

MINNESOTA DEPARTMENT OF TRANSPORTATION

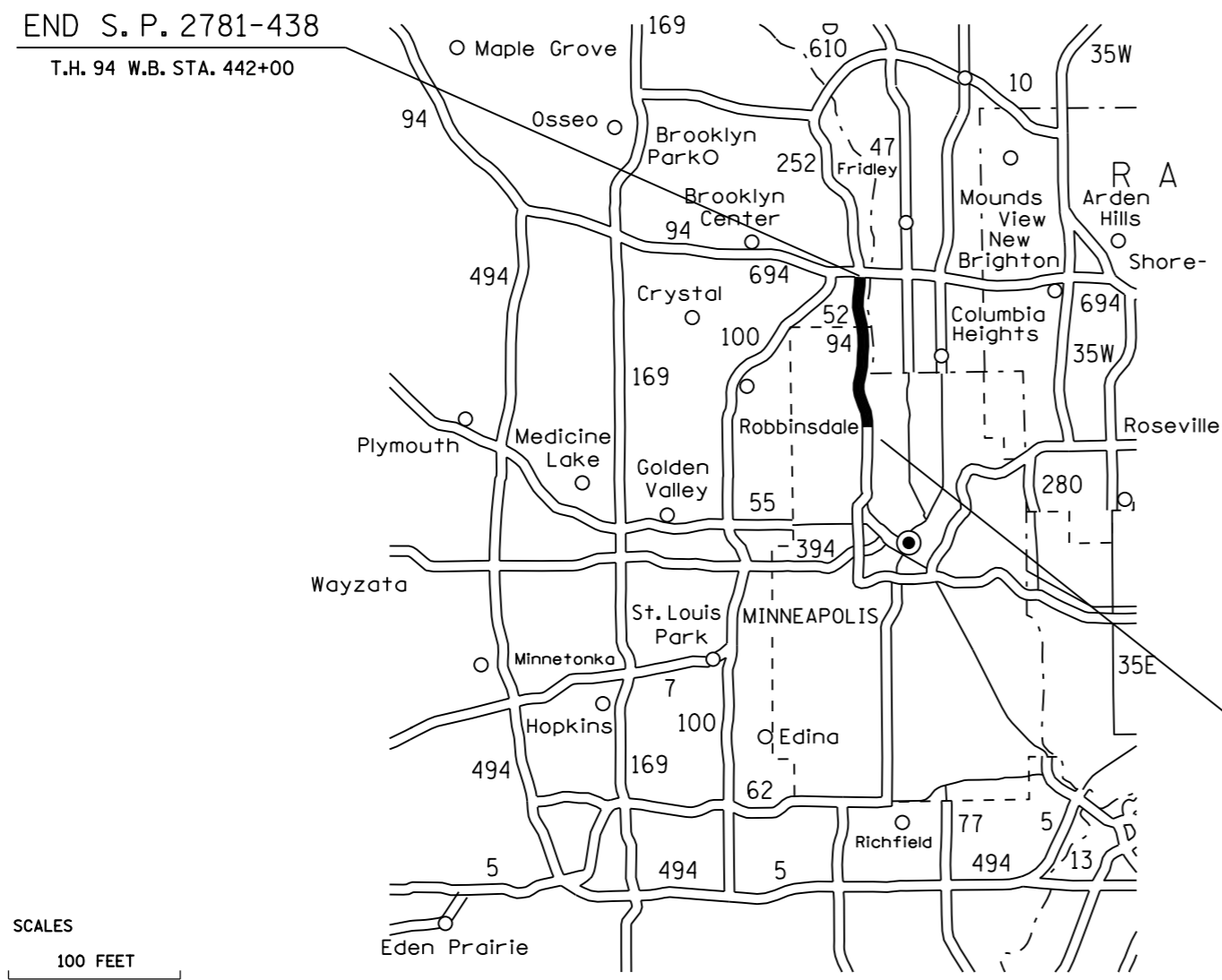
CONSTRUCTION PLAN FOR SIGN REPLACEMENT

LOCATED ON T. H. 94 FROM 2300' S OF DOWLING AVE. TO T. H. 252

STATE PROJ. NO. 2781-438
 GROSS LENGTH 16932 FEET 3.207 MILES
 BRIDGES-LENGTH _____ FEET _____ MILES
 EXCEPTIONS-LENGTH _____ FEET _____ MILES
 NET LENGTH 16932 FEET 3.207 MILES
 REF. POINT 228+00.184 TO REF. POINT 224+00.977

STATE PROJ. NO. _____
 GROSS LENGTH _____ FEET _____ MILES
 BRIDGES-LENGTH _____ FEET _____ MILES
 EXCEPTIONS-LENGTH _____ FEET _____ MILES
 NET LENGTH _____ FEET _____ MILES
 REF. POINT _____ TO REF. POINT _____

LENGTH AND DESCRIPTION IS BASED ON T.H. 94 W.B.



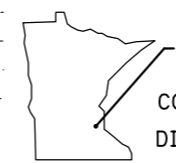
**WARNING!!
 PETROLEUM
 PRODUCTS
 PIPELINE**

BEG. S. P. 2781-438
 T.H. 94 W.B. STA. 255+00

PLAN 100 FEET
 INDEX MAP 4 MILES

DESIGN DESIGNATION

Design ESALS _____ = _____	ADT (Current Year) _____ = _____	Design Speed _____ MPH
ADT (Future Year) _____ = _____	Based on _____ Sight Distance	
DH (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	



PROJECT LOCATION
 COUNTY : HENNEPIN
 DISTRICT : METRO

FOR PLANS AND UTILITIES SYMBOLS SEE TECHNICAL MANUAL

STATE PROJ. NO.	CHARGE IDENTIFIER
<u>2781-438</u>	_____
_____	_____
_____	_____

GOVERNING SPECIFICATIONS

THE 2016 EDITION OF THE MINNESOTA DEPARTMENT OF TRANSPORTATION
 "STANDARD SPECIFICATIONS FOR CONSTRUCTION" SHALL GOVERN.

INDEX

SHEET NO.	DESCRIPTION
1	TITLE SHEET
2	ESTIMATED QUANTITIES
3-12	TABULATIONS
13	UTILITIES
	GUARD RAIL SHEETS (IF NEEDED)
14-26	ROADWAY LAYOUTS
27-34	SIGNING PANEL LAYOUTS
35-47A, 48-54	DETAILS
55	CROSS SECTION

THIS PLAN CONTAINS 56 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: M. HOWARD LICENSE # _____
 DATE: 4/1/2013 SIGNATURE: _____
 DESIGN SQUAD L. FINE, C. HOWARD

RECOMMENDED FOR APPROVAL _____	DISTRICT TRANSPORTATION ENGINEER	20
RECOMMENDED FOR APPROVAL _____	DISTRICT TRAFFIC ENGINEER	20
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: _____

PLOTTED/REVISED: 3/8/2016

DISTRICT #: METRO
 I/PLOT NAME: URBAN FREEWAY PLAN TYPICALS2
 PATH & FILENAME: IP_PWP-d1721848URBAN FREEWAY PLAN TYPICALS.dgn

STATEMENT OF ESTIMATED QUANTITIES					
TAB	SHEET NO	ITEM NO	ITEM	UNIT	TOTAL ESTIMATED QUANTITIES
P	10	2013.603	SAFETY CABLE	LIN FT	166
N	10	2104.501	REMOVE SIGN WALKWAY	LIN FT	340
		2104.509	REMOVE DELINEATOR	EACH	28
		2104.509	REMOVE MARKER	EACH	8
		2104.509	REMOVE SIGN TYPE C	EACH	17
B	4	2104.509	REMOVE SIGN TYPE D	EACH	5
E	7	2104.509	REMOVE SIGN TYPE EO	EACH	7
U	11	2104.509	REMOVE SIGN TYPE OH (BRIDGE MOUNTED)	EACH	1
O	10	2104.509	REMOVE SIGN LIGHTING SYSTEM	EACH	6
D	6	2104.509	REMOVE SIGN PANEL TYPE D	EACH	10
J	9	2104.509	REMOVE SIGN PANEL TYPE OH	EACH	4
M	12	2104.523	SALVAGE SIGN TYPE OH	EACH	1
L	12	2564.511	CONCRETE FOOTINGS (TYPE OH SHAFT)	CU YD	6.9
L	12	2564.522	STRUCT STEEL-POSTS FOR OH SIGNS (B)	(P) POUND	781
V	11	2564.522	STR STEEL-TRUSSES FOR OH SIGNS BR MTD	(P) POUND	1190
K,L	9,12	2564.522	STR STEEL-PANEL MT PST FOR OH SIGNS (B)	(P) POUND	2788
A	3	2564.531	SIGN PANELS TYPE C	SQ FT	375
C	5	2564.531	SIGN PANELS TYPE D	SQ FT	408
F	7	2564.531	SIGN PANELS TYPE EO	(P) SQ FT	270
R	11	2564.531	SIGN PANELS TYPE OVERLAY	SQ FT	236
H	9	2564.531	SIGN PANELS TYPE OH	(P) SQ FT	1073
G	8	2564.535	SIGN PANEL OVERLAY TYPE OH	(P) SQ FT	2226
M	12	2564.537	INSTALL SIGN TYPE OH	EACH	1
I	9	2564.539	OVERHEAD SIGN IDENTIFICATION PLATE	EACH	15
S	11	2564.550	DELINEATOR	EACH	35
Q	11	2564.551	REFERENCE LOCATION SIGN	EACH	8
T	11	2564.553	OBJECT MARKER X4-4	EACH	5

(P) DENOTES PLAN QUANTITY

SIGN PANELS TYPE C										A
SIGN NO	QTY	POSTS			MTG HT (1)	PANEL			CODE NO	PANEL LEGEND
		NO & TYPE	KNEE BRACES QTY	LENGTH FEET		SIZE		TOTAL AREA		
						INCH	SQ FT	SQ FT		
C-1	3	2-U	1	17	7	36 x 18	4.50	13.50	M3-2A	EAST
(3) C-2	1	1-ST	1	12	7	36 x 36	9.00	27.00	M1-1	INTERSTATE 94
C-3	1	2-U	1	18	7	48 x 48	16.00	16.00	W4-3R	ADDED LANE RIGHT
C-4	6	2-U	1	21	7	42 x 12	3.50	3.50	R4-X7P	BEGIN
(3) C-5	3	1-ST	1	12	7	42 x 48	14.00	14.00	R4-X7	SHOULDER AUTHORIZED BUSES ONLY
C-6	2	2-U	1	18	7	42 x 48	14.00	84.00	R4-X7	SHOULDER AUTHORIZED BUSES ONLY
(2) C-7	4	2-U	2	21	7	48 x 48	16.00	48.00	W4-1R	MERGE RIGHT
(4) C-8	1				7	24 x 12	2.00	4.00	M3-4A	WEST
						42 x 48	14.00	28.00	M1-1	94
						48 x 96	32.00	128.00	R2-4B	SPEED LIMIT 60 MINIMUM 40
						36 x 36	9.00	9.00	R3-7R	RIGHT LANE MUST TURN RIGHT
TOTAL								375.00		

SPECIFIC NOTES:

- (1) MOUNTING HEIGHT IS MINIMUM (WITH A +6 INCH TOLERANCE) SEE SHEET NO. 39 FOR TYPICAL MOUNTING.
- (2) FOR PUNCHING AND MOUNTING DETAILS, SEE SHEET NO. 40.
- (3) PLACE PER MANUFACTURER'S DETAIL USING A 10 GAUGE, 2-1/2" x 2-1/2" PRE-PUNCHED, GALVANIZED STEEL, SQUARE TUBE POST WITH A 10 GAUGE, 2-3/16" x 2-3/16" x 8', PRE-PUNCHED GALVANIZED STEEL INTERNAL SQUARE TUBE INSERT. THIS ASSEMBLY REQUIRES STRINGERS AND SLIP BASES.
- (4) BRIDGE RAIL MOUNTED SEE SHEET 43 FOR DETAILS.

GENERAL NOTES:

- 1. POST LENGTHS ARE APPROXIMATE AND INCLUDE EMBEDMENT, BUT DO NOT INCLUDE ADDITIONAL LENGTH REQUIRED FOR SPLICE.
- 2. SEE SHEETS 38 TO 40 FOR STRUCTURAL DETAILS.
- 3. SEE MNDOT STANDARD SIGNS AND MARKINGS MANUAL FOR PUNCHING CODE AND DETAILED DRAWINGS OF TYPE C SIGN PANELS.

TABULATIONS-TYPE C

REMOVE SIGN TYPE D					B
SIGN NO	QTY	POSTS		PANEL	PANEL LEGEND
		NO & TYPE	KNEE BRACES QTY	SIZE (1) INCH	
D-101	2	2-U	2	72 x 84	EXIT 228
D-104	2	2-U	2	72 x 84	EXIT 226
D-108	1	2-U	2	72 x 84	EXIT 225
TOTAL		5			

SPECIFIC NOTE:
 (1) SIZES ARE APPROXIMATE.

PLOTTED/REVISED: 3/8/2016

DISTRICT #: METRO
 IPLOT NAME: URBAN Freeway plan 2014_CHARTS4
 PATH & FILENAME: IP_PWP-d1721848\URBAN Freeway plan 2014_CHARTS.dgn

SIGN PANELS TYPE D										C
SIGN NO	QTY	POSTS				MTG HT (1)	PANEL			PANEL LEGEND
		NO & TYPE	KNEE BRACES QTY	LENGTH	SPACING		SIZE	AREA	TOTAL AREA	
				FEET	INCH				SQ FT	
(2)(4) D-1	2	2-ST		14	48	7	72 x 84	42.00	84.00	EXIT 228
(3) D-2	2						84 x 24	14.00	28.00	41ST AVE N
(3) D-3	2						96 x 24	16.00	32.00	42ND AVE N
(2)(4) D-4	2	2-ST		14	48	7	72 x 84	42.00	84.00	EXIT 226
(3) D-5	2						96 x 24	16.00	32.00	49TH AVE N
(3) D-6	2						96 x 24	16.00	32.00	53RD AVE N
(3) D-7	2						96 x 24	16.00	32.00	57TH AVE N
(2)(4) D-8	2	2-ST		14	48	7	72 x 84	42.00	84.00	EXIT 225
TOTAL									408.00	

SPECIFIC NOTES:

- (1) MOUNTING HEIGHT IS MINIMUM (WITH A +6 INCH TOLERANCE) SEE SHEET NO. 39 FOR TYPICAL MOUNTING.
- (2) SEE MNDOT STANDARD SIGNS AND MARKINGS MANUAL (E5-1B).
- (3) BRIDGE MOUNTED, SEE DETAIL SHEET 44.
- (4) 2-1/2" x 2-1/2" 10 GAUGE PRE-PUNCHED GALVANIZED STEEL SQUARE TUBE POST WITH A 2-3/16" x 2-3/16" 10 GAUGE PRE-PUNCHED GALVANIZED STEEL SQUARE TUBE INTERNAL POST. THIS ASSEMBLY REQUIRES STRINGERS AND SLIP BASES. PLACE PER MANUFACTURER'S DETAIL.

GENERAL NOTES:

- 1. POST LENGTHS ARE APPROXIMATE AND INCLUDE EMBEDMENT, BUT DO NOT INCLUDE ADDITIONAL LENGTH REQUIRED FOR SPLICE.
- 2. SEE SHEETS 38 TO 40 FOR STRUCTURAL DETAILS.
- 3. SEE MNDOT STANDARD SIGNS AND MARKINGS MANUAL FOR TYPE D STRINGER AND PANEL JOINT DETAILS.
- 4. SEE SHEET 27 FOR SIGN PANELS.

TABULATIONS-TYPE D

DRAWN BY: LBJ

CHECKED BY: RFK

CERTIFIED BY _____ LIC. NO. _____ DATE 3/8/2016

STATE PROJ. NO. 2781-438 (TH 94) SHEET NO. 5 OF 55 SHEETS

REMOVE SIGN PANEL TYPE D			D
SIGN NO	QTY	PANEL SIZE (1)	PANEL LEGEND
		INCHES	
D-102	2	84 x 24	41ST AVE N
D-103	2	96 x 24	42ND AVE N
D-105	2	84 x 24	49TH AVE N
D-106	2	84 x 24	53RD AVE N
D-107	2	84 x 24	57TH AVE N
TOTAL		10	

SPECIFIC NOTE:
 (1) SIZES ARE APPROXIMATE.

PLOTTED/REVISED: 3/8/2016

REMOVE SIGN TYPE EO					E
SIGN NO	QTY	LOCATION	POSTS NO & TYPE	PANEL SIZE (IN)	LEGEND
EO-101	2	OH I94-305, OH I94-311(R)	3-U	114 x 24	EXIT 228
EO-102	4	OH I94-306, OH I94-314 OH I94-317, OH I94-331	3-U	114 x 24	EXIT 226
EO-103	1	OH I94-311(L)	3-U	114 x 24	EXIT 229
TOTAL	7				

SIGN PANELS TYPE EO							F	
SIGN NO	QTY	LOCATION	PANEL SIZE			POSTS		LEGEND
			SIZE (IN)	AREA (SQ FT)	TOTAL AREA (SQ FT)	NO	SPACING	
EO-1	3	OH I94-305, OH I94-311(R), OH I94-585	108 x 30	22.50	67.50	3	36	EXIT 228
EO-2	4	OH I94-306, OH I94-314 OH 94-317, OH 331(R)	108 x 30	22.50	90.00	3	36	EXIT 226
EO-3	1	OH I94-311(L)	108 x 30	22.50	22.50	3	36	EXIT 229
EO-4	4	OH I94-310(R), OH I94-316(R) OH I94-318(R), OH I94-020(R)	108 x 30	22.50	90.00	3	36	EXIT 225
					TOTAL	270		

GENERAL NOTES:

1. SEE SHEET 45 FOR STRUCTURAL DETAIL.
2. POST SPACING MAY BE VARIED TO MISS MEMBERS OF OH SIGN STRUCTURES.
3. SEE SHEET 28 FOR SIGN PANELS.

DISTRICT #: METRO
 IPLOT NAME: URBAN Freeway plan 2014_CHARTS6
 PATH & FILENAME: IP_PWP-d1721848\URBAN Freeway plan 2014_CHARTS.dgn

PLOTTED/REVISED: 3/8/2016

SAW SIGN PANELS TYPE OH (1)				
SIGN NO	LOCATION	PANEL SIZE (IN)		LENGTH OF CUT (FT)
		EXISTING	MODIFIED	
OH I94-305	259+00 WB	252 x 84	216 x 84	7.0

SPECIFIC NOTE:
 (1) PAID FOR UNDER SIGN PANEL OVERLAY TYPE OH.

SIGN PANEL OVERLAY TYPE OH								G
SIGN NO	LOCATION	PANEL OVERLAY		PANEL OVERLAY		PANEL OVERLAY		TOTAL AREA (SQ FT)
		SIZE (IN)	AREA (SQ FT)	SIZE (IN)	AREA (SQ FT)	SIZE (IN)	AREA (SQ FT)	
OH I94-020(L)	430+95 WB	204 x 114	161.50					161.50
OH I94-305	259+00 WB	216 x 84	126.00					126.00
OH I94-306	BR.27812	180 x 90	112.50					112.50
OH I94-307	BR.27812	228 x 90	142.50					142.50
OH I94-310(L)	351+50 WB	204 x 132	187.00					187.00
OH I94-311	292+60 EB	168 x 132	154.00	156 x 108	117.00			271.00
OH I94-312	BR.27819	312 x 90	195.00					195.00
OH I94-314	336+90 WB	216 x 84	126.00					126.00
OH I94-316(L)	BR.27807	204 x 132	187.00					187.00
OH I94-317	393+70 EB	216 x 84	126.00					126.00
OH I94-318(L)	BR.27806	204 x 132	187.00					187.00
OH I94-319	BR.27806	282 x 84	164.50					164.50
OH I94-331	427+50 EB	180 x 96	120.00	180 x 96	120.00			240.00
TOTAL								2226.00

GENERAL NOTE:
 1. SEE SHEET 31 TO 34 FOR SIGN PANEL OVERLAYS.

DISTRICT #: METRO
 IPLOT NAME: URBAN Freeway plan 2014_CHARTS7
 PATH & FILENAME: IP_PWP-d1721848URBAN Freeway plan 2014_CHARTS.dgn

PLOTTED/REVISED: 3/8/2016

DISTRICT #: METRO
 IPLOT NAME: URBAN Freeway plan 2014_CHARTS8
 PATH & FILENAME: IP_PWP-d1721848URBAN Freeway plan 2014_CHARTS8.dgn

SIGN PANELS TYPE OH								H
SIGN NO	LOCATION	PANEL		PANEL		PANEL		TOTAL AREA (SQ FT)
		SIZE (IN)	AREA (SQ FT)	SIZE (IN)	AREA (SQ FT)	SIZE (IN)	AREA (SQ FT)	
OH I94-020(R)	430+95 WB	240 x 114	190.00					190.00
OH I94-310(R)	351+50 WB	252 x 138	241.50					241.50
OH I94-316(R)	BR.27807	252 x 114	199.50					199.50
OH I94-318(R)	BR.27806	252 x 114	199.50					199.50
OH I94-629	317+75 EB	258 x 84	150.50					150.50
OH I94-585	BR.27808	138 x 96	92.00					92.00
TOTAL								1073.00

GENERAL NOTE:
 1. SEE SHEET 29-30 FOR SIGN PANELS.

OH SIGN IDENTIFICATION PLATE			I
SIGN NO	QTY	LOCATION	IDENTIFICATION PLATE NO
OH I94-020	1	430+95 WB	94-020
OH I94-305	1	259+00 WB	94-305
OH I94-306	1	BR.27812	94-306
OH I94-307	1	BR.27812	94-307
OH I94-310	1	351+50 WB	94-310
OH I94-311	1	292+60 EB	94-311
OH I94-312	1	BR.27819	94-312
OH I94-314	1	336+90 WB	94-314
OH I94-316	1	BR.27807	94-316
OH I94-317	1	393+70 EB	94-317
OH I94-318	1	BR.27806	94-318
OH I94-319	1	BR.27806	94-319
OH I94-331	1	427+50 EB	94-331
OH I94-585	1	BR.27808	94-630
OH I94-629	1	317+75 EB	94-629
TOTAL		15	

GENERAL NOTES:
 1. SEE MNDOT STANDARD SIGNS AND MARKINGS MANUAL FOR OH SIGN IDENTIFICATION PLATE (X5-1).
 2. SEE SHEET SEE SHEET 42 FOR MOUNTING DETAILS.

REMOVE SIGN PANEL TYPE OH					J
SIGN NO	LOCATION	PANEL SIZE (IN)	PANEL SIZE (IN)	PANEL SIZE (IN)	TOTAL PANELS
OH I94-020(R)	430+95 WB	204 x 108			1
OH I94-310(R)	351+50 WB	204 x 108			1
OH I94-316(R)	BR.27807	204 x 108			1
OH I94-318(R)	BR.27806	204 x 108			1
TOTAL					4

PANEL MOUNTING POSTS						K
SIGN NO	TRUSS DEPTH (IN)	CHORD ANGLES (IN)	NO. OF POSTS	LENGTH APPROX (IN)	SIZE	WEIGHT (LBS)
(1) OH I94-020(R)	96	6 x 3 1/2 x 3/8	4	129	S4 x 7.7	404
(2) OH I94-310(R)	72	6 x 6 x 3/4	4	142	W6 x 12	640
OH I94-316(R)			4	126	W6 x 12	576
OH I94-318(R)			4	126	W6 x 12	576
(2) OH I94-629	72	6 x 6 x 1/2	4	88	S4 x 7.7	296
TOTAL						2492

SPECIFIC NOTES:
 (1) SEE SHEET 47A FOR ATTACHMENT DETAILS.
 (2) SEE SHEET 53 FOR ATTACHMENT DETAILS.

PLOTTED/REVISED: 3/8/2016

REMOVE SIGN WALKWAY (1)(2)			N
OH SIGN NO	LOCATION	LENGTH (FT)	NUMBER OF FIXTURES
OH I94-020	430+95 WB	85	6
OH I94-305	259+00 WB	21	3
OH I94-310	351+50 WB	48	6
OH I94-311	292+60 EB	27	4
OH I94-314	336+90 WB	21	3
OH I94-317	393+70 EB	21	3
OH I94-331	427+50 EB	95	4
OH I94-352	318+00 EB	21.5	3
TOTAL			339.5

SAFETY CABLE			P
SIGN NO	LOCATION	DESIGN	LENGTH FEET
OH I94-306	BR.27812	BR. MTD.	15
OH I94-307	BR.27812	BR. MTD.	19
OH I94-312	BR.27819	BR. MTD.	26
OH I94-316	BR.27807	BR. MTD.	41
OH I94-318	BR.27806	BR. MTD.	41
OH I94-319	BR.27806	BR. MTD.	23.5
TOTAL			165.5

SPECIFIC NOTES:

- (1) INCLUDES SIGN LIGHTING SYSTEM.
- (2) REMOVE FEED POINT IDENTIFICATION PLATE NUMBER.

REMOVE SIGN LIGHTING SYSTEM			0
SIGN NO	LOCATION	TYPE	NUMBER OF FIXTURES
OH I94-306	BR.27812	BRIDGE MOUNTED	2
OH I94-307	BR.27812	BRIDGE MOUNTED	3
OH I94-312	BR.27819	BRIDGE MOUNTED	4
OH I94-316	BR.27807	BRIDGE MOUNTED	6
OH I94-318	BR.27806	BRIDGE MOUNTED	6
OH I94-319	BR.27806	BRIDGE MOUNTED	3

DISTRICT #: METRO
 IPLOT NAME: URBAN Freeway plan 2014_CHARTS10
 PATH & FILENAME: IP_PWP-d1721848\URBAN Freeway plan 2014_CHARTS.dgn

REFERENCE LOCATION SIGN (1)				Q
CODE NO	QTY	SIZE		LEGEND
		INCH		
D10-3	2	12	48	MILE 225
D10-3	2	12	48	MILE 226
D10-3	2	12	48	MILE 227
D10-3	2	12	48	MILE 228
TOTAL				8

SPECIFIC NOTES:

(1) PLACE ON 3 LB/FT POST (MNDOT 3401).

GENERAL NOTE:

1. SEE MNDOT STANDARD SIGNS AND MARKINGS MANUAL FOR REFERENCE LOCATION SIGN.

DELINEATOR			S
CODE NO	QUANTITY		TOTAL
	COLOR		
	WHITE	YELLOW	
(1) X4-6	15	20	35

SPECIFIC NOTES:

(1) PLACE ON 3LB/FT POST (MNDOT 3401).

GENERAL NOTES:

1. FOR DELINEATOR PLACEMENT, SEE SHEET 37.
2. SEE MNDOT STANDARD SIGNS AND MARKINGS MANUAL FOR DELINEATOR DESIGN.

SIGN PANELS TYPE OVERLAY					R	
CODE NO	QTY	SIZE		AREA	TOTAL	LEGEND
		INCH		SQ FT	SQ FT	
M1-5B	5	45	36	11.25	56.25	MINNESOTA 252
M1-1	9	45	36	11.25	101.25	INTERSTATE 694
M1-1	5	36	36	9.00	45.00	INTERSTATE 94
(1)	1	96	24	16.00	16.00	55 MPH
M1-6A	1	36	36	9.00	9.00	COUNTY 81
M1-1	1	24	24	4.00	4.00	INTERSTATE 694
M1-5B	1	24	24	4.00	4.00	MINNESOTA 252
TOTAL				235.50		

SPECIFIC NOTE:

(1) SEE SHEET 35 FOR DETAILED DRAWING.

GENERAL NOTE:

1. SEE STANDARD SIGNS AND MARKINGS MANUAL FOR DETAILED DRAWINGS.

OBJECT MARKER			T
CODE NO	SIZE INCH	COLOR	QUANTITY EACH
(1) X4-4(C)	12 x 24	BLACK ON YELLOW	5

TOTAL QUANTITIES

CODE NO	QUANTITY EACH
X4-4	5

SPECIFIC NOTES:

(1) PLACE ON 3LB/FT POST (MNDOT 3401).

GENERAL NOTES:

1. FOR MARKER PLACEMENT, SEE SHEET NO. 37.
2. SEE MNDOT STANDARD SIGNS AND MARKINGS MANUAL FOR MARKER DESIGN.

REMOVE SIGN TYPE OH					U
OH SIGN NO.	LOCATION	TYPE	POST TYPE	SPAN	REMARKS
OH I94-315	BR 27808	BR MTD		11'-6"	SEE SPECIAL PROVISIONS

STRUCT. STEEL TRUSSES TYPE OH BR. MTD (1)(2)			V
OH SIGN NO	BRIDGE NO	POUNDS	
I94-585	27808	1190	
TOTAL		1190	

SPECIFIC NOTES:

(1) INCLUDES F. & I. OH SIGN IDENTIFICATION PLATE (X5-1).

(2) SEE SHEET 47 FOR DETAILS.

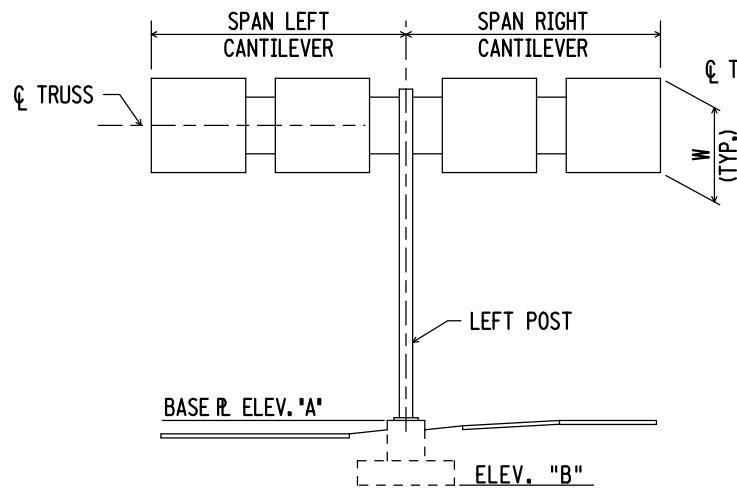
(3) QUANTITY SHOWN HERE IS FROM SAMPLE DETAIL FOR DEMONSTRATION PURPOSES. SEE NOTE ON DETAIL.

TABULATIONS			
DRAWN BY: LBJ	CHECKED BY: RFK	CERTIFIED BY _____ LIC. NO. _____ DATE 3/8/2016	STATE PROJ. NO. 2781-438 (TH 94) SHEET NO. 11 OF 55 SHEETS

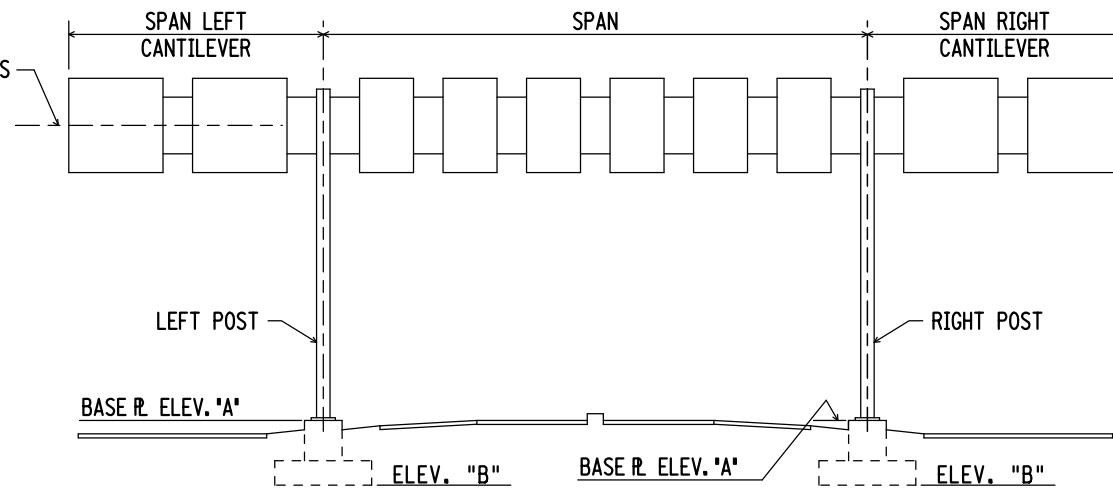
PLOTTED/REVISED: 3/8/2016

DISTRICT #: METRO
I/PLOT NAME: URBAN Freeway plan 2014_CHARTSII
PATH & FILENAME: IP_PWP-d1721848\URBAN Freeway plan 2014_CHARTS.dgn

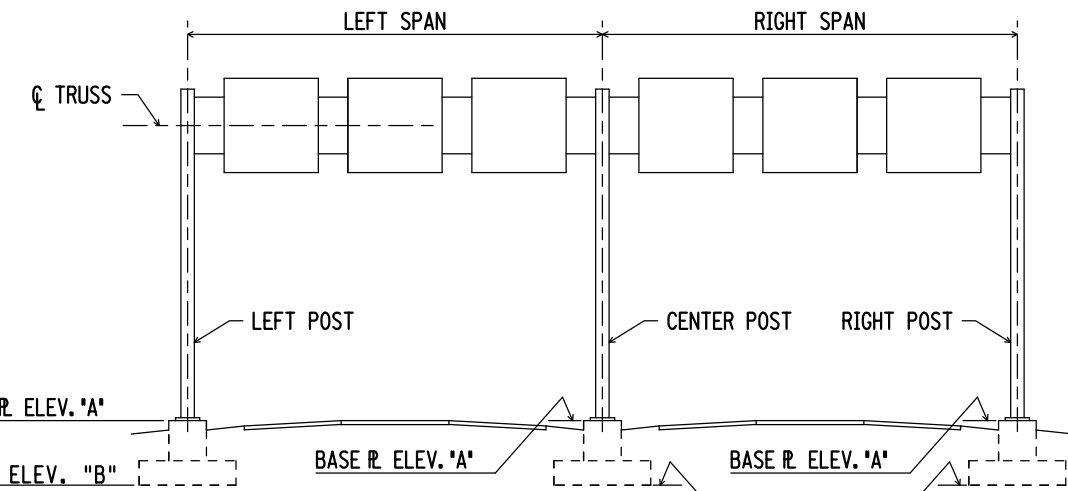
PLOTTED/REVISED: 3/8/2016



BRIDGE TYPE BC
BUTTERFLY AND CANTILEVER SPANS



BRIDGE TYPE S
SIMPLE SPAN WITH CANTILEVERS



BRIDGE TYPE C
CONTINUOUS SPANS

SALVAGE AND INSTALL OVERHEAD SIGN STRUCTURES

M

INPLACE SIGN NO	INPLACE STATION	NEW SIGN NO	NEW STATION	BRIDGE TYPE	TRUSS TYPE	SPAN LENGTHS				LOW STEEL ELEVATION (1)	LEFT POST			CENTER POST			RIGHT POST		
						LEFT CANT	RIGHT CANT	SPAN OR LEFT SPAN	RIGHT SPAN		ELEVATION (1)		TYPE	ELEVATION (1)		TYPE	ELEVATION (1)		TYPE
											A	B		A	B		A	B	
OH I94-352	318+00 EB	OH I94-629	317+75 EB	BC	A	32'-6"				917.99	900.57	(4)	4E						

SALVAGE AND INSTALL OVERHEAD SIGN STRUCTURE QUANTITIES (2)

L

SIGN NO		OH I94-629					TOTALS
STRUCT. STEEL POSTS (3)	LBS	(5) 781					781
STRUCT. STEEL TRUSSES	LBS						
STRUCT. STEEL WALKWAY SUPPORTS	LBS						
STRUCT. STEEL WALKWAY GRATING	LBS						
STRUCT. STEEL PANEL MTG. POSTS	LBS	296					296
CONCRETE FOOTINGS (SPREAD)	CU YD						
CONCRETE FOOTINGS (SHAFT)	CU YD	6.9					6.9

SPECIFIC NOTES:

- (1) CENTER LINE ELEVATION IS FIELD ELEVATION.
- (2) BASED ON TABULATED ELEVATIONS AND DIMENSIONS. REVISE IF NECESSARY USING QUANTITY TABLES ON ST-2.
- (3) INCLUDES F. & I. OH SIGN IDENTIFICATION PLATE (X5-1), SEE SHEET 42 FOR MOUNTING DETAIL.
- (4) DRILLED SHAFT FOOTING.
- (5) ANCHORAGE ASSEMBLY.

GENERAL NOTES:

1. THE SUBSCRIPTION E ON THE POST TYPE DENOTES THE POST WHICH HAS THE HAND HOLE AND PROVISIONS FOR GROUNDING, I.E. POST TYPE 3E.
2. TABULATED ELEVATIONS AND DIMENSIONS ARE APPROXIMATE ONLY. FABRICATION DEPENDENT ON THESE ELEVATIONS AND DIMENSIONS SHALL NOT BE STARTED UNTIL THE ENGINEER HAS MADE FINAL DETERMINATION OF THEM IN THE FIELD.
3. LEFT AND RIGHT DESIGNATIONS ARE SHOWN LOOKING IN DIRECTION OF TRAFFIC FLOW. WHEN TWO DIRECTIONS OF TRAFFIC ARE SPANNED THE DESIGNATIONS ARE SHOWN LOOKING UP STATIONING.
4. SEE SHEETS 48-54 FOR DETAILS.
5. SEE SHEET 55 FOR CROSS SECTION.

TABULATIONS-TYPE OH

DRAWN BY: LBJ

CHECKED BY: RFK

CERTIFIED BY _____

LICENSED PROFESSIONAL ENGINEER

LIC. NO. _____

DATE 3/8/2016

STATE PROJ. NO. 2781-438 (TH 94)

SHEET NO. 12

OF 55 SHEETS

DISTRICT #: METRO

PLOT NAME: URBAN Freeway plan 2014_CHARTS9

PATH & FILENAME: IP_PWP-d1721848\URBAN Freeway plan 2014_CHARTS.dgn

GENERAL NOTES:

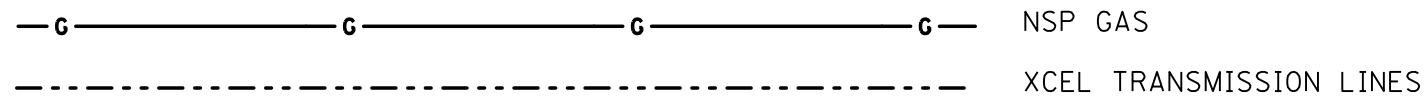
- IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO UTILIZE THE GOPHER ONE CALL EXCAVATION NOTICE SYSTEM , REQUIRED BY MINNESOTA STATUTE 216D, FOR ALL UTILITY LOCATIONS.
- NO UTILITIES WILL BE AFFECTED BY WORK ON THIS PROJECT.
- THE SUBSURFACE UTILITY INFORMATION IN THIS PLAN IS UTILITY QUALITY LEVEL D. 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."

UTILITIES

THE FOLLOWING LIST SHOWS THE UTILITY COMPANIES WITHIN THE PROJECT LIMITS

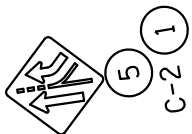
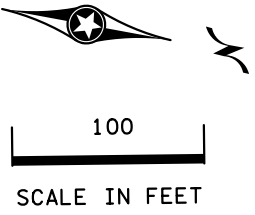
UTILITIES		
THE FOLLOWING LIST SHOWS THE UTILITY COMPANIES WITHIN THE PROJECT LIMITS		
1. ACCESS COMMUNICATIONS, INC.	13. METRO TRANSIT RAIL	25. MINNEAPOLIS PARK & RECREATION BOARD
2. ARVIG COMMUNICATIONS SYSTEMS	14. NUSTAR ENERGY, LP	26. NORTH CENTRAL UNIVERSITY
3. AT&T CORP.	15. CENTURYLINK	27. TDS METROCOM
4. AT&T LOCAL SCVS	16. MCI	28. TTM OPERATING CORP
5. AUGSBURG COLLEGE	17. WINDSTREAM COMMUNICATIONS	29. TW TELECOM, INC.
6. CITY OF BROOKLYN CENTER	18. MIDWEST NETWORKS DEVELOPMENT, LLC	30. UNIVERSITY OF MINNESOTA
7. CITY OF MINNEAPOLIS	19. METRO TRANSIT	31. US INTERNET CORP.
8. ROGERS COMMUNICATIONS	20. MINNEAPOLIS ENERGY CENTER	32. SPRINT COMMUNICATIONS COMPANY, L.P.
9. COMCAST CABLE COMMUNICATIONS, INC.	21. METROPOLITIAN COUNCIL, ENVIRONMENTAL SERVICE	33. LEVEL 3 COMMUNICATIONS, LLC
10. ENVENTIS TELECOM INC.	22. CENTERPOINT ENERGY, MINNESOTA GAS	34. XCEL ENERGY
11. FAIRVIEW HEALTH SERVICES	23. MINNESOTA COMMERCIAL RAILWAY	35. XO COMMUNICATIONS INC.
12. HENNEPIN COUNTY PUBLIC WORKS	24. MNDOT	36. ZAYO BANDWIDTH

THE FOLLOWING UTILITIES ARE SHOWN ON THE ROADWAY LAYOUTS.



