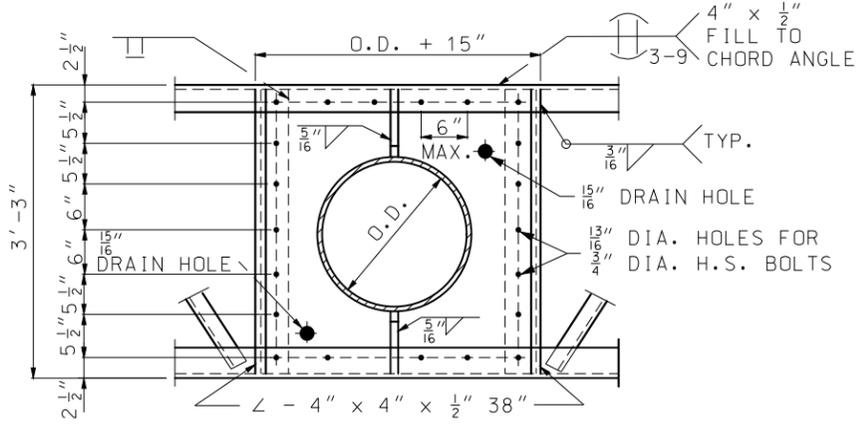
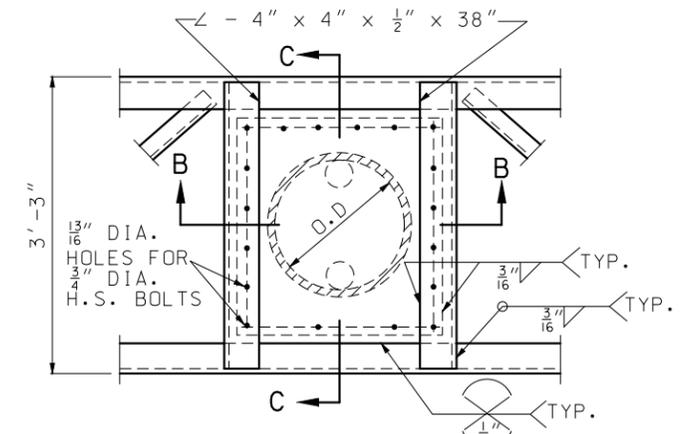


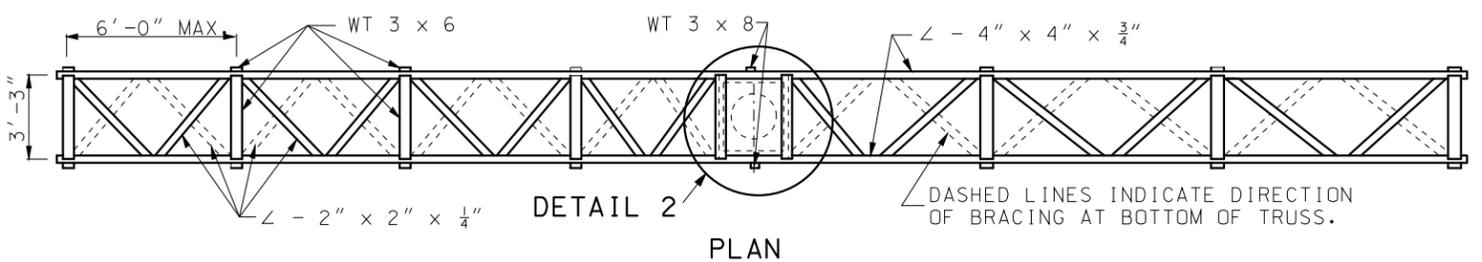
DETAIL 1
TRUSS BOTTOM CONNECTION TO COLUMN



SECTION A-A

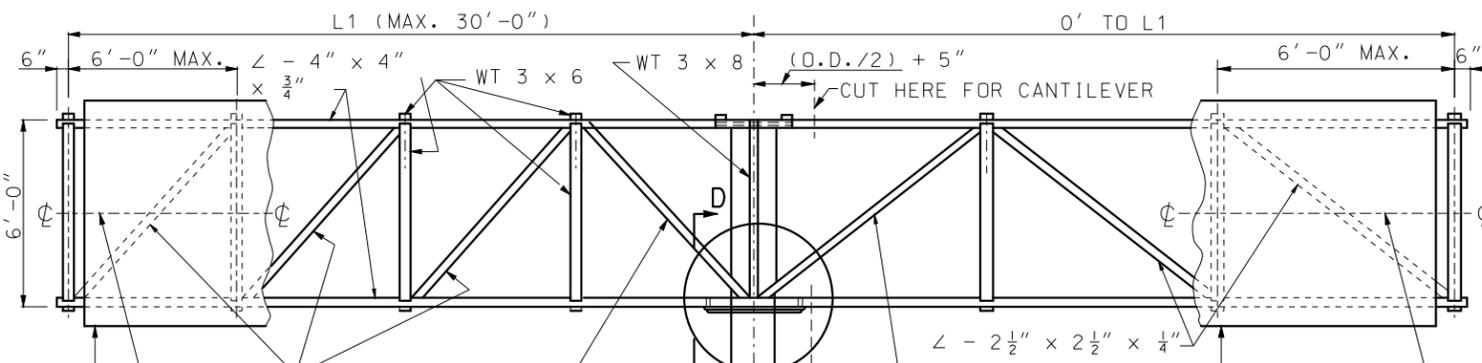


DETAIL 2
TRUSS TOP CONNECTION TO COLUMN

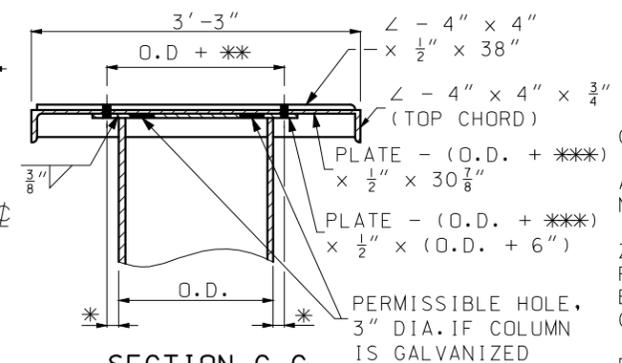


DETAIL 2
PLAN

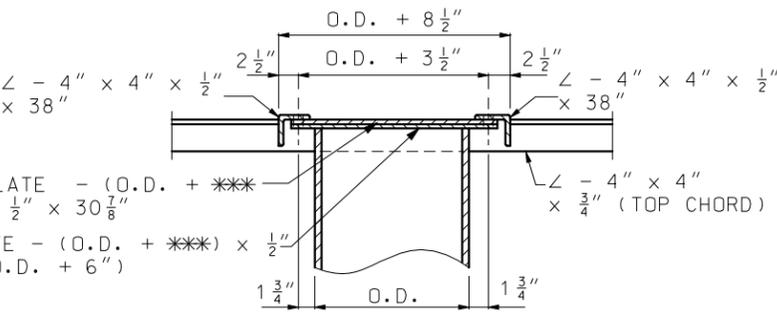
- * 1 1/2" FOR POST TYPE VII
1 3/4" FOR ALL OTHER POST TYPES
- ** 3" FOR POST TYPE VII
3 1/2" FOR ALL OTHER POST TYPES
- *** 5 1/2" FOR POST TYPE VII
6" FOR ALL OTHER POST TYPES



