

PLOTTED/REVISED: 3-SEP-2019

PLOT NAME: OTE_1901176_1.sh
PATH & FILENAME: Projects\DM_1901176\Signing\OT\STATE_1901176_1.tbl.dgn

MINNESOTA DEPARTMENT OF TRANSPORTATION

CONSTRUCTION PLAN FOR SIGNING

LOCATED ON TH 13 FROM 0.28 MILE WEST OF CO. RD. 5 TO 0.72 MILE EAST OF TH 77.

STATE PROJ. NO. 1901-176
 GROSS LENGTH..... FEET..... MILES
 BRIDGES-LENGTH..... FEET..... MILES
 EXCEPTIONS-LENGTH..... FEET..... MILES
 NET LENGTH..... FEET..... MILES
 REF. POINT 94+00.500 TO REF. POINT 102+00.652

REF. POINTS ARE BASED ON NB ROADWAY

FED. PROJ. NO. STATE FUNDS

GOVERNING SPECIFICATIONS

THE 2018 EDITION OF THE MINNESOTA DEPARTMENT OF TRANSPORTATION 'STANDARD SPECIFICATIONS FOR CONSTRUCTION' SHALL GOVERN.

ALL TRAFFIC CONTROL DEVICES AND SIGNING SHALL CONFORM AND BE PLACED IN ACCORDANCE WITH THE 'MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES' (MN MUTCD) AND PART VI, 'FIELD MANUAL' FOR TEMPORARY TRAFFIC CONTROL DEVICES.

INDEX

1	TITLE SHEET
2	ESTIMATED QUANTITIES
3-7	TABULATIONS
8-13	STANDARD PLANS
14-37	UTILITIES
38-60	INPLACE SIGNING
61-83	PERMANENT SIGNING
84-99	PANEL LAYOUTS
100-105	DETAILS
106	CROSS SECTION

THIS PLAN CONTAINS 106 SHEETS

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

PRINT NAME: S. MCBURNEY LICENSE #19579

DATE: 8/3/2019 SIGNATURE: *S. MCBURNEY*

DESIGN SQUAD: C. YANG

RECOMMENDED FOR APPROVAL *[Signature]* 9/4/2019 DISTRICT TRANSPORTATION ENGINEER

RECOMMENDED FOR APPROVAL *[Signature]* 9/4/2019 DISTRICT TRAFFIC ENGINEER

RECOMMENDED FOR APPROVAL STATE PRE-LETTING ENGINEER 20

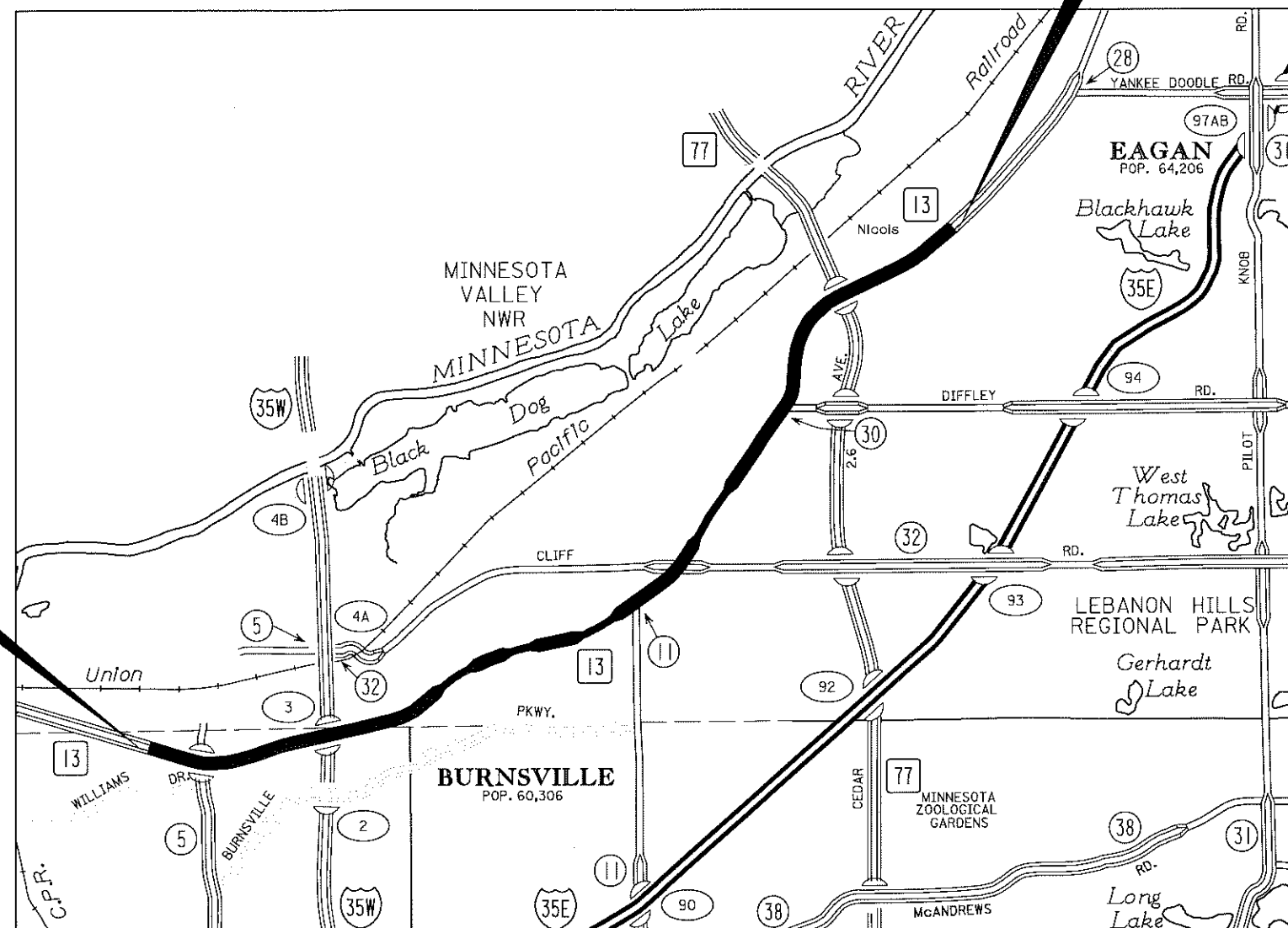
OFFICE OF LAND MANAGEMENT APPROVAL DIRECTOR, LAND MANAGEMENT 20

APPROVED STATE DESIGN ENGINEER 20

I HEREBY CERTIFY THAT THE FINAL FIELD REVISIONS, IF ANY, WERE PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

PRINT NAME: LICENSE #

DATE: SIGNATURE:



TH 13 NB STA 675+00.00
BEGIN SP 1901-176 (TH 13)

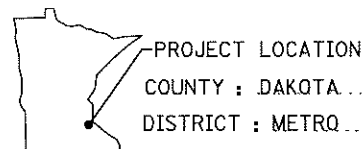
END SP 1901-176 (TH 13)
TH 13 NB STA 1014+00.00

SCALES

PLAN	100'
PROFILE	HORIZ. 2640'
INDEX MAP	VERT.
GENERAL LAYOUT	

DESIGN DESIGNATION

Design ESALS	=	
ADT (Current Year)	=	Design Speed MPH
ADT (Future Year)	=	Based on Sight Distance
DHV (Design Hr. Vol.)	=	Height of eye Height of object
D (Directional Distr.)	=	% Design Speed not achieved at:
T (Heavy Commercial)	=	STA. TO STA. MPH
		STA. TO STA. MPH



FOR PLANS AND UTILITIES SYMBOLS SEE TECHNICAL MANUAL
STATE PROJ. NO. CHARGE IDENTIFIER

PLAN REVISIONS		
DATE	SHEET NO.	APPROVED BY

STATEMENT OF ESTIMATED QUANTITIES					
TAB	SHEET NO	ITEM NO	ITEM	UNIT	TOTAL ESTIMATED QUANTITIES
		2011.601	AS BUILT	LUMP SUM	1
		2021.501	MOBILIZATION	LUMP SUM	1
		2104.502	REMOVE DELINEATOR	EACH	51
		2105.502	REMOVE DELINEATOR / MARKER PANEL	EACH	8
		2104.502	REMOVE MARKER	EACH	23
		2104.502	REMOVE REFERENCE LOCATION SIGN	EACH	8
A	3	2104.502	REMOVE SIGN TYPE A	EACH	1
		2104.502	REMOVE SIGN TYPE C	EACH	251
		2104.502	REMOVE SIGN TYPE D	EACH	66
		2104.502	REMOVE SIGN PANEL TYPE C	EACH	35
		2104.502	REMOVE SIGN PANEL TYPE D	EACH	9
I	7	2104.502	SALVAGE SIGN PANEL TYPE SPECIAL	EACH	1
D	3	2104.502	SALVAGE SIGN TYPE C	EACH	38
F	5	2104.502	SALVAGE SIGN TYPE D	EACH	1
		2563.601	TRAFFIC CONTROL	LUMP SUM	1
I	7	2564.502	INSTALL SIGN PANEL TYPE SPECIAL	EACH	1
D	3	2564.502	INSTALL SIGN TYPE C	EACH	38
F	5	2564.502	INSTALL SIGN TYPE D	EACH	1
J	7	2564.502	DELINEATOR TYPE X4-6	EACH	59
K	7	2564.502	REFERENCE LOCATION SIGN	EACH	11
L	7	2564.502	OBJECT MARKER TYPE X4-2	EACH	50
L	7	2564.502	OBJECT MARKER TYPE X4-4	EACH	10
B	3	2564.508	STRUCT STEEL-POSTS FOR TYPE A SIGNS (P)	POUND	1444
B	3	2564.518	SIGN PANELS TYPE A (P)	SQ FT	117
E	4 & 5	2564.518	SIGN PANELS TYPE C	SQ FT	2103
G	6	2564.518	SIGN PANELS TYPE D	SQ FT	2300
C	3	2564.518	SIGN PANEL OVERLAY TYPE A (P)	SQ FT	576
H	7	2564.518	SIGN PANEL OVERLAY TYPE OH (P)	SQ FT	1445

(P) DENOTES PLAN QUANTITY

ESTIMATED QUANTITIES

DRAWN BY: CCY

CHECKED BY: SRM

CERTIFIED BY

Steven M. Dunbar
 LICENSED PROFESSIONAL ENGINEER

LIC. NO. 19579

DATE 9/25/2019

STATE PROJ. NO. 1901-176 (TH 13) SHEET NO. 2 OF 106 SHEETS

PLOTTED/REVISED: 25-SEP-2019

REMOVE SIGN TYPE A							A		
SIGN NO	QTY	LOCATION	PANEL SIZE		POSTS				
			EXTRUDED TYPE	FLAT SHEET	SIZE		L1	L2	
					BREAK-AWAY	NON BREAK-AWAY			FEET
EACH	INCH	W	H	FEET	FEET	FEET			
A MN13-003	1	935+70 NB	156 x 108	x	W 6 x 20	x	19.0	19.0	
TOTAL		1							

GENERAL NOTE:
1. SIZES ARE APPROXIMATE.

SIGN PANEL OVERLAY TYPE A			C	
SIGN NO	LOCATION	OVERLAY		AREA
		INCH		SQ FT
A MN13-002	735+45 NB	216 x 108	162.00	
A MN13-004	973+80 SB	198 x 108	148.50	
A MN13-005	977+95 NB	198 x 108	148.50	
A MN13-006	1005+50 SB	156 x 108	117.00	
TOTAL			576.00	

GENERAL NOTE:
1. SEE PANEL LAYOUTS.

SIGN TYPE A						B
SIGN NO	LOCATION	PANEL		POST		TOTAL WEIGHT STRUCTURAL STEEL POUND
		SIZE	AREA	SIZE	NO. OF POSTS	
A MN13-007	943+00 NB	156 x 108	117.00	W6X20	2	1444.00
TOTAL		117.00	117.00			1444.00

GENERAL NOTE:
1. SEE PANEL LAYOUTS.

SALVAGE AND INSTALL SIGN TYPE C								D	
SIGN NO	SIGNS QTY	PANEL LEGEND	PANEL		MTG HT (1)	POSTS/MOUNTING			
			SIZE	FEET		NUMBER OF POSTS	POST TYPE	RISER POST SIZE	SURFACE TYPE
								INCHES	
C-201	2	EXIT 25 MPH	36 x 48	7	1	ST	2-1/2	SOIL	
C-202	2	ADOPT A HIGHWAY FAMILY & FRIENDS OF JONATHAN OSHAUGHMESSY SINCE 2017	60 x 36	7	2	ST	2-1/2	SOIL	
C-203	2	ADOPT A HIGHWAY DAKOTA COUNTY/SENTENCING TO SERVICE/CREW & G.S.S.C	60 x 36	7	2	ST	2-1/2	SOIL	
C-204	1	LEFT TURN ONLY OR LEFT TURN ONLY	36 x 30	7	1	ST	2	SOIL	
C-205	1	DO NOT ENTER	30 x 30	7	1	ST	2	SOIL	
C-206	1	ONE WAY RT	36 x 12	7	1	ST	2-1/2	CONCRETE	
C-207	2	LEFT TURN ONLY OR LEFT TURN ONLY	36 x 30	7	1	ST	2-1/2	CONCRETE	
C-208	2	DO NOT ENTER	30 x 30	7	1	ST	2-1/2	CONCRETE	
C-209	3	SPEED LIMIT 55	30 x 36	7	1	ST	2	SOIL	
C-210	5	YIELD	48 x 48 x 48	7	1	ST	2-1/2	SOIL	
C-211	2	ADOPT A HIGHWAY JIMMY BERGGREN & FRIENDS SINCE 2017	60 x 36	7	2	ST	2-1/2	SOIL	
C-212	1	END	42 x 12	7	1	ST	2-1/2	SOIL	
C-213	2	SHOULDER AUTHORIZED BUSES ONLY	42 x 48	7	1	ST	2	SOIL	
C-214	2	WATCH FOR BUSES ON SHOULDER	30 x 36	7	1	ST	2	SOIL	
C-215	5	SHOULDER AUTHORIZED BUSES ONLY	42 x 48	7	1	ST	2-1/2	SOIL	
C-216	1	KEEP RIGHT OF MEDIAN	24 x 30	7	1	ST	2	SOIL	
C-217	1	BEGIN	42 x 12	7	1	ST	2-1/2	SOIL	
C-218	2	SHOULDER AUTHORIZED BUSES ONLY	42 x 48	7	1	ST	2-1/2	SOIL	
C-219	2	ADOPT A HIGHWAY AMY SCHNEIDER, KOTA, TOMMY, DAVID & JOSI SINCE 2017	60 x 36	7	2	ST	2-1/2	SOIL	
C-220	1	SIGNAL AHEAD	36 x 36	7	1	ST	2	SOIL	
C-221	1	LEFT TURN YIELD ON FLASHING YELLOW ARROW	36 x 42	7	1	ST	2-1/2	CONCRETE	
C-222	1	KEEP RIGHT OF MEDIAN	24 x 30	7	1	ST	2-1/2	SOIL	
C-223	1	NO U TURN	24 x 24	7	1	ST	2-1/2	SOIL	
TOTAL		38							

SPECIFIC NOTES:
(1) MOUNTING HEIGHT IS MINIMUM (WITH A +6 INCH TOLERANCE).

- GENERAL NOTES:
- FOR 2 INCH RISER POST IN SOIL USE NON RECOVERABLE FIN BASE PLACED PER MANUFACTURER'S SPECIFICATIONS. USE A 12 GUAGE, 2" X 2" PRE-PUNCHED, GALVANIZED STEEL, SQUARE TUBE RISER POST. INSTALL 3/8" STAINLESS STEEL BOLT THROUGH THE 5TH HOLE DOWN FROM THE TOP OF THE BASE. RISER POST SHALL REST ON THE BOLT.
 - FOR 2-1/2" RISER POST ON CONCRETE USE RECOVERABLE SLIP BASE PLACED PER MANUFACTURER'S SPECIFICATIONS. USE A 10 GUAGE, 2-1/2" X 2-1/2" PRE-PUNCHED, GALVANIZED STEEL, SQUARE TUBE RISER POST WITH A 10 GUAGE 2-3/16" X 2-3/16" X 8' PRE-PUNCHED, GALVANIZED STEEL, SQUARE TUBE POST INTERNAL INSERT.
 - FOR 2-1/2" RISER POST IN SOIL USE RECOVERABLE SLIP BASE PLACED PER MANUFACTURER'S SPECIFICATIONS USING A 10 GUAGE, 2-1/2" X 2-1/2" PRE-PUNCHED, GALVANIZED STEEL, SQUARE TUBE RISER POST WITH A 10 GUAGE 2-3/16" X 2-3/16" X 8' PRE-PUNCHED, GALVANIZED STEEL, SQUARE TUBE POST INTERNAL INSERT.
 - ALUMINUM STRINGERS SHALL BE USED FOR SIGNS WIDER THAN 24". PLACE PER MANUFACTURER'S SPECIFICATIONS.

PLOT NAME: OTE_1901176_tab_3
PATH & FILENAME: Projects\DM_ROS\03\1901176\Signing\OT\NOTE_1901176_tab.dgn

TABULATIONS

DRAWN BY: CCY

CHECKED BY: SRM

CERTIFIED BY

Steven M. ...
LICENSED PROFESSIONAL ENGINEER

LIC. NO. 19579

DATE 9/25/2019

STATE PROJ. NO. 1901-176 (TH 13)

SHEET NO. 3

OF 106 SHEETS

PLOTTED/REVISED: 25-SEP-2019

I/PLOT NAME: OTE_1901176_tab-4
PATH & FILENAME: Projects\DM_ROS\03\1901176\Signing\OT\NOTE_1901176_tab.dgn

SIGN PANELS TYPE C											E
SIGN NO	SIGNS QTY EACH	CODE NO	PANEL LEGEND	PANEL		MTG HT (1) FEET	POSTS/MOUNTING				TOTAL AREA SQ FT
				SIZE	AREA		NUMBER OF POSTS	POST TYPE	RISER POST SIZE	SURFACE TYPE	
				INCH	SQ FT				INCHES		
C-1	5	W3-3	SIGNAL AHEAD	36 x 36	9.00	7	1	ST	2	SOIL	45.00
C-2	9	W4-1	MERGING TRAFFIC FROM RIGHT	36 x 36	9.00	7					81.00 (2)
C-3	12	M3-3A	SOUTH	24 x 12	2.00	7	1	ST	2	SOIL	24.00
		M1-5A	MN 13	24 x 24	4.00						48.00
C-4	11	R9-3	NO PEDESTRIAN CROSSING	18 x 18	2.25	7					24.75 (3)
C-5	20	R9-7	KEEP RIGHT OF MEDIAN	24 x 30	5.00	7	1	ST	2-1/2	CONCRETE	100.00
C-6	9	R10-X12	LEFT TURN YIELD ON FLASHING YELLOW ARROW	42 x 48	14.00						126.00 (4)
C-7	16	R5-1	DO NOT ENTER	36 x 36	9.00	7	1	ST	2-1/2	CONCRETE	144.00
C-8	1	R5-1A	WRONG WAY	42 x 30	8.75	7	1	ST	2	SOIL	8.75
C-9	28	R3-7R	RIGHT LANE MUST TURN RIGHT	36 x 36	9.00	7	1	ST	2	SOIL	252.00
C-10	6	R3-7L	LEFT LANE MUST TURN LEFT	36 x 36	9.00	7	1	ST	2	SOIL	54.00
C-11	1	R3-8ACA	LT ONLY OR THRU ONLY OR RIGHT ONLY	54 x 30	11.25	7	2	ST	2-1/2	SOIL	11.25
C-12	1	R3-8DA	LT, STRAIGHT OR RT ONLY	36 x 30	7.50	7					7.50 (5)
C-13	1	R5-1A	WRONG WAY	42 x 30	8.75	7					8.75 (5)
C-14	1	R5-1	DO NOT ENTER	36 x 36	9.00	7					9.00 (5)
C-15	12	R5-1	DO NOT ENTER	36 x 36	9.00	7	1	ST	2	SOIL	108.00
C-16	2	R6-1R	ONEWAY (RT)	36 x 12	3.00	7	1	ST	2-1/2	CONCRETE	6.00
C-17	3	R6-1L	ONEWAY (LT)	36 x 12	3.00						9.00
		R9-3	NO PEDESTRIAN CROSSING	18 x 18	2.25						6.75
C-18	14	R6-1R	ONEWAY (RT)	54 x 18	6.75						94.50 (4)
C-19	12	R6-1L	ONEWAY (LT)	54 x 18	6.75						81.00 (4)
C-20	3	R4-7	KEEP RIGHT OF MEDIAN	24 x 30	5.00	7					15.00 (2)
C-21	2	R5-1	DO NOT ENTER	36 x 36	9.00	7					18.00 (2)
C-22	1	M3-3A	SOUTH	24 x 12	2.00	7	1	ST	2-1/2	CONCRETE	2.00
		M1-5A	MN 13	24 x 24	4.00						4.00
		M6-1A	LT ARROW	21 x 15	2.19						2.19
C-23	1	W13-2	EXIT 20 MPH	24 x 30	5.00	7	1	ST	2-1/2	CONCRETE	5.00
C-24	1	R3-7L	LEFT LANE MUST TURN LEFT	36 x 36	9.00	7	1	ST	2-1/2	CONCRETE	9.00
		R3-7L	LEFT LANE MUST TURN LEFT	36 x 36	9.00						9.00 (6)
C-25	1	M3-1A	NORTH	24 x 12	2.00	7	1	ST	2-1/2	CONCRETE	2.00
		M1-5A	MN 13	24 x 24	4.00						4.00
		M6-1A	LT ARROW	21 x 15	2.19						2.19
C-26	9	M3-1A	NORTH	24 x 12	2.00	7	1	ST	2	SOIL	18.00
		M1-5A	MN 13	24 x 24	4.00						36.00
C-27	1	R3-33	RIGHT LANE MUST EXIT	78 x 36	19.50	7	2	ST	2-1/2	CONCRETE	19.50
C-28	9	R2-1	SPEED LIMIT 55	30 x 36	7.50	7	1	ST	2	SOIL	67.50
C-29	1	W13-3	RAMP 40 MPH	24 x 30	5.00	7	1	ST	2	SOIL	5.00
C-30	8	R16-X4	EMERGENCY STOPPING ONLY	36 x 36	9.00	7	1	ST	2	SOIL	72.00
C-31	9	R5-10D	PEDS BIKES PROHIBITED	18 x 24	3.00	7	1	ST	2	SOIL	27.00
C-32	6	R10-X6	1 CAR ON GREEN	24 x 18	3.00	7	1	ST	2	SOIL	18.00
C-33	2	W3-8	RAMP METERED WHEN FLASHING	36 x 36	9.00	7					18.00 (3)
C-34	2	R10-X7	FORM 2 LANES WHEN METERED	24 x 30	5.00	7	1	ST	2	SOIL	10.00
C-35	UNUSED										
C-36	4	R3-8AB	LT ONLY OR LT ONLY	36 x 30	7.50	7	1	ST	2-1/2	CONCRETE	30.00
C-37	1	R3-8AB	LT ONLY OR LT ONLY	36 x 30	7.50	7					7.50 (2)
C-38	5	R1-2	YIELD	48 x 48 x 48	6.93	7	1	ST	2-1/2	SOIL	34.65
C-39	1	R3-8AB	LT ONLY OR LT ONLY	36 x 30	7.50	7	1	ST	2	SOIL	7.50
C-40	7	R6-1R	ONEWAY (RT)	36 x 12	3.00	7	1	ST	2-1/2	SOIL	21.00
		R1-1	STOP	36 x 36	9.00						63.00
C-41	1	R5-1	DO NOT ENTER	36 x 36	9.00	7					9.00 (2)
C-42	2	R6-1R	ONEWAY (RT)	54 x 18	6.75	7	2	ST	2-1/2	SOIL	13.50
C-43	2	R6-1R	ONEWAY (RT)	54 x 18	6.75	7	2	ST	2-1/2	SOIL	13.50
		R6-1R	ONEWAY (RT)	54 x 18	6.75						13.50 (6)
C-44	10	W14-X9	WATCH FOR BUSES ON SHOULDER	30 x 36	7.50	7	1	ST	2	SOIL	75.00
C-45	1	R6-1R	ONEWAY (RT)	36 x 12	3.00	7					3.00
		R1-1	STOP	36 x 36	9.00						9.00
C-46	2	W14-X9	WATCH FOR BUSES ON SHOULDER	30 x 36	7.50	7					15.00 (2)
C-47	1	M3-1A	NORTH	24 x 12	2.00	7					2.00
		M1-5A	MN 13	24 x 24	4.00						4.00 (2)
C-48	6	R3-7L	LEFT LANE MUST TURN LEFT	36 x 36	9.00	7	1	ST	2-1/2	CONCRETE	54.00
C-49	1	R6-3	DIVIDED HIGHWAY	30 x 24	5.00	7					5.00 (2)
C-50	1	R3-7L	LEFT LANE MUST TURN LEFT	36 x 36	9.00	7					9.00 (2)
C-51	1	R4-X7	SHOULDER AUTHORIZED BUSES ONLY	42 x 48	14.00	7					14.00 (2)
SUB TOTAL A											2015.78

SEE SHEET 5 FOR NOTES.

TABULATIONS

DRAWN BY: CCY

CHECKED BY: SRM

CERTIFIED BY

Steve McBurn
LICENSED PROFESSIONAL ENGINEER

LIC. NO. 19579

DATE 9/25/2019

STATE PROJ. NO. 1901-176 (TH 13)

SHEET NO. 4

OF 106 SHEETS

PLOTTED/REVISED: 25-SEP-2019

I/PLOT NAME: OTE_1901176.tab_5
PATH & FILENAME: Projects\DM_ROM\03\1901176\Signing\OT\NOTE_1901176.tab.dgn

SIGN PANELS TYPE C											E
SIGN NO	SIGNS QTY	CODE NO	PANEL LEGEND	PANEL		MTG HT (1)	POSTS/MOUNTING				TOTAL AREA
				SIZE	AREA		NUMBER OF POSTS	POST TYPE	RISER POST SIZE	SURFACE TYPE	
				INCH	SQ FT				INCHES		
C-52	1	R1-1	STOP	36 x 36	9.00	7	1	ST	2-1/2	SOIL	9.00
		R6-3	DIVIDED HIGHWAY	30 x 24	5.00						5.00
C-53	1	R9-7	KEEP RIGHT OF MEDIAN	24 x 30	5.00	7					5.00 (2)
C-54	2	R10-12	LEFT TURN YIELD ON GREEN	30 x 36	7.50						15.00 (4)
C-55	1	R4-X7P	END	42 x 12	3.50	7	1	ST	2-1/2	SOIL	3.50
		R4-X7	SHOULDER AUTHORIZED BUSES ONLY	42 x 48	14.00						14.00
C-56	2	W13-2	EXIT 25 MPH	24 x 30	5.00	7					10.00 (2)
C-57	1	R10-X13	LEFT TURN YIELD ON FLASHING YELLOW ARROW	36 x 42	10.50	7					10.50 (3)
C-58	1	R3-8BA	RT ONLY OR RT ONLY	36 x 30	7.50	7	1	ST	2	SOIL	7.50
C-59	1	R2-1	SPEED LIMIT 55	30 x 36	7.50	7					7.50 (2)
SUB TOTAL B										87.00	
SUB TOTAL A										2015.78	
TOTAL										2102.78	

SPECIFIC NOTES:

- (1) MOUNTING HEIGHT IS MINIMUM (WITH A +6 INCH TOLERANCE).
- (2) F & I PANEL TYPE C.
- (3) MOUNT ON SIGNAL POLE. SEE DETAILS.
- (4) MOUNT ON MAST ARM. SEE DETAILS.
- (5) MOUNT ON CONCRETE RAIL. SEE DETAILS.
- (6) MOUNT BACK TO BACK.

GENERAL NOTES:

- 1. FOR 2 INCH RISER POST IN SOIL USE NON RECOVERABLE FIN BASE PLACED PER MANUFACTURER'S SPECIFICATIONS. USE A 12 GAUGE, 2" X 2" PRE-PUNCHED, GALVANIZED STEEL, SQUARE TUBE RISER POST. INSTALL 3/8" STAINLESS STEEL BOLT THROUGH THE 5TH HOLE DOWN FROM THE TOP OF THE BASE. RISER POST SHALL REST ON THE BOLT.
- 2. FOR 2-1/2" RISER POST ON CONCRETE USE RECOVERABLE SLIP BASE PLACED PER MANUFACTURER'S SPECIFICATIONS. USE A 10 GAUGE, 2-1/2" X 2-1/2" PRE-PUNCHED, GALVANIZED STEEL, SQUARE TUBE RISER POST WITH A 10 GAUGE 2-3/16" X 2-3/16" X 8' PRE-PUNCHED, GALVANIZED STEEL, SQUARE TUBE POST INTERNAL INSERT.
- 3. FOR 2-1/2" RISER POST IN SOIL USE RECOVERABLE SLIP BASE PLACED PER MANUFACTURER'S SPECIFICATIONS USING A 10 GAUGE, 2-1/2" X 2-1/2" PRE-PUNCHED, GALVANIZED STEEL, SQUARE TUBE RISER POST WITH A 10 GAUGE 2-3/16" X 2-3/16" X 8' PRE-PUNCHED, GALVANIZED STEEL, SQUARE TUBE POST INTERNAL INSERT.
- 4. ALUMINUM STRINGERS SHALL BE USED FOR SIGNS WIDER THAN 24". PLACE PER MANUFACTURER'S SPECIFICATIONS.

SALVAGE AND INSTALL SIGN TYPE D											F
SIGN NO	SIGNS QTY	PANEL LEGEND	PANEL		MTG HT (1)	POSTS/MOUNTING				TOTAL AREA	
			SIZE	AREA		NUMBER OF POSTS	POST TYPE	RISER POST SIZE	SURFACE TYPE		
			INCH	SQ FT				INCHES			SQ FT
D-201	1	BURNSVILLE POP 60,306	78 x 24	13.00	7	2	ST	2	SOIL		
TOTAL										1	

SPECIFIC NOTES:

- (1) MOUNTING HEIGHT IS MINIMUM (WITH A +6 INCH TOLERANCE).

GENERAL NOTES:

- 1. FOR 2 INCH RISER POST IN SOIL USE NON RECOVERABLE FIN BASE PLACED PER MANUFACTURER'S SPECIFICATIONS. USE A 12 GAUGE, 2" X 2" PRE-PUNCHED, GALVANIZED STEEL, SQUARE TUBE RISER POST. INSTALL 3/8" STAINLESS STEEL BOLT THROUGH THE 5TH HOLE DOWN FROM THE TOP OF THE BASE. RISER POST SHALL REST ON THE BOLT.
- 2. ALUMINUM STRINGERS SHALL BE USED FOR SIGNS WIDER THAN 24". PLACE PER MANUFACTURER'S SPECIFICATIONS.

TABULATIONS

DRAWN BY: CCY

CHECKED BY: SRM

CERTIFIED BY

Steven M. Burns
LICENSED PROFESSIONAL ENGINEER

LIC. NO. 19579

DATE 9/25/2019

STATE PROJ. NO. 1901-176 (TH 13)

SHEET NO. 5

OF 106 SHEETS

PLOTTED/REVISED: 25-SEP-2019

I/PLOT NAME: OTE_1901176.tab_6
PATH & FILENAME: Projects\DM_R05\03\1901176\Sign\OT\NOTE_1901176.tab.dgn

SIGN PANELS TYPE D										G	
SIGN NO	SIGNS QTY EACH	PANEL LEGEND	PANEL		MTG HT (1) FEET	POSTS/MOUNTING				TOTAL AREA SQ FT	
			SIZE INCH	AREA SQ FT		NUMBER OF POSTS	POST TYPE	RISER POST SIZE INCHES	SURFACE TYPE		
D-1	1	COUNTY 5 45 DEG ARROW	102 x 66	46.75	7	3	ST	2-1/2	SOIL	46.75	(2)
D-2	1	UP ARROW NORTH MN 13 SOUTH MN 13 RT ARROW	78 x 78	42.25	7	2	ST	2-1/2	SOIL	42.25	(2)
D-3	1	LT ARROW FRONTAGE RD	150 x 24	25.00						25.00	(2)
D-4	1	SOUTH MN 13 RT ARROW	54 x 66	24.75						24.75	(2)
D-5	1	NORTH MN 13 LT ARROW	54 x 66	24.75						24.75	(2)
D-6	3	COUNTY 5 DBL ARROW	42 x 54	15.75						47.25	(2)
D-7	1	SOUTH MN 13 LT ARROW	54 x 66	24.75						24.75	(2)
D-8	1	FRONTAGE RD RT ARROW	150 x 24	25.00						25.00	(2)
D-9	1	SOUTH MN 13 UP ARROW	54 x 66	24.75						24.75	(2)
D-10	1	EXIT 60 DEG ARROW	72 x 60	30.00	7	2	ST	2-1/2	SOIL	30.00	(2)
D-11	4	EXIT 45 DEG ARROW	72 x 60	30.00						120.00	(3)
D-12	1	EAGAN POP 64,206	72 x 24	12.00	9	2	ST	2-1/2	SOIL	12.00	(4)
D-13	2	NICOLLET AVE DBL ARROW	120 x 48	40.00	7	3	ST	2-1/2	SOIL	80.00	(2)
D-14	9	MN 13 DBL ARROW	42 x 54	15.75						141.75	(2)
D-15	2	NICOLLET AVE	102 x 24	17.00						34.00	(2)
D-16	1	JCT I35W 3/4 MILE	72 x 66	33.00	7	2	ST	2-1/2	SOIL	33.00	(2)
D-17	2	PORTLAND AVE DBL ARROW	126 x 48	42.00	7	3	ST	2-1/2	SOIL	84.00	(2)
D-18	2	PORTLAND AVE	108 x 24	18.00						36.00	(2)
D-19	1	LT ARROW 12TH AVE PARKWOOD DR RT ARROW	150 x 54	56.25	7	4	ST	2-1/2	SOIL	56.25	(2)
D-20	1	LT ARROW 12TH AVE PARKWOOD DR RT ARROW	132 x 48	44.00						44.00	(2)
D-21	1	LT ARROW PARKWOOD DR 12TH AVE RT ARROW	150 x 54	56.25	7	4	ST	2-1/2	SOIL	56.25	(2)
D-22	1	LT ARROW PARKWOOD DR 12TH AVE RT ARROW	132 x 48	44.00						44.00	(2)
D-23	1	121ST ST E RT ARROW	102 x 48	34.00	7	3	ST	2-1/2	SOIL	34.00	(2)
D-24	1	LT ARROW W RIVER HILLS DR COUNTY 11 RT ARROW	132 x 78	71.50	7	3	ST	2-1/2	SOIL	71.50	(2)
D-25	1	LT ARROW W RIVER HILLS DR	162 x 24	27.00						27.00	(2)
D-26	1	COUNTY 11 RT ARROW	42 x 54	15.75						15.75	(2)
D-27	2	COUNTY 32 CLIFF RD DBL ARROW	84 x 78	45.50	7	2	ST	2-1/2	SOIL	91.00	(2)
D-28	1	LT ARROW COUNTY 11 W RIVER HILLS DR RT ARROW	132 x 78	71.50	7	3	ST	2-1/2	SOIL	71.50	(2)
D-29	1	COUNTY 11 LT ARROW	42 x 54	15.75						15.75	(2)
D-30	1	W RIVER HILLS DR RT ARROW	162 x 24	27.00						27.00	(2)
D-31	2	CLIFF RD	66 x 24	11.00						22.00	(2)
D-32	2	COUNTY 32 DBL ARROW	42 x 54	15.75						31.50	(2)
D-33	1	LT ARROW 117TH ST HORIZON DR RT ARROW	138 x 54	51.75	7	3	ST	2-1/2	SOIL	51.75	(2)
D-34	1	LT ARROW HORIZON DR 117TH ST RT ARROW	138 x 54	51.75	7	3	ST	2-1/2	SOIL	51.75	(2)
D-35	2	GALTIER DR RT ARROW	102 x 48	34.00	7	3	ST	2-1/2	SOIL	68.00	(2)
D-36	1	115TH ST E RT ARROW	102 x 48	34.00	7	3	ST	2-1/2	SOIL	34.00	(2)
D-37	2	RIVER HILLS DR DBL ARROW	138 x 48	46.00	7	3	ST	2-1/2	SOIL	92.00	(2)
D-38	2	RIVER HILLS DR	120 x 24	20.00						40.00	(2)
D-39	1	LT ARROW CEDARBRIDGE AVE COUNTY 30 DIFFLEY RD RT ARROW	180 x 78	97.50	7	4	ST	2-1/2	SOIL	97.50	(2)
D-40	1	LT ARROW CEDARBRIDGE AVE COUNTY 30 DIFFLEY RD RT ARROW	156 x 54	58.50						58.50	(2)
D-41	1	LT ARROW COUNTY 30 DIFFLEY RD CEDARBRIDGE AVE RT ARROW	180 x 78	97.50	7	4	ST	2-1/2	SOIL	97.50	(2)
D-42	1	LT ARROW COUNTY 30 DIFFLEY RD CEDARBRIDGE AVE RT ARROW	156 x 54	58.50						58.50	(2)
D-43	3	EXIT 60 DEG ARROW	72 x 60	30.00						90.00	(3)
D-44	1	SILVER BELL RD DBL ARROW	138 x 48	46.00	7	3	ST	2-1/2	SOIL	46.00	(2)
D-45	1	BUSINESS DISTRICT RT ARROW	42 x 36	10.50	7	1	ST	2-1/2	SOIL	10.50	(2)
D-46	2	SILVER BELL RD	120 x 24	20.00						40.00	(2)
TOTAL									2299.50		

SPECIFIC NOTES:

- (1) MOUNTING HEIGHT IS MINIMUM (WITH A +6 INCH TOLERANCE).
- (2) MOUNT ON MAST ARM. SEE DETAIL SHEETS.
- (3) F & I PANEL TYPE D.
- (4) INSTALL ONE STRINGER 12 INCHES BELOW POPULATION SIGN.

GENERAL NOTES:

- 1. FOR 2-1/2" RISER POST IN SOIL USE RECOVERABLE SLIP BASE PLACED PER MANUFACTURER'S SPECIFICATIONS USING A 10 GAUGE, 2-1/2" X 2-1/2" PRE-PUNCHED, GALVANIZED STEEL, SQUARE TUBE RISER POST WITH A 10 GAUGE 2-3/16" X 2-3/16" X 8' PRE-PUNCHED, GALVANIZED STEEL, SQUARE TUBE POST INTERNAL INSERT.
- 2. ALUMINUM STRINGERS SHALL BE USED FOR SIGNS WIDER THAN 24". PLACE PER MANUFACTURER'S SPECIFICATIONS.
- 3. SEE PANEL LAYOUT SHEETS FOR PANEL DESIGNS.

TABULATIONS

DRAWN BY: CCY

CHECKED BY: SRM

CERTIFIED BY

Steve McBurn
LICENSED PROFESSIONAL ENGINEER

LIC. NO. 19579

DATE 9/25/2019

STATE PROJ. NO. 1901-176 (TH 13)

SHEET NO. 6

OF 106 SHEETS

PLOTTED/REVISED: 25-SEP-2019

SIGN PANEL OVERLAY TYPE OH								H
SIGN NO	LOCATION	PANEL OVERLAY		PANEL OVERLAY		PANEL OVERLAY		TOTAL AREA (SQ FT)
		SIZE (INCH)	AREA (SQ FT)	SIZE (INCH)	AREA (SQ FT)	SIZE (INCH)	AREA (SQ FT)	
OH MN13-004	689+86 NB	174 x 132	159.50	x		x		159.50
OH MN13-005	705+91 SB	156 x 96	104.00	x		x		104.00
OH MN13-006	705+28 SB	168 x 96	112.00	x		x		112.00
OH I35W-435	722+32 NB	180 x 108	135.00	192 x 90	120.00	x		255.00
OH MN13-007	732+86 SB	138 x 84	80.50	198 x 90	123.75	x		204.25
OH I35W-157	749+60 SB	156 x 120	130.00	204 x 108	153.00	x		283.00
OH MN77-005	957+34 NB	240 x 126	210.00	x		x		210.00
OH MN77-006	993+80 SB	156 x 108	117.00	x		x		117.00
TOTAL								1444.75

GENERAL NOTE:
1. SEE PANEL LAYOUTS.

REFERENCE LOCATION SIGN			K
CODE NO	QTY	SIZE	LEGEND
	EACH	INCH	
D10-2	2	10 x 27	MILE 95 (1)
D10-2	2	10 x 27	MILE 98 (2)
D10-2	2	10 x 27	MILE 99 (3)
D10-3	2	10 x 27	MILE 100 (4)
D10-3	2	10 x 27	MILE 101
D10-3	1	10 x 27	MILE 102
TOTAL		11	

SPECIFIC NOTES:
 (1) MOUNT BELOW SIGN C-28 TH 13 NB STA 712+95, RIGHT POST.
 MOUNT BELOW SIGN C-28 TH 13 NB STA 712+25, LEFT POST.
 (2) MOUNT BELOW SIGN C-26 TH 13 NB STA 765+00, RIGHT POST.
 (3) MOUNT BELOW SIGN C-3 TH 13 NB STA 817+10, LEFT POST.
 (4) MOUNT ABOVE MARKER TH 13 NB STA 868+60, LEFT POST.

GENERAL NOTE:
 1. SEE MNDOT STANDARD SIGNS AND MARKINGS MANUAL FOR REFERENCE LOCATION SIGN DETAIL.
 2. FOR REFERENCE LOCATION SIGN PLACEMENT, SEE DETAILS.
 3. USE 1-3/4" RISER POST WITH SQUARE TUBE THREE WALL BASE DETAIL. (SEE DETAILS)

SALVAGE & INSTALL SIGN PANEL TYPE SPECIAL					I
SIGN NO	QTY	POSTS		MTG HT (1)	PANEL LEGEND
		NO & TYPE	LENGTH FEET		
S-201	1	1-U	11	7	HIGHWAY 13 GALTIER RD
TOTAL		1			

SPECIFIC NOTE:
(1) MOUNTING HEIGHT IS MINIMUM (WITH A +6 INCH TOLERANCE)

GENERAL NOTE:
 1. POST LENGTHS ARE APPROXIMATE AND INCLUDE EMBEDMENT, BUT DO NOT ACCOUNT FOR DITCH GRADE.
 2. SEE DIVISION ST SPECIAL PROVISIONS FOR STREET NAME SIGN S&I SPECIFICATIONS.

OBJECT MARKER			L
CODE NO	SIZE INCH	COLOR	QUANTITY EACH
X4-2	18 x 18	YELLOW ON BLACK	50
X4-4(C)	12 x 24	BLACK ON YELLOW	10

(1)

TOTAL QUANTITIES	
CODE NO	QUANTITY EACH
X4-2	50
X4-4	10

SPECIFIC NOTES:
(1) X4-2 ARE MOUNTED BELOW TYPE C SIGNS.

GENERAL NOTES:
 1. FOR MARKER PLACEMENT, SEE DETAILS.
 2. SEE MNDOT STANDARD SIGNS AND MARKINGS MANUAL FOR MARKER DETAIL.
 3. USE 1-3/4" RISER POST WITH SQUARE TUBE THREE WALL BASE DETAIL. (SEE DETAILS)

PLOT NAME: OTE_1901176.tab.7
PATH & FILENAME: Projects\DM_R05\03\1901176\Signing\OT\NOTE_1901176.tab.dgn

DELINEATOR			J
CODE NO	QUANTITY EACH		TOTAL
	WHITE	YELLOW	
X4-6	30	29	59

GENERAL NOTES:
 1. FOR DELINEATOR PLACEMENT, SEE DETAILS.
 2. SEE MNDOT STANDARD SIGNS AND MARKINGS MANUAL FOR DELINEATOR DETAIL.
 3. USE 1-3/4" RISER POST WITH SQUARE TUBE THREE WALL BASE DETAIL. (SEE DETAILS)

TABULATIONS

DRAWN BY: CCY

CHECKED BY: SRM

CERTIFIED BY

Steven M. Dunbar
LICENSED PROFESSIONAL ENGINEER

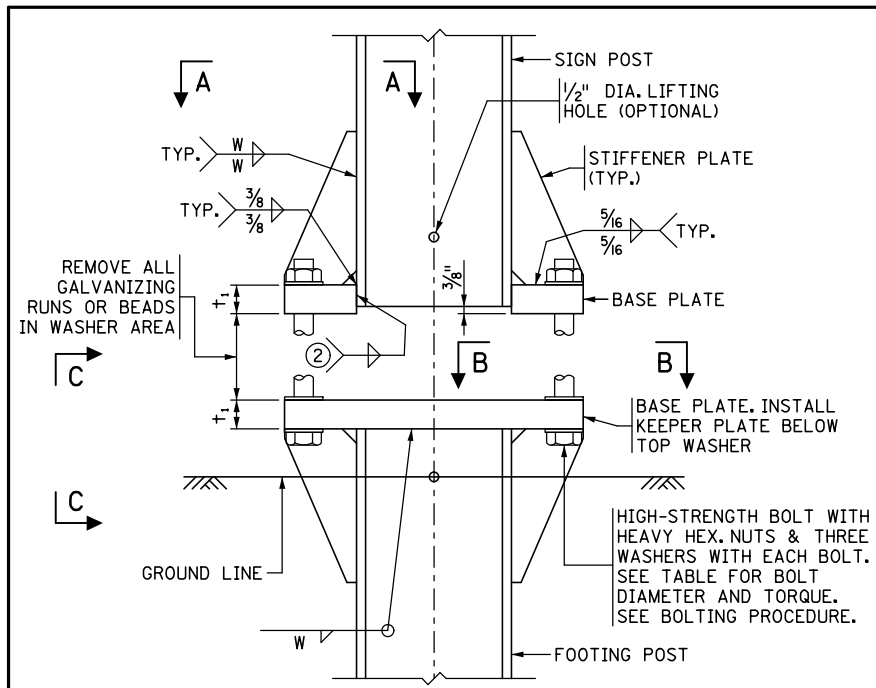
LIC. NO. 19579

DATE 9/25/2019

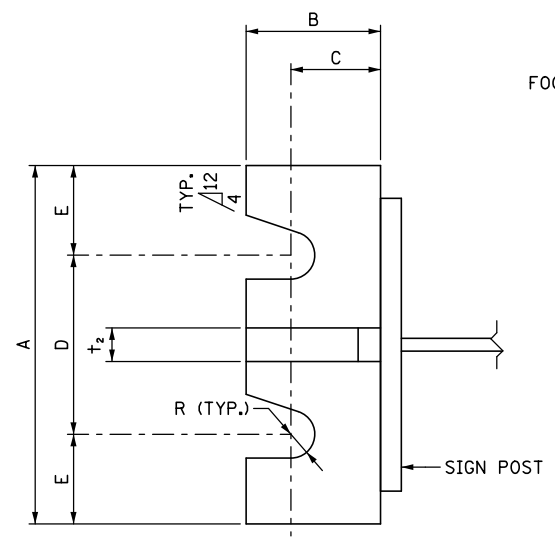
STATE PROJ. NO. 1901-176 (TH 13)

SHEET NO. 7

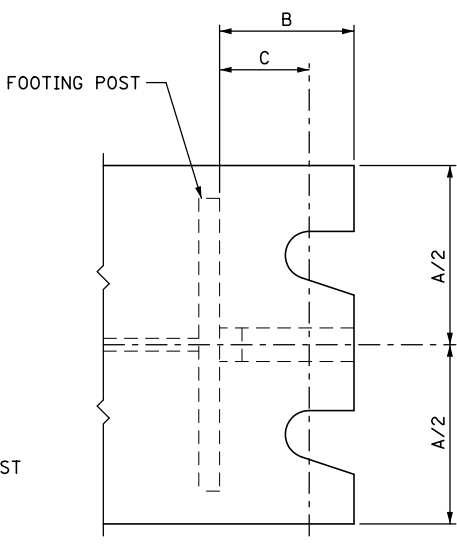
OF 106 SHEETS



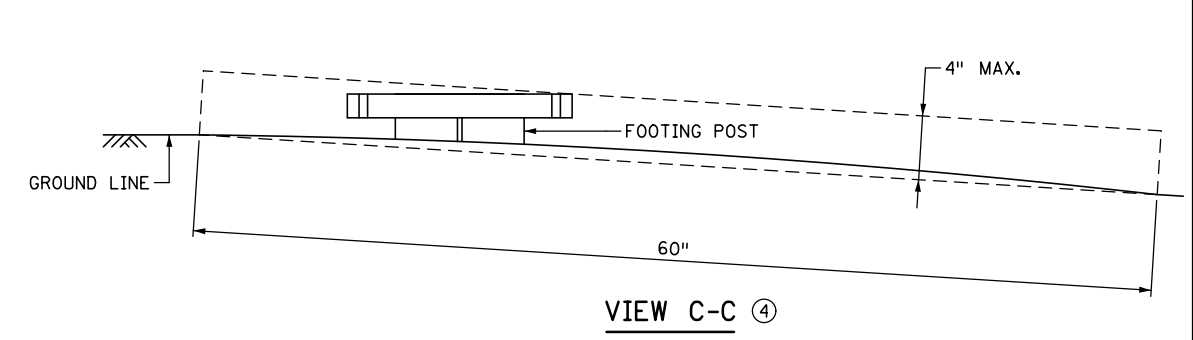
SIGN POST AND FOOTING POST ELEVATION



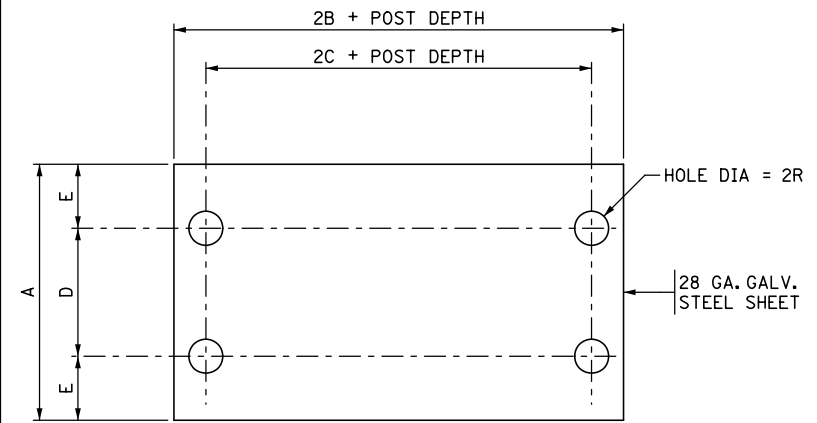
SECTION A-A



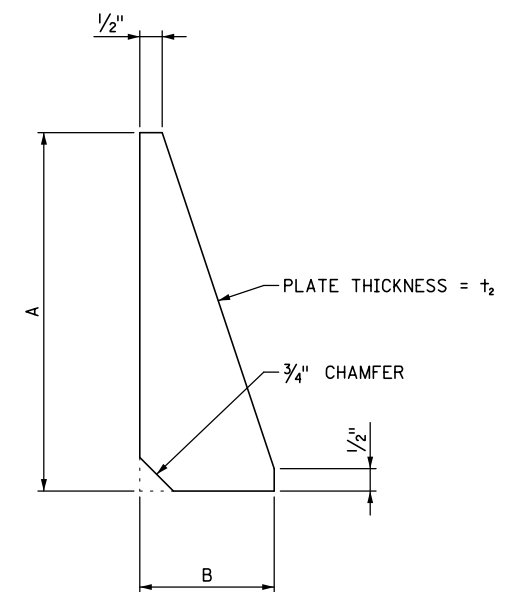
SECTION B-B



VIEW C-C

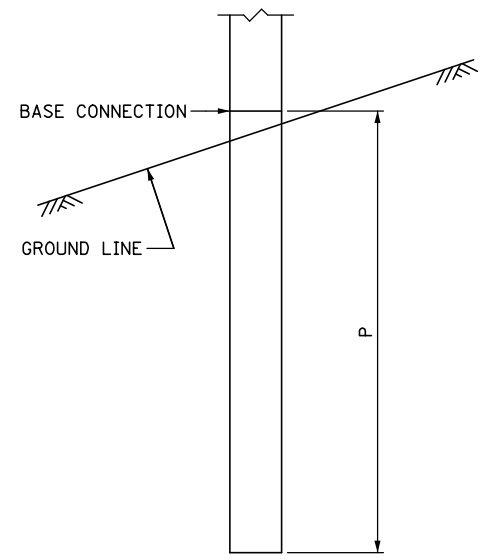


KEEPER PLATE

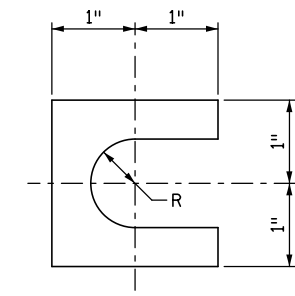


STIFFENER PLATE DETAIL

(SEE TABLE FOR DIMENSIONS)



FOOTING POST DETAIL



SHIM DETAIL

SOIL PARAMETERS:

THE FOUNDATIONS SHOWN ON THIS SHEET HAVE BEEN DESIGNED WITH THE FOLLOWING ASSUMED SOIL PROPERTIES:

COHESIVE SOILS:		GRANULAR SOILS:	
SHEAR STRENGTH: C = 1.0 ksf	ANGLE OF FRICTION: $\phi = 30^\circ$	UNIT WEIGHT OF SOIL: $\gamma = 125 \pm 10$ pcf	AT-REST COEFFICIENT: k = 0.50
UNIT WEIGHT OF SOIL: $\gamma = 125 \pm 10$ pcf	COEFFICIENT OF FRICTION: $\mu = 0.70$		

BOLTING PROCEDURE - BASE CONNECTION

- ASSEMBLE SIGN POST TO H-PILE FOOTING POST WITH BOLTS AND WITH ONE OF THE FLAT WASHERS ON EACH BOLT BETWEEN PLATES.
- SHIM AS REQUIRED TO PLUMB POST.
- TIGHTEN ALL BOLTS THE MAXIMUM POSSIBLE WITH 12" OR 15" WRENCH TO BED WASHERS AND SHIMS AND TO CLEAN BOLT THREADS, THEN LOOSEN EACH BOLT IN TURN AND RETIGHTEN TO THE PRESCRIBED TORQUE (SEE TABLE).
- BURR THREADS AT JUNCTION WITH NUT USING A CENTER PUNCH TO PREVENT NUT LOOSENING.

GENERAL NOTES:

PROVIDE STRUCTURAL STEEL IN ACCORDANCE WITH SPEC 3308. GALVANIZE STRUCTURAL STEEL ACCORDING TO SPEC. 3394 AND HARDWARE ACCORDING TO SPEC. 3392. FURNISH HIGH-STRENGTH BOLTS AND DIRECT TENSION INDICATORS IN ACCORDANCE WITH SPEC. 3391. UNLESS NOTED OTHERWISE, PLACE HIGH-STRENGTH BOLTS ACCORDING TO SPEC. 2402.

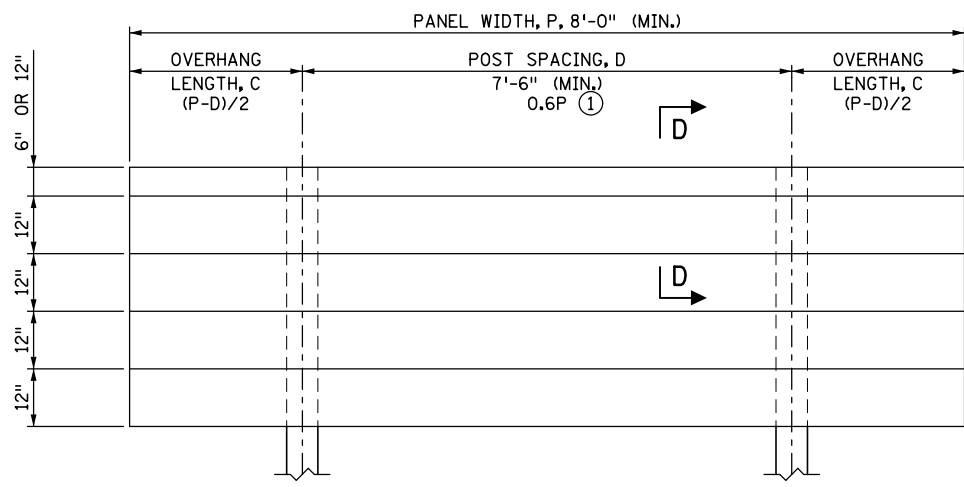
- MEASURED FROM TOP OF BASE PLATE.
- FLANGE THICKNESS - 1/16" (TYP.).
- SECTIONS SHOWN ARE FOR PLACEMENTS ON RIGHT SHOULDER AND IN GORE. PLATE SLOT BEVELS ARE OPPOSITE FROM THAT SHOWN FOR PLACEMENT ON LEFT SHOULDER.
- PLACE FOOTING POSTS SO THAT IF THEY ARE RUN OVER BY A VEHICLE WITH A 60" WHEELBASE AND 4" GROUND CLEARANCE, THE VEHICLE WILL NOT STRIKE THE FOOTING POST. MAXIMUM PROJECTION OF THE FOOTING POST SHALL NOT EXTEND BEYOND A LINE 4" PARALLEL TO ANY CHORD, WHICH IS PERPENDICULAR TO (OR ALIGNED RADIALLY TO) THE CENTERLINE OF THE HIGHWAY AND HAS THE CHORD'S END POINTS ON THE GROUND SURFACE ON THE OPPOSITE SIDES OF THE FOOTING POST.
- FURNISH TWO 0.012" ± THICK AND TWO 0.032" ± THICK SHIMS PER POST. FABRICATE SHIMS FROM BRASS SHIM STOCK OR STRIP CONFORMING TO ASTM B36.
- FOOTING POST SHALL BE THE SAME SIZE AS THE SIGN POST. A SPECIAL FOUNDATION DESIGN IS REQUIRED IN CASES WHERE THE SOIL PARAMETER VALUES LISTED ABOVE ARE NOT MET.

DIMENSION POST SIZE	BASE CONNECTION DATA	FUSE AND HINGE PLATE DATA															FOOTING POST, P (MIN. LENGTH) ①					
		BOLT SIZE AND TORQUE	A	B	C	D	E	t ₁	t ₂	W	R	G	H	J	K	L		M	d ₁	d ₂	t ₃	BOLT DIA.
W4X13	3/4" DIA. x 3 1/2" TORQUE = 50 FT-LBS	6"	3 1/4"	2 1/4"	3 1/2"	1 1/4"	1 1/2"	1/2"	1/4"	13/32"	2"	1 1/4"	4"	2 1/4"	7/8"	1"	1 1/16"	3/4"	3/8"	5/8"	2"	14' 0"
W6X20	7/8" DIA. x 4 1/4" TORQUE = 67 FT-LBS	8"	3 3/4"	2 1/2"	4"	2"	1 1/2"	1/2"	1/4"	15/32"	2 1/2"	1 1/4"	6"	3 1/2"	1 1/4"	1 3/8"	1 3/16"	1 1/8"	3/8"	3/4"	2"	14' 0"
W8X24	1" DIA. x 5" TORQUE = 83 FT-LBS	8"	3 3/4"	2 1/2"	4"	2"	1 1/2"	1/2"	1/4"	15/32"	2 1/2"	1 1/2"	6 1/2"	3 1/2"	1 1/2"	1 1/2"	1 5/16"	1 1/4"	1/2"	7/8"	2 1/2"	14' 0"
W8X31	1 1/8" DIA. x 5" TORQUE = 100 FT-LBS	9"	4 1/4"	2 3/4"	5"	2"	2"	3/4"	5/16"	19/32"	3"	1 3/4"	8"	5 1/2"	1 1/4"	2"	1 1/16"	1 1/2"	1/2"	1"	2 1/2"	14' 0"
W10X39	1 1/8" DIA. x 5" TORQUE = 100 FT-LBS	9"	4 1/4"	2 3/4"	5"	2"	2"	3/4"	5/16"	19/32"	3"	1 3/4"	8"	5 1/2"	1 1/4"	1 7/8"	1 3/16"	1 3/8"	1/2"	1 1/8"	2 3/4"	14' 0"

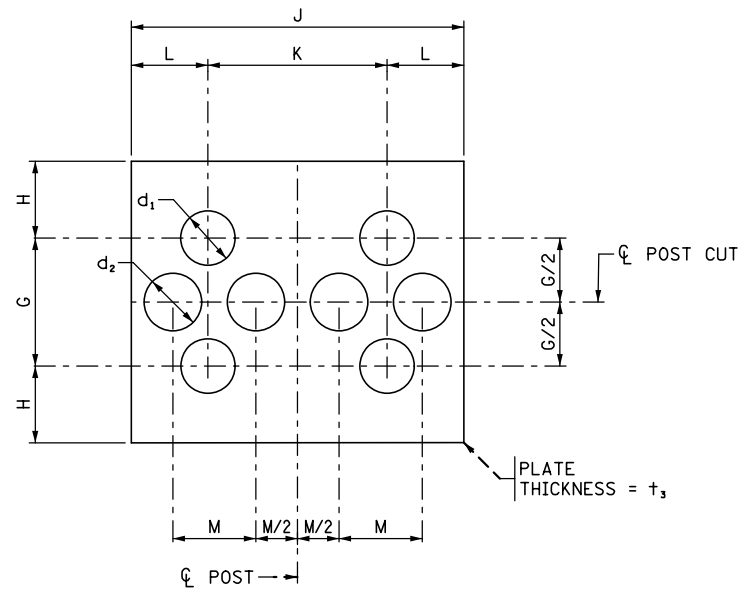
REVISION:
APPROVED: JUNE 4, 2019
Kevin Western
KEVIN WESTERN
STATE BRIDGE ENGINEER

m MINNESOTA DEPARTMENT OF TRANSPORTATION
STANDARD PLAN 5-297.711 1 OF 2
APPROVED: 6-4-2019
REVISOR:
Tom Styrbicki
THOMAS STYRBICKI
STATE DESIGN ENGINEER

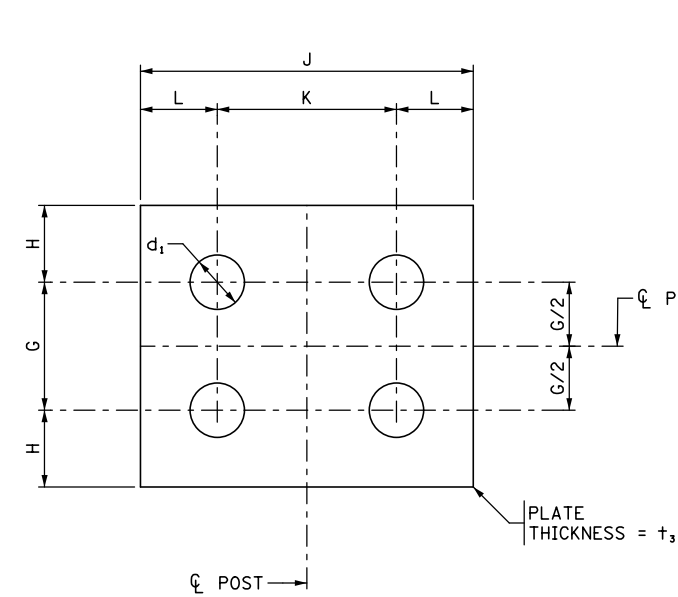
I-BEAM SUPPORTED SIGN STRUCTURAL DETAILS
FOOTINGS AND BASE CONNECTION



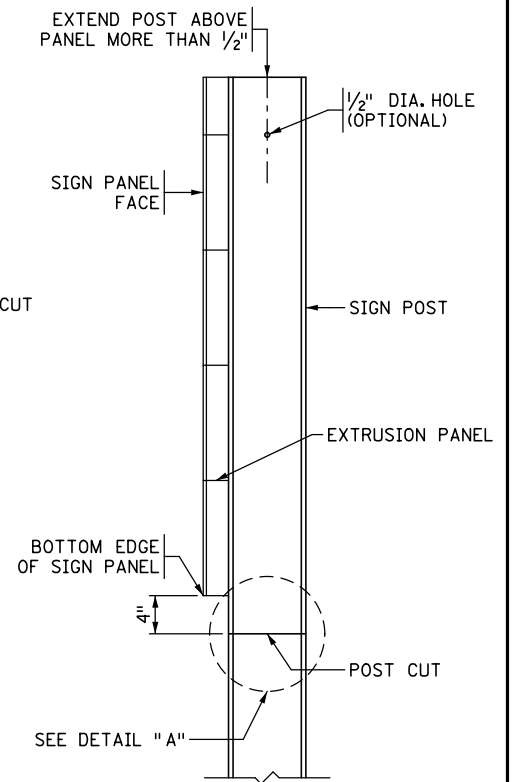
TYPICAL PANEL MOUNTING ④



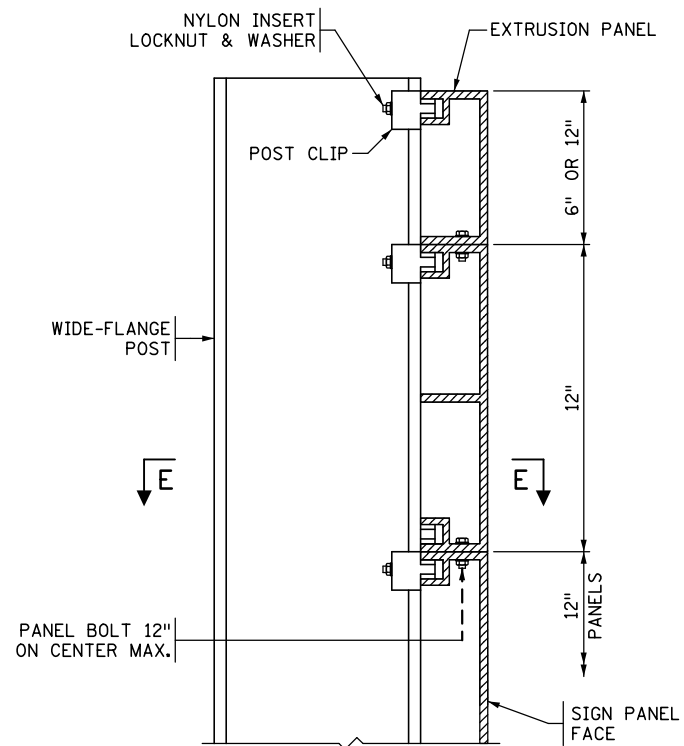
FRICTION FUSE PLATE DETAIL ③



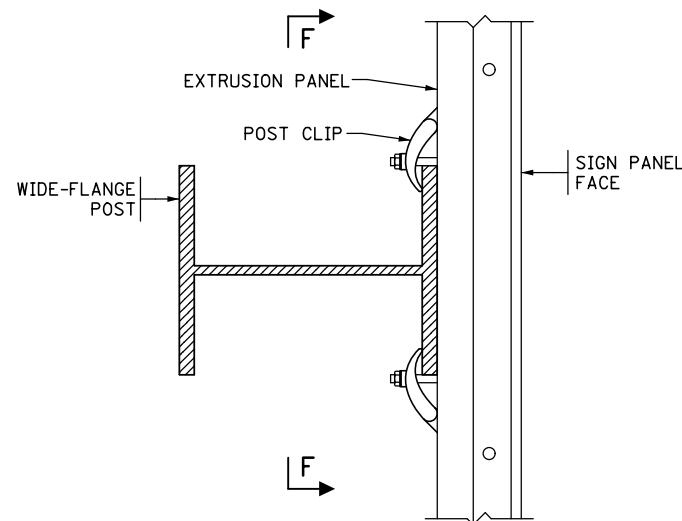
HINGE PLATE DETAIL ③



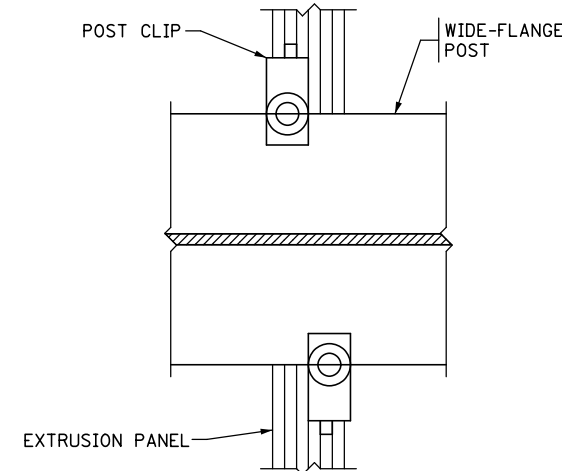
FRICTION FUSE SIDE VIEW



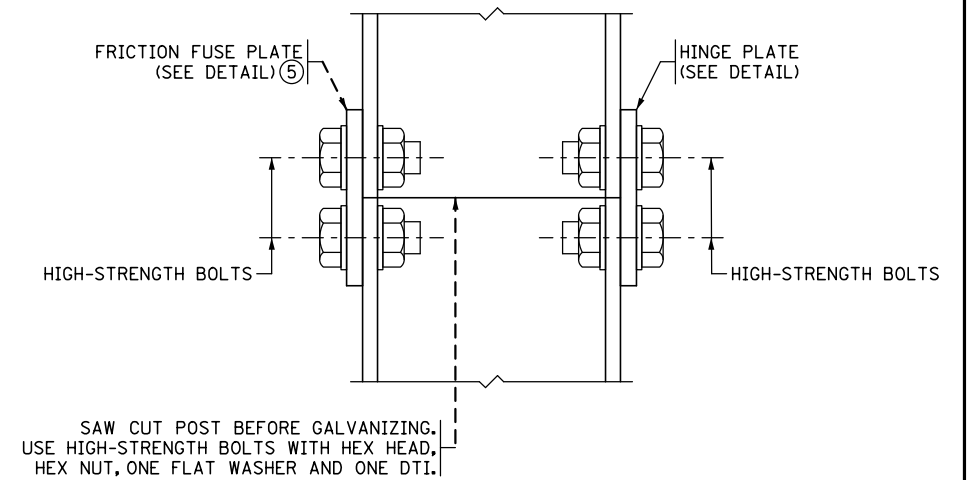
SECTION D-D



SECTION E-E



SECTION F-F ②



DETAIL 'A' FRICTION FUSE

POST QUANTITIES		
POST SIZE	FLANGE WIDTH	QUANTITY
W4X13	4"	61+13 LBS/FT
W6X20	6"	107+20 LBS/FT
W8X24	6.5"	123+24 LBS/FT
W8X31	8"	178+31 LBS/FT
W10X39	8"	202+39 LBS/FT

GENERAL NOTES:

PROVIDE STRUCTURAL STEEL IN ACCORDANCE WITH SPEC 3308. GALVANIZE STRUCTURAL STEEL ACCORDING TO SPEC. 3394 AND HARDWARE ACCORDING TO SPEC. 3392. FURNISH HIGH-STRENGTH BOLTS AND DIRECT TENSION INDICATORS IN ACCORDANCE WITH SPEC. 3391. PLACE HIGH-STRENGTH BOLTS ACCORDING TO SPEC. 2402.

SAW CUT ALL POST CUTS. PLATES MAY BE SHEARED OR FLAME CUT USING A MECHANICALLY GUIDED CUTTING TORCH. PREPARE EDGES IN ACCORDANCE WITH SPEC 2471.3.C.4 AND SPEC 2471.3.D4.

- ① ROUND TO THE NEAREST EVEN INCH FOR DIMENSION, D.
- ② PLACE POST CLIPS ON BOTH SIDES OF EACH POST AT EACH PANEL JOINT AS INDICATED.
- ③ SEE TABLE ON STANDARD PLAN 5-297.711 FOR DIMENSIONS.
- ④ SEE I-BEAM-SUPPORTED SIGN CROSS-SECTION(S) FOR PANEL WIDTH, POST SPACING, AND OVERHANG LENGTHS.
- ⑤ PLACE FRICTION FUSE PLATE ON SIDE OF POST FACING TRAFFIC.

REVISION:
 APPROVED: JUNE 4, 2019
Kevin Western
 KEVIN WESTERN
 STATE BRIDGE ENGINEER

m
 MINNESOTA
 DEPARTMENT
 OF
 TRANSPORTATION

STANDARD PLAN 5-297.711

2 OF 2

Tom Styrbicki
 THOMAS STYRBICKI
 STATE DESIGN ENGINEER

APPROVED: 6-4-2019
 REVISED:

I-BEAM SUPPORTED SIGN STRUCTURAL DETAILS
 POST AND PANEL

STATE PROJ. NO. 1901-176 (TH 13) SHEET NO. 9 OF 106 SHEETS

GENERAL NOTES:

PROVIDE PIPE MATERIAL IN ACCORDANCE WITH ASTM DESIGNATION A53, GRADE B, SCHEDULE 40.

PROVIDE STEEL FOR STRUCTURAL ITEMS IN ACCORDANCE WITH SPEC. 3306 AND GALVANIZE IN ACCORDANCE WITH SPEC. 3394 UNLESS OTHERWISE NOTED.

SEE STANDARD PLAN 5-297.740 (2 OF 4) FOR STEEL CONNECTION DETAILS.

SEE STANDARD PLAN 5-297.740 (3 OF 4) FOR SIGN MOUNTING DETAILS.

SEE STANDARD PLAN 5-297.740 (4 OF 4) FOR SIGN CONNECTION DETAILS.

