Permanent Sign Design Resources

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Office of Traffic Engineering

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DEPARTMENT OF TRANSPORTATION

mndot.gov

Introduction

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Permanent Signing Overview

- Sign Elements
- Square Tube Bases
- Square Tube in Plans
- Standard Plan Sheets
- New Standard Sign Designs and Codes
- Future Changes to Signing Plans

Sign Elements

- Panel
- Stringers
- Riser Post
- Footing/Base

3 Wall Base

- Small signs
  - Markers, Delineators, small chevrons
- 4’ Min. Height ground to bottom of sign panel
- Drive into soil or bituminous
- Core or form into concrete
- Standard Plan Sheet
- MASH Compliance Evaluation
- Single post only

Fin Base

- Sign size ~ 36” x 36”
- Min 4’ from ground to bottom of sign
  - Based on crash test
- Typical installation – min 7’ from ground to bottom of sign
- Drive into soil or bituminous
- Core or form into concrete
- Notes in tabulation
- Developing MASH Compliance Evaluation
- Single post only

Shear Bolt Base

- Sign size ~ 36” x 36”
- Min 7’ from ground to sign panel
- Mount on concrete
  - Min 4” depth of concrete
  - Slope >8%, then core or form
    - Use base on driven post
- Notes in Tabulations
- Single post only

Slip Base 2-1/2”

- Sign size ~ 60” x 60” on single post
- 7’ Min from ground to panel
- Drive into soil
- Mount onto concrete
  - Min 6” depth of concrete
  - Slope >8% or <6” of concrete, then core or form
    - Use base on driven post
- Notes in Tabulations
- Multi-post not omnidirectional

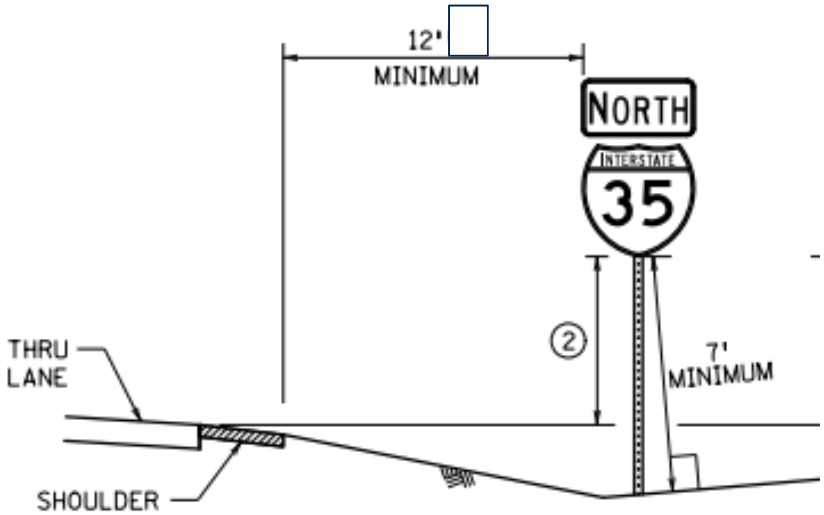
Slip Base – 4”

- Option for smaller I-beam signs
- 7’ min from ground to panel
- Drive base into soil
- Multi-post design requires a hinge at sign
- Not omnidirectional

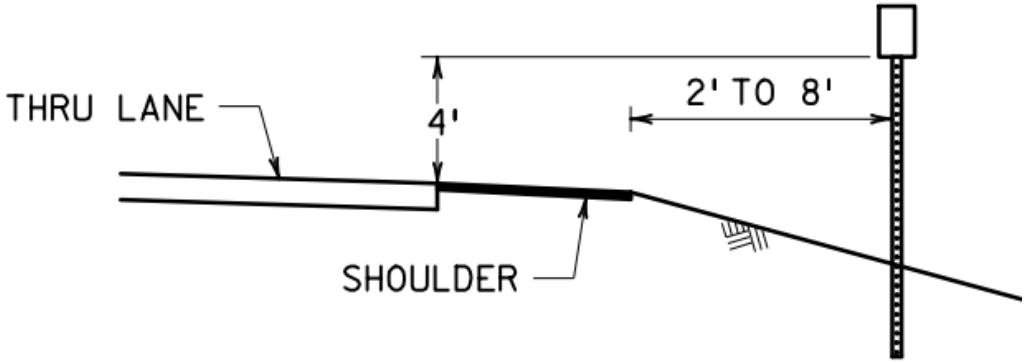
I-beam

- Current design is MASH crashworthy from 0°
- Standard plan
- Very little modification from previous
- MASH Compliance Evaluation

Height of Signs



Breakaway posts



Bendable Post

Sign Reaction When Hit

Break and go over vehicle
Or Bend and Vehicle Drives over sign

Types of Square Tube Structures

Base Type	Riser Post Size	Min. Height from Ground to Bottom of Panel (crashworthy)	Mounting surface
3 Wall	1-3/4”	4’ (bends)	Soil or core in concrete
Fin	2”	4’ (bends)	Soil or core in concrete
Shear Bolt	2” (possible insert)	7’ (breaks)	Concrete
Slip Base	2-1/2” (2-3/16” Insert)	7’ (breaks)	Soil or concrete
Slip Base	4”	7’ (breaks)	Soil

Sign Structure Mounting Surfaces

- Sign structures can be driven into soil and bituminous.
- Sign structures can be mounted on concrete.
- Sign structures cannot be mounted on brick.
- Do not bury Slip and Shear Bolt bases.

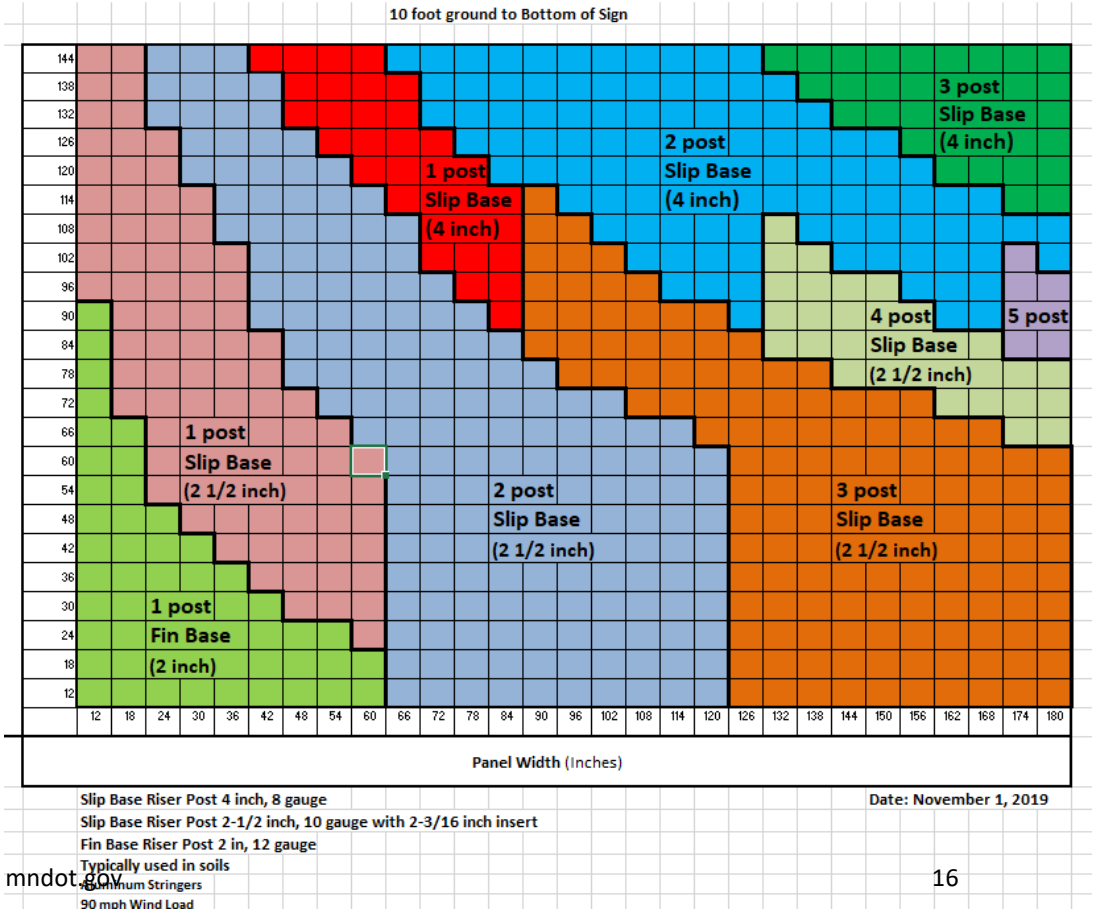
Square Tube Sign Structures

- Mounting height of 4’ – Roundabout Directional Arrow, Chevrons, etc.
  - 3 walled base
  - Fin-base
- Intersections need to be omnidirectionally crash worthy
  - 1 post for 3 walled base, Fin Base, Shear Bolt, and Slip Base (2 ½”)
  - 50’ of intersection

Wind loading Chart

- Wind loading chart for concrete and soil
- Wind loading chart for 5’ and 7’ mounting height
- Conservative 10’ from ground to bottom of sign
- Different post size, gauge and insert

See link to wind loading charts below video.



Examples using windloading chart

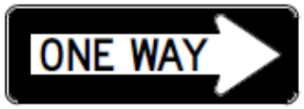
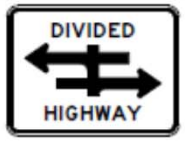
- Stop sign assembly on expressway
- Chevron

Stop Sign Assembly Example

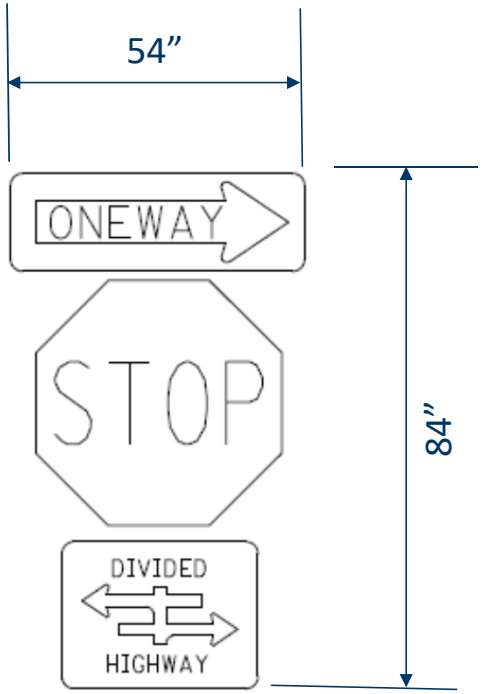
R Series

Sign Number	Old Sign Number	Sign Picture	Color	Use	Sign Size (inches)	MnDOT Stock #
R1-1			White on Red	B-P	18 x 18	32426
				M, CR-SL, B/Rt	30 x 30	24107
				CR-ML, E	36 x 36	24108
				O	48 x 48	24109
		A minimum size of 36 x 36 inches shall be used for STOP signs that face multi-lane approaches. Where side roads intersect a multi-lane street or highway that has a speed limit of 45 mph or higher, the minimum size of the STOP signs facing the side road approaches, even if the side road only has one approach lane, shall be 36 x 36 inches. Where side roads intersect a multi-lane street or highway that has a speed limit of 40 MPH or lower, the minimum size of the STOP signs facing the side road approaches shall be as shown above based on the number of approach lanes on the side street approach. Multi-Lane - more than one lane moving in the same direction. A multi-lane street, highway, or roadway has a basic cross-section comprised of two or more through lanes in one or both directions. A multi-lane approach has two or more lanes moving toward the intersection, including turning lanes.				
				B-P	18 x 18 x 18	51530