UTILITIES

PLOTTED/REVISED: 3/8/2016



TH 94 EB

TH 94 WB

255

260

265

5

BEG. S. P. 2781-438

STA. 277+70 R. P. 227+00.895

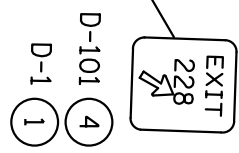
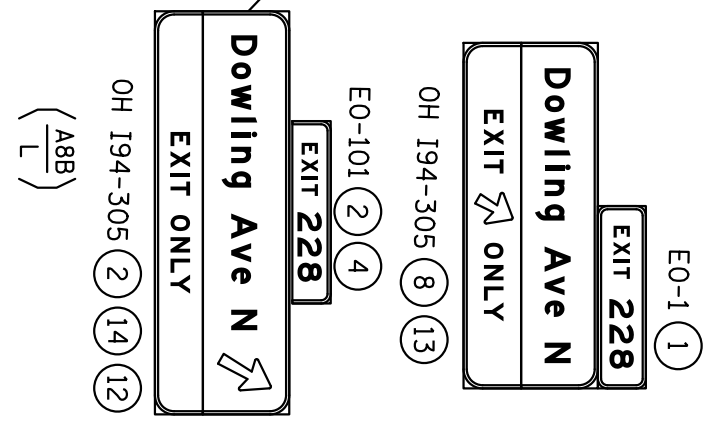
REMOVE 7 GUIDE DELINEATORS
AND 1 OBJECT MARKER
SEE SHEET 37 FOR DELINEATION
(PLAN A)

S.O.P. FOR OH 194-305
LIGHT AT STA. 262+25

SEE SHEET 36 FOR
SIGN PLACEMENT

NOTES:

- ① F. & I.
- ② INPLACE
- ④ REMOVE
- ⑤ REMOVE SIGN TYPE C
- ⑧ F. & I. SIGN PANEL OVERLAY(S)
- ⑫ SAW SIGN PANEL(S)
- ⑬ F. & I. OH SIGN IDENTIFICATION PLATE
- ⑭ REMOVE SIGN WALKWAY



ROADWAY LAYOUTS

DRAWN BY: LBJ

CHECKED BY: RFK

CERTIFIED BY _____

LIC. NO. _____

DATE 3/8/2016

STATE PROJ. NO. 2781-438 (TH 94)

SHEET NO. 14

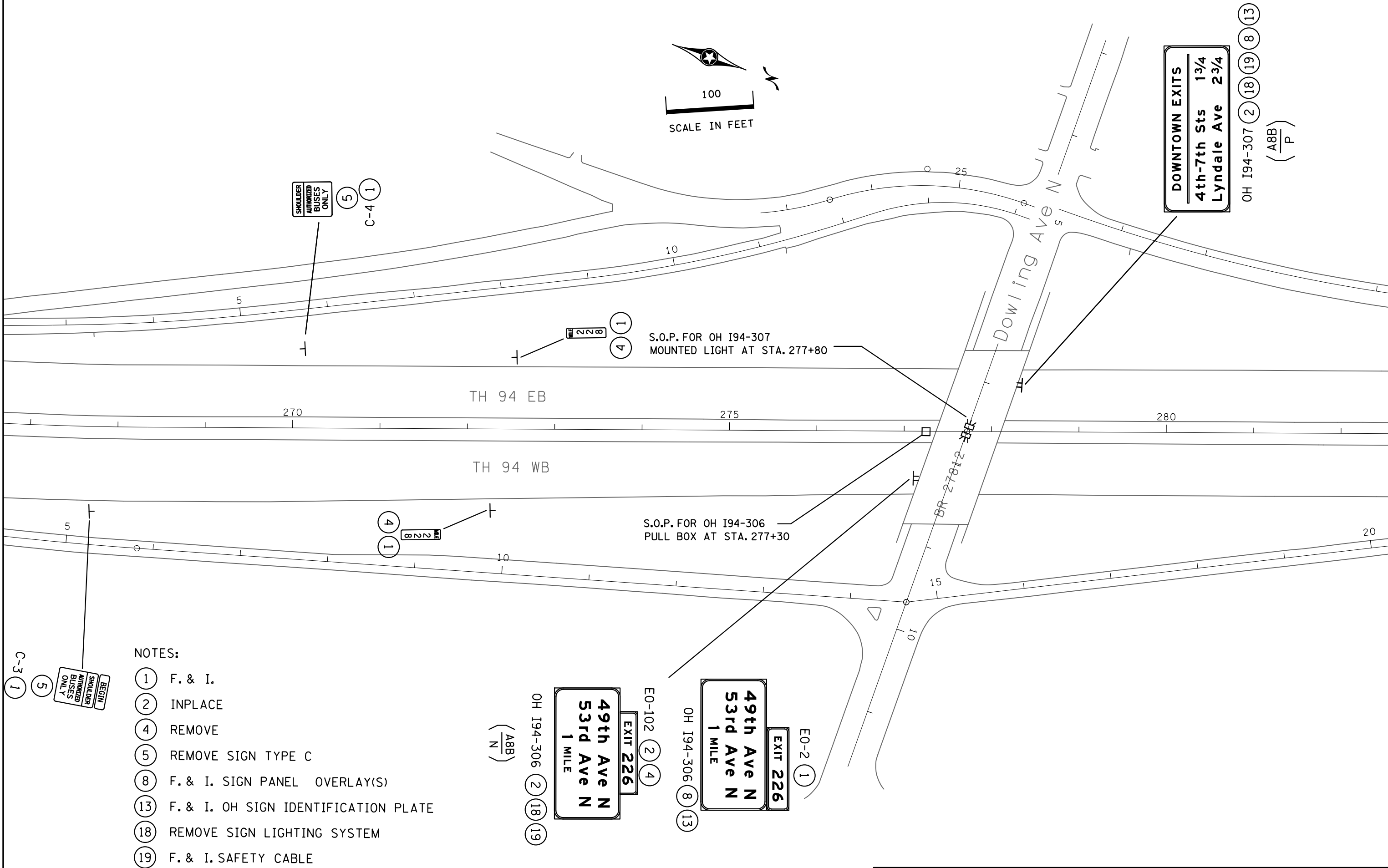
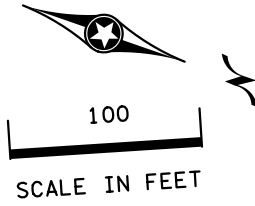
OF 55 SHEETS

LICENSED PROFESSIONAL ENGINEER

DISTRICT *: METRO
I/PLOT NAME: URBAN FREEWAY PLAN-2014_psl
PATH & FILENAME: IP_PWP-d1721848/URBAN FREEWAY PLAN-2014_psl.dgn

PLOTTED/REVISED: 3/8/2016

DISTRICT *: METRO
IPLOT NAME: URBAN FREEWAY PLAN-2014_psl2
PATH & FILENAME: IP_PWP-d1721848\URBAN FREEWAY PLAN-2014_psl.dgn



NOTES:

- ① F. & I.
- ② INPLACE
- ④ REMOVE
- ⑤ REMOVE SIGN TYPE C
- ⑧ F. & I. SIGN PANEL OVERLAY(S)
- ⑬ F. & I. OH SIGN IDENTIFICATION PLATE
- ⑱ REMOVE SIGN LIGHTING SYSTEM
- ⑲ F. & I. SAFETY CABLE

DOWNTOWN EXITS
 4th-7th Sts 13/4
 Lyndale Ave 23/4

OH 194-307 (2) (18) (19) (8) (13)

(A8B)
(P)

S.O.P. FOR OH 194-307
MOUNTED LIGHT AT STA. 277+80

S.O.P. FOR OH 194-306
PULL BOX AT STA. 277+30

OH 194-306 (2) (18) (19)
 (A8B)
 (N)

49th Ave N
53rd Ave N
 1 MILE

EXIT 226

EO-102 (2) (4)

OH 194-306 (8) (13)
 (A8B)
 (N)

49th Ave N
53rd Ave N
 1 MILE

EXIT 226

EO-2 (1)

ROADWAY LAYOUTS

DRAWN BY: LBJ

CHECKED BY: RFK

CERTIFIED BY _____

LICENSED PROFESSIONAL ENGINEER

LIC. NO. _____

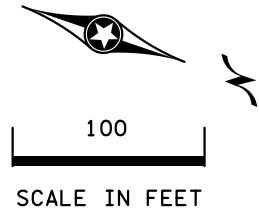
DATE 3/8/2016

STATE PROJ. NO. 2781-438 (TH 94)

SHEET NO. 15

OF 55 SHEETS

PLOTTED/REVISED: 3/8/2016



SCALE IN FEET

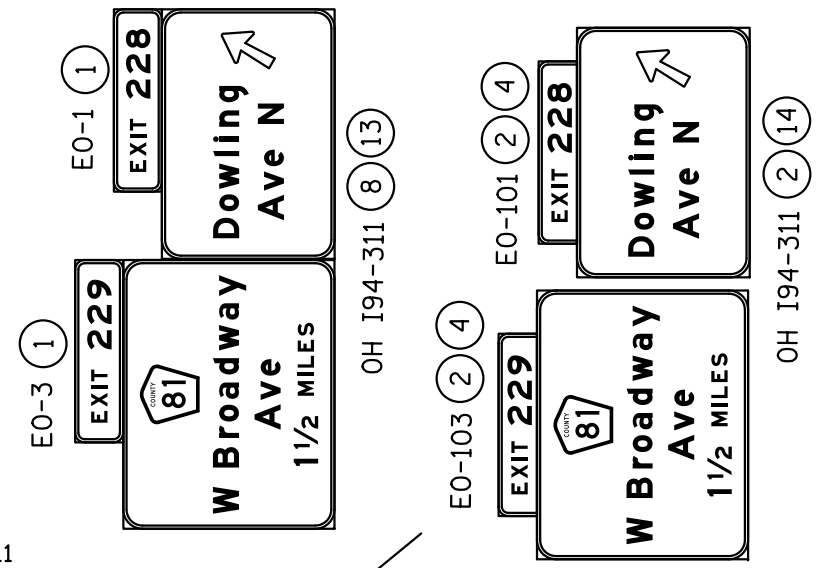
SEE SHEET 36 FOR SIGN PLACEMENT



D-101 (4)
D-1 (1)

REMOVE 7 GUIDE DELINEATORS AND 1 OBJECT MARKER
SEE SHEET 37 FOR DELINEATION (PLAN A)

S.O.P FOR OH I94-311 LIGHT AT STA. 290+00 MAINLINE



TH 94 EB

TH 94 WB

285

290

295

20

C-5 (5)
(1)



SEE SHEET 36 FOR SIGN PLACEMENT

NOTES:

- (1) F. & I.
- (2) INPLACE
- (4) REMOVE
- (5) REMOVE SIGN TYPE C
- (8) F. & I. SIGN PANEL OVERLAY(S)
- (13) F. & I. OH SIGN IDENTIFICATION PLATE
- (14) REMOVE SIGN WALKWAY

ROADWAY LAYOUTS

DRAWN BY: LBJ

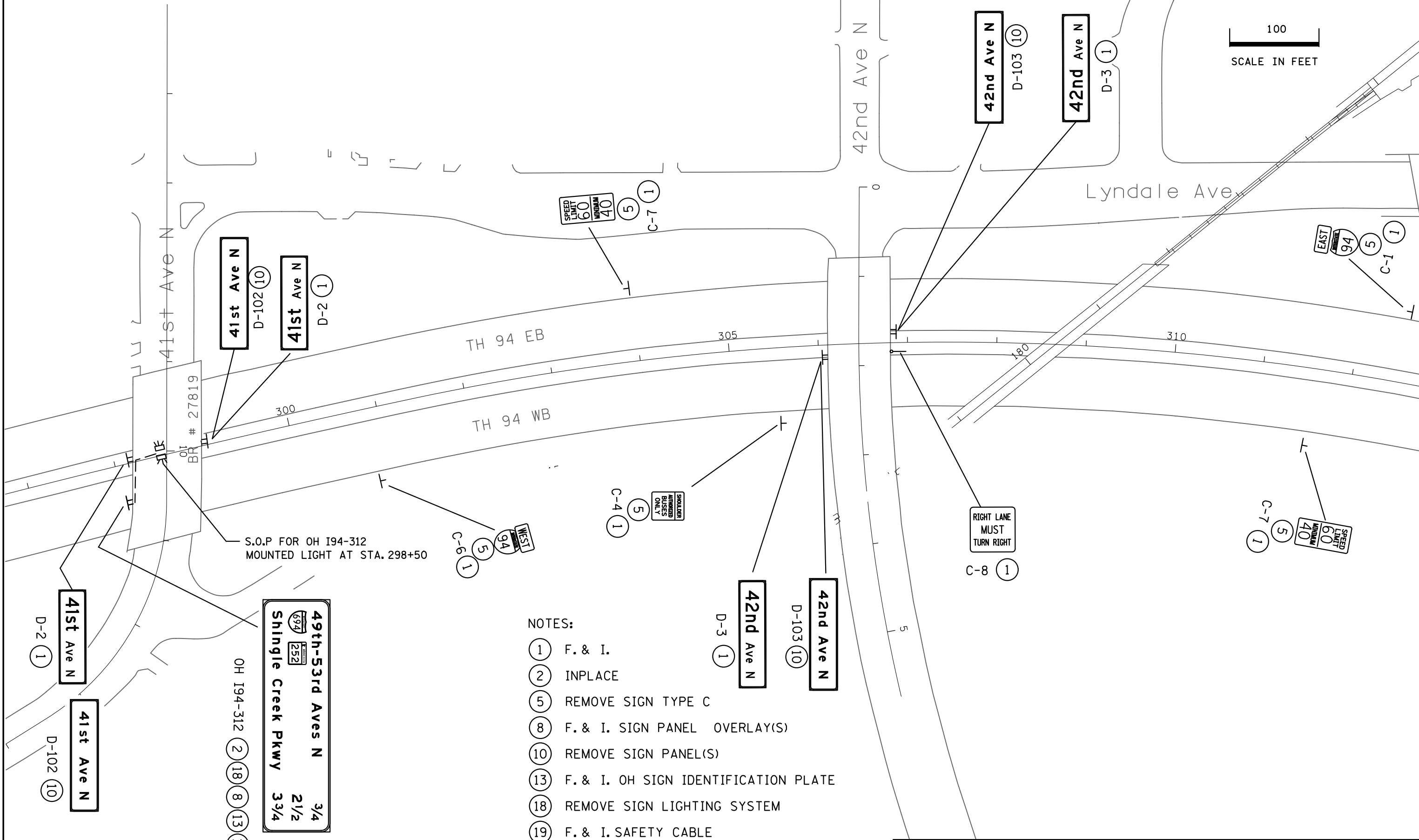
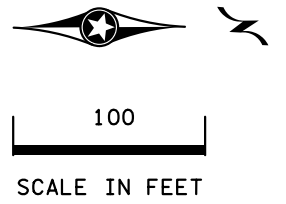
CHECKED BY: RFK

CERTIFIED BY _____ LIC. NO. _____ DATE 3/8/2016

STATE PROJ. NO. 2781-438 (TH 94) SHEET NO. 16 OF 55 SHEETS

LICENSED PROFESSIONAL ENGINEER

DISTRICT #: METRO
I/PLOT NAME: URBAN FREEWAY PLAN-2014_psl3
PATH & FILENAME: IP_PWP-d1721848\URBAN FREEWAY PLAN-2014_psl.dgn



49th-53rd Aves N 3/4
 252 21/2
 Shingle Creek Pkwy 33/4

NOTES:

- ① F. & I.
- ② INPLACE
- ⑤ REMOVE SIGN TYPE C
- ⑧ F. & I. SIGN PANEL OVERLAY(S)
- ⑩ REMOVE SIGN PANEL(S)
- ⑬ F. & I. OH SIGN IDENTIFICATION PLATE
- ⑱ REMOVE SIGN LIGHTING SYSTEM
- ⑲ F. & I. SAFETY CABLE

ROADWAY LAYOUTS

PLOTTED/REVISED: 3/8/2016

DISTRICT #: METRO
I/PLOT NAME: URBAN FREEWAY PLAN-2014_psl5
PATH & FILENAME: IP_PWP-d1721848\URBAN FREEWAY PLAN-2014_psl.dgn



100
SCALE IN FEET

Dowling Ave N 1/2
W Broadway Ave 2
4th-7th Sts N 2 1/4

OH 194-629 (16) (17) (13)

Dowling Ave N 1/2
W Broadway Ave 2
4th-7th Sts N 2 1/4

OH 194-352 (2) (14) (15)

SHOULDER
AUTHORIZED
BUSES
ONLY

(5) (1)
C-4

MILE 2 2 7

(4) (1)

SHOW GUARDRAIL AND
UTILITIES AS REQUIRED

TH 94 EB

TH 94 WB

315

320

325

330

NOTES:

- (1) F. & I.
- (2) INPLACE
- (4) REMOVE
- (5) REMOVE SIGN TYPE C
- (13) F. & I. OH SIGN IDENTIFICATION PLATE
- (14) REMOVE SIGN WALKWAY
- (15) SALVAGE OH SIGN STRUCTURE
- (16) INSTALL OH SIGN STRUCTURE
- (17) F. & I. SIGN PANEL AND PANEL MOUNTING POSTS

(4) (1)

MILE 2 2 7

ROADWAY LAYOUTS

DRAWN BY: LBJ

CHECKED BY: RFK

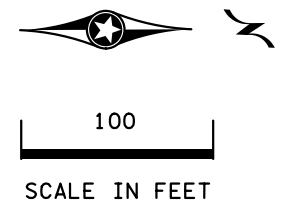
CERTIFIED BY _____ LIC. NO. _____ DATE 3/8/2016

LICENSED PROFESSIONAL ENGINEER

STATE PROJ. NO. 2781-438 (TH 94)

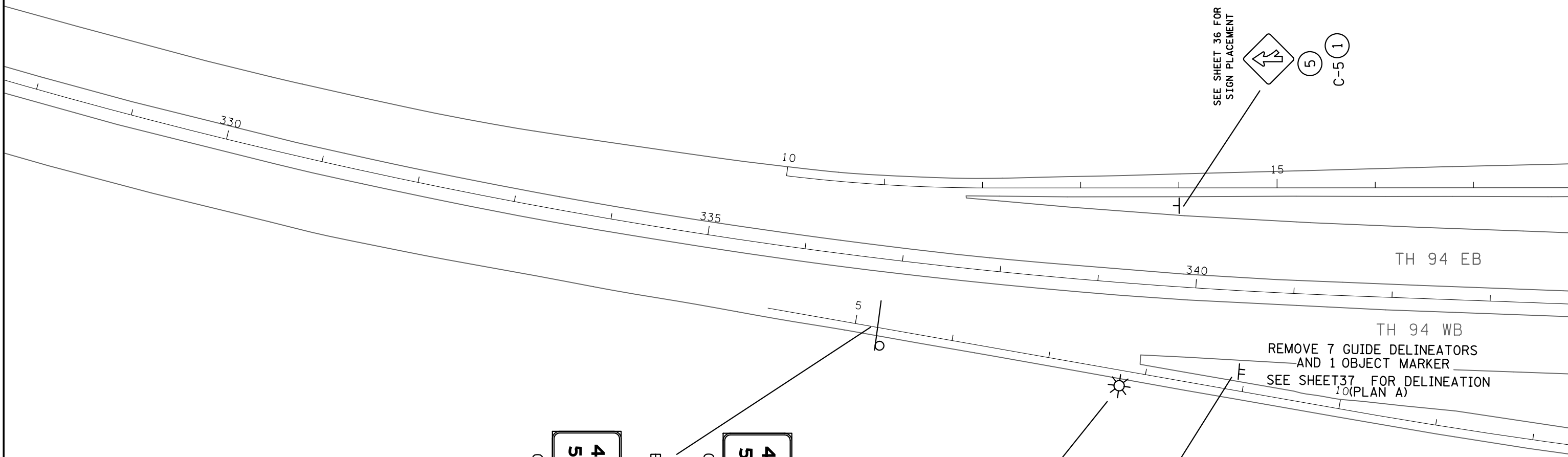
SHEET NO. 18

OF 55 SHEETS



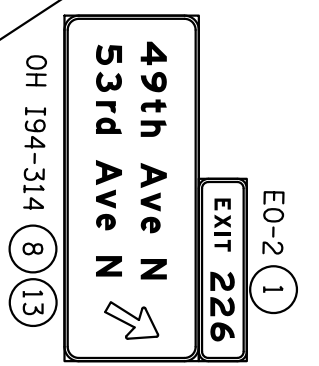
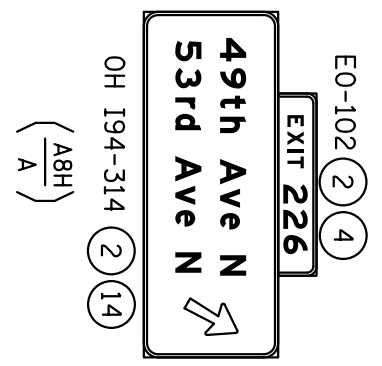
PLOTTED/REVISED: 3/8/2016

DISTRICT *: METRO
 IPLOT NAME: URBAN FREEWAY PLAN-2014_psl6
 PATH & FILENAME: IP_PWP-d1721848\URBAN FREEWAY PLAN-2014_psl.dgn

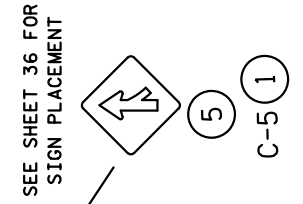
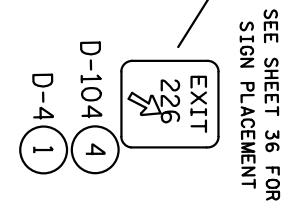


NOTES:

- ① F. & I.
- ② INPLACE
- ④ REMOVE
- ⑤ REMOVE SIGN TYPE C
- ⑧ F. & I. SIGN PANEL OVERLAY(S)
- ⑬ F. & I. OH SIGN IDENTIFICATION PLATE
- ⑭ REMOVE SIGN WALKWAY



S.O.P FOR OH 194-314
 LIGHT AT STA. 339+20 MAINLINE



TH 94 WB
 REMOVE 7 GUIDE DELINEATORS
 AND 1 OBJECT MARKER
 SEE SHEET 37 FOR DELINEATION
 10 (PLAN A)

SEE SHEET 36 FOR
 SIGN PLACEMENT

ROADWAY LAYOUTS

DRAWN BY: LBJ

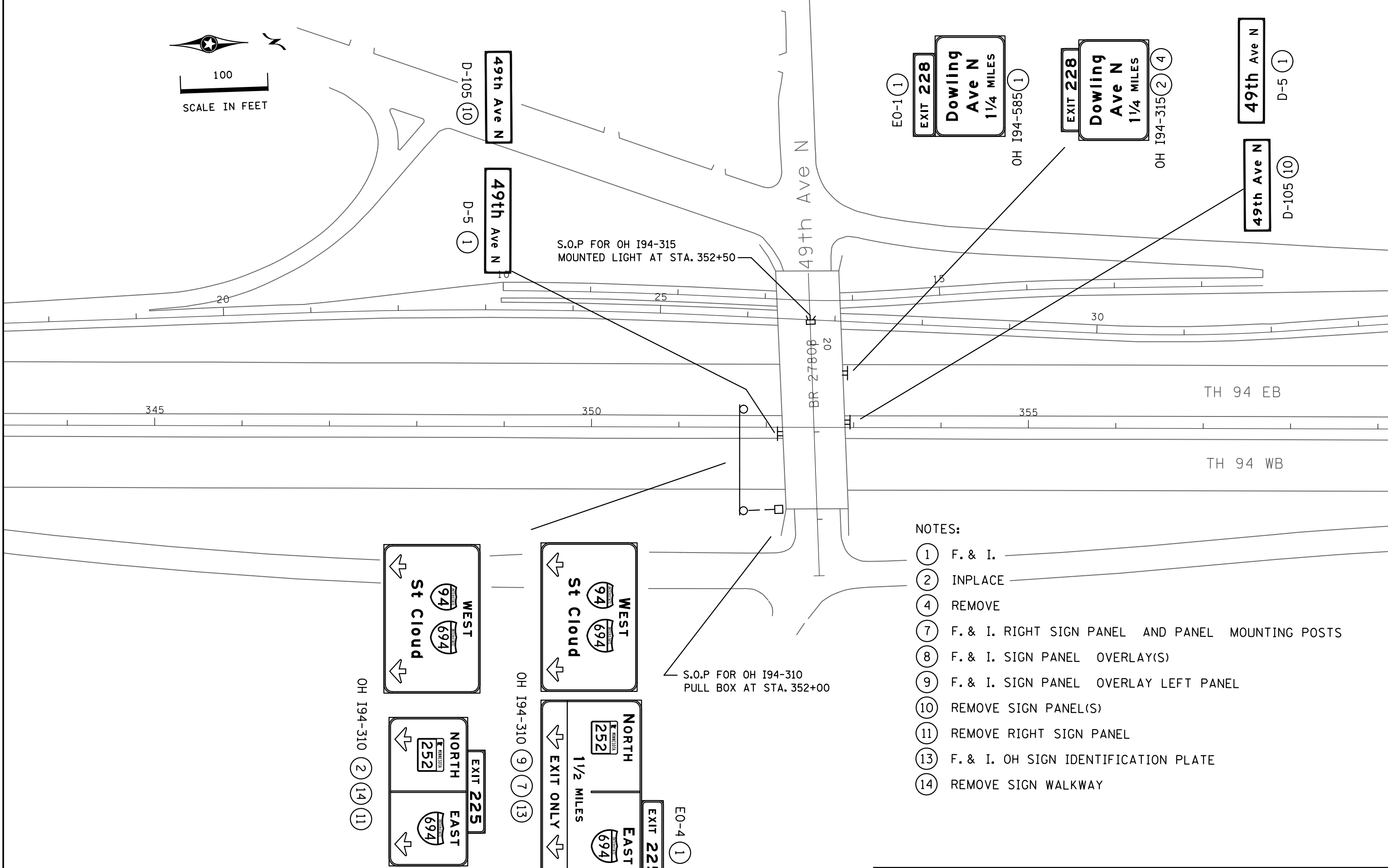
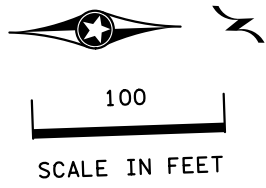
CHECKED BY: RFK

CERTIFIED BY _____ LIC. NO. _____ DATE 3/8/2016

STATE PROJ. NO. 2781-438 (TH 94) SHEET NO. 19 OF 55 SHEETS

PLOTTED/REVISED: 3/8/2016

DISTRICT: METRO
IPLOT NAME: URBAN FREEWAY PLAN-2014_pst7
PATH & FILENAME: IP_PWP-d1721848/URBAN FREEWAY PLAN-2014_psi.dgn



NOTES:

- ① F. & I.
- ② INPLACE
- ④ REMOVE
- ⑦ F. & I. RIGHT SIGN PANEL AND PANEL MOUNTING POSTS
- ⑧ F. & I. SIGN PANEL OVERLAY(S)
- ⑨ F. & I. SIGN PANEL OVERLAY LEFT PANEL
- ⑩ REMOVE SIGN PANEL(S)
- ⑪ REMOVE RIGHT SIGN PANEL
- ⑬ F. & I. OH SIGN IDENTIFICATION PLATE
- ⑭ REMOVE SIGN WALKWAY

ROADWAY LAYOUTS

DRAWN BY: LBJ

CHECKED BY: RFK

CERTIFIED BY _____

LICENSED PROFESSIONAL ENGINEER

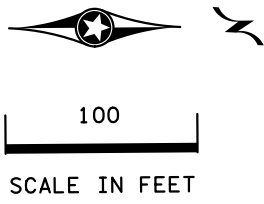
LIC. NO. _____

DATE 3/8/2016

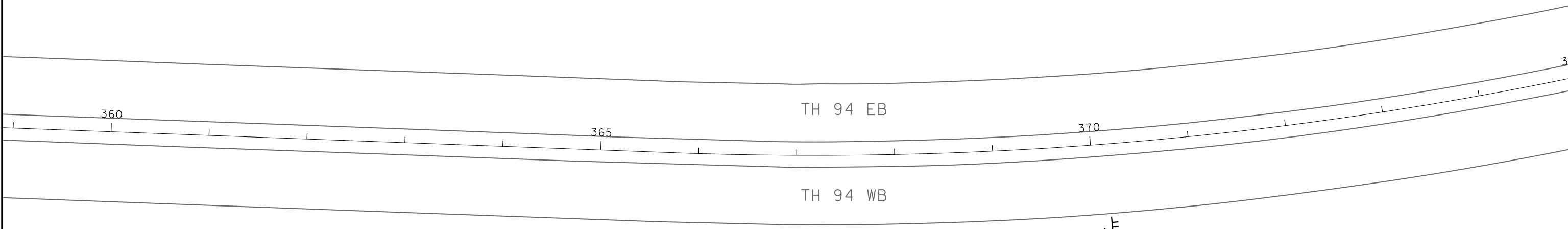
STATE PROJ. NO. 2781-438 (TH 94)

SHEET NO. 20

OF 55 SHEETS



PLOTTED/REVISED: 3/8/2016



NOTE:

② INPLACE

②

LOGO

ROADWAY LAYOUTS

DRAWN BY: LBJ

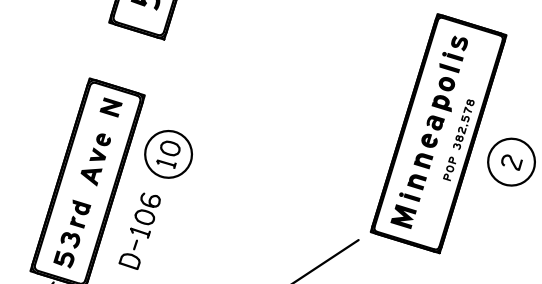
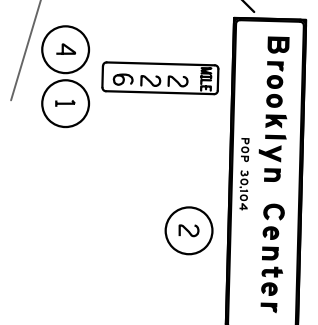
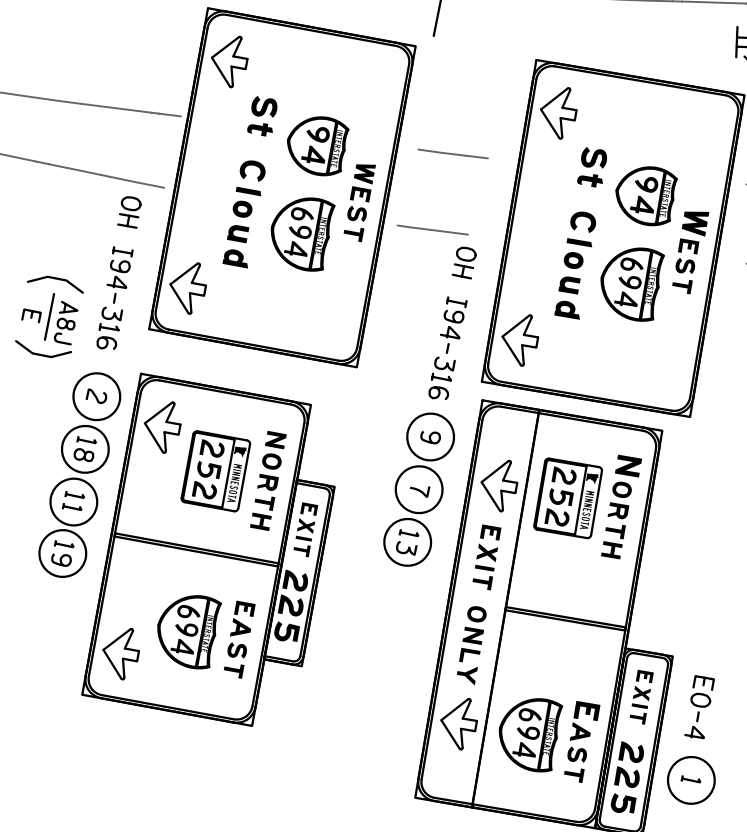
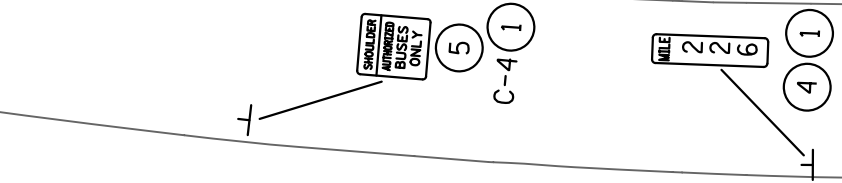
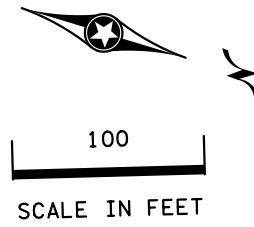
CHECKED BY: RFK

CERTIFIED BY _____ LIC. NO. _____ DATE 3/8/2016

STATE PROJ. NO. 2781-438 (TH 94) SHEET NO. 21 OF 55 SHEETS

LICENSED PROFESSIONAL ENGINEER

DISTRICT #: METRO
PLOT NAME: URBAN FREEWAY PLAN-2014_psl8
PATH & FILENAME: IP_PWP:d1721848\URBAN FREEWAY PLAN-2014_psl.dgn



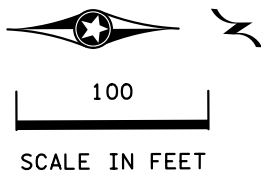
TH 94 EB
TH 94 WB

NOTES:

- ① F. & I.
- ② INPLACE
- ④ REMOVE
- ⑤ REMOVE SIGN TYPE C
- ⑦ F. & I. RIGHT SIGN PANEL AND PANEL MOUNTING POSTS
- ⑨ F. & I. SIGN PANEL OVERLAY LEFT PANEL
- ⑩ REMOVE SIGN PANEL(S)
- ⑪ REMOVE RIGHT SIGN PANEL
- ⑬ F. & I. OH SIGN IDENTIFICATION PLATE
- ⑱ REMOVE SIGN LIGHTING SYSTEM
- ⑲ F. & I. SAFETY CABLE

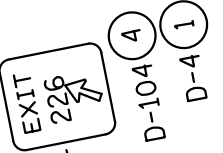
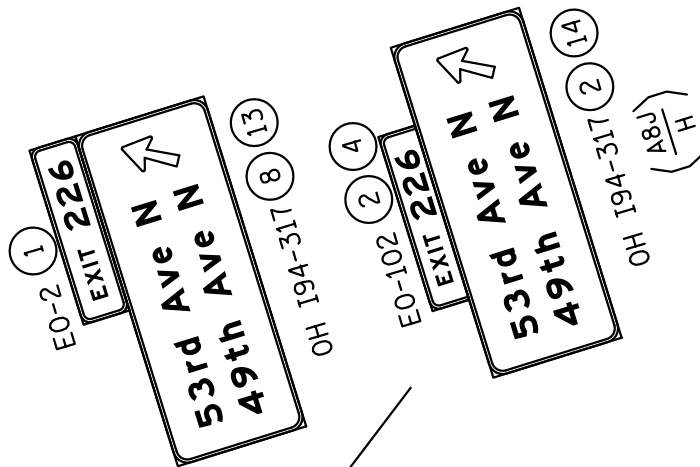
ROADWAY LAYOUTS

PLOTTED/REVISED: 3/8/2016



100

SCALE IN FEET

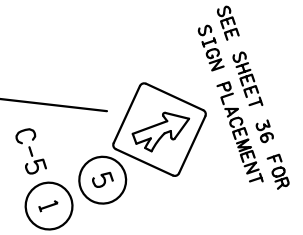
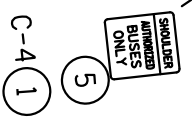


REMOVE 7 GUIDE DELINEATORS
1 OBJECT MARKER
SEE SHEET 37 FOR DELINEATION
(PLAN A)

S.O.P FOR OH 194-317
LIGHT AT STA. 392+50

TH 94 EB

TH 94 WB



NOTES:

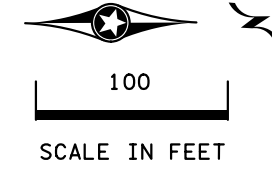
- (1) F. & I.
- (2) INPLACE
- (4) REMOVE
- (5) REMOVE SIGN TYPE C
- (8) F. & I. SIGN PANEL OVERLAY(S)
- (13) F. & I. OH SIGN IDENTIFICATION PLATE
- (14) REMOVE SIGN WALKWAY

DISTRICT #: METRO
I/PLOT NAME: URBAN FREEWAY PLAN-2014_psi/0
PATH & FILENAME: IP_PWP-d1721848/URBAN FREEWAY PLAN-2014_psi.dgn

DRAWN BY: LBJ

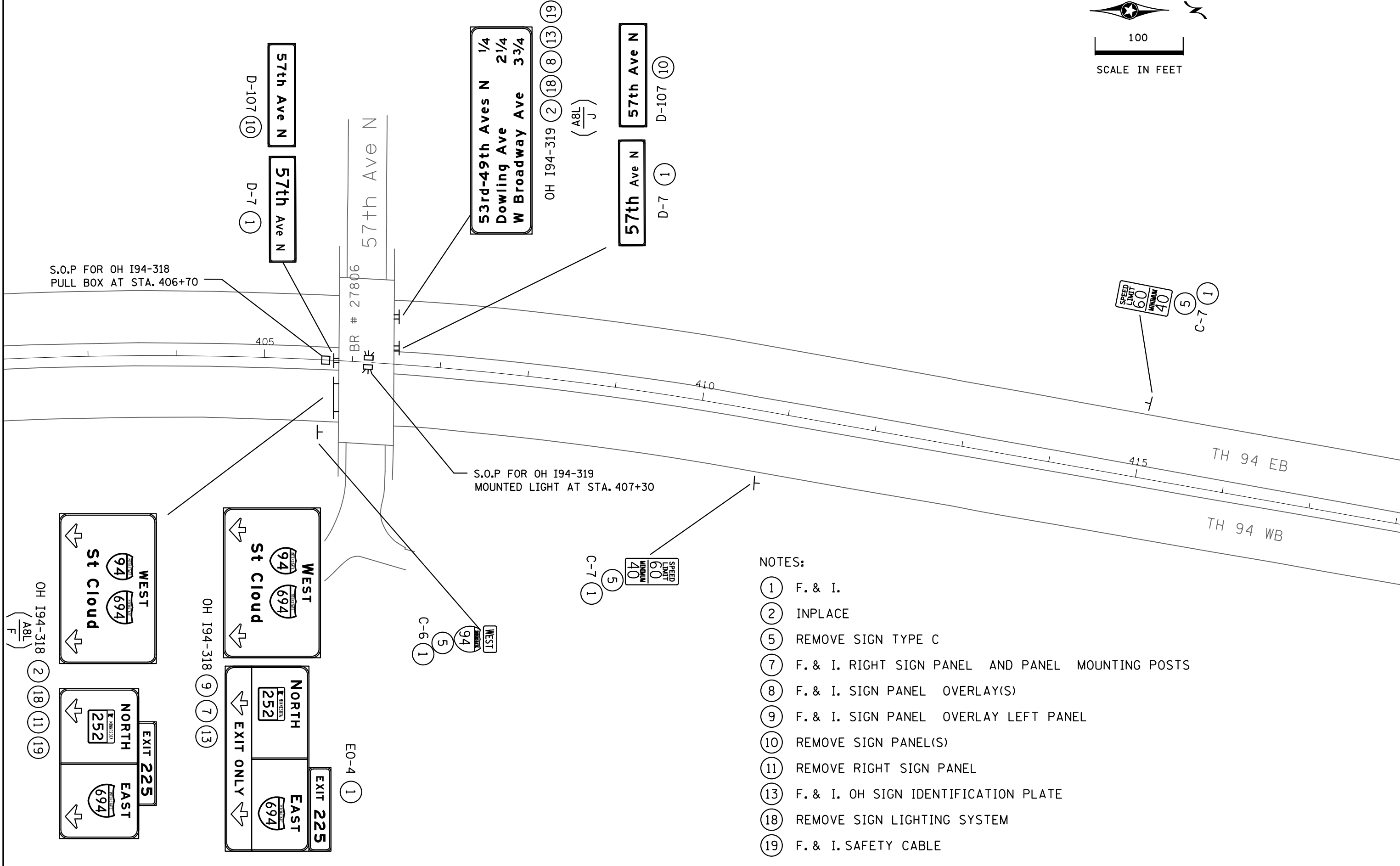
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CERTIFIED BY _____ LIC. NO. _____ DATE 3/8/2016

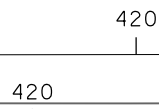
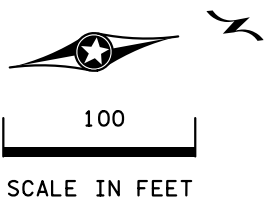


PLOTTED/REVISED: 3/8/2016

DISTRICT: METRO
 IPLOT NAME: URBAN FREEWAY PLAN-2014_psl
 PATH & FILENAME: IP_PWP-d1721848/URBAN FREEWAY PLAN-2014_psl.dgn



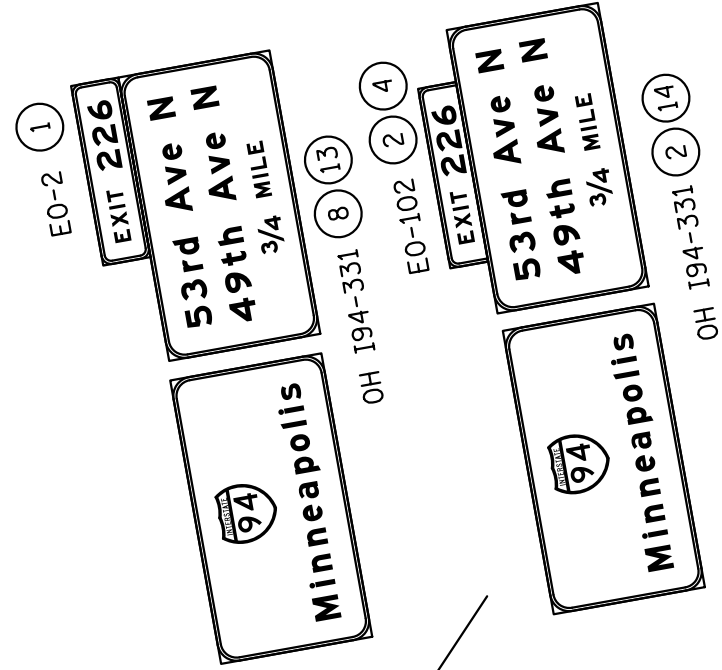
- NOTES:
- ① F. & I.
 - ② INPLACE
 - ⑤ REMOVE SIGN TYPE C
 - ⑦ F. & I. RIGHT SIGN PANEL AND PANEL MOUNTING POSTS
 - ⑧ F. & I. SIGN PANEL OVERLAY(S)
 - ⑨ F. & I. SIGN PANEL OVERLAY LEFT PANEL
 - ⑩ REMOVE SIGN PANEL(S)
 - ⑪ REMOVE RIGHT SIGN PANEL
 - ⑬ F. & I. OH SIGN IDENTIFICATION PLATE
 - ⑱ REMOVE SIGN LIGHTING SYSTEM
 - ⑲ F. & I. SAFETY CABLE



TH 94 EB

TH 94 WB

S.O.P FOR OH 194-331 LIGHT AT STA. 426+00



OH 194-331

OH 194-331



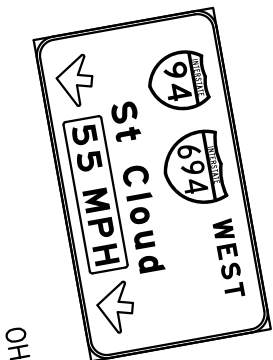
S.O.P FOR OH 194-020 LIGHT AT STA. 431+00

TH 94 EB

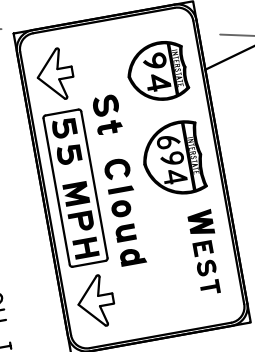


NOTES:

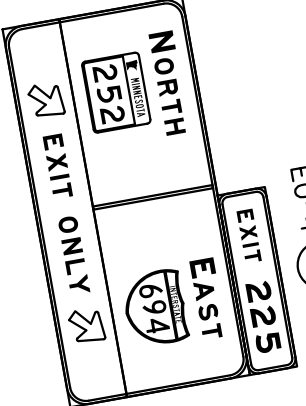
- ① F. & I.
- ② INPLACE
- ④ REMOVE
- ⑤ REMOVE SIGN TYPE C
- ⑦ F. & I. RIGHT SIGN PANEL AND PANEL MOUNTING POSTS
- ⑧ F. & I. SIGN PANEL OVERLAY(S)
- ⑨ F. & I. SIGN PANEL OVERLAY LEFT PANEL
- ⑪ REMOVE RIGHT SIGN PANEL
- ⑬ F. & I. OH SIGN IDENTIFICATION PLATE
- ⑭ REMOVE SIGN WALKWAY



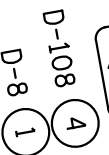
OH 194-020



OH 194-020



E0-4

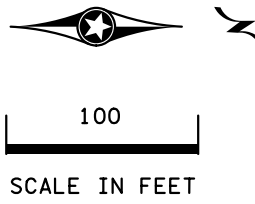


SEE SHEET 36 FOR SIGN PLACEMENT

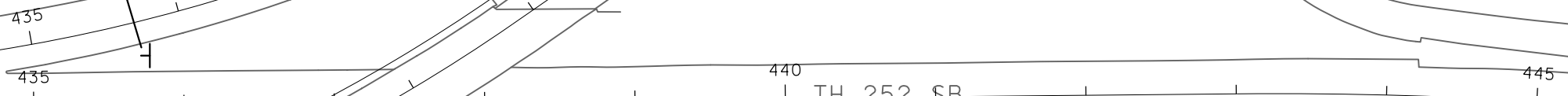
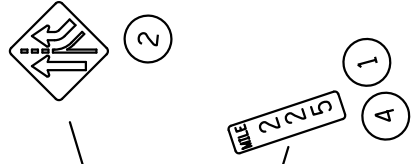
ROADWAY LAYOUTS

PLOTTED/REVISED: 3/8/2016

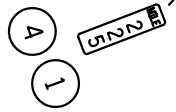
DISTRICT #: METRO
PLOT NAME: URBAN FREEWAY PLAN-2014_psl/3
PATH & FILENAME: IP_PWP-d1721848/URBAN FREEWAY PLAN-2014_psl.dgn



END S. P. 2781-438
STA. 442+00 R. P. 224+00.768



H 94 WB
REMOVE 7 GUIDE DELINEATORS
AND 1 OBJECT MARKER
SEE SHEET 37 FOR DELINEATION
(PLAN A)



- NOTES:
- ① F. & I.
 - ② INPLACE
 - ④ REMOVE

TH 694 EB
TH 694 WB

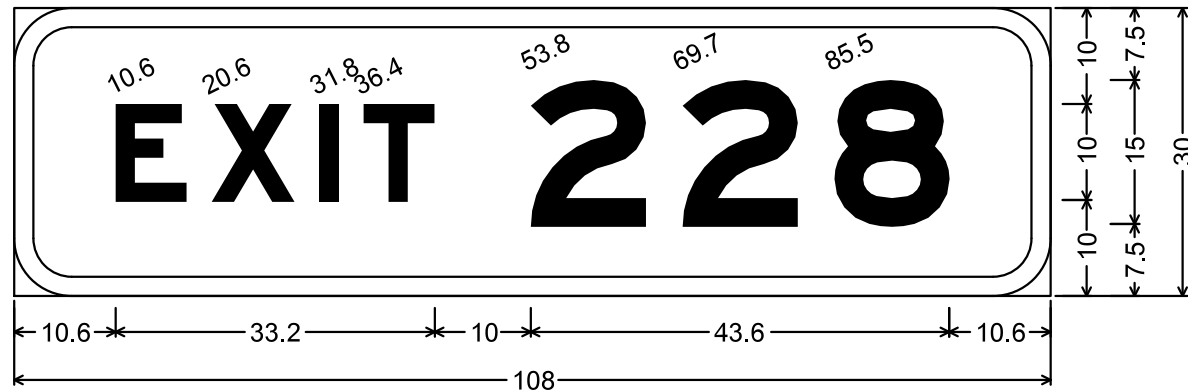
ROADWAY LAYOUTS

DRAWN BY: LBJ

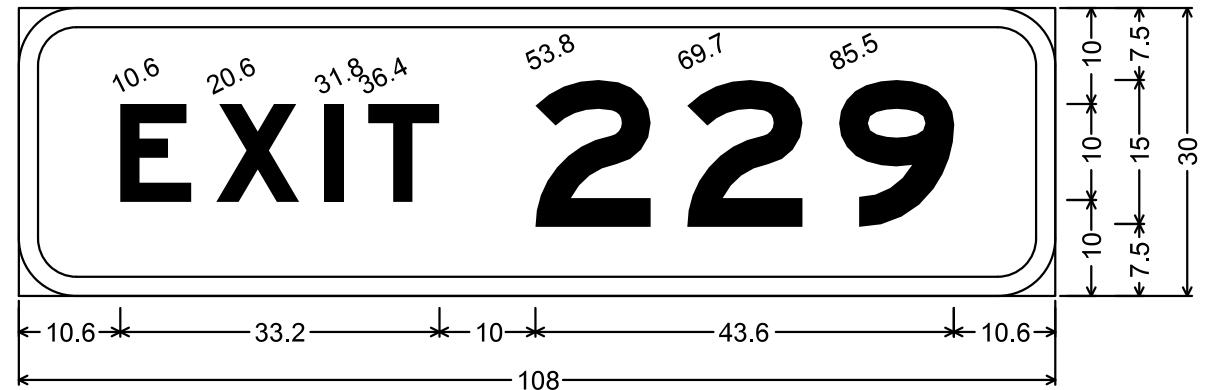
CHECKED BY: RFK

CERTIFIED BY _____ LIC. NO. _____ DATE 3/8/2016

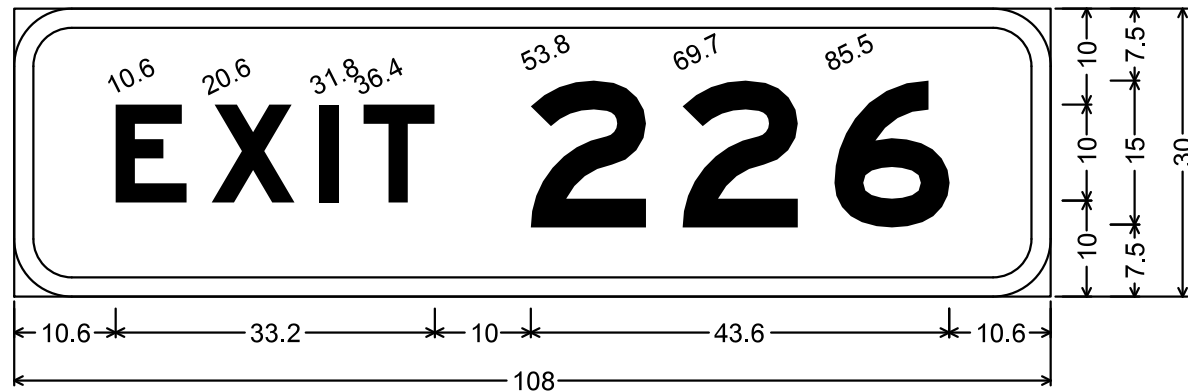
STATE PROJ. NO. 2781-438 (TH 94) SHEET NO. 26 OF 55 SHEETS



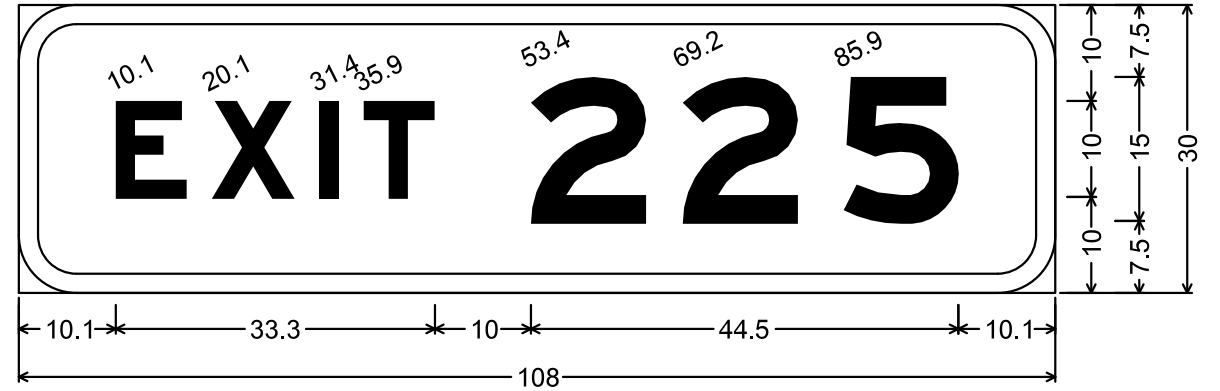
EO-1; 6.0" Radius, 2.0" Border, White on Green;
[EXIT 228] E Mod;



EO-3; 6.0" Radius, 2.0" Border, White on Green;
[EXIT 229] E Mod;



EO-2; 6.0" Radius, 2.0" Border, White on Green;
[EXIT 226] E Mod;

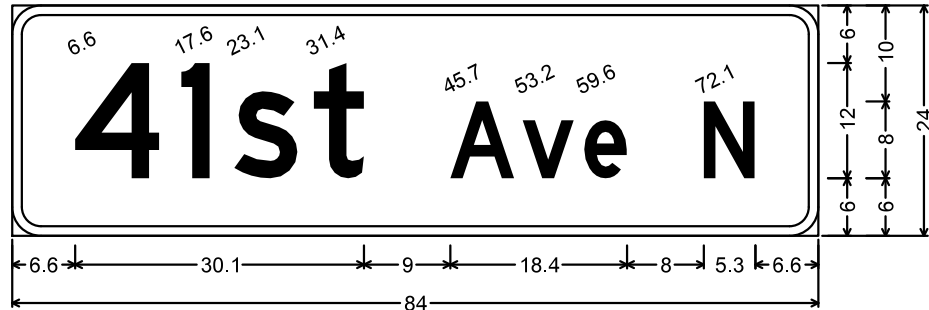


EO-4; 6.0" Radius, 2.0" Border, White on Green;
[EXIT 225] E Mod;

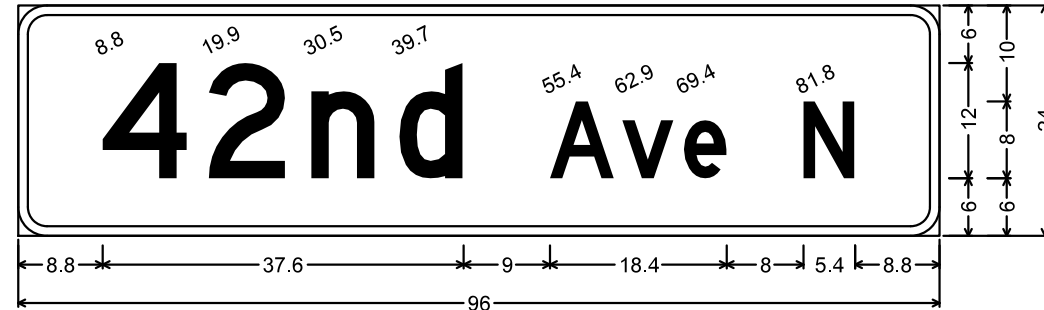
NOTES:

1. CORNERS OF THE SIGN PANEL EXTENDING BEYOND THE BORDER SHALL NOT BE TRIMMED.
2. SEE MNDOT STANDARD SIGNS AND MARKINGS MANUAL FOR ARROW, FRACTION AND OVERLAY DETAIL.