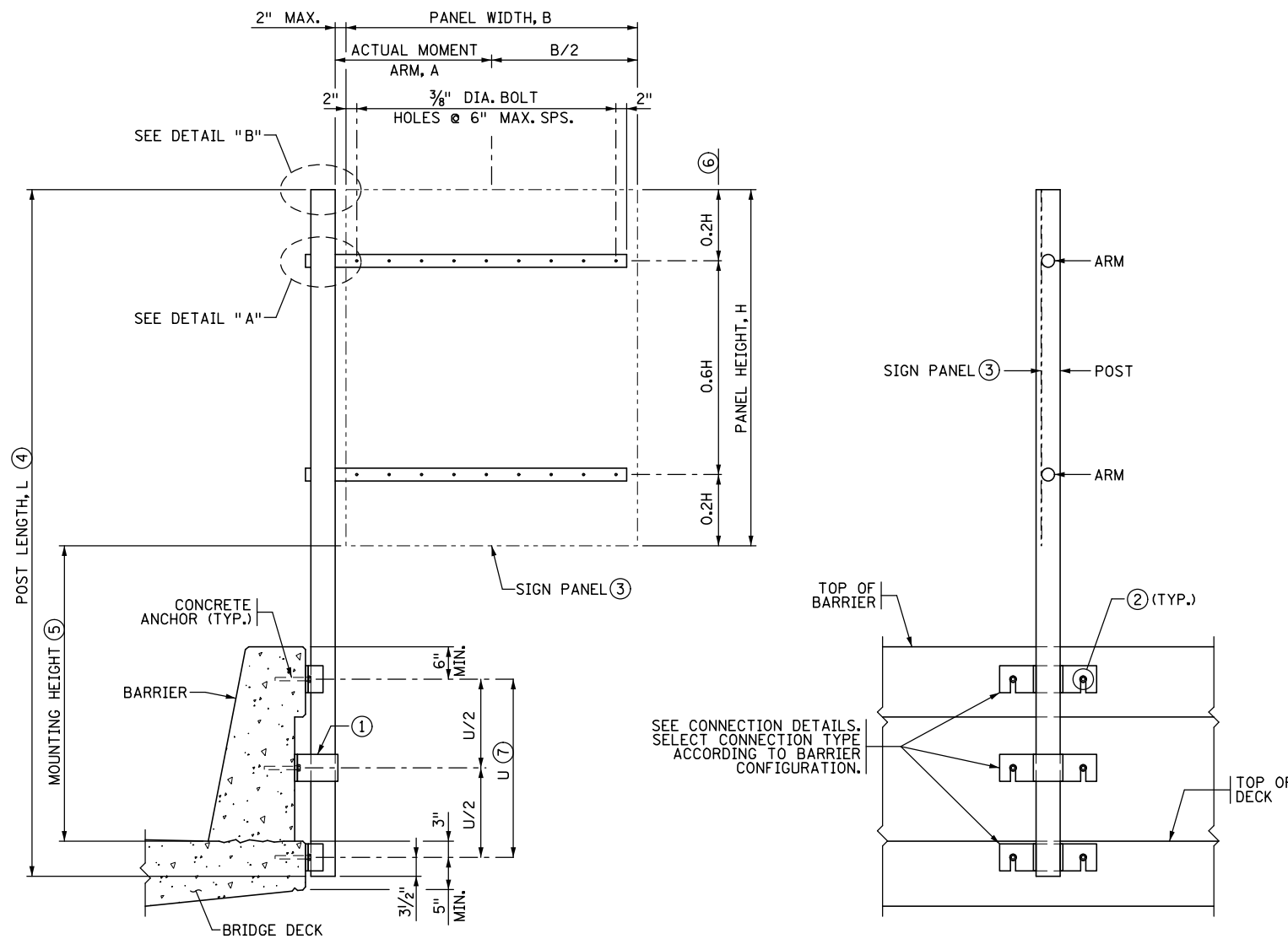
- ① INTERMEDIATE CONNECTION. TYPE AS REQUIRED PER SELECTION TABLE. OFFSET CONNECTION SHOWN, SELECT CONNECTION TYPE ACCORDING TO BARRIER CONFIGURATION.
- ② CONCRETE ANCHOR (TYP.). SEE TABLE FOR ANCHOR ROD DIAMETER AND EMBEDMENT. ANCHOR ROD ACCORDING TO SPEC. 3385, TYPE A WITH FLAT WASHER AND LOCK NUT OR PAIR OF JAM NUTS. FASTEN ANCHOR ROD TO CONCRETE WITH AN APPROVED ADHESIVE. PROVIDE AN ADHESIVE WITH A MINIMUM CHARACTERISTIC BOND STRENGTH IN UNCRACKED CONCRETE OF 1.5 KSI. SLIGHTLY ADJUST POSITION OF SIGN AND ANCHORS HORIZONTALLY IF REINFORCEMENT IS ENCOUNTERED. SEE TABLE FOR PROOF LOAD AND MINIMUM INSTALLATION TORQUE REQUIREMENTS. A HIGHER TORQUE MAY BE REQUIRED BY THE EPOXY MANUFACTURER. SEE SPECIAL PROVISIONS FOR ADDITIONAL REQUIREMENTS. DISTRICT BRIDGE ENGINEER TO CONFIRM THE CONCRETE CONDITION IS SUFFICIENT TO ACCEPT ANCHORS PRIOR TO PLACEMENT ON EXISTING STRUCTURES.
- ③ SINGLE SIGN PANEL SHOWN. FOR SIGN MOUNTING DETAILS AND MULTIPLE SIGN PANEL PLACEMENTS, SEE SIGN MOUNTING DETAILS SHEET.
- ④ TOP OF POST ELEVATION TO MATCH TOP OF SIGN FOR SINGLE SIGN PANEL PLACEMENT OR TOP OF RISER POST FOR MULTIPLE SIGN PANEL PLACEMENTS. SEE SIGNING TABULATIONS FOR DETAILS.
- ⑤ SEE SIGNING TABULATIONS FOR MOUNTING HEIGHT. MINIMUM CLEARANCE FROM BOTTOM OF SIGN PANEL TO TOP OF ROADWAY IS 5'-0". MAXIMUM CLEARANCE IS 7'-0".
- ⑥ APPROXIMATE LOCATION OF ARM MEMBERS RELATIVE TO A RECTANGULAR SIGN PANEL. ACTUAL LOCATIONS SHALL BE DETERMINED USING THE RATIOS PROVIDED AND ROUNDING OF THE 0.6H DIMENSION TO THE NEAREST 3" INCREMENT. THE 0.2H DIMENSIONS SHALL BE EQUAL. FOR OTHER SHAPES, POSITION ARM MEMBERS TO ACCEPT THE STANDARD SIGN MOUNTING HOLES (PUNCH CODES). SEE THE MnDOT STANDARD SIGNS AND MARKINGS MANUAL FOR INFORMATION.
- ⑦ THE MINIMUM DISTANCE BETWEEN UPPER AND LOWER POLE CONNECTION POINTS IS 1'-10" BY DESIGN. ALL CONFIGURATIONS WITH A CONNECTION SPACING GREATER THAN 1'-10" AND MEETING THE MINIMUM TOP AND BOTTOM COVER REQUIREMENTS ARE ACCEPTABLE.
- ⑧ DO NOT USE ON STRUCTURAL TUBE RAILING (DESIGN T-1).

IMPLEMENTATION INSTRUCTIONS

- STEP 1: DETERMINE THE ACTUAL SIGN AREA, SA.
ACTUAL SIGN AREA, SA = B x H (IN SF)
- STEP 2: DETERMINE THE ACTUAL MOMENT ARM OF THE PROPOSED SIGN. ACTUAL MOMENT ARM, A, IS THE DISTANCE FROM THE POLE EDGE TO THE SIGN CENTERLINE.
- STEP 3: DETERMINE THE DESIGN SIGN AREA FROM THE SELECTION TABLE. THE DESIGN SIGN AREA REPRESENTS THE UPPER BOUND SIGN FOR A STANDARD DESIGN CONDITION. FOR CONCRETE RAIL-MOUNTED SIGN SUPPORTS, THE DESIGN SIGN AREAS AVAILABLE ARE: 24.75 SF, 38.5 SF, AND 40.5 SF. IF THE ACTUAL SIGN AREA FALLS BETWEEN VALUES OF DESIGN SIGN AREA, USE THE LARGER VALUE. IF THE ACTUAL SIGN AREA FALLS ABOVE LARGEST OF DESIGN SIGN AREA VALUE, A SPECIAL DESIGN IS REQUIRED.
- STEP 4: DETERMINE THE DESIGN MOMENT ARM, DA, FROM THE SELECTION TABLE FOR THE SPECIFIED DESIGN SIGN AREA. THE DESIGN MOMENT ARM REPRESENTS THE UPPER BOUND FOR A STANDARD DESIGN CONDITION. FOR CONCRETE RAIL-MOUNTED SIGN SUPPORTS, THE DESIGN SIGN AREAS ARE DETERMINED BY THE CALCULATION SPECIFIED IN THE SELECTION TABLE. IF THE ACTUAL SIGN MOMENT ARM IS LESS THAN THE VALUE OF DESIGN MOMENT ARM FOR THE DESIGN SIGN AREA, THE DESIGN IS CONSIDERED ADEQUATE AND THE COMPONENT SIZES SPECIFIED IN THE TABLE MAY BE USED. IF THE ACTUAL SIGN MOMENT ARM IS GREATER THAN THE VALUE OF DESIGN MOMENT ARM FOR THE DESIGN SIGN AREA AND A LARGER DESIGN SIGN AREA IS AVAILABLE, THE COMPONENT SIZES SPECIFIED IN THE TABLE FOR THE LARGER DESIGN SIGN AREA MAY BE USED. IF THE ACTUAL MOMENT ARM FOR THE LARGEST DESIGN SIGN AREA FALLS ABOVE THE RANGE OF DESIGN MOMENT ARM VALUES, A SPECIAL DESIGN IS REQUIRED.

EXAMPLES

- EXAMPLE #1:
- ACTUAL PARAMETERS:
SIGN PANEL WIDTH, B = 54"
SIGN PANEL HEIGHT, H = 60"
- ACTUAL SIGN AREA, SA = 54" x 60" x (1 SF / 144 SQ. IN.) = 22.5 SF
ACTUAL MOMENT ARM, A = (1/2 x 54") + 2" = 29"
- DESIGN PARAMETERS:
SINCE THE ACTUAL SIGN AREA IS LESS THAN THE DESIGN SIGN AREA OF 24.75 SF, USE DESIGN SIGN AREA = 24.75 SF
DESIGN MOMENT ARM, DA = 717.75 / 22.5 SF = 31.9"
- SOLUTION:
ACTUAL SIGN AREA, 22.5 SF < DESIGN SIGN AREA, 24.75 SF, OK
ACTUAL MOMENT ARM, 29" < DESIGN MOMENT ARM = 31.9", OK
USE INFORMATION FOR A TYPE I DESIGN FROM THE SELECTION TABLE.
- EXAMPLE #2:
- ACTUAL PARAMETERS:
SIGN PANEL WIDTH, B = 68"
SIGN PANEL HEIGHT, H = 50"
- ACTUAL SIGN AREA, SA = 68" x 50" x (1 SF / 144 SQ. IN.) = 23.61 SF
ACTUAL MOMENT ARM, A = (1/2 x 68") + 2" = 36"
- DESIGN PARAMETERS:
SINCE THE ACTUAL SIGN AREA IS LESS THAN THE DESIGN SIGN AREA OF 24.75 SF, USE DESIGN SIGN AREA = 24.75 SF
DESIGN MOMENT ARM, DA = 717.75 / 23.61 SF = 30.4"
- SOLUTION:
ACTUAL SIGN AREA, 23.61 SF < DESIGN SIGN AREA, 24.75 SF, OK
ACTUAL MOMENT ARM, 36" > DESIGN MOMENT ARM = 30.4", UNACCEPTABLE
TRY NEXT ROW IN SELECTION TABLE.



ELEVATION

(TYPE S BARRIER ON BRIDGE DECK SHOWN. ALL OTHERS SIMILAR.)

END VIEW

TYPE	DESIGN SIGN AREA (SF)	DESIGN MOMENT ARM, DA (IN)	NOMINAL POST SIZE (IN.)	NOMINAL ARM SIZE (IN.)	CONCRETE ANCHOR					FILL PLATE THICKNESS (IN.)	BENT PLATE THICKNESS (IN.)	SIDE PLATE THICKNESS (IN.)	CONNECTION SPACING, U
					DIAMETER (IN.)	EMBEDMENT (IN.)	NUMBER REQUIRED	TORQUE (FT-LBS)	PROOF LOAD (KIPS)				
I	24.75	717.75/SA	4	2	0.625	5.625	2	60	7.4	0.5	0.5	0.5	1'-6" MIN.
II	38.50	1695/SA	5	3	0.875	8	2	80	14.5	0.625	0.625	0.625	1'-6" MIN.
III	40.50(8)	2268/SA	5	3	0.875	8	3	80	14.5	0.75	0.625	0.625	1'-10" MIN.

SA = ACTUAL SIGN AREA IN (SQUARE FEET)

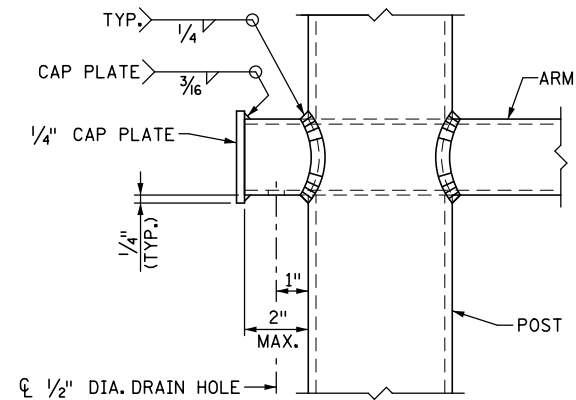
SELECTION TABLE

REVISION:
APPROVED: JUNE 4, 2019
Kevin Western
KEVIN WESTERN
STATE BRIDGE ENGINEER

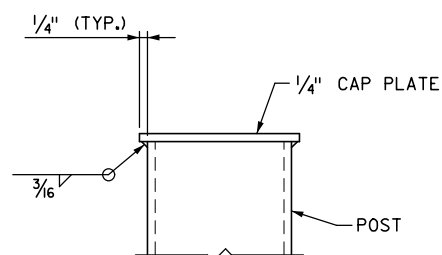
m
MINNESOTA
DEPARTMENT OF TRANSPORTATION

STANDARD PLAN 5-297.740 1 OF 4
Tom Styrbicki
THOMAS STYRBICKI
STATE DESIGN ENGINEER
APPROVED: 6-4-2019
REVISED:

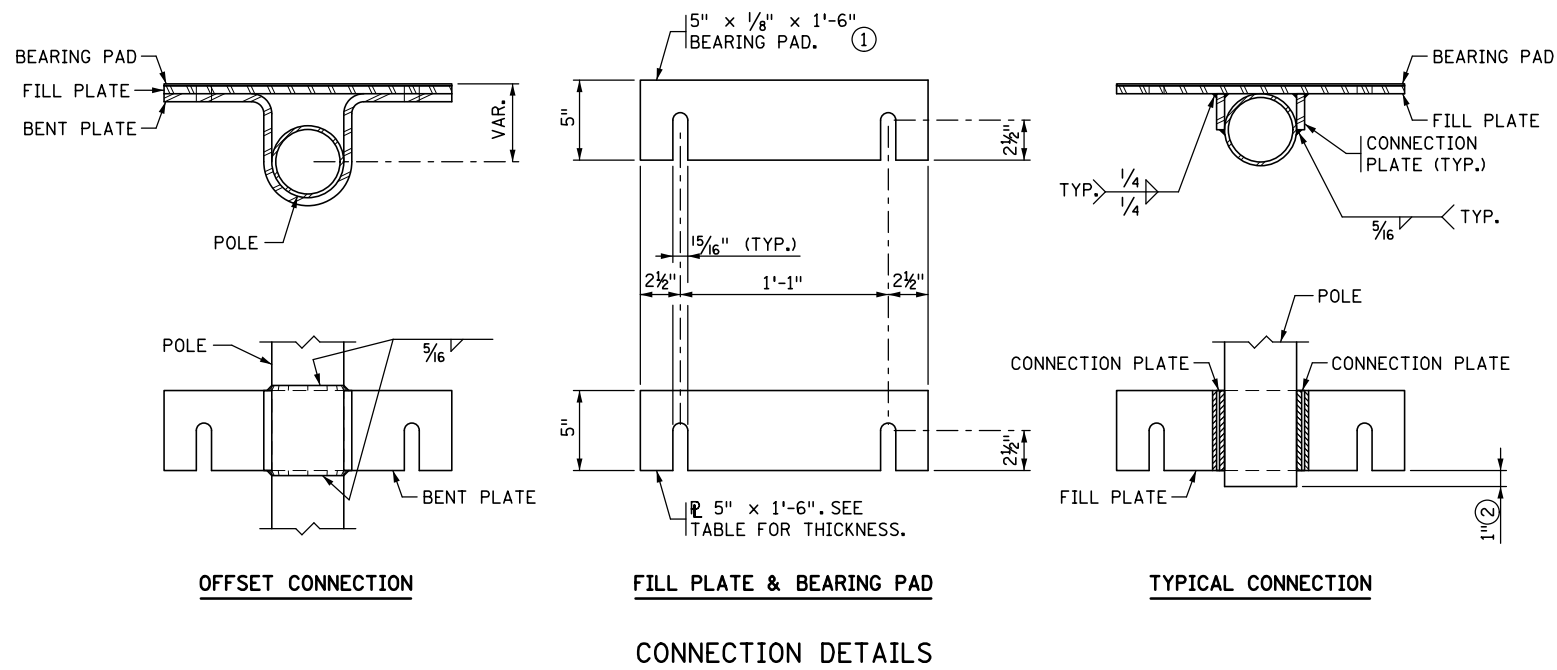
CONCRETE RAIL MOUNTED SIGN



DETAIL "A"



DETAIL "B"



OFFSET CONNECTION

FILL PLATE & BEARING PAD

TYPICAL CONNECTION

CONNECTION DETAILS

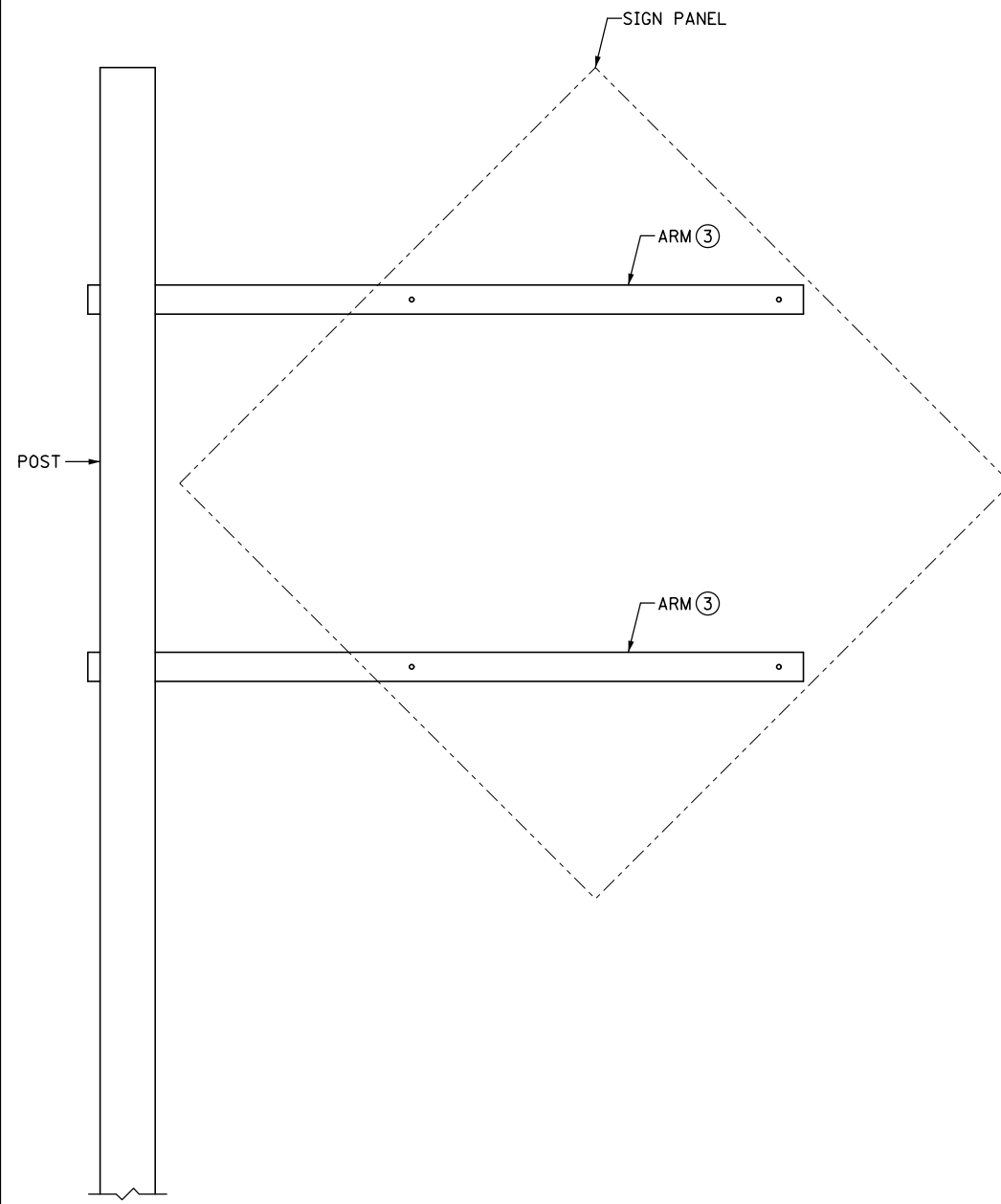
GENERAL NOTES:

- ① PROVIDE 1/8" 60 DUROMETER PLAIN ELASTOMERIC BEARING PAD OR PREFORMED FABRIC PAD MEETING AASHTO LRFD BRIDGE CONSTRUCTION SPECIFICATIONS SECTION 18.10. WAIVE THE SAMPLING AND TESTING REQUIREMENTS UNDER SPEC. 3741, "ELASTOMERIC BEARING PADS," AND AASHTO M 251.
- ② POLE PROJECTION BEYOND FILL PLATE SHOWN FOR TYPICAL CONNECTION. USE FOR OFFSET CONNECTION AS REQUIRED.

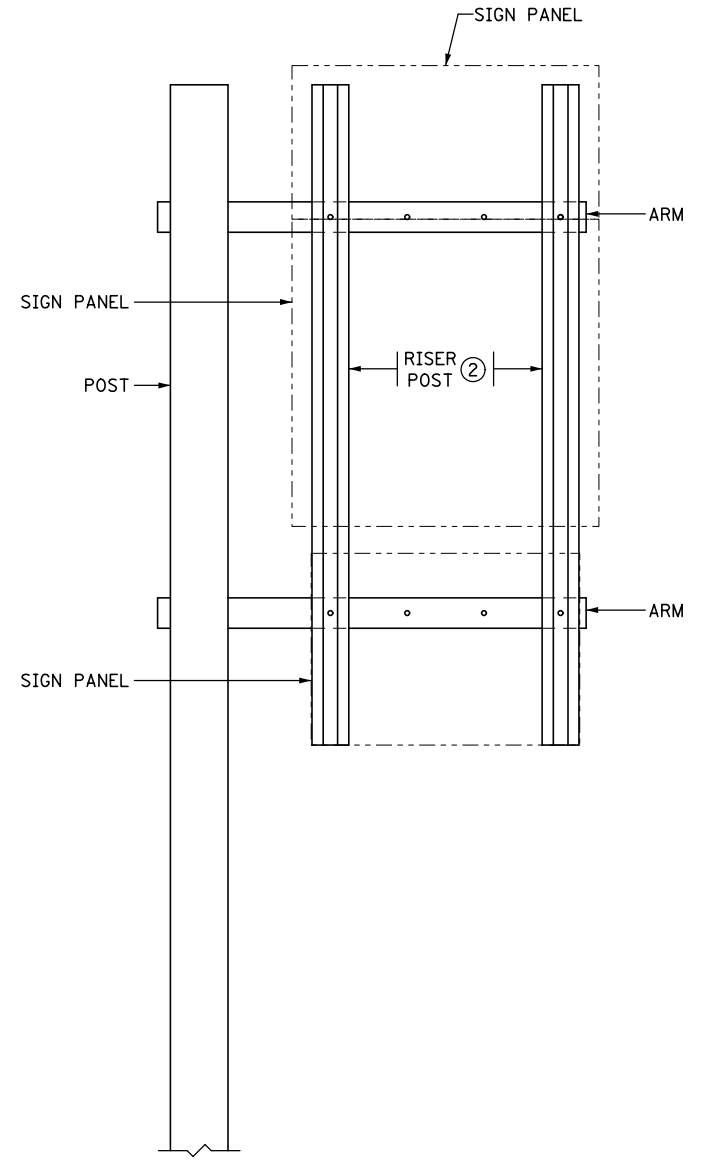
REVISION:
 APPROVED: JUNE 4, 2019
Kevin Western
 KEVIN WESTERN
 STATE BRIDGE ENGINEER

m MINNESOTA DEPARTMENT OF TRANSPORTATION
 STANDARD PLAN 5-297.740 2 OF 4
 APPROVED: 6-4-2019
 REVISED:
Tom Styrbicki
 THOMAS STYRBICKI
 STATE DESIGN ENGINEER

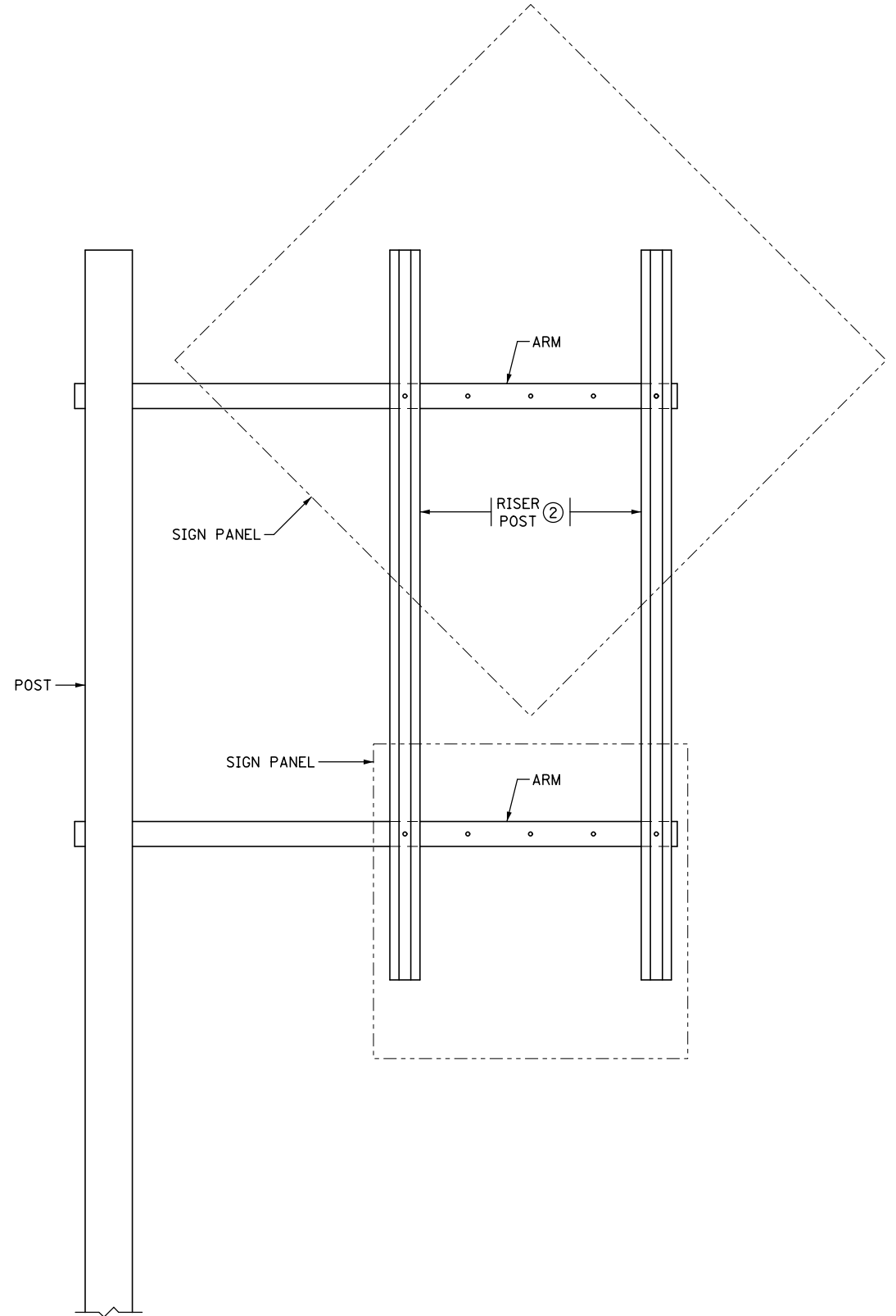
CONCRETE RAIL MOUNTED SIGN
 STEEL CONNECTION DETAILS



SINGLE PANEL PLACEMENT ①
(DIAMOND PANEL SHOWN)



MULTIPLE PANEL PLACEMENT ①



MULTIPLE PANEL PLACEMENT ①

GENERAL NOTES:

BOLT TYPE D SIGN PANELS TO ARM MEMBERS AT 24" MAXIMUM INTERVALS SIMILAR TO THE TYPE D STRINGER AND PANEL-JOINT DETAIL (SEE MnDOT STANDARD SIGNS AND MARKINGS MANUAL).

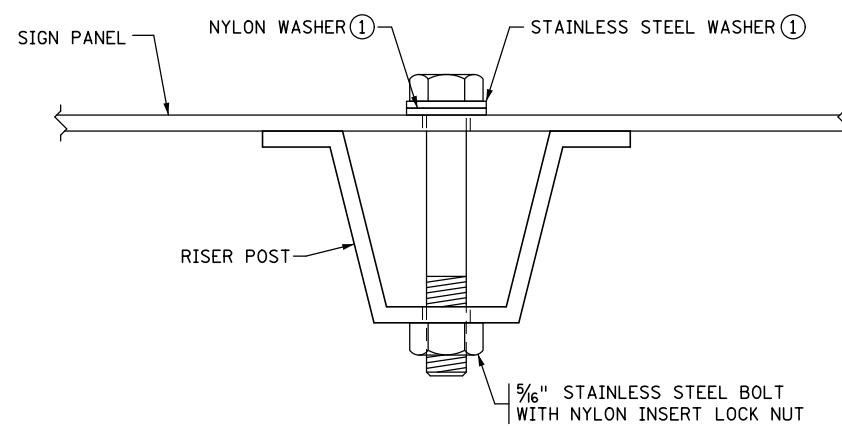
BOLT TYPE C SIGN PANELS TO ARM MEMBERS OR RISER POSTS ACCORDING TO SINGLE/MULTIPLE PANEL PLACEMENT DETAILS. SEE THE MnDOT STANDARD SIGNS AND MARKINGS MANUAL FOR MOUNTING HOLES (PUNCH CODES) INFORMATION.

- ① SEE SIGN TABULATIONS FOR DIMENSIONAL INFORMATION.
- ② USE 2.5 LB/FT RISER POSTS IN ACCORDANCE WITH SPEC. 3401. SEE STANDARD SIGN PLANS FOR LOCATIONS OF PUNCHED HOLES IN RISER POSTS FOR MOUNTING OF SIGNS. USE RISER POST LENGTH AS PANEL HEIGHT, H, FOR DETERMINATION OF ARM MEMBER LOCATIONS.
- ③ SEE STANDARD PLAN 5-297.740 (1 OF 4) FOR POSITION OF ARMS FOR RECTANGULAR PANELS. FOR OTHER SHAPES, POSITION ARM MEMBERS TO ACCEPT THE STANDARD SIGN MOUNTING HOLES (PUNCH CODES). SEE THE MnDOT STANDARD SIGNS AND MARKINGS MANUAL FOR INFORMATION.

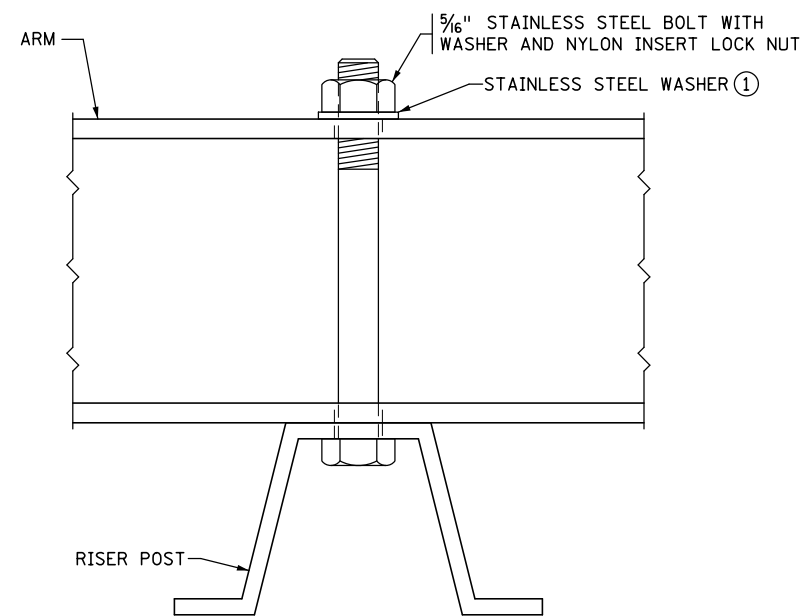
REVISION:
APPROVED: JUNE 4, 2019
Kevin Western
KEVIN WESTERN
STATE BRIDGE ENGINEER

m MINNESOTA
DEPARTMENT OF TRANSPORTATION
STANDARD PLAN 5-297.740 3 OF 4
Tom Styrbicki
THOMAS STYRBICKI
STATE DESIGN ENGINEER
APPROVED: 6-4-2019
REVISED:

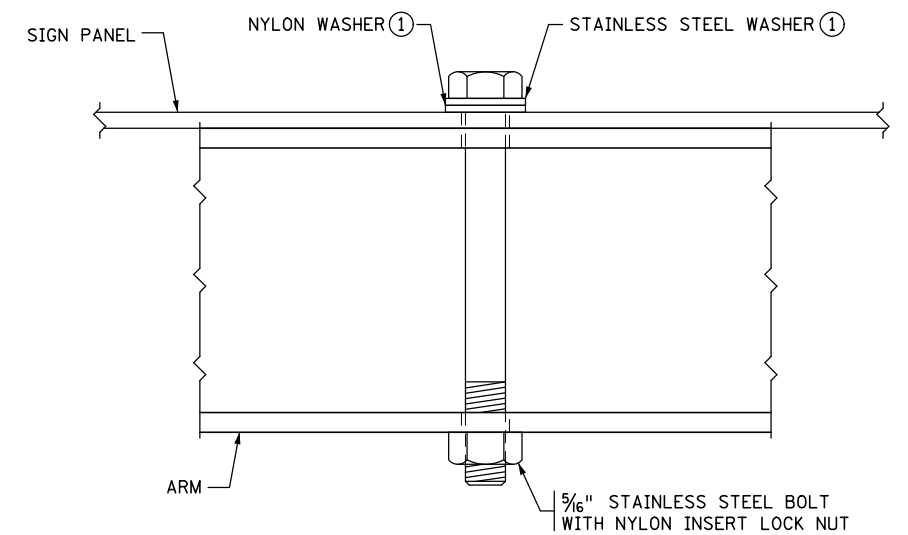
CONCRETE RAIL MOUNTED SIGN
SIGN MOUNTING DETAILS
STATE PROJ. NO. 1901-176 (TH 13) SHEET NO. 12 OF 106 SHEETS



SIGN TO RISER POST CONNECTION



RISER POST TO ARM CONNECTION



SIGN TO ARM CONNECTION

GENERAL NOTES:

USE STAINLESS STEEL 5/16" BOLTS, WASHERS, AND NYLON INSERT LOCK NUTS AS SHOWN.

PROVIDE FASTENERS IN ACCORDANCE WITH SPEC. 3391.

① PROVIDE STAINLESS STEEL WASHERS AND NYLON WASHERS AS SHOWN. STAINLESS STEEL AND NYLON WASHERS SHALL HAVE IDENTICAL DIMENSIONS (T=1/32" MIN., I.D.=3/8" MAX., O.D.=7/8" MAX.).

REVISION:

APPROVED: JUNE 4, 2019

Kevin Western

KEVIN WESTERN
STATE BRIDGE ENGINEER



STANDARD PLAN 5-297.740 4 OF 4

Tom Styrbicki

THOMAS STYRBICKI
STATE DESIGN ENGINEER

APPROVED: 6-4-2019
REVISED:

CONCRETE RAIL MOUNTED SIGN
SIGN CONNECTION DETAILS

GENERAL NOTES:

1. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO UTILIZE THE GOPHER ONE CALL EXCAVATION NOTICE SYSTEM, REQUIRED BY MINNESOTA STATUTE 216D, FOR ALL UTILITY LOCATIONS.
2. NO UTILITIES WILL BE AFFECTED BY WORK ON THIS PROJECT.
3. THE SUBSURFACE UTILITY INFORMATION IN THIS PLAN IS UTILITY QUALITY LEVEL D. THIS UTILITY QUALITY LEVEL WAS DETERMINED ACCORDING TO THE GUIDELINES OF CI/ASCE 38-02, ENTITLED "STANDARD GUIDELINES FOR THE COLLECTION AND DEPICTION OF EXISTING SUBSURFACE UTILITY DATA."
4. ALL POWER LINES ARE DISTRIBUTION UNLESS NOTED OTHERWISE.

UTILITY OWNERSHIP

THE FOLLOWING LIST SHOWS THE UTILITY COMPANIES WITHIN THE PROJECT LIMITS

AT&T CORPORATION
 CENTERPOINT ENERGY MINNESOTA GAS
 CENTURYLINK
 CHARTER COMMUNICATIONS
 CITY OF EAGAN
 COMCAST CABLE, LLC
 CONSOLIDATED COMMUNICATIONS
 DAKOTA ELECTRIC ASSOCIATION
 FRONTIER COMMUNICATIONS OF MINNESOTA, INCORPORATED
 GOPHER STATE ONE CALL
 METROPOLITAN COUNCIL, ENVIROMENTAL SERVICES
 MINNESOTA DEPARTMENT OF TRANSPORTATION
 MINNESOTA ENERGY RESOURCES
 SPRINT COMMUNICATIONS COMPANY, LP
 WINDSTREAM
 XCEL ENERGY

LEGEND

—○○—	—○○—	—○○—	COMMUNICATIONS
— F/O -BUR	— F/O -BUR	— F/O -BUR	FIBER OPTICS BURIED
=====	=====	=====	FIBER OPTICS
— F/O -OH	— F/O -OH	— F/O -OH	FIBER OPTIC OVERHEAD
— G	— G	— G	GAS
— √√	— √√	— √√	POWER LINE
— P-BUR	— P-BUR	— P-BUR	POWER BURIED
— OHP	— OHP	— OHP	OVERHEAD POWER
SIG-BUR	SIG-BUR	SIG-BUR	SIGNAL WIRE BURIED
- >>	- >>	- >>	SANITARY SEWER
-----	-----	-----	INPLACE RIGHT OF WAY

I/PLOT NAME: OTE_1901176_ufl1.tsh
 PATH & FILENAME: Projects\DM_ROS\03\1901176\Signing\OT\ST\OTE_1901176.tbdgn

UTILITIES

DRAWN BY: CCY

CHECKED BY: SRM

CERTIFIED BY



LICENSED PROFESSIONAL ENGINEER

LIC. NO. 19579

DATE 9/25/2019

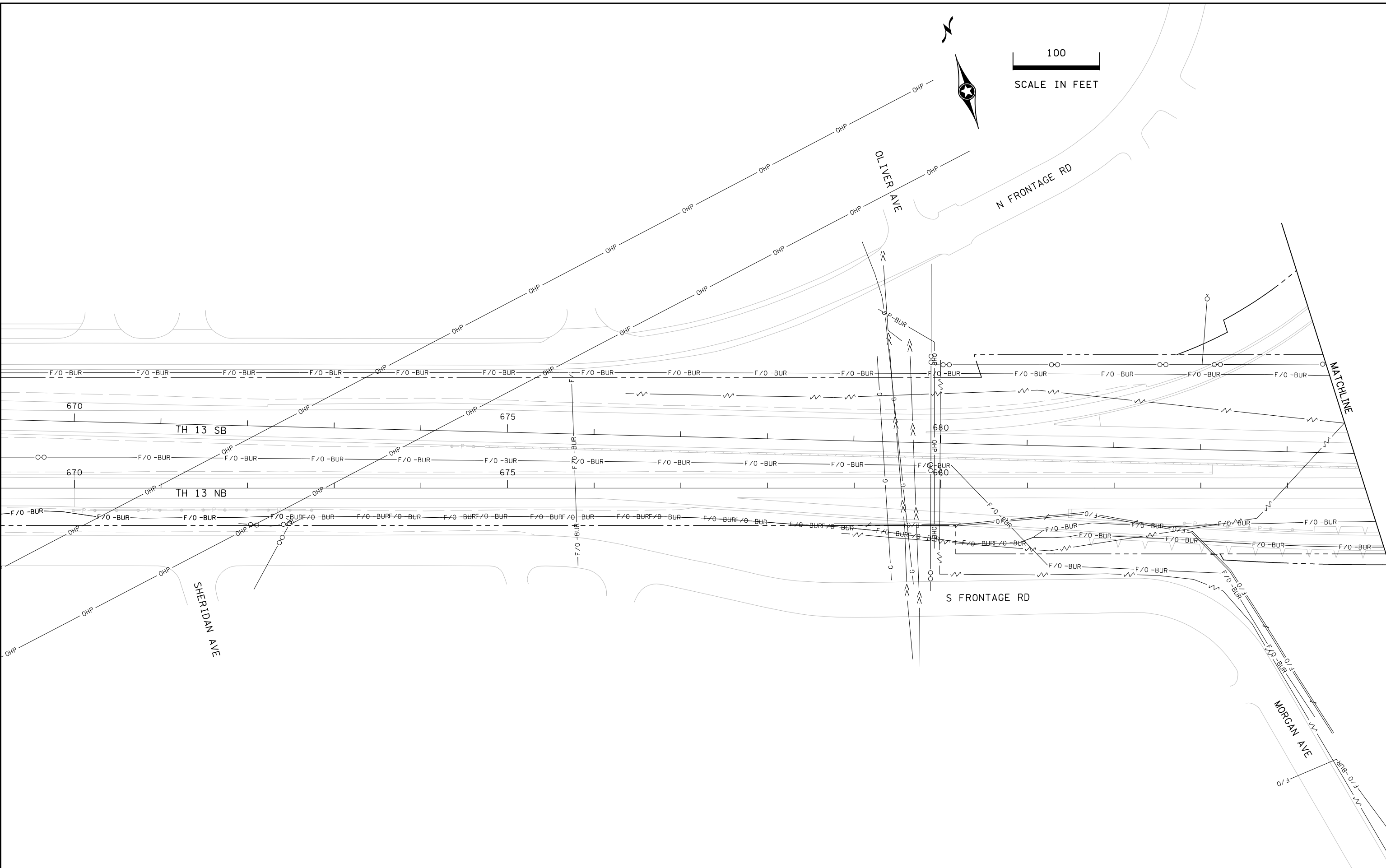
STATE PROJ. NO. 1901-176 (TH 13)

SHEET NO. 14

OF 106 SHEETS

PLOTTED/REVISED: 25-SEP-2019

IPLLOT NAME: OTE_1901176.dgn
PATH & FILENAME: Projects\DM_ROS\1901176\Signing\OTE_1901176.dgn



UTILITIES

DRAWN BY: CCY

CHECKED BY: SRM

CERTIFIED BY

Steve McBurn
LICENSED PROFESSIONAL ENGINEER

LIC. NO. 19579

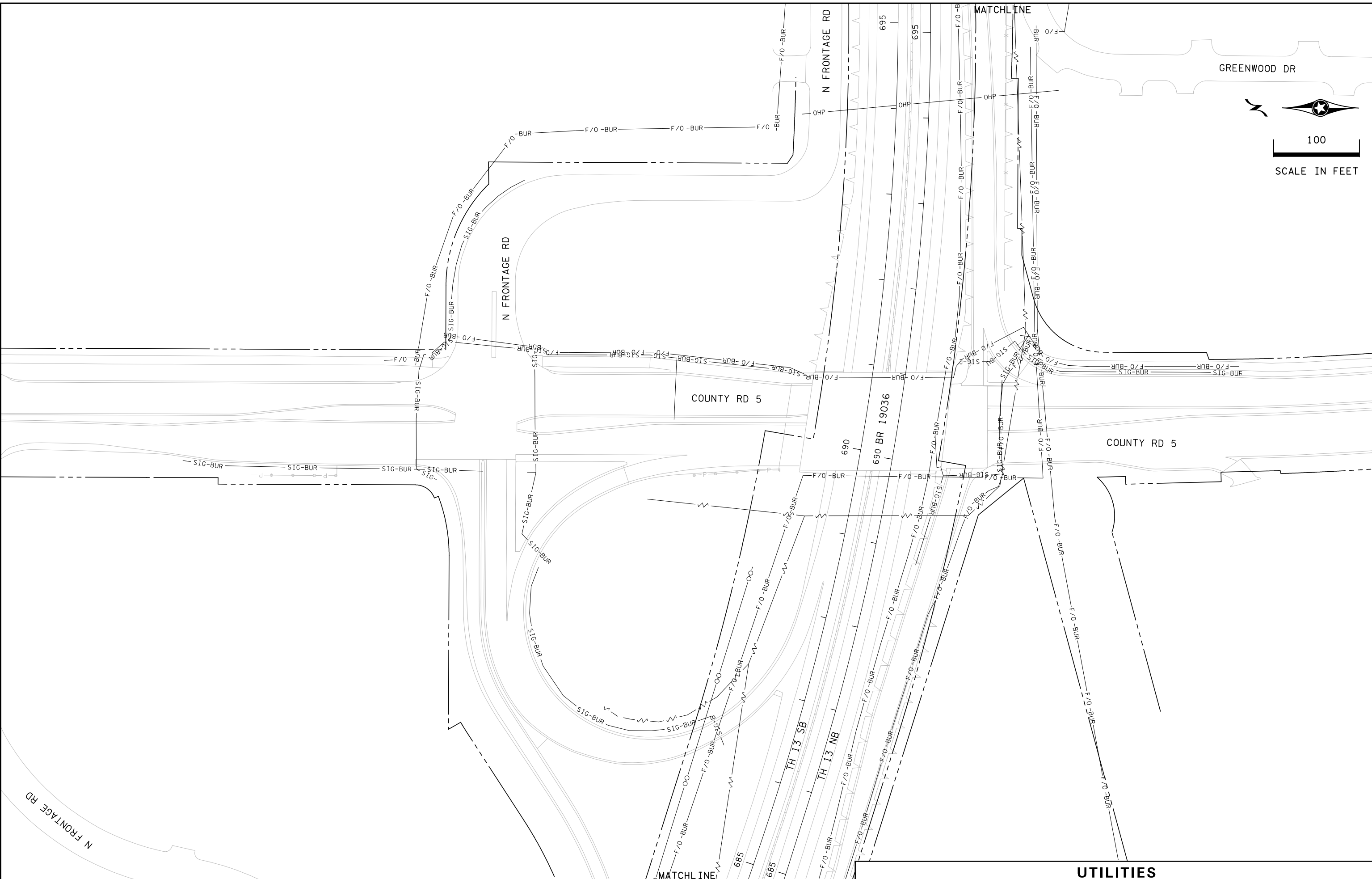
DATE 9/25/2019

STATE PROJ. NO. 1901-176 (TH 13)

SHEET NO. 15 OF 106 SHEETS

PLOTTED/REVISED: 25-SEP-2019

I PLOT NAME: OTE_1901176.dwg
PATH & FILENAME: Projects\DM_ROS\03\1901176\Signing\OT\ST\NOTE_1901176.dwg

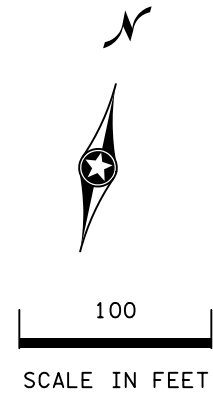


100
SCALE IN FEET

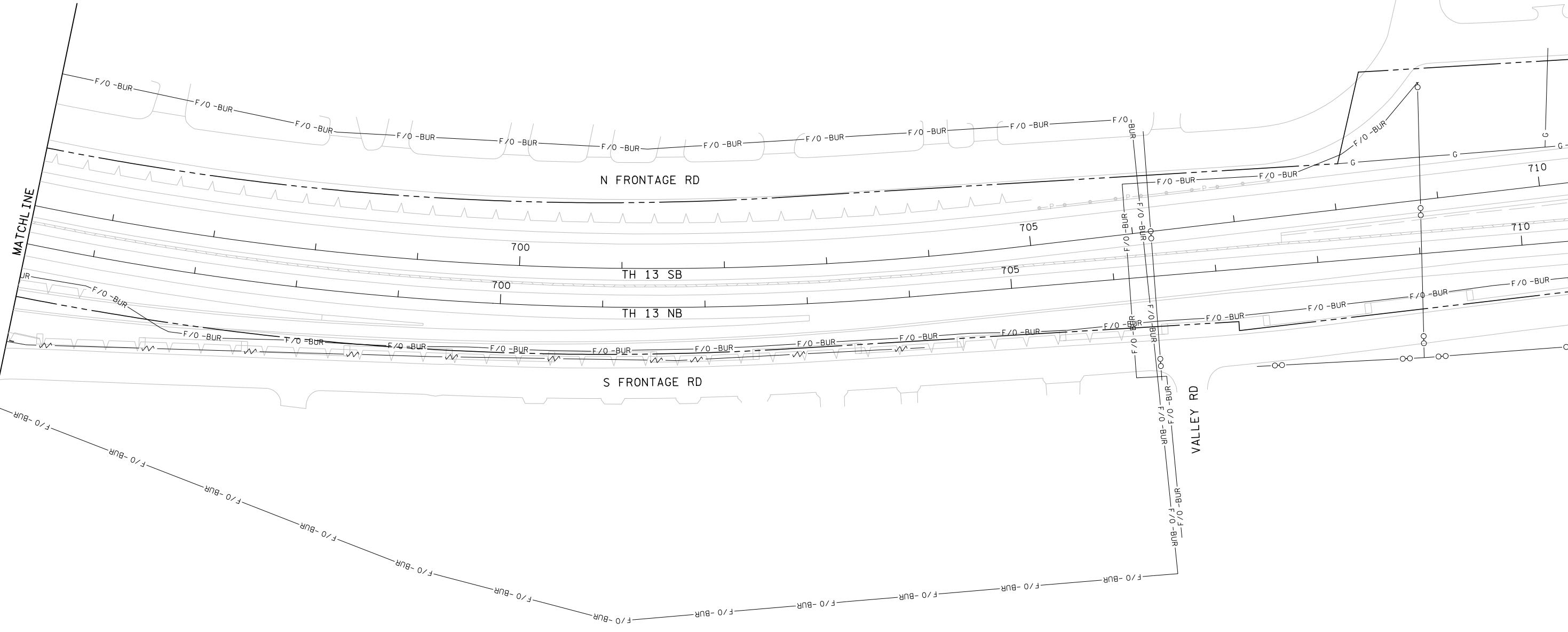
UTILITIES

PLOTTED/REVISED: 25-SEP-2019

IPLOT NAME: OTE_1901176.dwg
PATH & FILENAME: Projects\DM_ROMS\03\1901176\Signing\OT\NOTE_1901176.dwg



DUPONT AVE S



UTILITIES

DRAWN BY: CCY

CHECKED BY: SRM

CERTIFIED BY

Steven M. Bur
LICENSED PROFESSIONAL ENGINEER

LIC. NO. 19579

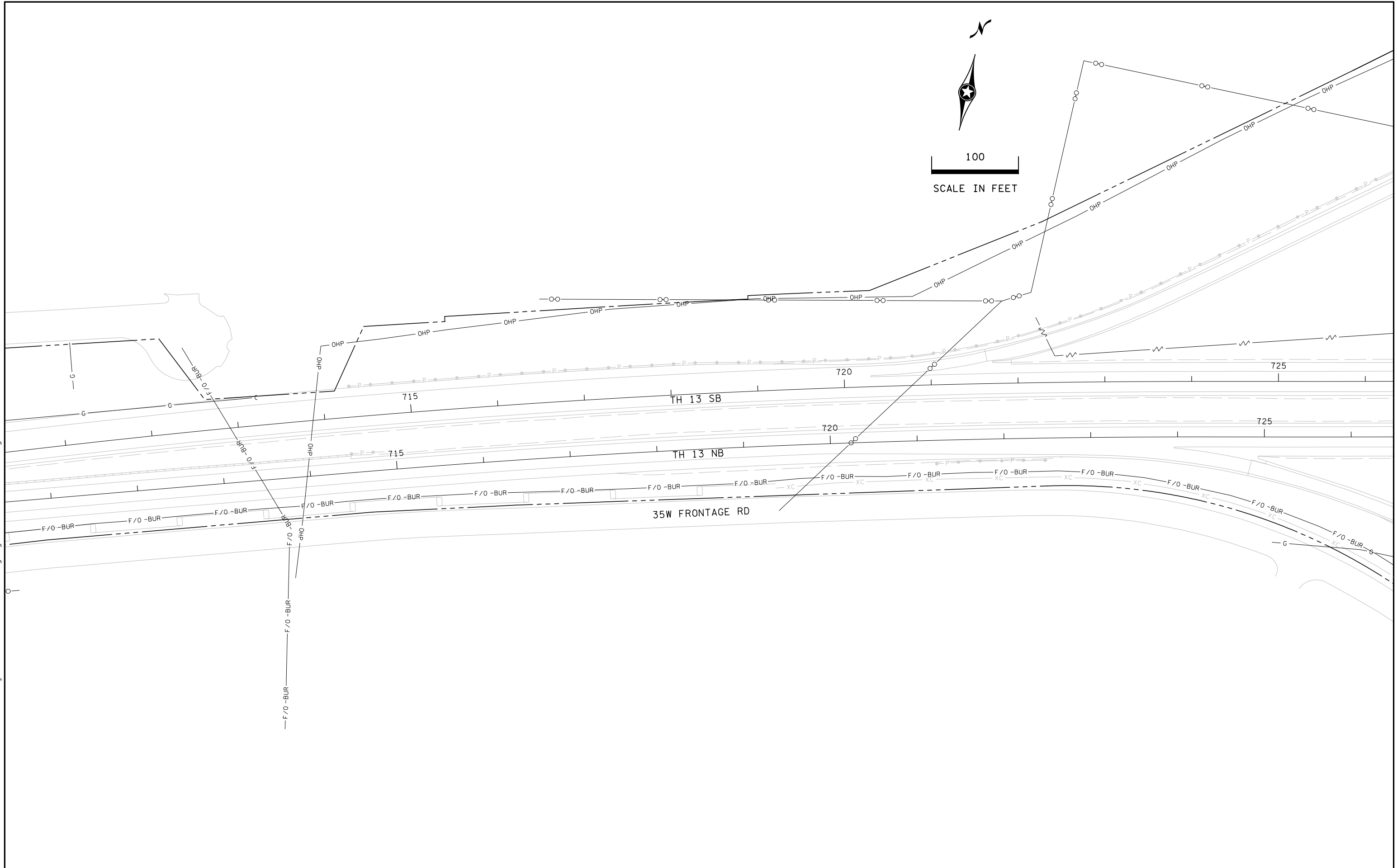
DATE 9/25/2019

STATE PROJ. NO. 1901-176 (TH 13)

SHEET NO. 17 OF 106 SHEETS

PLOTTED/REVISED: 25-SEP-2019

I/PLOT NAME: OTE_1901176.dgn
PATH & FILENAME: Projects\DM_ROMS\031901176\Signing\OTE_1901176.dgn



UTILITIES

DRAWN BY: CCY

CHECKED BY: SRM

CERTIFIED BY

Steve McBurn
LICENSED PROFESSIONAL ENGINEER

LIC. NO. 19579

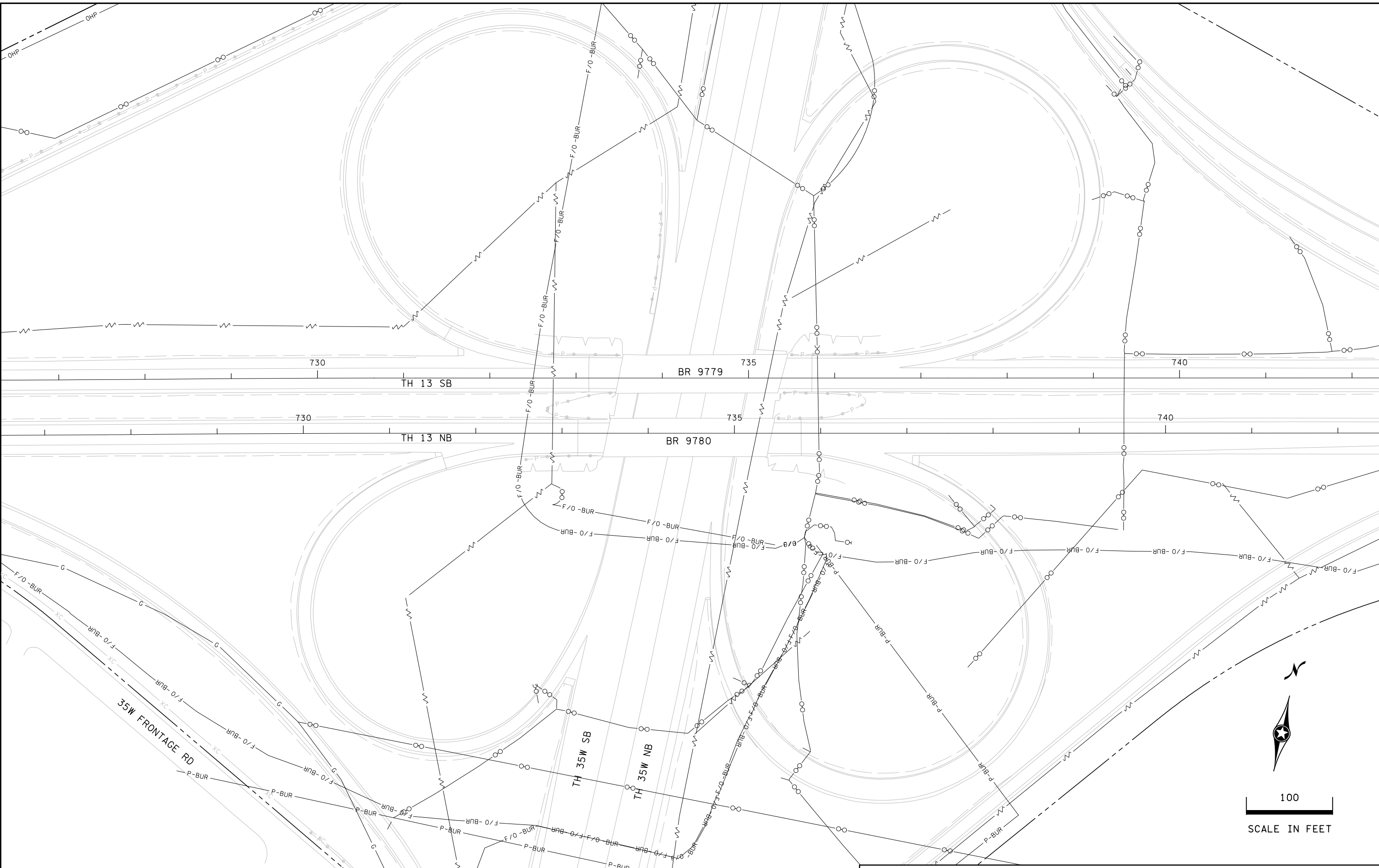
DATE 9/25/2019

STATE PROJ. NO. 1901-176 (TH 13)

SHEET NO. 18 OF 106 SHEETS

PLOTTED/REVISED: 25-SEP-2019

IPLLOT NAME: OTE_1901176.dgn
PATH & FILENAME: Projects\DM_ROM\03\1901176\Signing\OT\ST\OTE_1901176.dgn



UTILITIES

DRAWN BY: CCY

CHECKED BY: SRM

CERTIFIED BY

Steve McBurn
LICENSED PROFESSIONAL ENGINEER

LIC. NO. 19579

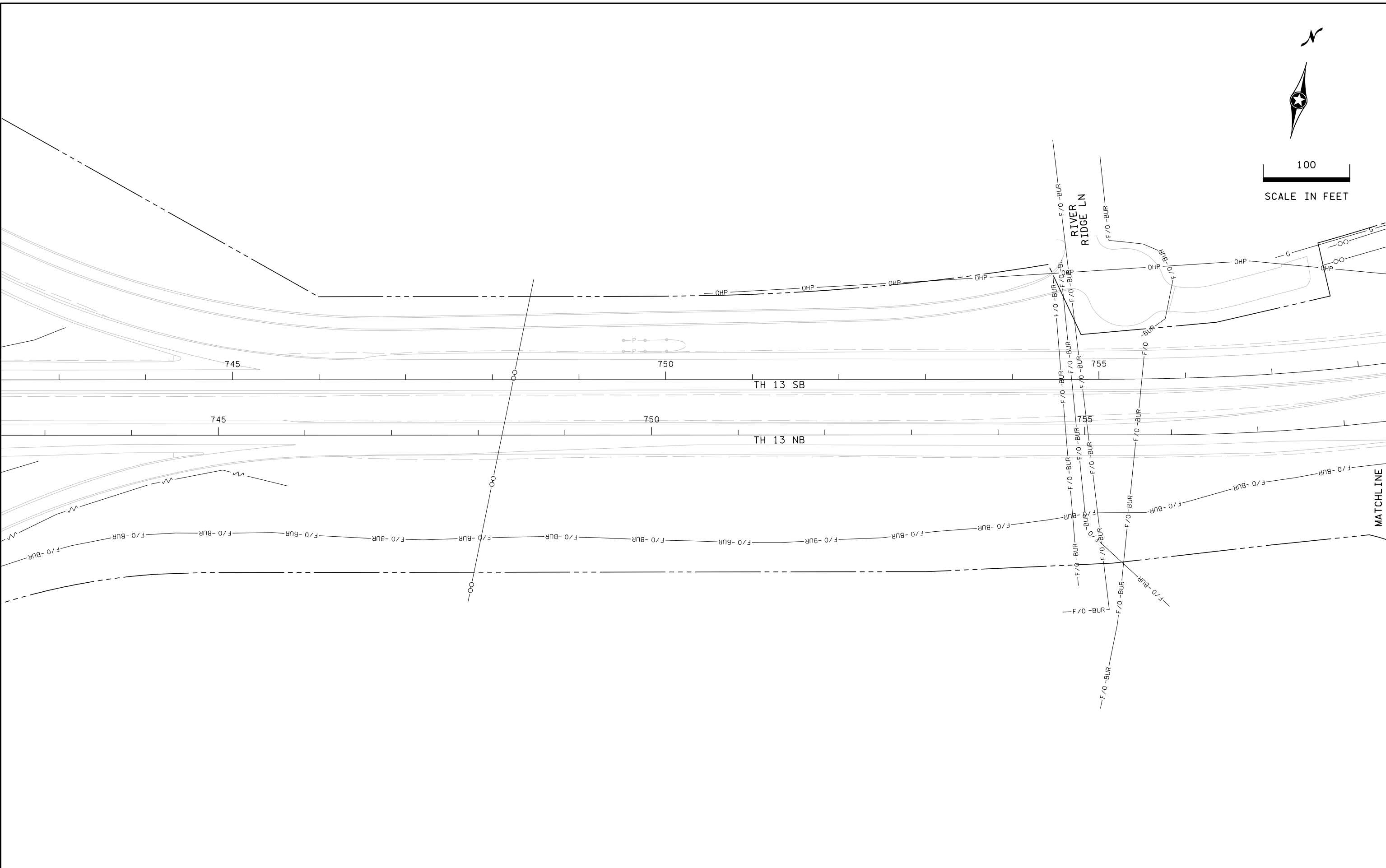
DATE 9/25/2019

STATE PROJ. NO. 1901-176 (TH 13)

SHEET NO. 19 OF 106 SHEETS

PLOTTED/REVISED: 25-SEP-2019

I/PLOT NAME: OTE_1901176.dgn
PATH & FILENAME: Projects\DM_ROS\1901176\Signing\OTE_1901176.dgn



UTILITIES

DRAWN BY: CCY

CHECKED BY: SRM

CERTIFIED BY

Steven M. Bur
LICENSED PROFESSIONAL ENGINEER

LIC. NO. 19579

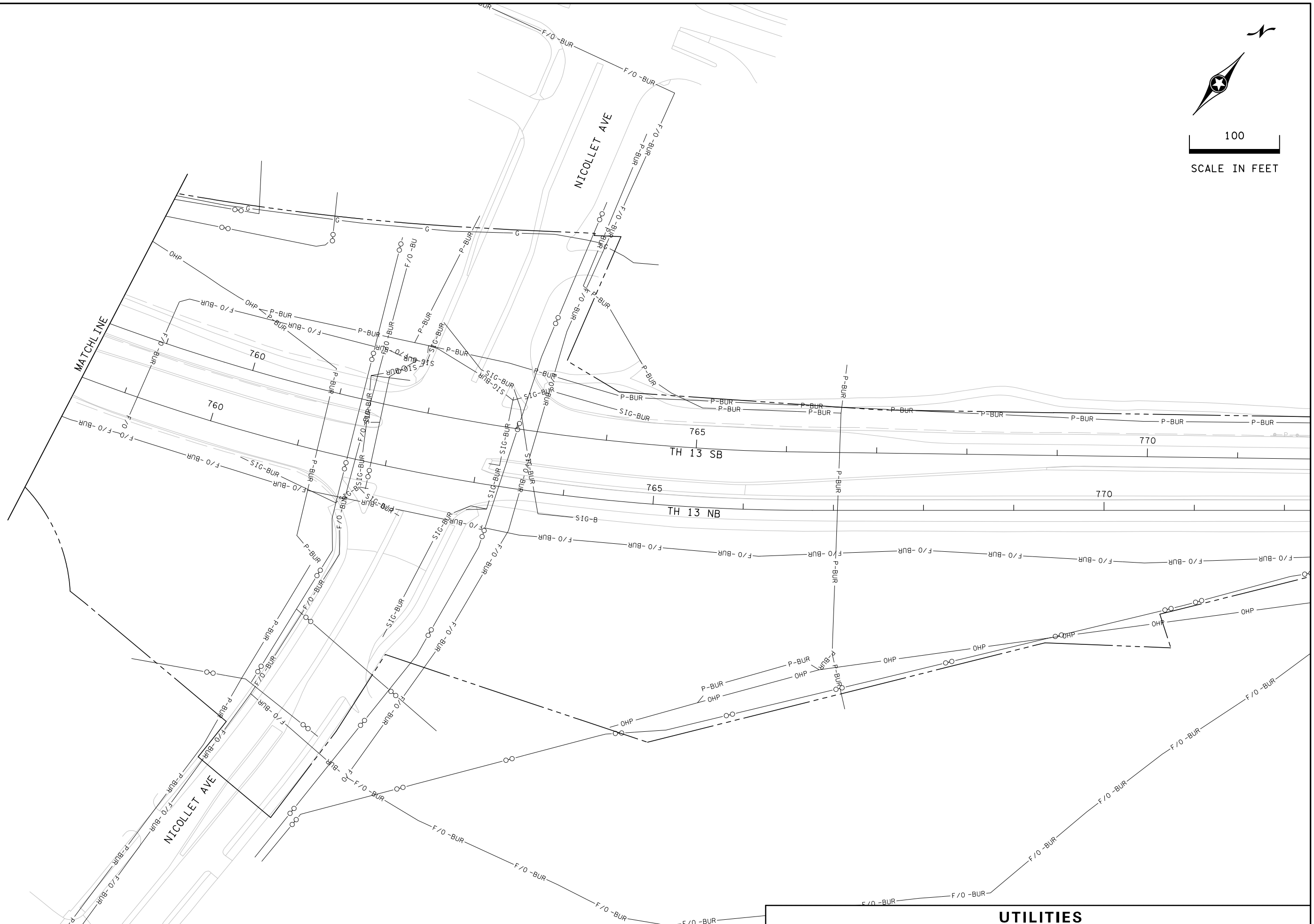
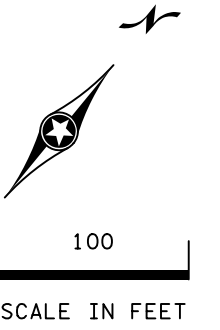
DATE 9/25/2019

STATE PROJ. NO. 1901-176 (TH 13)

SHEET NO. 20 OF 106 SHEETS

PLOTTED/REVISED: 25-SEP-2019

IPLOT NAME: OTE_1901176.dgn
PATH & FILENAME: Projects\DM_ROS\03\1901176\Signing\OT\NOTE_1901176.dgn



UTILITIES

DRAWN BY: CCY

CHECKED BY: SRM

CERTIFIED BY

Steven M. Bur
LICENSED PROFESSIONAL ENGINEER

LIC. NO. 19579

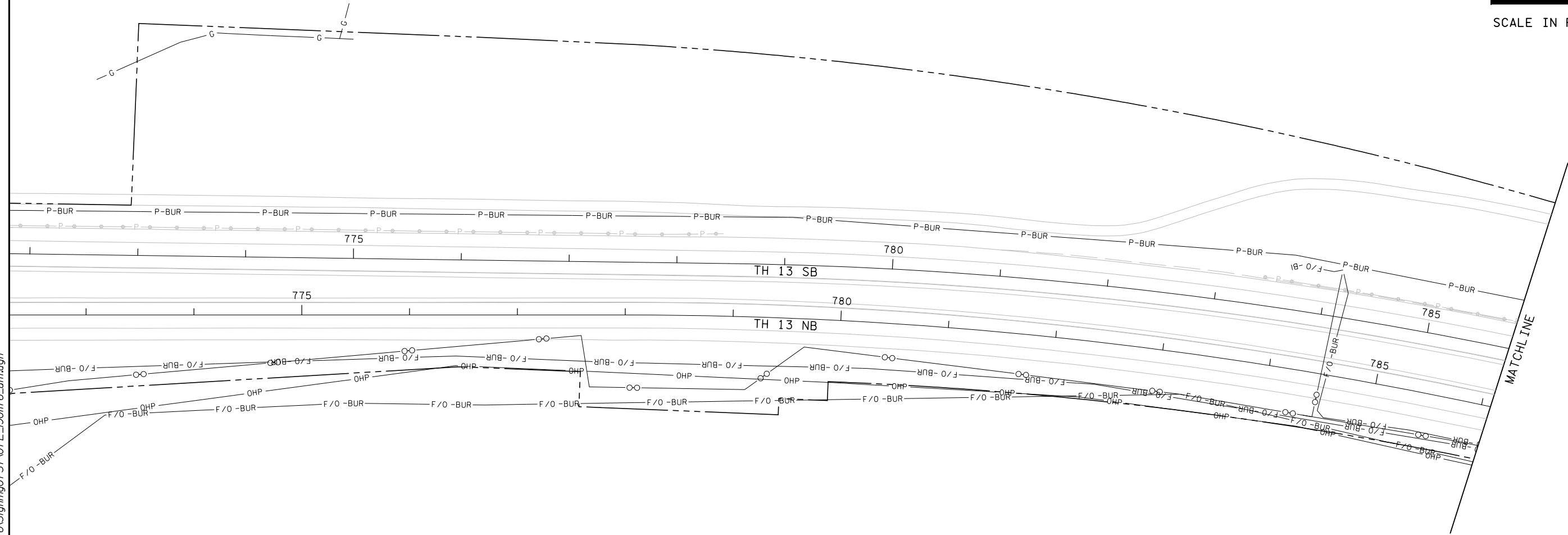
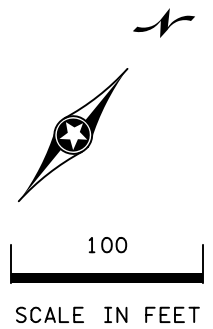
DATE 9/25/2019

STATE PROJ. NO. 1901-176 (TH 13)

SHEET NO. 21 OF 106 SHEETS

PLOTTED/REVISED: 25-SEP-2019

IPLOT NAME: OTE_1901176.dgn
PATH & FILENAME: Projects\DM_ROS\03\1901176\Signing\OT\ST\OTE_1901176.dgn



UTILITIES

DRAWN BY: CCY

CHECKED BY: SRM

CERTIFIED BY

Steven M. ...
LICENSED PROFESSIONAL ENGINEER

LIC. NO. 19579

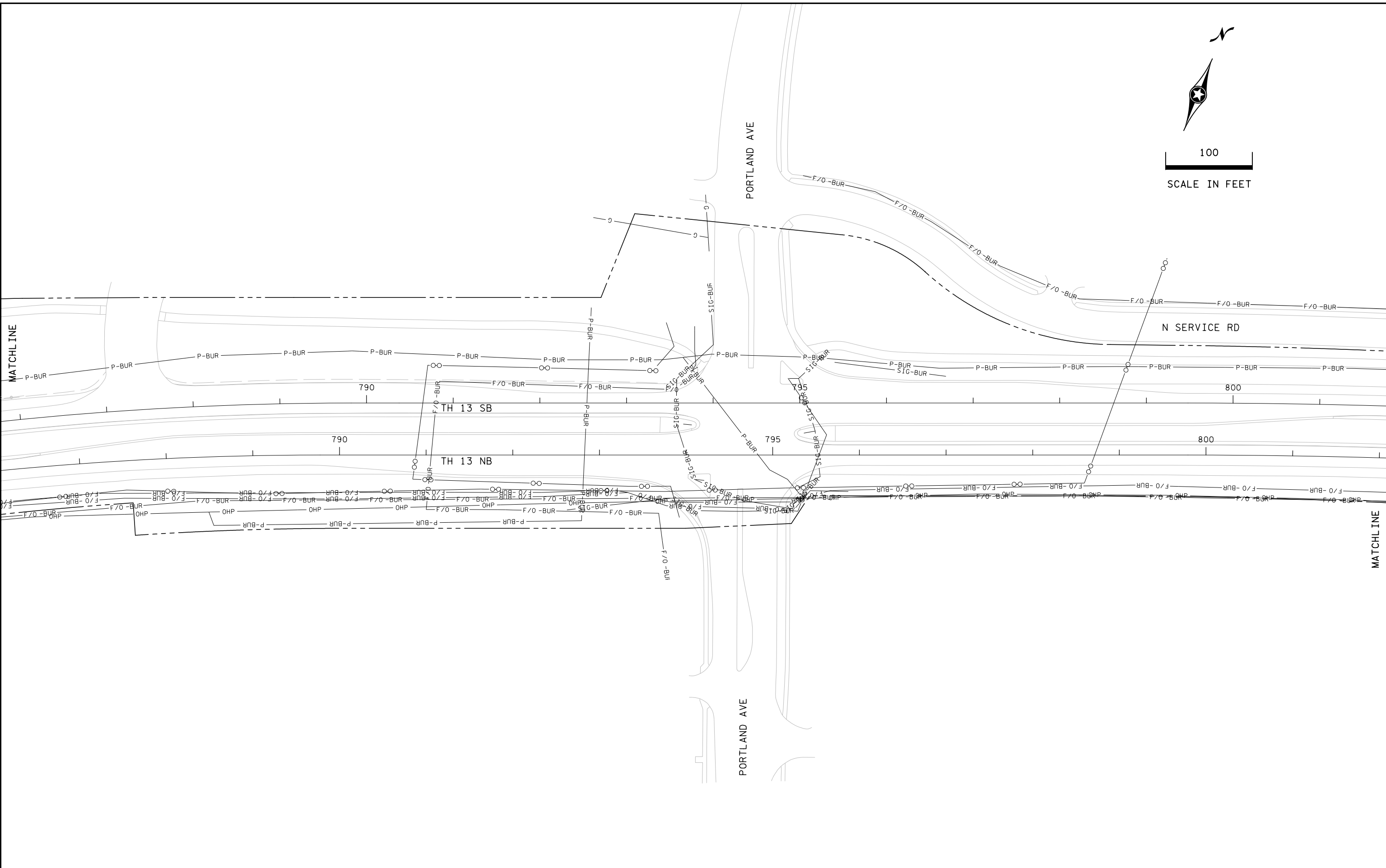
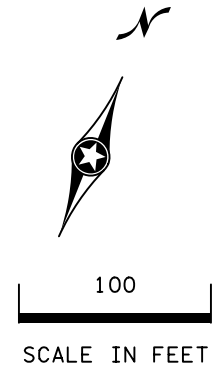
DATE 9/25/2019

STATE PROJ. NO. 1901-176 (TH 13)

