

Nose Cable with swagged end buttons attached by two sets of three 1/4" D U-bolts with 2 Nuts and Plate Washer at middle and quarter points.

12'-6" Bent Thrie Beam Section, 12-gauge, Rail Section No. 1

Side B

6'-3" (TYP)

Begin standard thrie beam construction

3'-1 1/2" (TYP)

12'-6" Bent Thrie Beam Section, 12-gauge, Rail Section No. 2

1

2

3

4

5

6

7

PLAN VIEW

Side A

8

9

10

11

12

13

14

12'-6" Thrie Beam Section 12-gauge Rail Section No. 3

12'-6" Thrie Beam Section 12-gauge Rail Section No. 4

12'-5 7/8" Thrie Beam Section 12-gauge Rail Section No. 4

12'-6" Thrie Beam Section 12-gauge End Section Rail Section No. 5

B

C

2'-7 5/8"

B

C

Thrie BCT post in 8' long (galvanized) foundation tube and BCT cable anchor

UBSP Post with 6x8x14 1/4" tapered blockout

UBSP Posts with two 6x8x14 1/4" blockouts, one is tapered

W6x8.5 posts 78" long with 6x8x14 1/4" blockouts

Thrie BCT posts in 6' long (galvanized) foundation tubes, ground line strut, and BCT cable anchor

ELEVATION VIEW



Midwest Roadside Safety Facility

Universal Breakaway Steel Post for Thrie Beam Bullnose Median Barrier System

System Layout

DWG. NAME.

UBSP Bullnose_R8

SCALE: 1:100

UNITS: Inches

SHEET:

1 of 15

DATE:

9/4/2009

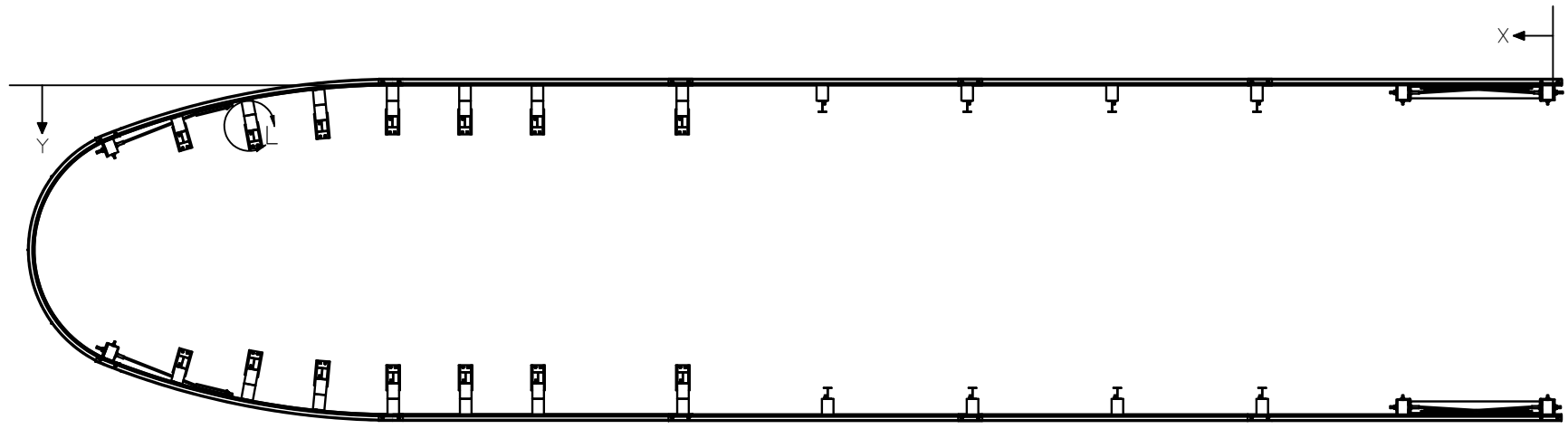
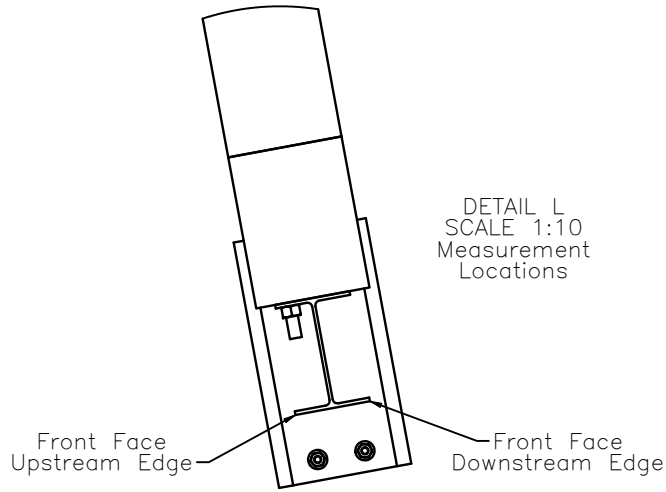
DRAWN BY:

RJT/EAJ

REV. BY:

KAP/RKF/SWA

Post No.	Front Face D.S. Edge		Front Face U.S. Edge	
	X	Y	X	Y
1	61'-10 7/8"	2'-10 1/2"	62'-4"	3'-0 1/2"
2	58'-11"	2'-5 1/4"	59'-2 13/16"	2'-6 5/16"
3	55'-10 3/8"	2'-4 5/8"	56'-2 1/4"	2'-5 5/16"
4	52'-11 3/16"	1'-11 3/4"	53'-3 1/8"	2'-0 1/8"
5	49'-10 15/16"	1'-9 13/16"	50'-2 7/8"	1'-9 13/16"
6	46'-9 7/16"	1'-9 13/16"	47'-1 3/8"	1'-9 13/16"
7	43'-7 15/16"	1'-9 13/16"	43'-11 7/8"	1'-9 13/16"
8	37'-4 15/16"	1'-9 13/16"	37'-8 7/8"	1'-9 13/16"
9	31'-1 15/16"	1'-1 13/16"	31'-5 7/8"	1'-1 13/16"
10	24'-10 15/16"	1'-1 13/16"	25'-2 7/8"	1'-1 13/16"
11	18'-7 15/16"	1'-1 13/16"	18'-11 7/8"	1'-1 13/16"
12	12'-4 15/16"	1'-1 13/16"	12'-8 7/8"	1'-1 13/16"
13	6'-3"	7 1/2"	6'-8 1/2"	7 1/2"
14	0"	7 1/2"	5 1/2"	7 1/2"



Midwest Roadside
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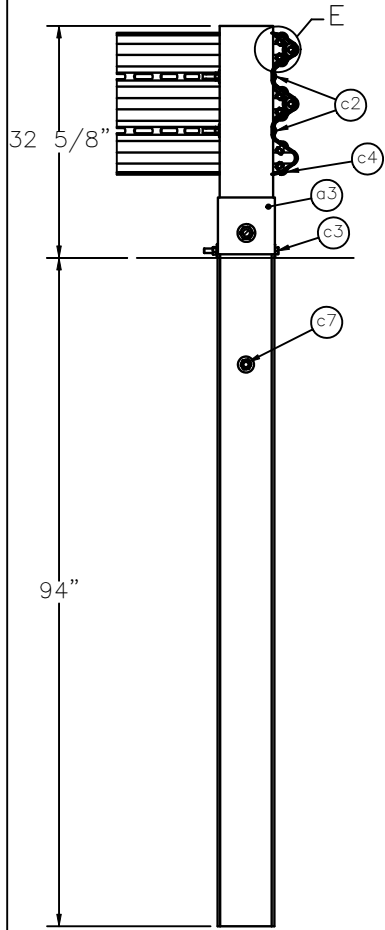
Universal Breakaway
Steel Post for Thrie
Beam Bullnose Median
Barrier System