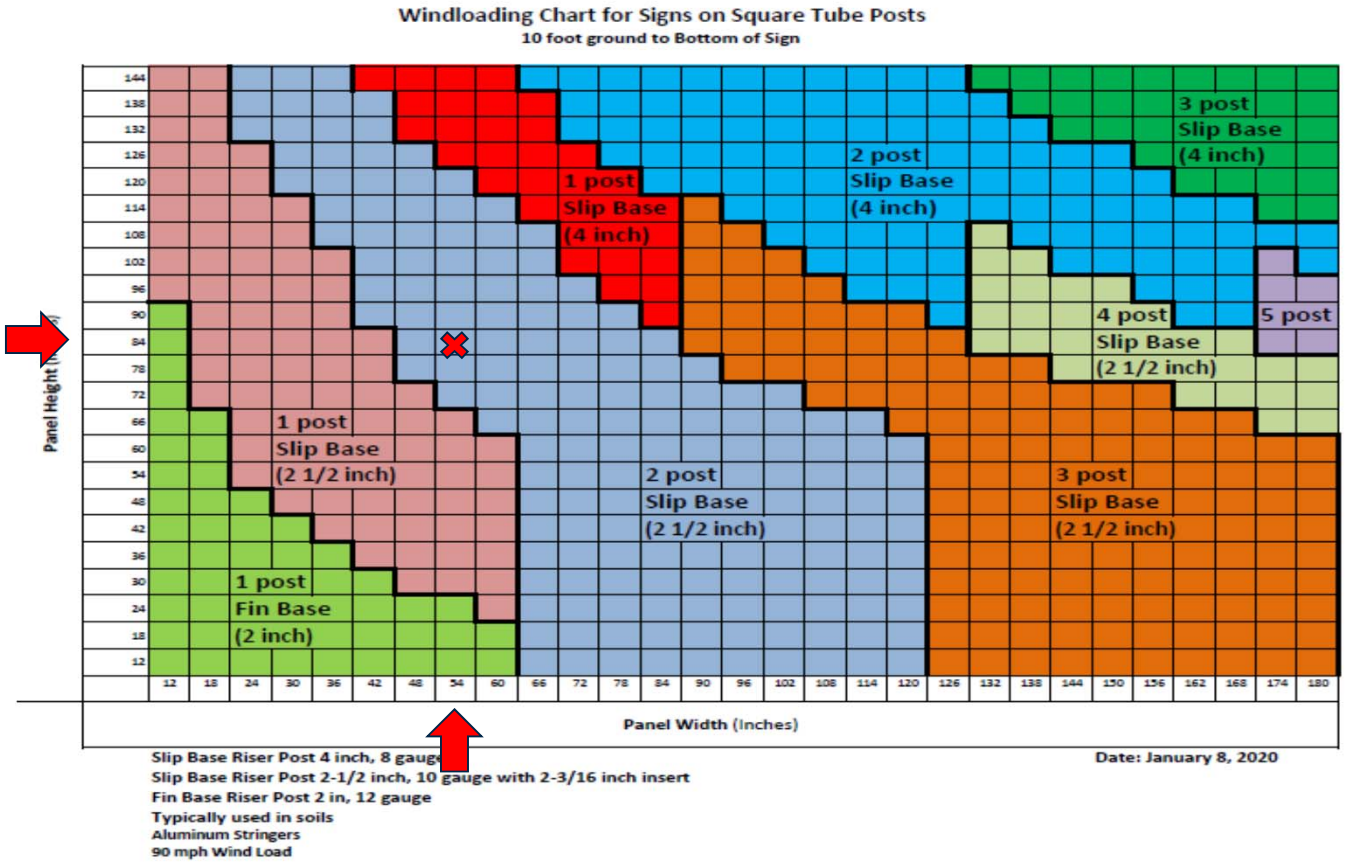
Stop Sign Assembly Example

SSM Design							
				E, F	180 x 16	34300	
R6-1 (R or L) Right is shown			Black on White	CR-SL	36 x 12	24119 (L)	24117 (R)
				CR-ML, E, F, O	54 x 18	51473 (L)	51478 (R)
R6-2 (R or L) Right is shown			Black on White	M	18 x 24	31000 (L)	30834 (R)
				CR-SL	24 x 30	31001 (L)	31012 (R)
				CR-ML	30 x 36	51479 (L)	51481 (R)
				E, O	36 x 48	34518 (L)	34519 (R)
				F	48 x 60	51480 (L)	50990 (R)
R6-3			Black on White	CR-SL, ML	30 x 24	34520	
				E, O	36 x 30	50991	
		DIVIDED		CR-SL, ML	30 x 24	34521	

Stop Sign Assembly Example



Stop Sign Assembly Example



Stop Sign Assembly Example

From FAQ on Website

17) How do we handle sign assemblies that are too large for a single post in intersections?

A typical sign assembly that includes back to back one way signs, a stop or yield sign, and a divided highway sign can be installed on a single post. Because these signs are not a uniform width, we analyzed the assembly and determined it would meet the wind loading requirements of a single post. Contact the Office of Traffic Engineering with any other unique sign assemblies you have in an intersection that fall outside of the 1 post area on the wind loading charts. We will review them.

Chevron Example

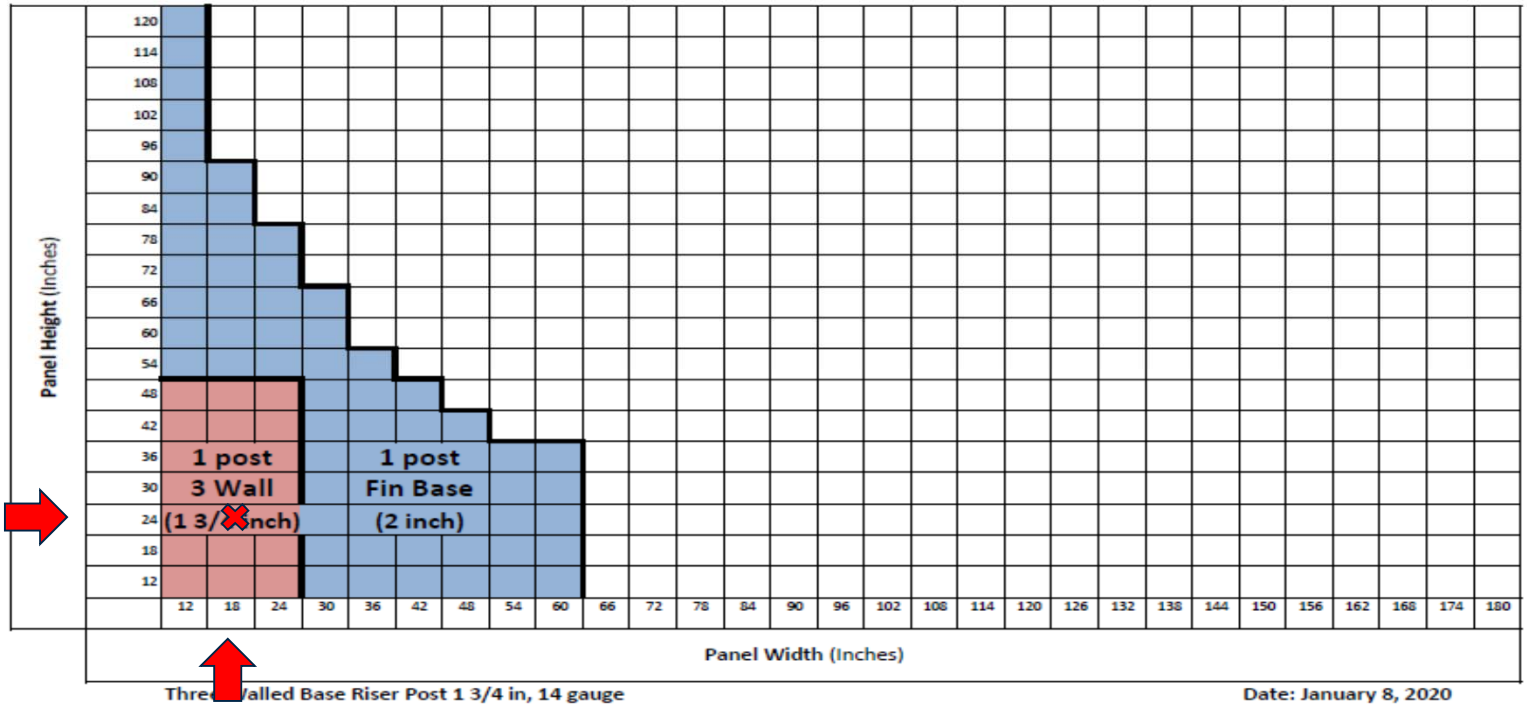
W Series

Sign Number	Old Sign Number	Sign Picture	Color	Use	Sign Size (inches)	MnDOT Stock #	
W1-7			Black on Yellow	B-P	24 x 12	33736	
				B/Rt	36 x 18	56939	
				CR-SL, ML	48 x 24	28789	
				O	60 x 30	57934	
					72 x 30	30851	
W1-8			Black on Yellow	CR-SL, ML	18 x 24	33253	
				O	24 x 30	33254	
				E	30 x 36	33738	
				F	36 x 48	33265	
W1-10 (R or L) Right is shown			Black on Yellow	CR-SL, ML, E	36 x 36	33745 (L)	33741 (R)
				F	48 x 48	33746 (L)	33742 (R)

Chevron Example

Windloading Chart for Signs on Square Tube Posts

5 foot Mounting Height



Three Walled Base Riser Post 1 3/4 in, 14 gauge
Fin Base Riser Post 2 in, 12 gauge
Typically used in soils
Aluminum Stringers
90 mph Wind Load

Date: January 8, 2020

Typical Tabulation

SIGN PANELS TYPE C											STA
SIGN NO	SIGNS QTY	CODE NO	PANEL LEGEND	PANEL SIZE	PANEL AREA	MTG HT (1)	POSTS/MOUNTING NUMBER OF POSTS	POST TYPE (2)	RISER POST SIZE	SURFACE TYPE	TOTAL AREA
	EACH			INCH	SQ FT	FEET			INCHES		SQ FT
C-1	2	W13-2	EXIT 30 MPH	48 x 60	20.00	7	1	SQ	2-1/2	SOIL	40.00
C-2	12	W1-8	CHEVRON	36 x 48	12.00	7	1	SQ	2-1/2	SOIL	144.00
3) C-3	1	D10-3	MILE 164	12 x 36	3.00	7	1	SQ	1-3/4	CONC	3.00
C-4	2	W13-1	CURVE	48 x 48	16.00	7	2	SQ	2-1/2	SOIL	32.00
		W13-1	30 MPH	30 x 30	6.25				2-1/2	SOIL	12.50
C-5	2	W13-3	RAMP 30 MPH	48 x 60	20.00	7	1	SQ	2-1/2	SOIL	40.00
C-6	1	SPECIAL	ALTERNATE ROUTE TO	24 x 12	2.00	7	1	SQ	2	SOIL	2.00
		M3-2A	EAST	24 x 12	2.00						2.00
		M1-1	INTERSTATE 94	24 x 24	4.00						4.00
		M5-1R	ADVANCED RIGHT TURN ARROW	21 x 15	2.19						2.19
C-7	2	R6-1R	ONE WAY(RIGHT)	54 x 18	6.75	7	1	SQ	2-1/2	SOIL	13.50
		R1-1	STOP	36 x 36	9.00						18.00
C-8	6	R6-1L	ONE WAY (LEFT)	54 x 18	6.75	7	1	SQ	2	SOIL	40.50
C-9	2	R6-1L	ONE WAY (LEFT)	54 x 18	6.75	7	1	SQ	2-1/2	SOIL	13.50
		R1-2	YIELD	36 x 36 x 36	3.90						7.80
C-10	4	R6-1R	ONE WAY (RIGHT)	54 x 18	6.75	7	1	SQ	2	CONCRETE	27.00
C-11	4	R5-1	DO NOT ENTER	48 x 48	16.00	7	1	SQ	2	SOIL	64.00
C-12	2	R5-10D	PEDS BIKES PROHIBITED	18 x 24	3.00	7	1	SQ	1-3/4	SOIL	6.00
C-13	2	R5-1A	WRONG WAY	42 x 30	8.75	7	1	SQ	2-1/2	SOIL	17.50
C-14	1	SPECIAL	ALTERNATE ROUTE TO	24 x 12	2.00	7	1	SQ	2-1/2	SOIL	2.00
		M3-2A	EAST	24 x 12	2.00						2.00
		M1-1	INTERSTATE 94	24 x 24	4.00						4.00
		M6-X2	U TURN ARROW	21 x 15	2.19						2.19
C-15	1	SPECIAL	ALTERNATE ROUTE TO	24 x 12	2.00	7	1	SQ	2-1/2	SOIL	2.00
		M3-2A	EAST	24 x 12	2.00						2.00
		M1-1	INTERSTATE 94	24 x 24	4.00						4.00
		M6-X2	U TURN ARROW	21 x 15	2.19						2.19
C-16	1	R10-X12	LEFT TURN YIELD ON FLASHING YELLOW ARROW	42 x 48	14.00					MAST ARM	14.00
C-17	1	W3-3	SIGNAL AHEAD	48 x 48	16.00	7		R	II	CONC RAIL	16.00
		W20-100P	500 FEET	42 x 18	5.25						5.25
TOTAL											545.12

Typical Tabulation Notes

SPECIFIC NOTES:
(1) MOUNTING HEIGHT IS MINIMUM (WITH A +6 INCH TOLERANCE)
(2) POST TYPE ABBREVIATIONS (SQ = SQUARE TUBE, R = ROUND POST, U = U CHANNEL).
(3) CORE OR PREFORM A 4 INCH DIAMETER HOLE IN CONCRETE FOR POST. DO NOT FILL HOLE WITH CONCRETE.

