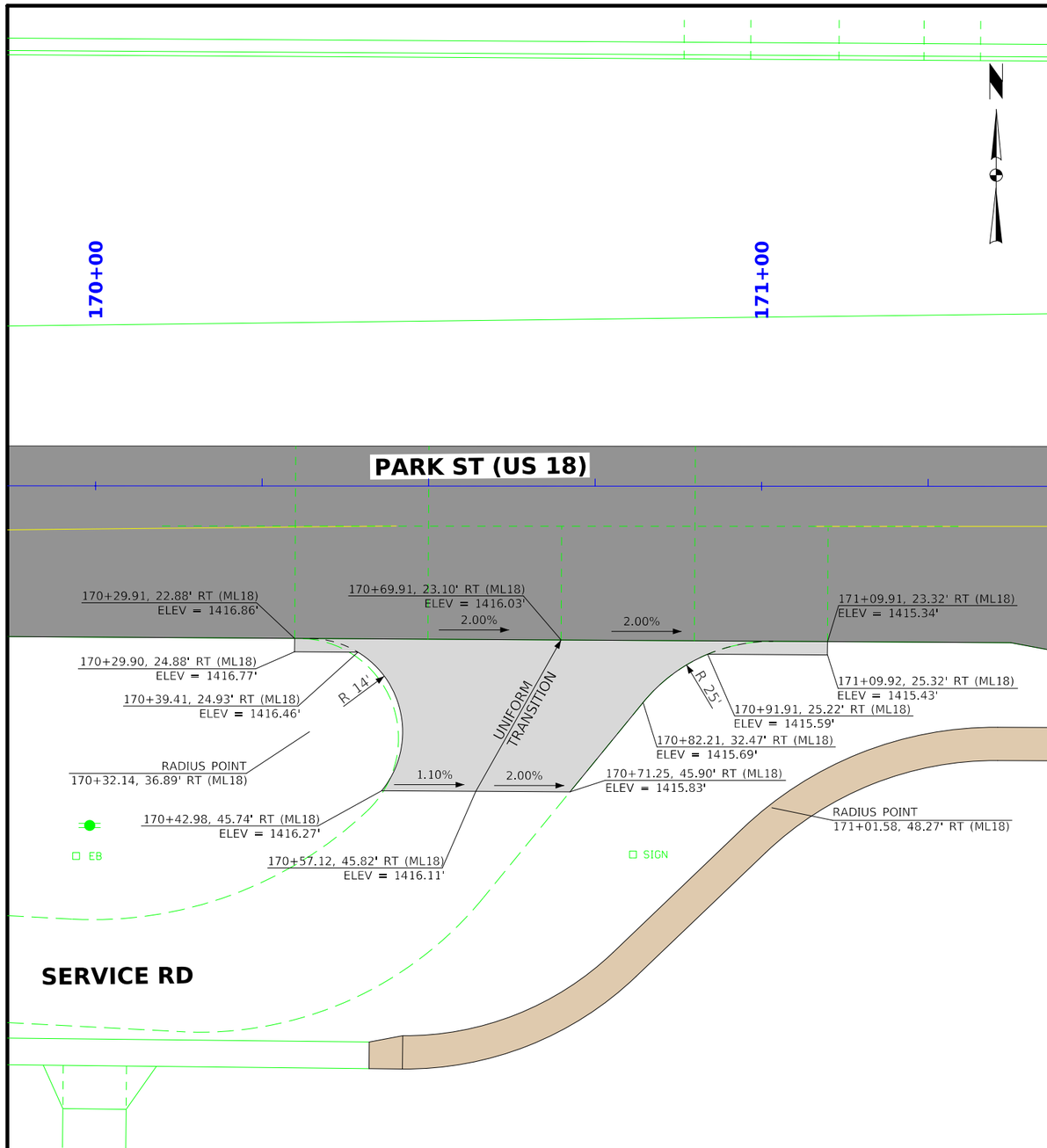

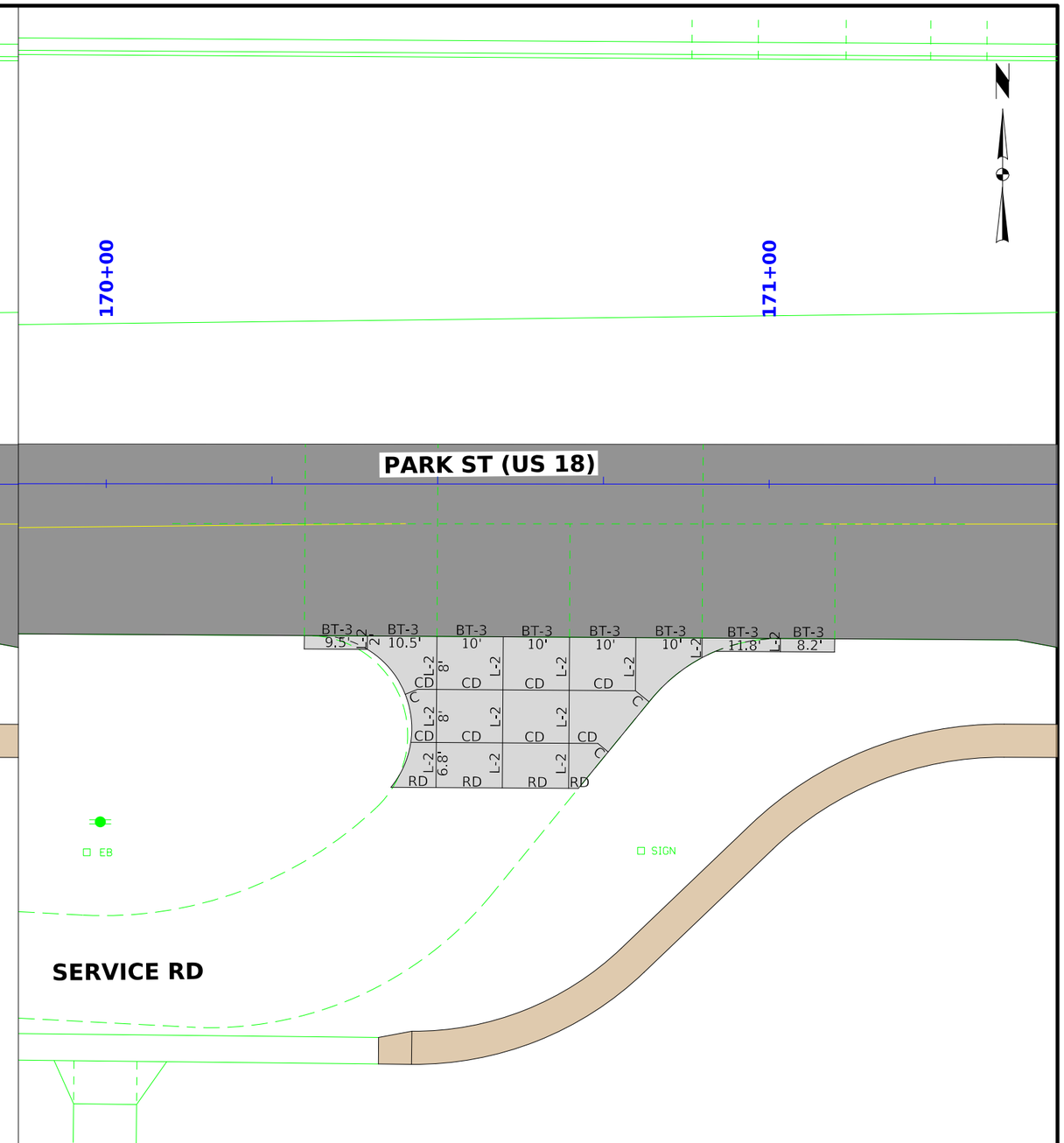

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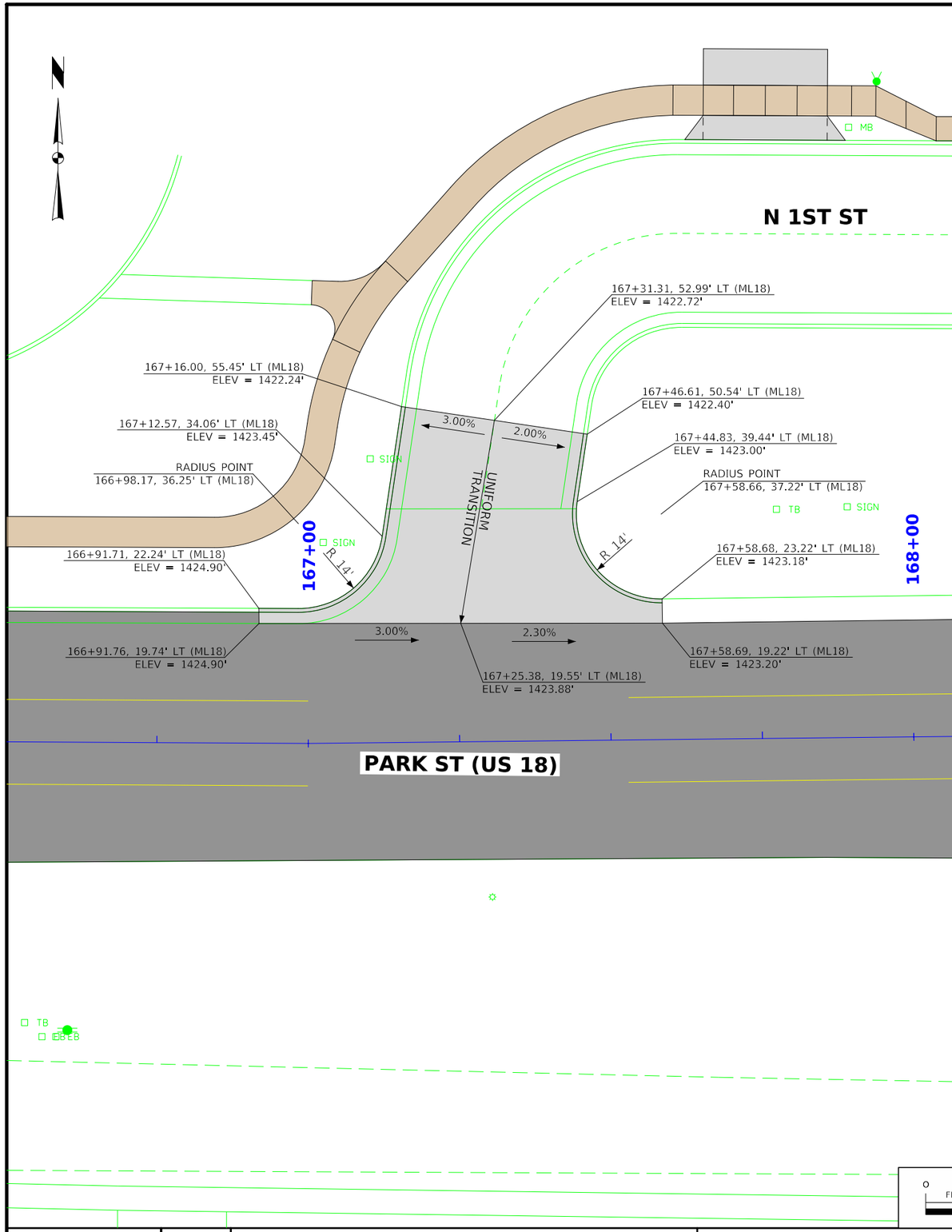

