

DISTRICT \*: METRO  
IPLOT NAME: ST DRAWINGS STD\*  
PATH & FILENAME: IP\_PWP-d\339380\ST DRAWINGS STD\* dgn  
PLOTTED/REVISED: 5/9/2012

TABLE 1 - TRUSS TYPE SELECTION CANTILEVER STRUCTURE TYPE WITH CONVENTIONAL SIGNS																
SIGN AREA (SQ. FT.)	CANTILEVER LENGTH (FEET)															
	16	18	20	22	24	26	28	30	32	34	36	38	40	42	44	
350							A	A	A	A	B	B	B	B	B	
330							A	A	A	A	B	B	B	B	B	
310							A	A	A	A	B	B	B	B	B	
290					A	A	A	A	A	A	A	B	B	B	B	
270				A	A	A	A	A	A	A	A	B	B	B	B	
250			A	A	A	A	A	A	A	A	A	A	B	B	B	
230		A	A	A	A	A	A	A	A	A	A	A	A	B	B	
210		A	A	A	A	A	A	A	A	A	A	A	A	A	B	
190	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	
170	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	
150	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	
130	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	
110	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	
90	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	
70	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	
50	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	
"A" INDICATES TRUSS TYPE A. "B" INDICATES TRUSS TYPE B. SEE DRAWINGS ST-5 THROUGH ST-7 FOR TRUSS DETAILS.																

TABLE 2 - TRUSS TYPE SELECTION SIMPLE SPAN STRUCTURE WITH CONVENTIONAL SIGNS																										
SIGN AREA (SQ. FT.)	SPAN LENGTH (FEET)																									
	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100	105	110	115	120	125	130	135	140	146		
1000											B	C	C	C	C	C	C	C	C	NA	NA	NA	NA	NA		
900										B	B	C	C	C	C	C	C	C	C	NA	NA	NA	NA	NA		
800									A	B	B	B	C	C	C	C	C	C	C	NA	NA	NA	NA	NA		
700								A	A	A	B	B	B	C	C	C	C	C	C	C	NA	NA	NA	NA		
600					A	A	A	A	A	A	B	B	B	B	C	C	C	C	C	C	C	NA	NA	NA		
500				A	A	A	A	A	A	A	B	B	B	B	C	C	C	C	C	C	C	C	C	C		
400		A	A	A	A	A	A	A	A	A	A	B	B	B	B	C	C	C	C	C	C	C	C	C		
300	A	A	A	A	A	A	A	A	A	A	A	A	A	A	B	B	B	C	C	C	C	C	C	C		
200	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	B	B	B	B	C	C	C	C	C		
100	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	B	B	B	B	B	B	B	C		
"A" INDICATES TRUSS TYPE A. "B" INDICATES TRUSS TYPE B. "C" INDICATES TRUSS TYPE C. "NA" NOT ALLOWED. SEE DRAWINGS ST-5 THROUGH ST-7 FOR TRUSS DETAILS.																										

TRUSS SELECTION PROCEDURE

1. THESE STANDARD PLANS ARE SUITABLE ONLY FOR SIMPLE SPAN AND CANTILEVERED OVERHEAD SIGN STRUCTURES. WITH ONLY A SINGLE TYPE OF SIGN (CMS OR CONVENTIONAL) ATTACHED TO THE STRUCTURE. THE FOLLOWING CONDITIONS ARE NOT PRESENTED IN THIS PLAN SET AND WILL REQUIRE ADDITIONAL DESIGN ATTENTION.
- INSTALLATION OF 2 CMS's ON THE SAME SIDE OF THE TRUSS.
  - BUTTERFLY, CONTINUOUS OR A COMBINATION OF SIMPLE AND CANTILEVERED STRUCTURES.
  - ANY COMBINATION OF CMS AND CONVENTIONAL SIGNS.

2. DETERMINE THE TYPE OF STRUCTURE FOR WHICH THE TRUSS IS TO BE USED FOR. REFER TO PLANS FOR BRIDGE TYPE BC OR BRIDGE TYPE S.

CANTILEVERED SIGN STRUCTURE - BRIDGE TYPE BC  
SIMPLE SPAN SIGN STRUCTURE - BRIDGE TYPE S

3. DETERMINE THE TABLE WHICH CORRESPONDS TO THE STRUCTURE TYPE UNDER CONSIDERATION.
- TABLE 1 - CANTILEVER W/CONVENTIONAL SIGNS  
TABLE 2 - SIMPLE SPAN W/CONVENTIONAL SIGNS  
TABLE 3 - SIMPLE SPAN W/DRUM CMS  
TABLE 4 - SIMPLE SPAN W/LED-CMS  
THIS TABLE IS TO BE USED FOR STEPS 4 &5.

4. DETERMINE THE AREA OF ALL THE SIGNS WHICH ARE TO BE PLACED ON THE SIGN STRUCTURE. THE SIGN AREA IS DEFINED AS THE SUMMATION OF THE INDIVIDUAL SIGN HEIGHTS MULTIPLIED BY THE SIGN WIDTHS. USE THIS VALUE TO ENTER THE APPROPRIATE TABLE FROM THE LEFT COLUMN. IF THE TOTAL SIGN AREA FALLS BETWEEN TWO VALUES, USE THE LARGER VALUE. (BE SURE TO INCLUDE EXIT SIGNS IN TOTAL AREA.

5. DETERMINE THE SPAN LENGTH OR CANTILEVER LENGTH AND ENTER THE APPROPRIATE TABLE ALONG THE TOP. IF THE SPAN LENGTH FALLS BETWEEN TWO VALUES, USE THE LARGER VALUE. THIS SPAN LENGTH IDENTIFIES THE VERTICAL COLUMN FROM WHICH A TRUSS WILL BE SELECTED.

EXAMPLE: SIGN AREA: 250 SQ. FT.  
SPAN LENGTH: 102 FT  
TYPE: SIMPLE SPAN  
SIGN TYPE: CONVENTIONAL

TRUSS TYPE: B

TABLE 5 - POST SELECTION - CHANGEABLE MESSAGE SIGN (LED) ON SIMPLE SPAN SIGN STRUCTURE																										
NO. OF CMS UNITS	CMS AREA (SQ. FT.)	POST HT. ( FT.)	SPAN LENGTH (FEET)																							
			40	45	50	55	60	65	70	75	80	85	90	95	100	105	110	115	120	125	130	135	140			
1	261	16	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
		24	1	1	1	1	1	1	1	1	2	2	2	2	2	2	3	3	3	3	3	4	4	4		
		26	1	1	1	1	1	1	2	2	2	2	2	3	3	3	3	4	4	4	4	4	4	4		
		28	1	1	1	1	2	2	2	2	3	3	3	3	3	3	4	4	4	4	4	4	6	6		
		30	1	1	1	2	2	2	2	3	3	3	3	3	4	4	4	4	6	6	6	6	6	6		
⊕ 2	522	16									1	1	1	1	1	2	2	2	2	2	3	3				
		24									2	3	3	3	4	4	4	4	4	6	6					
		26									3	3	3	4	4	4	4	6	6	6	6					
		28									3	4	4	4	4	6	6	6	6	6	5					
		30									4	4	4	4	5	6	6	6	6	5	5	5				

TYPE A TRUSS ← TYPE B TRUSS → TYPE C TRUSS

⊕ CMS's ATTACHED ON OPPOSITE SIDES OF THE TRUSS.

STANDARD OVERHEAD SIGN SUPPORTS  
INTERIM DESIGN B

POST/TRUSS SELECTION  
TABLES

PLOTTED/REVISED: 5/9/2012

⊕ CMS's ATTACHED ON OPPOSITE SIDES OF THE TRUSS.

⊕ CMS's ATTACHED ON OPPOSITE SIDES OF THE TRUSS.

TYPE A TRUSS ← TYPE B TRUSS → TYPE C TRUSS

\* USE ONLY 20" Ø x .812" WALL (42 KSI) OPTION.

TYPE B TRUSS → TYPE A TRUSS

1. THESE STANDARD PLANS ARE SUITABLE ONLY FOR SIMPLE SPAN AND CANTILEVERED OVERHEAD SIGN STRUCTURES. WITH ONLY A SINGLE TYPE OF SIGN (CMS OR CONVENTIONAL) ATTACHED TO THE STRUCTURE. THE FOLLOWING CONDITIONS ARE NOT PRESENTED IN THIS PLAN SET AND WILL REQUIRE ADDITIONAL DESIGN ATTENTION.
  - INSTALLATION OF 2 CMS'S ON THE SAME SIDE OF THE TRUSS.
  - BUTTERFLY, CONTINUOUS OR A COMBINATION OF SIMPLE AND CANTILEVERED STRUCTURES.
  - ANY COMBINATION OF CMS AND CONVENTIONAL SIGNS.

CANTILEVERED SIGN STRUCTURE - BRIDGE TYPE BC  
SIMPLE SPAN SIGN STRUCTURE - BRIDGE TYPE S

4. DETERMINE THE AREA OF ALL THE SIGNS WHICH ARE TO BE PLACED ON THE SIGN STRUCTURE. THE SIGN AREA IS DEFINED AS THE SUMMATION OF THE INDIVIDUAL SIGN HEIGHTS MULTIPLIED BY THE SIGN WIDTHS. USE THIS VALUE TO ENTER THE APPROPRIATE TABLE FROM THE LEFT COLUMN. IF THE TOTAL SIGN AREA FALLS BETWEEN TWO VALUES, USE THE LARGER VALUE. (BE SURE TO INCLUDE EXIT SIGNS IN TOTAL AREA).

5. DETERMINE THE POST HEIGHT APPLICABLE FOR THE STRUCTURE UNDER CONSIDERATION. THE POST HEIGHT IS DEFINED AS THE VERTICAL DISTANCE BETWEEN THE BOTTOM OF THE BASEPLATE TO THE TOP OF THE TRUSS. USING THE VALUES BRACKETED WITHIN THE SIGN AREA FROM STEP 4, LOCATE THE POST HEIGHT. IF THE ACTUAL HEIGHT FALLS BETWEEN TWO VALUES, USE THE LARGER VALUE. THIS POST HEIGHT IDENTIFIES THE HORIZONTAL ROW FROM WHICH A POST WILL BE SELECTED.

6. DETERMINE THE SPAN LENGTH OR CANTILEVER LENGTH AND ENTER THE APPROPRIATE TABLE ALONG THE TOP. IF THE SPAN LENGTH FALLS BETWEEN TWO VALUES, USE THE LARGER VALUE. THIS SPAN LENGTH IDENTIFIES THE VERTICAL COLUMN FROM WHICH A POST WILL BE SELECTED.

7. DETERMINED THE POST IDENTIFICATION NUMBER BY READING ACROSS THE ROW FROM THE IDENTIFIED POST HEIGHT AND DOWN THE COLUMN FROM THE IDENTIFIED SPAN LENGTH. THE INTERSECTION OF THIS ROW AND COLUMN WILL UNIQUELY IDENTIFY THE APPROPRIATE POST IDENTIFICATION NUMBER.

8. USE THE POST IDENTIFICATION NUMBER TO DETERMINE THE RANGE OF PIPE REQUIREMENTS AVAILABLE FROM THE POST IDENTIFICATION TABLE (TABLE 1, DRAWING ST-2).

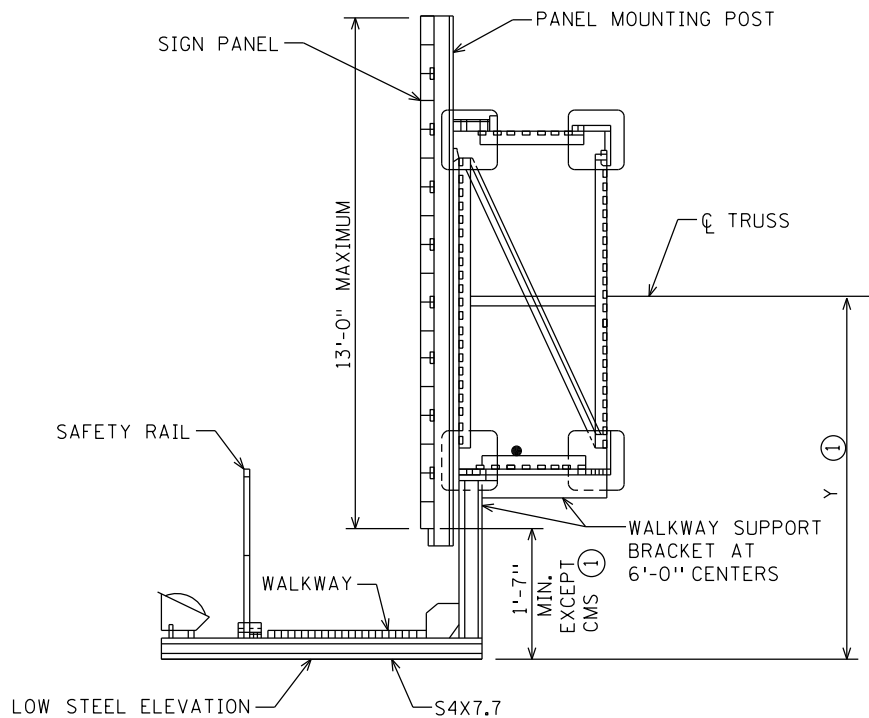
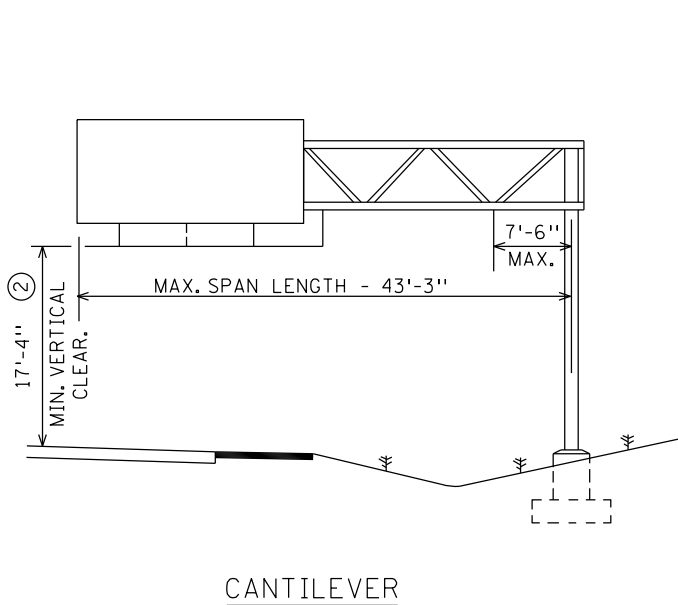
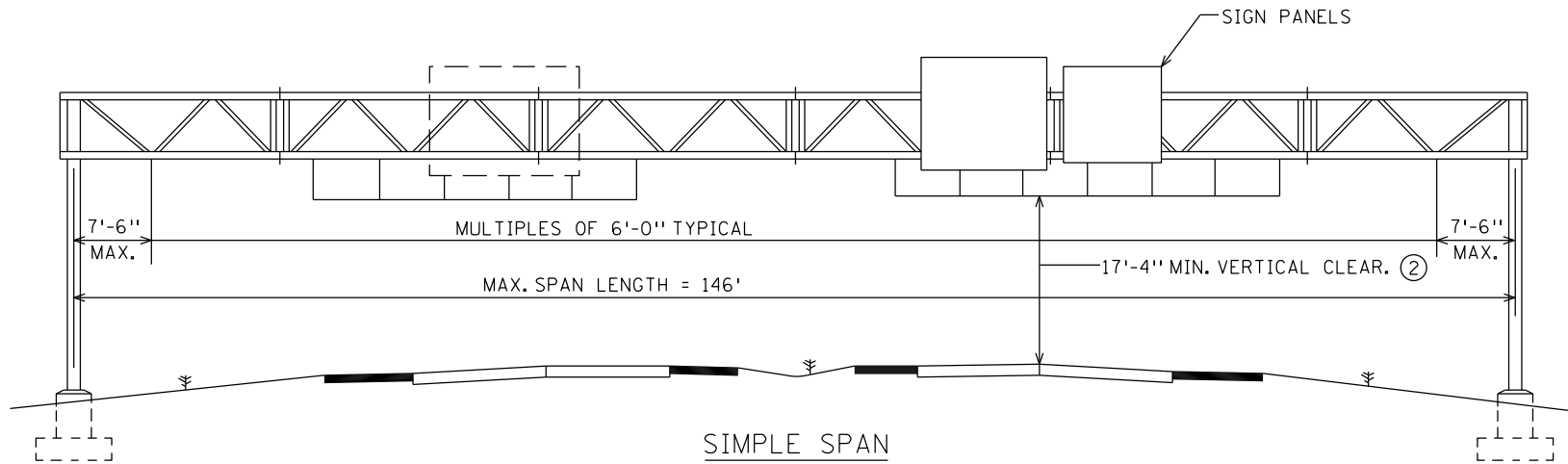
EXAMPLE: SIGN AREA: 250 SQ. FT.  
POST HEIGHT: 27 FT.  
SPAN LENGTH: 75 FT.  
TYPE: SIMPLE SPAN  
SIGN TYPE: CONVENTIONAL

POST IDENTIFICATION NUMBER: 3

STANDARD OVERHEAD SIGN SUPPORTS  
INTERIM DESIGN B

POST SELECTION TABLES

DISTRICT #: METRO  
IPLOT NAME: ST DRAWINGS STD#2  
PATH & FILENAME: IP\_PWP-d\339380\ST DRAWINGS STD#2.dgn



#### 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"	

#### 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<sub>c</sub> = 1,600 PSI  
REINFORCEMENT STEEL----- F<sub>s</sub> = 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.

STANDARD OVERHEAD SIGN SUPPORTS  
INTERIM DESIGN B

GENERAL ELEVATIONS  
AND NOTES

DRAWING ST-1

DISTRICT #: METRO

IPLOT NAME: ST DRAWINGS\_STD\*3

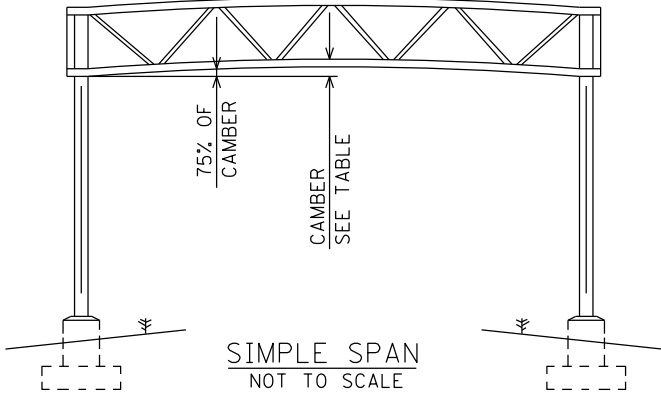
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SIMPLE SPAN

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	11/16	13/8	111/16	2	23/8	213/16	31/4	33/4
DL DEFLECTION	0	1/16	1/16	1/8	1/4	3/8	9/16	13/16	11/8	11/2	21/16	211/16
RESIDUAL CAMBER	1/4	3/8	9/16	11/16	13/16	1	11/8	13/16	11/4	15/16	13/16	11/16

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



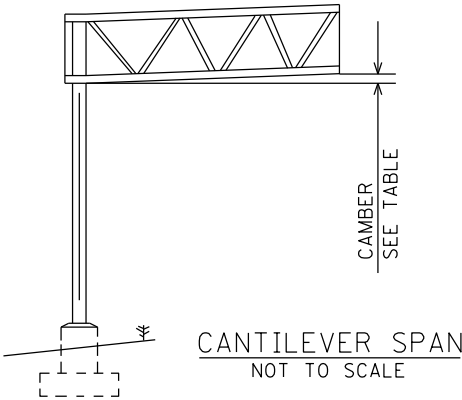
TRUSS QUANTITIES		
USE LENGTH FROM Q POST WHEN CALCULATING TOTAL WEIGHTS.		
TRUSS TYPE A	TRUSS TYPE B	TRUSS TYPE C
123 LBS./FT.	168 LBS./FT.	196 LBS./FT.