GENERAL NOTES:
1. FOR SIGN CODES SEE THE 2020 MNDOT STANDARD SIGNS AND MARKINGS SUMMARY.
1. FOR PUNCHING CODES SEE MNDOT OFFICE OF TRAFFIC ENGINEERING WEBSITE.
2. USE 1-3/4" RISER POST WITH SQUARE TUBE THREE WALL BASE. SEE STANDARD PLAN.
3. FOR 2 INCH RISER POST ON CONCRETE USE RECOVERABLE SHEAR BOLT BASE PLACED PER MANUFACTURER'S SPECIFICATIONS. USE A 12 GAUGE, 2" X 2" PRE-PUNCHED, GALVANIZED STEEL, SQUARE TUBE RISER POST WITH A 12 GAUGE, 1-3/4" X 1-3/4" X 36" PRE-PUNCHED GALVANIZED STEEL, SQUARE TUBE POST INTERNAL INSERT.
4. FOR 2 INCH RISER POST IN SOIL USE NON RECOVERABLE FIN BASE PLACED PER MANUFACTURER'S SPECIFICATIONS. USE A 12 GAUGE, 2" X 2" PRE-PUNCHED, GALVANIZED STEEL, SQUARE TUBE RISER POST. PLACE 3/8" STAINLESS STEEL BOLT THROUGH THE 5TH HOLE DOWN FROM THE TOP OF THE BASE. RISER POST SHALL REST ON THE BOLT.
5. FOR 2-1/2" RISER POST ON CONCRETE USE RECOVERABLE SLIP BASE PLACED PER MANUFACTURER'S SPECIFICATIONS. USE A 10 GAUGE, 2-1/2" X 2-1/2" PRE-PUNCHED, GALVANIZED STEEL, SQUARE TUBE RISER POST WITH A 10 GAUGE 2-3/16" X 2-3/16" X 8' PRE-PUNCHED, GALVANIZED STEEL, SQUARE TUBE POST INTERNAL INSERT.
6. FOR 2-1/2" RISER POST IN SOIL USE RECOVERABLE SLIP BASE PLACED PER MANUFACTURER'S SPECIFICATIONS USING A 10 GAUGE, 2-1/2" X 2-1/2" PRE-PUNCHED, GALVANIZED STEEL, SQUARE TUBE RISER POST WITH A 10 GAUGE 2-3/16" X 2-3/16" X 8' PRE-PUNCHED, GALVANIZED STEEL, SQUARE TUBE POST INTERNAL INSERT.
7. ALUMINUM STRINGERS SHALL BE USED FOR SIGNS 36" AND WIDER. SEE SQUARE TUBE MOUNTING DETAILS.
8. SEE STANDARD PLAN 5-297.740 FOR CONCRETE RAIL MOUNTED SIGN STRUCTURES.

See link to typical tabulation below video.

APL

Approved/Qualified Products

Home | Contacts

Sign structures

All products shown are MASH-16, Test Level 3 compliant for 0 degree impacts.

Bases for Square Tube Sign Structures					
Product	**Manufacturer**	**Riser Post**	**Mounting Surface**	**Omni-directional**	**Approval Date**
Omni-Directional Anchor Base (sleeve)	Xcessories Squared, Inc.	2" Square Tube	Soil	Single Post only	Provisional: 12/12/19
Redi-Torque System	Xcessories Squared, Inc.	2-1/2" Square Tube	Soil or Concrete	Single Post only	Provisional: 12/12/19
MASSH-400	Xcessories Squared, Inc.	4" Square Tube	Soil or Concrete	No	Provisional: 12/12/19

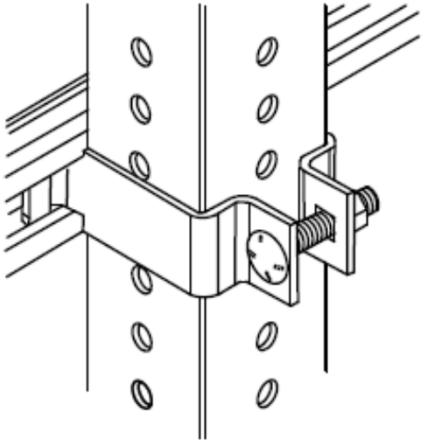
NCHRP 350, Test Level 3 compliant devices may be found here.

Mounting Details

- Aluminum stringer attachment detail
- Riser post spacing charts
- Stringer spacing charts
- New punching codes

See link to mounting details below video.

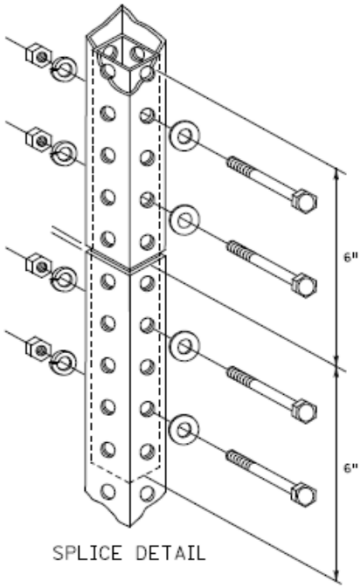
Mounting Details



CLAMP DETAIL

PANEL WIDTH	SQUARE TUBE POST SPACING						
	2 POSTS	3 POSTS	4 POSTS	5 POSTS	6 POSTS	7 POSTS	8 POSTS
(IN)	(IN)	(IN)	(IN)	(IN)	(IN)	(IN)	(IN)
24	12						
30	12						
36	12						
42	18						
48	24						
54	30						
60	36						
66	36						
72	42						
78	42						
84	48						
90	48	42					
96	48	42					
102	54	42					
108	54	42					
114	60	42					
120	60	48					
126	66	48					
132	66	48	42				
138	72	48	42				
144	72	48	42				
150	78	54	42				
156	78	54	42				
162	84	54	42				
168	84	60	48				
174	90	60	48	42			
180	90	60	48	42			
186	96	66	48	42			
192	96	66	48	42			

Mounting Details



SPLICE DETAIL

NO MORE THAN ONE SPLICE PER POST.

WHEN USED MUST BE PLACED AT LEAST 8 FEET ABOVE GROUND. THE PREFERRED PLACEMENT LOCATION IS BEHIND THE SIGN PANEL.

INTERIOR POST STUD SHALL BE ONE SIZE SMALLER FOR A TIGHT FIT. IF RISER POST IS 2-1/2", INTERIOR POST IS 2-3/16". IF RISER POST IS 2", INTERIOR POST IS 1-3/4".

NUMBER OF ALUMINUM STRINGERS FOR 2 1/2 INCH OR SMALLER POSTS

PANEL HEIGHT (INCHES)

	12	18	24	30	36	42	48	54	60	66	72	78	84	90	96	102	108	114	120	126	132	138	144	150	156	162	168	174	180	186	192	198	204	210	216	222	228	234	240	246	252	258	264	270	276	282	288	294	300	306	312	318	324	330	336
120	0	0	0	4	4	4	4	4	4	4																																													
114	0	0	0	0	4	4	4	4	4	4	4			4																																									
108	0	0	0	0	4	4	4	4	4	4	4			4	4						4																																		
102	0	0	0	0	4	4	4	4	4	4	4	4		4	4	4					4	4						4																											
96	0	0	0	0	3	3	3	3	3	3	3	3	3	3	3	3	3				3	3	3	3				3	3						3																				
90	0	0	0	0	3	3	3	3	3	3	3	3	3	3	3	3	3	3			3	3	3	3	3			3	3	3	3				3	3	3	3																	
84	0	0	0	0	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3																
78	0	0	0	0	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3										
72	0	0	0	0	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3					
66	0	0	0	0	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
60	0	0	0	0	2	2	2	3	3	2	2	2	2	2	2	3	3	3	3	2	2	2	2	3	3	3	3	3	3	2	2	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
54	0	0	0	0	2	2	2	3	3	2	2	2	2	2	2	2	3	3	3	2	2	2	2	2	2	3	3	3	3	2	2	2	2	3	3	3	3	3	2	2	2	2	3	3	3	3	3	3	2	2	2	3	3	3
48	0	0	0	0	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
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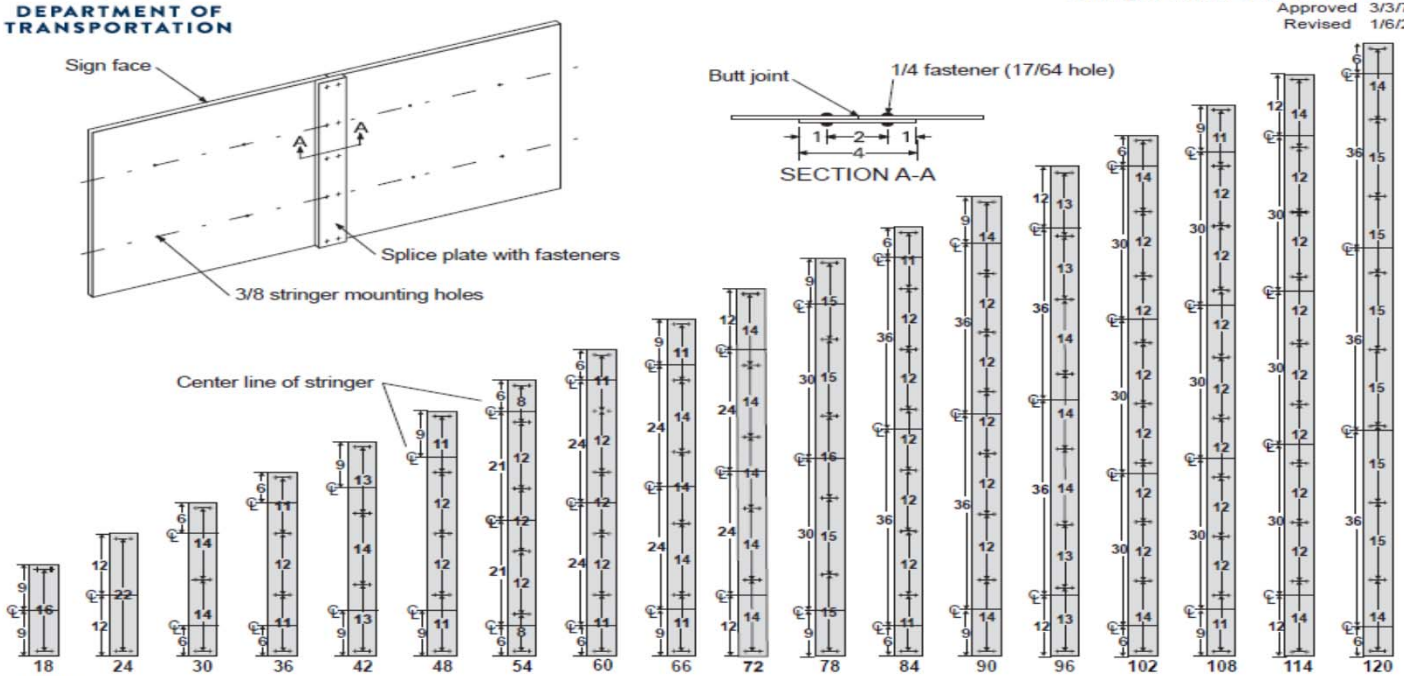
12	0	0	0	0	2	2	2	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	1 POST									2 POST										3 POST										4 POST									5 POST									6 POST						

PANEL WIDTH (INCHES)

Mounting Details

DEPARTMENT OF TRANSPORTATION

SSD-7
Stringer and Panel Joint Detail
Approved 3/3/71
Revised 1/6/20



NOTES:
1. All dimensions are in inches.
2. Splice plates shall be made of the same material as the sign panel with a minimum thickness equal to that of the panel.
3. The end fasteners are located 1" in from the end of the splice plate.
4. 3/8" stringer mounting holes shall be spaced vertically as detailed for each sign height above. Horizontally the holes shall be spaced on 24" centers maximum, beginning 10" in from the edge of the sign panel.
5. All sign panel splices shall be vertical.