Layout for Post Locations

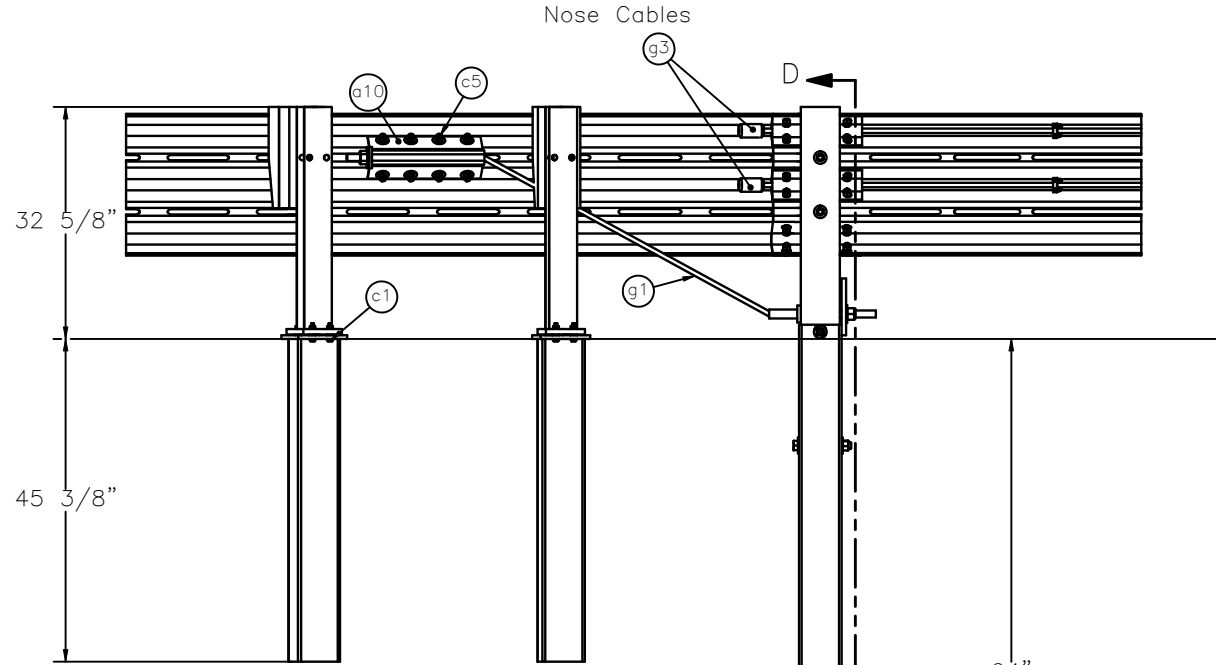
DWG. NAME.
UBSP Bullnose_R8

SCALE: 1:90
UNITS: Inches

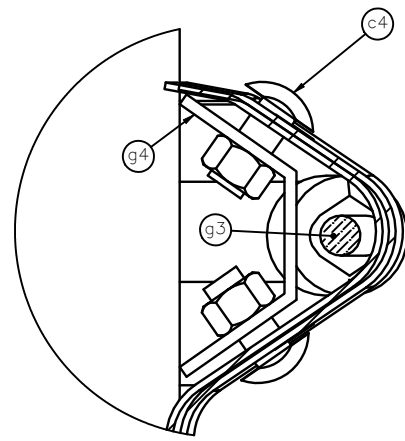
SHEET:
2 of 15
DATE:
9/4/2009
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REV. BY:
KAP/RKF/
SWA



SECTION D-D



SECTION A-A
Post 1



DETAIL E
SCALE 1 : 3



Midwest Roadside
Safety Facility

Universal Breakaway
Steel Post for Thrie
Beam Bullnose Median
Barrier System

Nose Section Detail

DWG. NAME:
UBSP Bullnose_R8

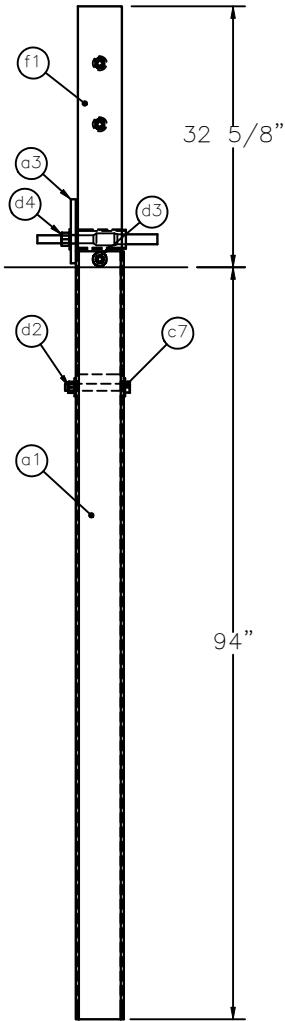
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UNITS: Inches

SHEET:
3 of 15

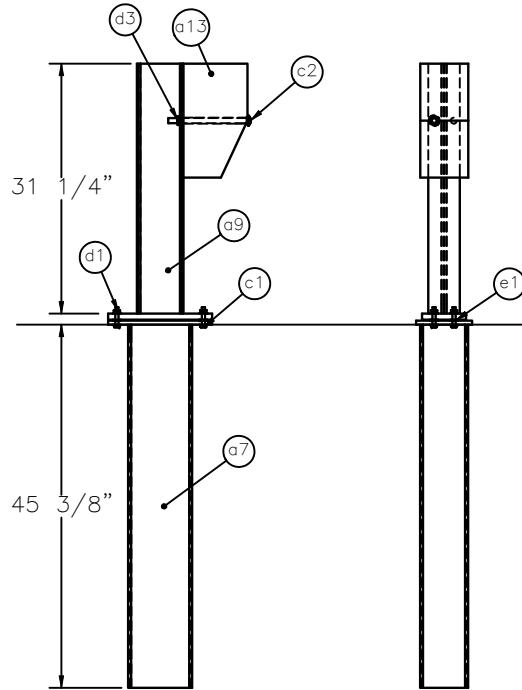
DATE:
9/4/2009

DRAWN BY:
RJT/EAJ

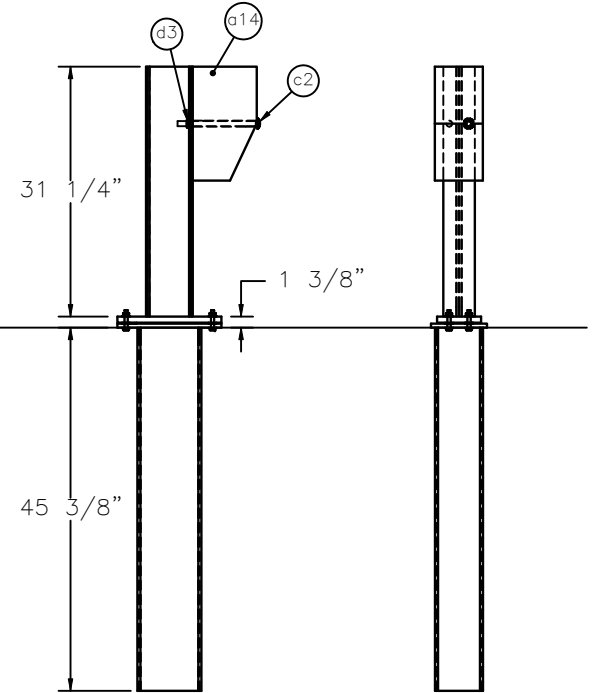
REV. BY:
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SWA



Post 1



Post 2 – UBSP Post
Side A



Post 2 – UBSP Post
Side B



Midwest Roadside
Safety Facility

Universal Breakaway
Steel Post for Thrie
Beam Bullnose Median
Barrier System

Post Nos. 1 and 2 Details

DWG. NAME:
UBSP_Bullnose_R8

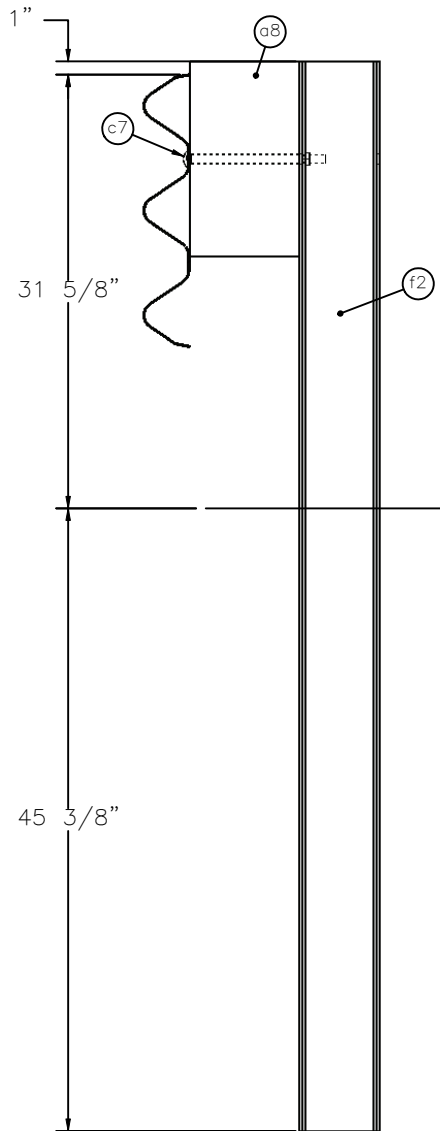
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SHEET:
4 of 15