CANTILEVER SPAN

CANTILEVER SPAN TRUSS CAMBER					
SPAN	15'	20'	30'	40'	45'
CAMBER	1/8	1/4	5/8	11/16	11/4
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
6'-6"	99	105	113
7'-0"	101	107	115
7'-6"	103	109	117
8'-0"	105	111	119
8'-6"	107	113	121
9'-0"	109	115	123
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

CMS(NEW LED)

CMS(LED)

CMS(DRUM)

FOR FOUNDATION QUANTITIES SEE DRAWING ST-3

WALKWAY WEIGHTS:

1. USE 3'-43/4" WIDE GRATING @ 44 LBS/FT.
2. WEIGHT INCLUDES HANDRAIL (12 LBS/FT.) AND FIXTURE  
MOUNTING CHANNELS (4 LBS/FT.).

POST QUANTITIES

QUANTITIES INCLUDE ANCHORAGE ASSEMBLY AND TRUSS CONNECTION PLATES. PAY LENGTH OF  
POSTS IS FROM THE BOTTOM OF THE BASE PLATE (ELEV. A) TO THE TOP OF THE TRUSS. POST  
QUANTITIES ARE BASED ON GRADE 42 STEEL. NO ADJUSTMENTS WILL BE MADE IN THE QUANTITIES  
FOR THE USE OF GRADE 35 STEEL POSTS.

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	1915+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

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.

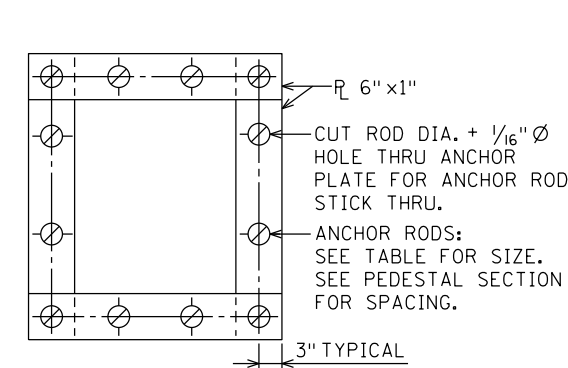
SEE DRAWING ST-4 FOR BASEPLATE DETAILS.

DISTRICT #: METRO

IPLOT NAME: ST DRAWINGS STD#4

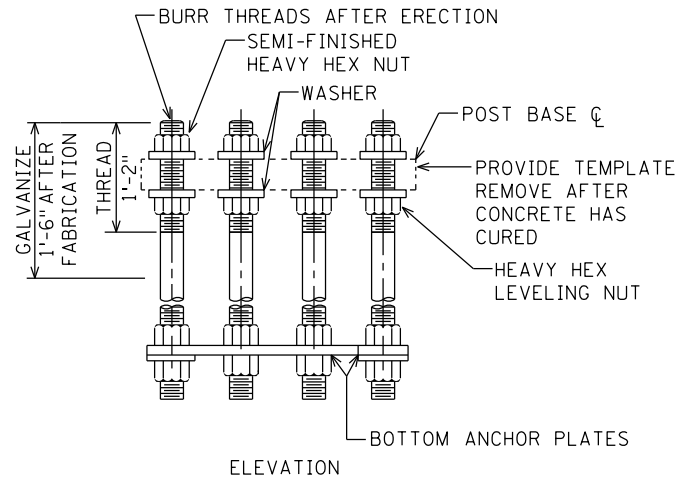
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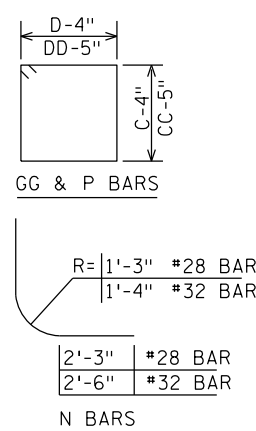


NOTE: ANCHOR PLATES SHOWN TYPICAL FOR ALL ANCHOR ROD SPACING.

ANCHOR PLATE PLAN

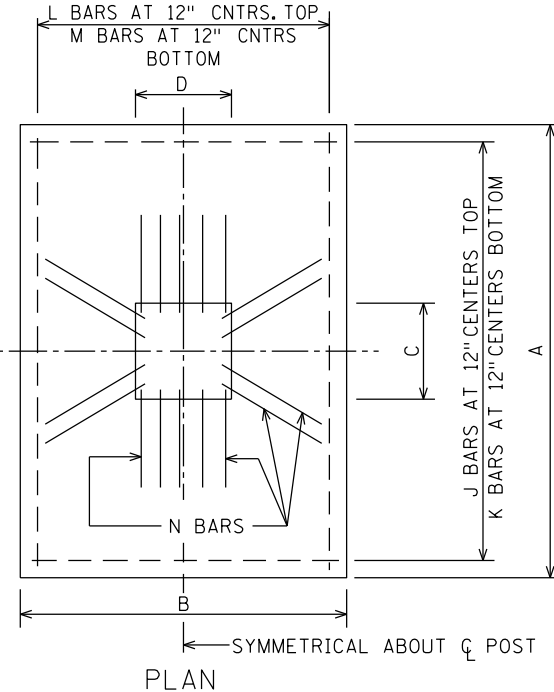


ANCHOR ROD DETAILS



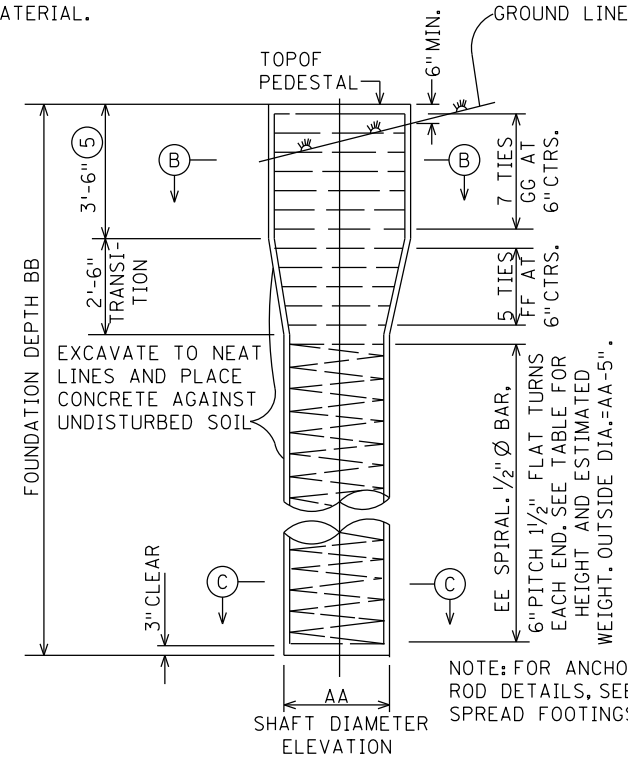
J, K, L, M, FF AND HH ARE STRAIGHT BARS  
BAR BENDING DIAGRAMS

SYMMETRICAL ABOUT  $\phi$  SIGN TRUSS

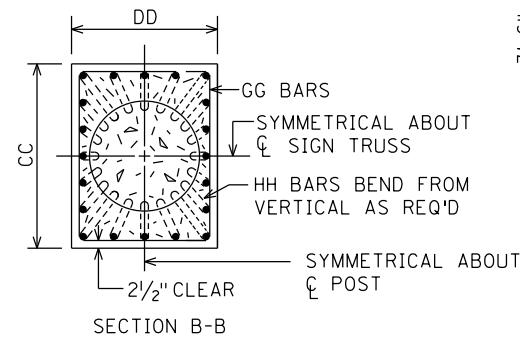


PLAN

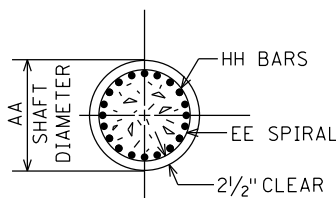
NOTE (5): MUST BE FORMED A MINIMUM OF 6" BELOW THE GROUND SURFACE. THE EXCAVATED AREA FOR FORMING SHALL BE BACKFILLED AND TAMPED WITH EQUIVALENT TO SURROUNDING MATERIAL.



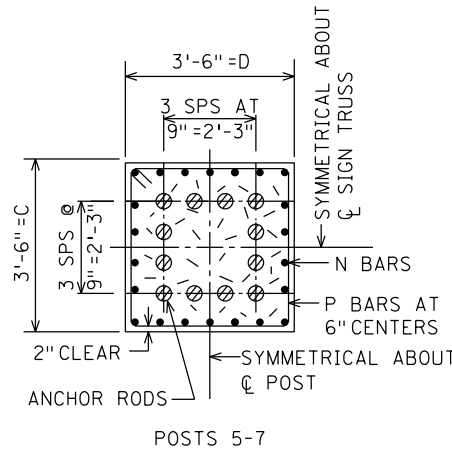
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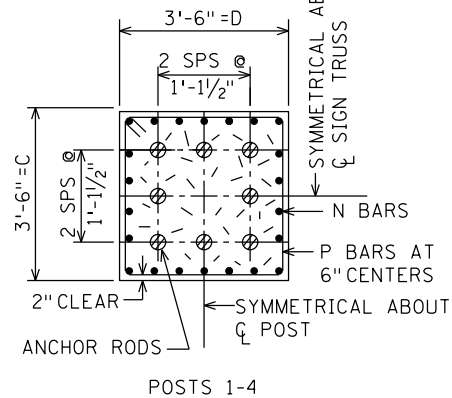
SECTION B-B



SECTION C-C

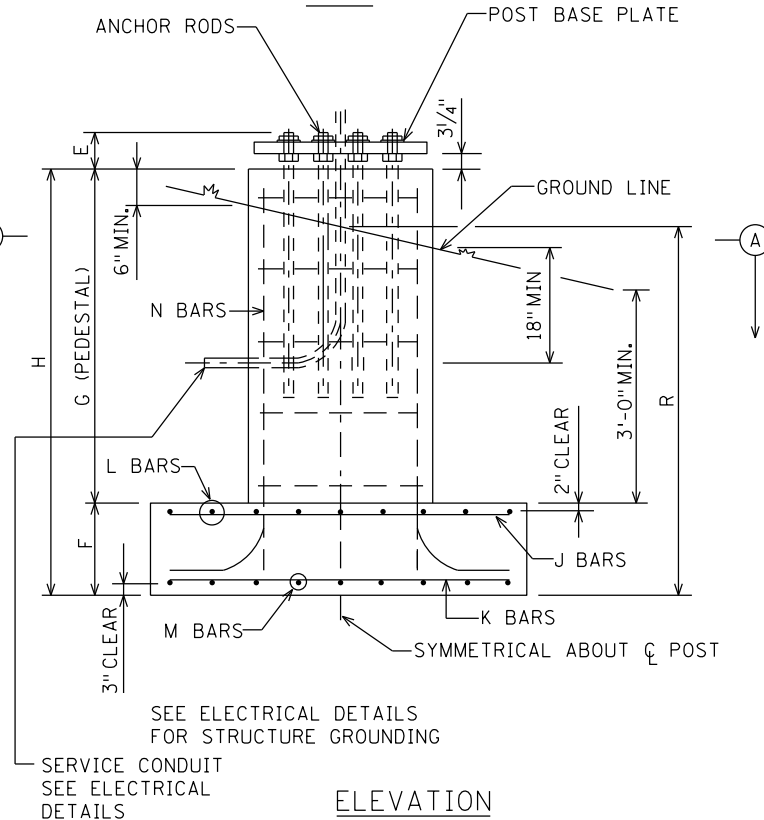


POSTS 5-7



POSTS 1-4

PEDESTAL CROSS SECTIONS A-A



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  $1 \frac{1}{4}$  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 MMNDOT3301. 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.

DRILLED SHAFT										SPREAD FOOTINGS			
POST NO.	DIMENSIONS				REINFORCING BARS				ESTIMATED QUANTITIES ④	SUMMARY OF ESTIMATED QUANTITIES			
	AA	BB	CC	DD	EE	FF ③	GG	HH		CONCRETE CY ②	REIN. STEEL LBS. ②	ANCH. ASSM. LBS	ST. EXC. C.Y. ②
1-4	3'-0"	23'-0"	3'-6"	3'-6"	16'-6" x 197 LBS.	5 #16x 14'-1"	7 #16x 14'-1"	20 #28x 22'-7"	6.9	1910	9.3 + 0.46 G	945 + 98G	7.4 R
5-7	4'-0"	29'-0"	4'-0"	4'-0"	22'-6" x 362 LBS.	5 #16x 16'-1"	7 #16x 16'-1"	24 #32x 28'-7"	14.1	3490	16.7 + 0.46 G	2333 + 133G	12.1 R

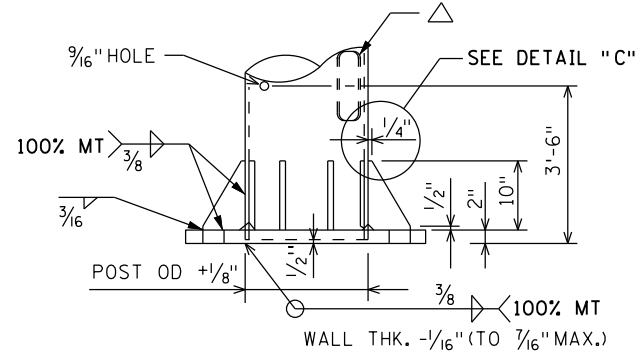
SPREAD FOOTINGS																											
POST							ANCHOR RODS			J REIN. BARS			K REIN. BARS			L REIN. BARS			M REIN. BARS			⑥ N REIN. BARS			P REIN. BARS ①		
NO.	A	B	C	D	E	F	NO. REQ'D	DIA.	LENGTH	NO. REQ'D	SIZE	LENGTH	NO. REQ'D	SIZE	LENGTH	NO. REQ'D	SIZE	LENGTH	NO. REQ'D	SIZE	LENGTH	NO. REQ'D	SIZE	LENGTH	NO. REQ'D	SIZE	LENGTH
1-4	14'-0"	9'-0"	3'-6"	3'-6"	8 1/2"	2'-0"	8	2 1/4"	3'-10 1/2"	14	#13	8'-6"	14	#19	8'-6"	10	#16	13'-6"	10	#22	13'-6"	20	#28	H + 2'-6"	2G	#16	14'-3"
5-7	18'-0"	12'-6"	3'-6"	3'-6"	9"	2'-0"	12	2 1/2"	4'-0"	19	#13	12'-0"	19	#19	12'-0"	13	#19	17'-6"	13	#32	17'-6"	24	#32	H + 2'-9"	2G	#16	14'-3"

STANDARD OVERHEAD SIGN SUPPORTS  
INTERIM DESIGN B

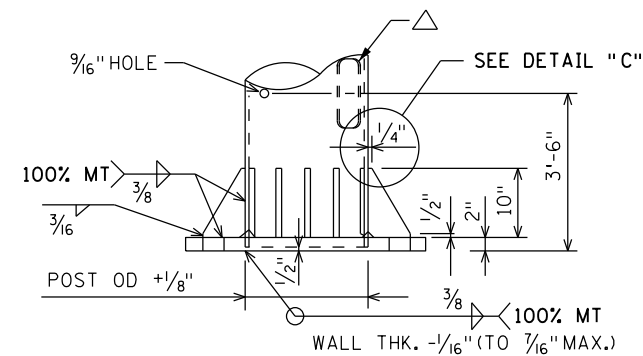
FOUNDATIONS AND  
ANCHOR RODS

DRAWING ST-3

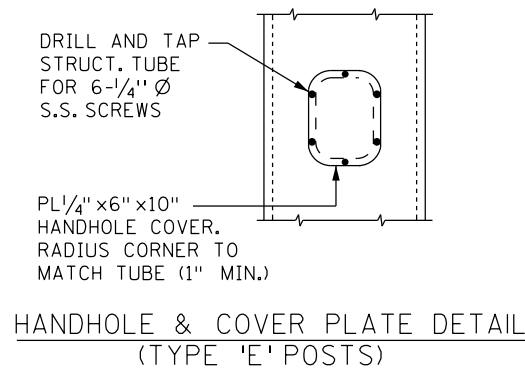
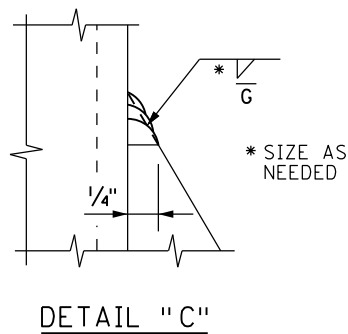
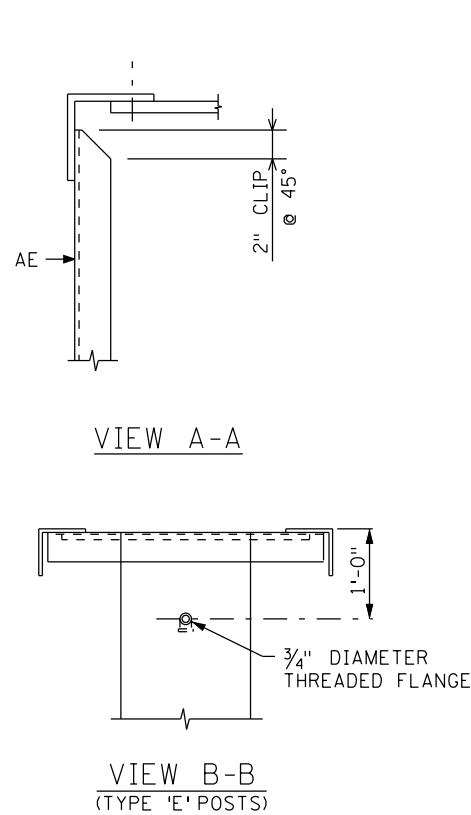
DISTRICT #: METRO  
IPLOT NAME: ST DRAWINGS STD#5  
PATH & FILENAME: IP\_PWP-d\339380\ST DRAWINGS STD#5.dgn  
PLOTTED/REVISED: 5/9/2012