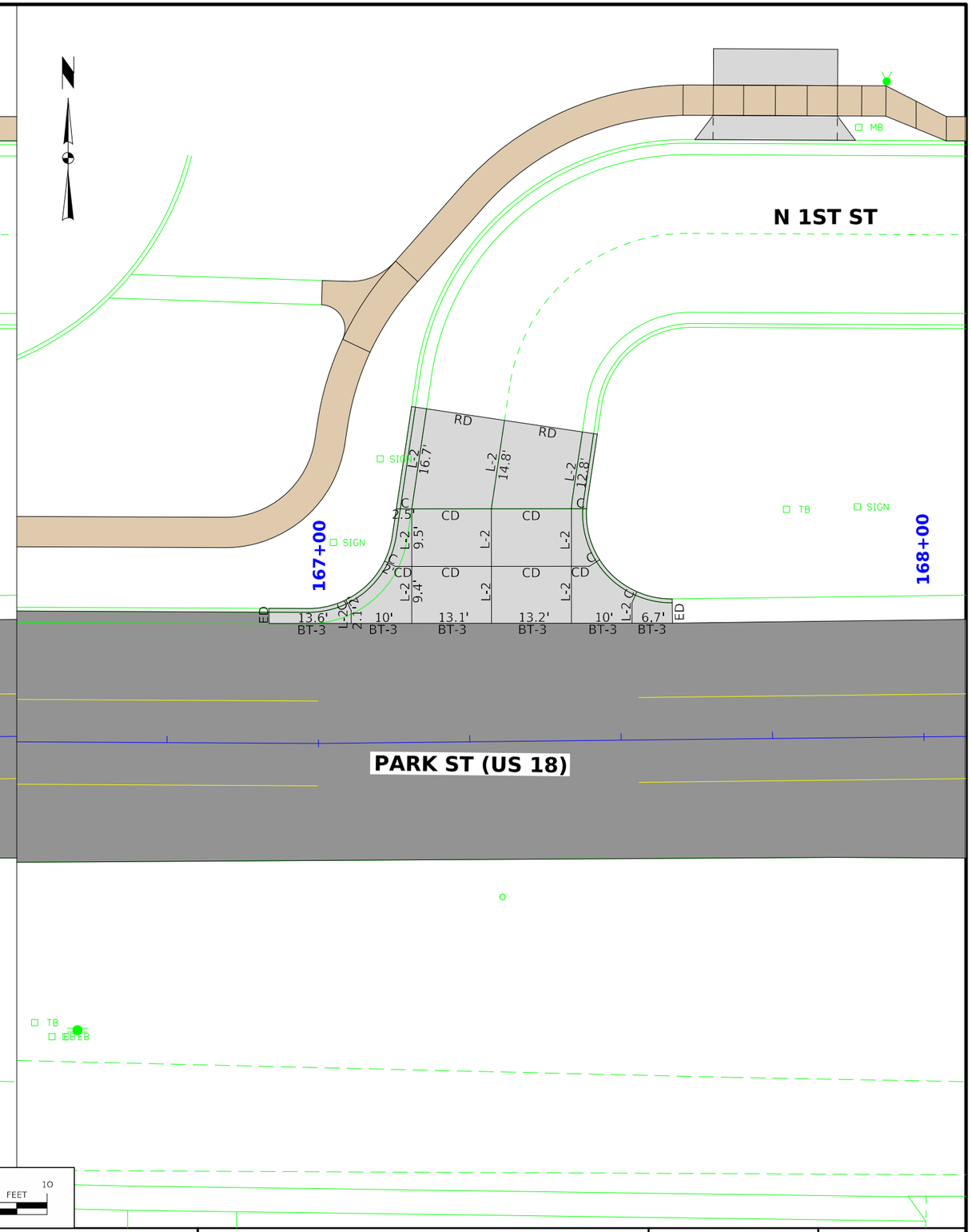

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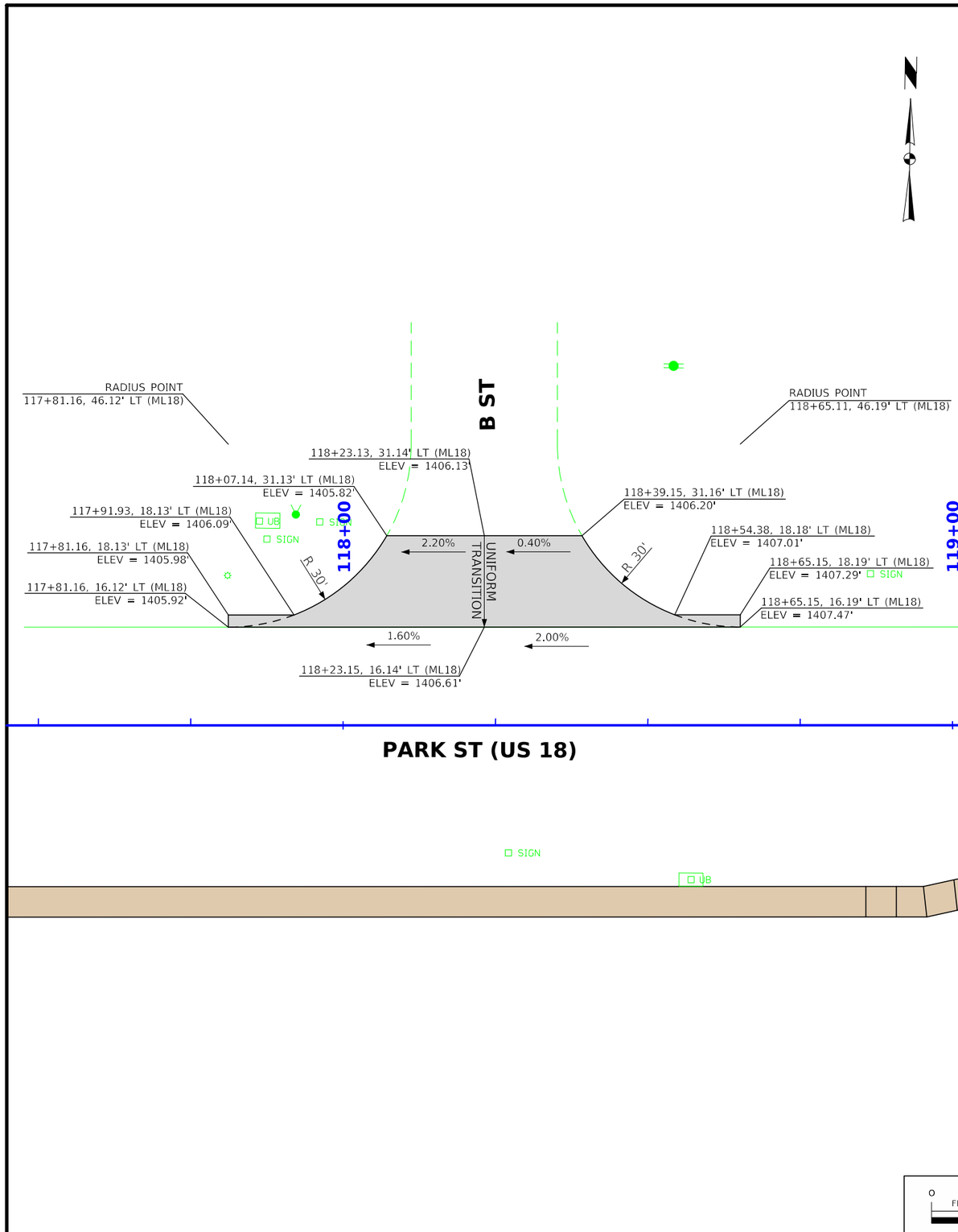