SHEET NO. 22 OF 106 SHEETS

PLOTTED/REVISED: 25-SEP-2019

I/PLOT NAME: OTE_1901176.dgn
PATH & FILENAME: Projects\DM_ROM\1901176\Signing\OT\STATE_1901176_util.dgn



UTILITIES

DRAWN BY: CCY

CHECKED BY: SRM

CERTIFIED BY

Steve McBurn
LICENSED PROFESSIONAL ENGINEER

LIC. NO. 19579

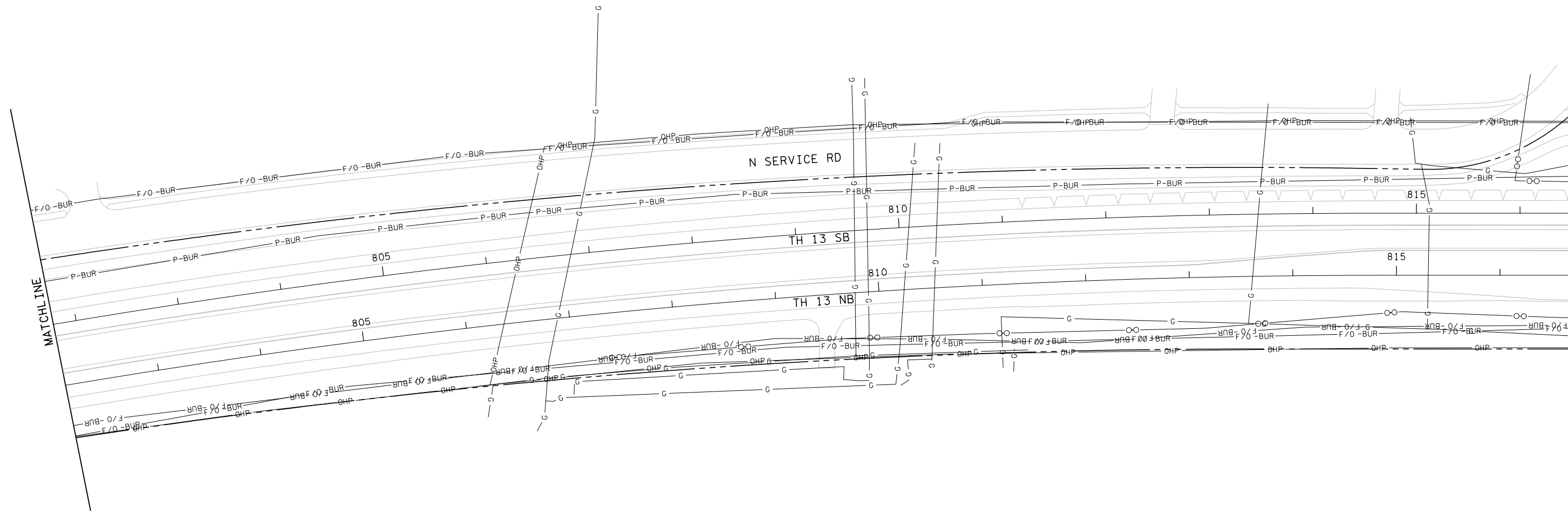
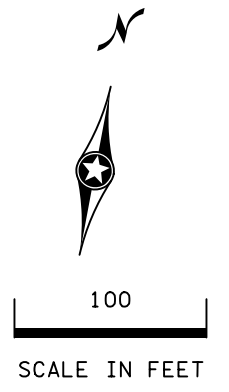
DATE 9/25/2019

STATE PROJ. NO. 1901-176 (TH 13)

SHEET NO. 23 OF 106 SHEETS

PLOTTED/REVISED: 25-SEP-2019

IPLOT NAME: OTE_1901176.dgn
PATH & FILENAME: Projects\DM_ROMS\1901176\Signing\OTE_1901176.dgn



UTILITIES

DRAWN BY: CCY

CHECKED BY: SRM

CERTIFIED BY

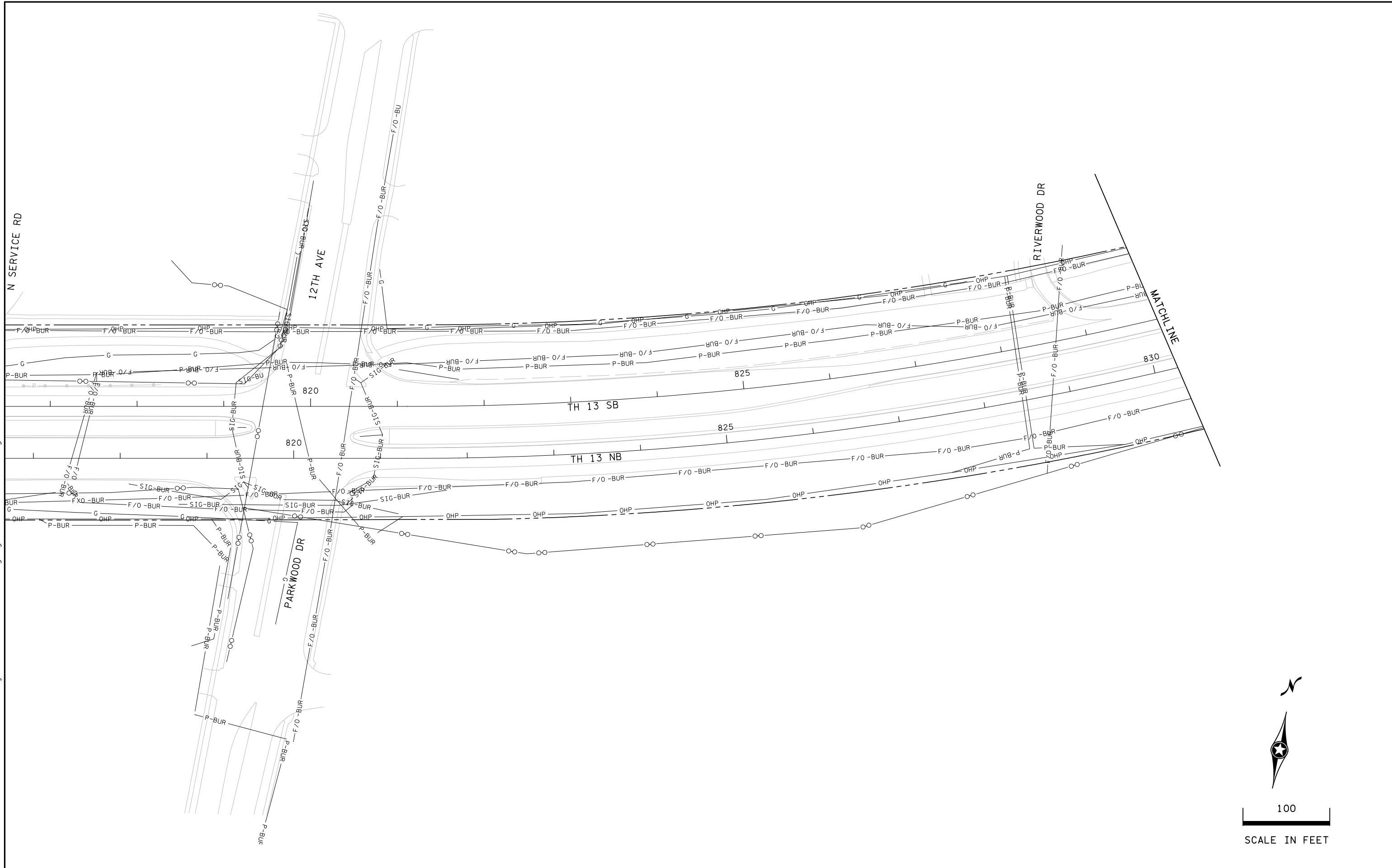
Steve McBurn
LICENSED PROFESSIONAL ENGINEER

LIC. NO. 19579

DATE 9/25/2019

STATE PROJ. NO. 1901-176 (TH 13)

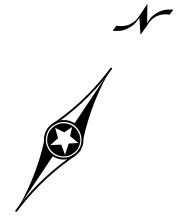
SHEET NO. 24 OF 106 SHEETS



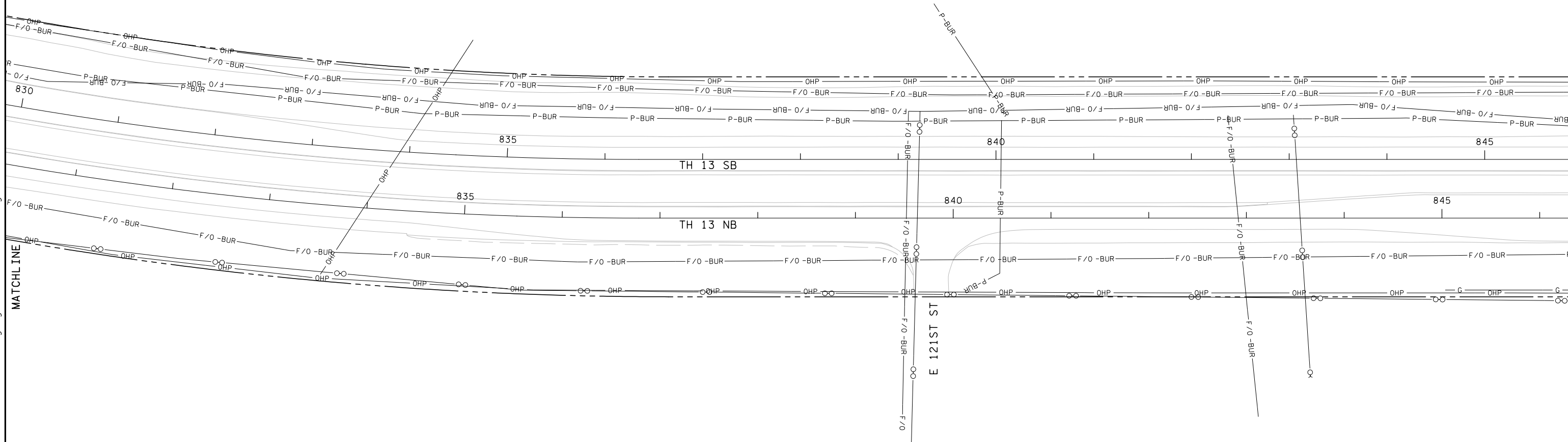
DRAWN BY: CCY			CHECKED BY: SRM			CERTIFIED BY <i>Steve McBurn</i> LIC. NO. 19579 DATE 9/25/2019			UTILITIES		
STATE PROJ. NO. 1901-176 (TH 13)						SHEET NO. 25 OF 106 SHEETS					

PLOTTED/REVISED: 25-SEP-2019

I/PLOT NAME: OTE_1901176.dgn
PATH & FILENAME: Projects\DM_ROS\03\1901176\Signing\OTE_1901176.dgn



100
SCALE IN FEET



UTILITIES

DRAWN BY: CCY

CHECKED BY: SRM

CERTIFIED BY

Steve McBurn
LICENSED PROFESSIONAL ENGINEER

LIC. NO. 19579

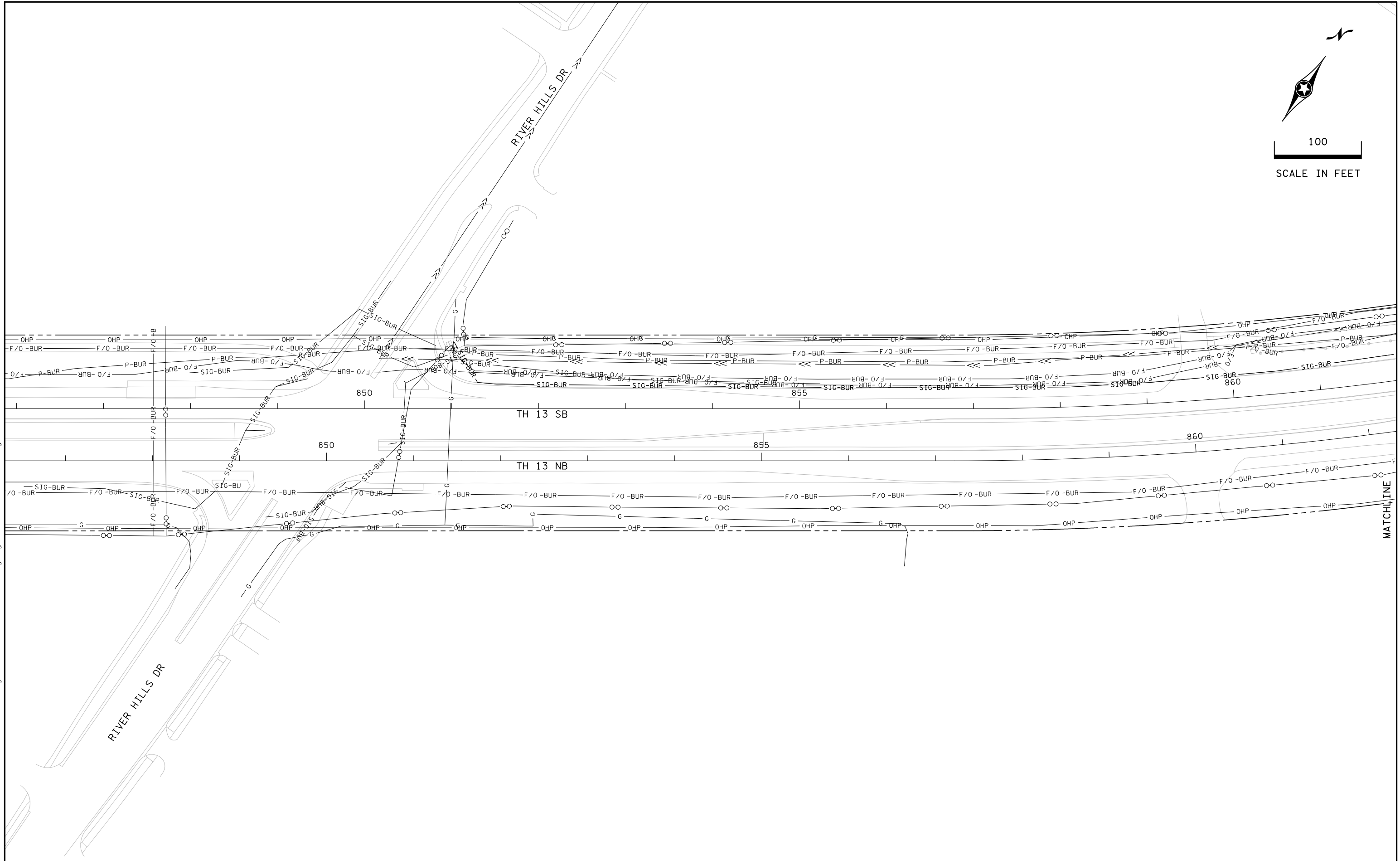
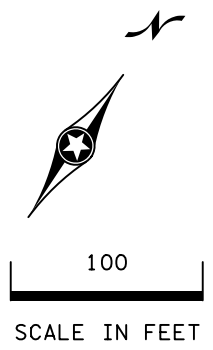
DATE 9/25/2019

STATE PROJ. NO. 1901-176 (TH 13)

SHEET NO. 26 OF 106 SHEETS

PLOTTED/REVISED: 25-SEP-2019

I/PLOT NAME: OTE_1901176.dgn
PATH & FILENAME: Projects\DM ROS\1901176\Signing\OTE_1901176.dgn



MATCHLINE

UTILITIES

DRAWN BY: CCY

CHECKED BY: SRM

CERTIFIED BY

Steven M. ...
LICENSED PROFESSIONAL ENGINEER

LIC. NO. 19579

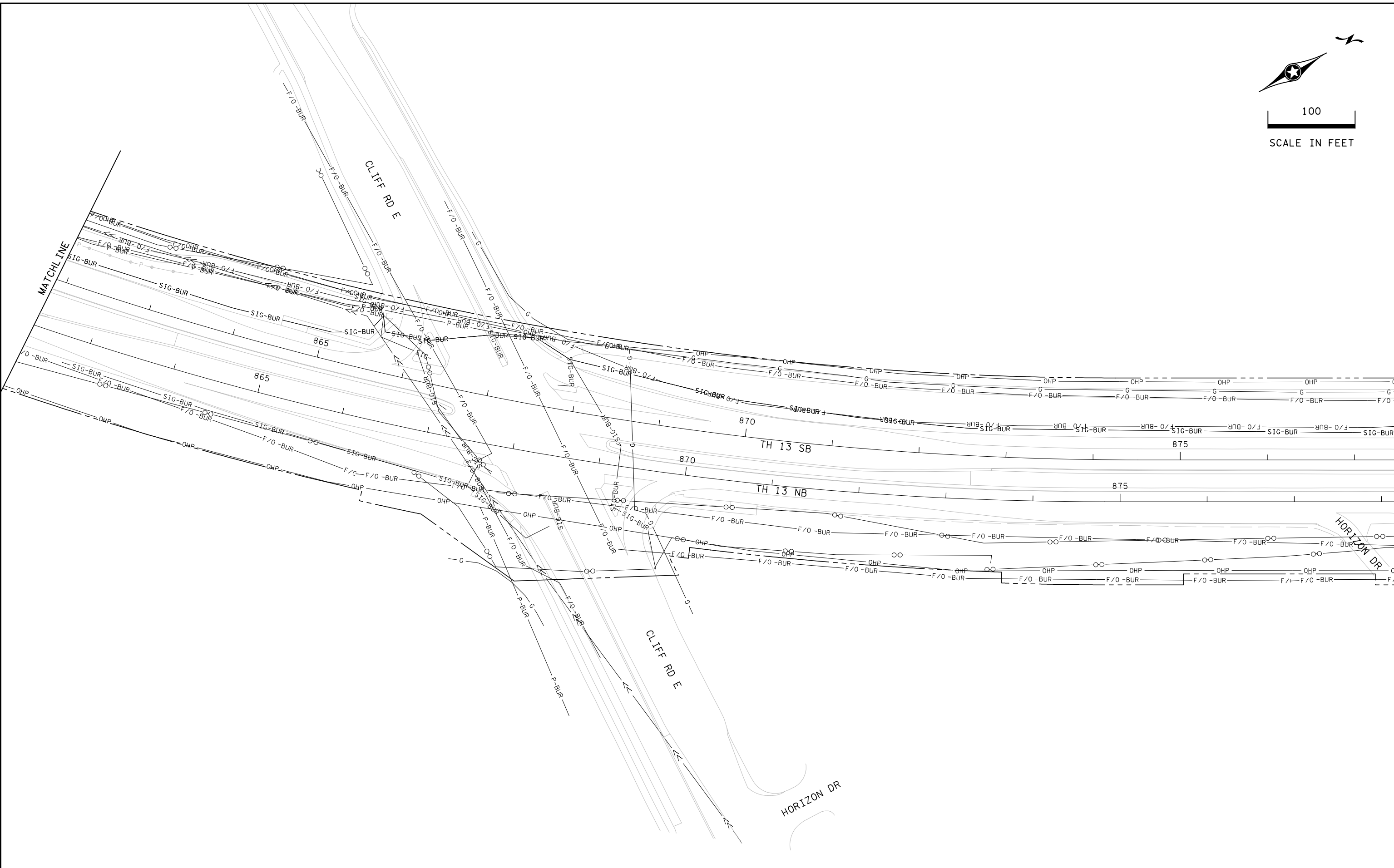
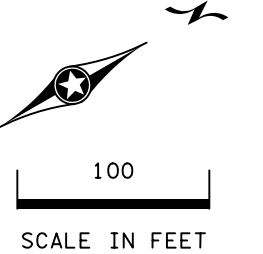
DATE 9/25/2019

STATE PROJ. NO. 1901-176 (TH 13)

SHEET NO. 27 OF 106 SHEETS

PLOTTED/REVISED: 25-SEP-2019

IPLOT NAME: OTE_1901176.dgn
PATH & FILENAME: Projects\DM_ROS\1901176\Signing\OT\NOTE_1901176.dgn



UTILITIES

DRAWN BY: CCY

CHECKED BY: SRM

CERTIFIED BY

Steven M. ...
LICENSED PROFESSIONAL ENGINEER

LIC. NO. 19579

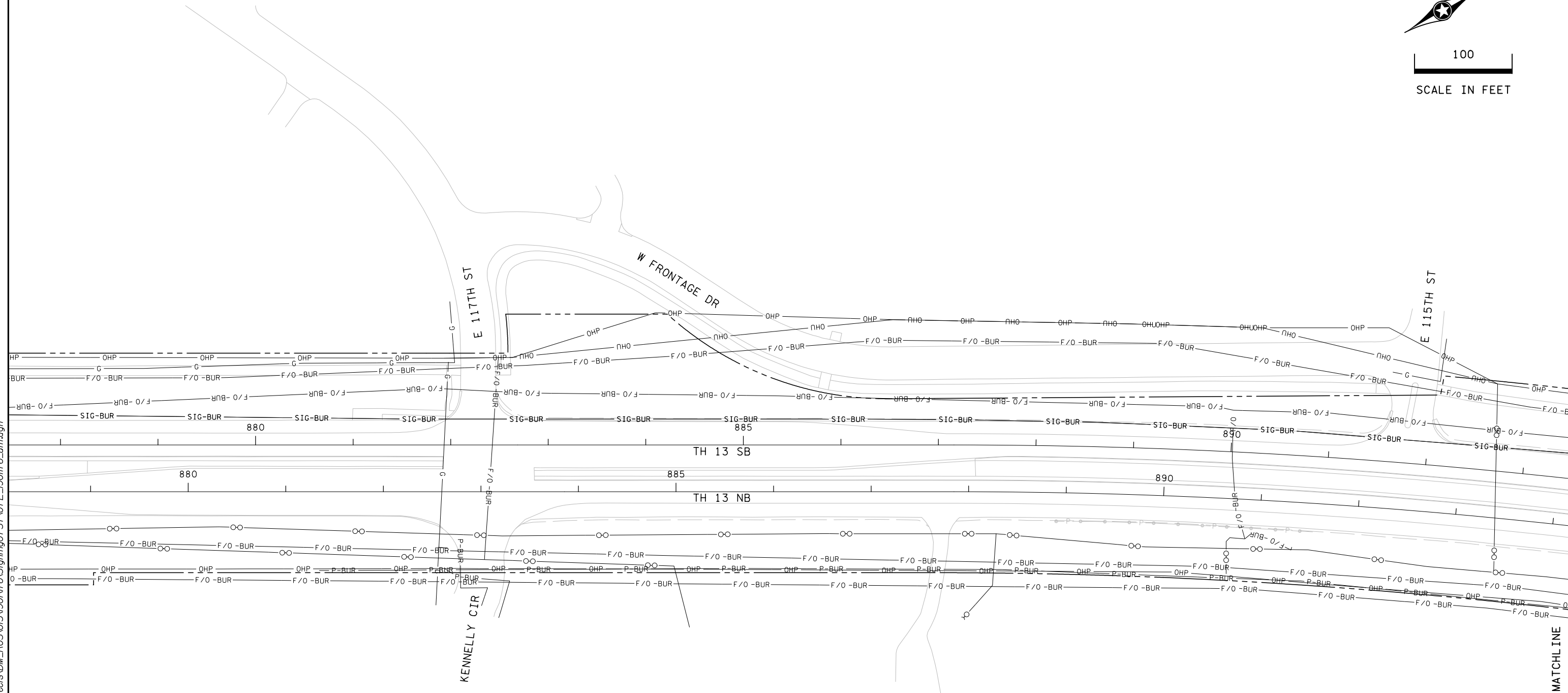
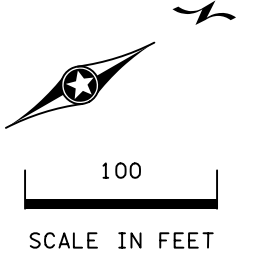
DATE 9/25/2019

STATE PROJ. NO. 1901-176 (TH 13)

SHEET NO. 28 OF 106 SHEETS

PLOTTED/REVISED: 25-SEP-2019

IPLOT NAME: OTE_190176.dgn
PATH & FILENAME: Projects\DM_ROS\03\190176\Signing\OT\STATE_190176.dgn



UTILITIES

DRAWN BY: CCY

CHECKED BY: SRM

CERTIFIED BY

Steve McBurn
LICENSED PROFESSIONAL ENGINEER

LIC. NO. 19579

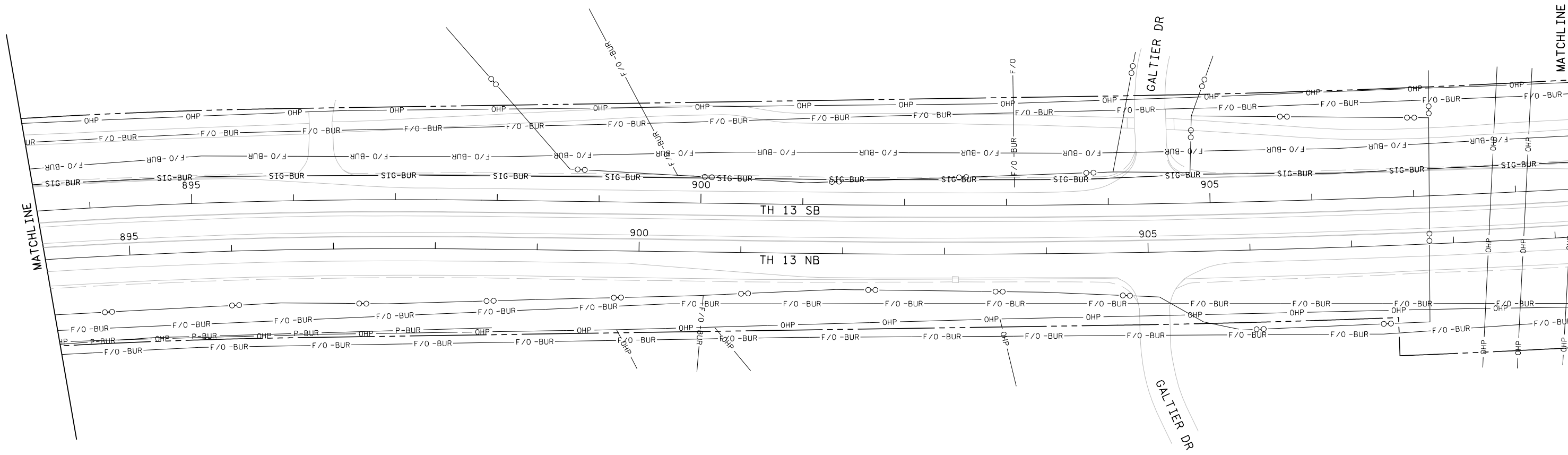
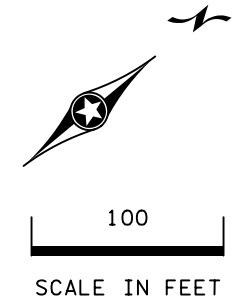
DATE 9/25/2019

STATE PROJ. NO. 1901-176 (TH 13)

SHEET NO. 29 OF 106 SHEETS

PLOTTED/REVISED: 25-SEP-2019

IPLOT NAME: OTE_1901176.dwg
PATH & FILENAME: Projects\DM_ROMS\03\1901176\Signing\OTE_1901176.dwg



UTILITIES

DRAWN BY: CCY

CHECKED BY: SRM

CERTIFIED BY

Steven M. Bur
LICENSED PROFESSIONAL ENGINEER

LIC. NO. 19579

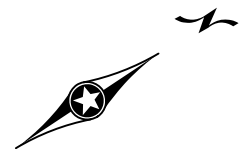
DATE 9/25/2019

STATE PROJ. NO. 1901-176 (TH 13)

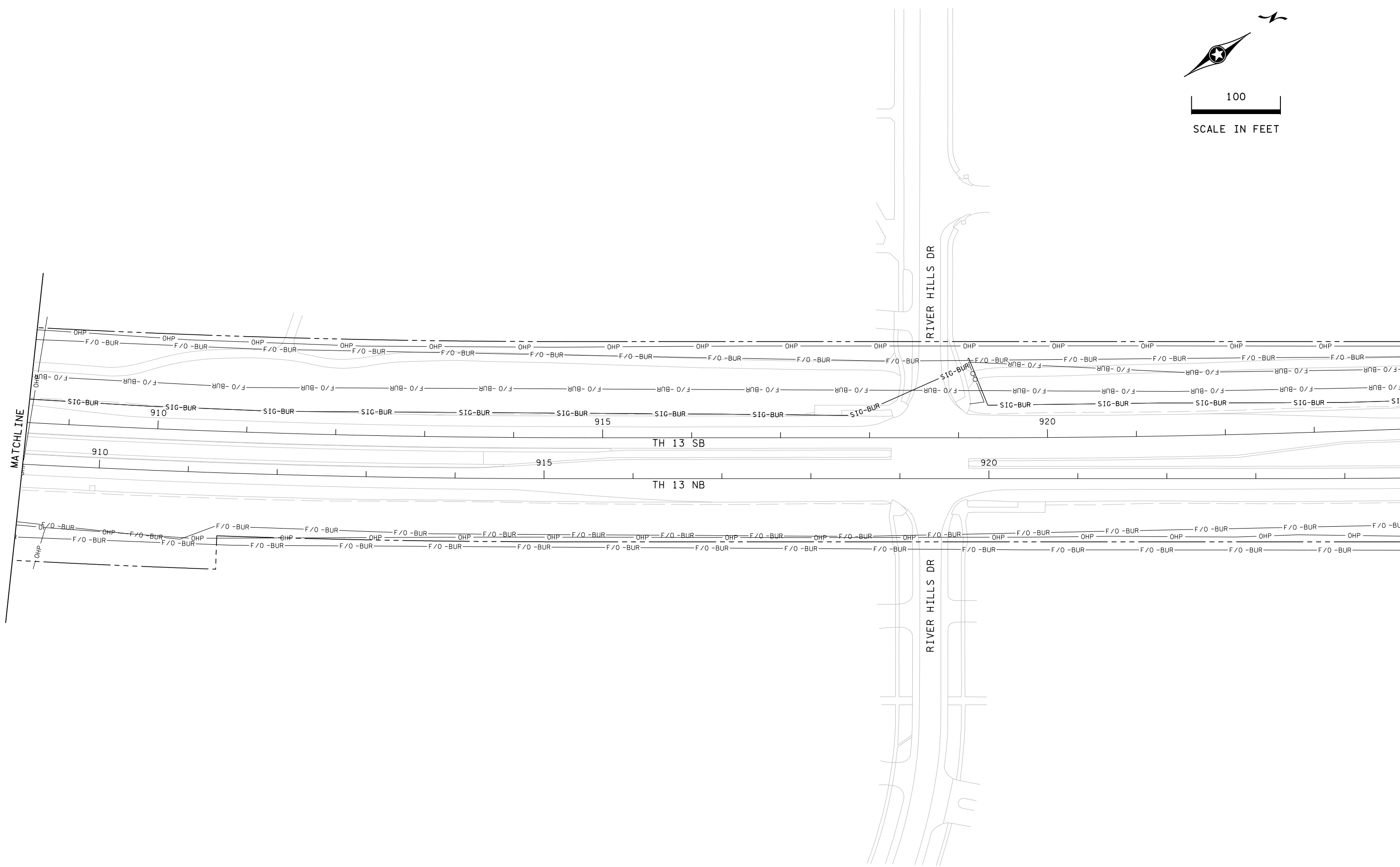
SHEET NO. 30 OF 106 SHEETS

PLOTTED/REVISED: 25-SEP-2019

IPLOT NAME: OTE_1901176.dgn
PATH & FILENAME: Projects\DM_ROMS\03\1901176\Signing\OTE_1901176.dgn




100
SCALE IN FEET



UTILITIES

DRAWN BY: CCY

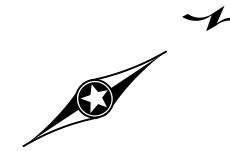
CHECKED BY: SRM

CERTIFIED BY  LIC. NO. 19579 DATE 9/25/2019

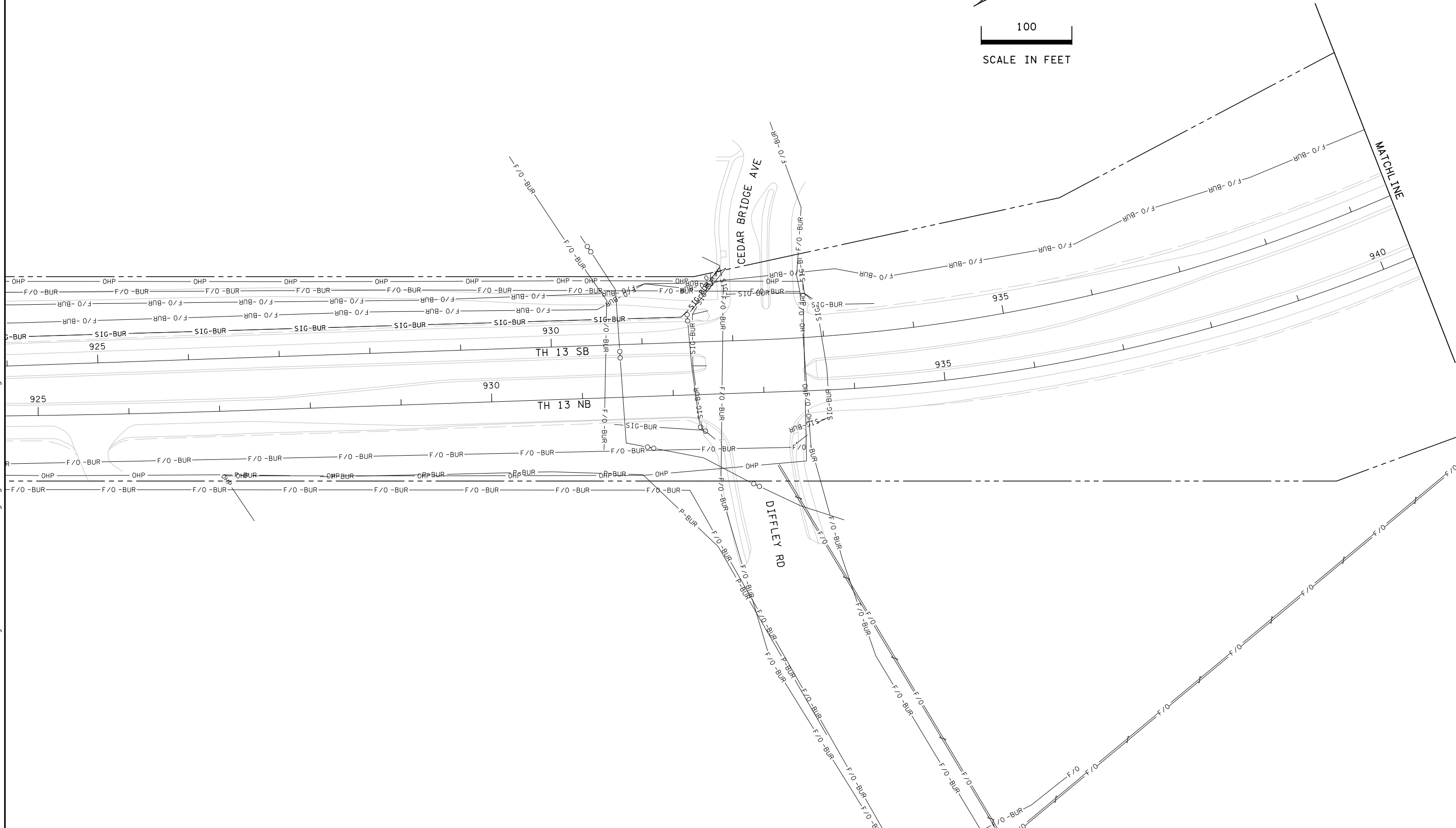
STATE PROJ. NO. 1901-176 (TH 13) SHEET NO. 31 OF 106 SHEETS

PLOTTED/REVISED: 25-SEP-2019

IPLOT NAME: OTE_1901176.dgn
PATH & FILENAME: Projects\DM_ROS\03\1901176\Signing\OTE_1901176.dgn



100
SCALE IN FEET



UTILITIES

DRAWN BY: CCY

CHECKED BY: SRM

CERTIFIED BY

Steven M. Bur
LICENSED PROFESSIONAL ENGINEER

LIC. NO. 19579

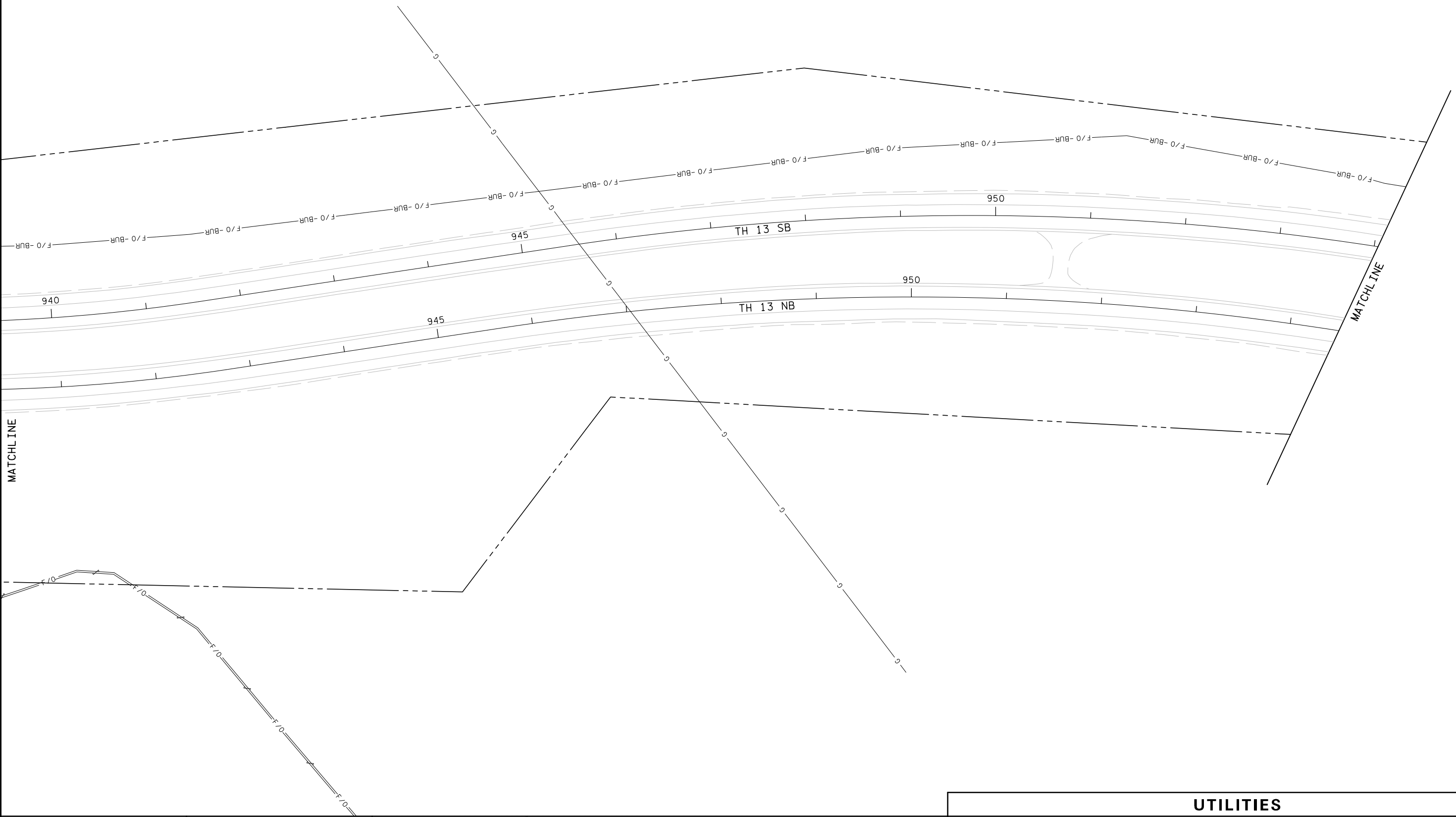
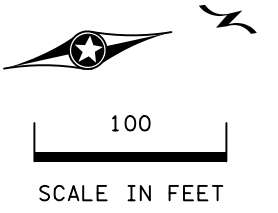
DATE 9/25/2019

STATE PROJ. NO. 1901-176 (TH 13)

SHEET NO. 32 OF 106 SHEETS

PLOTTED/REVISED: 25-SEP-2019

I/PLOT NAME: OTE_1901176.dgn
PATH & FILENAME: Projects\DM_ROMS\03\1901176\Signing\OTE_1901176.dgn



DRAWN BY: CCY

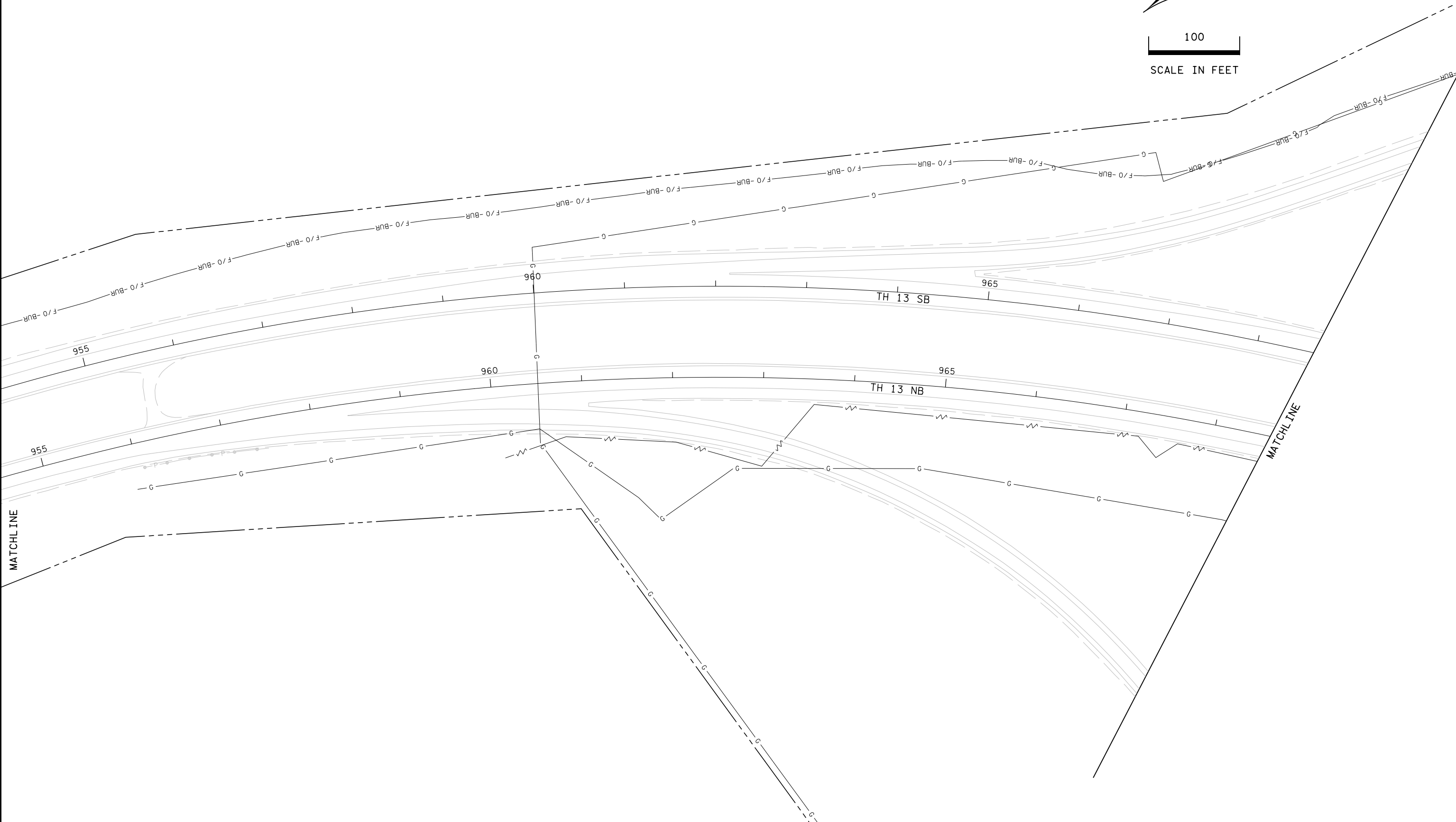
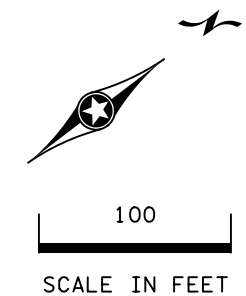
CHECKED BY: SRM

CERTIFIED BY *Steve McBurn* LIC. NO. 19579 DATE 9/25/2019
LICENSED PROFESSIONAL ENGINEER

UTILITIES
STATE PROJ. NO. 1901-176 (TH 13) SHEET NO. 33 OF 106 SHEETS

PLOTTED/REVISED: 25-SEP-2019

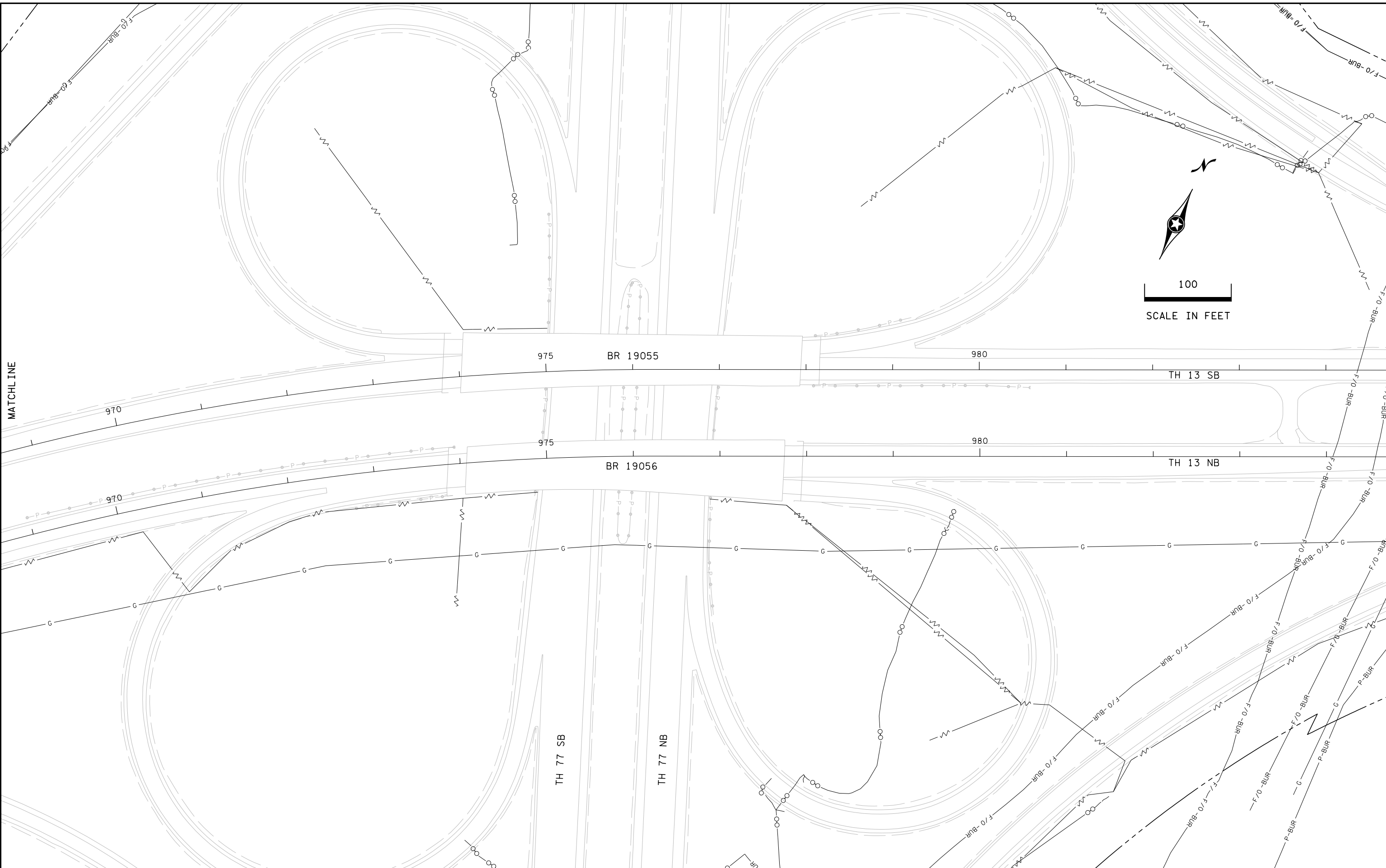
I/PLOT NAME: OTE_1901176.dgn
PATH & FILENAME: Projects\DM_ROS\03\1901176\Signing\OTE_1901176.dgn



DRAWN BY: CCY		CHECKED BY: SRM		CERTIFIED BY <i>Steve McBurn</i> LICENSED PROFESSIONAL ENGINEER		LIC. NO. 19579		DATE 9/25/2019		UTILITIES		STATE PROJ. NO. 1901-176 (TH 13)		SHEET NO. 34 OF 106 SHEETS	
---------------	--	-----------------	--	--	--	----------------	--	----------------	--	------------------	--	----------------------------------	--	----------------------------	--

PLOTTED/REVISED: 25-SEP-2019

I PLOT NAME: OTE_1901176.dgn
PATH & FILENAME: Projects\DM ROS\03\1901176\Signing\OT\ST\OTE_1901176.dgn



100
SCALE IN FEET

DRAWN BY: CCY

CHECKED BY: SRM

CERTIFIED BY

Steve McBurn
LICENSED PROFESSIONAL ENGINEER

LIC. NO. 19579

DATE 9/25/2019

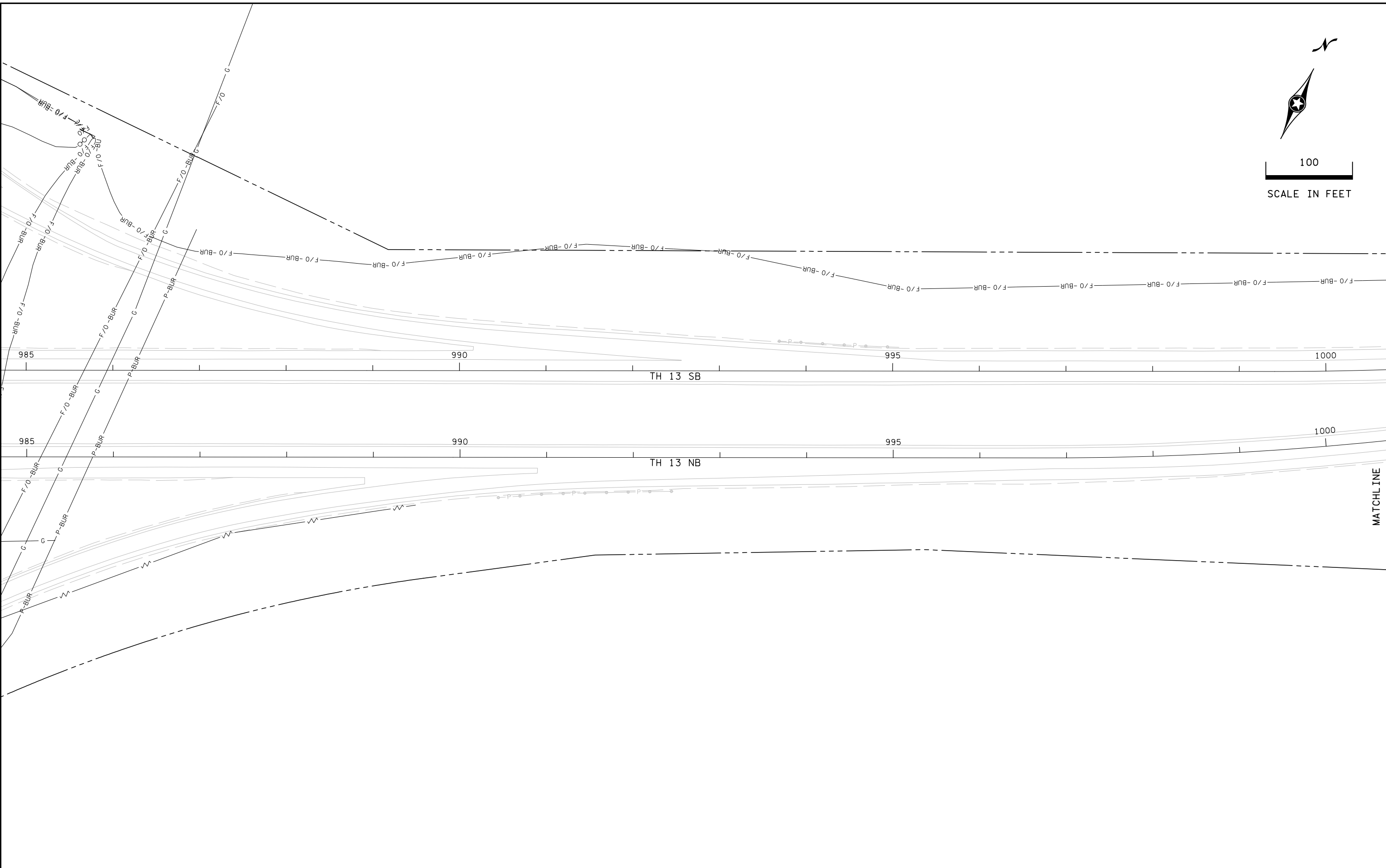
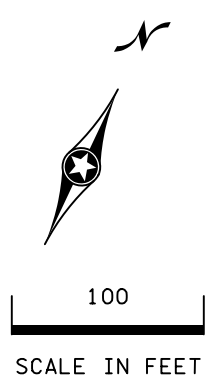
STATE PROJ. NO. 1901-176 (TH 13)

SHEET NO. 35 OF 106 SHEETS

UTILITIES

PLOTTED/REVISED: 25-SEP-2019

I/PLOT NAME: OTE_1901176.dgn
PATH & FILENAME: Projects\DM_R0S\013\1901176\Signing\OT\STATE_1901176.dgn



MATCHLINE

UTILITIES

DRAWN BY: CCY

CHECKED BY: SRM

CERTIFIED BY

Steve McBurn
LICENSED PROFESSIONAL ENGINEER

LIC. NO. 19579

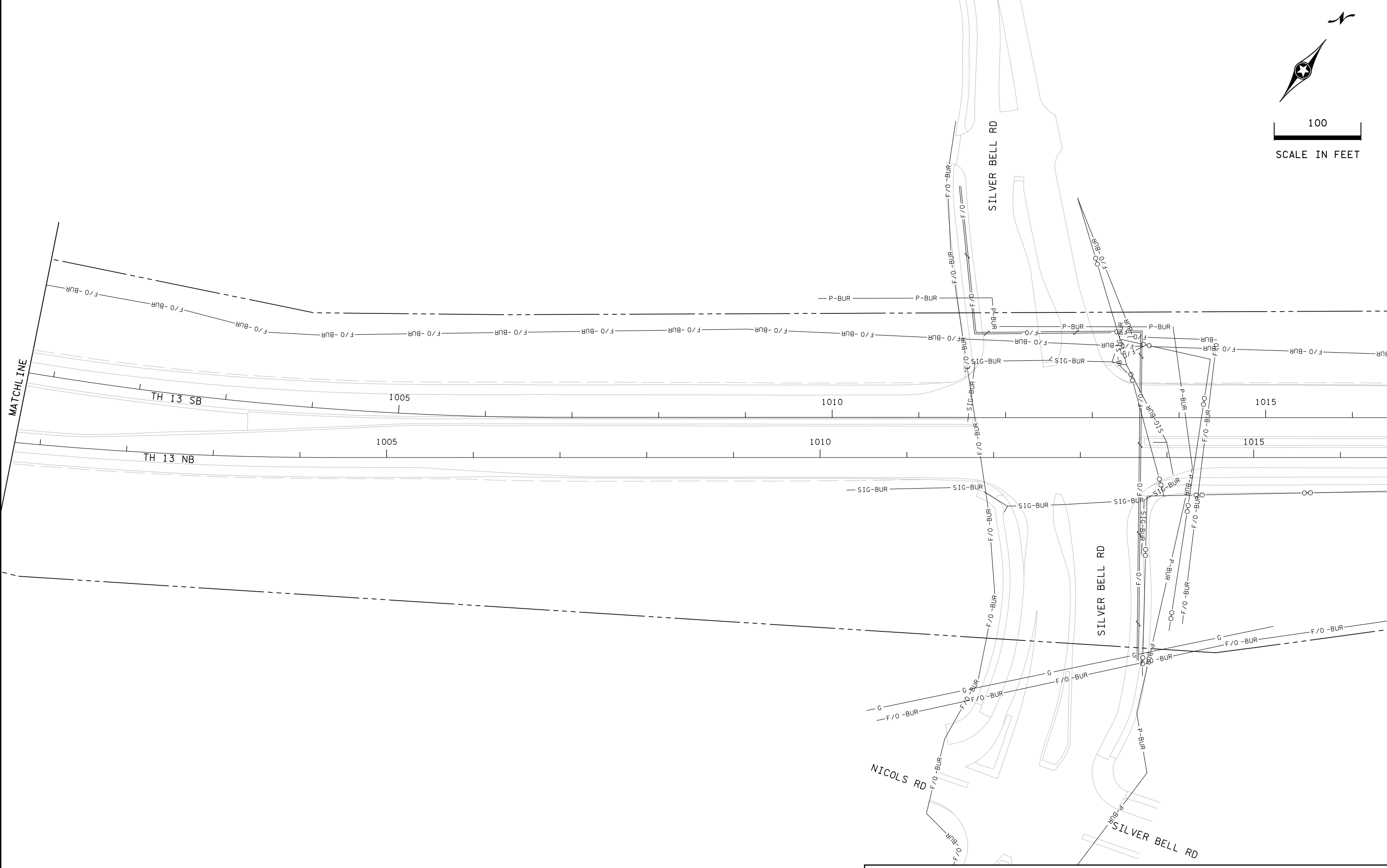
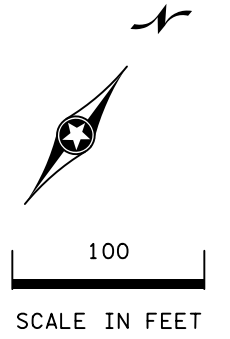
DATE 9/25/2019

STATE PROJ. NO. 1901-176 (TH 13)

SHEET NO. 36 OF 106 SHEETS

PLOTTED/REVISED: 25-SEP-2019

IPLOT NAME: OTE_1901176.dwg
PATH & FILENAME: Projects\DM_ROM\1901176\Signing\OT\NOTE_1901176.dwg



UTILITIES

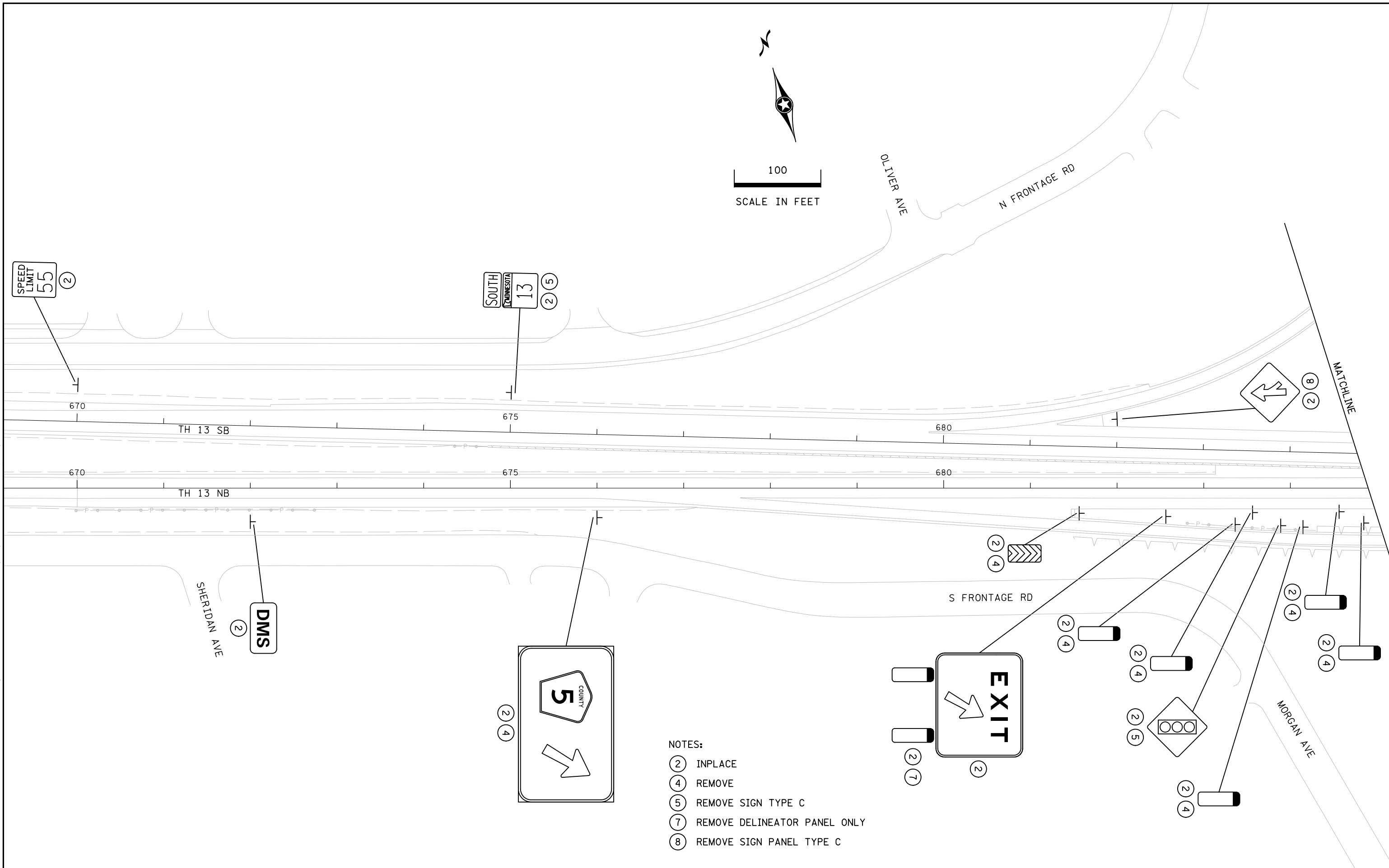
DRAWN BY: CCY

CHECKED BY: SRM

CERTIFIED BY *Steve McBurn*
LICENSED PROFESSIONAL ENGINEER

LIC. NO. 19579 DATE 9/25/2019

STATE PROJ. NO. 1901-176 (TH 13) SHEET NO. 37 OF 106 SHEETS



- NOTES:
- ② INPLACE
 - ④ REMOVE
 - ⑤ REMOVE SIGN TYPE C
 - ⑦ REMOVE DELINEATOR PANEL ONLY
 - ⑧ REMOVE SIGN PANEL TYPE C

INPLACE SIGNING

DRAWN BY: CCY

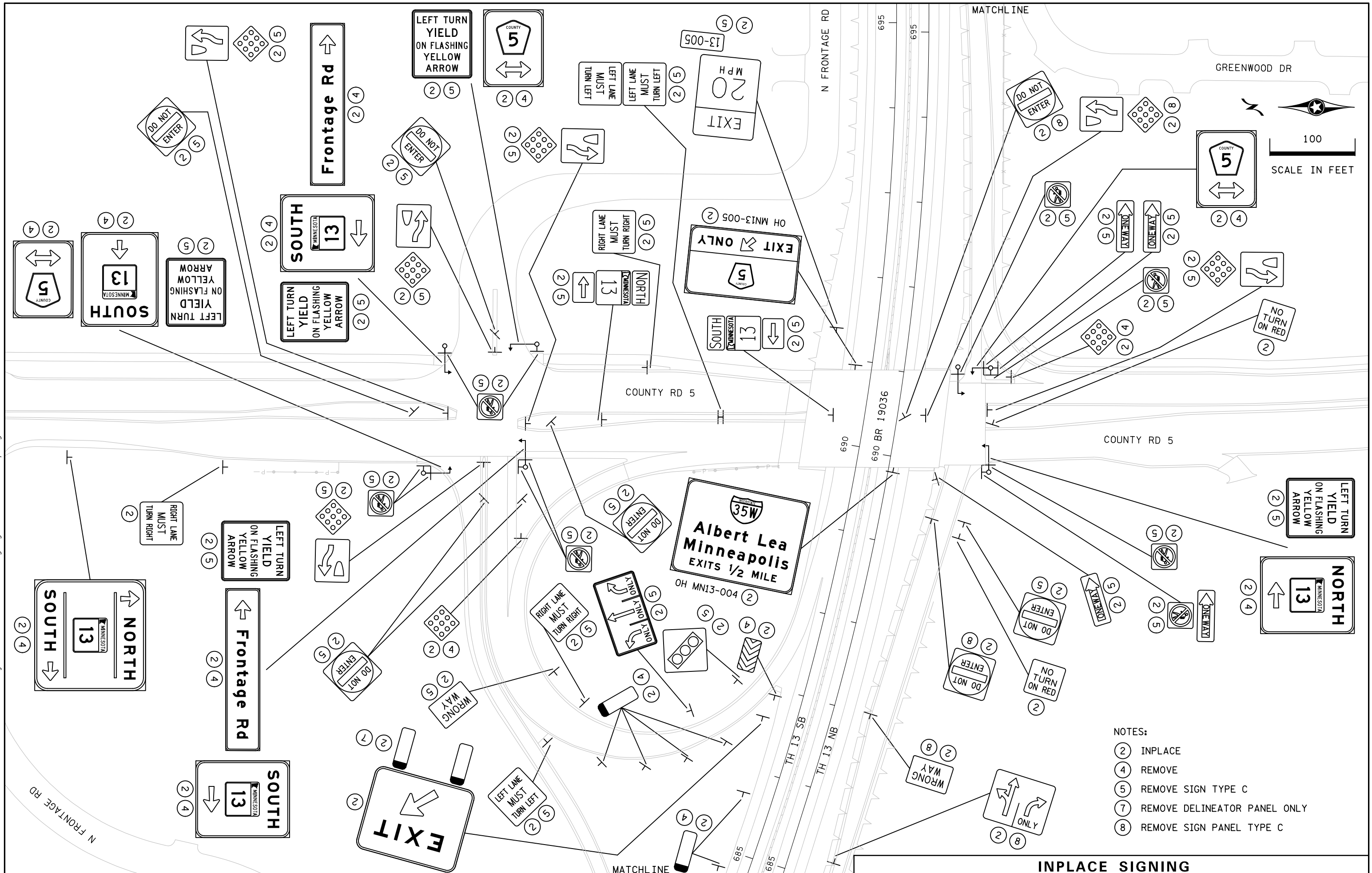
CHECKED BY: SRM

CERTIFIED BY *Steve McBurn*

LIC. NO. 19579 DATE 9/25/2019

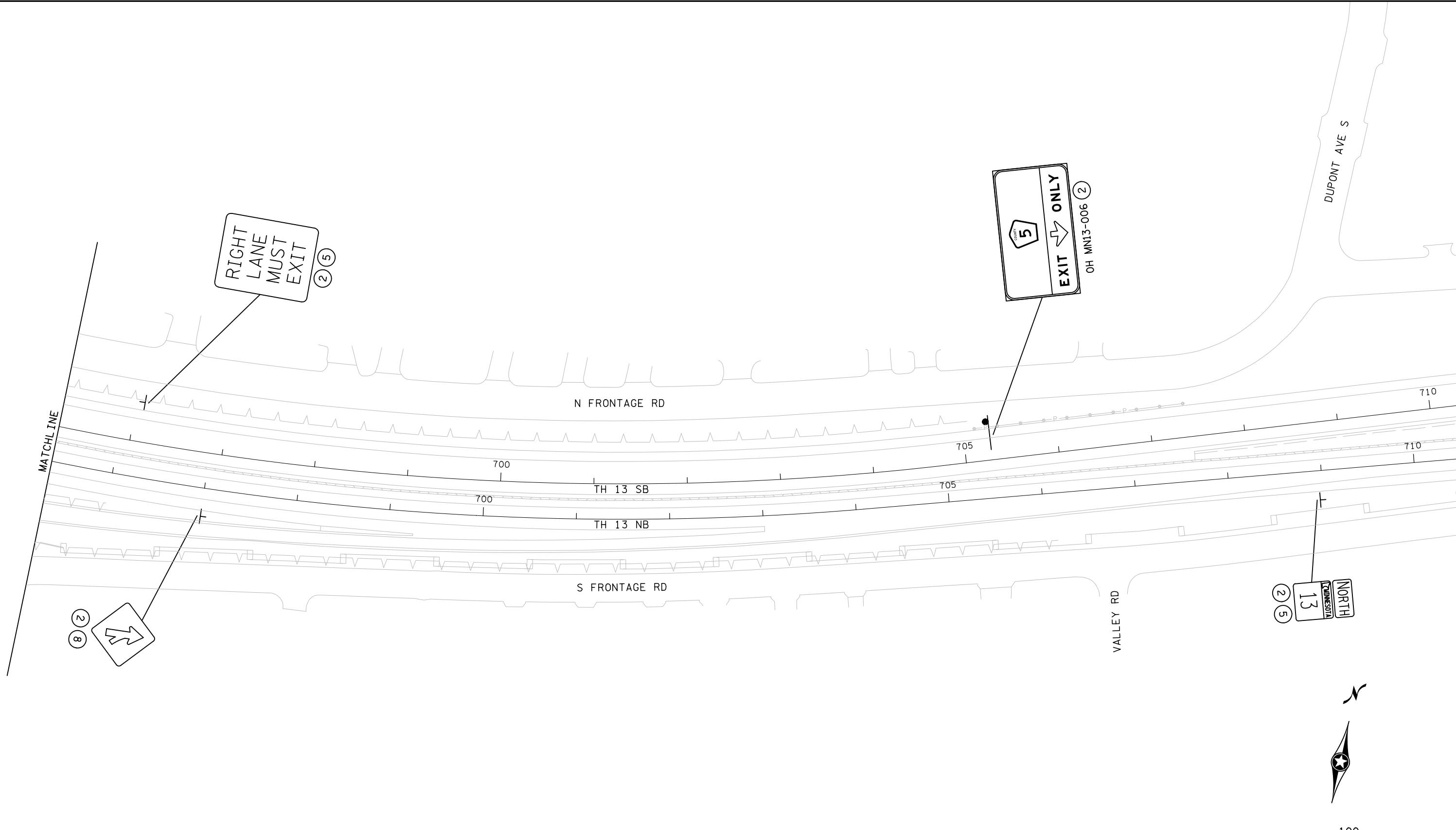
STATE PROJ. NO. 1901-176 (TH 13)

SHEET NO. 38 OF 106 SHEETS

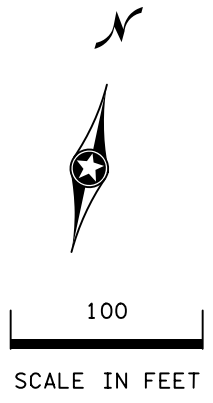


- NOTES:
- (2) INPLACE
 - (4) REMOVE
 - (5) REMOVE SIGN TYPE C
 - (7) REMOVE DELINEATOR PANEL ONLY
 - (8) REMOVE SIGN PANEL TYPE C