Change in Costs

		Square Tube Structures					U-Channel Structures				
sign	Sign Area (SF)	base type	installation cost	cost per SF	repair cost	repair time	base type	installation cost	cost per SF	repair cost	repair time (*)
8x24 delineator	1.33	3 wall base	$48.46	$36.44	$9.12	10 min	direct driven	$33.16	$24.93	$17.34	30 min
24x30 keep right	5	Kleen Break	$161.05	$32.21	$6.60	10 min	direct driven	$120.31	$24.06	$53.34	40 min
36x36 stop	9	Omni base	$182.64	$20.29	$27.84	10 min	direct driven	$202.37	$22.49	$96.47	60 min
48x48 merge	16	Slip base	$460.06	$28.75	$17.92	20 min	direct driven	$314.27	$19.64	$99.76	60 min
102x72 weigh station 1 mile	51	slip base	$1,223.04	$23.98	$35.84	35 min	direct driven	$941.84	$18.47	$229.20	120 min

* repair time is approximately 4 times longer during winter due to frozen ground.

Initial costs are increasing, but maintenance costs will decrease.

Sign Replacement Policy

- Maintenance Repairs
  - Drive post into ground = square tube
  - Work on structure above ground = either u-channel or square tube
- Corridor Renewals
  - Replace all structures with square tube
  - Exception is requester pay signs that are not being touched

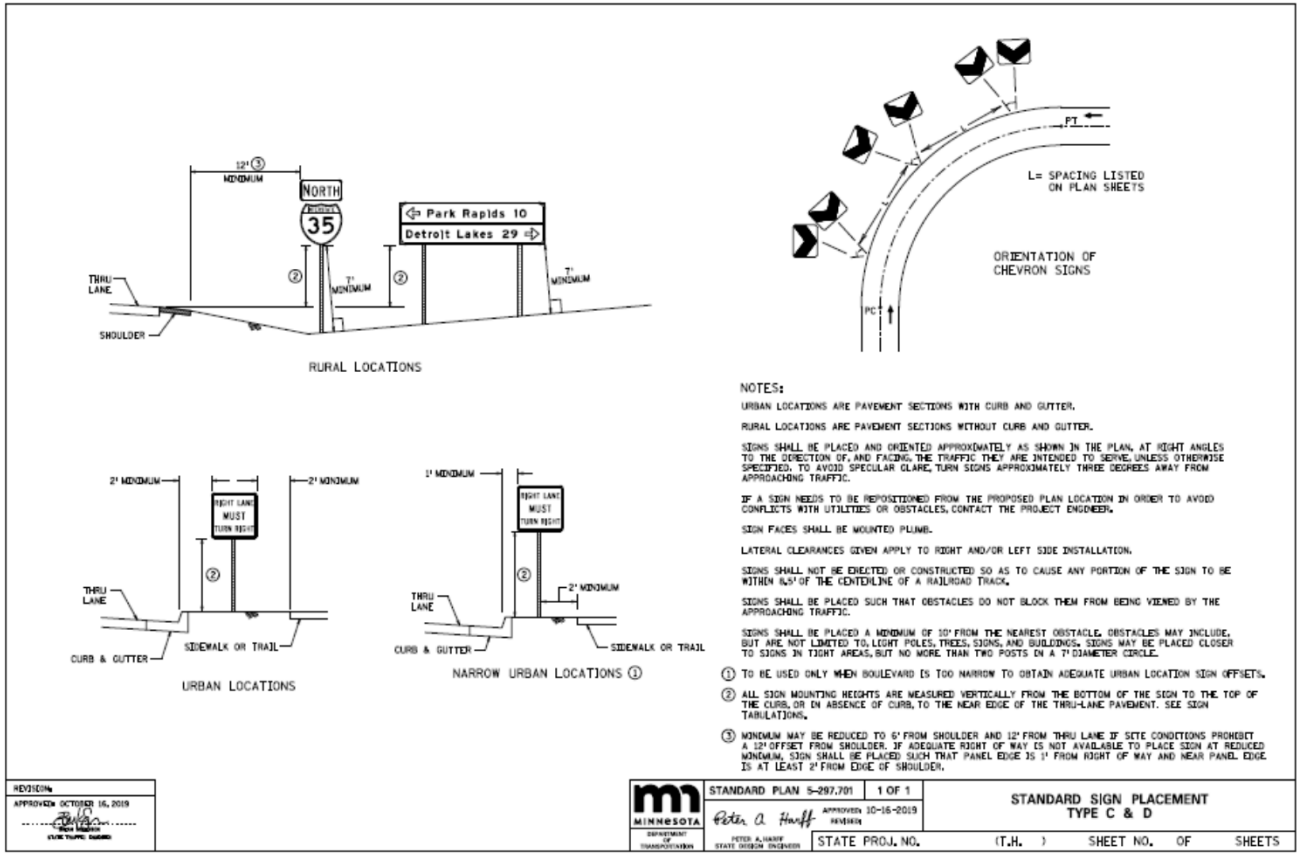
Website tools

- www.dot.state.mn.us/trafficeng/signing/plans.html
  - Windloading Chart
  - Sample Plan
  - Standard Plan Sheets
- www.dot.state.mn.us/trafficeng/publ/signsmanual/index.html
  - Standard Sign & Pavement Marking Summary and Manual
  - Punching Codes
- http://www.dot.state.mn.us/trafficeng/publ/updates.html
  - E-mail Updates for Manuals

Standard Plan Sheets

STANDARD PLANS	
5-297.701	STANDARD SIGN PLACEMENT TYPE C AND D
5-297.702	DELINEATOR AND MARKER PLACEMENT
5-297.703	SIGN, DELINEATOR AND MARKER PLACEMENT NEAR INTERCHANGE RAMP GORES
5-297.710	TYPE EA & EO SIGN STRUCTURE DETAILS
5-297.711	I-BEAM SUPPORTED SIGN STRUCTURE DETAILS - FOOTING AND BASE CONNECTIONS (2 SHEETS)
5-297.721	SQUARE-TUBE THREE-WALL SIGN BASE
5-297.730	SIGN MOUNTING SYSTEMS FOR ROUND SUPPORTS
5-297.731	SIGN MOUNTING DETAILS FOR SIGNAL MAST ARMS
5-297.740	CONCRETE RAIL MOUNTED SIGN (4 SHEETS)
5-297.741	STRUCTURAL DETAILS FOR BRIDGE MOUNTED TYPE D SIGNS
5-297.742	STRUCTURAL DETAILS FOR BRIDGE MOUNTED SIGNS - MINOR GUIDE SIGNS
5-297.750	PANEL MOUNTING POST DETAILS
5-297.752	TYPE F MEDIAN BARRIER FOUNDATION - SPREAD FOOTING
5-297.753	TYPE F MEDIAN BARRIER FOOTING - DRILLED SHAFT FOOTING
5-297.754	SINGLE SLOPE MEDIAN BARRIER FOUNDATION - SPREAD FOOTING
5-297.755	SINGLE SLOPE MEDIAN BARRIER FOUNDATION - DRILLED SHAFT FOOTING
5-297.760	STANDARD OVERHEAD SIGN STRUCTURES - DESIGN D - IMPLEMENTATION INSTRUCTIONS AND NOTES (3 SHEETS)
5-297.761	STANDARD OVERHEAD SIGN STRUCTURES - DESIGN D - GENERAL ELEVATIONS, SECTIONS AND NOTES
5-297.762	STANDARD OVERHEAD SIGN STRUCTURES - DESIGN D - CAMBER POST TYPE AND ESTIMATED QUANTITIES
5-297.763	STANDARD OVERHEAD SIGN STRUCTURES - DESIGN D - FOUNDATION DETAILS (2 SHEETS)
5-297.764	STANDARD OVERHEAD SIGN STRUCTURES - DESIGN D - BASE PLATE, HANDHOLE, AND COVER PLATE DETAILS
5-297.765	STANDARD OVERHEAD SIGN STRUCTURES - DESIGN D - TRUSS TO POST CONNECTION DETAILS.
5-297.766	STANDARD OVERHEAD SIGN STRUCTURES - DESIGN D - SIGN TRUSS DETAILS TYPE A
5-297.767	STANDARD OVERHEAD SIGN STRUCTURES - DESIGN D - SIGN TRUSS DETAILS TYPE B
5-297.768	STANDARD OVERHEAD SIGN STRUCTURES - DESIGN D - SIGN TRUSS DETAILS TYPE C
5-297.769	STANDARD OVERHEAD SIGN STRUCTURES - DESIGN D - WALKWAY DETAILS (3 SHEETS)
5-297.770	STANDARD OVERHEAD SIGN STRUCTURES - DESIGN D - WALKWAY AND RAILING RETROFIT DETAILS
5-297.771	STANDARD OVERHEAD SIGN STRUCTURES - DESIGN D - SIGN PANEL MOUNTING POST DETAILS
5-297.772	STANDARD SIGN STRUCTURES - DESIGN D - DMS MOUNTING DETAILS

