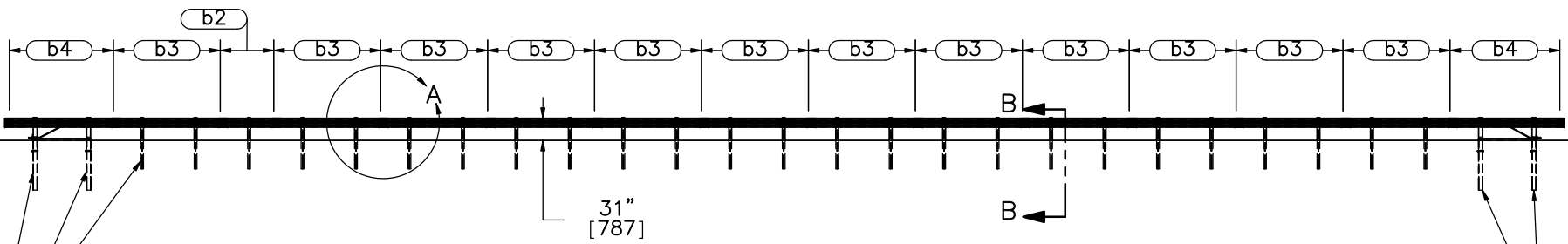


PLAN VIEW



ELEVATION VIEW

Post Nos. 3-27
W6x8.5 [W152x12.6],
6' [1829] Long with
W-Beam Backup Plates,
Part no. b8

BCT Posts in 6' [1829]
Long (Galvanized) Foundation
Tubes, Ground Line Strut,
and BCT Cable Anchor

BCT Posts in 6' [1829]
Long (Galvanized) Foundation
Tubes, Ground Line Strut,
and BCT Cable Anchor

- Note:
- (1) Impact locations are measured from the centerline of post no. 15. Impact for the 2270P is located at 13'-3 1/2" [4051].
 - (2) The BCT anchor posts are placed in ϕ 3' [914] holes.
 - (3) Critical region located between post nos. 11 and 20.



Midwest Roadside
Safety Facility

MGS Without Blockouts
System Layout

SHEET:
1 of 10

DATE:
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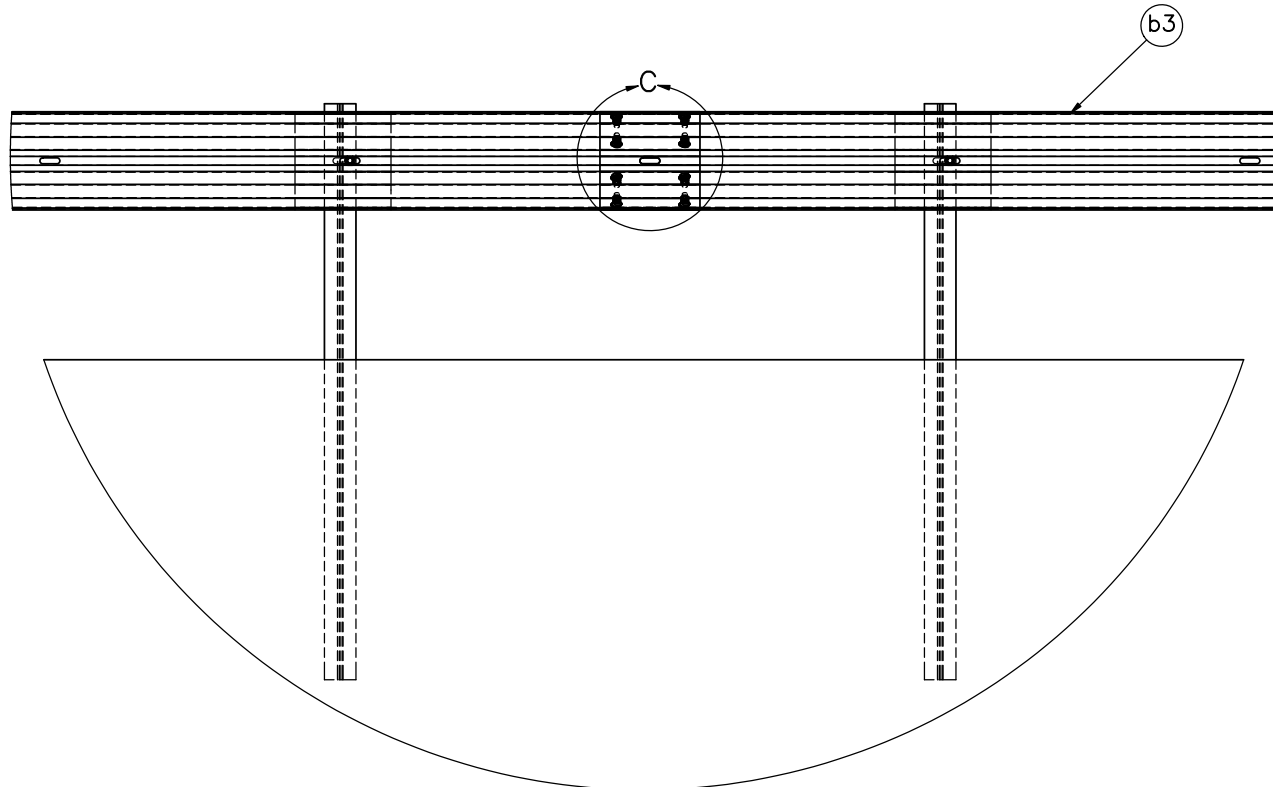
DRAWN BY:
MDM/DMH