INPLACE SIGNING



- NOTES:
- (2) INPLACE
 - (5) REMOVE SIGN TYPE C
 - (8) REMOVE SIGN PANEL TYPE C



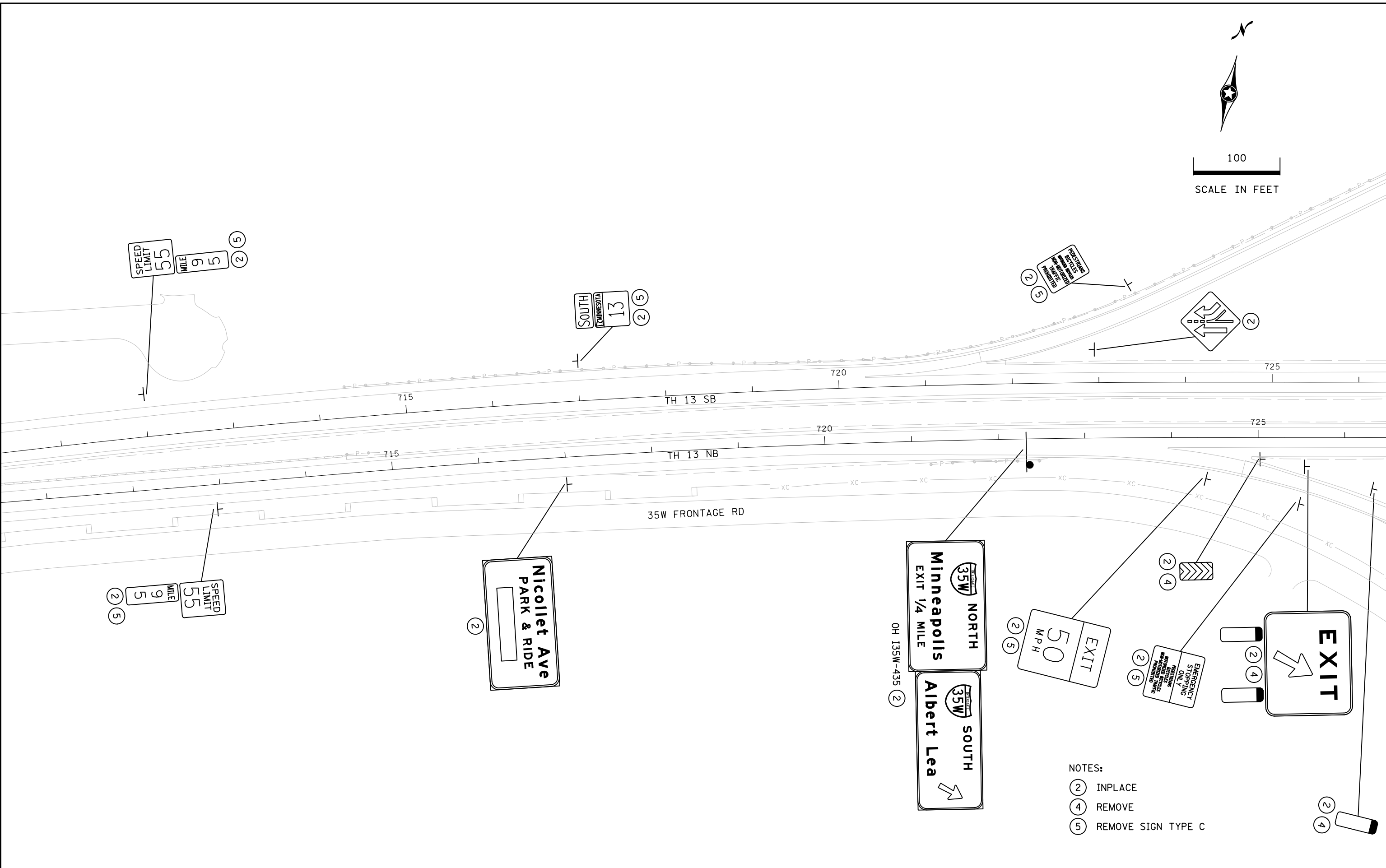
INPLACE SIGNING

DRAWN BY: CCY

CHECKED BY: SRM

CERTIFIED BY *Steve McBurn* LIC. NO. 19579 DATE 9/25/2019

STATE PROJ. NO. 1901-176 (TH 13) SHEET NO. 40 OF 106 SHEETS



- NOTES:
- (2) INPLACE
 - (4) REMOVE
 - (5) REMOVE SIGN TYPE C

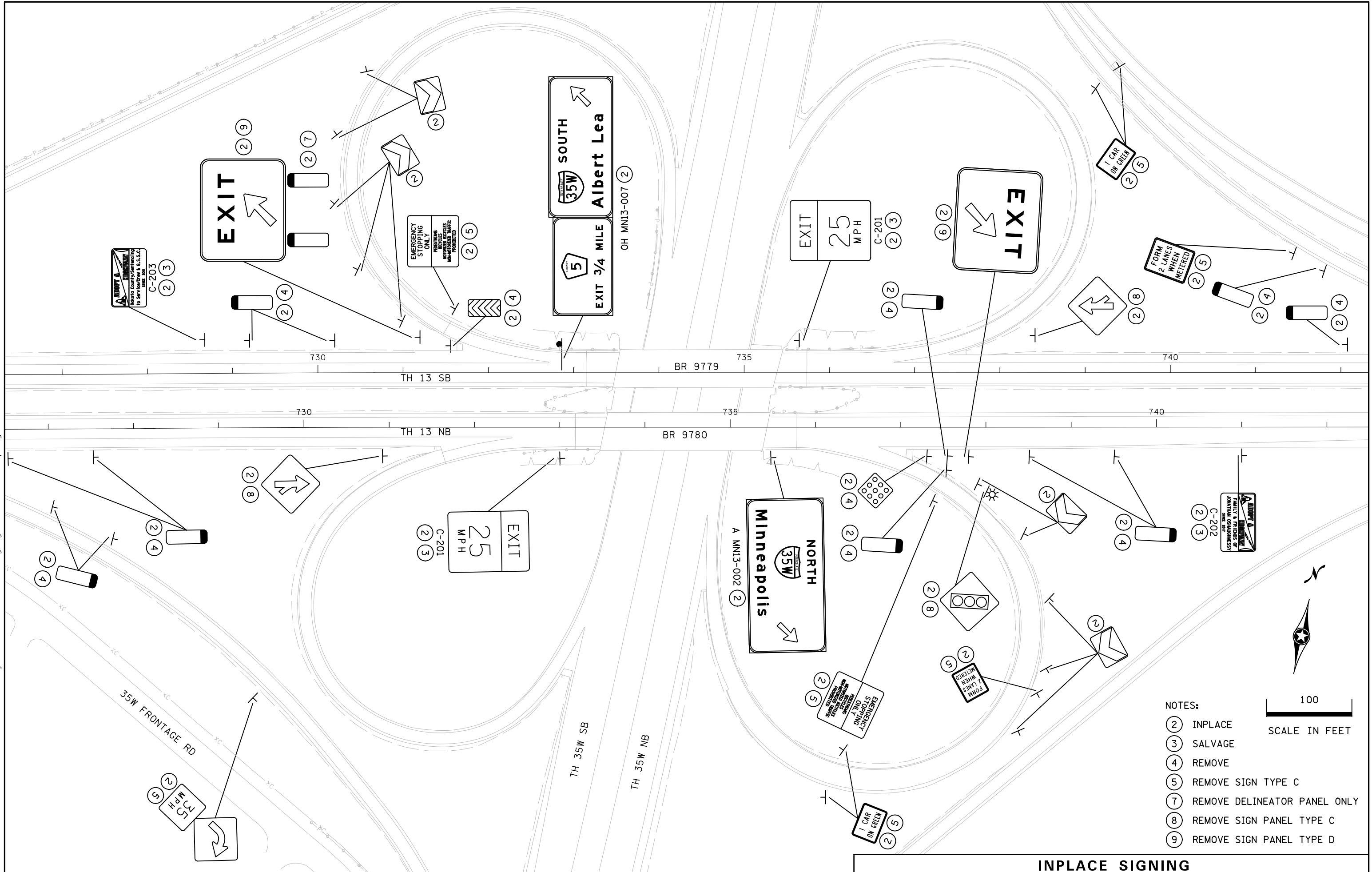
INPLACE SIGNING

DRAWN BY: CCY

CHECKED BY: SRM

CERTIFIED BY *Steve McBurn* LIC. NO. 19579 DATE 9/25/2019

STATE PROJ. NO. 1901-176 (TH 13) SHEET NO. 41 OF 106 SHEETS



- NOTES:
- ② INPLACE
 - ③ SALVAGE
 - ④ REMOVE
 - ⑤ REMOVE SIGN TYPE C
 - ⑦ REMOVE DELINEATOR PANEL ONLY
 - ⑧ REMOVE SIGN PANEL TYPE C
 - ⑨ REMOVE SIGN PANEL TYPE D

INPLACE SIGNING

DRAWN BY: CCY

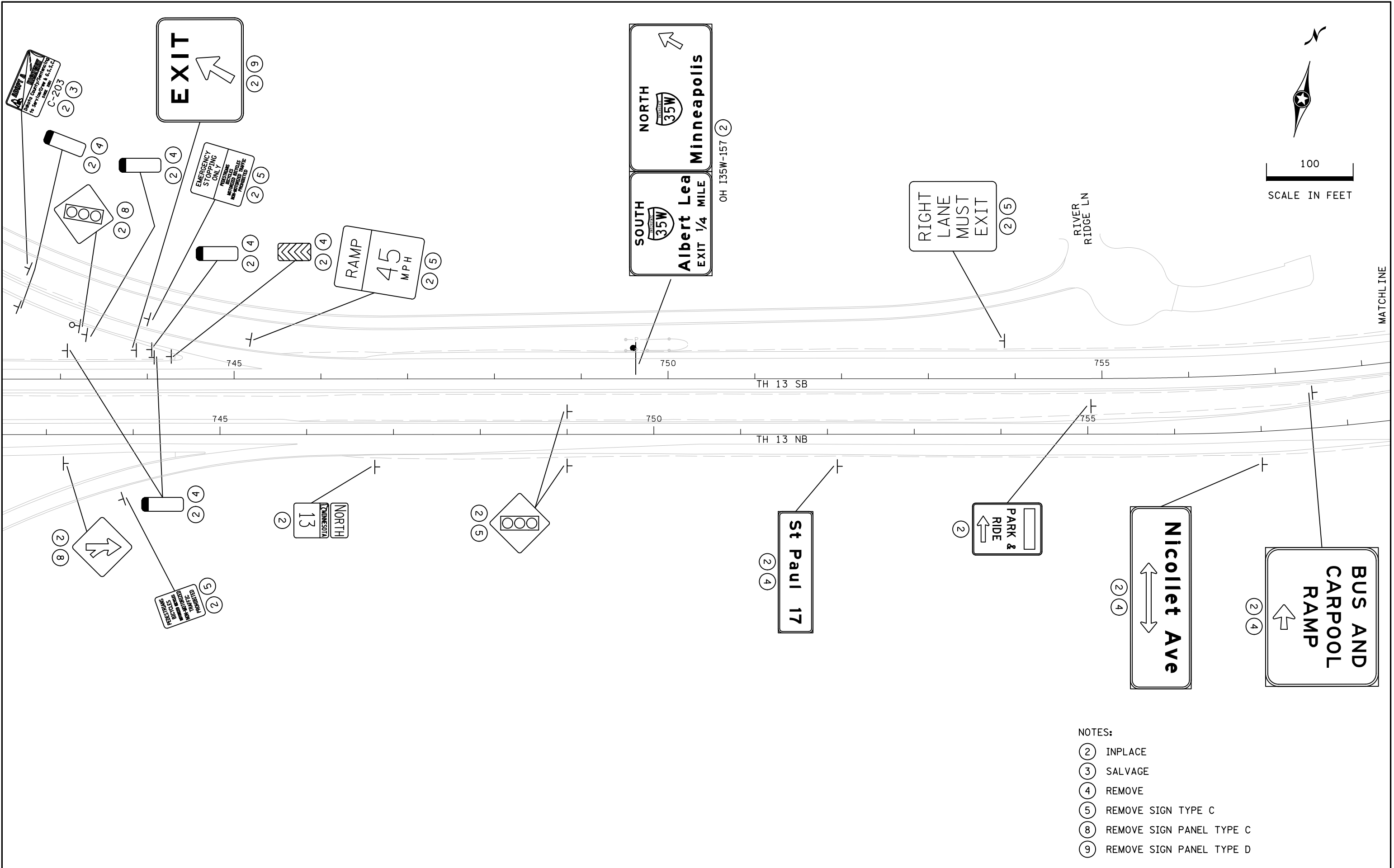
CHECKED BY: SRM

CERTIFIED BY *Steve McBurn* LIC. NO. 19579 DATE 9/25/2019

STATE PROJ. NO. 1901-176 (TH 13) SHEET NO. 42 OF 106 SHEETS

PLOTTED/REVISED: 25-SEP-2019

IPLOT NAME: OTE_1901176.ps
PATH & FILENAME: Projects\DM_ROS\03\1901176\Signing\OT\NOTE_1901176_psi.dgn



- NOTES:
- ② INPLACE
 - ③ SALVAGE
 - ④ REMOVE
 - ⑤ REMOVE SIGN TYPE C
 - ⑧ REMOVE SIGN PANEL TYPE C
 - ⑨ REMOVE SIGN PANEL TYPE D

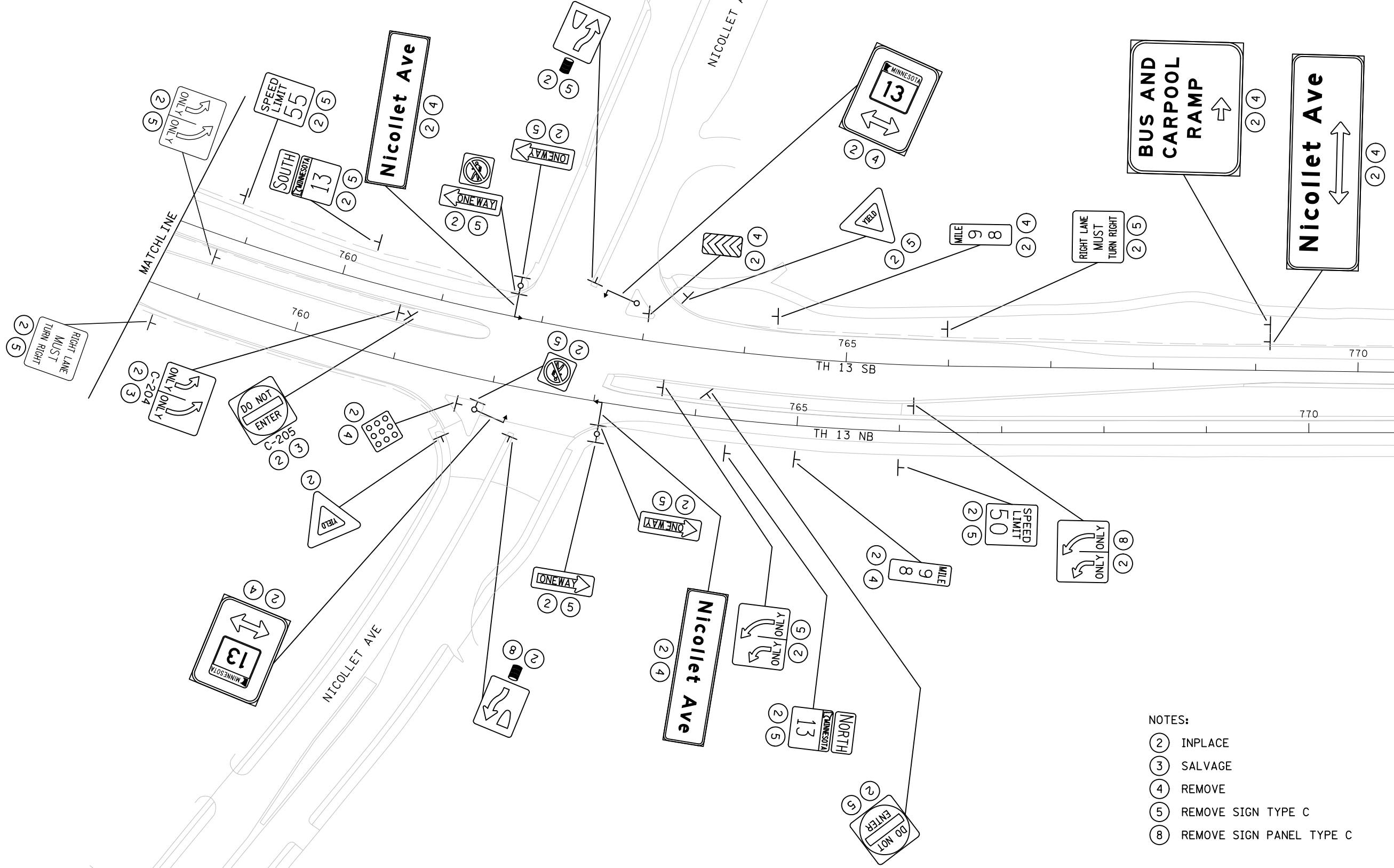
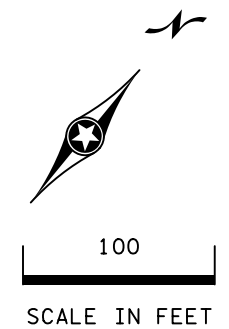
INPLACE SIGNING

DRAWN BY: CCY

CHECKED BY: SRM

CERTIFIED BY *Steve McBurn* LIC. NO. 19579 DATE 9/25/2019

STATE PROJ. NO. 1901-176 (TH 13) SHEET NO. 43 OF 106 SHEETS



- NOTES:
- (2) INPLACE
 - (3) SALVAGE
 - (4) REMOVE
 - (5) REMOVE SIGN TYPE C
 - (8) REMOVE SIGN PANEL TYPE C

INPLACE SIGNING

DRAWN BY: CCY

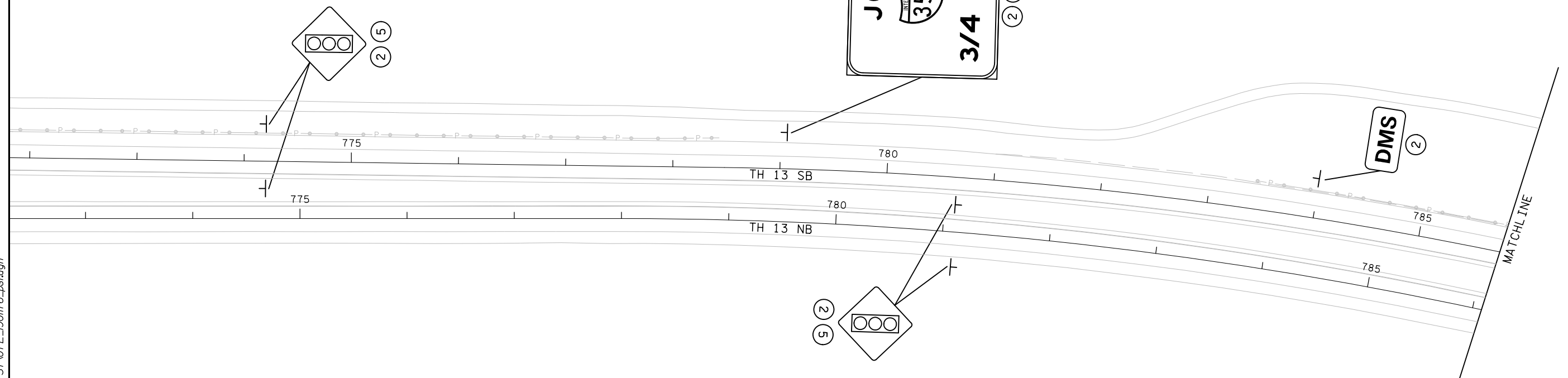
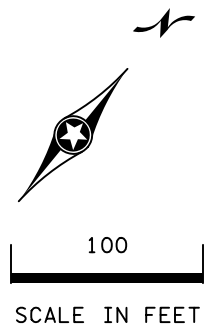
CHECKED BY: SRM

CERTIFIED BY *Steve McBurn* LIC. NO. 19579 DATE 9/25/2019

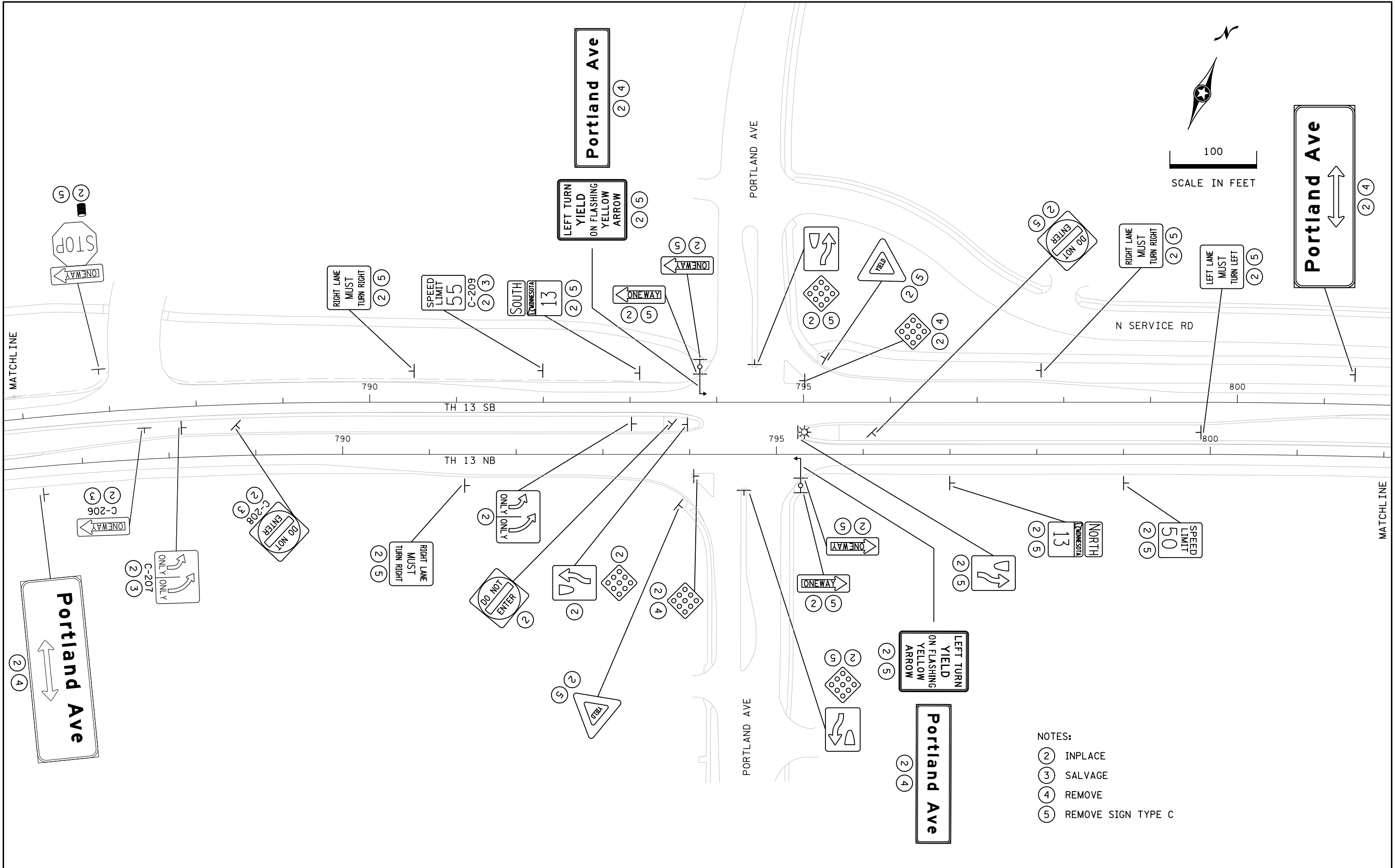
STATE PROJ. NO. 1901-176 (TH 13) SHEET NO. 44 OF 106 SHEETS

PLOTTED/REVISED: 25-SEP-2019

I/PLOT NAME: OTE_1901176.ps
PATH & FILENAME: Projects\DM_ROM\03\1901176\Signing\OT\ST\OTE_1901176_psi.dgn

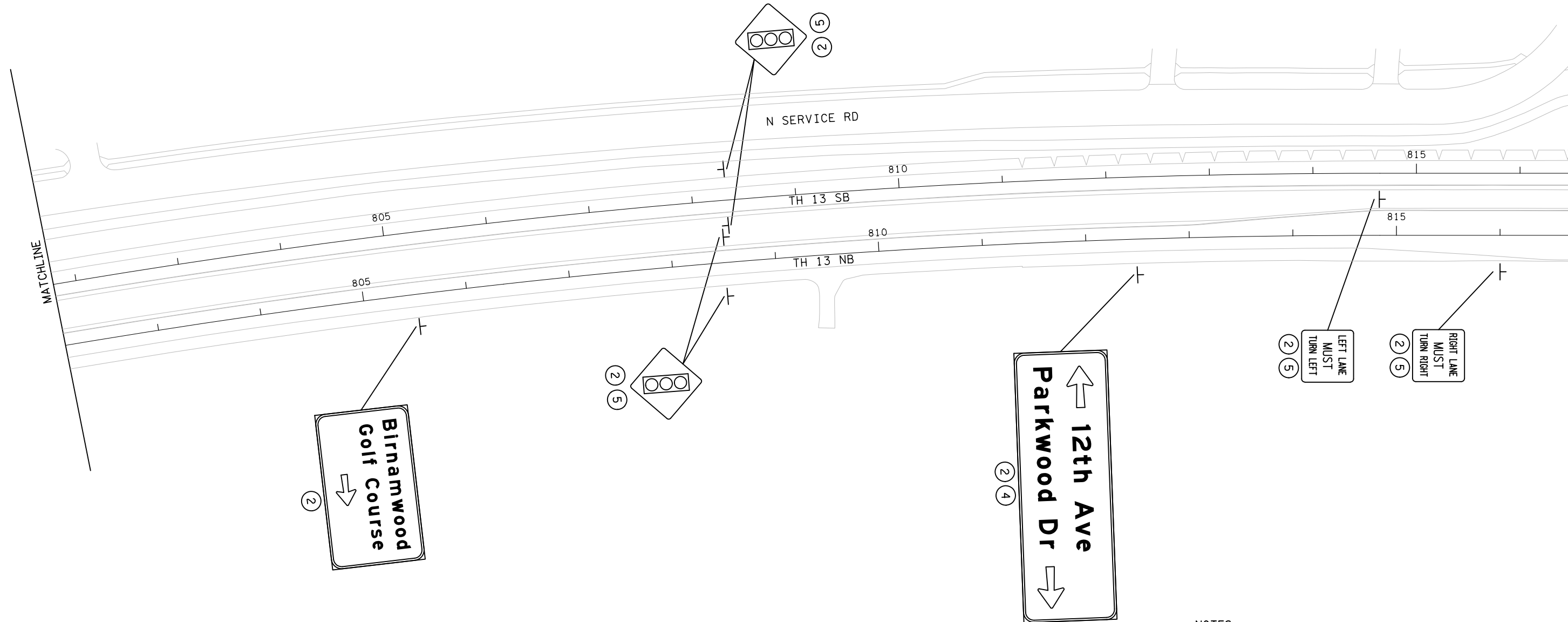
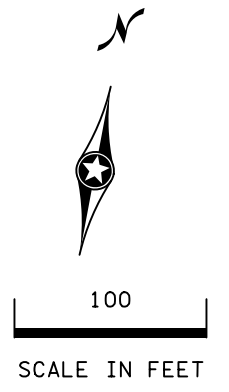


- NOTES:
- ② INPLACE
 - ④ REMOVE
 - ⑤ REMOVE SIGN TYPE C

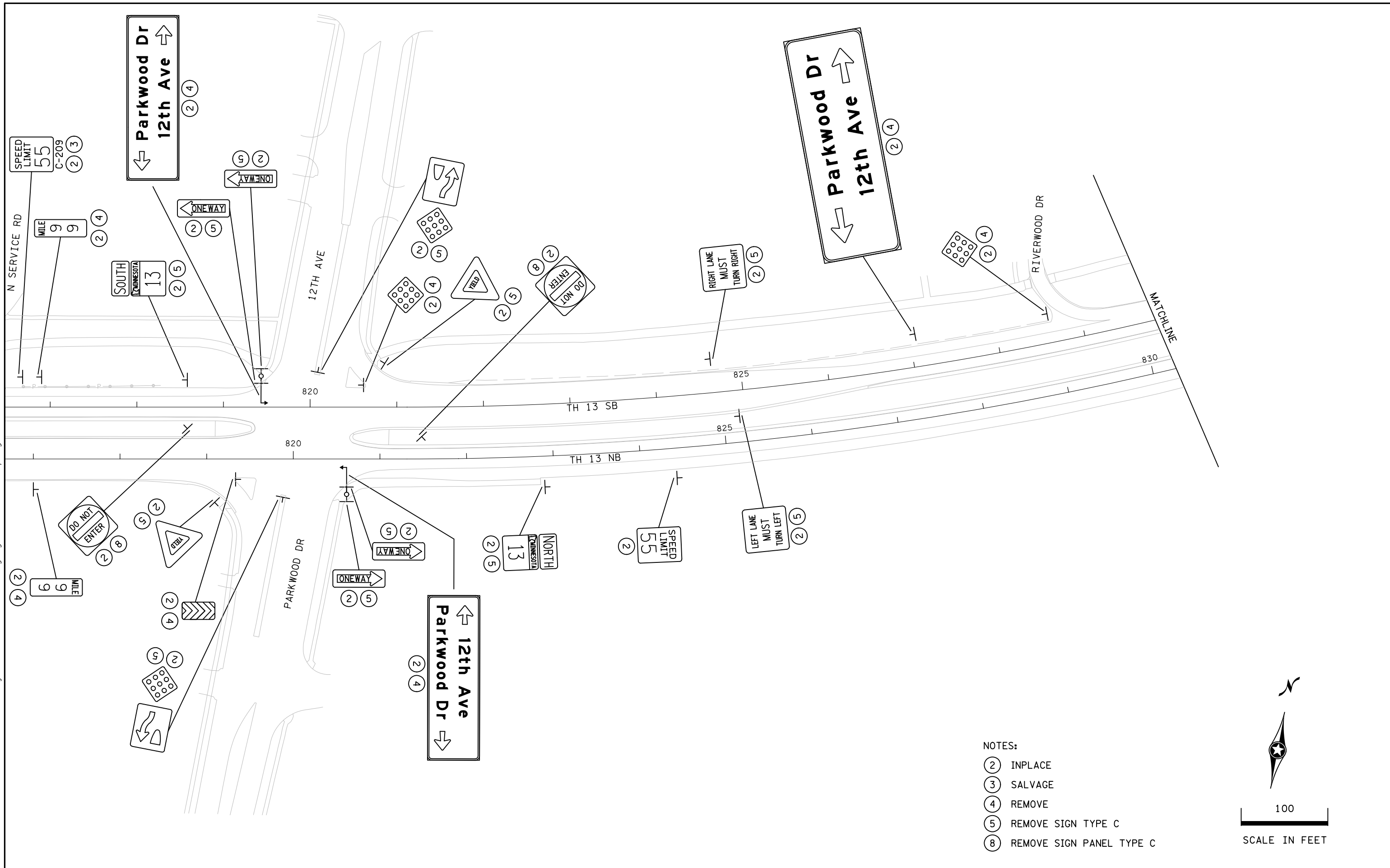


- NOTES:
- (2) INPLACE
 - (3) SALVAGE
 - (4) REMOVE
 - (5) REMOVE SIGN TYPE C

INPLACE SIGNING



- NOTES:
- (2) INPLACE
 - (4) REMOVE
 - (5) REMOVE SIGN TYPE C



- NOTES:
- ② INPLACE
 - ③ SALVAGE
 - ④ REMOVE
 - ⑤ REMOVE SIGN TYPE C
 - ⑧ REMOVE SIGN PANEL TYPE C

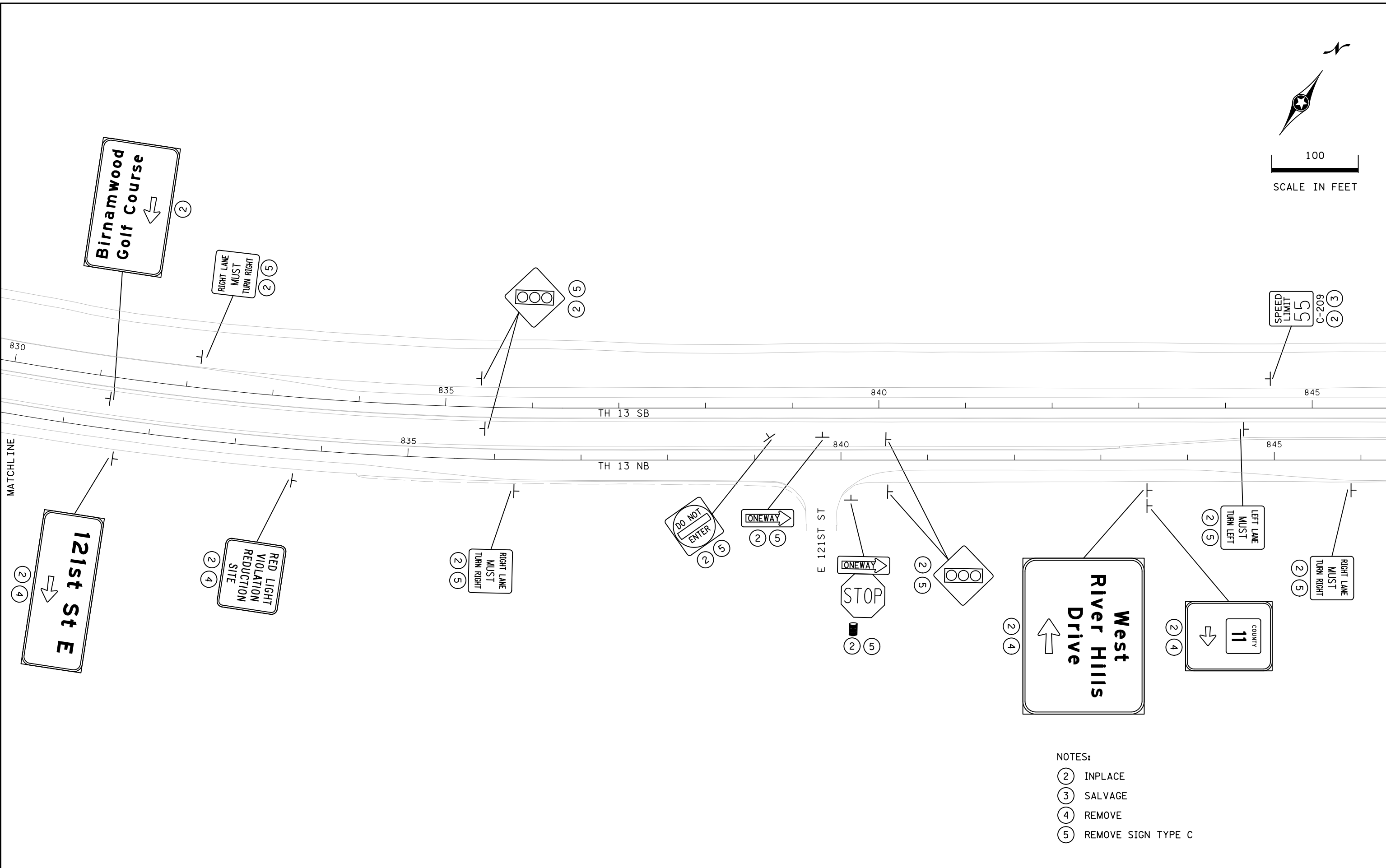


PLOTTED/REVISED: 25-SEP-2019

IPLOT NAME: OTE_1901176.ps
PATH & FILENAME: Projects\DM_ROS\1901176\Signing\OTE_1901176_psi.dgn



100
SCALE IN FEET



- NOTES:
- (2) INPLACE
 - (3) SALVAGE
 - (4) REMOVE
 - (5) REMOVE SIGN TYPE C

INPLACE SIGNING

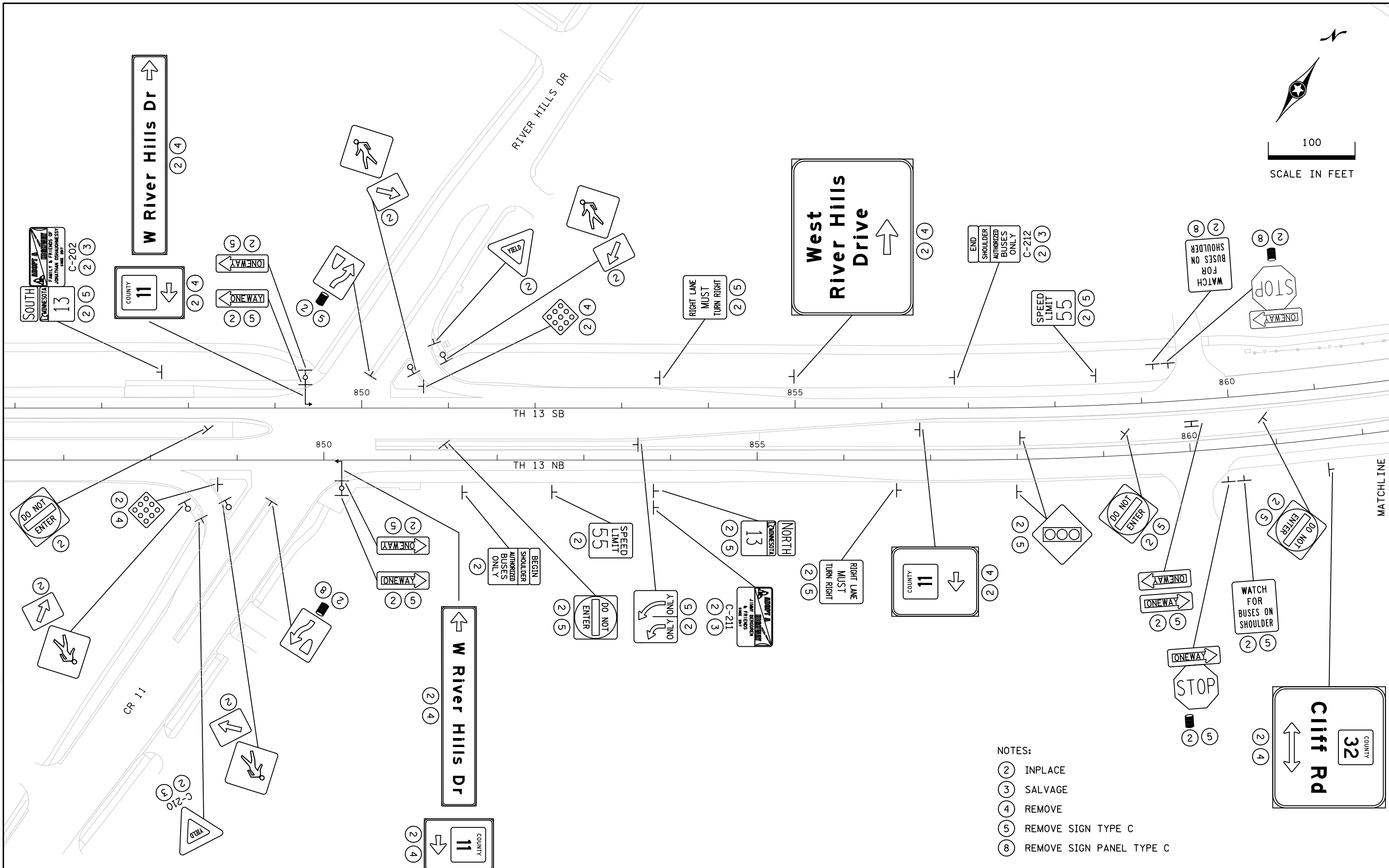
DRAWN BY: CCY

CHECKED BY: SRM

CERTIFIED BY *Steve McBurn*

LIC. NO. 19579 DATE 9/25/2019

STATE PROJ. NO. 1901-176 (TH 13) SHEET NO. 49 OF 106 SHEETS



- NOTES:
- (2) INPLACE
 - (3) SALVAGE
 - (4) REMOVE
 - (5) REMOVE SIGN TYPE C
 - (8) REMOVE SIGN PANEL TYPE C

INPLACE SIGNING

DRAWN BY: CCY

CHECKED BY: SRM

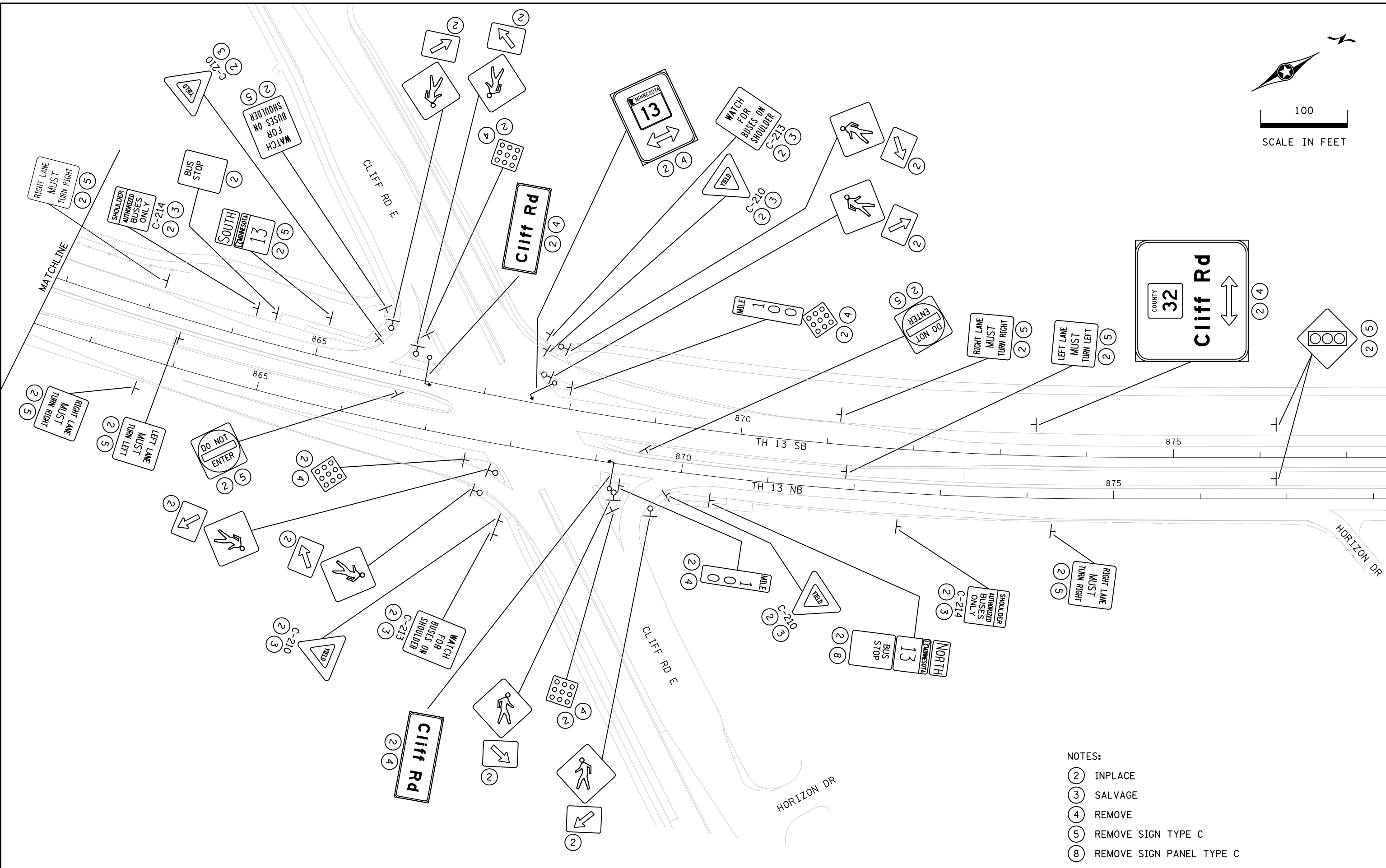
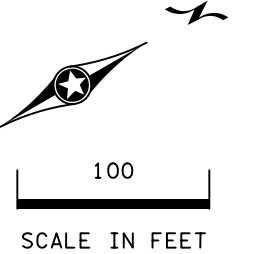
CERTIFIED BY *Steve McBurn* LIC. NO. 19579 DATE 9/25/2019

STATE PROJ. NO. 1901-176 (TH 13) SHEET NO. 50 OF 106 SHEETS

PLOTTED/REVISED: 25-SEP-2019

I/PLOT NAME: OTE_1901176.ps
PATH & FILENAME: Projects\DM_ROS\03\1901176\Signing\OT\NOTE_1901176_psi.dgn

I/PLOT NAME: OTE_1901176.ps



- NOTES:
- (2) INPLACE
 - (3) SALVAGE
 - (4) REMOVE
 - (5) REMOVE SIGN TYPE C
 - (8) REMOVE SIGN PANEL TYPE C

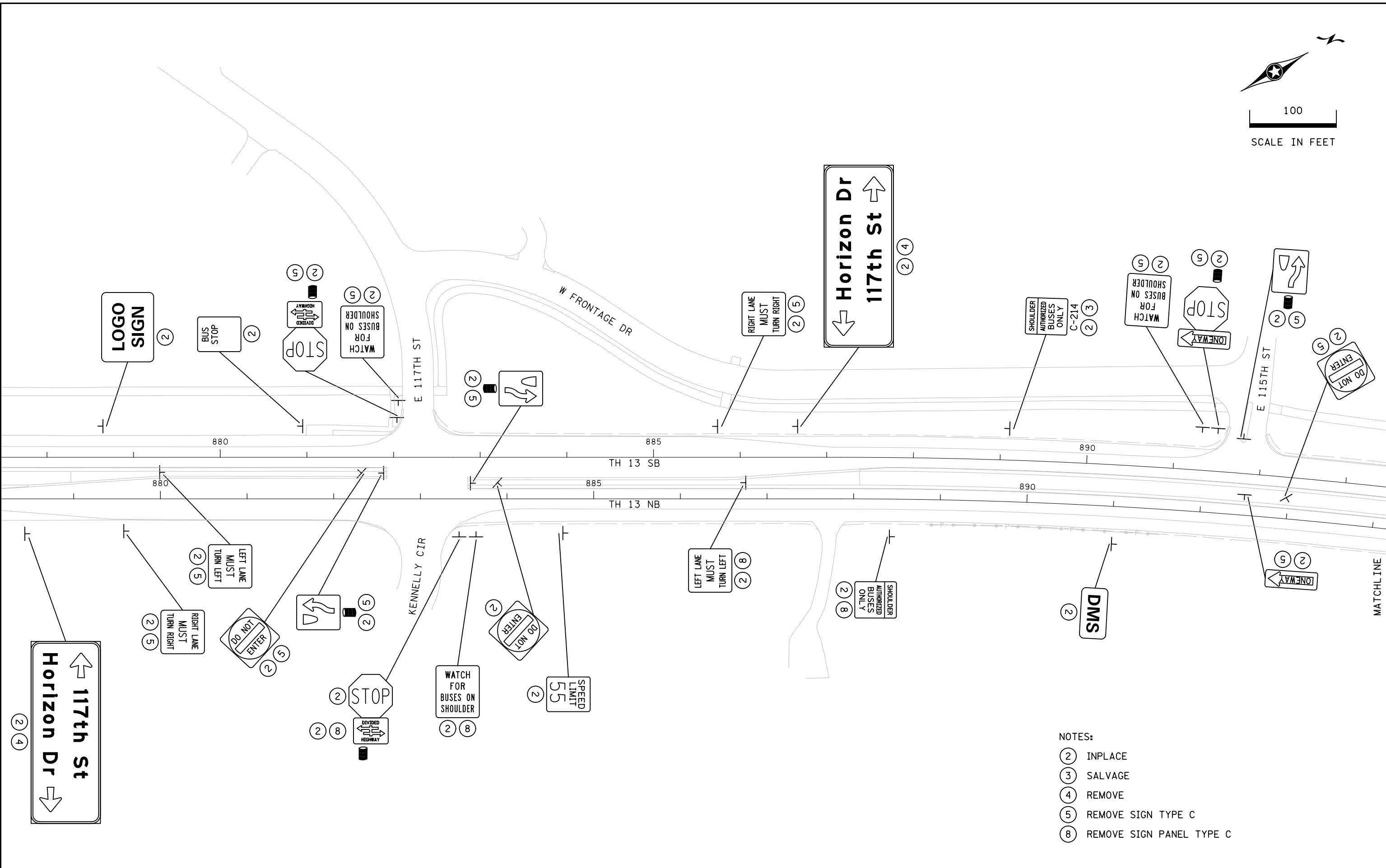
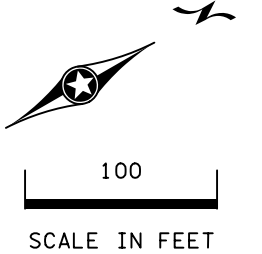
INPLACE SIGNING

DRAWN BY: CCY

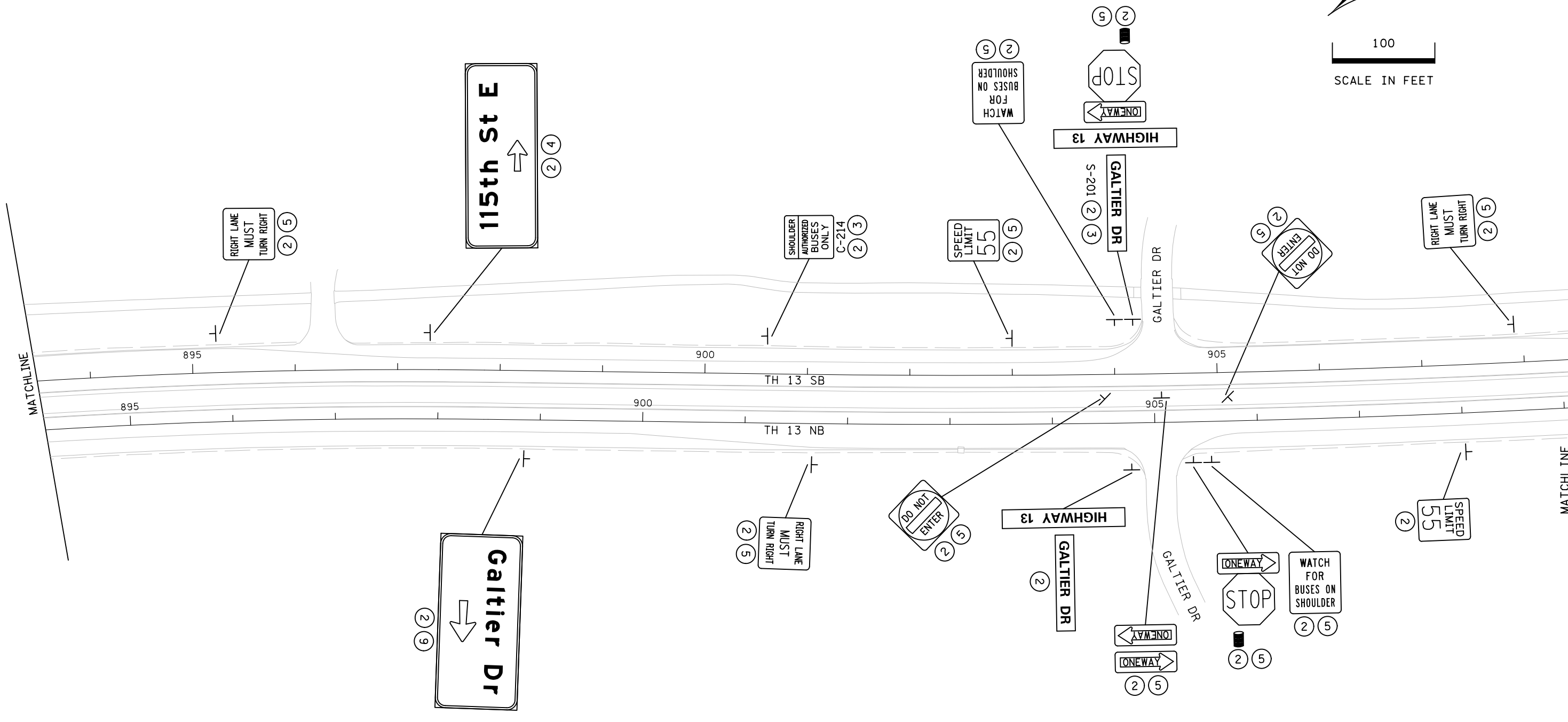
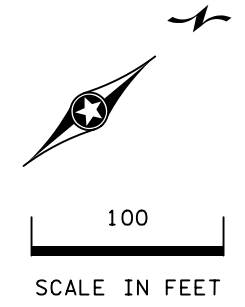
CHECKED BY: SRM

CERTIFIED BY *Steve McBurn* LIC. NO. 19579 DATE 9/25/2019

STATE PROJ. NO. 1901-176 (TH 13) SHEET NO. 51 OF 106 SHEETS



- NOTES:
- (2) INPLACE
 - (3) SALVAGE
 - (4) REMOVE
 - (5) REMOVE SIGN TYPE C
 - (8) REMOVE SIGN PANEL TYPE C



- NOTES:
- (2) INPLACE
 - (3) SALVAGE
 - (4) REMOVE
 - (5) REMOVE SIGN TYPE C
 - (9) REMOVE SIGN PANEL TYPE D

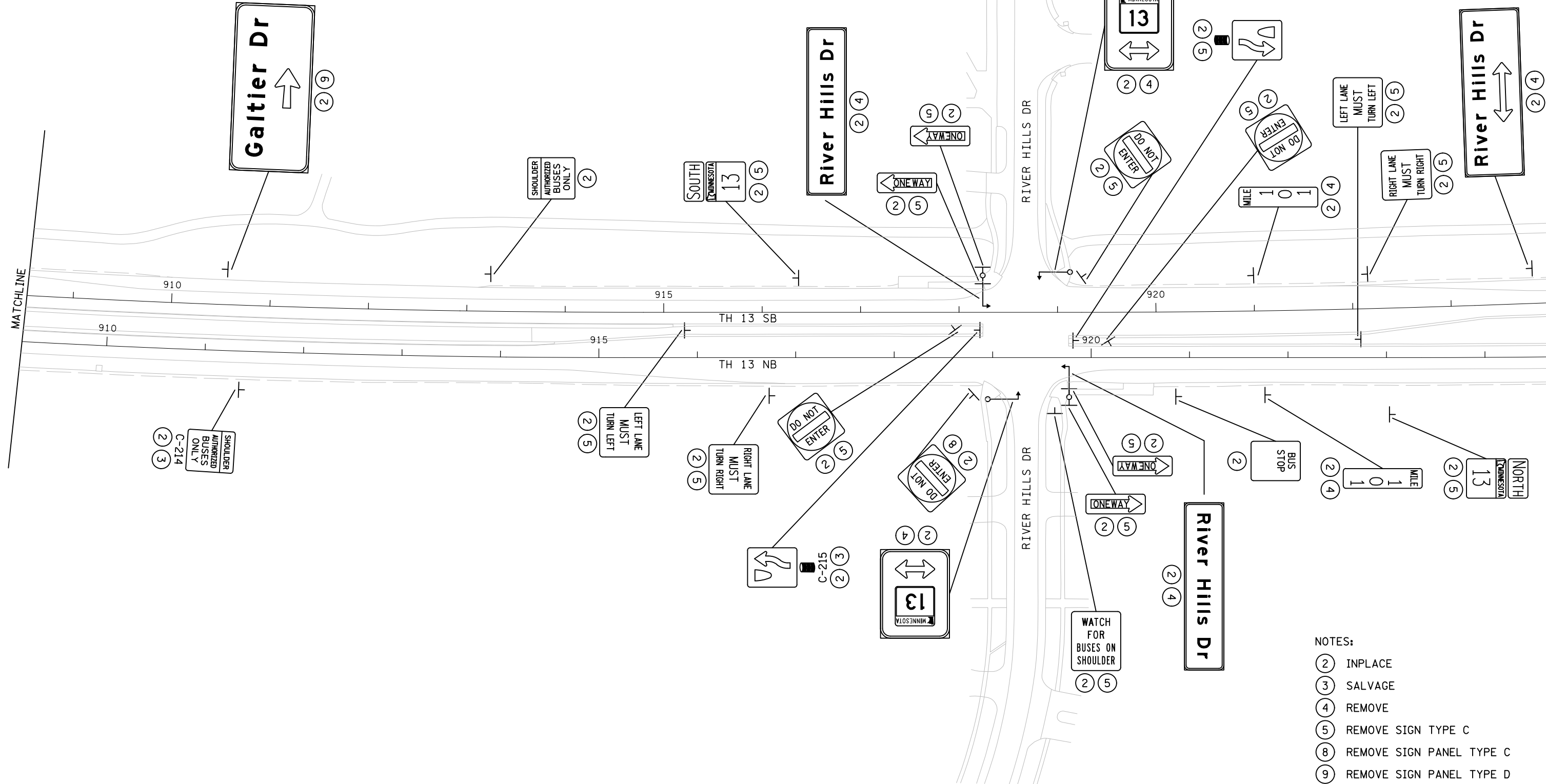
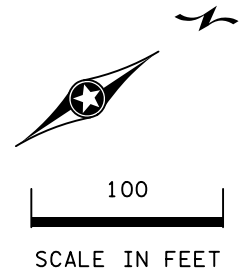
DRAWN BY: CCY

CHECKED BY: SRM

CERTIFIED BY *Steve McBurn* LIC. NO. 19579 DATE 9/25/2019

INPLACE SIGNING

STATE PROJ. NO. 1901-176 (TH 13) SHEET NO. 53 OF 106 SHEETS



- NOTES:
- (2) INPLACE
 - (3) SALVAGE
 - (4) REMOVE
 - (5) REMOVE SIGN TYPE C
 - (8) REMOVE SIGN PANEL TYPE C
 - (9) REMOVE SIGN PANEL TYPE D

INPLACE SIGNING

DRAWN BY: CCY

CHECKED BY: SRM

CERTIFIED BY

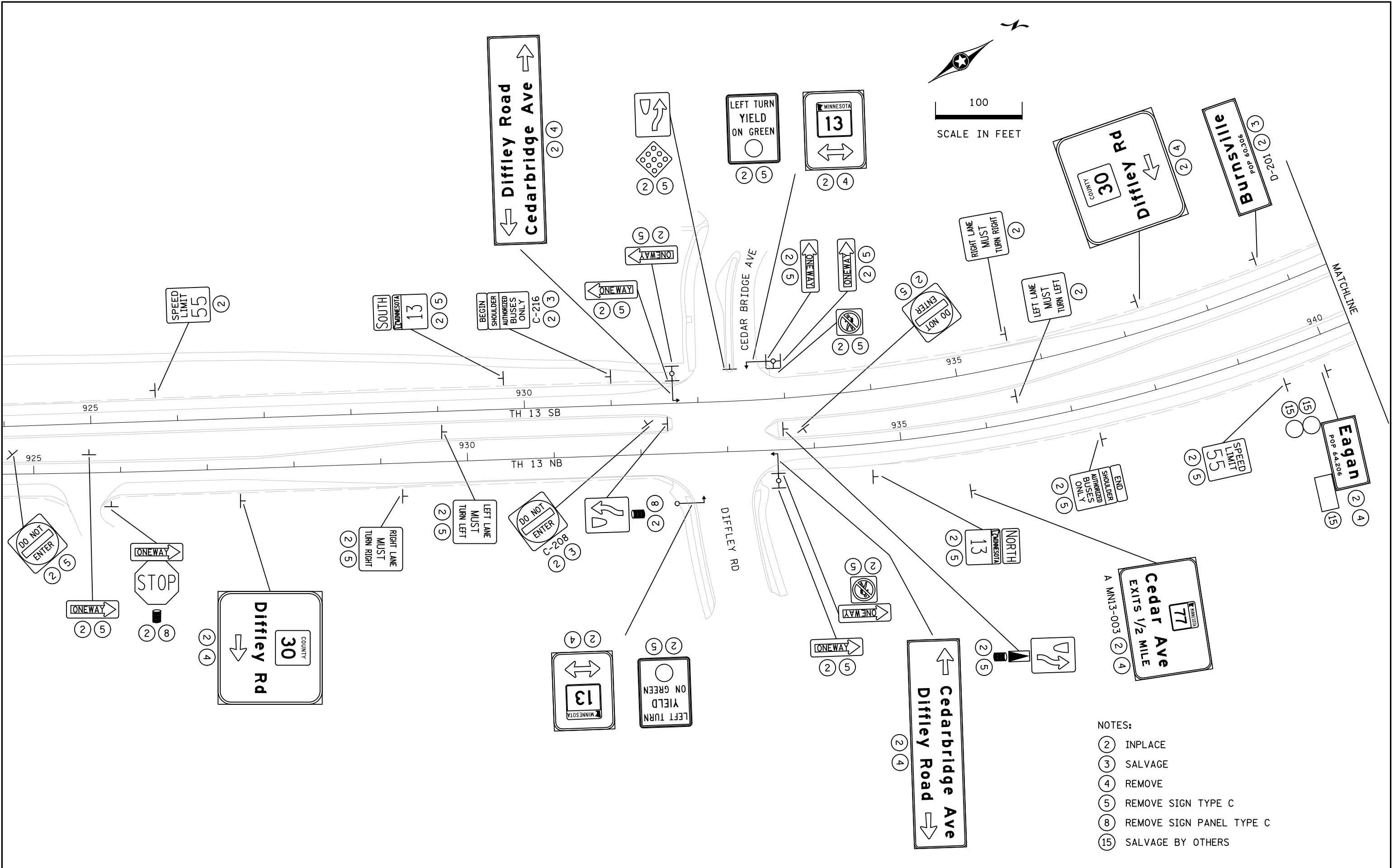
Steve McBurn
LICENSED PROFESSIONAL ENGINEER

LIC. NO. 19579

DATE 9/25/2019

STATE PROJ. NO. 1901-176 (TH 13)

SHEET NO. 54 OF 106 SHEETS



- NOTES:
- (2) INPLACE
 - (3) SALVAGE
 - (4) REMOVE
 - (5) REMOVE SIGN TYPE C
 - (8) REMOVE SIGN PANEL TYPE C
 - (15) SALVAGE BY OTHERS

INPLACE SIGNING

DRAWN BY: CCY

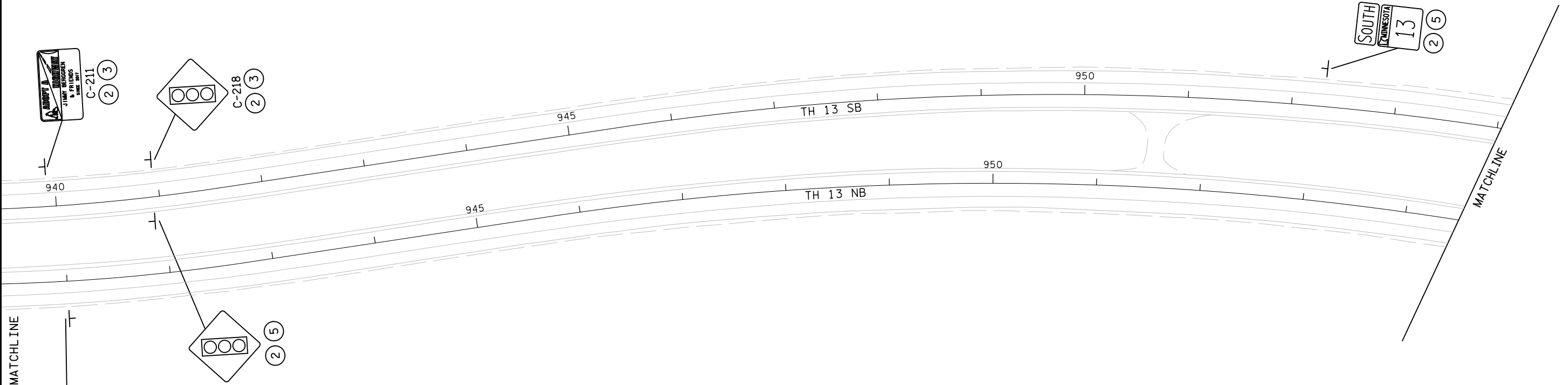
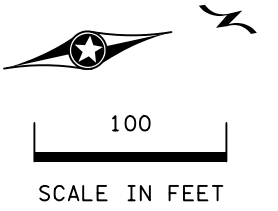
CHECKED BY: SRM

CERTIFIED BY *Steve McBurn* LIC. NO. 19579 DATE 9/25/2019

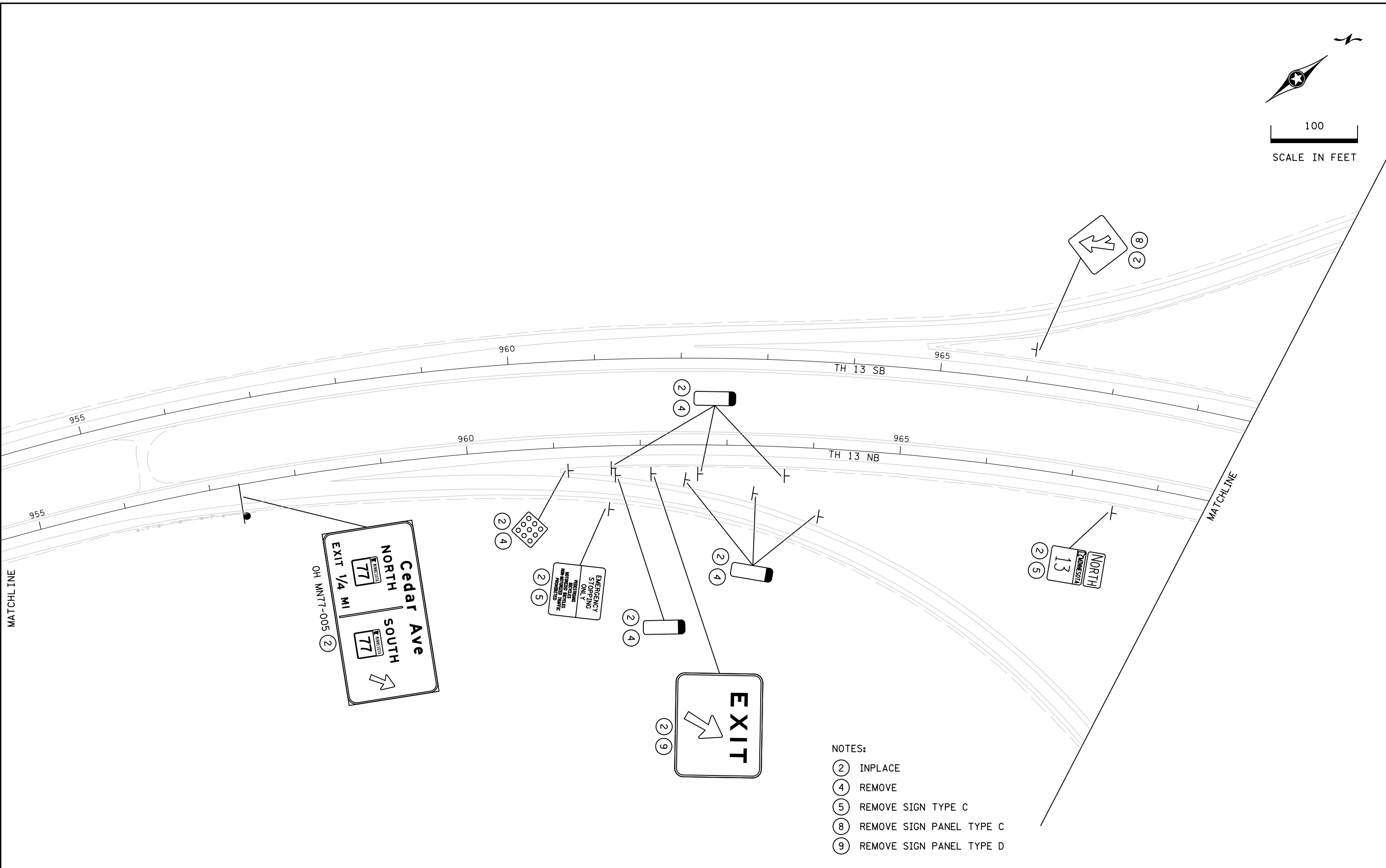
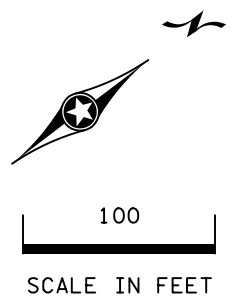
STATE PROJ. NO. 1901-176 (TH 13) SHEET NO. 55 OF 106 SHEETS

PLOTTED/REVISED: 25-SEP-2019

IPLOT NAME: OTE_1901176.ps
PATH & FILENAME: Projects\DM_ROM\03\1901176\Signing\OTE_1901176.ps.dgn



- NOTES:
- ② INPLACE
 - ③ SALVAGE
 - ⑤ REMOVE SIGN TYPE C



- NOTES:
- (2) INPLACE
 - (4) REMOVE
 - (5) REMOVE SIGN TYPE C
 - (8) REMOVE SIGN PANEL TYPE C
 - (9) REMOVE SIGN PANEL TYPE D

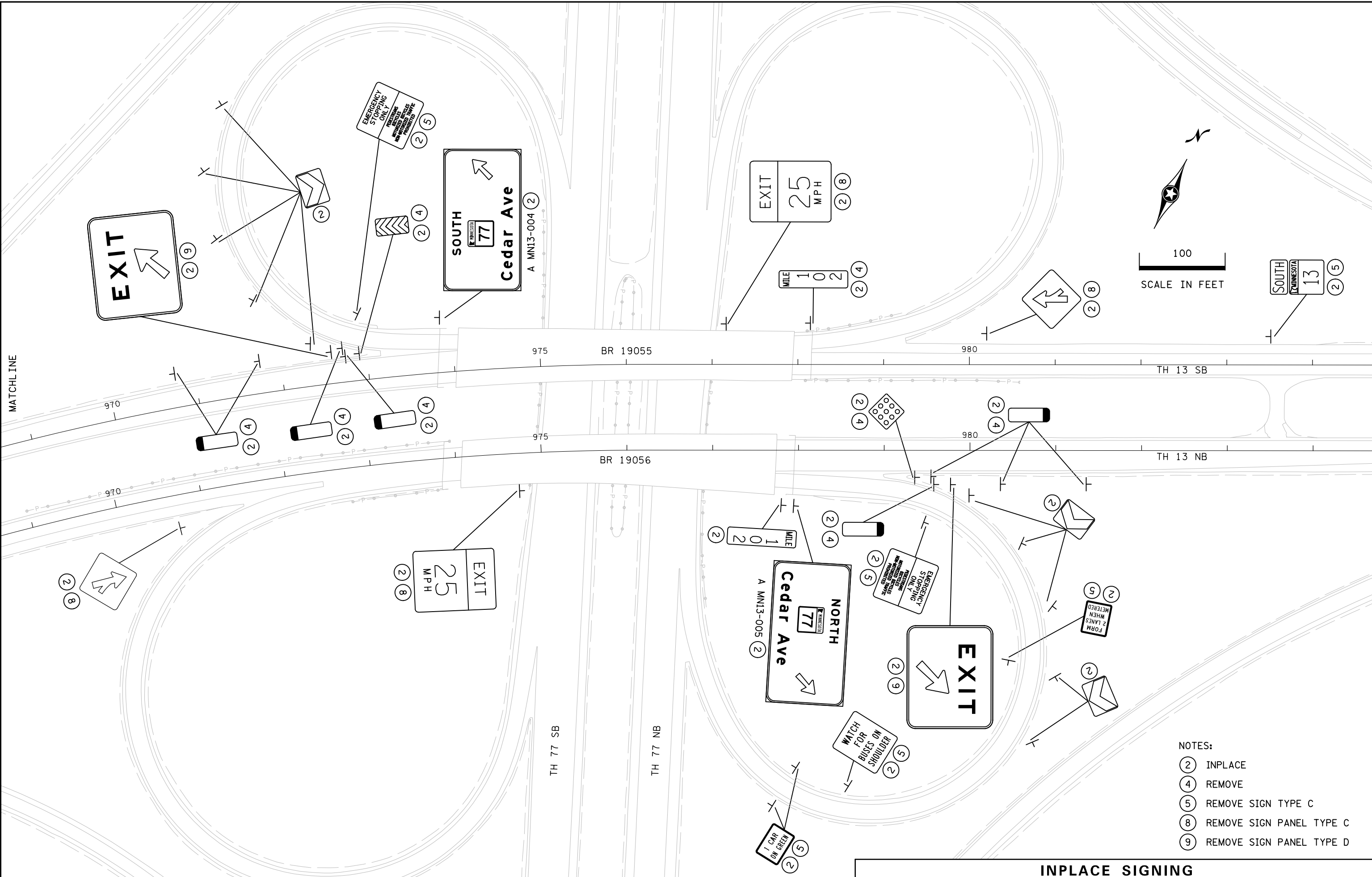
INPLACE SIGNING

DRAWN BY: CCY

CHECKED BY: SRM

CERTIFIED BY *Steve McBurn* LIC. NO. 19579 DATE 9/25/2019
LICENSED PROFESSIONAL ENGINEER

STATE PROJ. NO. 1901-176 (TH 13) SHEET NO. 57 OF 106 SHEETS



- NOTES:
- (2) INPLACE
 - (4) REMOVE
 - (5) REMOVE SIGN TYPE C
 - (8) REMOVE SIGN PANEL TYPE C
 - (9) REMOVE SIGN PANEL TYPE D

INPLACE SIGNING

DRAWN BY: CCY

CHECKED BY: SRM

CERTIFIED BY

Steven M. ...
LICENSED PROFESSIONAL ENGINEER

LIC. NO. 19579

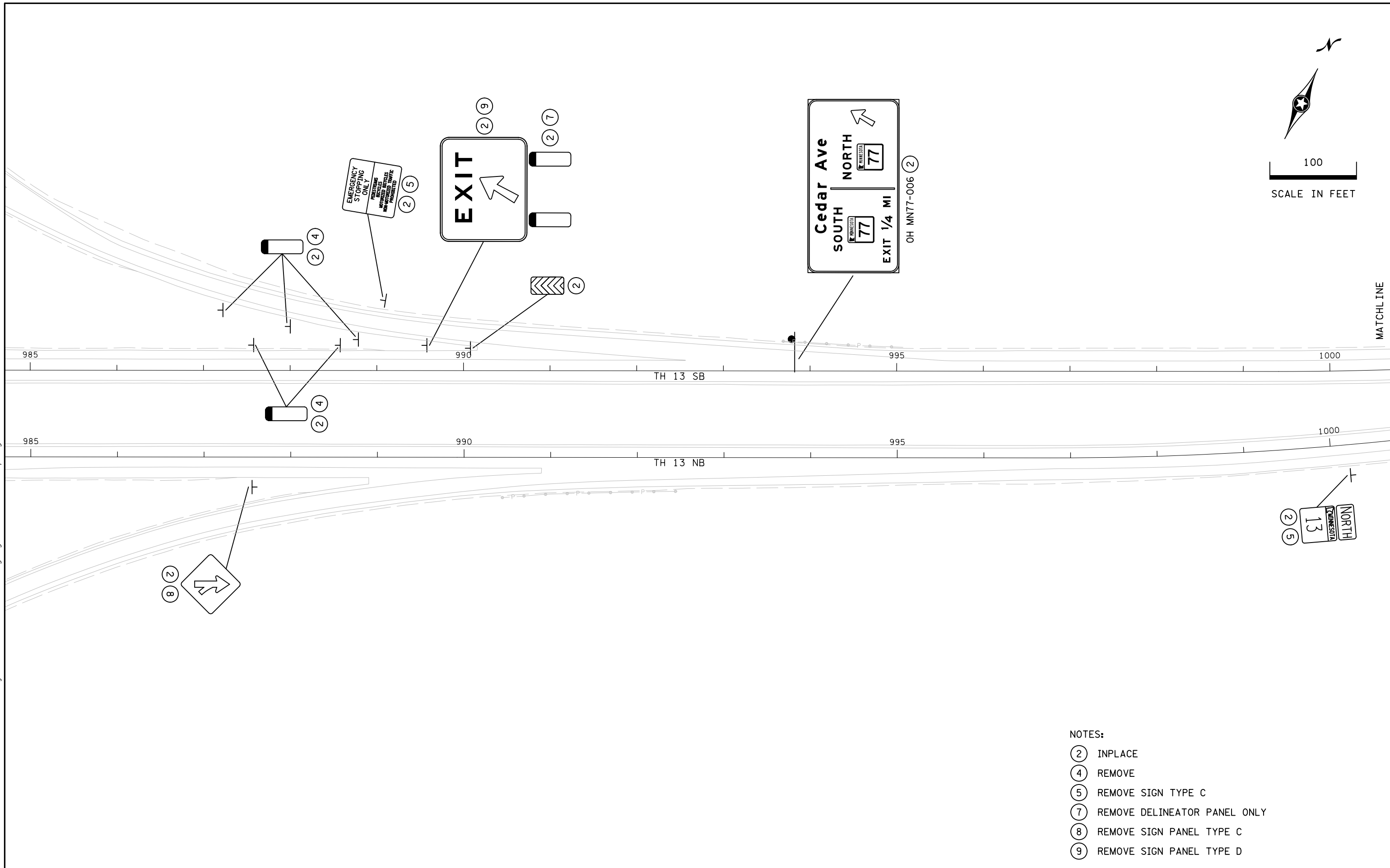
DATE 9/25/2019

STATE PROJ. NO. 1901-176 (TH 13)