Standard Plan Sheets



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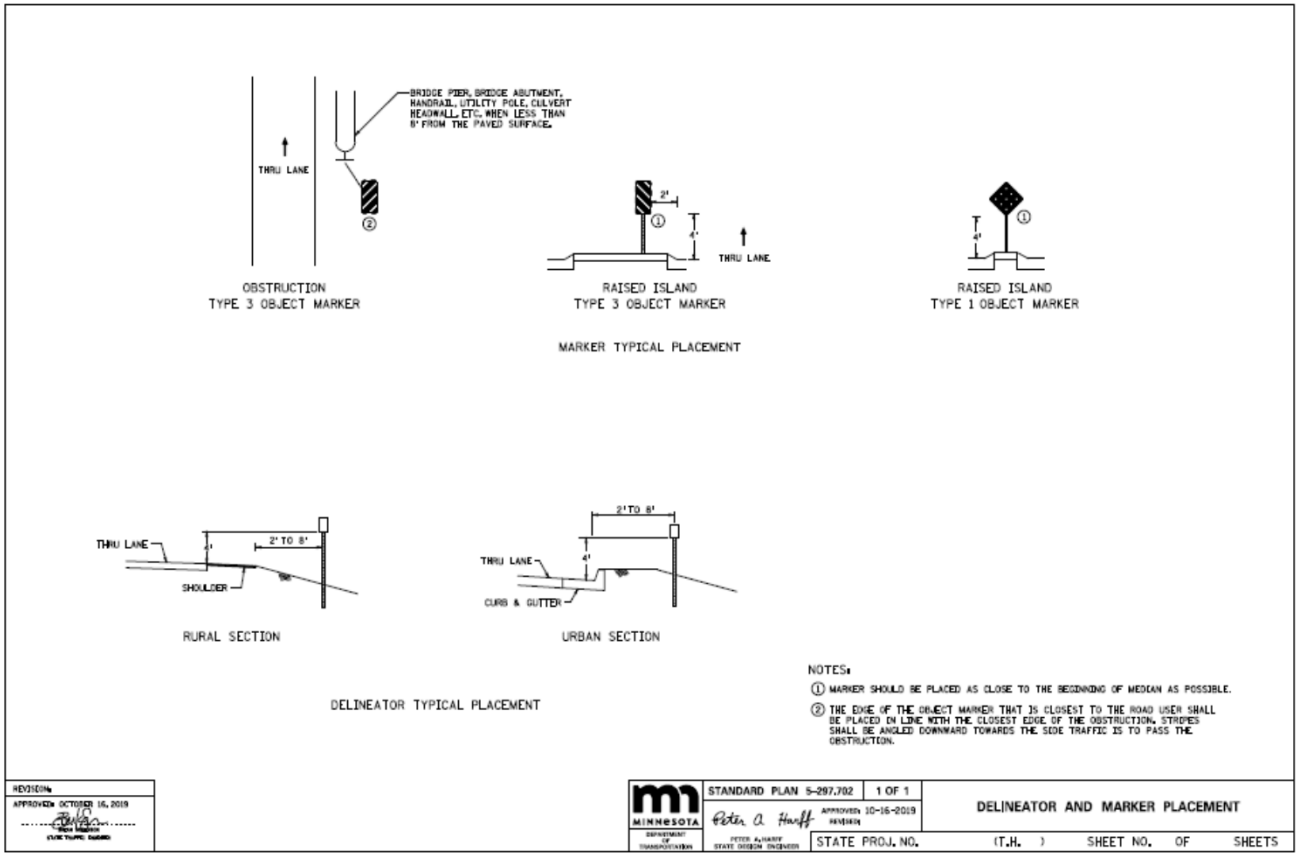

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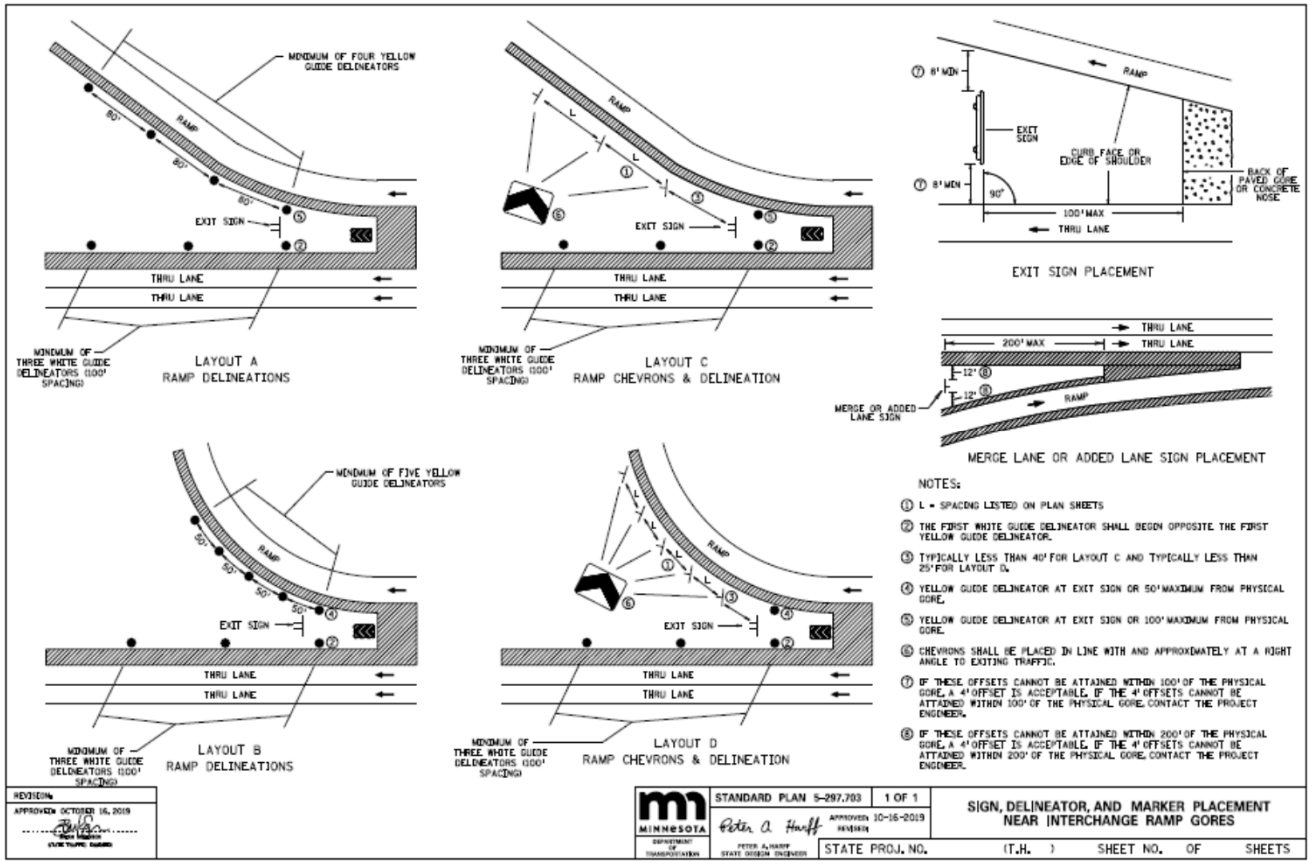

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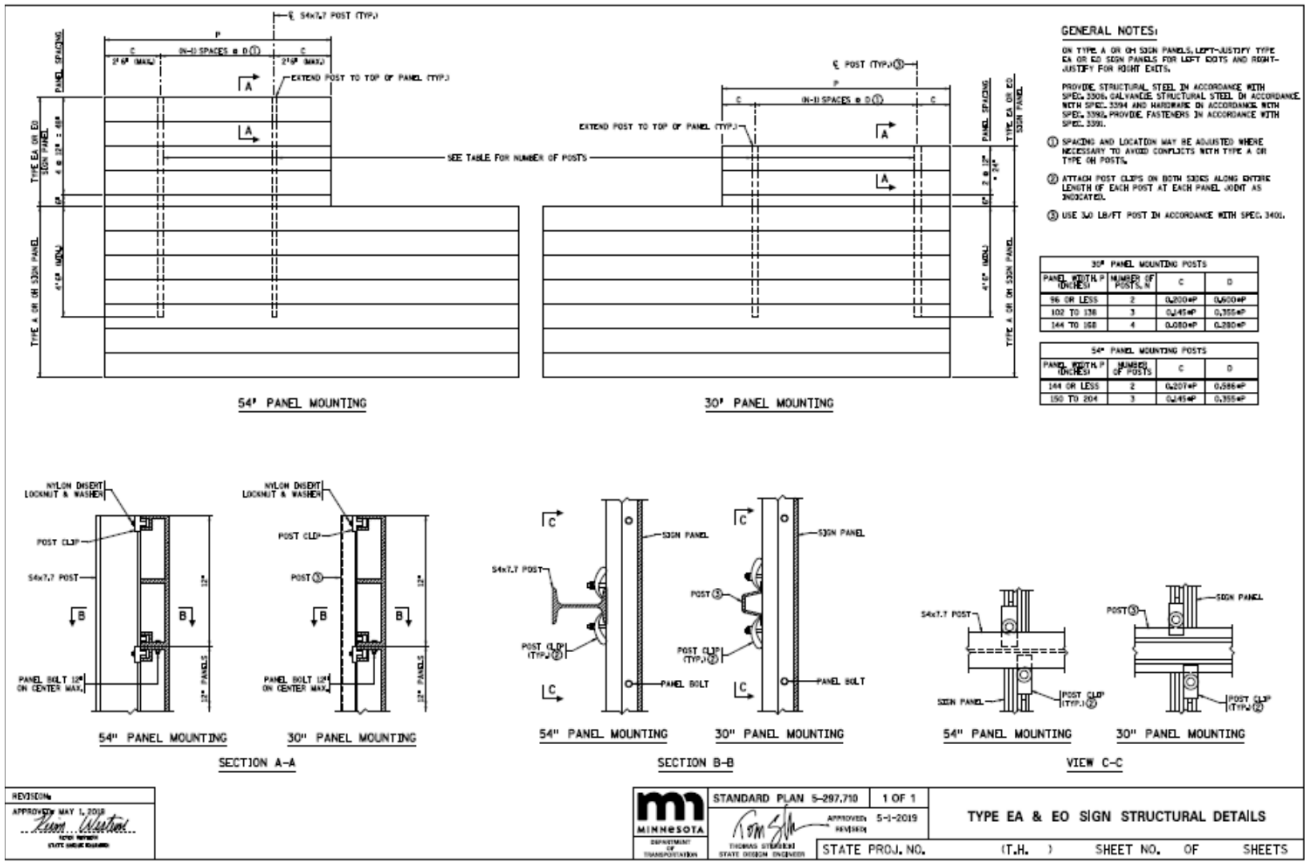

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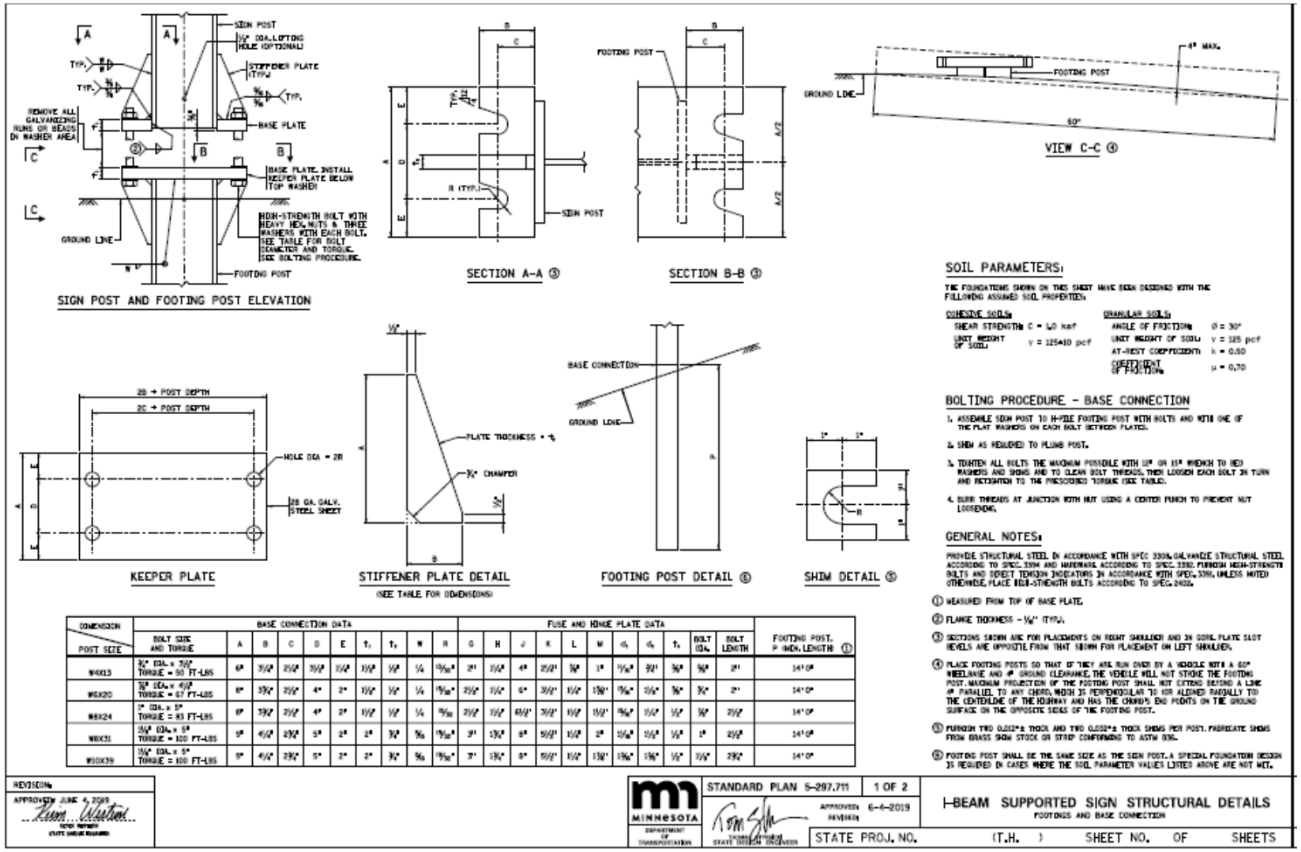