DWG. NAME:
MGSNB_r4

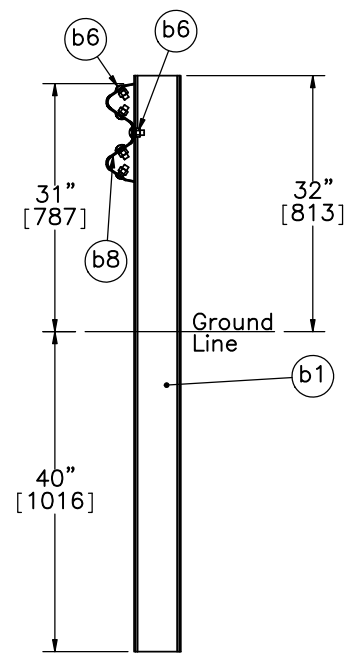
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UNITS: In.[mm]

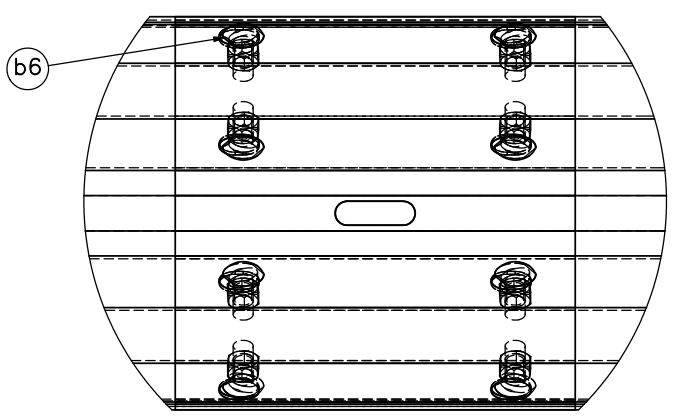
REV. BY:
KAL/SKR



DETAIL A



SECTION B-B



DETAIL C
SCALE 1:6



Midwest Roadside
Safety Facility

MGS Without Blockouts
Post Details

DWG. NAME:
MGSNB_r4

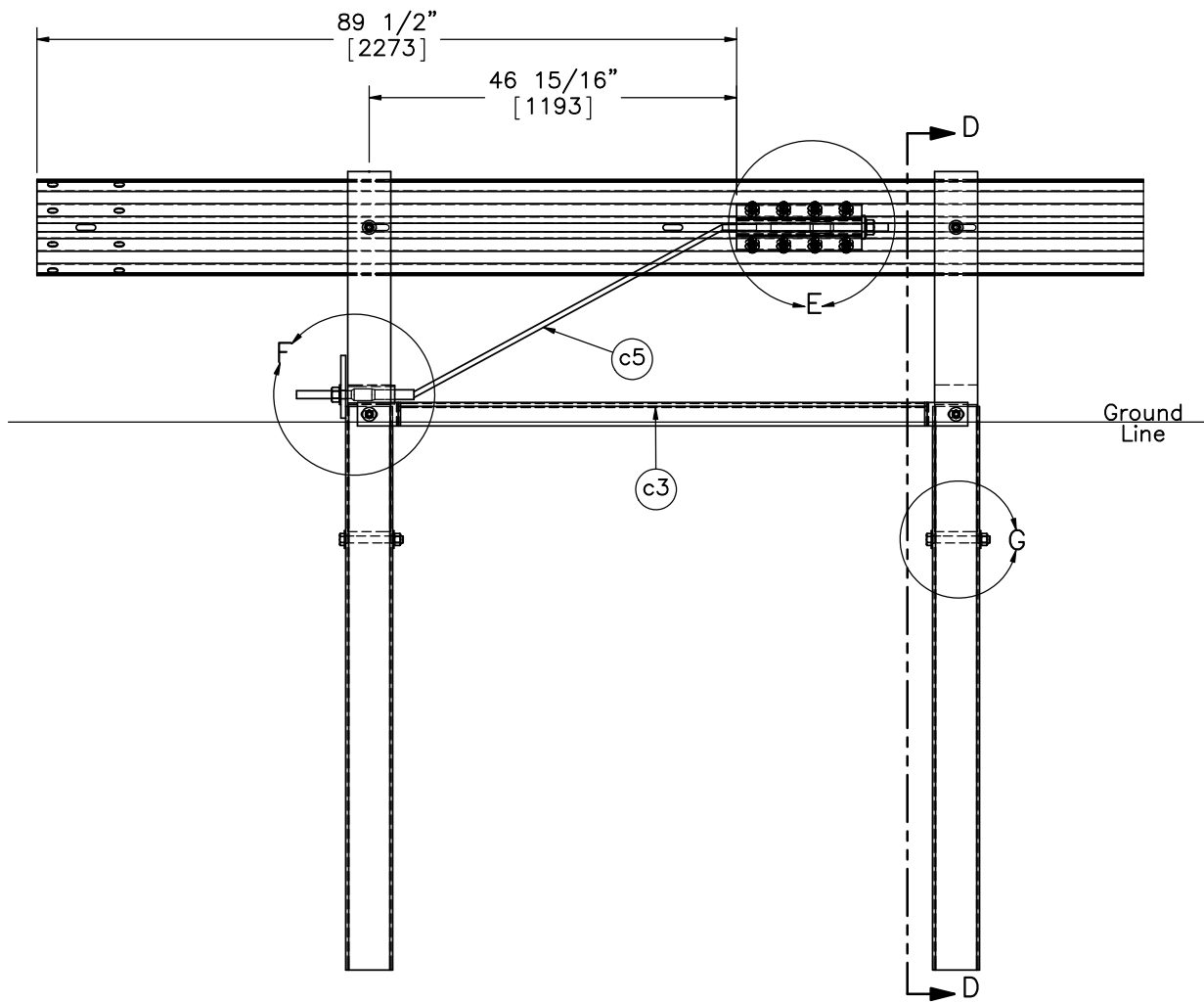
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UNITS: In.[mm]

