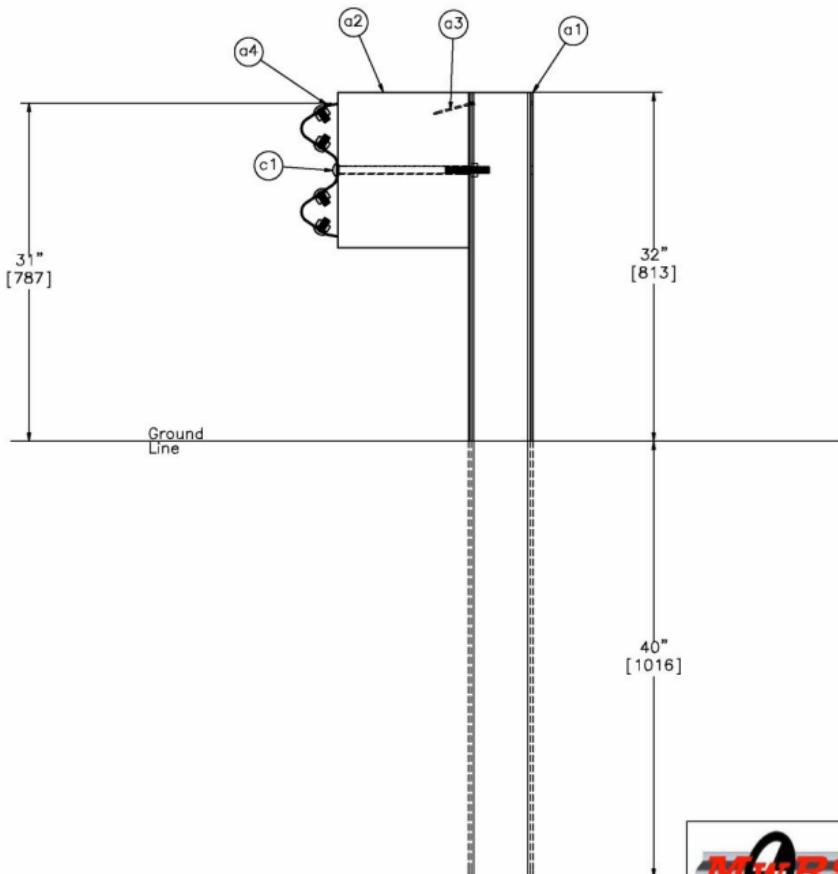


ELEVATION VIEW

Notes: (1) Test shall be performed according to test designation no. 3-11 of MASH criteria.

- (2) The impact location is 206 1/4" [5239] upstream of the splice between post nos. 13 and 14.
- (3) BCT anchors are placed in ϕ 3' [914] holes.
- (4) Load cells to be used on both end anchors.

MwRSF	Standard MGS with Omitted Post	
System Layout		
Midwest Roadside Facility		DRAWN BY: JEK/JAH
DWG. NAME: MGS_OmittedPost_RS5	SCALE: 1:220	REV. BY: KAL
UNITS: Inches		