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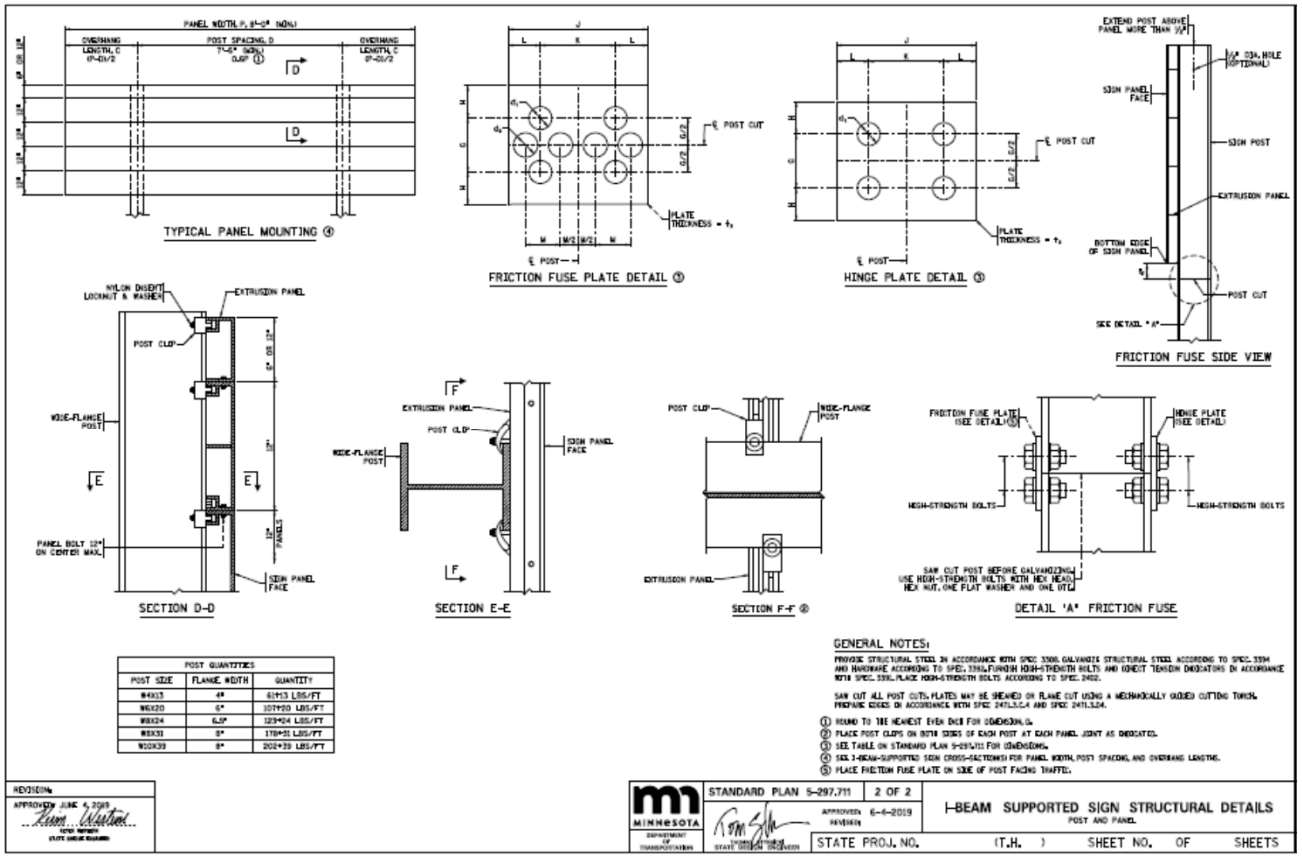

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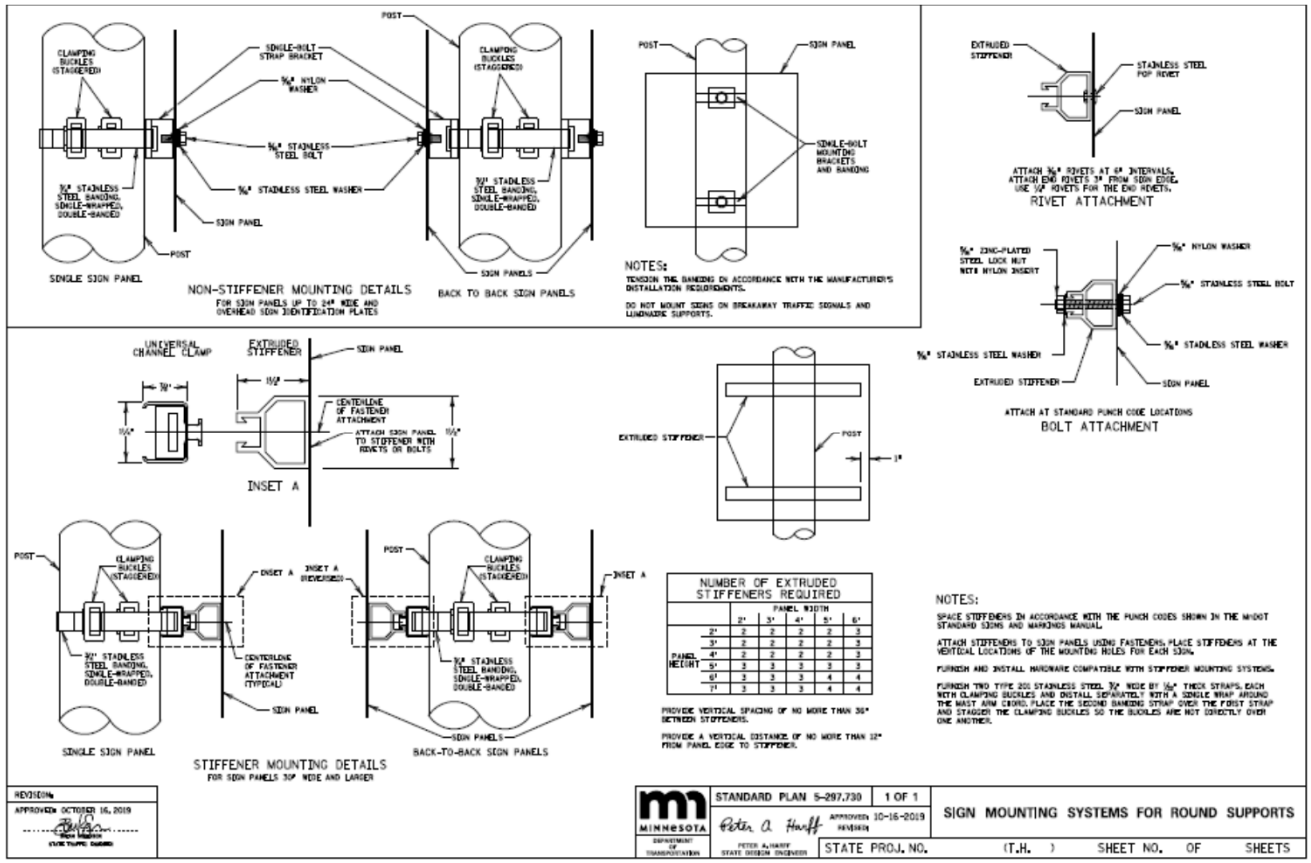

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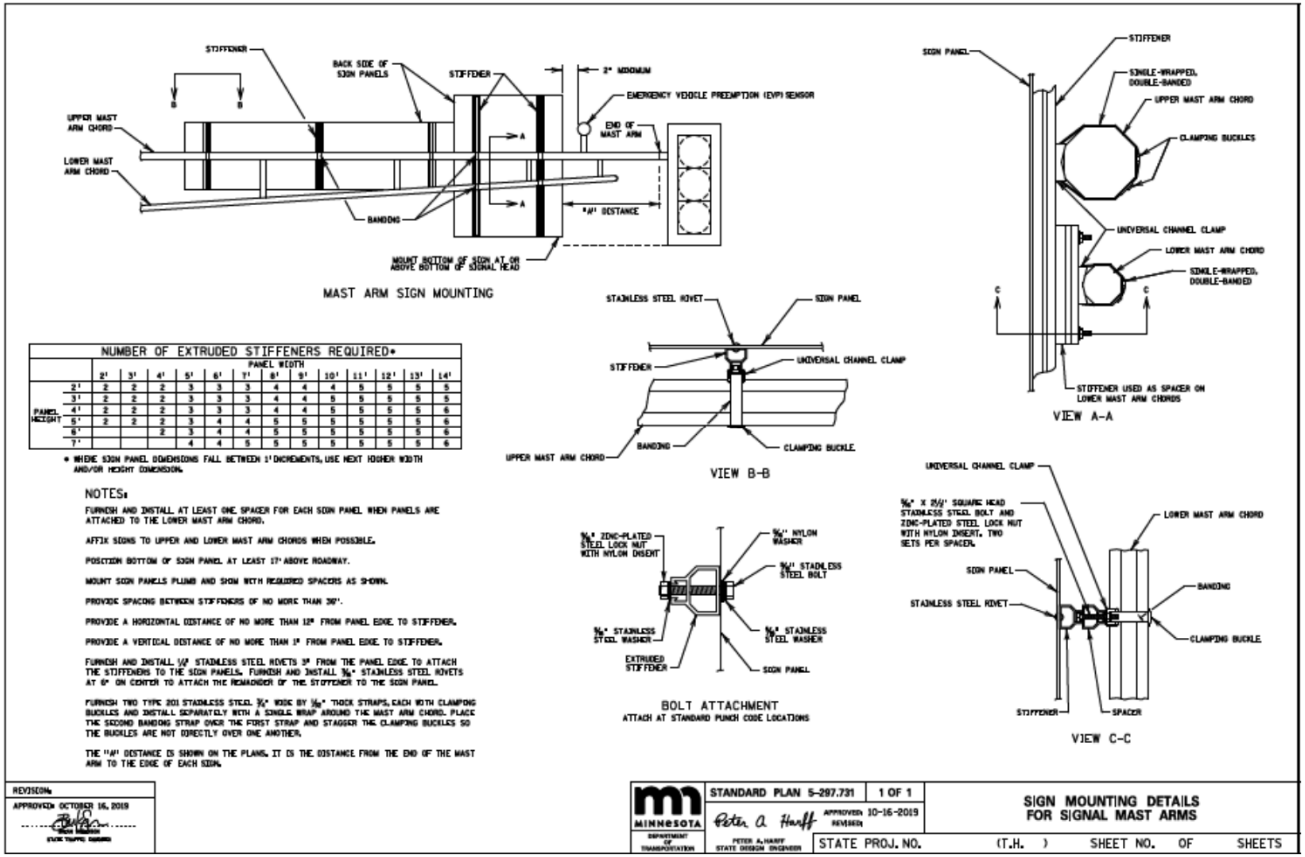