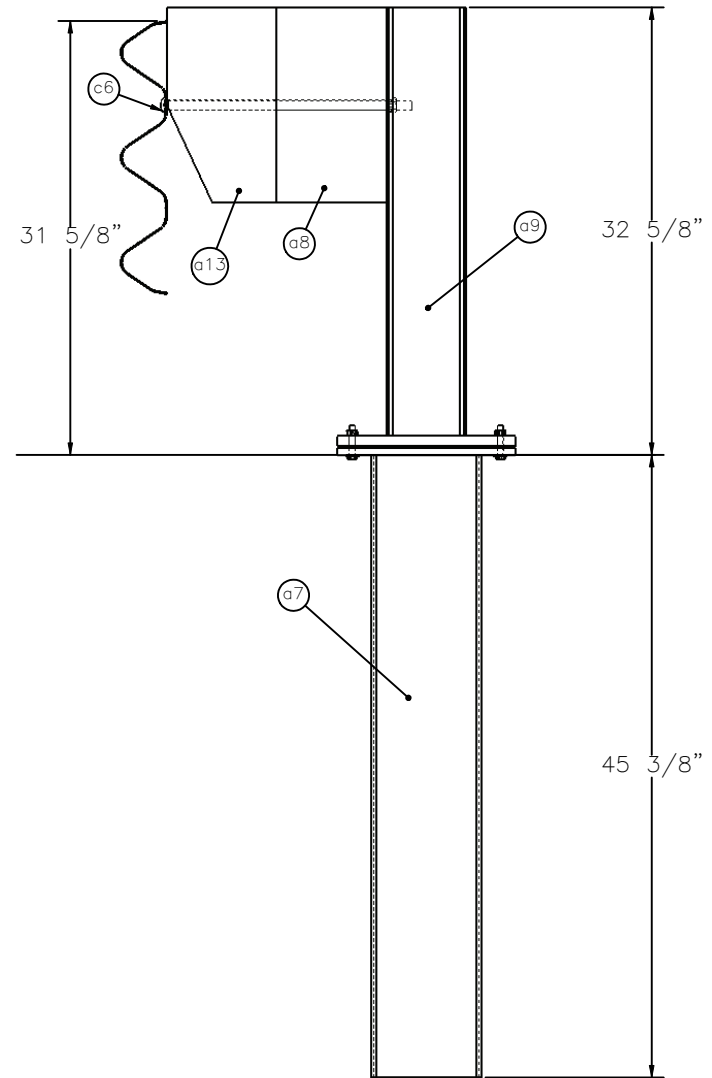
DATE:
9/4/2009

DRAWN BY:
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REV. BY:
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SWA

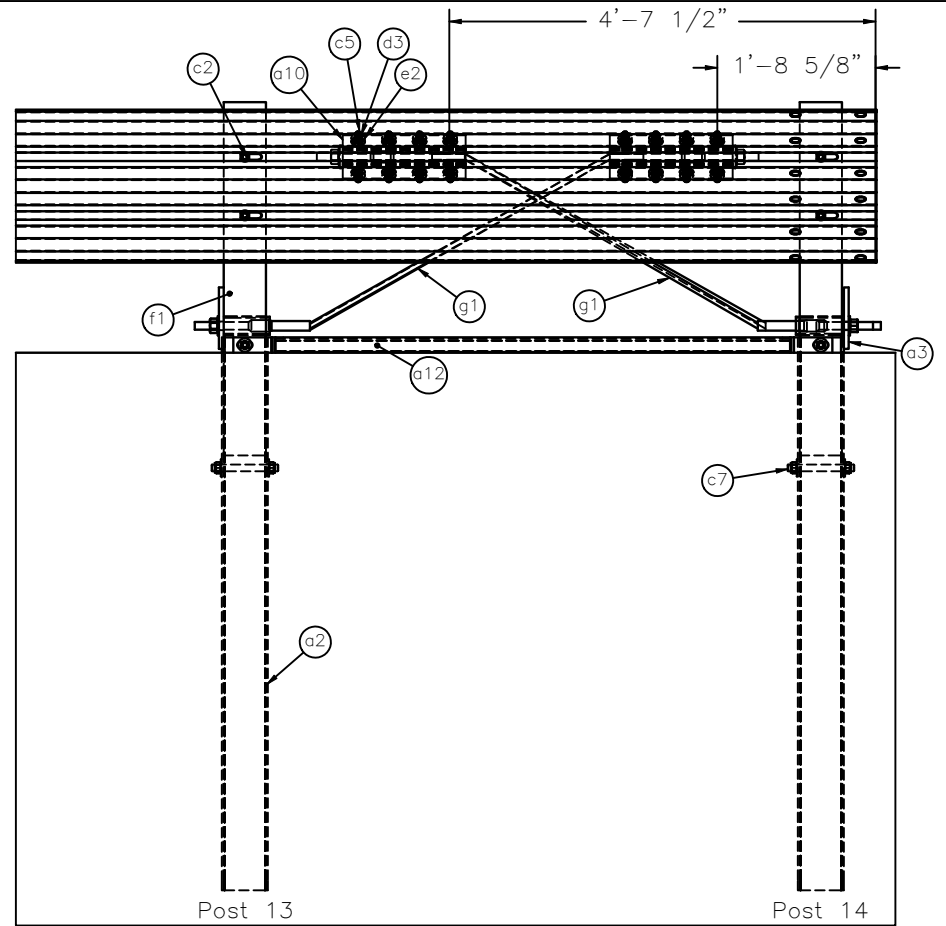
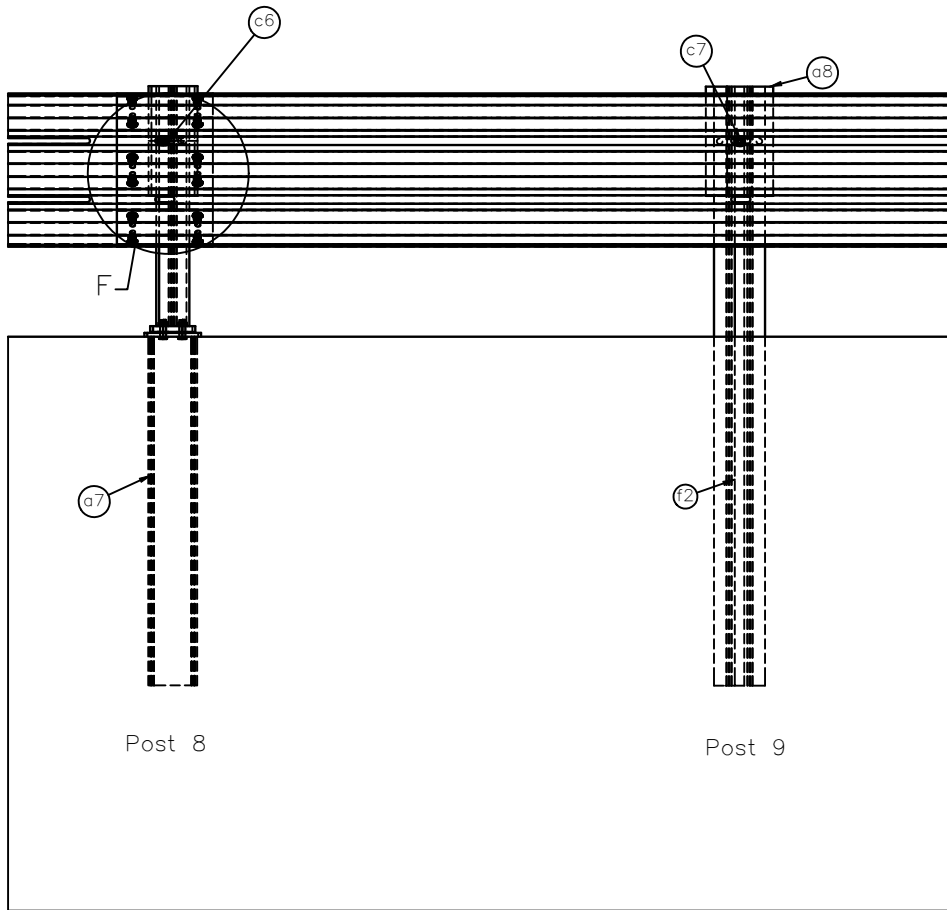


SECTION C-C
Post Nos. 9-12

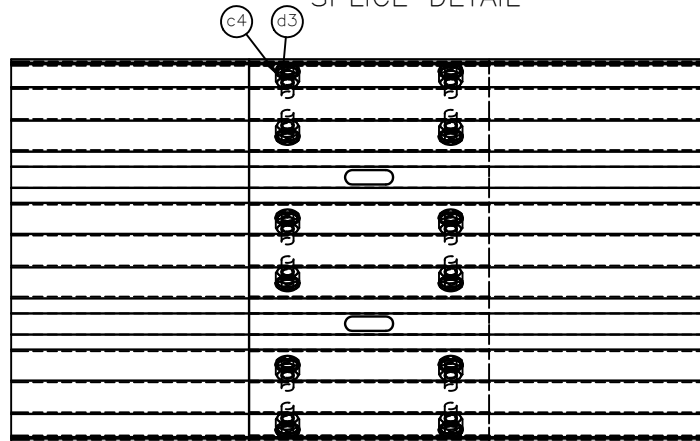


SECTION B-B
Post Nos. 3-8

 Midwest Roadside Safety Facility	Universal Breakaway Steel Post for Thrie Beam Bullnose Median Barrier System		SHEET: 5 of 15
	Post Nos. 3-8 and 9-12 Details		DATE: 9/4/2009
DWG. NAME: UBSP Bullnose_R8	SCALE: 1:14 UNITS: Inches	REV. BY: KAP/RKF/ SWA	DRAWN BY: RJT/EAJ