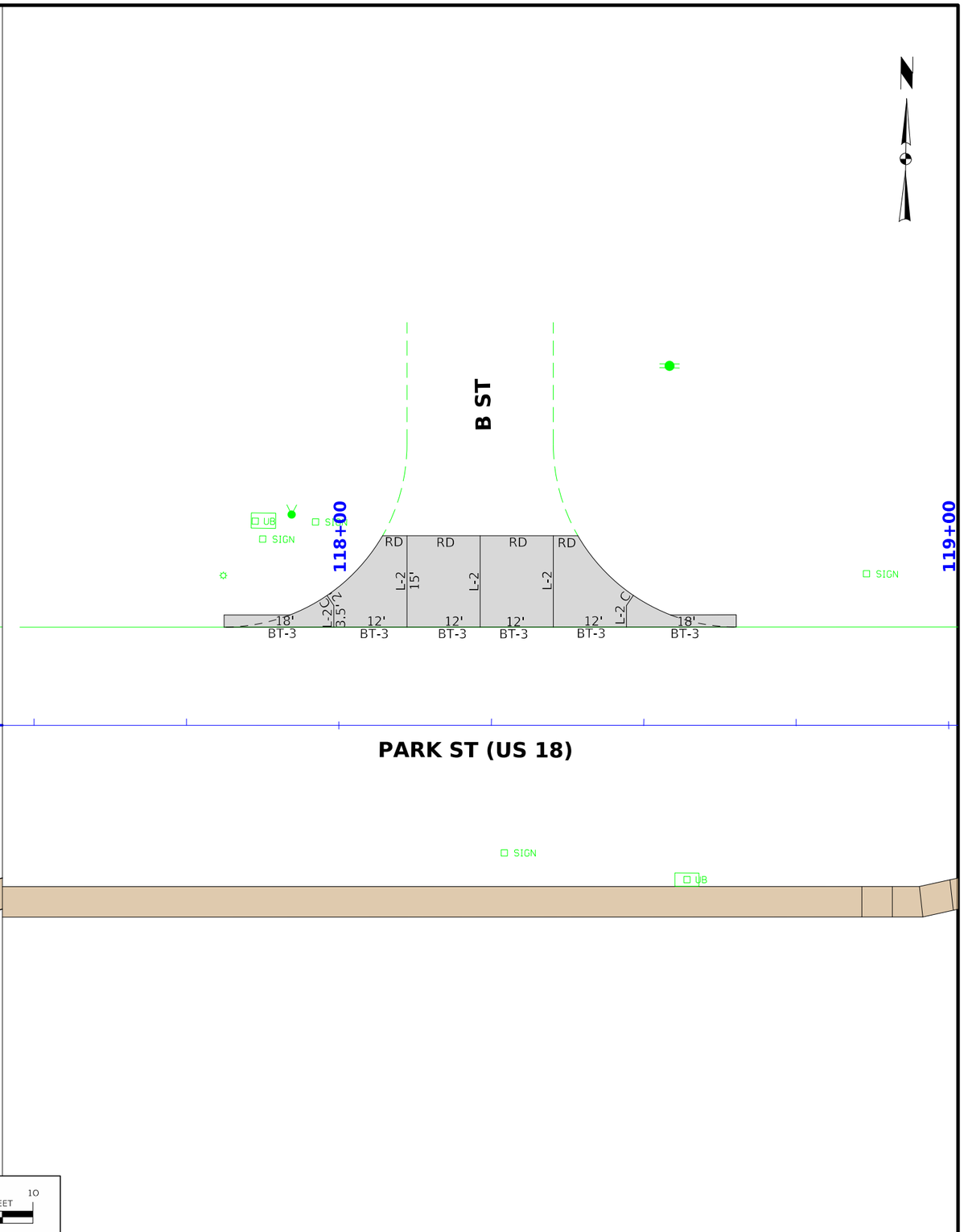

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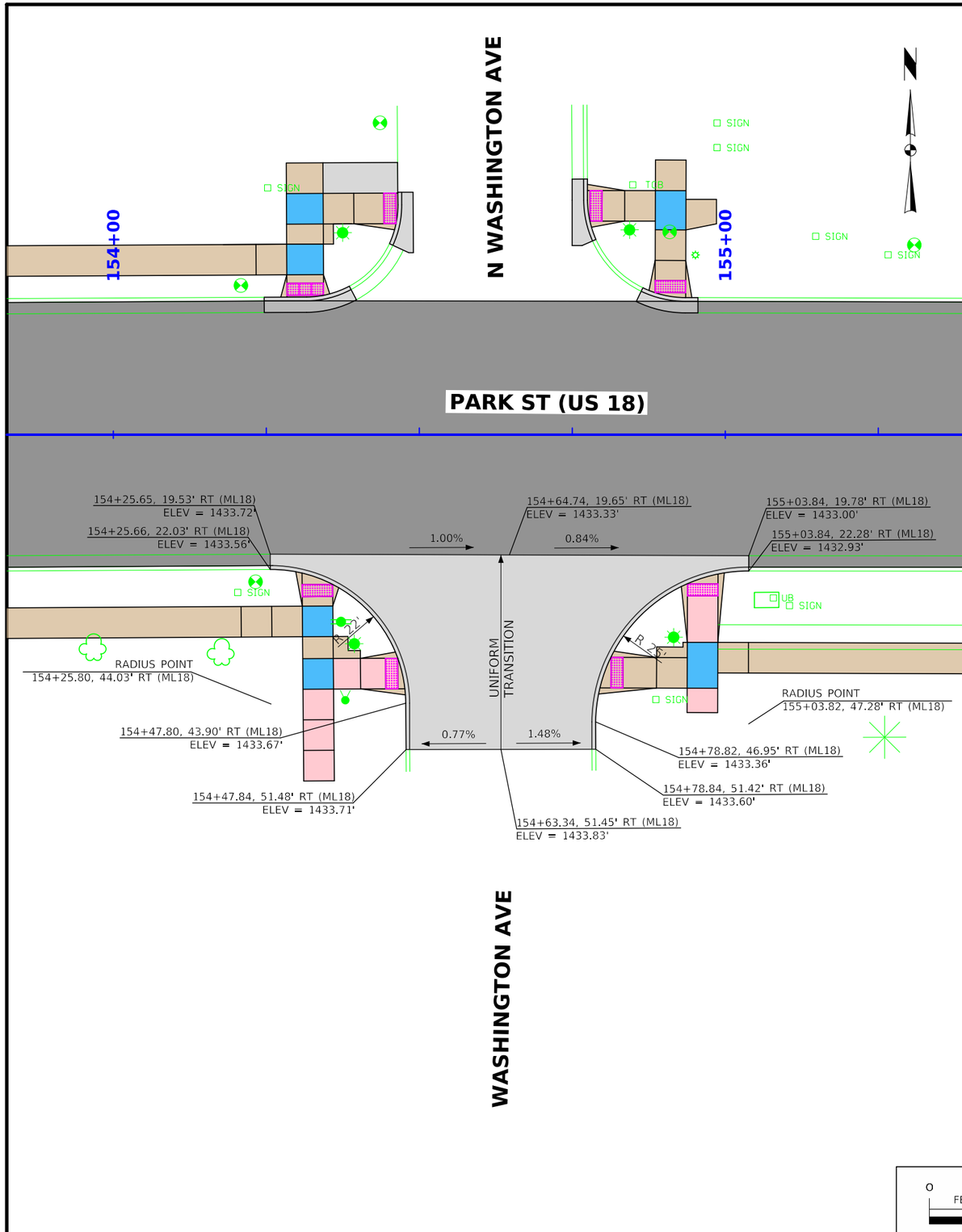

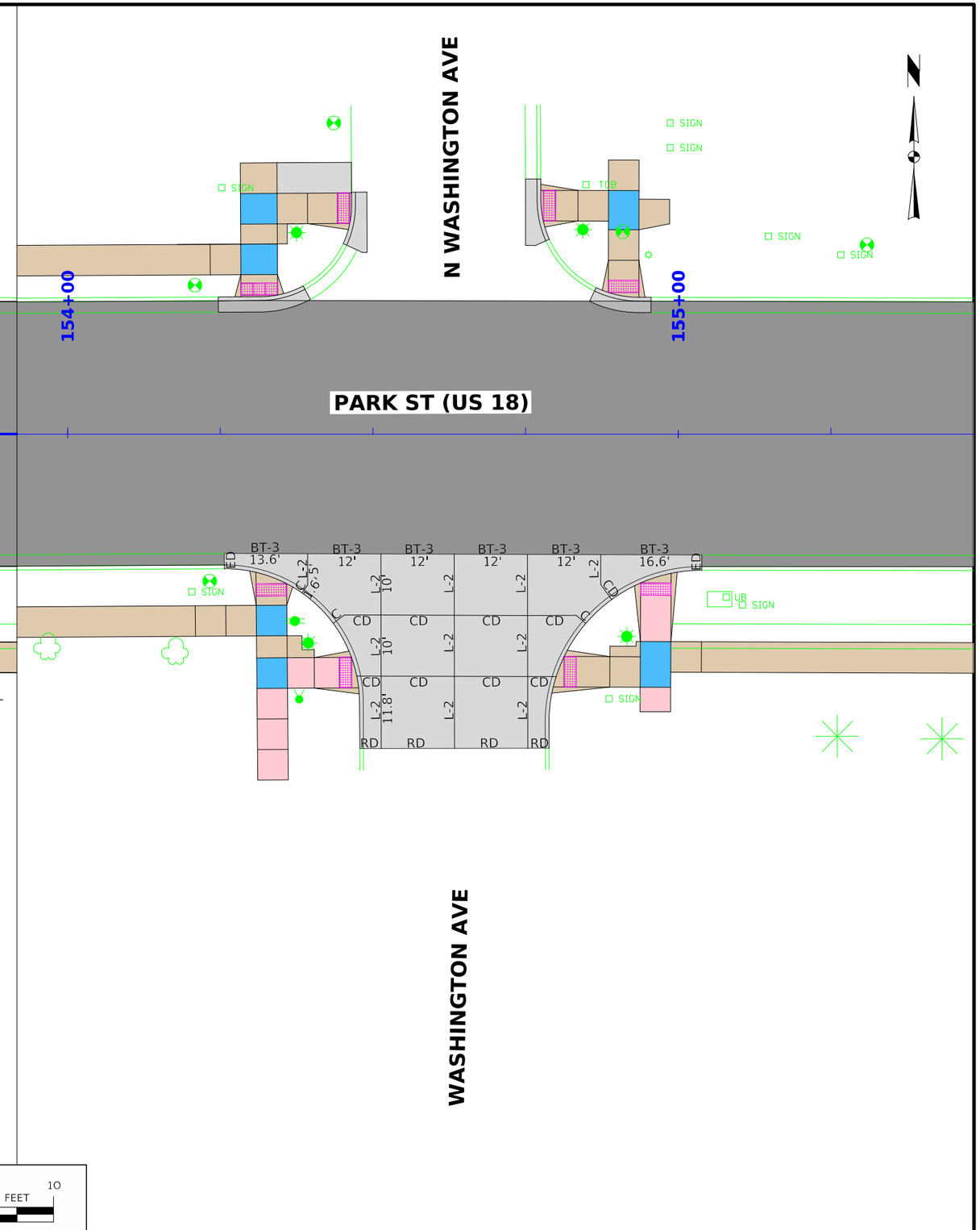

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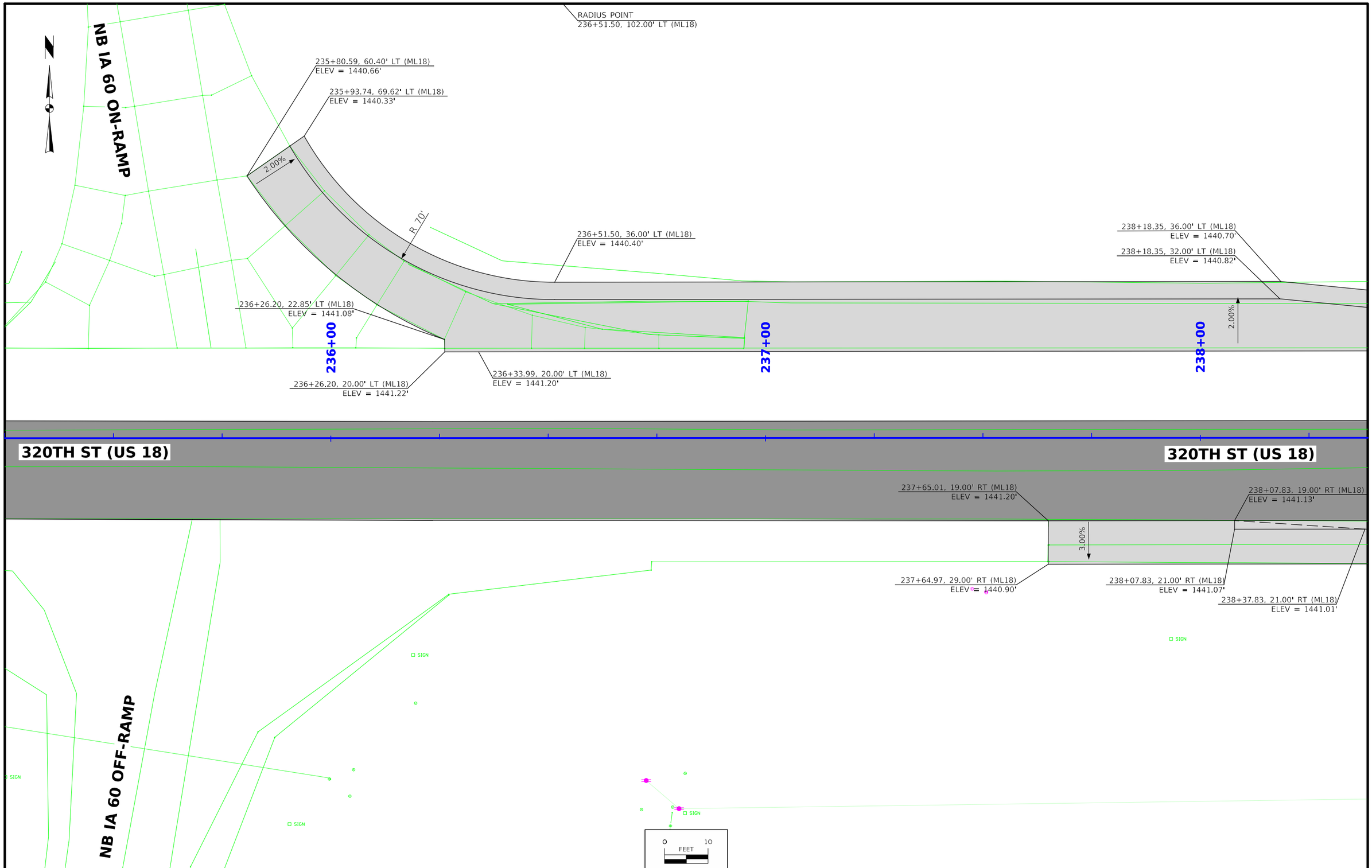