DETAIL 1



SECTION C-C



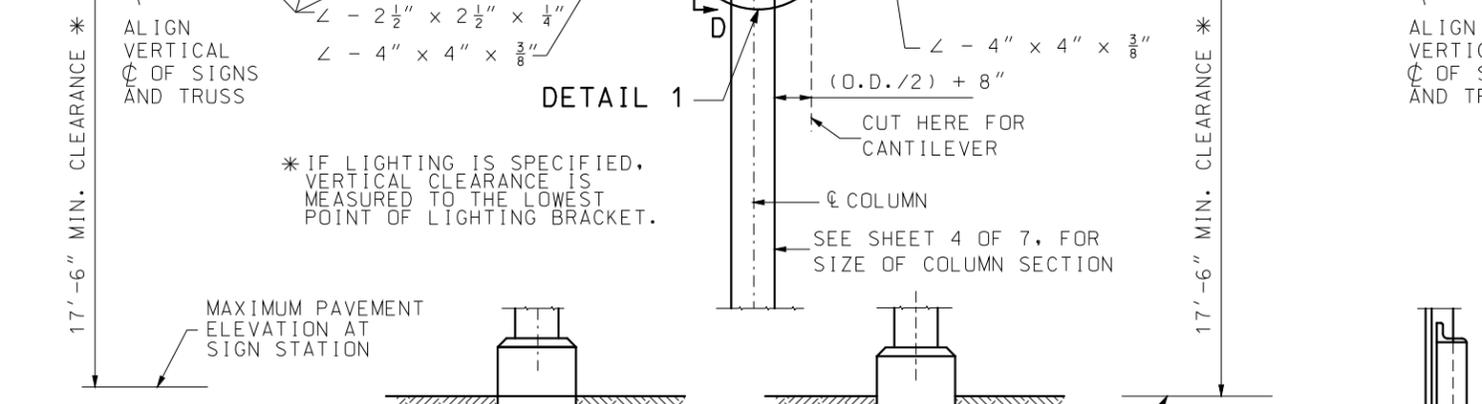
SECTION B-B

GENERAL NOTES:
ALL FASTENERS SHALL HAVE A HARDENED WASHER UNDER THE NUT OR BOLT HEAD, WHICHEVER IS TURNED IN TIGHTENING.
ZINC CHROMATE PRIMER SHALL MEET THE REQUIREMENTS OF FEDERAL SPECIFICATION TT-P-645 OR TT-P-1757 AND SHALL BE ACCEPTED ON THE BASIS OF THE LABEL SHOWING CONFORMANCE OR A MANUFACTURER'S CERTIFICATION.

DESIGN OF STRUCTURAL SUPPORTS SHALL COMPLY WITH AASHTO STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES AND TRAFFIC SIGNALS 2001 AND CURRENT INTERIMS.

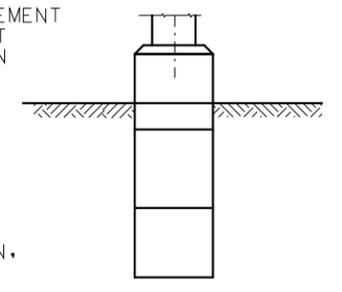
DESIGN OF SPREAD FOOTINGS SHALL COMPLY WITH 1994 AASHTO STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES AND TRAFFIC SIGNALS.

ALL SIGNS SHALL BE CENTERED VERTICALLY ABOUT THE HORIZONTAL ϕ OF THE TRUSS.

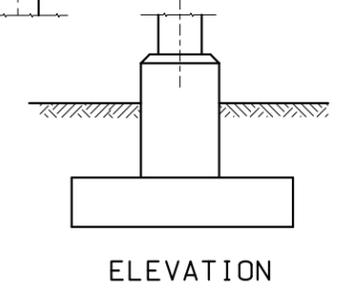


DETAIL 1

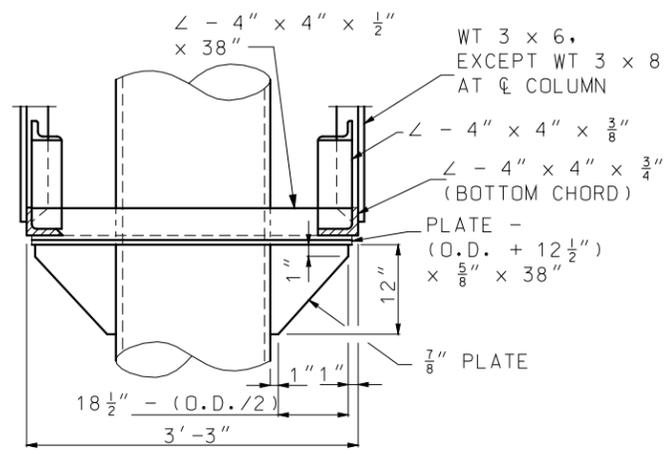
NOTE:
TRUSSES AND COLUMN BASE PLATES: ASTM A36. ANCHOR BOLTS: ASTM A307.
FOR ADDITIONAL INFORMATION, SEE DATA SHEET.