SPLICE DETAIL



DETAIL F
SCALE 1 : 15

END RAIL DETAIL



Midwest Roadside
Safety Facility

Universal Breakaway
Steel Post for Thrie
Beam Bullnose Median
Barrier System

End Rail Detail
Splice Detail

DWG. NAME:
UBSP_Bullnose_R8

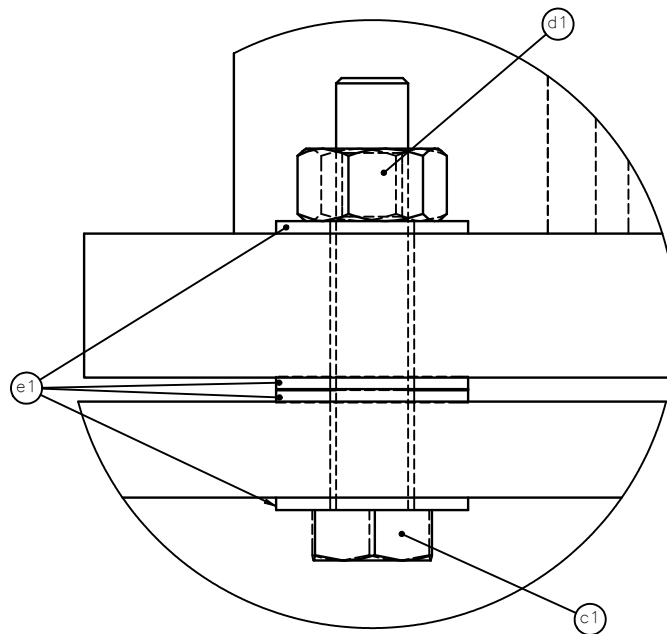
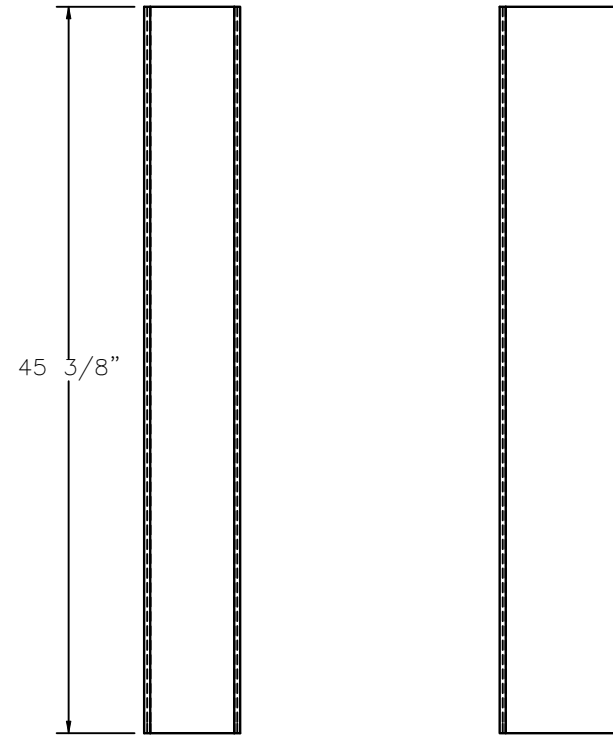
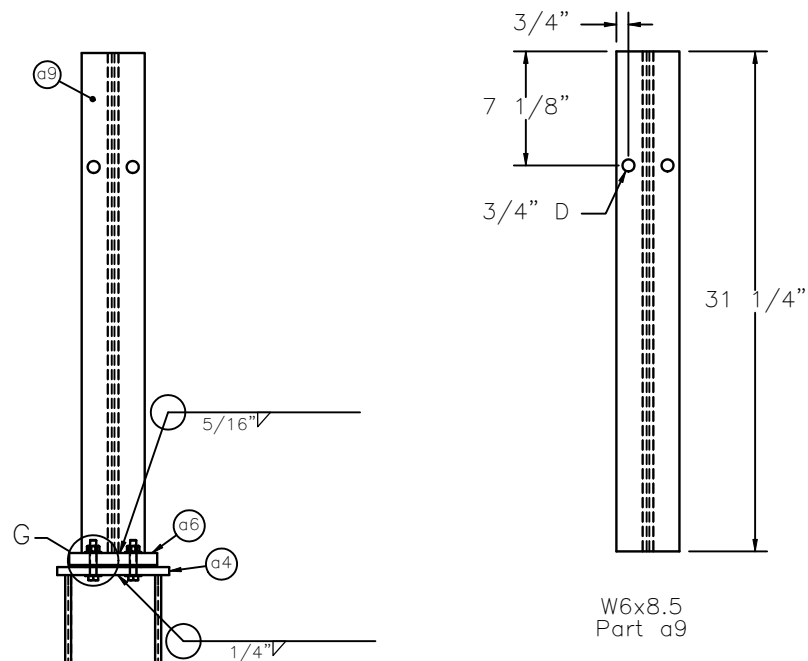
SCALE: 1:25
UNITS: Inches

SHEET:
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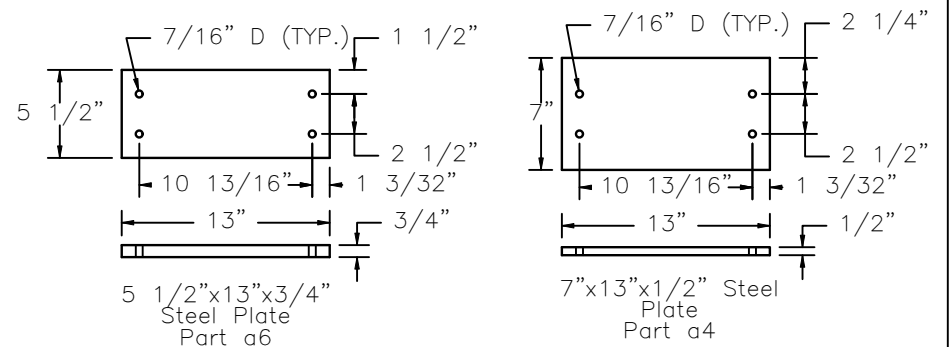
DATE:
9/4/2009

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REV. BY:
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SWA



DETAIL G
SCALE 1 : 1



Universal Breakaway
Steel Post for Thrie
Beam Bullnose Median
Barrier System

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DATE:
9/4/2009

DRAWN BY:
RJT/EAJ

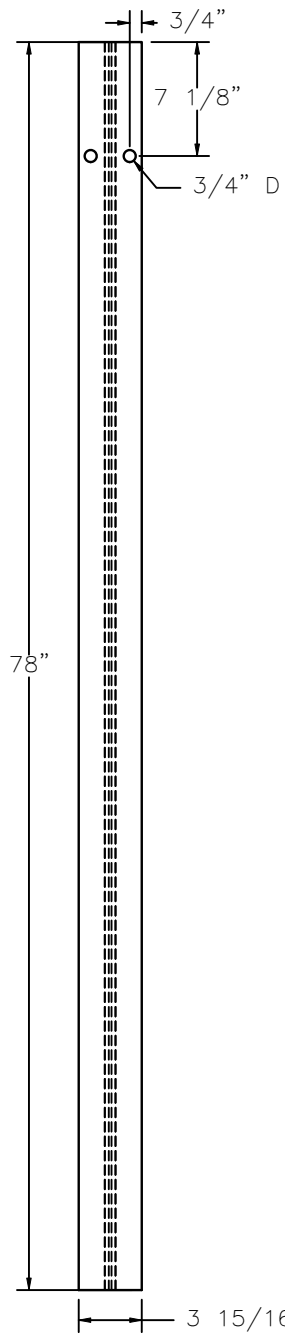
Midwest Roadside
Safety Facility

UBSP Post and Component
Details

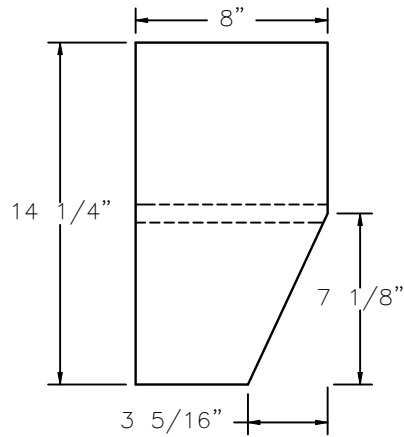
DWG. NAME:
UBSP Bullnose_R8

SCALE: 1:12
UNITS: Inches

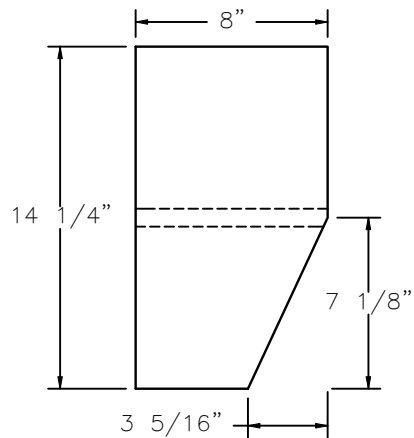
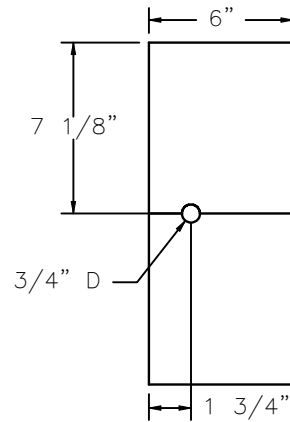
REV. BY:
KAP/RKF/
SWA