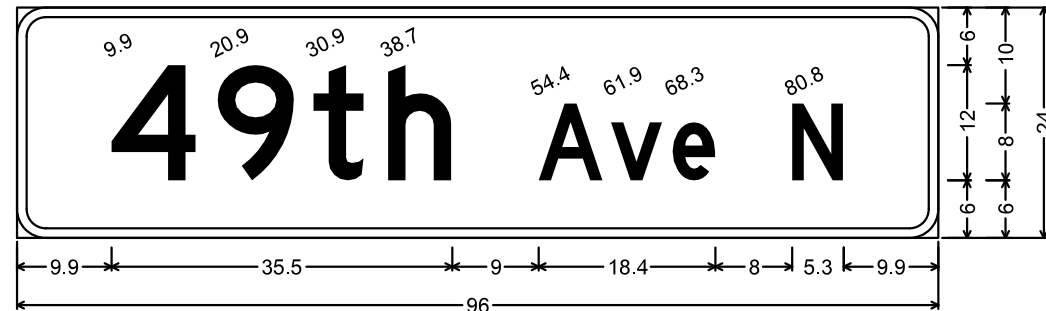
TYPE EO SIGN PANELS



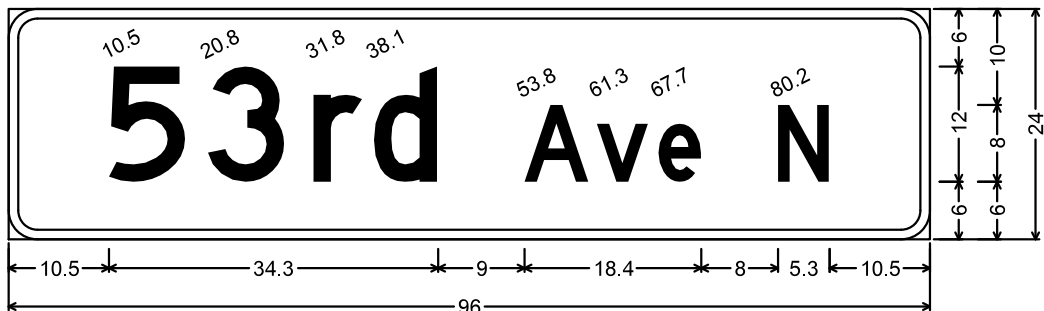
D-2; 3.0" Radius, 1.0" Border, White on Green;
[41st Ave N] D;



D-3; 3.0" Radius, 1.0" Border, White on Green;
[42nd Ave N] D;



D-5; 3.0" Radius, 1.0" Border, White on Green;
[49th Ave N] D;



D-6; 3.0" Radius, 1.0" Border, White on Green;
[53rd Ave N] D;



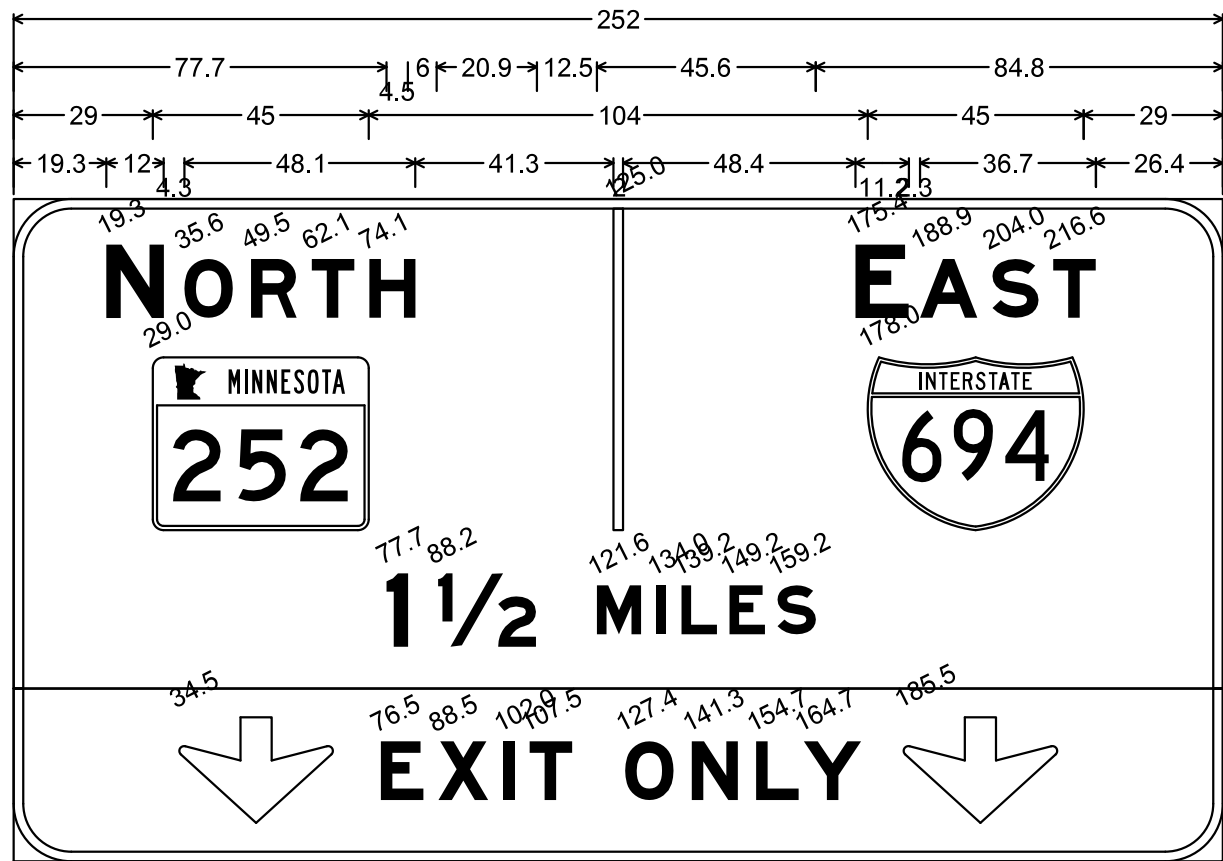
D-7; 3.0" Radius, 1.0" Border, White on Green;
[57th Ave N] D;

NOTES:

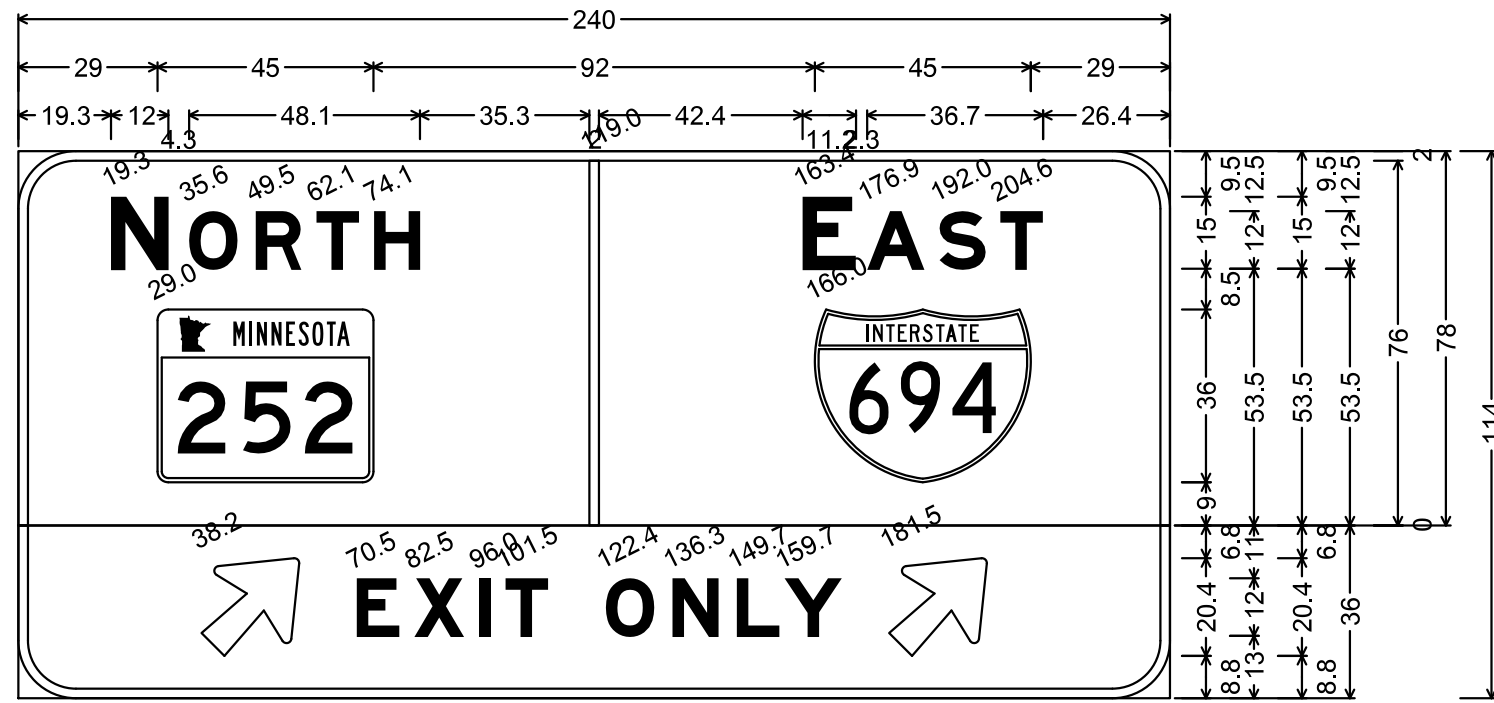
1. CORNERS OF THE SIGN PANEL EXTENDING BEYOND THE BORDER SHALL NOT BE TRIMMED.
2. SEE MNDOT STANDARD SIGNS AND MARKINGS MANUAL FOR ARROW, FRACTION AND OVERLAY DETAIL.

TYPE D SIGN PANELS

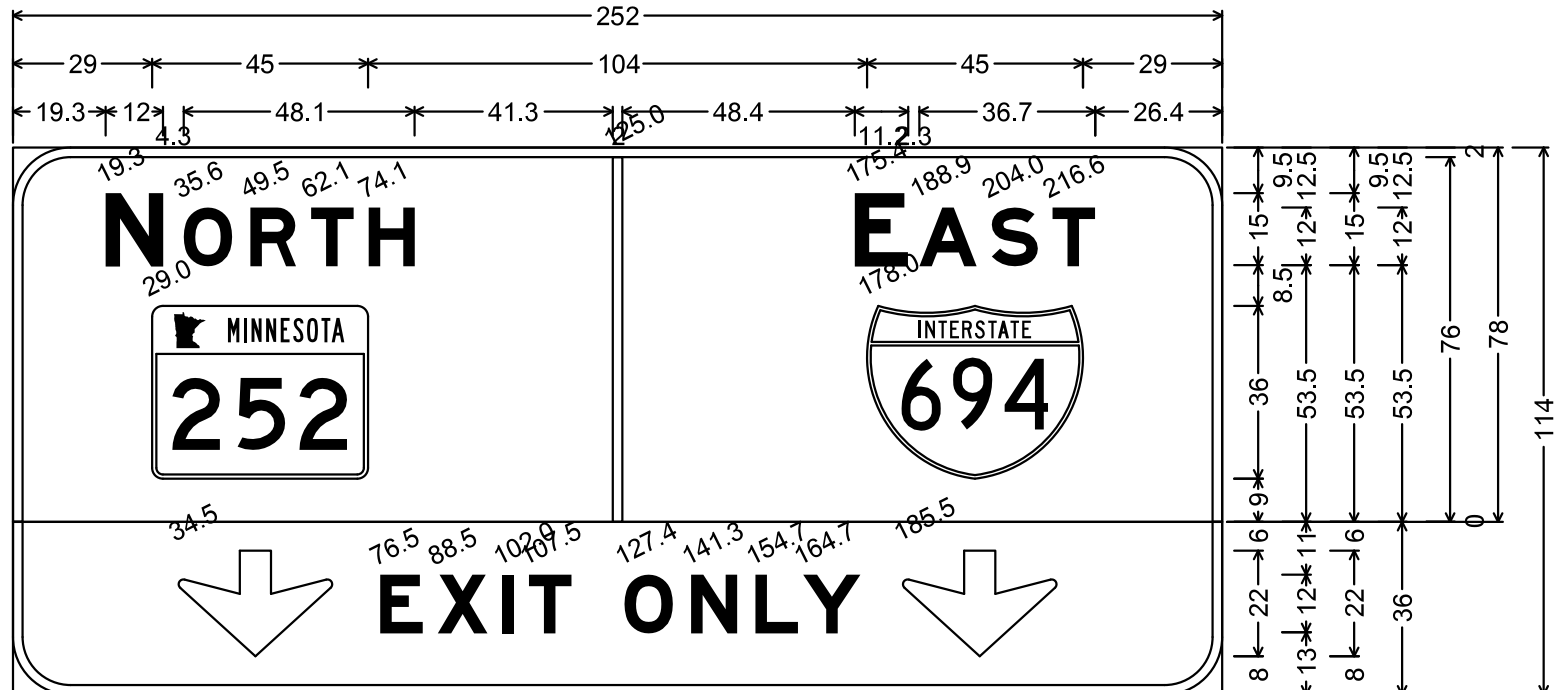
PLOTTED/REVISED: 3/8/2016



OH 194-310(R); 12.0" Radius, 2.0" Border, White on Green;
 [NORTH] E Mod; [EAST] E Mod; [1 1/2 MILES] E Mod;
 12.0" Radius, 2.0" Border, Black on Yellow;
 Down Arrow 22.0" 270°; [EXIT ONLY] E Mod; Down Arrow 22.0" 270°;



OH 194-20(R); 12.0" Radius, 2.0" Border, White on Green;
 [NORTH] E Mod; [EAST] E Mod;
 12.0" Radius, 2.0" Border, Black on Yellow;
 Arrow 8 - 25.0" 45°; [EXIT ONLY] E Mod; Arrow 8 - 25.0" 45°;

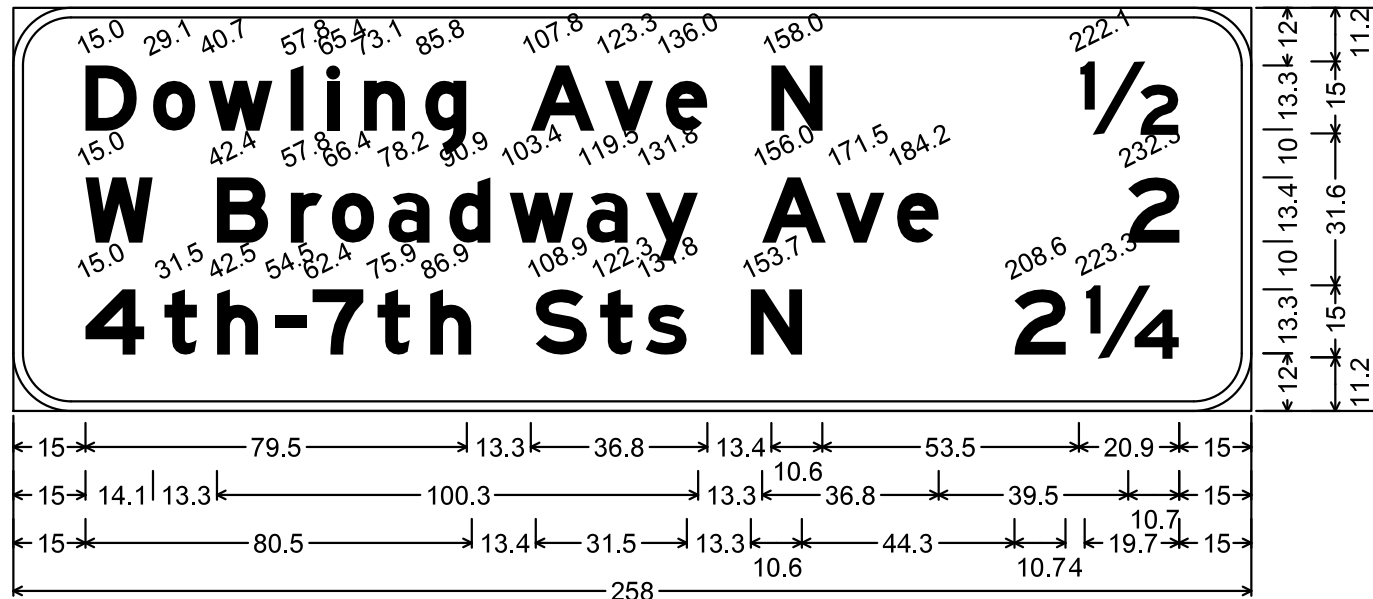


OH 194-316(R) & OH 94-318(R); 12.0" Radius, 2.0" Border, White on Green;
 [NORTH] E Mod; [EAST] E Mod;
 12.0" Radius, 2.0" Border, Black on Yellow;
 Down Arrow 22.0" 270°; [EXIT ONLY] E Mod; Down Arrow 22.0" 270°;

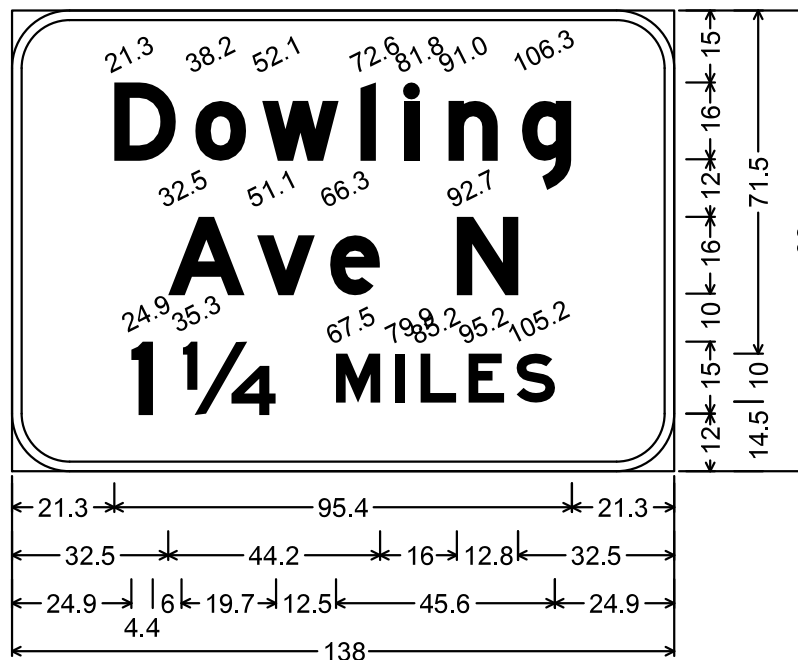
- NOTES:
1. CORNERS OF THE SIGN PANEL EXTENDING BEYOND THE BORDER SHALL NOT BE TRIMMED.
 2. SEE MNDOT STANDARD SIGNS AND MARKINGS MANUAL FOR ARROW, FRACTION AND OVERLAY DETAIL.

TYPE OH SIGN PANELS

DISTRICT #: METRO
 IPLOT NAME: URBAN Freeway Panels10
 PATH & FILENAME: IP_PWP-d1721848\URBAN Freeway Panels.dgn



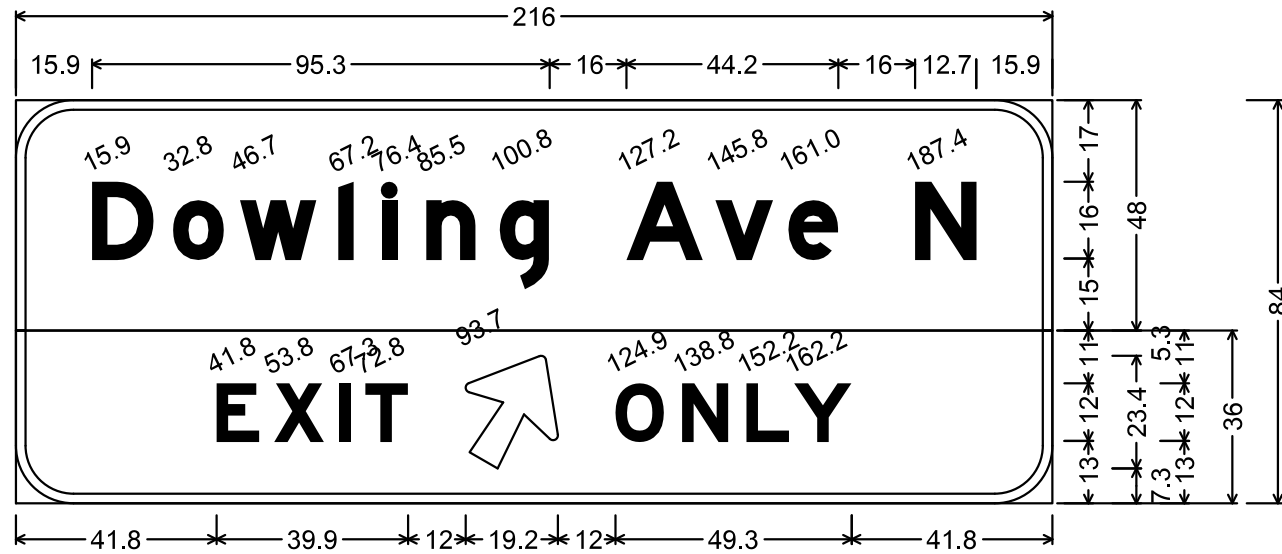
OH I94-629; 12.0" Radius, 2.0" Border, White on Green;
 [Dowling Ave N] E Mod; [1/2] E Mod; [W Broadway Ave] E Mod; [2] E Mod;
 [4th-7th Sts N] E Mod; [2 1/4] E Mod;



OH I94-585;
 12.0" Radius, 2.0" Border, White on Green;
 [Dowling] E Mod; [Ave N] E Mod;
 [1 1/4 MILES] E Mod;

NOTES:

1. CORNERS OF THE SIGN PANEL EXTENDING BEYOND THE BORDER SHALL NOT BE TRIMMED.
2. SEE MNDOT STANDARD SIGNS AND MARKINGS MANUAL FOR ARROW, FRACTION AND OVERLAY DETAIL.



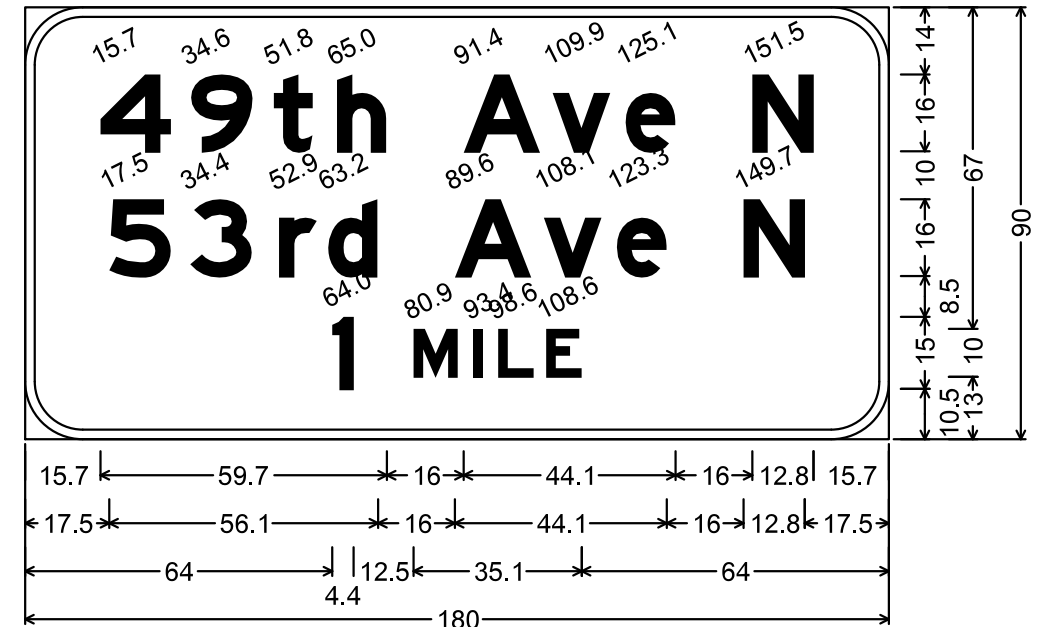
OH 194-305;

12.0" Radius, 2.0" Border, White on Green;

[Dowling Ave N] E Mod;

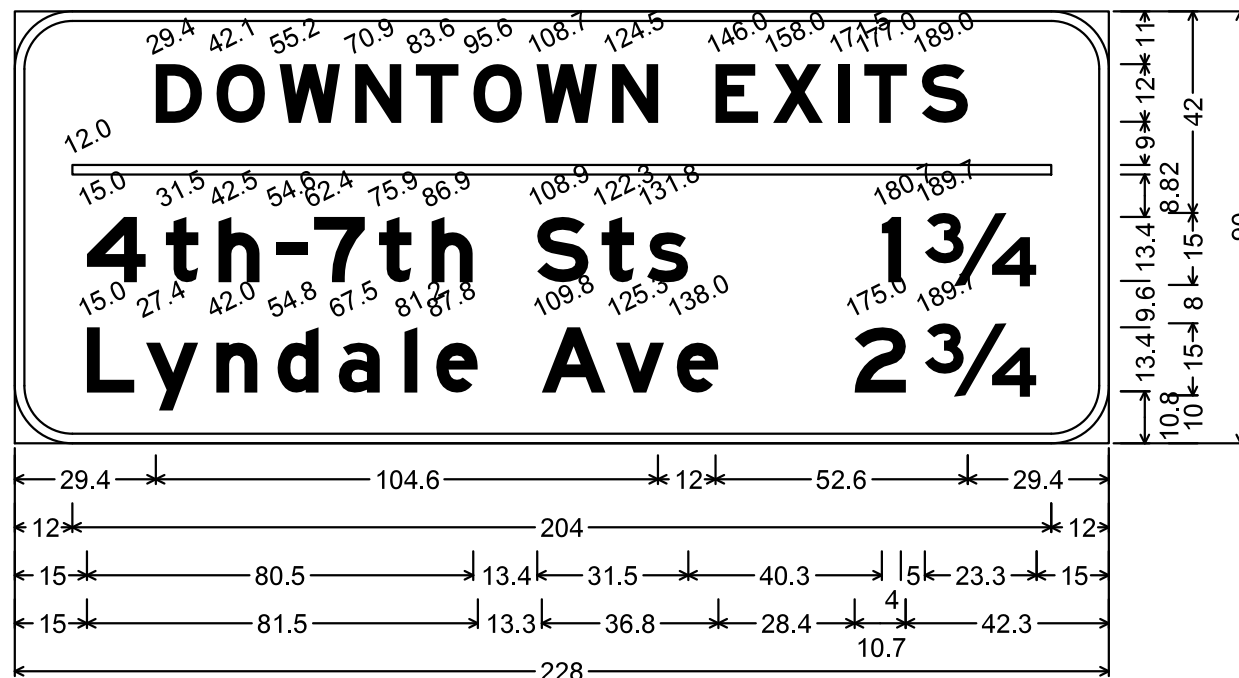
12.0" Radius, 2.0" Border, Black on Yellow;

[EXIT] E Mod; Arrow 8 - 25.0" 60°; [ONLY] E Mod;



OH 194-306; 12.0" Radius, 2.0" Border, White on Green;

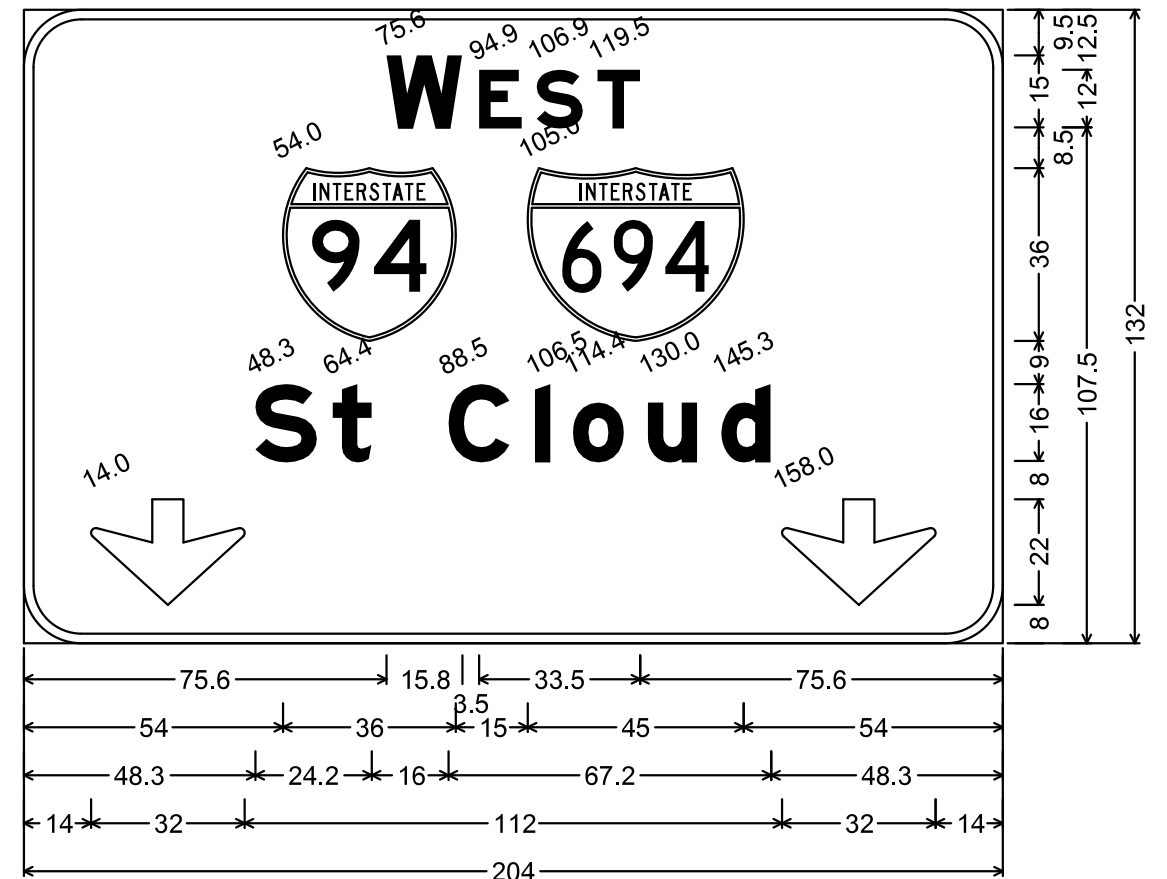
[49th Ave N] E Mod; [53rd Ave N] E Mod; [1 MILE] E Mod;



OH 194-307; 12.0" Radius, 2.0" Border, White on Green;

[DOWNTOWN EXITS] E Mod; [4th-7th Sts] E Mod; [1 3/4] E Mod;

[Lyndale Ave] E Mod; [2 3/4] E Mod;



OH 194-310(L), OH 94-316(L) & OH 94-318(L);

12.0" Radius, 2.0" Border, White on Green;

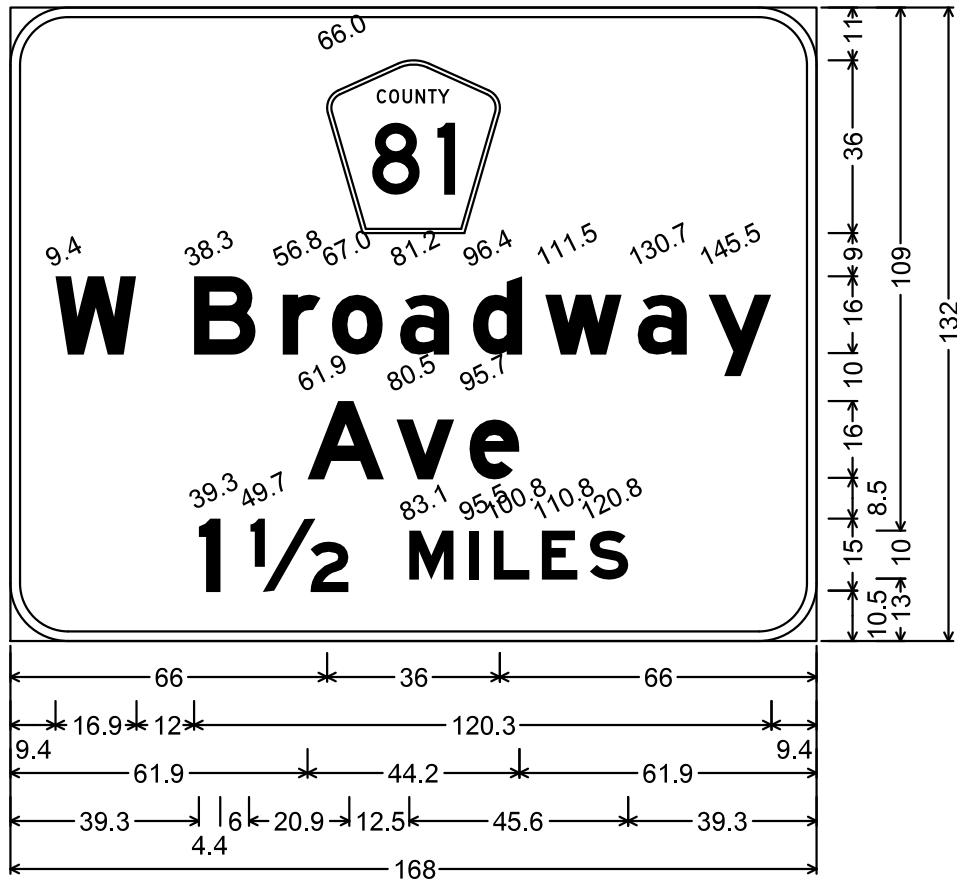
[WEST] E Mod; [St Cloud] E Mod; Down Arrow 22.0" 270°;

Down Arrow 22.0" 270°;

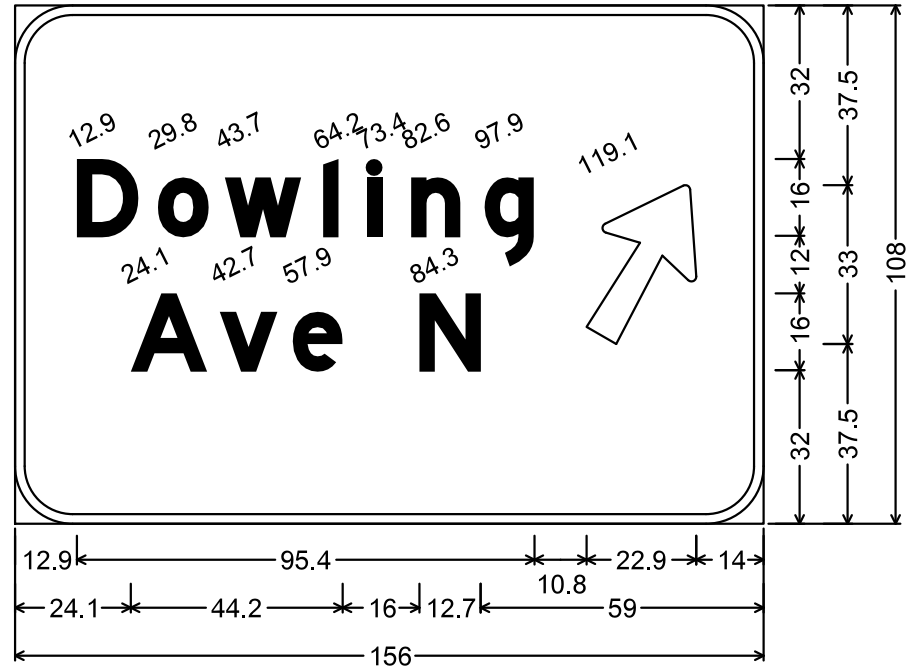
NOTES:

1. CORNERS OF THE SIGN PANEL EXTENDING BEYOND THE BORDER SHALL NOT BE TRIMMED.
2. SEE MNDOT STANDARD SIGNS AND MARKINGS MANUAL FOR ARROW, FRACTION AND OVERLAY DETAIL.

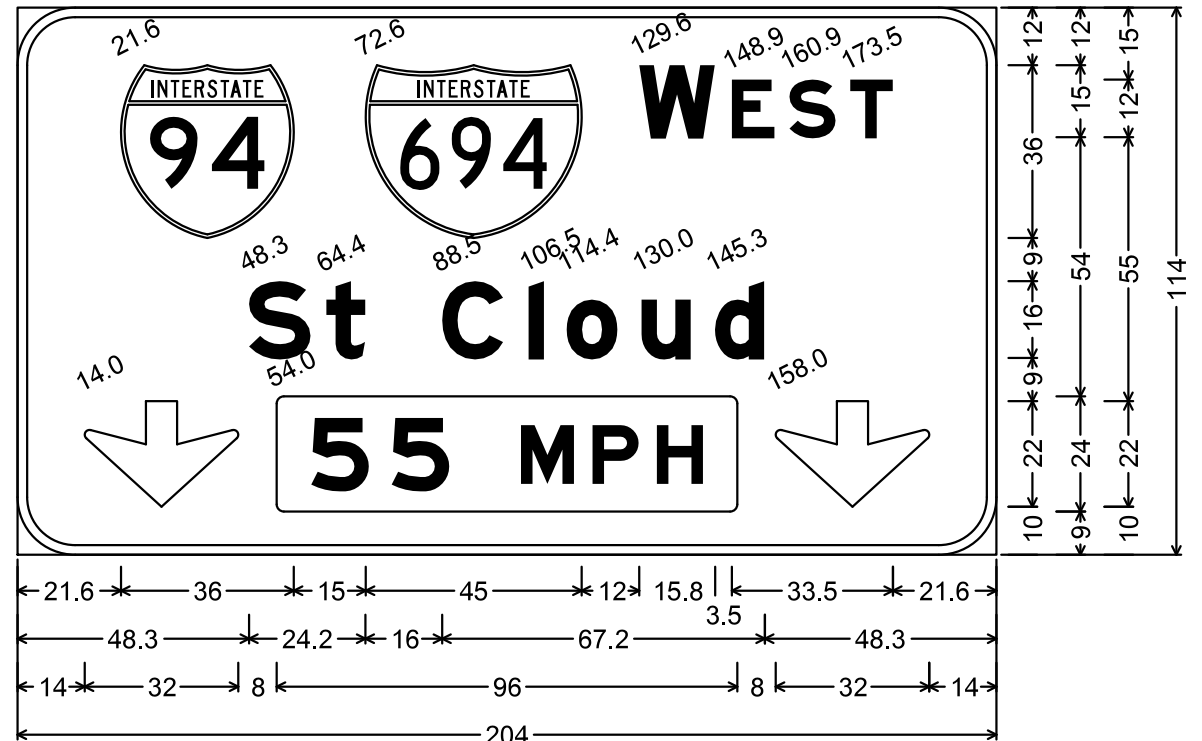
TYPE OH SIGN PANEL OVERLAYS



OH I94-311(L); 12.0" Radius, 2.0" Border, White on Green;
 [W Broadway] E Mod; [Ave] E Mod; [1 1/2 MILES] E Mod;



OH I94-311(R);
 12.0" Radius, 2.0" Border, White on Green;
 [Dowling] E Mod; [Ave N] E Mod; Arrow 17 - 36.0" 60°;

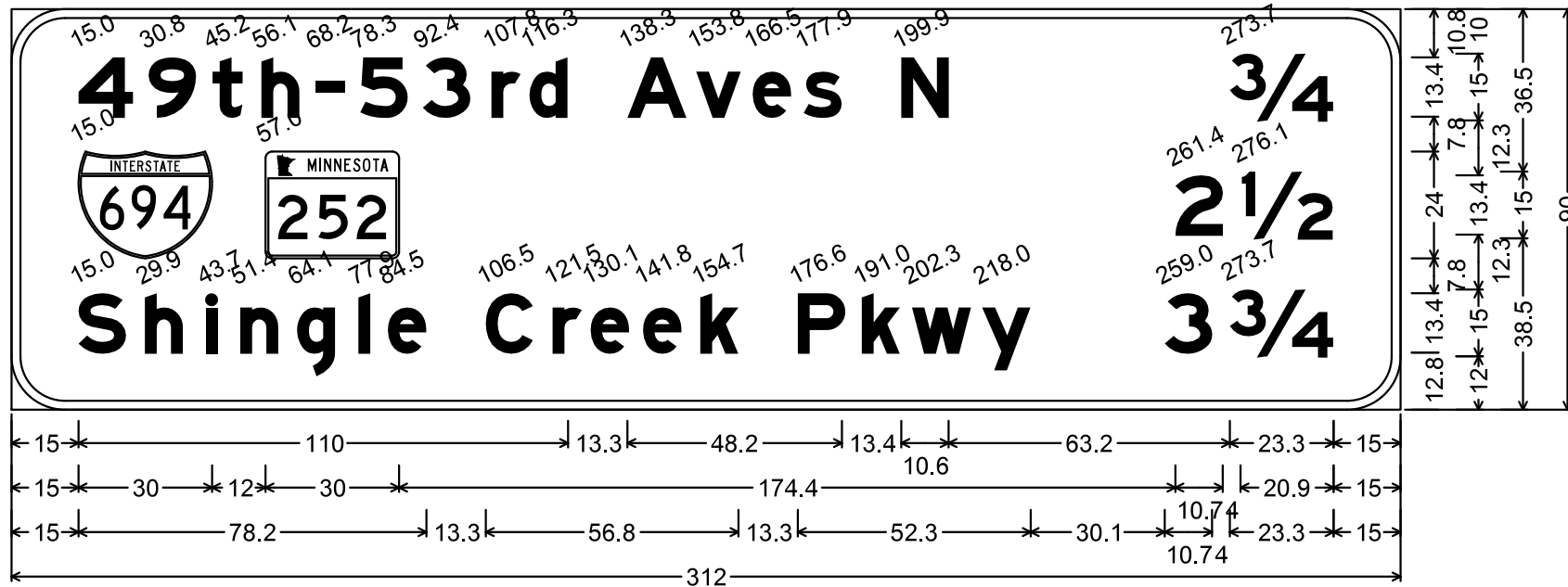


OH I94-20(L); 12.0" Radius, 2.0" Border, White on Green;
 [WEST] E Mod; [St Cloud] E Mod; Down Arrow 22.0" 270°;
 Rounded Rectangle 1.5" Radius Yellow;
 Down Arrow 22.0" 270°;

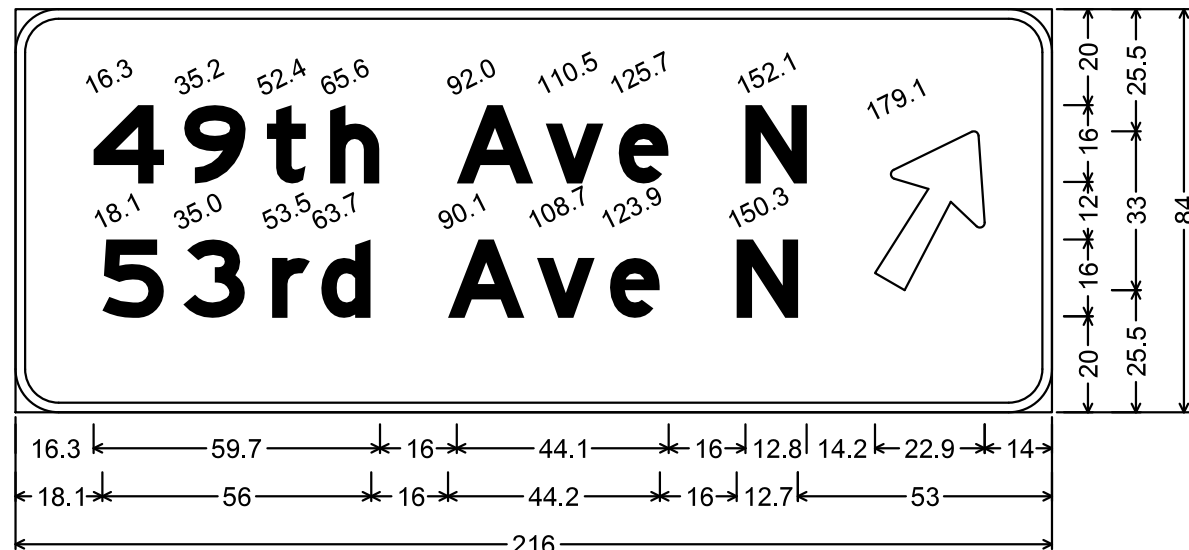
NOTES:

1. CORNERS OF THE SIGN PANEL EXTENDING BEYOND THE BORDER SHALL NOT BE TRIMMED.
2. SEE MNDOT STANDARD SIGNS AND MARKINGS MANUAL FOR ARROW, FRACTION AND OVERLAY DETAIL.