SHEET:
2 of 10

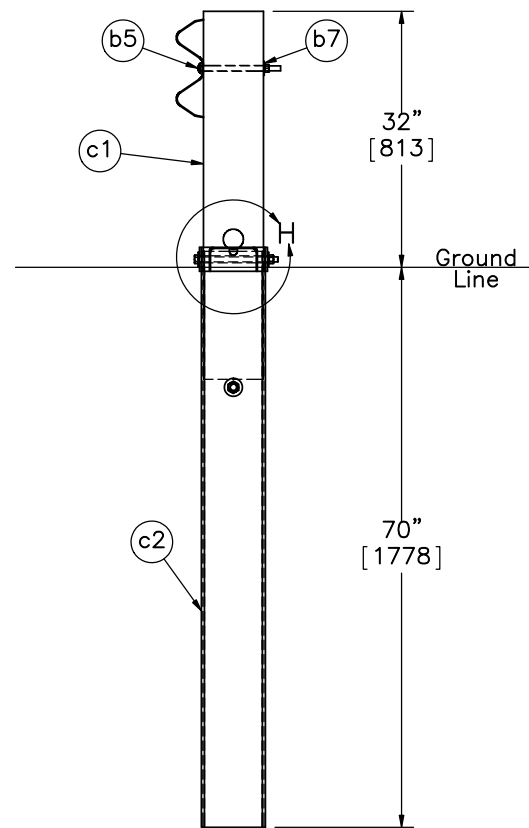
DATE:
6/16/2011

DRAWN BY:
MDM/DMH

REV. BY:
KAL/SKR



END SECTION DETAIL



SECTION D-D



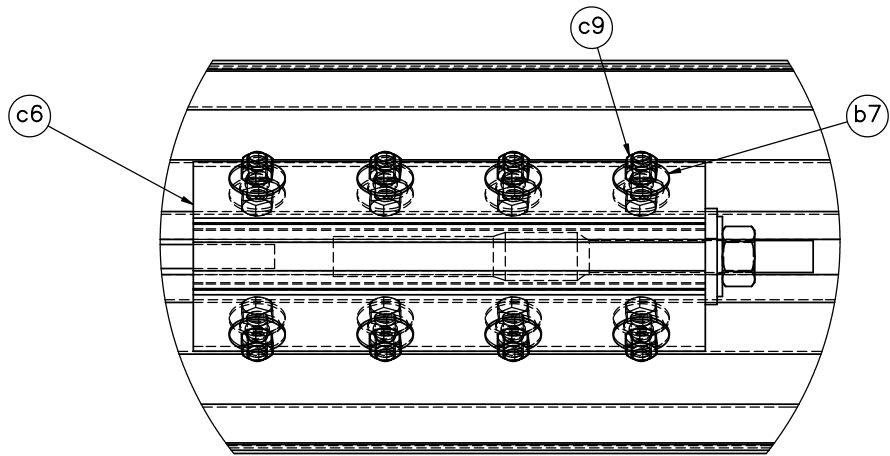
Midwest Roadside
Safety Facility

MGS Without Blockouts
End Rail Details

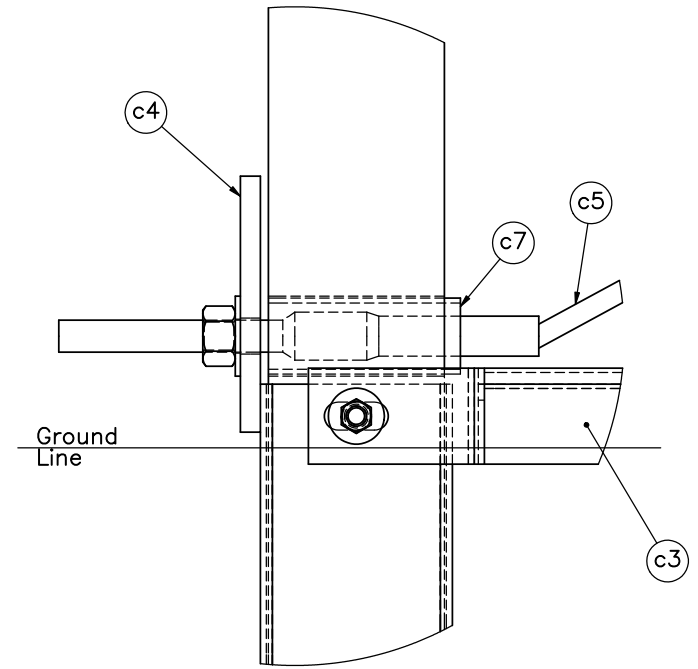
DWG. NAME.
MGSNB_r4

SCALE: 1:24
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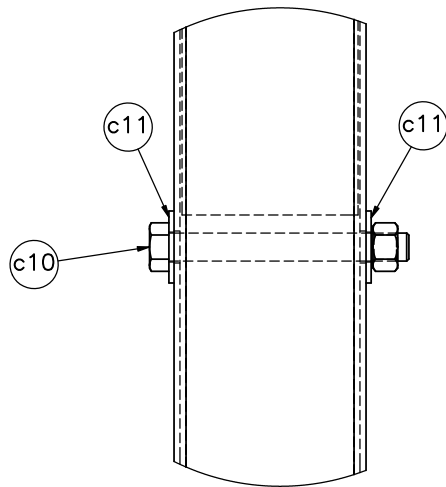
SHEET:
3 of 10
DATE:
6/16/2011
DRAWN BY:
MDM/DMH
REV. BY:
KAL/SKR