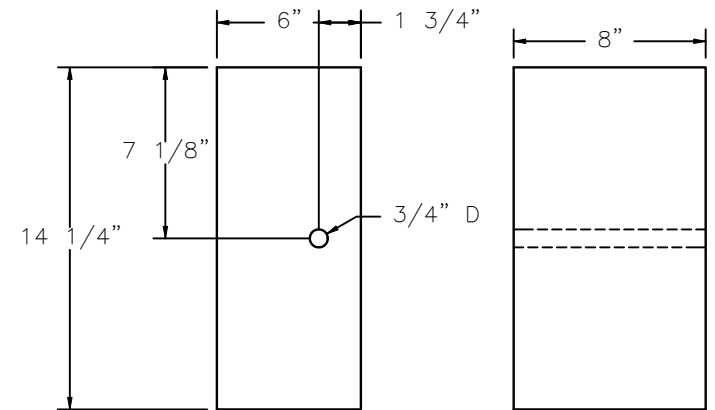
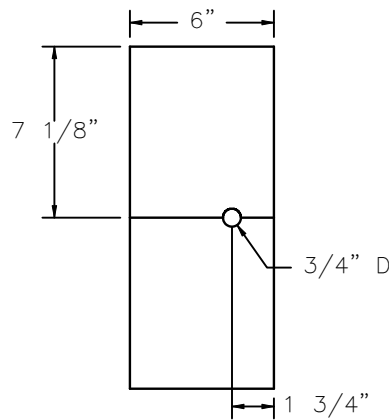
W6x8.5
Part f2
SCALE 1 : 12



Tapered Blockout
Side A
Part a13



Tapered Blockout
Side B
Part a14



Blockout
Part a8



Midwest Roadside
Safety Facility

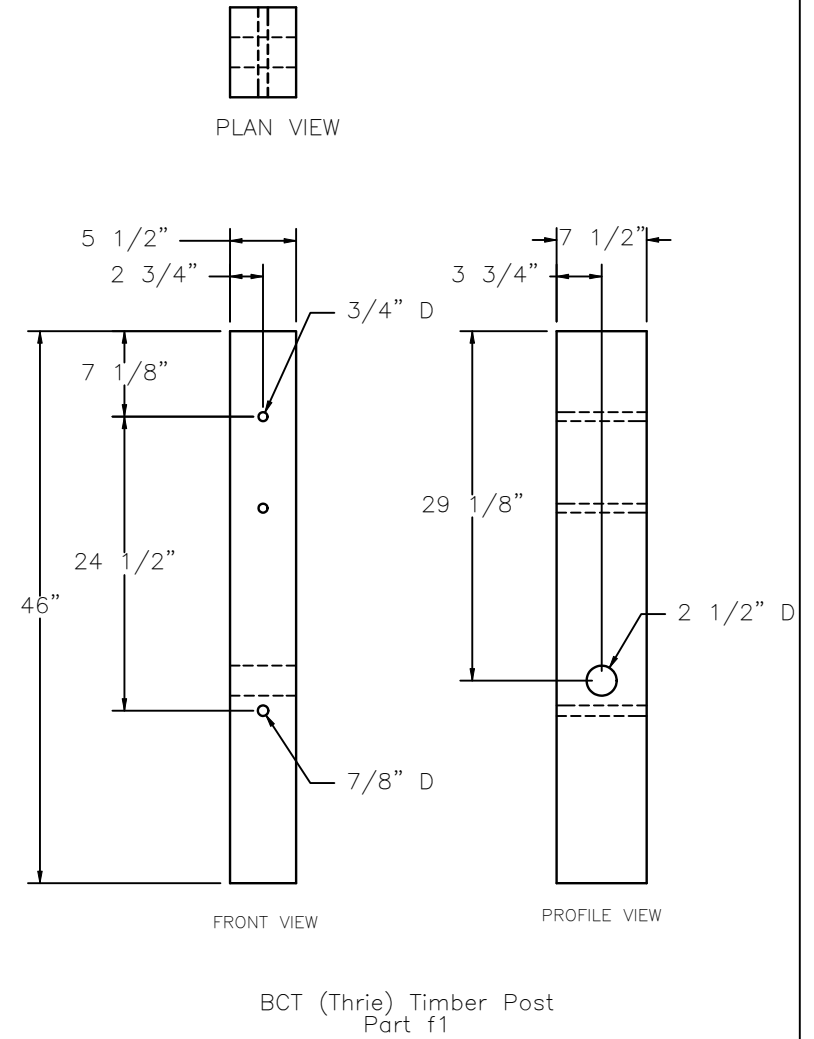
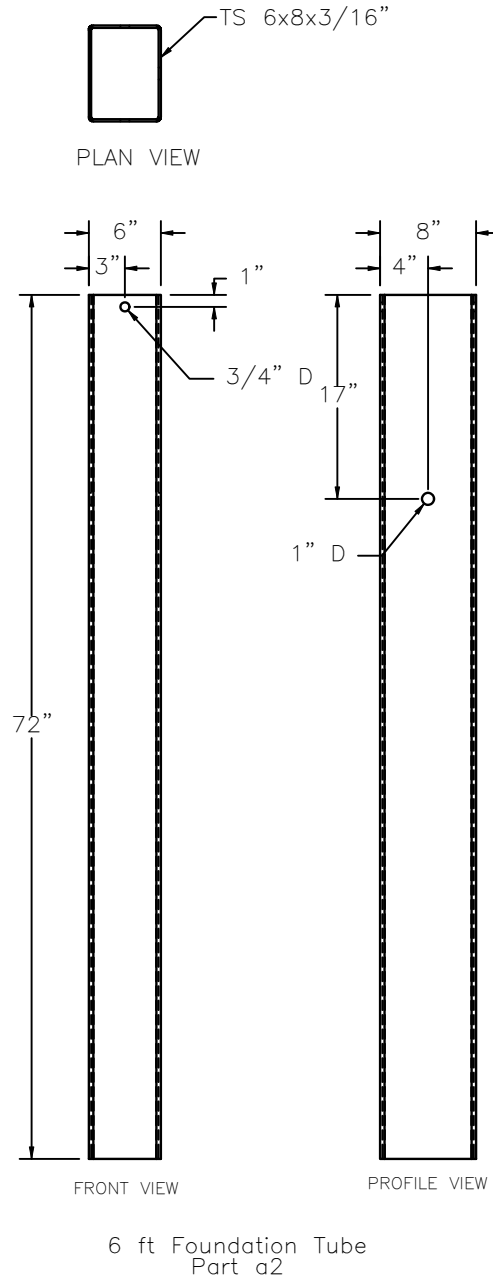
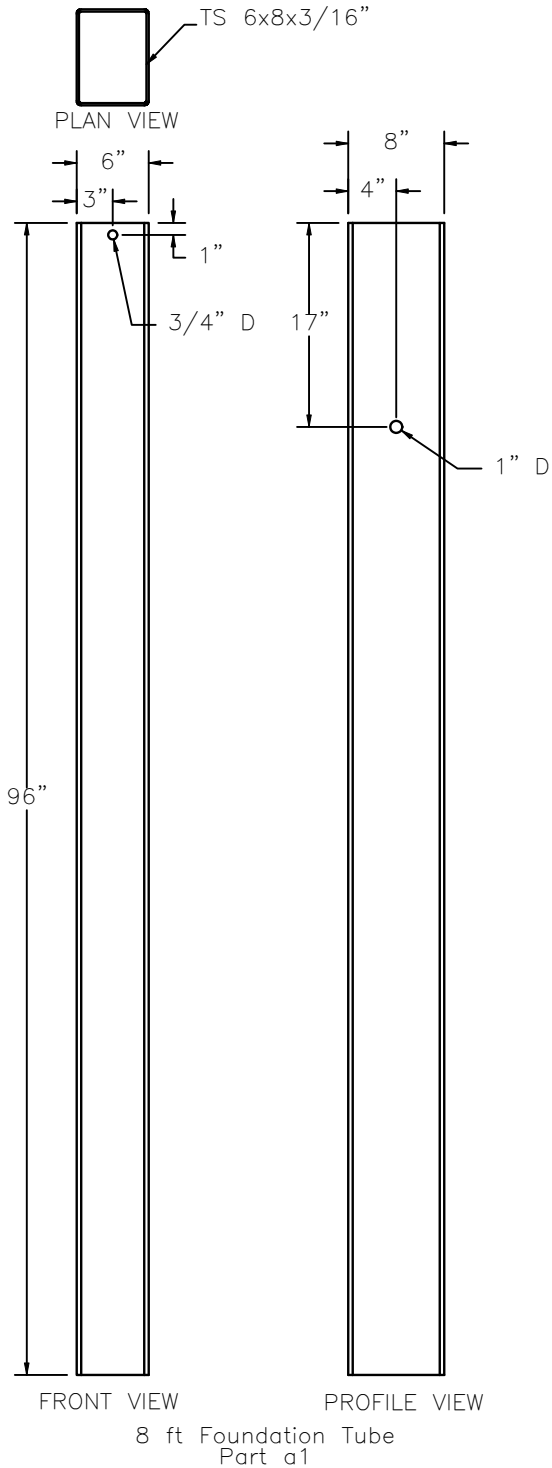
Universal Breakaway
Steel Post for Thrie
Beam Bullnose Median
Barrier System