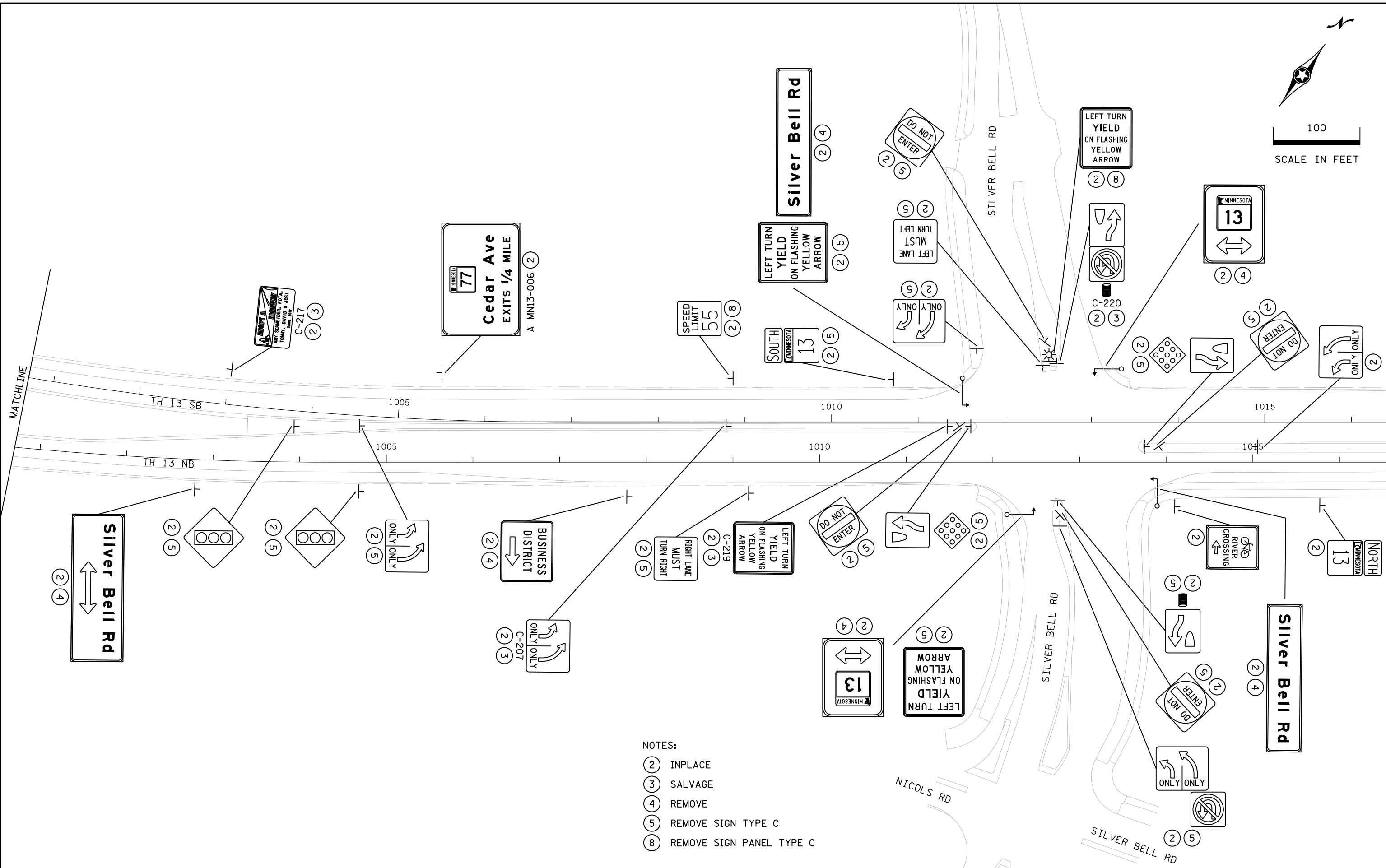
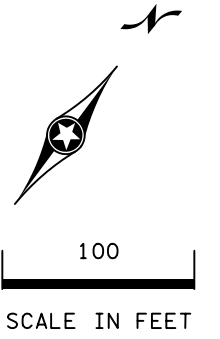
SHEET NO. 58 OF 106 SHEETS

PLOTTED/REVISED: 25-SEP-2019

I/PLOT NAME: OTE_1901176.ps
PATH & FILENAME: Projects\DM_ROMS\03\1901176\Signing\OT\NOTE_1901176_psi.dgn

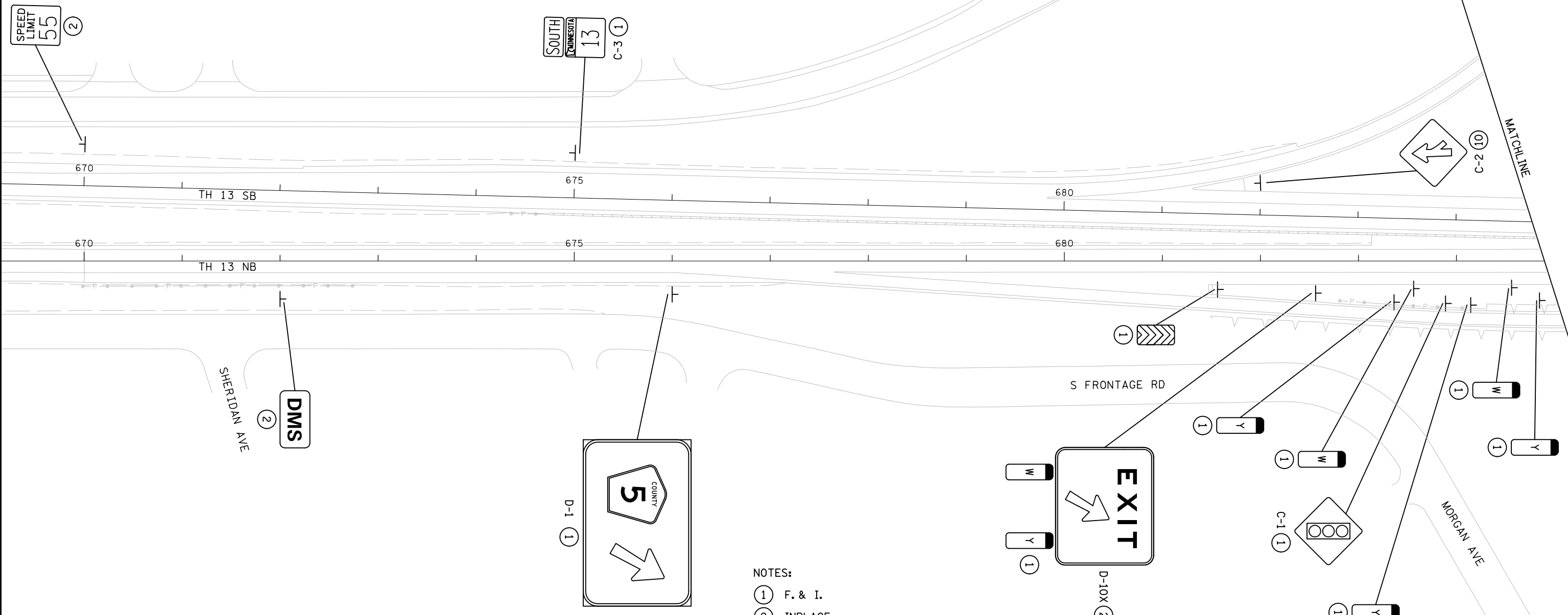
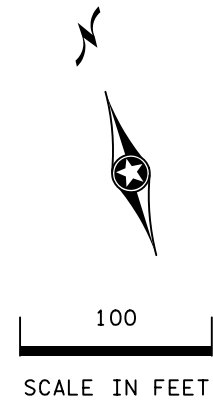


- NOTES:
- (2) INPLACE
 - (4) REMOVE
 - (5) REMOVE SIGN TYPE C
 - (7) REMOVE DELINEATOR PANEL ONLY
 - (8) REMOVE SIGN PANEL TYPE C
 - (9) REMOVE SIGN PANEL TYPE D



- NOTES:
- ② INPLACE
 - ③ SALVAGE
 - ④ REMOVE
 - ⑤ REMOVE SIGN TYPE C
 - ⑧ REMOVE SIGN PANEL TYPE C

INPLACE SIGNING



- NOTES:
- ① F. & I.
 - ② INPLACE
 - ⑩ F. & I. SIGN PANEL TYPE C

PERMANENT SIGNING

DRAWN BY: CCY

CHECKED BY: SRM

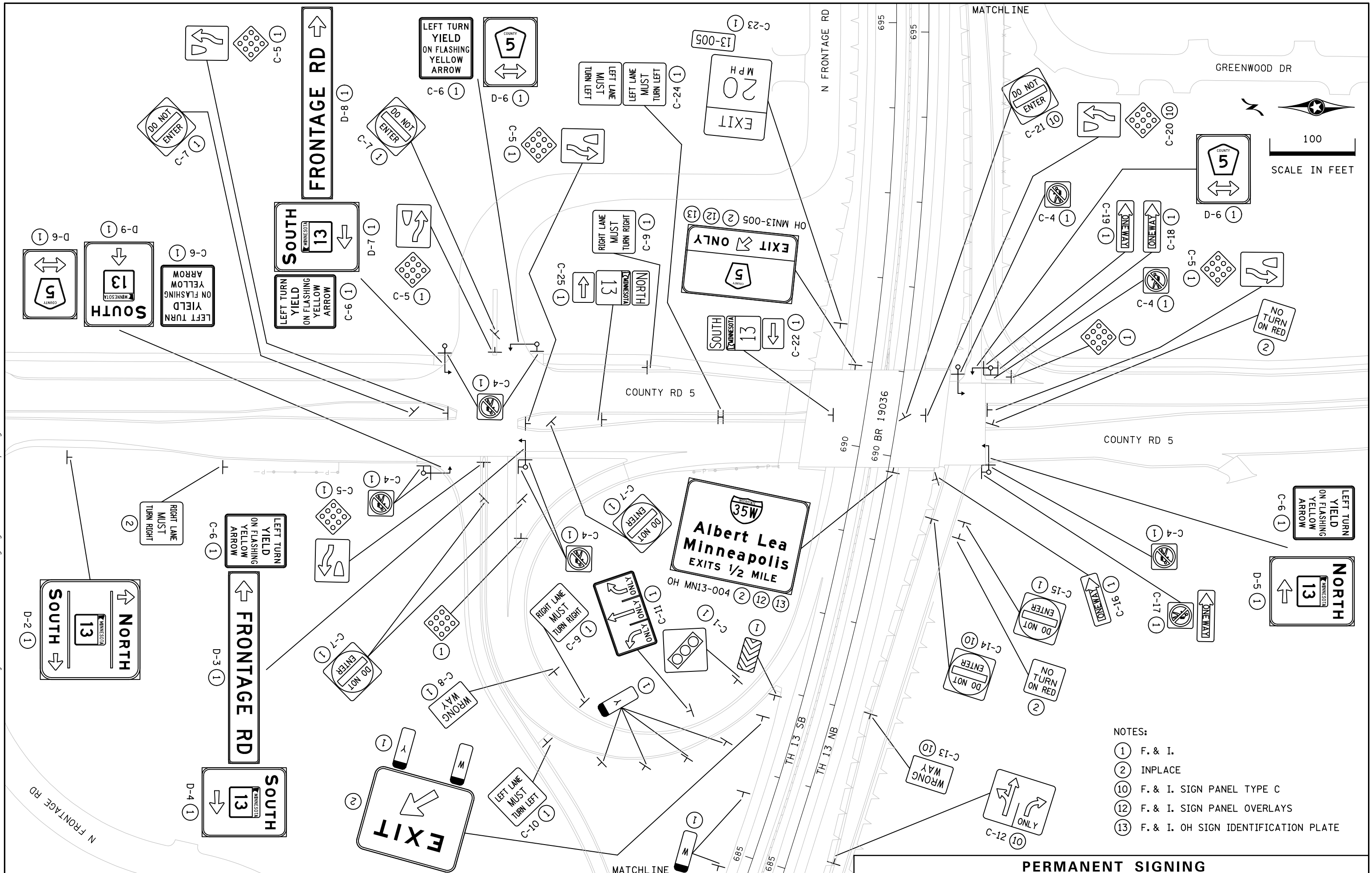
CERTIFIED BY *Steve McBurn* LIC. NO. 19579 DATE 9/25/2019

STATE PROJ. NO. 1901-176 (TH 13) SHEET NO. 61 OF 106 SHEETS

PLOTTED/REVISED: 25-SEP-2019

IPLOT NAME: OTE_1901176.ps2
PATH & FILENAME: Projects\JM_ROS\013\1901176\Signing\OT\ST\OTE_1901176.ps2.dgn

OT E_1901176.ps2



- NOTES:
- (1) F. & I.
 - (2) INPLACE
 - (10) F. & I. SIGN PANEL TYPE C
 - (12) F. & I. SIGN PANEL OVERLAYS
 - (13) F. & I. OH SIGN IDENTIFICATION PLATE

PERMANENT SIGNING

DRAWN BY: CCY

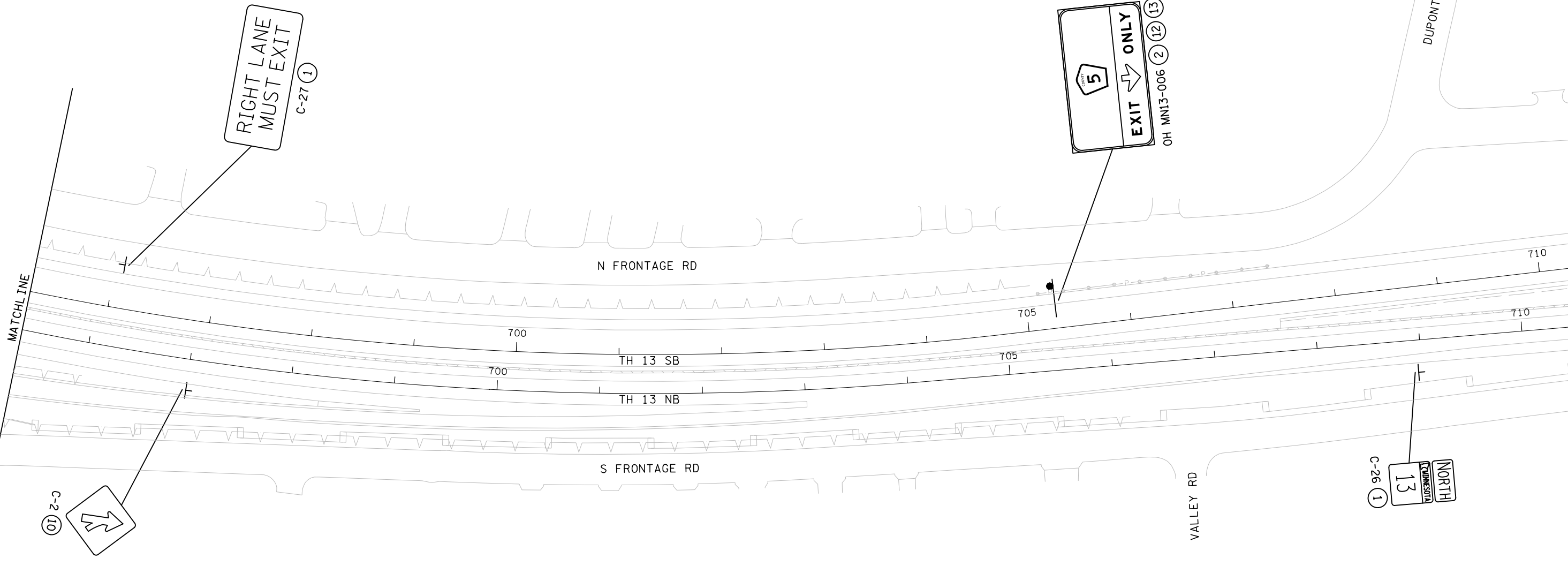
CHECKED BY: SRM

CERTIFIED BY *Steve McEwen*

LIC. NO. 19579 DATE 9/25/2019

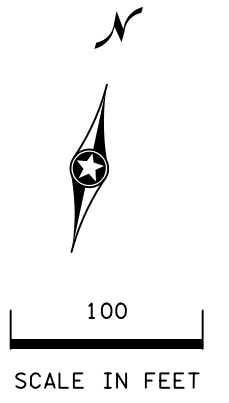
STATE PROJ. NO. 1901-176 (TH 13)

SHEET NO. 62 OF 106 SHEETS



NOTES:

- ① F. & I.
- ② INPLACE
- ⑩ F. & I. SIGN PANEL TYPE C
- ⑫ F. & I. SIGN PANEL OVERLAYS
- ⑬ F. & I. OH SIGN IDENTIFICATION PLATE



PERMANENT SIGNING

DRAWN BY: CCY

CHECKED BY: SRM

CERTIFIED BY

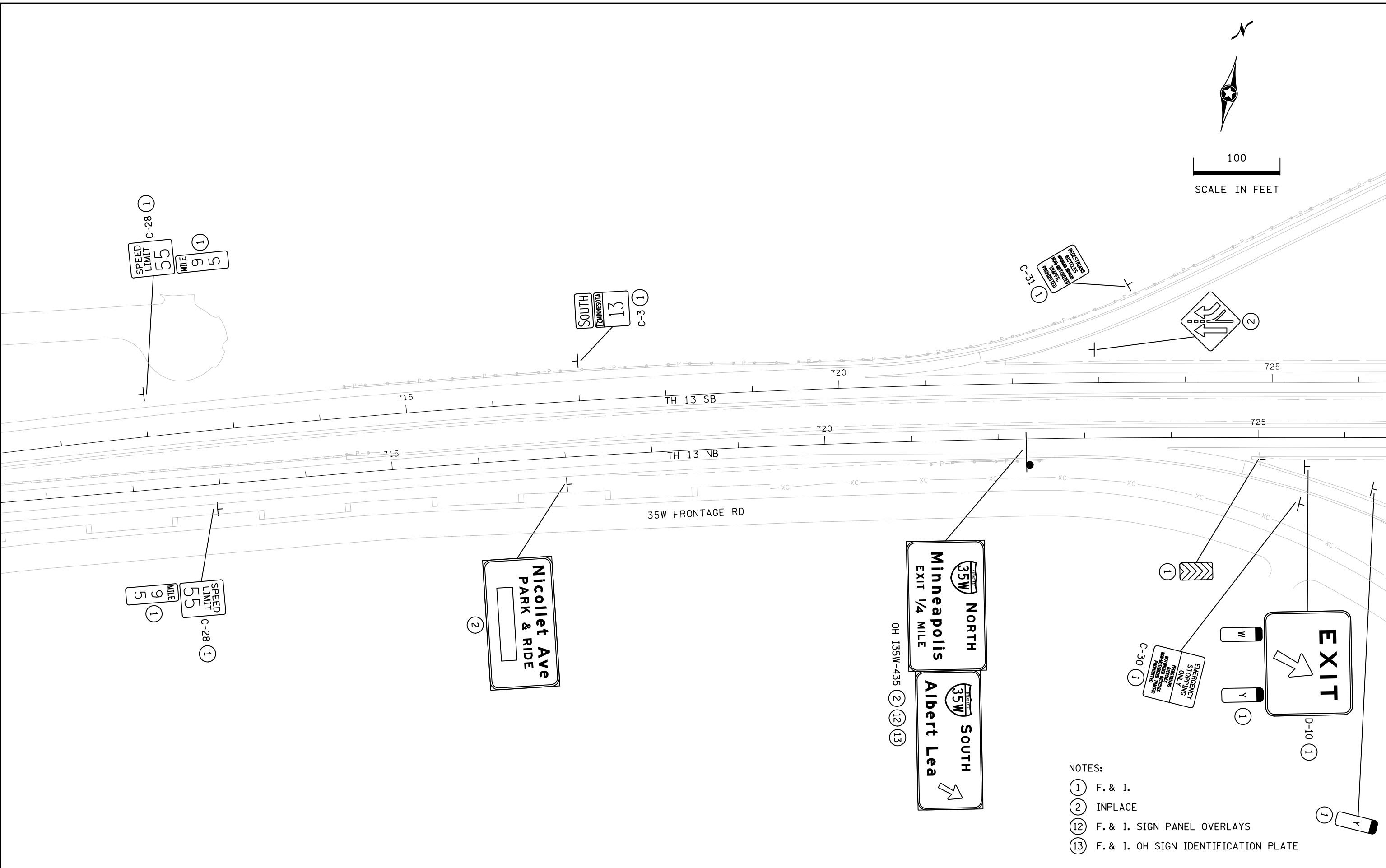
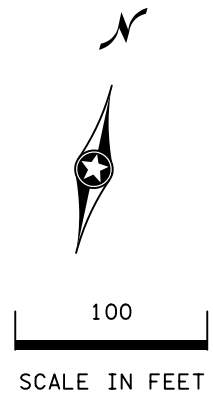
STEVEN M. DUNBAR
LICENSED PROFESSIONAL ENGINEER

LIC. NO. 19579

DATE 9/25/2019

STATE PROJ. NO. 1901-176 (TH 13)

SHEET NO. 63 OF 106 SHEETS

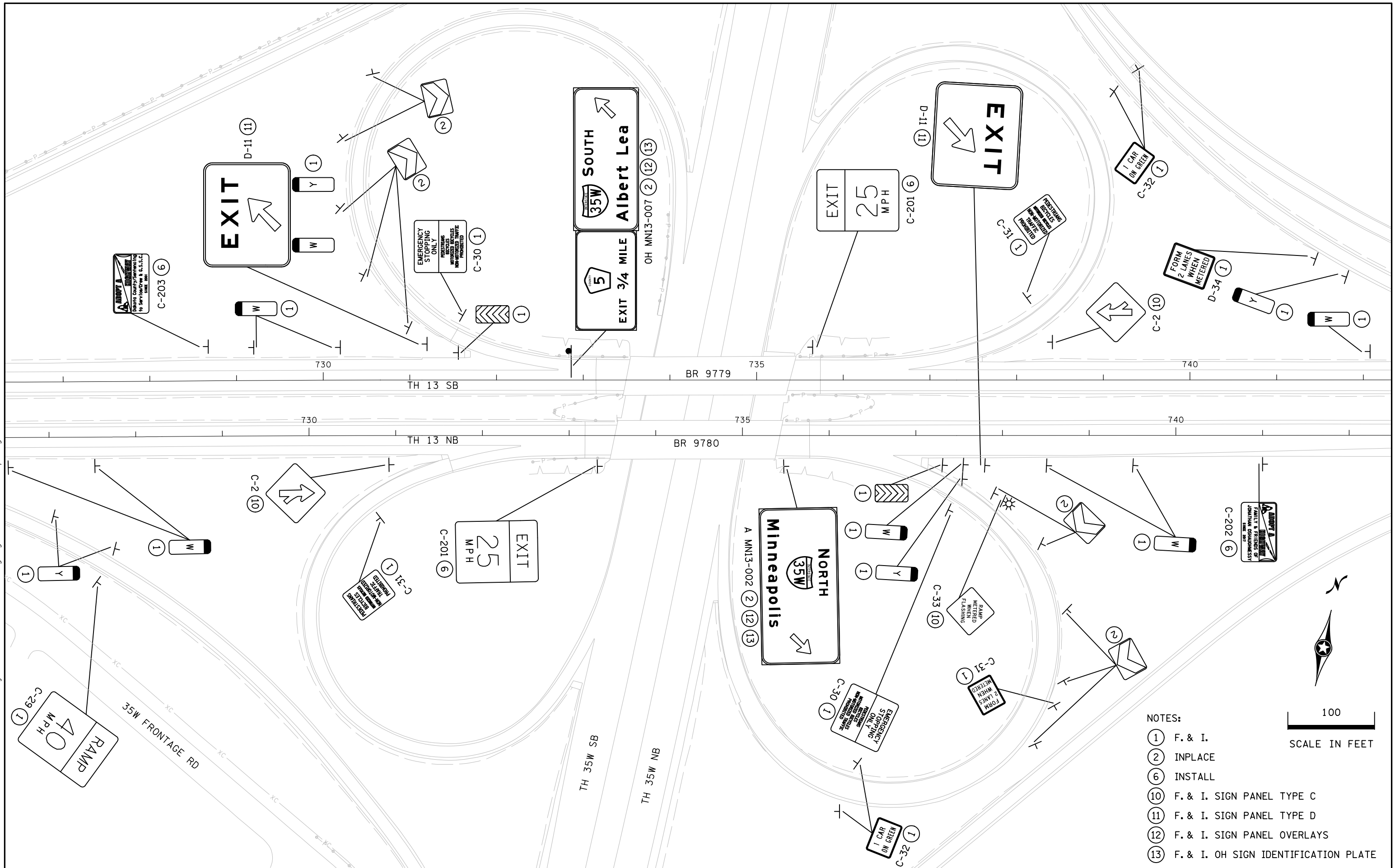


- NOTES:
- ① F. & I.
 - ② INPLACE
 - ⑫ F. & I. SIGN PANEL OVERLAYS
 - ⑬ F. & I. OH SIGN IDENTIFICATION PLATE

PERMANENT SIGNING

STATE PROJ. NO. 1901-176 (TH 13) SHEET NO. 64 OF 106 SHEETS

DRAWN BY: CCY CHECKED BY: SRM CERTIFIED BY: *Steve McBurn* LIC. NO. 19579 DATE 9/25/2019



- NOTES:
- ① F. & I.
 - ② INPLACE
 - ⑥ INSTALL
 - ⑩ F. & I. SIGN PANEL TYPE C
 - ⑪ F. & I. SIGN PANEL TYPE D
 - ⑫ F. & I. SIGN PANEL OVERLAYS
 - ⑬ F. & I. OH SIGN IDENTIFICATION PLATE



PERMANENT SIGNING

DRAWN BY: CCY

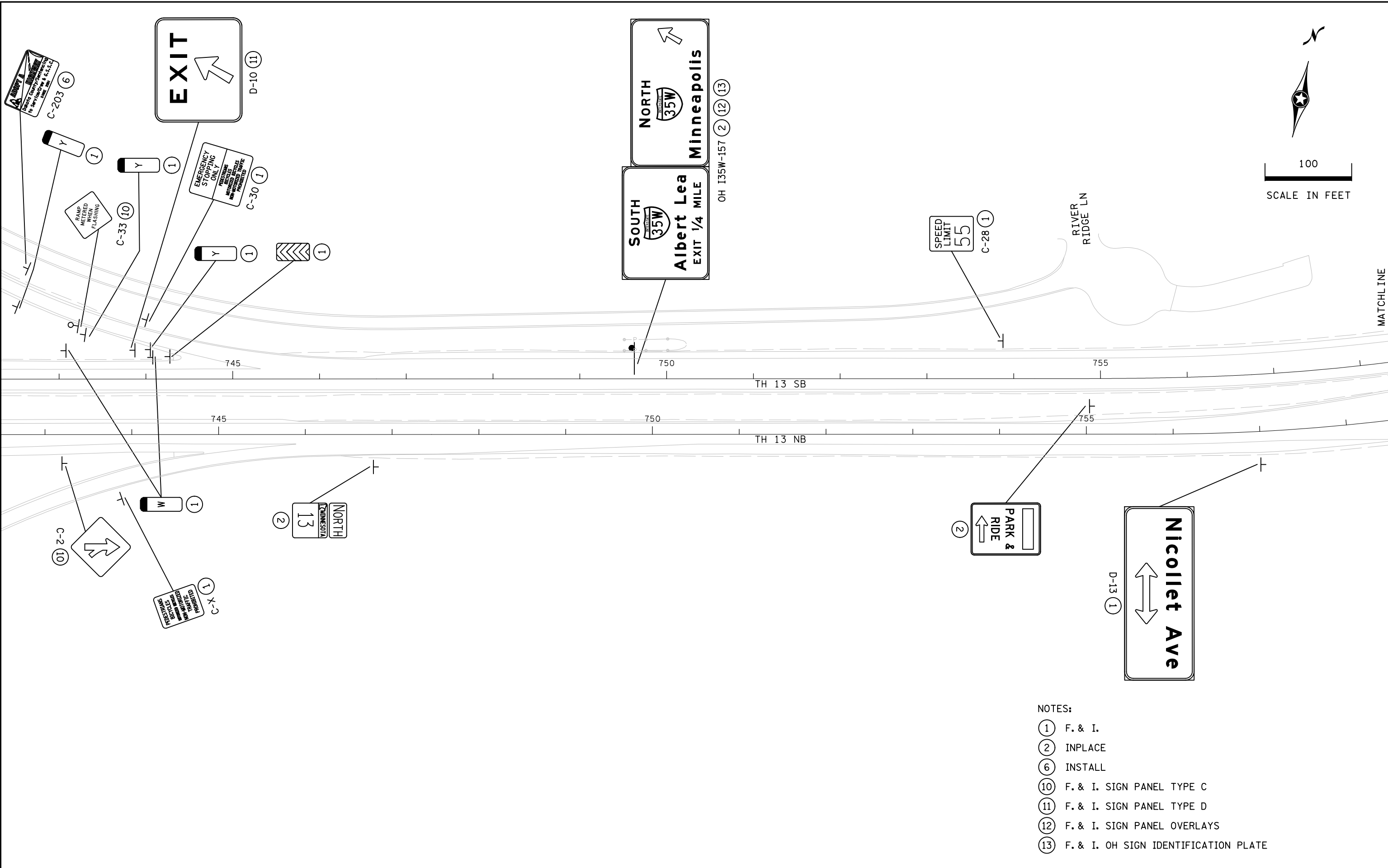
CHECKED BY: SRM

CERTIFIED BY *Steve McBurn* LIC. NO. 19579 DATE 9/25/2019

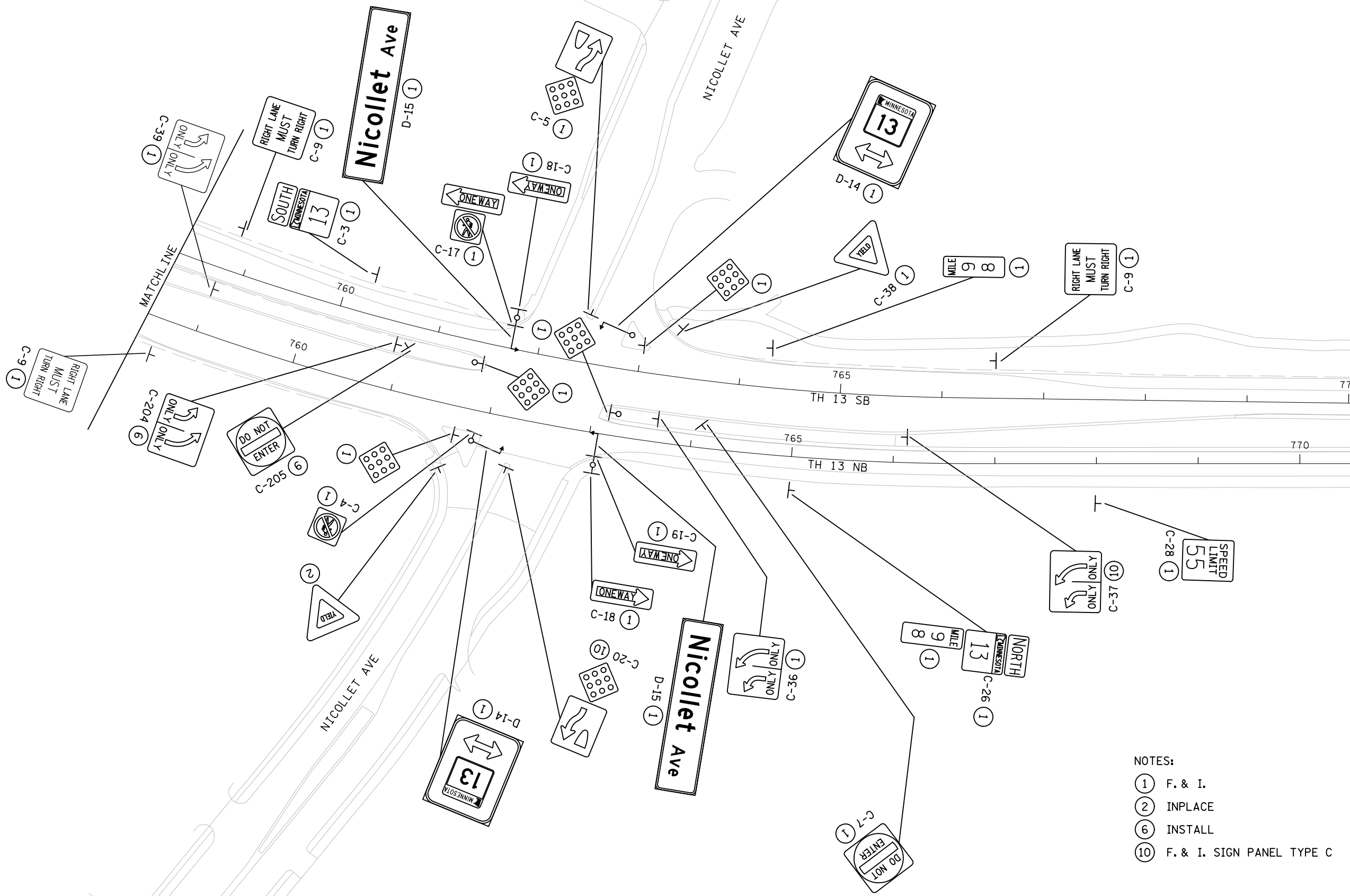
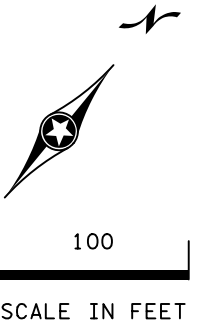
STATE PROJ. NO. 1901-176 (TH 13) SHEET NO. 65 OF 106 SHEETS

PLOTTED/REVISED: 25-SEP-2019

IPLOT NAME: OTE_1901176.ps2
PATH & FILENAME: Projects\DM_ROS\013\1901176\Signing\OT\NOTE_1901176.ps2.dgn



- NOTES:
- ① F. & I.
 - ② INPLACE
 - ⑥ INSTALL
 - ⑩ F. & I. SIGN PANEL TYPE C
 - ⑪ F. & I. SIGN PANEL TYPE D
 - ⑫ F. & I. SIGN PANEL OVERLAYS
 - ⑬ F. & I. OH SIGN IDENTIFICATION PLATE



- NOTES:
- ① F. & I.
 - ② INPLACE
 - ⑥ INSTALL
 - ⑩ F. & I. SIGN PANEL TYPE C

PERMANENT SIGNING

DRAWN BY: CCY

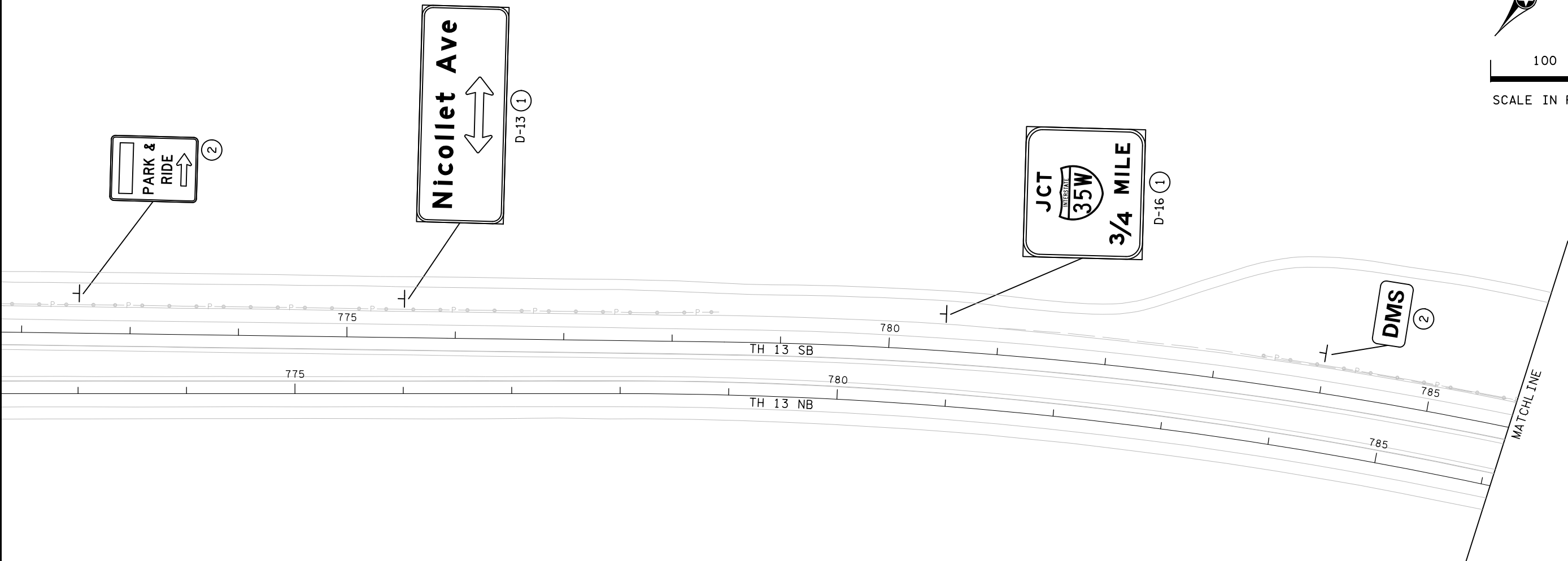
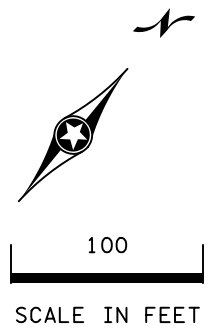
CHECKED BY: SRM

CERTIFIED BY *Steve McBurn* LIC. NO. 19579 DATE 9/25/2019

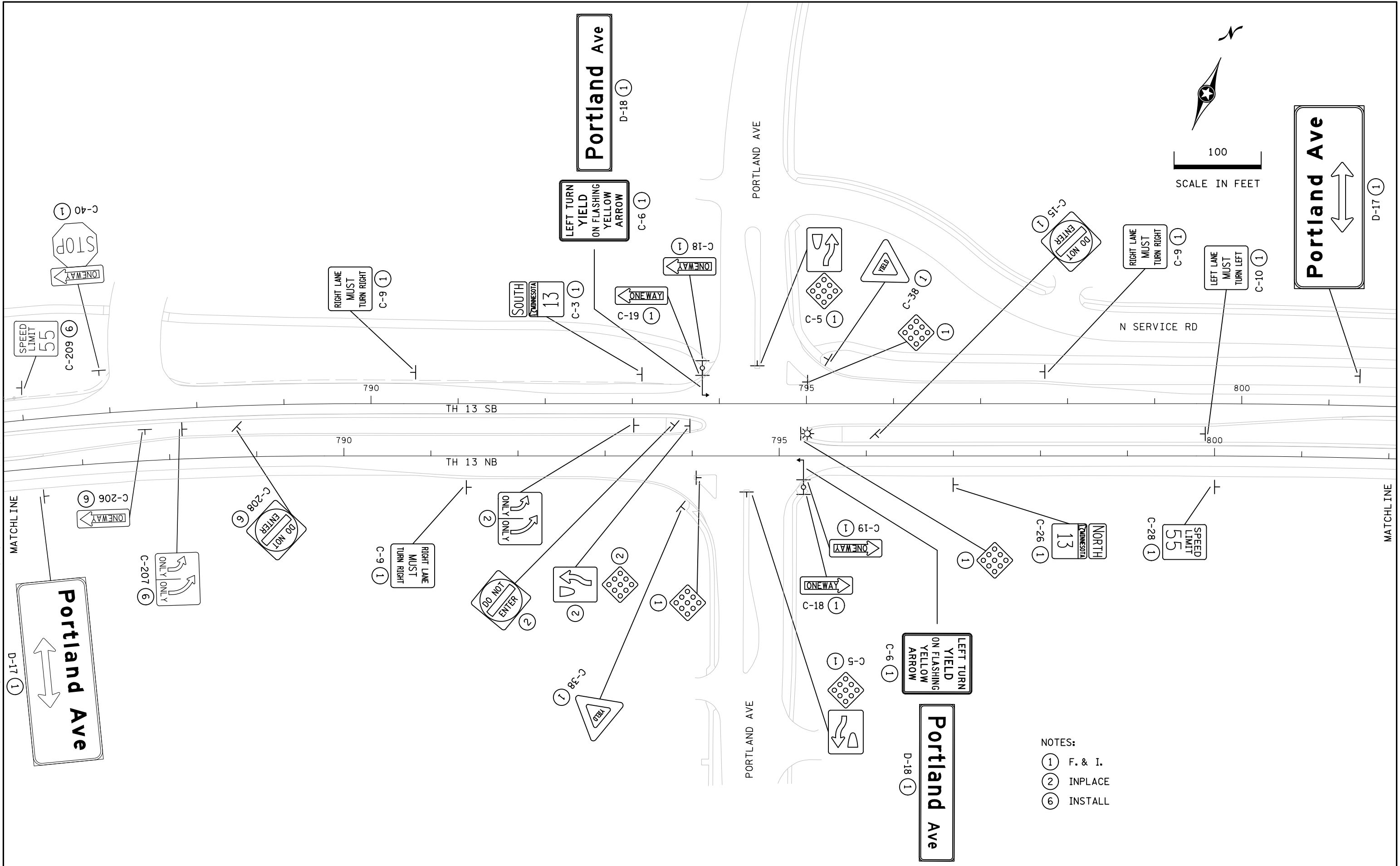
STATE PROJ. NO. 1901-176 (TH 13) SHEET NO. 67 OF 106 SHEETS

PLOTTED/REVISED: 25-SEP-2019

I/PLOT NAME: OTE_1901176.ps2
PATH & FILENAME: Projects\DM_ROMS\03\1901176\Signing\OT\ST\OTE_1901176.ps2.dgn



- NOTES:
- ① F. & I.
 - ② INPLACE



- NOTES:
- ① F. & I.
 - ② INPLACE
 - ⑥ INSTALL

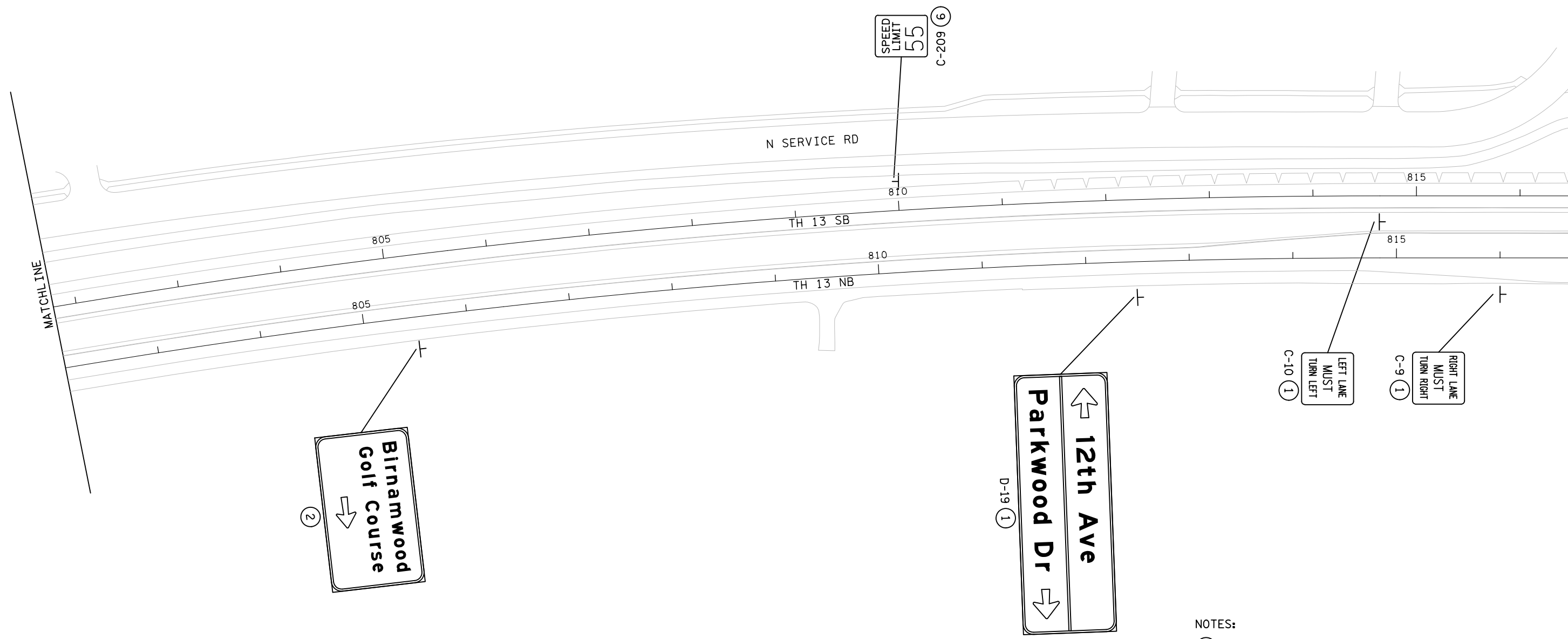
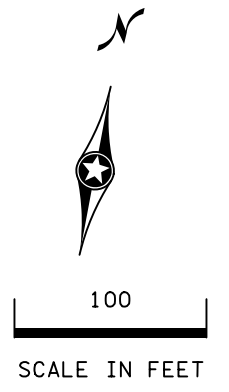
PERMANENT SIGNING

DRAWN BY: CCY

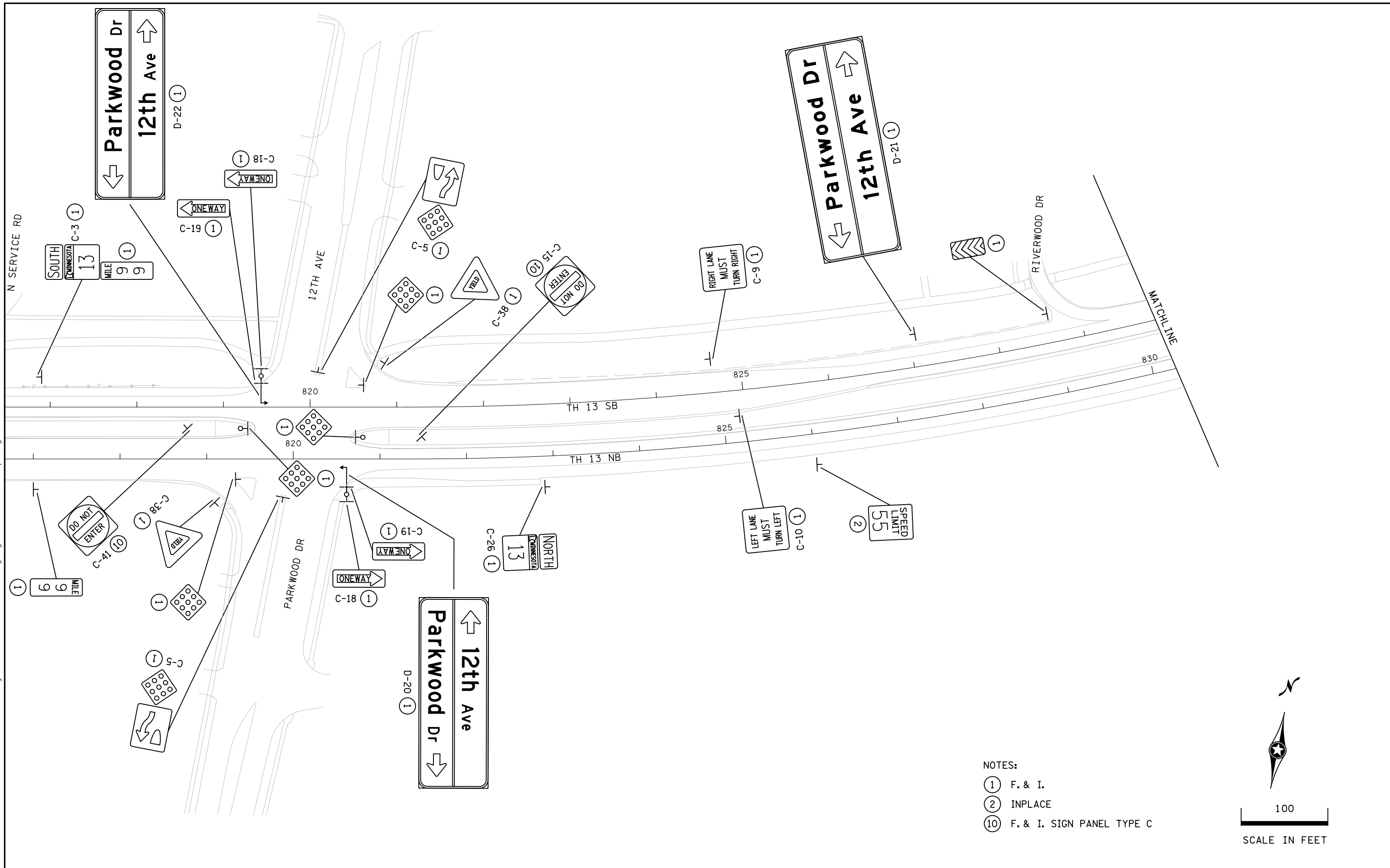
CHECKED BY: SRM

CERTIFIED BY *Steve McBurn* LIC. NO. 19579 DATE 9/25/2019

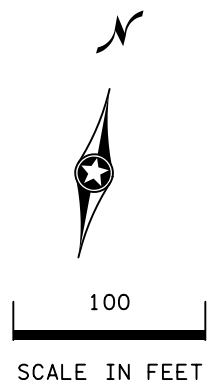
STATE PROJ. NO. 1901-176 (TH 13) SHEET NO. 69 OF 106 SHEETS



- NOTES:
- ① F. & I.
 - ② INPLACE
 - ⑥ INSTALL

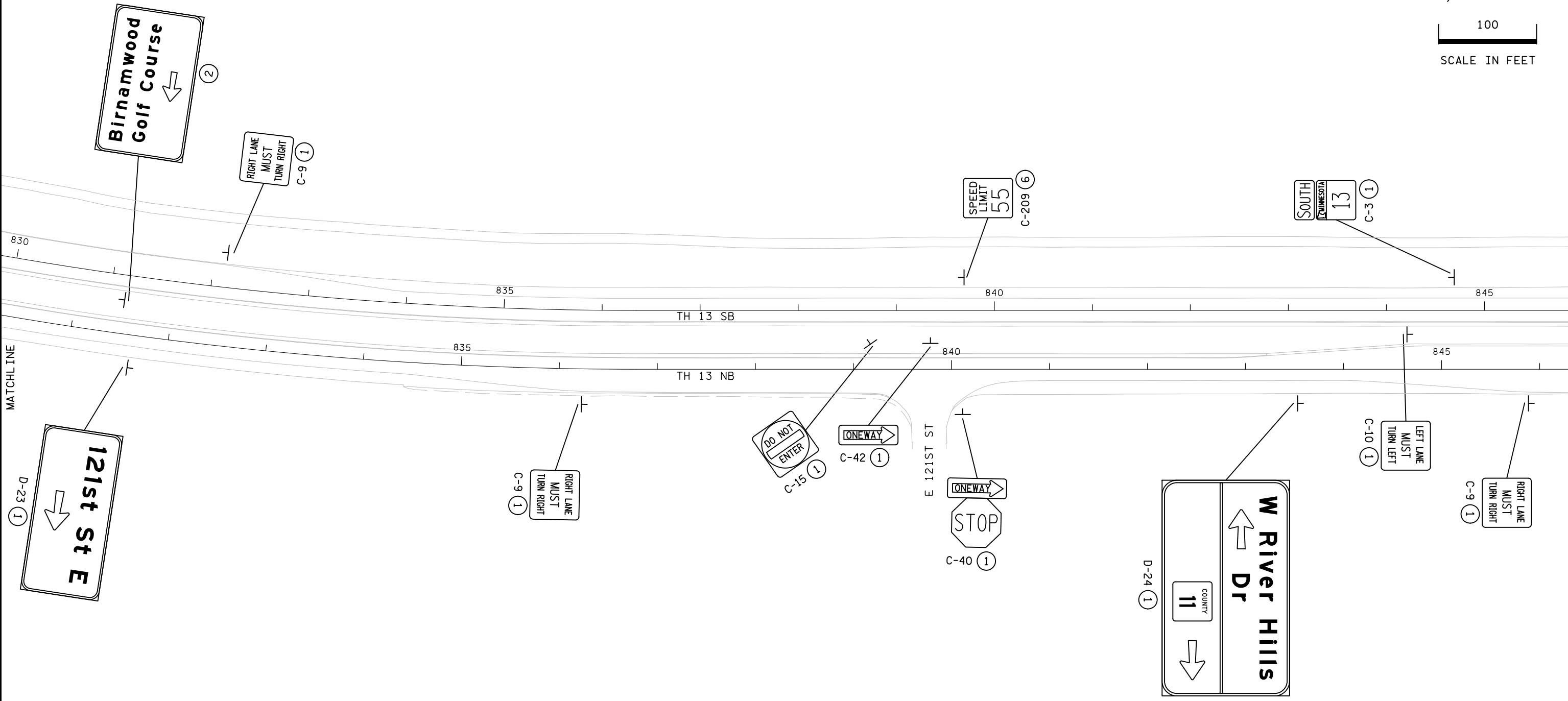
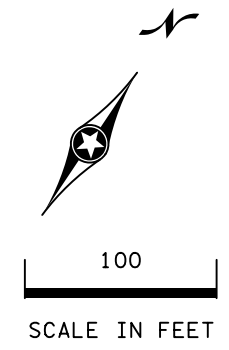


- NOTES:
- ① F. & I.
 - ② INPLACE
 - ⑩ F. & I. SIGN PANEL TYPE C

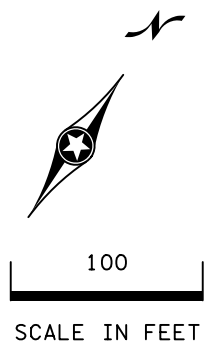
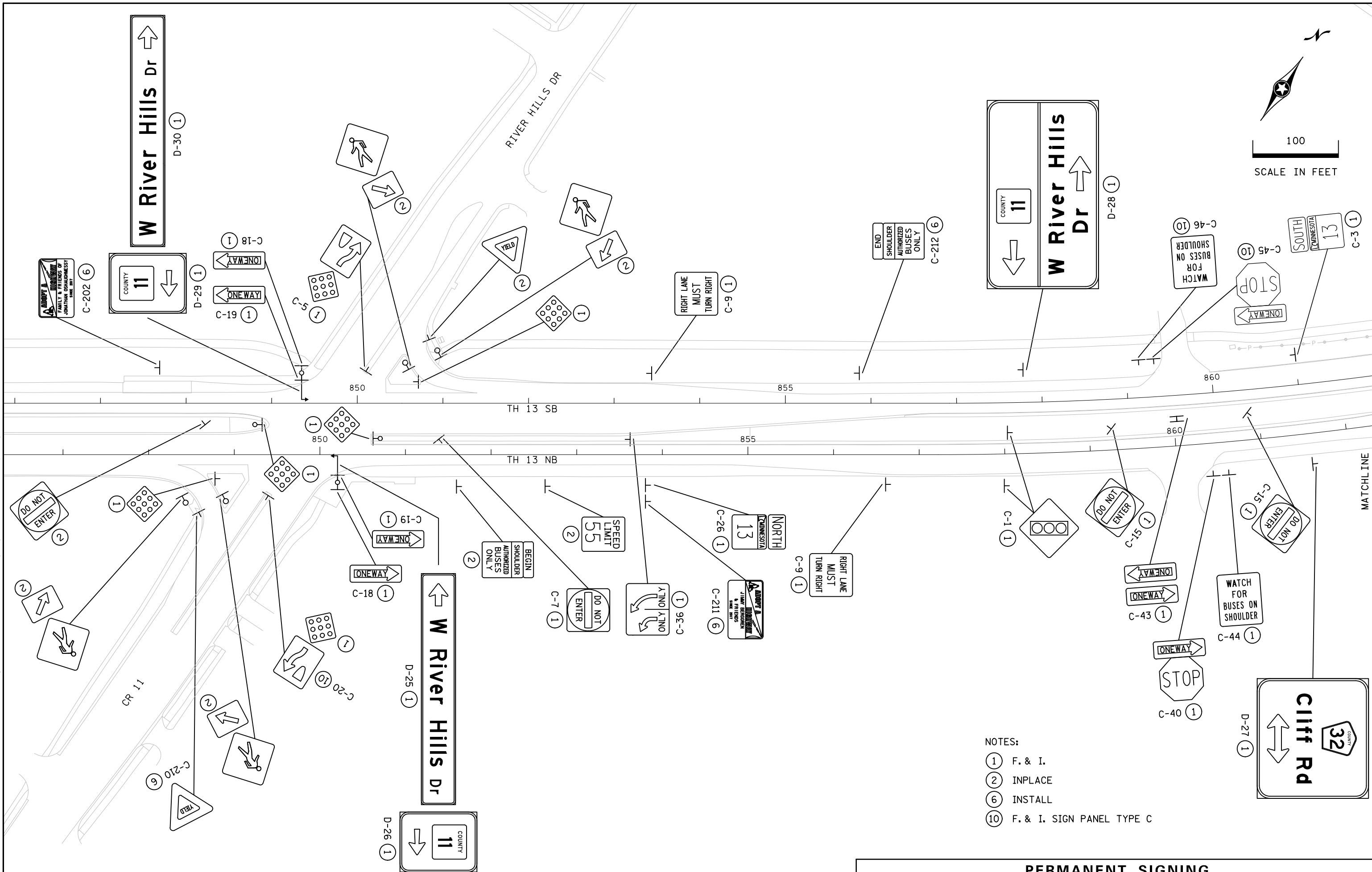


PLOTTED/REVISED: 25-SEP-2019

IPLOT NAME: OTE_1901176.ps2
PATH & FILENAME: Projects\DM_ROS\03\1901176\Signing\OTE_1901176.ps2.dgn



- NOTES:
- ① F. & I.
 - ② INPLACE
 - ⑥ INSTALL



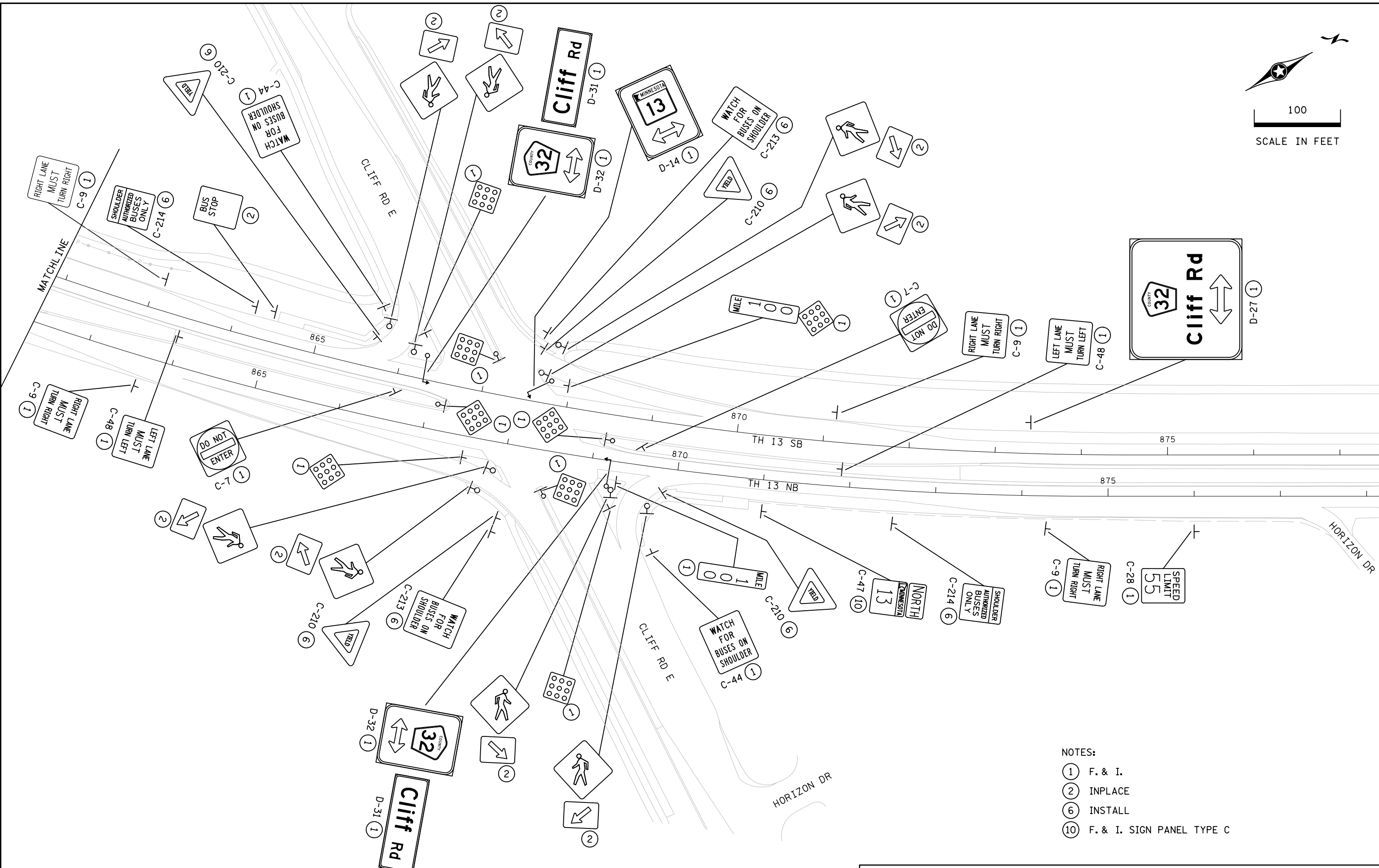
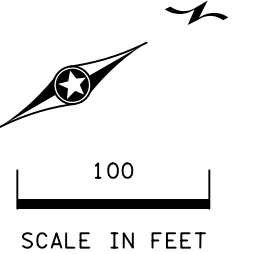
- NOTES:
- ① F. & I.
 - ② INPLACE
 - ⑥ INSTALL
 - ⑩ F. & I. SIGN PANEL TYPE C

PERMANENT SIGNING

PLOTTED/REVISED: 25-SEP-2019

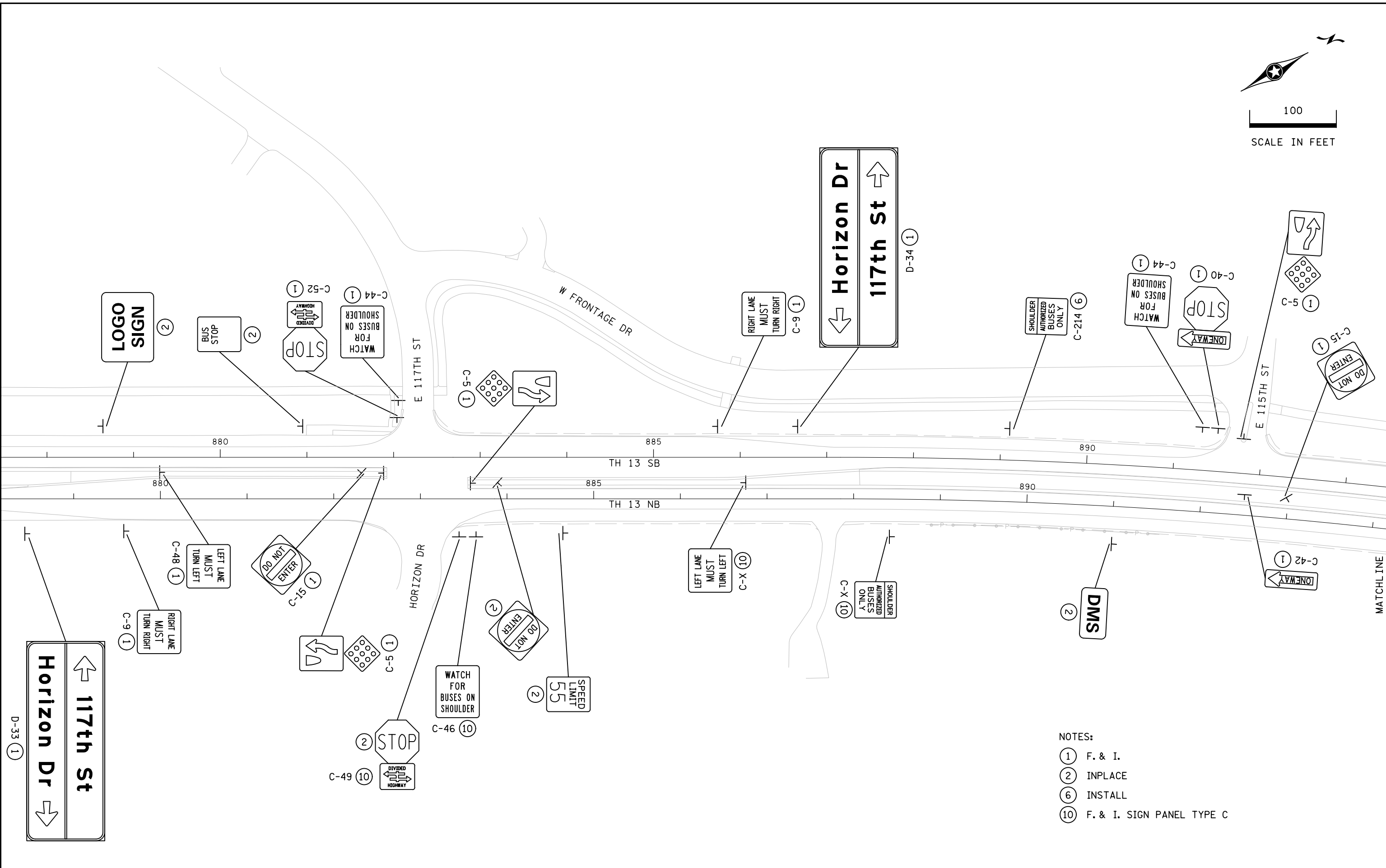
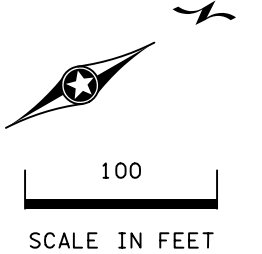
I/PLOT NAME: OTE_1901176_ps2
PATH & FILENAME: Projects\DM_ROS\03\1901176\Signing\OT\NOTE_1901176_ps2.dgn

I/PLOT NAME: OTE_1901176_ps2



- NOTES:
- ① F. & I.
 - ② INPLACE
 - ⑥ INSTALL
 - ⑩ F. & I. SIGN PANEL TYPE C

PERMANENT SIGNING



- NOTES:
- ① F. & I.
 - ② INPLACE
 - ⑥ INSTALL
 - ⑩ F. & I. SIGN PANEL TYPE C

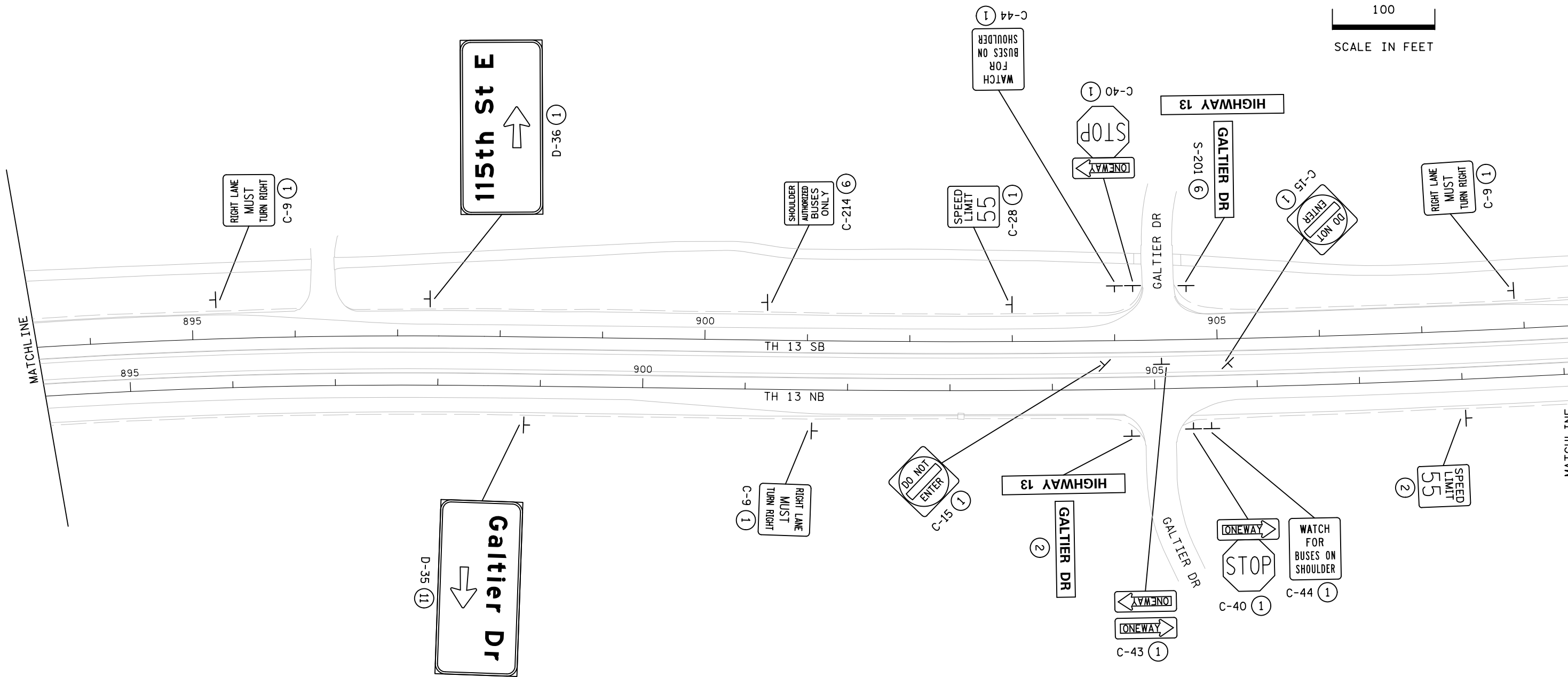
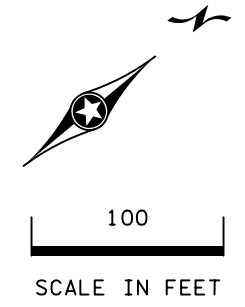
PERMANENT SIGNING

DRAWN BY: CCY

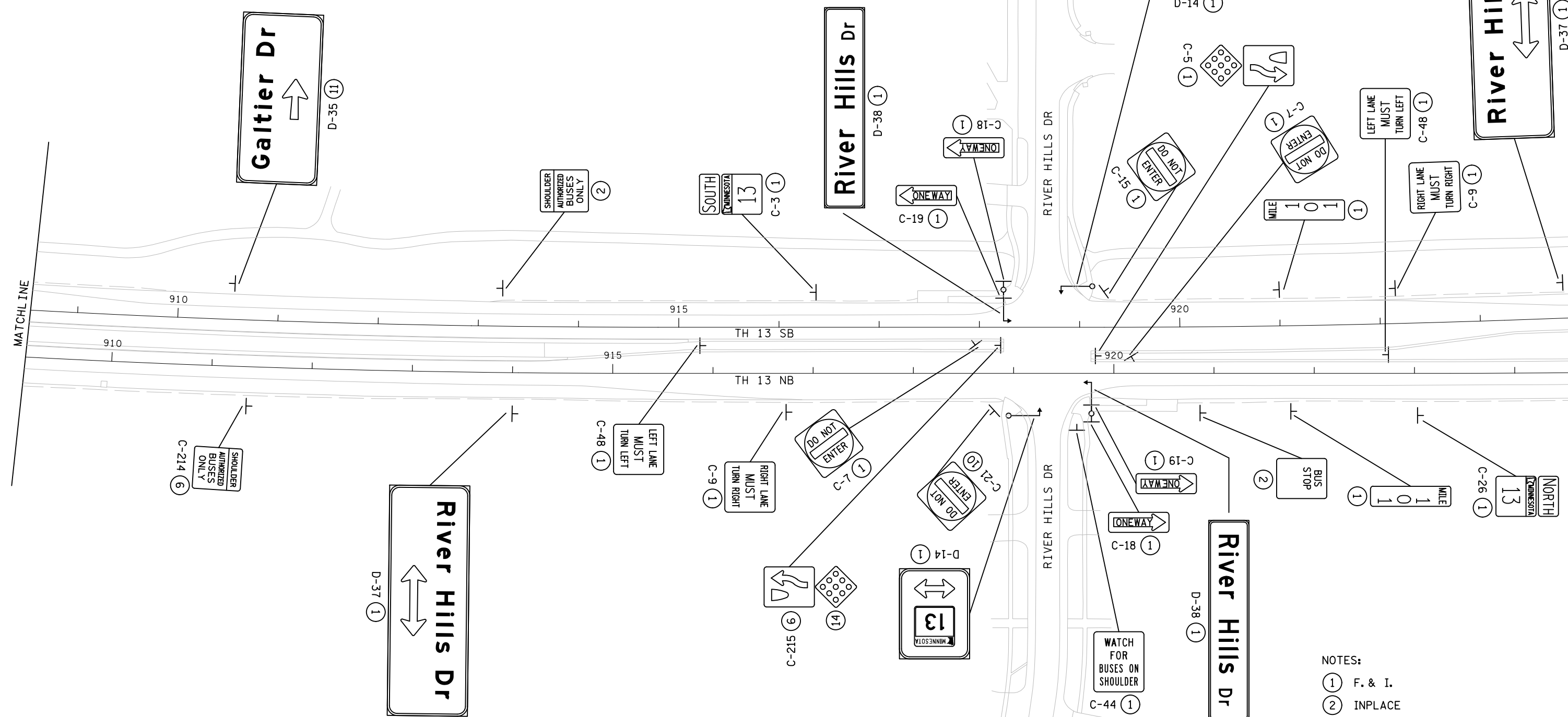
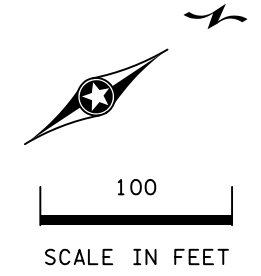
CHECKED BY: SRM

CERTIFIED BY *Steve McBurn* LIC. NO. 19579 DATE 9/25/2019

STATE PROJ. NO. 1901-176 (TH 13) SHEET NO. 75 OF 106 SHEETS



- NOTES:
- ① F. & I.
 - ② INPLACE
 - ⑥ INSTALL
 - ⑪ F. & I. SIGN PANEL TYPE D



- NOTES:
- ① F. & I.
 - ② INPLACE
 - ⑥ INSTALL
 - ⑩ F. & I. SIGN PANEL TYPE C
 - ⑪ F. & I. SIGN PANEL TYPE D
 - ⑭ F. & I. MARKER PANEL