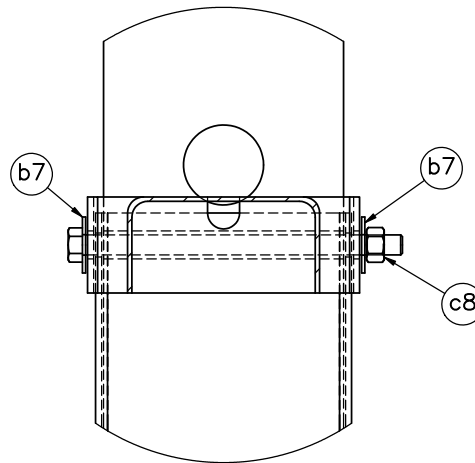
DETAIL E



DETAIL F



DETAIL G



DETAIL H



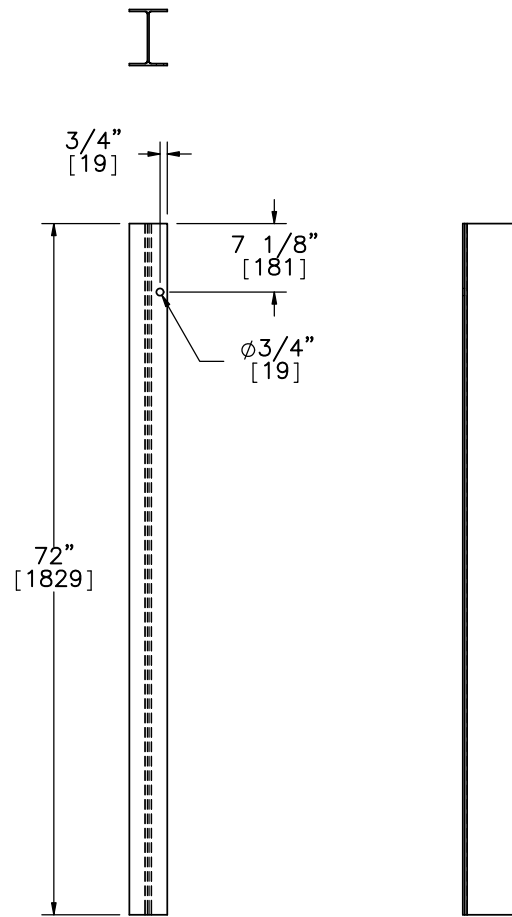
Midwest Roadside
Safety Facility

MGS Without Blockouts
Anchor Details

DWG. NAME:
MGSNB_r4

SCALE: 1:6
UNITS: In.[mm]

SHEET:
4 of 10
DATE:
6/16/2011
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MDM/DMH
REV. BY:
KAL/SKR



