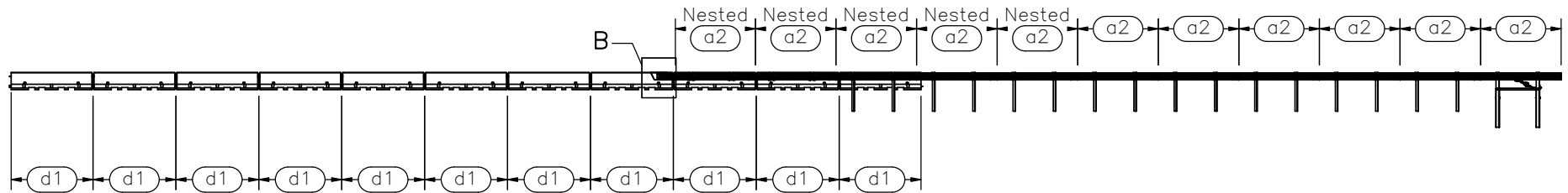


PLAN VIEW



ELEVATION VIEW

- Notes:
- (1) Test shall be performed according to test designation no. 3-20 of MASH criteria.
 - (2) The impact location is 93.75" [2381] upstream from the centerline of the second splice upstream from the end shoe.
 - (3) The front edge of the soil pit should be at least 5' [1524] from the center of each post. The distance can be adjusted as long as the PCB system does not cross the front edge of the soil pit.
 - (4) Critical region is between post nos. 12 through 18 (ø3' holes).
 - (5) BCT anchors are placed in ø3' [914] holes, then backfilled and tamped with soil.



Midwest Roadside Safety Facility

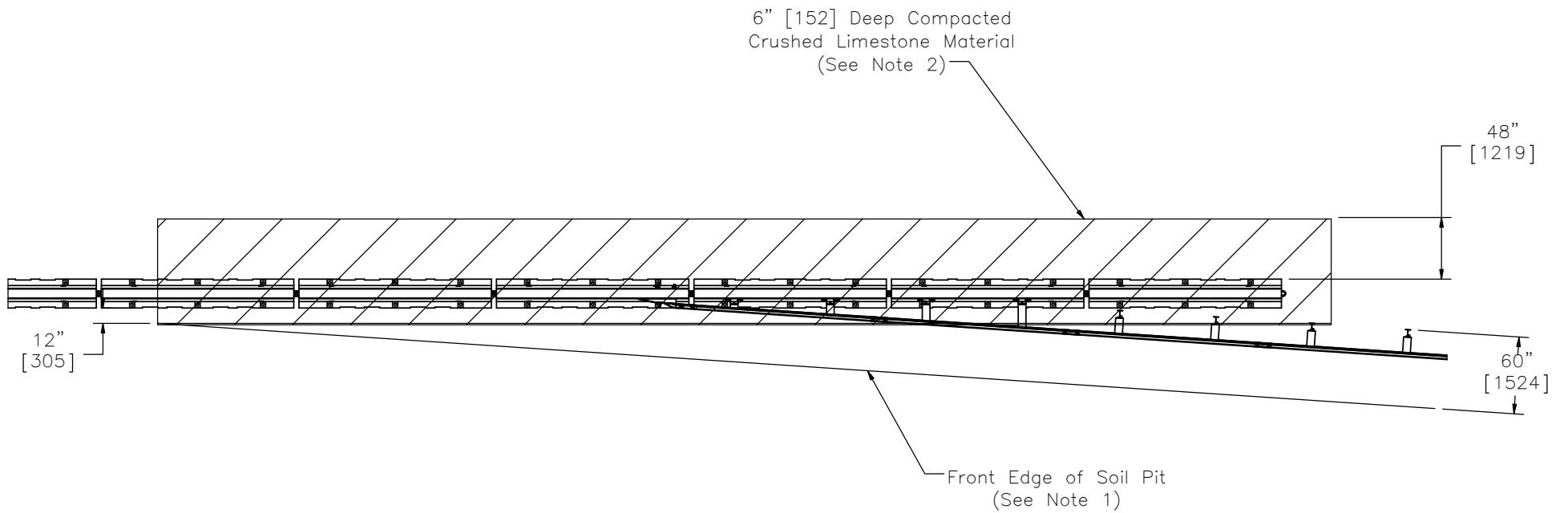
NDOR PCB-MGS Transition MGSPCB-2

System Layout

DWG. NAME:
MGSPCB-2_R5

SCALE: 1:300
UNITS: in.[mm]

SHEET:
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DATE:
10/20/2016
DRAWN BY:
JEK/TJD/JAH
REV. BY:
KAL/RWB/JEK



- Notes: (1) The front edge of the soil pit should be at least 5' [1524] from the center of each post. The distance can be adjusted as long as the PCB system does not cross the front edge of the soil pit.
- (2) The compacted crushed limestone material must meet AASHTO Grade B soil specifications. The length of this limestone material pit is up to the discretion of the test site manager.



Midwest Roadside
Safety Facility

NDOR PCB-MGS
Transition MGSPCB-2

Soil Pit Detail

DWG. NAME.
MGSPCB-2_R5

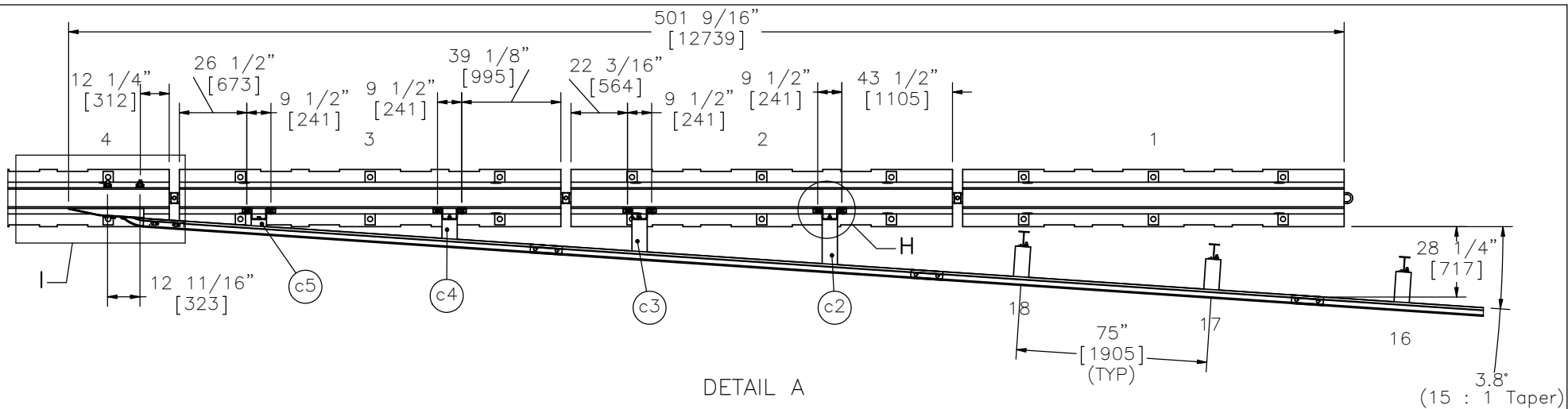
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UNITS: in.[mm]

SHEET:
2 of 36

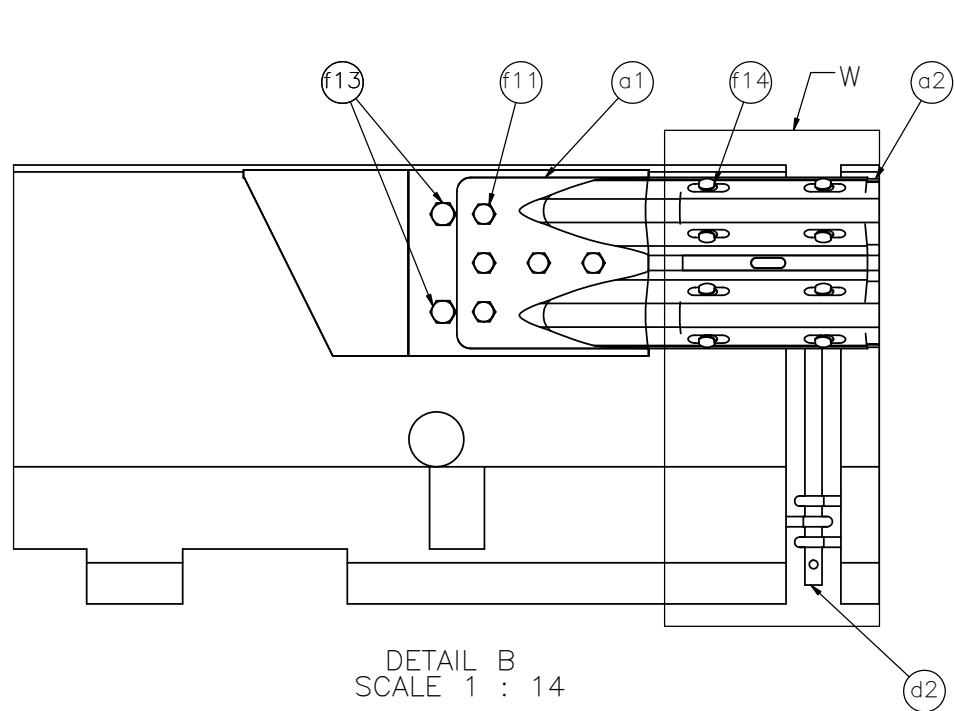
DATE:
10/20/2016

DRAWN BY:
JEK/TJD/JA
H

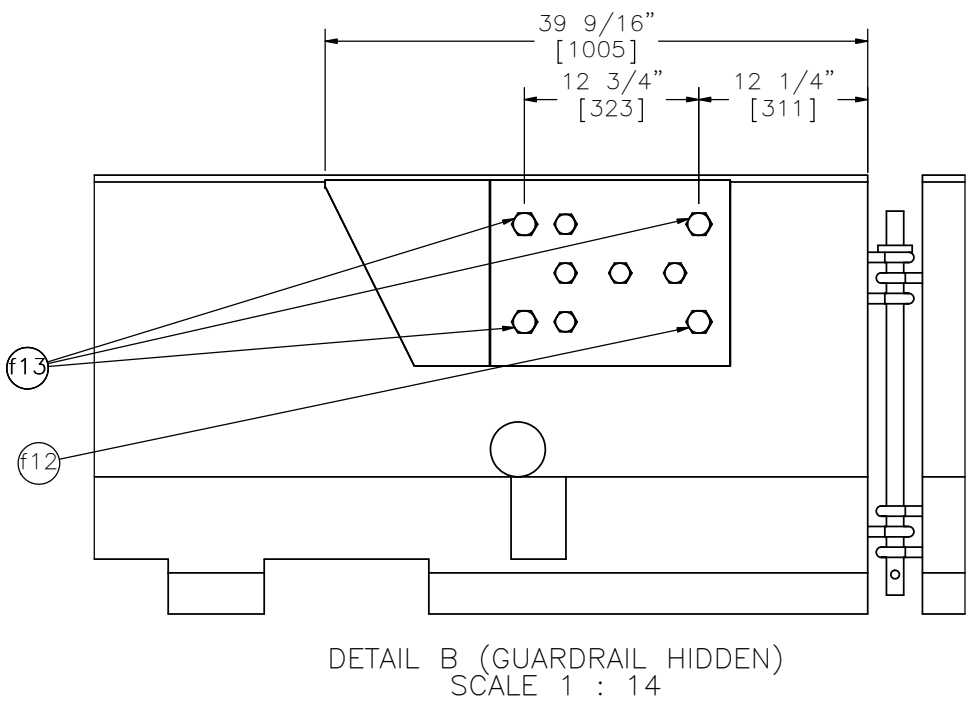
REV. BY:
KAL/RWB/J
EK



DETAIL A



DETAIL B
SCALE 1 : 14



DETAIL B (GUARDRAIL HIDDEN)
SCALE 1 : 14

Note: (1) All bolt hole measurements in concrete barrier are field measured and drilled.



Midwest Roadside Safety Facility

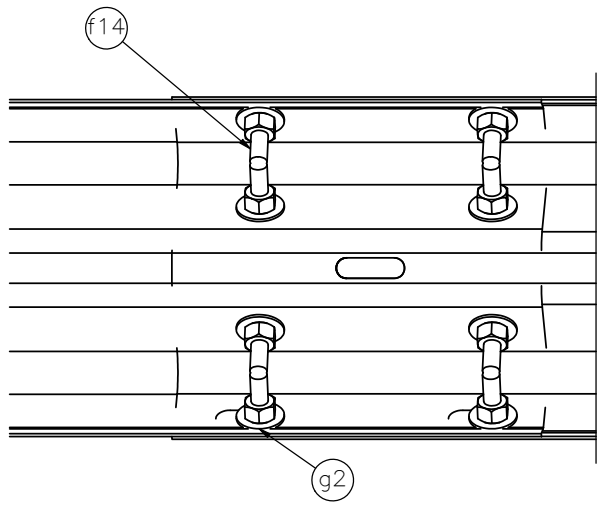
NDOR PCB-MGS
Transition MGSPCB-2

Transition Detail

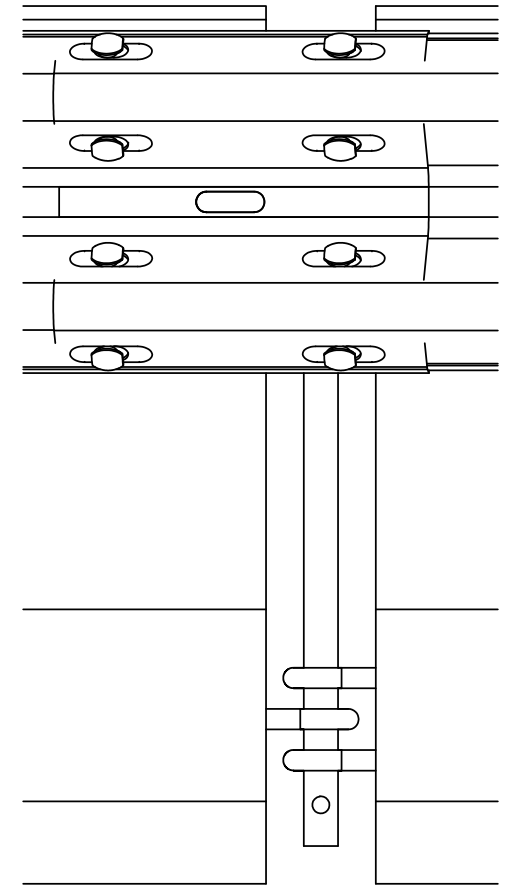
DWG. NAME:
MGSPCB-2_R5

SCALE: 1:60
UNITS: in.[mm]

SHEET:
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DATE:
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DRAWN BY:
JEK/TJD/JA
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REV. BY:
KAL/RWB/J
EK



DETAIL W
 (PORTABLE CONCRETE BARRIER HIDDEN)
 BACKSIDE DETAIL



DETAIL W



Midwest Roadside
 Safety Facility

NDOR PCB-MGS
 Transition MGSPCB-2

W-Beam End Shoe Detail

DWG. NAME.
 MGSPCB-2_R5

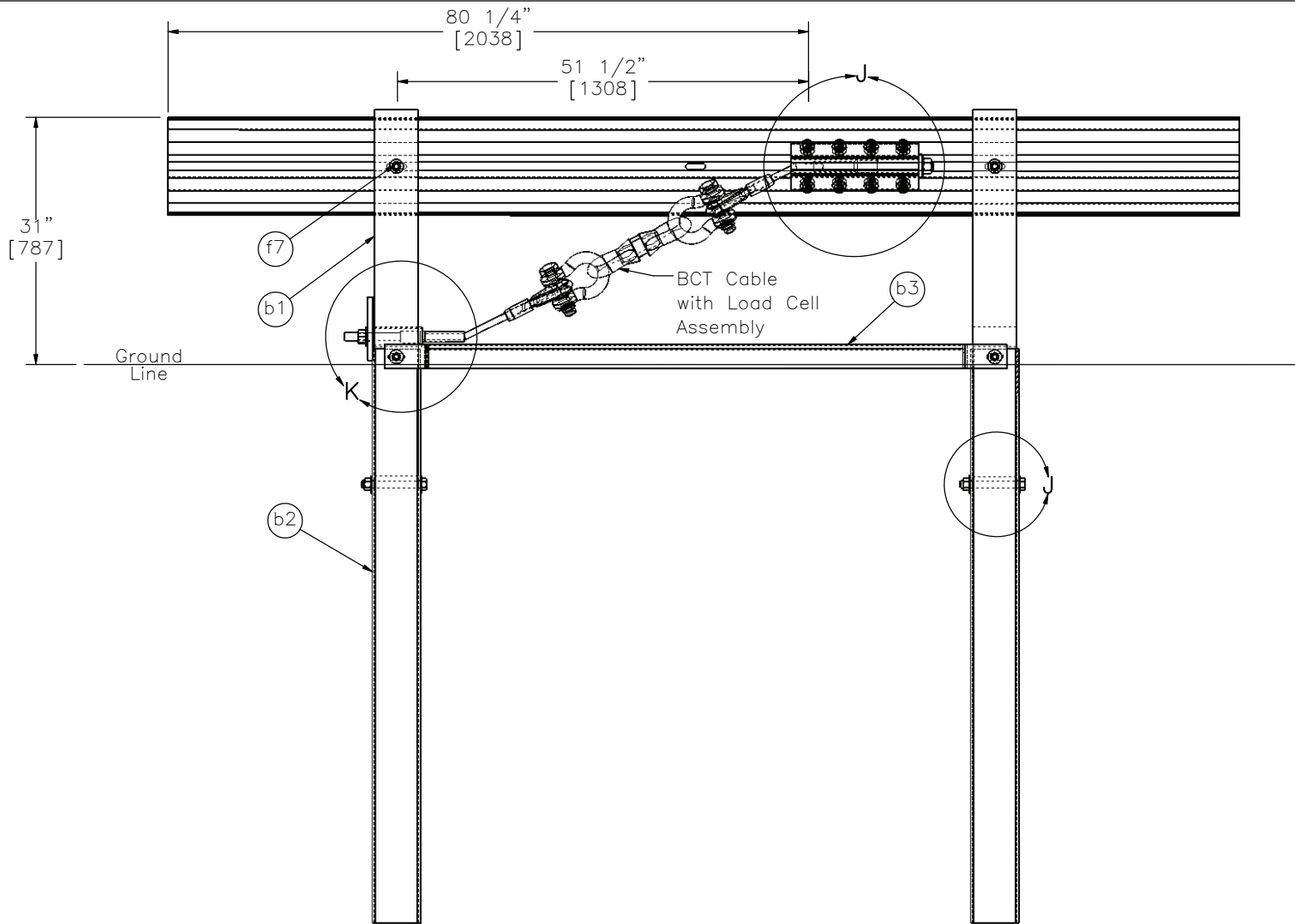
SCALE: 1:7
 UNITS: in.[mm]