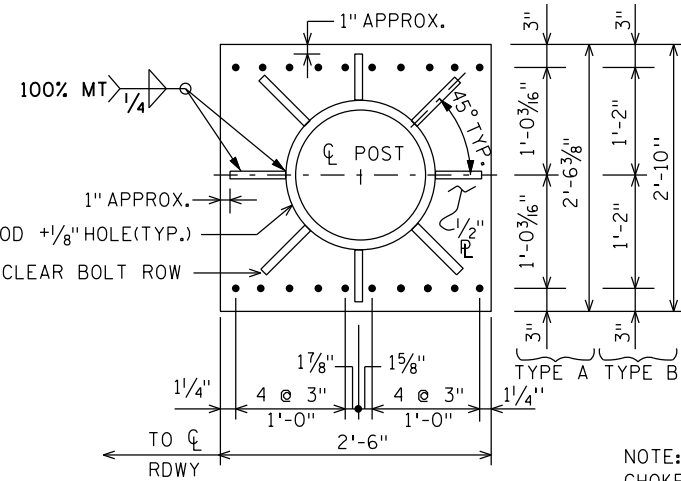
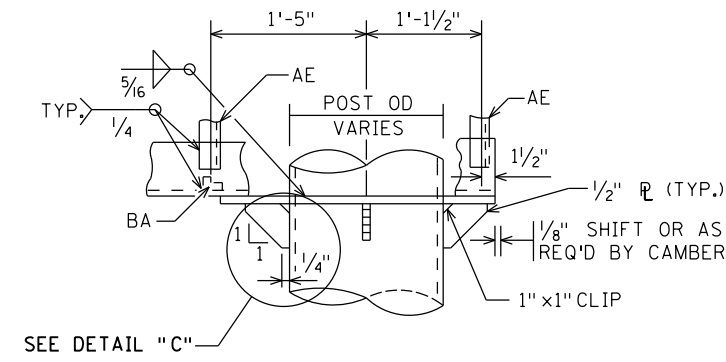
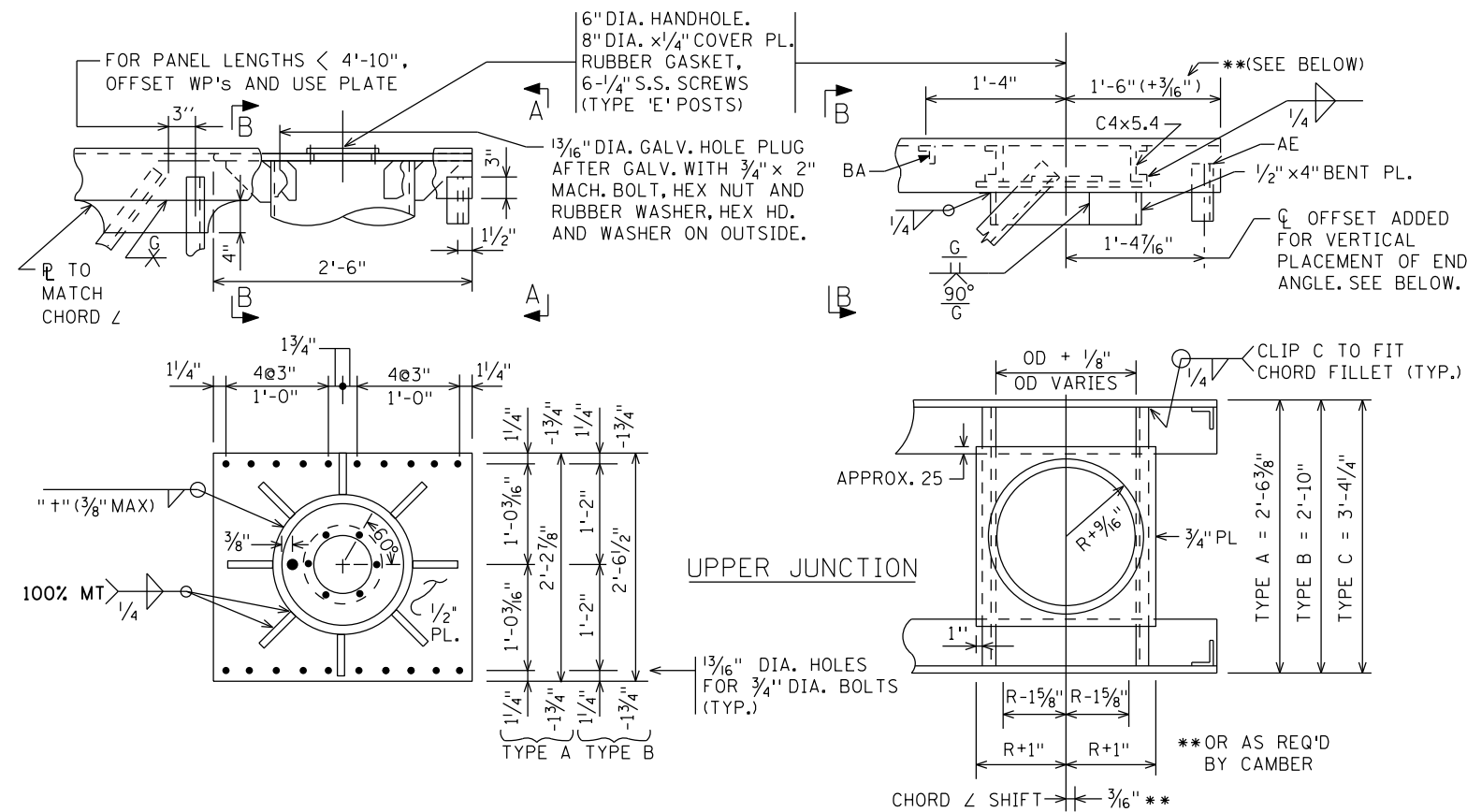
PLAN & ELEVATION - BASEPLATE TYPE A  
POST NO. 1 THRU 4



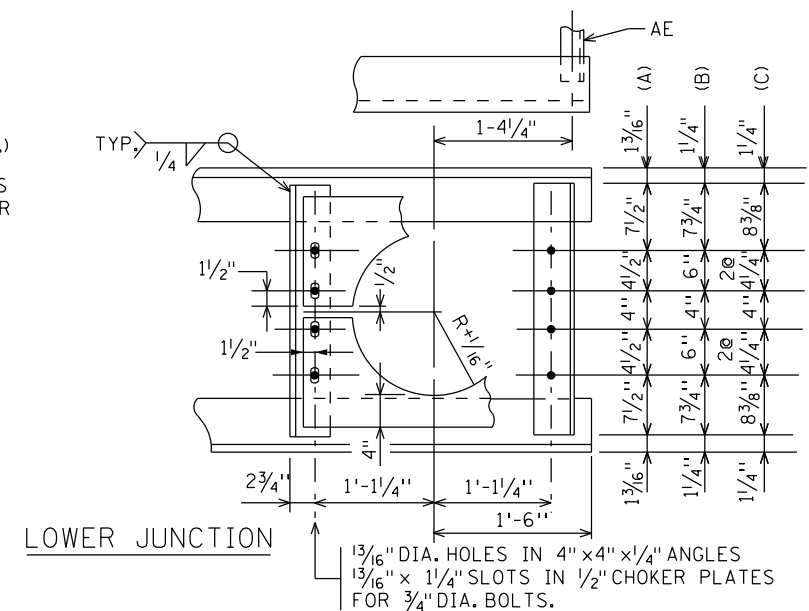
PLAN & ELEVATION - BASEPLATE TYPE B  
POST NO. 5 THRU 7



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



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



SIMPLE TRUSS

STANDARD OVERHEAD SIGN SUPPORTS  
INTERIM DESIGN B

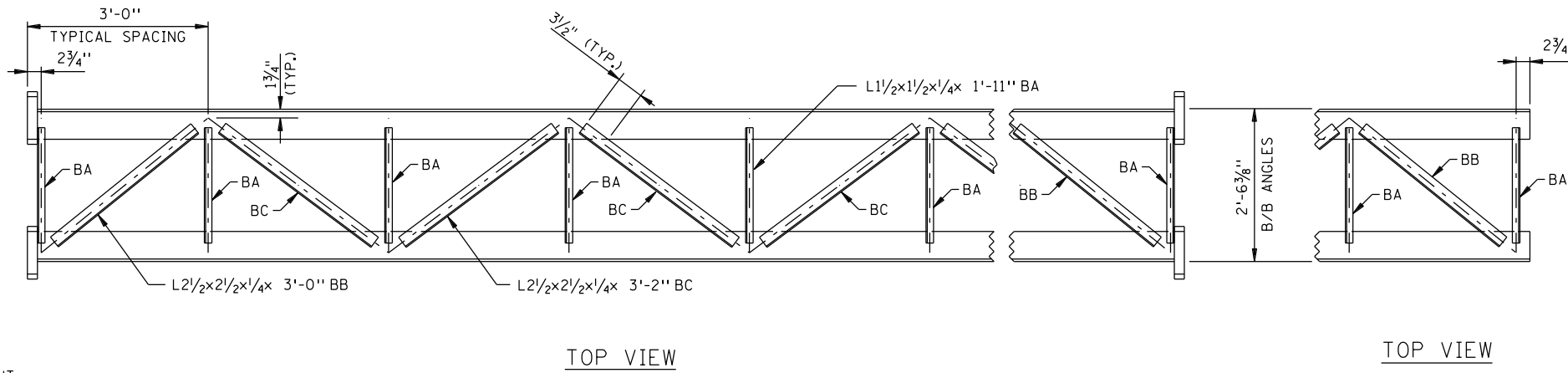
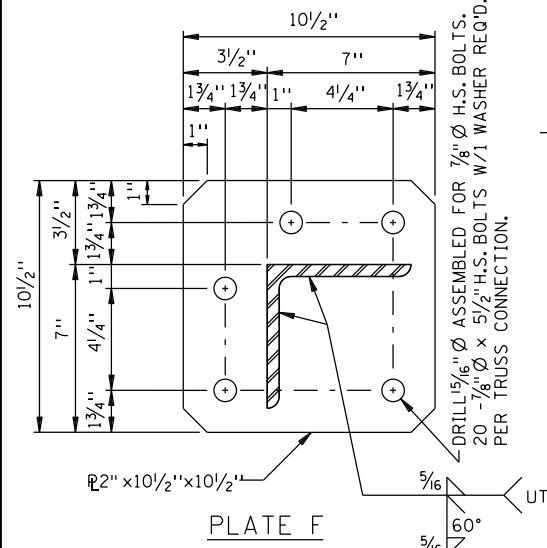
TRUSS/POST CONNECTION  
&  
BASEPLATES

DRAWING ST-4

STATE PROJ. NO.

SHEET NO. OF SHEETS

PATH & FILENAME: IP\_PWP:d\139380\STD DRAWINGS-STD#.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.

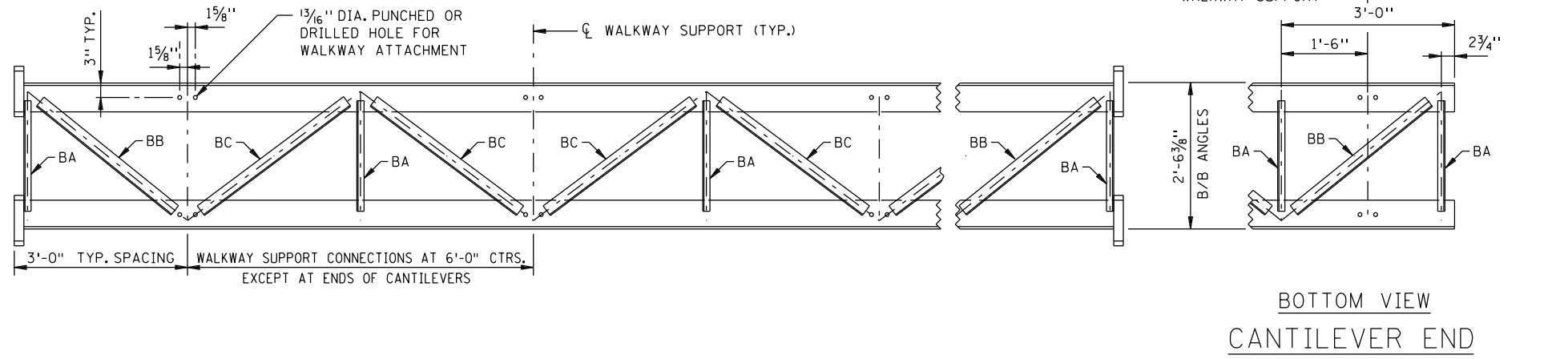
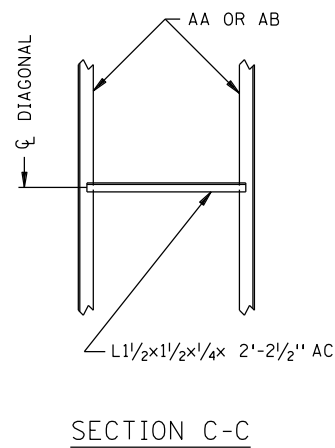
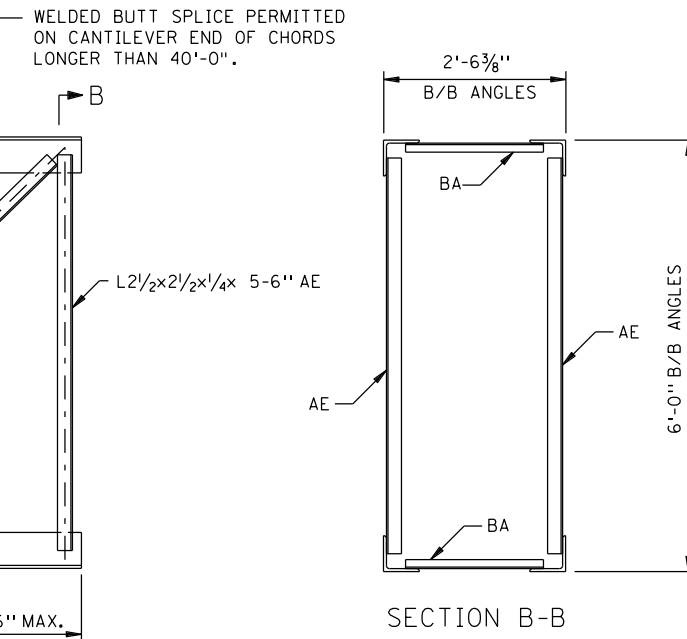
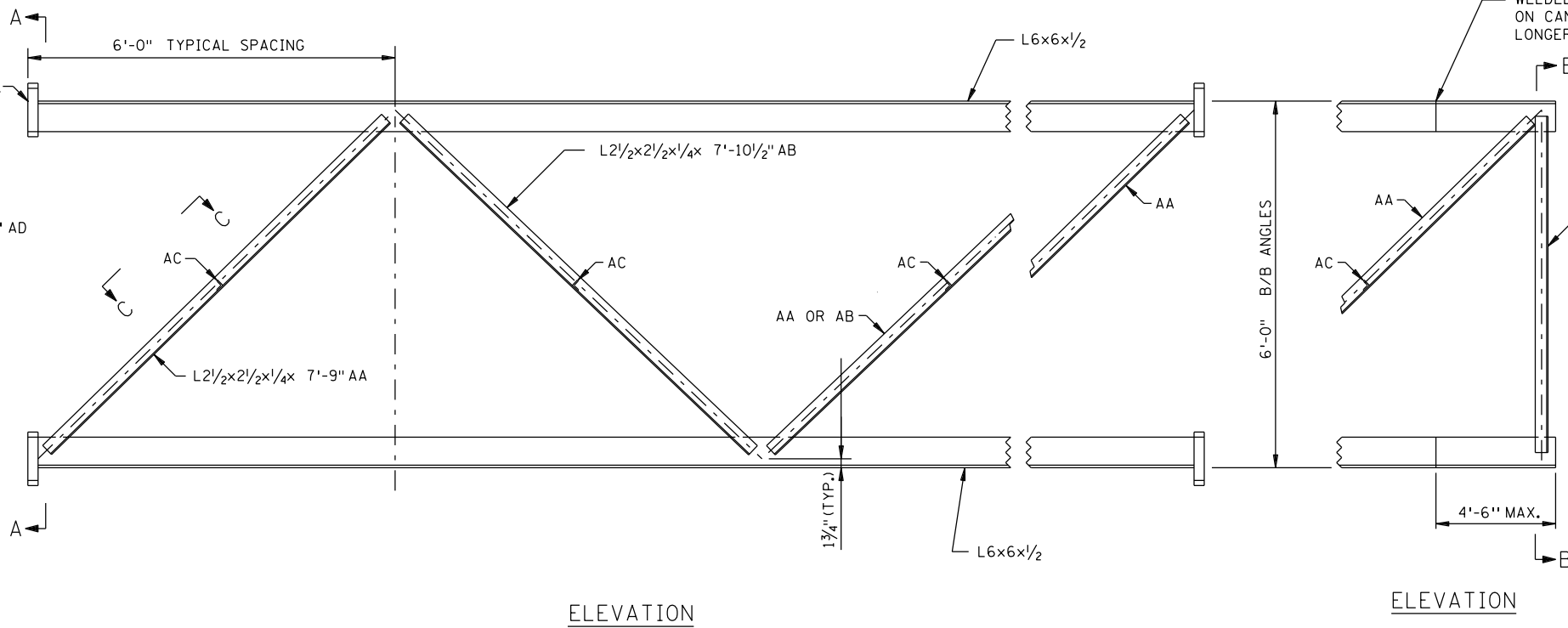
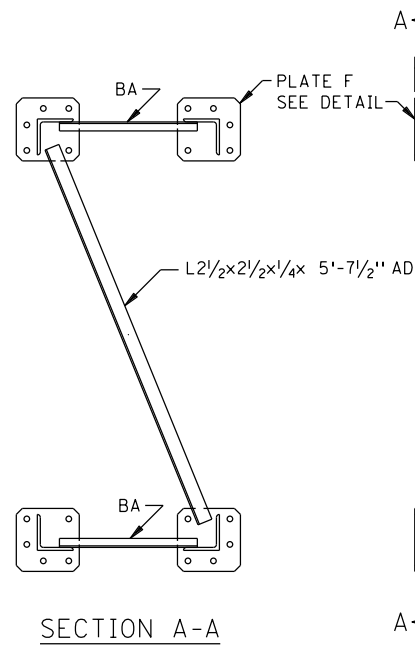
BOLTED SPLICES SHALL NOT BE LOCATED BEHIND CMS SIGNS.

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.