SECTION A-A
Post Nos. 3-26



Midwest Roadside Facility

Standard MGS with
Omitted Post

Post Section

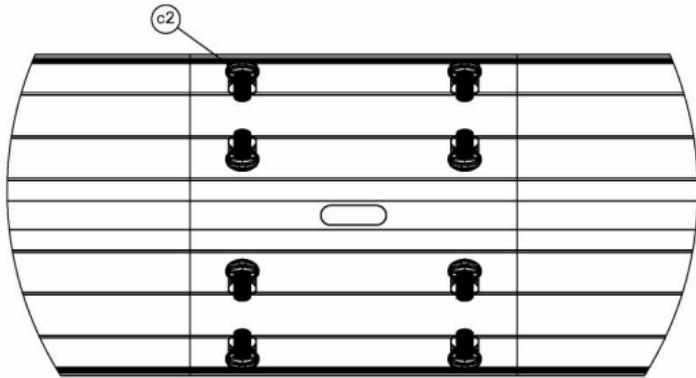
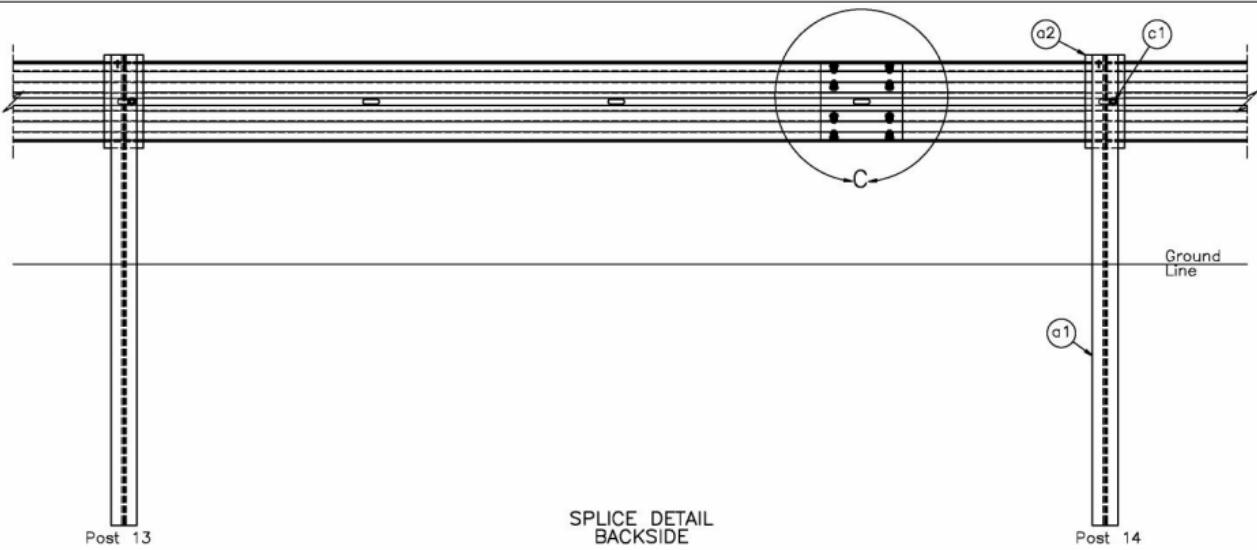
SHEET:
2 of 13