W6x9 Post and Blockout
Details

DWG. NAME:
UBSP Bullnose_R8

SCALE: 1:8
UNITS: Inches

SHEET:
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DATE:
9/4/2009
DRAWN BY:
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SWA



Midwest Roadside
Safety Facility

Universal Breakaway
Steel Post for Thrie
Beam Bullnose Median
Barrier System

BCT Timber Posts and
Foundation Tube Details

DWG. NAME:
UBSP Bullnose_R8

SCALE: 1:16
UNITS: Inches

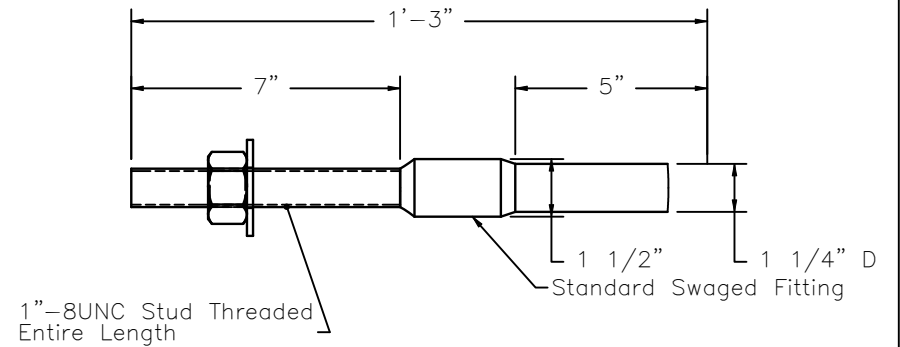
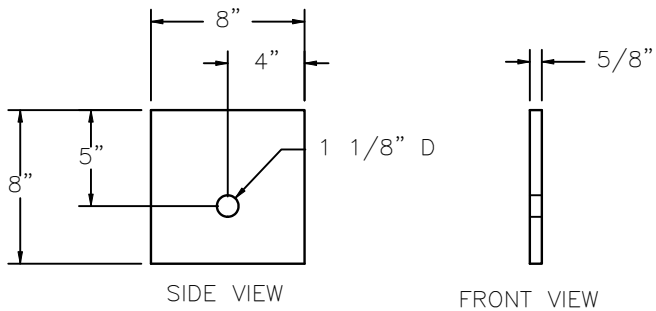
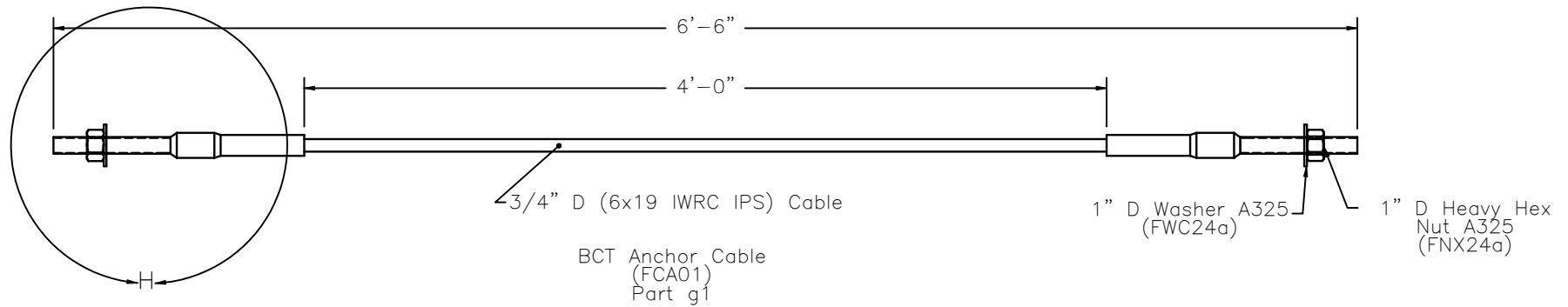
SHEET:
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DATE:
9/4/2009

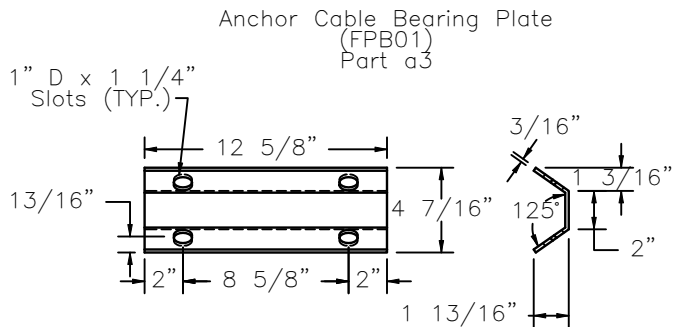
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Note: (1) 6x19 and 6x25 IWRC cables are equivalent.

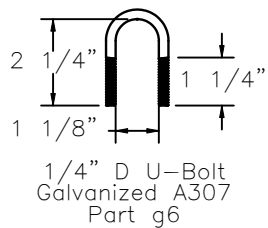
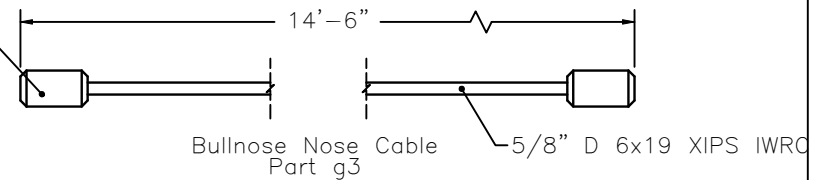


DETAIL H
SCALE 1 : 5

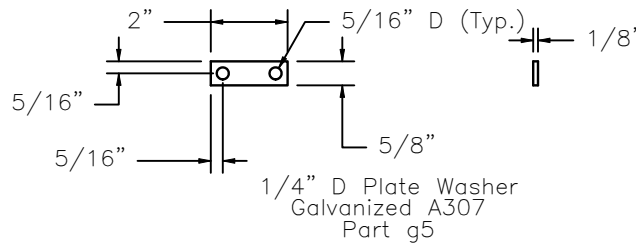


Nose Cable Anchor Plate
Part g4

"Cold Tuff" Button, S-409 Size No. 12 SB
2" Stock No. 1040395 for 5/8" D 6x19
XIPS IWRC wire rope (or any similarly-sized swage-grip button ferrules)