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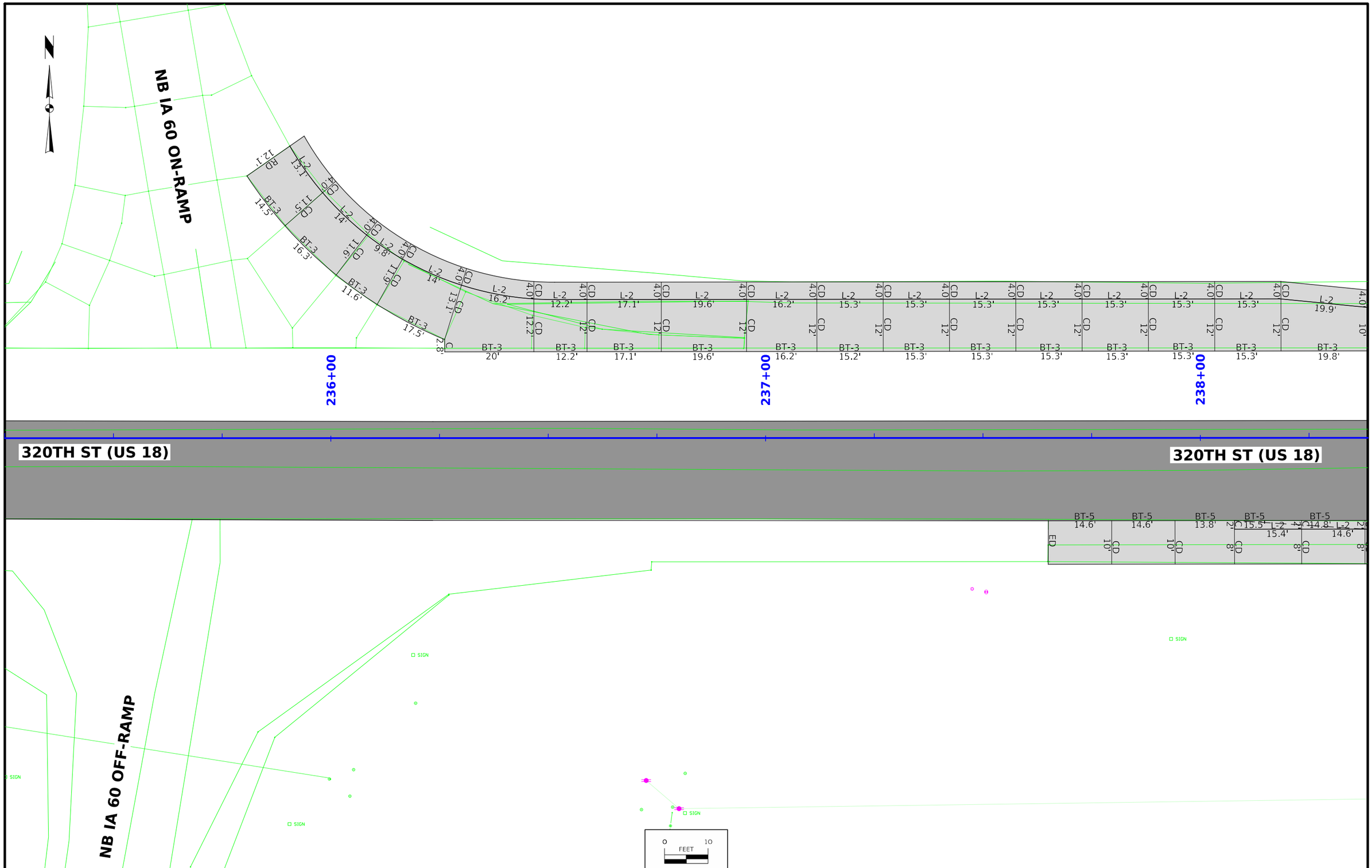

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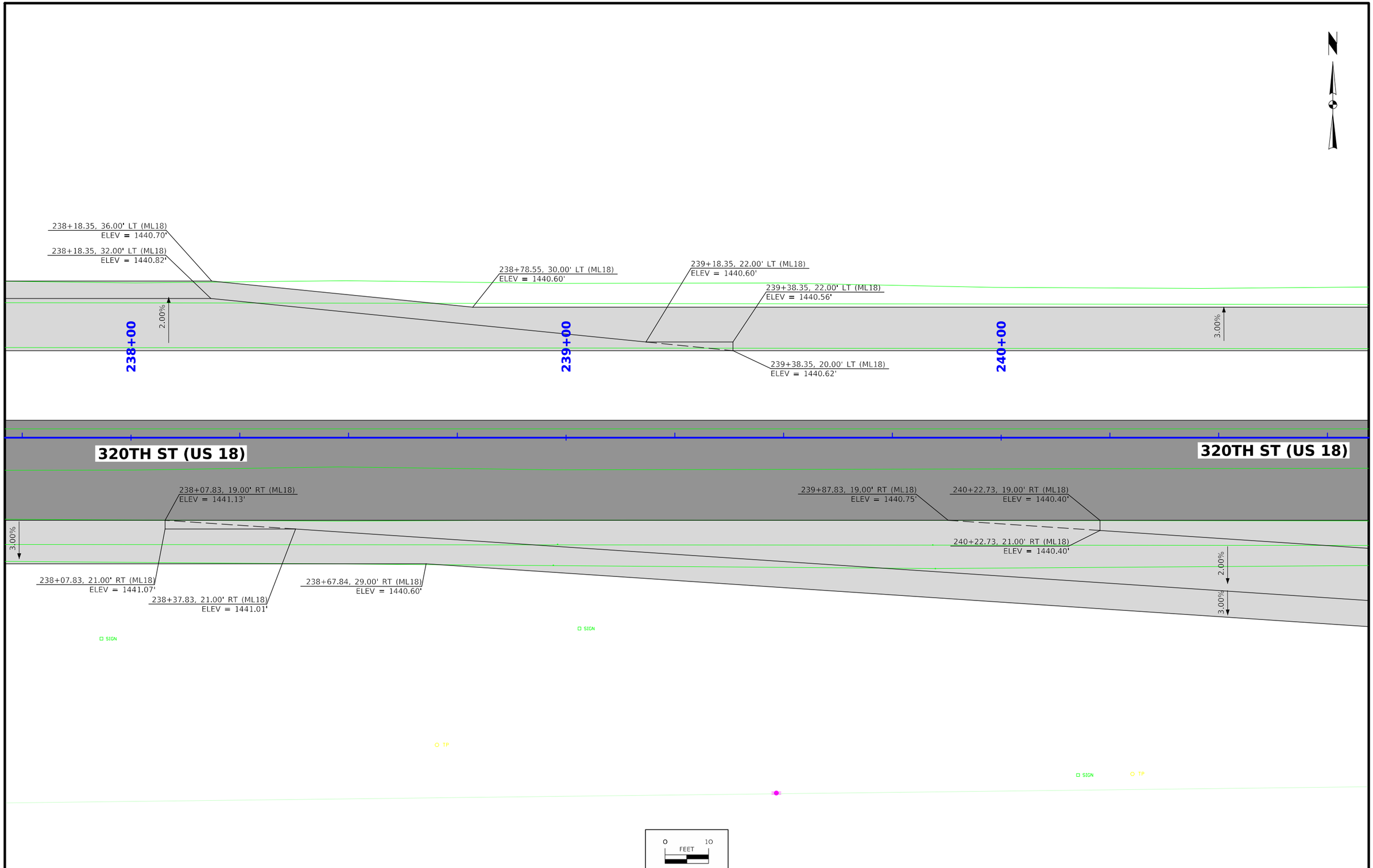

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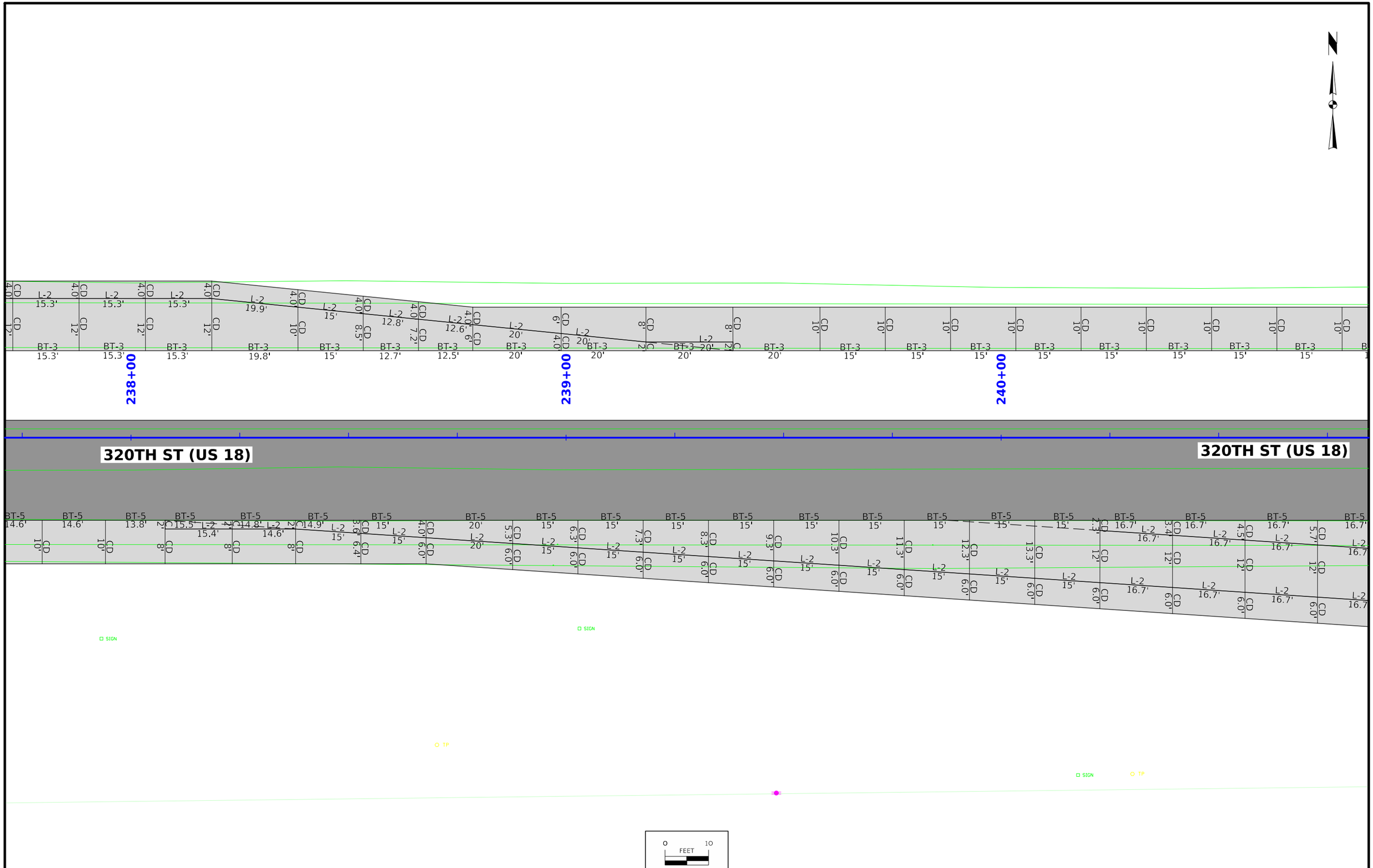

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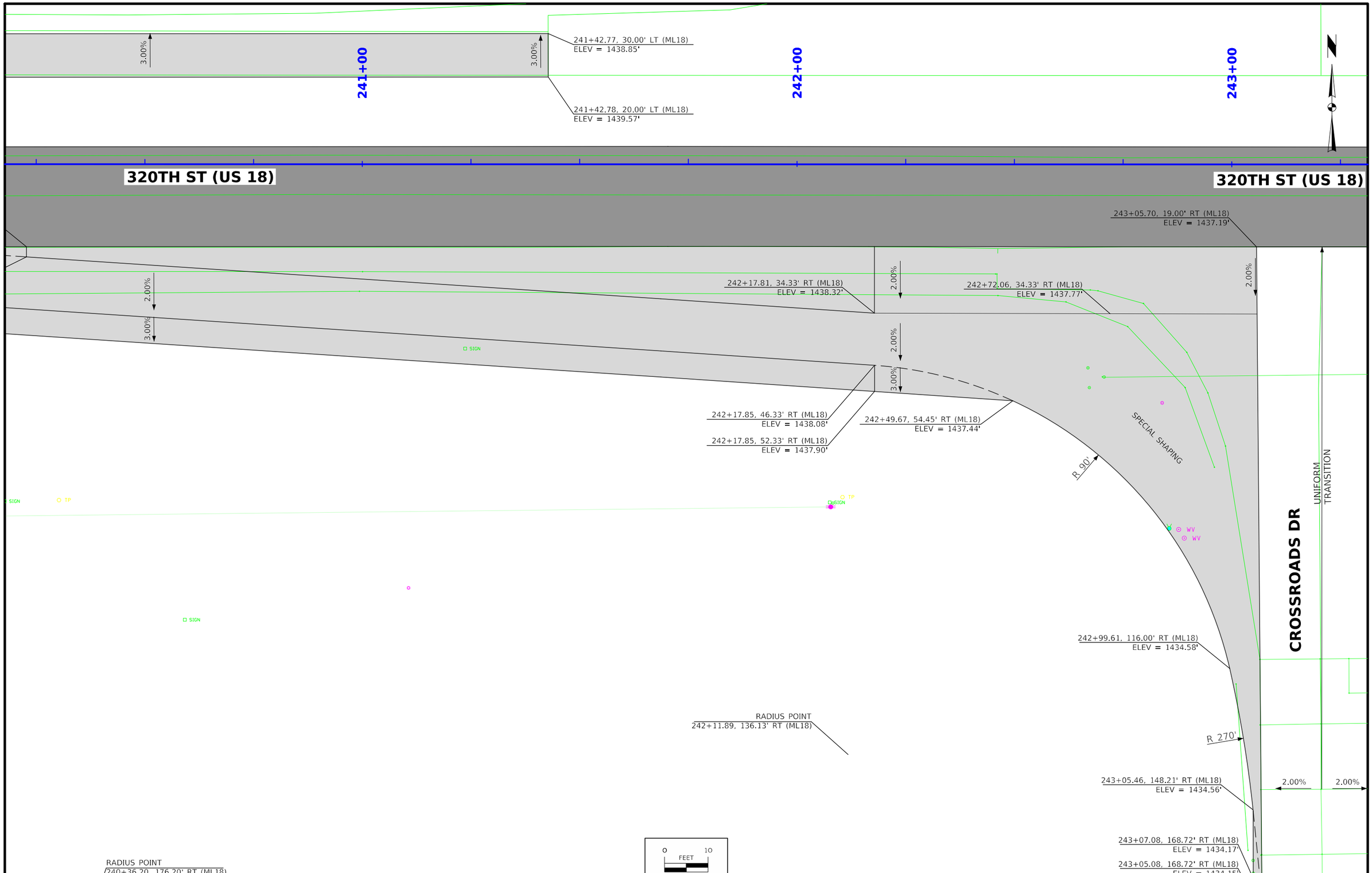