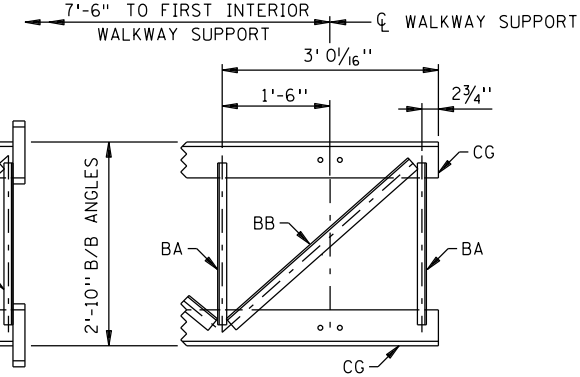
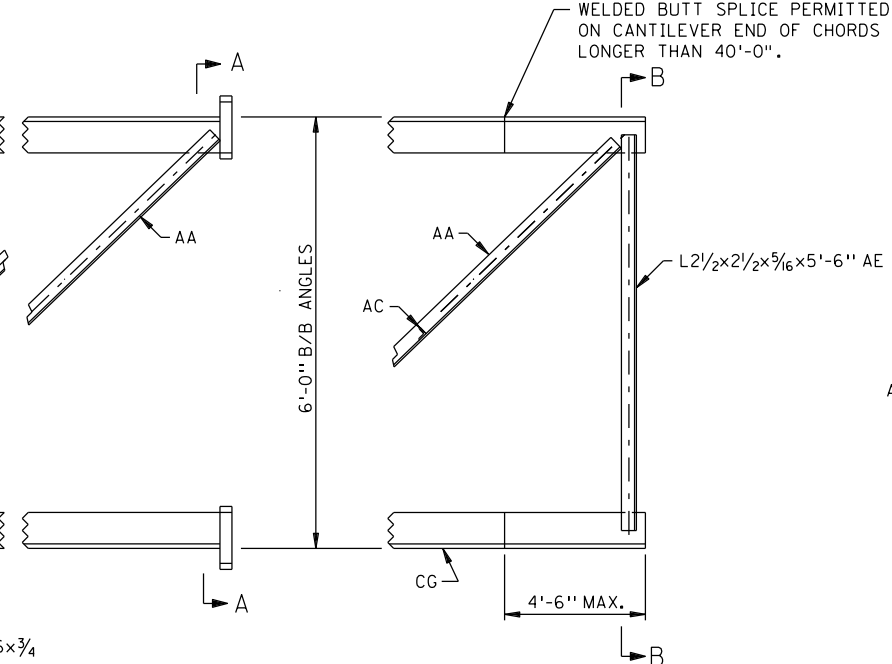
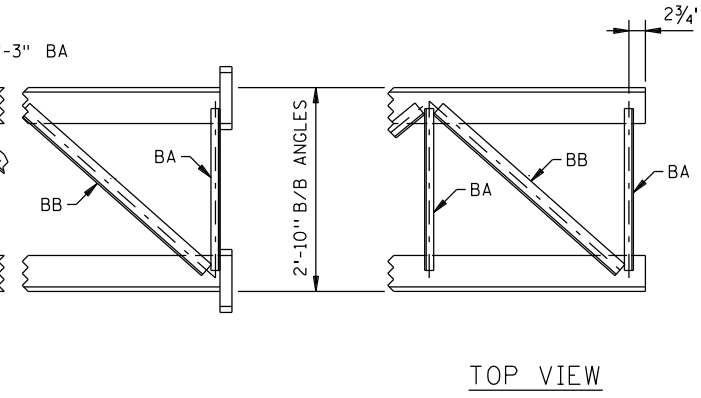
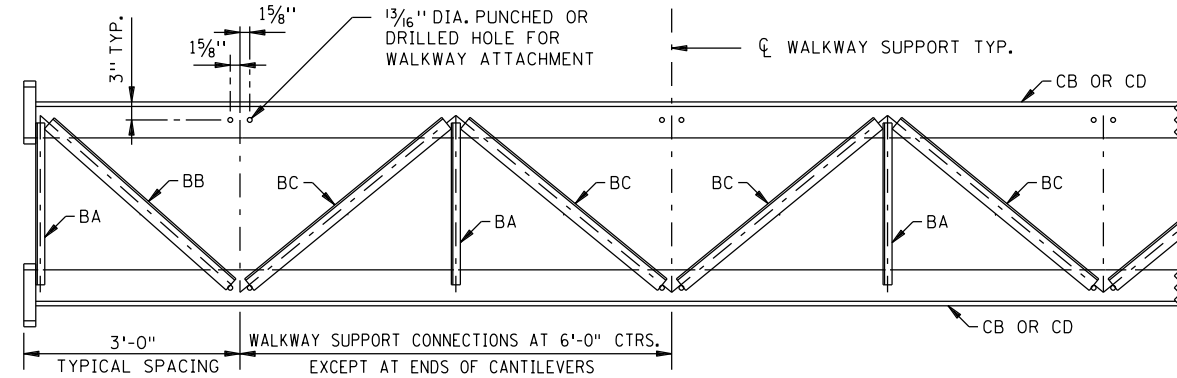
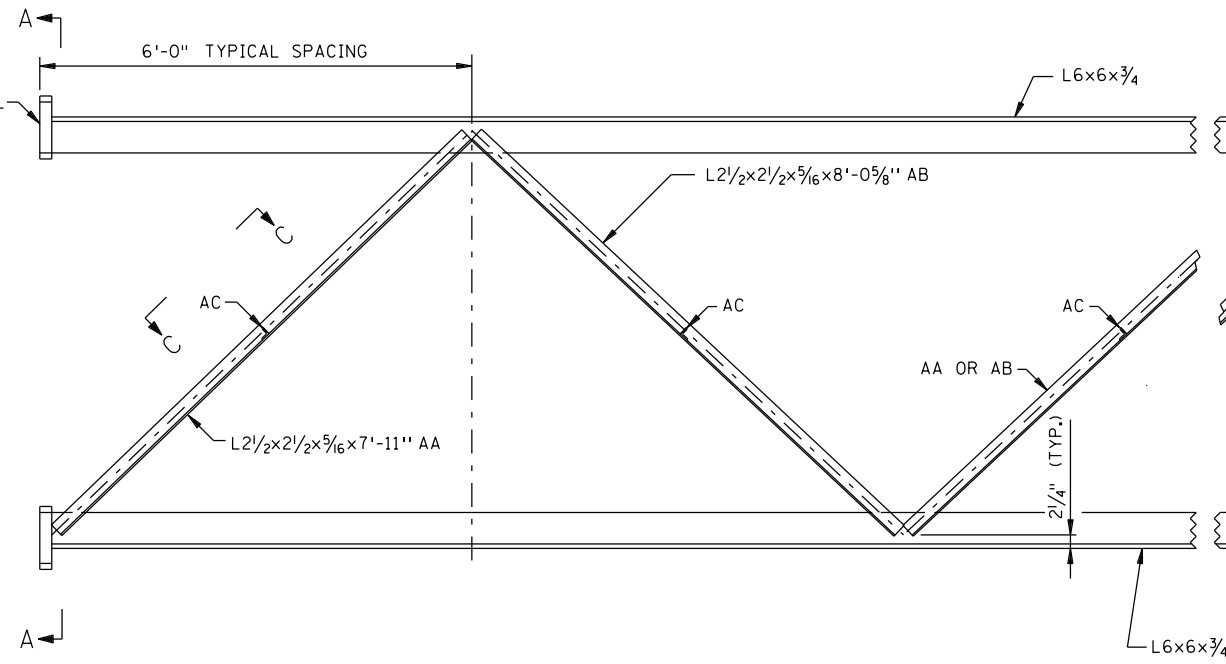
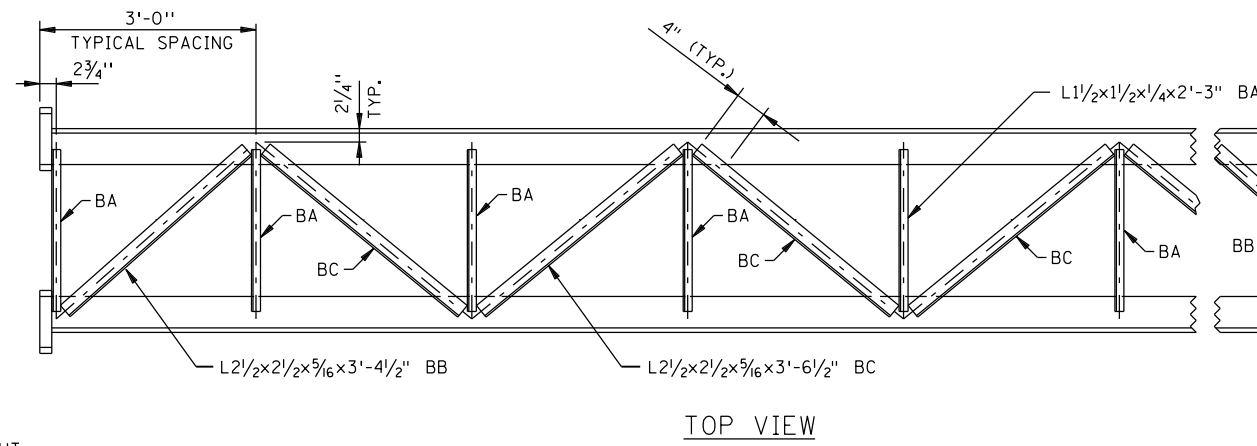
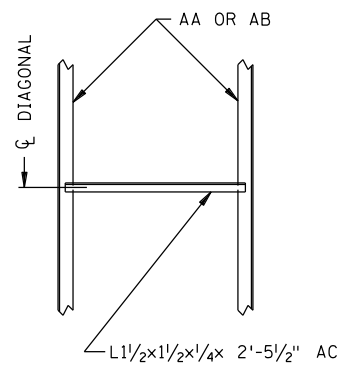
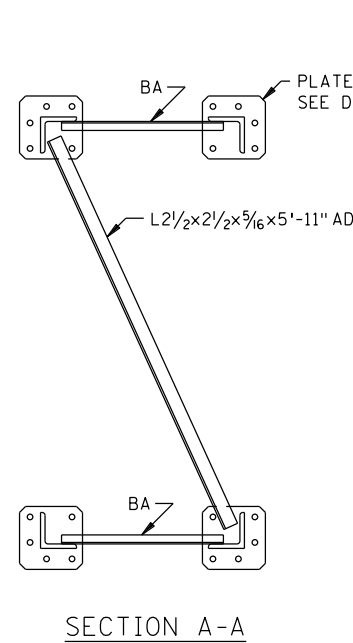
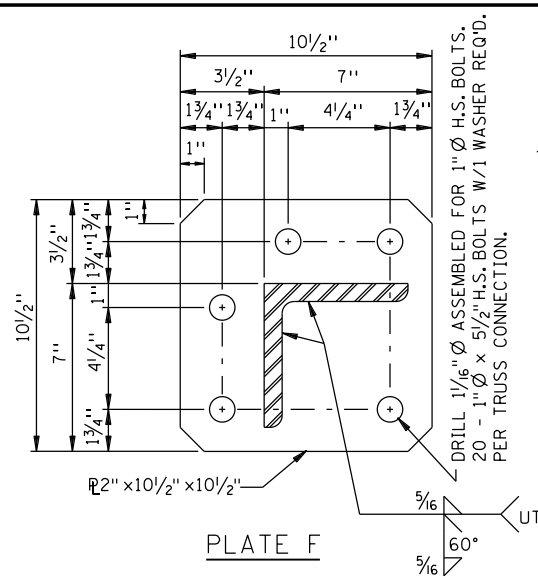
SEE DRAWING ST-4 FOR POST CONNECTION DETAILS.



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.

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



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.

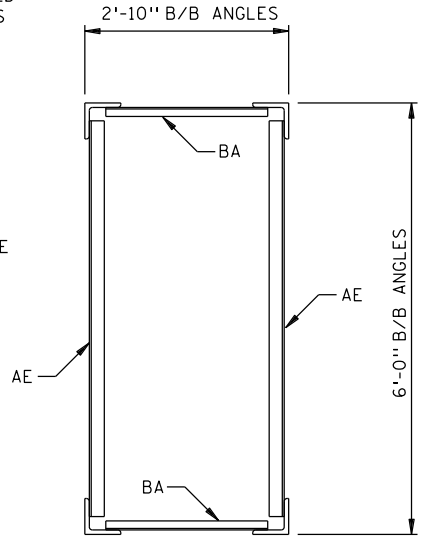
BOLTED SPLICES SHALL NOT BE LOCATED BEHIND  
CMS SIGNS.

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.



SECTION B-B

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.

BOTTOM VIEW  
CANTILEVER END

# STANDARD OVERHEAD SIGN SUPPORTS INTERIM DESIGN B

SIGN TRUSS DETAILS  
TRUSS TYPE B

DRAWING ST-6

SHEET NO. OF SHEETS

STATE PROJ. NO.



DISTRICT #: METRO  
IPLOT NAME: ST DRAWINGS STD#8  
PATH & FILENAME: IP\_PWP-d\339380\ST DRAWINGS STD#8.dgn

PLOTTED/REVISED: 5/9/2012

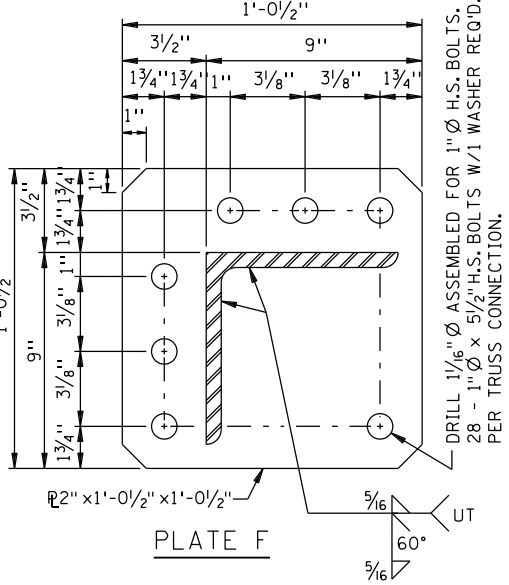
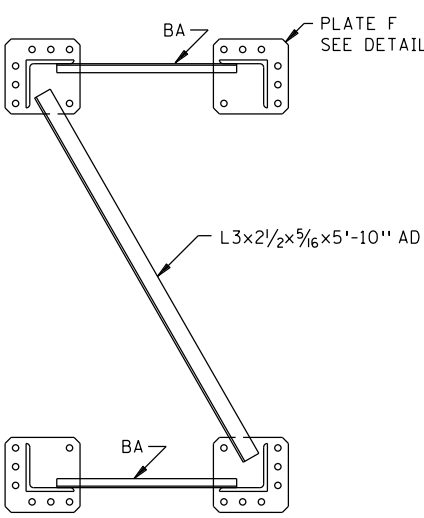
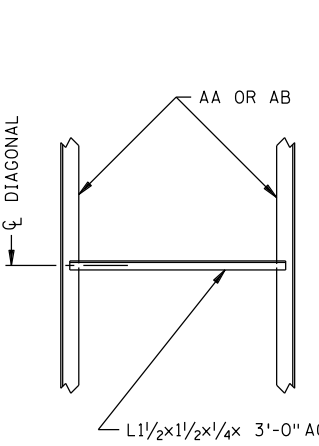