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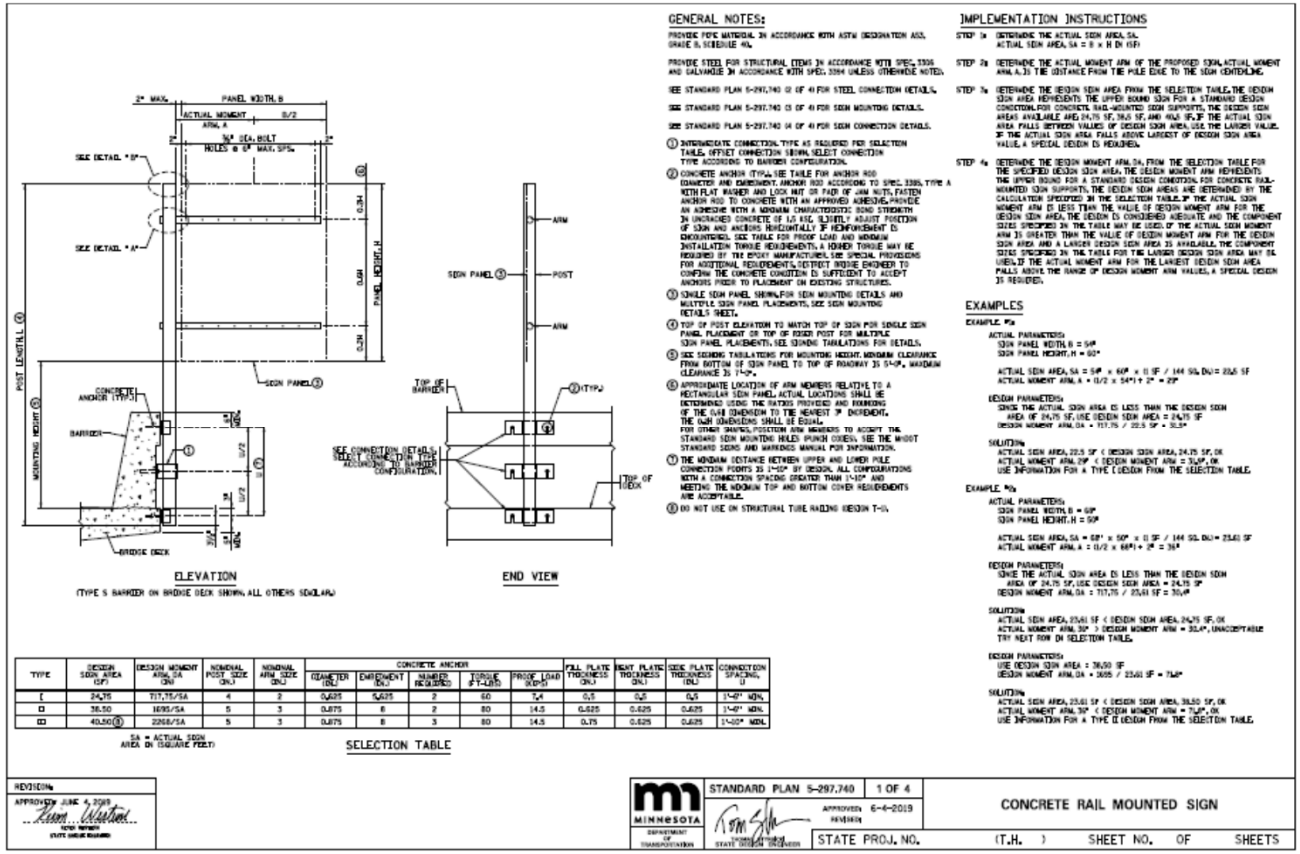

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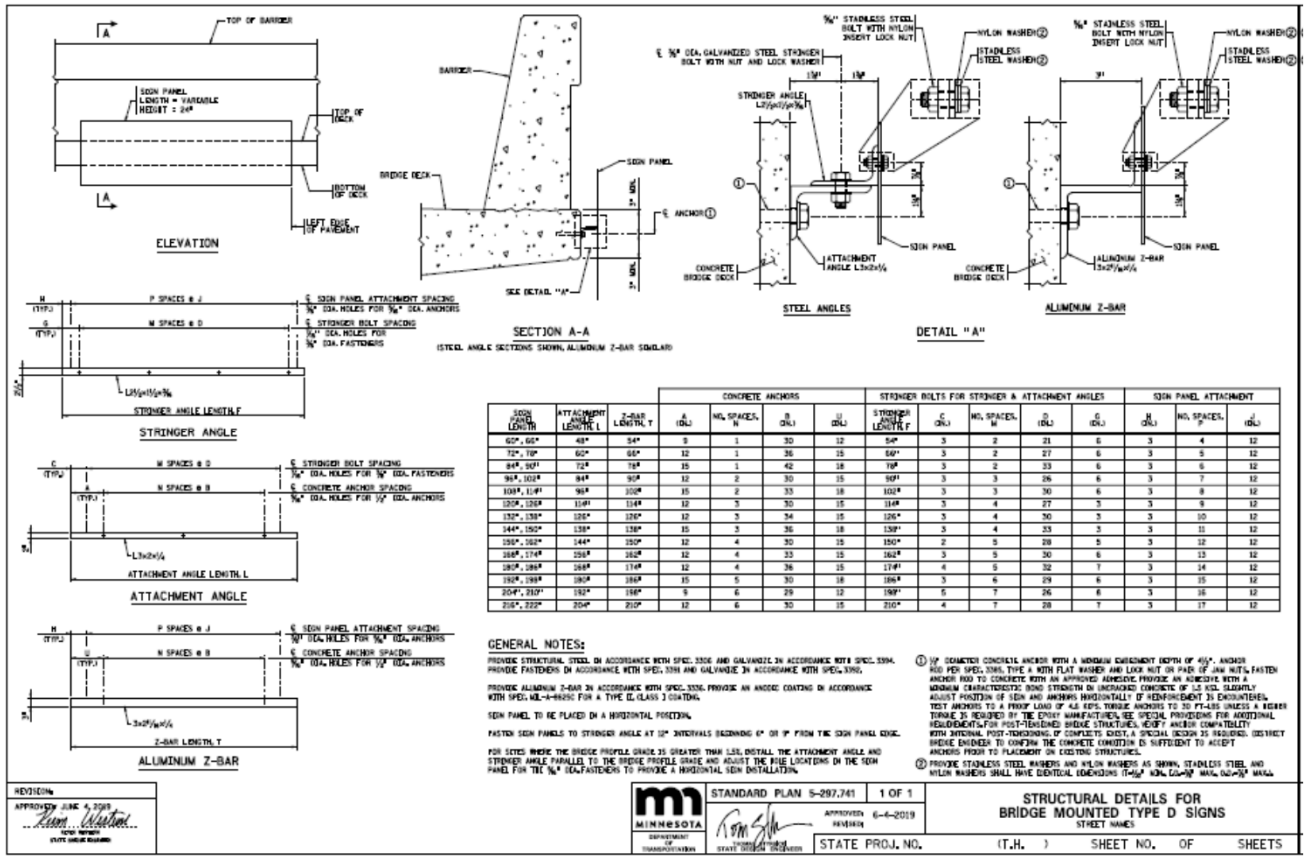

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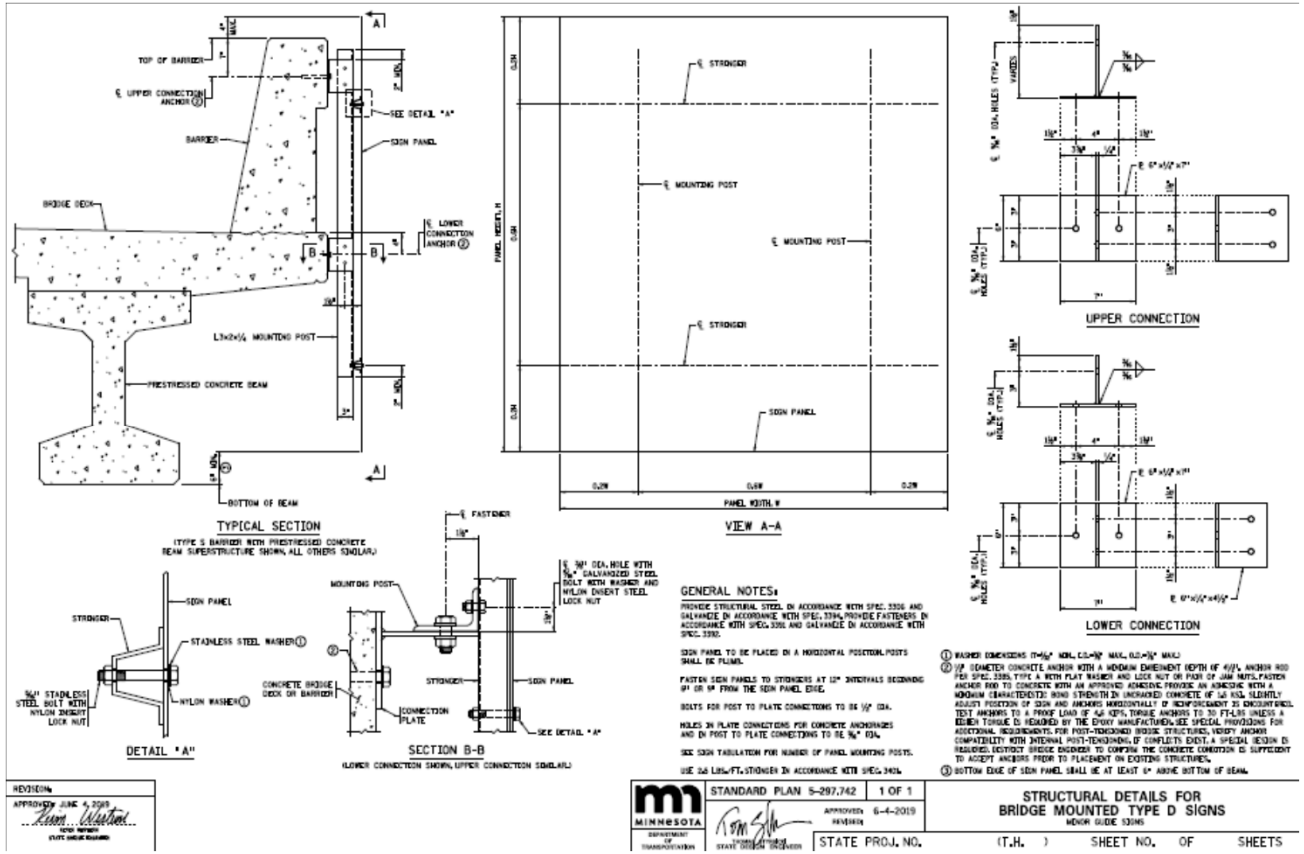