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SECTION C-C



Midwest Roadside
Safety Facility

NDOR PCB-MGS
Transition MGSPCB-2

End Section Detail

DWG. NAME.
MGSPCB-2_R5

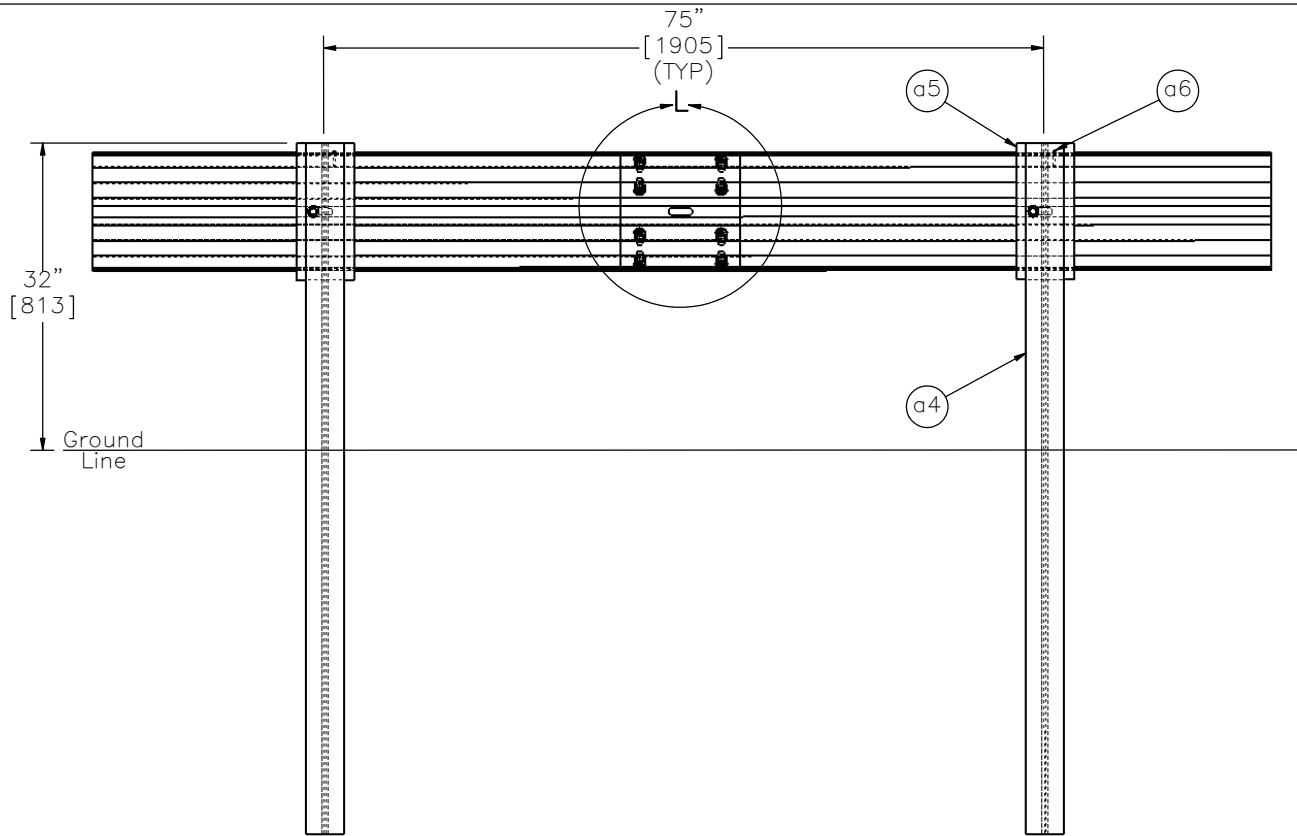
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UNITS: in.[mm]

SHEET:
5 of 36

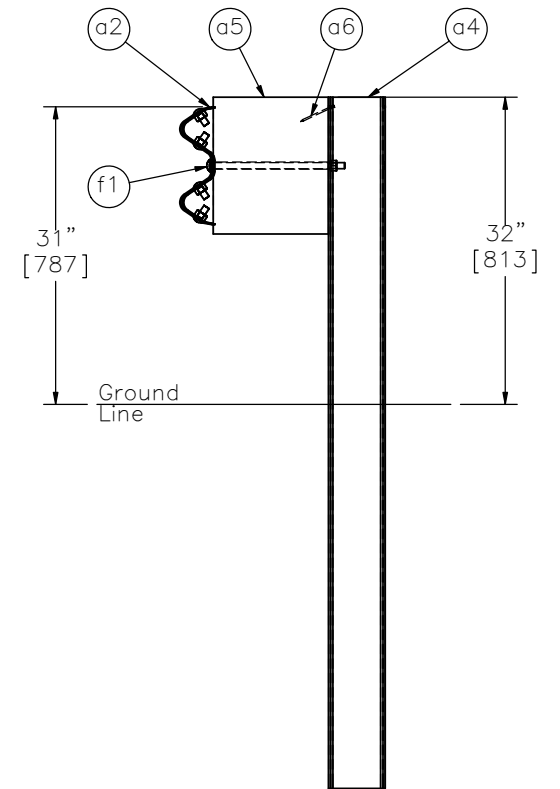
DATE:
10/20/2016

DRAWN BY:
JEK/TJD/JA
H

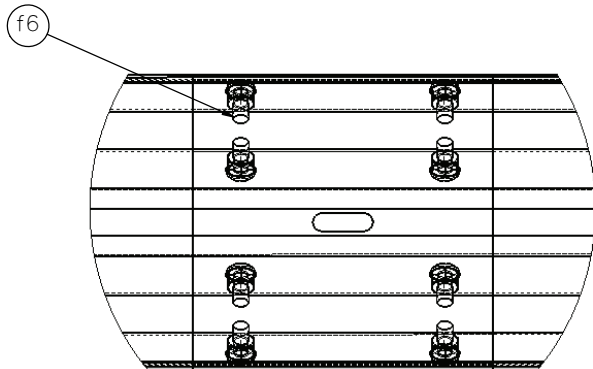
REV. BY:
KAL/RWB/J
EK



SECTION D-D



SECTION E-E



DETAIL L
SCALE 1 : 8



Midwest Roadside
Safety Facility

NDOR PCB-MGS
Transition MGSPCB-2

Splice and Post nos. 3-12
Detail

DWG. NAME:
MGSPCB-2_R5

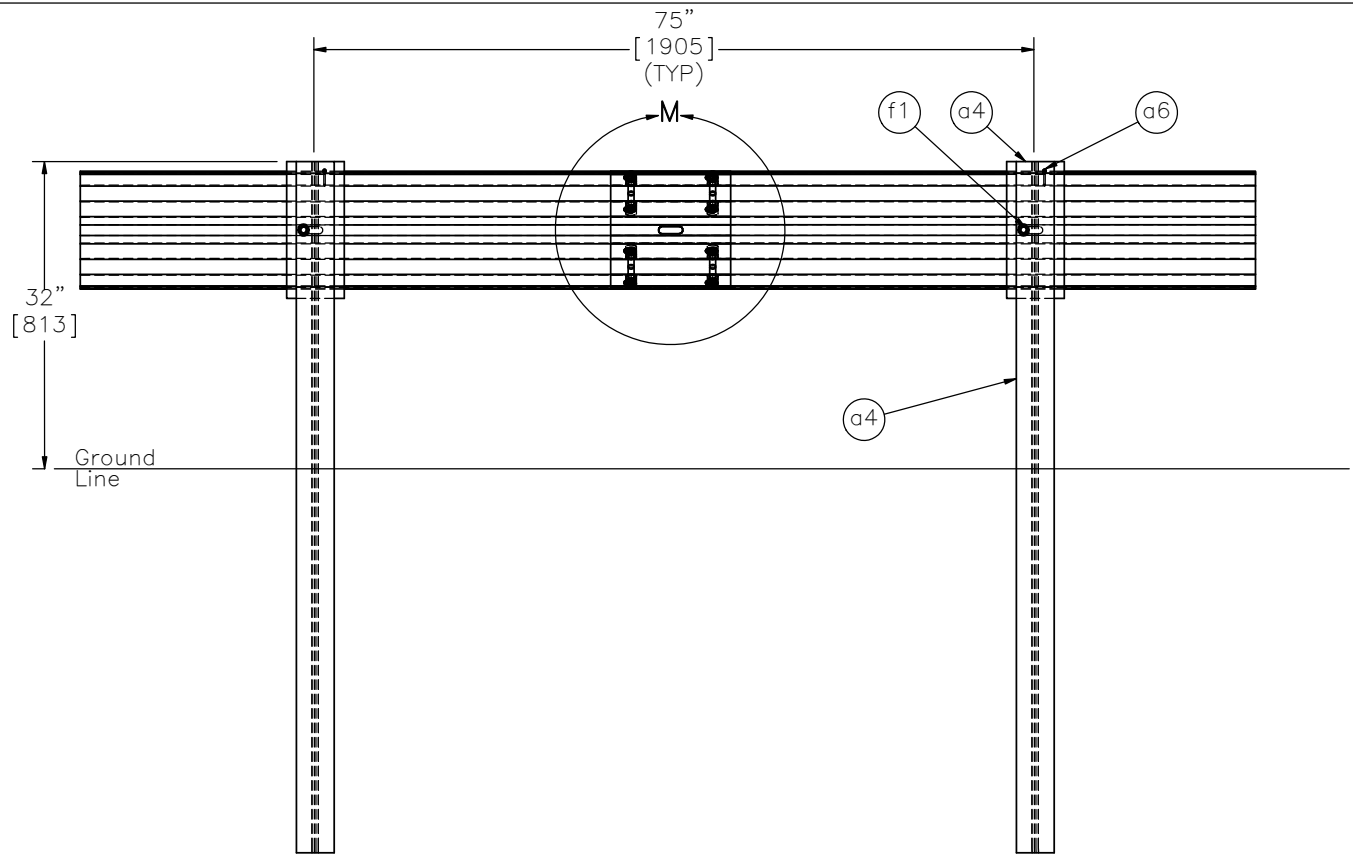
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UNITS: in.[mm]

SHEET:
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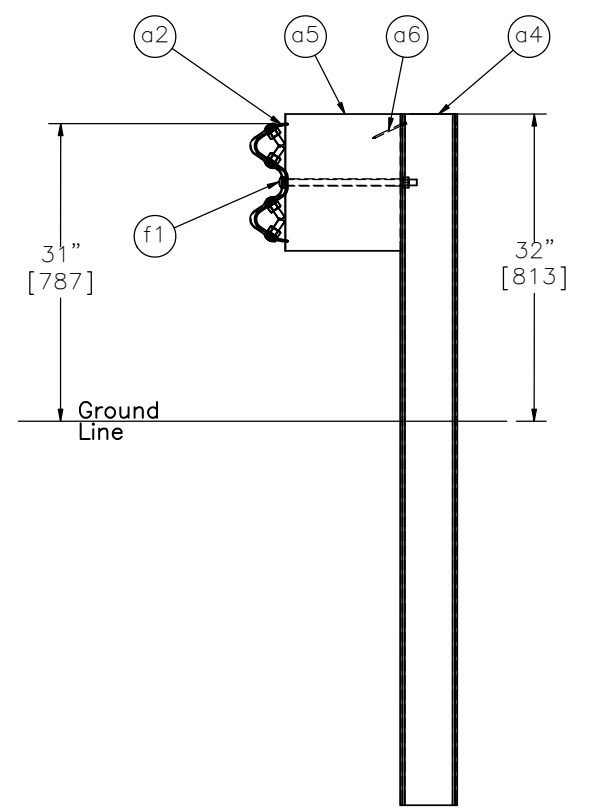
DATE:
10/20/2016

DRAWN BY:
JEK/TJD/JA
H

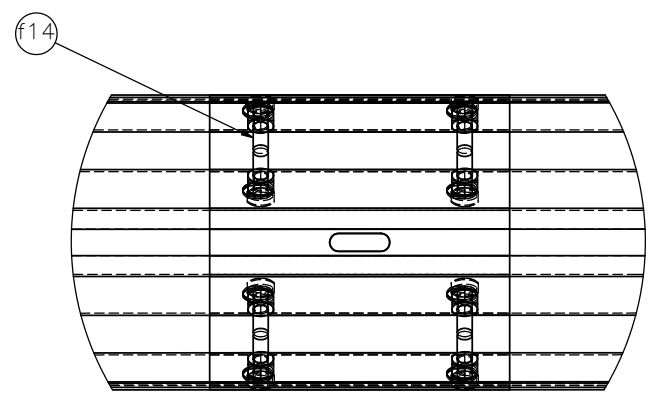
REV. BY:
KAL/RWB/J
EK




SECTION F-F

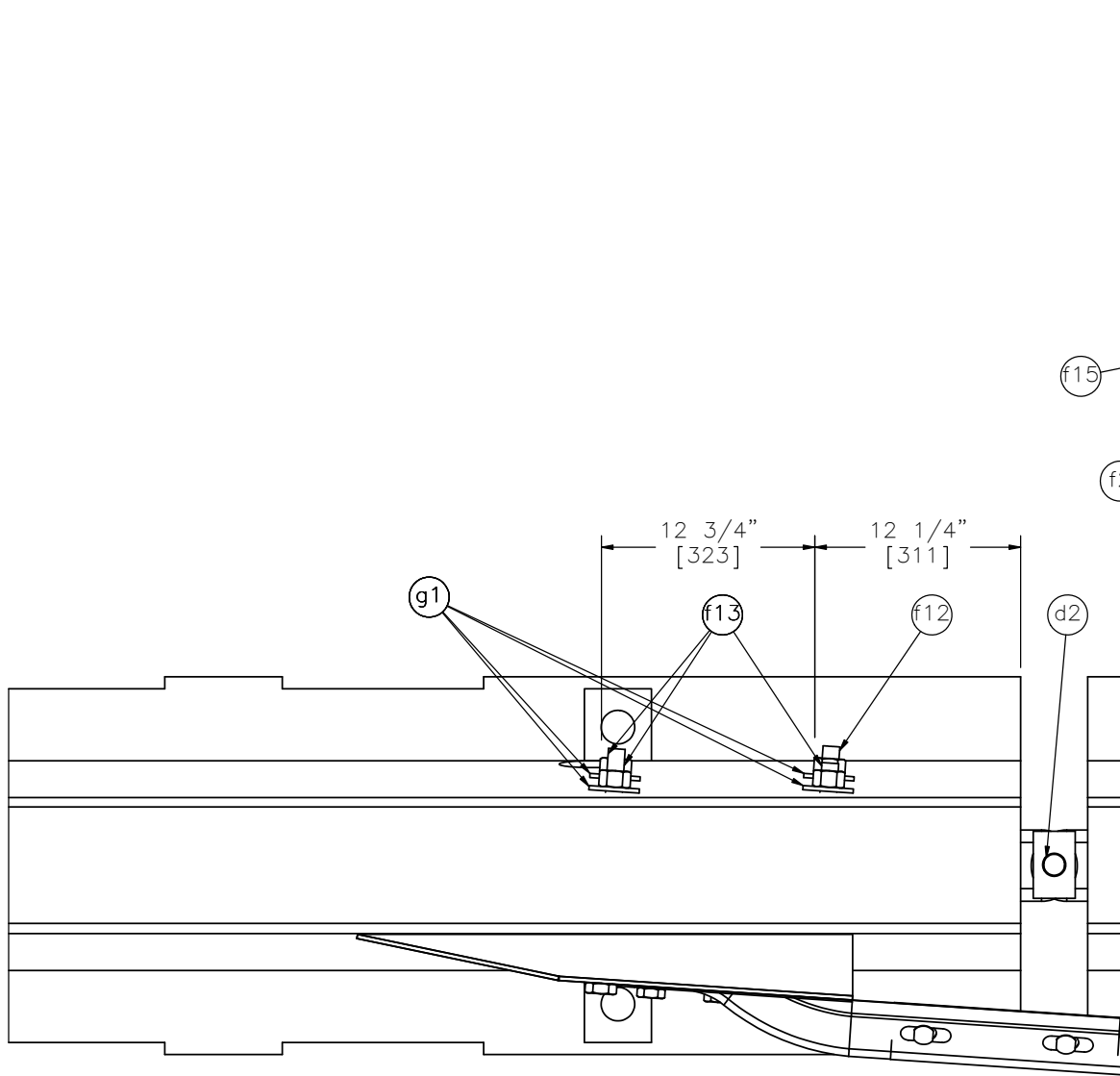


SECTION G-G

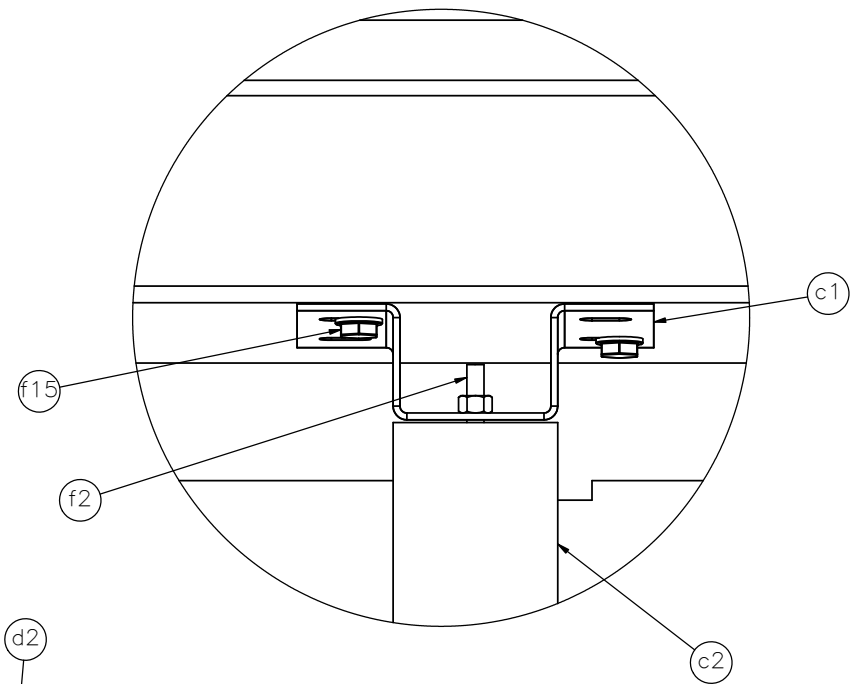


DETAIL M
SCALE 1 : 8

 Midwest Roadside Safety Facility	NDOR PCB-MGS Transition MGSPCB-2		SHEET: 7 of 36
	Splice and Post nos. 13-18 Detail		DATE: 10/20/2016
DWG. NAME: MGSPCB-2_R5	SCALE: 1:20 UNITS: in.[mm]	REV. BY: KAL/RWB/J EK	DRAWN BY: JEK/TJD/JA H



DETAIL I



DETAIL H
SCALE 1 : 7

- Notes: (1) Each blockout mounting plate (part c1), uses two diagonal power wedge bolts (part f15).
- (2) Four $\phi 1 \frac{1}{8}$ " [29] holes are field drilled through the PCB for the bolts (parts f12, f13, and f14) used to mount the connector plate.



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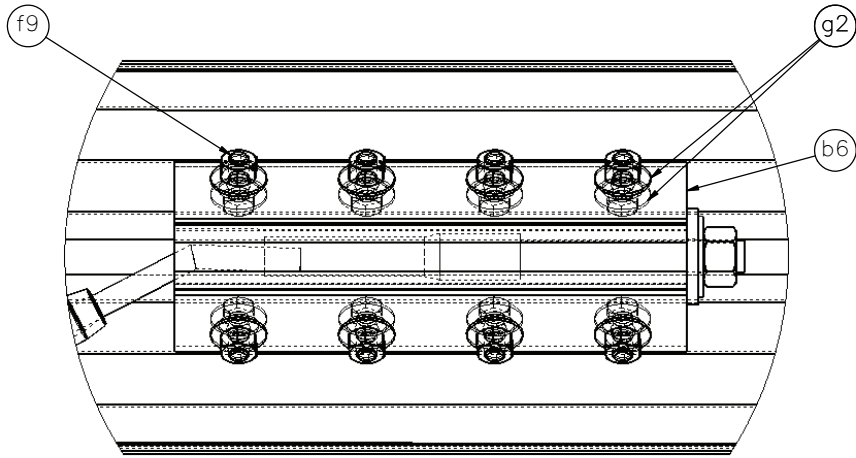
NDOR PCB-MGS
Transition MGSPCB-2

Transition Connection Detail

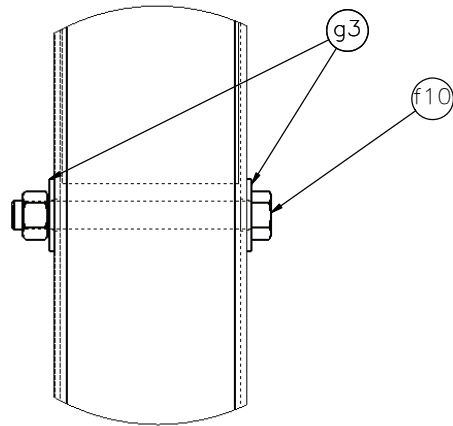
DWG. NAME.
MGSPCB-2_R5

SCALE: 1:11
UNITS: in.[mm]

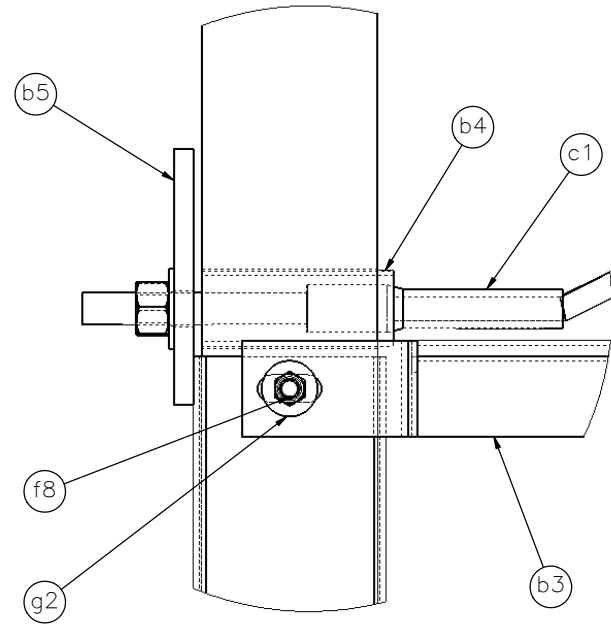
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EK



DETAIL J



DETAIL J



DETAIL K

Note: (1) Additional part g2 on the opposite side under the head of part f8.