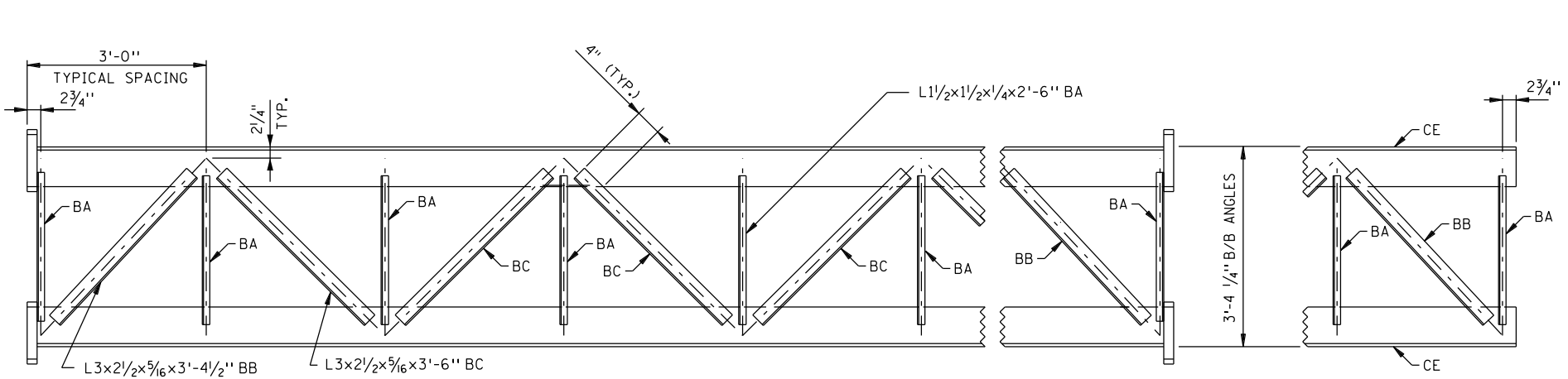
PLATE F



SECTION A-A

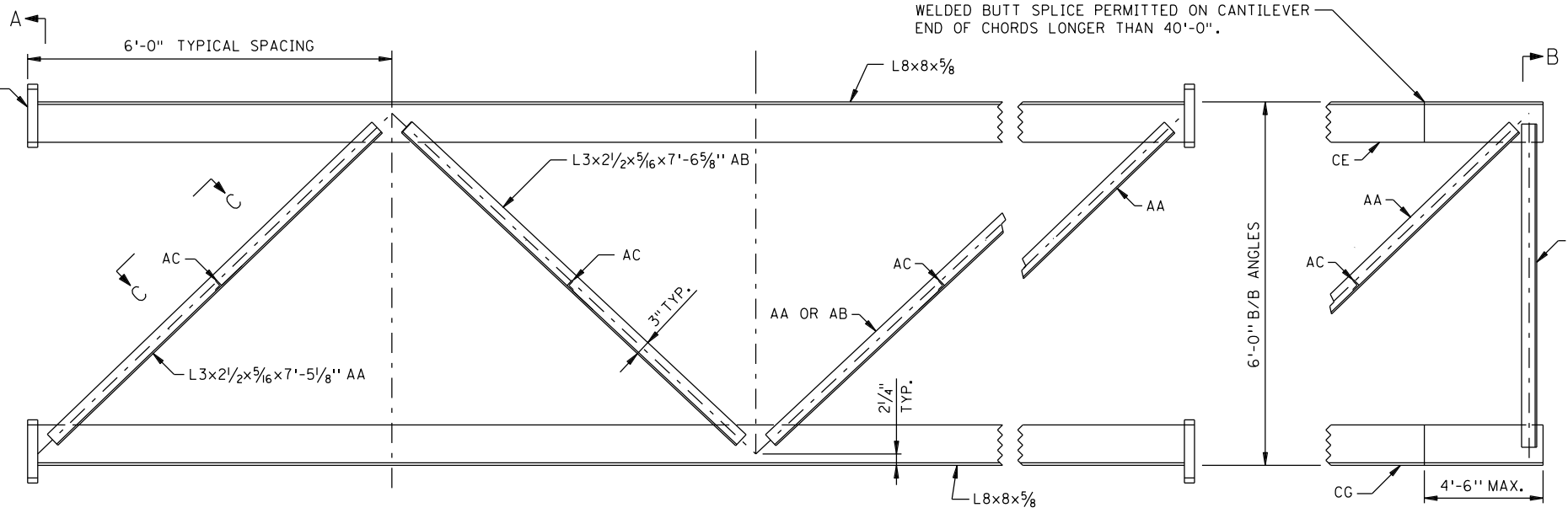


SECTION C-C



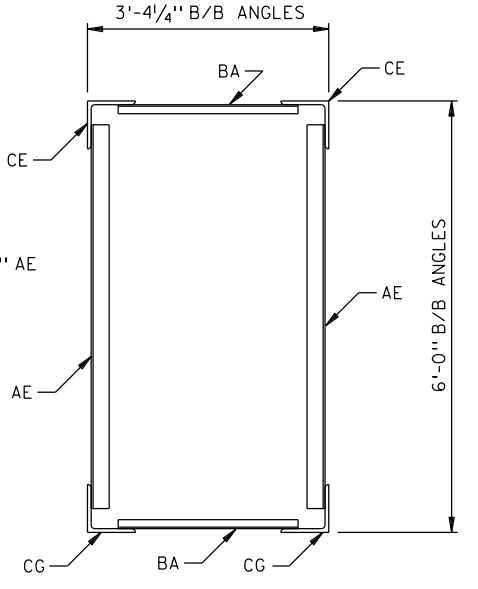
TOP VIEW

TOP VIEW

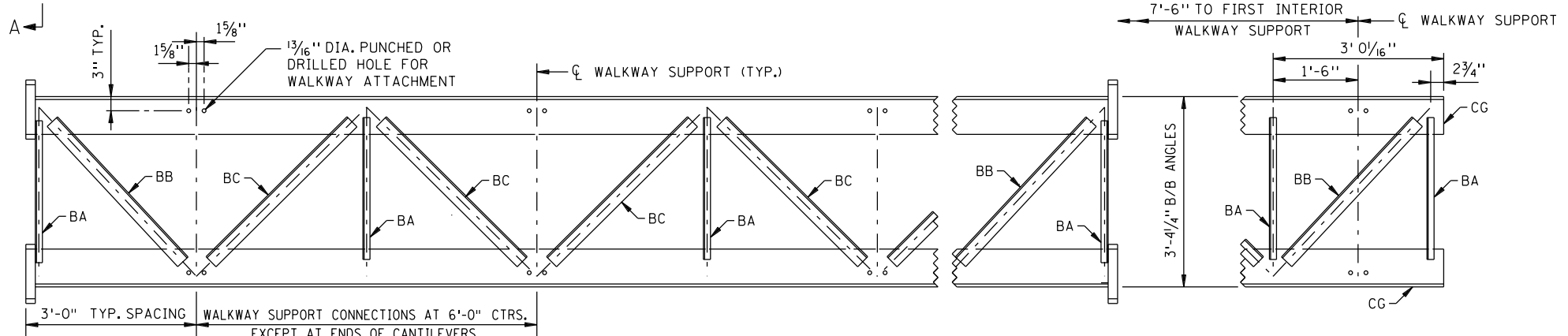


ELEVATION

ELEVATION



SECTION B-B



BOTTOM VIEW

BOTTOM VIEW  
CANTILEVER END

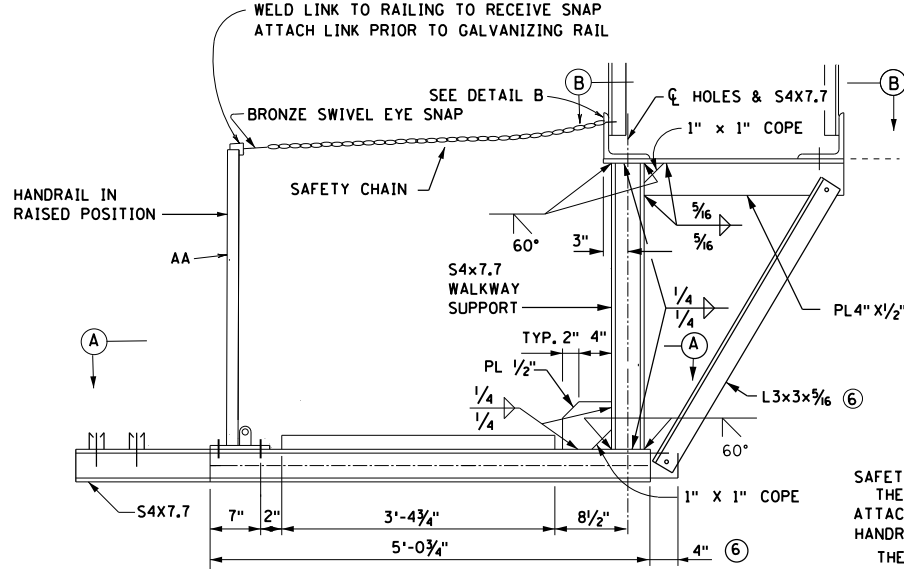
NOTE:  
THE BOTTOM VIEW IS DETAILED TO  
PROVIDE FOR WALKWAY ATTACHMENT, WHERE  
THE WALKWAY IS OMITTED, PROVIDE STRUT  
BA AS INDICATED IN THE TOP VIEW.

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.

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.

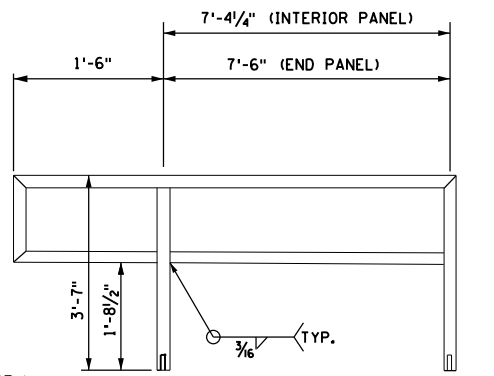
STANDARD OVERHEAD SIGN SUPPORTS INTERIM DESIGN B		
SIGN TRUSS DETAILS TRUSS TYPE C		
DRAWING	ST-7	



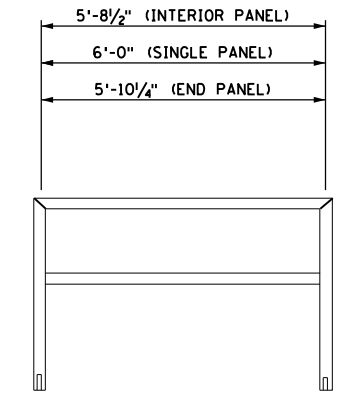
SIGN HEIGHT	X ①
6'-6"	1'-0"
7'-0"	1'-3"
7'-6"	1'-6"
8'-0"	1'-9"
8'-6"	2'-0"
9'-0"	2'-3"
9'-6"	2'-6"
10'-0"	2'-9"
10'-6"	3'-0"
11'-0"	3'-3"
11'-6"	3'-6"
12'-0"	3'-9"
12'-6"	4'-0"
13'-0"	4'-3"

① SEE NOTE 1 ON DRAWING ST-1

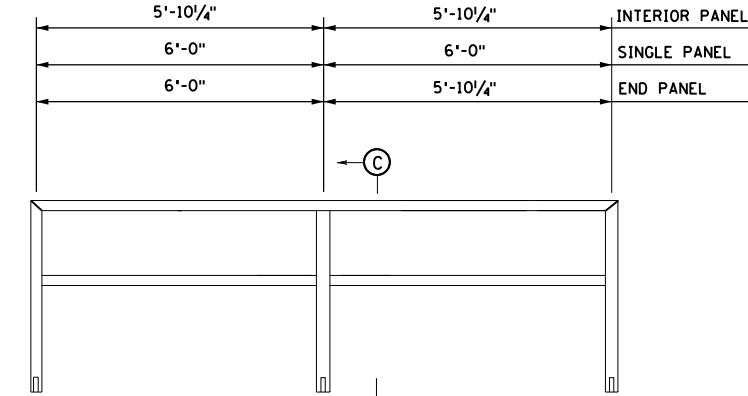
**SAFETY CHAIN NOTES:**  
THE SAFETY CHAIN SHALL BE ATTACHED AT EACH END OF THE HANDRAIL.  
THE CHAIN SHALL BE 3/16" STAINLESS STEEL STRAIGHT LENGTH CHAIN WITH APPROXIMATELY 12 LINKS PER FOOT.  
THE CHAIN AND ITS CONNECTIONS SHALL HAVE A MINIMUM RATED WORK LOAD OF 700 LBS.



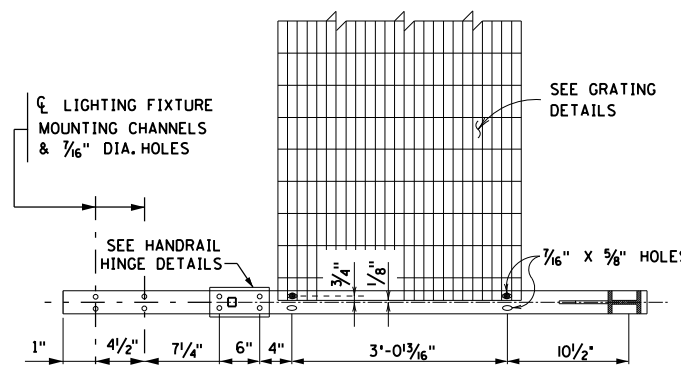
STRUCTURAL TUBING 1 1/2 X 1 1/2 X 3/16 (TYP.)



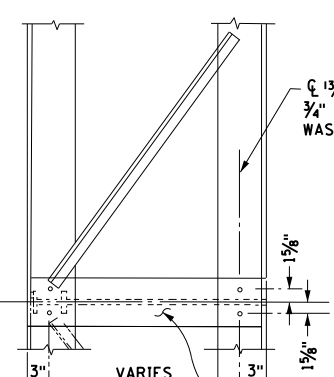
STRUCTURAL TUBING 1 1/2 X 1 1/2 X 3/16 (TYP.)



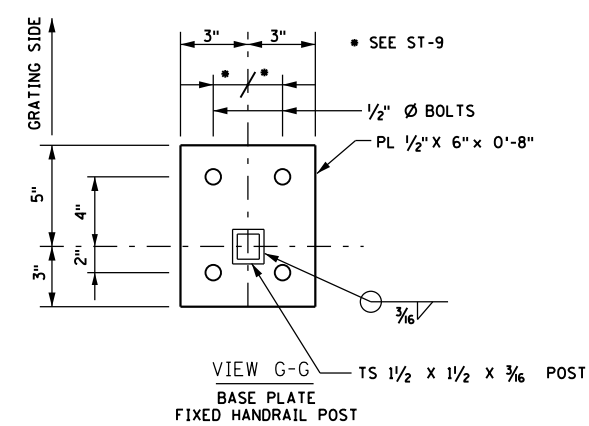
STRUCTURAL TUBING 1 1/2 X 1 1/2 X 3/16 (TYP.)



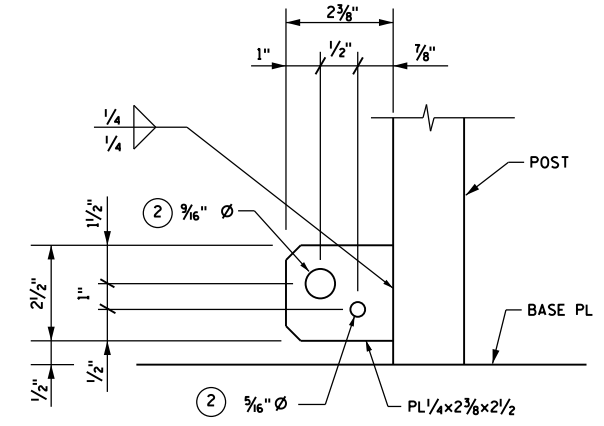
VIEW A-A



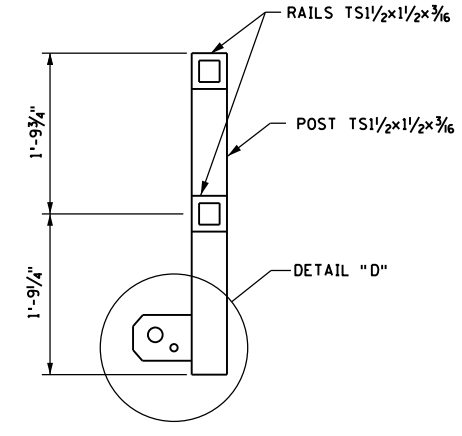
VIEW B-B



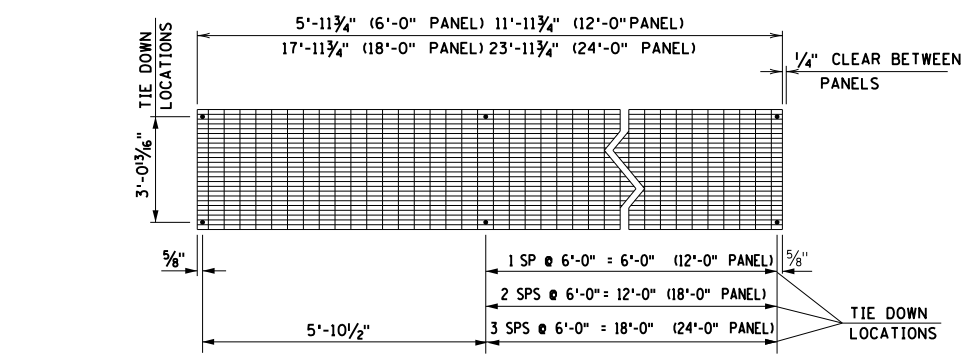
VIEW G-G  
BASE PLATE  
FIXED HANDRAIL POST



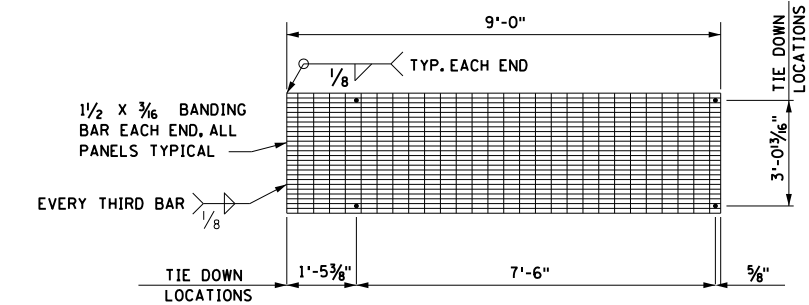
DETAIL "D"



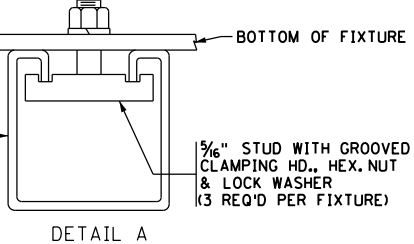
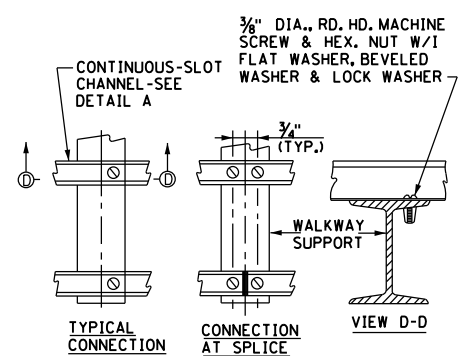
VIEW C-C  
FOLDING HANDRAIL POST



GRATING PLAN - 6'-0", 12'-0", 18'-0", OR 24'-0" PANELS



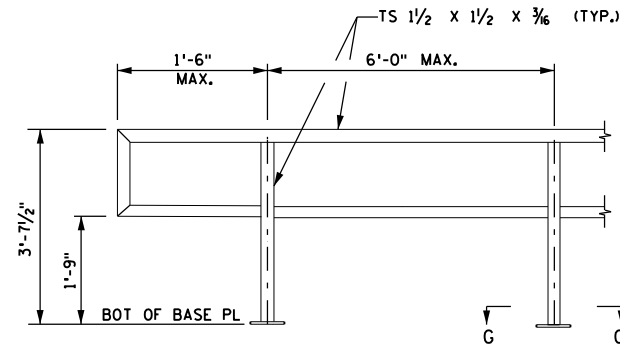
GRATING PLAN - AT CANTILEVERS ONLY



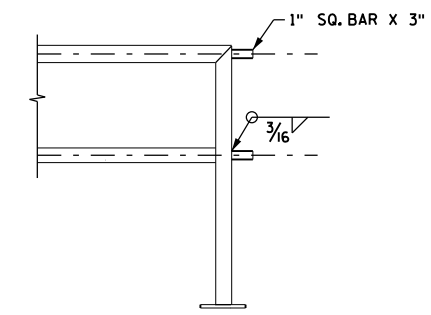
DETAIL A  
FIXTURE MOUNTING DETAILS

**NOTE:**  
ALL GRATING SHALL BE 3'-4 3/4" WIDE AND SHALL BE 1 1/2" X 3/16" SERRATED BEARING BARS AT 1 3/16" CENTERS WITH CROSS BARS AT 4" CENTERS. ATTACH GRATING AT EACH TIE DOWN LOCATION WITH A STAINLESS STEEL SADDLE ANCHOR DESIGNED FOR THIS SPECIFIC USE.

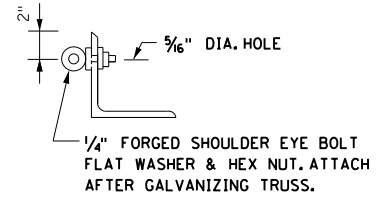
**FIXTURE MOUNTING CHANNEL NOTES:**  
FIXTURE MOUNTING CHANNELS SHALL EXTEND THE FULL LENGTH OF THE WALKWAY AND SHALL BE CONTINUOUS OVER AS MANY WALKWAY SUPPORT SPANS AS PRACTICABLE CONSISTENT WITH EASE OF HANDLING AND ASSEMBLING.  
JOINTS IN THE CHANNELS SHALL BE CENTERED ON THE WALKWAY SUPPORTS WITH A MAX 1/8" GAP BETWEEN SECTIONS.  
CHANNELS SHALL HAVE A 1/4" DRAIN HOLE IN EACH WALKWAY SUPPORT SPAN.



FIXED HANDRAIL FOR OH SIGN



FIXED RAIL SPLICE DETAIL



DETAIL B

- SPECIFIC NOTES:**
- ① SEE NOTE 1 ON DRAWING ST-1
  - ② REAM RAILING SUPPORT BOLT AND LOCKING PIN HOLES AFTER GALVANIZING TO ENSURE BOLT AND PIN FIT.
  - ③ LED CMS
  - ④ DRUM CMS
  - ⑤ NEW LED CMS
  - ⑥ USE FOR SIGN HEIGHTS OF 11'-0" OR GREATER. EXTEND S4x7.7 BY 4" AND COPE FLANGES.

**GENERAL NOTES:**

WALKWAY DETAILS SHOWN ARE TYPICAL FOR CANTILEVER AND SIMPLE SPAN SIGNS

WHEN THE FORMAT SHEET INDICATES THAT THE WALKWAY IS CONTINUOUS FROM ONE SPAN TO ANOTHER, THE CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING THE SPECIAL LENGTH GRATING AND HANDRAIL PANELS REQUIRED.