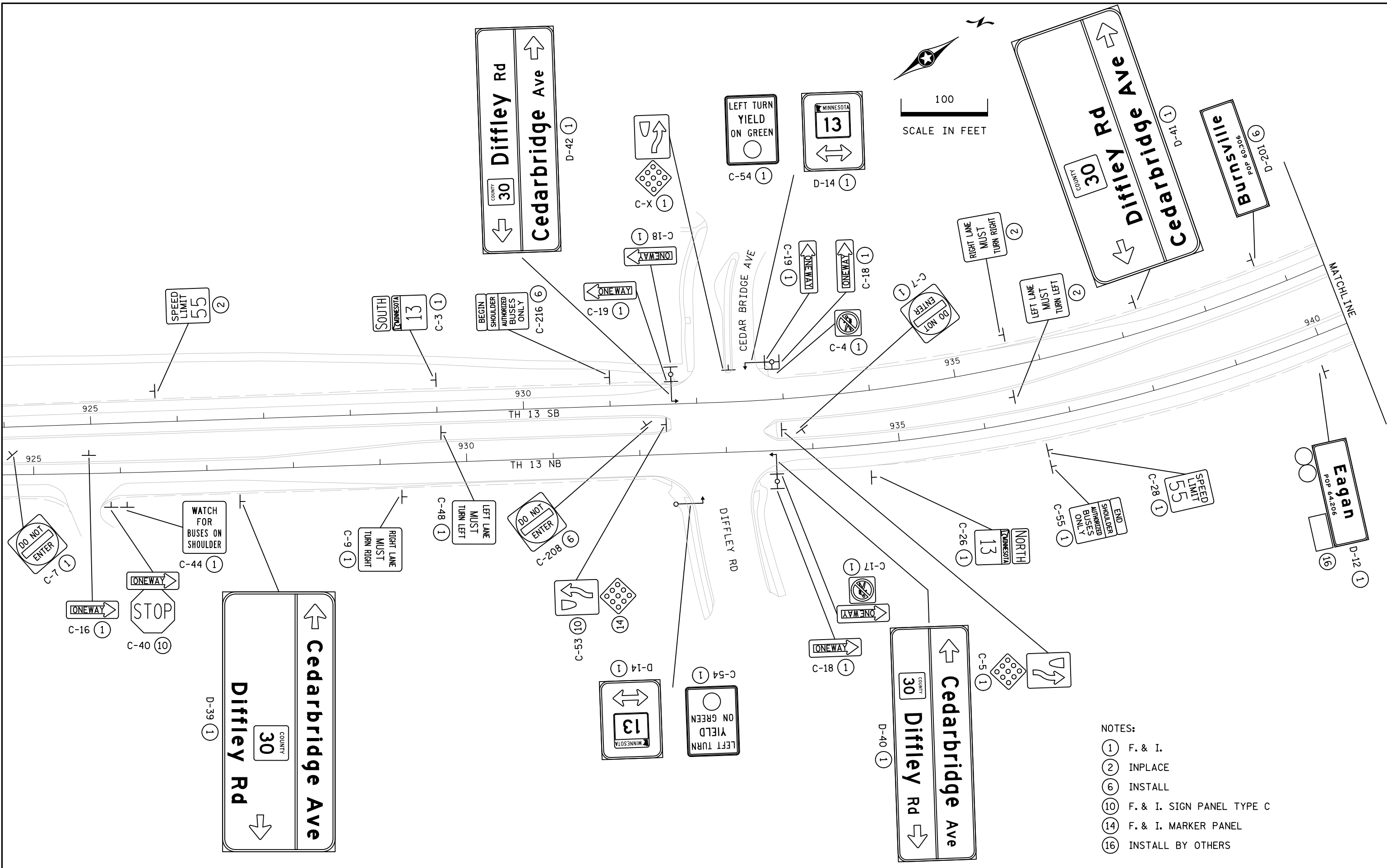
PERMANENT SIGNING

DRAWN BY: CCY

CHECKED BY: SRM

CERTIFIED BY *Steve McBurn* LIC. NO. 19579 DATE 9/25/2019

STATE PROJ. NO. 1901-176 (TH 13) SHEET NO. 77 OF 106 SHEETS

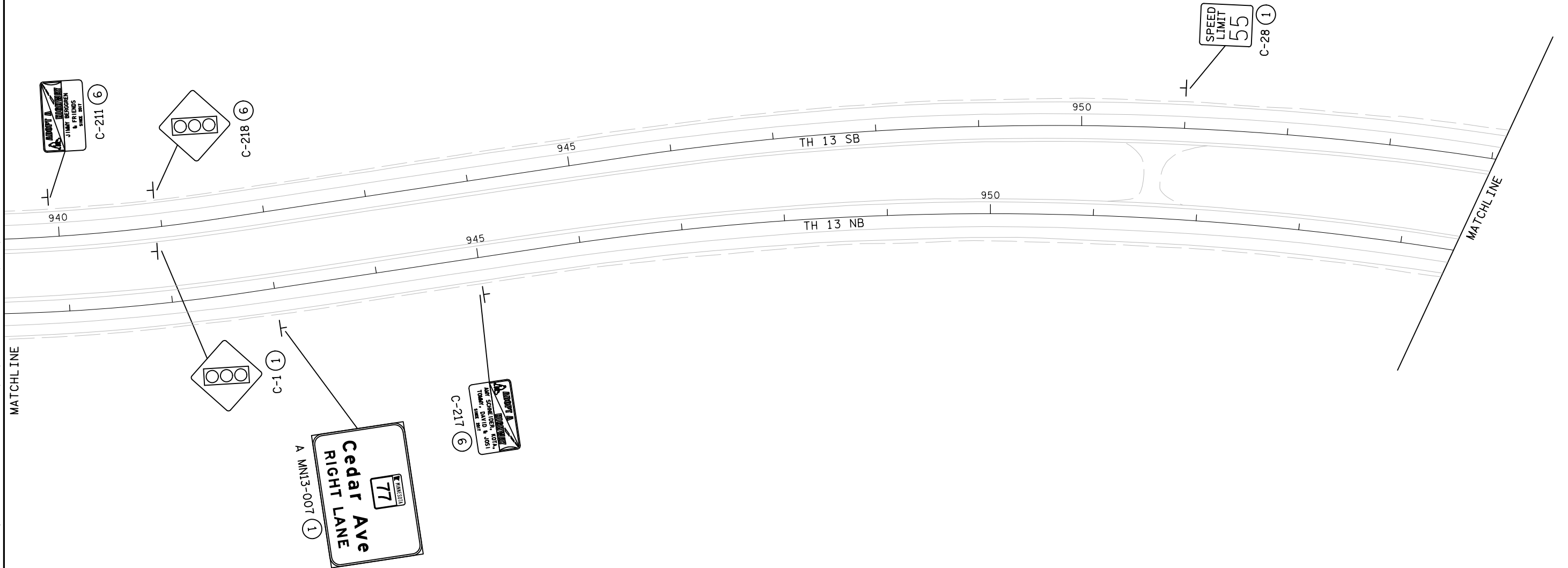
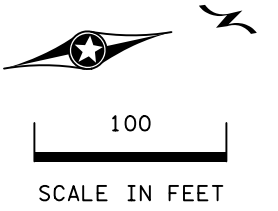


- NOTES:
- ① F. & I.
 - ② INPLACE
 - ⑥ INSTALL
 - ⑩ F. & I. SIGN PANEL TYPE C
 - ⑭ F. & I. MARKER PANEL
 - ⑰ INSTALL BY OTHERS

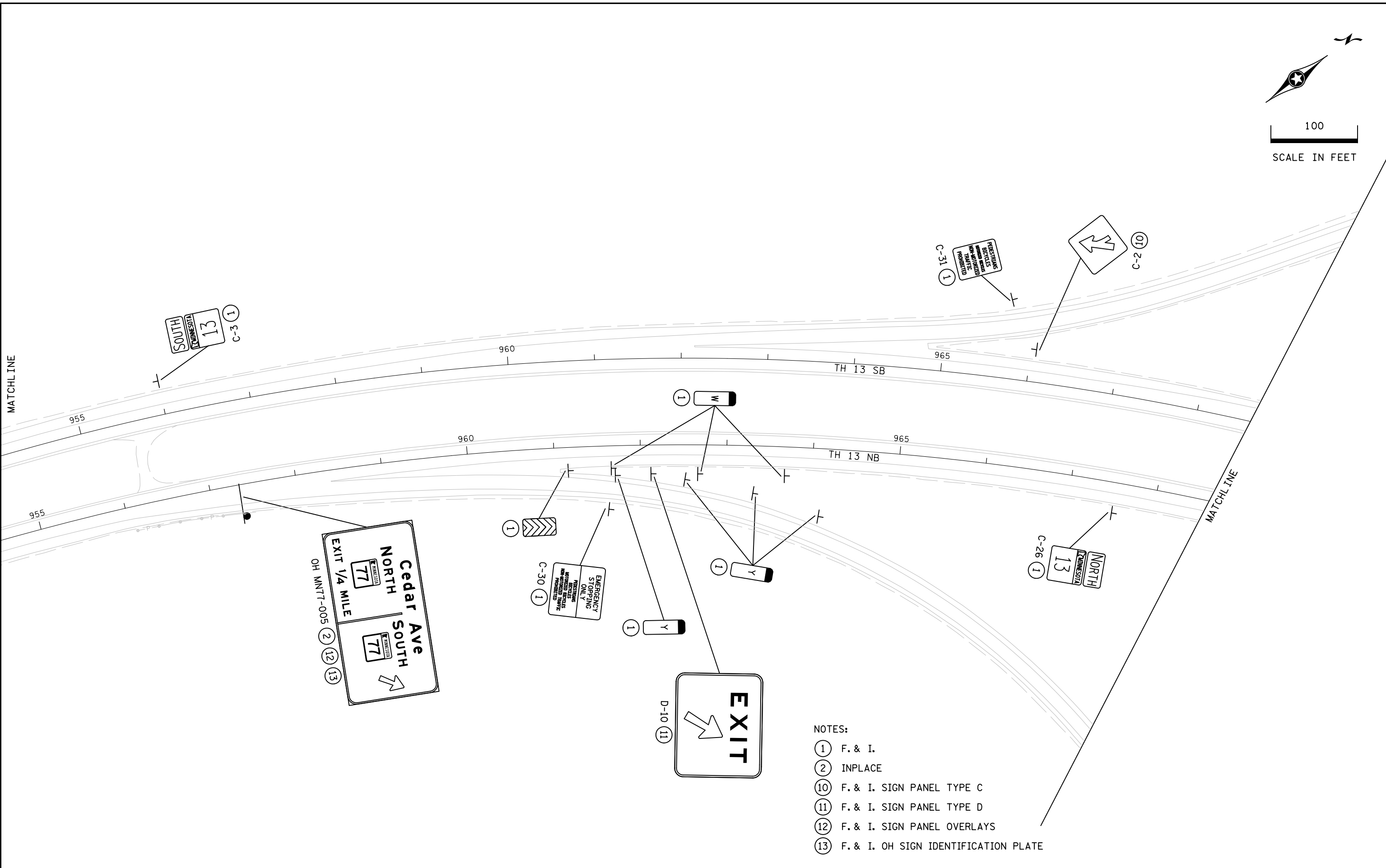
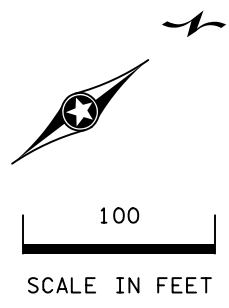
PERMANENT SIGNING

PLOTTED/REVISED: 25-SEP-2019

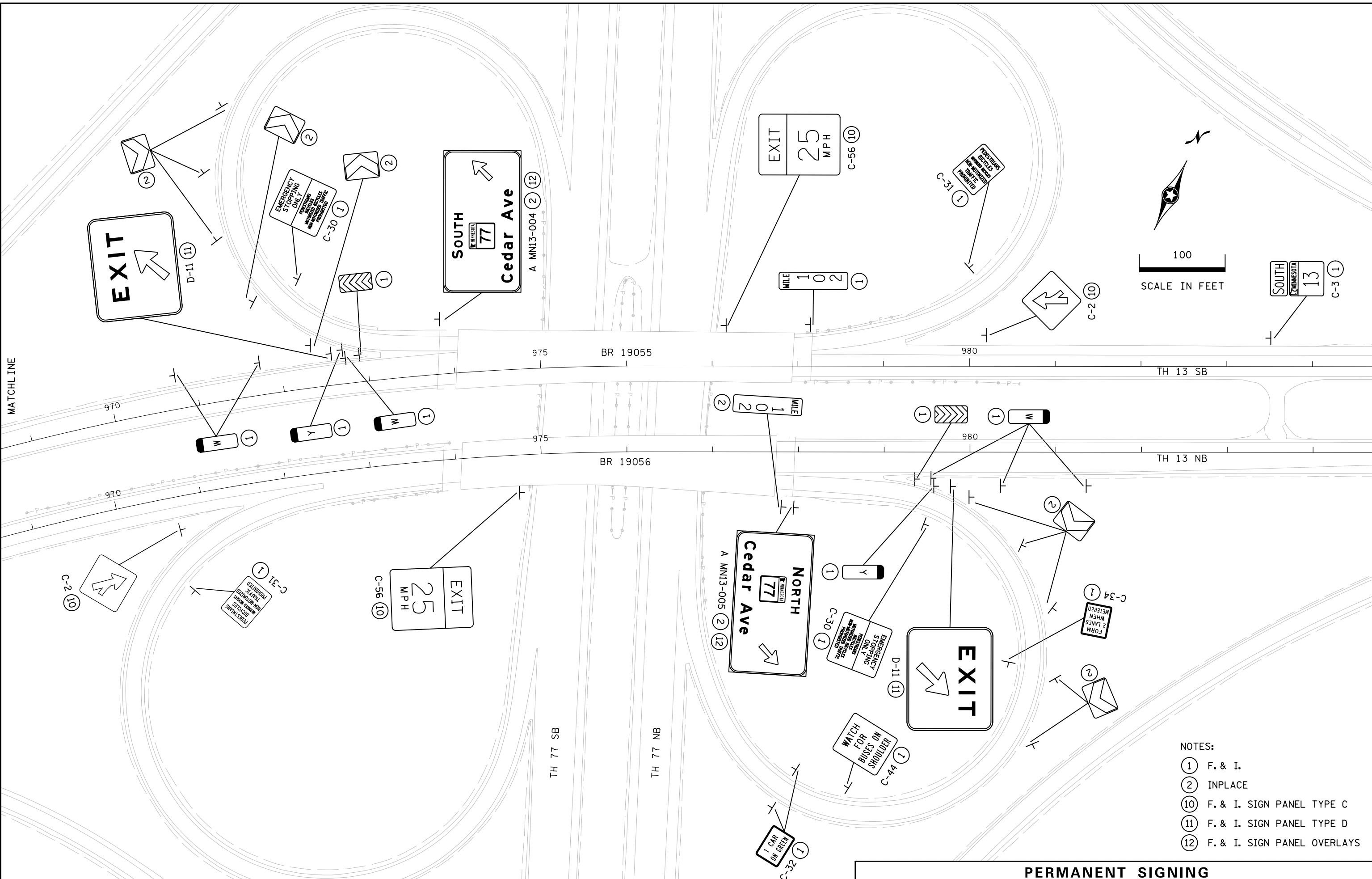
I/PLOT NAME: OTE_1901176.ps2
PATH & FILENAME: Projects\DM_ROMS\03\1901176\Signing\OT\ST\NOTE_1901176.ps2.dgn



- NOTES:
- ① F. & I.
 - ⑥ INSTALL



- NOTES:
- ① F. & I.
 - ② INPLACE
 - ⑩ F. & I. SIGN PANEL TYPE C
 - ⑪ F. & I. SIGN PANEL TYPE D
 - ⑫ F. & I. SIGN PANEL OVERLAYS
 - ⑬ F. & I. OH SIGN IDENTIFICATION PLATE

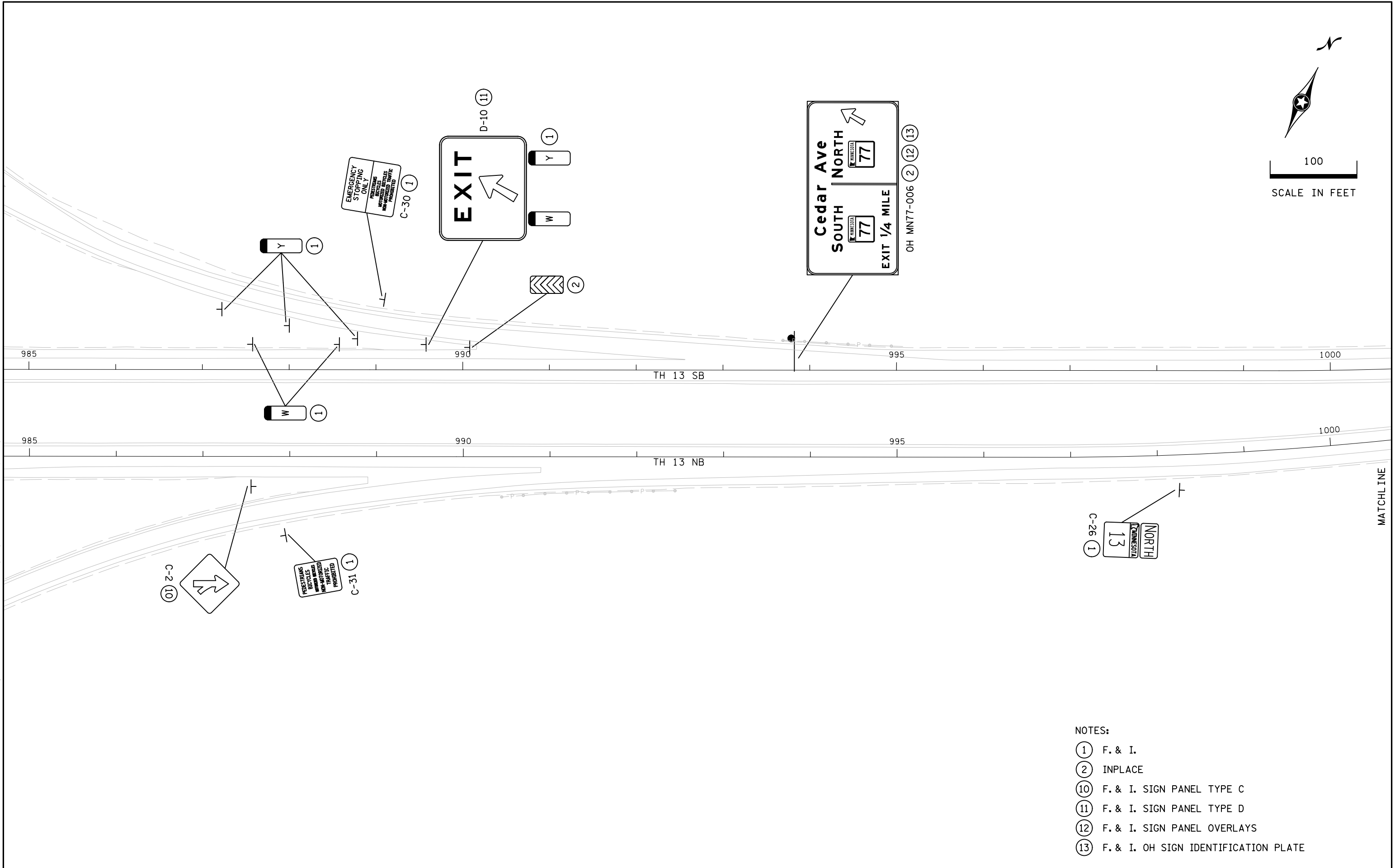


- NOTES:
- ① F. & I.
 - ② INPLACE
 - ⑩ F. & I. SIGN PANEL TYPE C
 - ⑪ F. & I. SIGN PANEL TYPE D
 - ⑫ F. & I. SIGN PANEL OVERLAYS


PERMANENT SIGNING

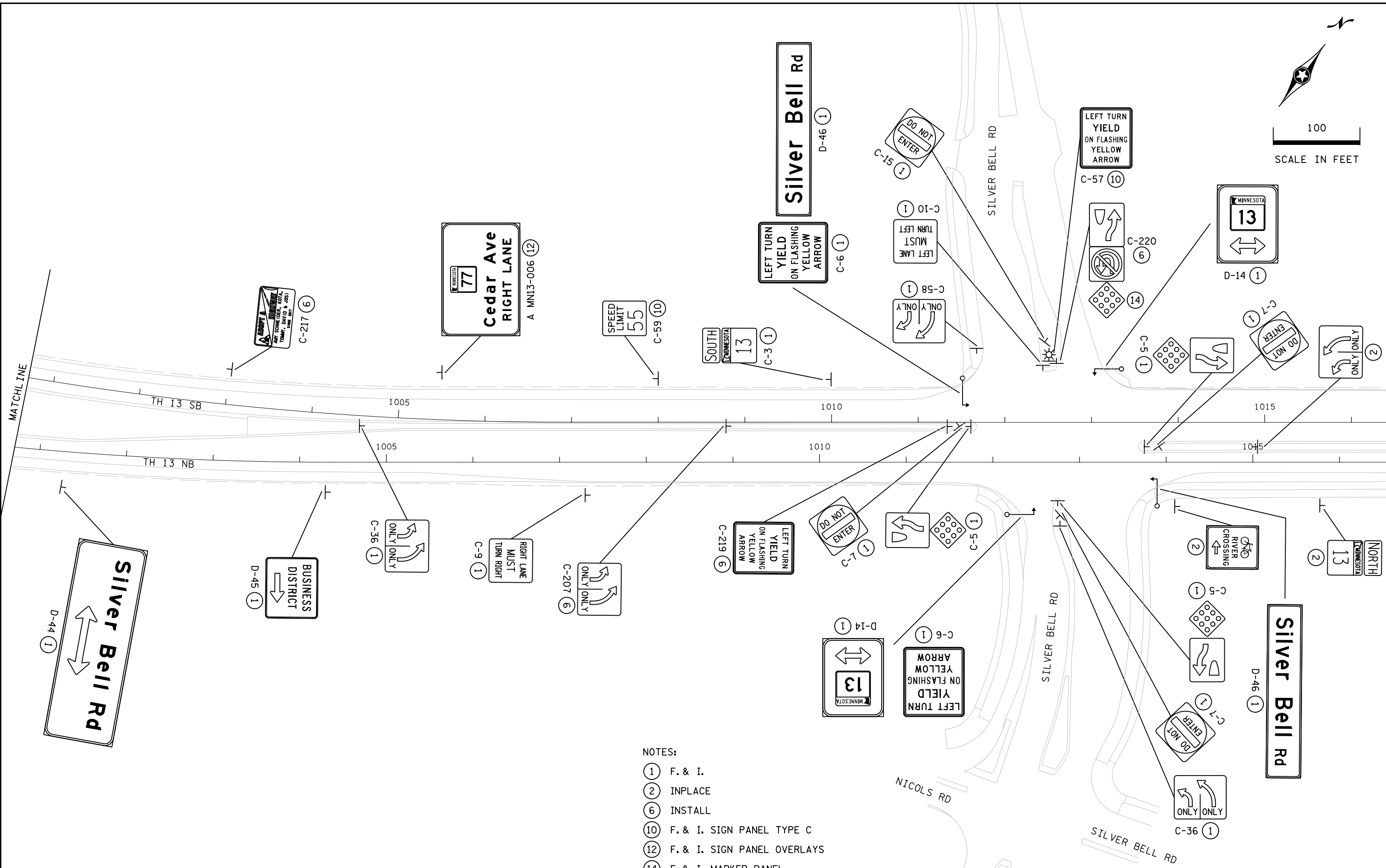
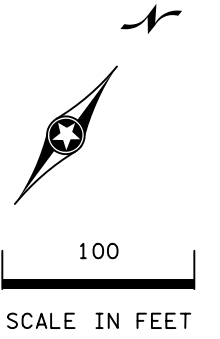
PLOTTED/REVISED: 25-SEP-2019

I/PLOT NAME: OTE_1901176.ps2
PATH & FILENAME: Projects\DM_ROS\03\1901176\Signing\OT\NOTE_1901176.ps2.dgn



- NOTES:
- ① F. & I.
 - ② INPLACE
 - ⑩ F. & I. SIGN PANEL TYPE C
 - ⑪ F. & I. SIGN PANEL TYPE D
 - ⑫ F. & I. SIGN PANEL OVERLAYS
 - ⑬ F. & I. OH SIGN IDENTIFICATION PLATE

PERMANENT SIGNING			STATE PROJ. NO. 1901-176 (TH 13) SHEET NO. 82 OF 106 SHEETS
DRAWN BY: CCY	CHECKED BY: SRM	CERTIFIED BY  LIC. NO. 19579 DATE 9/25/2019 <small>LICENSED PROFESSIONAL ENGINEER</small>	



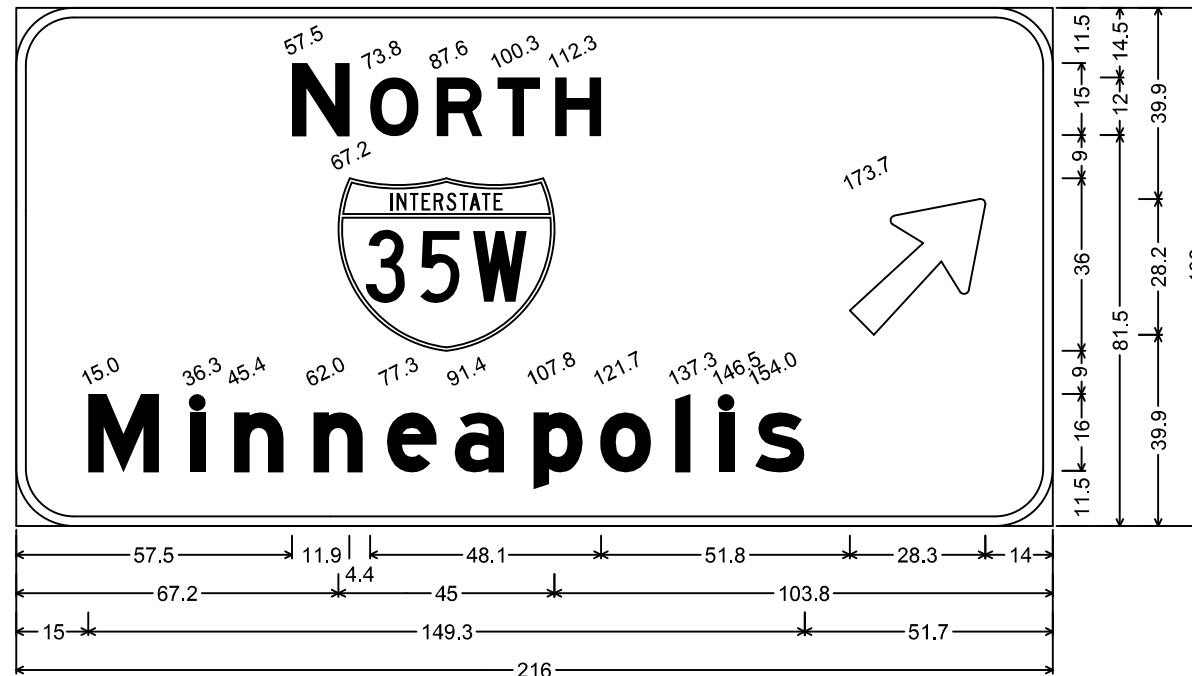
- NOTES:
- ① F. & I.
 - ② INPLACE
 - ⑥ INSTALL
 - ⑩ F. & I. SIGN PANEL TYPE C
 - ⑫ F. & I. SIGN PANEL OVERLAYS
 - ⑭ F. & I. MARKER PANEL

PERMANENT SIGNING

PLOTTED/REVISED: 25-SEP-2019

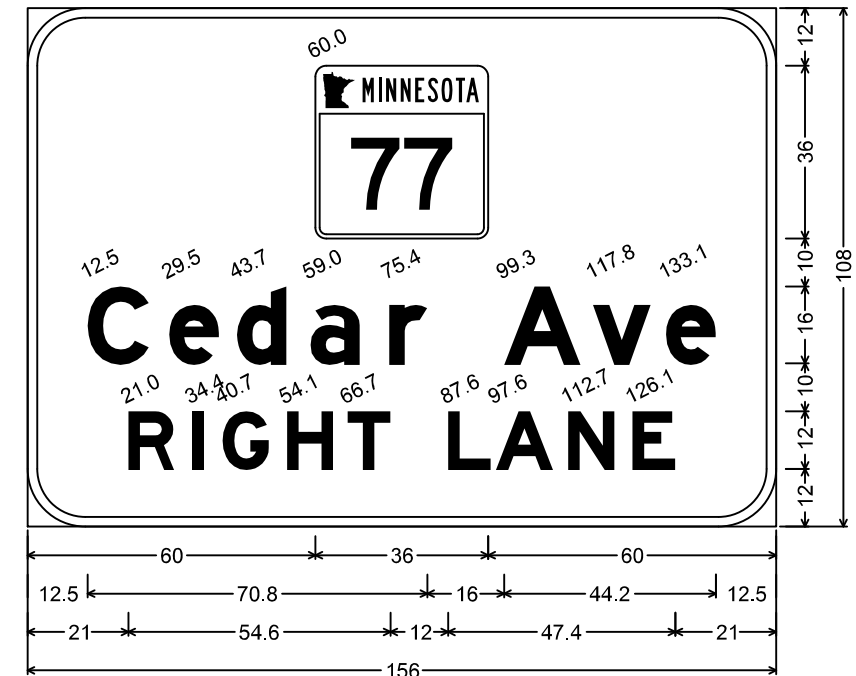
IPLOT NAME: OTE_190176.sp
PATH & FILENAME: Projects\DM_ROMS\03\190176\Signing\OT\NOTE_190176.sp.dgn

A MN13-002



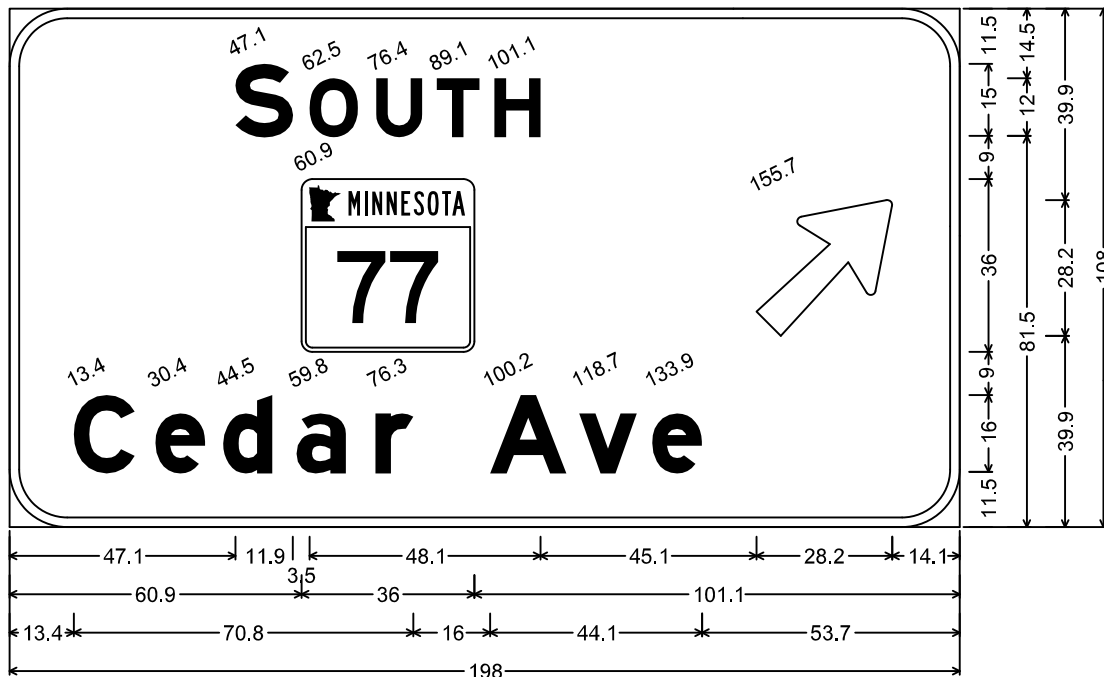
Identifier : NORTH I35W MINNEAPOLIS 45 DEG ARROW;
 12.0" Radius, 2.0" Border, White on Green;
 [NORTH] E Mod; Interstate 35W M1-1; [Minneapolis] E Mod; Arrow 17 - 36.0" 45°;

A MN13-006



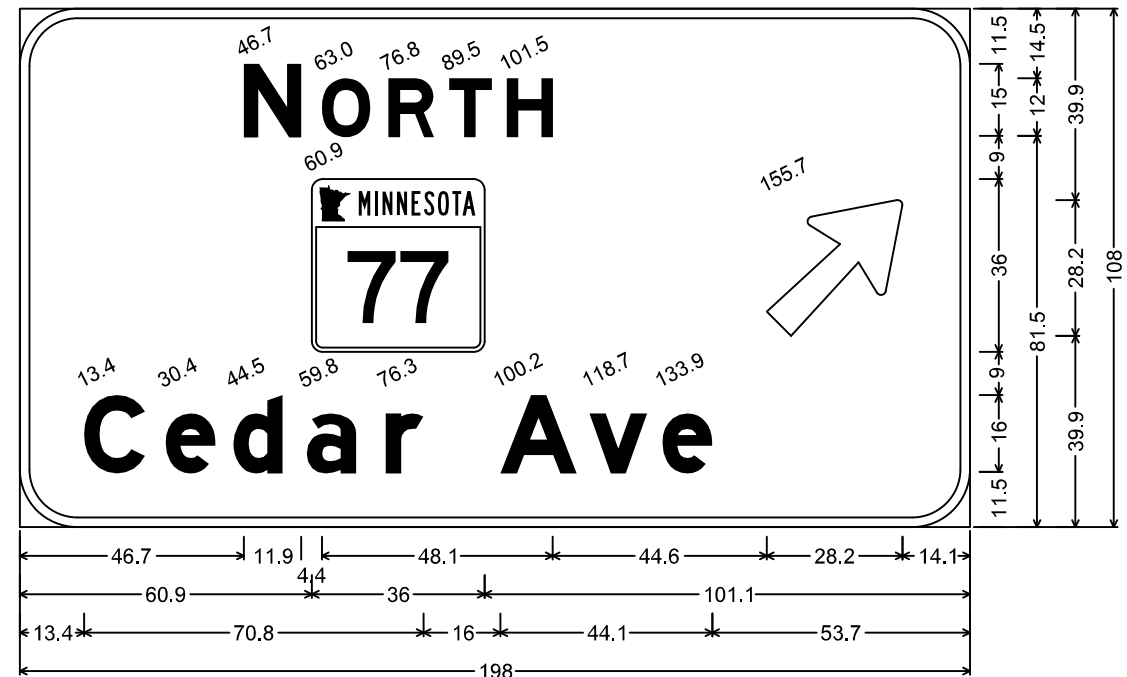
Identifier : MN77 CEDAR AVE RIGHT LANE;
 12.0" Radius, 2.0" Border, White on Green;
 State Highway 77 M1-5b; [Cedar Ave] E Mod; [RIGHT LANE] E Mod;

A MN13-004



Identifier : SOUTH MN77 CEDAR AVE 45 DEG ARROW;
 12.0" Radius, 2.0" Border, White on Green;
 [SOUTH] E Mod; State Highway 77 M1-5b; [Cedar Ave] E Mod; Arrow 17 - 36.0" 45°;

A MN13-005



Identifier : NORTH MN77 CEDAR AVE 45 DEG ARROW;
 12.0" Radius, 2.0" Border, White on Green;
 [NORTH] E Mod; State Highway 77 M1-5b; [Cedar Ave] E Mod; Arrow 17 - 36.0" 45°;

NOTES:

1. SEE MNDOT STANDARD SIGNS AND MARKINGS MANUAL FOR ARROW, FRACTION AND ROUTE MARKER DETAILS.
2. ALL DIMENSIONS ARE IN INCHES.
3. CORNERS OF SIGN PANELS EXTENDING BEYOND BORDER SHALL NOT BE TRIMMED.

TYPE A SIGN PANEL OVERLAYS

PANEL LAYOUTS

DRAWN BY: CCY

CHECKED BY: SRM

CERTIFIED BY

Steven M. [Signature]
 LICENSED PROFESSIONAL ENGINEER

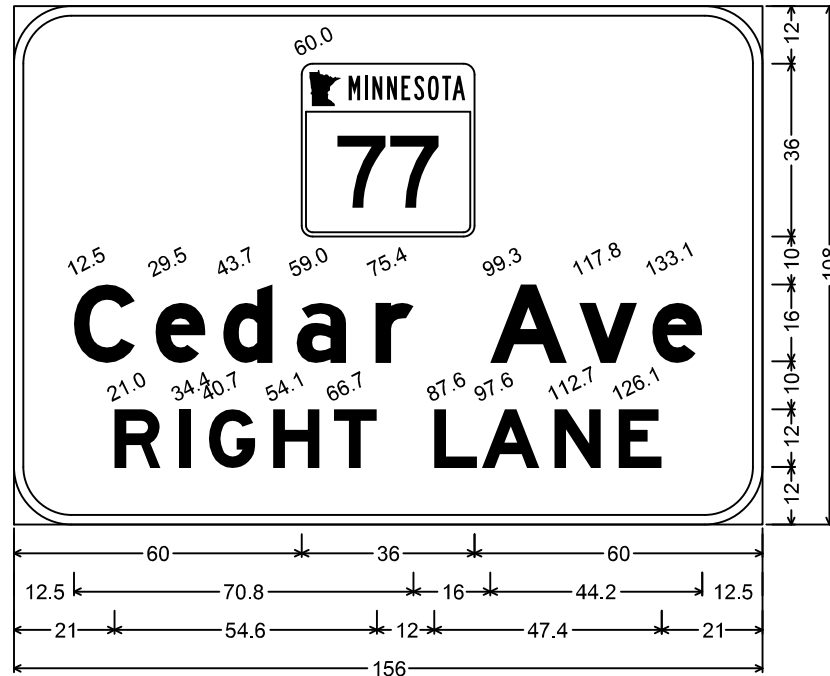
LIC. NO. 19579

DATE 9/25/2019

STATE PROJ. NO. 1901-176 (TH 13)

SHEET NO. 84 OF 106 SHEETS

A MN13-007



Identifier : MN77 CEDAR AVE RIGHT LANE;
 12.0" Radius, 2.0" Border, White on Green;
 State Highway 77 M1-5b; [Cedar Ave] E Mod; [RIGHT LANE] E Mod;

PLOTTED/REVISED: 25-SEP-2019

I/PLOT NAME: OTE_1901176.sp
 PATH & FILENAME: Projects\DM_ROS\03\1901176\Signing\OT\NOTE_1901176.sp.dgn

NOTES:

1. SEE MNDOT STANDARD SIGNS AND MARKINGS MANUAL FOR ARROW, FRACTION AND ROUTE MARKER DETAILS.
2. ALL DIMENSIONS ARE IN INCHES.
3. CORNERS OF SIGN PANELS EXTENDING BEYOND BORDER SHALL NOT BE TRIMMED.

TYPE A SIGN PANELS

PANEL LAYOUTS

DRAWN BY: CCY

CHECKED BY: SRM

CERTIFIED BY

Steve McBurn
 LICENSED PROFESSIONAL ENGINEER

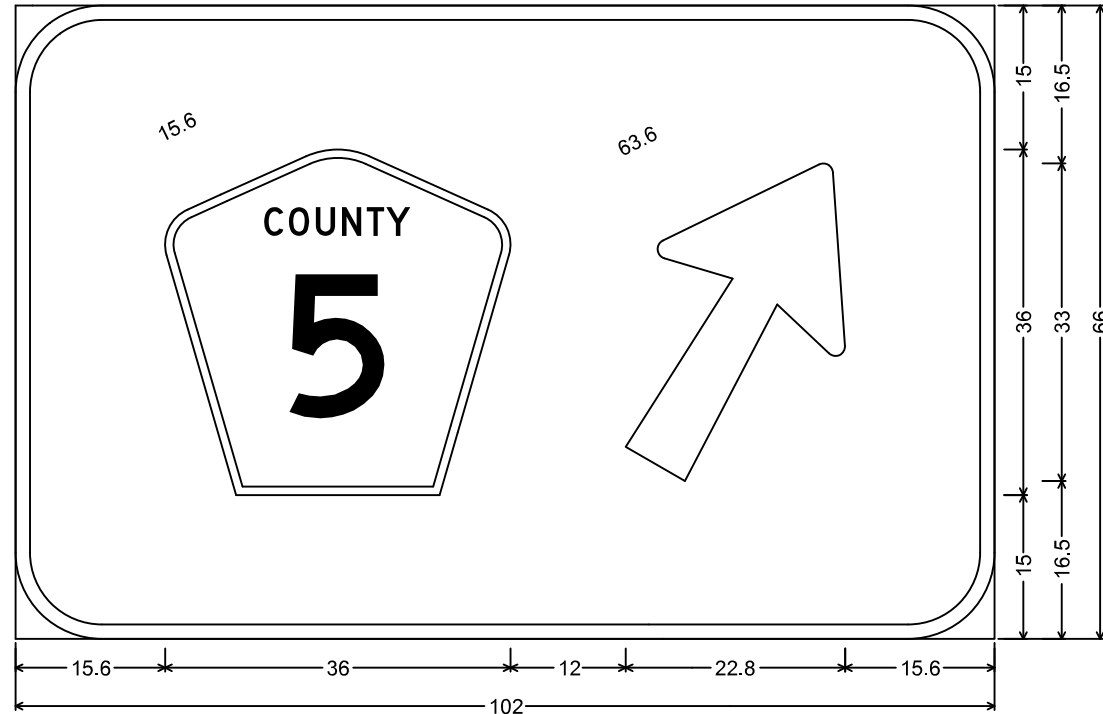
LIC. NO. 19579

DATE 9/25/2019

STATE PROJ. NO. 1901-176 (TH 13)

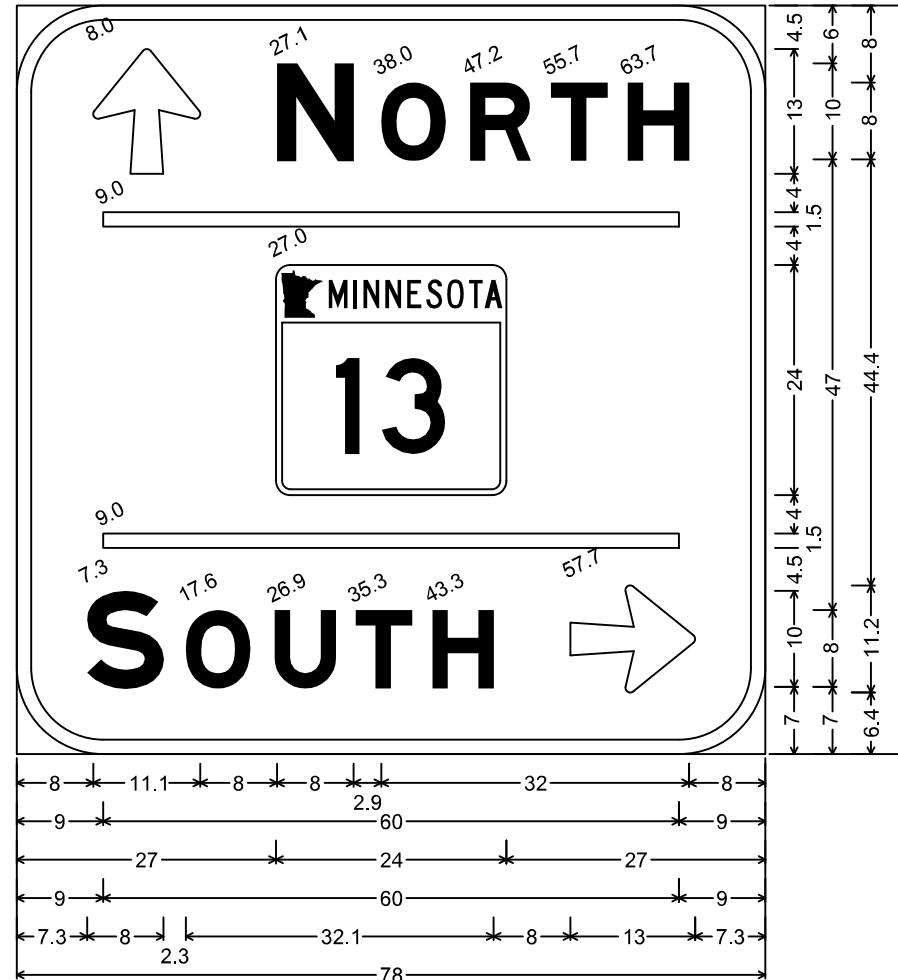
SHEET NO. 85 OF 106 SHEETS

D-1



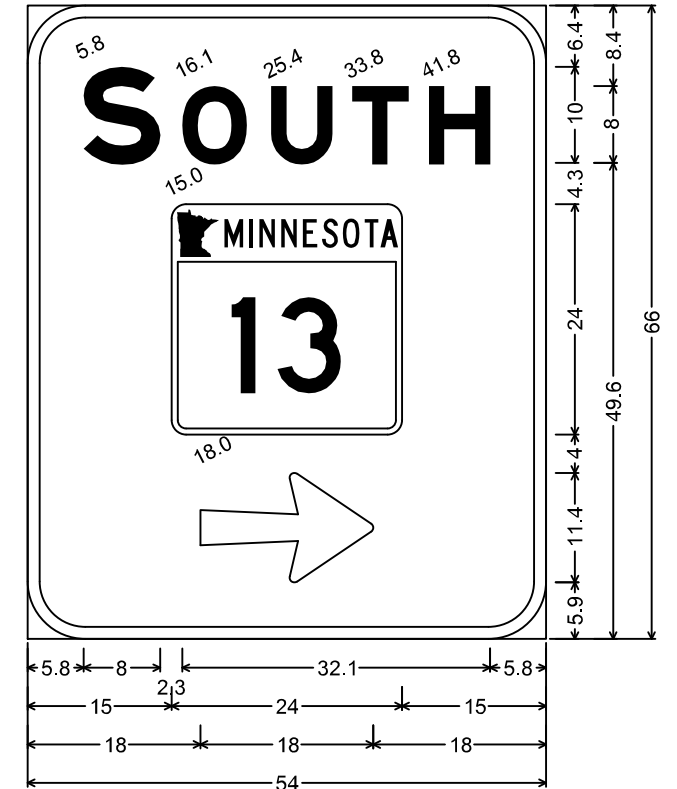
Identifier : COUNTY 5 45 DEG ARROW;
 9.0" Radius, 1.5" Border, White on Green;
 Pentagonal County 5 M1-6a; Arrow 17 - 36.0" 60°;

D-2



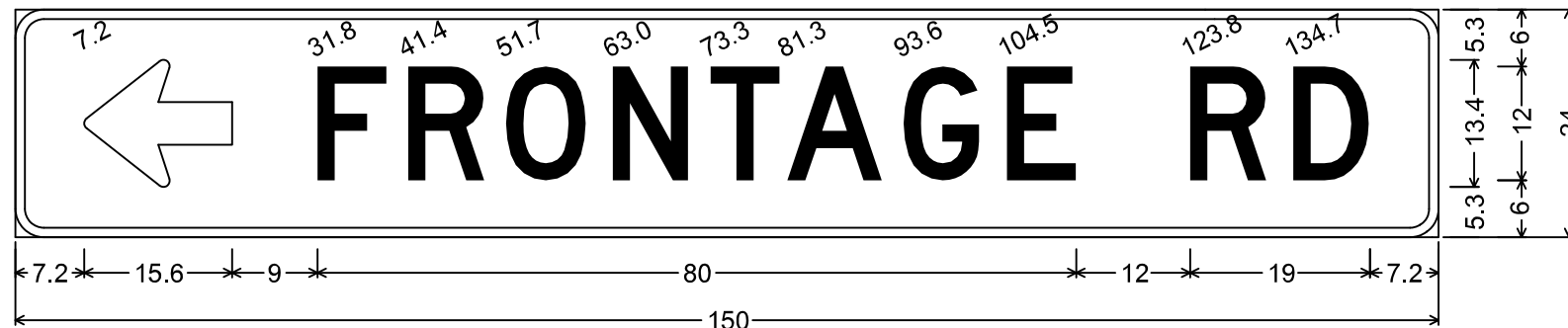
Identifier : UP ARROW NORTH MN 13 SOUTH RT ARROW;
 9.0" Radius, 1.5" Border, White on Green;
 Arrow 5 - 13.0" 90°; [NORTH] E Mod; State Highway 13 M1-5b;
 [SOUTH] E Mod; Arrow 5 - 13.0" 0°;

D-4



Identifier : SOUTH MN 13 RT ARROW;
 6.0" Radius, 1.3" Border, White on Green;
 [SOUTH] E Mod; State Highway 13 M1-5b;
 Arrow 14 - 18.0" 0°;

D-3



Identifier : LT ARROW FRONTAGE RD;
 3.0" Radius, 1.0" Border, White on Green;
 Arrow Custom - 15.6" 180°; [FRONTAGE RD] D;

- NOTES:
 1. SEE MNDOT STANDARD SIGNS AND MARKINGS MANUAL FOR ARROW, FRACTION AND ROUTE MARKER DETAILS.
 2. ALL DIMENSIONS ARE IN INCHES.

D SIGN

PANEL LAYOUTS

DRAWN BY: CCY

CHECKED BY: SRM

CERTIFIED BY

Steven M. Dunbar
 LICENSED PROFESSIONAL ENGINEER

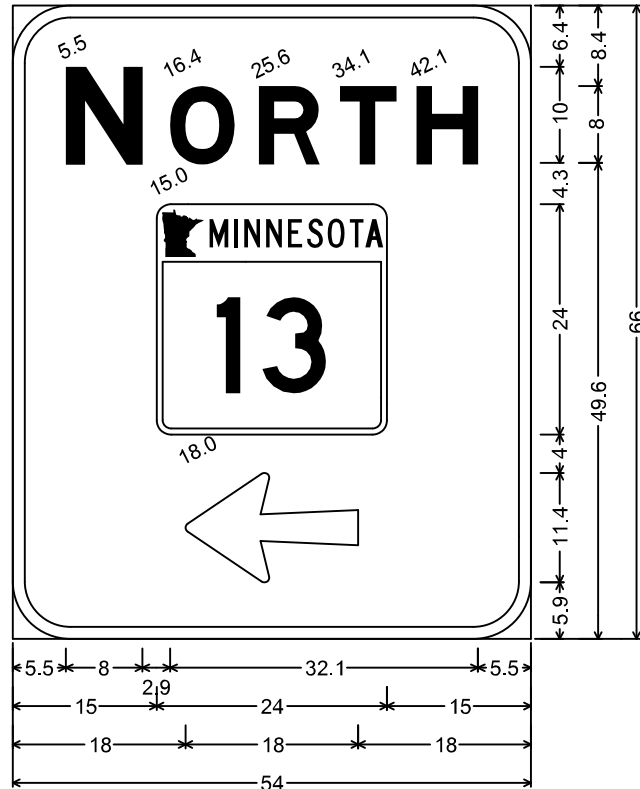
LIC. NO. 19579

DATE 9/25/2019

STATE PROJ. NO. 1901-176 (TH 13)

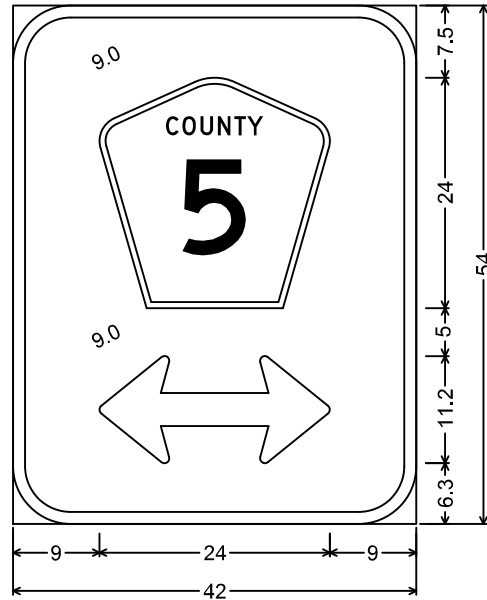
SHEET NO. 86 OF 106 SHEETS

D-5



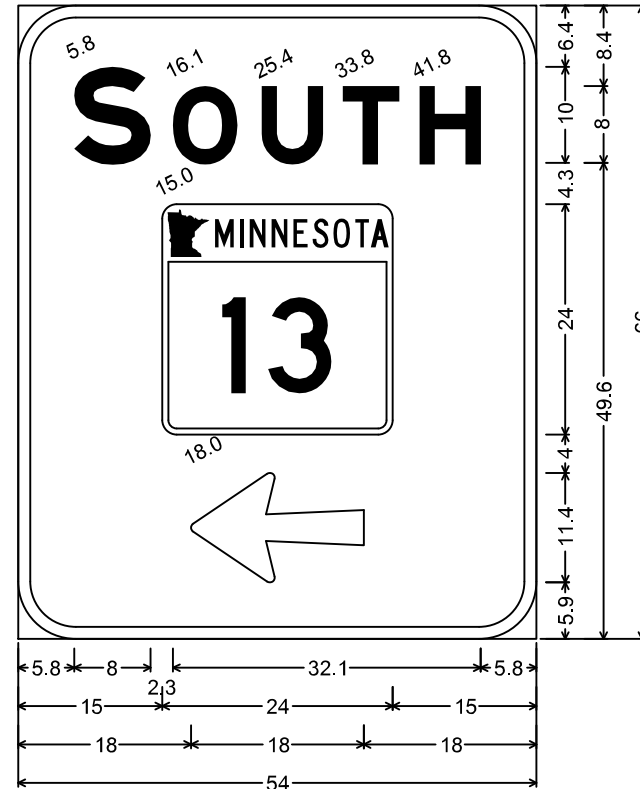
Identifier : NORTH MN 13 LT ARROW;
6.0" Radius, 1.3" Border, White on Green;
[NORTH] E Mod; State Highway 13 M1-5b;
Arrow 14 - 18.0" 180°;

D-6



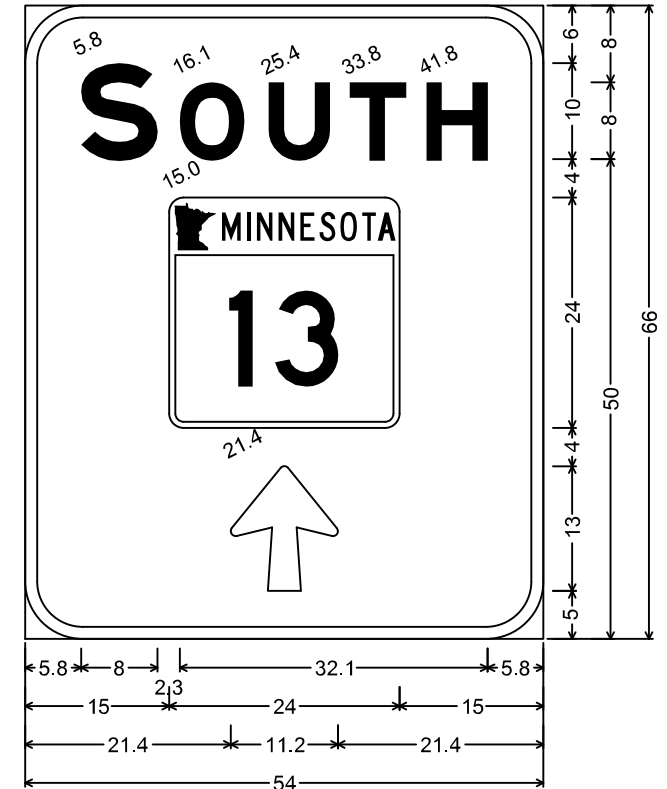
Identifier : COUNTY 5 DBL ARROW;
6.0" Radius, 1.3" Border, White on Green;
Pentagonal County 5 M1-6a;
Double Headed Arrow 5 - 24.0" 0°;

D-7



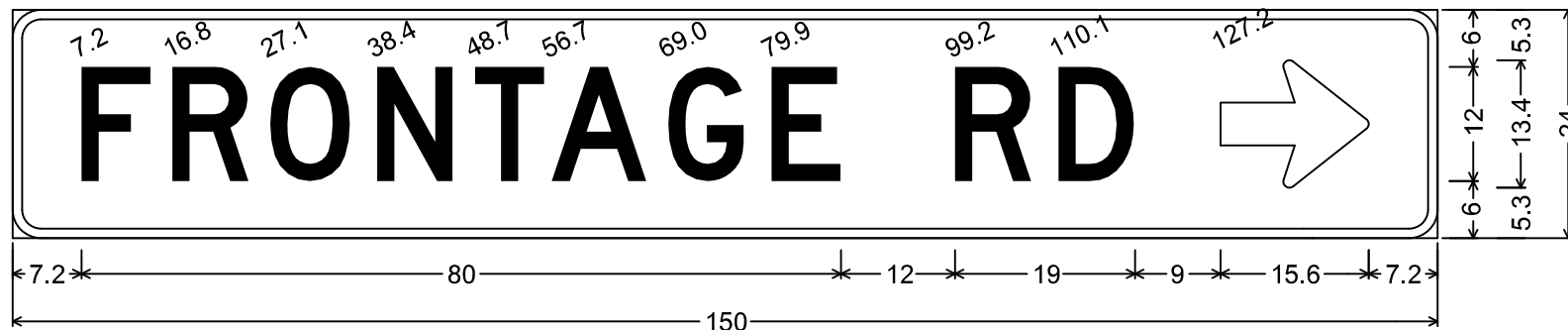
Identifier : SOUTH MN 13 LT ARROW;
6.0" Radius, 1.3" Border, White on Green;
[SOUTH] E Mod; State Highway 13 M1-5b;
Arrow 14 - 18.0" 180°;

D-9



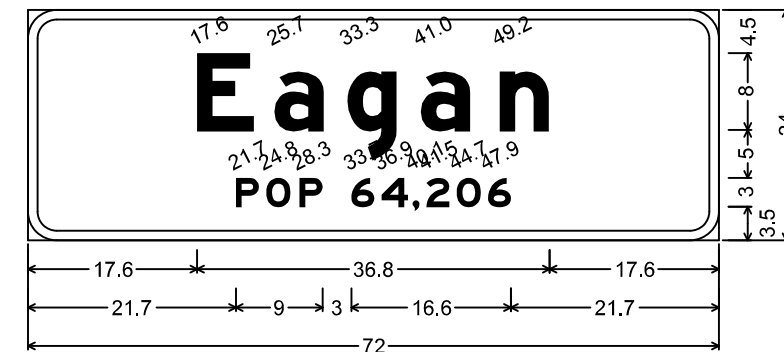
Identifier : SOUTH MN 13 UP ARROW;
6.0" Radius, 1.3" Border, White on Green;
[SOUTH] E Mod; State Highway 13 M1-5b;
Arrow 5 - 13.0" 90°;

D-8



Identifier : FRONTAGE RD RT ARROW;
3.0" Radius, 1.0" Border, White on Green;
[FRONTAGE RD] D; Arrow Custom - 15.6" 0°;

D-12



Identifier : EAGAN POP 64,206;
1.0" Border, White on Green;
[Eagan] E Mod; [POP] E Mod; [64,206] E Mod;

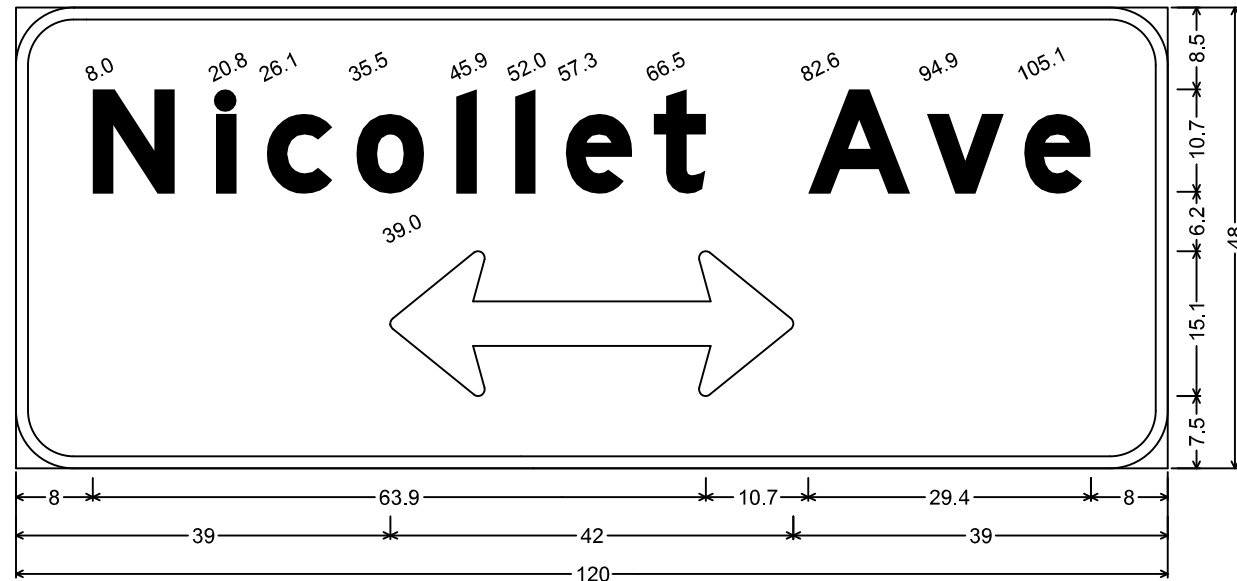
NOTES:

- SEE MNDOT STANDARD SIGNS AND MARKINGS MANUAL FOR ARROW, FRACTION AND ROUTE MARKER DETAILS.
- ALL DIMENSIONS ARE IN INCHES.

D SIGN

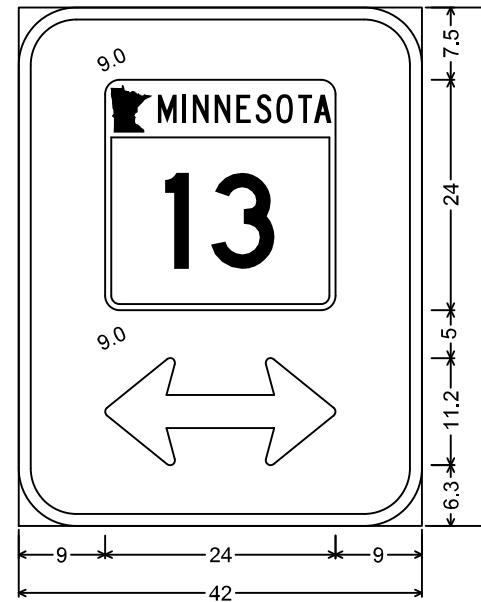
PANEL LAYOUTS

D-13



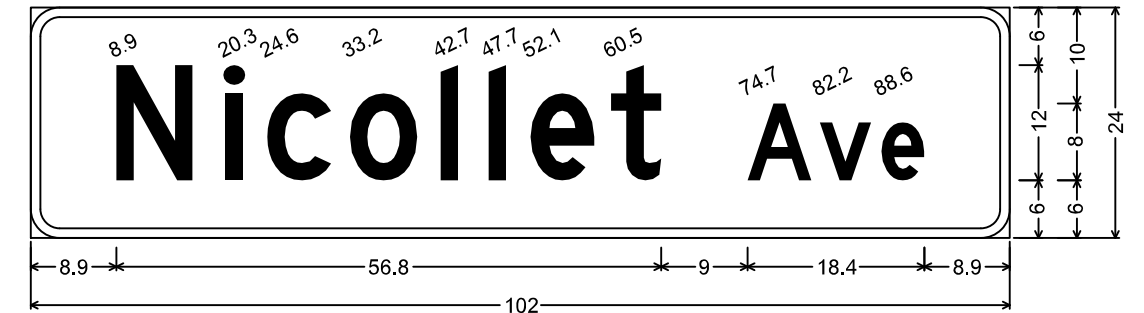
Identifier : NICOLLET AVE DBL ARROW;
6.0" Radius, 1.3" Border, White on Green;
[Nicollet Ave] E Mod; Double Headed Arrow 6 - 42.0" 0°;

D-14



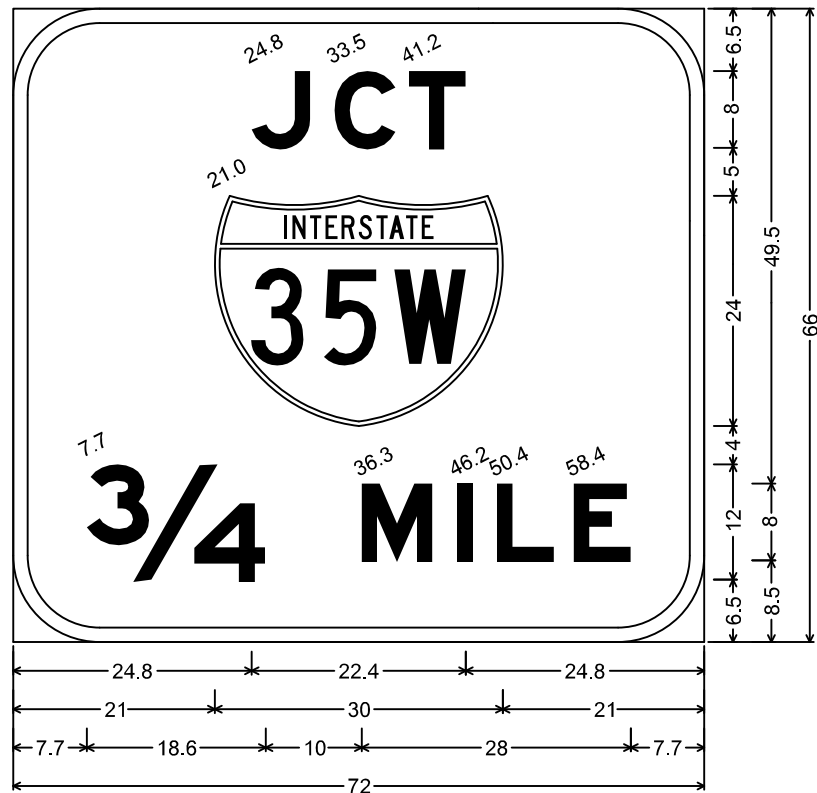
Identifier : MN 13 DBL ARROW;
6.0" Radius, 1.3" Border, White on Green;
State Highway 13 M1-5b;
Double Headed Arrow 5 - 24.0" 0°;

D-15



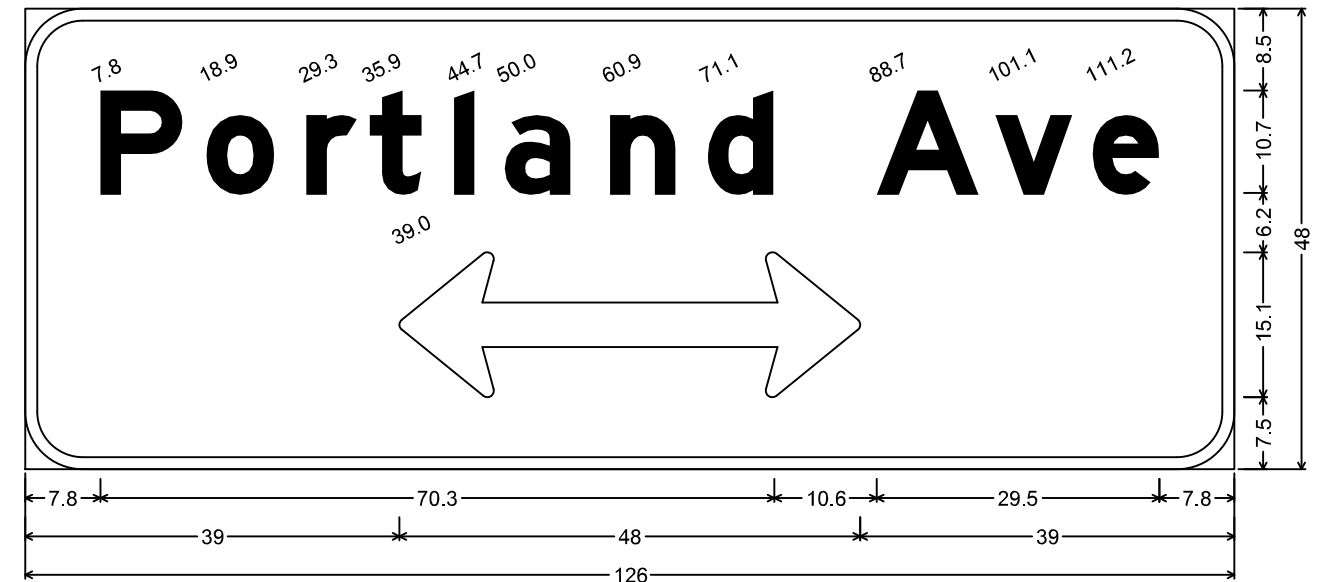
Identifier : NICOLLET AVE;
3.0" Radius, 1.0" Border, White on Green;
[Nicollet Ave] D;

D-16



Identifier : JCT I35W 3/4 MILE;
9.0" Radius, 1.5" Border, White on Green;
[JCT] E Mod; Interstate 35W M1-1; [3/4 MILE] E Mod;

D-17



Identifier : PORTLAND AVE DBL ARROW;
6.0" Radius, 1.3" Border, White on Green;
[Portland Ave] E Mod; Double Headed Arrow 6 - 48.0" 0°;

NOTES:

1. SEE MNDOT STANDARD SIGNS AND MARKINGS MANUAL FOR ARROW, FRACTION AND ROUTE MARKER DETAILS.
2. ALL DIMENSIONS ARE IN INCHES.

D SIGN

PANEL LAYOUTS

DRAWN BY: CCY

CHECKED BY: SRM

CERTIFIED BY

Steve McBurn
LICENSED PROFESSIONAL ENGINEER

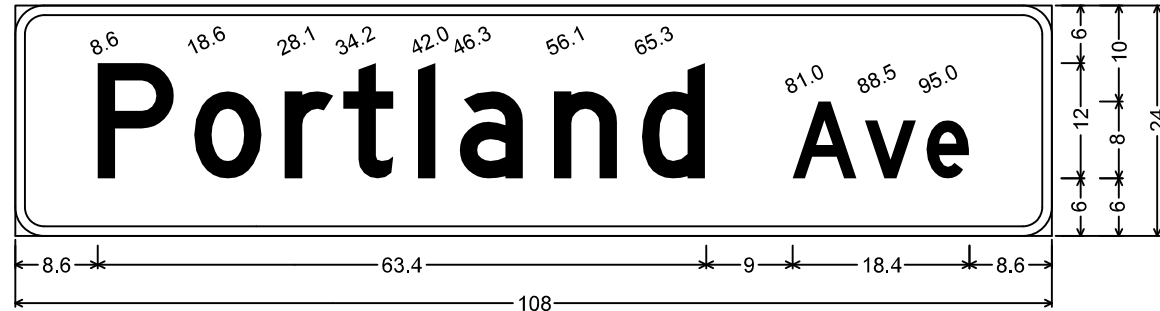
LIC. NO. 19579

DATE 9/25/2019

STATE PROJ. NO. 1901-176 (TH 13)

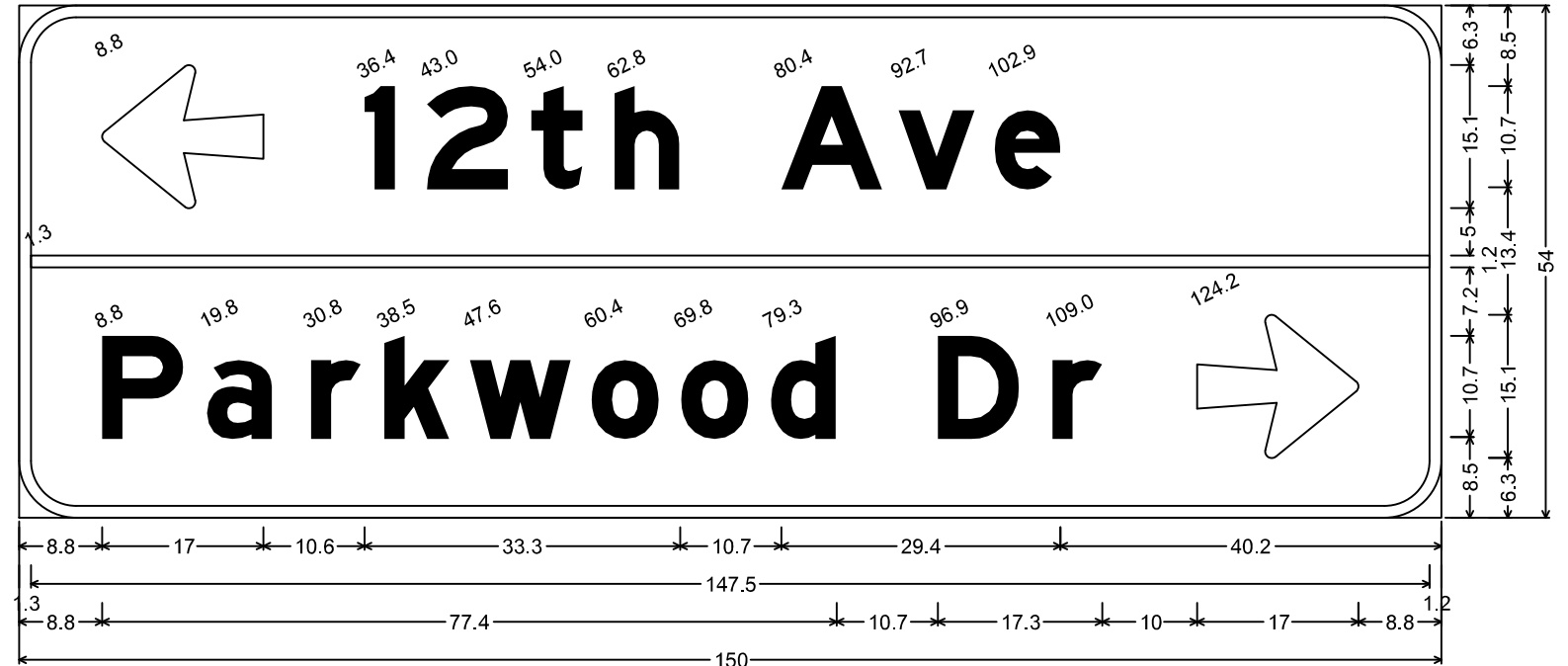
SHEET NO. 88 OF 106 SHEETS

D-18



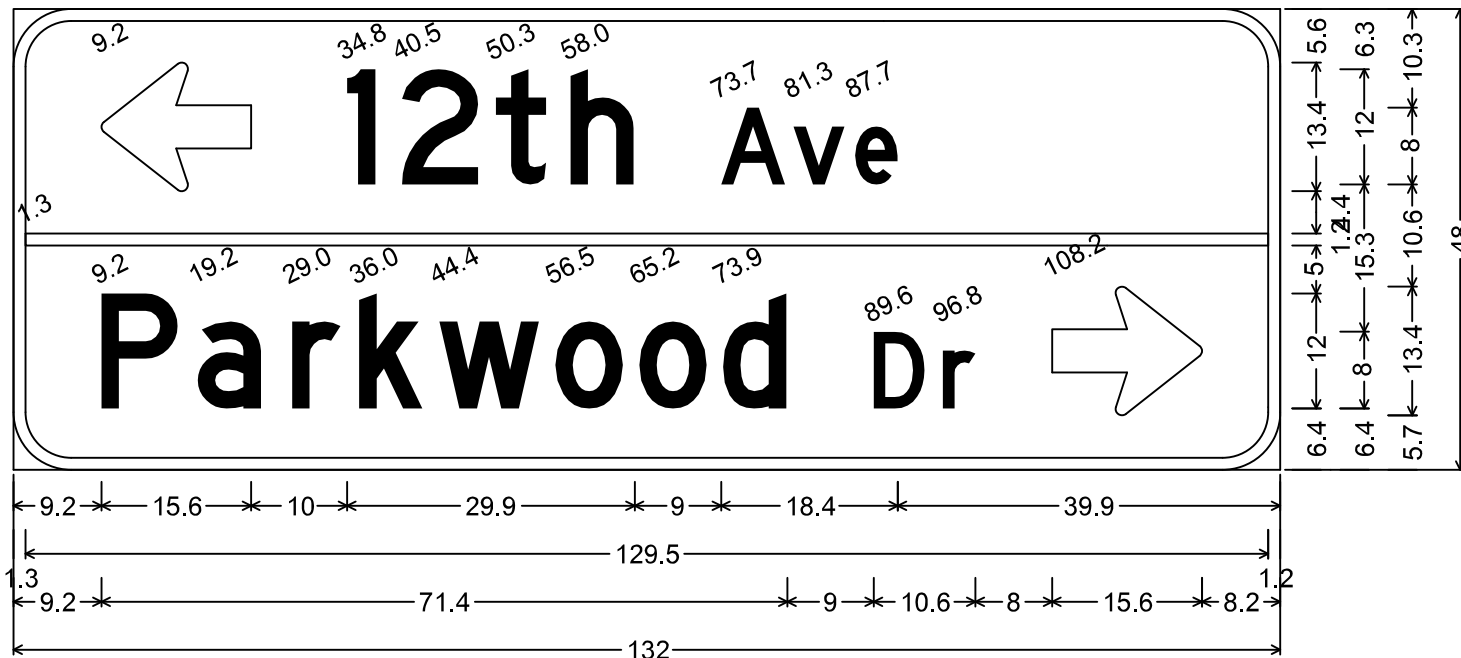
Identifier : PORTLAND AVE;
 3.0" Radius, 1.0" Border, White on Green;
 [Portland Ave] D;

D-19



Identifier : LT ARROW 12TH AVE PARKWOOD DR RT ARROW;
 6.0" Radius, 1.3" Border, White on Green;
 Arrow 6 - 17.0" 180°; [12th Ave] E Mod; [Parkwood Dr] E Mod; Arrow 6 - 17.0" 0°;

D-20



Identifier : LT ARROW 12TH AVE PARKWOOD DR RT ARROW;
 6.0" Radius, 1.3" Border, White on Green;
 Arrow Custom - 15.6" 180°; [12th Ave] D; [Parkwood Dr] D; Arrow Custom - 15.6" 0°;

- NOTES:
 1. SEE MNDOT STANDARD SIGNS AND MARKINGS MANUAL FOR ARROW, FRACTION AND ROUTE MARKER DETAILS.
 2. ALL DIMENSIONS ARE IN INCHES.