SCALE: 1 : 5



SCALE: 1 : 5



Midwest Roadside Safety Facility

Universal Breakaway Steel Post for Thrie Beam Bullnose Median Barrier System

BCT Anchor Cable and Nose Cable Detail

DWG. NAME:
UBSP Bullnose_R8

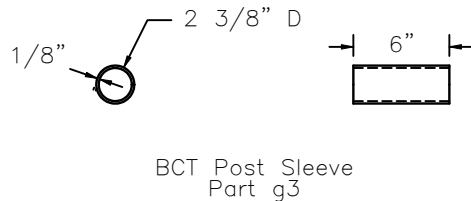
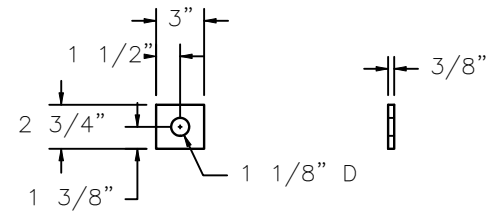
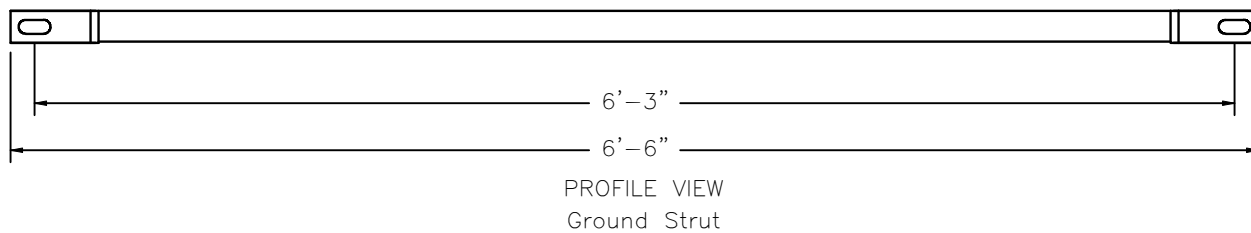
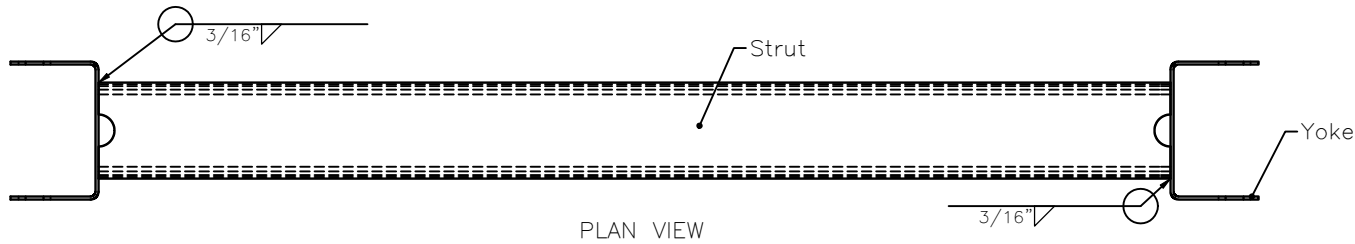
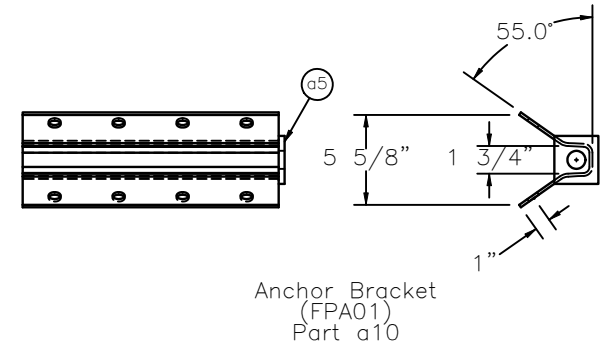
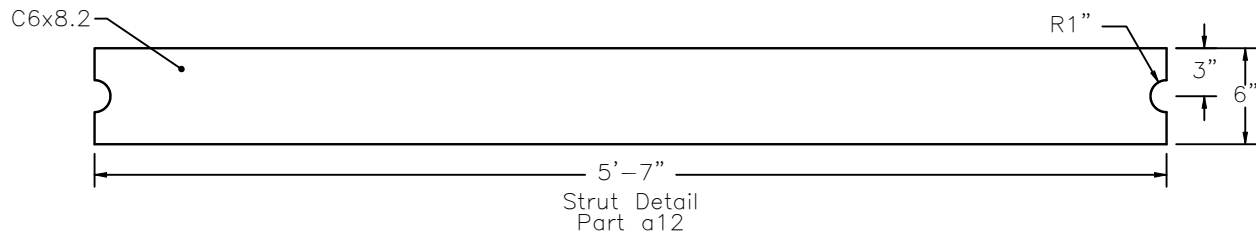
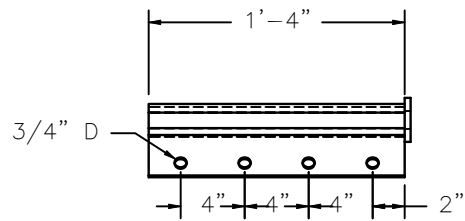
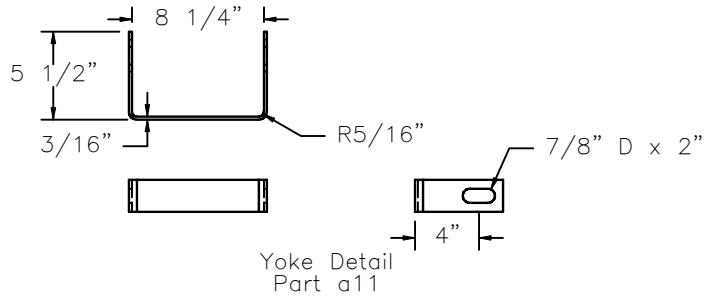
SCALE: 1:10
UNITS: Inches

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Midwest Roadside
Safety Facility

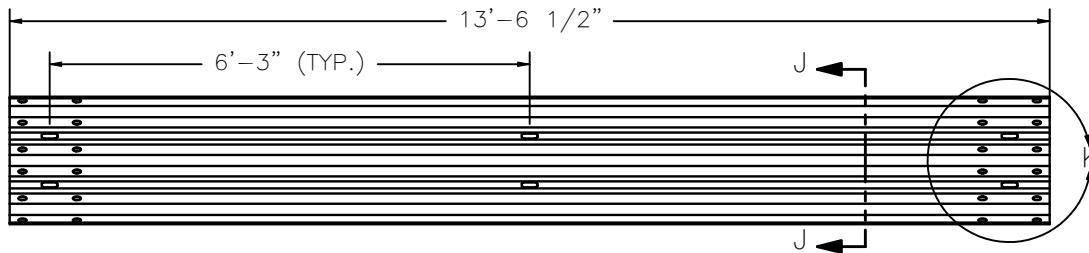
Universal Breakaway
Steel Post for Thrie
Beam Bullnose Median
Barrier System

BCT Anchorage Detail

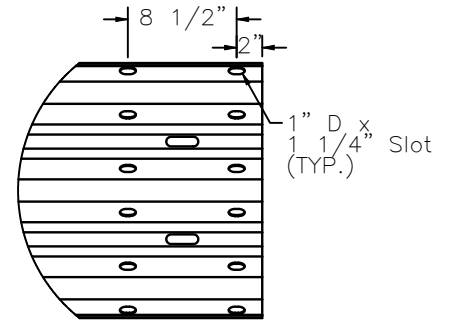
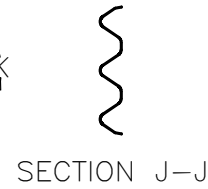
DWG. NAME:
UBSP Bullnose_R8

SCALE: 1:12
UNITS: Inches

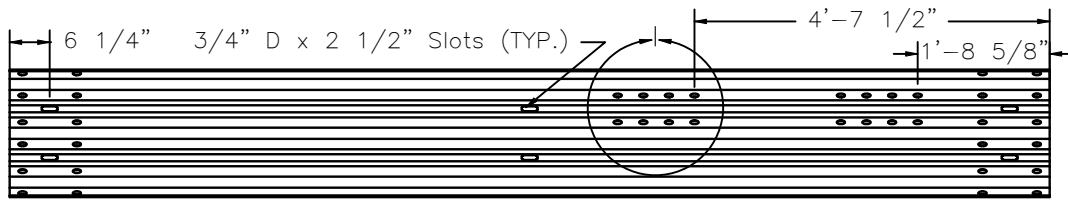
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DATE:
9/4/2009
DRAWN BY:
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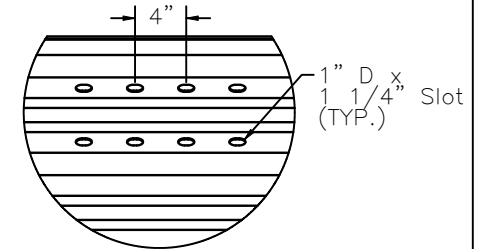
12'-6" Thrie Beam Section, 12 gauge
Rail Section No. 4



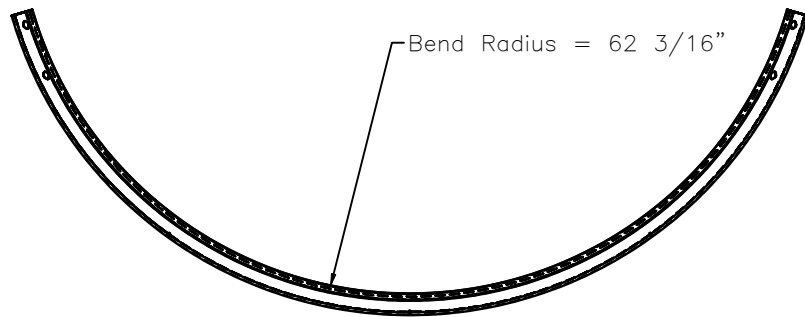
DETAIL K
SCALE 1 : 15



12'-6" Thrie Beam End Section, 12 gauge
Rail Section No. 5



DETAIL I
SCALE 1 : 15



Rail Section No. 1



Rail Section No. 2



Midwest Roadside
Safety Facility

Universal Breakaway
Steel Post for Thrie
Beam Bullnose Median
Barrier System

Rail Section Details
Bend Radii

DWG. NAME:
UBSP Bullnose_R8

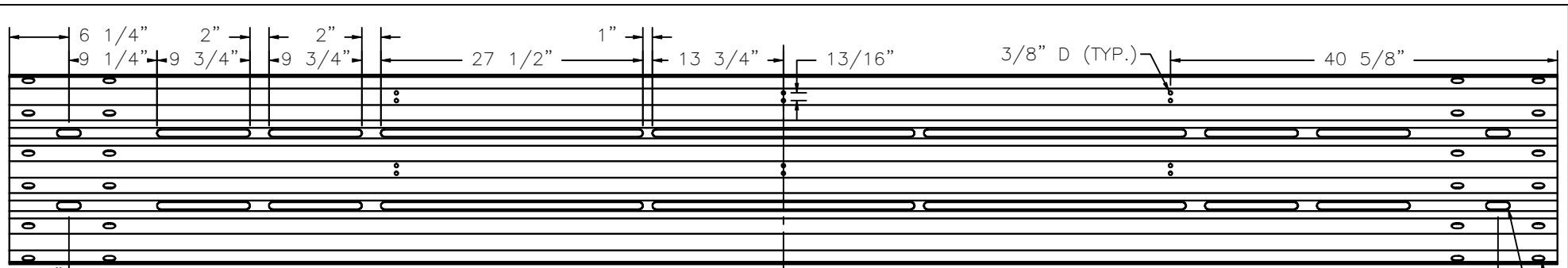
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UNITS: Inches