DATE:
8/14/2015

DRAWN BY:
JEK/JAH

DWG. NAME:
MGS_OmitedPost_RS

SCALE: 1:12
UNITS: inches
REV. BY:
KAL



Midwest Roadside
Safety Facility

Standard MGS with
Omitted Post

Splice Detail

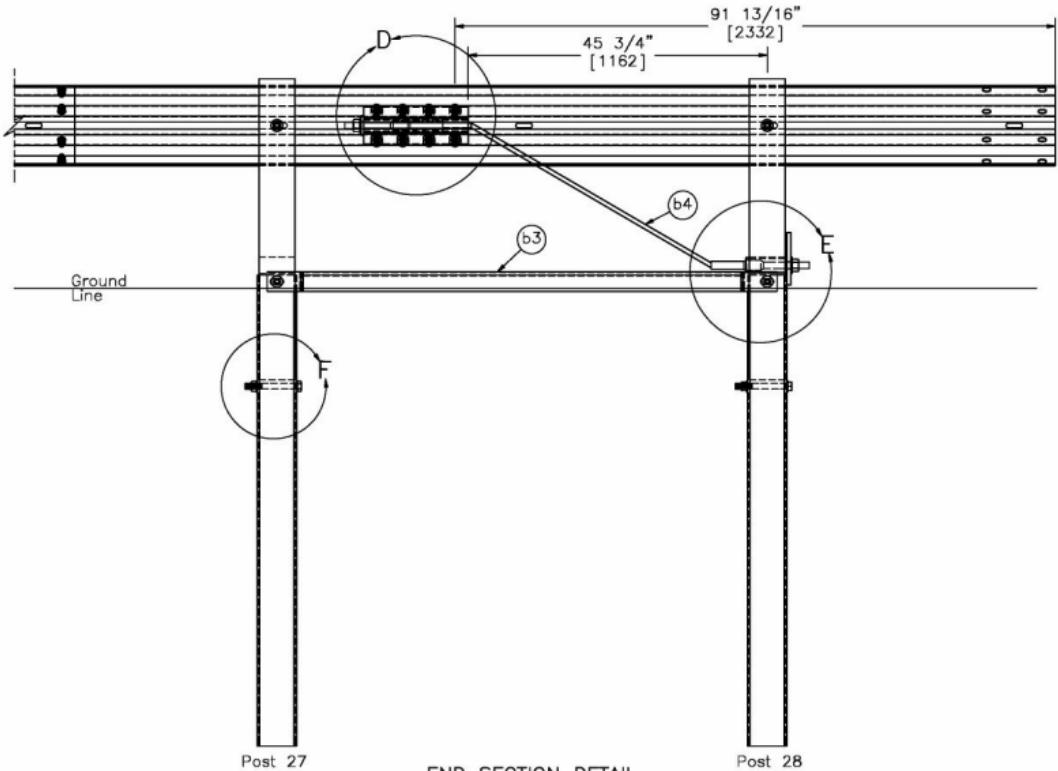
SHEET:
3 of 13

DATE:
8/14/2015

DRAWN BY:
JER/JAH

DWG. NAME:
MGS_OmitedPost_R5

SCALE: 1:20
UNITS: inches
REV. BY:
KAL



END SECTION DETAIL
BACKSIDE



Midwest Roadside Facility

Standard MGS with
Omitted Post

End Anchorage

SHEET:
4 of 13

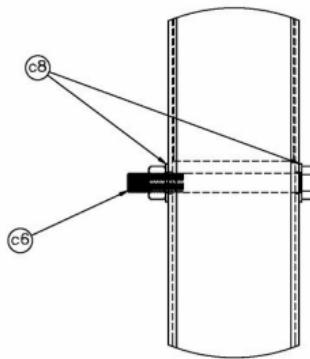
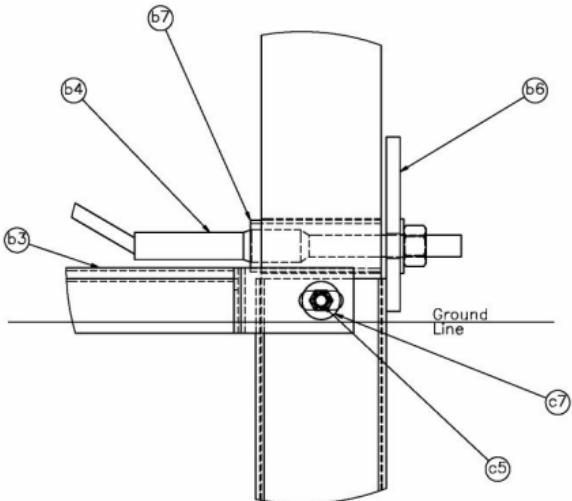
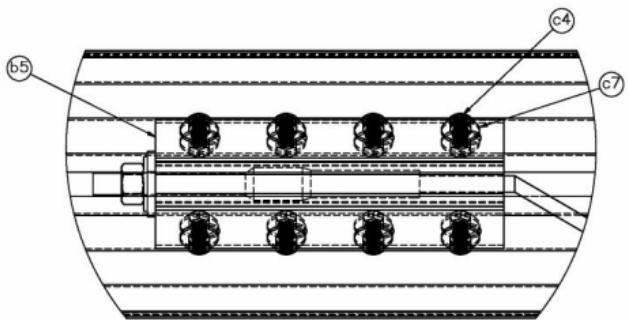
DATE:
8/14/2015

DRAWN BY:
JEK/JAH

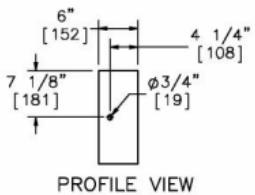
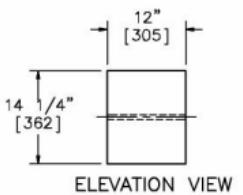
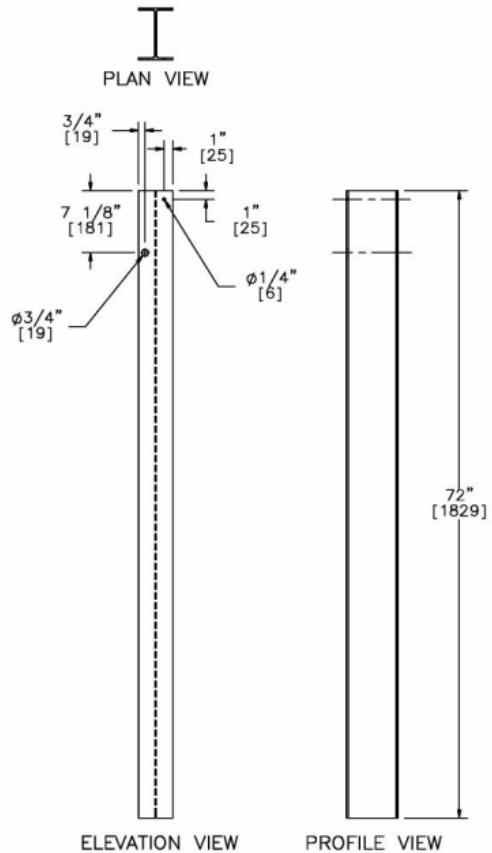
DWG. NAME:
MGS_OmitedPost_R5