Midwest Roadside
Safety Facility

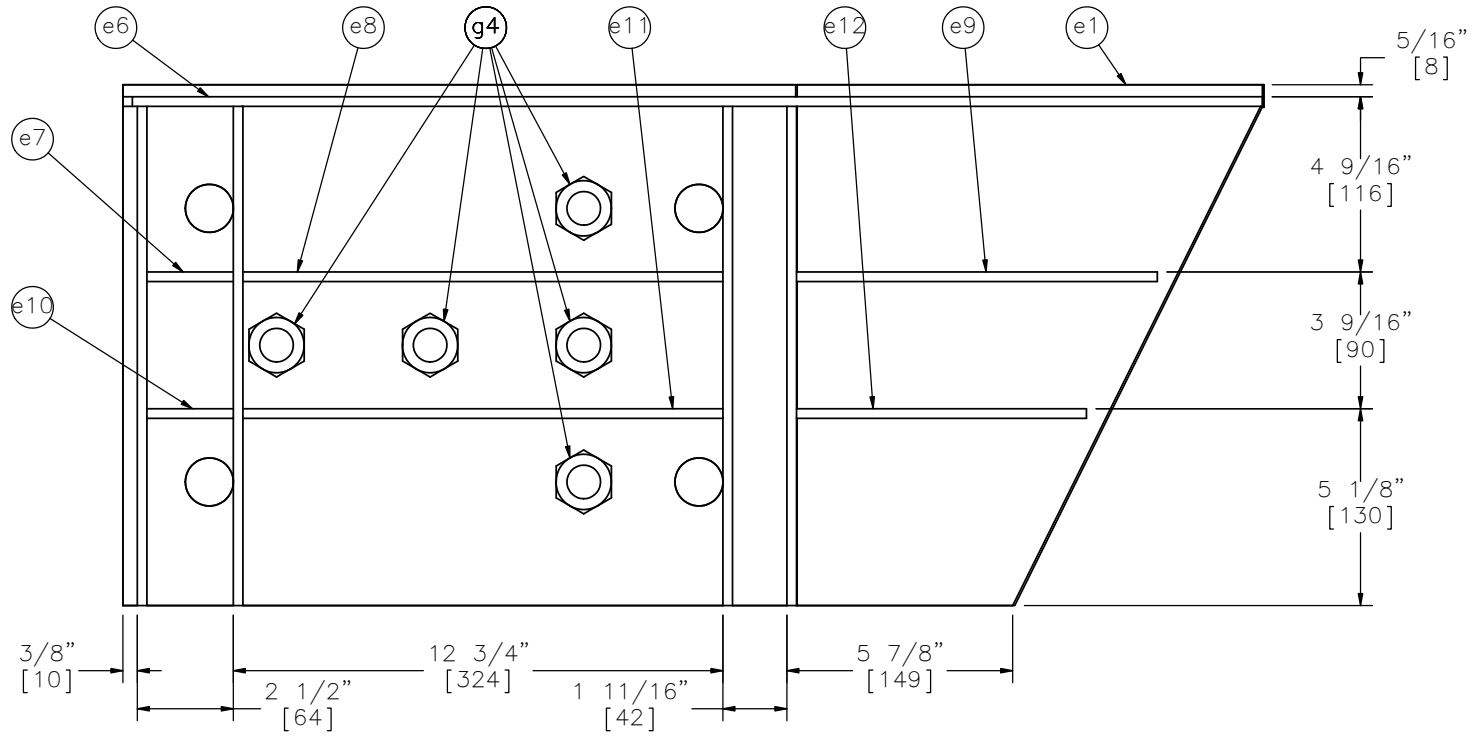
NDOR PCB-MGS
Transition MGSPCB-2

BCT Anchor Detail

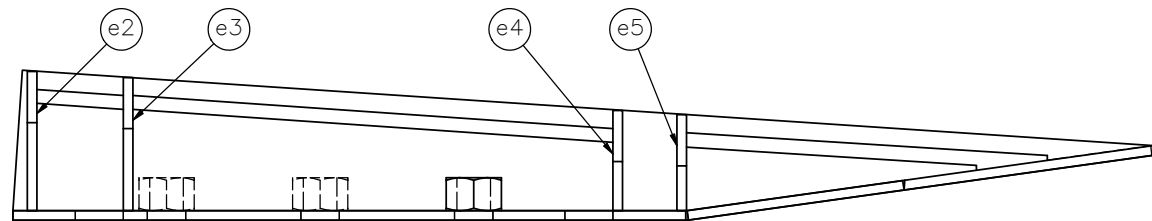
DWG. NAME.
MGSPCB-2_R5

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

SHEET:
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H
REV. BY:
KAL/RWB/J
EK



BACK ELEVATION VIEW



BOTTOM PLAN VIEW



Midwest Roadside
Safety Facility

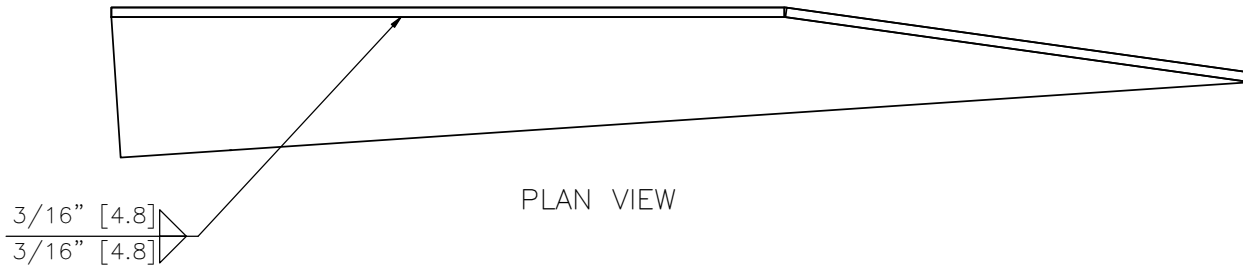
NDOR PCB-MGS
Transition MGSPCB-2

Connector Plate Detail

DWG. NAME.
MGSPCB-2_R5

SCALE: 1:5
UNITS: in.[mm]

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EK

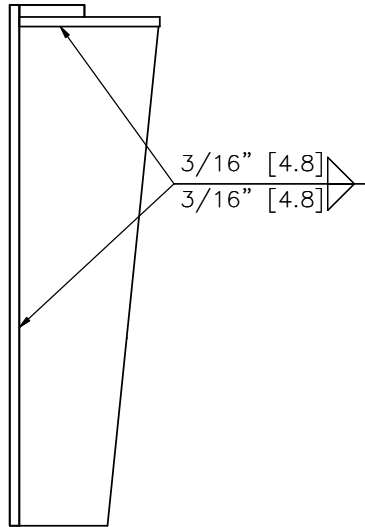


PLAN VIEW

$\frac{3}{16}$ " [4.8]
 $\frac{3}{16}$ " [4.8]

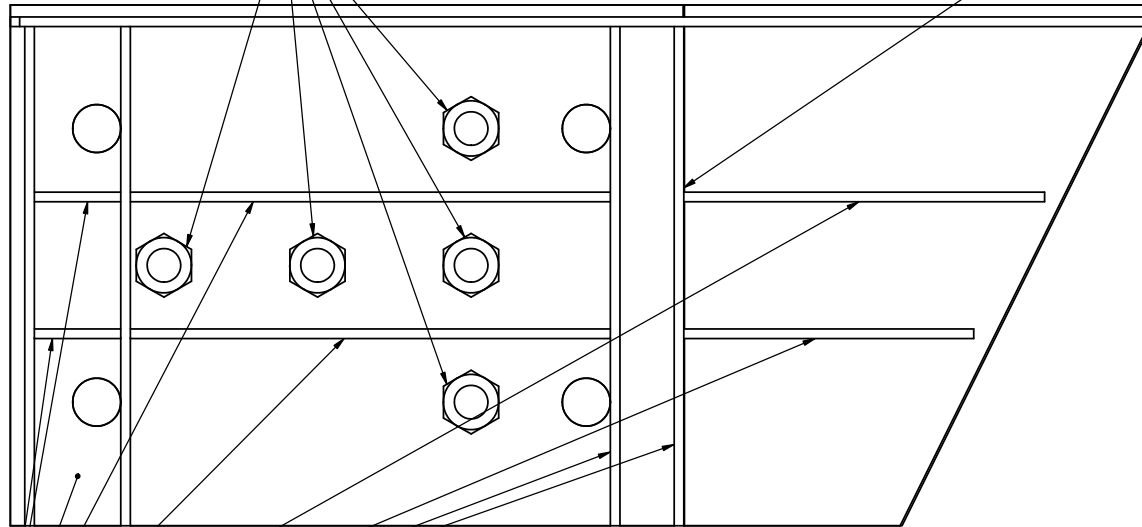
$\frac{1}{4}$ " [6.4] 2 Sides

$\frac{3}{16}$ " [4.8]
 $\frac{3}{16}$ " [4.8] TYP



PROFILE VIEW

$\frac{3}{16}$ " [4.8]
 $\frac{3}{16}$ " [4.8]



BACK ELEVATION VIEW

$\frac{3}{16}$ " [4.8] [25-51]
 $\frac{3}{16}$ " [4.8] [25-51]



Midwest Roadside
Safety Facility

NDOR PCB-MGS
Transition MGSPCB-2

Connector Plate Weld Detail

DWG. NAME.
MGSPCB-2_R5

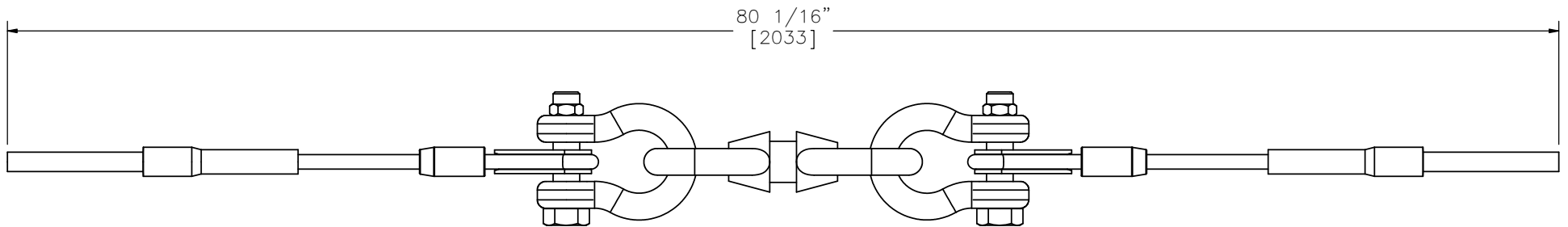
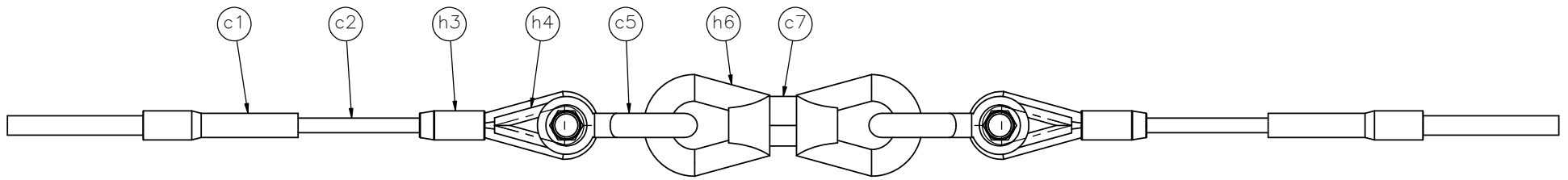
SCALE: 1:5
UNITS: in.[mm]

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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.



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Safety Facility

NDOR PCB-MGS
Transition MGSPCB-2

BCT Anchor Cable and Load
Cell Detail

DWG. NAME:
MGSPCB-2_R5

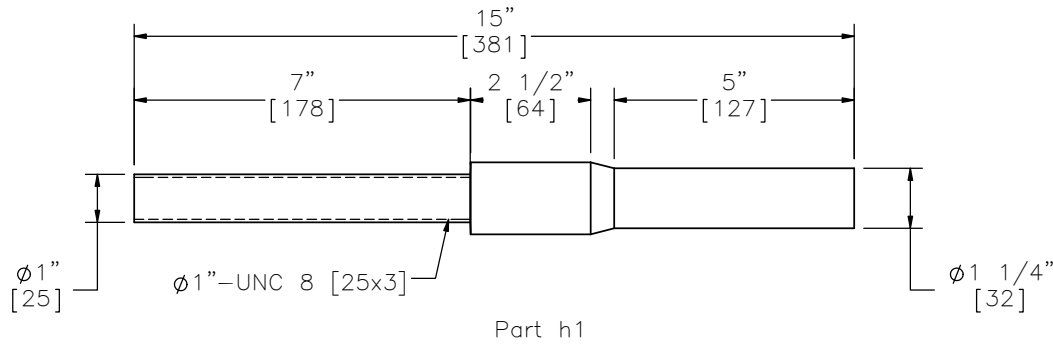
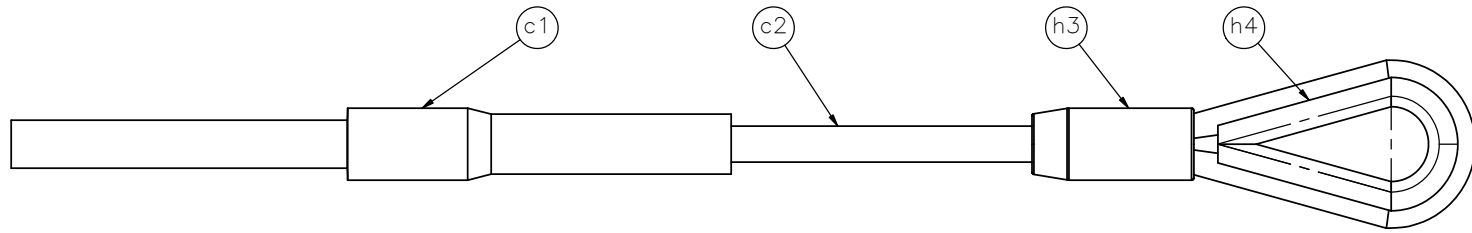
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UNITS: in.[mm]

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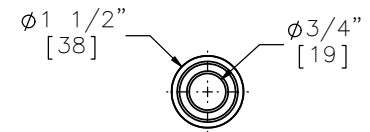
DATE:
10/20/2016

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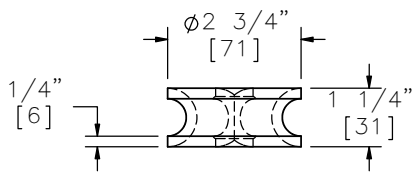
REV. BY:
KAL/RWB/J
EK



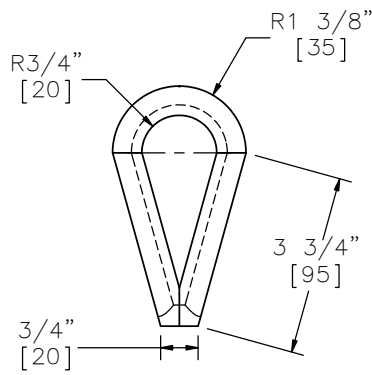
Part h1



PLAN VIEW

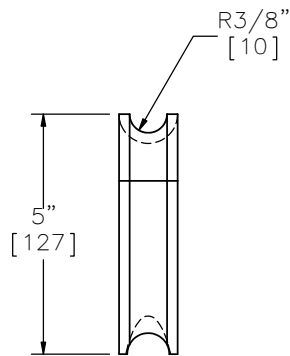


PLAN VIEW

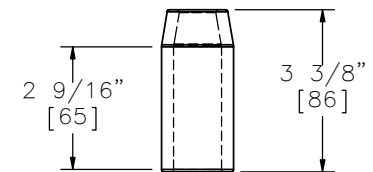


ELEVATION VIEW

Part h4



PROFILE VIEW



ELEVATION VIEW

Part h3



Midwest Roadside Safety Facility

NDOR PCB-MGS
Transition MGSPCB-2

Modified BCT Anchor Cable

DWG. NAME:
MGSPCB-2_R5

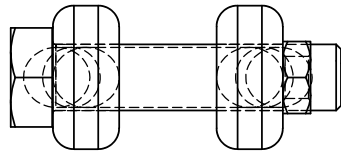
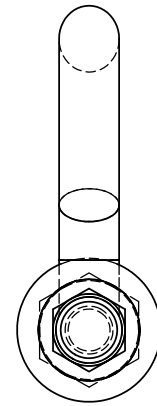
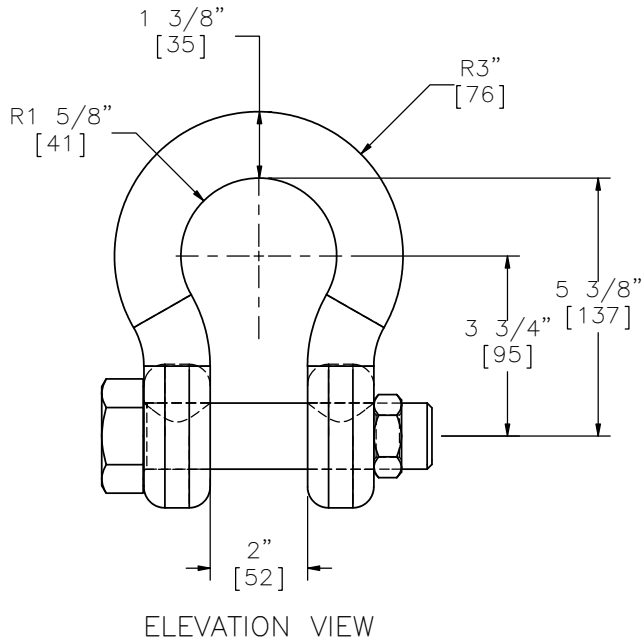
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UNITS: in.[mm]

SHEET:
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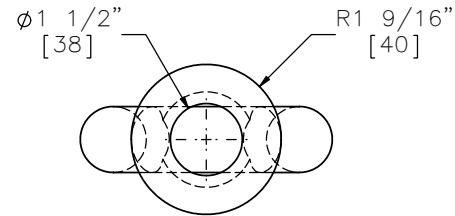
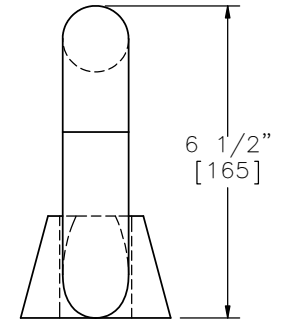
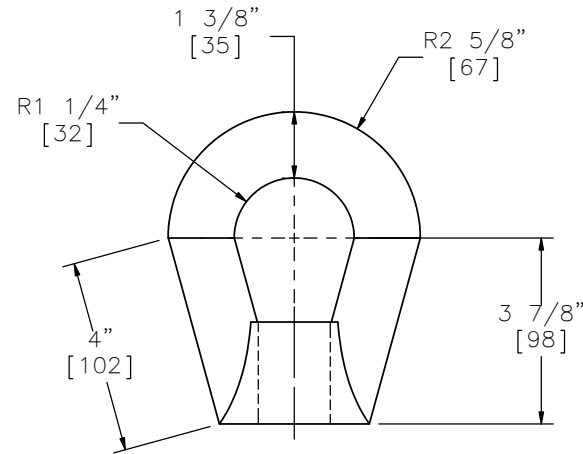
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Part h5