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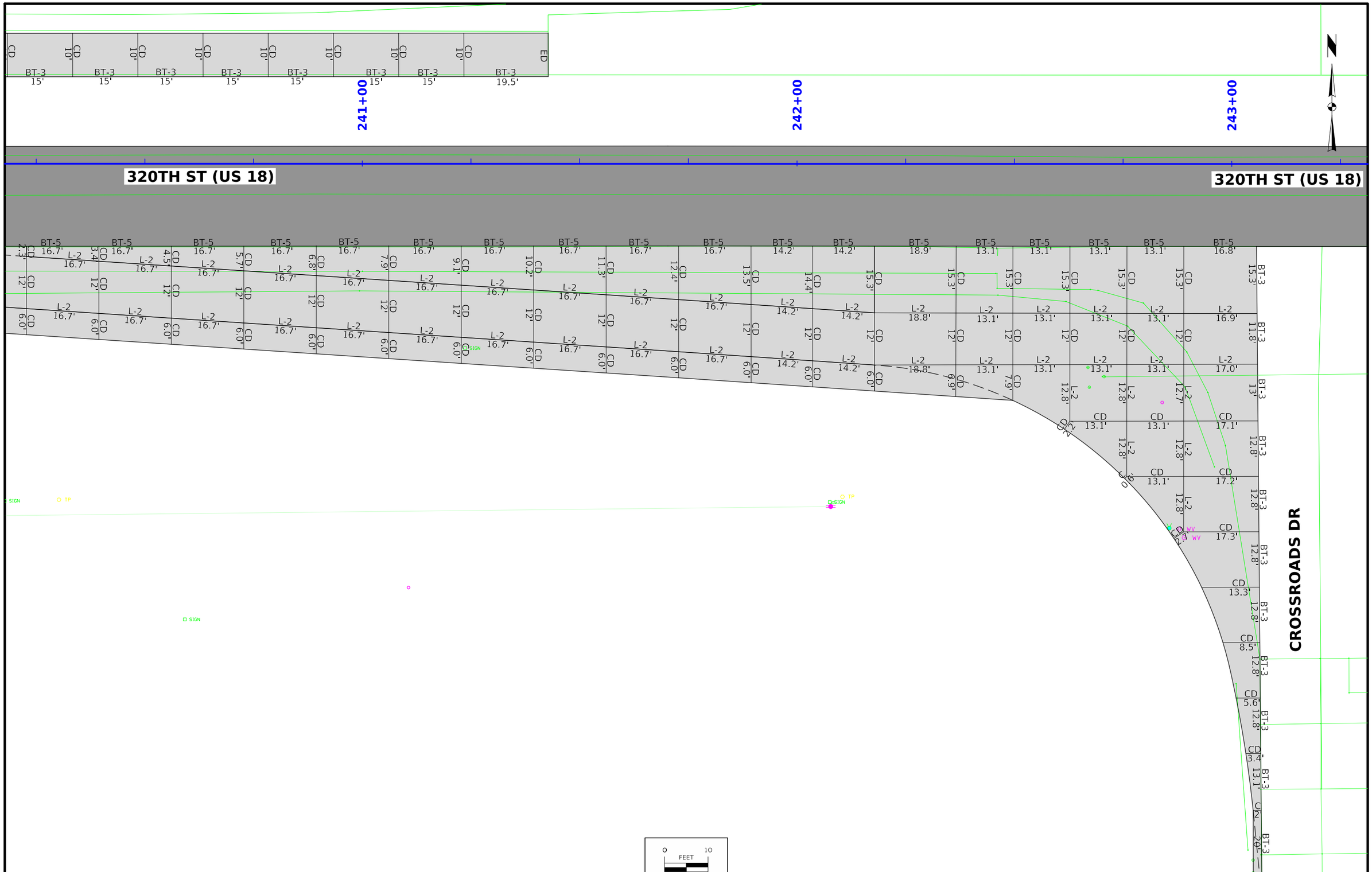

FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT / HR Green, Inc.	O'BRIEN COUNTY	PROJECT NUMBER NHSN-018-2(139)--2R-71	SHEET NUMBER L.13

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LINE STYLE LEGEND OF LANDSCAPE SHEETS

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

CELL LEGEND OF LANDSCAPE SHEETS

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

PATTERN LEGEND OF LANDSCAPE SHEETS

Brush Clearing

Spray Area

Clearing & Grubbing

LINE STYLE LEGEND OF EROSION CONTROL SHEETS

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

CELL LEGEND OF EROSION CONTROL SHEETS

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

PLAN VIEW COLOR LEGEND OF EROSION CONTROL SHEETS

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

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

PATTERN LEGEND OF EROSION CONTROL SHEETS

Seeding and Fertilizing

R — Seeding and Fertilizing (Rural)

U — Seeding and Fertilizing (Urban)

N — Native Grass Seeding

ST — Salt Tolerant Seeding

WL — Wetland Grass Seeding

WF — Wildflower Seeding

SOD — Sodding

Turf Reinforcement Mat Type 1

Turf Reinforcement Mat Type 2

Turf Reinforcement Mat Type 3

Turf Reinforcement Mat Type 4

Slope Protection, Wood Excelsior Mat

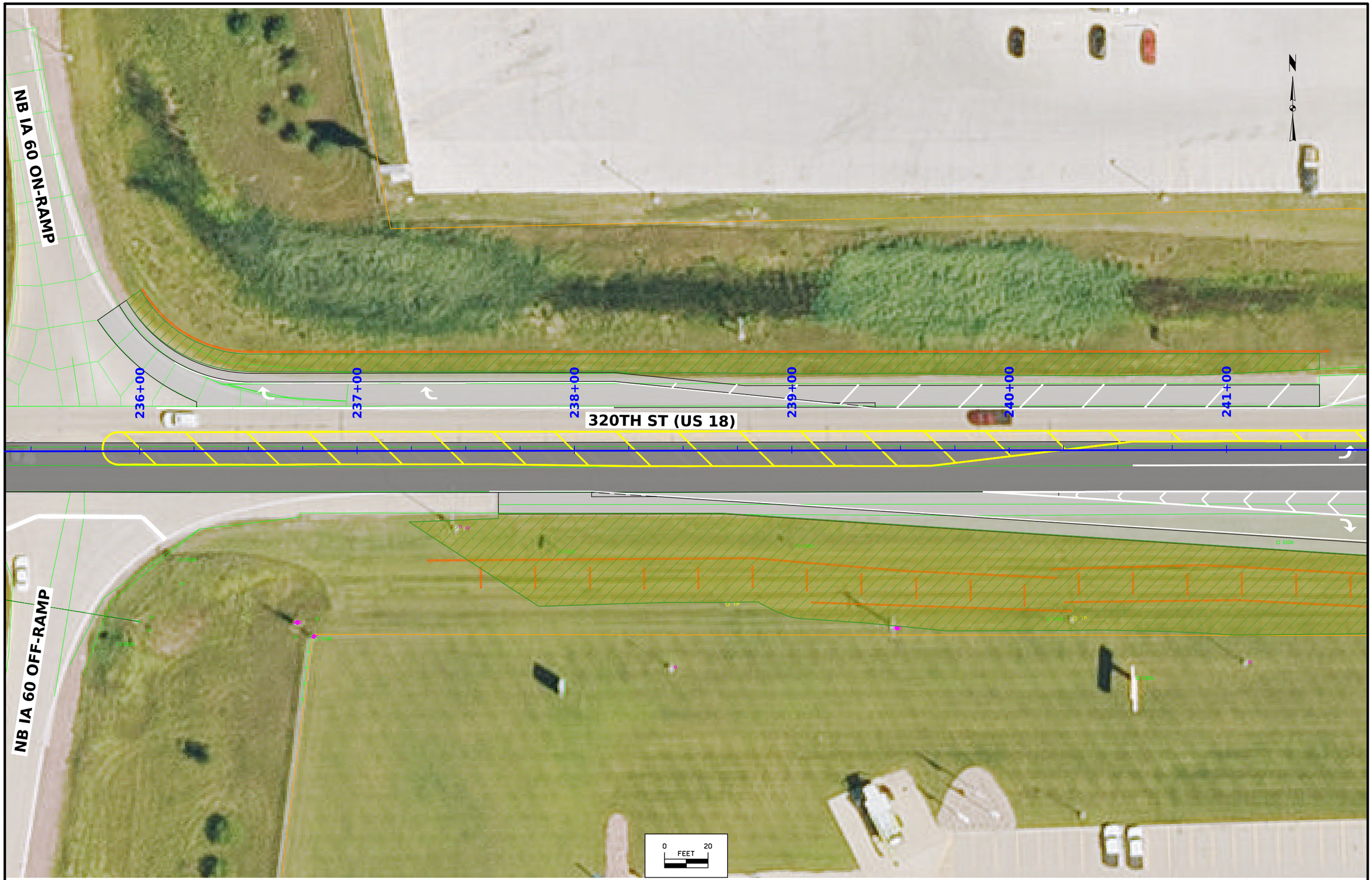
Transition Mat

Rock Features, Permanent

Rock Features, Temporary

EROSION CONTROL LEGEND AND SYMBOL INFORMATION SHEET

(COVERS SHEET SERIES R)



FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT / HR Green, Inc.	O'BRIEN COUNTY	PROJECT NUMBER NHSN-018-2(139)--2R-71	SHEET NUMBER R.2