SCALE: 1:20
UNITS: Inches

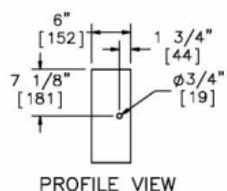
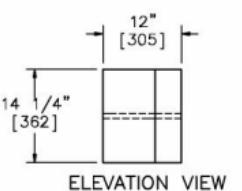
REV. BY:
KAL



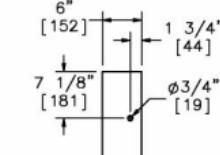
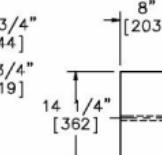
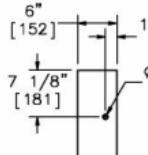
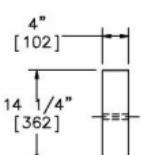
	Standard MGS with Omitted Post	SHEET: 5 of 13
	BCT Anchor Details	DATE: 8/14/2015
Midwest Roadside Safety Facility		DRAWN BY: JEK/JAH
DWG. NAME: MGS_OmittedPost_R5	SCALE: 1:6	REV. BY: KAL.
UNITS: Inches		



Part a2



Alternate Blockout Option –
6"x4"x14 1/4" [152x102x362] Blockout
with 6"x8"x14 1/4" [152x203x362] Blockout



6"x4"x14 1/4"
[152x102x362] Blockout

6"x8"x14 1/4"
[152x203x362] Blockout

Part a1

Part a2



Standard MGS with
Omitted Post

Midwest
Roadside
Facility

Post Nos. 3-26 Components

Sheet:
6 of 13

Date:
8/14/2015

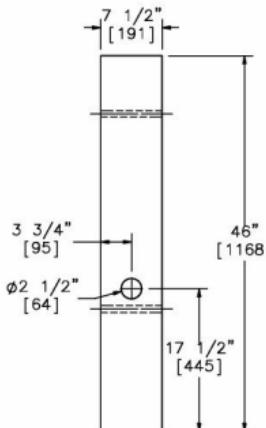
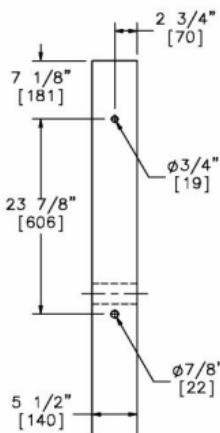
Drawn By:
JEK/JAH

DWG. NAME:
MGS_OmitedPost_R5

SCALE: 1:20
UNITS: Inches
REV. BY:
KAL.



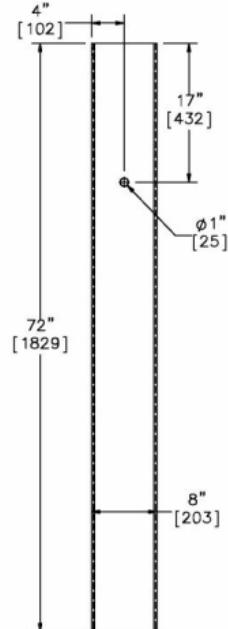
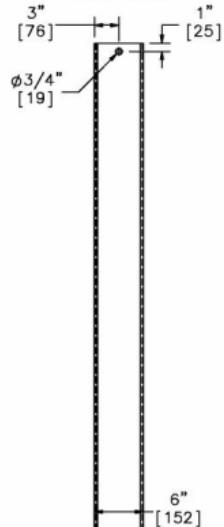
PLAN VIEW