ELEVATION
DRILLED SHAFT OPTION



ELEVATION
SPREAD FOOTING OPTION



SECTION D-D

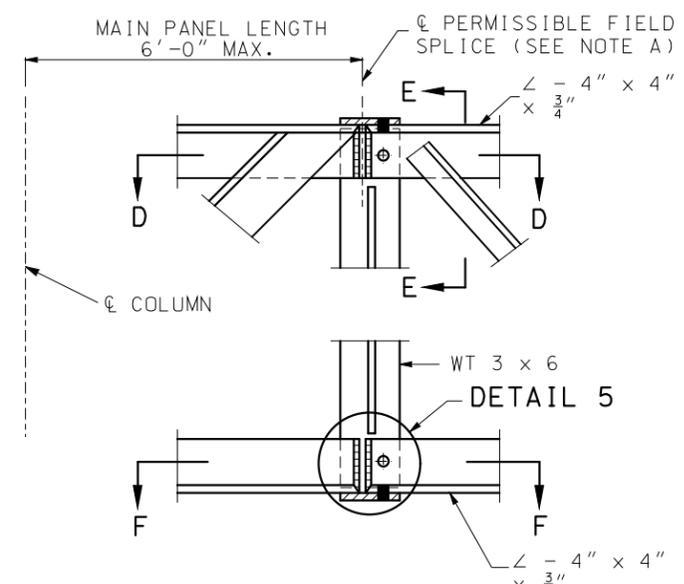
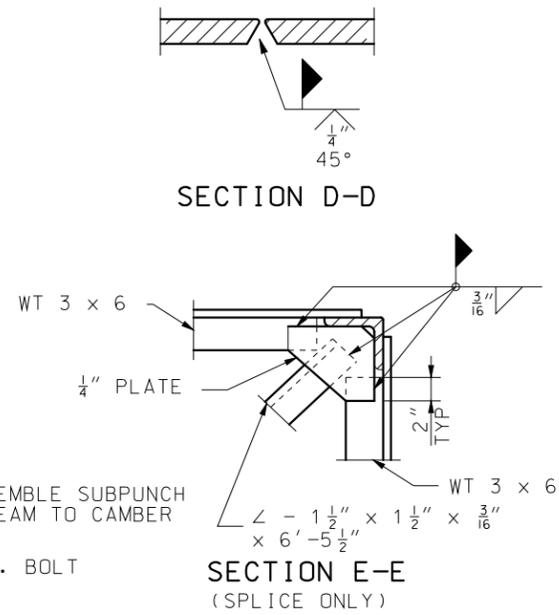
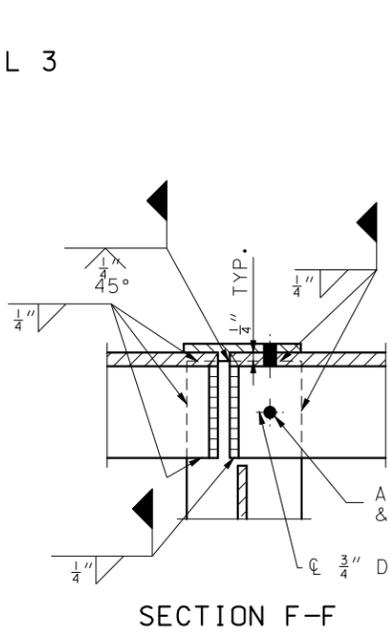
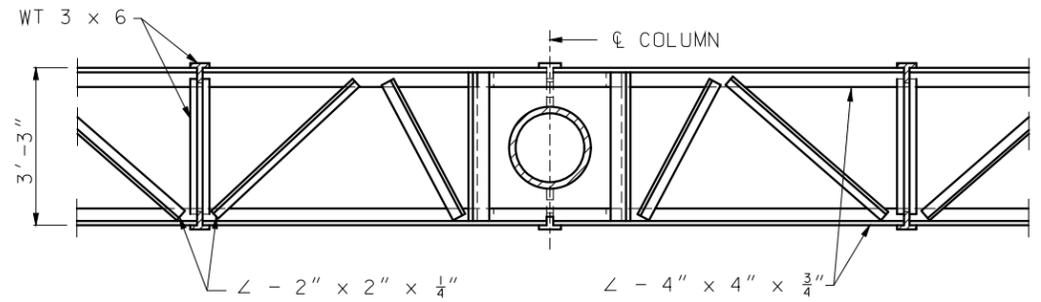
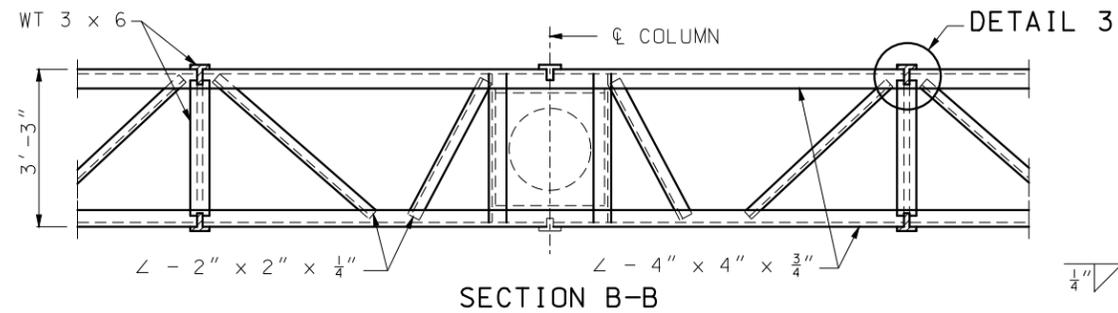
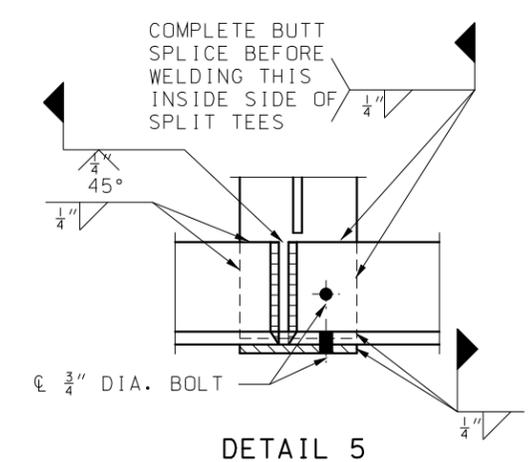
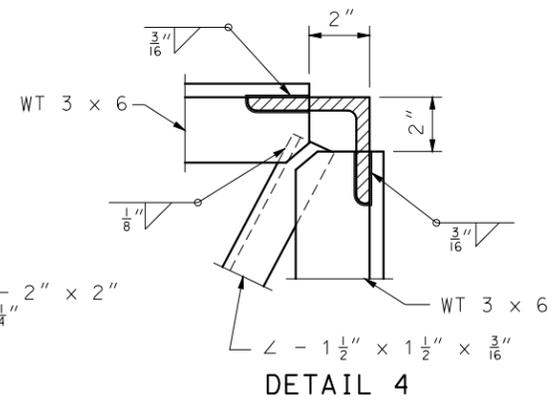
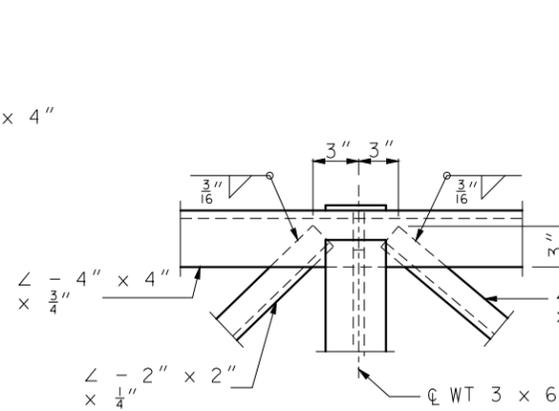
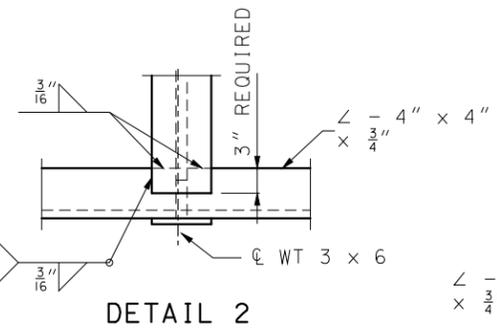
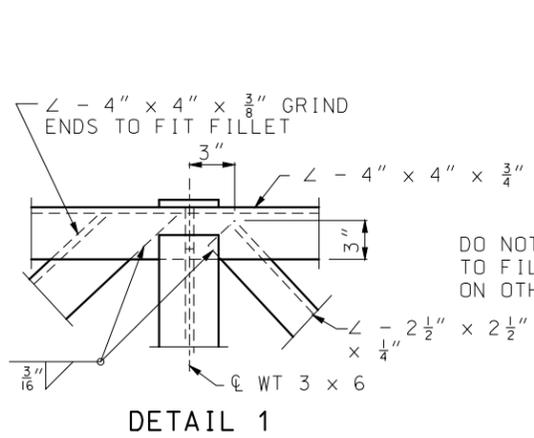
MoDOT MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

STATE OF MISSOURI
ELEEN H. RACKERS
NUMBER PE-28336
PROFESSIONAL ENGINEER
THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.

OVERHEAD SIGN TRUSSES
BUTTERFLY AND CANTILEVER
STRUCTURAL STEEL

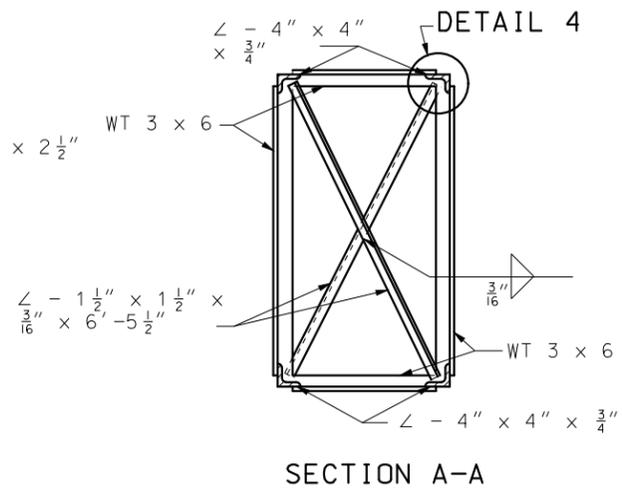
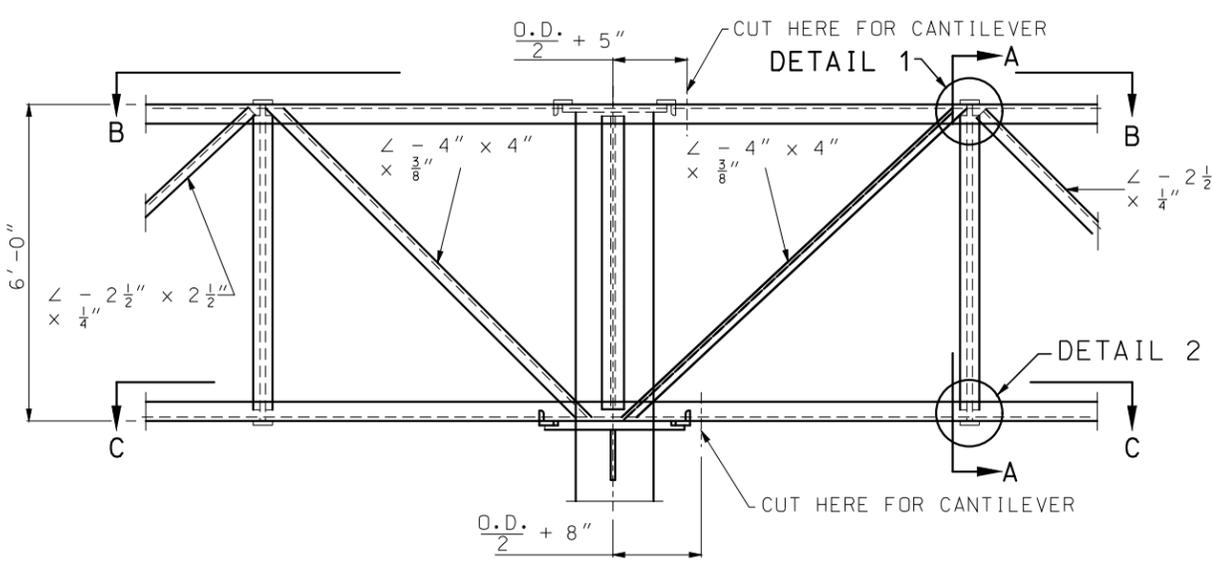
DATE EFFECTIVE: 10-01-2016	903.12Z	SHEET NO. 1 OF 7
DATE PREPARED: 8/11/2016		

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.