Part h6



Midwest Roadside
Safety Facility

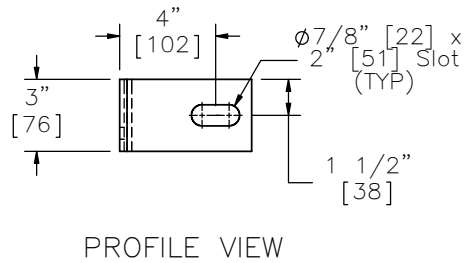
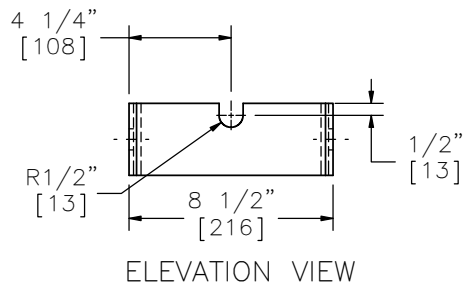
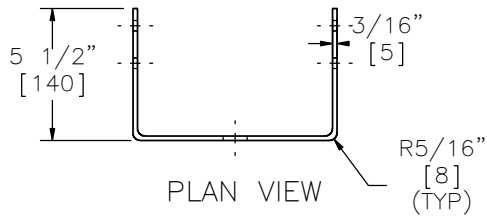
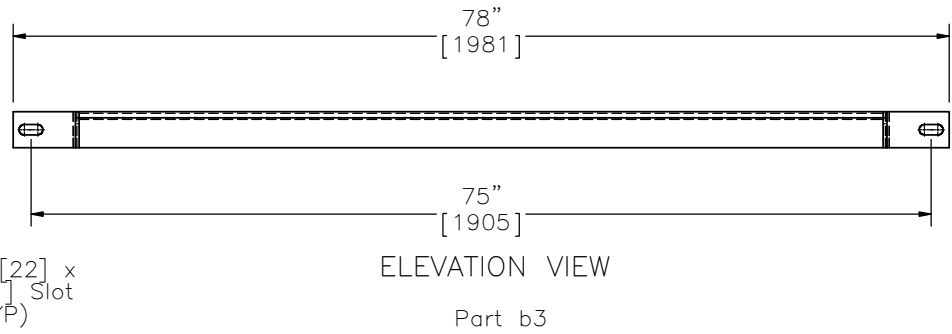
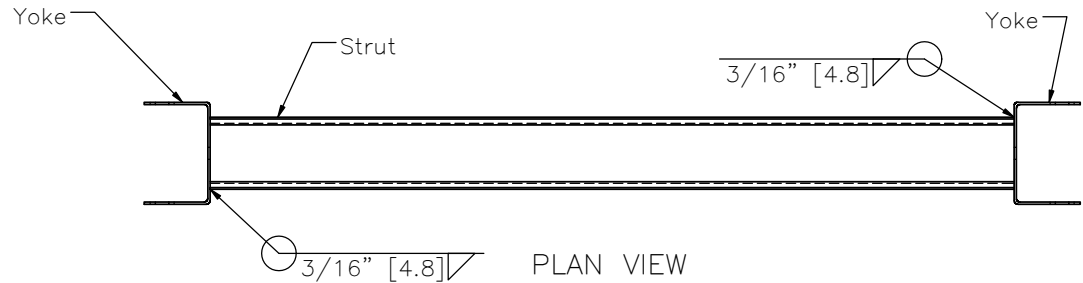
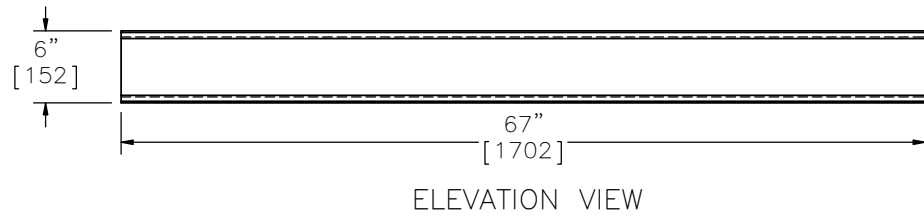
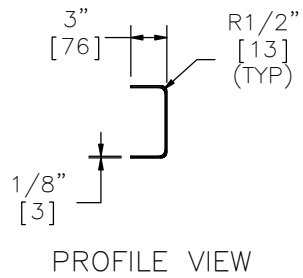
NDOR PCB-MGS
Transition MGSPCB-2

Shackle and Eye Nut Detail

DWG. NAME:
MGSPCB-2_R5

SCALE: 1:4
UNITS: in.[mm]

SHEET:
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DATE:
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REV. BY:
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Yoke
SCALE 1 : 8



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Safety Facility

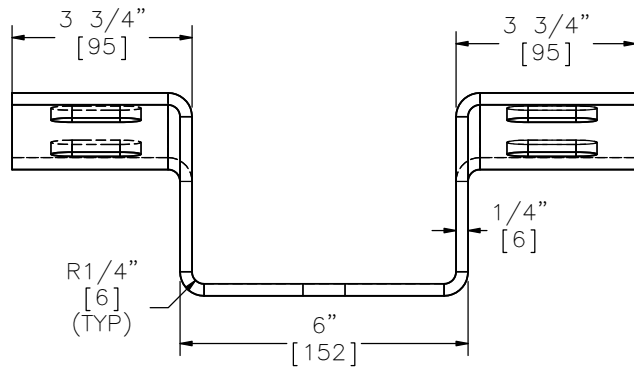
NDOR PCB-MGS
Transition MGSPCB-2

Ground Strut Detail

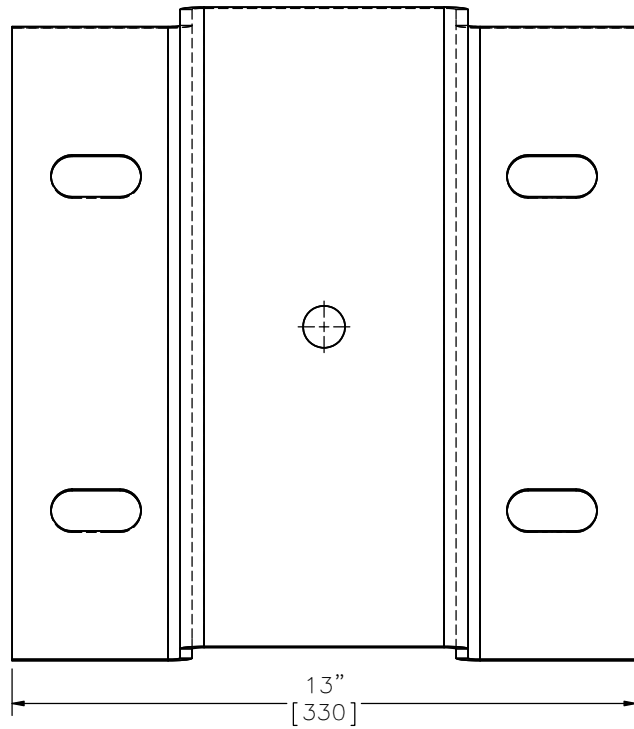
DWG. NAME.
MGSPCB-2_R5

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

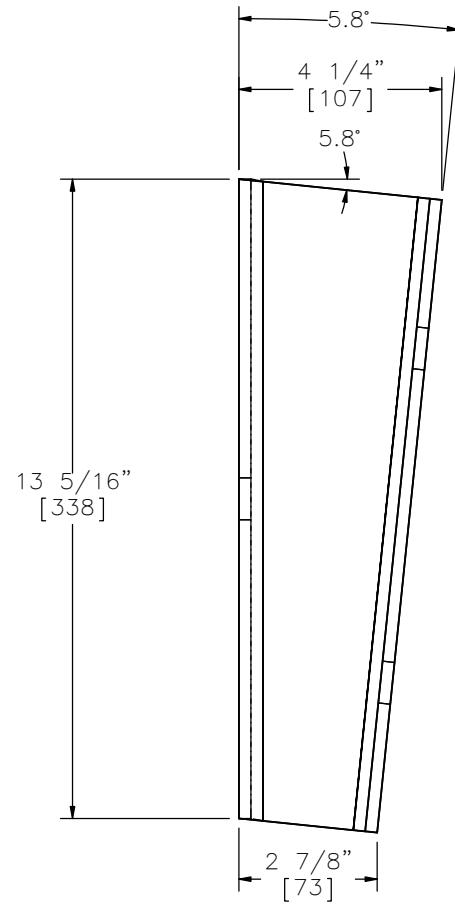
SHEET:
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DATE:
10/20/2016
DRAWN BY:
JEK/TJD/JA
H
REV. BY:
KAL/RWB/J
EK



PLAN VIEW



ELEVATION VIEW



PROFILE VIEW



Midwest Roadside
Safety Facility

NDOR PCB-MGS
Transition MGSPCB-2

Blockout Mounting Plate

DWG. NAME.
MGSPCB-2_R5

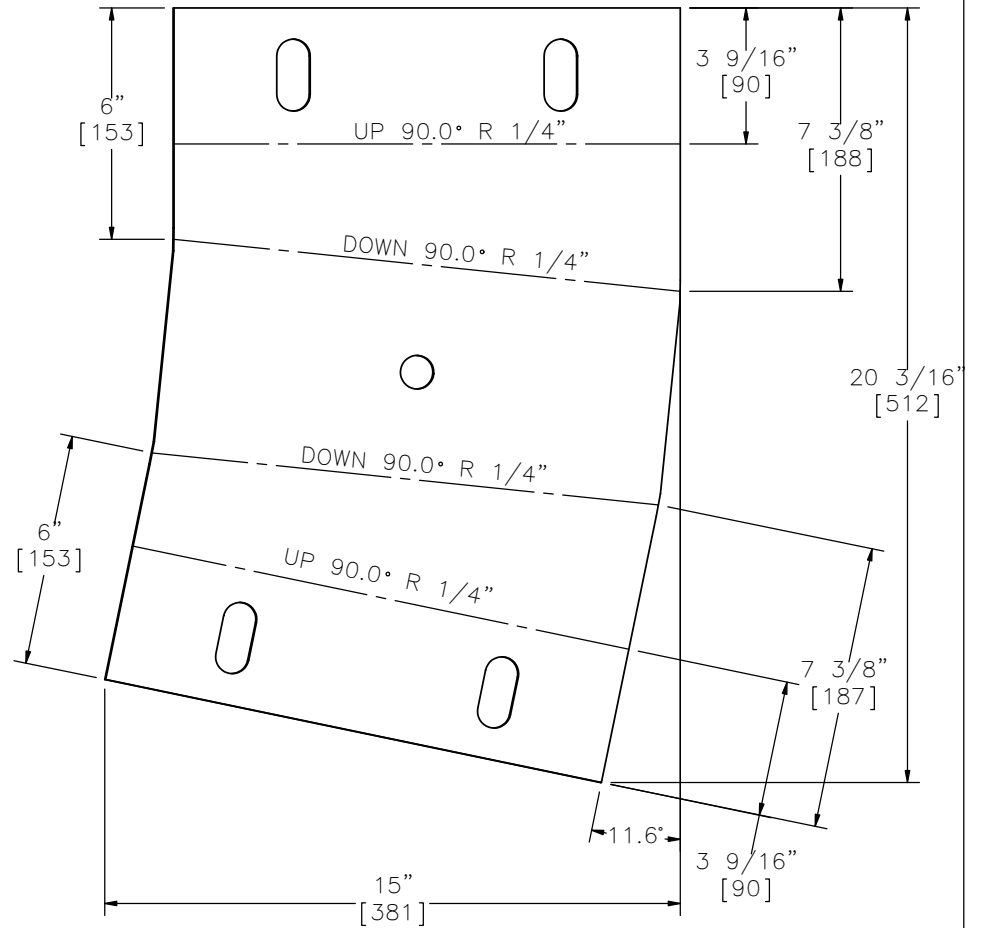
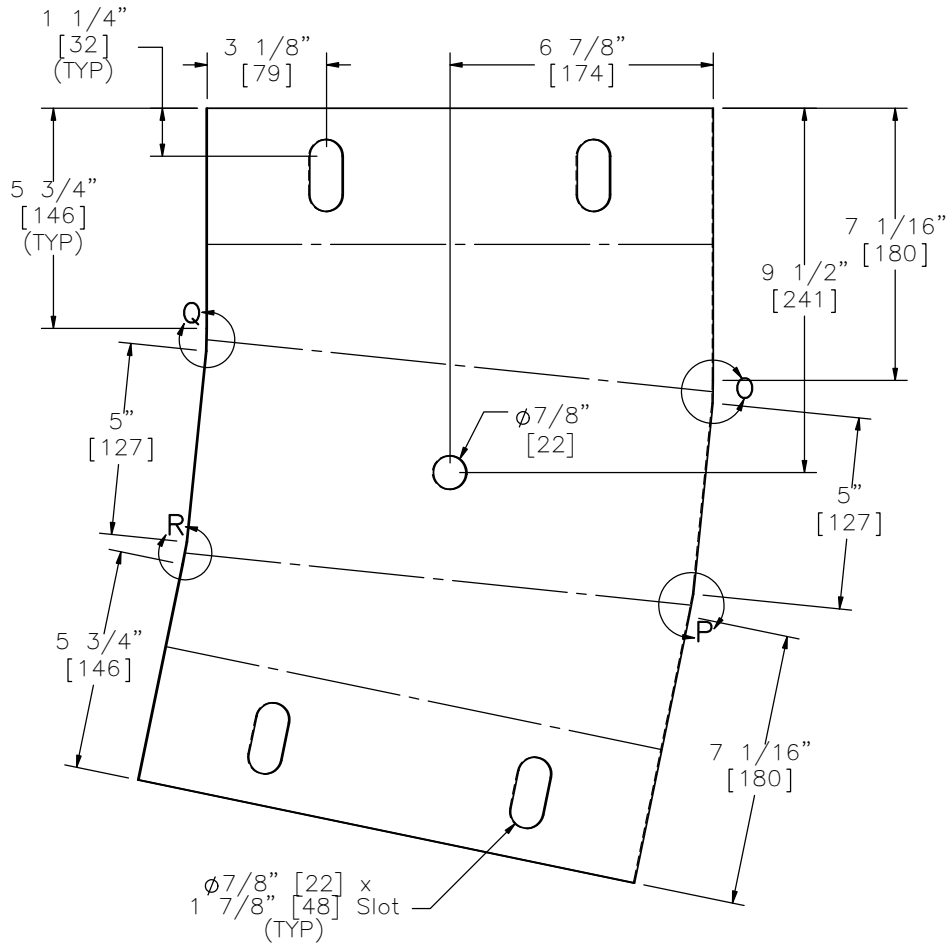
SCALE: 1:4
UNITS: in.[mm]

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DATE:
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REV. BY:
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Note: (1) Thickness of Blockout Mounting Plate is $1/4''$ [6].



Midwest Roadside
Safety Facility

NDOR PCB-MGS
Transition MGSPCB-2

Blockout Mounting Plate - Flat
Pattern

DWG. NAME.
MGSPCB-2_R5

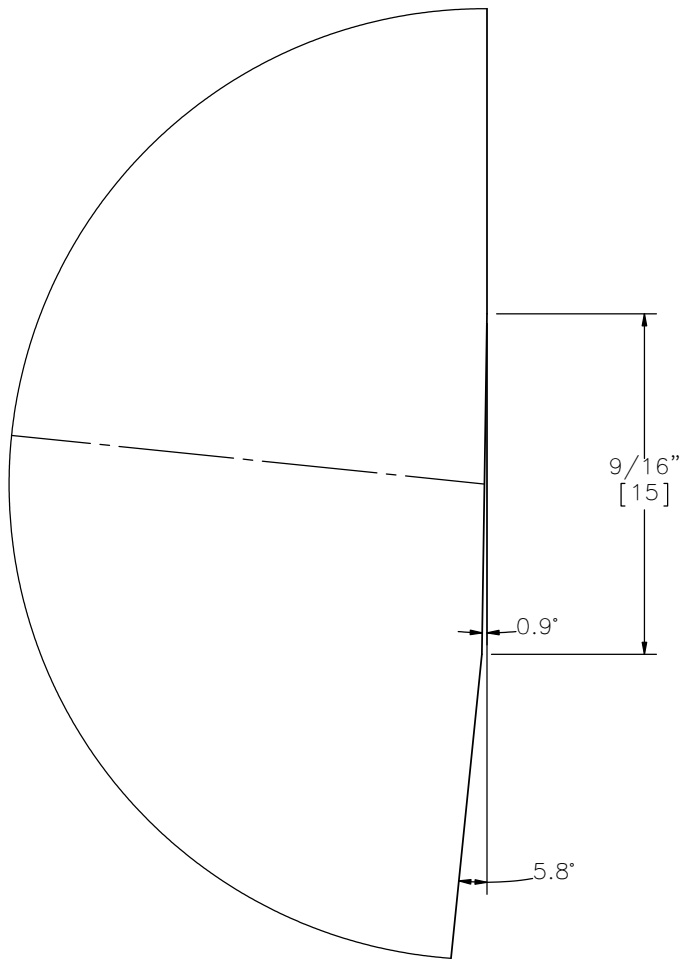
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SHEET:
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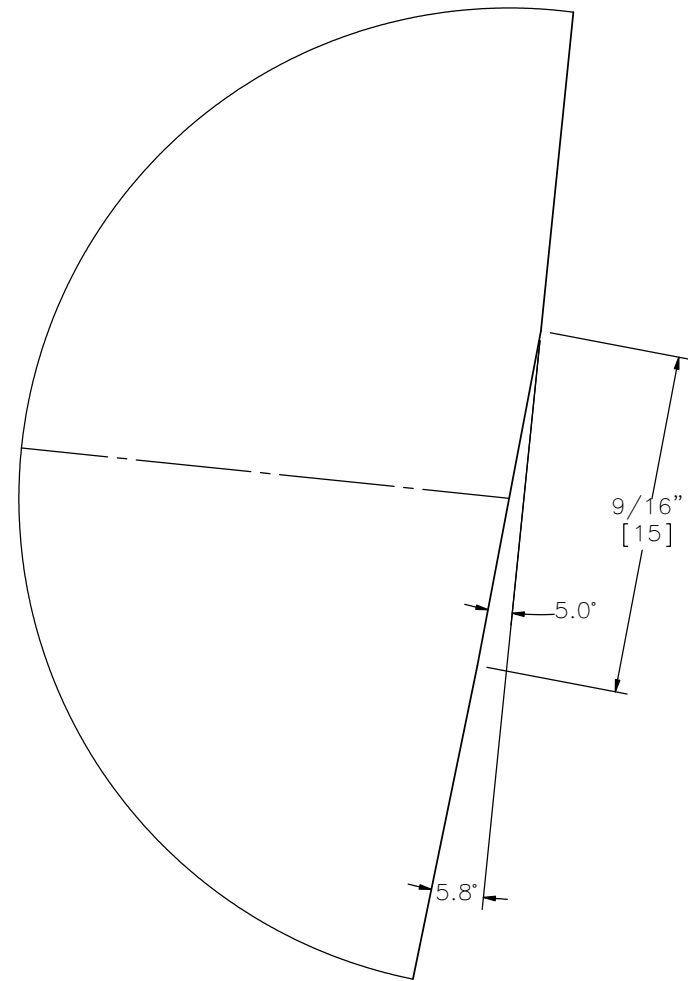
DATE:
10/20/2016

DRAWN BY:
JEK/TJD/JA
H

REV. BY:
KAL/RWB/J
EK



DETAIL O



DETAIL P



Midwest Roadside
Safety Facility

NDOR PCB-MGS
Transition MGSPCB-2

Blockout Mounting Plate Detail

DWG. NAME.
MGSPCB-2_R5

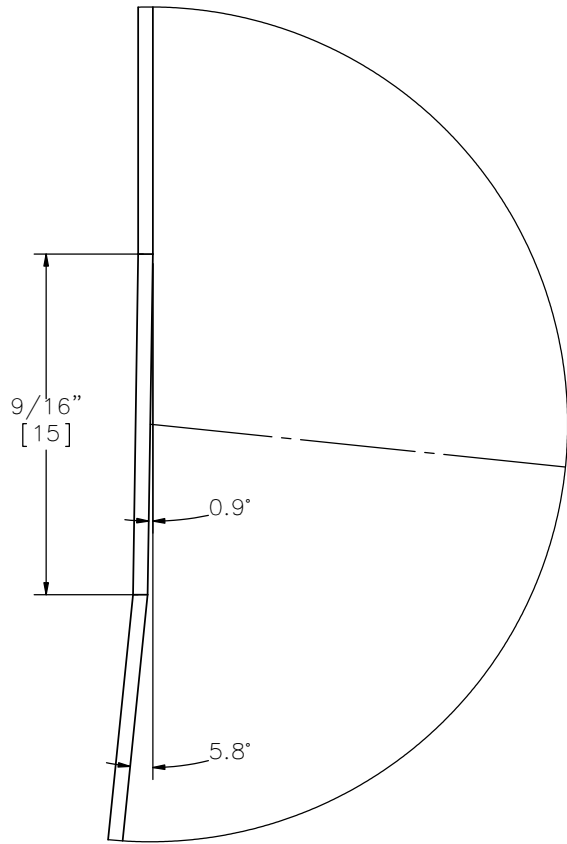
SCALE: 3:1
UNITS: in.[mm]