D SIGN

PANEL LAYOUTS

DRAWN BY: CCY

CHECKED BY: SRM

CERTIFIED BY

Steven M. ...
 LICENSED PROFESSIONAL ENGINEER

LIC. NO. 19579

DATE 9/25/2019

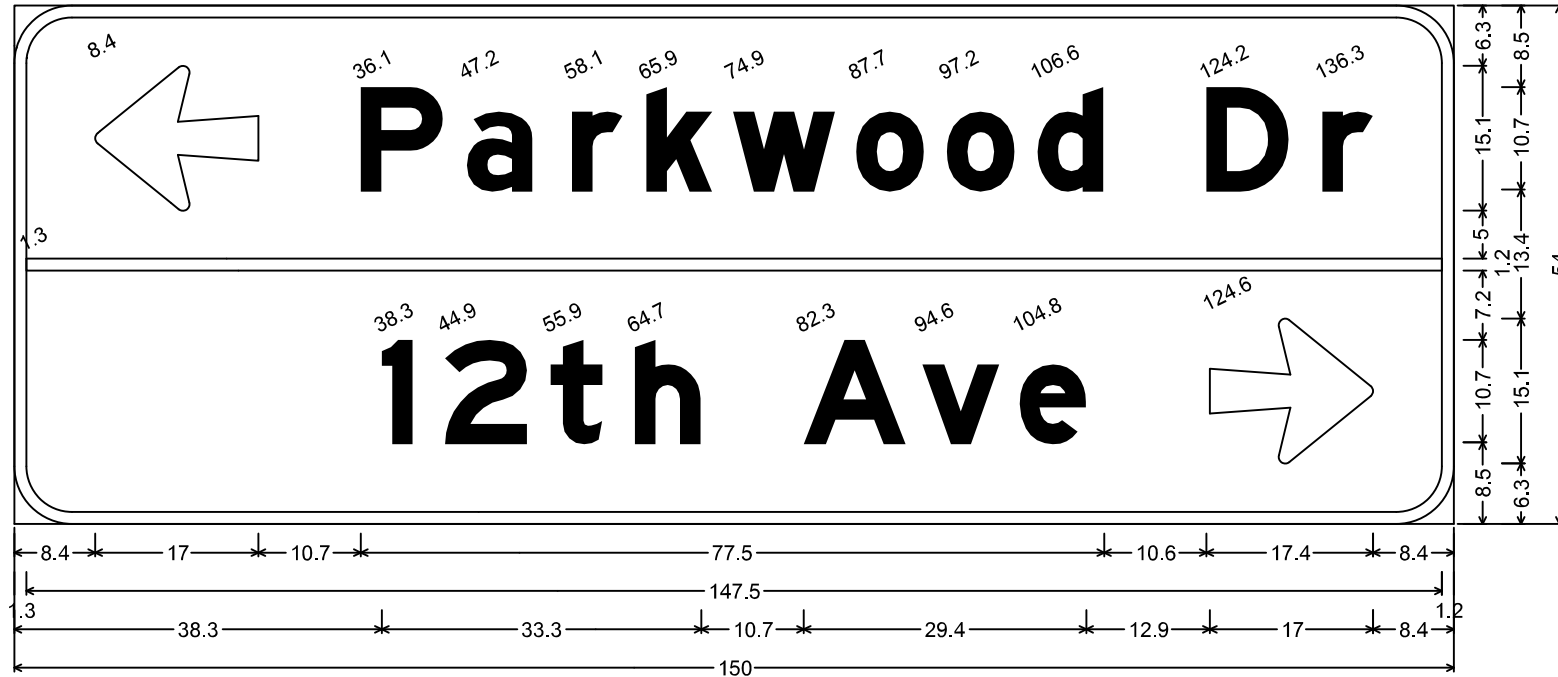
STATE PROJ. NO. 1901-176 (TH 13)

SHEET NO. 89 OF 106 SHEETS

PLOTTED/REVISED: 25-SEP-2019

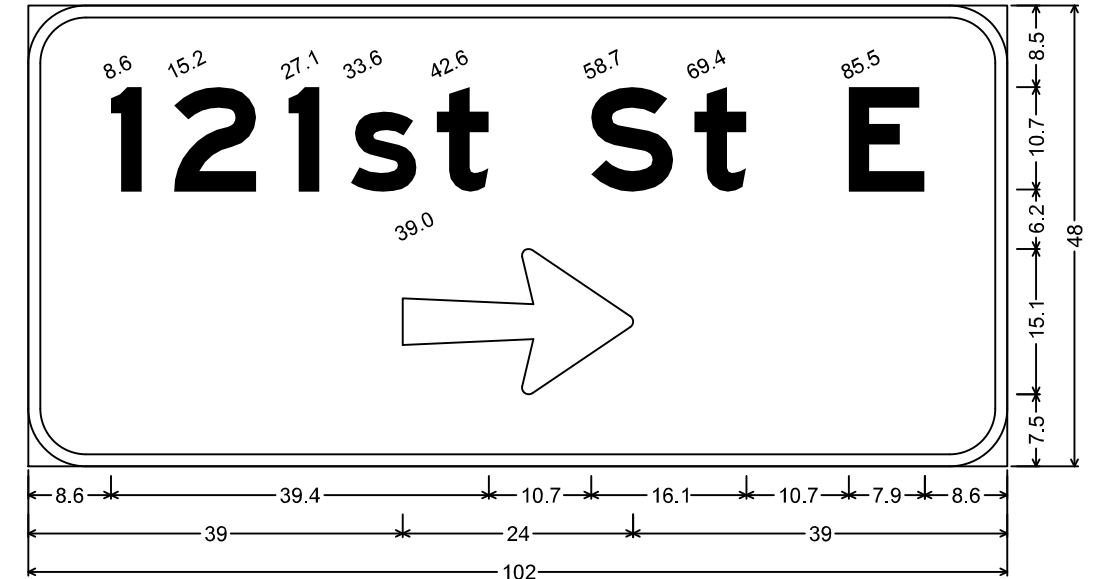
IPLOT NAME: OTE_1901176.sp
PATH & FILENAME: Projects\DM_ROS\03\1901176\Signing\OT\NOTE_1901176.sp.dgn

D-21



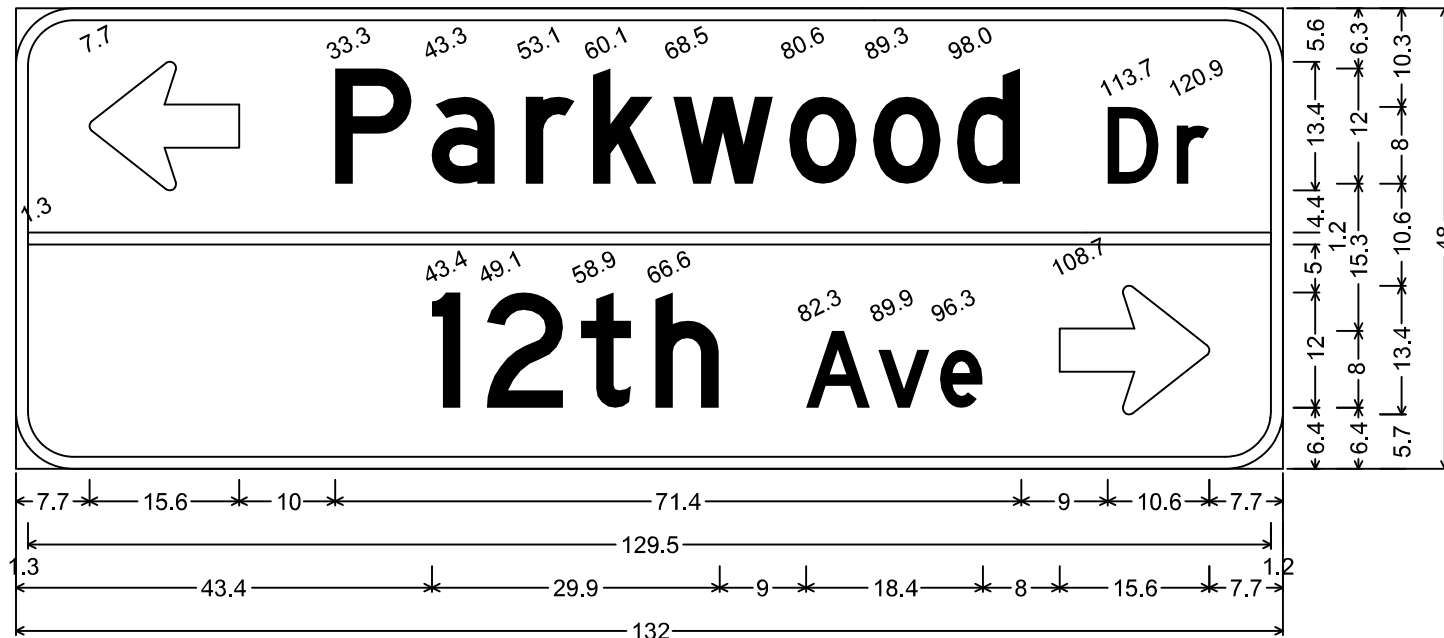
Identifier : LT ARROW PARKWOOD DR 12TH AVE RT ARROW;
 6.0" Radius, 1.3" Border, White on Green;
 Arrow 6 - 17.0" 180°; [Parkwood Dr] E Mod; [12th Ave] E Mod; Arrow 6 - 17.0" 0°;

D-23



Identifier : 121ST ST E RT ARROW;
 6.0" Radius, 1.3" Border, White on Green;
 [121st St E] E Mod; Arrow 15 - 24.0" 0°;

D-22



Identifier : LT ARROW PARKWOOD DR 12TH AVE RT ARROW;
 6.0" Radius, 1.3" Border, White on Green;
 Arrow Custom - 15.6" 180°; [Parkwood Dr] D; [12th Ave] D; Arrow Custom - 15.6" 0°;

- NOTES:
 1. SEE MNDOT STANDARD SIGNS AND MARKINGS MANUAL FOR ARROW, FRACTION AND ROUTE MARKER DETAILS.
 2. ALL DIMENSIONS ARE IN INCHES.

D SIGN

PANEL LAYOUTS

DRAWN BY: CCY

CHECKED BY: SRM

CERTIFIED BY

Steven M. ...
 LICENSED PROFESSIONAL ENGINEER

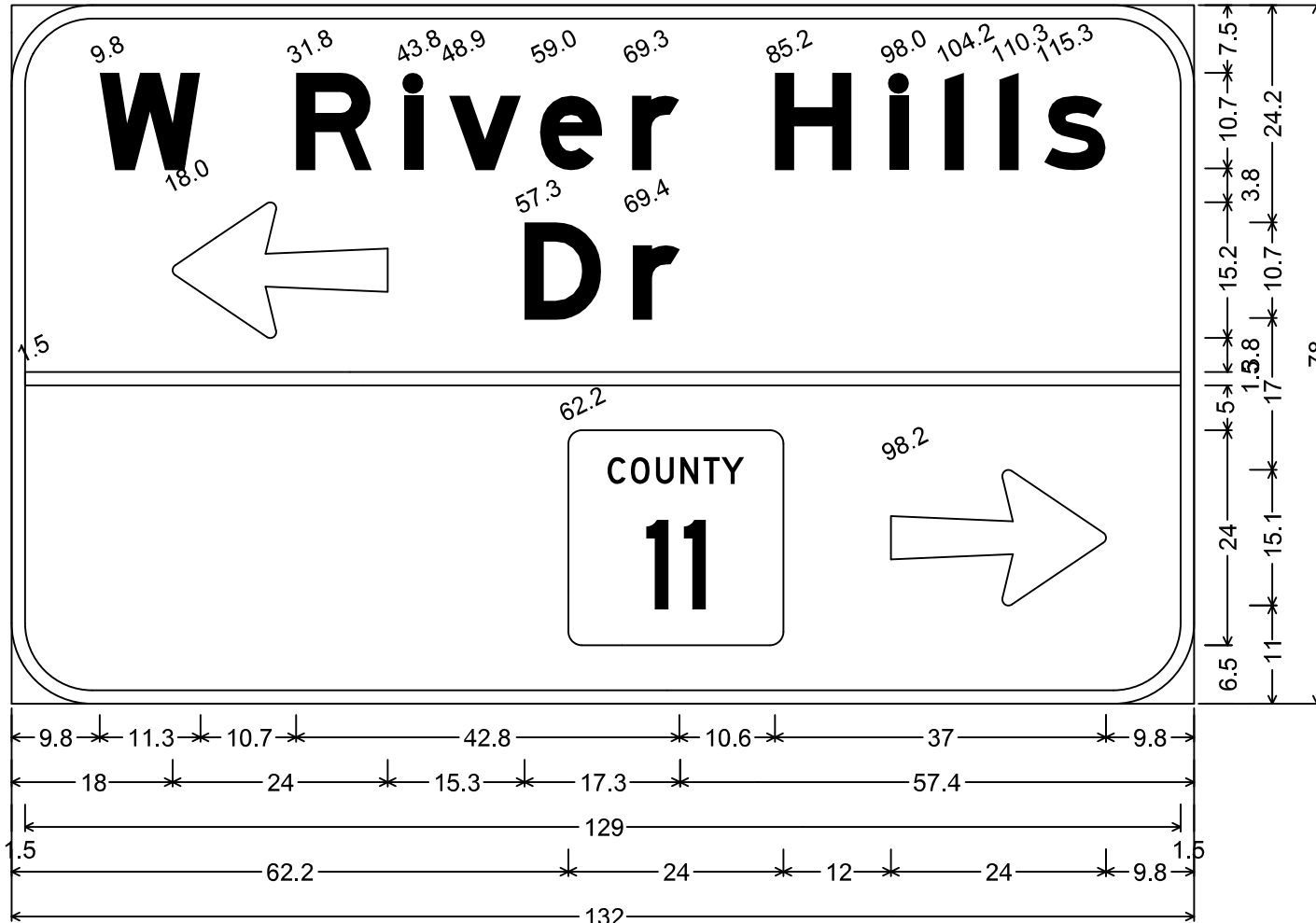
LIC. NO. 19579

DATE 9/25/2019

STATE PROJ. NO. 1901-176 (TH 13)

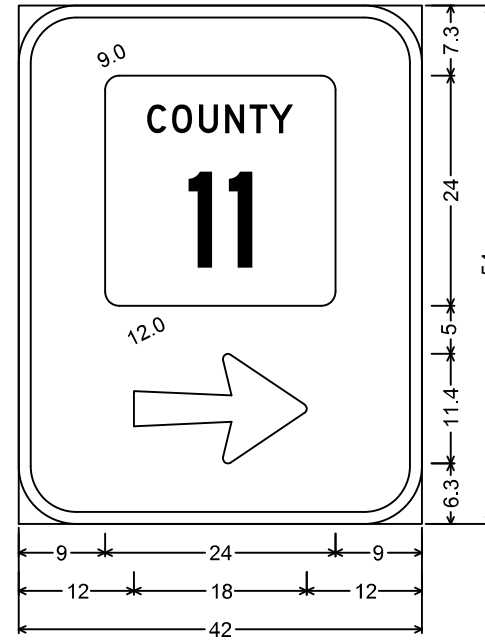
SHEET NO. 90 OF 106 SHEETS

D-24



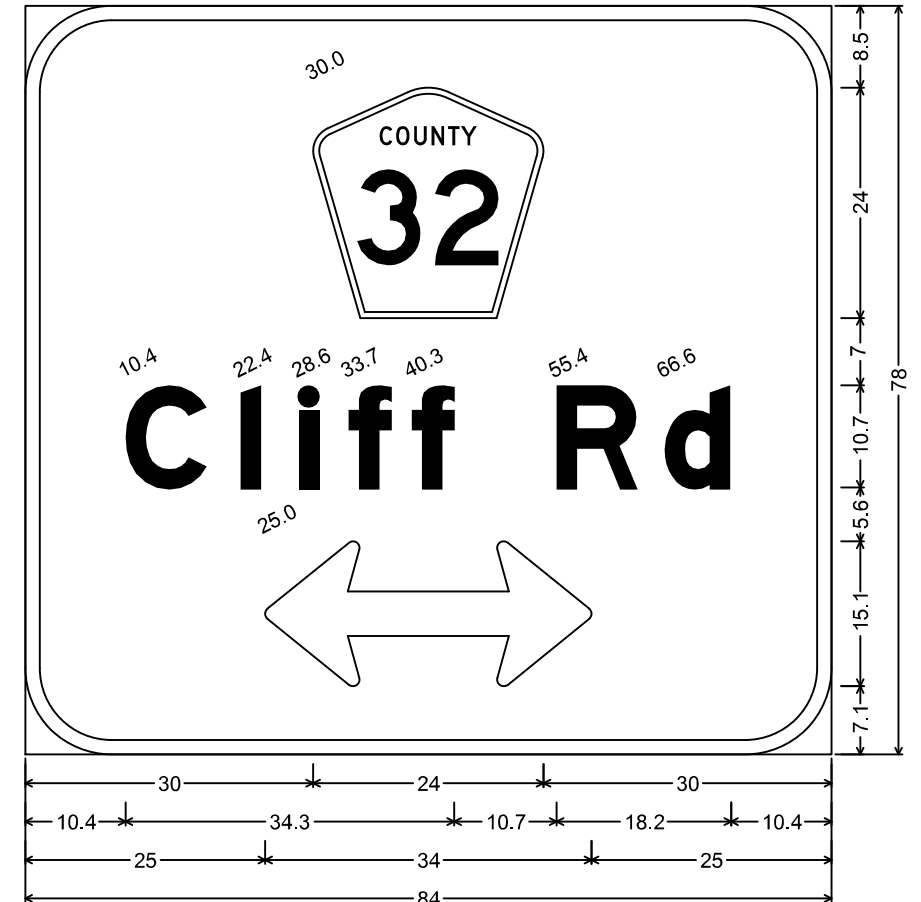
Identifier : LT ARROW W RIVER HILLS DR COUNTY 11 RT ARROW;
 9.0" Radius, 1.5" Border, White on Green;
 [W River Hills] E Mod; Arrow 15 - 24.0" 180°; [Dr] E Mod; Square County 11 M1-X4a;
 Arrow 15 - 24.0" 0°;

D-26



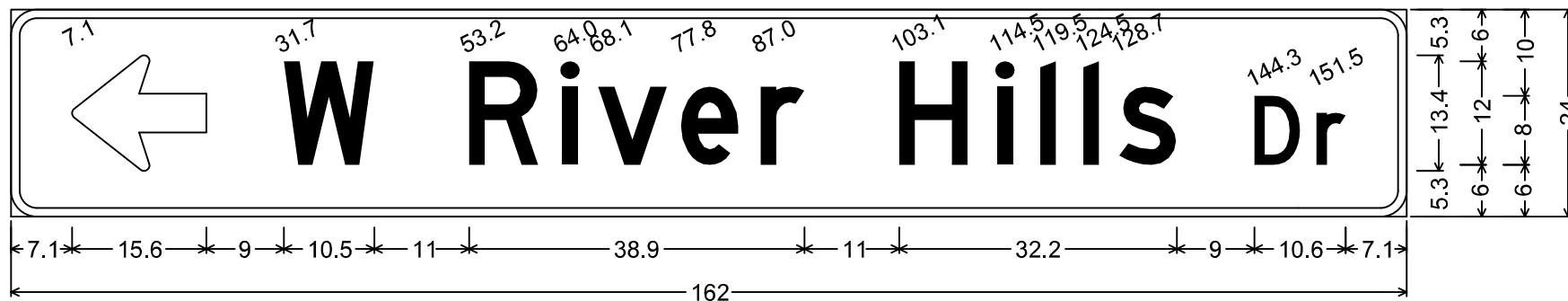
Identifier : COUNTY 11 RT ARROW;
 6.0" Radius, 1.3" Border, White on Green;
 Square County 11 M1-X4a;
 Arrow 14 - 18.0" 0°;

D-27



Identifier : COUNTY 32 CLIFF RD DBL ARROW;
 9.0" Radius, 1.5" Border, White on Green;
 Pentagonal County 32 M1-6a; [Cliff Rd] E Mod;
 Double Headed Arrow 6 - 34.0" 0°;

D-25



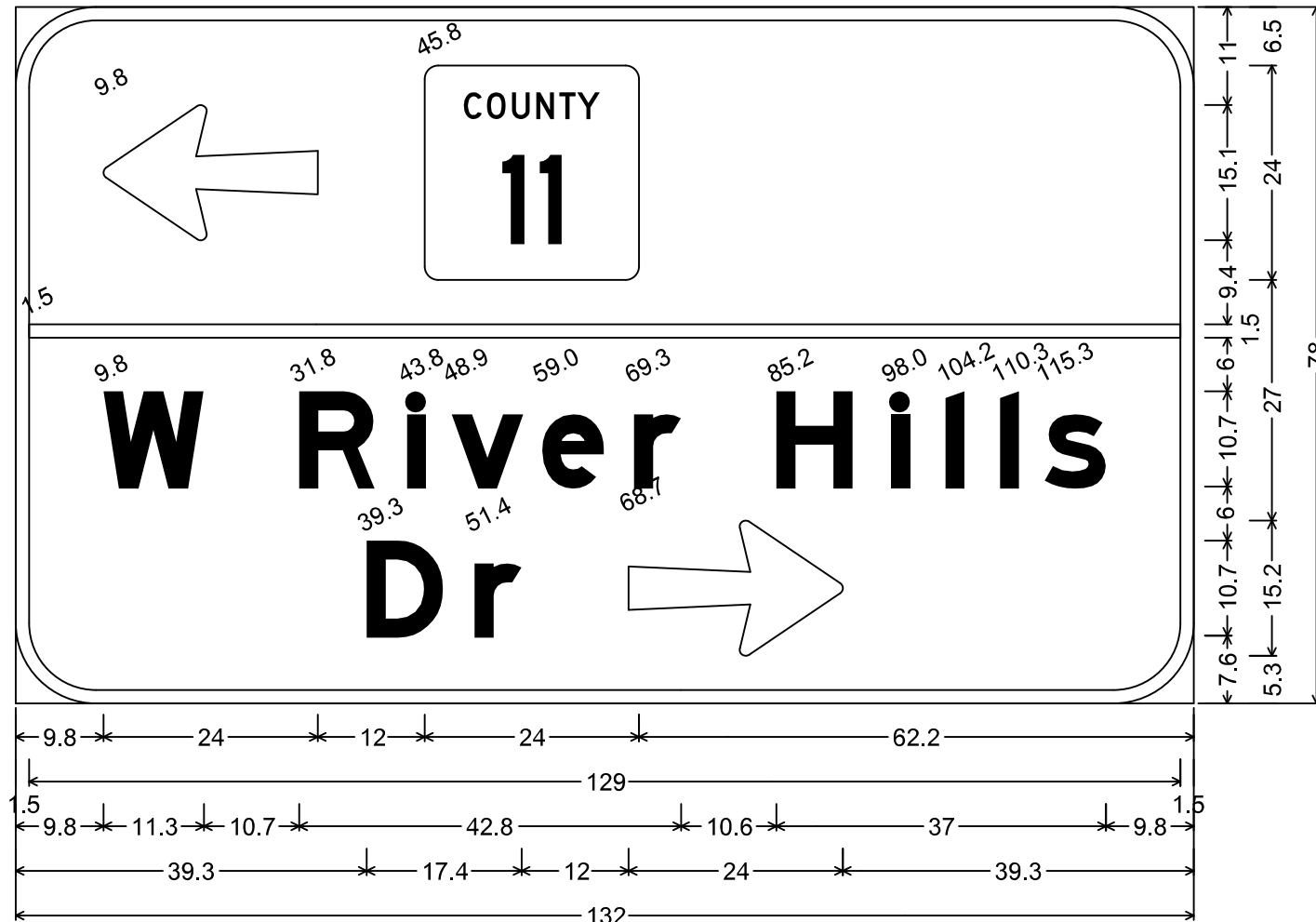
Identifier : LT ARROW W RIVER HILLS DR;
 3.0" Radius, 1.0" Border, White on Green;
 Arrow Custom - 15.6" 180°; [W River Hills Dr] D;

NOTES:
 1. SEE MNDOT STANDARD SIGNS AND MARKINGS MANUAL FOR ARROW, FRACTION AND ROUTE MARKER DETAILS.
 2. ALL DIMENSIONS ARE IN INCHES.

D SIGN

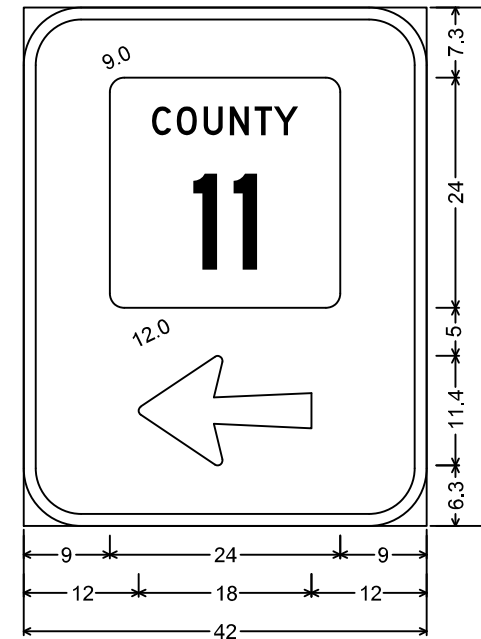
PANEL LAYOUTS

D-28



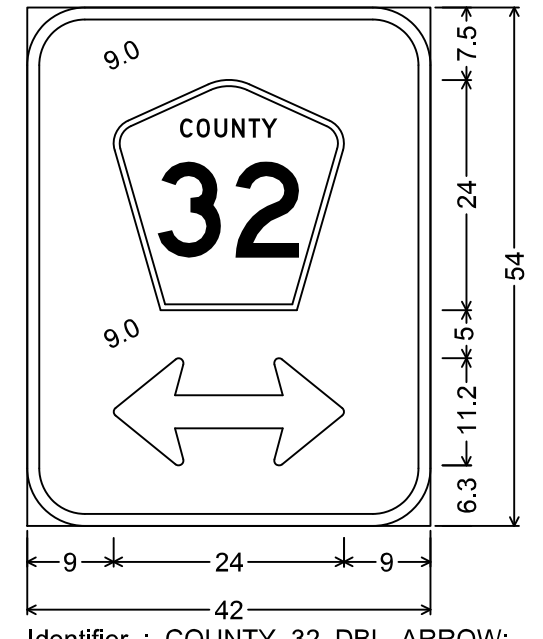
Identifier : LT ARROW COUNTY 11 W RIVER HILLS DR RT ARROW;
 9.0" Radius, 1.5" Border, White on Green;
 Arrow 15 - 24.0" 180°; Square County 11 M1-X4a; [W River Hills] E Mod; [Dr] E Mod;
 Arrow 15 - 24.0" 0°;

D-29



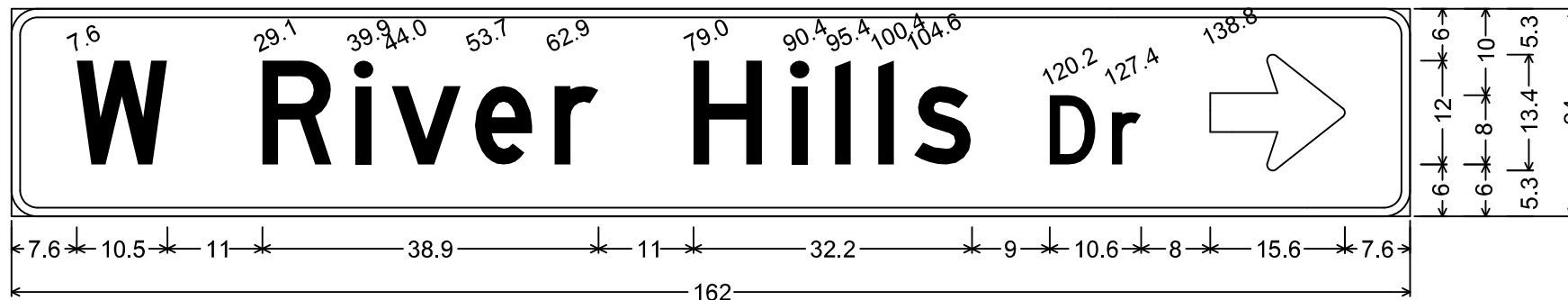
Identifier : COUNTY 11 LT ARROW;
 6.0" Radius, 1.3" Border, White on Green;
 Square County 11 M1-X4a;
 Arrow 14 - 18.0" 180°;

D-32



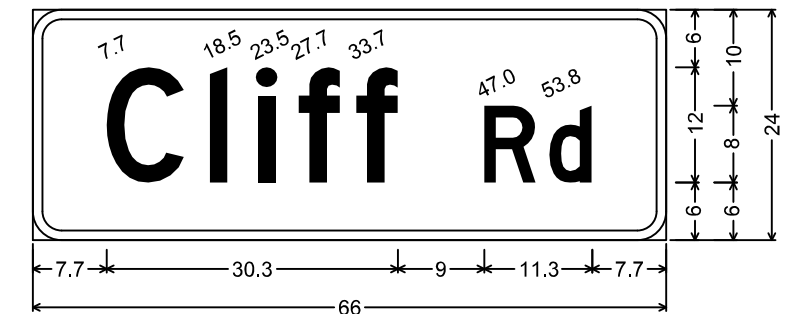
Identifier : COUNTY 32 DBL ARROW;
 6.0" Radius, 1.3" Border, White on Green;
 Pentagonal County 32 M1-6a;
 Double Headed Arrow 5 - 24.0" 0°;

D-30



Identifier : W RIVER HILLS DR RT ARROW;
 3.0" Radius, 1.0" Border, White on Green;
 [W River Hills Dr] D; Arrow Custom - 15.6" 0°;

D-31



Identifier : Cliff Rd;
 3.0" Radius, 1.0" Border, White on Green;
 [Cliff Rd] D;

- NOTES:
 1. SEE MNDOT STANDARD SIGNS AND MARKINGS MANUAL FOR ARROW, FRACTION AND ROUTE MARKER DETAILS.
 2. ALL DIMENSIONS ARE IN INCHES.

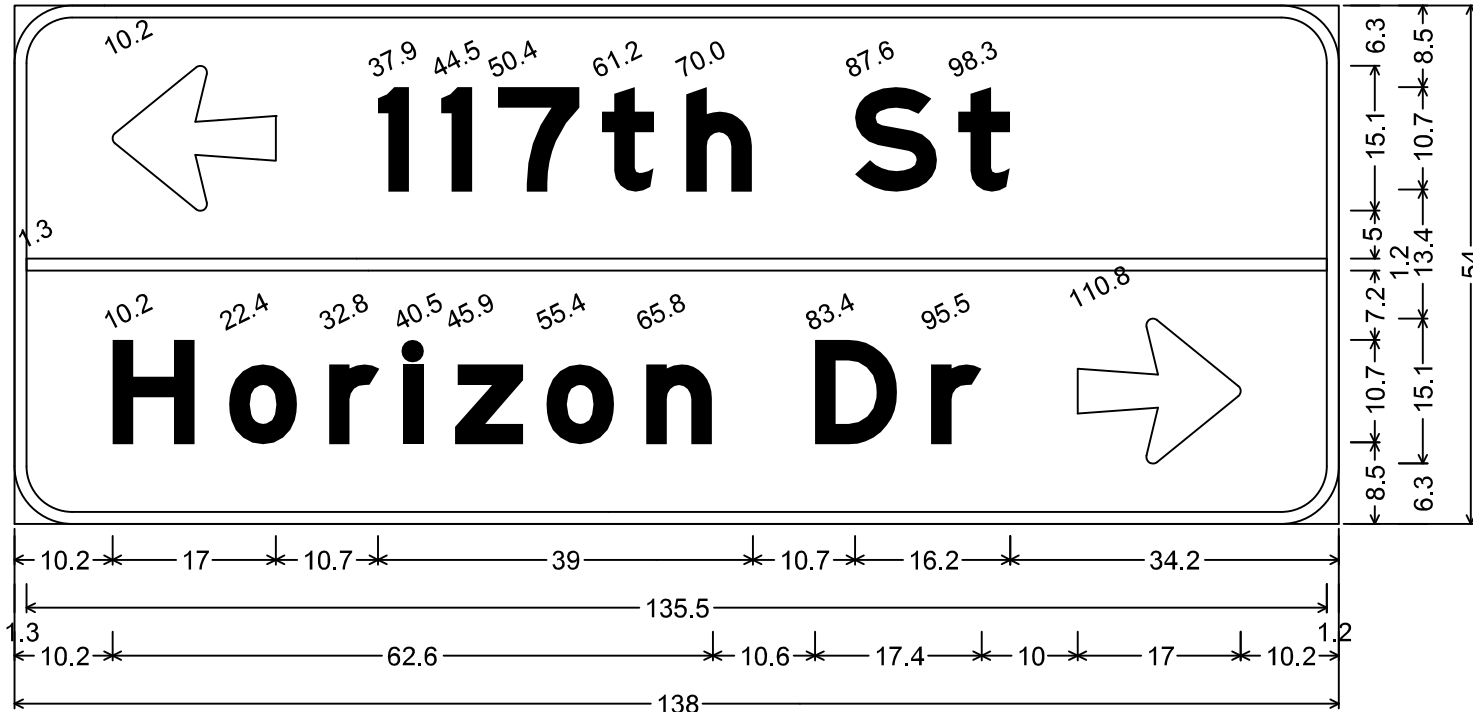
D SIGN

PANEL LAYOUTS

PLOTTED/REVISED: 25-SEP-2019

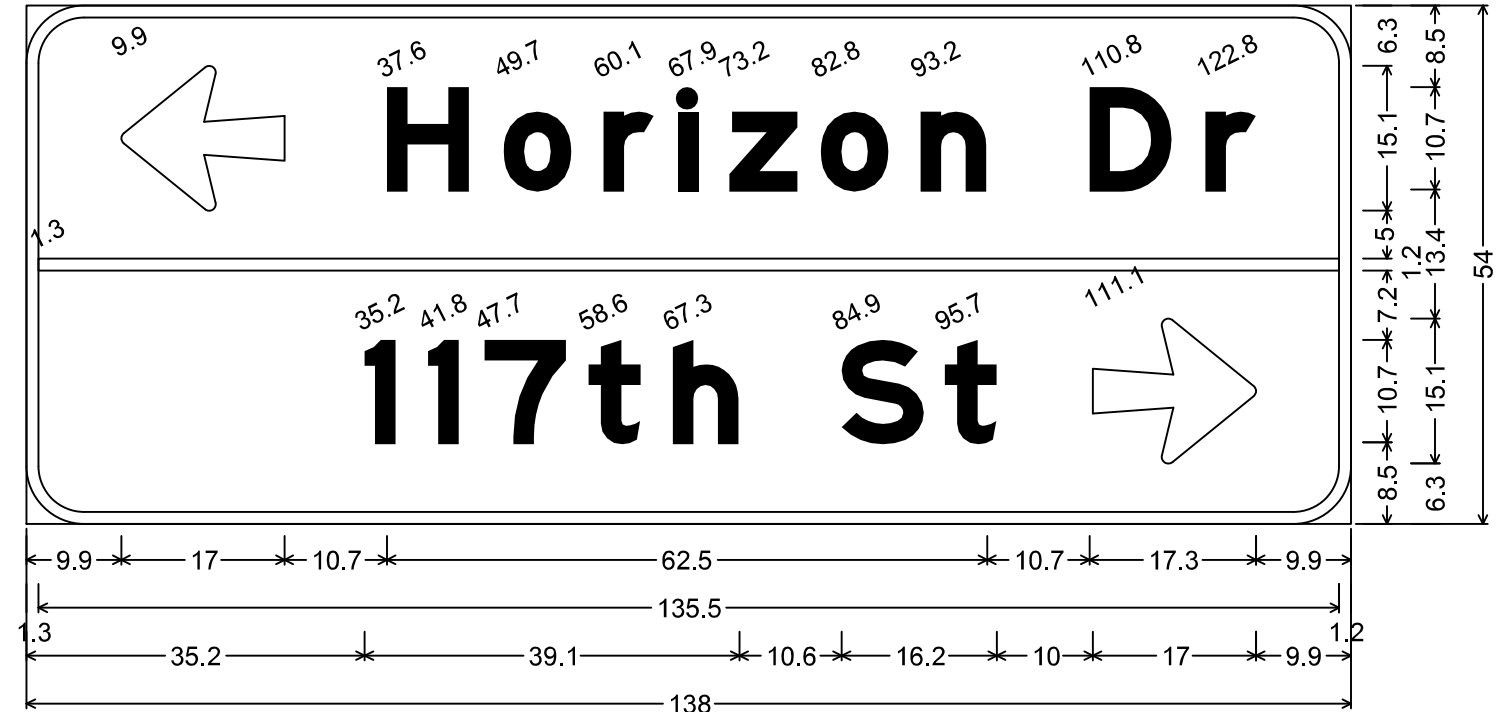
I/PLOT NAME: OTE_1901176.sp
PATH & FILENAME: Projects\DM_ROM\03\1901176\Signing\OT\NOTE_1901176.sp.dgn

D-33



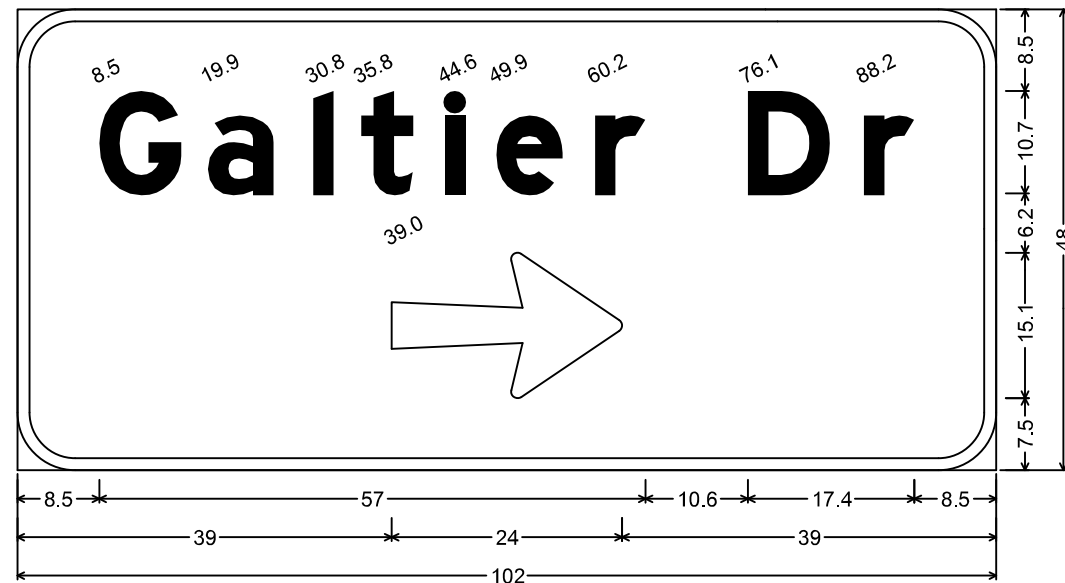
Identifier : LT ARROW 117TH ST HORIZON DR RT ARROW;
 6.0" Radius, 1.3" Border, White on Green;
 Arrow 6 - 17.0" 180°; [117th St] E Mod; [Horizon Dr] E Mod; Arrow 6 - 17.0" 0°;

D-34



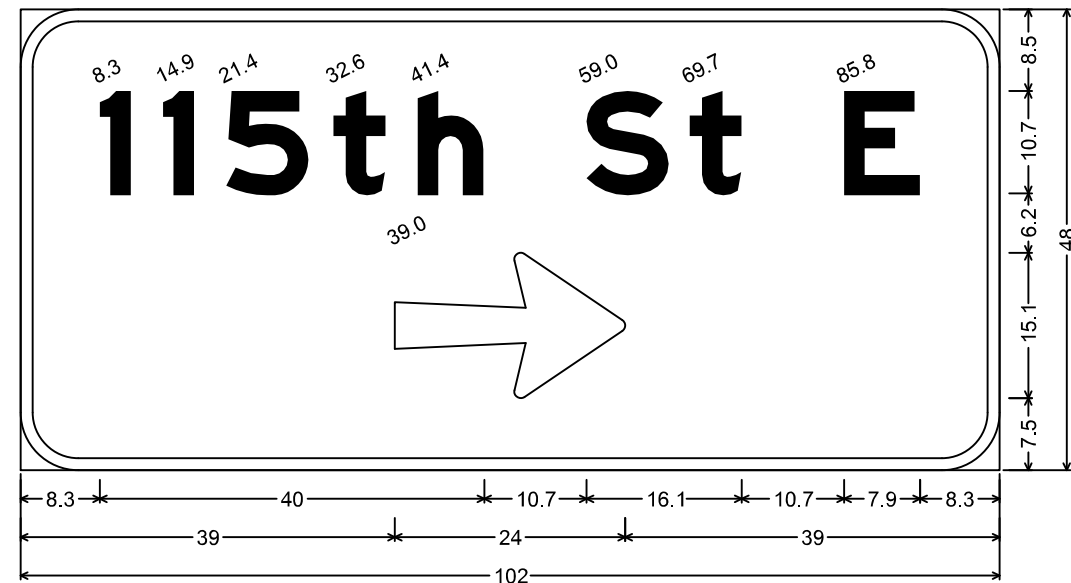
Identifier : LT ARROW HORIZON DR 117TH ST RT ARROW;
 6.0" Radius, 1.3" Border, White on Green;
 Arrow 6 - 17.0" 180°; [Horizon Dr] E Mod; [117th St] E Mod; Arrow 6 - 17.0" 0°;

D-35



Identifier : GALTIER DR RT ARROW;
 6.0" Radius, 1.3" Border, White on Green;
 [Galtier Dr] E Mod; Arrow 15 - 24.0" 0°;

D-36



Identifier : 115TH ST E RT ARROW;
 6.0" Radius, 1.3" Border, White on Green;
 [115th St E] E Mod; Arrow 15 - 24.0" 0°;

- NOTES:
 1. SEE MNDOT STANDARD SIGNS AND MARKINGS MANUAL FOR ARROW, FRACTION AND ROUTE MARKER DETAILS.
 2. ALL DIMENSIONS ARE IN INCHES.

D SIGN

PANEL LAYOUTS

DRAWN BY: CCY

CHECKED BY: SRM

CERTIFIED BY

Steven M. ...
 LICENSED PROFESSIONAL ENGINEER

LIC. NO. 19579

DATE 9/25/2019

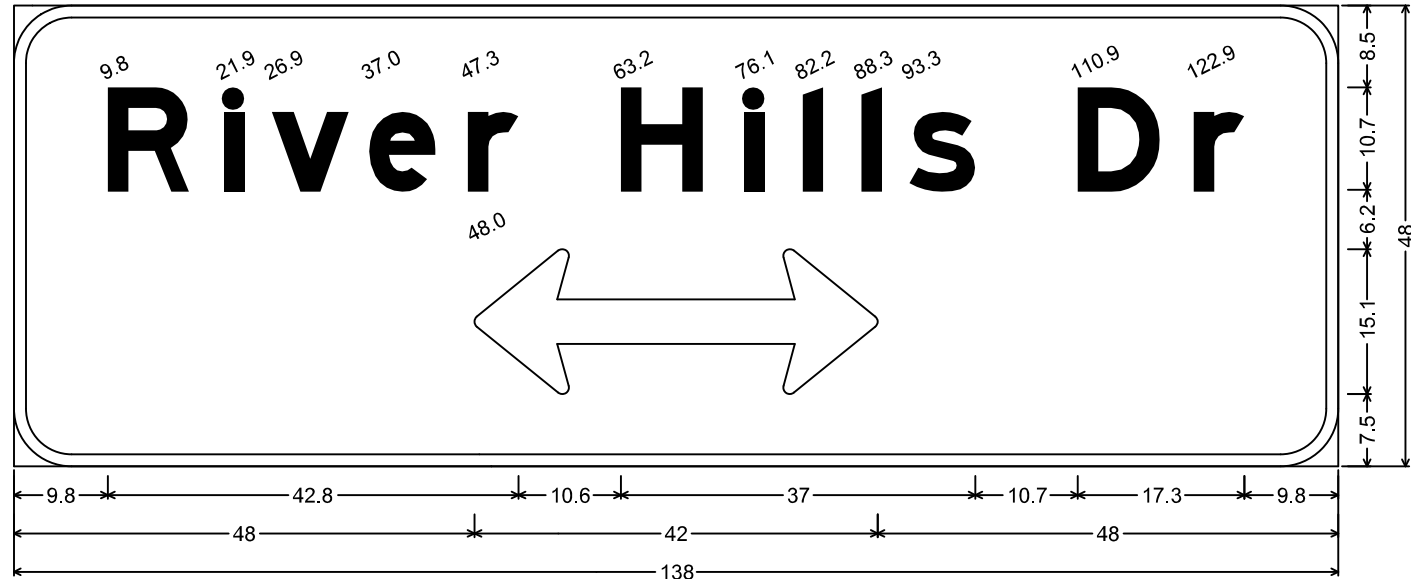
STATE PROJ. NO. 1901-176 (TH 13)

SHEET NO. 93 OF 106 SHEETS

PLOTTED/REVISED: 25-SEP-2019

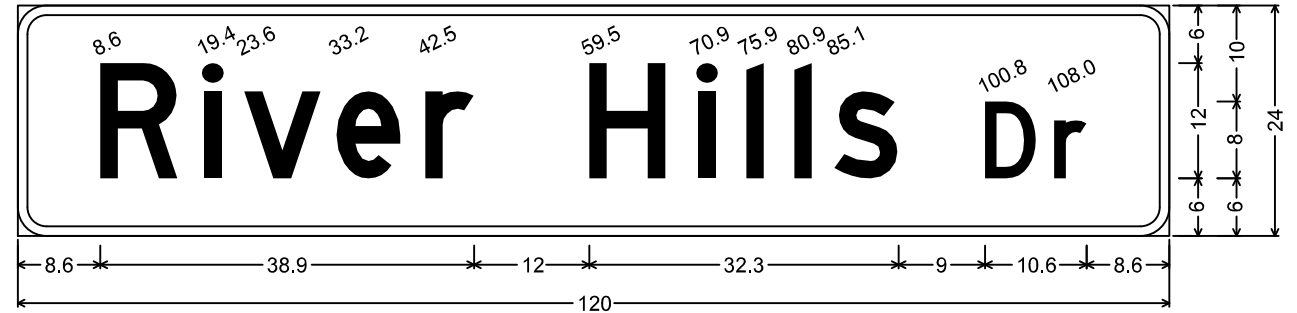
I/PLOT NAME: OTE_1901176.sp
PATH & FILENAME: Projects\DM_R05\013\1901176\Signing\OT\ST\OTE_1901176.sp.dgn

D-37



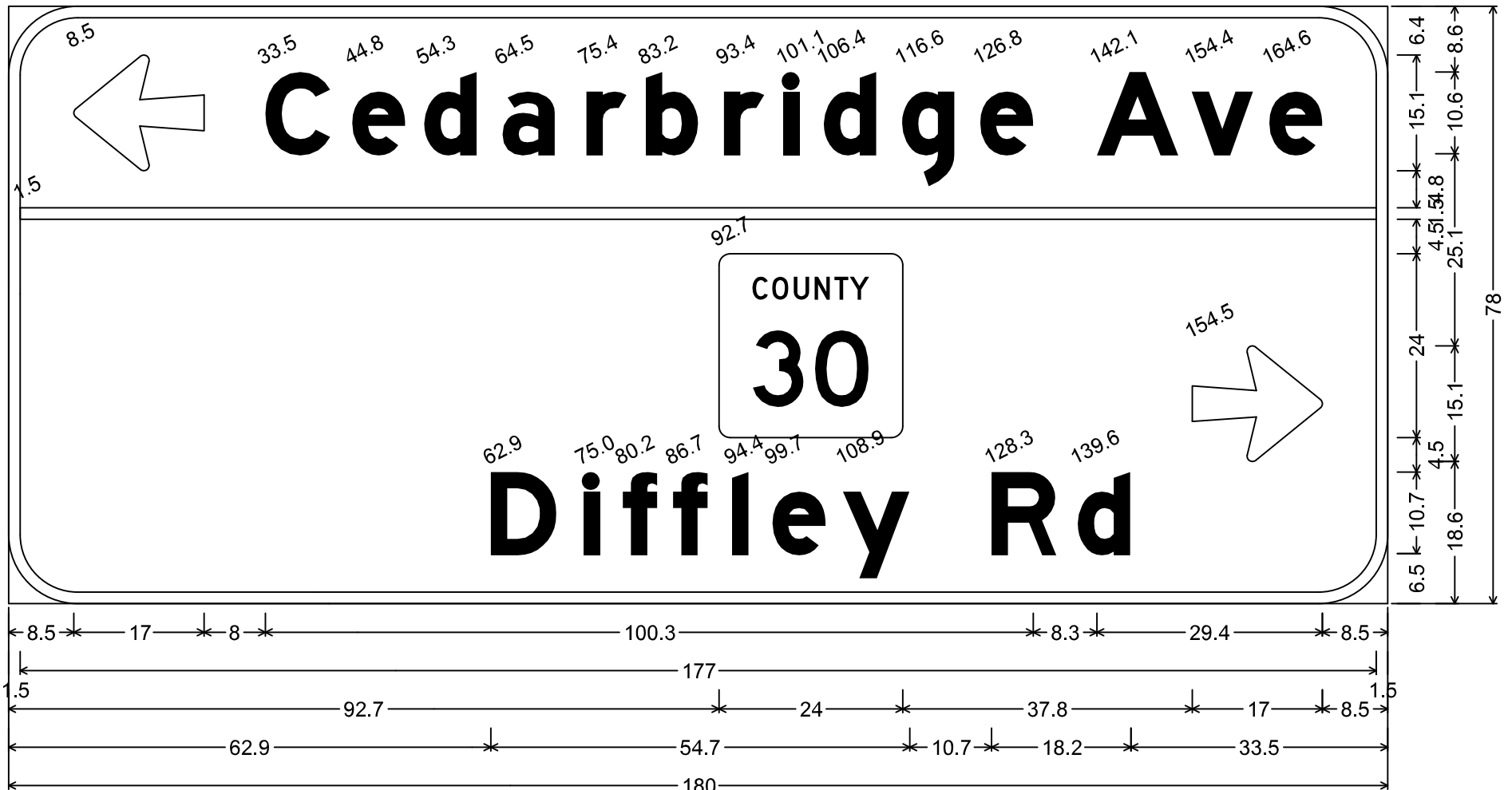
Identifier : RIVER HILLS DR DBL ARROW;
6.0" Radius, 1.3" Border, White on Green;
[River Hills Dr] E Mod; Double Headed Arrow 6 - 42.0" 0°;

D-38



Identifier : RIVER HILLS DR;
3.0" Radius, 1.0" Border, White on Green;
[River Hills Dr] D;

D-39



Identifier : LT ARROW CEDARBRIDGE AVE COUNTY 30 DIFFLEY RD RT ARROW;
9.0" Radius, 1.5" Border, White on Green;
Arrow 6 - 17.0" 180°; [Cedarbridge Ave] E Mod; Square County 30 M1-X4a; [Diffley Rd] E Mod; Arrow 6 - 17.0" 0°;

- NOTES:
1. SEE MNDOT STANDARD SIGNS AND MARKINGS MANUAL FOR ARROW, FRACTION AND ROUTE MARKER DETAILS.
2. ALL DIMENSIONS ARE IN INCHES.

D SIGN

PANEL LAYOUTS

DRAWN BY: CCY

CHECKED BY: SRM

CERTIFIED BY

Steve McBurn
LICENSED PROFESSIONAL ENGINEER

LIC. NO. 19579

DATE 9/25/2019

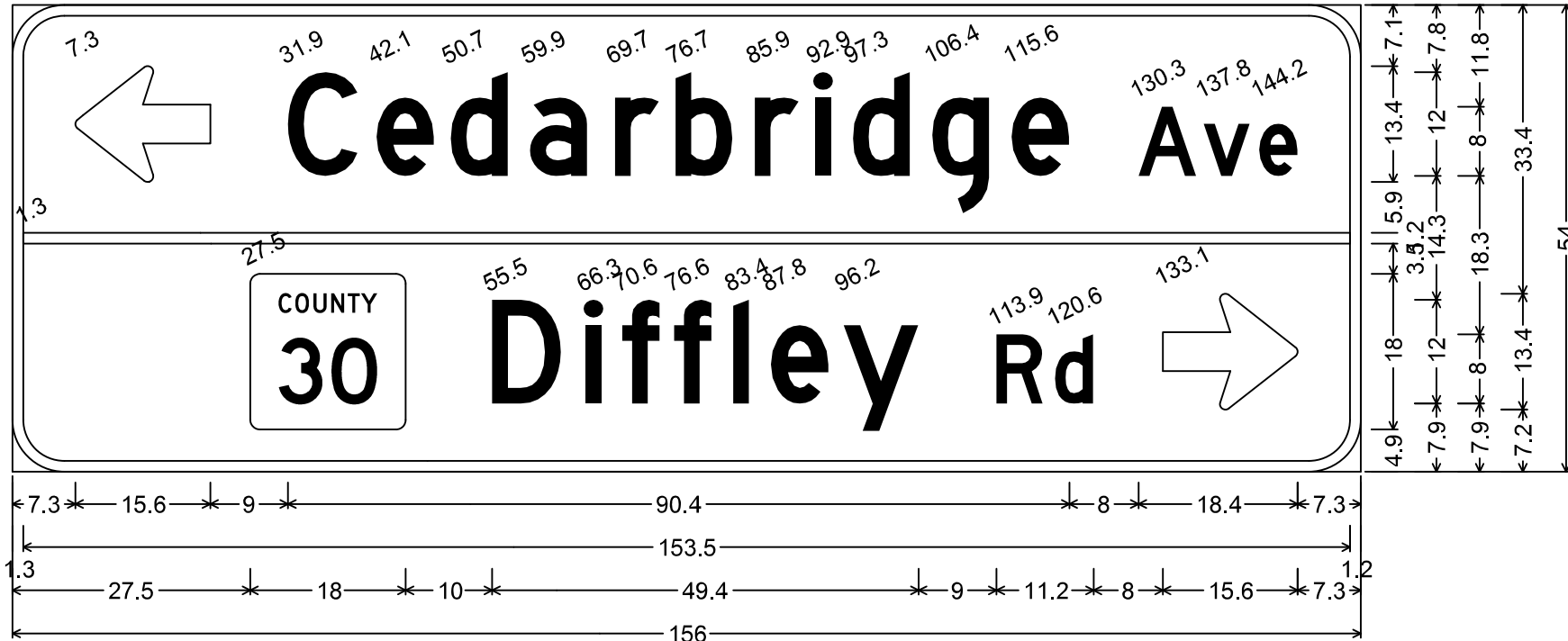
STATE PROJ. NO. 1901-176 (TH 13)

SHEET NO. 94 OF 106 SHEETS

PLOTTED/REVISED: 25-SEP-2019

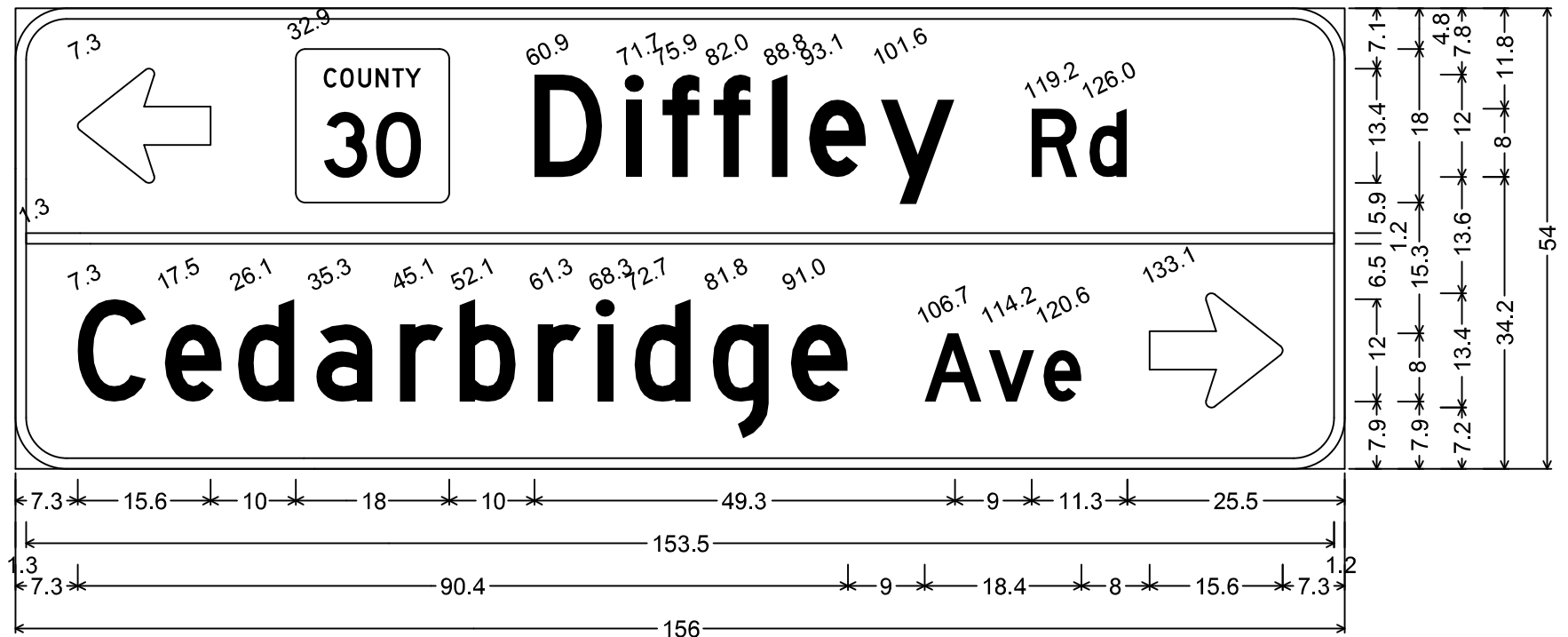
IPLOT NAME: OTE_190176.sp
PATH & FILENAME: Projects\DM_ROS\03\190176\Signing\OT\NOTE_190176.sp.dgn

D-40



Identifier : LT ARROW CEDARBRIDGE AVE COUNTY 30 DIFFLEY RD RT ARROW;
 6.0" Radius, 1.3" Border, White on Green;
 Arrow Custom - 15.6" 180°; [Cedarbridge Ave] D; Square County 30 M1-X4a; [Diffley Rd] D;
 Arrow Custom - 15.6" 0°;

D-42



Identifier : LT ARROW COUNTY 30 DIFFLEY RD CEDARBRIDGE AVE RT ARROW;
 6.0" Radius, 1.3" Border, White on Green;
 Arrow Custom - 15.6" 180°; Square County 30 M1-X4a; [Diffley Rd] D; [Cedarbridge Ave] D;
 Arrow Custom - 15.6" 0°;

- NOTES:
 1. SEE MNDOT STANDARD SIGNS AND MARKINGS MANUAL FOR ARROW, FRACTION AND ROUTE MARKER DETAILS.
 2. ALL DIMENSIONS ARE IN INCHES.

D SIGN

PANEL LAYOUTS

DRAWN BY: CCY

CHECKED BY: SRM

CERTIFIED BY

Steven M. ...
 LICENSED PROFESSIONAL ENGINEER

LIC. NO. 19579

DATE 9/25/2019

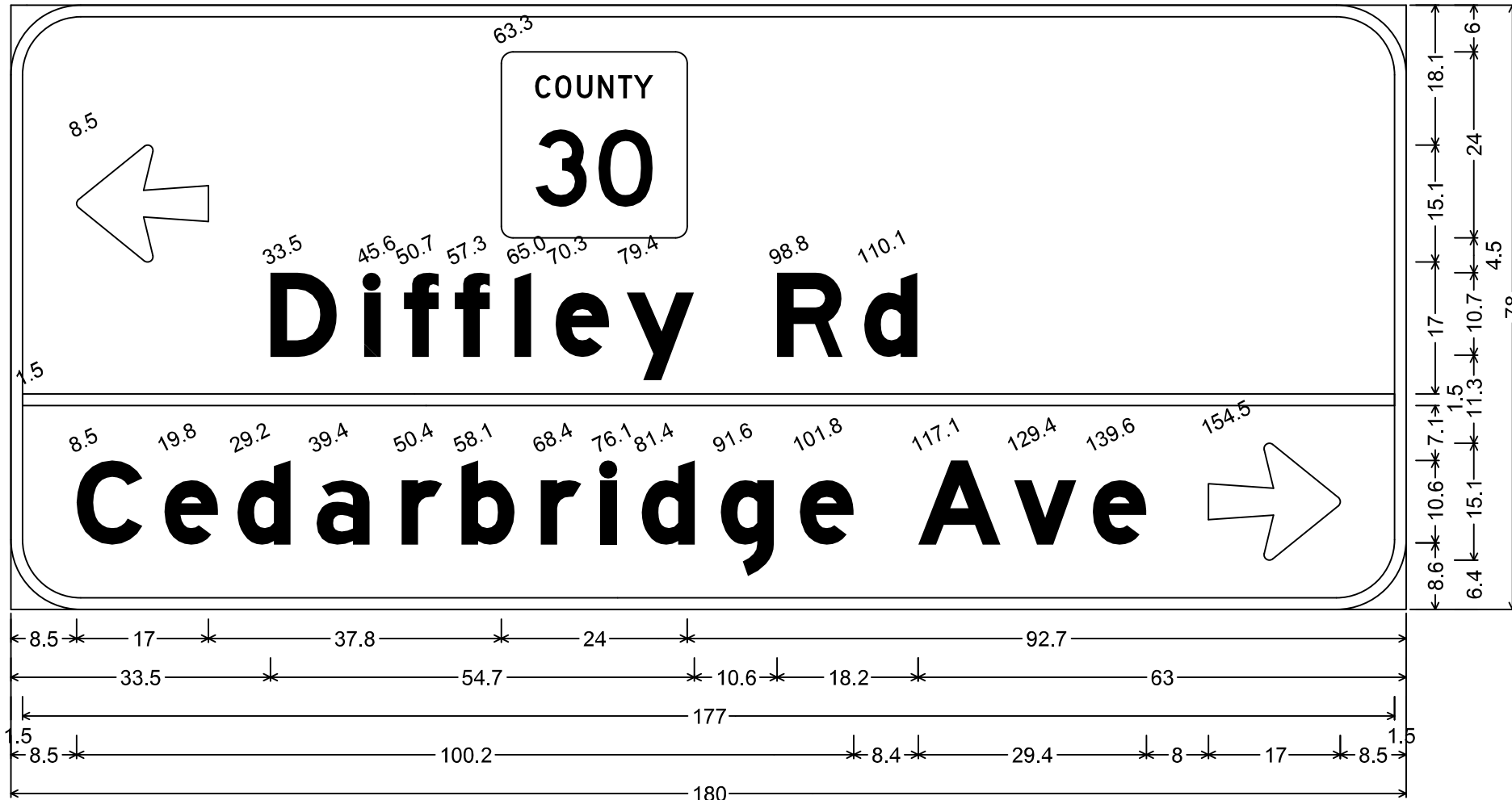
STATE PROJ. NO. 1901-176 (TH 13)

SHEET NO. 95 OF 106 SHEETS

PLOTTED/REVISED: 25-SEP-2019

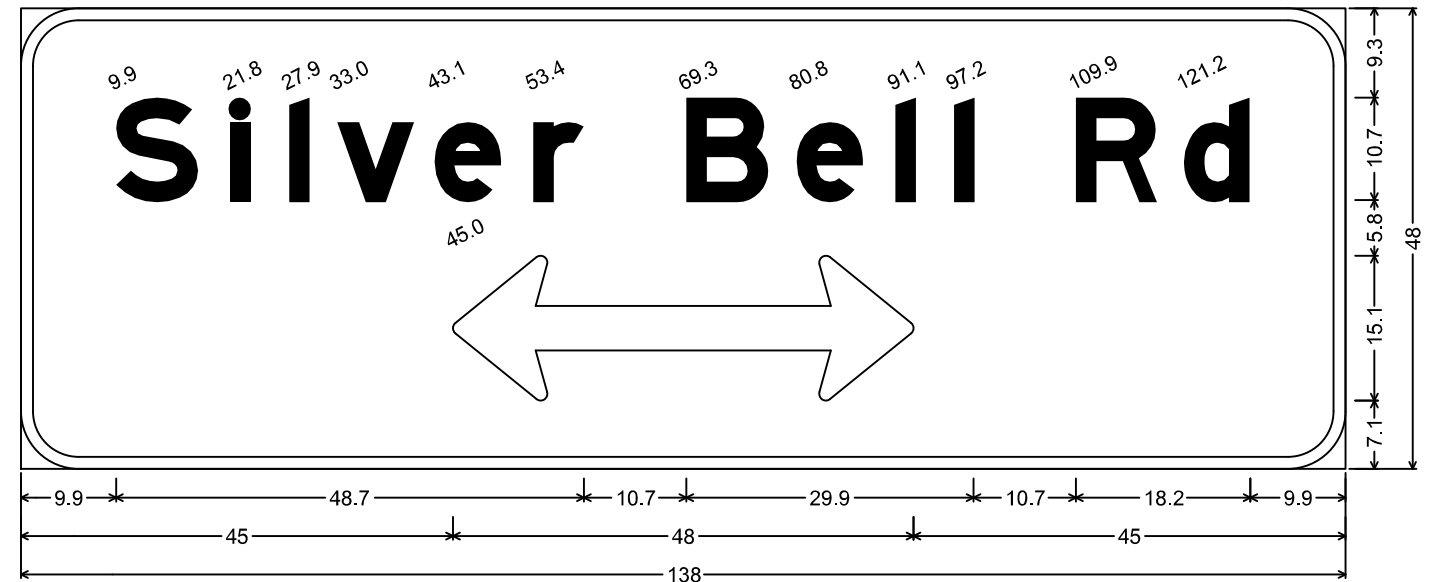
IPLOT NAME: OTE_I90176.sp
PATH & FILENAME: Projects\DM_ROM\013\90176\Signing\OT\NOTE_I90176.sp.dgn

D-41



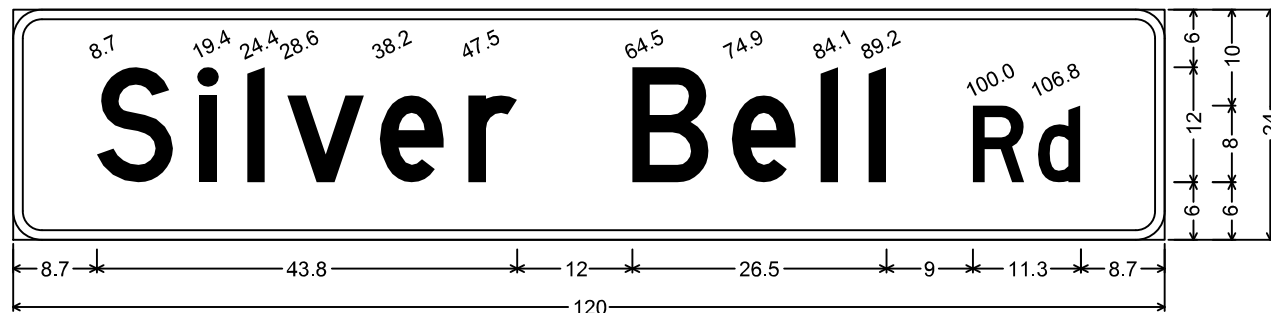
Identifier : LT ARROW COUNTY 30 DIFFLEY RD CEDARBRIDGE AVE RT ARROW;
 9.0" Radius, 1.5" Border, White on Green;
 Arrow 6 - 17.0" 180°; Square County 30 M1-X4a; [Diffley Rd] E Mod; [Cedarbridge Ave] E Mod; Arrow 6 - 17.0" 0°;

D-44



Identifier : SILVER BELL RD DBL ARROW;
 6.0" Radius, 1.3" Border, White on Green;
 [Silver Bell Rd] E Mod; Double Headed Arrow 6 - 48.0" 0°;

D-46



Identifier : SILVER BELL RD;
 3.0" Radius, 1.0" Border, White on Green;
 [Silver Bell Rd] D;

- NOTES:
 1. SEE MNDOT STANDARD SIGNS AND MARKINGS MANUAL FOR ARROW, FRACTION AND ROUTE MARKER DETAILS.
 2. ALL DIMENSIONS ARE IN INCHES.