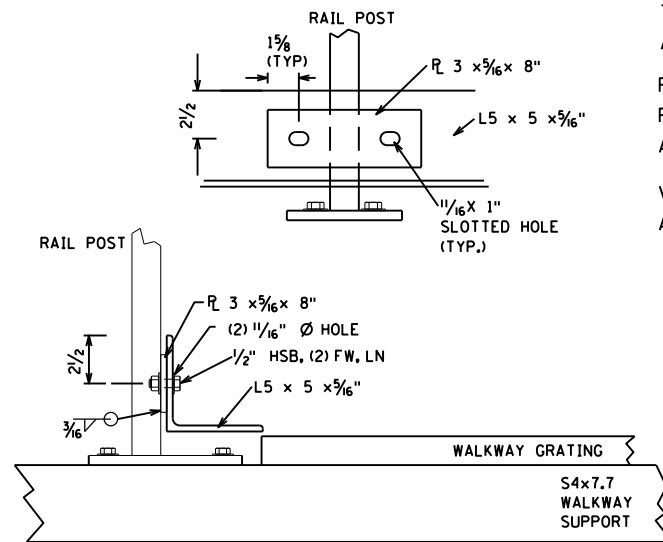
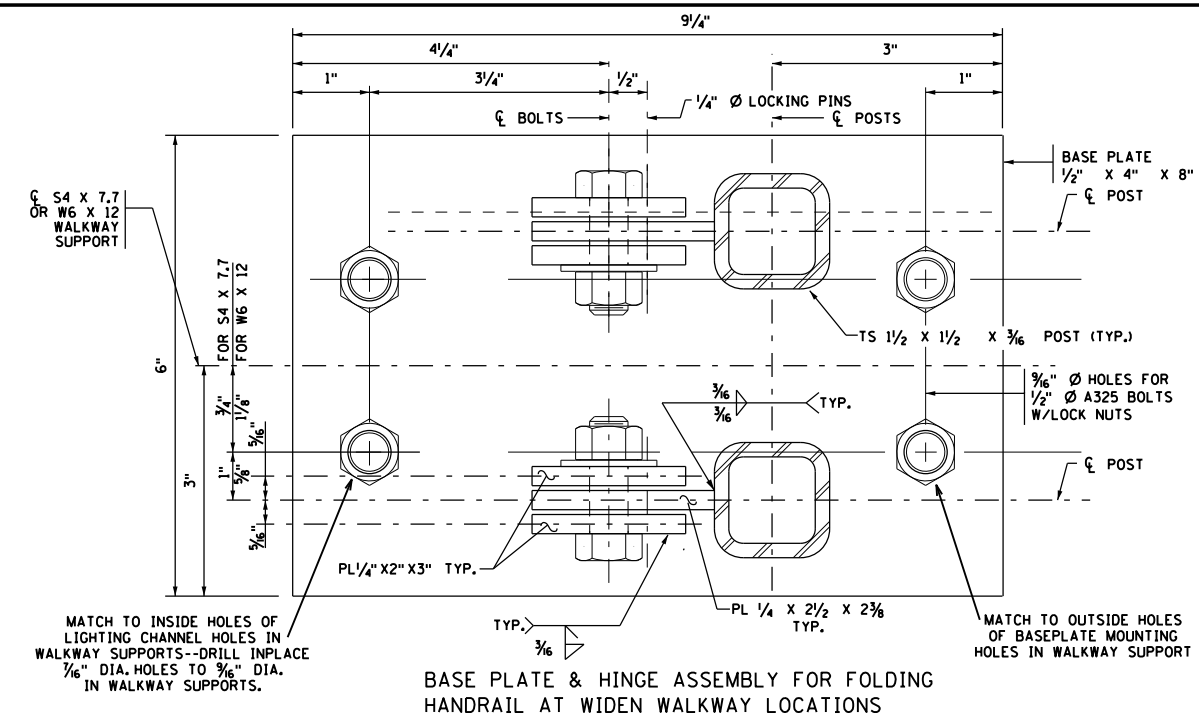
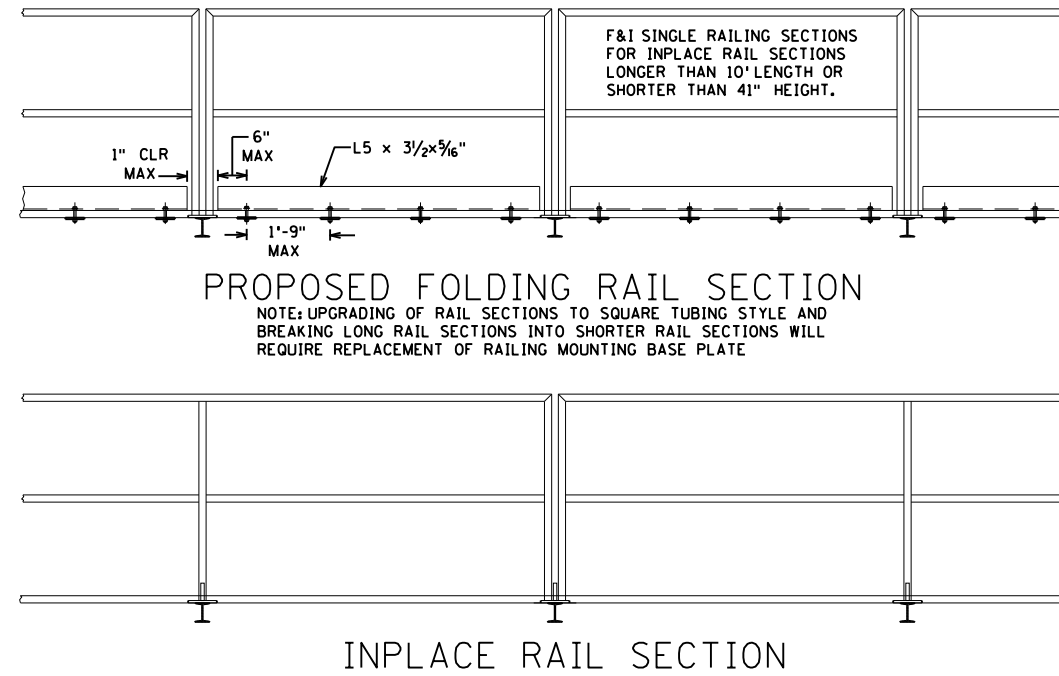
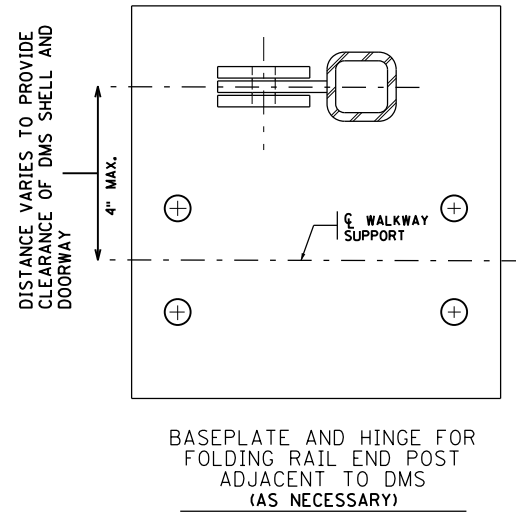
FOLDING HANDRAIL PANELS ARE TO BE CONTINUOUS OVER A MAX. OF TWO WALKWAY SUPPORT SPANS.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING THE LENGTH OF GRATING AND HANDRAIL PANELS REQUIRED FOR BRIDGE MOUNTED SIGNS AND CANTILEVERS WHERE THE SPECIFIED LENGTH DOES NOT AGREE WITH THE DETAILS.

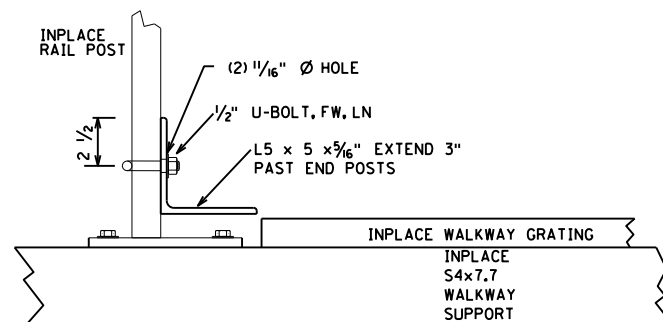
PROVIDE ADEQUATE WEEP HOLES FOR HOT-DIP GALVANIZING.

STANDARD OVERHEAD SIGN SUPPORTS INTERIM DESIGN B
WALKWAY DETAILS
DRAWING ST-8

DISTRICT #: METRO  
 IPLOT NAME: ST DRAWINGS\_STD#15  
 PATH & FILENAME: IP\_PWP\d\3939380\ST DRAWINGS\_STD\*.dgn



OH SIGN-FIXED RAILING TOE  
ANGLE-NEW CONSTRUCTION



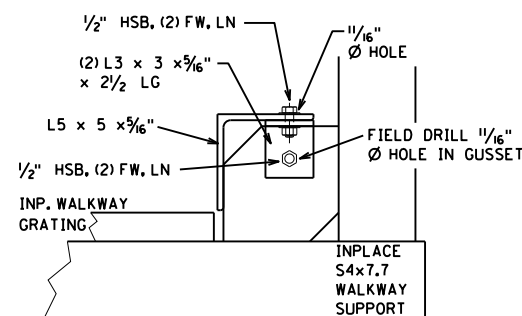
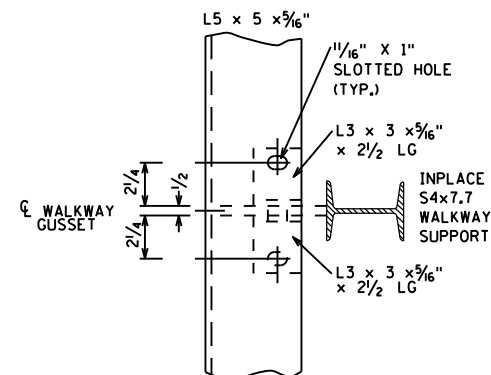
OH SIGN-FIXED RAILING  
TOE ANGLE-RETROFIT

GENERAL NOTES:

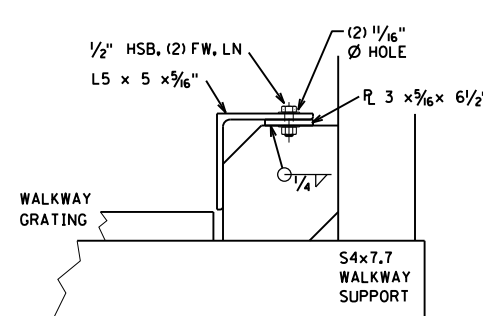
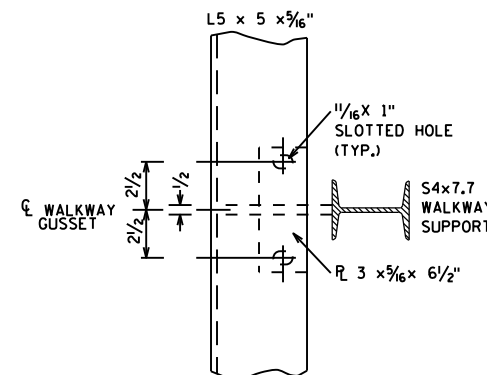
THE CONTRACTOR SHALL BE RESPONSIBLE FOR MEASURING AND VERIFYING THE INDIVIDUAL RAIL, TOE ANGLE AND CURB ANGLE LENGTHS REQUIRED AT EACH SITE FOR INPLACE STRUCTURES PRIOR TO MANUFACTURE.

REAM F&I RAILING SUPPORT BOLT AND LOCKING PIN HOLES AFTER GALVANIZING TO ENSURE BOLT AND PIN FIT. VERIFY FIT AND REAM AS NECESSARY IN FIELD ALL RAILING SUPPORT BOLT AND LOCKING PIN HOLES ON INPLACE RAILING TO REMAIN TO ENSURE BOLT AND PIN FIT.

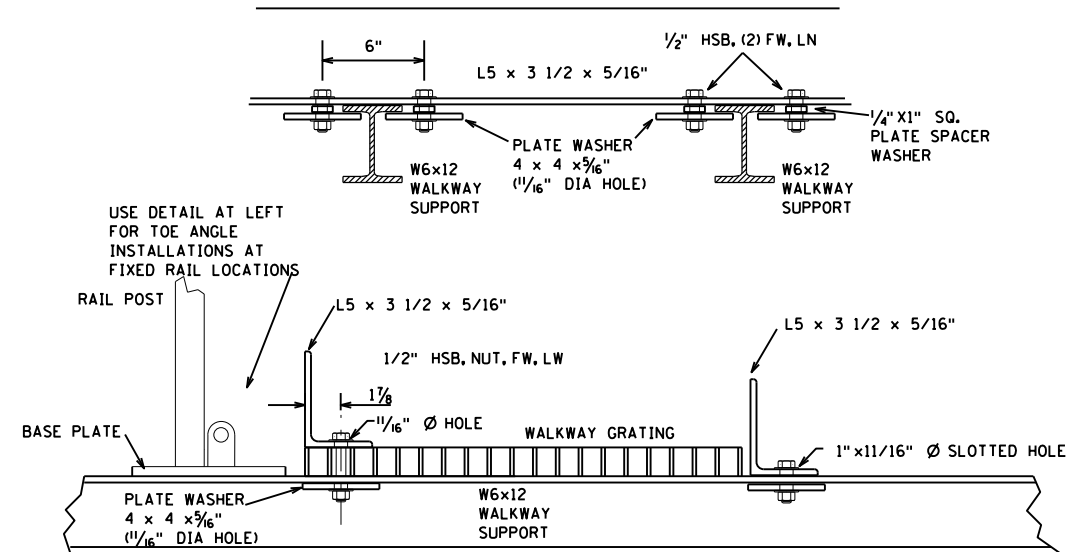
VERIFY & F&I AS NECESSARY  $\frac{3}{4}$ " DIA. DROP-FORGED SHOULDER EYE BOLT W/LOCK WASHER & HEX NUT  
AT SIGN TRUSS LOCATIONS. (HARNES TIE OFF POINT)



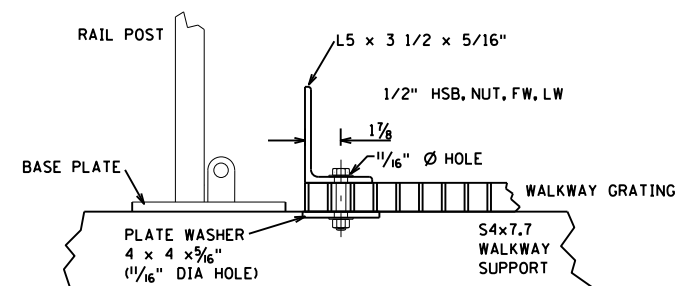
OH SIGN TRUSS SIDE  
CURB ANGLE-RETROFIT



OH SIGN TRUSS SIDE  
CURB ANGLE-NEW CONST.



OH SIGN BRIDGE MOUNT-BRIDGE SIDE  
TOE ANGLE (NEW CONST. OR RETROFIT)



OH SIGN TRUSS-FOLDING  
RAIL TOE ANGLE (NEW  
CONST. OR RETROFIT)

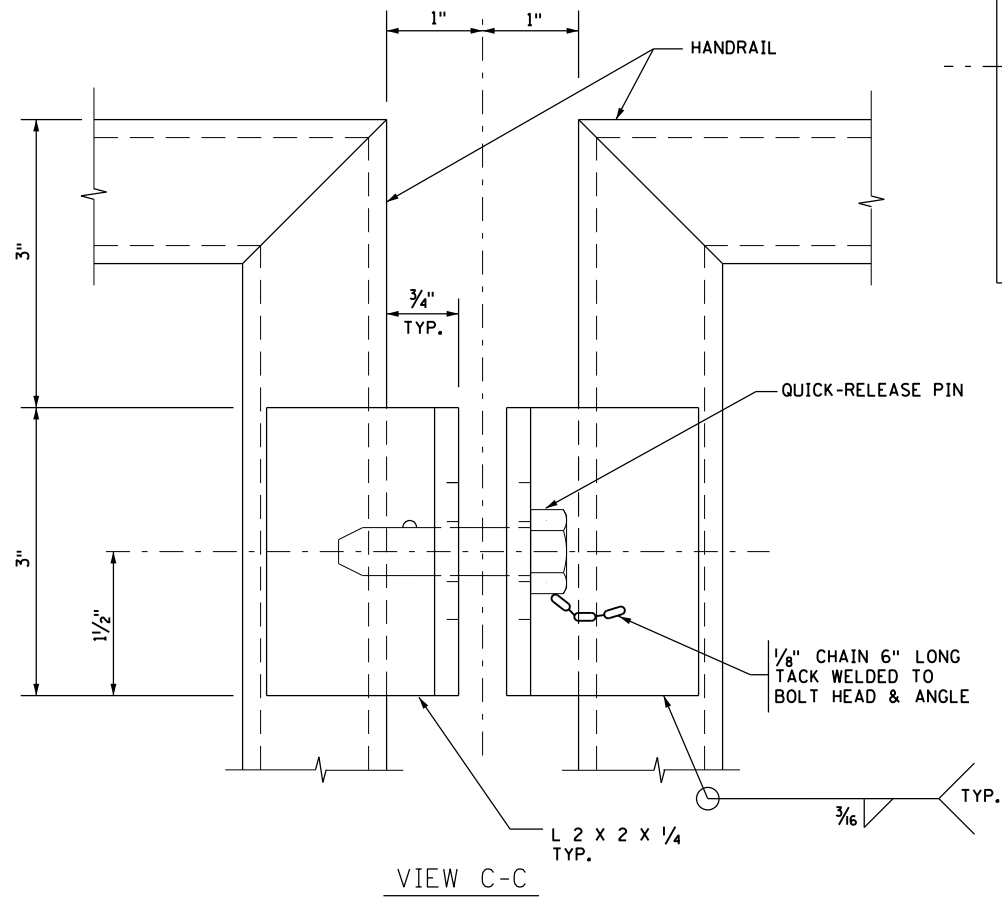
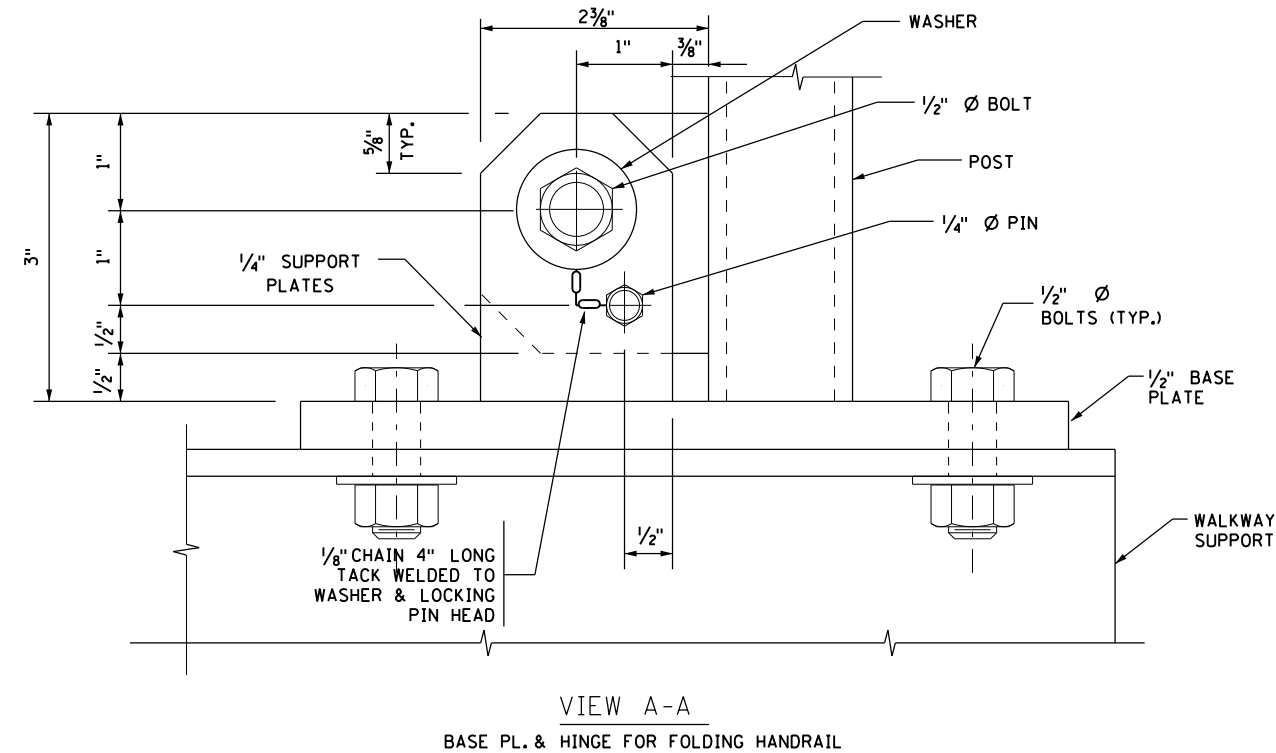
STANDARD OVERHEAD SIGN SUPPORTS  
INTERIM DESIGN BWALKWAY TOE ANGLES-  
NEW CONST. & RETROFIT

DRAWING ST-8A

STATE PROJ. NO.