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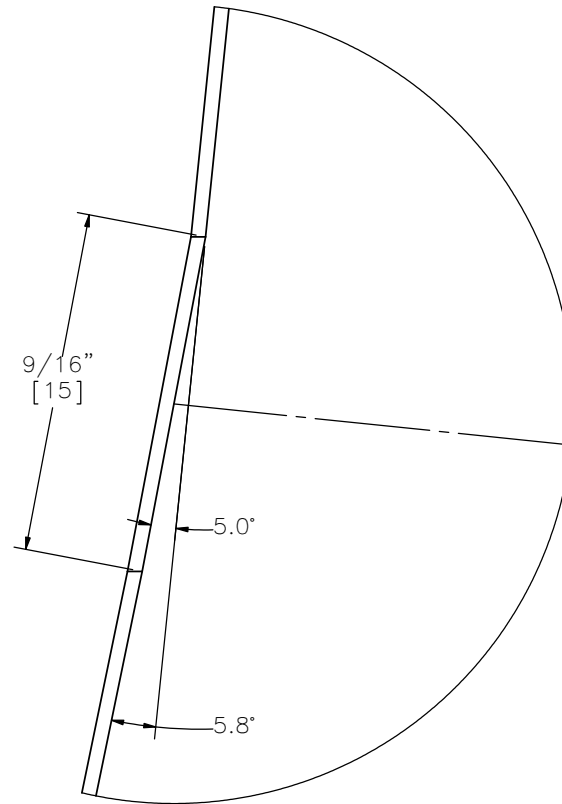
DATE:
10/20/2016

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EK



DETAIL Q



DETAIL R



Midwest Roadside
Safety Facility

NDOR PCB-MGS
Transition MGSPCB-2

Blockout Mounting Plate Detail

DWG. NAME.
MGSPCB-2_R5

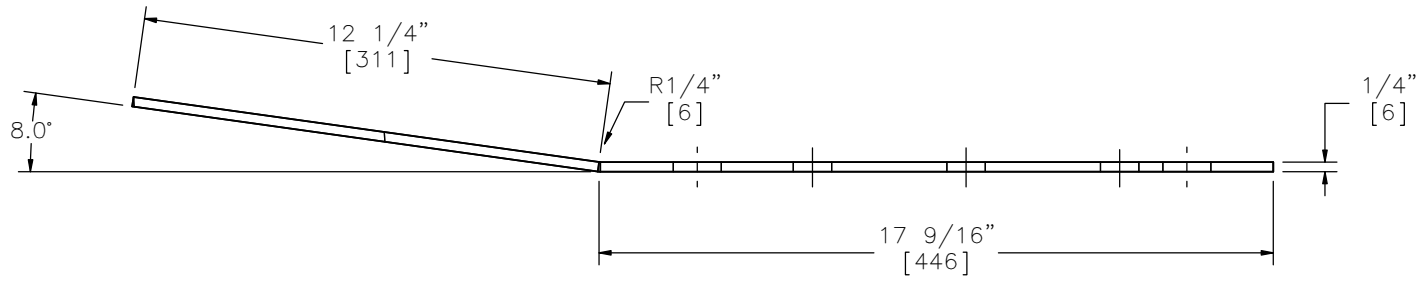
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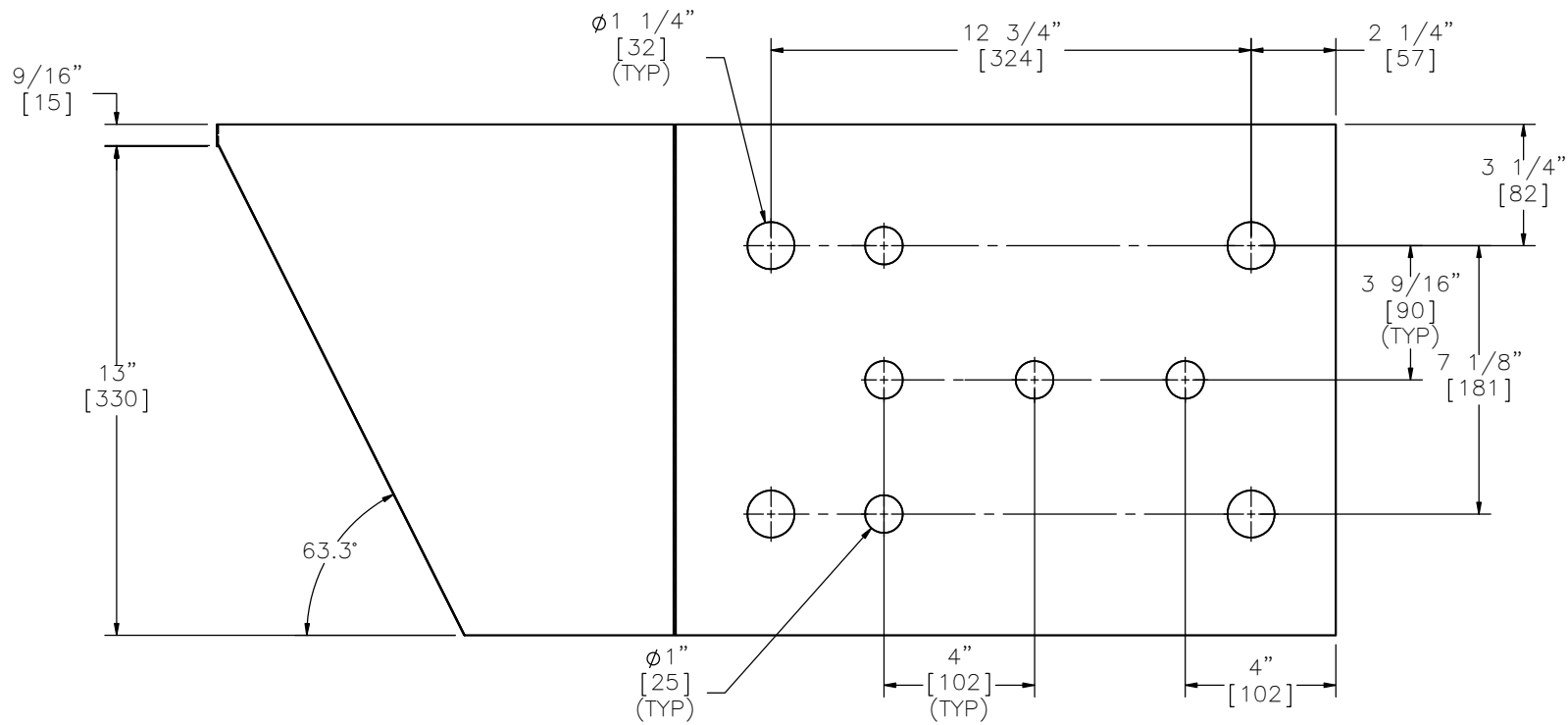
DATE:
10/20/2016

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JEK/TJD/JA
H

REV. BY:
KAL/RWB/J
EK



PLAN VIEW



ELEVATION VIEW
Part e1



Midwest Roadside
Safety Facility

NDOR PCB-MGS
Transition MGSPCB-2

Connector Plate Face Plate

DWG. NAME:
MGSPCB-2_R5

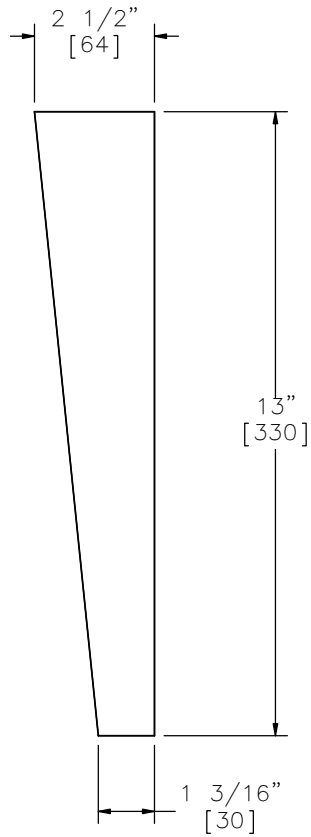
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UNITS: in.[mm]

SHEET:
20 of 36

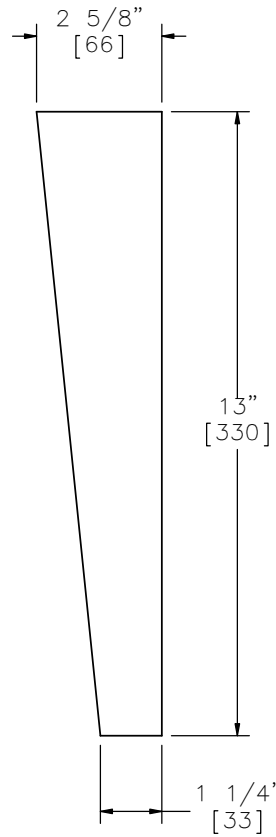
DATE:
10/20/2016

DRAWN BY:
JEK/TJD/JA
H

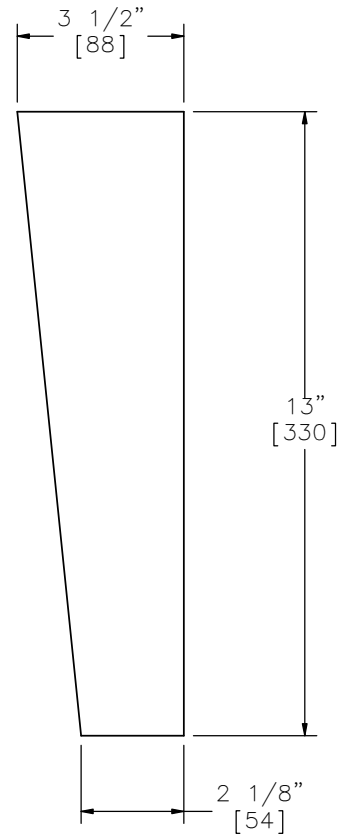
REV. BY:
KAL/RWB/J
EK



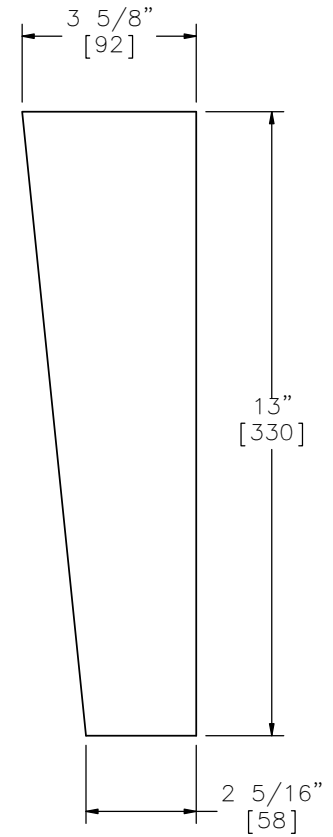
Part e5



Part e4



Part e3



Part e2

Note: (1) All vertical gussets have a thickness of 1/4" [6].



Midwest Roadside
Safety Facility

NDOR PCB-MGS
Transition MGSPCB-2

Connector Plate Vertical
Gussets

DWG. NAME:
MGSPCB-2_R5

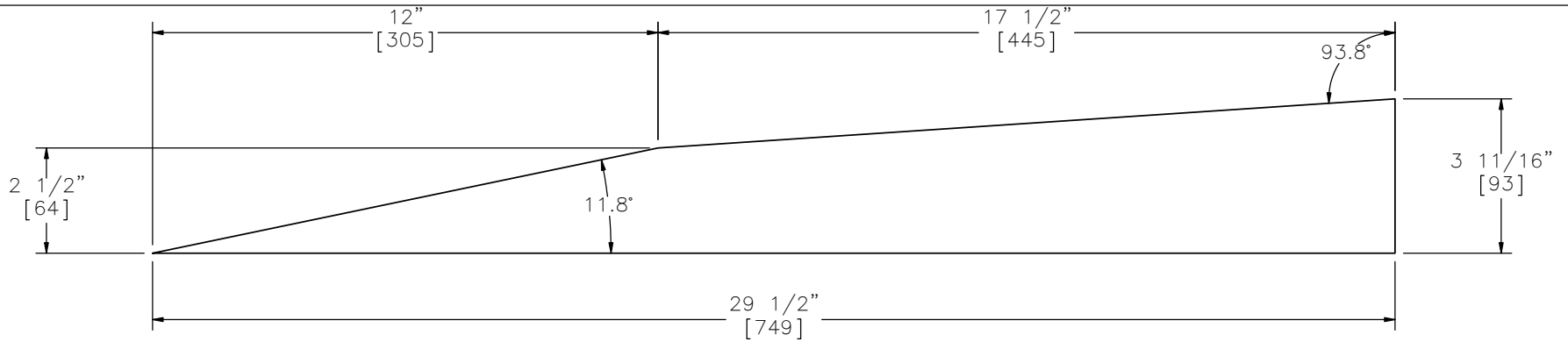
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UNITS: in.[mm]

SHEET:
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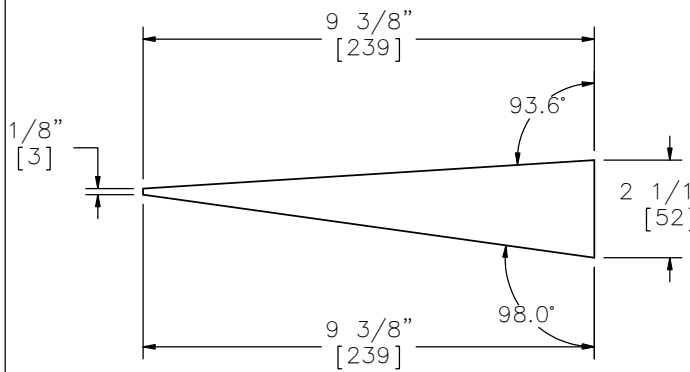
DATE:
10/20/2016

DRAWN BY:
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H

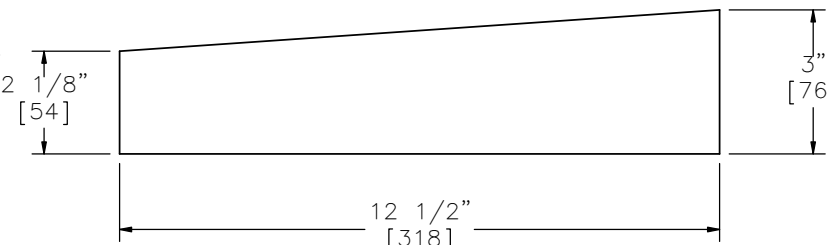
REV. BY:
KAL/RWB/J
EK



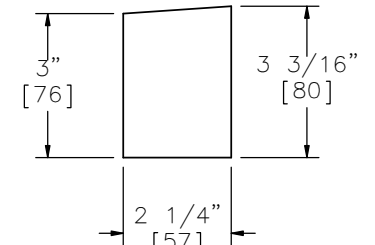
Part e6



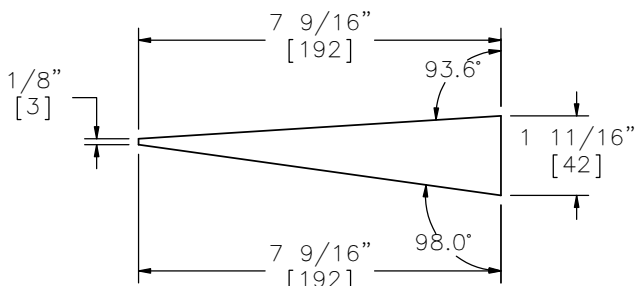
Part e9



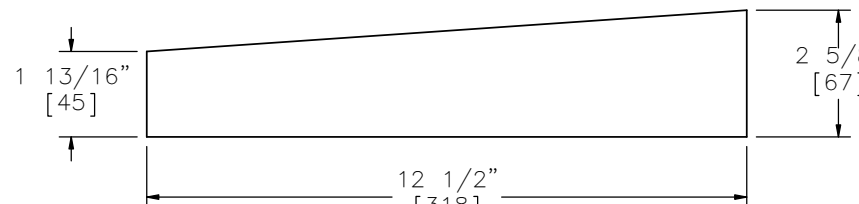
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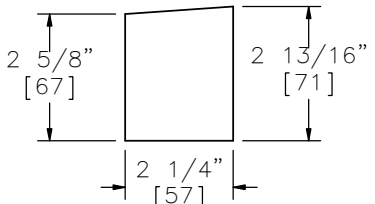
Part e7



Part e12



Part e11



Part e10

Note: (1) All horizontal gussets have a thickness of 1/4" [6].



Midwest Roadside
Safety Facility

NDOR PCB-MGS
Transition MGSPCB-2

Connector Plate Horizontal
Gussets

DWG. NAME:
MGSPCB-2_R5

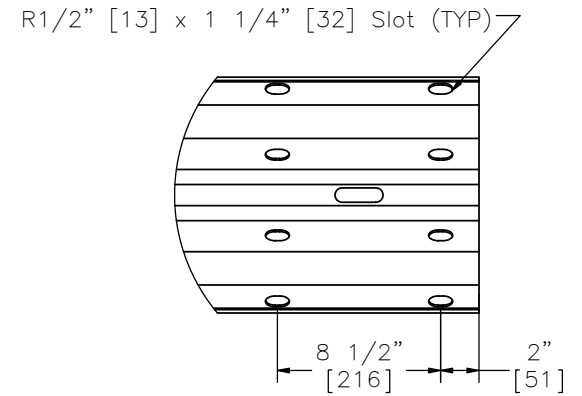
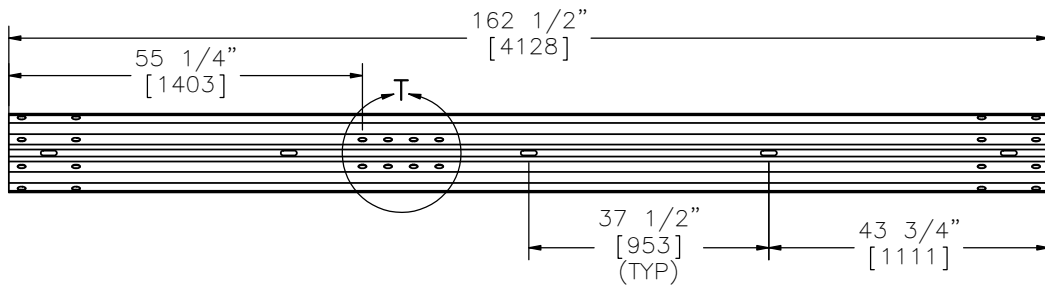
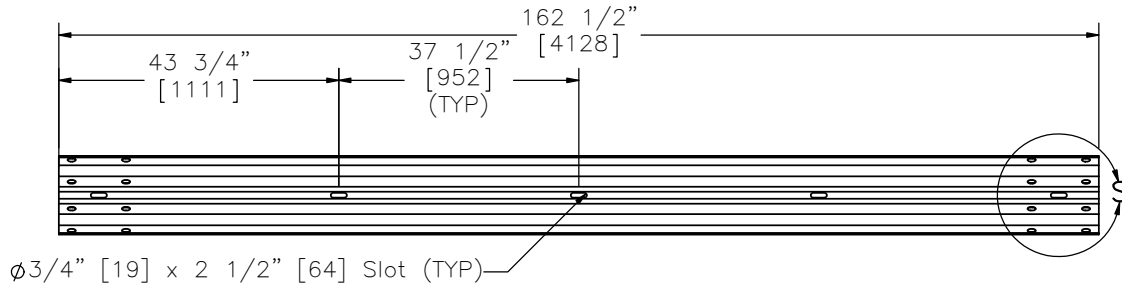
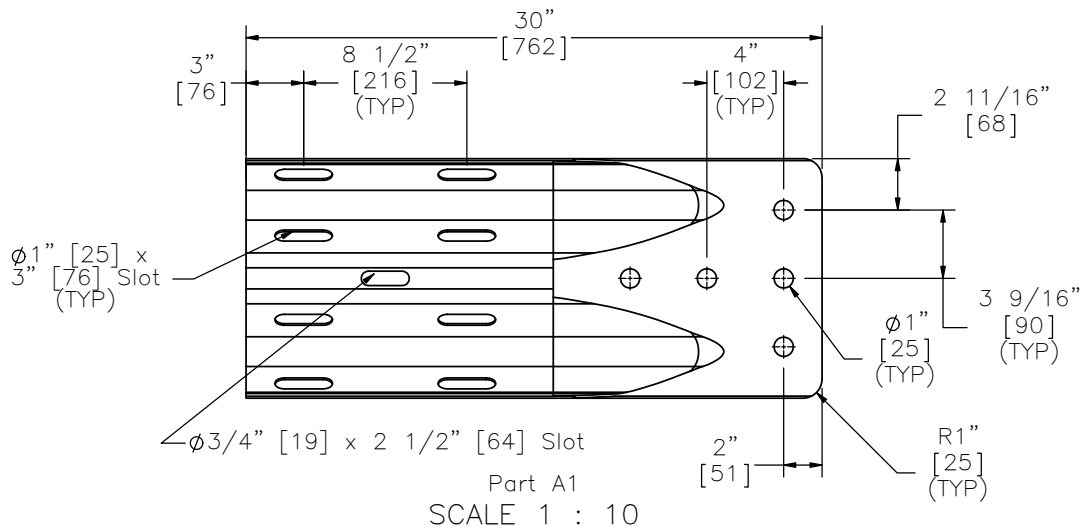
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UNITS: in.[mm]