Line Post
Part b1



Midwest Roadside
Safety Facility

MGS Without Blockouts
Post Nos. 3-27 Details

SHEET:
5 of 10

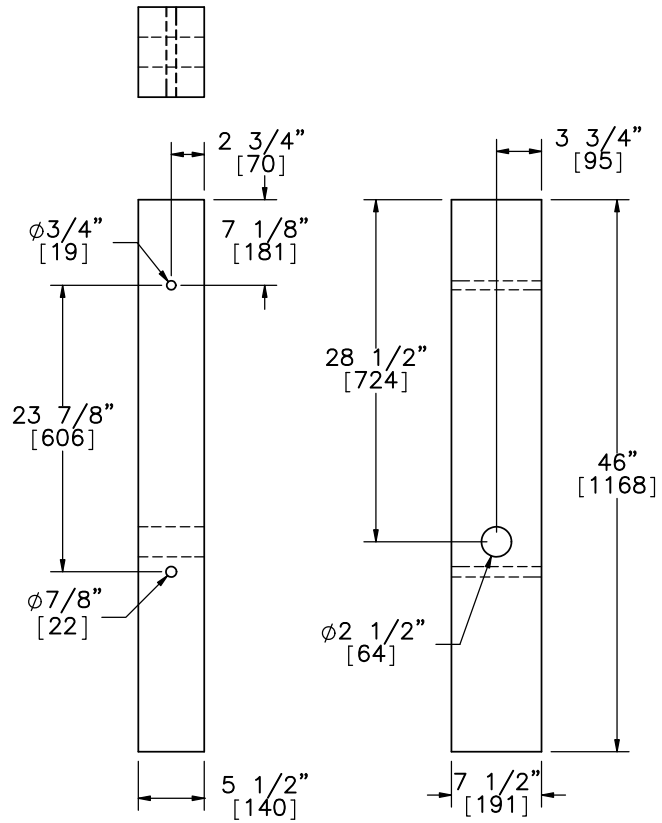
DATE:
6/16/2011

DRAWN BY:
MDM/DMH

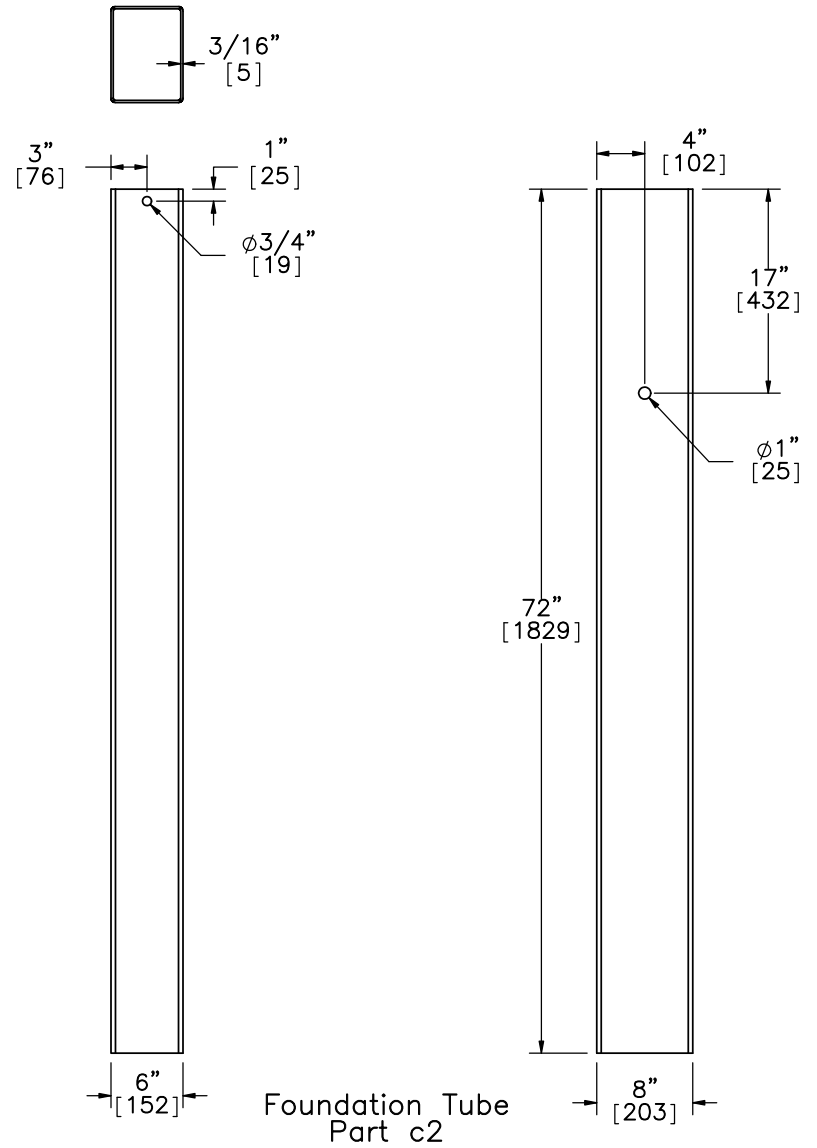
DWG. NAME:
MGSNB_r4

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UNITS: In.[mm]

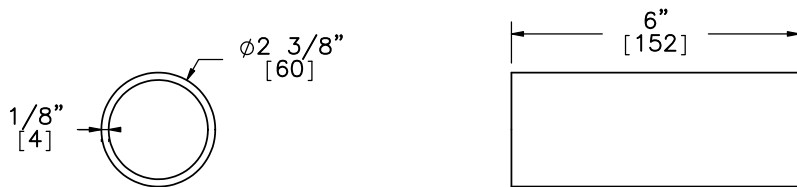
REV. BY:
KAL/SKR



BCT (MGS) Timber Post
Part c1



Foundation Tube
Part c2



BCT Post Sleeve
Part c7
SCALE 1:4



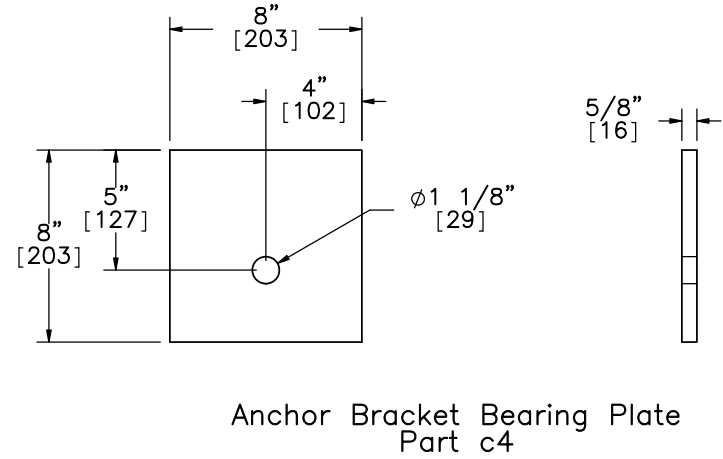
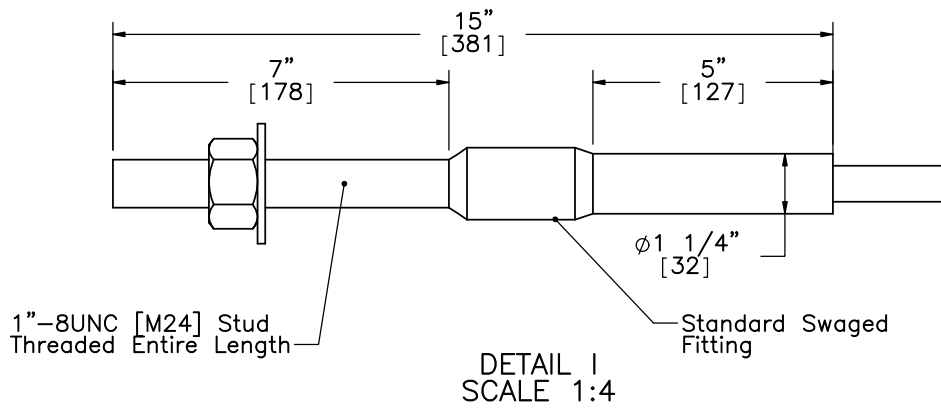
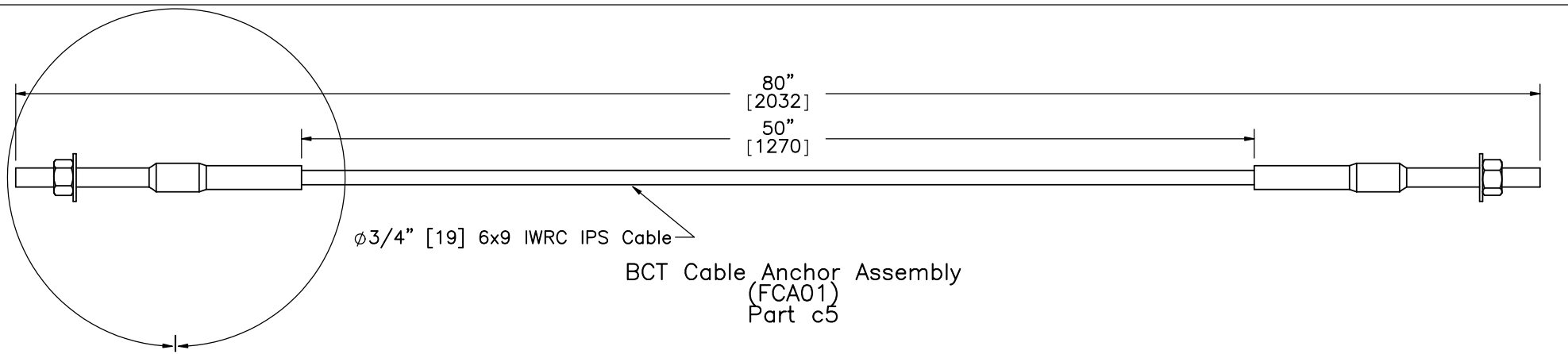
Midwest Roadside
Safety Facility