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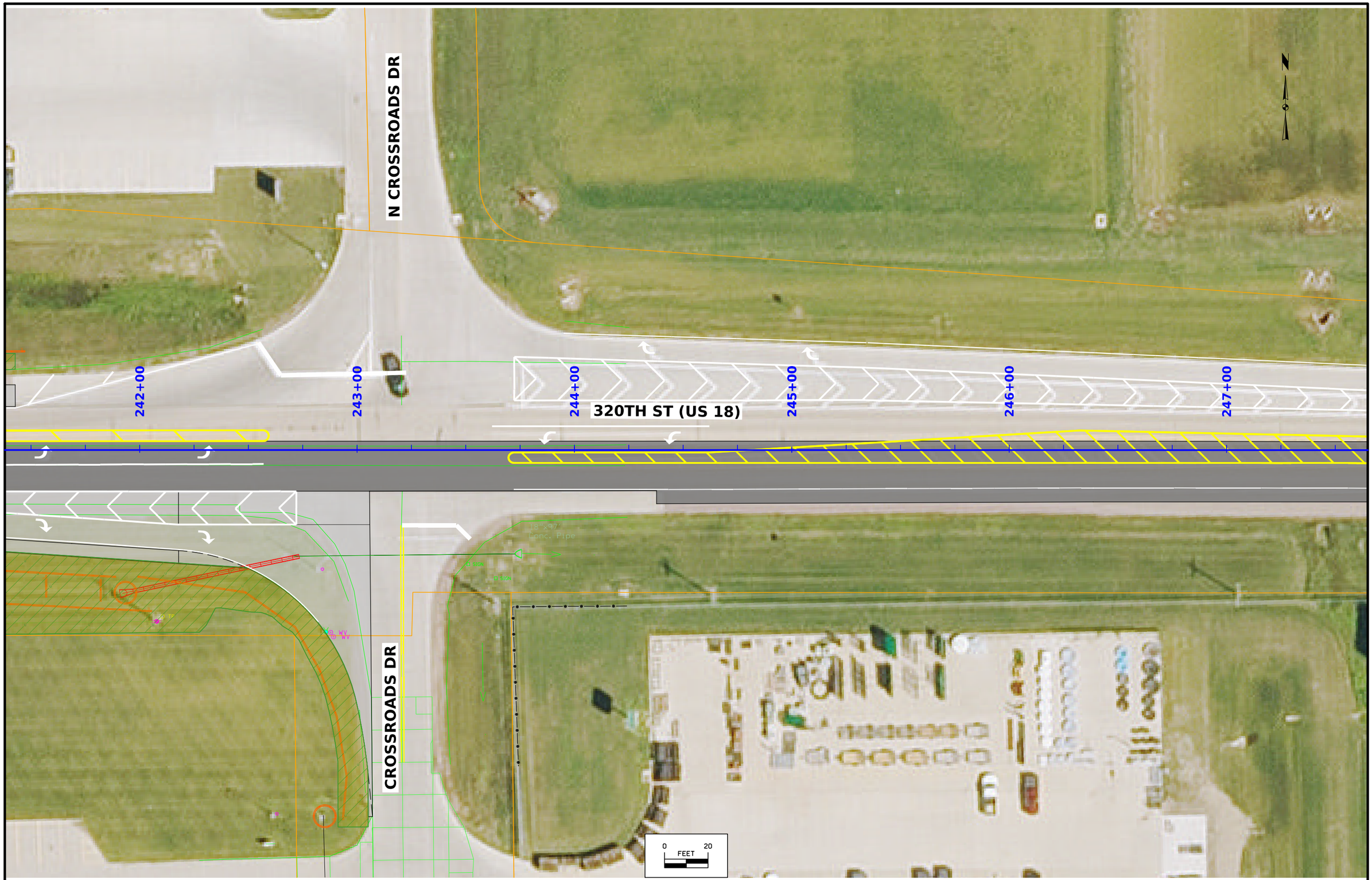

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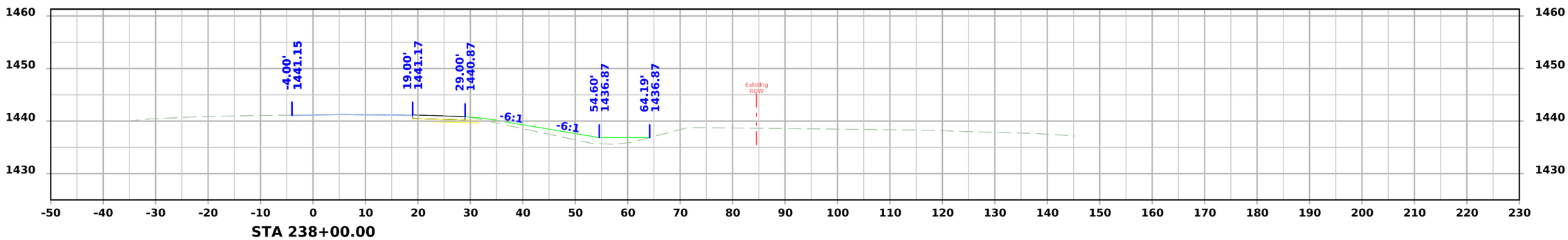
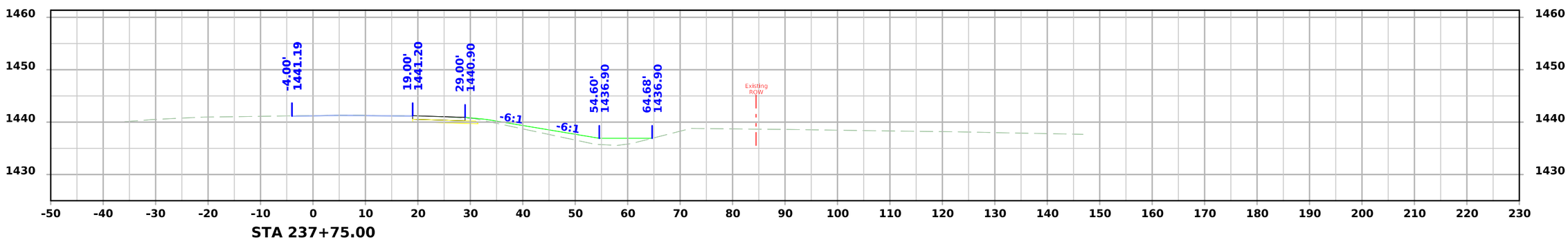
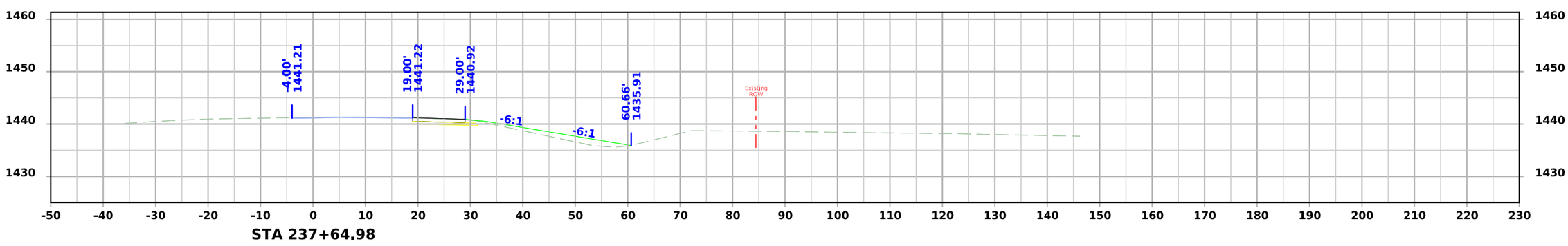
US 18







FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT / HR Green, Inc.	O'BRIEN COUNTY	PROJECT NUMBER NHSN-018-2(139)--2R-71	SHEET NUMBER W.1

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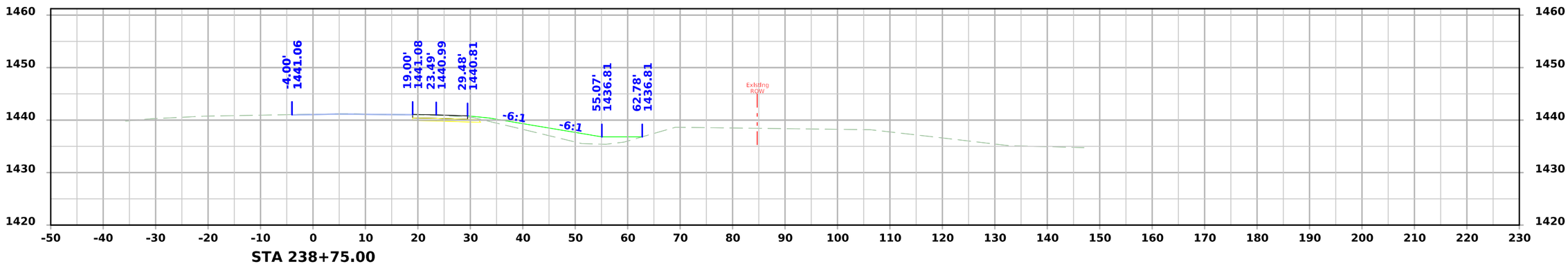
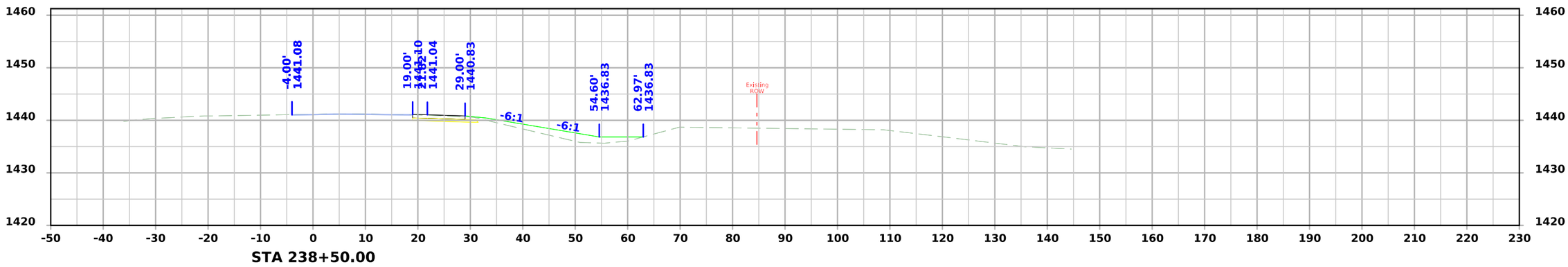
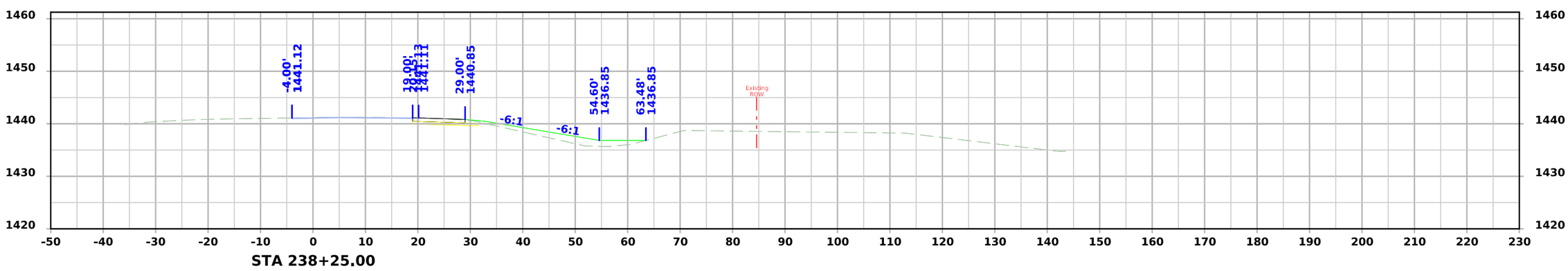
US 18