Part b1



PLAN VIEW



Part b2



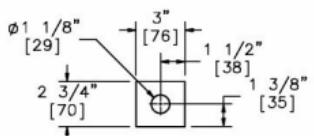
Midwest Roadside Safety Facility

Standard MGS with Omitted Post

BCT Timber Post & Foundation Tube Details

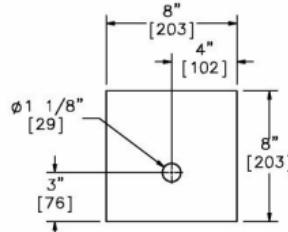
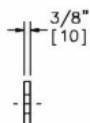
DWG. NAME: MGS_OmittedPost_R5

SCALE: 1:16
UNITS: Inches
REV. BY: KAL.SHEET:
7 of 13DATE:
8/14/2015DRAWN BY:
JEK/JAH

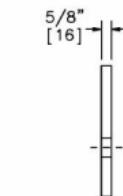


ELEVATION VIEW

Anchor Bracket End Plate

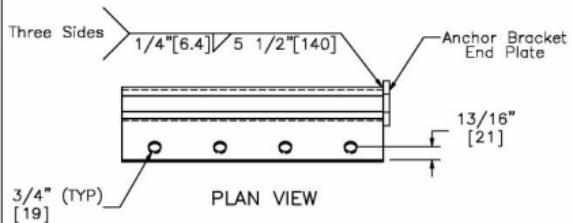


ELEVATION VIEW

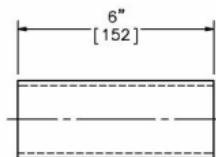


PROFILE VIEW

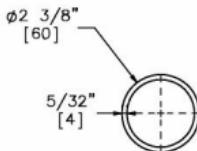
Part b6



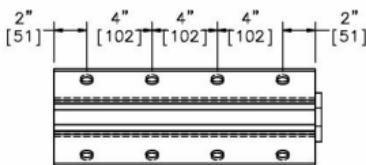
PLAN VIEW



ELEVATION VIEW

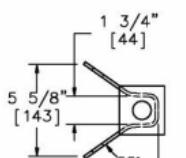


PROFILE VIEW

Part b7
SCALE 1:4

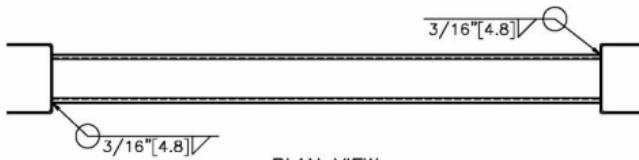
ELEVATION VIEW

Part b5

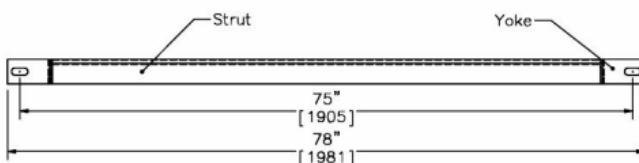


PROFILE VIEW

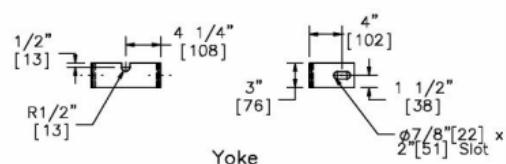
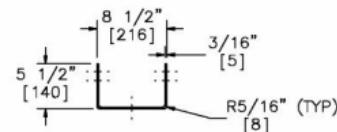
Standard MGS with
Omitted PostMidwest Roadside
Safety FacilitySHEET:
8 of 13DATE:
8/14/2015DRAWN BY:
JEK/JAHDWG. NAME:
MGS_OmittedPost_R5SCALE: 1:8
UNITS: InchesREV. BY:
KAL.