NOTE: 3/4" DIA. BOLTS SHALL BE REMOVED AFTER WELDING IS COMPLETE. BOLT HOLES SHALL BE PLUGGED AND THE OUTSIDE FACE GROUND SMOOTH.

NOTE A: SPLICING CHORD ANGLES IN THE SHOP AND THE FIELD SPLICE SHOWN IN THIS SHEET WILL NOT BE ALLOWED WITHOUT SPECIAL PERMISSION. IF PERMISSION IS GRANTED SUCH SPLICES SHALL BE LOCATED AT THE CENTER LINE OF MAIN PANEL POINT NEXT TO COLUMN.



NOTE: SHRINK L - 1 1/2" x 1 1/2" x 3/16" IF NECESSARY TO TAKE UP DISTORTIONAL SLACK.

PART ELEVATION OF BUTTERFLY TRUSS

		MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION	
		105 WEST CAPITOL JEFFERSON CITY, MO 65102 1-888-ASK-MODOT (1-888-275-6636)	
		OVERHEAD SIGN TRUSSES BUTTERFLY & CANTILEVER STRUCTURAL STEEL	
DATE EFFECTIVE: 10-01-2016 DATE PREPARED: 8/11/2016	903.12Z	SHEET NO. 2 OF 7	

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

DRILLED SHAFT OPTION																									ALTERNATE PEDESTALS						
POST TYPE	PIPE COLUMN		"E"	SPLIT	BASE PLATE SIZE**	ANCHOR BOLT		C	FA	FB	FC	FD	FH	COLLAR REINFORCEMENT						SHAFT REINFORCEMENT				REBAR TOTAL (LBS.)	CONCRETE (CU.YDS.)	REBAR TOTAL (LBS.)		CONCRETE (CU.YDS.)			
	O.D.	WEIGHT (LBS.)				NO.	DIA.							MOMENT-C1		SHEAR-C2		SKIN-C3		LONGITUDINAL S1		SHEAR-S2				REBAR TOTAL (LBS.)	CONCRETE (CU.YDS.)	TYPE A	TYPE C	TYPE A	TYPE C
														BARS	SPACING	BARS	SPACING	BARS	SPACING	QUANTITY	BARS	BARS	SPACING								
III	18"	93.45	8 1/2"	0"	2'-8" x 2'-8" x 1 3/4"	10	2"	2'-10"	4'-0"	7'-6"	1'-6"	4'-6"	14'-0"	#6	6"	#4	12"	#4	12"	19	#10	#5	6"	2126	12.4	2066	2077	13.4	14.5		
IV	20"	104.13	8 1/2"	0"	2'-10" x 2'-10" x 2"	10	2 1/4"	3'-0"	4'-0"	7'-6"	1'-6"	4'-6"	14'-0"	#6	6"	#4	12"	#4	12"	19	#10	#5	6"	2126	12.4	2066	2077	13.5	14.6		
V	18"	93.45	8 1/2"	7"	3'-3" x 2'-8" x 2"	10	2 1/4"	2'-10"	5'-0"	13'-6"	4'-0"	5'-6"	17'-0"	#6	6"	#4	12"	#4	12"	22	#11	#6	6"	3901	26.5	3763	3782	28.8	30.7		
VI	20"	104.13	8 1/2"	8"	3'-6" x 2'-10" x 2 1/4"	10	2 1/4"	3'-0"	5'-0"	14'-0"	4'-0"	6'-0"	18'-0"	#6	6"	#4	12"	#4	12"	27	#11	#6	6"	4742	31.8	4528	4547	34.1	36.2		
VII	24"	125.49	9"	8"	3'-10" x 3'-2" x 2 1/4"	10	2 1/2"	3'-4"	5'-0"	14'-0"	4'-0"	6'-0"	18'-0"	#6	6"	#4	12"	#4	12"	27	#11	#6	6"	4742	31.8	4528	4547	34.5	36.8		

SPREAD FOOTING OPTION																								
POST TYPE	PIPE COLUMN		"E"	SPLIT	BASE PLATE SIZE**	ANCHOR BOLT		PEDESTAL SIZE *		FOOTING SIZE *	LONGITUDINAL FOOTING REINFORCEMENT				PEDESTAL REINFORCEMENT				REBAR TOTAL (LBS.)	CONCRETE (CU.YDS.)				
	O.D.	WEIGHT (LBS.)				NO.	DIA.	a	b		TOP		BOTTOM											
											NO.	BARS	NO.	BARS	NO.	BARS	NO.	BARS			NO.	BARS		
III	18"	93.45	8 1/2"	0"	2'-8" x 2'-8" x 1 3/4"	10	2"	4'-2"	3'-8"	10'-0" x 13'-0"	10	#5	10	#5	10	#4	14	#8	695	14.4				
IV	20"	104.13	8 1/2"	0"	2'-10" x 2'-10" x 2"	10	2 1/4"	4'-4"	3'-10"	10'-0" x 14'-0"	10	#5	10	#5	10	#4	14	#8	733	15.6				
V	18"	93.45	8 1/2"	7"	3'-3" x 2'-8" x 2"	10	2 1/4"	4'-9"	3'-8"	9'-0" x 17'-0"	9	#5	10	#7	10	#4	14	#8	955	16.5				
VI	20"	104.13	8 1/2"	8"	3'-6" x 2'-10" x 2 1/4"	10	2 1/4"	5'-0"	3'-10"	9'-0" x 19'-0"	9	#5	10	#7	10	#4	14	#8	1028	18.4				
VII	24"	125.49	9"	8"	3'-10" x 3'-2" x 2 1/4"	10	2 1/2"	5'-4"	4'-2"	10'-0" x 20'-0"	9	#5	12	#7	10	#4	14	#8	1196	21.5				

SPREAD FOOTING OPTION WITH ALTERNATE PEDESTALS																															
POST TYPE	PIPE COLUMN		"E"	SPLIT	BASE PLATE SIZE**	ANCHOR BOLT		PEDESTAL SIZE *			FOOTING SIZE *	TYPE A LONGITUDINAL FOOTING REINFORCEMENT				TYPE A PEDESTAL REINFORCEMENT				TYPE A REBAR TOTAL (LBS.)	TYPE A CONCRETE (CU.YDS.)	TYPE C LONGITUDINAL FOOTING REINFORCEMENT				TYPE C PEDESTAL REINFORCEMENT				TYPE C REBAR TOTAL (LBS.)	TYPE C CONCRETE (CU.YDS.)
	O.D.	WEIGHT (LBS.)				NO.	DIA.	c	d	e		TOP		BOTTOM								TOP		BOTTOM							
												NO.	BARS	NO.	BARS	NO.	BARS	NO.	BARS			NO.	BARS	NO.	BARS	NO.	BARS	NO.	BARS		
III	18"	93.45	8 1/2"	0"	2'-8" x 2'-8" x 1 3/4"	10	2"	2'-10"	6'-6"	15"	10'-0" x 13'-0"	10	#5	10	#5	10	#4	14	#8	757	14.4	10	#4	10	#5	12	#4	14	#8	800	15.3
IV	20"	104.13	8 1/2"	0"	2'-10" x 2'-10" x 2"	10	2 1/4"	3'-0"	6'-9"	18"	10'-0" x 14'-0"	10	#5	10	#5	10	#4	14	#8	795	15.6	10	#4	10	#5	12	#4	14	#8	839	16.5
V	18"	93.45	8 1/2"	7"	3'-3" x 2'-8" x 2"	10	2 1/4"	2'-10"	7'-0"	12"	9'-0" x 17'-0"	9	#5	10	#7	10	#4	14	#8	1015	16.5	10	#4	10	#7	12	#4	14	#8	1059	17.5
VI	20"	104.13	8 1/2"	8"	3'-6" x 2'-10" x 2 1/4"	10	2 1/4"	3'-0"	7'-6"	15"	9'-0" x 19'-0"	9	#5	10	#7	10	#4	14	#8	1099	18.4	10	#4	10	#7	12	#4	14	#8	1134	19.5
VII	24"	125.49	9"	8"	3'-10" x 3'-2" x 2 1/4"	10	2 1/2"	3'-4"	7'-10"	15"	10'-0" x 20'-0"	9	#5	12	#7	10	#4	14	#8	1257	21.5	10	#4	12	#7	12	#4	14	#8	1302	22.6