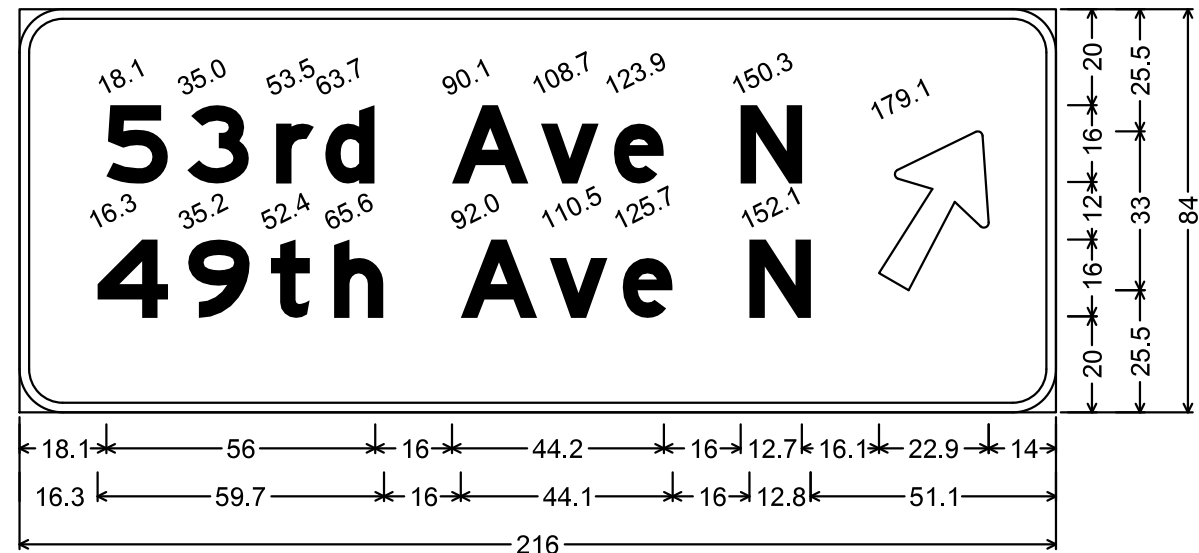
TYPE OH SIGN PANEL OVERLAYS



OH I94-312; 12.0" Radius, 2.0" Border, White on Green;
 [49th-53rd Aves N] E Mod; [$\frac{3}{4}$] E Mod; [$2 \frac{1}{2}$] E Mod; [Shingle Creek Pkwy] E Mod; [$3 \frac{3}{4}$] E Mod;



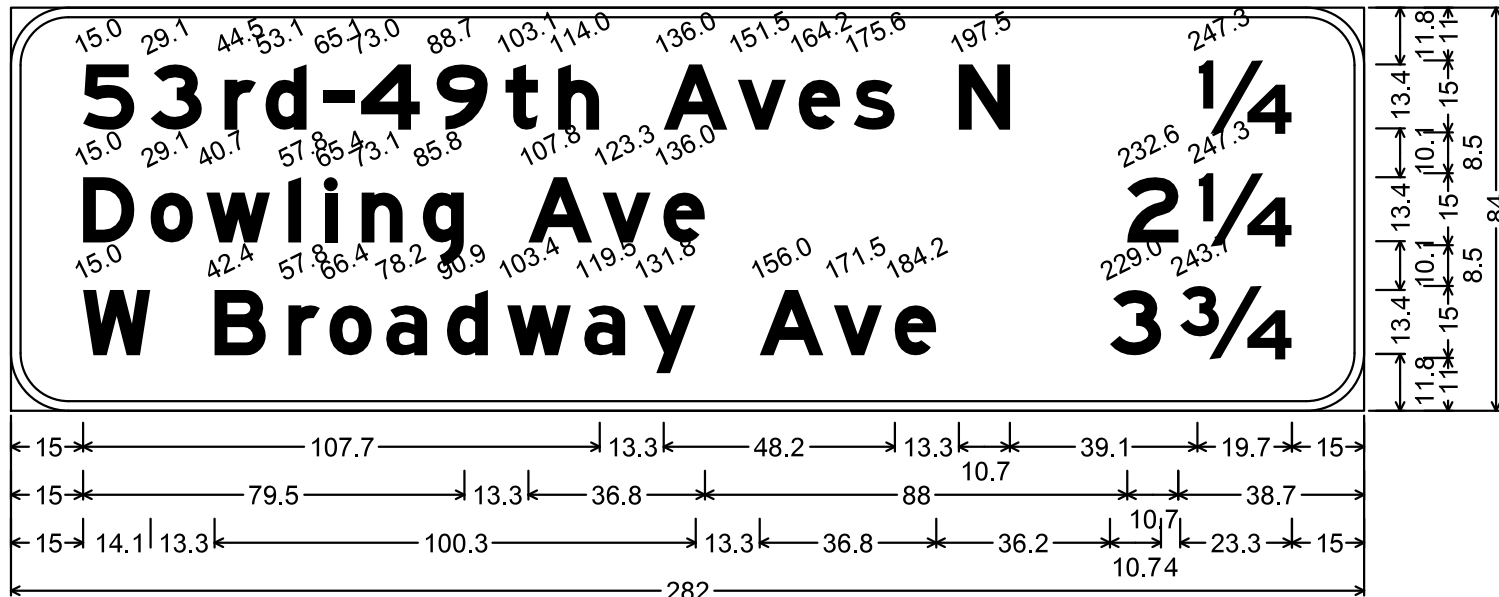
OH I94-314; 9.0" Radius, 2.0" Border, White on Green;
 [49th Ave N] E Mod; [53rd Ave N] E Mod; Arrow 17 - 36.0" 60°;



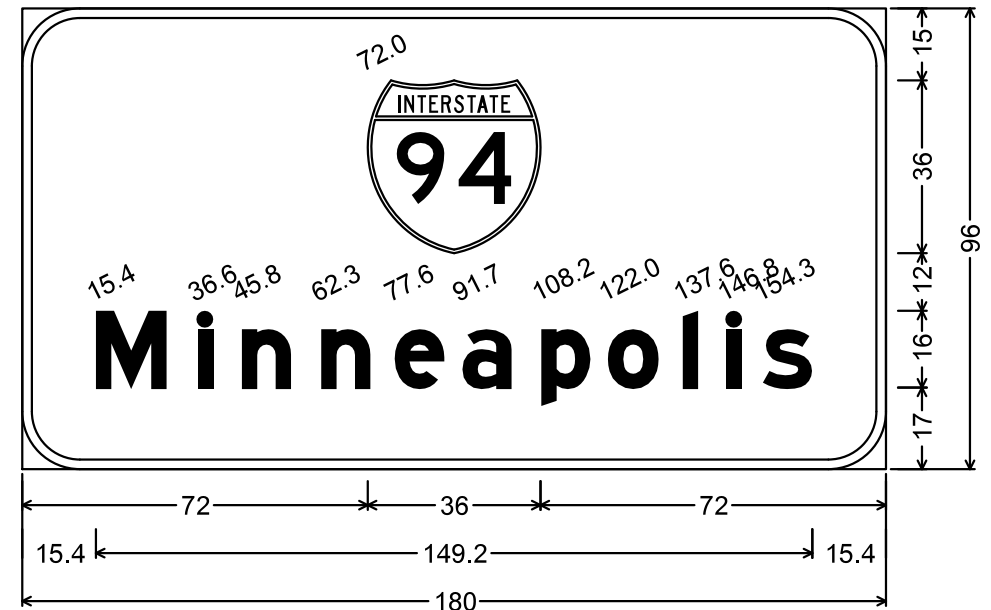
OH I94-317; 9.0" Radius, 2.0" Border, White on Green;
 [53rd Ave N] E Mod; [49th Ave N] E Mod; Arrow 17 - 36.0" 60°;

NOTES:

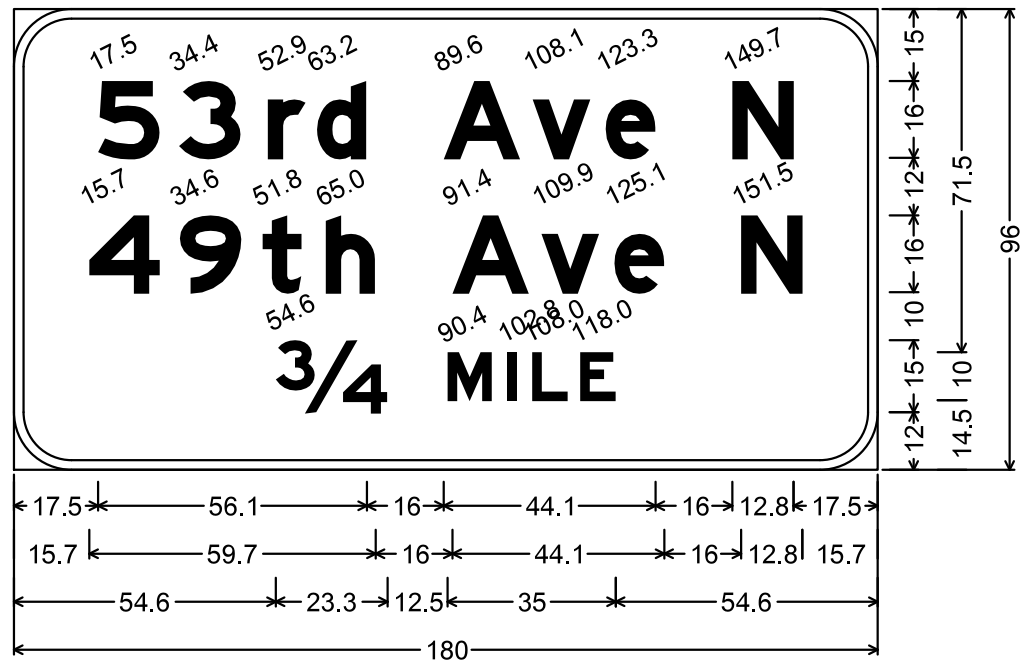
1. CORNERS OF THE SIGN PANEL EXTENDING BEYOND THE BORDER SHALL NOT BE TRIMMED.
2. SEE MNDOT STANDARD SIGNS AND MARKINGS MANUAL FOR ARROW, FRACTION AND OVERLAY DETAIL.



OH I94-319; 12.0" Radius, 2.0" Border, White on Green;
 [53rd-49th Aves N] E Mod; [1/4] E Mod; [Dowling Ave] E Mod; [2 1/4] E Mod;
 [W Broadway Ave] E Mod; [3 3/4] E Mod;



OH I94-331(L); 12.0" Radius, 2.0" Border, White on Green;
 [Minneapolis] E Mod;



OH I94-331(R); 12.0" Radius, 2.0" Border, White on Green;
 [53rd Ave N] E Mod; [49th Ave N] E Mod; [3/4 MILE] E Mod;

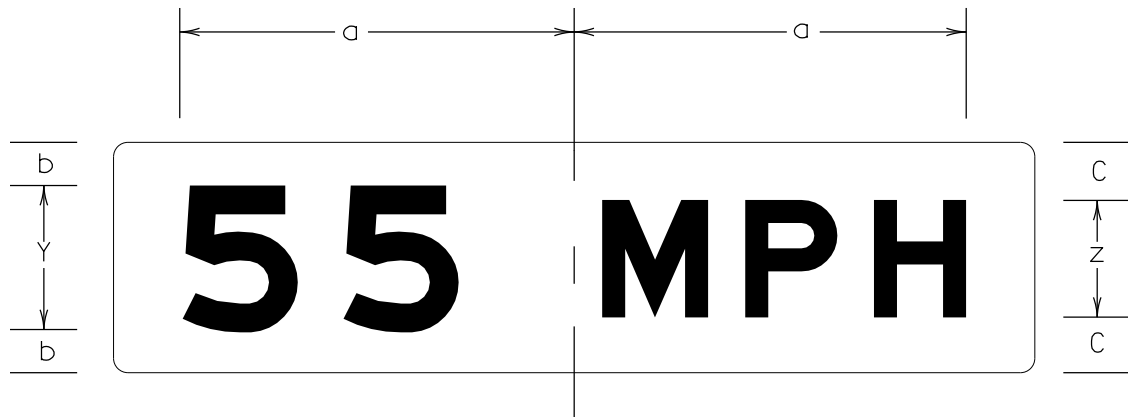
NOTES:

1. CORNERS OF THE SIGN PANEL EXTENDING BEYOND THE BORDER SHALL NOT BE TRIMMED.
2. SEE MNDOT STANDARD SIGNS AND MARKINGS MANUAL FOR ARROW, FRACTION AND OVERLAY DETAIL.

REVISED:

	STATE OF MINNESOTA DEPARTMENT OF TRANSPORTATION STANDARD SIGN DRAWING	
SPEED PLAQUE		

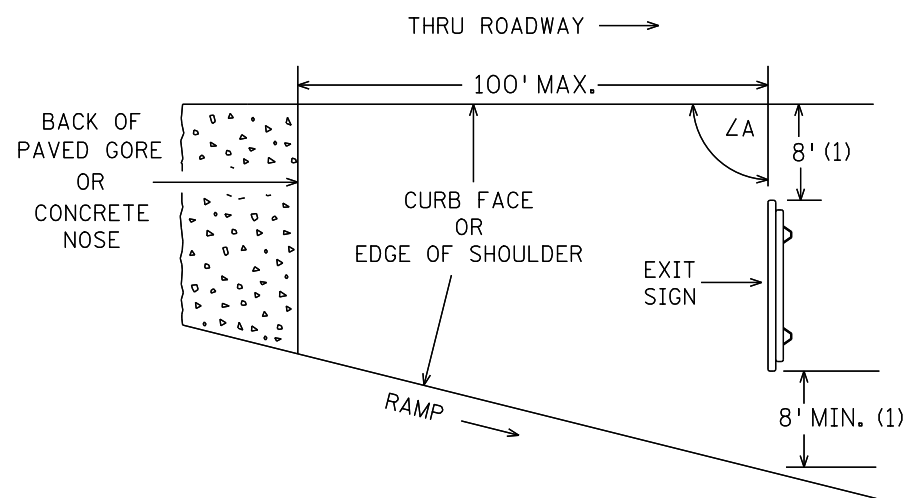
<i>SIZE DIMENSION</i>	96x24
RADIUS	1.5
MARGIN	
BORDER	
a	40.8
b	4.5
c	6.0
d	
e	
f	
g	
h	
i	
j	
k	
l	
m	
n	
o	
p	
q	
r	
s	
t	
u	
v	
w	
x	
y	15E MOD.
z	12E MOD.
PUNCH CODE	



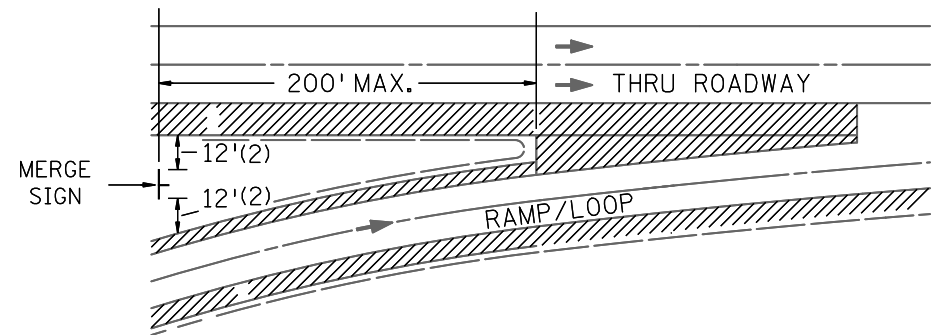
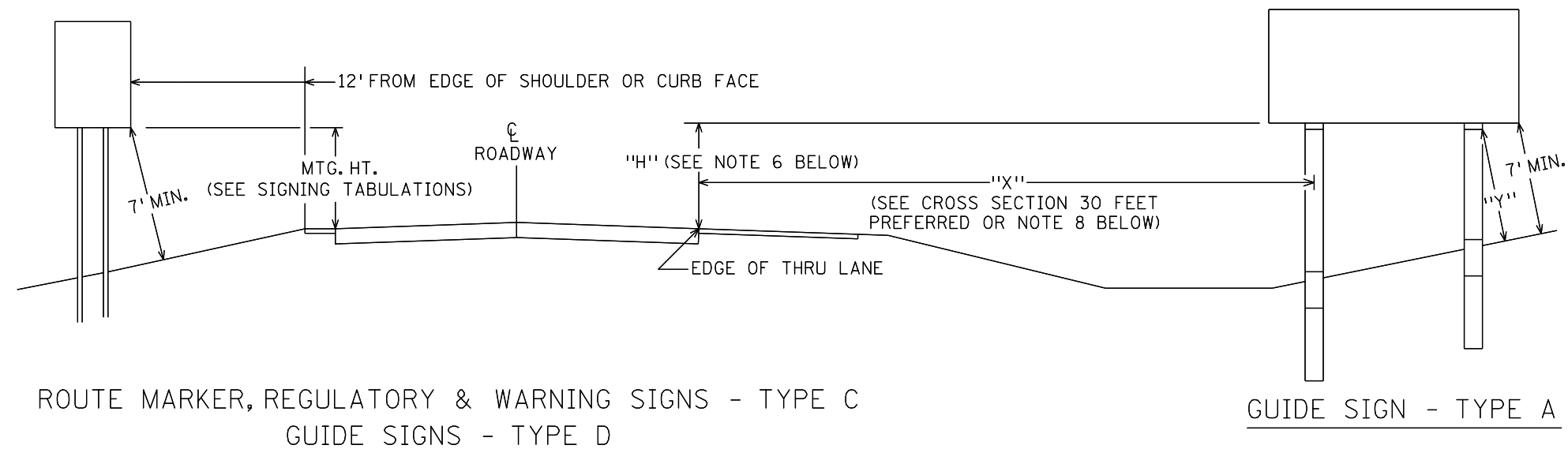
NOTES:

1. ALL DIMENSIONS ARE IN INCHES.
2. COLOR-BLACK LEGEND (NO BORDER) ON YELLOW REFLECTORIZED BACKGROUND.
3. APPROPRIATE NUMERALS TO BE SPECIFIED.

GORE PLACEMENT



ROADSIDE PLACEMENT



SPECIFIC NOTES:

(1) EXIT SIGNS

IF THESE OFFSETS CANNOT BE ATTAINED WITHIN 100 FEET OF THE PAVED GORE, A 4 FOOT OFFSET IS ACCEPTABLE. IF THE 4 FOOT OFFSETS CANNOT BE ATTAINED WITHIN 100 FEET OF THE PAVED GORE, CONTACT THE PROJECT ENGINEER.

(2) MERGE SIGNS

IF THESE OFFSETS CANNOT BE ATTAINED WITHIN 200 FEET OF THE PAVED GORE, A 4 FOOT OFFSET IS ACCEPTABLE. IF THE 4 FOOT OFFSETS CANNOT BE ATTAINED WITHIN 200 FEET OF THE PAVED GORE, CONTACT THE PROJECT ENGINEER.

NOTES:

1. ALL TYPE C AND D MOUNTING HEIGHTS ARE MEASURED VERTICALLY FROM THE BOTTOM OF THE SIGN TO THE ELEVATION OF THE NEAR EDGE OF PAVEMENT IN RURAL AREAS OR TO THE TOP OF THE CURB OR IN THE ABSCENCE OF CURB, TO THE NEAR EDGE OF THE TRAVELED WAY.
2. SIGN FACES SHALL BE VERTICAL.
3. OVERHEAD SIGNS SHALL BE POSITIONED AT RIGHT ANGLES TO THE THRU ROADWAY UNLESS OTHERWISE NOTED.
4. TO AVOID SPECULAR GLARE, $\angle A$ SHALL BE APPROXIMATELY 93° FOR SIGNS LOCATED LESS THAN 30' FROM THE EDGE OF THRU LANE AND APPROXIMATELY 92° FOR SIGNS LOCATED 30' OR MORE FROM EDGE OF THRU LANE. THIS APPLIES TO SIGNS TYPE A, C, & D AND INCLUDES SIGNS IN THE GORE.
5. "Y" IS THE PERPENDICULAR DISTANCE FROM THE GROUND LINE TO THE FRICTION FUSE ON THE POST. THIS DISTANCE SHALL BE AT LEAST 7'.
6. WHERE "X" IS LESS THAN 30', "H" SHALL BE 7'. WHERE "X" IS 30' OR GREATER, MINIMUM AND PREFERRED "H" IS 5'.
7. LATERAL CLEARANCES GIVEN APPLY TO RIGHT AND OR LEFT SIDE INSTALLATION.
8. WHEN A TYPE A SIGN IS INSTALLED DIRECTLY BEHIND TRAFFIC BARRIER, THE LEFT EDGE OF THE SIGN PANEL SHALL BE LOCATED A MINIMUM OF 8 FEET BEHIND THE FACE OF THE TRAFFIC BARRIER.

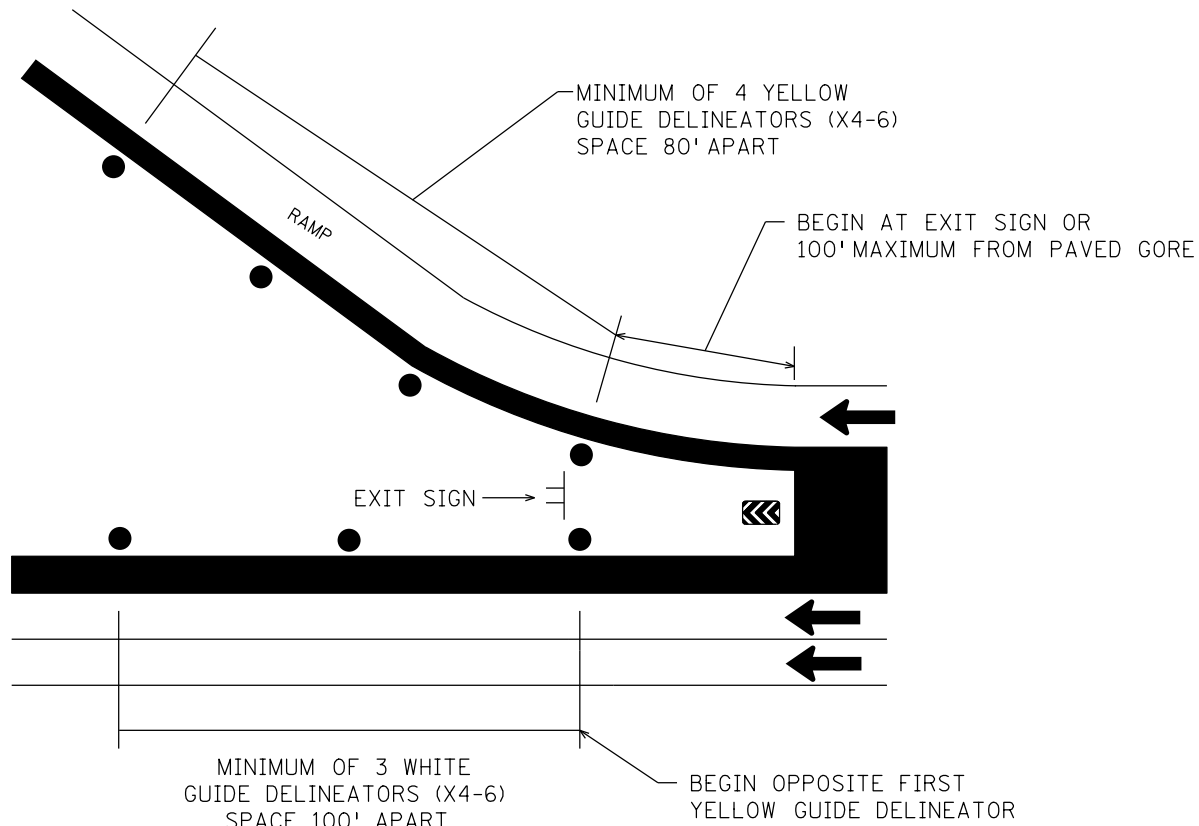
SIGN PLACEMENT

PLOTTED/REVISED: 3/8/2016

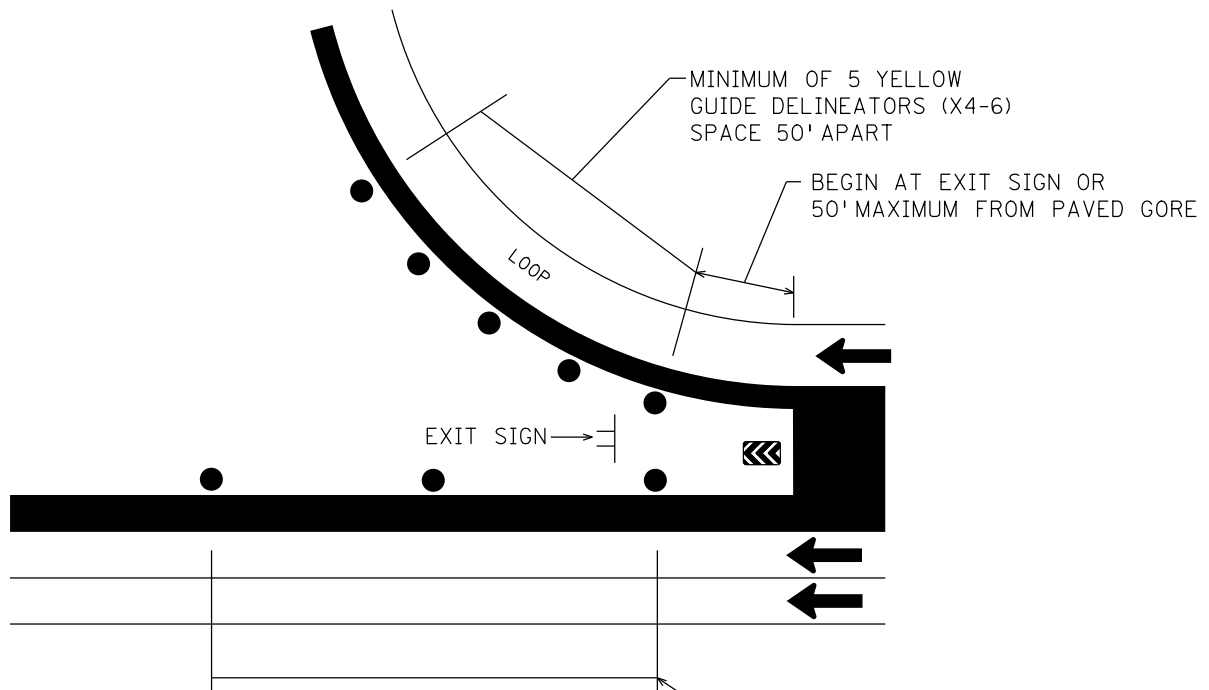
DISTRICT #: METRO
PLOT NAME: 36
PATH & FILENAME: IP_PWP-d721848/URBAN FREEWAY PLAN TYPICALS.dgn

PLOTTED/REVISED: 3/8/2016

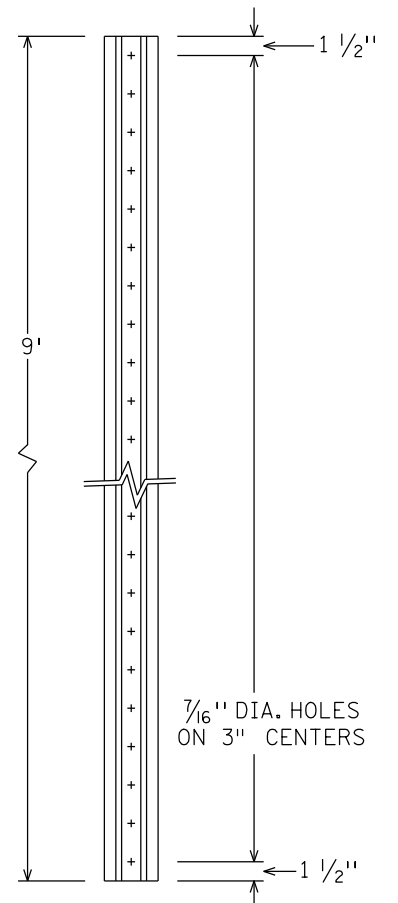
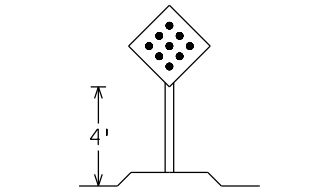
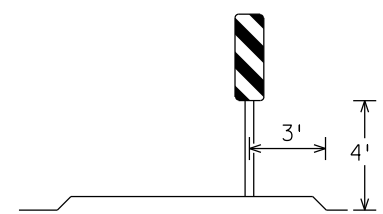
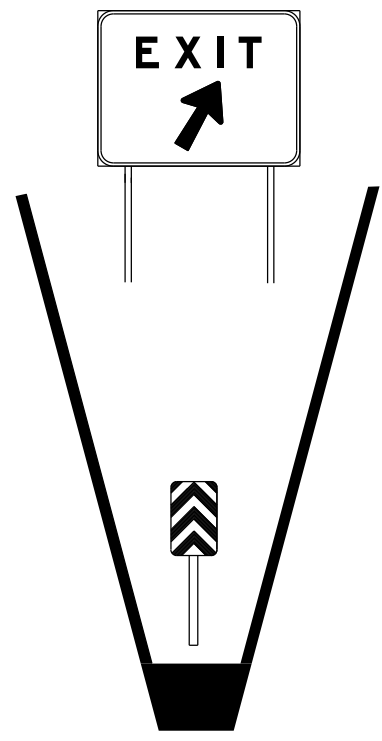
DISTRICT #: METRO
PLOT NAME: 37
PATH & FILENAME: IP_PWP-d1721848URBAN FREEWAY PLAN TYPICALS.dgn



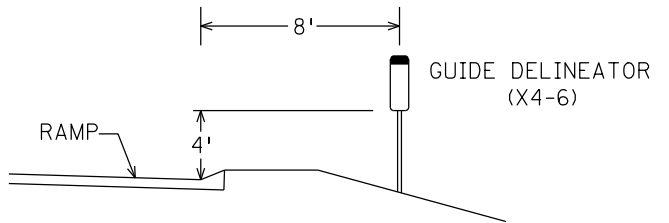
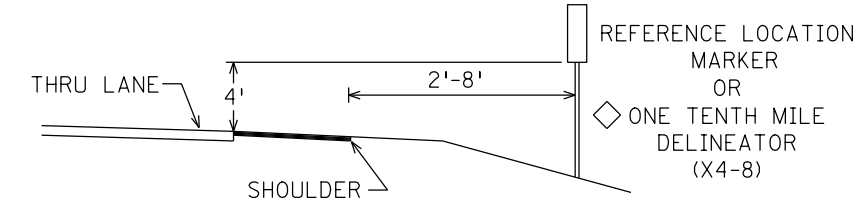
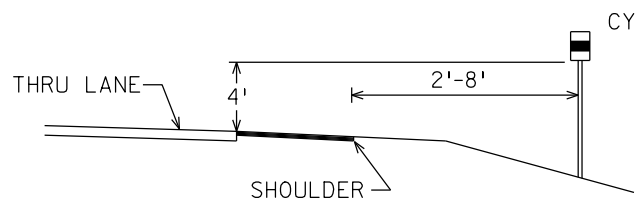
PLAN A
RAMP DELINEATION



PLAN B
LOOP DELINEATION



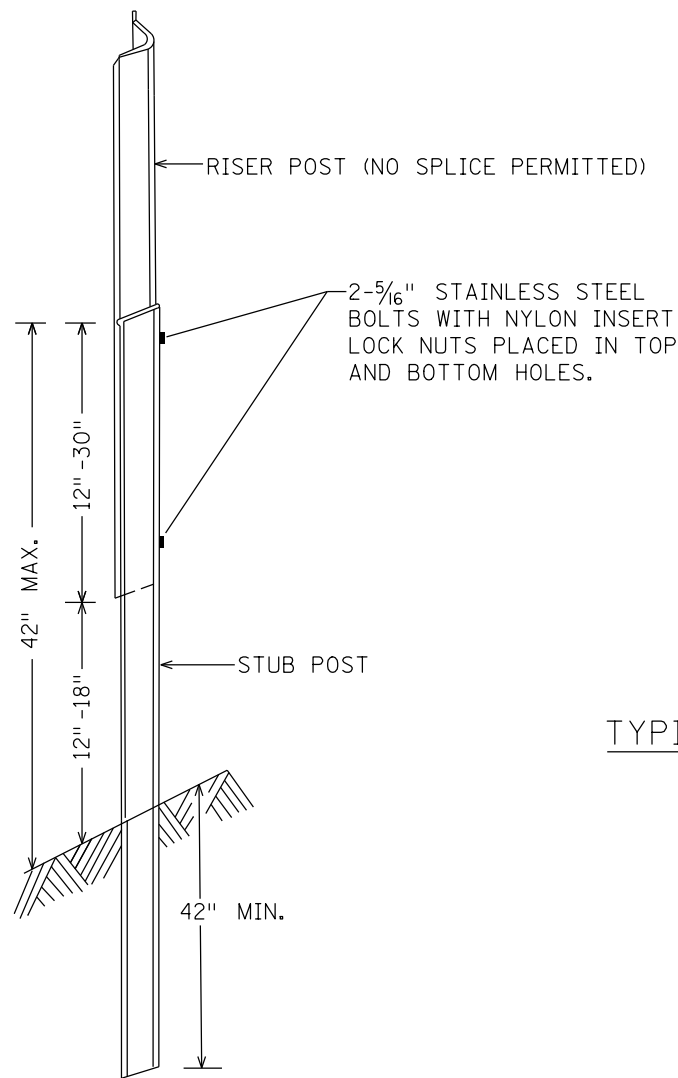
DELINEATOR POST



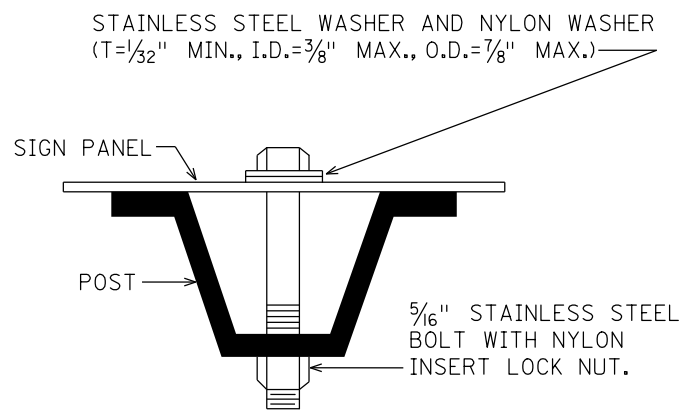
TYPICAL PLACEMENT

DELINEATORS AND MARKERS

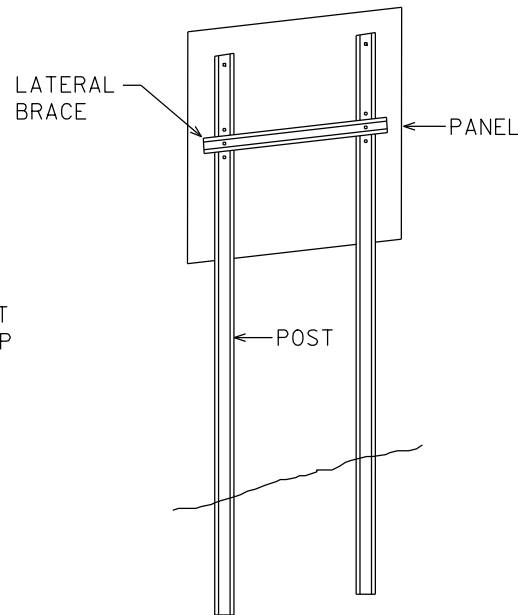
TYPE C & D POST



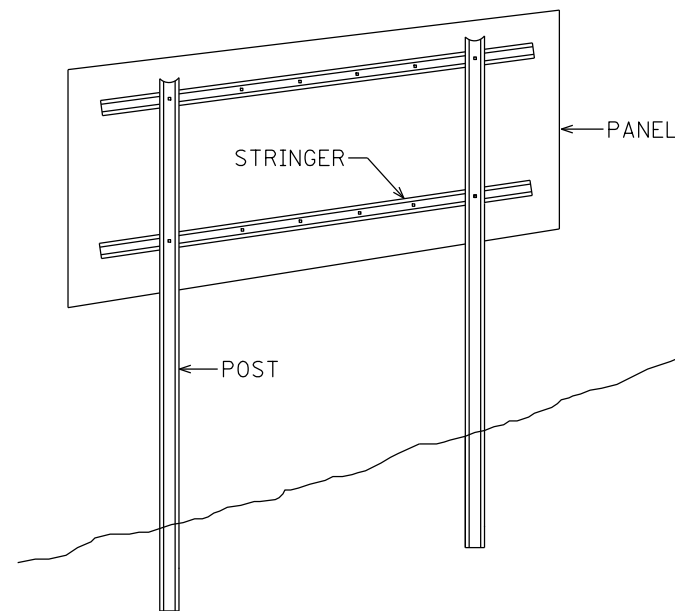
U POST BREAKAWAY SPLICE



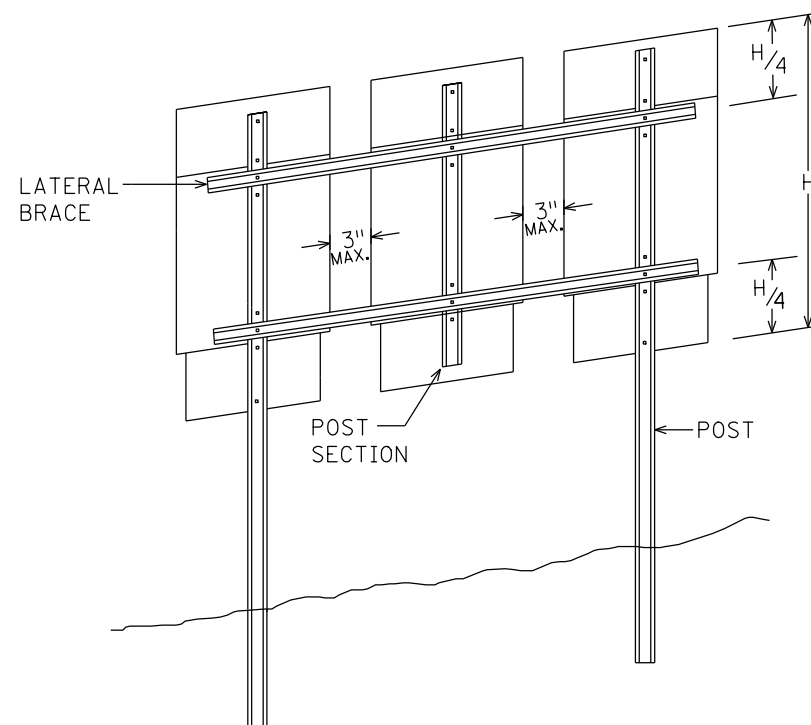
U POST MOUNTING
TYPE C SIGNS



TYPICAL TYPE C INSTALLATION



TYPICAL TYPE D INSTALLATION



MODIFIED TYPE C INSTALLATION

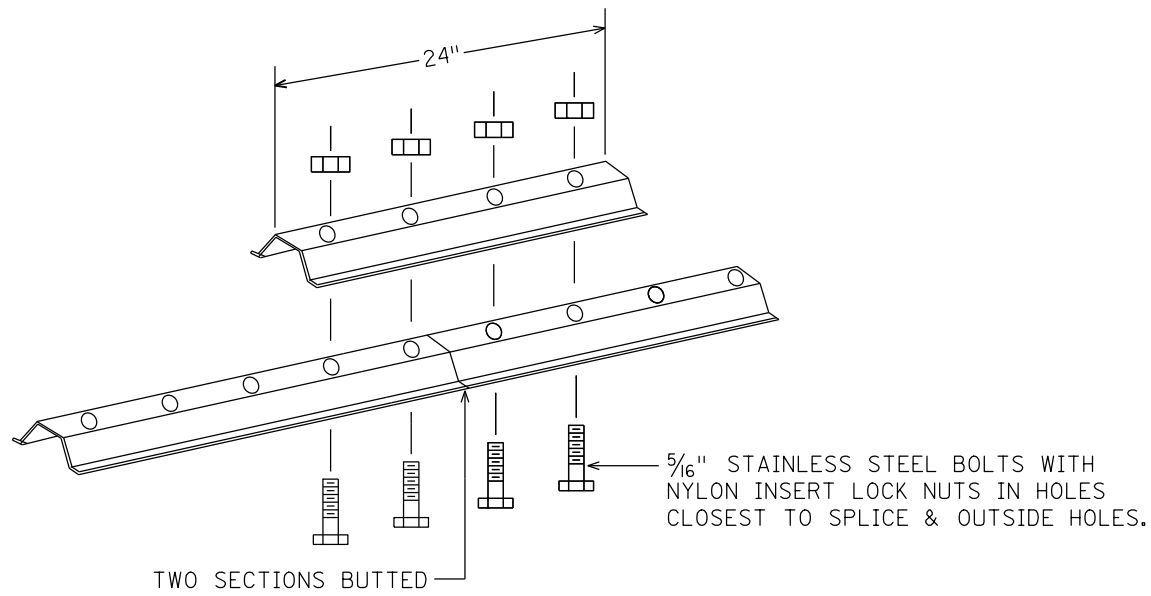
NOTES:

1. USE 3 LB/FT STUB POSTS. SHALL CONFORM TO MNDOT 3401.
2. USE 2.5 LB/FT RISER POSTS, STRINGERS, KNEE BRACES AND LATERAL BRACES. ALL SHALL CONFORM TO MNDOT 3401.
3. SEE SIGN DATA SHEETS FOR NUMBER OF POSTS, KNEE BRACES, POST LENGTHS AND SPACINGS, AS DETERMINED FROM TEM CHARTS 6.3 AND 6.4.
4. IF MORE THAN TWO POSTS ARE NEEDED, THE MINIMUM SPACING SHALL BE 45" BETWEEN POSTS.
5. TYPE D SIGN PANELS SHALL BE BOLTED TO STRINGERS AT 24" MAXIMUM INTERVALS IN ACCORDANCE WITH THE TYPE D STRINGER AND PANEL - JOINT DETAIL (SEE MNDOT STANDARD SIGNS AND MARKINGS MANUAL).
6. MOUNTING (PUNCH CODE) FOR TYPE C SIGN PANELS SHALL BE AS INDICATED IN THE MNDOT STANDARD SIGNS AND MARKINGS MANUAL UNLESS OTHERWISE SPECIFIED.
7. ALL RISER (VERTICAL) U POSTS SHALL BE SPLICED. DRIVEN STUB POSTS SHALL BE AT LEAST 7' LONG.
8. USE STAINLESS STEEL 5/16" BOLTS, WASHERS AND NYLON INSERT LOCK NUTS AS SHOWN FOR ALL GROUND MOUNTED AND OVERHEAD MOUNTED SIGNS.
9. STAINLESS STEEL WASHER WITH SAME DIMENSIONS SHALL BE PROVIDED BETWEEN ALL NYLON WASHERS AND BOLT HEADS.
10. BRACING STUBS SHALL BE NO MORE THAN 4" ABOVE GROUND AND EMBEDDED AT LEAST 42".
11. A-FRAME BRACKET SHALL BE STEEL CONFORMING TO MNDOT 3306 AND GALVANIZED IN ACCORDANCE WITH MNDOT 3394.
12. COLLARS SHALL BE USED TO SHIM OVERLAYS AND LEGEND COMPONENTS AWAY FROM PANEL WHERE INTERFERENCE WITH BOLT HEADS IS ENCOUNTERED. MNDOT 3352.2A6.
13. 2 POST TYPE C SIGNS SHALL BE REINFORCED WITH AT LEAST ONE LATERAL BRACE. INSTALLATIONS WHERE THE TOTAL PANEL HEIGHT IS 60" OR MORE SHALL HAVE TWO LATERAL BRACES LOCATED APPROXIMATELY AT THE QUARTER POINTS.
14. WHERE 2 SINGLE POST TYPE C SIGNS ARE INSTALLED SIDE BY SIDE, THEY SHALL BE REINFORCED Laterally BY AT LEAST 2 BRACES, BOLTED AT EACH POST AND LOCATED APPROXIMATELY AT THE QUARTER POINTS.
15. WHERE 3 OR MORE TYPE C SIGNS ARE INSTALLED SIDE BY SIDE, THEY SHALL BE REINFORCED Laterally BY AT LEAST 2 BRACES, BOLTED AT EACH POST AND POST SECTION AND LOCATED APPROXIMATELY AT THE QUARTER POINTS AS SHOWN IN MODIFIED TYPE C INSTALLATION.