D SIGN

PANEL LAYOUTS

DRAWN BY: CCY

CHECKED BY: SRM

CERTIFIED BY

Steven M. Dunbar
 LICENSED PROFESSIONAL ENGINEER

LIC. NO. 19579

DATE 9/25/2019

STATE PROJ. NO. 1901-176 (TH 13)

SHEET NO. 96 OF 106 SHEETS

PLOTTED/REVISED: 25-SEP-2019

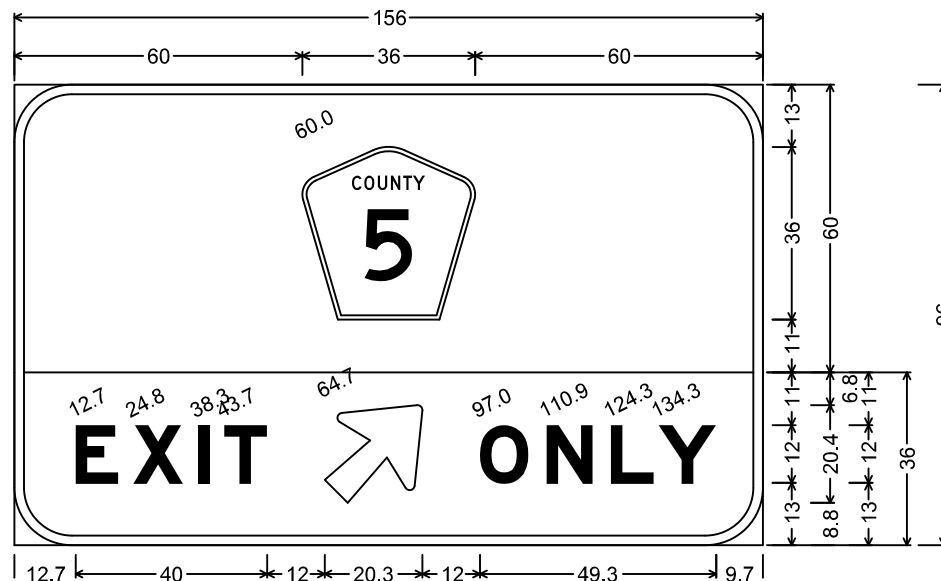
I/PLOT NAME: OTE_190176.sp
PATH & FILENAME: Projects\DM_ROS\03\90176\Signing\OT\NOTE_190176.sp.dgn

OH MN13-004



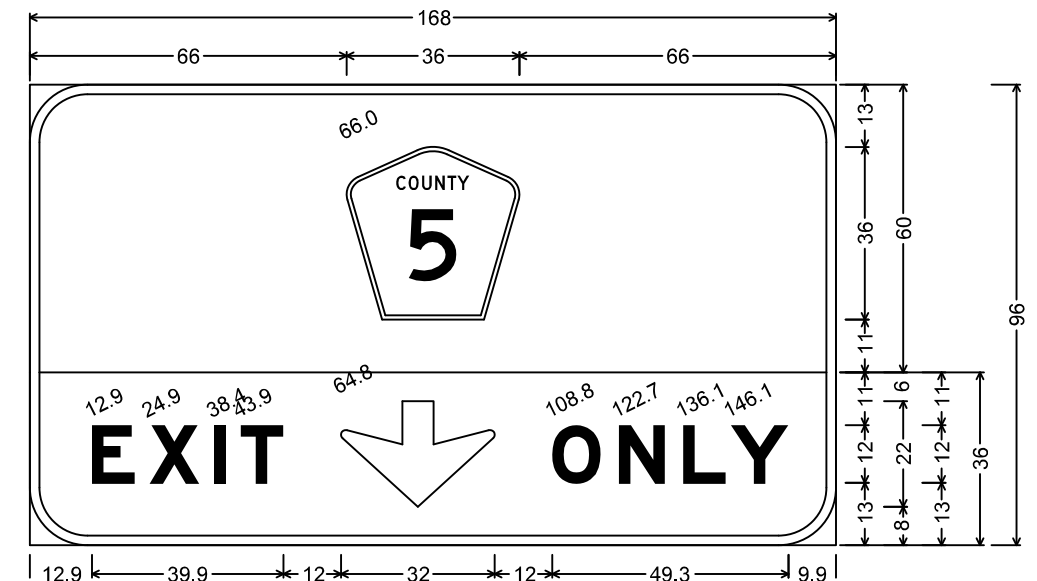
Identifier : I35W ALBERT LEA MINNEAPOLIS EXITS 1/2 MILE;
 12.0" Radius, 2.0" Border, White on Green;
 Interstate 35W M1-1; [Albert Lea] E Mod; [Minneapolis] E Mod;
 [EXITS 1/2 MILE] E Mod;

OH MN13-005



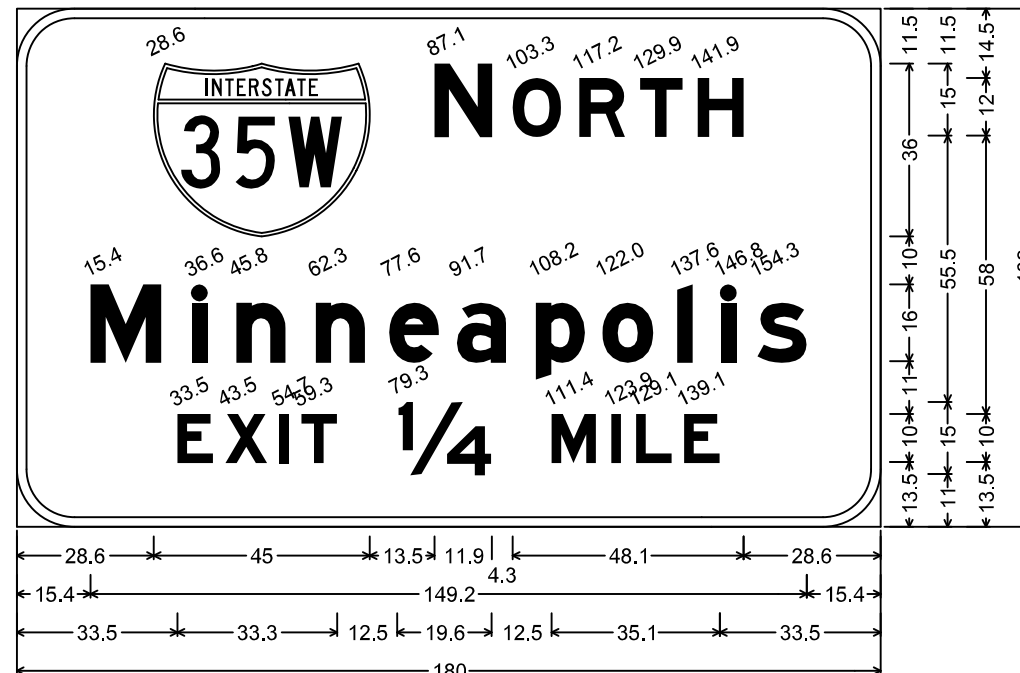
Identifier : COUNTY 5 EXIT 45 DEG ARROW ONLY;
 12.0" Radius, 2.0" Border, White on Green;
 Pentagonal County 5 M1-6a;
 12.0" Radius, 2.0" Border, Black on Yellow;
 [EXIT] E Mod; Arrow 8 - 25.0" 45°; [ONLY] E Mod;

OH MN13-006



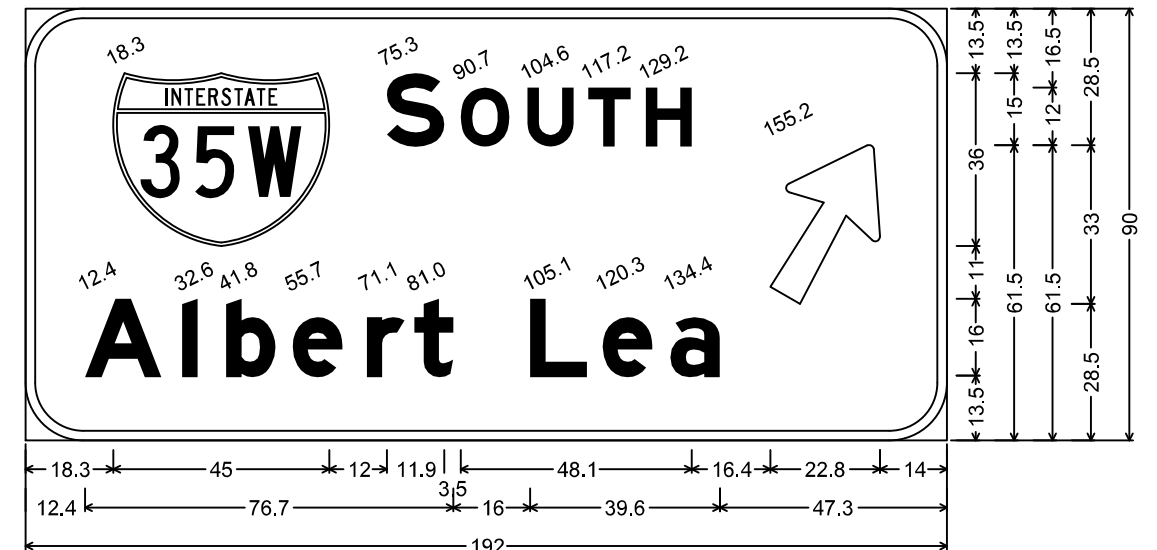
Identifier : COUNTY 5 EXIT DOWN ARROW ONLY;
 12.0" Radius, 2.0" Border, White on Green;
 Pentagonal County 5 M1-6a;
 12.0" Radius, 2.0" Border, Black on Yellow;
 [EXIT] E Mod; Down Arrow 22.0" 270°; [ONLY] E Mod;

OH I35W-435 (L)



Identifier : I35W NORTH MINNEAPOLIS EXIT 1/4 MILE;
 12.0" Radius, 2.0" Border, White on Green;
 Interstate 35W M1-1; [NORTH] E Mod; [Minneapolis] E Mod;
 [EXIT 1/4 MILE] E Mod;

OH I35W-435 (R)



Identifier : I35W SOUTH ALBERT LEA 60 DEG ARROW;
 12.0" Radius, 2.0" Border, White on Green;
 Interstate 35W M1-1; [SOUTH] E Mod; [Albert Lea] E Mod; Arrow 17 - 36.0" 60°;

NOTES:

1. SEE MNDOT STANDARD SIGNS AND MARKINGS MANUAL FOR ARROW, FRACTION AND ROUTE MARKER DETAILS.
2. ALL DIMENSIONS ARE IN INCHES.
3. CORNERS OF SIGN PANELS EXTENDING BEYOND BORDER SHALL NOT BE TRIMMED.

OH SIGN

PANEL LAYOUTS

DRAWN BY: CCY

CHECKED BY: SRM

CERTIFIED BY

Steven M. [Signature]
 LICENSED PROFESSIONAL ENGINEER

LIC. NO. 19579

DATE 9/25/2019

STATE PROJ. NO. 1901-176 (TH 13)

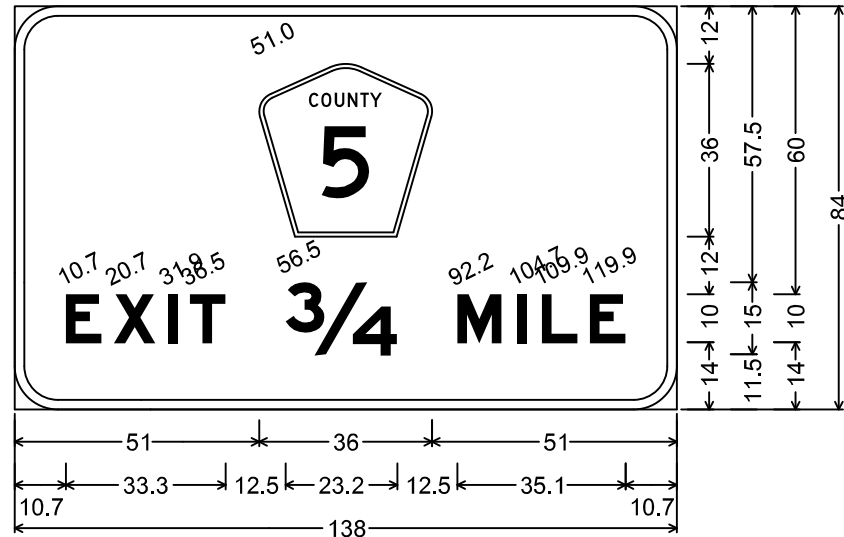
SHEET NO. 97 OF

106 SHEETS

PLOTTED/REVISED: 25-SEP-2019

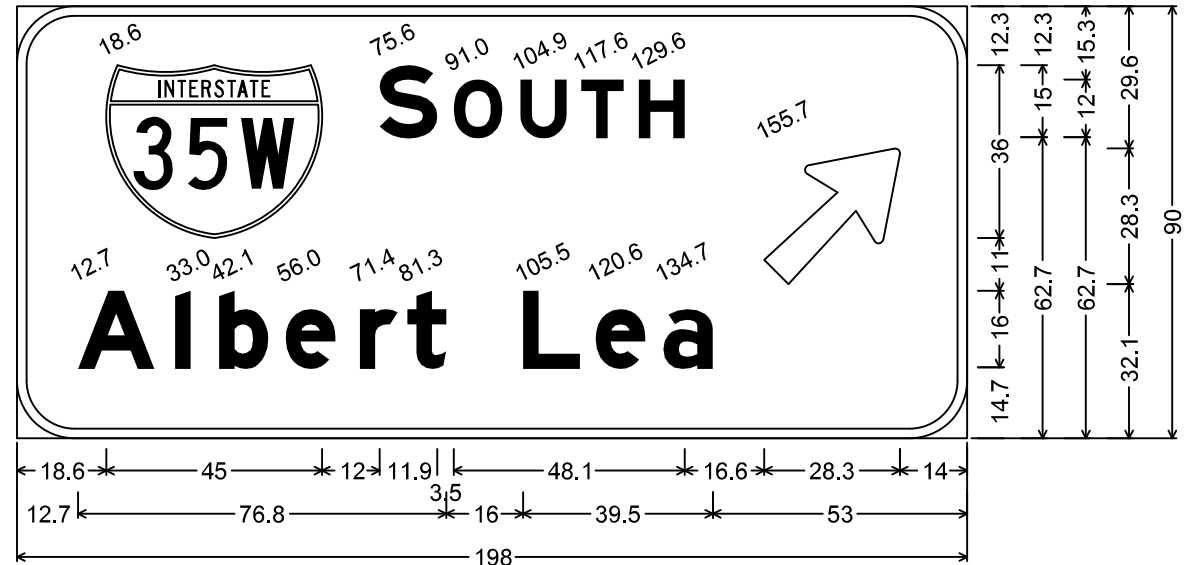
I/LOT NAME: OTE_1901176.sp
PATH & FILENAME: Projects\DM_ROS\03\1901176\Signing\OT\NOTE_1901176.sp.dgn

OH MN13-007 (L)



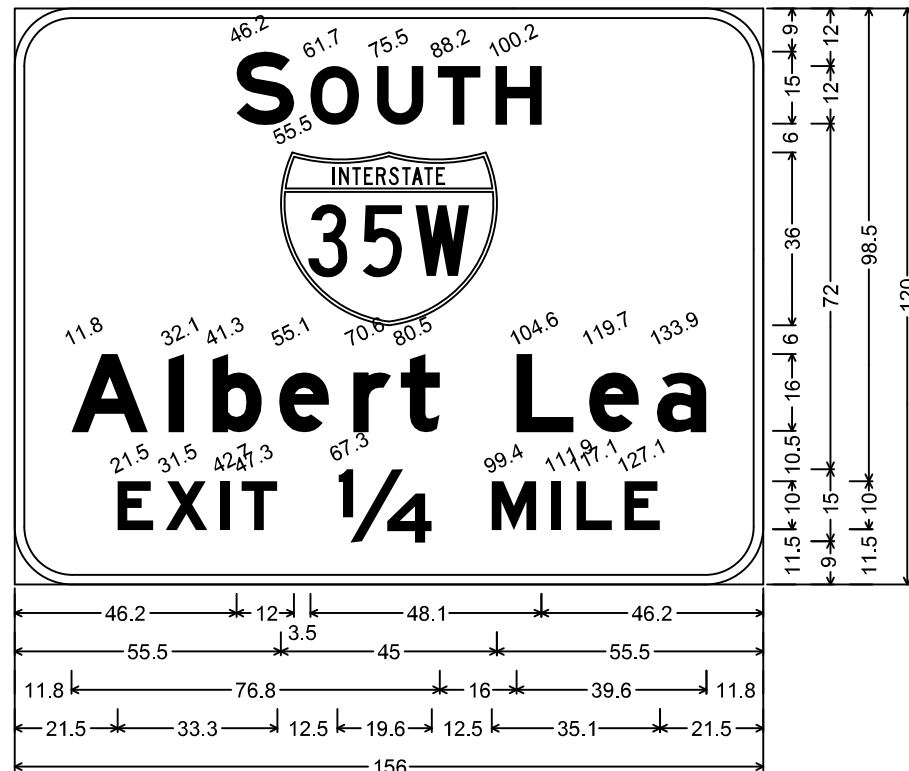
Identifier : COUNTY 5 EXIT 3/4 MILE;
 9.0" Radius, 2.0" Border, White on Green;
 Pentagonal County 5 M1-6a; [EXIT 3/4 MILE] E Mod;

OH MN13-007 (R)



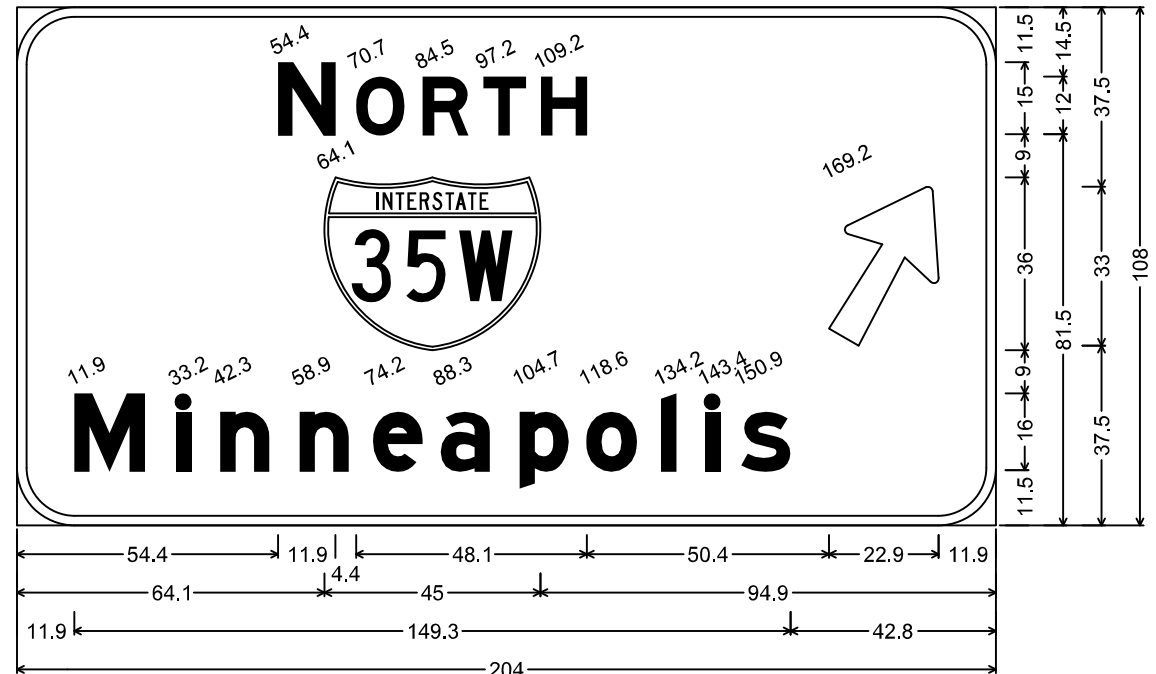
Identifier : I35W SOUTH ALBERT LEA 45 DEG ARROW;
 12.0" Radius, 2.0" Border, White on Green;
 Interstate 35W M1-1; [SOUTH] E Mod; [Albert Lea] E Mod;
 Arrow 17 - 36.0" 45°;

OH I35W-157 (L)



Identifier : SOUTH I35W ALBERT LEA EXIT 1/4 MILE;
 12.0" Radius, 2.0" Border, White on Green;
 [SOUTH] E Mod; Interstate 35W M1-1; [Albert Lea] E Mod;
 [EXIT 1/4 MILE] E Mod;

OH I35W-157 (R)



Identifier : NORTH I35W MINNEAPOLIS 60 DEG ARROW;
 12.0" Radius, 2.0" Border, White on Green;
 [NORTH] E Mod; Interstate 35W M1-1; [Minneapolis] E Mod; Arrow 17 - 36.0" 60°;

NOTES:

1. SEE MNDOT STANDARD SIGNS AND MARKINGS MANUAL FOR ARROW, FRACTION AND ROUTE MARKER DETAILS.
2. ALL DIMENSIONS ARE IN INCHES.
3. CORNERS OF SIGN PANELS EXTENDING BEYOND BORDER SHALL NOT BE TRIMMED.

OH SIGN

PANEL LAYOUTS

DRAWN BY: CCY

CHECKED BY: SRM

CERTIFIED BY

Steven M. [Signature]
 LICENSED PROFESSIONAL ENGINEER

LIC. NO. 19579

DATE 9/25/2019

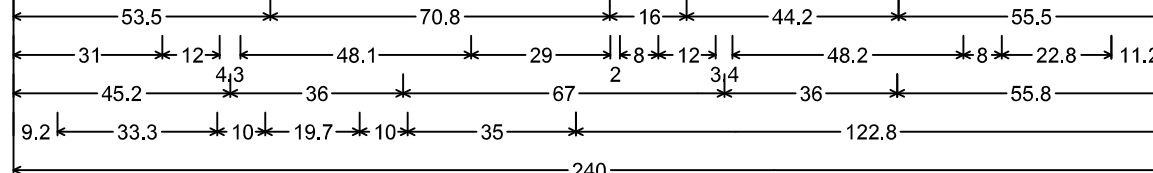
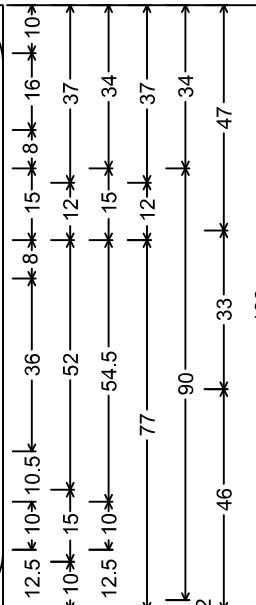
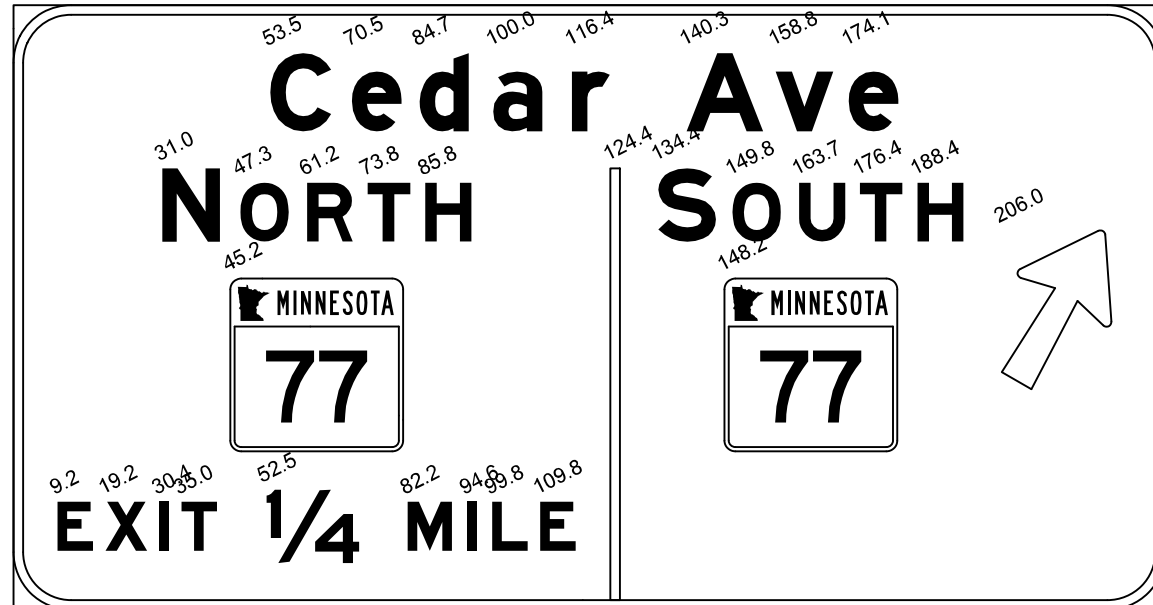
STATE PROJ. NO. 1901-176 (TH 13)

SHEET NO. 98 OF 106 SHEETS

PLOTTED/REVISED: 25-SEP-2019

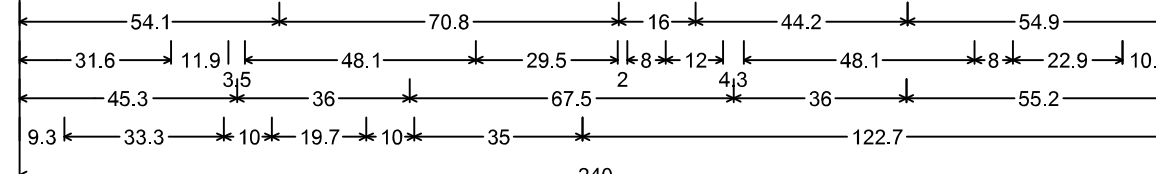
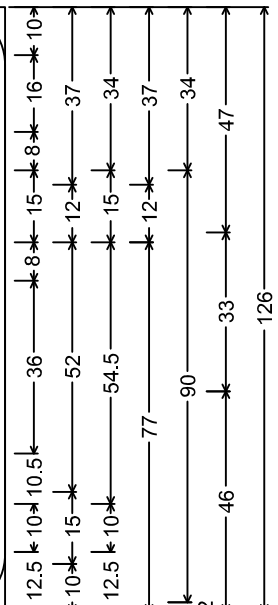
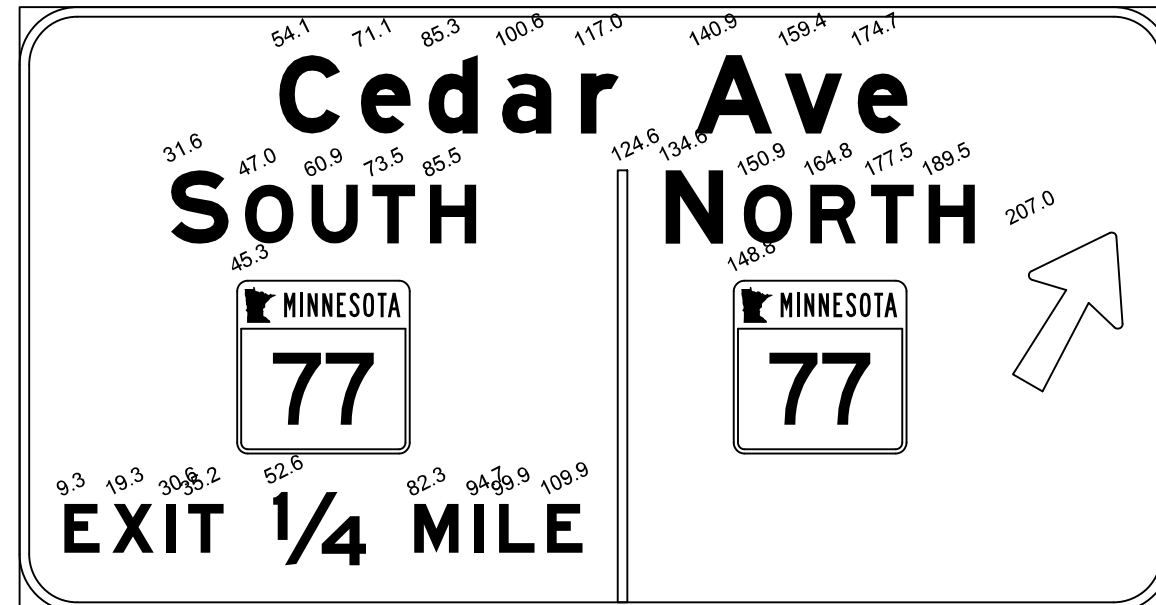
I/PLOT NAME: OTE_1901176.sp
PATH & FILENAME: Projects\DM_ROMS\0131901176\Signing\OT\ST\OTE_1901176.sp.dgn

OH MN77-005



Identifier : CEDAR AVE NORTH MN77 EXIT 1/4 MILE SOUTH MN77 60 DEG ARROW;
 12.0" Radius, 2.0" Border, White on Green;
 [Cedar Ave] E Mod; [NORTH] E Mod; [SOUTH] E Mod; State Highway 77 M1-5b; State Highway 77 M1-5b;
 [EXIT 1/4 MILE] E Mod; Arrow 17 - 36.0" 60°;

OH MN77-006



Identifier : CEDAR AVE SOUTH MN77 EXIT 1/4 MILE NORTH MN77 60 DEG ARROW;
 12.0" Radius, 2.0" Border, White on Green;
 [Cedar Ave] E Mod; [SOUTH] E Mod; [NORTH] E Mod; State Highway 77 M1-5b; State Highway 77 M1-5b;
 [EXIT 1/4 MILE] E Mod; Arrow 17 - 36.0" 60°;

NOTES:

1. SEE MNDOT STANDARD SIGNS AND MARKINGS MANUAL FOR ARROW, FRACTION AND ROUTE MARKER DETAILS.
2. ALL DIMENSIONS ARE IN INCHES.
3. CORNERS OF SIGN PANELS EXTENDING BEYOND BORDER SHALL NOT BE TRIMMED.

OH SIGN

PANEL LAYOUTS

DRAWN BY: CCY

CHECKED BY: SRM

CERTIFIED BY

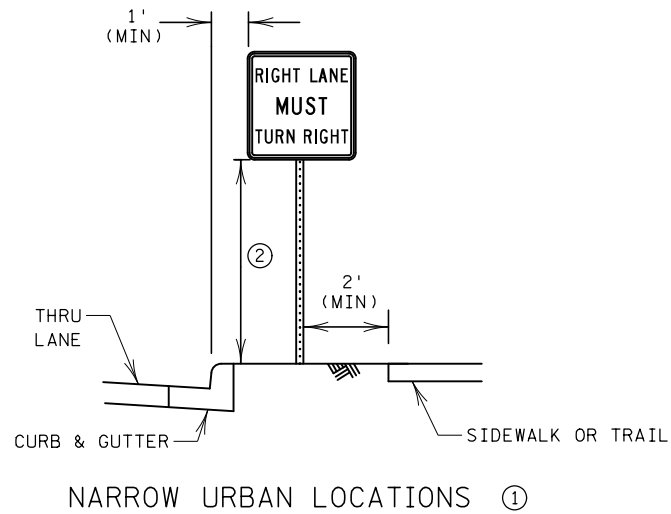
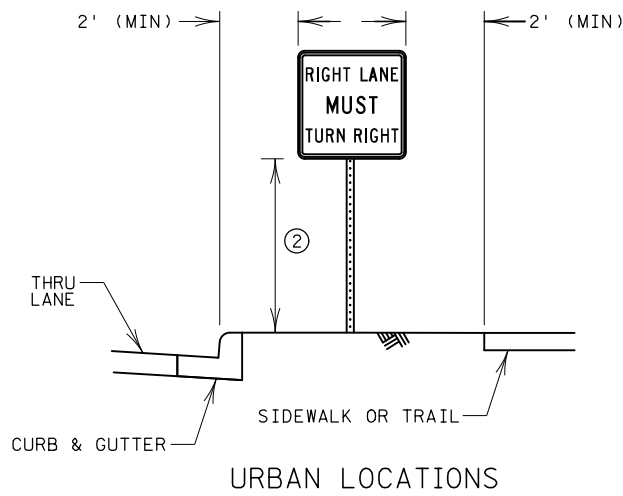
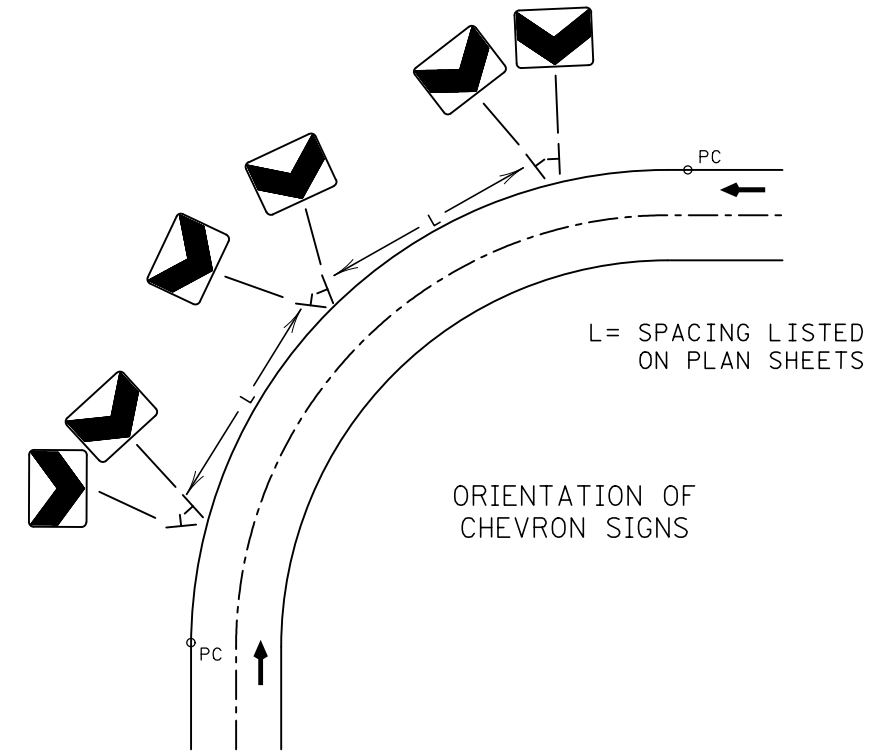
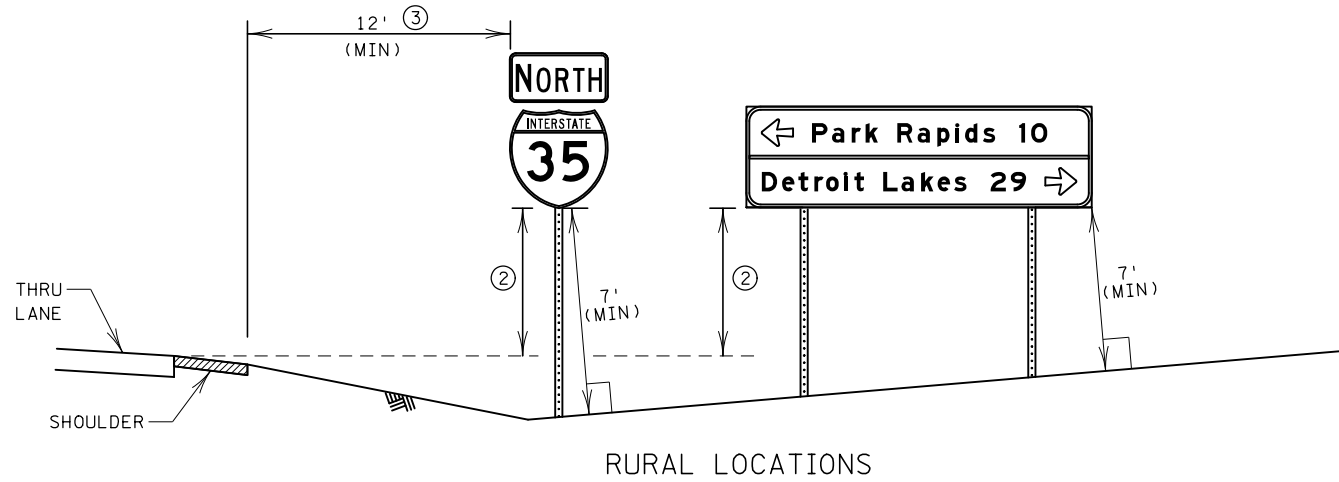
Steven M. ...
 LICENSED PROFESSIONAL ENGINEER

LIC. NO. 19579

DATE 9/25/2019

STATE PROJ. NO. 1901-176 (TH 13)

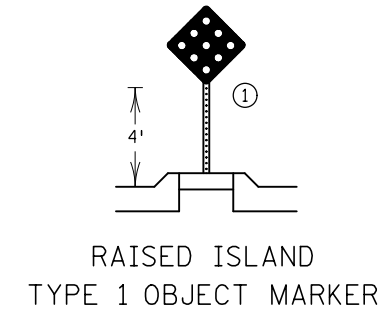
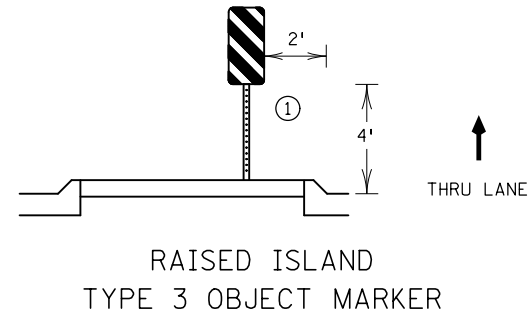
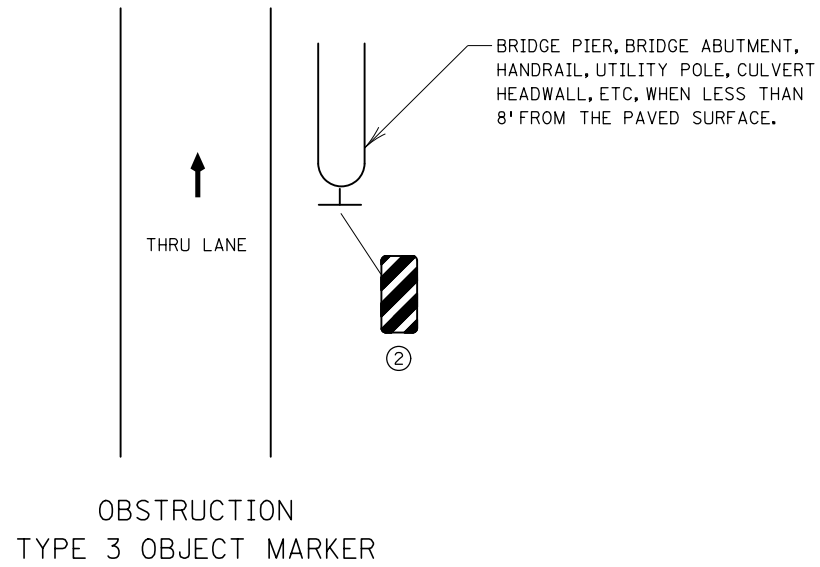
SHEET NO. 99 OF 106 SHEETS



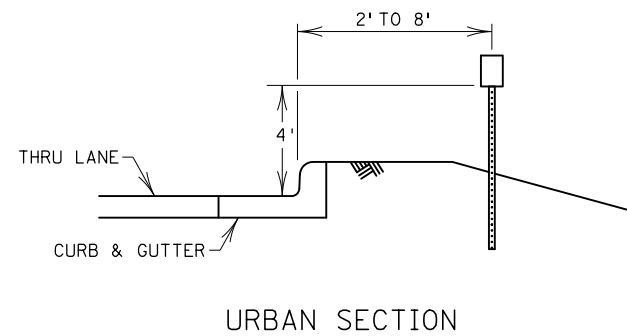
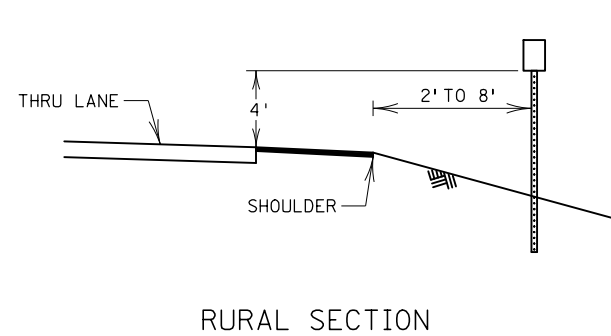
NOTES:

- URBAN LOCATIONS ARE PAVEMENT SECTIONS WITH CURB AND GUTTER.
 - RURAL LOCATIONS ARE PAVEMENT SECTIONS WITHOUT CURB AND GUTTER.
 - SIGNS SHALL BE PLACED FACING APPROXIMATELY THREE DEGREES AWAY FROM A RIGHT ANGLE TO APPROACHING TRAFFIC.
 - SIGN FACES SHALL BE MOUNTED PLUMB.
 - LATERAL CLEARANCES GIVEN APPLY TO RIGHT AND/OR LEFT SIDE INSTALLATION.
 - SIGNS SHALL NOT BE ERECTED OR CONSTRUCTED SO AS TO CAUSE ANY PORTION OF THE SIGN TO BE WITHIN 8.5 FEET OF THE CENTERLINE OF A RAILROAD TRACK.
 - SIGNS SHALL BE PLACED SUCH THAT OBSTACLES DO NOT BLOCK THEM FROM BEING VIEWED BY THE APPROACHING TRAFFIC.
 - SIGNS SHALL BE PLACED A MINIMUM OF 4' FROM THE NEAREST OBSTACLE. OBSTACLES MAY INCLUDE, BUT ARE NOT LIMITED TO, LIGHT POLES, TREES, SIGNS, AND BUILDINGS.
- ① TO BE USED ONLY WHEN BOULEVARD IS TOO NARROW FOR URBAN LOCATIONS.
 - ② ALL SIGN MOUNTING HEIGHTS ARE MEASURED VERTICALLY FROM THE BOTTOM OF THE SIGN TO THE TOP OF THE CURB, OR IN ABSENCE OF CURB, TO THE NEAR EDGE OF THE THRU-LANE PAVEMENT. SEE SIGN TABULATIONS.
 - ③ MINIMUM MAY BE REDUCED TO 6' FROM SHOULDER AND 12' FROM THRU LANE IF SITE CONDITIONS PROHIBIT A 12' OFFSET FROM SHOULDER. IF ADEQUATE RIGHT OF WAY IS NOT AVAILABLE TO PLACE SIGN AT REDUCED MINIMUM, SIGN SHALL BE PLACED SUCH THAT PANEL EDGE IS 1' FROM RIGHT OF WAY AND NEAR PANEL EDGE IS AT LEAST 2' FROM EDGE OF SHOULDER.

**STANDARD SIGN PLACEMENT
 TYPE C & D**



MARKER TYPICAL PLACEMENT



DELINEATOR TYPICAL PLACEMENT

NOTES:

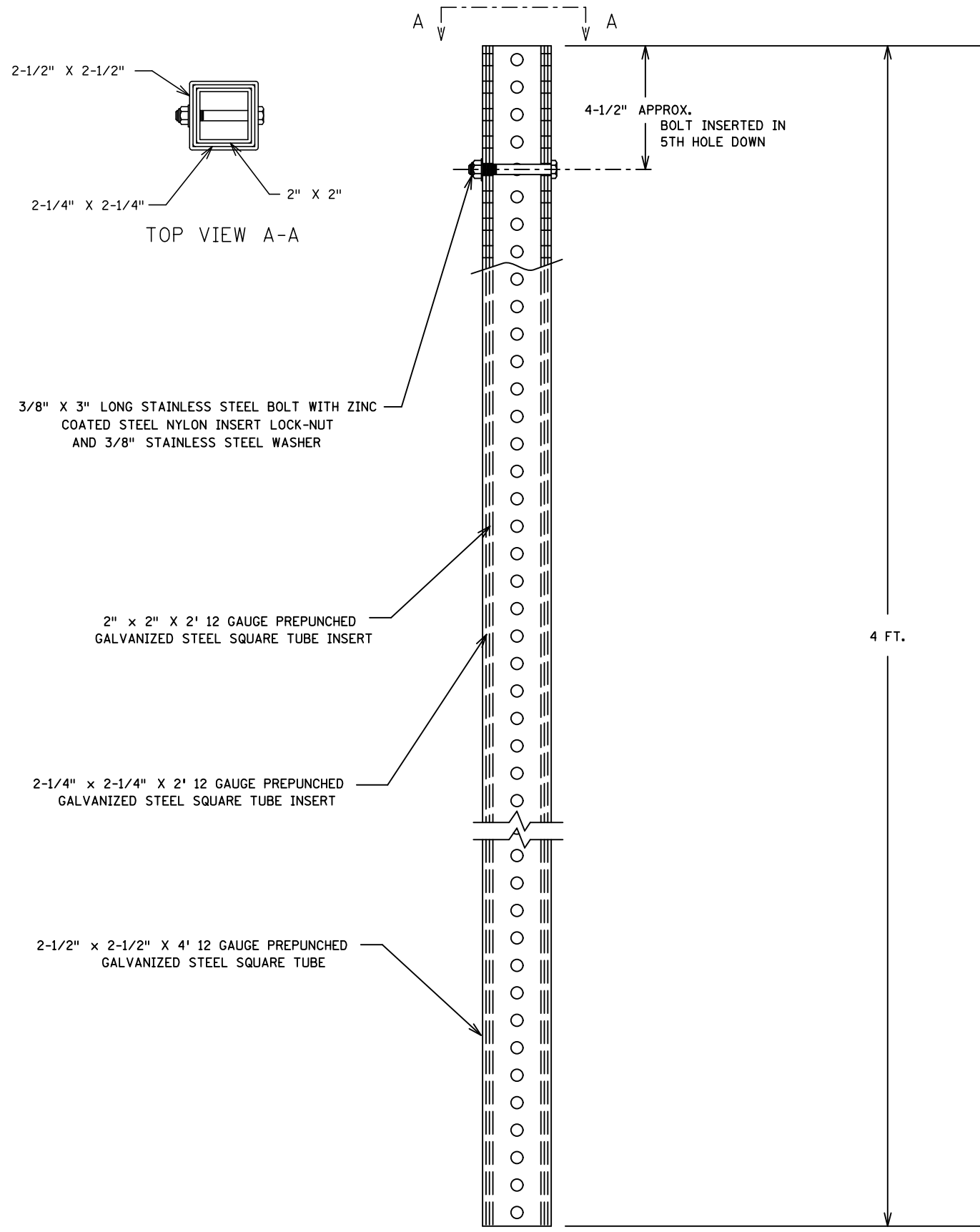
- ① MARKER SHOULD BE PLACED AS CLOSE TO THE BEGINNING OF MEDIAN AS POSSIBLE.
- ② THE EDGE OF THE OBJECT MARKER THAT IS CLOSEST TO THE ROAD USER SHALL BE PLACED IN LINE WITH THE CLOSEST EDGE OF THE OBSTRUCTION. STRIPES SHALL BE ANGLED DOWNWARD TOWARDS THE SIDE TRAFFIC IS TO PASS THE OBSTRUCTION.

DELINEATOR AND MARKER PLACEMENT

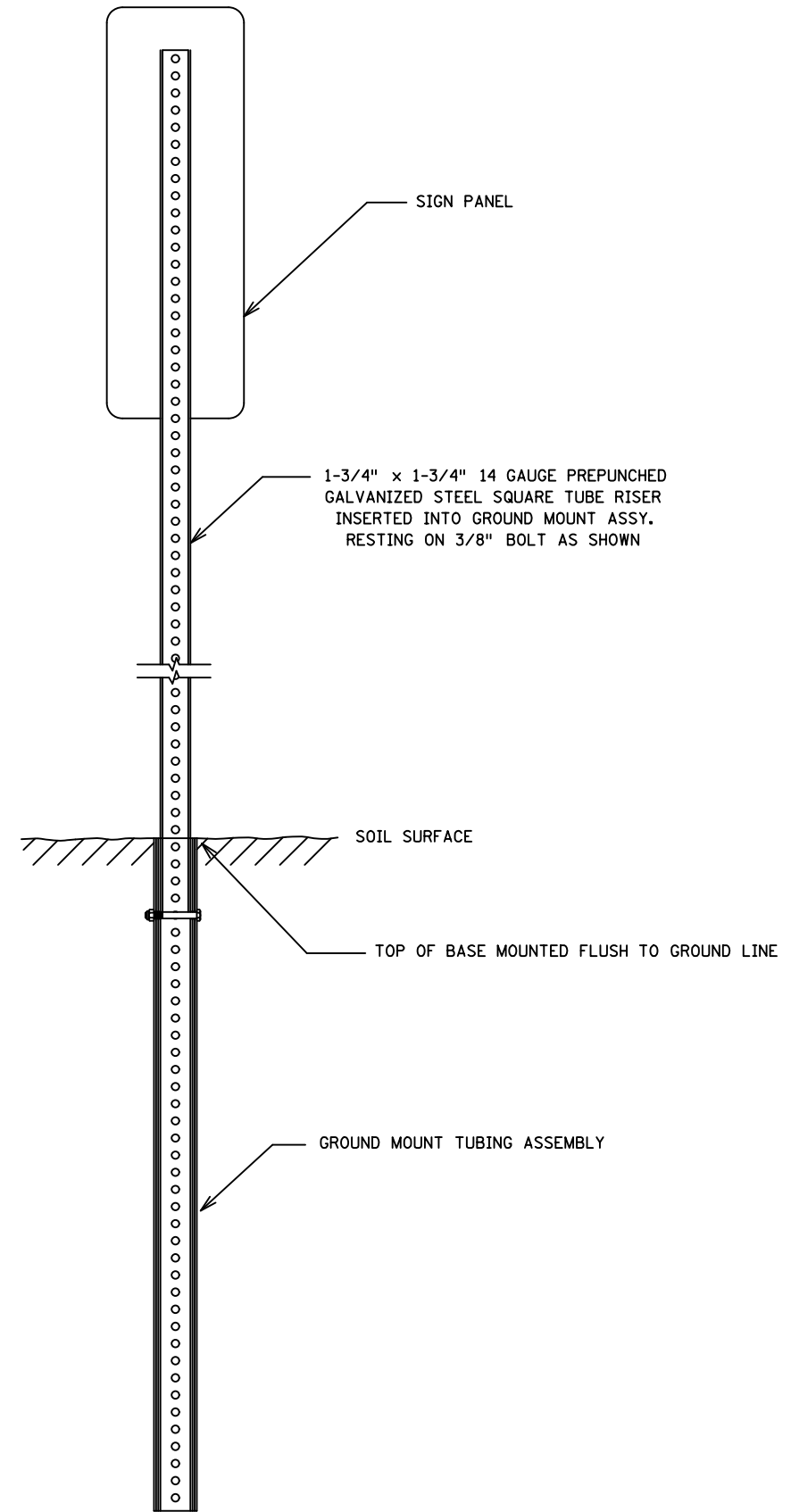
PLOTTED/REVISED: 25-SEP-2019

PLOT NAME: 5-297.721
PATH & FILENAME: Projects\DM_R05\013\1901\176\Signing\TST\Details\5-297.721.dgn

PLOT NAME: 5-297.721



GROUND MOUNT TUBING ASSEMBLY



**SQUARE TUBE
THREE WALL BASE**

CERTIFIED BY *Steve McQueen*
LICENSED PROFESSIONAL ENGINEER

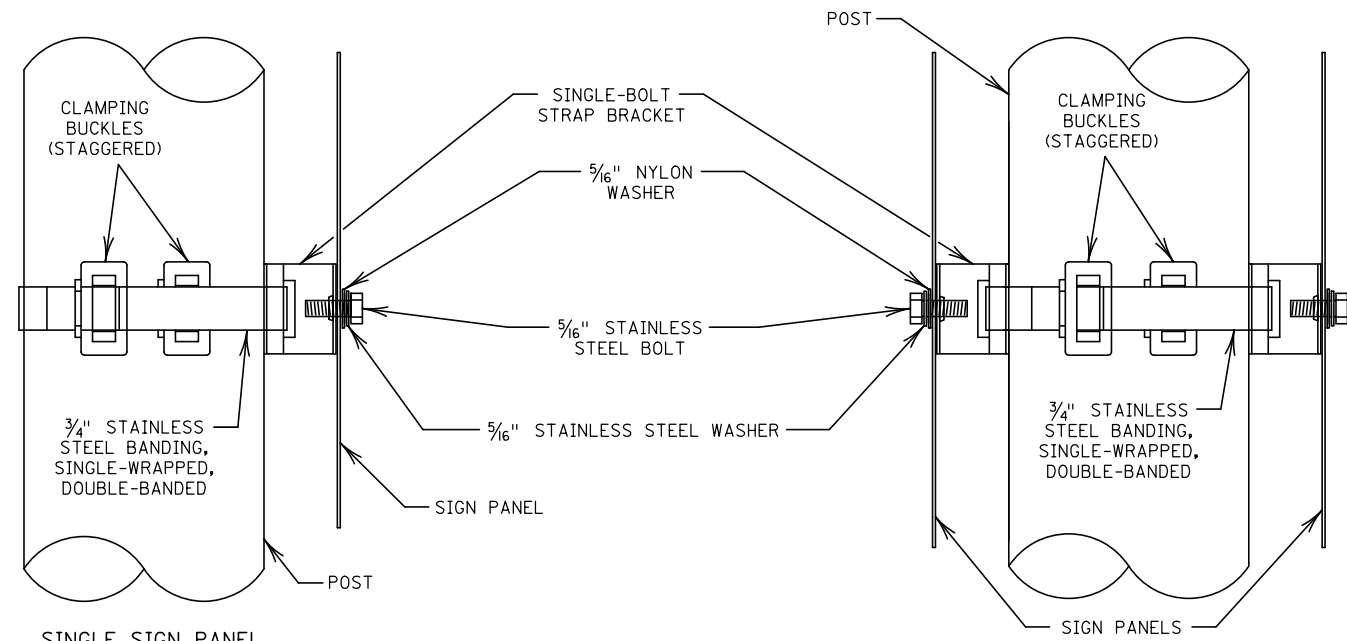
LIC. NO. 19579 DATE 9/25/2019

STATE PROJ. NO. 1901-176 (TH 13)

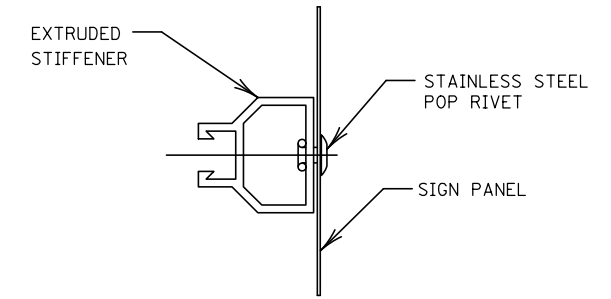
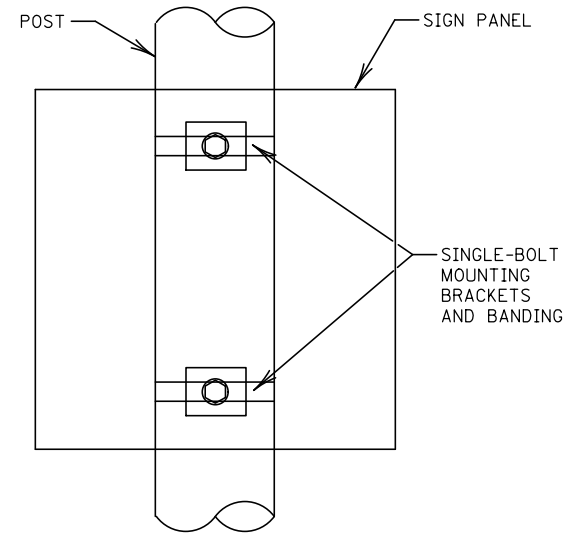
SHEET NO. 103 OF 106 SHEETS

PLOTTED/REVISED: 25-SEP-2019

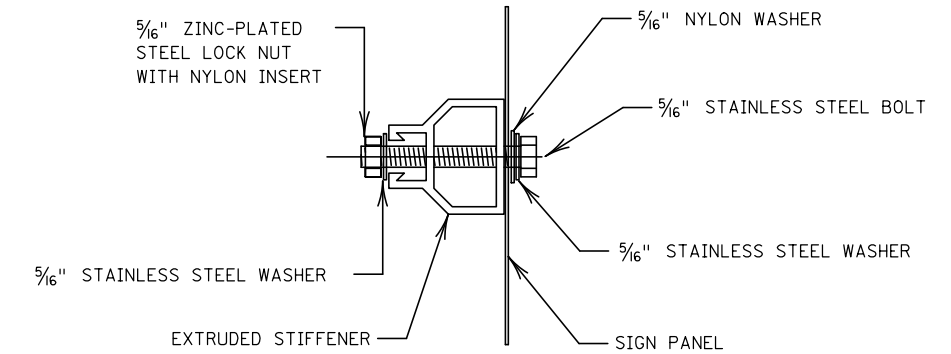
PLOT NAME: 5-297.730
 PATH & FILENAME: Projects\DM.ROS\013\1901\176\Signing\01ST\Details\5-297.730.dgn



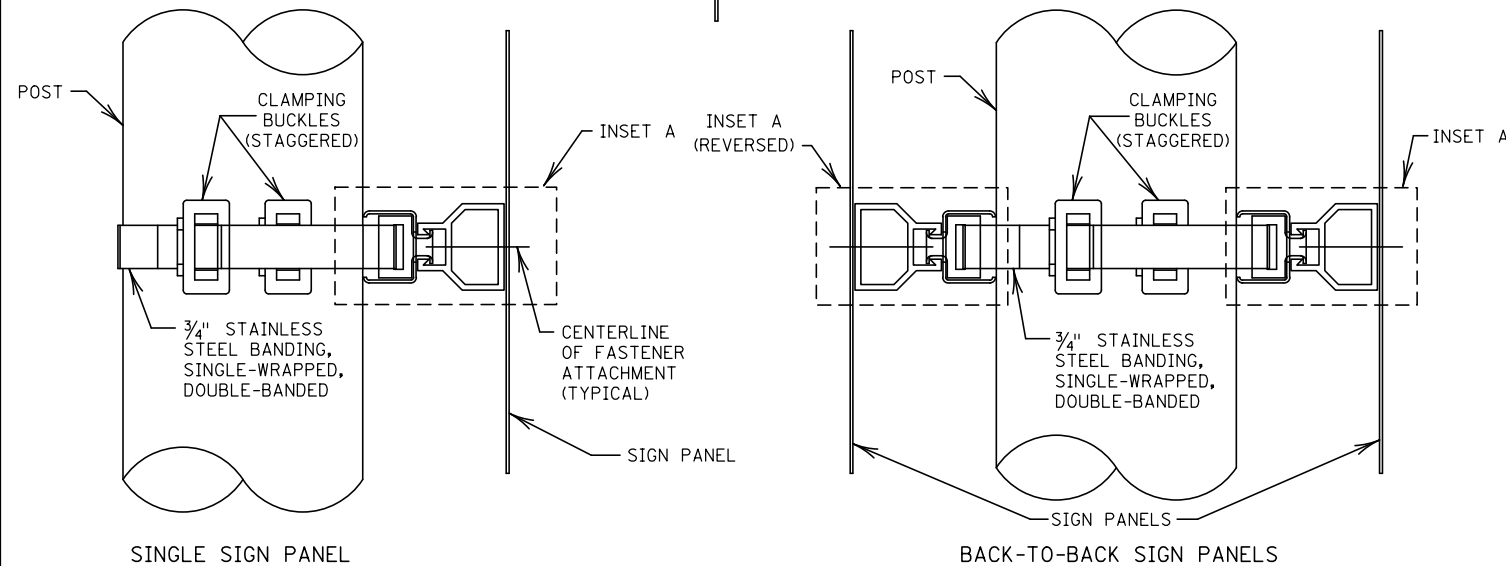
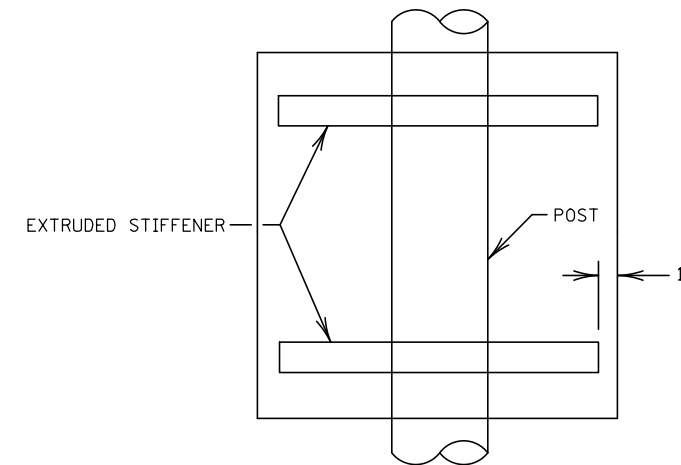
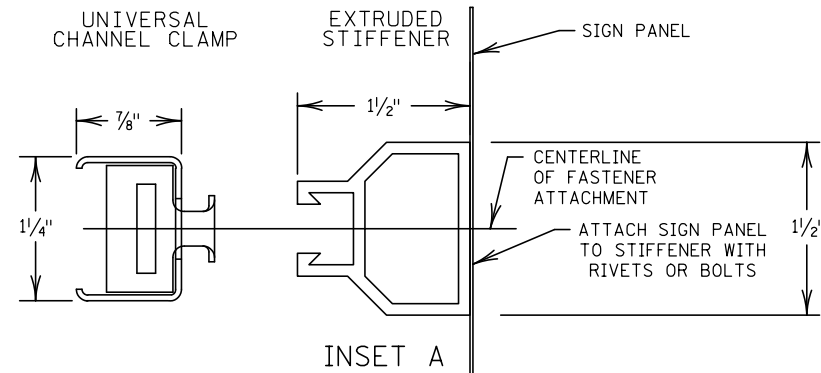
NON-STIFFENER MOUNTING DETAILS
 FOR SIGN PANELS UP TO 24" WIDE AND
 OVERHEAD SIGN IDENTIFICATION PLATES



ATTACH 3/16" RIVETS AT 6" INTERVALS.
 ATTACH END RIVETS 3" FROM SIGN EDGE.
 USE 1/4" RIVETS FOR THE END RIVETS.
RIVET ATTACHMENT



ATTACH AT STANDARD PUNCH CODE LOCATIONS
BOLT ATTACHMENT



STIFFENER MOUNTING DETAILS
 FOR SIGN PANELS 30" WIDE AND LARGER

		PANEL WIDTH				
		2'	3'	4'	5'	6'
PANEL HEIGHT	2'	2	2	2	2	3
	3'	2	2	2	2	3
	4'	2	2	2	2	3
	5'	3	3	3	3	3
	6'	3	3	3	4	4
7'	3	3	3	4	4	

PROVIDE VERTICAL SPACING OF NO MORE THAN 36 INCHES BETWEEN STIFFENERS.

PROVIDE A VERTICAL DISTANCE OF NO MORE THAN 12 INCHES FROM PANEL EDGE TO STIFFENER.

PROVIDE A HORIZONTAL DISTANCE OF NO MORE THAN 1 INCH FROM PANEL EDGE TO STIFFENER.

NOTES:

SPACE STIFFENERS IN ACCORDANCE WITH THE PUNCH CODES SHOWN IN THE MHDOT STANDARD SIGNS AND MARKINGS MANUAL.

ATTACH STIFFENERS TO SIGN PANELS USING FASTENERS. PLACE STIFFENERS AT THE VERTICAL LOCATIONS OF THE MOUNTING HOLES FOR EACH SIGN.

TENSION THE BANDING IN ACCORDANCE WITH THE MANUFACTURER'S INSTALLATION REQUIREMENTS.

FURNISH AND INSTALL HARDWARE COMPATIBLE WITH STIFFENER MOUNTING SYSTEMS.

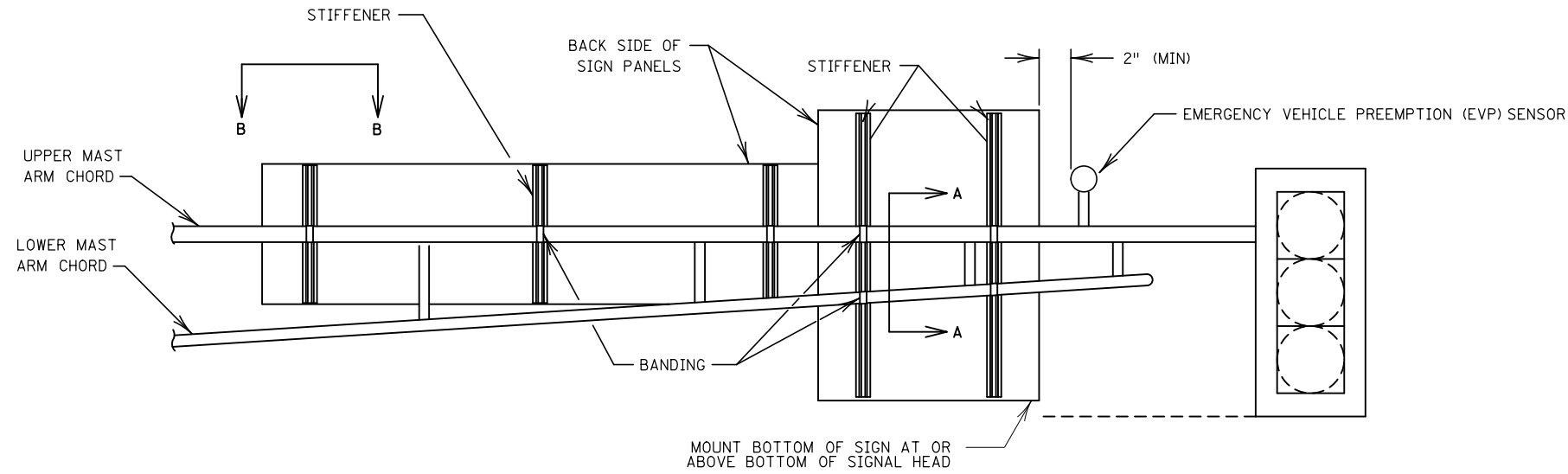
FURNISH TWO TYPE 201 STAINLESS STEEL 3/4 INCH WIDE BY 1/32 INCH THICK STRAPS, EACH WITH CLAMPING BUCKLES AND INSTALL SEPARATELY WITH A SINGLE WRAP AROUND THE MAST ARM CHORD. PLACE THE SECOND BANDING STRAP OVER THE FIRST STRAP AND STAGGER THE CLAMPING BUCKLES SO THE BUCKLES ARE NOT DIRECTLY OVER ONE ANOTHER.

DO NOT MOUNT SIGNS ON BREAKAWAY TRAFFIC SIGNALS AND LUMINAIRE SUPPORTS.

SIGN MOUNTING SYSTEMS FOR ROUND SUPPORTS

PLOTTED/REVISED: 25-SEP-2019

PLOT NAME: 5-297.731
 PATH & FILENAME: Projects\DM-ROS\013\1901\176\Signing\015T\Details\5-297.731.dgn



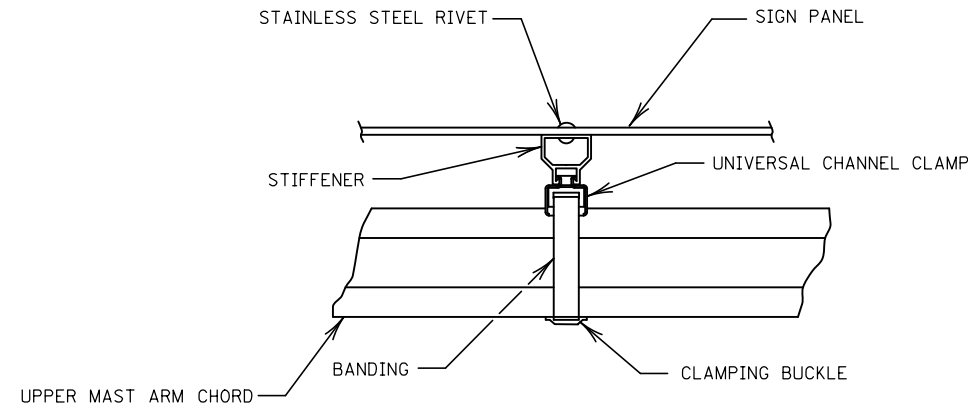
MAST ARM SIGN MOUNTING

		NUMBER OF EXTRUDED STIFFENERS REQUIRED													
		PANEL WIDTH													
PANEL HEIGHT	2'	2	2	2	3	3	3	4	4	4	5	5	5	5	
	3'	2	2	2	3	3	3	4	4	5	5	5	5	5	
	4'	2	2	2	3	3	3	4	4	5	5	5	5	6	
	5'	2	2	2	3	4	4	5	5	5	5	5	5	6	
	6'			2	3	4	4	5	5	5	5	5	5	6	
7'				4	4	5	5	5	5	5	5	5	6		

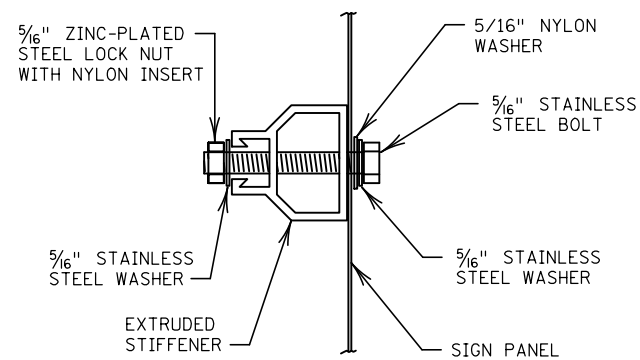
NOTE: WHERE SIGN PANEL DIMENSIONS FALL BETWEEN 1' INCREMENTS, USE NEXT HIGHER WIDTH AND/OR HEIGHT DIMENSION.

NOTES:

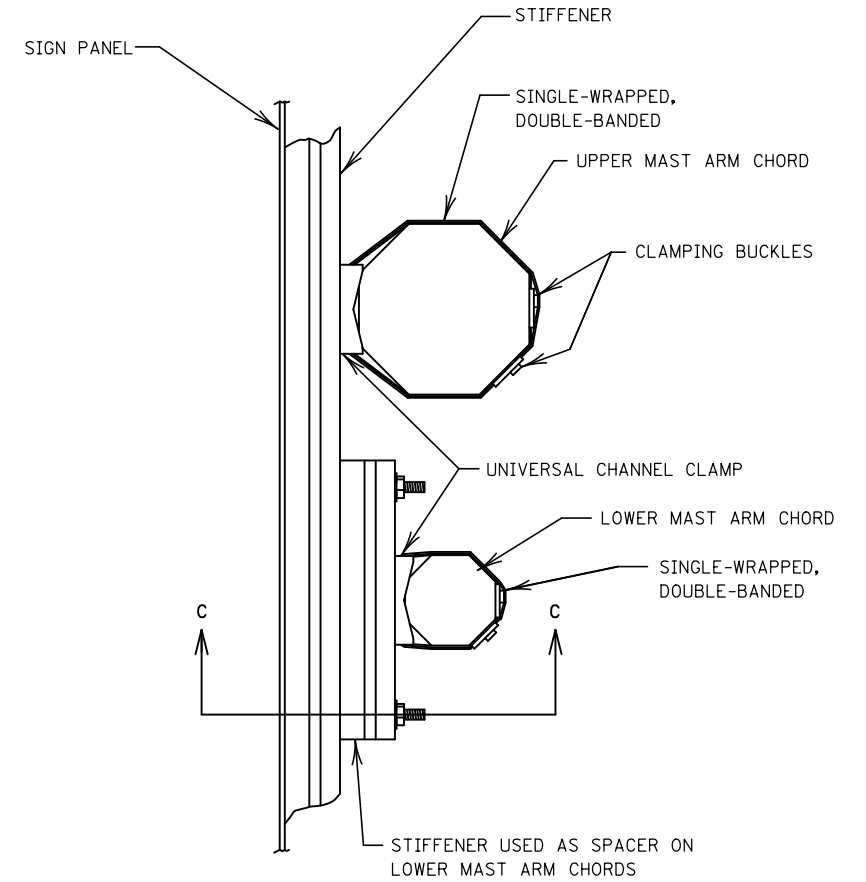
- FURNISH AND INSTALL AT LEAST ONE SPACER FOR EACH SIGN PANEL WHEN PANELS ARE ATTACHED TO THE LOWER MAST ARM CHORD.
- AFFIX SIGNS TO UPPER AND LOWER MAST ARM CHORDS WHEN POSSIBLE.
- POSITION BOTTOM OF SIGN PANEL AT LEAST 17 FEET ABOVE ROADWAY.
- MOUNT SIGN PANELS PLUMB AND SHIM WITH REQUIRED SPACERS AS SHOWN.
- PROVIDE SPACING BETWEEN STIFFENERS OF NO MORE THAN 36 INCHES.
- PROVIDE A HORIZONTAL DISTANCE OF NO MORE THAN 12 INCHES FROM PANEL EDGE TO STIFFENER.
- PROVIDE A VERTICAL DISTANCE OF NO MORE THAN 1 INCH FROM PANEL EDGE TO STIFFENER.
- FURNISH AND INSTALL 1/4" STAINLESS STEEL RIVETS 3 INCHES FROM THE PANEL EDGE TO ATTACH THE STIFFENERS TO THE SIGN PANELS. FURNISH AND INSTALL 3/16 INCH STAINLESS STEEL RIVETS AT 6 INCHES ON CENTER TO ATTACH THE REMAINDER OF THE STIFFENER TO THE SIGN PANEL.
- FURNISH TWO TYPE 201 STAINLESS STEEL 3/4 INCH WIDE BY 1/32 INCH THICK STRAPS, EACH WITH CLAMPING BUCKLES AND INSTALL SEPARATELY WITH A SINGLE WRAP AROUND THE MAST ARM CHORD. PLACE THE SECOND BANDING STRAP OVER THE FIRST STRAP AND STAGGER THE CLAMPING BUCKLES SO THE THE BUCKLES ARE NOT DIRECTLY OVER ONE ANOTHER.



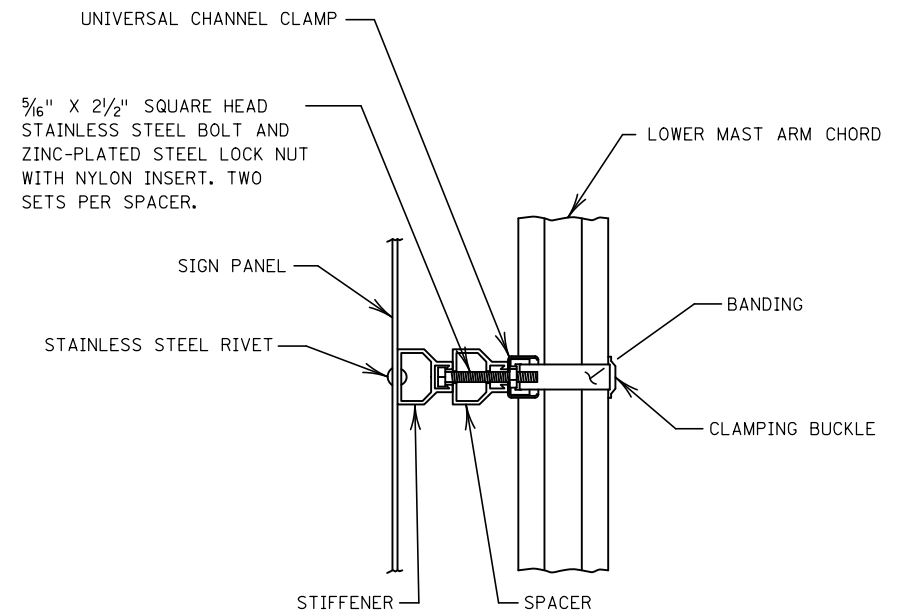
VIEW B-B



BOLT ATTACHMENT
 ATTACH AT STANDARD PUNCH CODE LOCATIONS



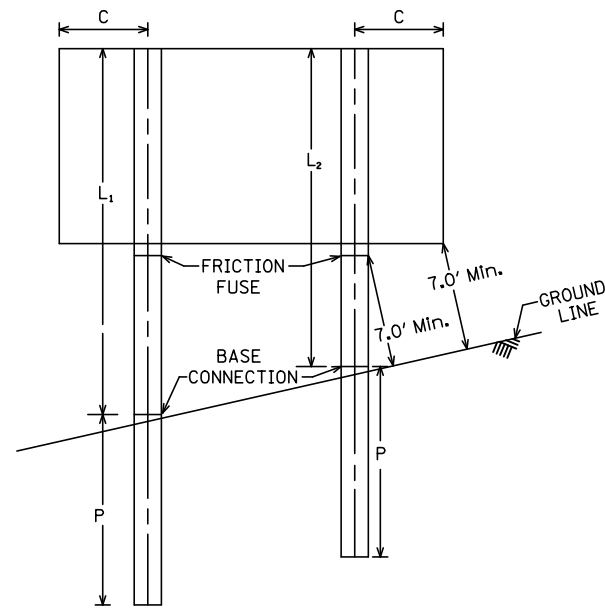
VIEW A-A



VIEW C-C

STRUCTURAL DETAILS FOR SIGNAL
 MAST ARM MOUNTED SIGNS

PLOTTED/REVISED: 25-SEP-2019



TYPICAL

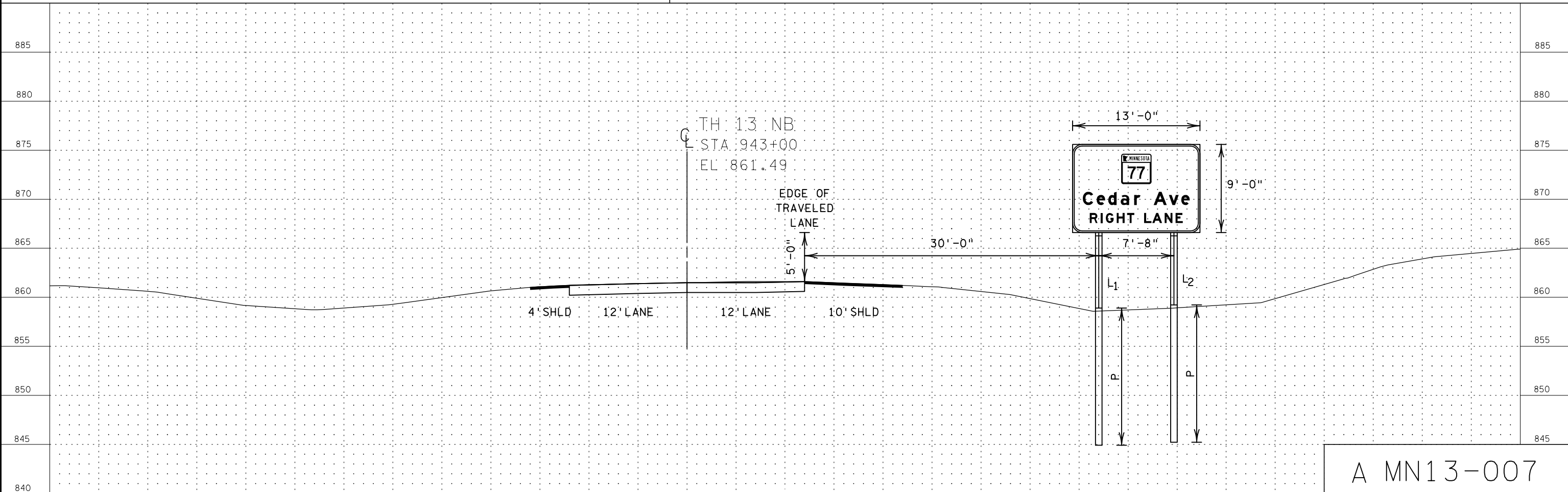
NOTE:
 "C" DIMENSION IS EQUAL TO PANEL WIDTH MINUS POST SPACING ALL DIVIDED BY TWO.

SIGN A MN13-007

TH 13 NB
 STA 943+00

POST TYPE	W6X20
POST LENGTH L ₁	17.0 FT
POST LENGTH L ₂	16.5 FT
PILE FOOTING P	14.0 FT
STRUCT STEEL-POSTS FOR TYPE A SIGNS	1444 POUND

IPLOT NAME: OTE_1901176_xs
PATH & FILENAME: Projects\DM_ROM\013\1901176\Signing\OT\ST\OTE_1901176_xs.dgn



A MN13-007