* BASE PLATES, PEDESTAL AND FOOTINGS, LONGER SIDES SHALL BE NORMAL TO AXIS OF SIGN.
 ** BASE PLATES, PEDESTAL AND FOUNDATIONS, LONGER SIDES SHALL BE NORMAL TO AXIS OF SIGN.



MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

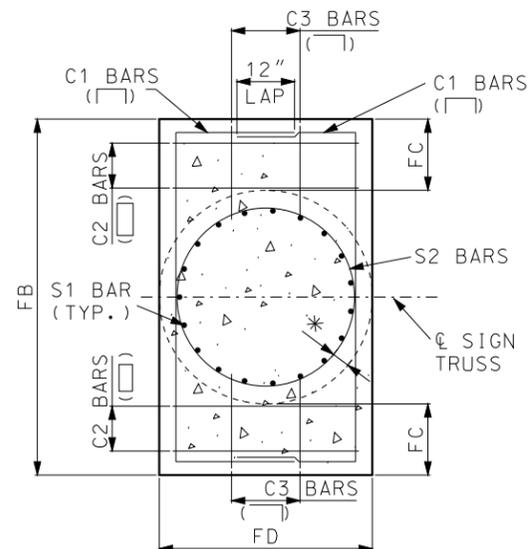
OVERHEAD SIGN TRUSSES
OPTIONAL SUBSTRUCTURE DATA



THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.

DATE EFFECTIVE: 10-01-2016	903.12Z	SHEET NO. 4 OF 7
DATE PREPARED: 8/11/2016		

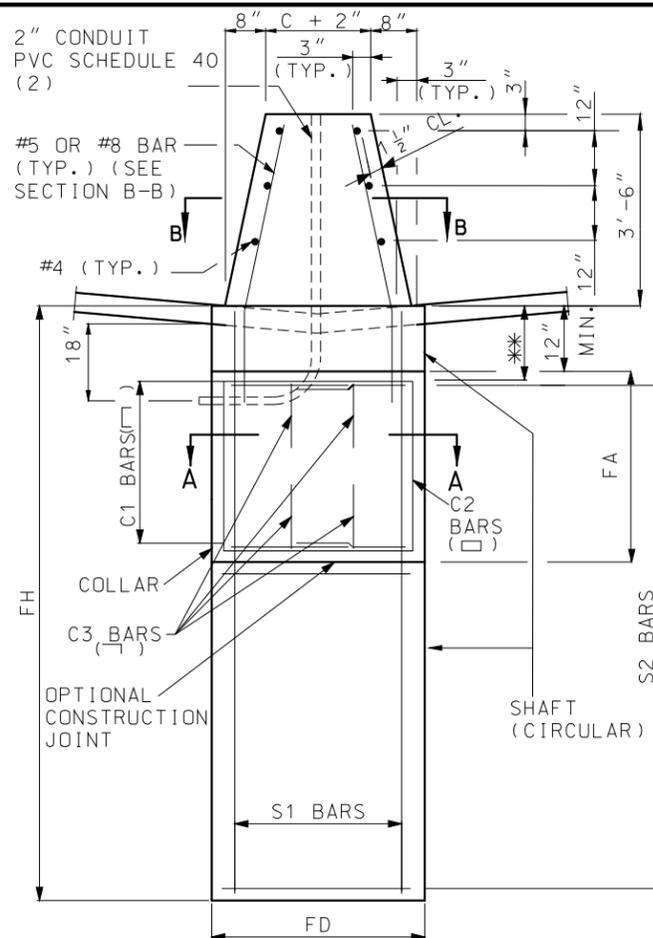
IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.



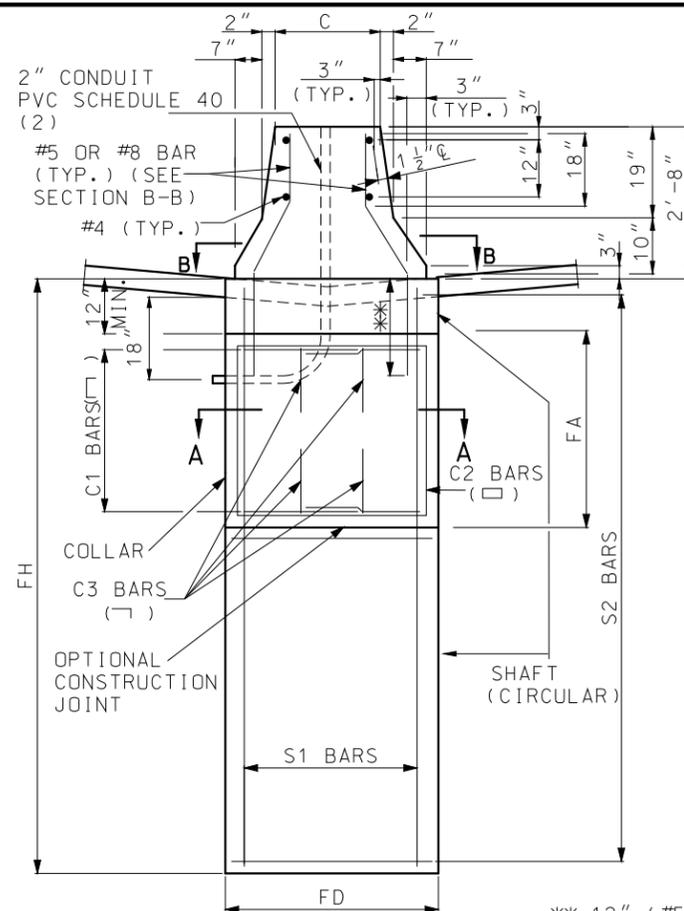
SECTION A-A
(TYPICAL SECTION SHOWING REINFORCING STEEL)

* 4" CLEAR FOR FD = 4'-6"
6" CLEAR FOR FD > 4'-6"

VERTICAL LEG OF C3 SHALL BE PLACED INSIDE SHAFT S2 BARS.