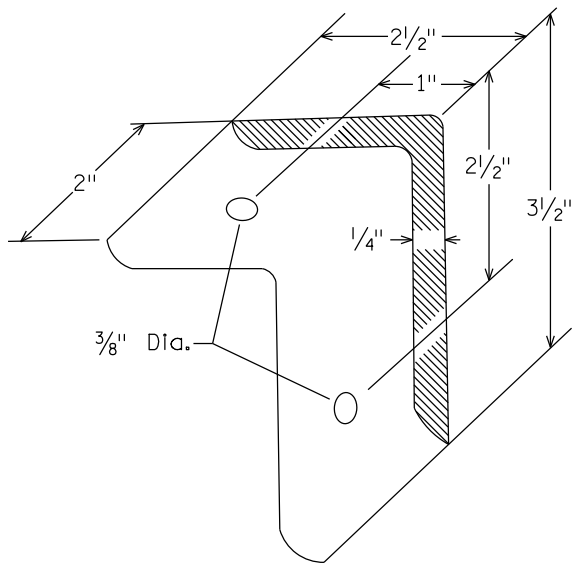
TYPE C & D SIGN
STRUCTURAL DETAILS

PLOTTED/REVISED: 3/8/2016

DISTRICT #: METRO
I/PLOT NAME: 39
PATH & FILENAME: IP_PWP-d721848/URBAN FREEWAY PLAN TYPICALS.dgn

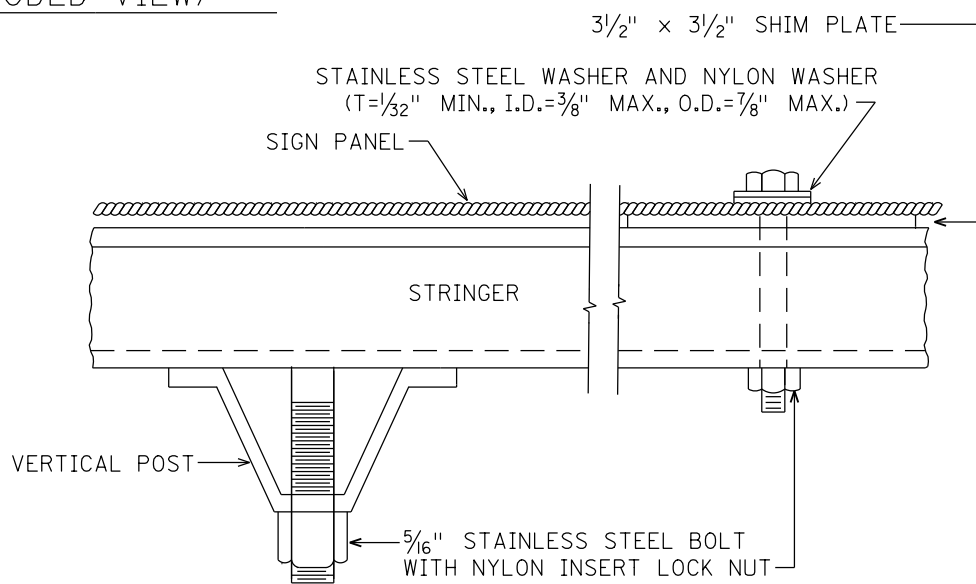
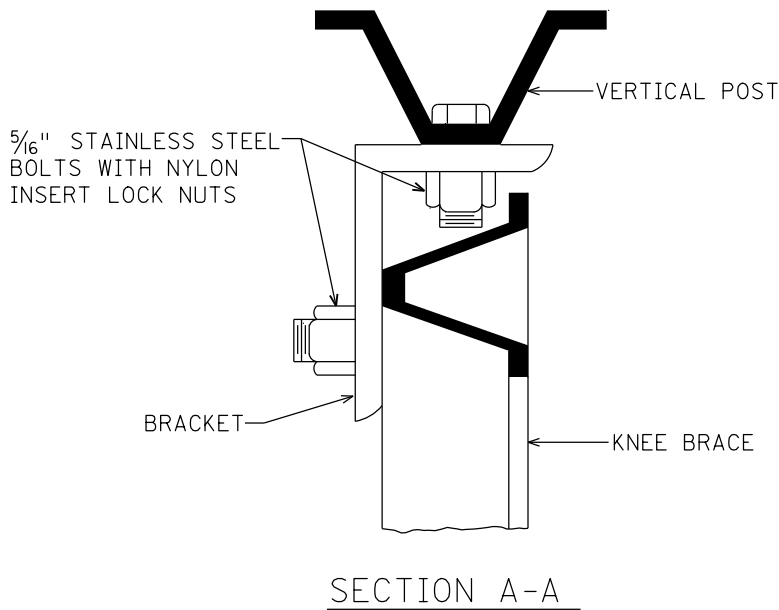


LATERAL BRACE OR STRINGER SPLICE DETAIL (EXPLODED VIEW)

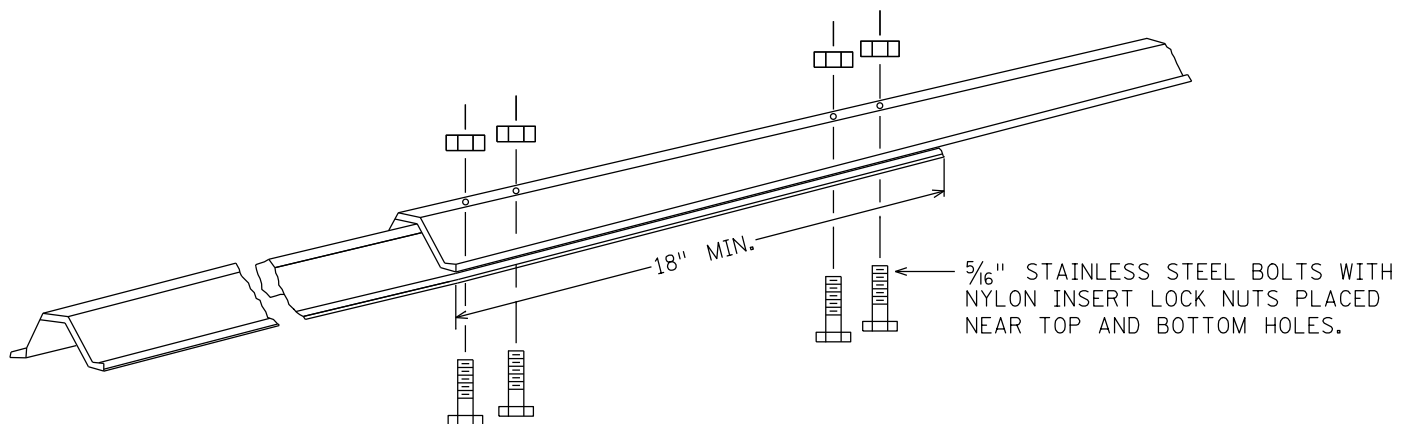


A-FRAME BRACKET

(STEEL MNDOT 3306 GALVANIZED PER MNDOT 3394)

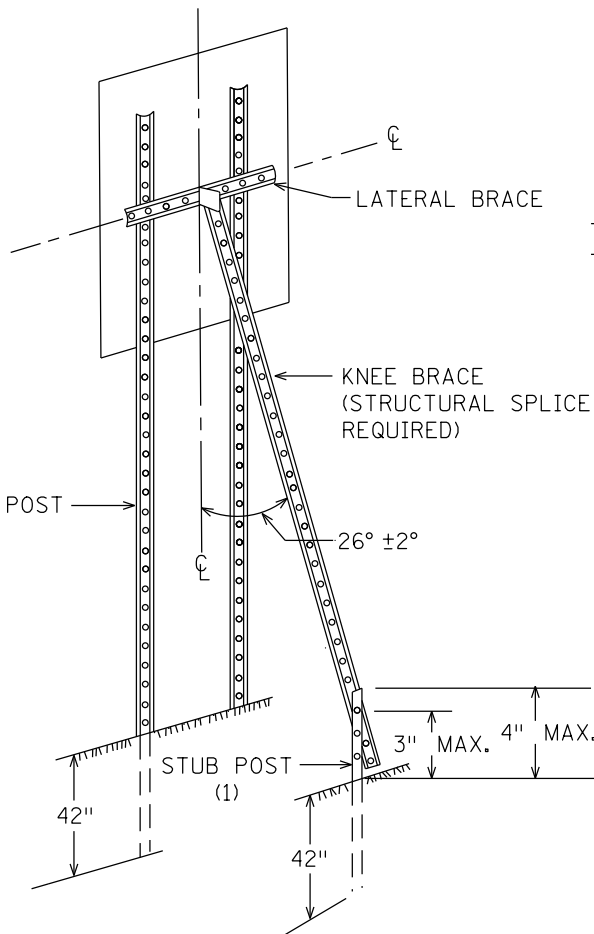


SECTION B-B

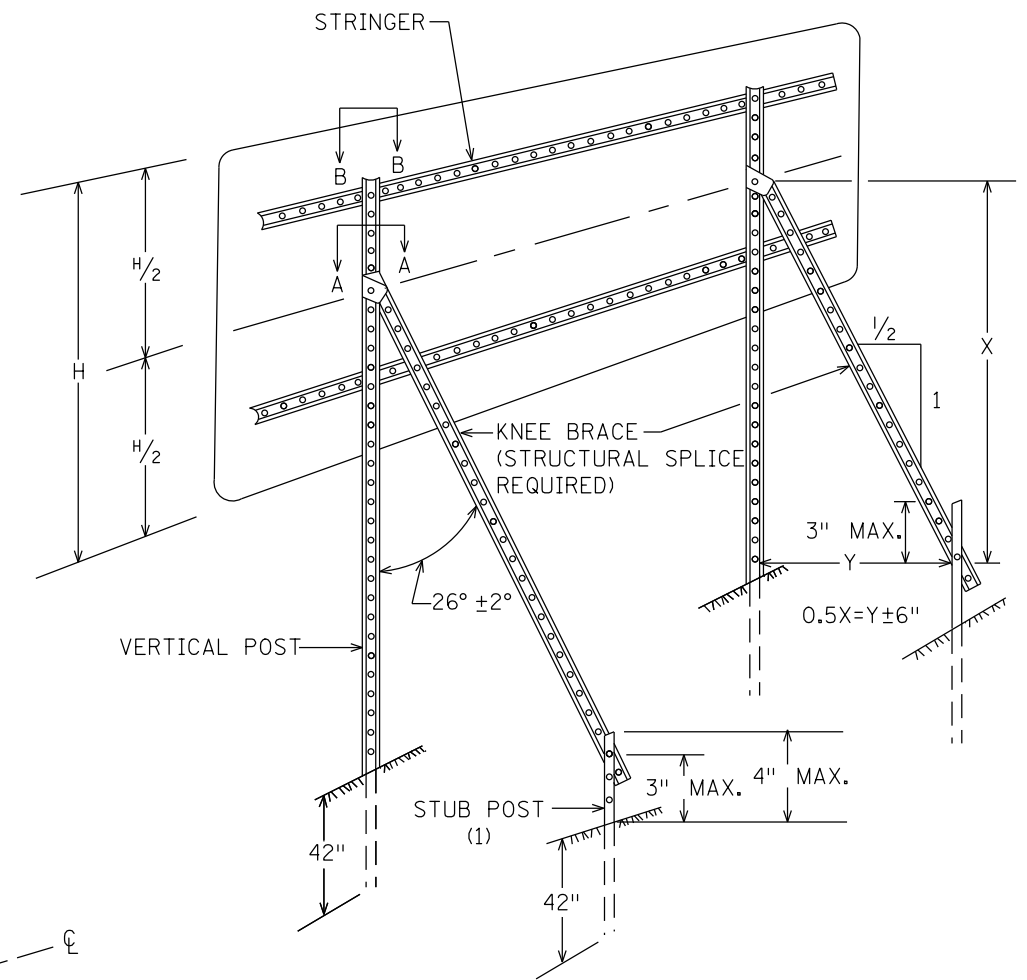


STRUCTURAL SPLICE

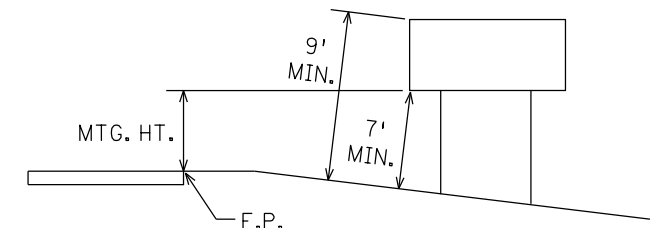
(USE WHEN IT IS NECESSARY TO FABRICATE THE CORRECT LENGTH OF POST FROM TWO PIECES)



TYPICAL "A-FRAME" INSTALLATION TYPE "C" SIGNS



TYPICAL "A-FRAME" INSTALLATION TYPE "D" SIGNS

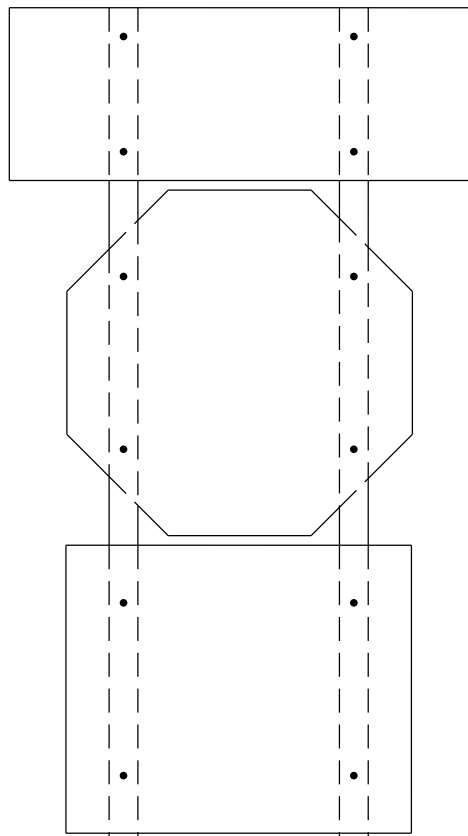


TYPICAL MOUNTING

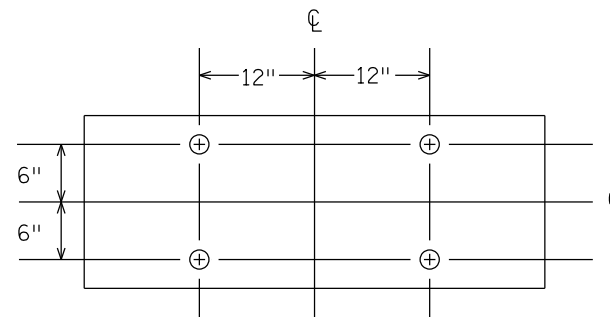
(1) OFFSET STUB POST 1' TOWARD ROADWAY RELATIVE TO VERTICAL POST. ATTACH STUB POST AND KNEE BRACE BACK TO BACK.

TYPE C & D SIGN STRUCTURAL DETAILS

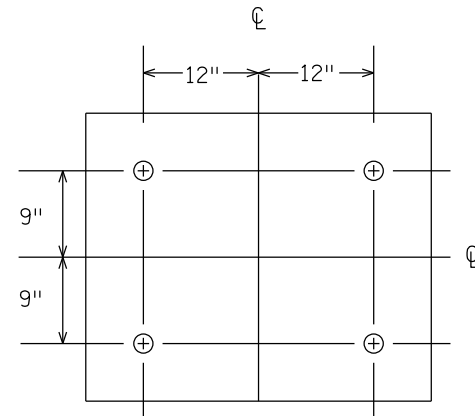
Sheet 2 of 3



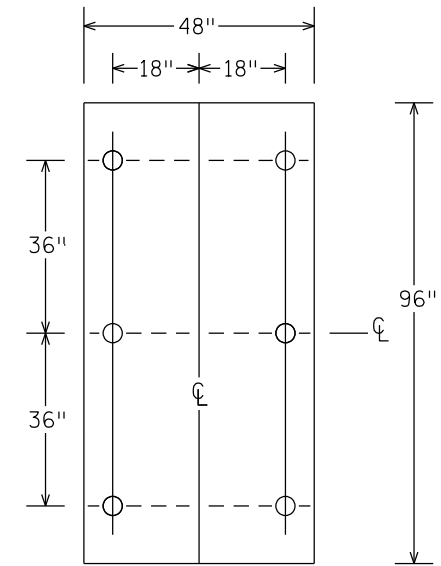
R6-1, R1-1 & (R6-3 OR R6-3a)
MOUNTING



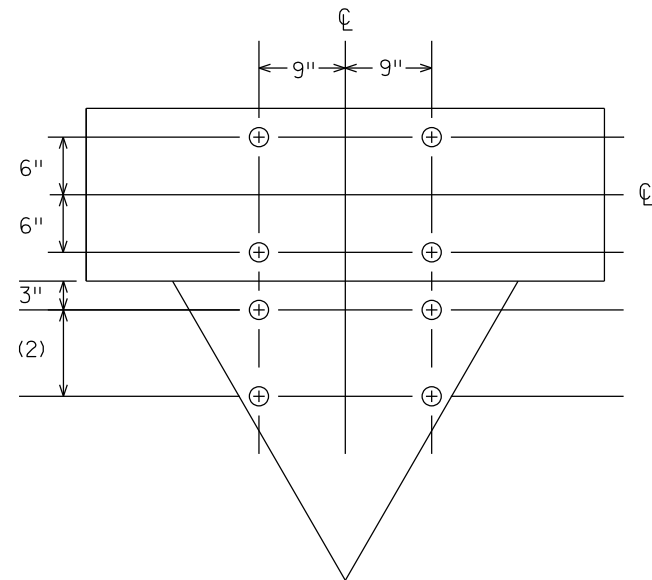
PUNCHING FOR R6-1 (54" x 18")



PUNCHING FOR R6-3 OR R6-3a (36" x 30")

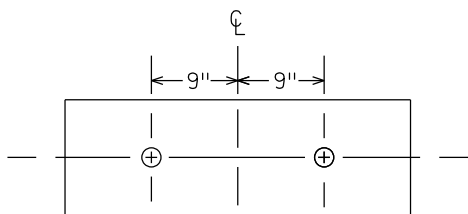


PUNCHING FOR R2-4b
SPEED LIMIT

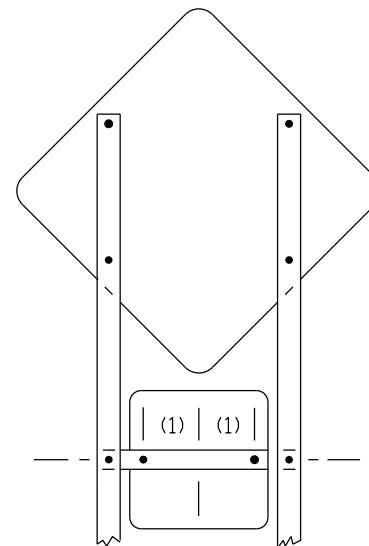


PUNCHING FOR R6-1 (54" x 18") AND
R1-2 (36" x 36" x 36" OR 48" x 48" x 48")

- (2) 9" FOR 36" x 36" x 36"
- 18" FOR 48" x 48" x 48"

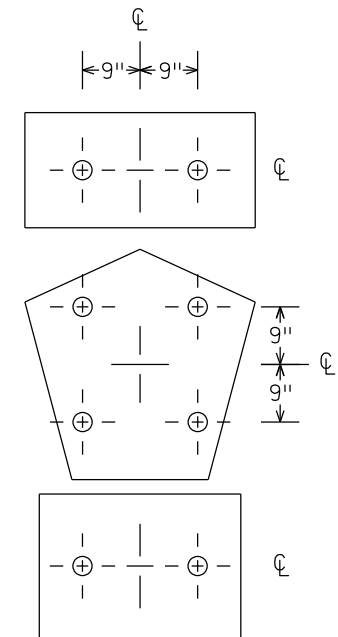


PUNCHING FOR R6-1 (36" x 12")



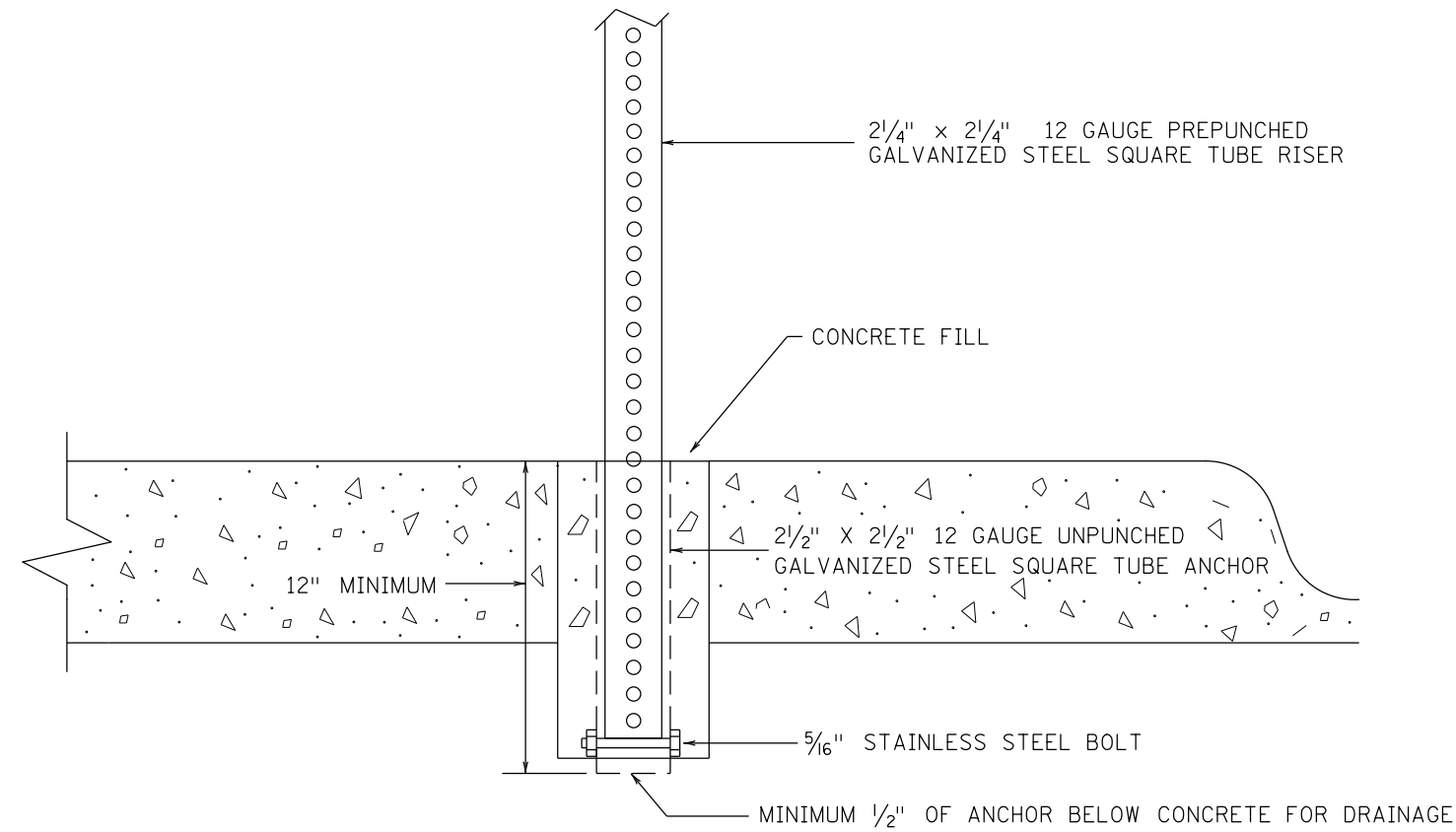
WARNING SIGN [30" x 30 OR 48" x 48"] AND
WARNING PLAQUE [18" x 18" OR 30" x 30"]
PUNCHING AND MOUNTING

- (1) 6" FOR WARNING PLAQUE (18" x 18")
- 12" FOR WARNING PLAQUE (30" x 30")



(M3-1A, M3-2A, M3-3A OR M3-4A) [36" x 18"] AND
M1-6 [36" x 36"] AND
(M5-1A, M5-2A, M6-1A, M6-2A, M6-3A, M6-4A, M6-5A OR M6-6A) [30" x 24"]
PUNCHING

TYPE C & D SIGN
STRUCTURAL DETAILS

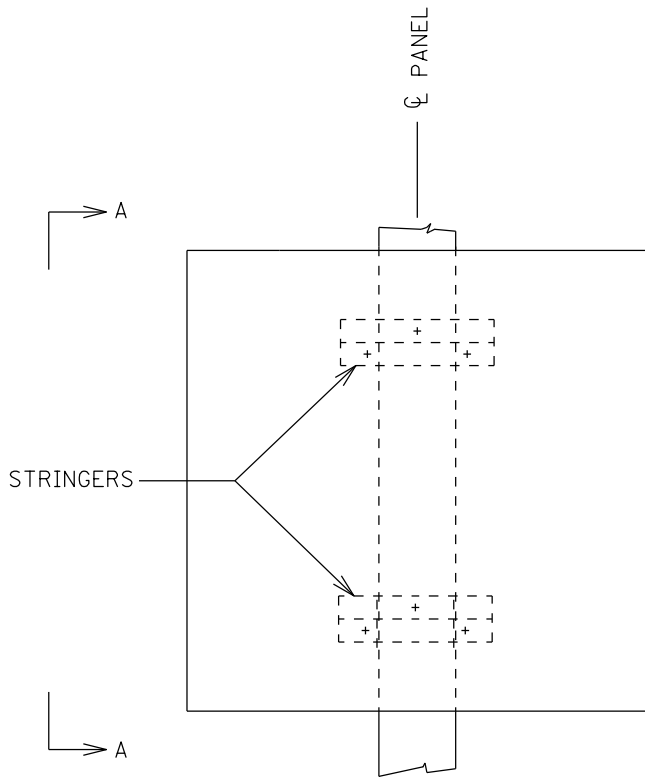


NOTES;

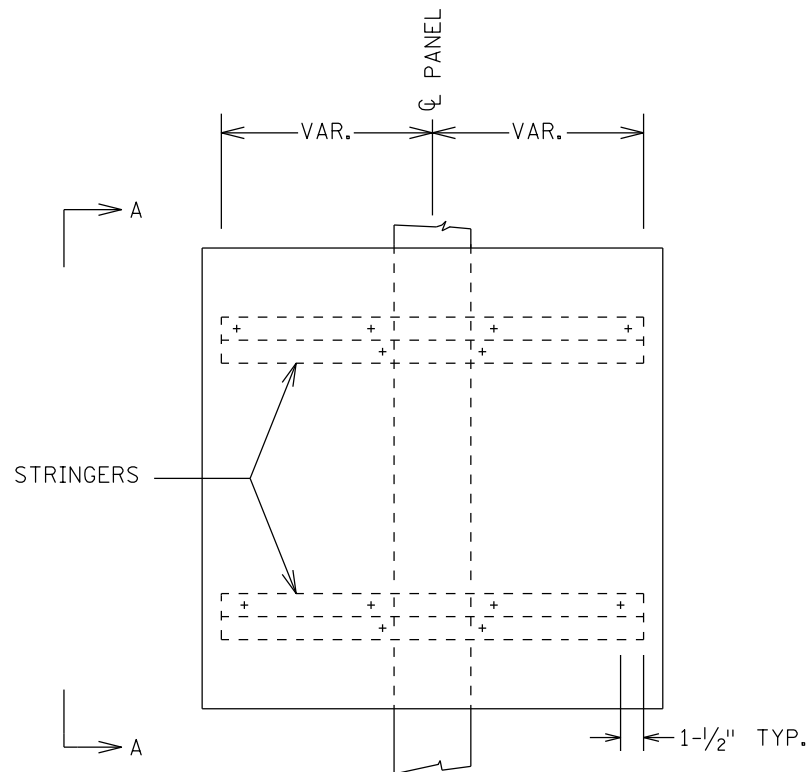
1. DRILL AN 8" DIAMETER HOLE THE FULL DEPTH OF THE ANCHOR.
2. DRILL 3/8" HOLES ON OPPOSITE SIDES OF THE UNPUNCHED GALVANIZED STEEL SQUARE TUBE ANCHOR APPROX. 1" FROM THE BOTTOM OF THE ANCHOR. INSERT A 5/16" STAINLESS STEEL BOLT THROUGH THE HOLES AND SECURE WITH A STAINLESS STEEL LOCK NUT WITH NYLON INSERT. THE PREPUNCHED GALVANIZED STEEL SQUARE TUBE RISER (TO BE INSERTED INSIDE THE UNPUNCHED GALVANIZED SQUARE TUBE ANCHOR) WILL REST ON BOLT.
3. INSERT THE ANCHOR IN THE HOLE.
4. AFTER INSTALLATION OF THE UNPUNCHED GALVANIZED STEEL SQUARE TUBE ANCHOR, FILL THE HOLE WITH A CONCRETE MIX APPROVED BY THE ENGINEER AND LEVEL OFF THE TOP OF CONCRETE.
5. MAXIMUM SIGN PANEL SIZE IS 42" WIDE X 48" HIGH.
6. SIGN PANEL TO BE MOUNTED 7 FT ABOVE THE GROUND.

TYPE C SIGNS, DELINEATORS &
 MARKERS IN CONCRETE

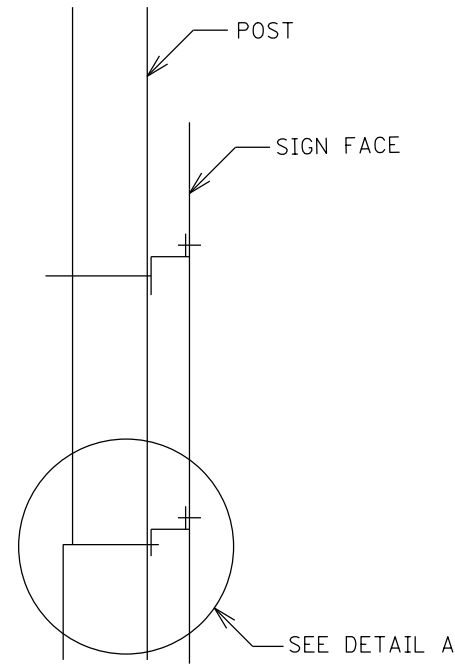
PLOTTED/REVISED: 3/8/2016



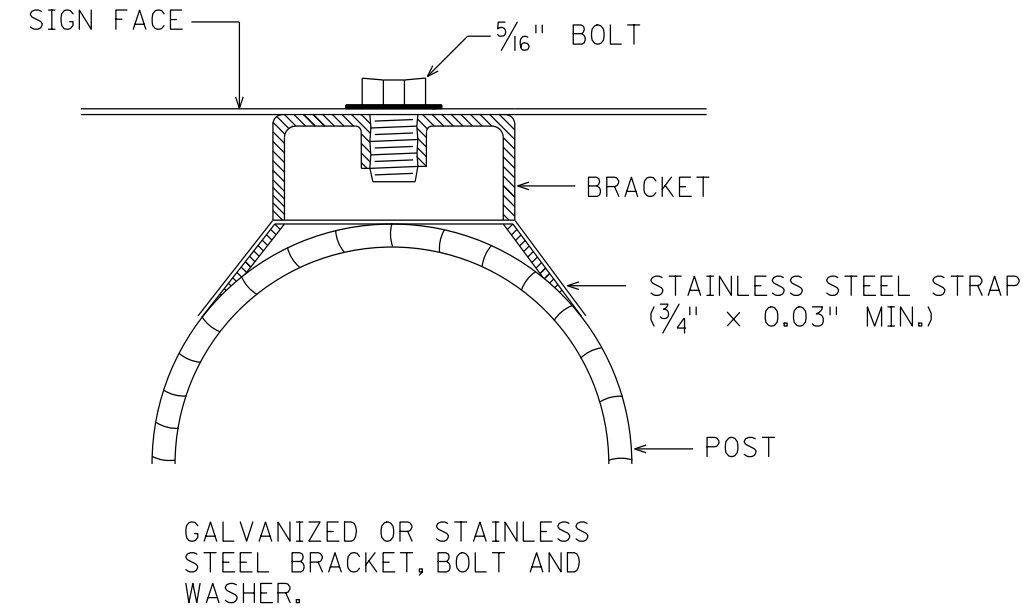
SINGLE POST PUNCHING
ELEVATION



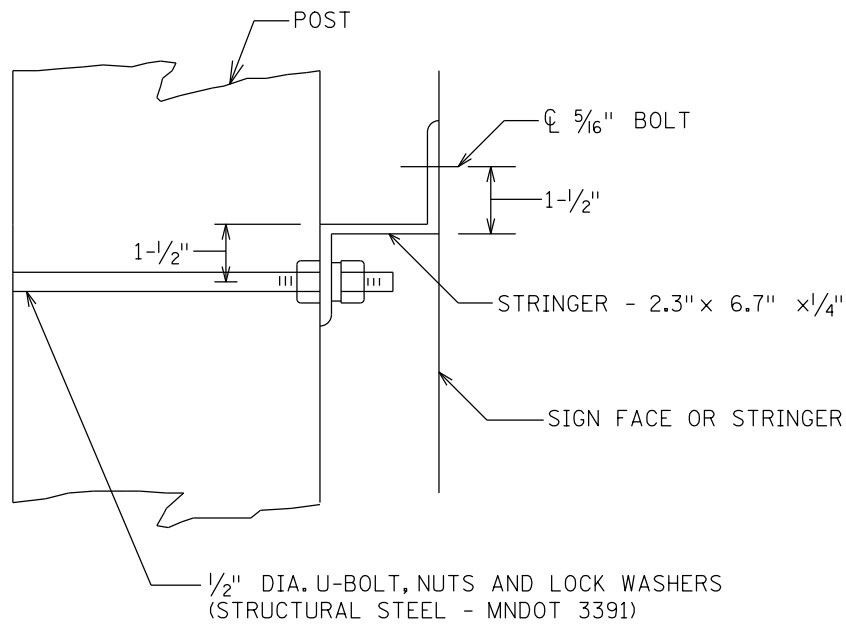
2-POST PUNCHING
ELEVATION



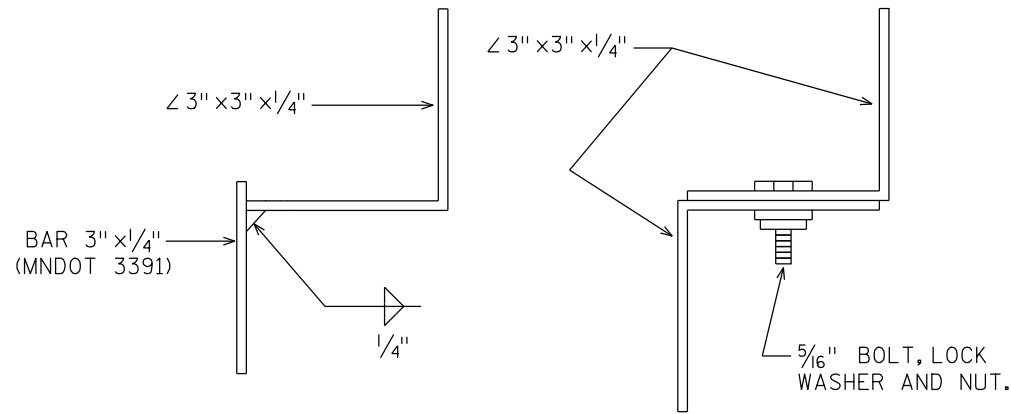
VIEW A-A



STRAP MOUNTING DETAIL FOR
OVERHEAD IDENTIFICATION AND
LIGHTING SYSTEM IDENTIFICATION PLATES



DETAIL A



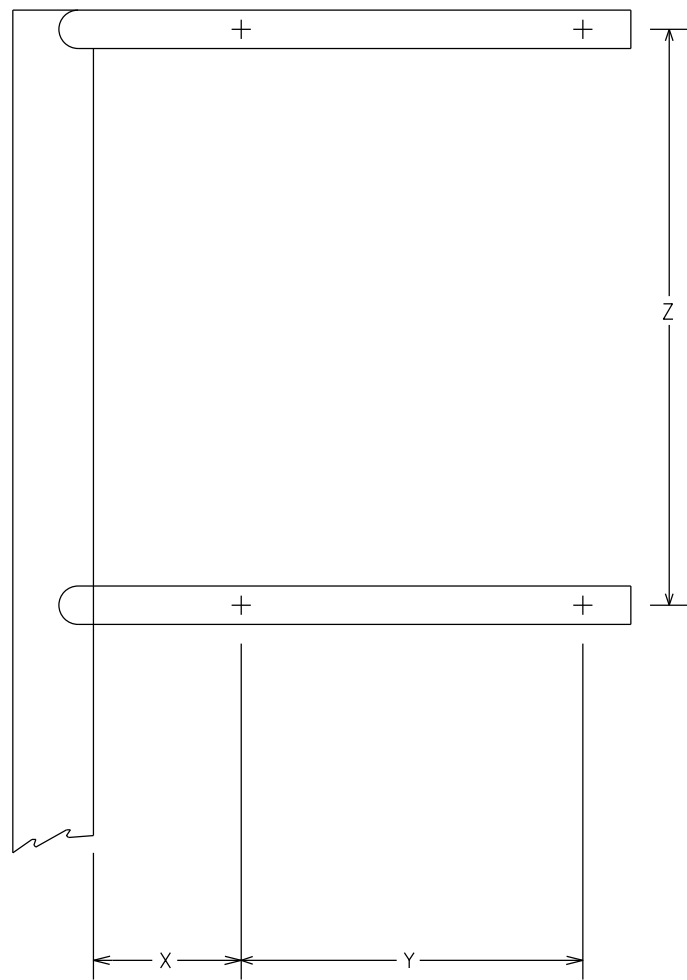
DETAIL A STRINGER ALTERNATES

NOTES:

1. FOR DETAILS AND NOTES NOT SHOWN SEE "C" & "D" SIGN DETAILS.
2. FOR BACK TO BACK MOUNTINGS, ROTATE STRINGERS FOR ONE PANEL 180° FROM WHAT IS SHOWN SUCH THAT PANELS CAN BE MOUNTED AT SAME ELEVATION.
3. DETAIL A STRINGER MAY BE ONE OF THE THREE DESIGNS DETAILED OR AN APPROVED EQUAL. STRUCTURAL STEEL SHALL BE IN ACCORDANCE WITH MNDOT 3306 AND GALVANIZED IN ACCORDANCE WITH MNDOT 3394. FASTENERS SHALL BE IN ACCORDANCE WITH MNDOT 3391.2B AND SHALL BE GALVANIZED EITHER BY THE HOT-DIP PROCESS IN ACCORDANCE WITH ASTM A153, OR BY THE MECHANICAL PROCESS IN ACCORDANCE WITH ASTM B695, CLASS 50 OR GREATER.

SIGN TYPE C AND D STRUCTURAL
STEEL MOUNTING SYSTEM
FOR ROUND SUPPORTS

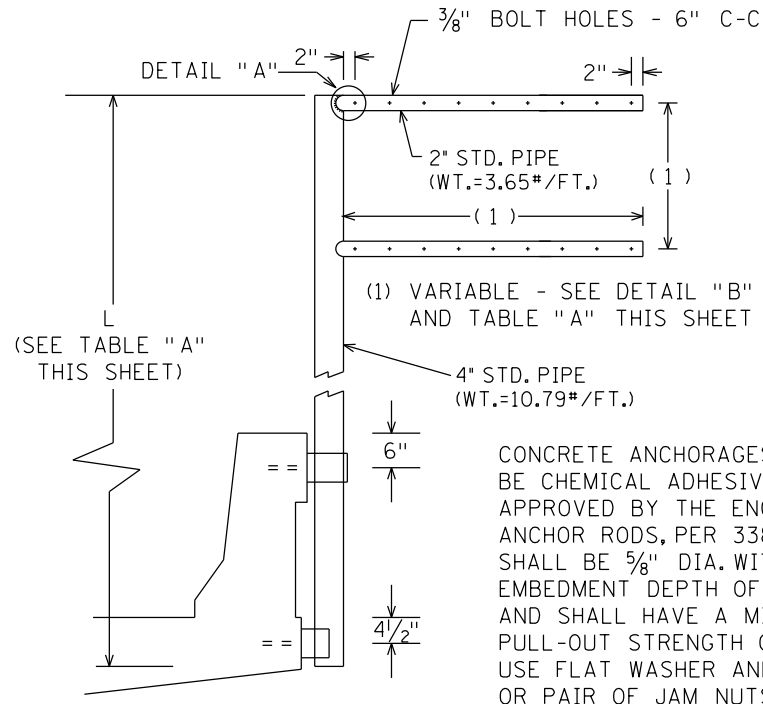
DISTRICT #: METRO
PLOT NAME: 42
PATH & FILENAME: IP_PWP-d721848URBAN FREEWAY PLAN TYPICALS.dgn



DETAIL "B"

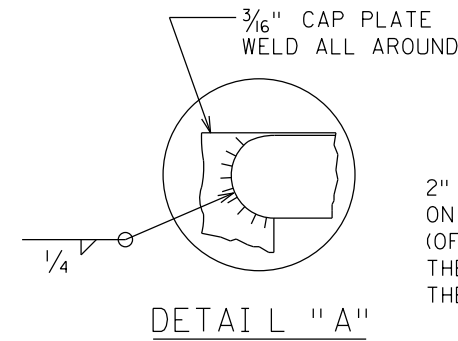
SIGN NO.	X (IN.)	Y (IN.)	Z (IN.)	L (FT.)
C-8	8	30	30	11

TABLE "A"



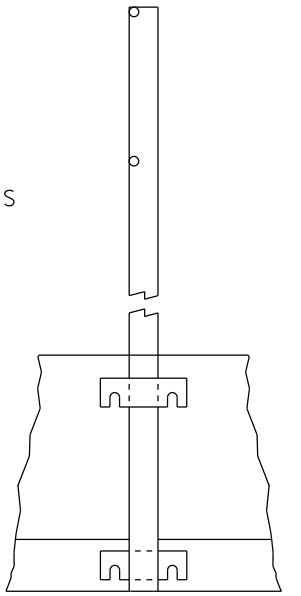
ELEVATION

CONCRETE ANCHORAGES SHALL BE CHEMICAL ADHESIVE TYPE AS APPROVED BY THE ENGINEER. ANCHOR RODS, PER 3385 TYPE A, SHALL BE 5/8" DIA. WITH A MIN. EMBEDMENT DEPTH OF 5 5/8", AND SHALL HAVE A MIN. ULTIMATE PULL-OUT STRENGTH OF 12,000#. USE FLAT WASHER AND LOCK NUT OR PAIR OF JAM NUTS.