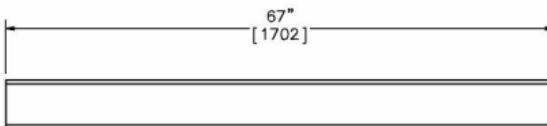
PLAN VIEW



ELEVATION VIEW
Part b3

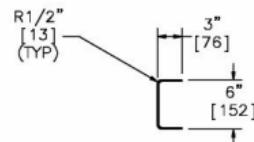


Yoke



ELEVATION VIEW

6"x3" [152x76] 10 Gauge [3.4] Strut



PROFILE VIEW



Midwest Roadside Safety Facility

Standard MGS with Omitted Post

Ground Strut Details

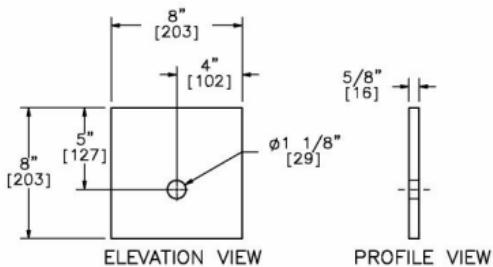
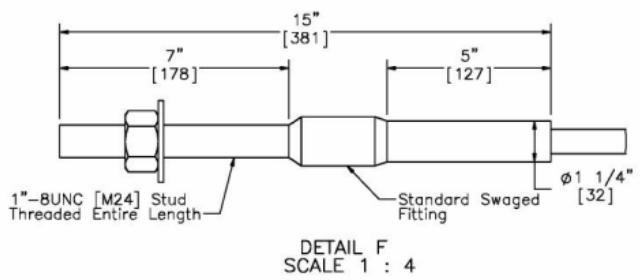
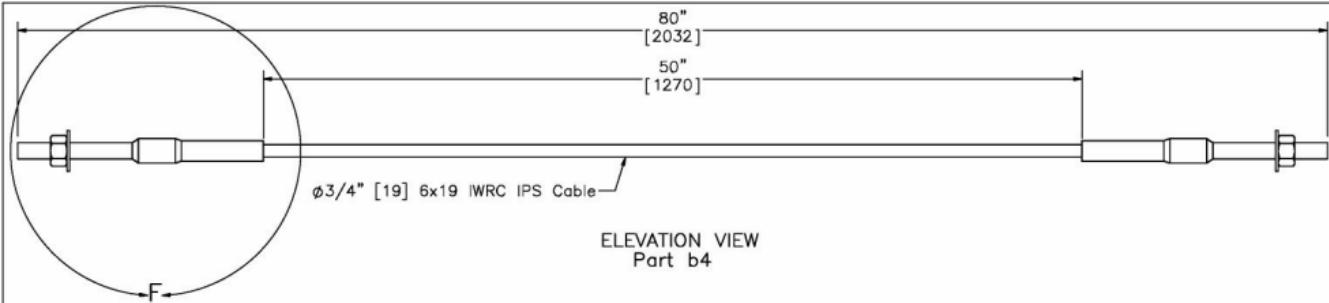
SHEET:
9 of 13

DATE:
8/14/2015

DRAWN BY:
JER/JAH

DWG. NAME:
MGS_OmittedPost_R5

SCALE: 1:16
UNITS: Inches
REV. BY:
KAL



Part b6

Notes: (1) 6x25 IWRC IPS meet the minimum breaking strength of 42.7 kips [190 kN] and may be substituted for the 6x19 IWRC IPS cables.



Midwest Roadside Safety Facility

Standard MGS with Omitted Post

BCT Anchor Cable

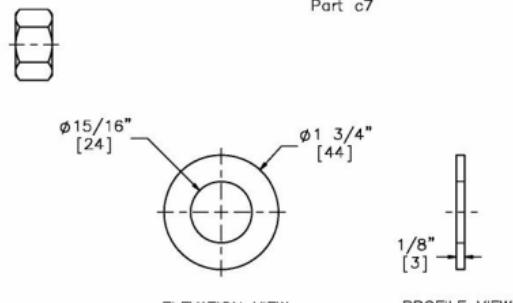
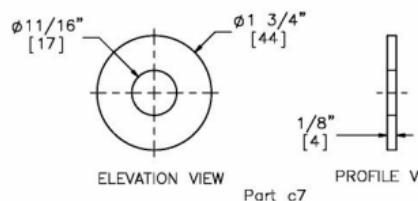
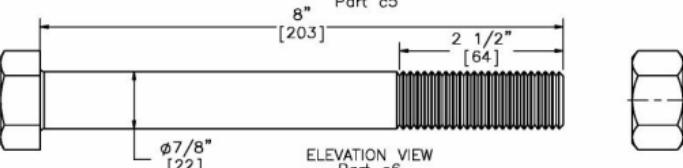
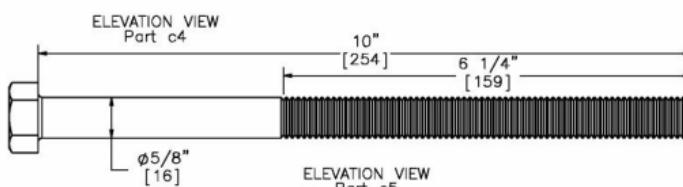
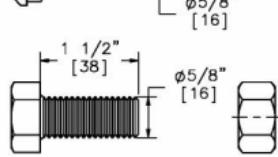
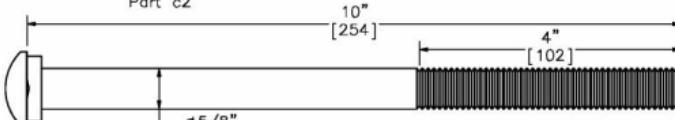
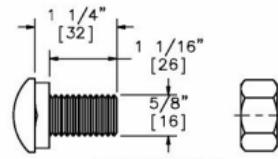
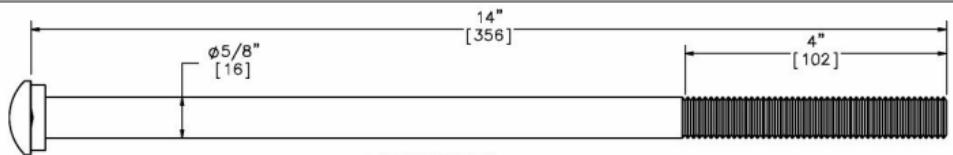
SHEET:
10 of 13