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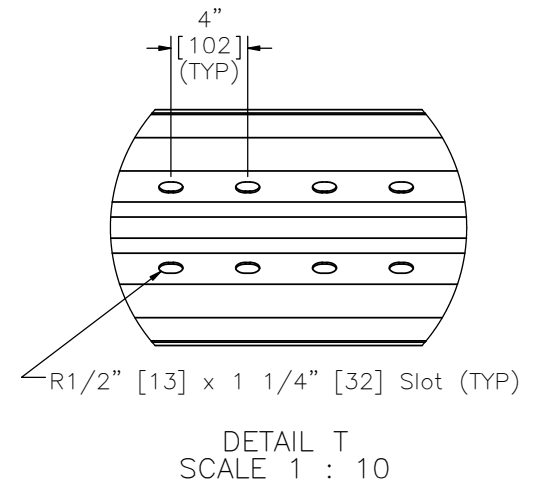
DATE:
10/20/2016

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EK



PROFILE VIEW



Midwest Roadside
Safety Facility

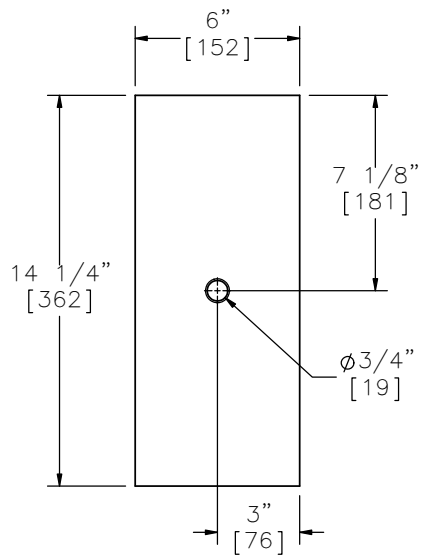
NDOR PCB-MGS
Transition MGSPCB-2

W-Beam Section Details

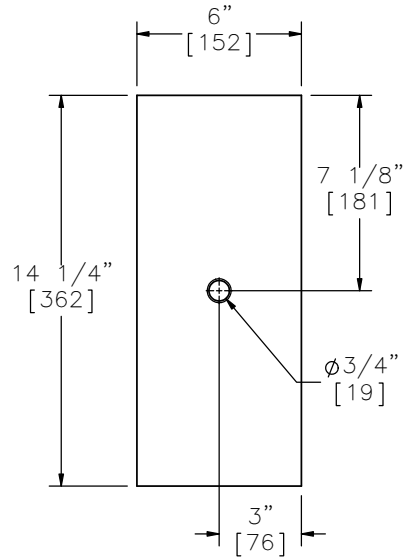
DWG. NAME:
MGSPCB-2_R5

SCALE: 1:30
UNITS: in.[mm]

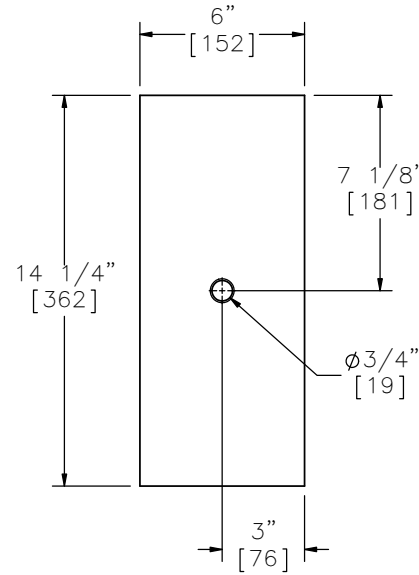
SHEET:
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DATE:
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REV. BY:
KAL/RWB/J
EK



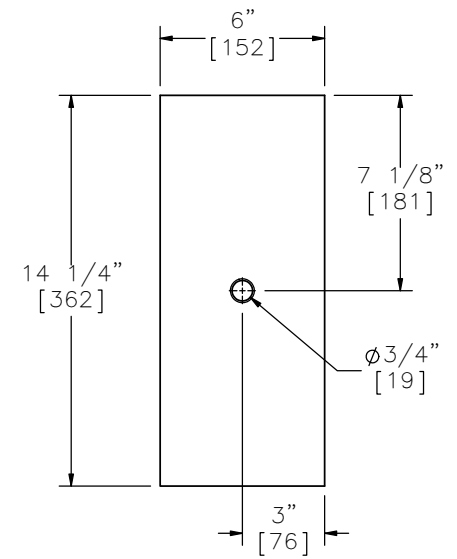
ELEVATION VIEW



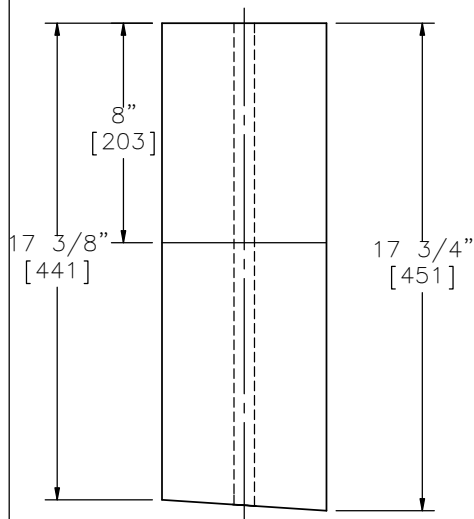
ELEVATION VIEW



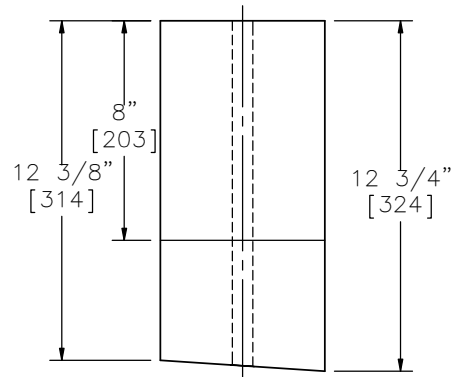
ELEVATION VIEW



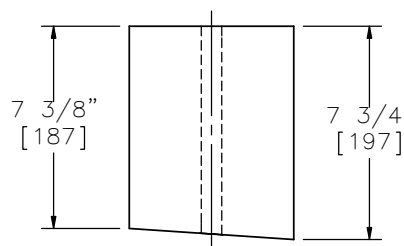
ELEVATION VIEW



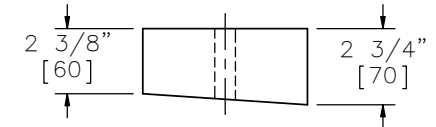
PLAN VIEW
Part c2



PLAN VIEW
Part c3



PLAN VIEW
Part c4



PLAN VIEW
Part c5

Note: (1) Parts c2 and c3 can be made from any two combined blackout sizes and can be adjusted as necessary.



Midwest Roadside
Safety Facility

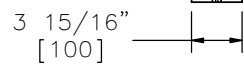
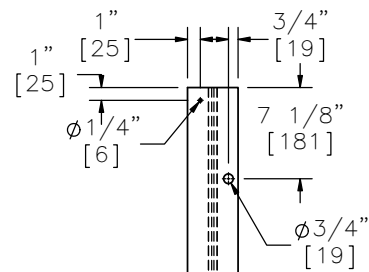
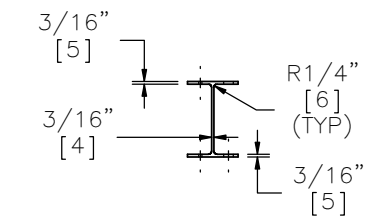
NDOR PCB-MGS
Transition MGSPCB-2

Transition Blockouts

DWG. NAME.
MGSPCB-2_R5

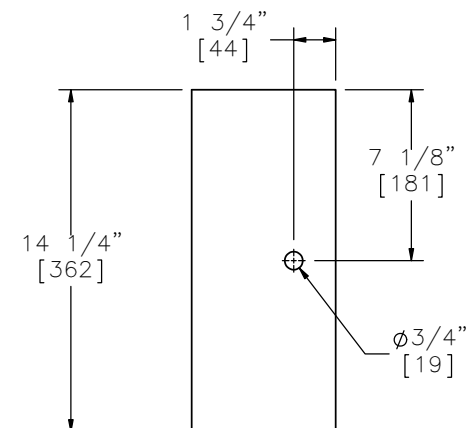
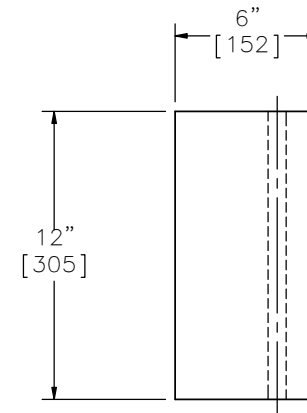
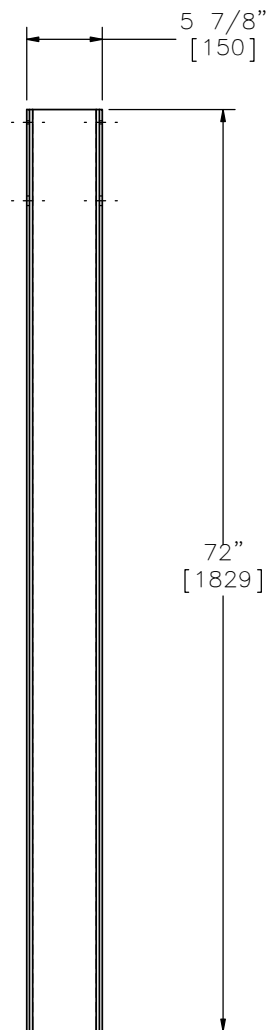
SCALE: 1:7
UNITS: in.[mm]

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REV. BY:
KAL/RWB/JEK



ELEVATION VIEW

Part a4



ELEVATION VIEW

Part a5
SCALE 1 : 8



Midwest Roadside
Safety Facility

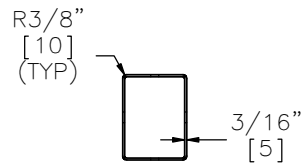
NDOR PCB-MGS
Transition MGSPCB-2

Post Nos. 3-18 Detail

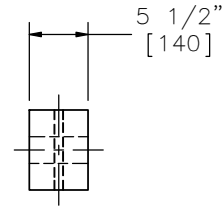
DWG. NAME.
MGSPCB-2_R5

SCALE: 1:15
UNITS: in.[mm]

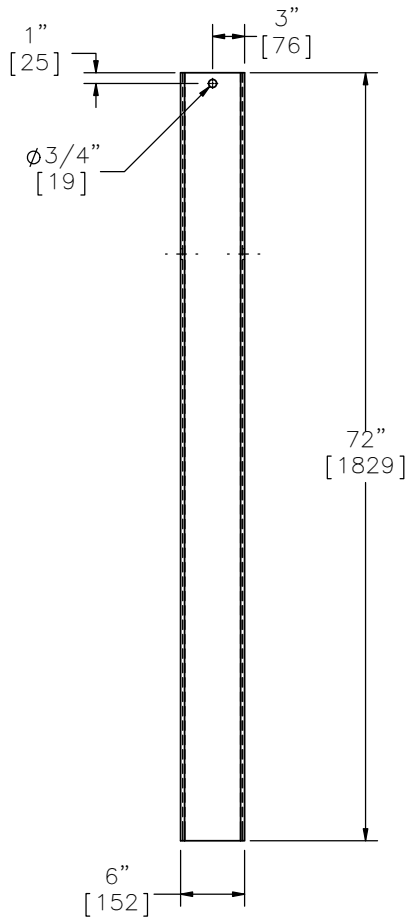
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REV. BY:
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PLAN VIEW

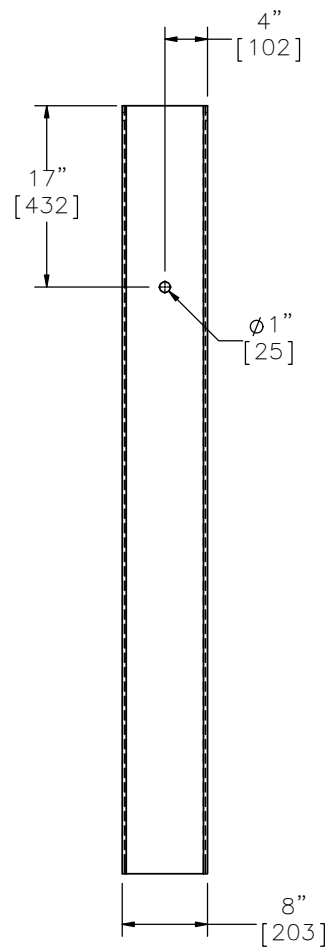


PLAN VIEW

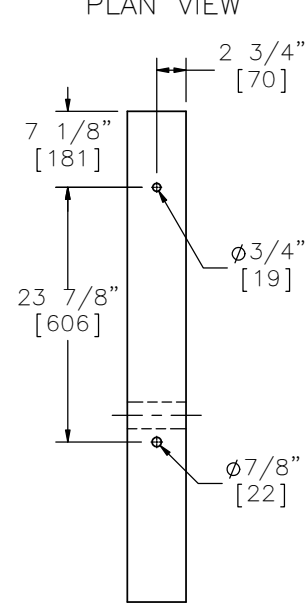


ELEVATION VIEW

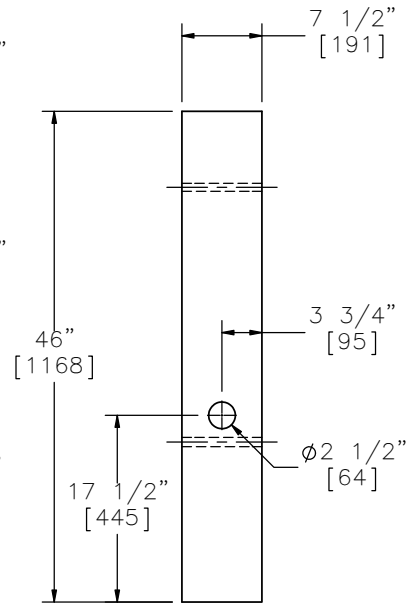
Part b2



PROFILE VIEW



ELEVATION VIEW



PROFILE VIEW

Part b1



Midwest Roadside
Safety Facility

NDOR PCB-MGS
Transition MGSPCB-2

BCT Timber Post and
Foundation Tube

DWG. NAME:
MGSPCB-2_R5

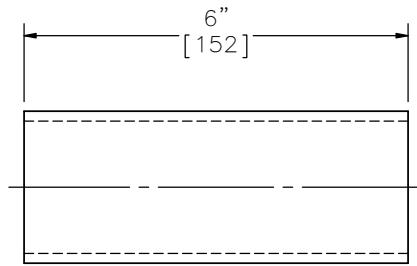
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UNITS: in.[mm]

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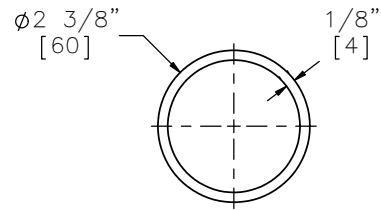
DATE:
10/20/2016