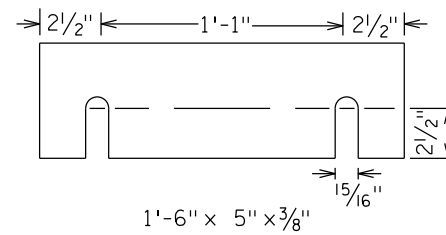
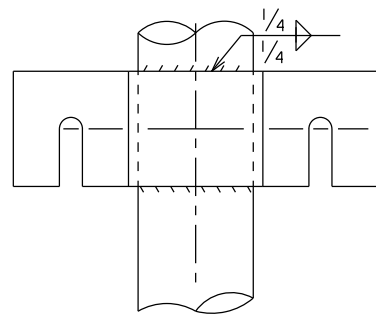


DETAIL "A"

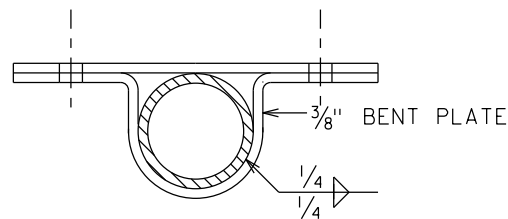
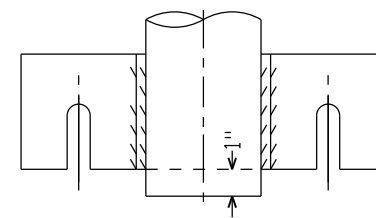
2" PIPE OFFSET ON 4" PIPE (OFFSET SHALL BE IN THE SAME DIRECTION AS THE SIGN IS FACING)



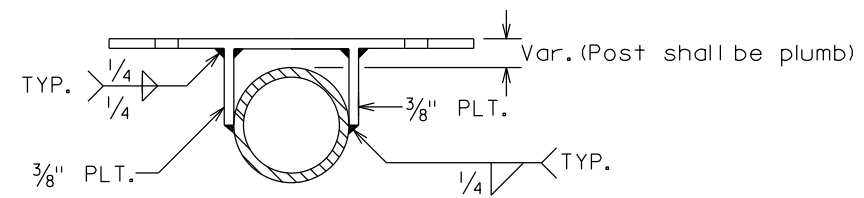
END VIEW



FILL PLATE



UPPER CONNECTION



CONNECTION

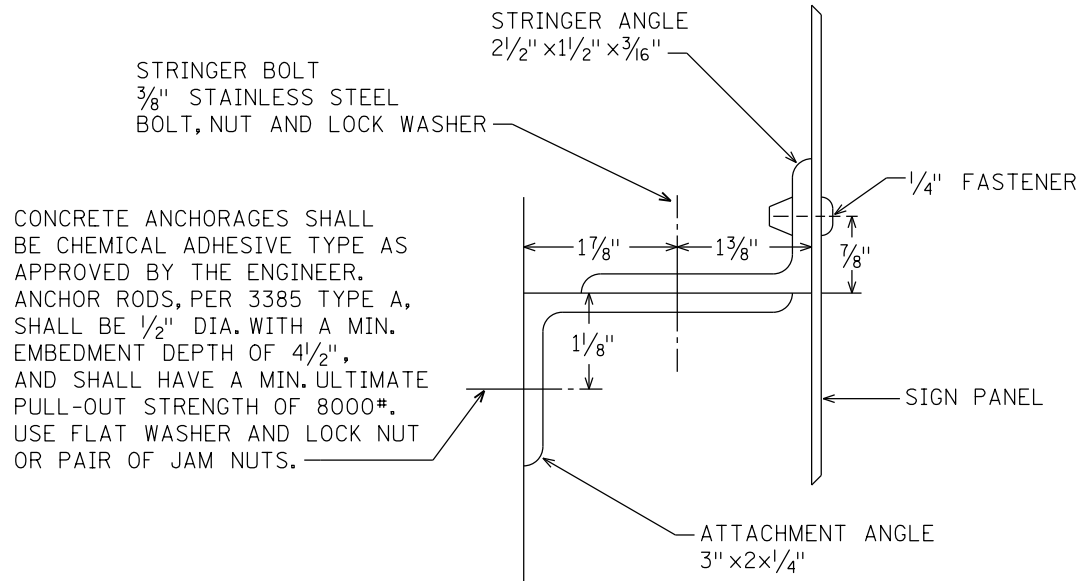
NOTES:

1. ALL PIPE MATERIAL SHALL CONFORM TO ASTM DESIGNATION A53, GRADE B, SCHEDULE 40.
2. ALL STEEL FOR STRUCTURAL ITEMS SHALL CONFORM TO MN/DOT 3306 (STRUCTURAL STEEL) UNLESS OTHERWISE NOTED.
3. FOR NOTES AND DETAILS NOT SHOWN, SEE TYPE C AND D SIGN DETAILS.

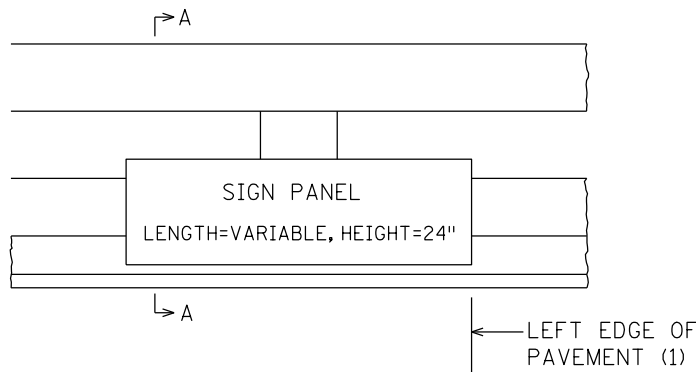
TYPE C & D SIGNS
MOUNTED ON BRIDGE RAIL
 CONCRETE BARRIER
 TYPE F, TL-4

PLOTTED/REVISED: 3/8/2016

DISTRICT #: METRO
 IPLOT NAME: 44
 PATH & FILENAME: IP_PWP-d1721848URBAN FREEWAY PLAN TYPICALS.dgn

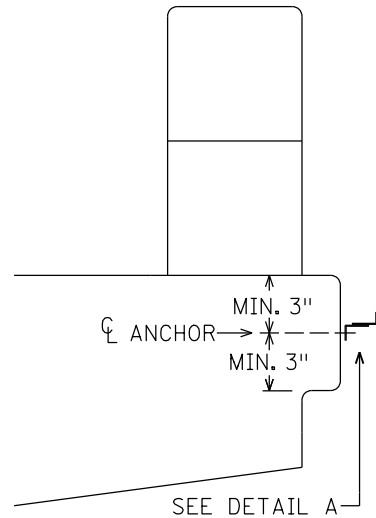


DETAIL A

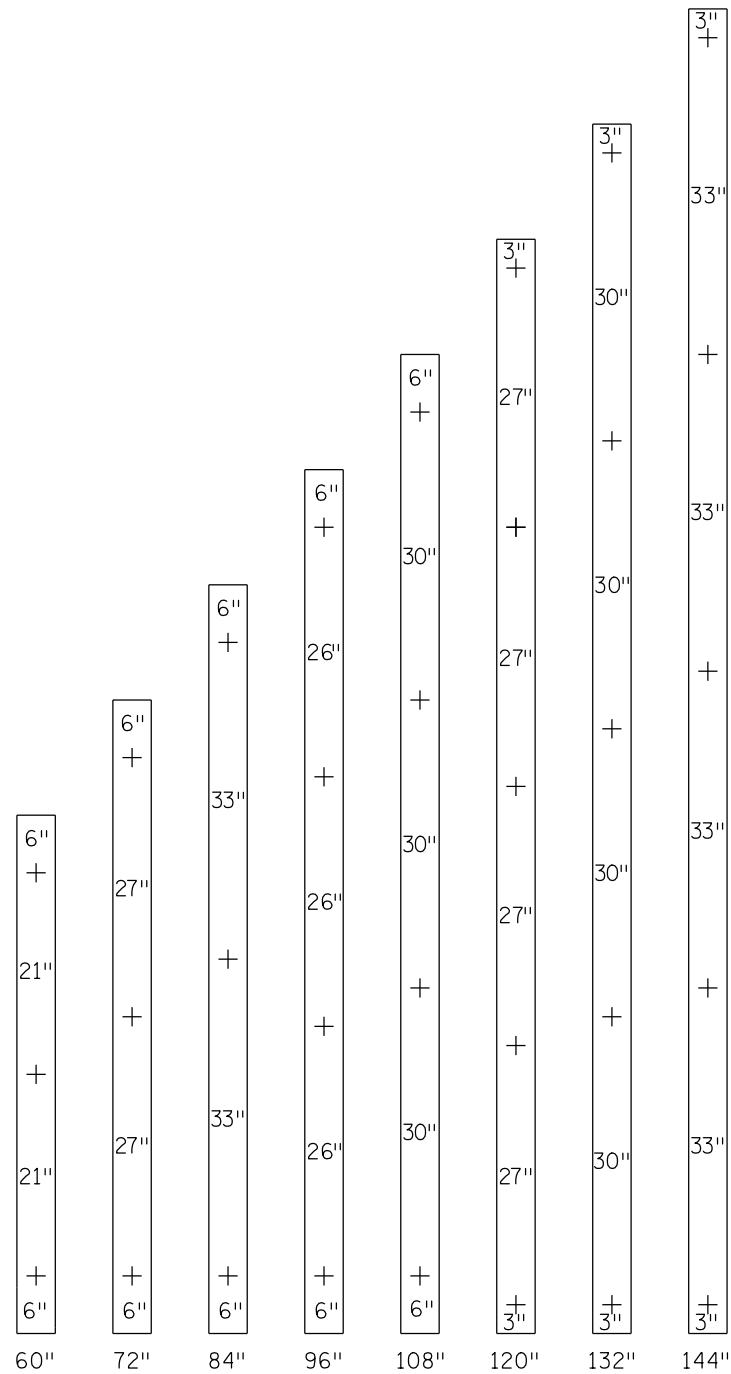


(1) SIGN PANEL MAY BE SHIFTED
 Laterally if necessary

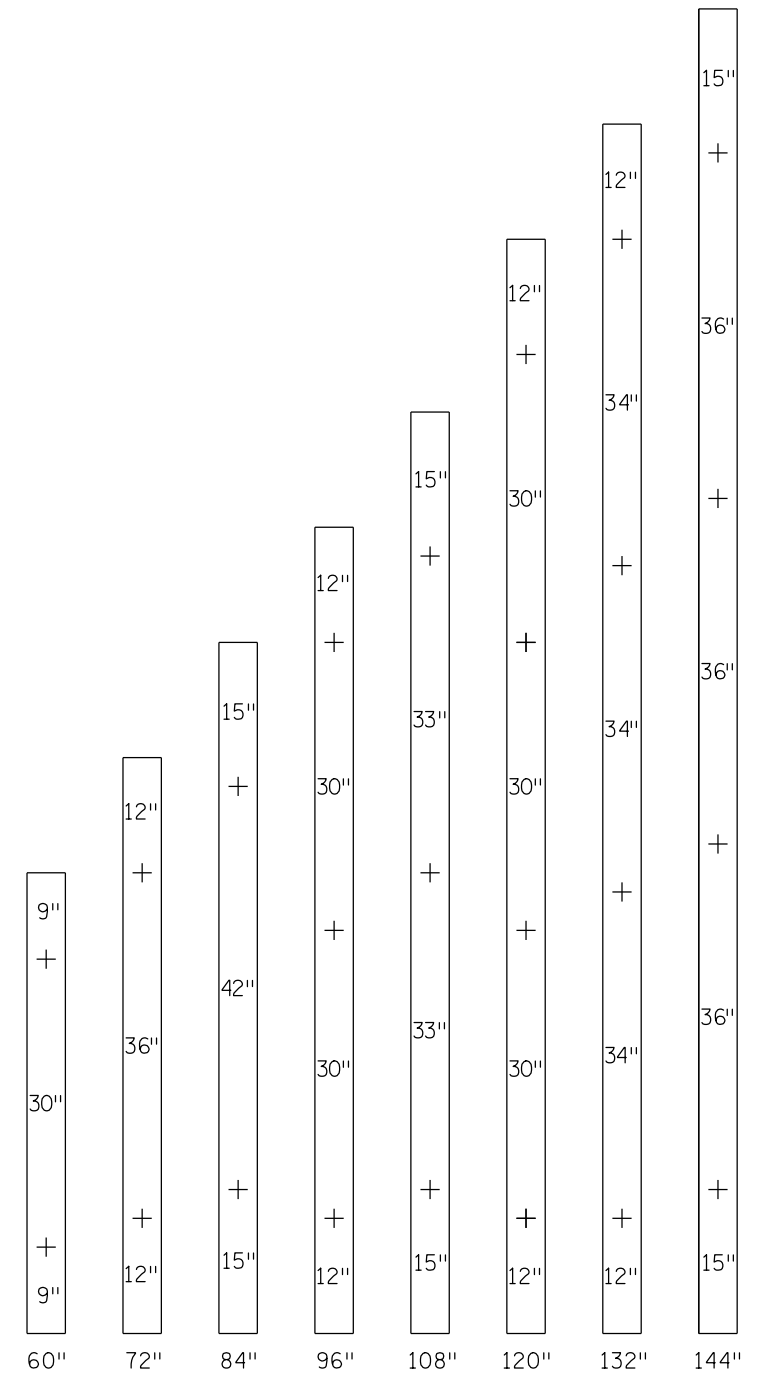
ELEVATION



SECTION A-A



SIGN PANEL LENGTH
PUNCHING FOR STRINGER BOLT



SIGN PANEL LENGTH
PUNCHING FOR CONCRETE ANCHOR

PANEL LENGTH	STRINGER ANGLE LENGTH	ATTACHMENT ANGLE LENGTH
60"	54"	48"
72"	66"	60"
84"	78"	72"
96"	90"	84"
108"	102"	96"
120"	114"	108"
132"	126"	120"
144"	138"	132"

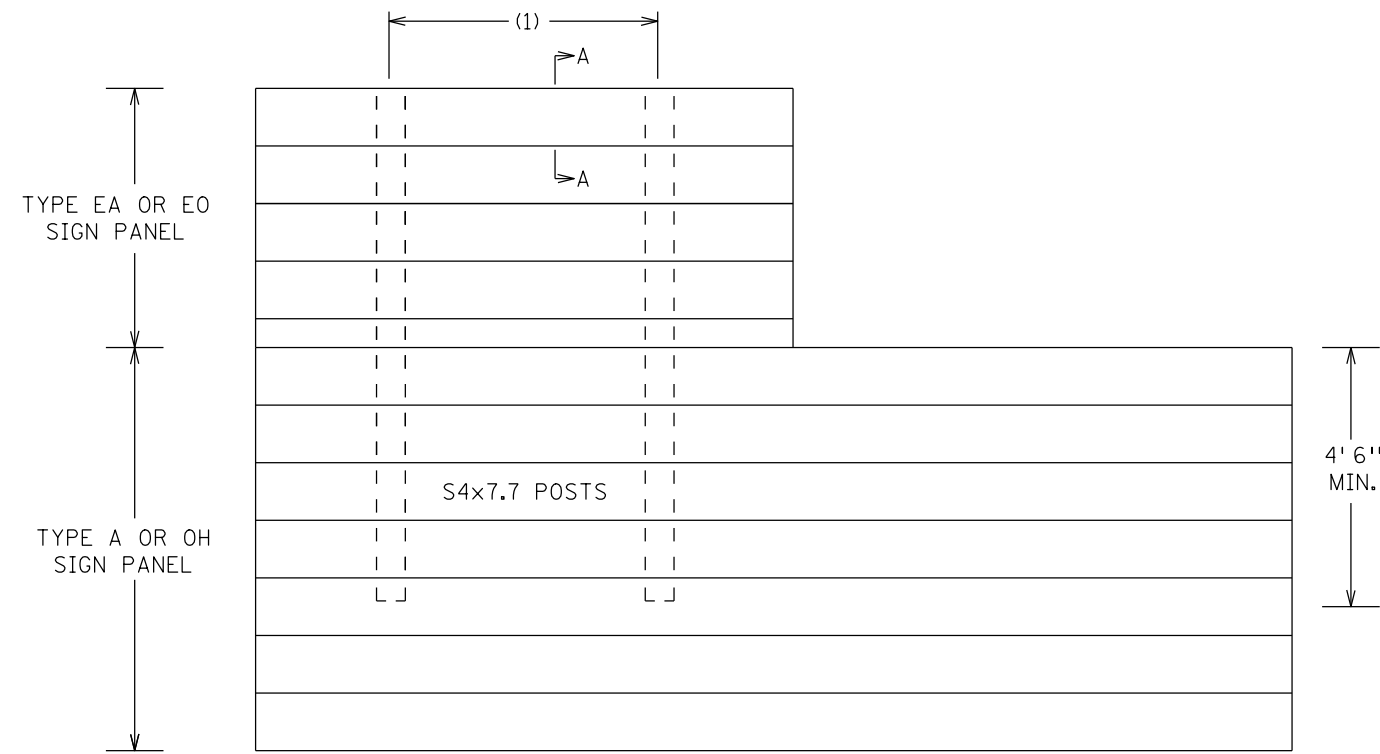
NOTES:

- STRUCTURAL STEEL SHALL CONFORM TO MNDOT 3306 AND SHALL BE GALVANIZED PER MNDOT 3394.
- SIGN PANEL SHALL BE FASTENED TO STRINGER AT 12" INTERVALS BEGINNING 6" FROM SIGN PANEL EDGE.

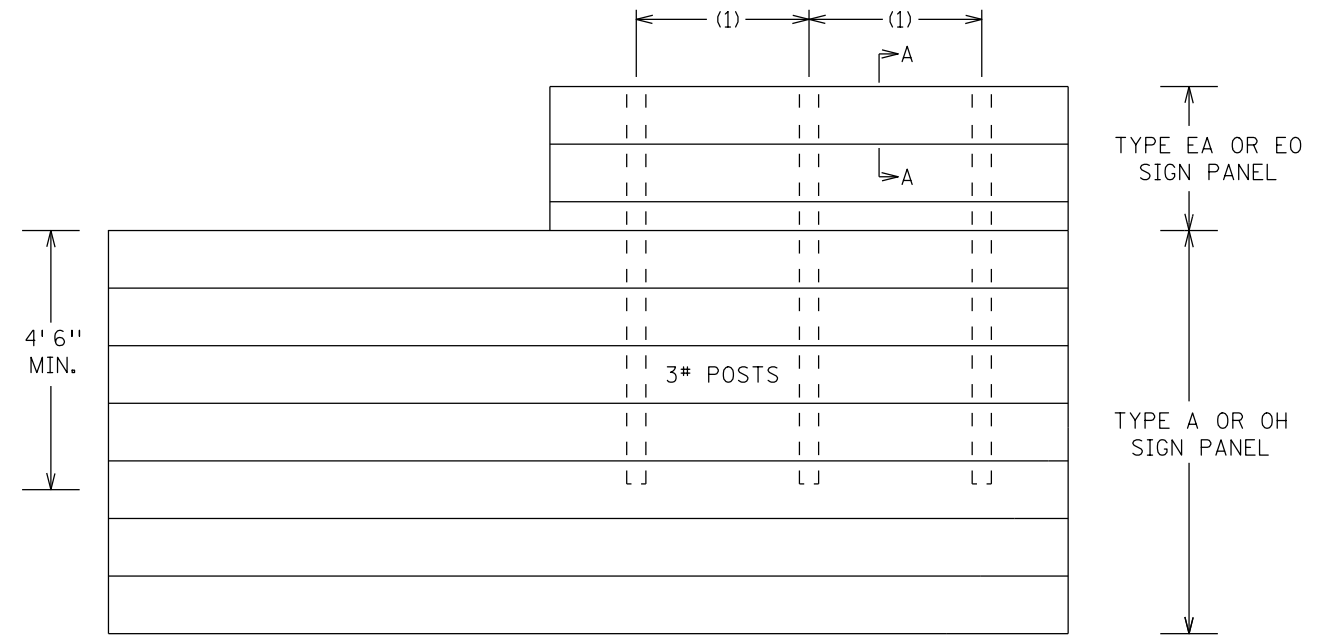
STRUCTURAL DETAILS
BRIDGE MOUNTED TYPE D SIGNS
DESIGN A1

PLOTTED/REVISED: 3/8/2016

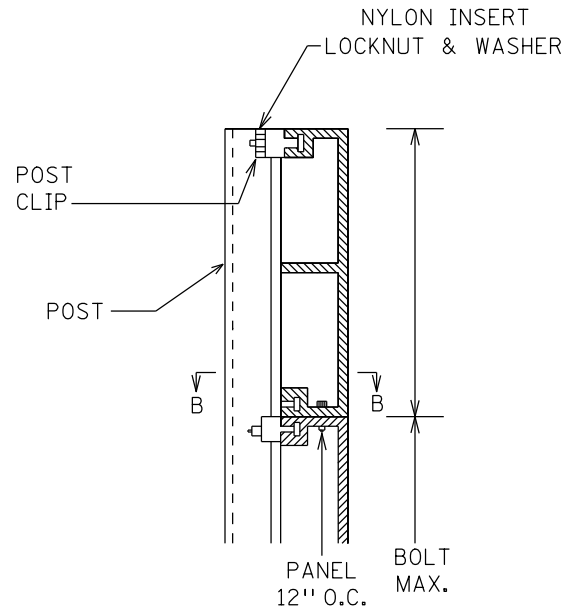
DISTRICT #: METRO
PLOT NAME: 45
PATH & FILENAME: IP_PWP-d1721848/URBAN FREEWAY PLAN TYPICALS.dgn



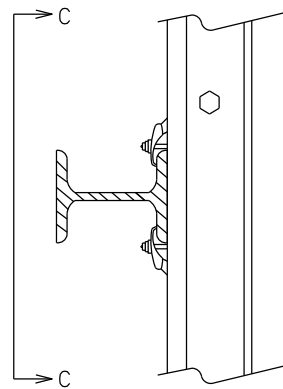
LEFT JUSTIFIED PANEL MOUNTING



RIGHT JUSTIFIED PANEL MOUNTING

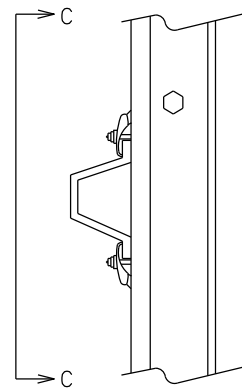


SECTION A-A



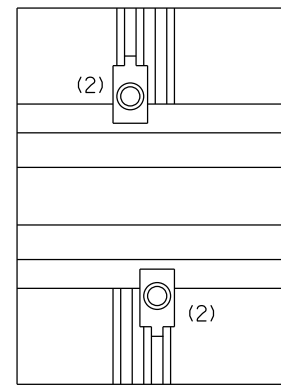
SECTION B-B

S4x7.7 POST



SECTION B-B

3# POST
(Mn/DOT 3401)



VIEW C-C

SPECIFIC NOTES:

- (1) SEE TABULATION SHEET FOR NUMBER AND SPACING OF POSTS. SPACING AND LOCATION CAN BE ADJUSTED WHERE NECESSARY.
- (2) POST CLIPS SHALL BE ATTACHED ON BOTH SIDES OF EACH POST AT EACH PANEL JOINT AS INDICATED.

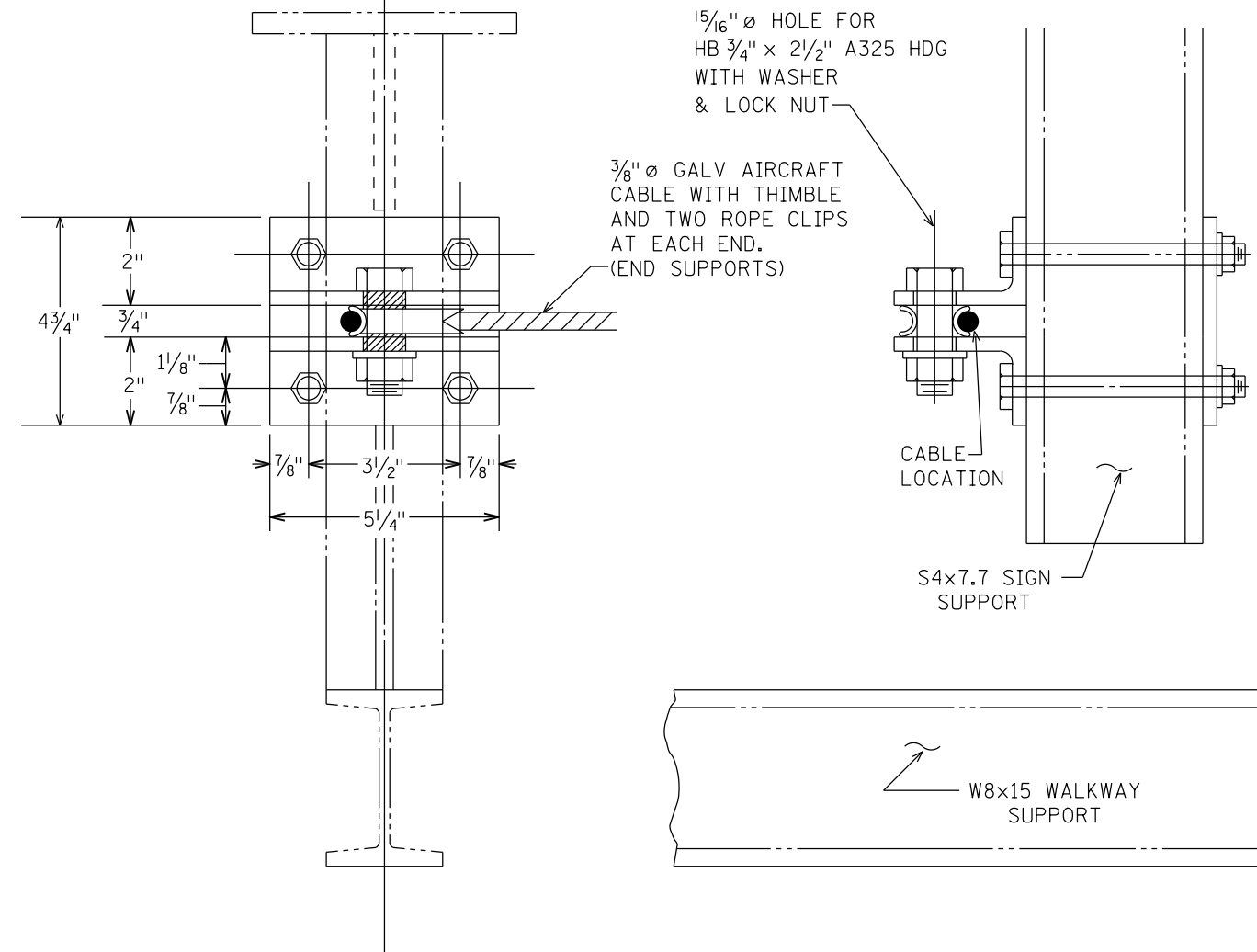
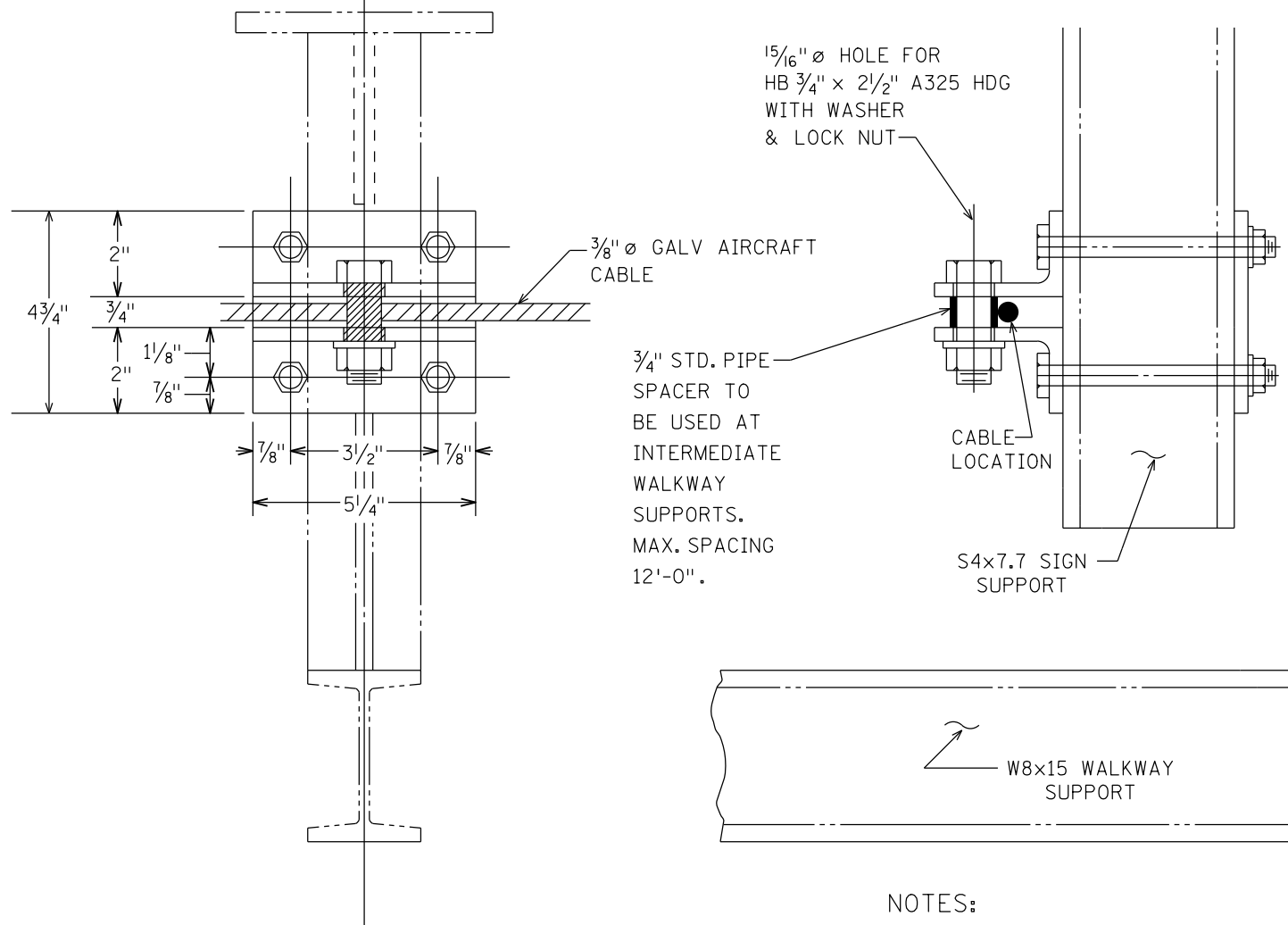
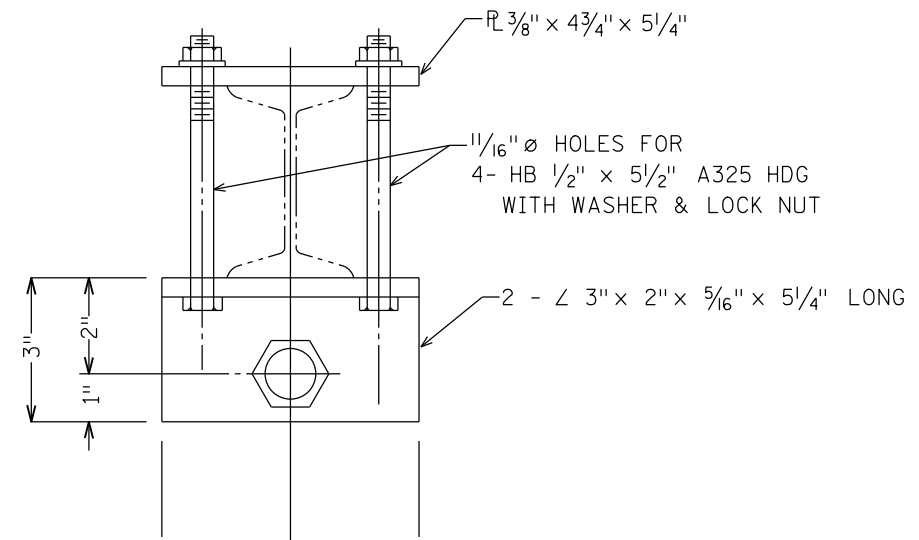
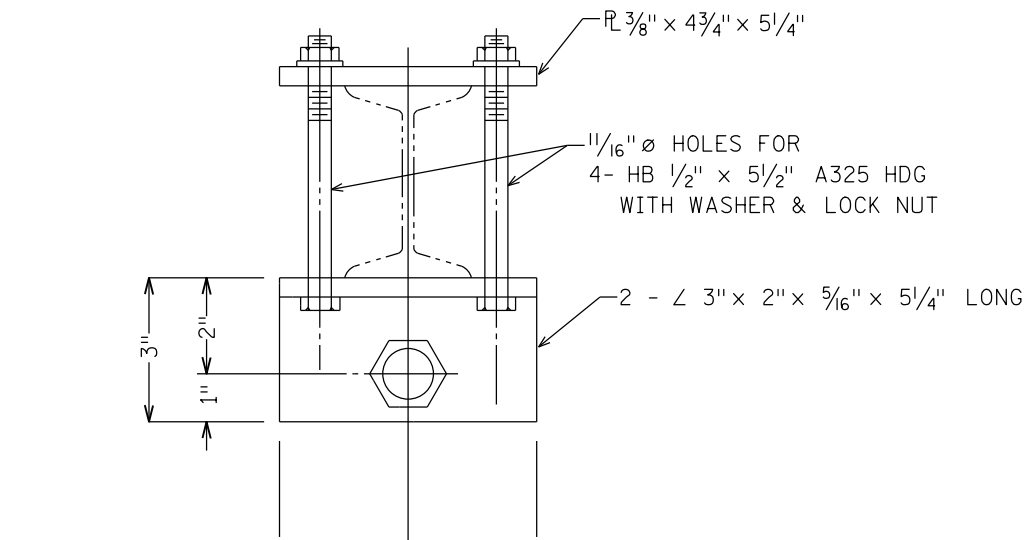
GENERAL NOTE:

- 1. TYPE EA OR EO SIGN PANEL SHALL BE LEFT JUSTIFIED FOR LEFT EXITS AND RIGHT JUSTIFIED FOR RIGHT EXITS ON TYPE A OR OH SIGN PANEL.

TYPE EA & EO SIGN
STRUCTURAL DETAILS

PLOTTED/REVISED: 3/8/2016

DISTRICT #: METRO
 IPLOT NAME: 46
 PATH & FILENAME: IP_PWP-d1721848\URBAN FREEWAY PLAN TYPICALS.dgn

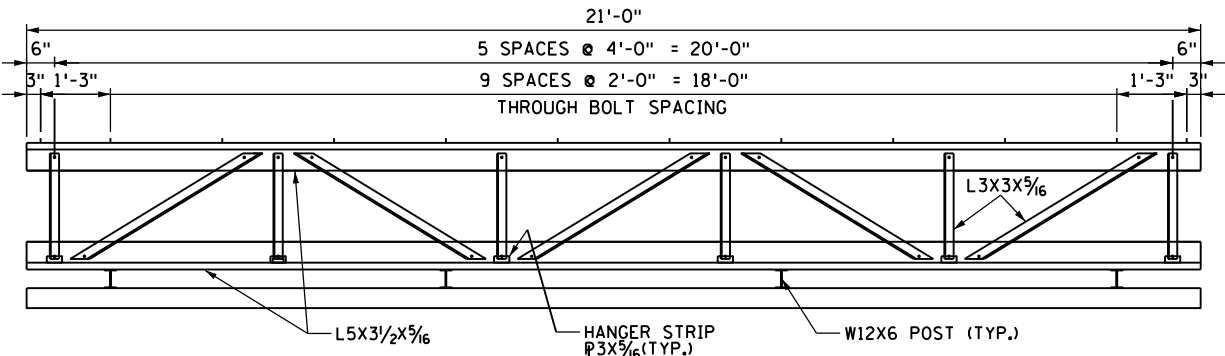


MIDDLE CONNECTION

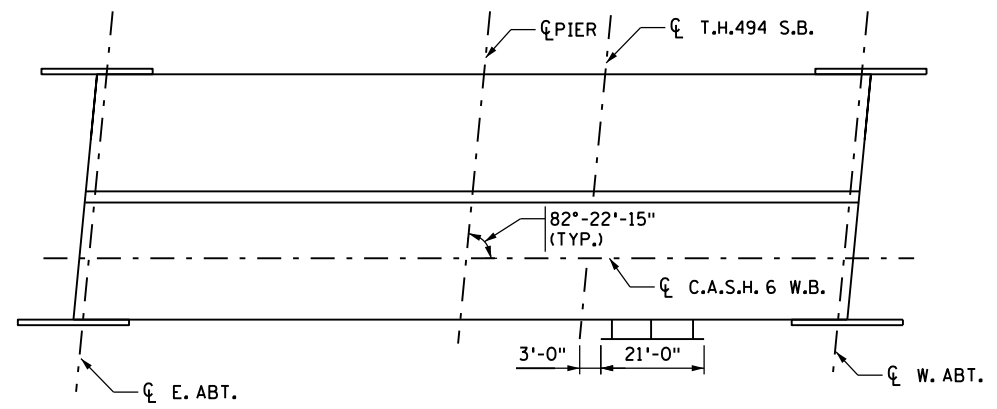
END CONNECTION

SAFETY CABLE FOR OH SIGNS
 BRIDGE MOUNT

- NOTES:
1. ALL STRUCTURAL STEEL PER Mn/DOT 3306. GALVANIZED PER Mn/DOT 3394.
 2. ALL FASTENERS PER A325. GALVANIZED PER Mn/DOT 3392.
 3. HB-HEX BOLT.
 4. HDG-HOT DIP GALVANIZED.

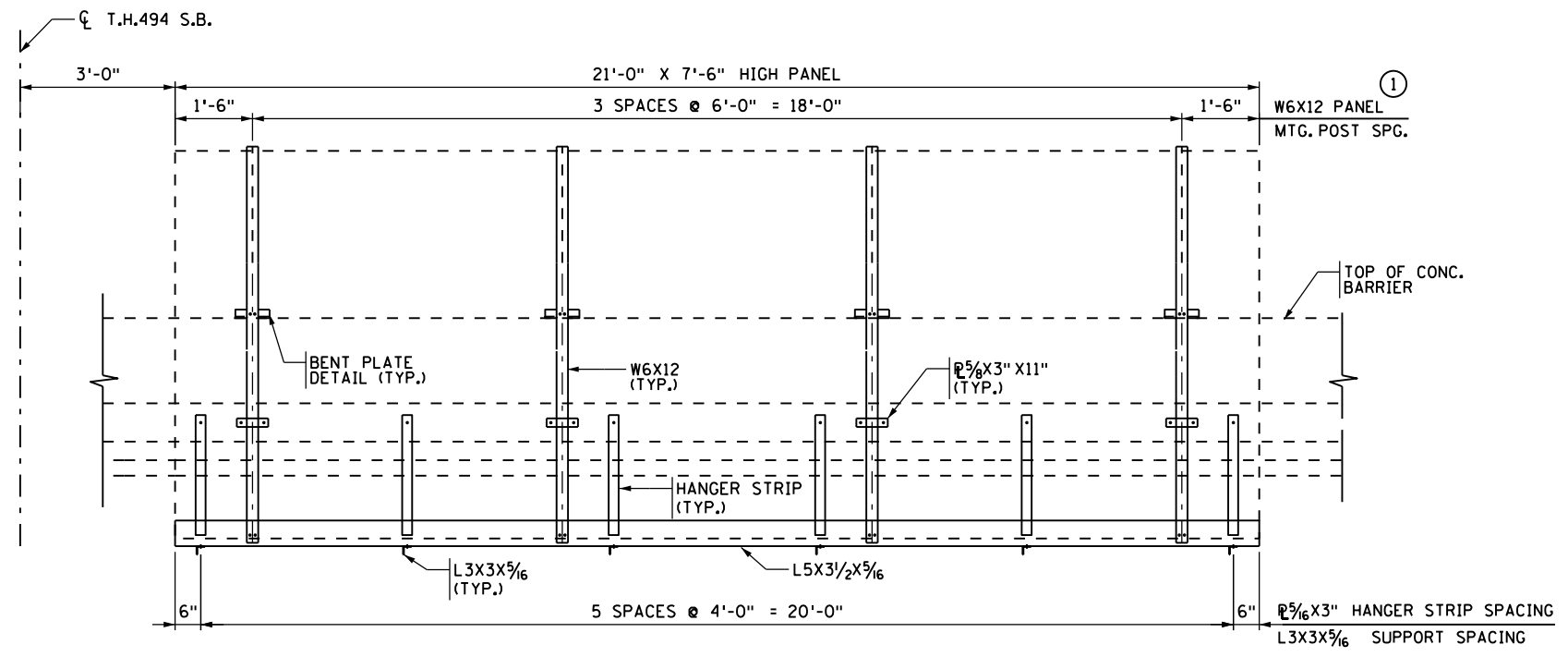


PLAN



SIGN LOCATION

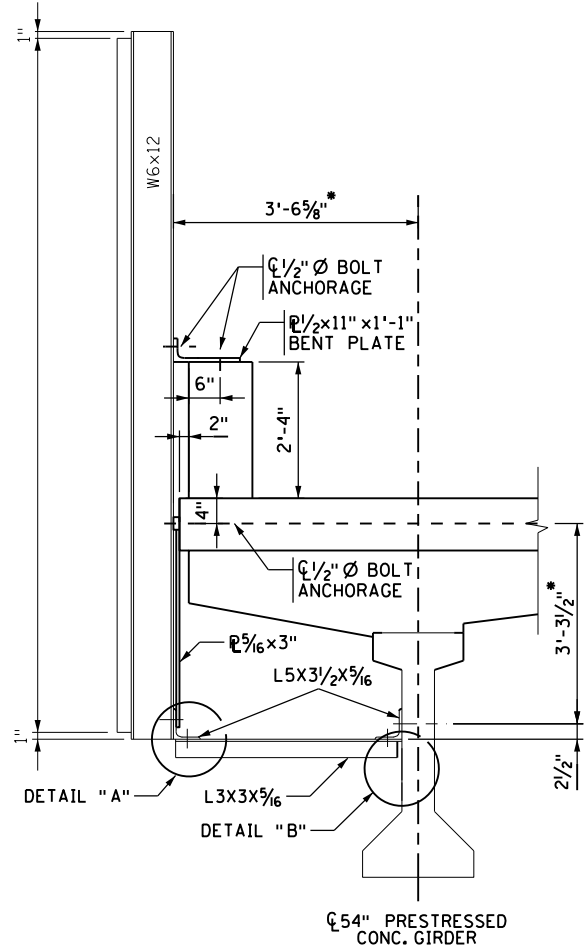
BR. 27679 - T.H. 494 UNDER C.A.S.H. 6
1.0 MILES S. OF JCT. OF T.H. 55 AND T.H. 494
IN PLYMOUTH



ELEVATION

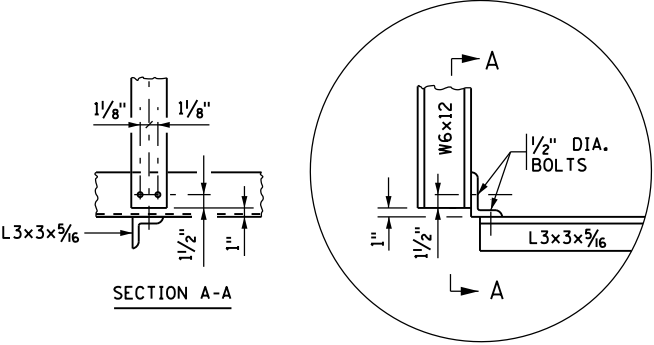
SIGN NOTES

- ① FIELD VERIFY METAL RAILING POST LOCATIONS AND, IF NECESSARY, ADJUST PANEL POST LOCATIONS TO MAINTAIN AT LEAST 1'-6" CLEARANCE BETWEEN CENTERLINES OF BENT PLATES AND RAILING POSTS.
- CONTRACTOR SHALL VERIFY DIMENSIONS BEFORE FABRICATION.
- SIGN FACE TO BE VERTICAL.
- SIGNS TO BE PLACED PARALLEL TO BEAM FLANGE.
- ALL CONNECTIONS TO BE 1/2" Ø BOLTS PER MN/DOT 3391 (A325), EXCEPT AS NOTED. HOLES TO BE 5/16" Ø
- BOLT ANCHORAGES SHALL BE 1/2" Ø CHEMICAL ADHESIVE TYPE, APPROVED BY THE ENGINEER. HOLES TO BE 4 1/2" DEEP, MINIMUM, AND SHALL HAVE A MINIMUM ULTIMATE PULLOUT STRENGTH OF 8000#.
- FOR GENERAL NOTES AND DETAILS NOT SHOWN SEE STANDARD SHEETS.

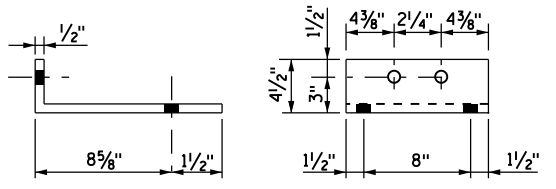


TYPICAL SECTION

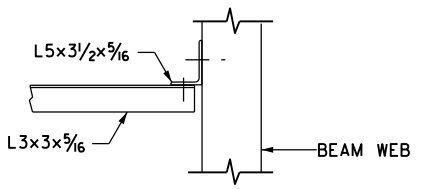
* FIELD VERIFY



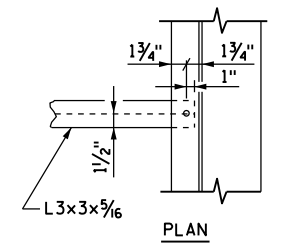
DETAIL "A"
TYP. AT PANEL MOUNTING POST



BENT PLATE DETAIL
TYP. AT PANEL MOUNTING POST



ELEVATION



DETAIL "B"

SAMPLE SHEET ONLY
THIS IS AN EXAMPLE OF THE REQUIRED DETAIL SHEET FOR A BRIDGE MOUNTED OH SIGN. IT DOES NOT MATCH THE BRIDGE OR SIGN STRUCTURE DETAILS FOR OH 94-585 IN THIS SAMPLE PLAN.