DATE:
8/14/2015

DRAWN BY:
JEK/JAH

DWG. NAME:
MGS_OmittedPost_R5

SCALE: 1:8
UNITS: Inches
REV. BY:
KAL



Midwest Roadside Safety Facility

Standard MGS with Omitted Post

Fasteners

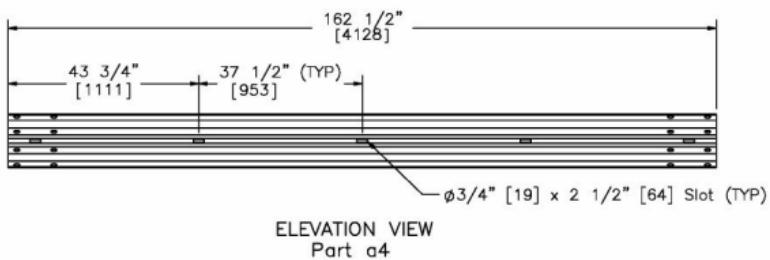
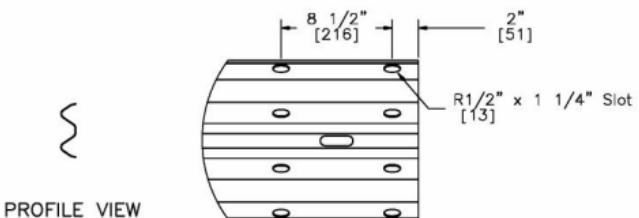
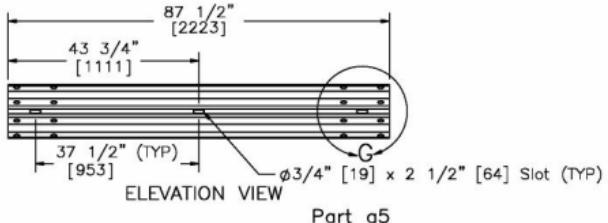
DWG. NAME:
MGS_OmittedPost_R5

SCALE: 1:8
REV. BY:
KAL
UNITS: Inches

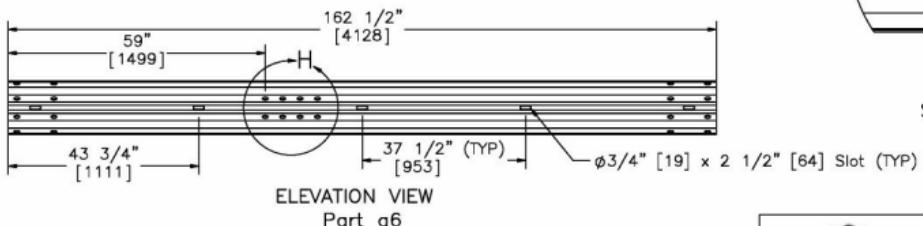
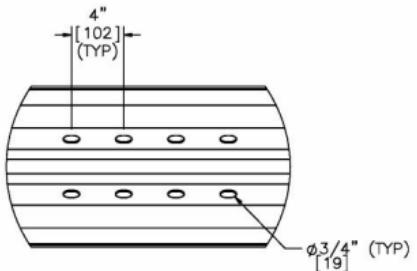
SHEET:
11 of 13