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REV. BY:
KAL/RWB/J
EK

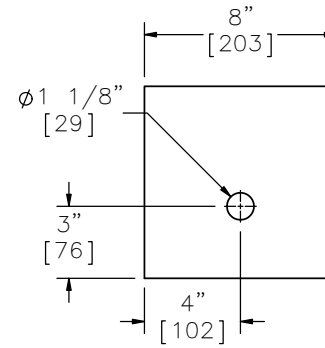


ELEVATION VIEW

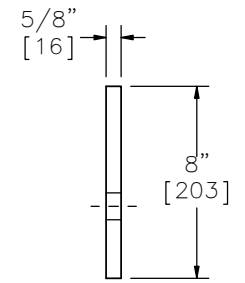


PROFILE VIEW

Part b4
SCALE 1 : 3

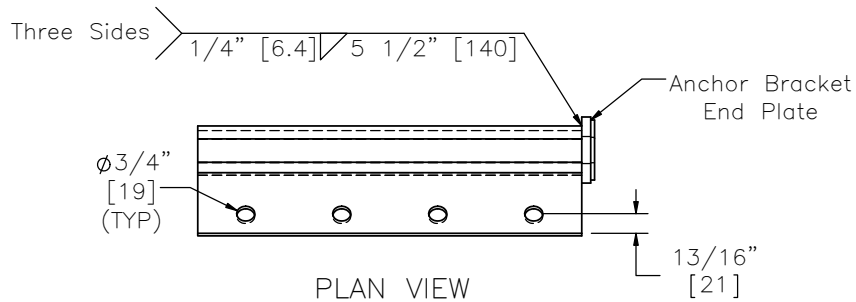


ELEVATION VIEW

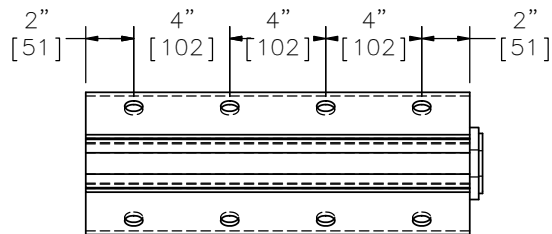


PROFILE VIEW

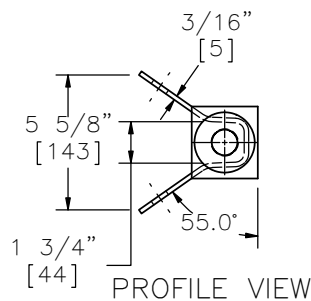
Part b5



PLAN VIEW

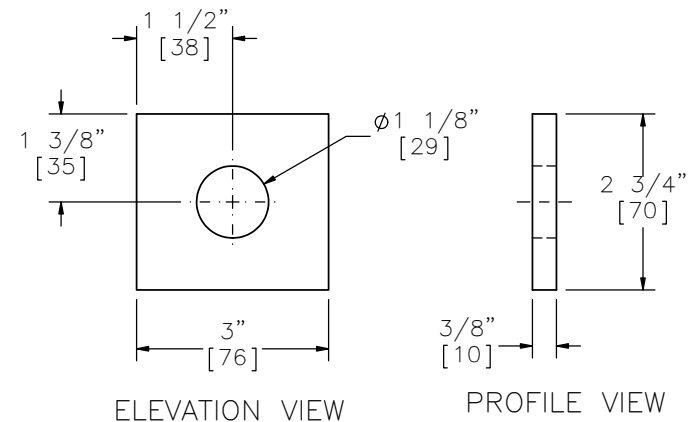


ELEVATION VIEW

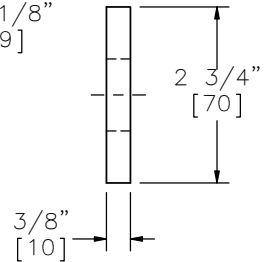


PROFILE VIEW

Part b6



ELEVATION VIEW



PROFILE VIEW

Anchor Bracket End Plate
SCALE 1 : 3



Midwest Roadside
Safety Facility

NDOR PCB-MGS
Transition MGSPCB-2

BCT Post Components and
Anchor Brackets

DWG. NAME:
MGSPCB-2_R5

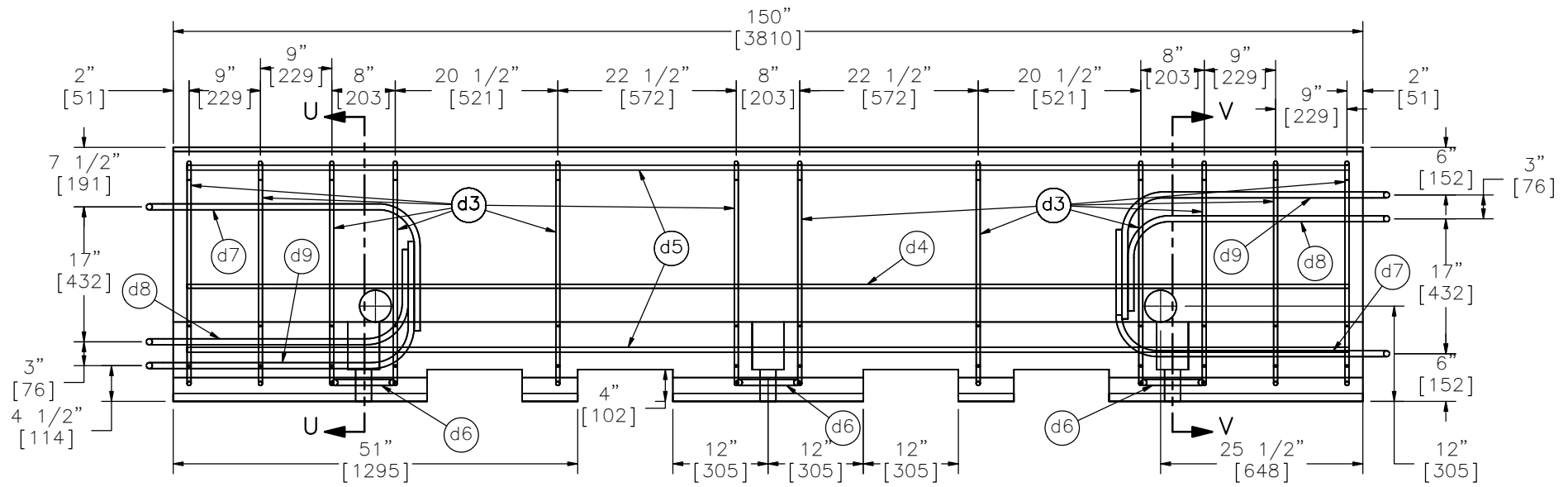
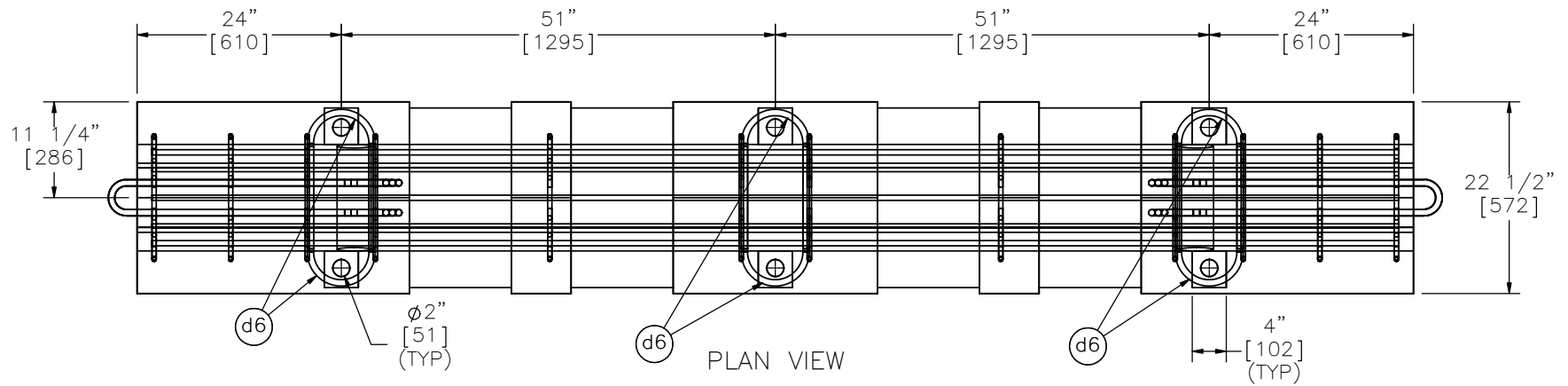
SCALE: 1:8
UNITS: in.[mm]

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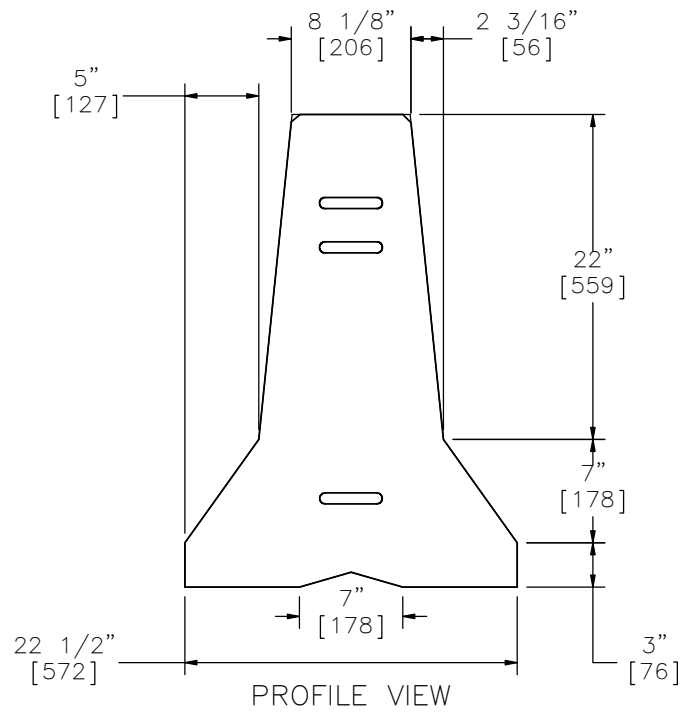
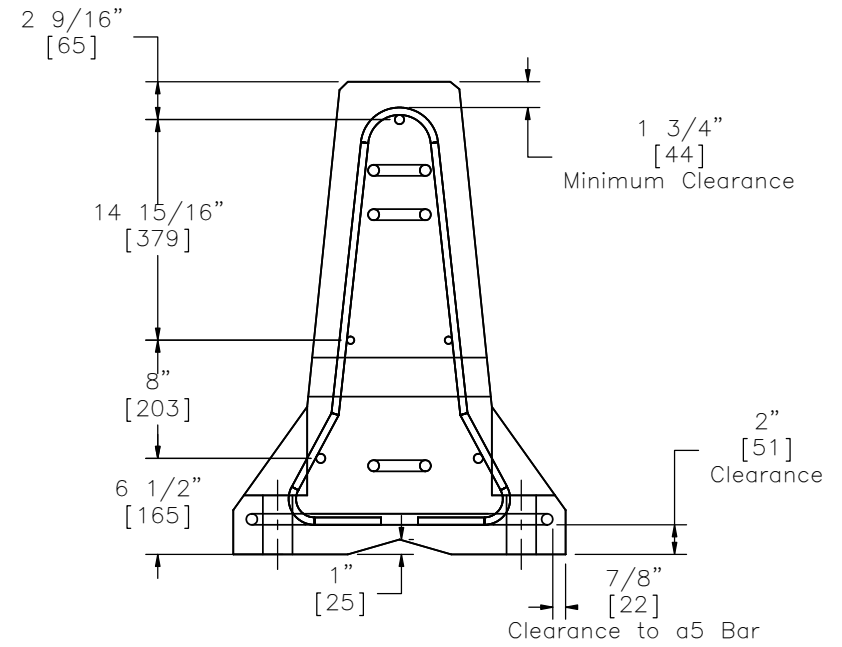
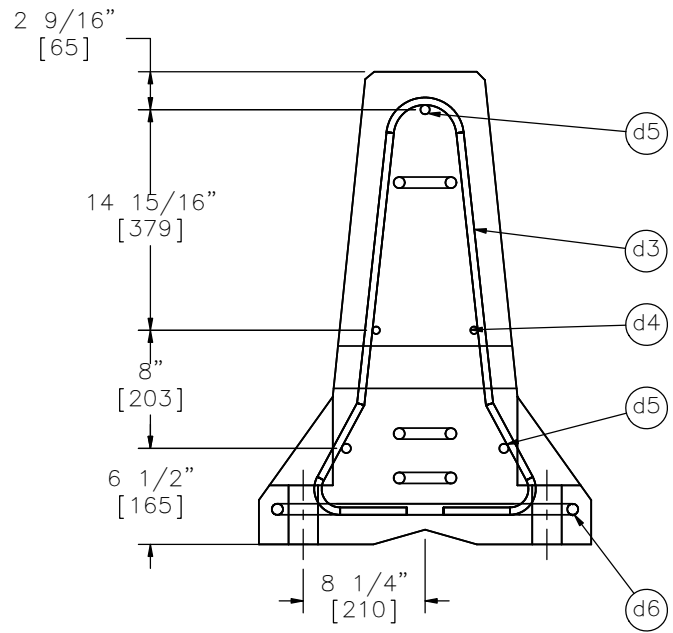
NDOR PCB-MGS Transition MGSPCB-2

Portable Concrete Barrier

DWG. NAME:
MGSPCB-2_R5

SCALE: 1:20
UNITS: in.[mm]

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Midwest Roadside Safety Facility

NDOR PCB-MGS
Transition MGSPCB-2

Portable Concrete Barrier
Profile Detail

DWG. NAME:
MGSPCB-2_R5

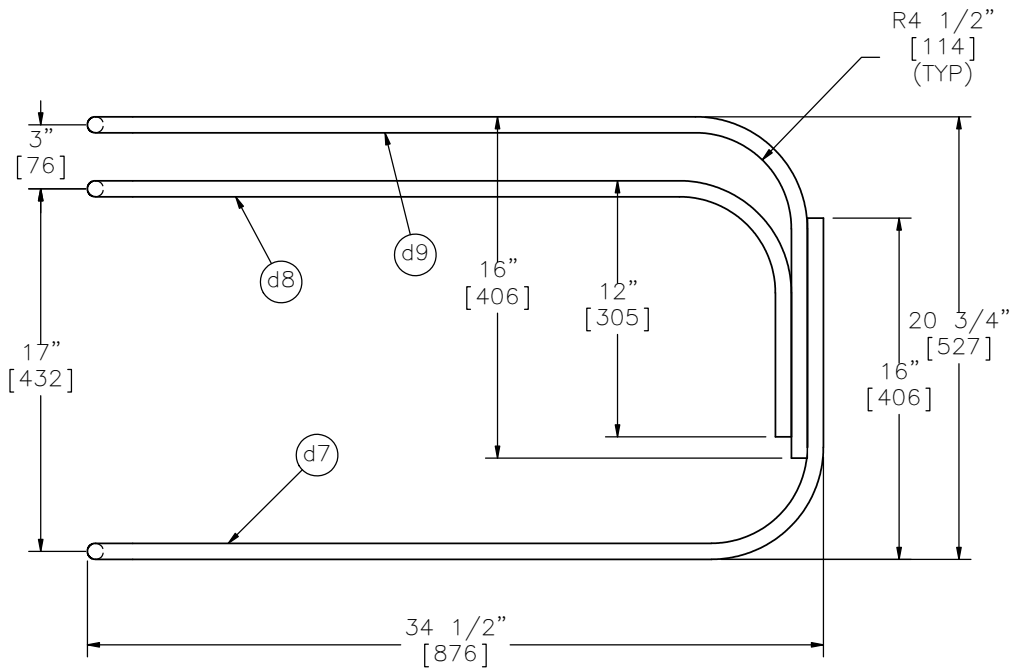
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UNITS: in.[mm]

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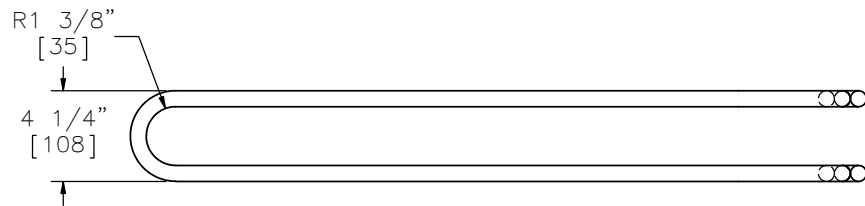
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10/20/2016

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JEK/TJD/JAH

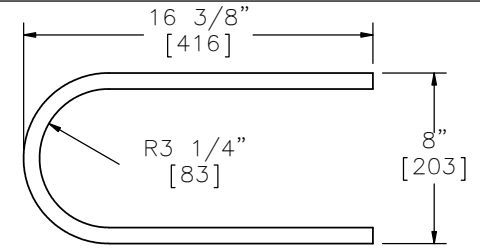
REV. BY:
KAL/RWB/JEK



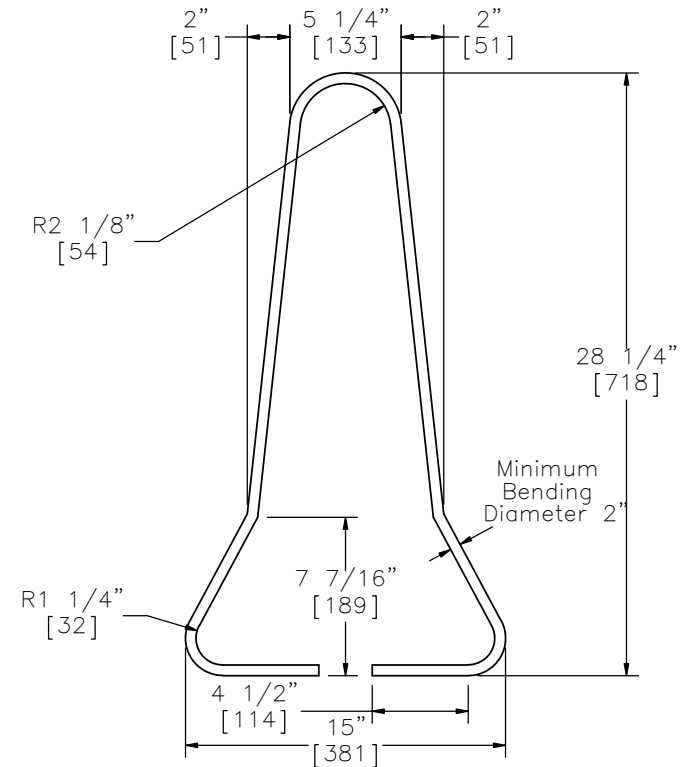
ELEVATION VIEW



PLAN VIEW
Loop Bar Assembly



Part d6



Part d3



Midwest Roadside
Safety Facility

NDOR PCB-MGS
Transition MGSPCB-2

Bill of Bars - Portable
Concrete Barriers

DWG. NAME:
MGSPCB-2_R5

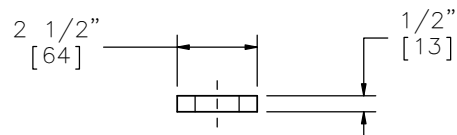
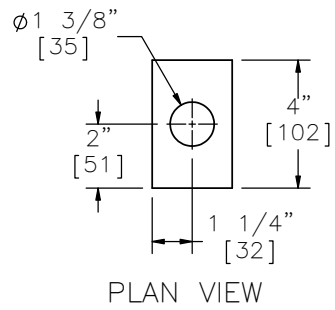
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UNITS: in.[mm]

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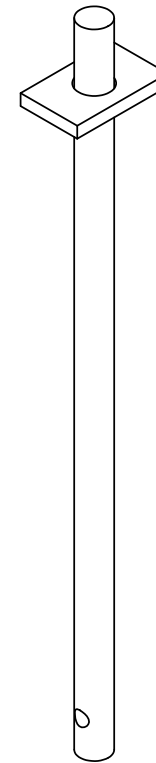
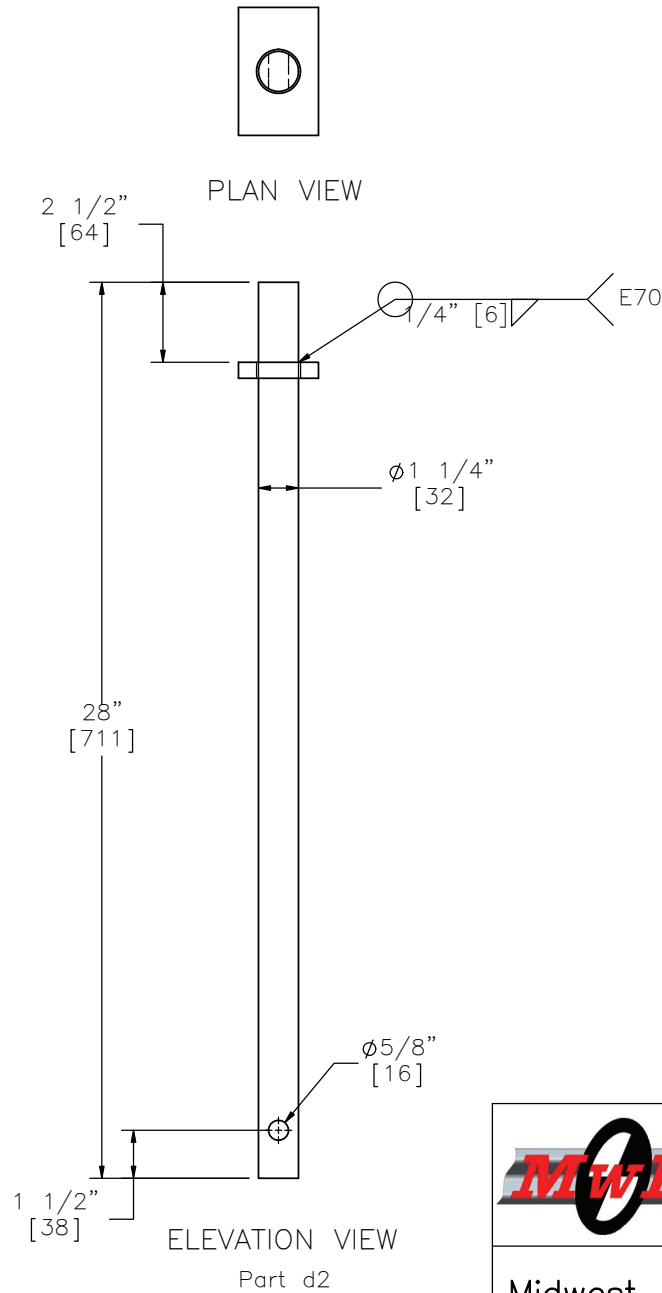
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Connection Pin
Plate