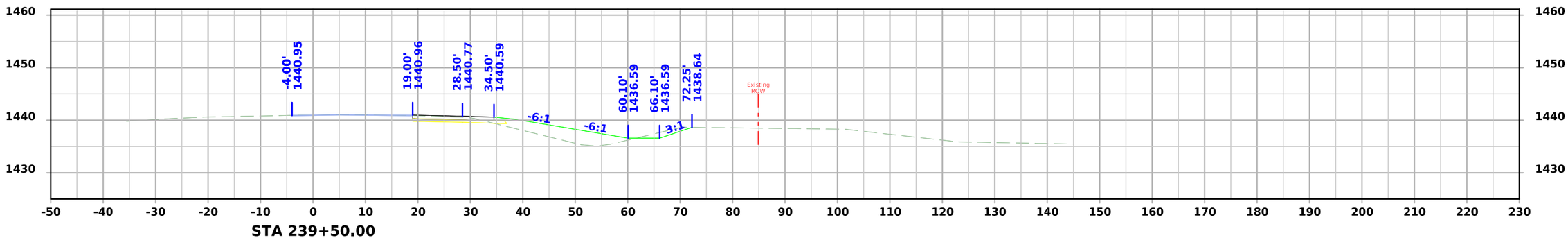


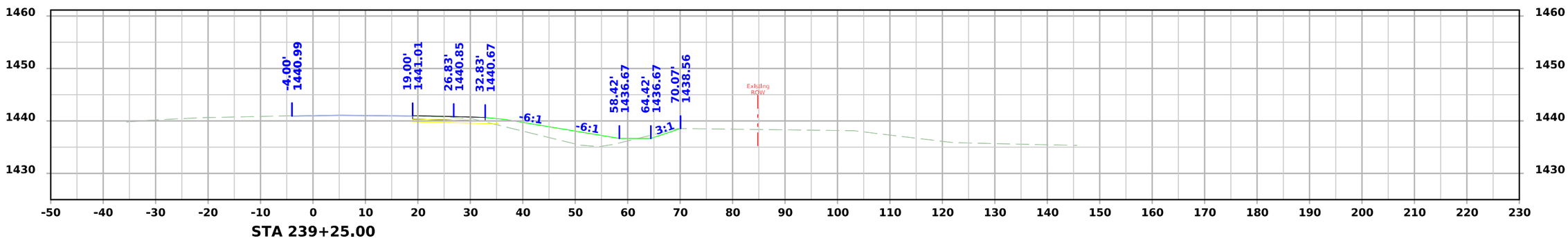


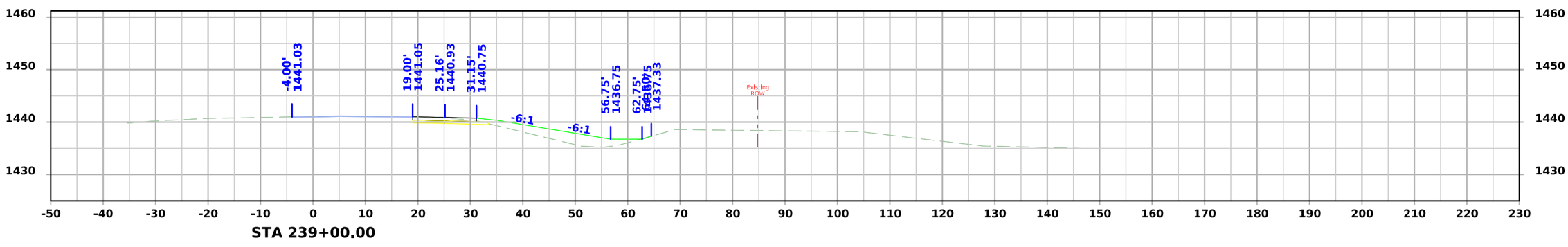


FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT / HR Green, Inc.	O'BRIEN COUNTY	PROJECT NUMBER NHSN-018-2(139)--2R-71	SHEET NUMBER W.2

US 18

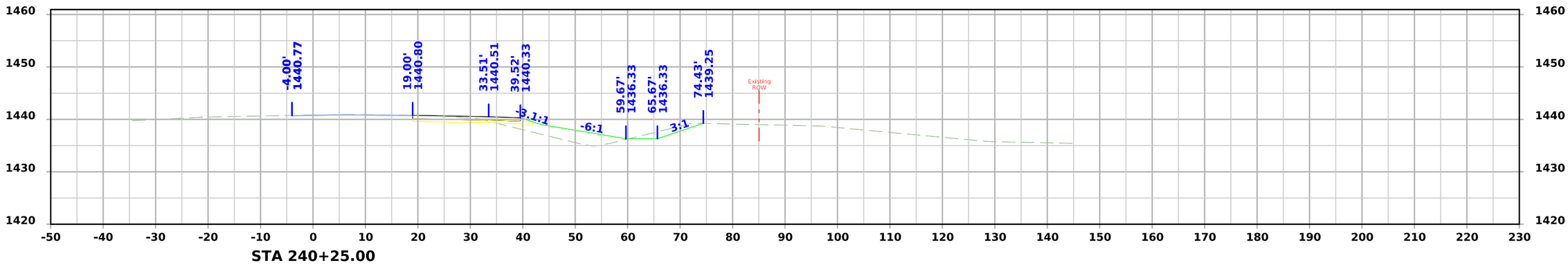






FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT / HR Green, Inc.	O'BRIEN COUNTY	PROJECT NUMBER NHSN-018-2(139)--2R-71	SHEET NUMBER W.3

US 18



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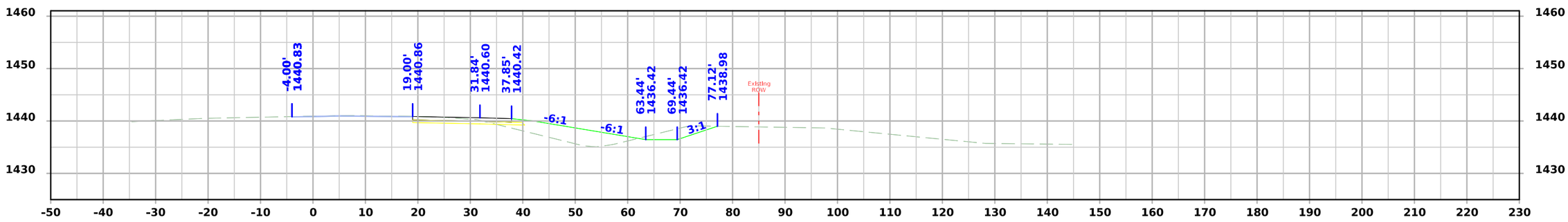

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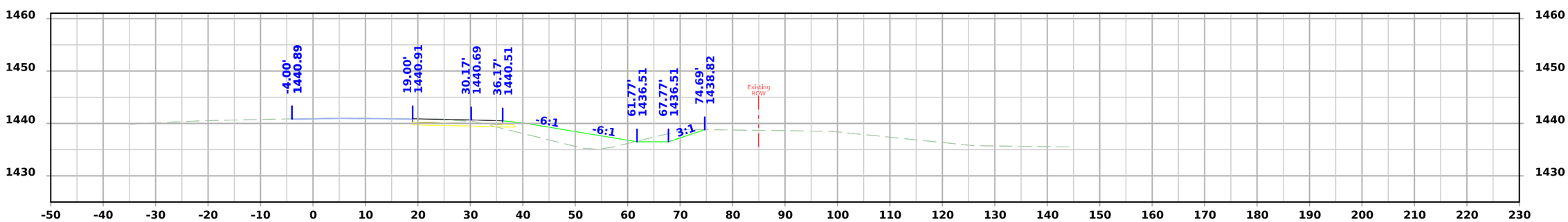

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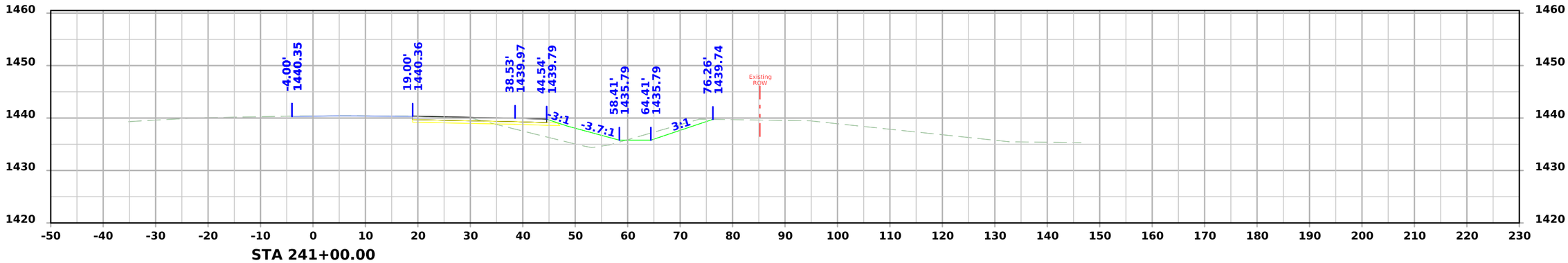
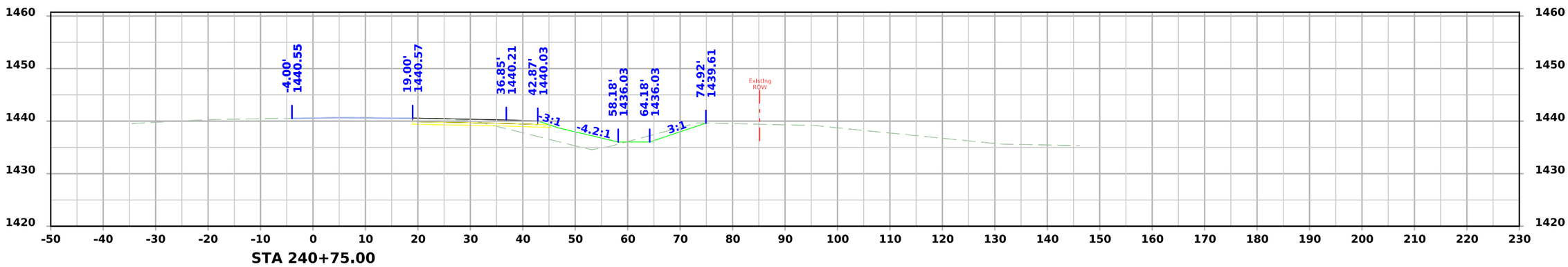
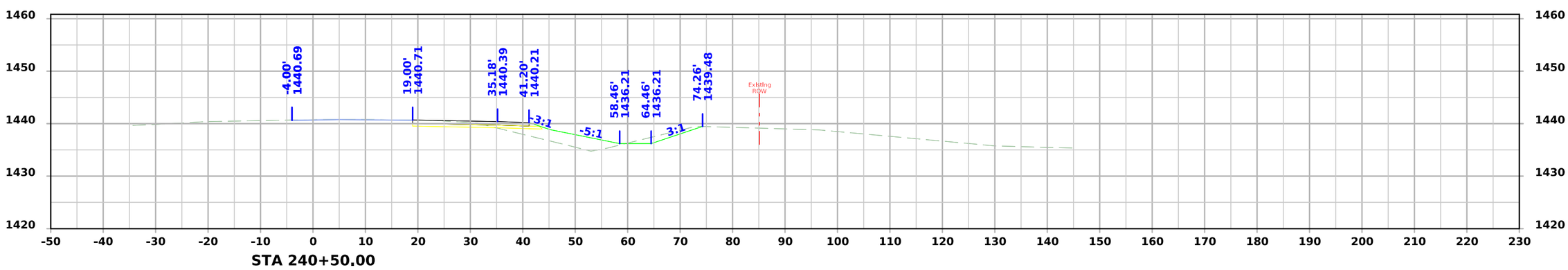
US 18