TRUSS QUANTITY	POUNDS	1190
CERTIFIED BY	JIHSHYA J. LIN, P.E., S.E.	
REG. NO. 19115	DATE	

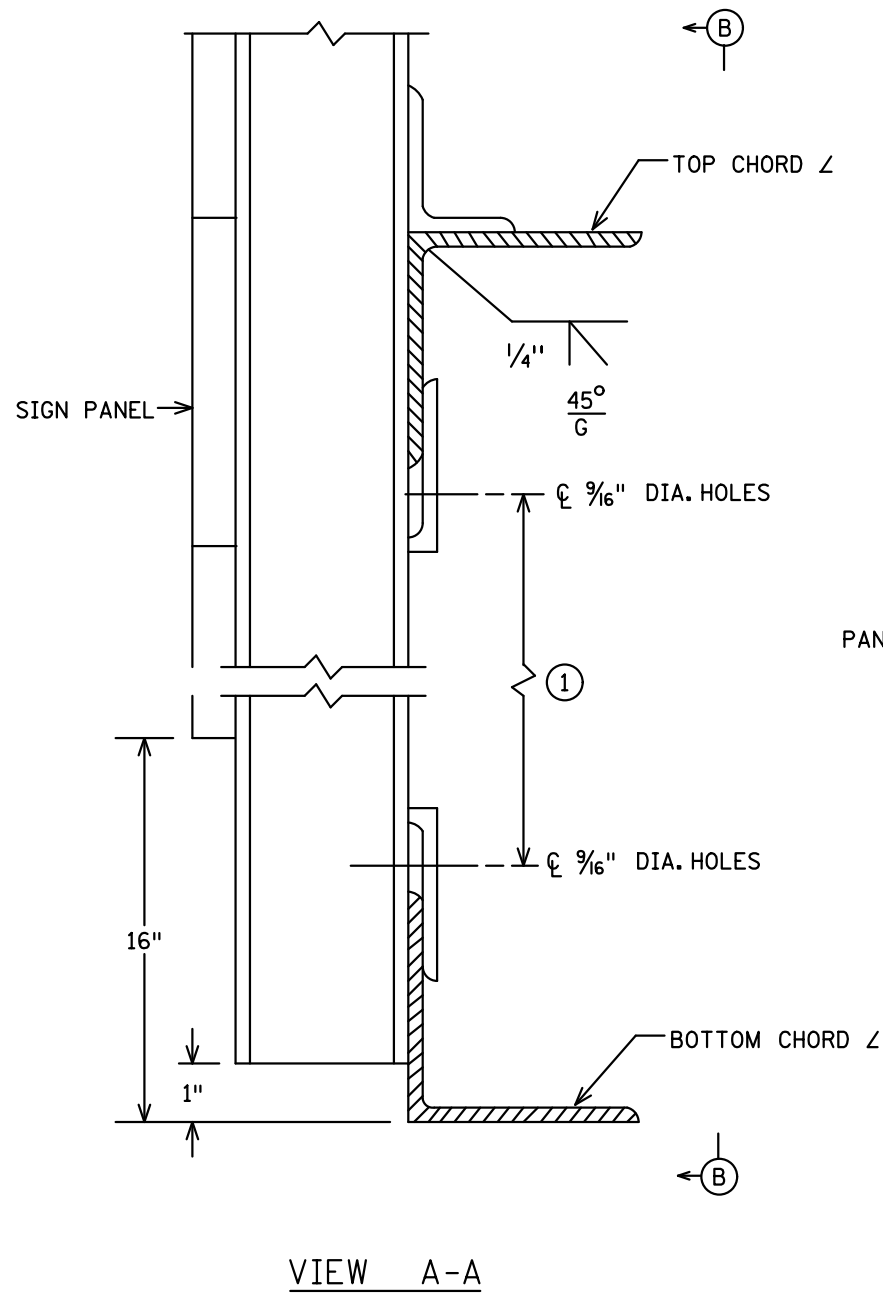
STATE OF MINNESOTA DEPARTMENT OF TRANSPORTATION		
BRIDGE MOUNTED SIGN DETAILS OH 494-461		
DES: J.J.L.	DR: H.Y.X.	DATE DRAWN: 08/11/14
CHK: J.J.L.	CHK: J.J.L.	

TIME: 12:00PM PLOTTED: 08/11/2014 PATH & FILENAME: S:\FabricationMethods\YUNHAN XU\BR.27679\494-461 FILENAME: OH494-461

PLOTTED/REVISED: 3/8/2016

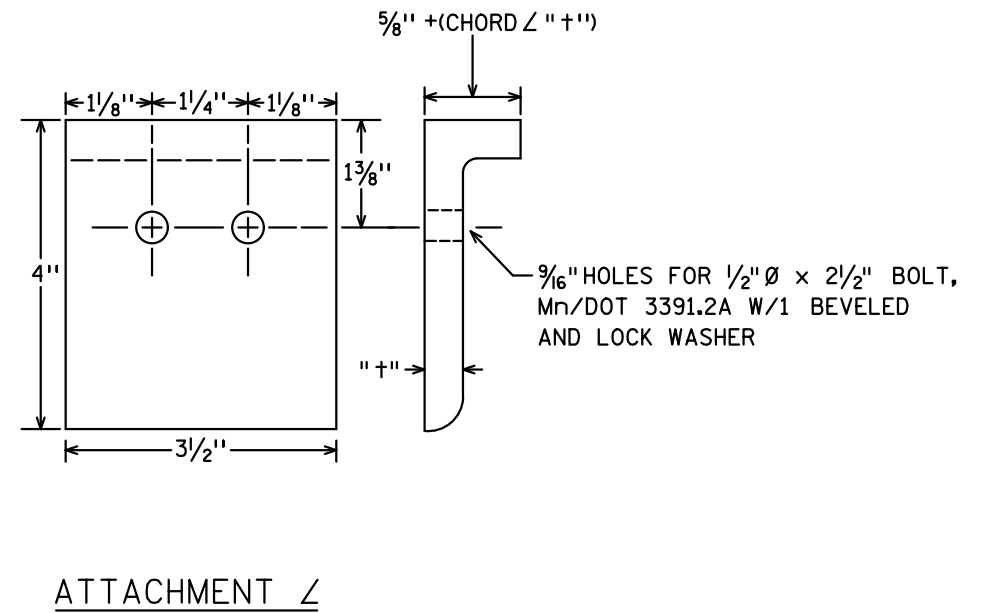
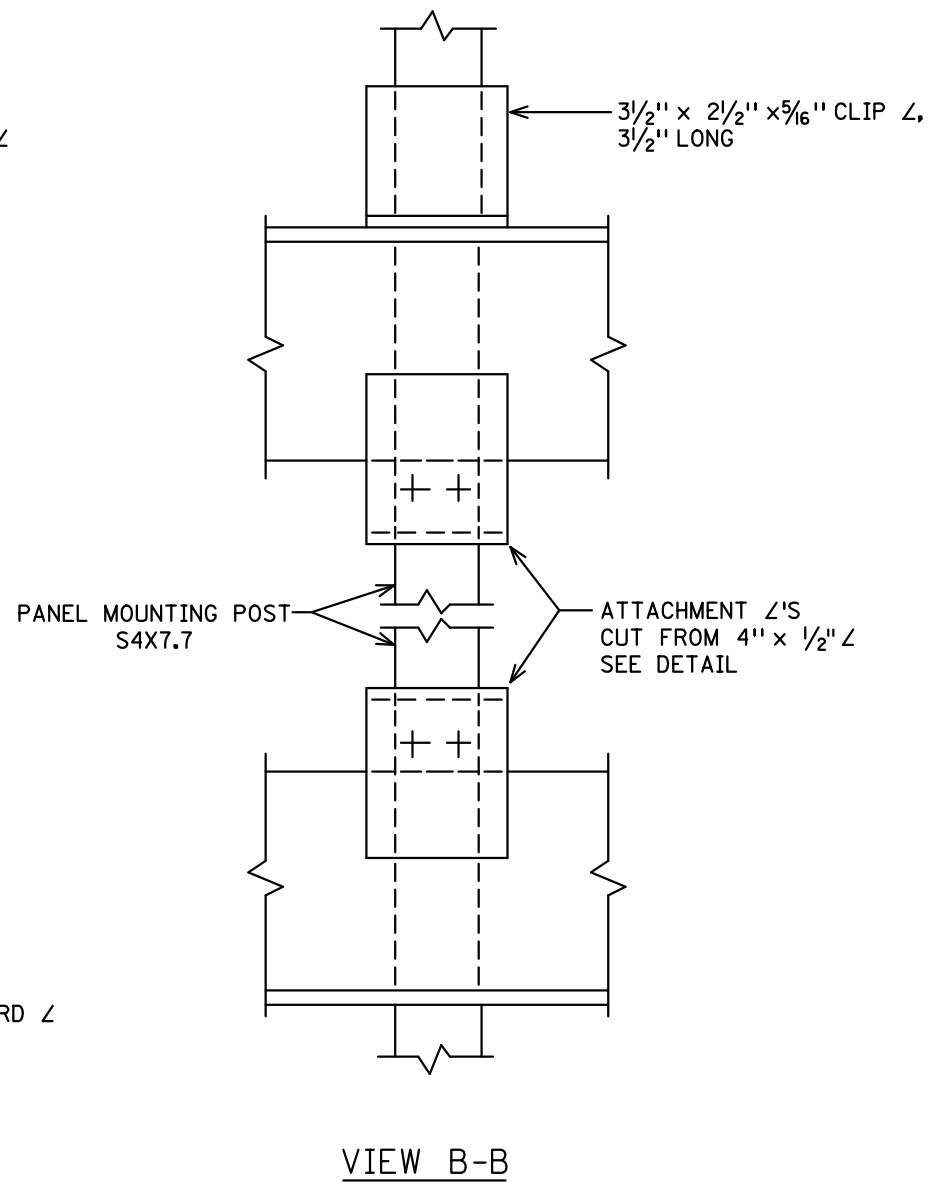
DISTRICT #: METRO
PLOT NAME: 47A
PATH & FILENAME: IP_PWP-d1721848\URBAN FREEWAY PLAN TYPICALS.dgn

ORIGNA_STR DMTT 3-20-97



NOTE:

① (TRUSS DEPTH)-(TOP & BOTTOM CHORD \angle LEGS)- $\frac{1}{4}''$

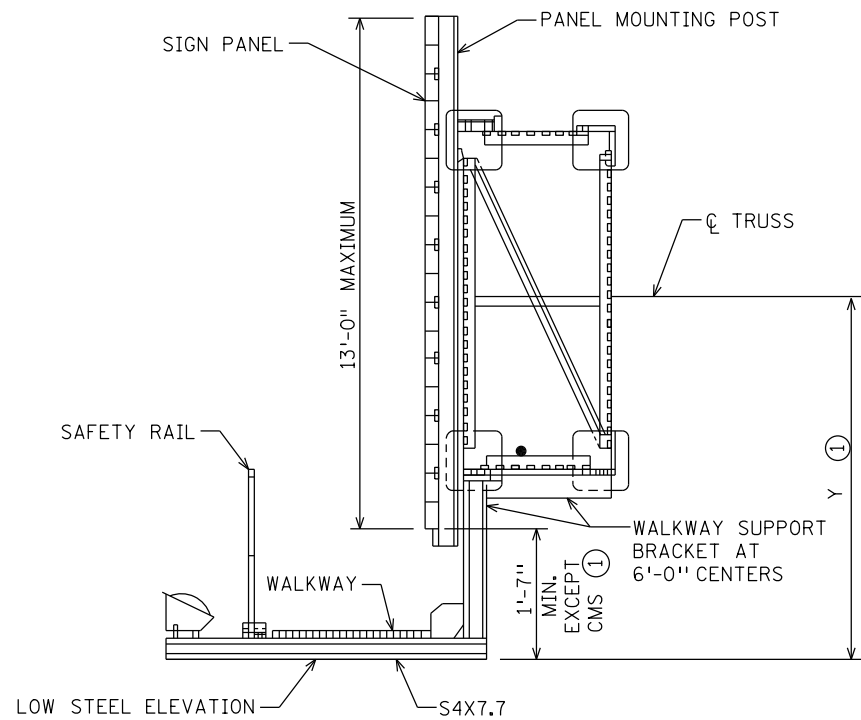
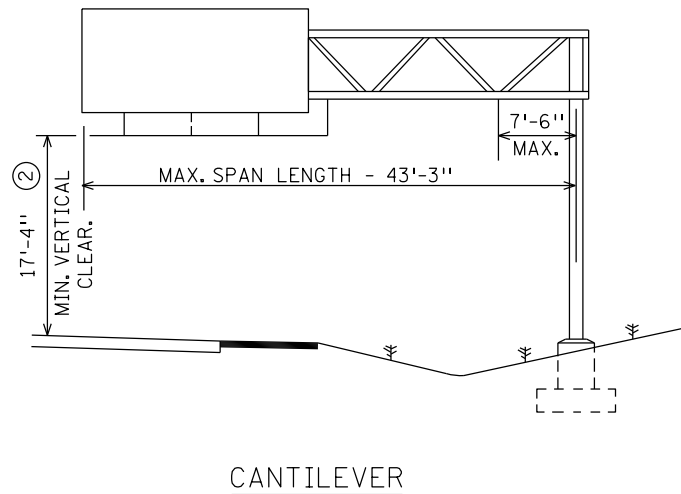
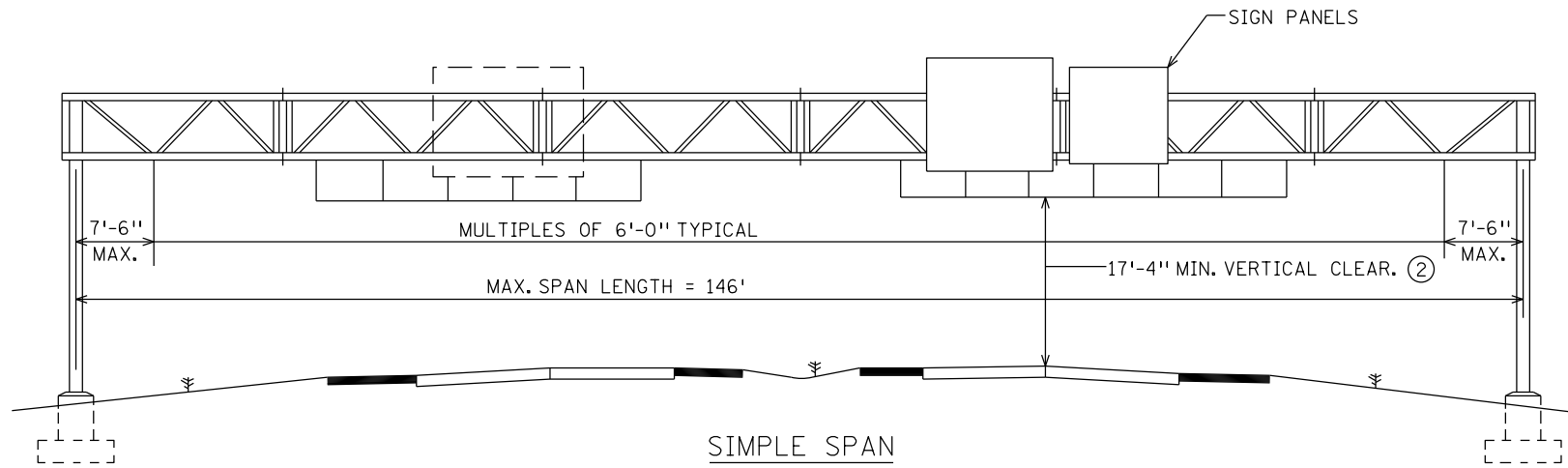


STANDARD OVERHEAD SIGNS
ATTACHMENT DETAILS FOR NEW SIGN PANELS ON EXISTING SIGN TRUSSES
DESIGN A

PLOTTED/REVISED: 3/8/2016

DISTRICT #: METRO
 IPLOT NAME: 48
 PATH & FILENAME: IP_PWP-d1721848URBAN FREEWAY PLAN TYPICALS.dgn

REV. 10-2-2013



SPECIFIC NOTES:

- ① DIMENSION Y IS CONSTANT AND BASED ON THE DEEPEST SIGN PANEL ABOVE THAT WALKWAY. WHEN STANDARD SIGN PANEL(S) AND CMS ARE MOUNTED ON THE SAME SPAN, DIMENSION Y SHALL BE GOVERNED BY THE CMS.
- ② MINIMUM CLEARANCE WILL BE MEASURED FROM THE HIGHEST ELEVATION OF PAVEMENT, SHOULDERS, AND MOUNTABLE CURBS, OR IF INSURMOUNTABLE CURBS ARE USED, THE HIGHEST ELEVATION BETWEEN CURB LINES.

GENERAL NOTES:

DESIGN SPECIFICATIONS:

TRUSS, POST, & HARDWARE:
 AASHTO STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES AND TRAFFIC SIGNALS DATED 1999.

LOADING:

WIND LOAD 90 M.P.H. NORMAL TO SIGN FACE IN COMBINATION WITH OTHER LOADS OUTLINED IN THE DESIGN SPECIFICATIONS.

UNIT STRESSES:

CONCRETE----- F_c = 1,600 PSI
 REINFORCEMENT STEEL----- F_s = 24,000 PSI
 FOOTING SOIL PRESSURE----- 1-1/4 TONS PER SQ. FT.

MATERIALS:

STRUCTURAL STEEL (EXCEPT POST, TUBES)- MNDOT 3306
 POST STEEL----- VARIES
 HIGH STRENGTH BOLTS----- MNDOT 3391.2B
 ANCHOR RODS----- MNDOT 3385
 CASTINGS----- MNDOT 3322
 REINFORCEMENT
 BARS----- MNDOT 3301
 SPIRAL----- MNDOT 3305 NO SPLICES
 WALKWAY GRATING----- FEDERAL SPECIFICATIONS RR-G-661b, TYPE 1, STEEL
 CONCRETE----- MNDOT 2461 (MIX 3Y43)

FINISH:

ALL COMPONENTS SHALL BE GALVANIZED AFTER FABRICATION EXCEPT REINFORCEMENT BARS, LOWER PORTION OF ANCHOR RODS, ALUMINUM, AND OTHER NON FERROUS INCIDENTALS. GALVANIZING SHALL CONFORM TO MNDOT 3392 OR MNDOT 3394 AS APPLICABLE. BEARING SURFACES MUST BE SMOOTH.

FABRICATION:

FABRICATION OF STRUCTURAL METALS SHALL BE IN ACCORDANCE WITH MNDOT 2471, MNDOT 2564 AND THE APPLICABLE SPECIAL PROVISIONS. ALL WELDING TO BE CONTINUOUS. ALL CONTACT SURFACES MUST BE COMPLETELY SEALED.

INSPECTION:

INSPECTION BEFORE AND AFTER GALVANIZING PER MNDOT 1511 AND MNDOT 2471.

INDEX OF STANDARD SIGN DRAWINGS

DRAWING	TITLE
ST-1	GENERAL ELEVATION AND NOTES
ST-2	CAMBER, POST IDENTIFICATION AND ESTIMATED QUANTITIES
ST-3	FOUNDATIONS AND ANCHOR RODS
ST-4	TRUSS/POST CONNECTION & BASEPLATE
ST-5	SIGN TRUSS DETAILS - TYPE A
ST-6	SIGN TRUSS DETAILS - TYPE B
ST-7	SIGN TRUSS DETAILS - TYPE C
ST-8	WALKWAY DETAILS
ST-9	FOLDING HANDRAIL
ST-10	SIGN PANEL AND PANEL MOUNTING POST DETAILS
ST-11	ELECTRICAL DETAILS
ST-12	ELECTRICAL DETAILS
ST-13	ELECTRICAL DETAILS (CMS SIGNS)

SECTION

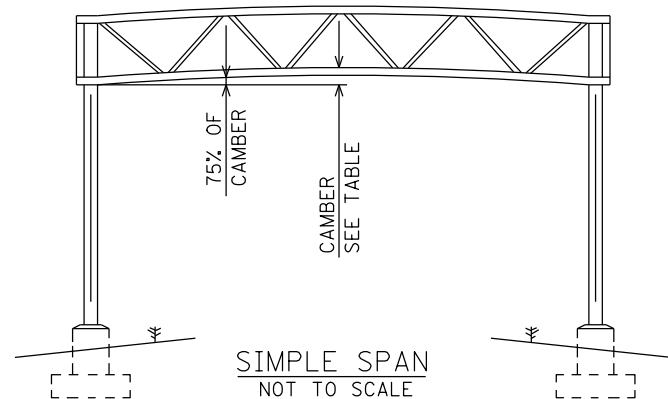
SIGN HEIGHT	Y ①	
6'-6"	4'-4"	CMS (NEW LED)
7'-0"	4'-7"	
7'-6"	4'-10"	
8'-0"	5'-1"	CMS (LED)
8'-6"	5'-4"	
9'-0"	5'-7"	CMS (DRUM)
9'-6"	5'-10"	
10'-0"	6'-1"	
10'-6"	6'-4"	
11'-0"	6'-7"	
11'-6"	6'-10"	
12'-0"	7'-1"	
12'-6"	7'-4"	
13'-0"	7'-7"	

STANDARD OVERHEAD SIGN SUPPORTS INTERIM DESIGN B	
GENERAL ELEVATIONS AND NOTES	
DRAWING	ST-1

SIMPLE SPAN

SIMPLE SPAN TRUSS CAMBER												
SPAN	40	50	60	70	80	90	100	110	120	130	140	150
CAMBER	1/4	7/16	5/8	13/16	1 1/16	1 3/8	1 11/16	2	2 3/8	2 13/16	3 1/4	3 3/4
DL DEFLECTION	0	1/16	1/16	1/8	1/4	3/8	9/16	1 3/16	1 1/8	1 1/2	2 1/16	2 11/16
RESIDUAL CAMBER	1/4	3/8	9/16	1 1/16	1 3/16	1	1 1/8	1 3/16	1 1/4	1 5/16	1 3/16	1 1/16

NOTE:
CAMBER AND DEFLECTIONS SHOWN ARE AT Q SPAN. THE DEFLECTIONS AND CAMBER AT THE QUARTER POINTS SHALL BE APPROXIMATELY 75% OF THESE VALUES.



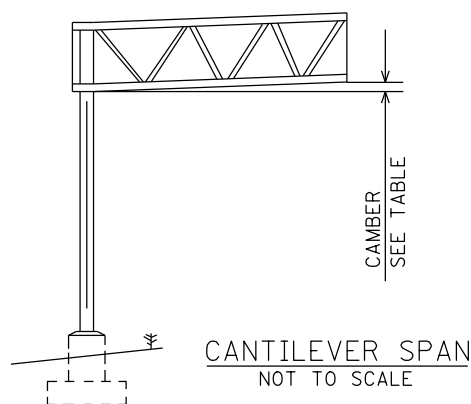
TRUSS QUANTITIES		
USE LENGTH FROM Q POST WHEN CALCULATING TOTAL WEIGHTS.		
TRUSS TYPE A	TRUSS TYPE B	TRUSS TYPE C
123 LBS./FT.	168 LBS./FT.	196 LBS./FT.

CANTILEVER SPAN

CANTILEVER SPAN TRUSS CAMBER					
SPAN	15'	20'	30'	40'	45'
CAMBER	1/8	1/4	9/16	1 1/16	1 1/4
DL DEFLECTION	0	0	1/16	3/16	1/4
RESIDUAL CAMBER	1/8	1/4	9/16	7/8	1

NOTE:
CAMBER AND DEFLECTIONS SHOWN ARE SHOWN AT END OF CANTILEVER.

WHEN ERECTING CANTILEVER TRUSSES, THE POSTS SHALL BE SET 1/8" PER FOOT OUT OF PLUMB TO COMPENSATE FOR THE BENDING OF THE POSTS.



PANEL MOUNTING POST QUANTITIES INCLUDES MOUNTING ANGLES	
PANEL HEIGHT	WEIGHT/POST
6'-6"	70
7'-0"	74
7'-6"	78
8'-0"	82
8'-6"	86
9'-0"	90
9'-6"	93
10'-0"	97
10'-6"	101
11'-0"	105
11'-6"	160
12'-0"	166
12'-6"	172
13'-0"	178

WALKWAY SUPPORT QUANTITIES

USE MAXIMUM PANEL HEIGHT ON SPAN TO CALCULATE QUANTITIES. WHEN CONVENTIONAL SIGN PANEL(S) AND CMS ARE MOUNTED ON THE SAME SPAN, QUANTITIES SHALL BE GOVERNED BY THE CMS.

	PANEL HEIGHT	TRUSS TYPE (WEIGHT/SUPPORT)		
		A	B	C
CMS (NEW LED)	6'-6"	99	105	113
	7'-0"	101	107	115
	7'-6"	103	109	117
CMS (LED)	8'-0"	105	111	119
	8'-6"	107	113	121
	9'-0"	109	115	123
CMS (DRUM)	9'-6"	111	117	125
	10'-0"	113	119	127
	10'-6"	115	121	129
	11'-0"	135	142	151
	11'-6"	138	144	153
	12'-0"	141	147	156
	12'-6"	143	150	159
13'-0"	146	153	162	

FOR FOUNDATION QUANTITIES SEE DRAWING ST-3

WALKWAY WEIGHTS:

- USE 3'-4 3/4" WIDE GRATING @ 44 LBS/FT.
- WEIGHT INCLUDES HANDRAIL (12 LBS/FT.) AND FIXTURE MOUNTING CHANNELS (4 LBS/FT.).

TABLE 1 - POST IDENTIFICATION					
POST IDENTIFICATION NUMBER	BASEPLATE DESIGN	PERMISSIBLE PIPE SECTIONS			
		MIN. YIELD=35 KSI		MIN. YIELD=42 KSI	
		OUTSIDE DIAMETER (INCH)	WALL THICKNESS (INCH)	OUTSIDE DIAMETER (INCH)	WALL THICKNESS (INCH)
1	A	N.A.	N.A.	18	0.250
2	A	18	0.375	18	0.312
3	A	18	0.500	18	0.375
4	A	18	0.562	18	0.500
5	B	18	0.938	18	0.750
6	B	20	0.594	20	0.500
7	B	N.A.	N.A.	20	0.812

WALL THICKNESS IS MINIMUM, THINNER WALLS WILL NOT BE APPROVED

POST IDENTIFICATION NOTES:

POST MATERIAL SHALL CONFORM TO ONE OF THE FOLLOWING SPECIFICATIONS:
ASTM A709, GRADE 36
ASTM A53, GRADE B
API 5L, GRADES B, X42, X46, X52, X56, X60, X65

CONTRACTOR SHALL DEMONSTRATE THAT THE POST MATERIAL MEETS THE REQUIREMENTS OF ONE OF THE ABOVE CITED SPECIFICATIONS AND THE MINIMUM YIELD STRENGTH.

NO SPLICES OF ANY KIND WILL BE PERMITTED IN POSTS INTENDED FOR USE IN CANTILEVER TYPE STRUCTURES (BRIDGE TYPE BC).

ONE OF TWO POSTS FOR SIMPLE SPAN STRUCTURES (BRIDGE TYPE S) MAY INCORPORATE ONE WELDED CIRCUMFERENTIAL BUTT SPLICE CONFORMING TO AWS D1.1 DETAIL B-U2 IN THE UPPER 1/3 OF ITS LENGTH. BACK UP RINGS FOR THESE WELDED SPLICES SHALL BE COMMERCIAL PRODUCTS. BUTT WELDS REQUIRE RADIOGRAPHIC INSPECTION (MNDOT 2471.3).

ALL RADIOGRAPHIC INSPECTIONS AND MAGNETIC PARTICLE TESTING REPORTS AND RADIOGRAPHIC FILMS SHALL BECOME THE PROPERTY OF THE DEPARTMENT.

SEE DRAWING ST-4 FOR BASEPLATE DETAILS.

POST QUANTITIES					
POST TYPE	CANTILEVER		SIMPLE SPAN		
	TRUSS TYPE A	TRUSS TYPE B	TRUSS TYPE A	TRUSS TYPE B	TRUSS TYPE C
	1	1880+47 LBS/FT	1910+47 LBS/FT	1870+47 LBS/FT	1890+47 LBS/FT
2	1880+59 LBS/FT	1910+59 LBS/FT	1870+59 LBS/FT	1890+59 LBS/FT	1915+59 LBS/FT
3	1880+71 LBS/FT	1910+71 LBS/FT	1870+71 LBS/FT	1890+71 LBS/FT	1915+71 LBS/FT
4	1880+94 LBS/FT	1910+94 LBS/FT	1870+94 LBS/FT	1890+94 LBS/FT	1915+94 LBS/FT
5	2470+138 LBS/FT	2500+138 LBS/FT	2460+138 LBS/FT	2480+138 LBS/FT	2505+138 LBS/FT
6	N/A	2500+104 LBS/FT	N/A	2545+104 LBS/FT	2570+104 LBS/FT
7	N/A	2500+167 LBS/FT	N/A	2545+167 LBS/FT	2570+167 LBS/FT

STANDARD OVERHEAD SIGN SUPPORTS INTERIM DESIGN B

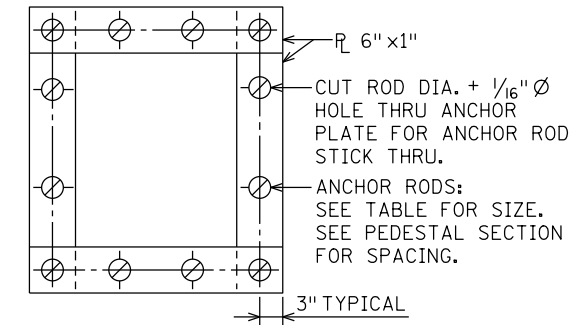
CAMBER, POST IDENTIFICATION AND ESTIMATED QUANTITIES

DRAWING ST-2

PLOTTED/REVISED: 3/8/2016

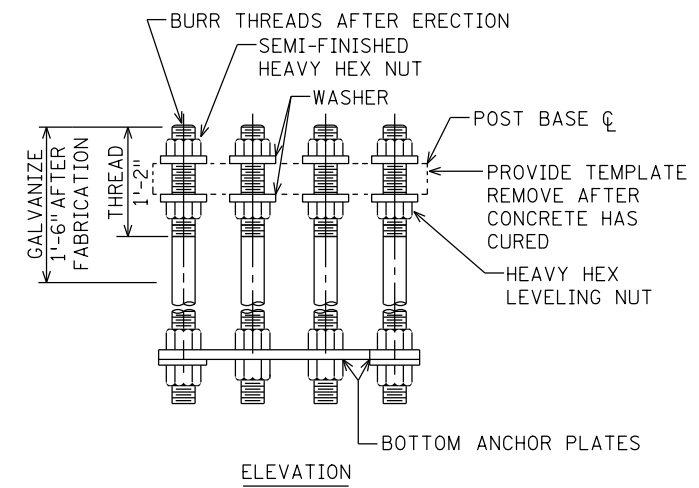
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REV. 10-2-2013

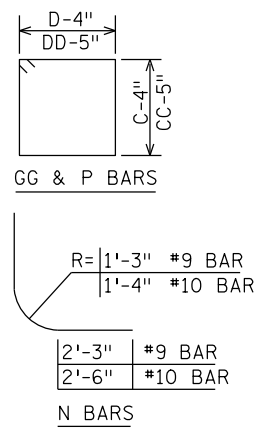


NOTE: ANCHOR PLATES SHOWN TYPICAL FOR ALL ANCHOR ROD SPACING.

ANCHOR PLATE PLAN

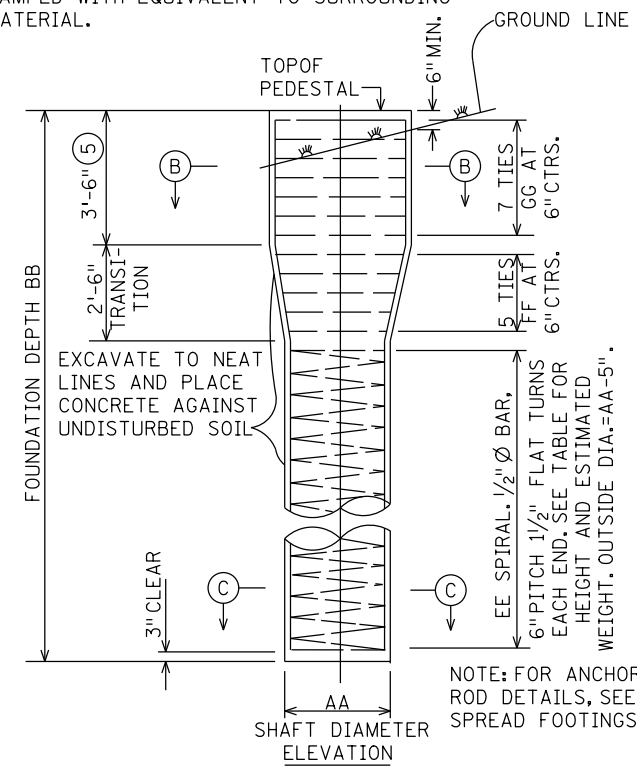


ANCHOR ROD DETAILS

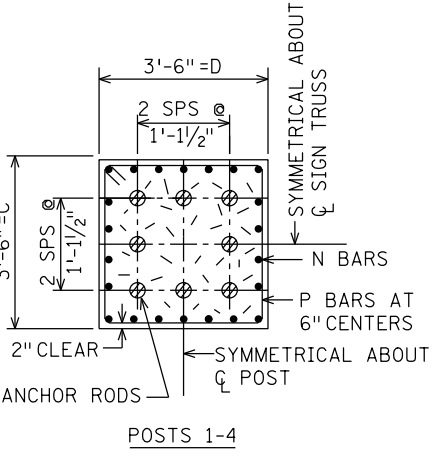
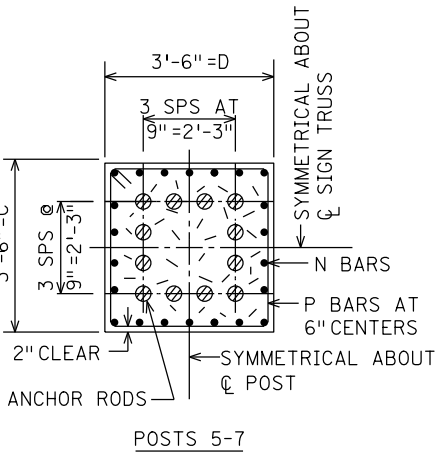
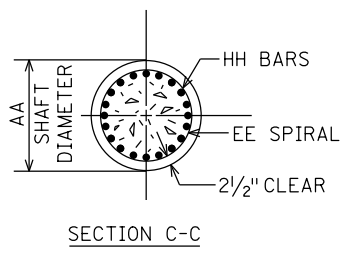
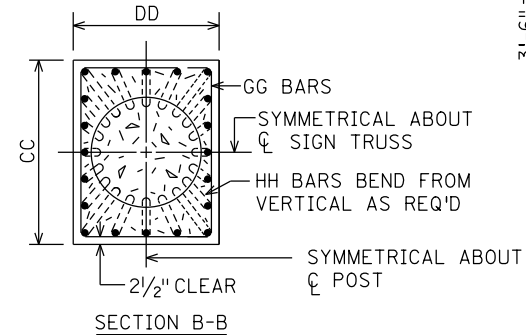


J, K, L, M, FF AND HH ARE STRAIGHT BARS
 BAR BENDING DIAGRAMS

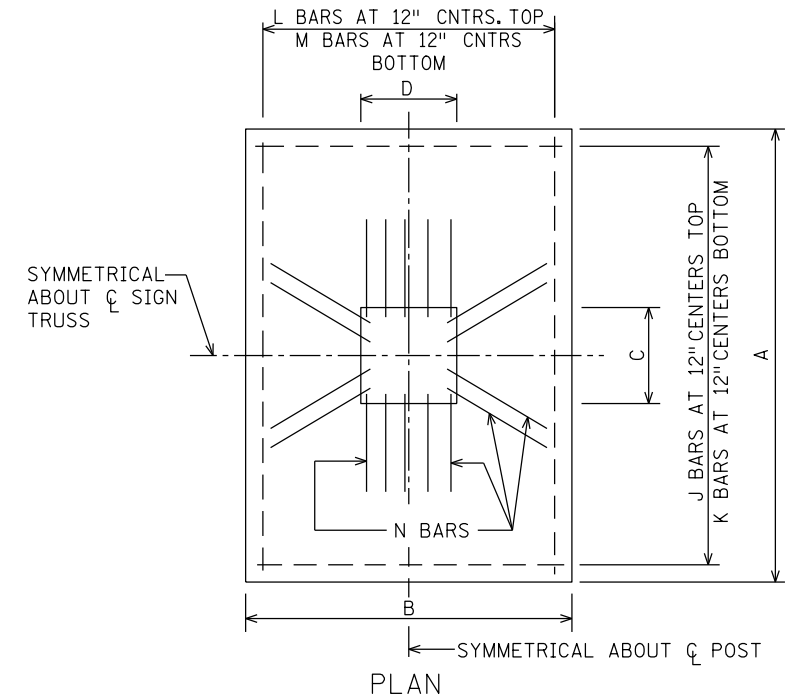
NOTE (5): MUST BE FORMED A MINIMUM OF 6" BELOW THE GROUND SURFACE. THE EXCAVATED AREA FOR FORMING SHALL BE BACKFILLED AND TAMPED WITH EQUIVALENT TO SURROUNDING MATERIAL.



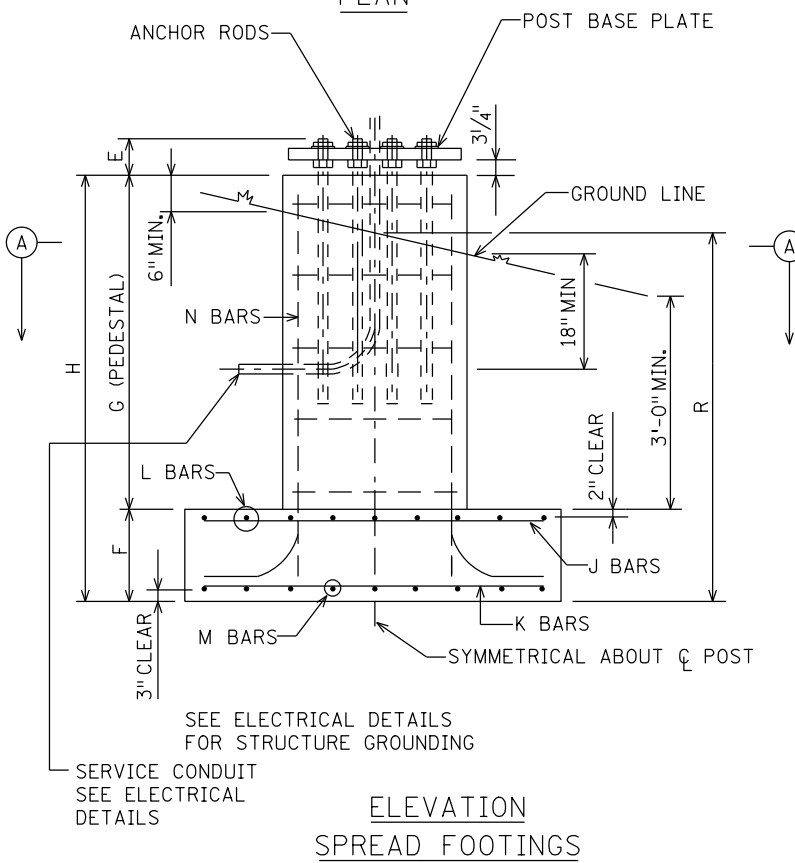
DRILLED SHAFT



PEDESTAL CROSS SECTIONS A-A



PLAN



ELEVATION
 SPREAD FOOTINGS

SPECIFIC NOTES:

- ① G IS IN FEET, ROUND UP TO WHOLE NUMBER, E.G. G=4.10/26=8.2 NO. REQ'D=9.
- ② G AND R ARE IN FEET.
- ③ BEND AS REQUIRED TO FORM A CLOSED LOOP.
- ④ FOR STRUCTURE STEEL SEE SPREAD FOOTING.
- ⑤ MUST BE FORMED A MIN. OF 6" BELOW THE GROUND SURFACE. THE SOIL EXCAVATED FOR FORMING SHALL BE BACKFILLED AND TAMPED TO EQUIVALENT COMPACTION AS SURROUNDING MATERIAL.
- ⑥ SPECIAL LARGE RADIUS BENDS ARE REQUIRED. SEE "BAR BENDING DIAGRAMS" FOR SIZES OF RADII.

GENERAL NOTES:

1. SEE THE FORMAT SHEET FOR FOOTING LOCATIONS, POST DESIGNATIONS, TOP OF PEDESTAL ELEVATIONS AND BOTTOM OF FOOTING ELEVATIONS.
2. ALL CONCRETE SHALL CONFORM TO CONCRETE MIX 3Y43 (MNDOT 2461).
3. ALL BAR DIMENSIONS ARE OUT TO OUT OF BARS.
4. ALL SPREAD FOOTINGS HAVE AN ALLOWABLE DESIGN BEARING PRESSURE OF 1 1/4 T PER SQUARE FOOT.
5. DRILLED SHAFTS SHALL BE USED ONLY WHEN SPECIFIED IN THE CONTRACT PLANS.
6. THE DRILLED SHAFTS HAVE AN ALLOWABLE DESIGN LATERAL BEARING PRESSURE OF 250 LBS. PER SQ. FT. PER FOOT OF DEPTH.
7. UNLESS OTHERWISE NOTED, ALL REINFORCEMENT BARS SHALL BE EPOXY COATED IN ACCORDANCE WITH MNDOT3301. SPIRAL BARS AND J, K, L, & M BARS NEED NOT BE EPOXY COATED.
8. THE FOLLOWING TORQUE VALUES SHALL BE USED WHEN INSTALLING ALL ANCHOR NUTS FOR OVERHEAD SIGN STRUCTURES:

ANCHOR BOLT DIAMETER	TORQUE (FT./LBS.)
2 1/4"	375
2 1/2"	450

THE CONTRACTOR SHALL BURR THE THREADS OF THE ANCHOR BOLTS IN ACCORDANCE WITH MNDOT 2402.3H AFTER TORQUEING NUTS.