DATE:
8/14/2015

DRAWN BY:
JEK/JAH



DETAIL G
SCALE 1 : 10



DETAIL H
SCALE 1 : 10

	Standard MGS with Omitted Post	SHEET: 12 of 13
Rail Section Details		DATE: 8/14/2015
Midwest Roadside Safety Facility		DRAWN BY: JEK/JAH
DWG. NAME: MGS_OmittedPost_R5	SCALE: 1:30	REV. BY: KAL.
UNITS: Inches		

Midwest Gu

Item No.	QTY.	Description	Material Spec	Hardware Guide
a1	24	W6x8.5 [W152x12.6], 72" [1829] Long Steel Post	ASTM A992 Min. 50 ksi [345 MPa] Steel Galv. or W6x9 [W152x13.4] ASTM A36 Min. 36 ksi [248 MPa] Steel Galv.	PWE06
a2	24	6x12x14 1/4" [152x305x362] Timber Blockout for Steel Posts	SYP Grade No.1 or better	PDB10a-b
a3	24	16D Double Head Nail	-	-
a4	12	12'-6" [3810] W-Beam MGS Section	12 gauge [2.7] AASHTO M180 Galv.	RWM04a
a5	1	6'-3" [1905] W-Beam MGS Section	12 gauge [2.7] AASHTO M180 Galv.	RWM04a
a6	2	12'-6" [3810] W-Beam MGS End Section	12 gauge [2.7] AASHTO M180 Galv.	RWM14a
b1	4	BCT Timber Post - MGS Height	SYP Grade No. 1 or better (No knots, 18" [457] above or below ground tension face)	PDF01
b2	4	72" [1829] Long Foundation Tube	ASTM A500 Grade B Galv.	PTE06
b3	2	Strut and Yoke Assembly	ASTM A36 Steel Galv.	-
b4	4	BCT Cable Anchor Assembly	Ø3/4" [19] 6x19 IWRC IPS Galvanized Wire Rope	FCA01
b5	2	Anchor Bracket Assembly	ASTM A36 Steel Galv.	FPA01
b6	2	8"x8"x5/8" [203x203x16] Anchor Bearing Plate	ASTM A36 Steel Galv.	FPB01
b7	2	2 3/8" [60] O.D. x 6" [152] Long BCT Post Sleeve	ASTM A53 Grade B Schedule 40 Galv.	FMM02
c1	24	5/8" Dia. x 14" [M16 x 356] Long Guardrail Bolt and Nut	Bolt ASTM A307 Galv., Nut ASTM A563 A Galv.	FBB06
c2	112	5/8" Dia. x 1 1/4" [M16 x 32] Guardrail Bolt and Nut	Bolt ASTM A307 Galv., Nut ASTM A563 A Galv.	FBB01
c3	4	5/8" Dia. x 10" [M16 x 254] Long Guardrail Bolt and Nut	Bolt ASTM A307 Galv., Nut ASTM A563 A Galv.	FBB03
c4	16	5/8" Dia. x 1 1/2" [M16 x 38] Long Hex Head Bolt and Nut	Bolt ASTM A307 Galv., Nut ASTM A563 A Galv.	FBX16a
c5	4	5/8" Dia. x 10" [M16 x 254] Long Hex Head Bolt and Nut	Bolt ASTM A307 Galv., Nut ASTM A563 A Galv.	FBX16a
c6	4	7/8" Dia. x 8" [M22 x 203] Long Hex Head Bolt and Nut	Bolt ASTM A307 Grade A Galv., Nut ASTM A563 A Galv.	-
c7	44	5/8" [16] Dia. Plain Round Washer	ASTM FB44 Galv.	FWC14a
c8	8	7/8" [22] Dia. Plain Round Washer	ASTM FB44 Galv.	-



Standard MGS with
Omitted Post

Bill of Materials

DWG. NAME: MGS_OmittedPost_R5

SCALE: None

UNITS: Inches

REV. BY: JEK/JAH

SHEET:
13 of 13

DATE:
8/14/2015

DRAWN BY:
JEK/JAH