MGS Without Blockouts
BCT Timber Post &
Foundation Tube Details

SHEET:
6 of 10
DATE:
6/16/2011
DRAWN BY:
MDM/DMH

DWG. NAME:
MGSNB_r4

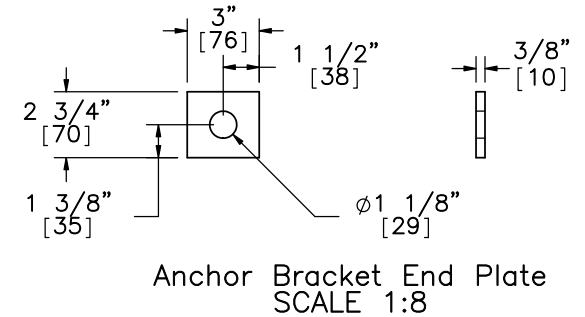
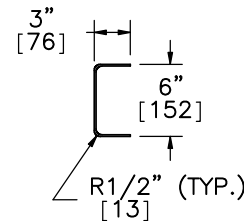
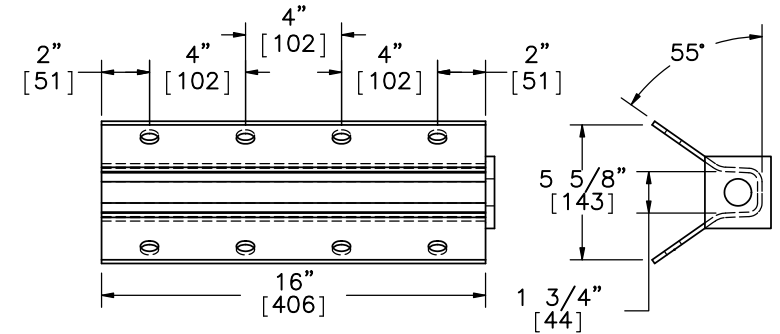
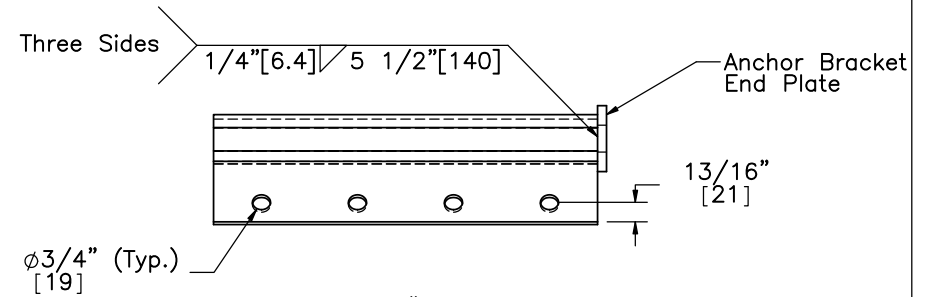
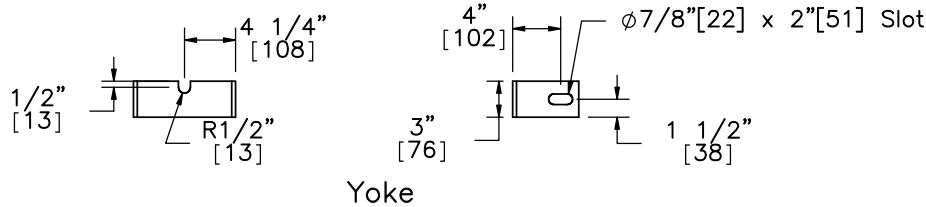
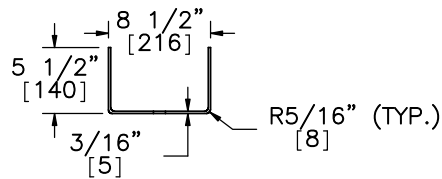
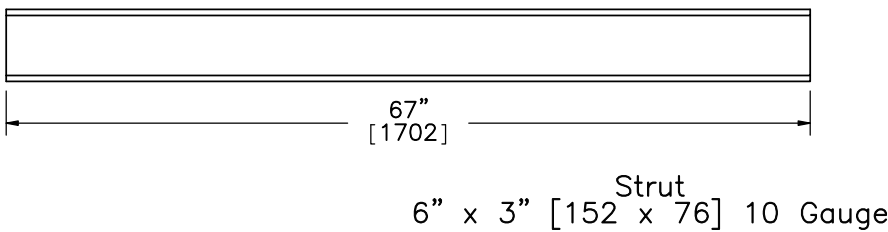
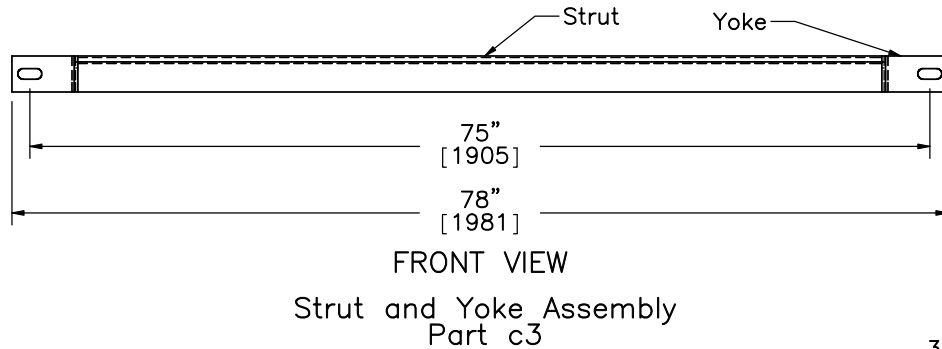
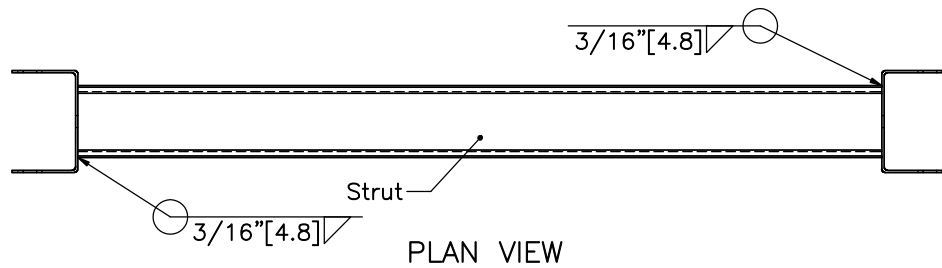
SCALE: 1:16
UNITS: In.[mm]
REV. BY:
KAL/SKR