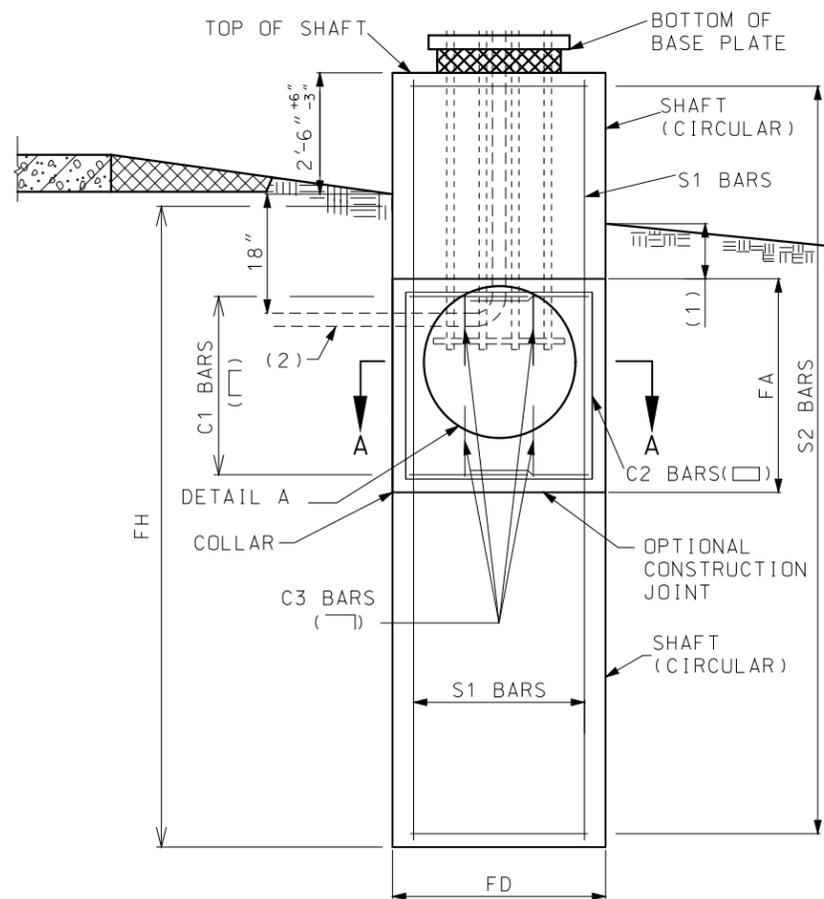


PART ELEVATION
(TYPE C CONCRETE TRAFFIC BARRIER)



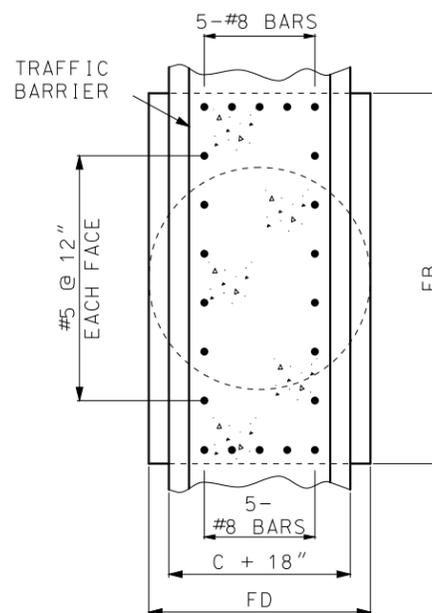
PART ELEVATION
(TYPE A CONCRETE TRAFFIC BARRIER)

** 12" (#5 BAR)
2'-4" (#8 BAR)



ELEVATION

DETAILS OF ALTERNATE PEDESTAL
(TO BE USED ADJACENT TO TYPE A OR TYPE C MEDIAN BARRIER)



SECTION B-B

BACKFILL SHALL BE IN PLACE PRIOR TO ERECTION OF POST

- (1) 12" MIN. TO 24" MAX.
- (2) 2" CONDUIT IN THE CONCRETE PEDESTAL SHALL BE PVC SCHEDULE 40 AND SHALL BE PLACED WITH A MINIMUM BEND RADIUS OF 9 1/2"

GENERAL NOTES:

SHAFT AND COLLAR SHALL BE CLASS B (P.C.C.).

MINIMUM CLEARANCE TO REINFORCEMENT IS 3" EXCEPT AS SHOWN.

WHEN ROCK IS ENCOUNTERED AT A DEPTH NOT EXCEEDING "FH"/2 FOR FD > 3'-0" OR "FH"/4 FOR FD ≤ 3'-0", THE DIMENSION "FH" MAY BE ADJUSTED TO A MINIMUM OF 3 X "FD", SUBJECT TO APPROVAL BY THE ENGINEER.

CONTACT THE ENGINEER IF WATER TABLE IS ENCOUNTERED DURING EXCAVATION.

PIPE COLUMN, BASE PLATE, ANCHOR BOLTS AND NOTES PERTAINING TO THESE ITEMS HAVE BEEN OMITTED FOR CLARITY. REFER TO SHEET 3 OF 7 FOR DETAILS OF THESE ITEMS.

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

STATE OF MISSOURI
EILEEN H. RACKERS
NUMBER PE-28336
PROFESSIONAL ENGINEER
THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.

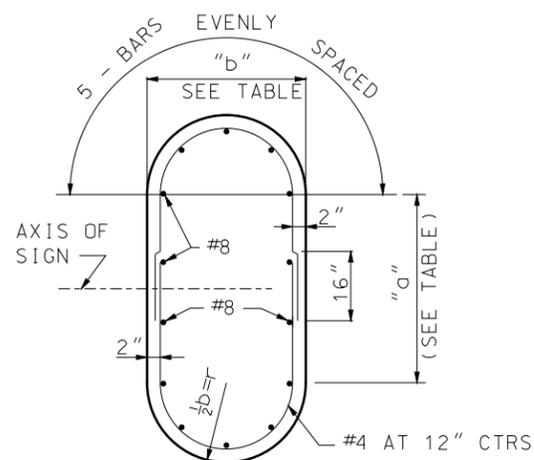
OVERHEAD SIGN TRUSSES
DRILLED SHAFT OPTION

DATE EFFECTIVE: 10-01-2016
DATE PREPARED: 8/11/2016

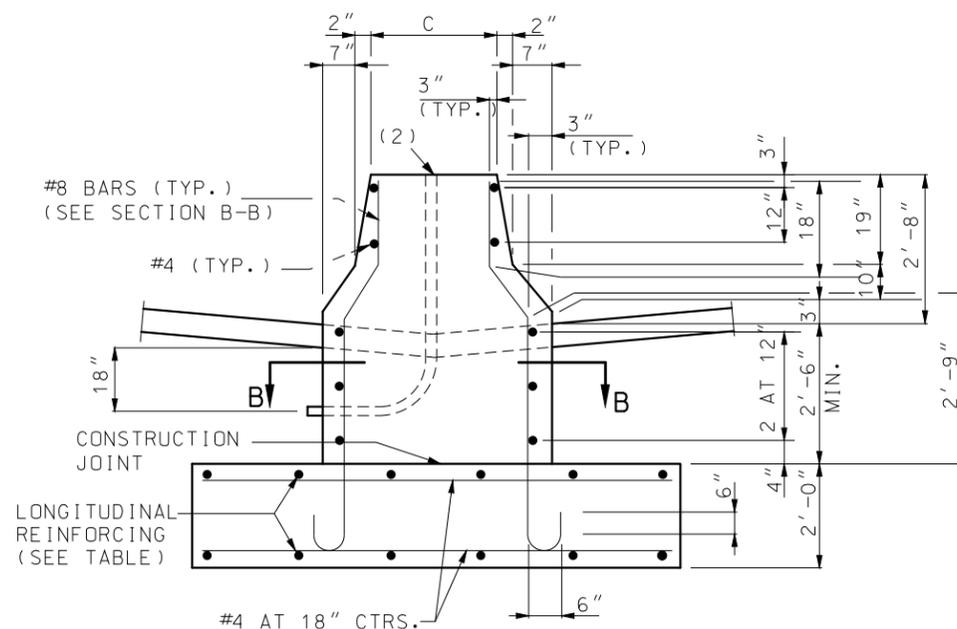
903.12Z

SHEET NO.
5 OF 7

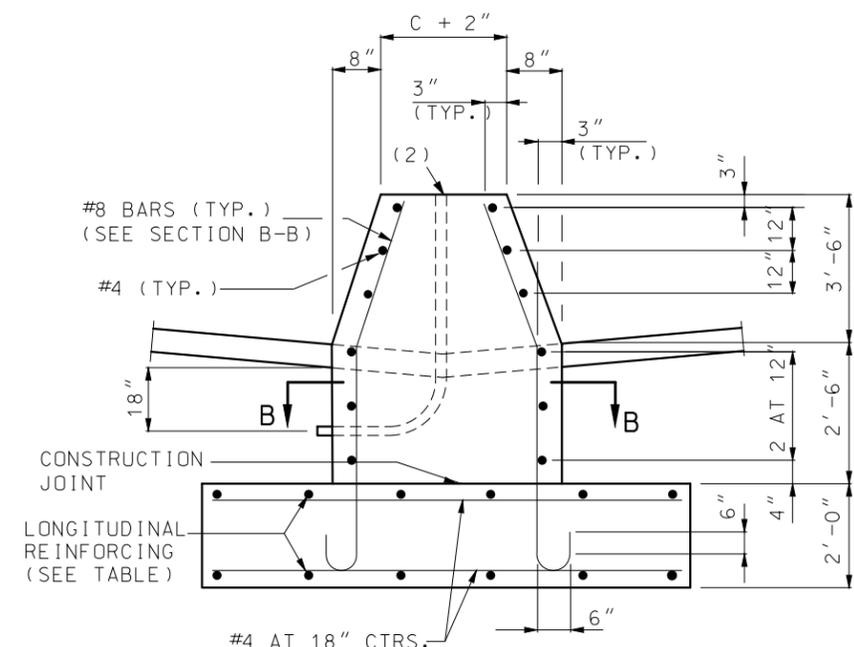
IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.