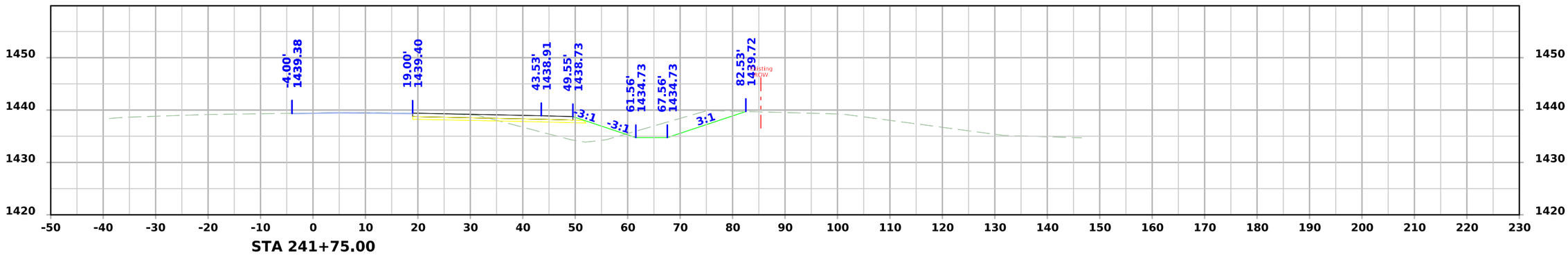






FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT / HR Green, Inc.	O'BRIEN COUNTY	PROJECT NUMBER NHSN-018-2(139)--2R-71	SHEET NUMBER W.5

US 18



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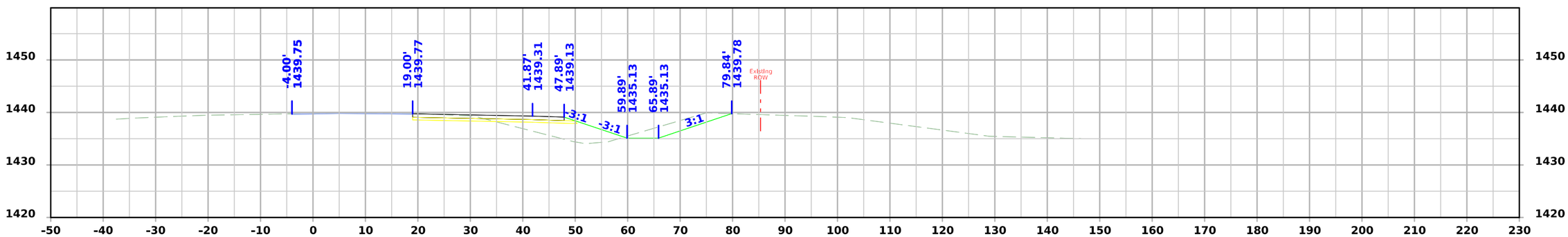

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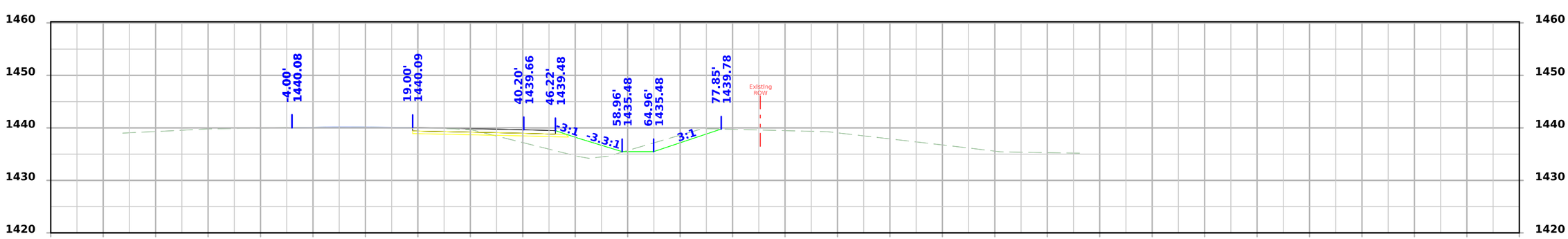
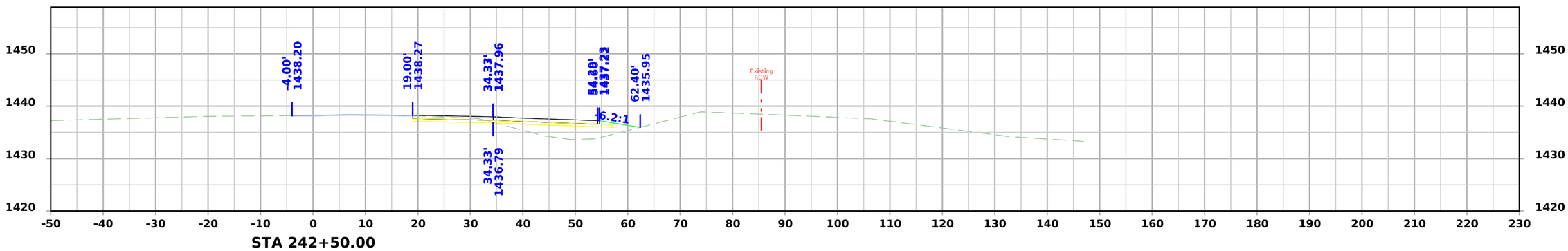


STA 241+25.00

FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT / HR Green, Inc.	O'BRIEN COUNTY	PROJECT NUMBER NHSN-018-2(139)--2R-71	SHEET NUMBER W.6

US 18



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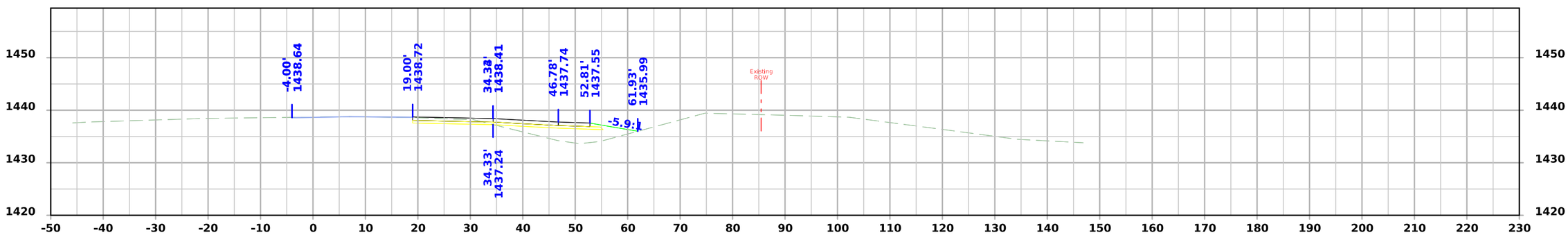

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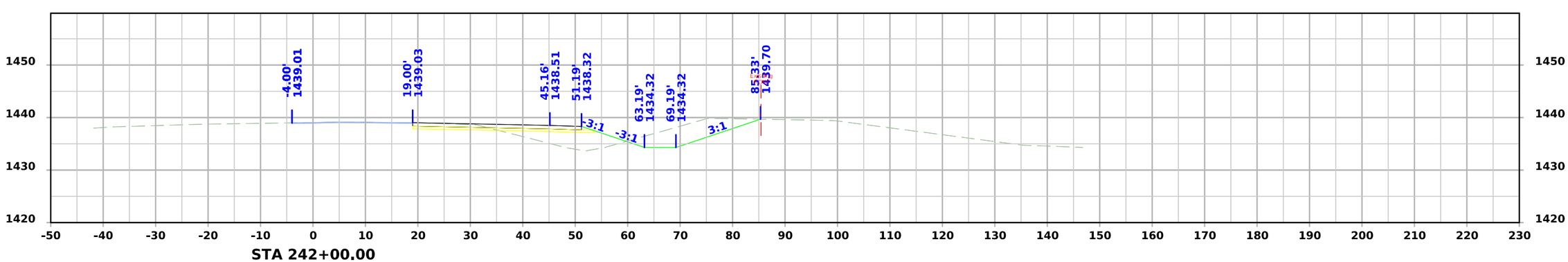
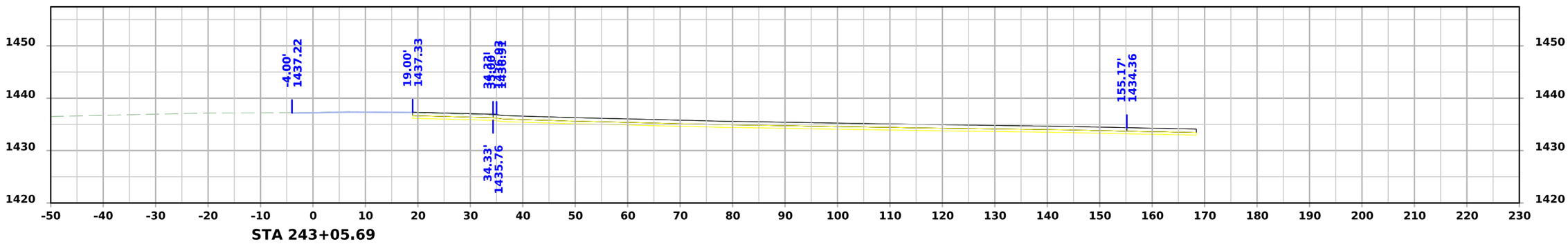
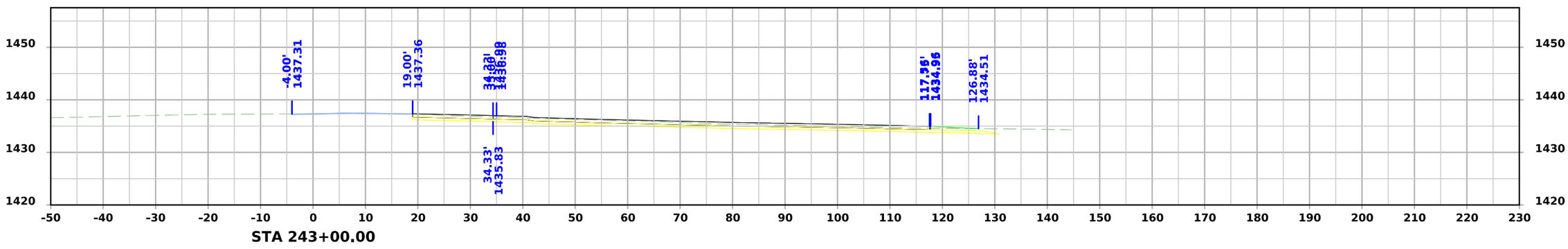


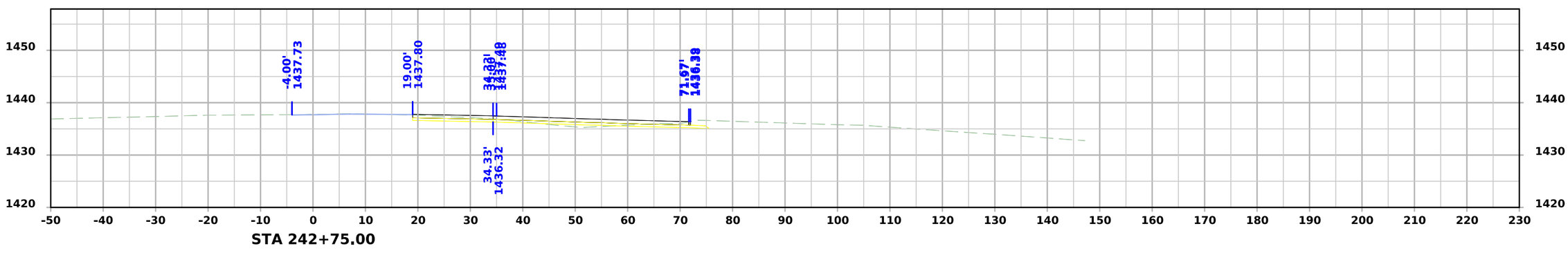
STA 242+00.00

FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT / HR Green, Inc.	O'BRIEN COUNTY	PROJECT NUMBER NHSN-018-2(139)--2R-71	SHEET NUMBER W.7

US 18







FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT / HR Green, Inc.	O'BRIEN COUNTY	PROJECT NUMBER NHSN-018-2(139)--2R-71	SHEET NUMBER W.8