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



MGS Without Blockouts BCT Anchor Cable	SHEET: 7 of 10
	DATE: 6/16/2011
	DRAWN BY: MDM/DMH
DWG. NAME: MGSNB_r4	SCALE: 1:8 UNITS: In.[mm]
	REV. BY: KAL/SKR



Midwest Roadside
Safety Facility

MGS Without Blockouts
Ground Strut & Anchor
Bracket Detail

SHEET:
8 of 10

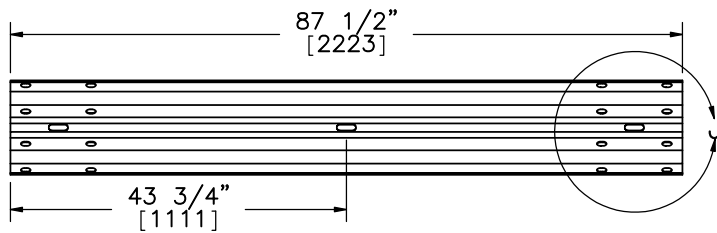
DATE:
6/16/2011

DRAWN BY:
MDM/DMH

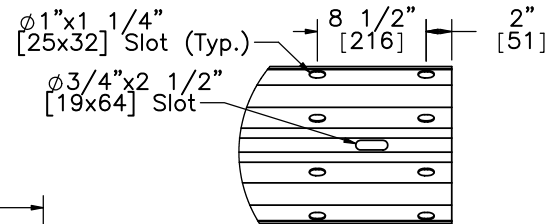
DWG. NAME:
MGSNB_r4

SCALE: 1:16
UNITS: In.[mm]

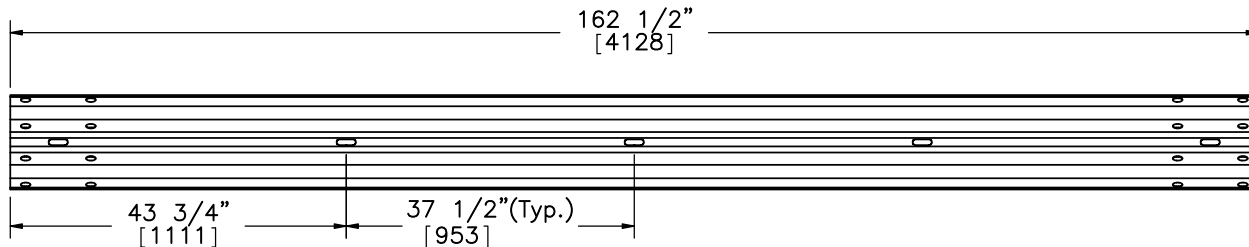
REV. BY:
KAL/SKR



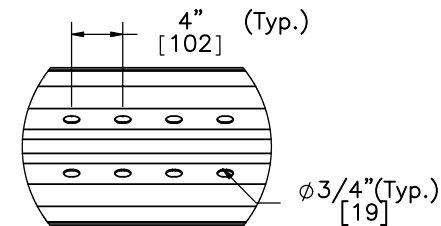
6'-3" [1905] W-Beam Section, 12 gauge [2.7]
Part b2