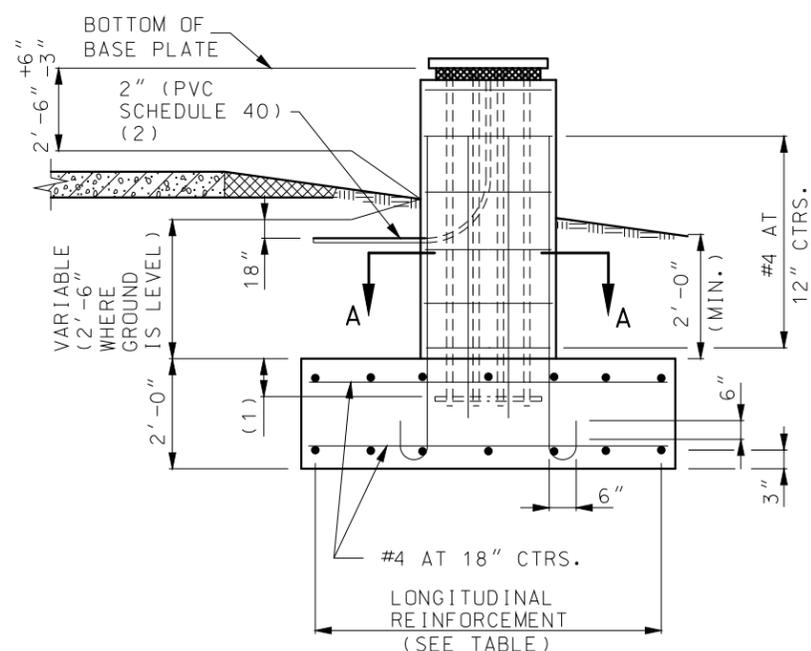
SECTION A-A
(TYPICAL SECTION SHOWING REINFORCING STEEL)



PART ELEVATION
(TYPE A CONCRETE TRAFFIC BARRIER)

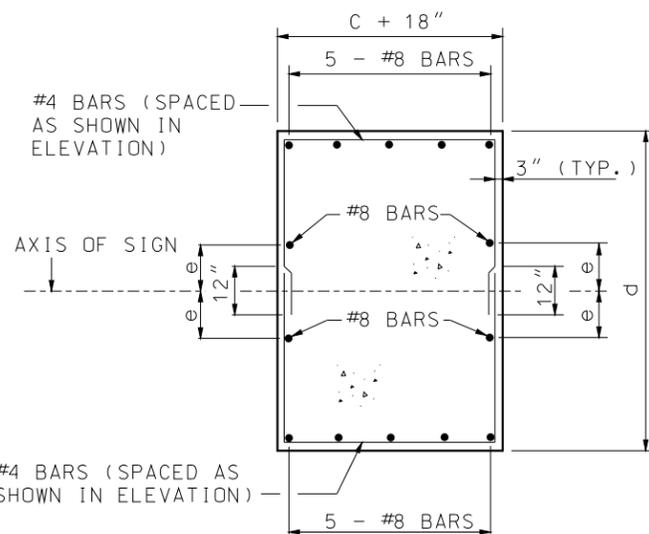


PART ELEVATION
(TYPE C CONCRETE TRAFFIC BARRIER)



ELEVATION

- (1) $12'' \pm \frac{6}{3}''$ (DETAIL FOR 12" FIELD TOLERANCE)
- (2) 2" CONDUIT IN THE CONCRETE PEDESTAL SHALL BE PVC SCHEDULE 40 AND SHALL BE PLACED WITH A MINIMUM BEND RADIUS OF $9\frac{1}{2}''$.



SECTION B-B
TYPICAL SECTION SHOWING
REINFORCING STEEL
DETAILS OF ALTERNATE PEDESTAL

GENERAL NOTES:

PEDESTAL AND FOOTING SHALL BE CLASS B (P.C.C.).

MINIMUM CLEARANCE TO REINFORCEMENT IS 3" EXCEPT AS SHOWN.

CONTACT THE ENGINEER IF WATER TABLE IS ENCOUNTERED DURING EXCAVATION.

PIPE COLUMN, BASE PLATE, ANCHOR BOLTS AND NOTES PERTAINING TO THESE ITEMS HAVE BEEN OMITTED FOR CLARITY. REFER TO SHEET 3 OF 7 FOR DETAILS OF THESE ITEMS.

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

 105 WEST CAPITOL
 JEFFERSON CITY, MO 65102
 1-888-ASK-MODOT (1-888-275-6636)

STATE OF MISSOURI

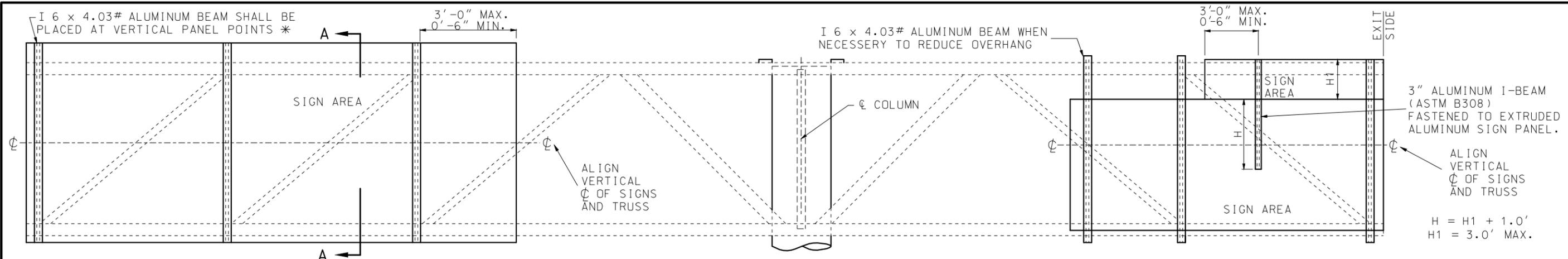
 EILEEN H. RACKERS
 NUMBER PE-28336
 PROFESSIONAL ENGINEER
 THIS SHEET HAS BEEN
 SIGNED, SEALED AND DATED
 ELECTRONICALLY.