Midwest Roadside
Safety Facility

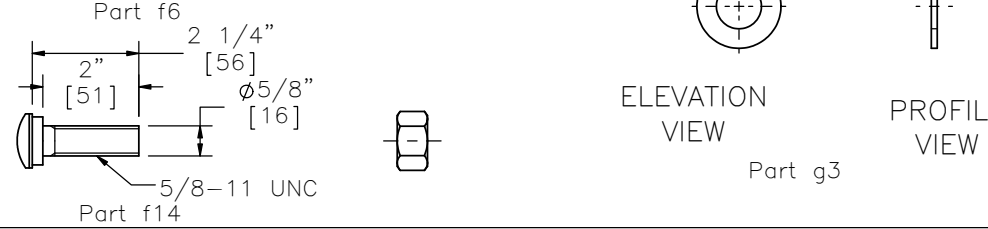
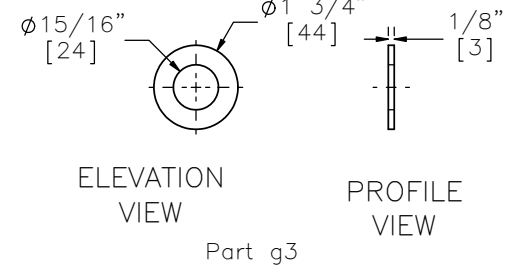
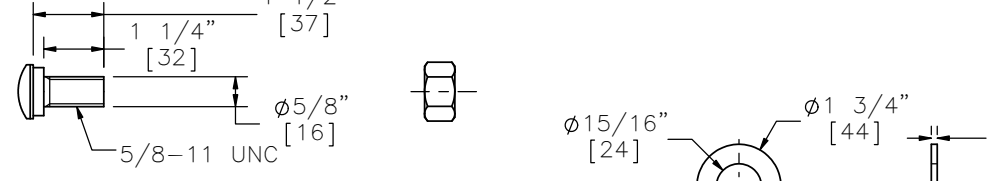
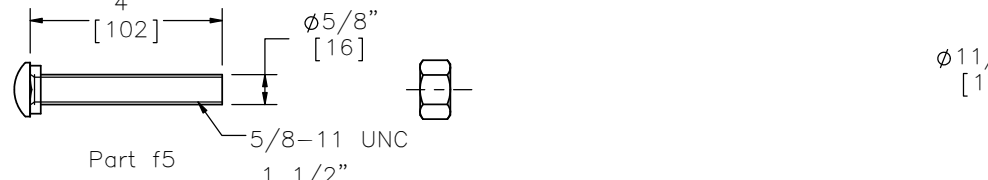
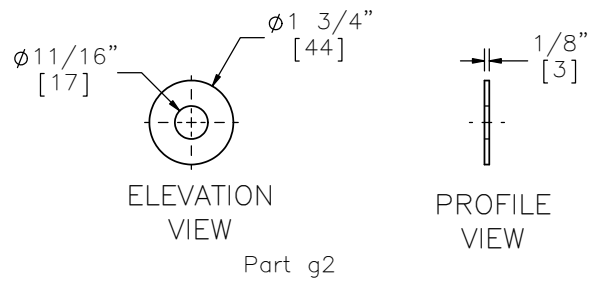
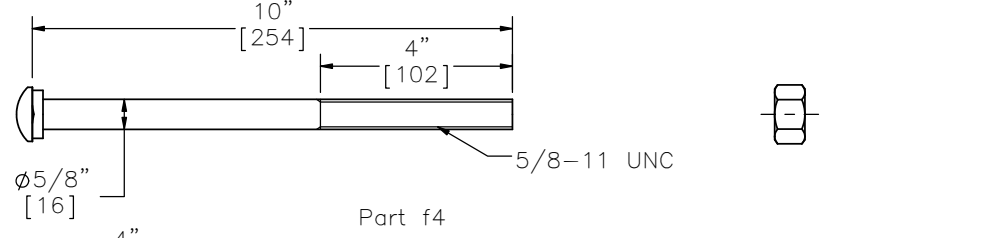
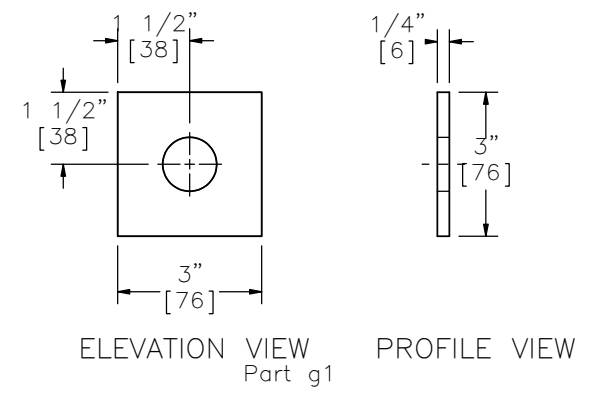
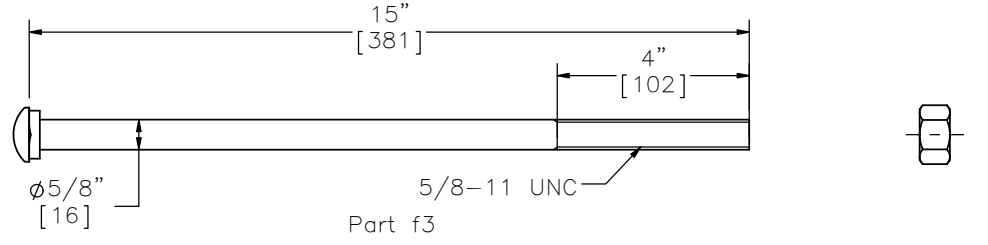
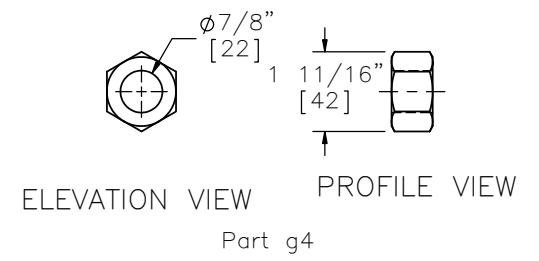
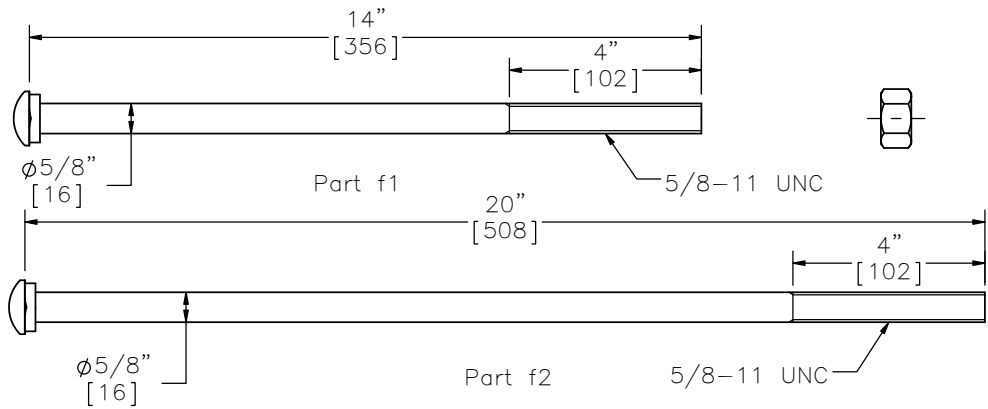
NDOR PCB-MGS
Transition MGSPCB-2


Connection Pin Detail

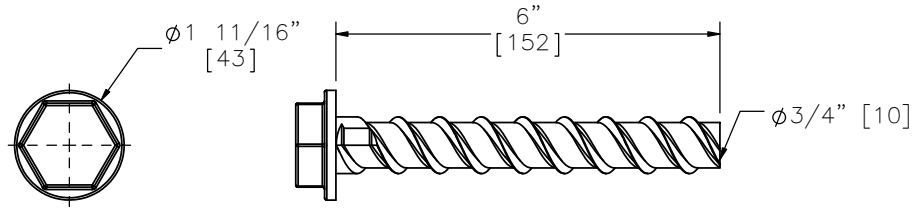
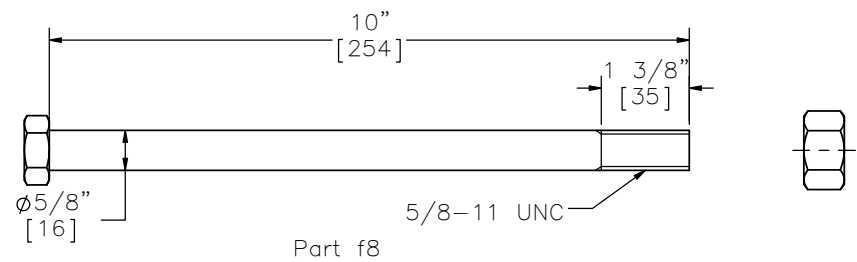
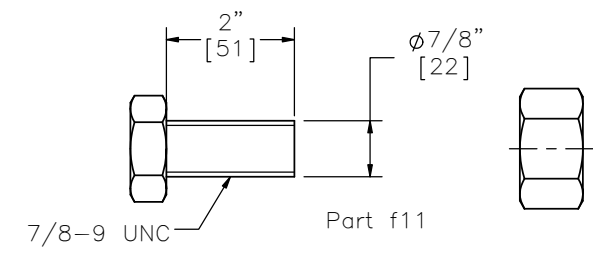
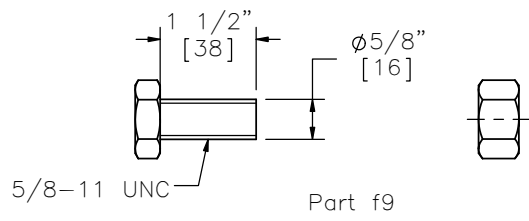
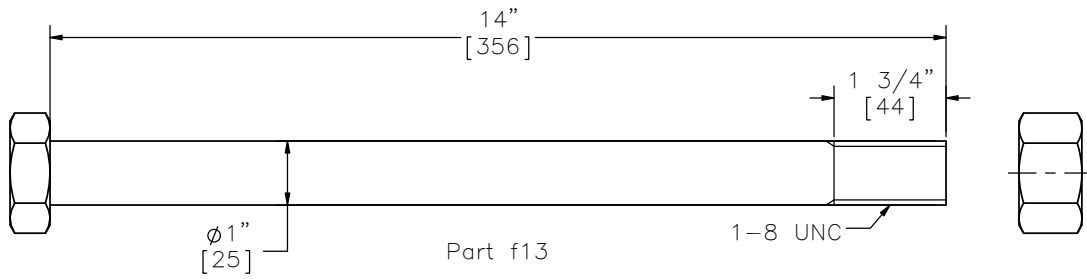
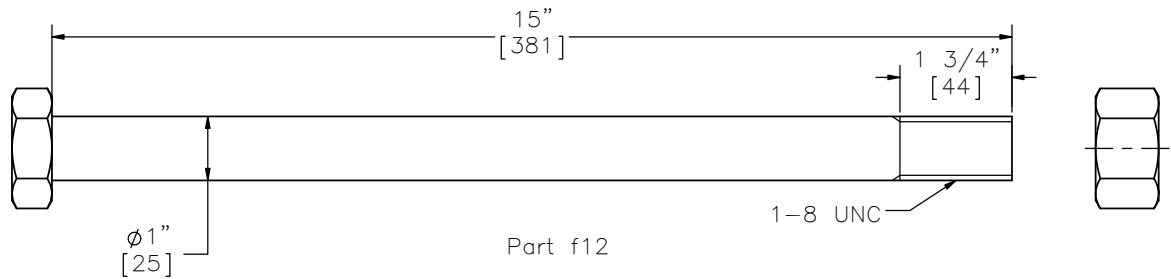
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SCALE: 1:6
UNITS: in.[mm]

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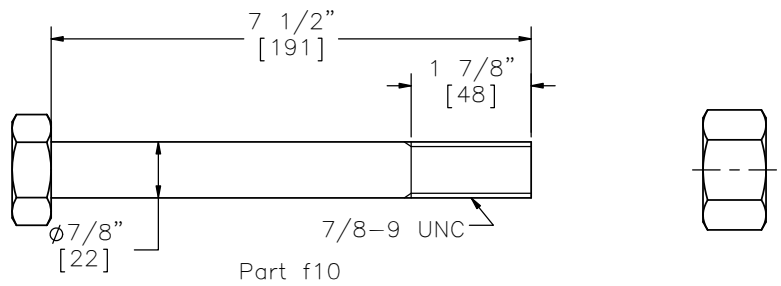
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	Guardrail Bolts and Washers		DATE: 10/20/2016
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PROFILE VIEW

ELEVATION VIEW

Power Wedge Bolt+
Part f15



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Hex and Power Wedge Bolts

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UNITS: in.[mm]

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Item No.	QTY.	Description	Material Spec	Hardware Guide
a1	1	W-Beam End Shoe Section	10 gauge [3.4] AASHTO M180 Galv.	RWE02b
a2	15	12'-6" [3810] W-Beam MGS Section	12 gauge [2.7] AASHTO M180 Galv.	RWM04a
a3	1	12'-6" [3810] W-Beam MGS End Section	12 gauge [2.7] AASHTO M180 Galv.	RWM14a
a4	16	W6"x8.5" [W152x12.6], 72" Long [1829] 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
a5	16	6"x12"x14 1/4" [152x305x368] Timber Blockout for Steel Posts	SYP Grade No.1 or better	PDB10a
a6	16	16D Double Head Nail	-	-
b1	2	BCT Timber Post - MGS Height	SYP Grade No. 1 or better (No knots 18" [457] above or below ground tension face)	PDF01
b2	2	72" [1829] Long Foundation Tube	ASTM A500 Grade B Galv.	PTE06
b3	1	Ground Strut Assembly	ASTM A36 Steel Galv.	PPF02
b4	1	2 3/8" [60] O.D. x 6" [152] Long BCT Post Sleeve	ASTM A53 Grade B Schedule 40 Galv.	FMM02
b5	1	8"x8"x5/8" [203x203x16] Anchor Bearing Plate	ASTM A36 Steel Galv.	FPB01
b6	1	Anchor Bracket Assembly	ASTM A36 Steel Galv.	FPA01
c1	4	Blockout Mounting Plate	ASTM A36 Steel Galv.	-
c2	1	6"x17 3/4"x14 1/4" [152x451x368] Timber Blockout for Steel Posts	SYP Grade No.1 or better	-
c3	1	6"x12 3/4"x14 1/4" [152x324x368] Timber Blockout for Steel Posts	SYP Grade No.1 or better	-
c4	1	6"x7 3/4"x14 1/4" [152x197x368] Timber Blockout for Steel Posts	SYP Grade No.1 or better	-
c5	1	6"x2 3/4"x14 1/4" [152x70x368] Timber Blockout for Steel Posts	SYP Grade No.1 or better	-
d1	11	Portable Concrete Barrier	min f'c=5000 psi [34.5 MPa]	-
d2	10	1 1/4" [32] Dia., 28" [711] Long Connector Pin	ASTM A36	FMW02
d3	132	1/2" [13] Dia., 72" [1829] Long Form Bar	ASTM A615 Grade 60	-
d4	22	1/2" [13] Dia., 146" [3708] Long Longitudinal Bar	ASTM A615 Grade 60	-
d5	33	5/8" [16] Dia., 146" [3708] Long Longitudinal Bar	ASTM A615 Grade 60	-
d6	66	3/4" [19] Dia., 36" [914] Long Anchor Loop Bar	ASTM A615 Grade 60	-
d7	22	3/4" [19] Dia., 102" [2591] Long Connection Loop Bar	ASTM A709 Grade 70 or A706 Grade 60	-
d8	22	3/4" [19] Dia., 91" [2311] Long Connection Loop Bar	ASTM A709 Grade 70 or A706 Grade 60	-



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Item No.	QTY.	Description	Material Spec	Hardware Guide
d9	22	3/4" [19] Dia., 101" [2565] Long Connection Loop Bar	ASTM A709 Grade 70 or A706 Grade 60	—
e1	1	Connector Plate Face Plate	ASTM A36 Steel Galv.	—
e10	1	2 1/4" [57] x 2 13/16" [71] Connector Plate Horizontal Gusset	ASTM A36 Steel Galv.	—
e11	1	12 1/2" [318] x 2 5/8" [67] Connector Plate Horizontal Gusset	ASTM A36 Steel Galv.	—
e12	1	7 9/16" [192] Long Connector Plate Horizontal Gusset	ASTM A36 Steel Galv.	—
e2	1	3 5/8" [92] Connector Plate Vertical Gusset	ASTM A36 Steel Galv.	—
e3	1	3 1/2" [88] Connector Plate Vertical Gusset	ASTM A36 Steel Galv.	—
e4	1	2 5/8" [66] Connector Plate Vertical Gusset	ASTM A36 Steel Galv.	—
e5	1	2 1/2" [64] Connector Plate Vertical Gusset	ASTM A36 Steel Galv.	—
e6	1	29 1/2" [749] Long Connector Plate Horizontal Gusset	ASTM A36 Steel Galv.	—
e7	1	2 1/4" [57] x 3 3/16" [80] Connector Plate Horizontal Gusset	ASTM A36 Steel Galv.	—
e8	1	12 1/2" [318] x 3" [76] Connector Plate Horizontal Gusset	ASTM A36 Steel Galv.	—
e9	1	9 3/8" [239] Long Connector Plate Horizontal Gusset	ASTM A36 Steel Galv.	—
f1	16	5/8" [16] Dia. UNC, 14" [356] Long Guardrail Bolt and Nut	Bolt ASTM A307 Grade A Galv., Nut ASTM A563 A Galv.	FBB06
f2	1	5/8" [16] Dia. UNC, 20" [508] Long Guardrail Bolt and Nut	Bolt ASTM A307 Grade A Galv., Nut ASTM A563 A Galv.	—
f10	2	7/8" Dia. [22] UNC, 7 1/2" [191] Long Hex Head Bolt and Nut	Bolt ASTM A307 Grade A Galv., Nut ASTM A563 A Galv.	—
f11	5	7/8" [22] Dia. UNC, 2" [51] Long Heavy Hex Bolt	Bolt ASTM A325 Galv.	FBX22b
f12	1	1" [25] Dia. UNC, 15" [381] Long Heavy Hex Bolt and Nut	Bolt ASTM A325 Galv., Nut ASTM A563DH Galv.	FBX27b
f13	3	1" [25] Dia., UNC, 14" [356] Long Heavy Hex Bolt and Nut	Bolt ASTM A325 Galv., Nut ASTM A563DH Galv.	FBX27b
f14	48	5/8" [16] Dia. UNC, 2" [51] Long Guardrail Bolt and Nut	Bolt ASTM A307 Grade A Galv., Nut ASTM A563A Galv.	FBB02
f15	8	φ3/4" x 6" [M20x152] Power Wedge Bolt+	Galvanized	FBX02



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Item No.	QTY.	Description	Material Spec	Hardware Guide
f3	1	5/8" [16] Dia. UNC, 15" [381] Long Guardrail Bolt and Nut	Bolt ASTM A307 Grade A Galv., Nut ASTM A563 A Galv.	—
f4	1	5/8" [16] Dia. UNC, 10" [254] Long Guardrail Bolt and Nut	Bolt ASTM A307 Grade A Galv., Nut ASTM A563 A Galv.	FBB03
f5	1	5/8" [16] Dia. UNC, 4" [102] Long Guardrail Bolt and Nut	Bolt ASTM A307 Grade A Galv., Nut ASTM A563 A Galv.	—
f6	40	5/8" [16] Dia. UNC, 1 1/4" [32] Long Guardrail Bolt and Nut	Bolt ASTM A307 Grade A Galv., Nut ASTM A563 A Galv.	FBB01
f7	2	5/8" [16] Dia. UNC, 10" [254] Long Guardrail Bolt and Nut	Bolt ASTM A307 Grade A Galv., Nut ASTM A563 A Galv.	FBB03
f8	2	5/8" [16] Dia. UNC, 10" [254] Long Hex Head Bolt and Nut	Bolt ASTM A307 Grade A Galv., Nut ASTM A563 A Galv.	FBX16a
f9	8	5/8" [16] Dia. UNC, 1 1/2" [38] Long Hex Head Bolt and Nut	Bolt ASTM A307 Grade A Galv., Nut ASTM A563 A Galv.	FBX16a
g1	4	3"x3"x1/4" [76x76x6] Square Washer	A572 Grade 50 Galvanized	—
g2	27	5/8" [16] Dia. Plain Round Washer	ASTM F844 Galv.	FWC16a
g3	4	7/8" [22] Dia. Plain Round Washer	ASTM F844 Galv.	—
g4	5	7/8" [22] Dia. UNC Heavy Hex Nut	ASTM A563DH Galv.	FNX22b
h1	2	BCT Anchor Cable End Swaged Fitting	Fitting — ASTM A576 Gr. 1035 Stud — ASTM F568 Class C	—
h2	2	3/4" [190] Dia. 6x19 IWRC IPS Wire Rope	IPS Galv.	—
h3	2	115-HT Mechanical Splice — 3/4" [19] Dia.	As Supplied	—
h4	2	Crosby Heavy Duty HT — 3/4" [19] Dia. Cable Thimble	Stock No. 1037773 — Galv.	—
h5	2	Crosby G2130 or S2130 Bolt Type Shackle — 1 1/4" [32] Dia. with thin head bolt, nut, and cotter pin, Grade A, Class 3	Stock Nos. 1019597 and 1019604 — As Supplied	—
h6	2	Chicago Hardware Drop Forged Heavy Duty Eye Nut — Drilled and Tapped 1 1/2" [38] Dia. — UNC 6 [M36x4]	Stock No. 107 — As Supplied	—
h7	1	TLL-50K-PTB Load Cell	—	—



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REV.	DATE OF ISSUE	Page	NATURE OF CHANGES	REVIEWER	REVISED BY
R0	7/23/2015	-	Originated from PCB-MS_Trans_Layout 2_R5		JEK
R1	7/23/2015	1	Note 6 removed.	KAL	JEK
R2	8/4/2015	3	G2 washers added and noted. Note corrected.	KAL/RWB	JEK
		4	String potentiometer note added. Ground line height corrected.		
		22	Detail S name corrected.		
		31	Part g2 inner diameter corrected.		
		32	Part f11 labeled.		
		35	Part g1 description and material corrected. Number of g2 washers corrected.		
R3	1/15/2016	3	Added g2 washers behind a1 backplate. Removed g2 washers as they do not appear in photos and were the wrong size for the bolts.	KAL	TJD
		4	Added sheet 4 to show backside detail of W-Beam End Shoe section.		
		16	Added bend lines to flat pattern view of Blockout Mounting Plate.		
R4	3/15/2016	-	Corrected two spelling errors.	JEK	JAH
		16	Note 1 removed.		
R5	10/20/2016	-	BOM updates/corrections	KAL	JEK