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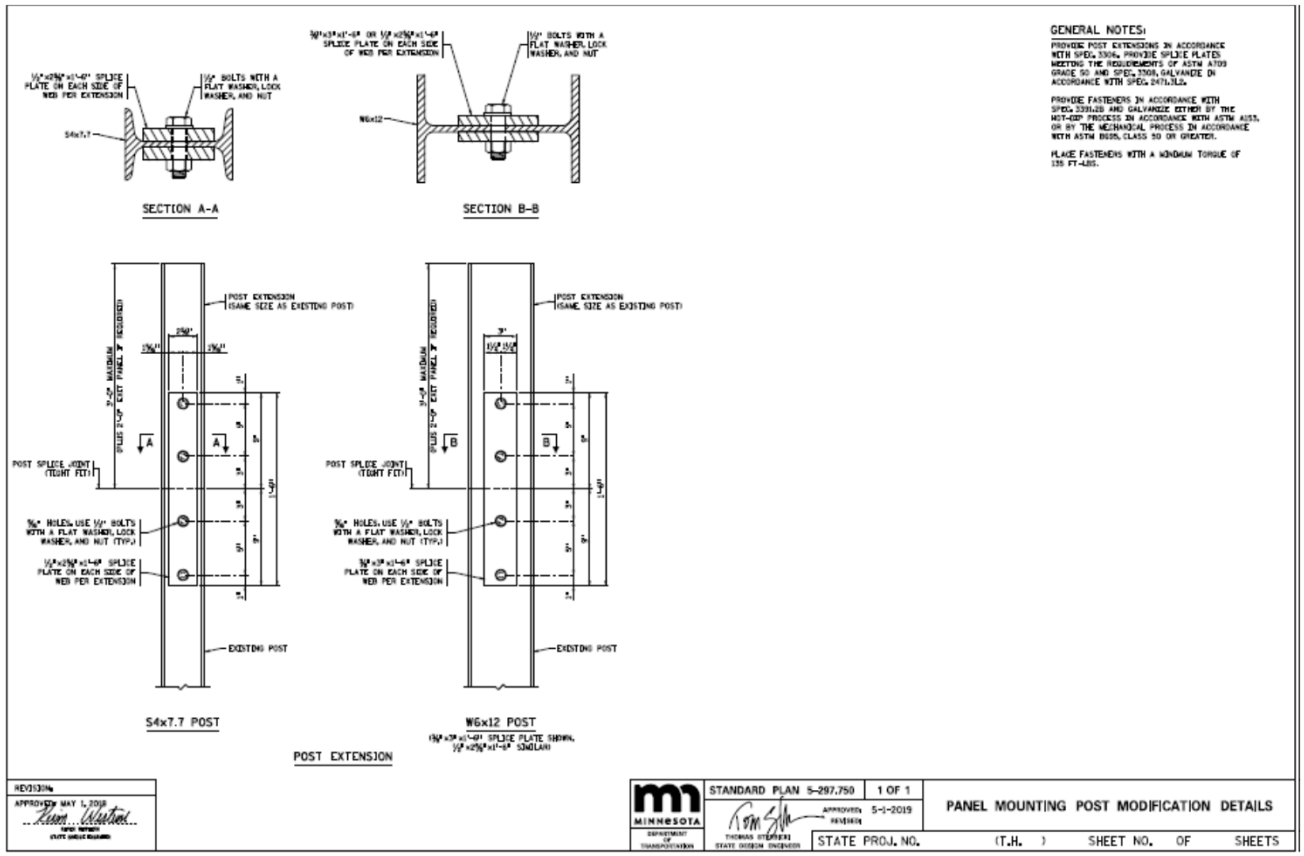
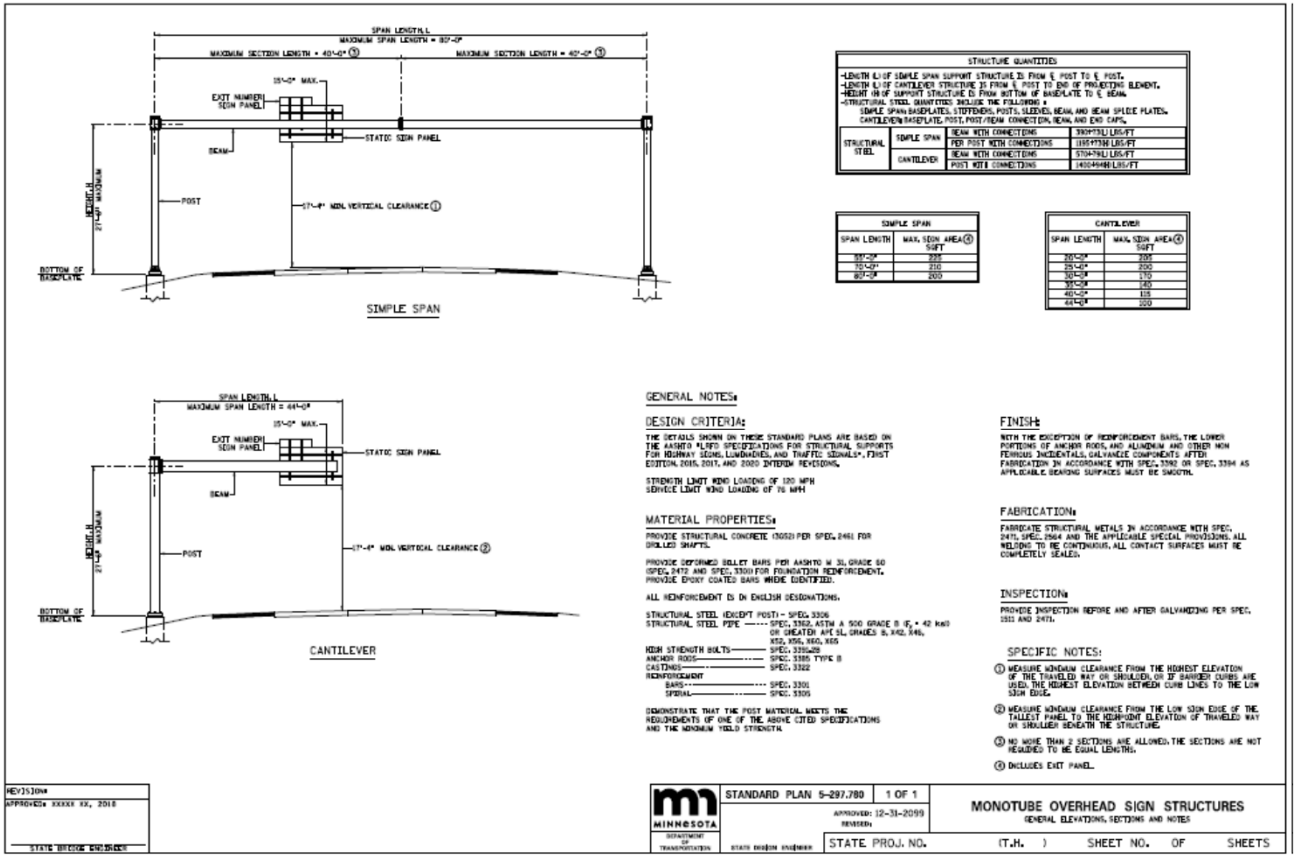
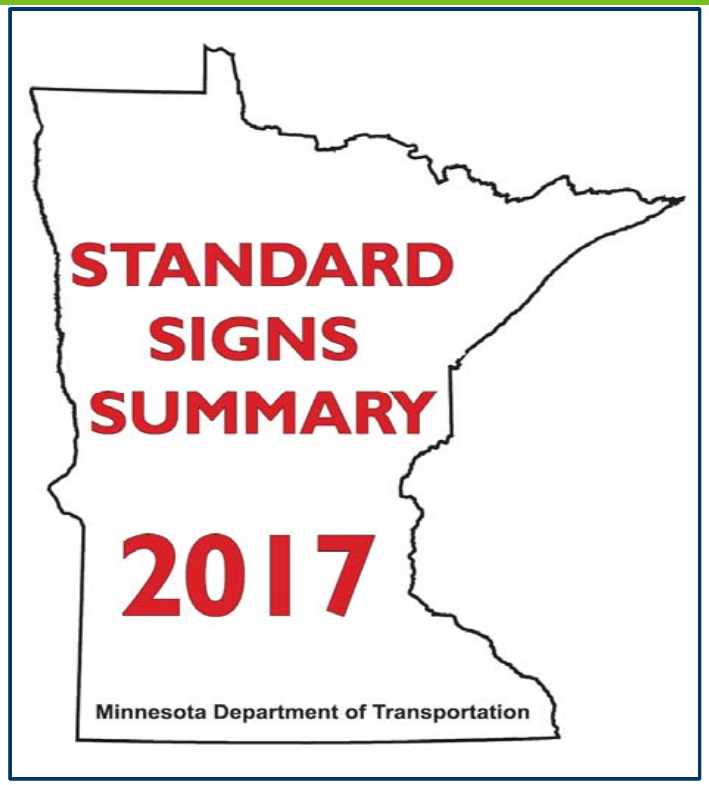


Standard Plan Sheets



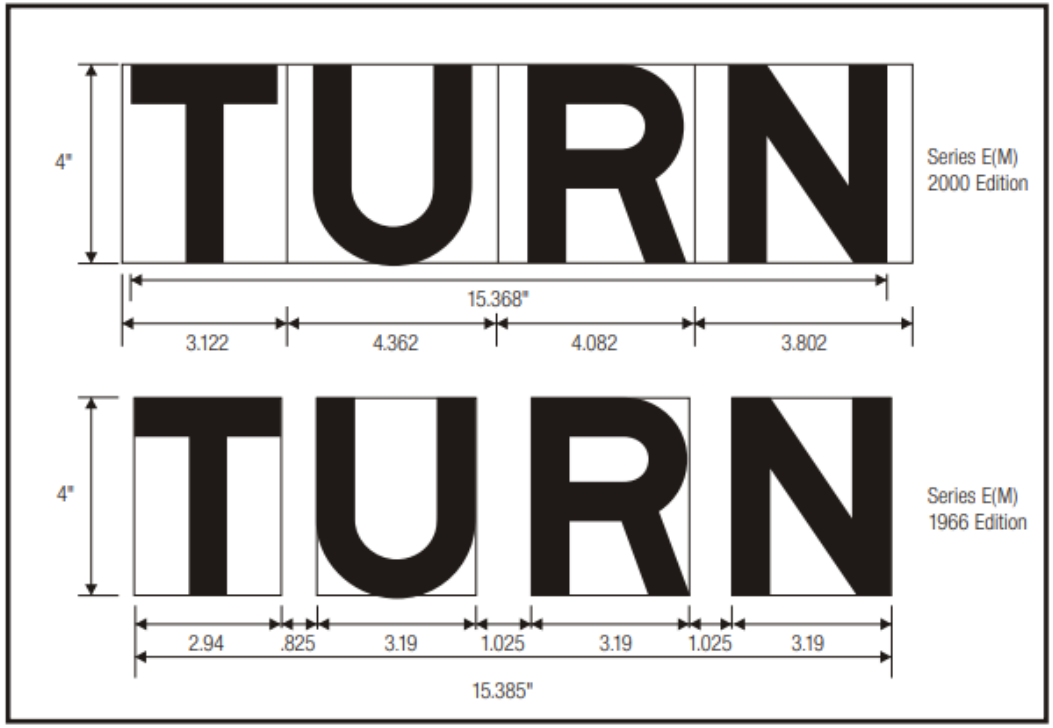
Standard Sign and Markings Summary



1966 Font

2K Font

Sign CAD 2k Font



Standard Signs

Modification to FHWA codes:

- All Minnesota designs that are a modification of a federal design will be designed with an “M” at the end of the code. The rest of the code will mirror the federal code.
  - S3-2M

- If there is another modification of the same sign, add an “a” at the end of the code. If there are multiple codes, change the last letter alphabetically.
  - D-2Ma

Standard Signs

Minnesota Special Designs:

- All Minnesota special designs start with the numbers associated with the sign design and then after the dash place an “X” and start numbering numerically.
  - R5-X1

- If there is another similar sign with a minor word change and it maintains the same basic meaning, add an “a” after the code. If there are multiple codes, change the last letter alphabetically
  - R12-X2a
- If a plaque is associated with that sign code then add a “P” at the end
  - R12-X1P

Standard Sign Codes & Design

Sign Number	Old Sign Number	Sign Picture	Color	Use	Sign Size (inches)	MnDOT Stock #
R2-1		SPEED LIMIT 50	Black on White	M	18 x 24	54830
				CR-SL	24 x 30	54846
				CR-ML, O	30 x 36	50984
				E	36 x 48	54847
				F	48 x 60	54829
R2-4a	R2-4b	SPEED LIMIT 65 MINIMUM 40	Black on White	CR-SL, ML	24 x 48	33269
				E, O	36 x 72	57575
				F	48 x 96	33270
R2-6bP MnDOT SSM Design		$300 FINE Work zone use only	Black on White	CR-SL, ML	24 x 18	57577
				E,O	36 x 24	57578
				F	48 x 36	57636

Digital Printing

- Investigating methods of determining if the overlay film is installed.
- Currently digitally printing scenic byway, trail, and other signs with multicolor designs.

Future Sign Plan Changes

SIGNING LEGEND

- SIGN
- SIGN BACK TO BACK
- I BEAM SIGN
- SIGN ON LIGHT POLE
- SIGN ON ROUND POST
- SIGN ON ROUND POST BACK TO BACK
- MAST ARM
- CANTILEVER
- SIGN BRIDGE
- BRIDGE MOUNTED OH SIGN
- CONCRETE RAIL STRUCTURE

Thank you again!

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