**OVERHEAD SIGN TRUSSES
SPREAD FOOTING**

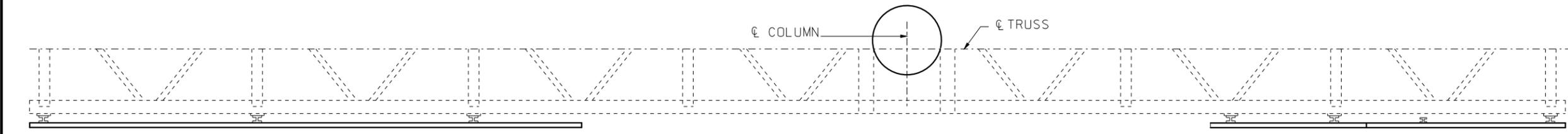
DATE EFFECTIVE:	10-01-2016	903.12Z	SHEET NO. 6 OF 7
DATE PREPARED:	8/11/2016		

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

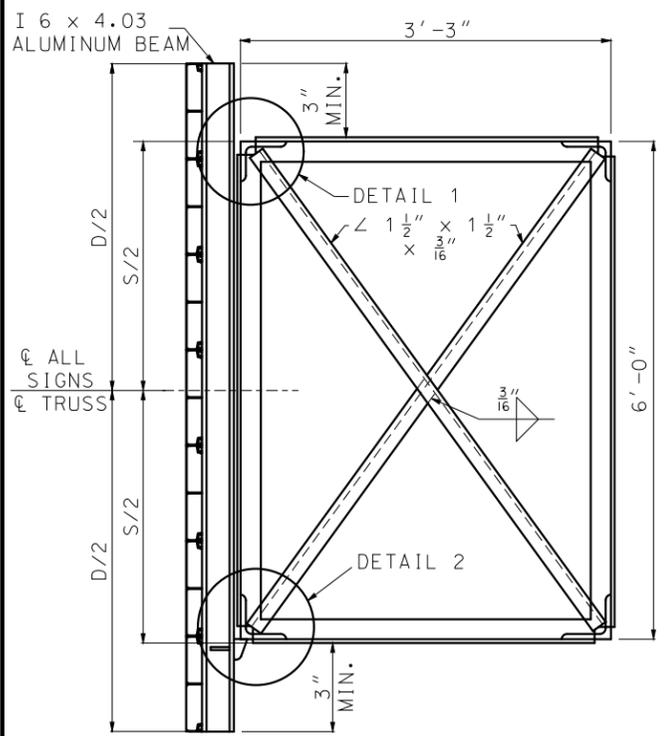
IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.



TYPICAL ELEVATION OF SIGNS COMPONENTS



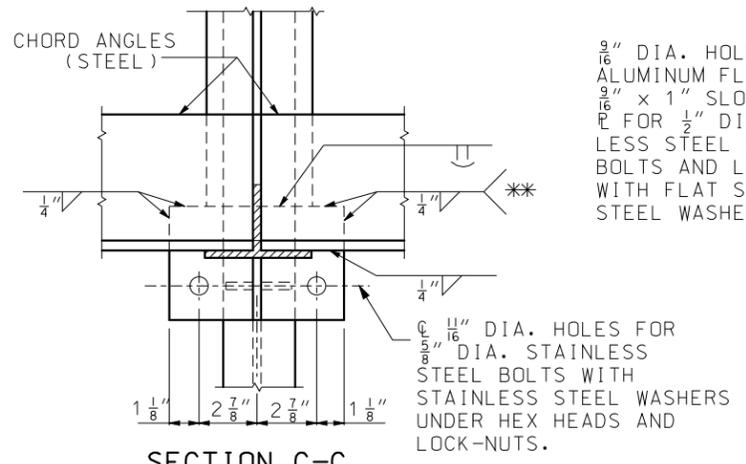
TYPICAL PLAN OF SIGN COMPONENTS



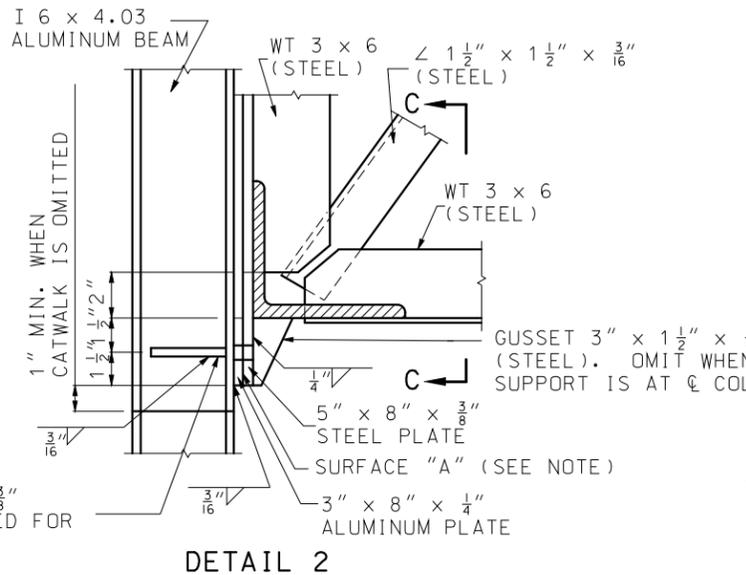
**SECTION A-A
TYPICAL SECTION
OF SIGN SUPPORT**

NOTE:
"D" = GREATEST OVERALL DEPTH
OF ANY SIGNS ON TRUSSES.

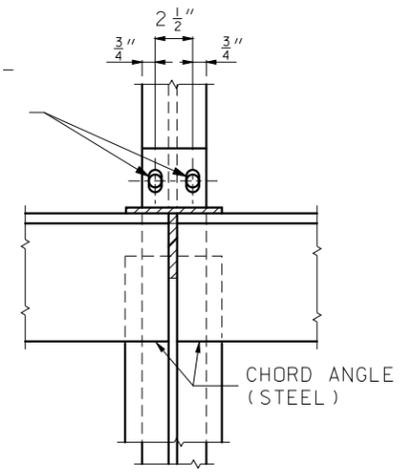
TWO - GUSSETS 5" x 1" x 3/8"
(ALUM.) OMIT WHEN NOT USED FOR
CATWALK SUPPORT.



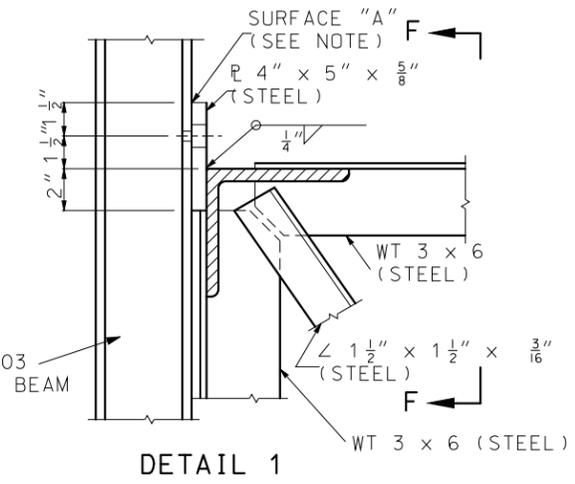
SECTION C-C



DETAIL 2



SECTION F-F



DETAIL 1

NOTE:
SURFACE "A", ZINC CHROMATE ON ALUMINUM SURFACES.
NORMAL CLEANING AND PAINTING ON STEEL SURFACES.
ZINC CHROMATE IS NOT REQUIRED WHEN STEEL IS
GALVANIZED.

* FOR SIGN HEIGHTS GREATER THAN 17'-0", BUT LESS
THAN OR EQUAL TO 20'-0" USE ADDITIONAL I 6 x 4.03
ALUMINUM BEAMS TO ACHIEVE A MAXIMUM SPACING OF
4'-0" BETWEEN SIGN SUPPORTS.

** WHEN SIGN SUPPORTS ARE PLACED BETWEEN VERTICAL
PANEL POINTS AS ILLUSTRATED IN TYPICAL ELEVATION
OF SIGNS COMPONENTS, WELD THE 3/8" STEEL PLATE
TO THE BOTTOM CHORD WITH A 1/4" FILLET WELD.

GENERAL NOTES:

EXIT NO. PANELS SHALL BE MONTED FLUSH WITH THE EXIT
SIDE OF THE GUIDE SIGN.

ALL SIGNS SHALL BE CENTERED VERTICALLY ABOUT THE
HORIZONTAL CENTERLINE OF THE TRUSS.

FOR SIGN MOUNTING DETAILS, SEE STANDARD PLANS 903.03.

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

 105 WEST CAPITOL
 JEFFERSON CITY, MO 65102
 1-888-ASK-MODOT (1-888-275-6636)

STATE OF MISSOURI

 EILEEN H. RACKERS
 NUMBER PE-28336
 PROFESSIONAL ENGINEER
 THIS SHEET HAS BEEN
 SIGNED, SEALED AND DATED
 ELECTRONICALLY.

OVERHEAD SIGN TRUSSES
 STRUCTURAL STEEL
 BUTTERFLY AND CANTILEVER

DATE EFFECTIVE: 10-01-2016	903.12Z	SHEET NO. 7 OF 7
DATE PREPARED: 8/11/2016		