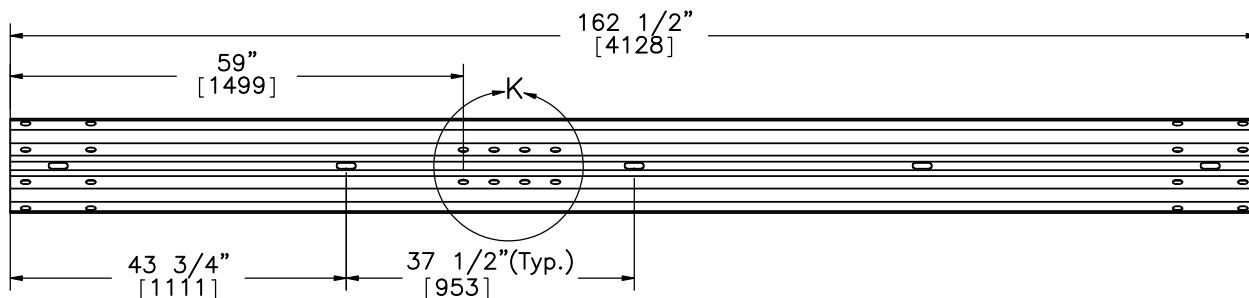
DETAIL J
SCALE 1:15



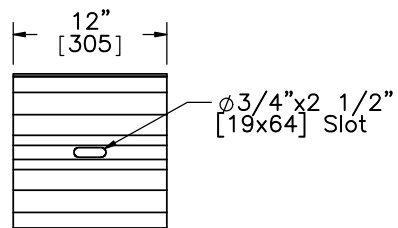
12'-6" [3810] W-Beam Section, 12 gauge [2.7]
Part b3



DETAIL K
SCALE 1:15



12'-6" [3810] W-Beam End Section, 12 gauge [2.7]
Part b4



1'-0" [305] W-Beam Backup Plate, 12 gauge [2.7]
Part b8
SCALE 1:15



Midwest Roadside
Safety Facility

MGS Without Blockouts
Rail Section Details

SHEET:
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DATE:
6/16/2011
DRAWN BY:
MDM/DMH

DWG. NAME:
MGSNB_r4

SCALE: 1:25
UNITS: In.[mm]

REV. BY:
KAL/SKR

Item No.	QTY.	Description	Material Specifications and/or Grade	Hardware Guide
b1	25	W6x8.5 6' [W152x12.6 1829] Long Steel Post	ASTM A992 [345 MPa] (W6x9 A36 [248 Mpa])	—
b2	1	6'-3" W-Beam MGS Section	12 gauge [2.7] AASHTO M180	RWMO1a
b3	12	12'-6" W-Beam MGS Section	12 gauge [2.7] AASHTO M180	RWMO4a
b4	2	12'-6" W-Beam MGS End Section	12 gauge [2.7] AASHTO M180	RWMO4a
b5	4	5/8" Dia. x 10" [M16x254] long Guardrail Bolt and Nut	ASTM A307	FBB03
b6	137	5/8" Dia. x 1 1/2" [M16x38] Long Guardrail Bolt and Nut	ASTM A307	FBB01
b7	44	5/8" [16] Dia. Flat Washer	ASTM A153	FWC16a
b8	25	W-Beam Backup Plate	12 ga. [2.7] AASHTO M180	RWB01a
c1	4	BCT Timber Post – MGS Height	SYP Grade No. 1 or better	PDF01
c2	4	72" [1829] Long Foundation Tube	ASTM A53 Grade B	PTE06
c3	2	Strut and Yoke Assembly	ASTM A36 Steel Galvanized	—
c4	2	8x8x5/8" [127x203x16] Anchor Cable Bearing Plate	ASTM A36 Steel	FPB01
c5	2	BCT Anchor Cable Assembly	ø3/4" [19] 6x19 IWRC IPS Galvanized Wire Rope	FCA01-02
c6	2	Anchor Bracket Assembly	ASTM A36 Steel	FPA01
c7	2	2 3/8" [60] O.D. x 6" [152] Long BCT Post Sleeve	ASTM A53 Grade B Schedule 40	FMM02
c8	4	5/8" Dia. x 10" [M16x254] Long Hex Head Bolt and Nut	ASTM A307	FBX16a
c9	16	5/8" Dia. x 1 1/2" [M16x38] Long Hex Head Bolt and Nut	ASTM A307	FBX16a
c10	4	7/8" Dia. x 7 1/2" [M22x191] Long Hex Head Bolt and Nut	ASTM A307	FBX22a
c11	8	7/8" [22] Dia. Flat Washer	ASTM A153	FWC22a



Midwest Roadside
Safety Facility

MGS Without Blockouts

Bill of Materials

DWG. NAME.
MGSNB_r4

SCALE: None
UNITS: In.[mm]

SHEET:
10 of 10

DATE:
6/16/2011

DRAWN BY:
MDM/DMH

REV. BY:
KAL/SKR