SHEET NO. OF SHEETS

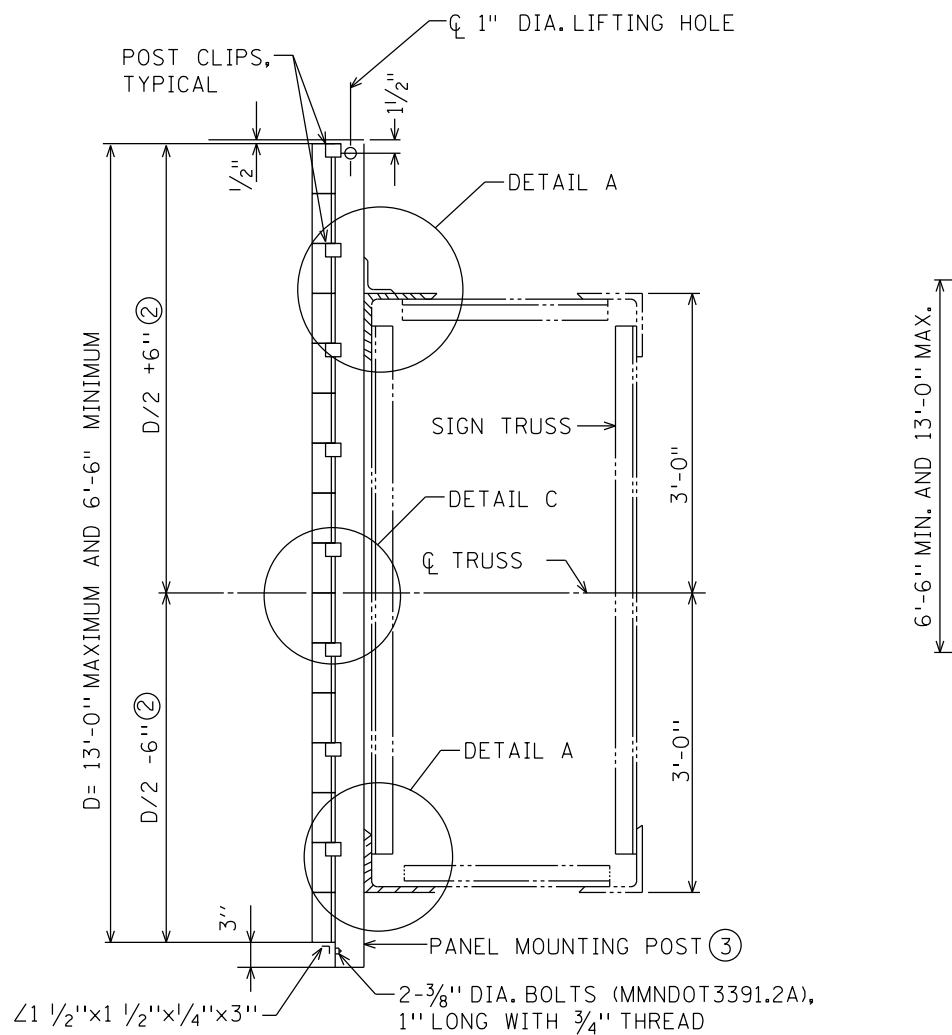
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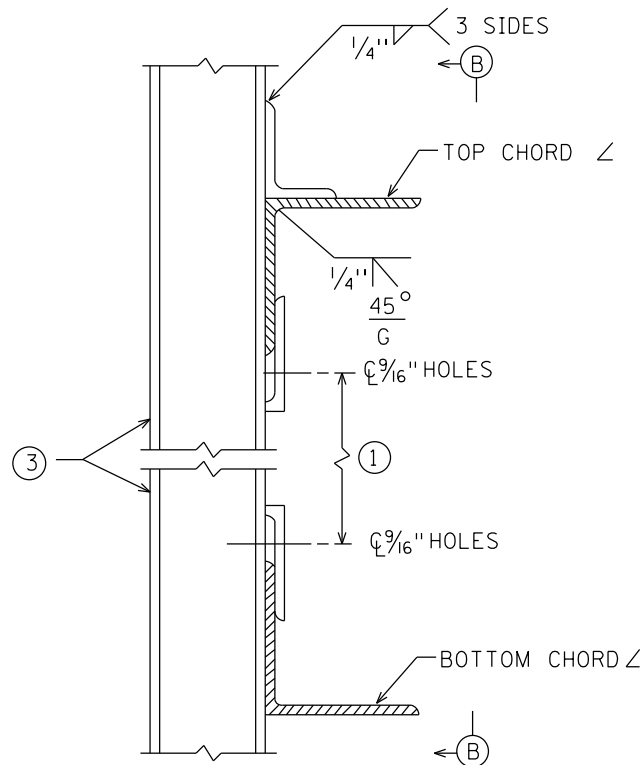
STANDARD OVERHEAD SIGN SUPPORTS INTERIM DESIGN B
FOLDING HANDRAIL
DRAWING ST-9

DISTRICT #: METRO  
IPLOT NAME: ST DRAWINGS STD#11  
PATH & FILENAME: IP\_PWP-d\339380\ST DRAWINGS STD#11.dgn

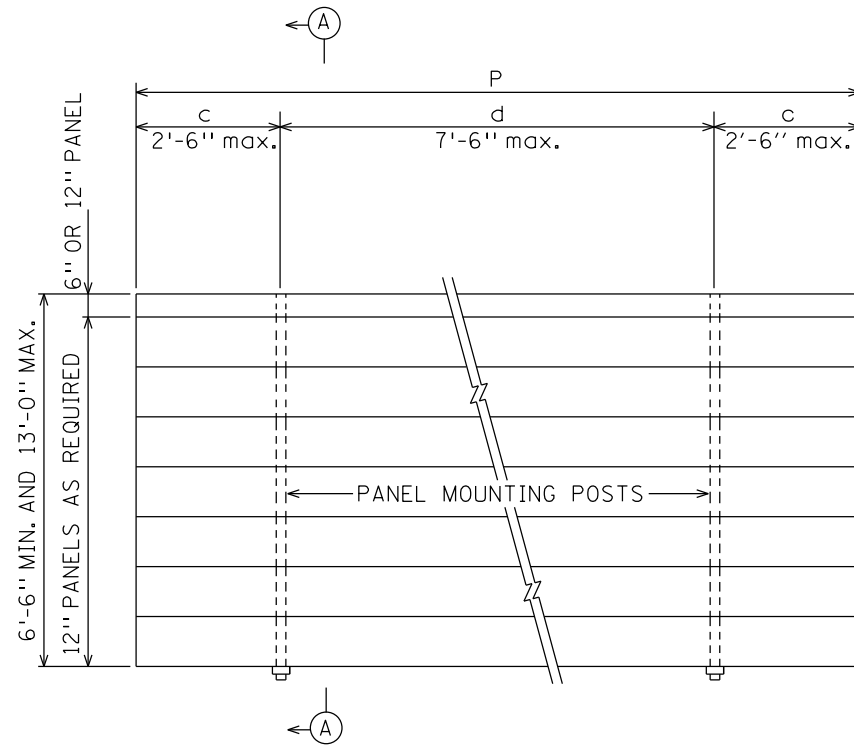
PLOTTED/REVISED: 5/9/2012



SECTION A-A

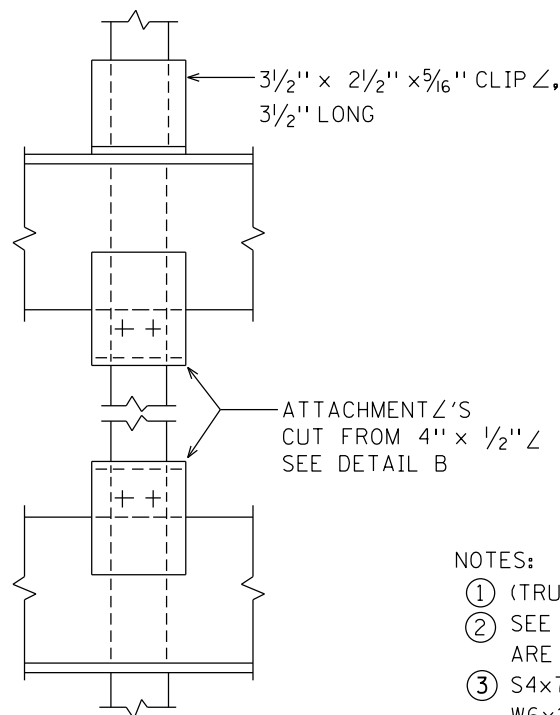


DETAIL A



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.	

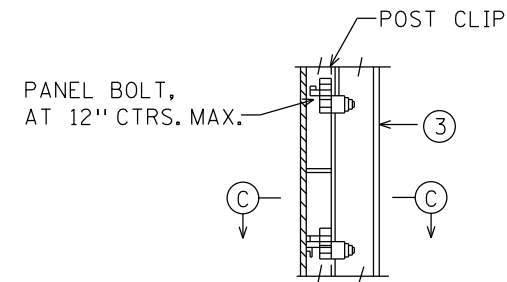
SIGN PANEL ELEVATION



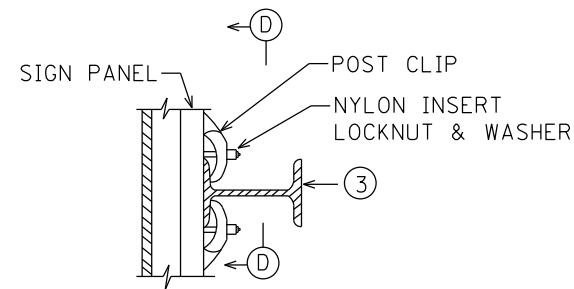
VIEW B-B

NOTES:

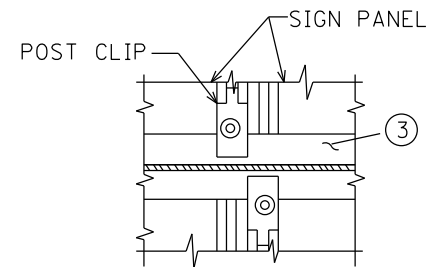
- (1) (TRUSS DEPTH)-(TOP & BOTTOM CHORD LEGS)-1/4"
- (2) SEE NOTE 1 ON ST-1 WHEN STANDARD PANELS AND CMS ARE MOUNTED ON THE SAME SPAN
- (3) S4x7.7 FOR SIGN HEIGHTS ≤ 11'-0"  
W6x12 FOR SIGN HEIGHTS OVER 11'-0"



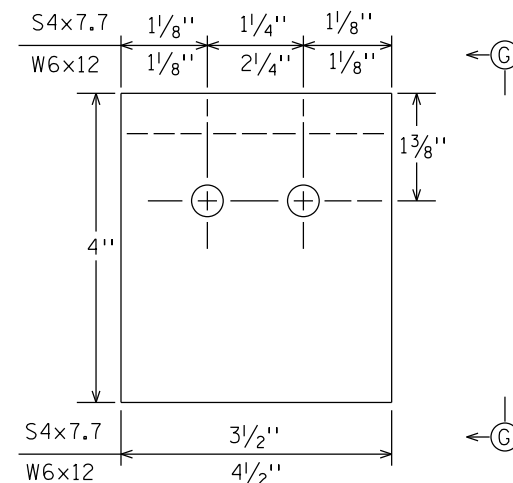
DETAIL C



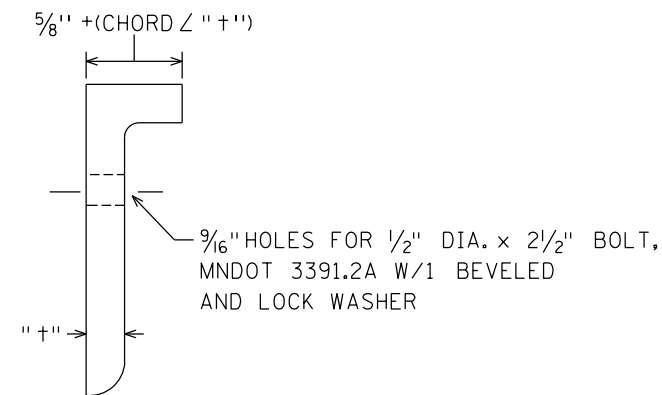
SECTION C



SECTION D-D



DETAIL B



VIEW G-G

STANDARD OVERHEAD SIGN SUPPORTS  
INTERIM DESIGN B

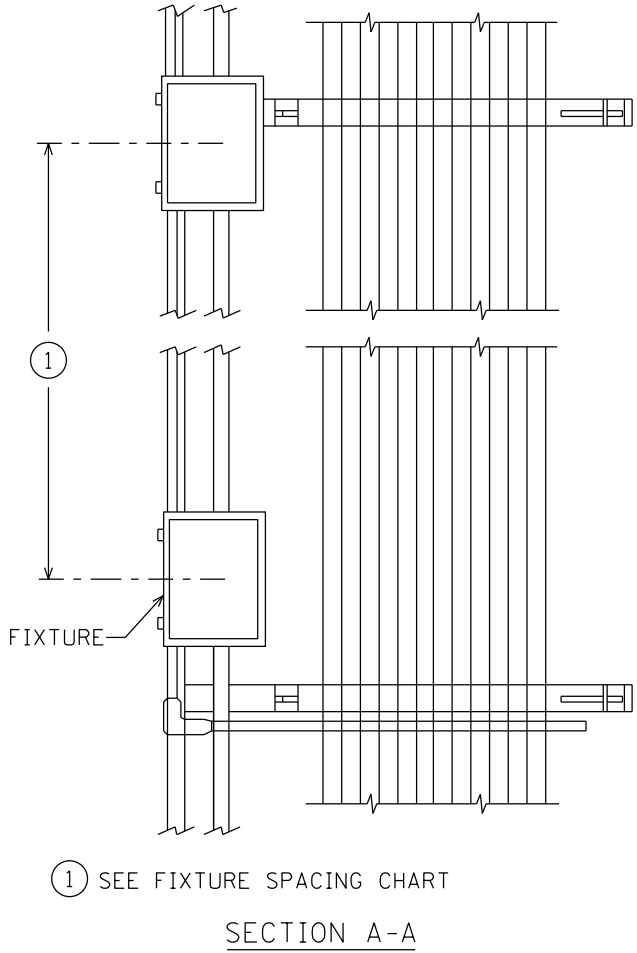
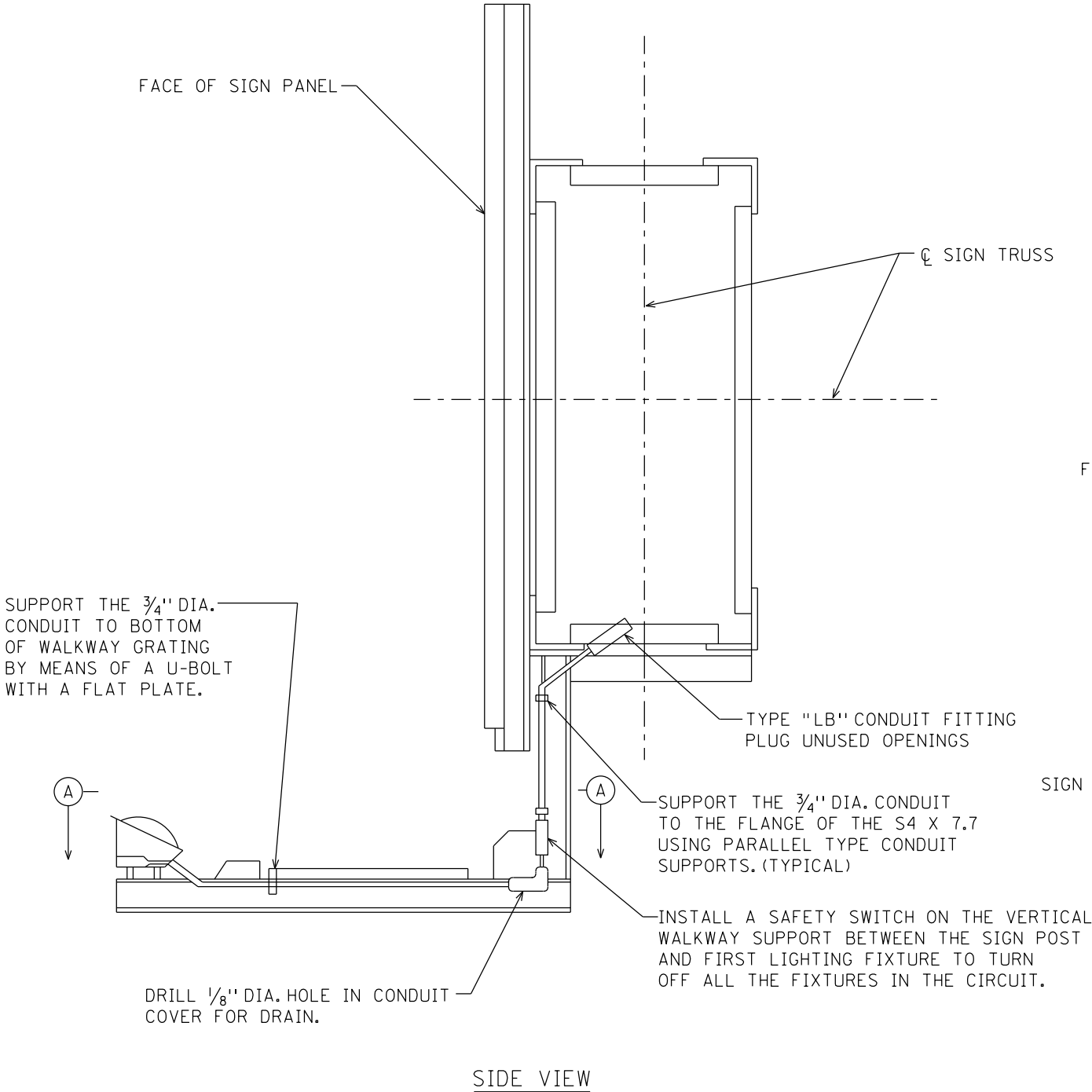
SIGN PANEL AND PANEL  
MOUNTING POST DETAILS

DRAWING ST-10

MOUNTING DETAILS FOR SIGN LIGHTING

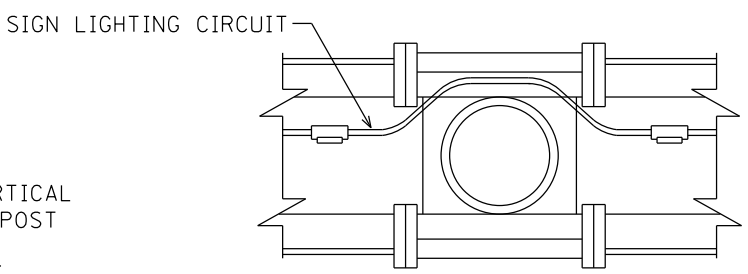
PLOTTED/REVISED: 5/9/2012

DISTRICT #: METRO  
IPLOT NAME: ST DRAWINGS STD#12  
PATH & FILENAME: IP\_PWP-d\339380\ST DRAWINGS STD# dgn

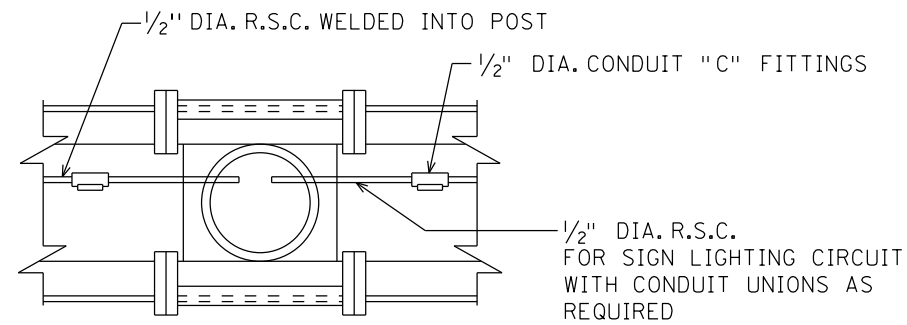


FIXTURE SPACING CHART		
W (PANEL WIDTH)	NUMBER OF FIXTURES	FIXTURE SPACING
9.5' OR LESS	1	
10.0' TO 16.5'	2	W/2
17.0' TO 24.5'	3	W/3
25.0' TO 32.5'	4	W/4
33.0' TO 40.5'	5	W/5
41.0' TO 48.5'	6	W/6
49.0' TO 56.5'	7	W/7
57.0' TO 64.5'	8	W/8
65.0' TO 72.5'	9	W/9
73.0' TO 80.0'	10	W/10

FIXTURES SHALL BE SYMMETRICALLY PLACED WITH RESPECT TO THE SIGN PANEL. SIGN PANELS WHICH ABUT EACH OTHER SHALL BE TREATED AS A SINGLE SIGN PANEL FOR LIGHTING FIXTURE SPACING.