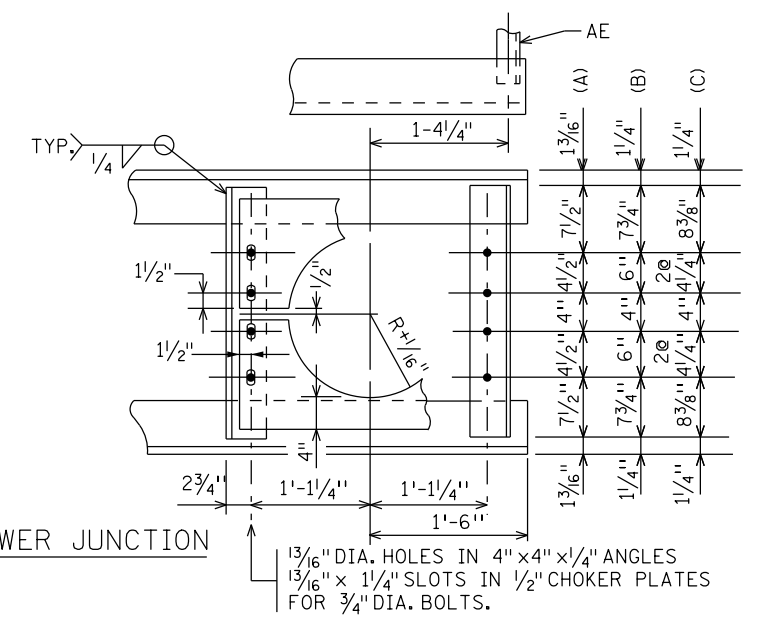
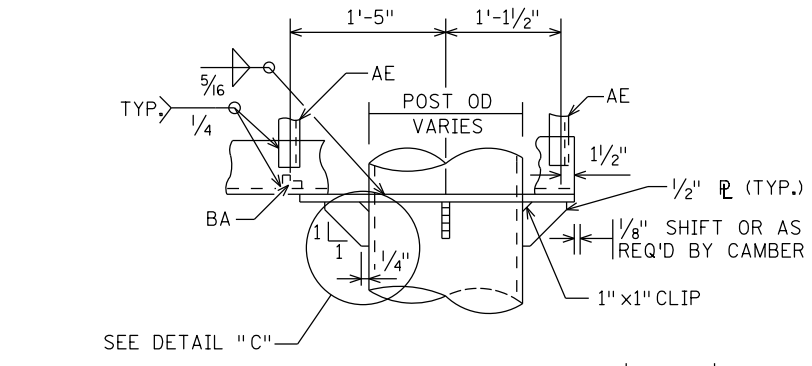
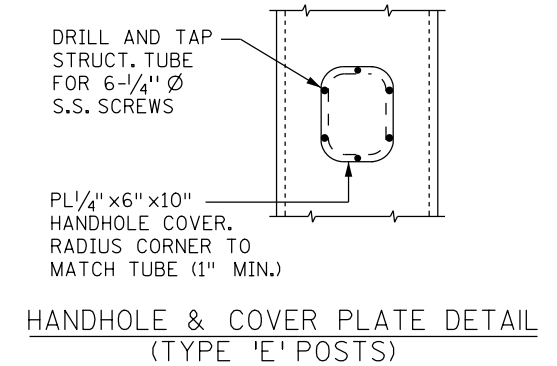
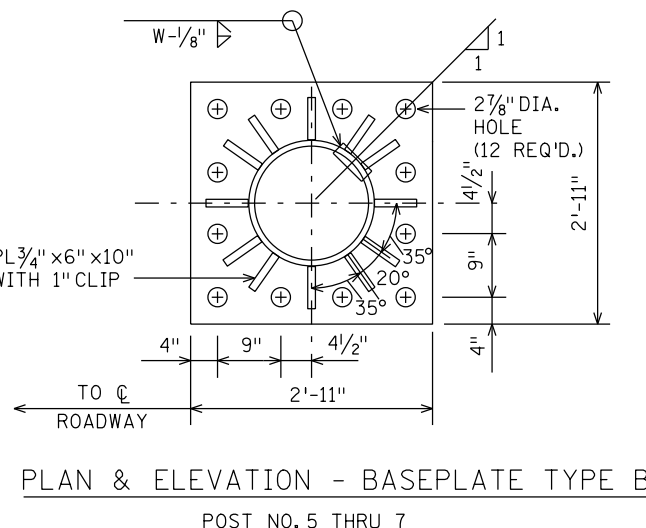
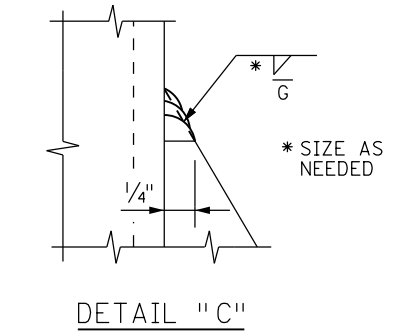
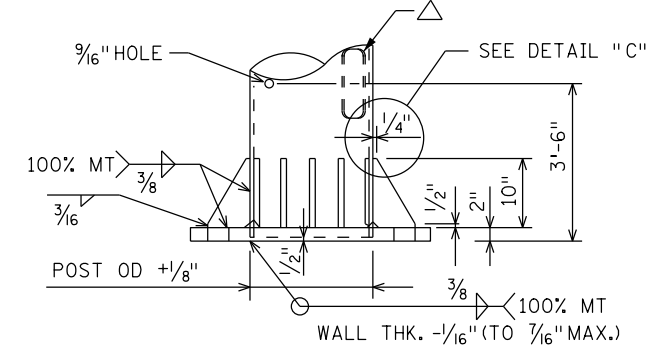
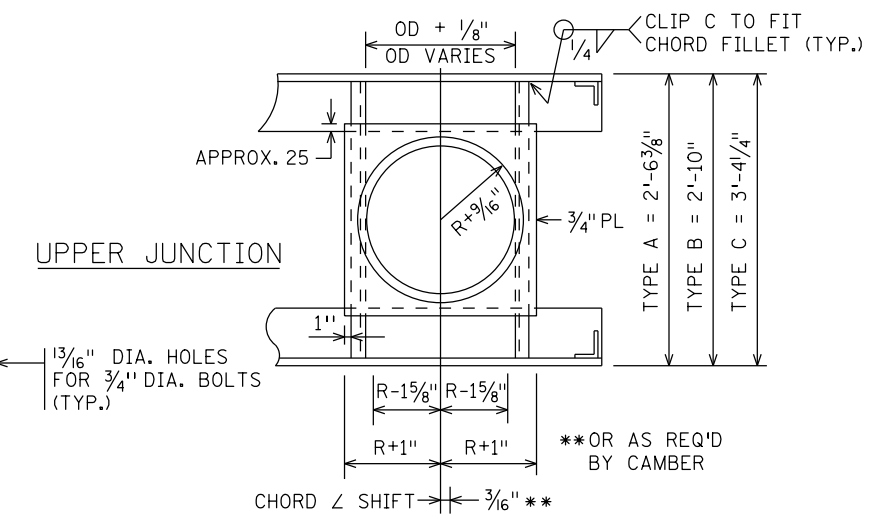
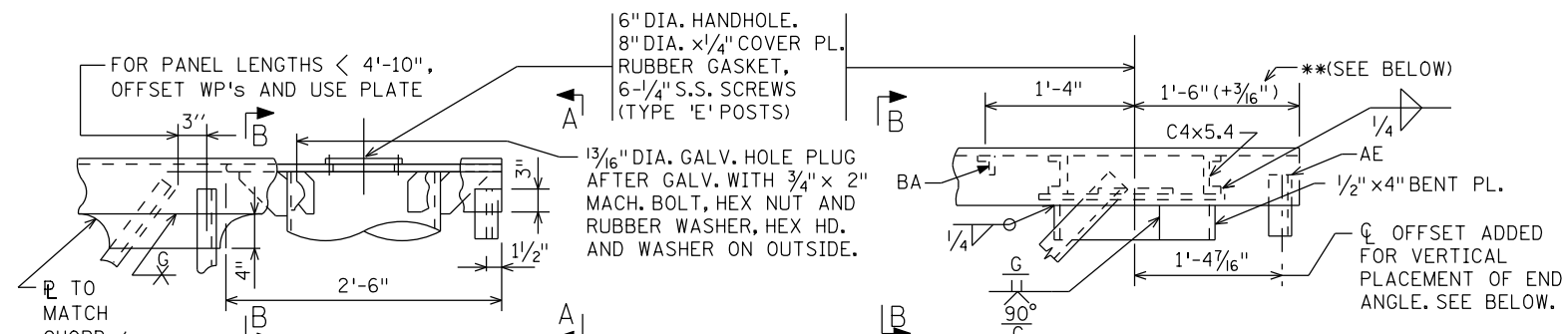
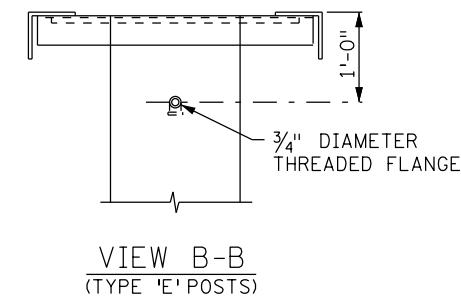
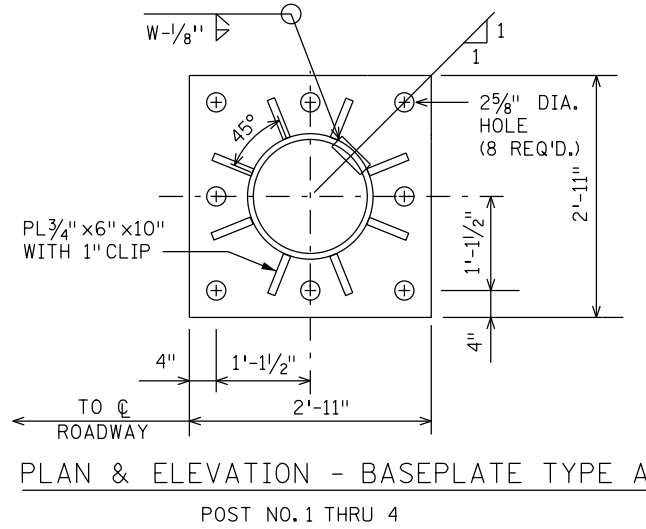
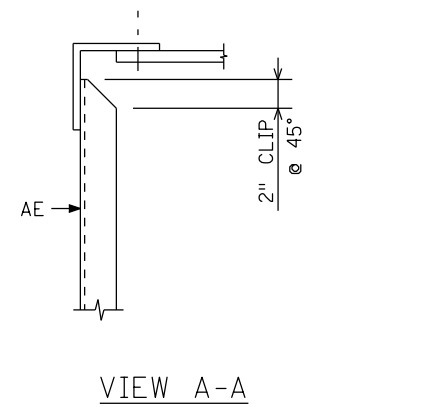
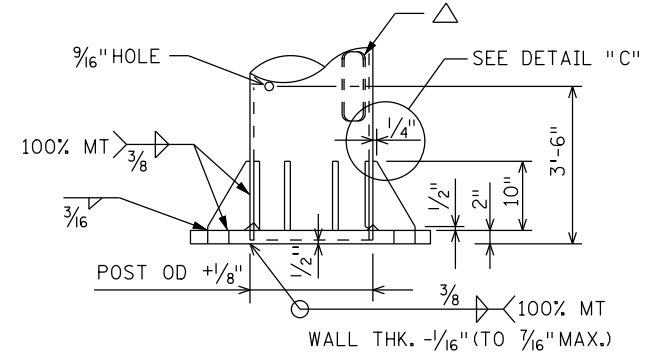
POST NO.	DRILLED SHAFT DIMENSIONS				REINFORCING BARS				ESTIMATED QUANTITIES (4)		SPREAD FOOTINGS SUMMARY OF ESTIMATED QUANTITIES			
	AA	BB	CC	DD	EE	FF (3)	GG	HH	CONCRETE CY	REIN. STEEL LBS.	CONCRETE CY (2)	REIN. STEEL LBS. (2)	ANCH. ASSM. LBS	ST. EXC. C.Y. (2)
1-4	3'-0" Ø	23'-0"	3'-6"	3'-6"	16'-6" x 197 LBS.	5 #5x 14'-1"	7 #5x 14'-1"	20 #9x 22'-7"	6.9	1910	9.3 + 0.46 G	945 + 98G	781	7.4 R
5-7	4'-0" Ø	29'-0"	4'-0"	4'-0"	22'-6" x 362 LBS.	5 #5x 16'-1"	7 #5x 16'-1"	24 #10x 28'-7"	14.1	3490	16.7 + 0.46 G	2333 + 133G	1320	12.1 R

POST NO.	SPREAD FOOTINGS ANCHOR RODS						J REIN. BARS		K REIN. BARS		L REIN. BARS		M REIN. BARS		(6) N REIN. BARS		P REIN. BARS (1)									
	A	B	C	D	E	F	NO. REQ'D	SIZE	NO. REQ'D	SIZE	NO. REQ'D	SIZE	NO. REQ'D	SIZE	NO. REQ'D	SIZE	NO. REQ'D	SIZE								
1-4	14'-0"	9'-0"	3'-6"	3'-6"	8 1/2"	2'-0"	8	2 1/4" 3'-10 1/2"	14	#4	8'-6"	14	#6	8'-6"	10	#5	13'-6"	10	#7	13'-6"	20	#9	H + 2'-6"	2G	#5	14'-3"
5-7	18'-0"	12'-6"	3'-6"	3'-6"	9"	2'-0"	12	2 1/2" 4'-0"	19	#4	12'-0"	19	#6	12'-0"	13	#6	17'-6"	13	#10	17'-6"	24	#10	H + 2'-9"	2G	#5	14'-3"

STANDARD OVERHEAD SIGN SUPPORTS INTERIM DESIGN B

FOUNDATIONS AND ANCHOR RODS

DRAWING ST-3



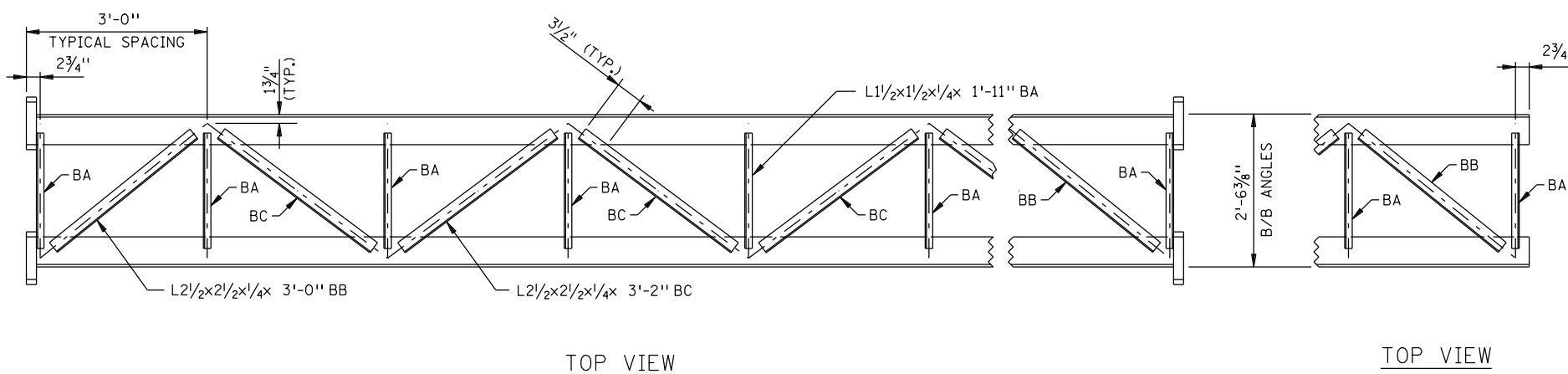
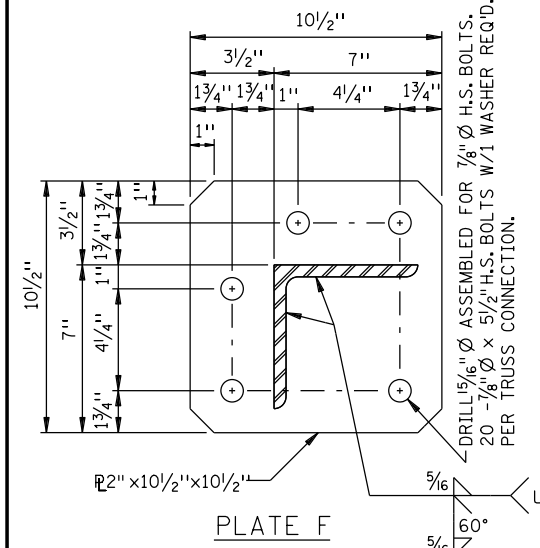
NOTE:
 CHOKER PLATES AND HANDHOLE COVERS SHALL BE GALVANIZED SEPARATELY.

Δ = FOR TYPE 'E' POST ONLY: LOCATE 45° AWAY FROM TRAFFIC. 10" x 6" x 1/2" x 0'-2" STRUCTURAL TUBE OR EQUAL W $\frac{1}{4}$ " RUBBER GASKET.

STANDARD OVERHEAD SIGN SUPPORTS INTERIM DESIGN B
TRUSS/POST CONNECTION & BASEPLATES
DRAWING ST-4

PLOTTED/REVISED: 3/8/2016

DISTRICT #: METRO
IPLOT NAME: 52
PATH & FILENAME: IP_PWP-d712848/URBAN FREEWAY PLAN TYPICALS.dgn



NOTES:

TRUSS SECTIONS SHALL BE MADE IN MULTIPLES OF 6'-0", EXCEPT THAT THE BRACING PANEL NEAREST EACH POST MAY VARY TO MAKE UP THE NEEDED SECTION LENGTH. WELDED CHORD SPLICES ARE NOT PERMITTED EXCEPT IN CANTILEVER TRUSSES AS NOTED BELOW.

CANTILEVER TRUSSES SHALL BE SUPPLIED AS A SINGLE UNIT WHENEVER POSSIBLE. WHEN CANTILEVER TRUSS LENGTH EXCEEDS 40'-0" CHORDS MAY BE SPLICED, AS SHOWN, IN THE END BRACING PANEL ONLY. CHORD SPLICE WELD SHALL BE COMPLETE PENETRATION, WITH 100% UT AND MT TESTING PER 2471.3M.

UNLESS OTHERWISE SHOWN, ALL WELDS SHALL BE 1/4" FILLET WELDS ALL AROUND.

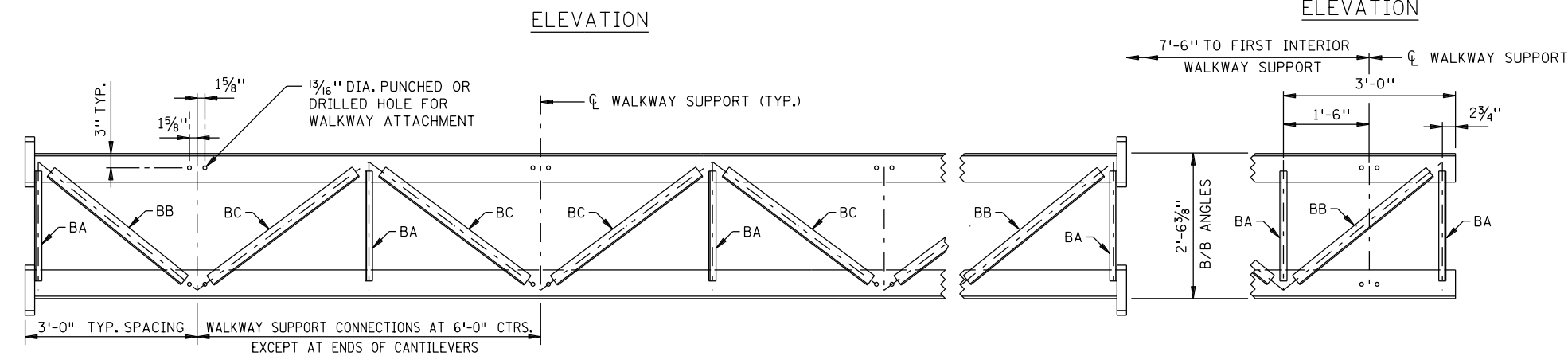
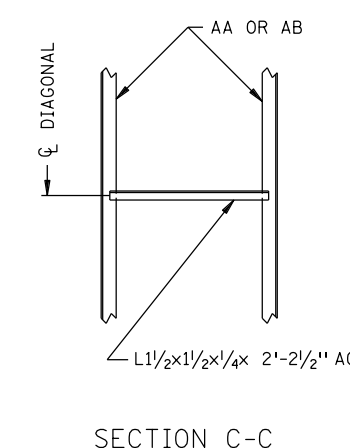
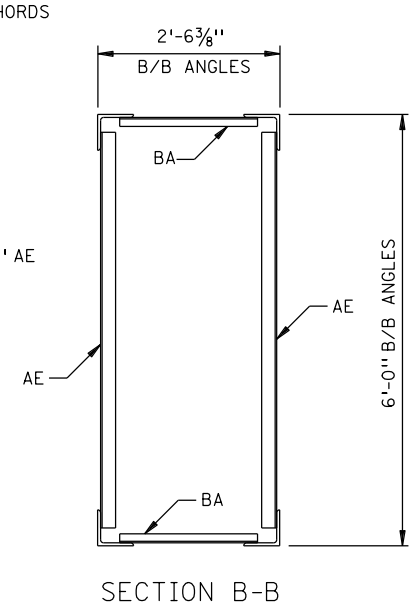
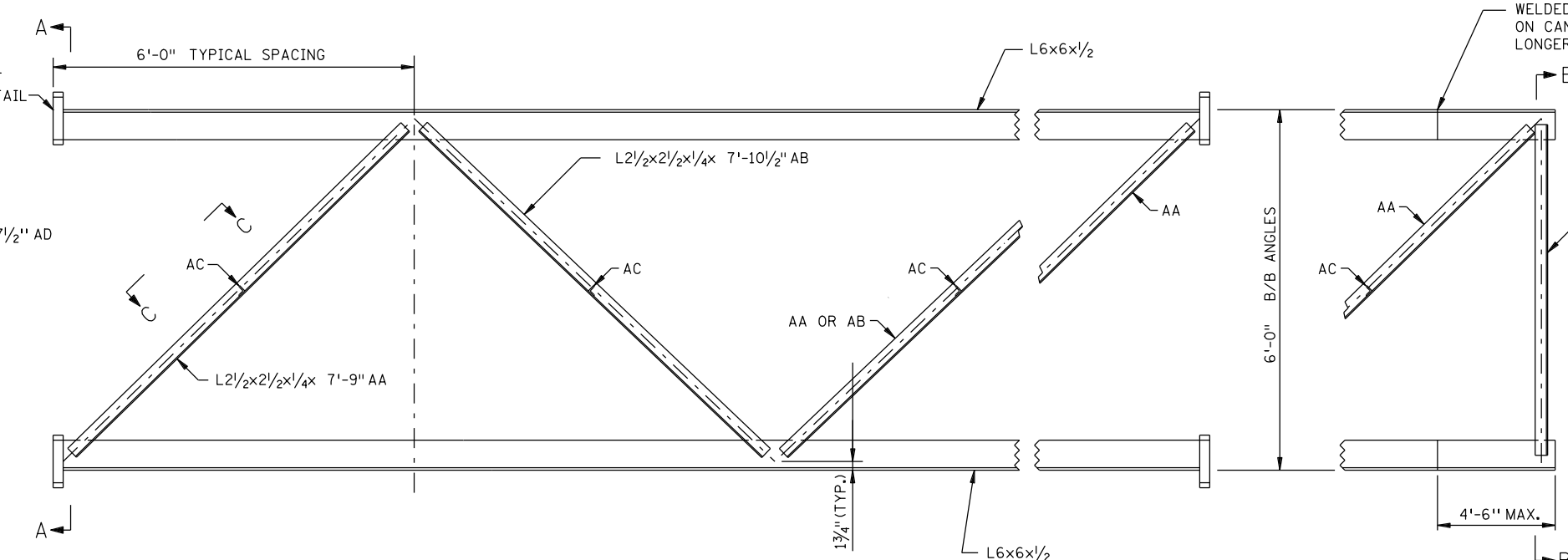
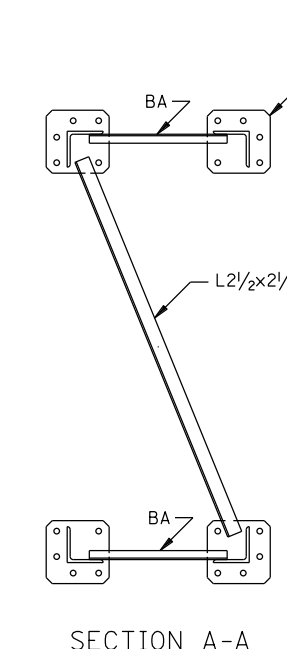
BOLTED SPLICES SHALL NOT BE LOCATED BEHIND CMS SIGNS.

PROVIDE 2- 1/16" BRASS, STAINLESS STEEL OR GALVANIZED STEEL SHIMS AT EACH FLANGE TO BRING TRUSS INTO CORRECT CAMBER AND ALIGNMENT.

TRUSSES SHALL BE SHOP ASSEMBLED AND MATCH MARKED.

ALL VIEWS OF THE TRUSSES ARE DRAWN FROM THE INSIDE OF THE TRUSS LOOKING OUT.

SEE DRAWING ST-4 FOR POST CONNECTION DETAILS.



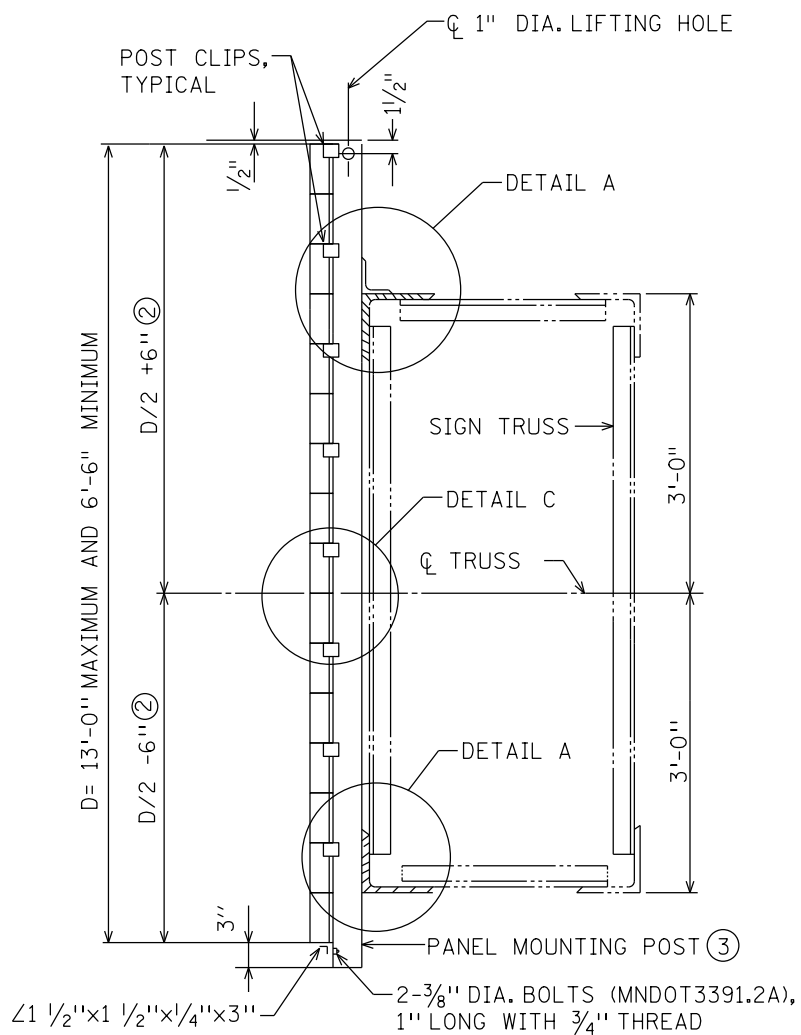
NOTE:
THE BOTTOM VIEW IS DETAILED TO PROVIDE FOR WALKWAY ATTACHMENT. WHERE THE WALKWAY IS OMITTED, PROVIDE STRUT BA AS INDICATED IN THE TOP VIEW.

BOTTOM VIEW SIMPLE SPAN

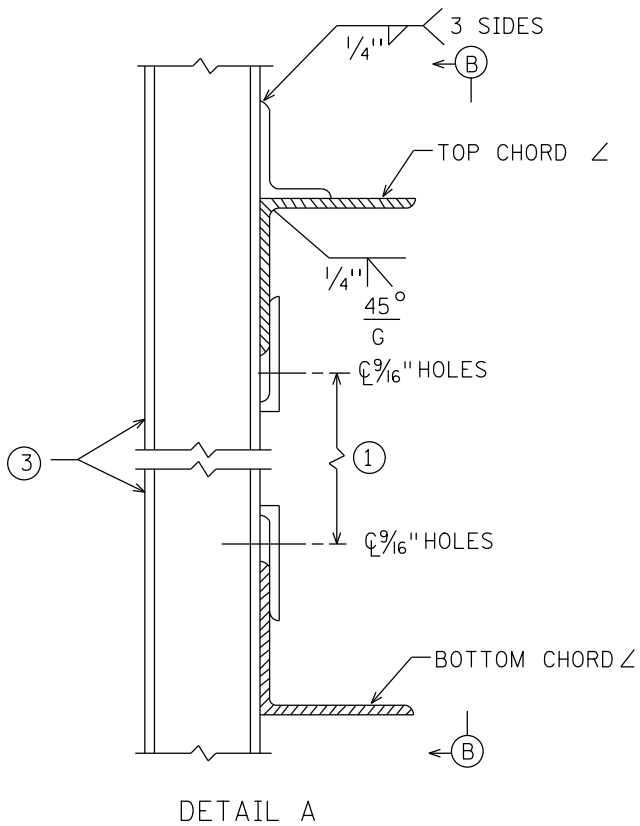
DETAILS SHOWN ARE FOR THE FREE ENDS OF THE CANTILEVER SPANS. ALL OTHER DETAILS FOR CANTILEVER TRUSSES SHALL BE AS SHOWN FOR THE SIMPLE SPANS.

STANDARD OVERHEAD SIGN SUPPORTS INTERIM DESIGN B	
SIGN TRUSS DETAILS TRUSS TYPE A	
DRAWING	ST-5

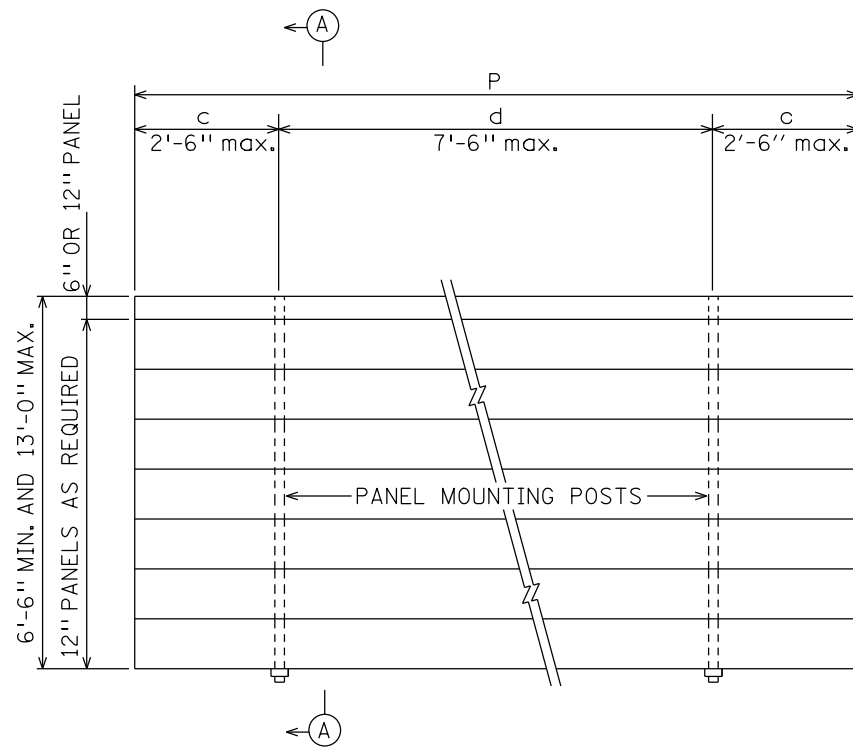
REV. 10-2-2013



SECTION A-A



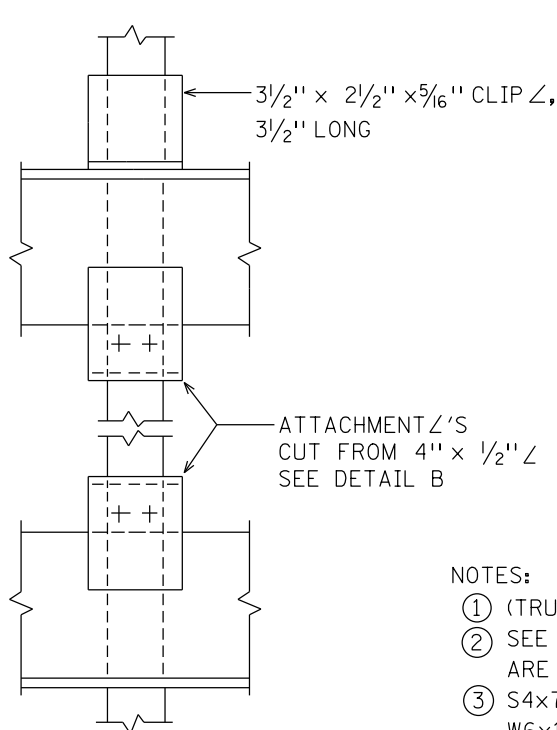
DETAIL A



PANEL MOUNTING POST	
NO. OF POSTS	
2	P=144" OR LESS, c=.207P, d=.586P
3	P=150" THRU 204", c=.145P, d=.355P
4	P=210" THRU 276", c=.107P, d=.262P
5	P=282" THRU 348", c=.084P, d=.208P
6	P=354" THRU 420", c=.070P, d=.172P
7	P=426" THRU 492", c=.059P, d=.147P

POST SPACING MAY BE ADJUSTED AS REQUIRED IF CONFLICT WITH TRUSS DETAILS IS ENCOUNTERED.

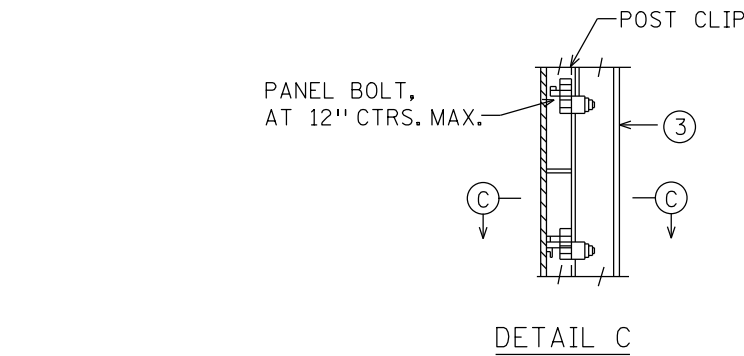
SIGN PANEL ELEVATION



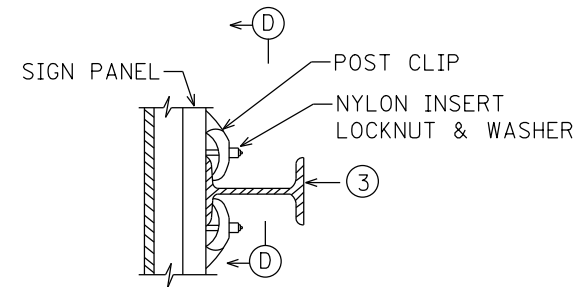
VIEW B-B

NOTES:

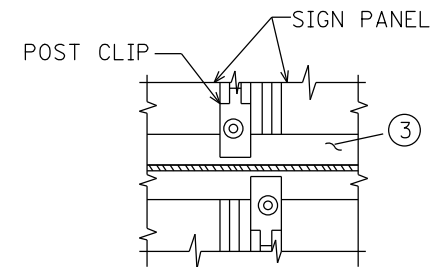
- ① (TRUSS DEPTH)-(TOP & BOTTOM CHORD LEGS)-1/4"
- ② SEE NOTE 1 ON ST-1 WHEN STANDARD PANELS AND CMS ARE MOUNTED ON THE SAME SPAN
- ③ S4x7.7 FOR SIGN HEIGHTS ≤ 11'-0"
 W6x12 FOR SIGN HEIGHTS OVER 11'-0"



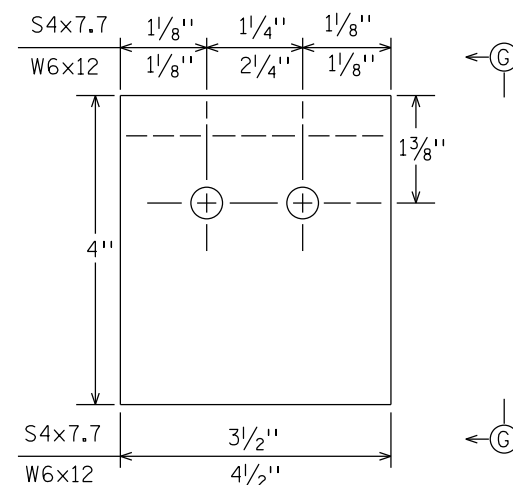
DETAIL C



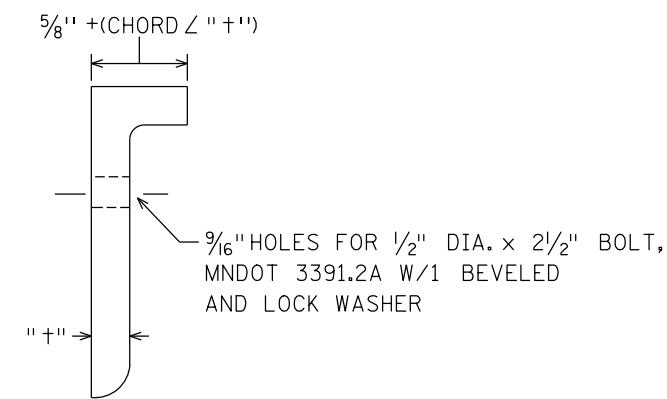
SECTION C



SECTION D-D



DETAIL B



VIEW G-G

STANDARD OVERHEAD SIGN SUPPORTS
 INTERIM DESIGN B

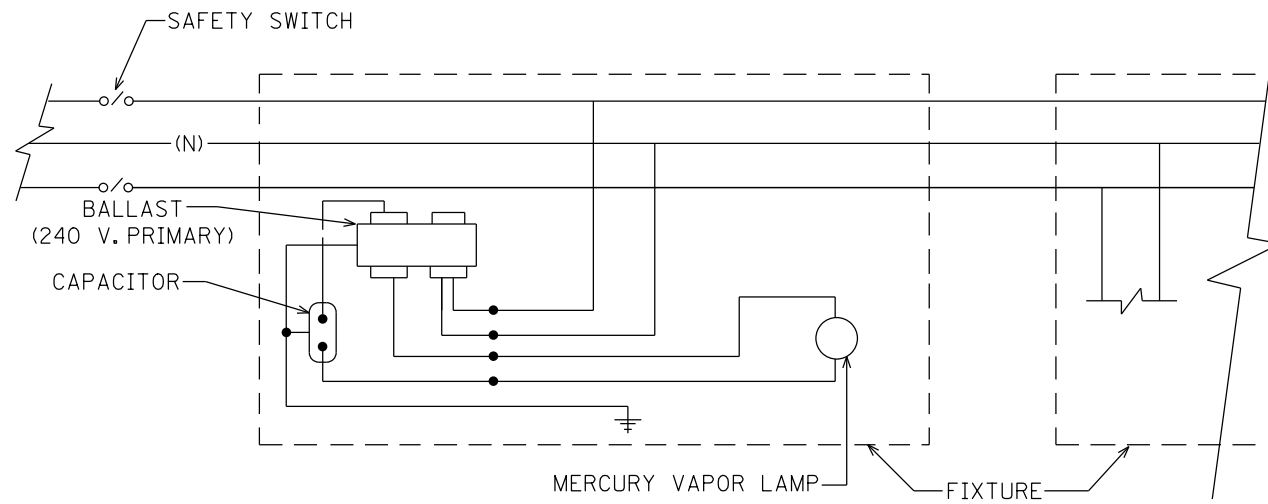
SIGN PANEL AND PANEL
 MOUNTING POST DETAILS

DRAWING ST-10

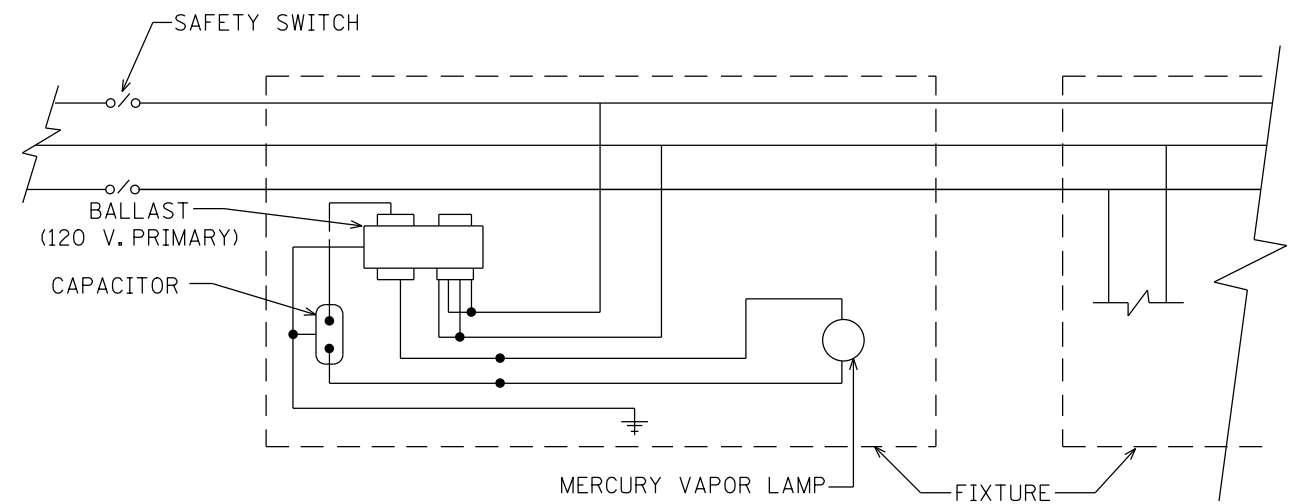
PLOTTED/REVISED: 3/8/2016

DISTRICT #: METRO
 IPLOT NAME: 54
 PATH & FILENAME: IP_PWP-d1721848URBAN FREEWAY PLAN TYPICALS.dgn

REV. 10-2-2013

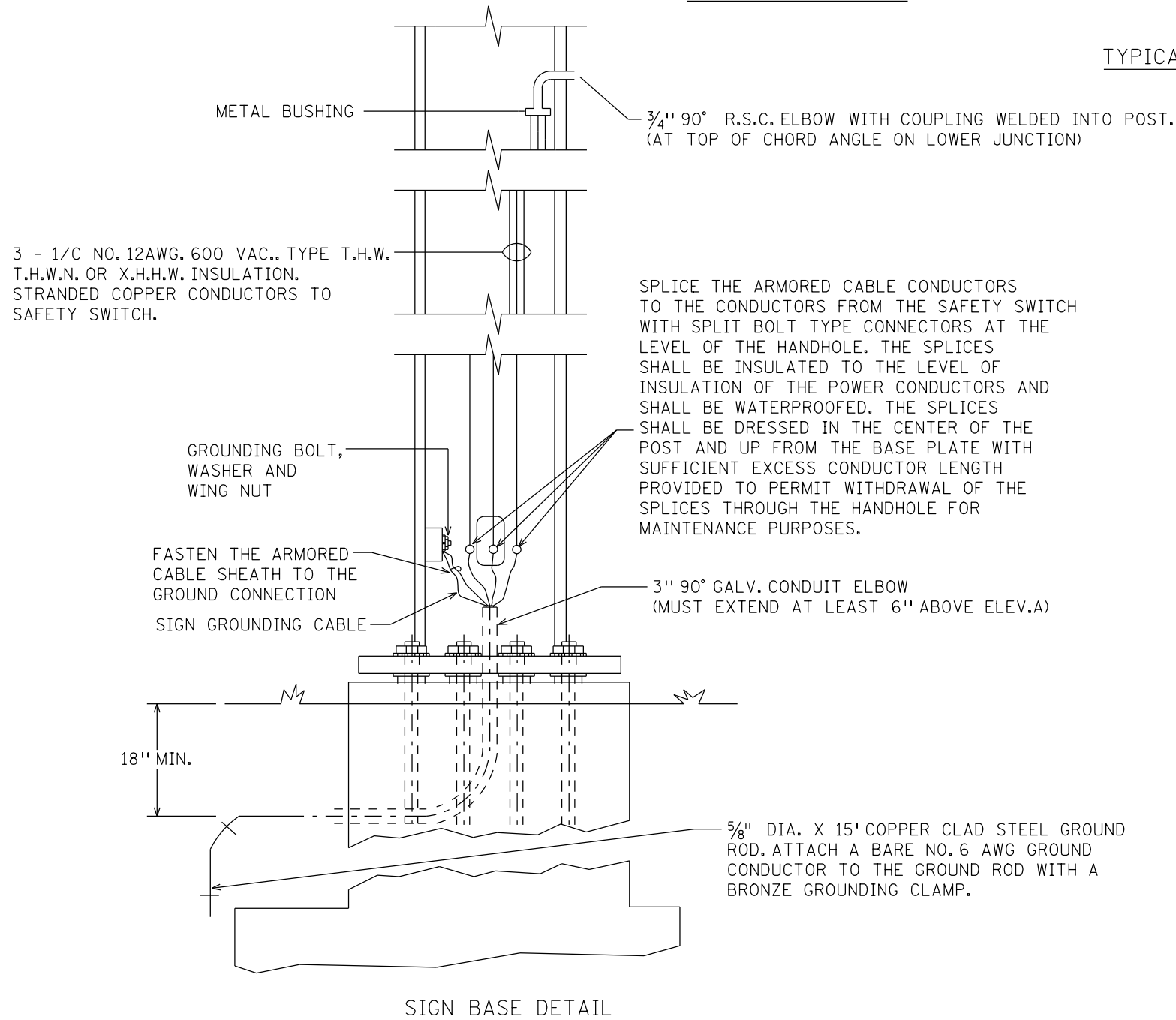


240/480 V. CIRCUIT



120/240 V. CIRCUIT

TYPICAL CIRCUIT DIAGRAMS



ELECTRICAL NOTES:

1. WHEN SIGN LIGHTING SYSTEMS HAVE BEEN COMPLETED, THE CONTRACTOR SHALL, WITHOUT FURTHER COMPENSATION, CONDUCT BURNING AND RESISTANCE TESTS FOR FINAL ACCEPTANCE. THE RESISTANCE TO GROUND OF EACH UNGROUNDED CONDUCTOR SHALL BE NOT LESS THAN 8 MEGOHMS.
2. ALL FITTINGS, HUBS, UNIONS, BUSHINGS, ETC. SHALL BE SUPPLIED AS PART OF CONDUIT, CONDUIT ENTERING SIGN POSTS SHALL HAVE INSULATED GROUNDING BUSHINGS INSTALLED BEFORE PULLING WIRE.
3. CONDUIT ON STRUCTURE SHALL BE SURFACED MOUNTED, STRAPPED AT EVERY ANGLE BRACE WITH U-BOLT TYPE CLAMPS.
4. SUCCESSIVE LIGHTING FIXTURES SHALL BE CONNECTED ON ALTERNATE SIDES OF THE 3-WIRE CIRCUIT.
5. THE CABLE SHEATH SHALL EXTEND AT LEAST 4" ABOVE THE TOP OF THE CONDUIT END AND THE TAPE ARMOR OF ARMORED CABLE SHALL BE CONNECTED TO THE GROUNDING BOLT IN THE SIGN POSTS.
6. WIRING FROM THE SAFETY SWITCH TO LIGHTING FIXTURES SHALL BE 1/2" NO. 12 AWG AND SHALL BE RUN IN 3/4" R.S.C. ALL SPLICING SHALL BE ACCOMPLISHED WITH A WIRE NUT AND WATERPROOF COATING. ALL CONDUIT CONNECTIONS SHALL BE RAIN TIGHT.

STANDARD OVERHEAD SIGN SUPPORTS INTERIM DESIGN B	
ELECTRICAL DETAILS	
DRAWING	ST-12

PLOTTED/REVISED: 3/8/2016

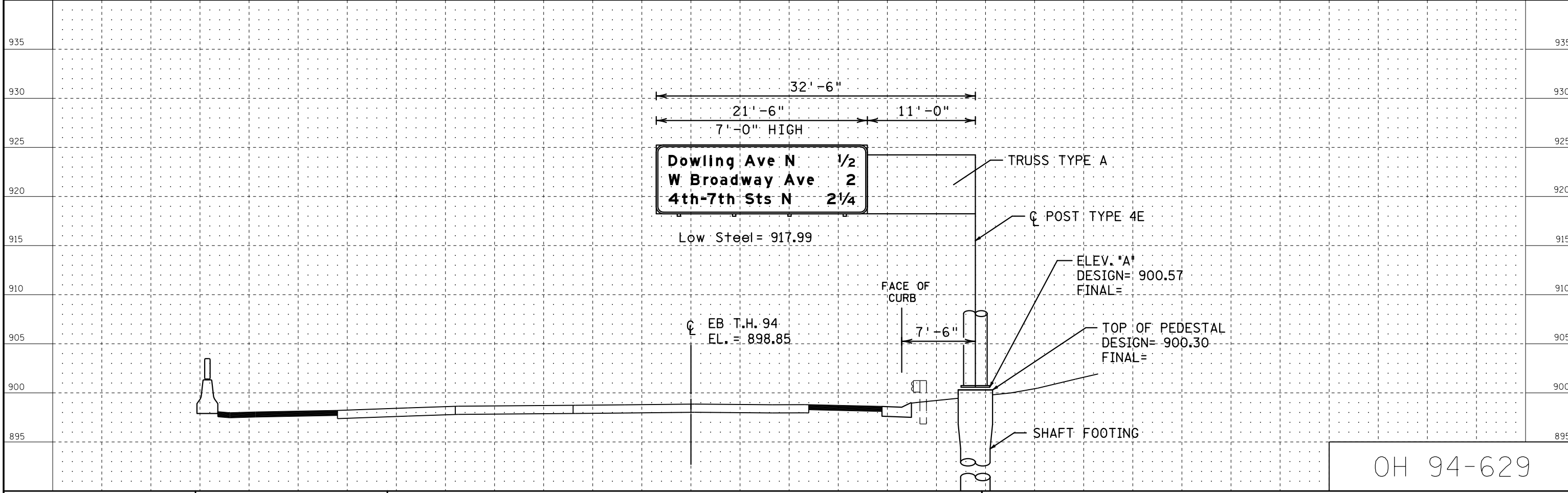
OH 94-629 (OLD OH 94-352)
E.B. T.H. 94

STA. 317+75

QUANTITIES

	<u>DESIGN</u>	<u>FINAL</u>
POST STEEL (ANCHORAGE ASSEMBLY)	781 POUNDS	_____
TRUSS STEEL	POUNDS	_____
WALKWAY SUPPORT STEEL	POUNDS	_____
WALKWAY GRATING STEEL	POUNDS	_____
PANEL MOUNTING POST STEEL	296 POUNDS	_____
CONCRETE (SHAFT) FOOTINGS	6.9 CU YDS	_____
SIGN PANELS TYPE OH	150.5 SQ FT	_____

- NOTES: 1. LOW STEEL IS BOTTOM OF PANEL MOUNTING POSTS ON TALLEST PANEL.
2. STRUCTURE IS DESIGNED FOR FUTURE WALKWAY.



OH 94-629

DISTRICT #: METRO
I/PLOT NAME: 55
PATH & FILENAME: IP_PWP-d1721848URBAN X-SECTIONS_XS.dgn