POST WITHOUT HANDHOLES



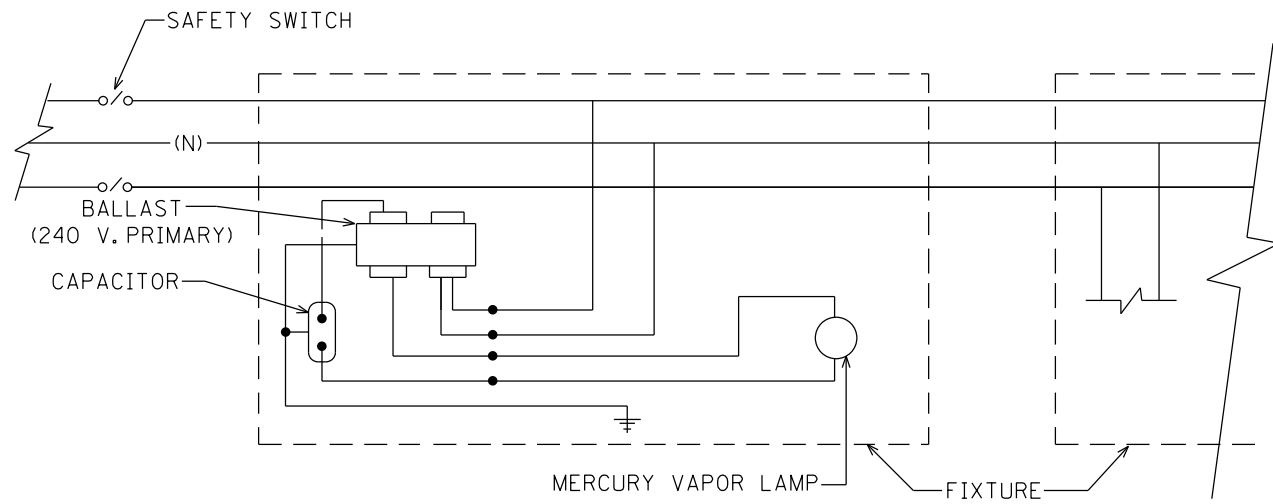
POST WITH HANDHOLES

ELECTRICAL SERVICE CONNECTION FROM POST TO TRUSS

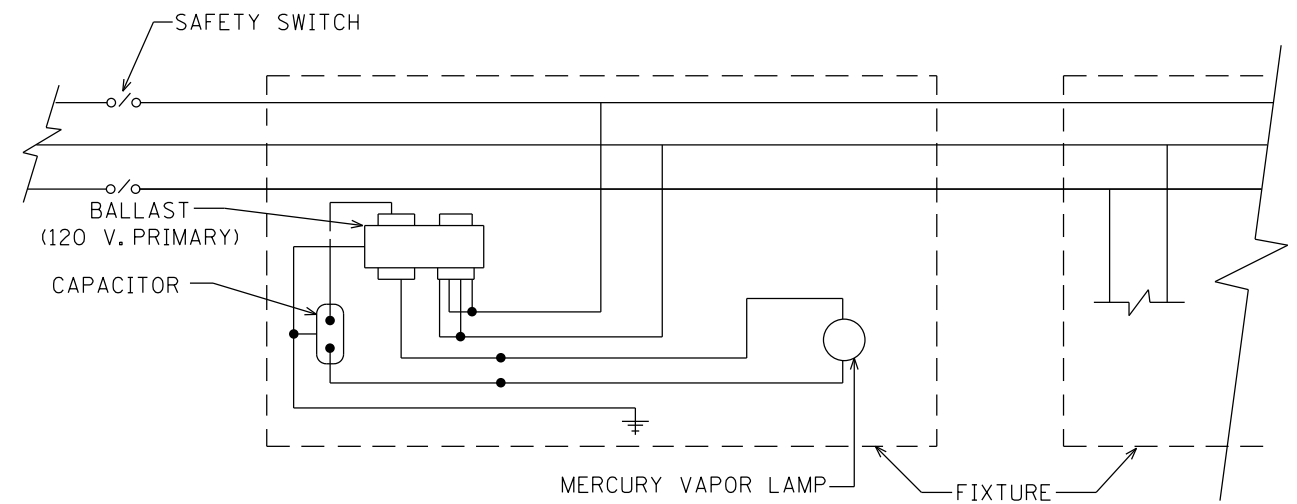
- NOTES:
- SEE SPECIAL PROVISIONS FOR SIGN LIGHTING FIXTURE REQUIREMENTS.
  - HIGH IMPACT RESISTANT POLYCARBONATE SHIELD SHALL BE PROVIDED FOR ALL SIGN LIGHTING FIXTURES INSTALLED ON TYPE OH SIGNS (BRIDGE MOUNTED).
  - WIRING BETWEEN THE SIGN POST AND THE SAFETY SWITCH SHALL BE RUN IN 3/4" R.S.C.

STANDARD OVERHEAD SIGN SUPPORTS INTERIM DESIGN B	
ELECTRICAL DETAILS	
DRAWING	ST-11

PLOTTED/REVISED: 5/9/2012

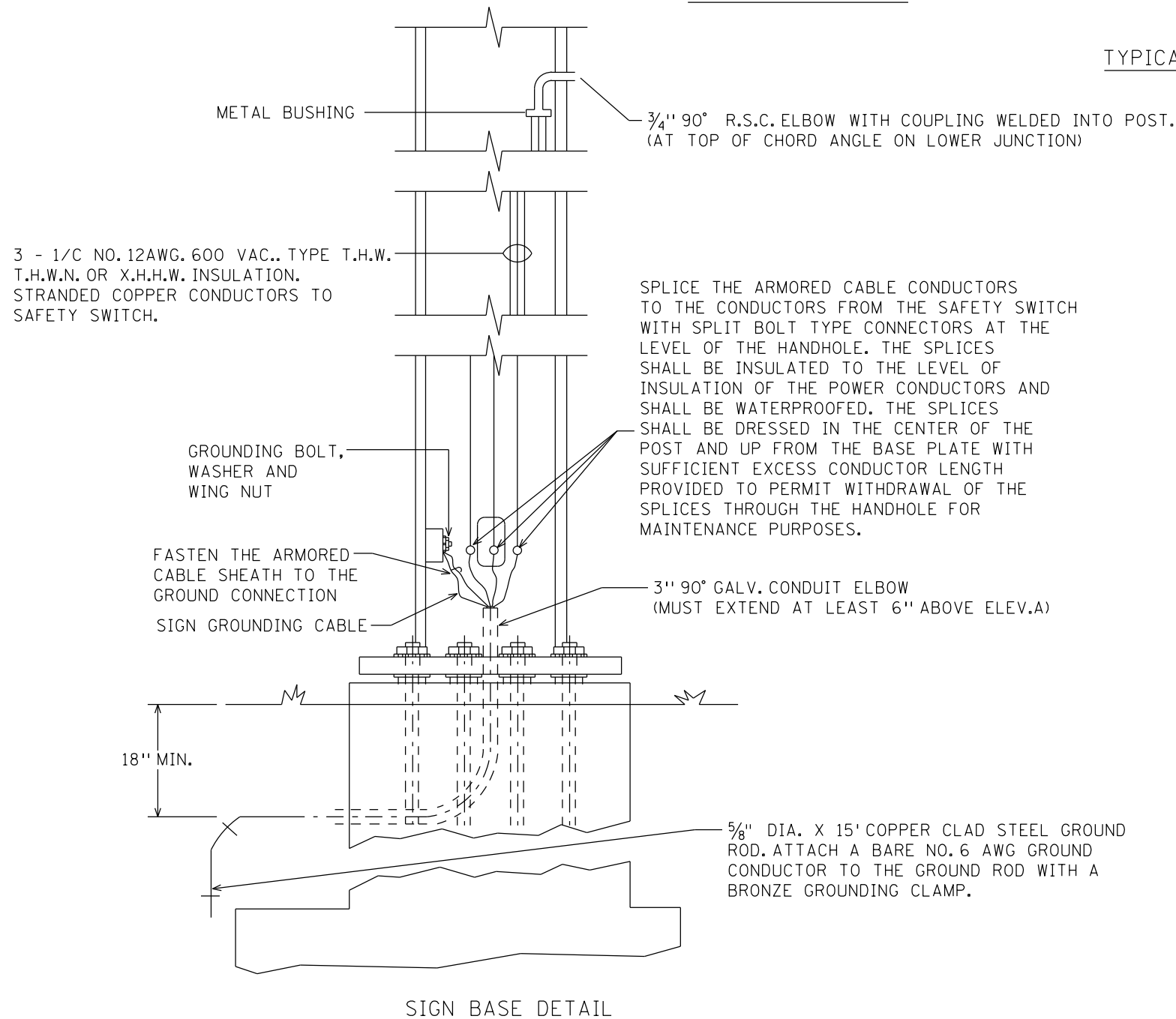


240/480 V. CIRCUIT



120/240 V. CIRCUIT

TYPICAL CIRCUIT DIAGRAMS



ELECTRICAL NOTES:

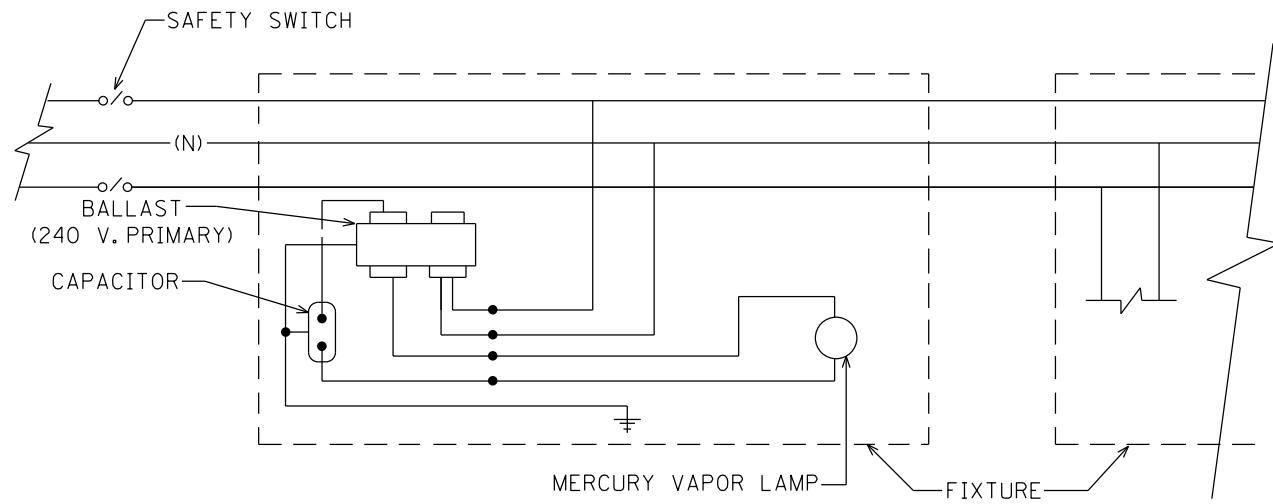
1. WHEN SIGN LIGHTING SYSTEMS HAVE BEEN COMPLETED, THE CONTRACTOR SHALL, WITHOUT FURTHER COMPENSATION, CONDUCT BURNING AND RESISTANCE TESTS FOR FINAL ACCEPTANCE. THE RESISTANCE TO GROUND OF EACH UNGROUNDED CONDUCTOR SHALL BE NOT LESS THAN 8 MEGOHMS.
2. ALL FITTINGS, HUBS, UNIONS, BUSHINGS, ETC. SHALL 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/C 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

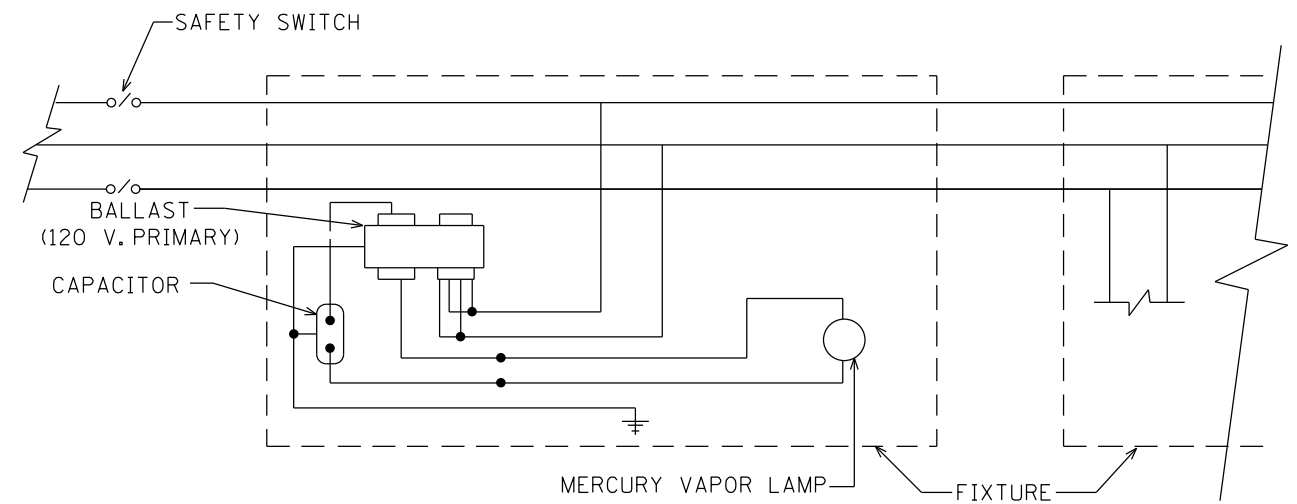
ELECTRICAL DETAILS

DRAWING ST-12

PLOTTED/REVISED: 5/9/2012

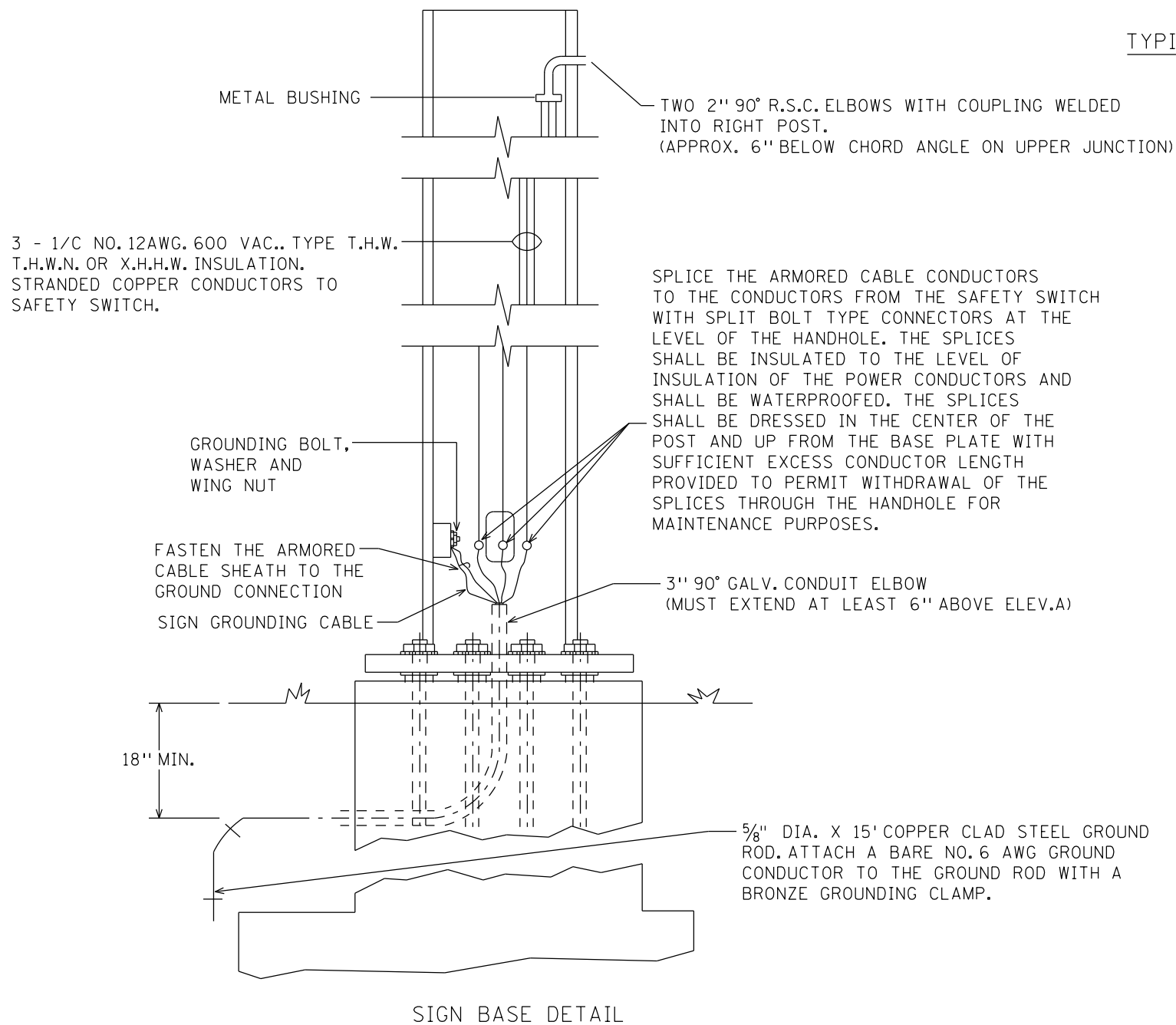


240/480 V. CIRCUIT



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/C 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

MODIFIED  
ELECTRICAL DETAILS

DRAWING ST-13