SHEET:
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DATE:
9/4/2009

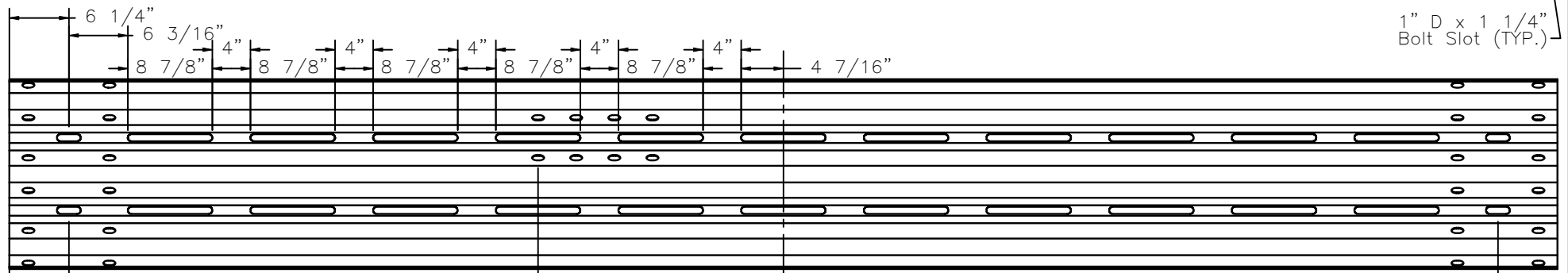
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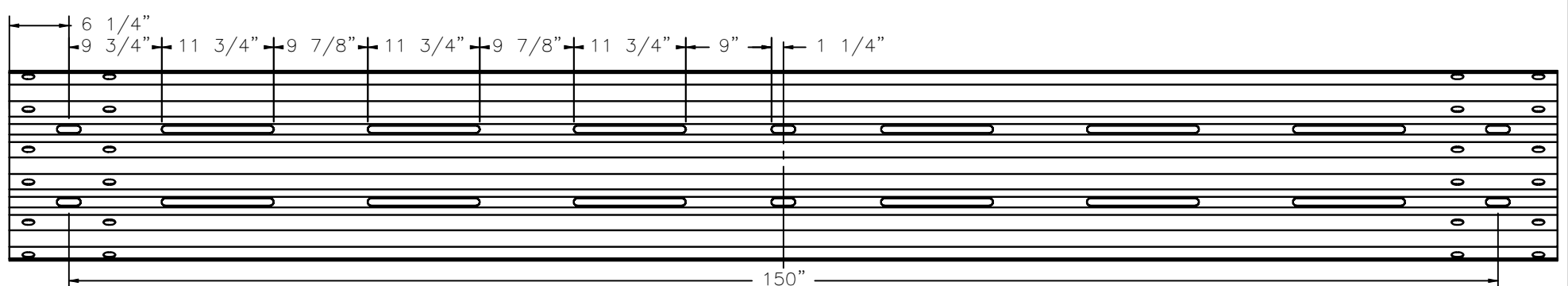


2" 8 1/2" 150" Rail Section No. 1 (Unbent) RTM07a Slot Pattern


3/4" D x 2 1/2" Bolt Slot (TYP.)
1" D x 1 1/4" Bolt Slot (TYP.)



55 1/2" 150" Rail Section No. 2 (Unbent) RTM07d Slot Pattern



150" Rail Section No. 3 RTM07e Slot Pattern

 Midwest Roadside Safety Facility	Universal Breakaway Steel Post for Thrie Beam Bullnose Median Barrier System		SHEET: 13 of 15
	Slot Patterns		DATE: 9/4/2009
DWG. NAME: UBSP_Bullnose_R8	SCALE: 1:16 UNITS: Inches	REV. BY: KAP/RKF/SWA	

UBSP Bullnose			
Item No.	QTY.	Description	Hardware Guide
a1	2	96" Foundation Tube	A500 Grade B PTE05
a2	4	72" Foundation Tube	A500 Grade B PTE05
a3	6	8 x 8 x 5/8" Anchor Bearing Plate	A36 FPB01
a4	14	13 x 7 x 1/2" Steel Plate	A36 -
a5	6	Anchor Bracket End Plate	A36 FPA01
a6	14	13 x 5 1/2 x 3/4" Steel Plate	A36 -
a7	14	6 x 8 x 3/16 x 45 3/8" long Foundation Tube	A500 Grade B -
a8	20	6 x 8 x 14 1/4" Blockout	SYP Grade No.1 or better PDB09
a9	14	W6x8.5 x 31 1/4" long (W6x9 can be substituted)	A36 -
a10	6	Anchor Bracket	A36 FPA01
a11	4	Yoke	A36 PFP01
a12	2	Straight Ground Strut 67" long	C6x8.2 Channel Section A36 Steel PFP01
a13	7	6 x 8 x 14 1/4" Tapered Blockout - Side A	SYP Grade No.1 or better Blockout with Offset Holes
a14	7	6 x 8 x 14 1/4" Tapered Blockout - Side B	SYP Grade No.1 or better Blockout with Offset Holes
b1	4	12'-6" Thrie Beam Section	12 gauge AASHTO M180 RTM02a
b2	1	Bent 12'-6" Thrie Beam Section - Radius 62 3/16"	12 gauge AASHTO M180 RTM07a
b3	2	12'-6" Thrie Beam Section with Extra Slots	12 gauge AASHTO M180 RTM07e
b4	1	12'-6" Thrie Beam End Section - Side A	12 gauge AASHTO M180 -
b5	1	12'-6" Thrie Beam End Section - Side B	12 gauge AASHTO M180 -
b6	1	Bent 12'-6" Thrie Beam Section - Radius 409 7/16" - Side A	12 gauge AASHTO M180 RTM07d
b7	1	Bent 12'-6" Thrie Beam Section - Radius 409 7/16" - Side B	12 gauge AASHTO M180 RTM07d
c1	56	Hex Top Bolts 3/8" D x 2 1/4" long (Fully Threaded)	A325 -
c2	14	5/8"Dia. x 10" long Guardrail Bolt	A307 FBB03
c3	6	5/8"Dia. x 10" long Hex Head Bolt	A307 FBX16a
c4	120	5/8"Dia. x 1 1/2" long Guardrail Bolt	A307 FBB01
c5	48	5/8"Dia. x 1 1/2" long Hex Head Bolt	A307 FBX16a
c6	12	5/8"Dia. x 18" long Guardrail Bolt	A307 FBB04
c7	6	7/8"Dia. x 7 1/2" long Hex Head Bolt	A307 FBX22a
d1	56	3/8"Dia. Hex Nut	A563DH Galvanized -
d2	6	7/8"Dia. Hex Nut	A563DH FBX22a
d3	208	5/8"Dia. Hex Nut	A563DH FBX16a
d2	12	1"Dia. Hex Nut	A563DH -
e1	224	3/8"Dia. Flat Washer	F436 Gr. 1 Galvanized -
e2	112	5/8"Dia. Flat Washer	F436 Gr. 1 FWC16a
e3	12	7/8"Dia. Flat Washer	F436 Gr. 1 FWC22a
e4	12	1"Dia. Flat Washer	F436 Gr. 1 FWC24a
f1	6	BCT Thrie Post	SYP Grade No. 1 or better (No knots, 18" above or below ground tension face) PDF04
f2	8	W6x8.5 x 78" long (W6x9 can be substituted)	A36 -
g1	6	BCT Cable 6'-6" Long	6x19 Cable IWRC IPS FCA01
g2	5	2 3/8" O.D. x 6" long BCT Post Sleeve	ASTM A53 Grade B Schedule 40 FMM02
g3	2	Bullnose Nose Cable ø.625" x 14.4' Long	"Cold Tuff" Button, S-409 Size No. 12 SB 2 7/8" Stock No. 1040395 for .625" Dia. (6x25) wire rope (or any similarly sized swage-grip button ferrules) -
g4	4	Nose Cable Anchor Plates 12 5/8" x 5 13/16"	A36 -
g5	6	1/4"Dia. U-Bolt Plate Washer	Galvanized A307 -
g6	6	1/4"Dia. U-Bolt	Galvanized A307 -
g7	12	1/4"Dia. Hex Nut	Galvanized A307 -



Midwest Roadside
Safety Facility

Universal Breakaway
Steel Post for Thrie
Beam Bullnose Median
Barrier System

Bill of Materials

DWG. NAME.

UBSP Bullnose_R8

SCALE: None

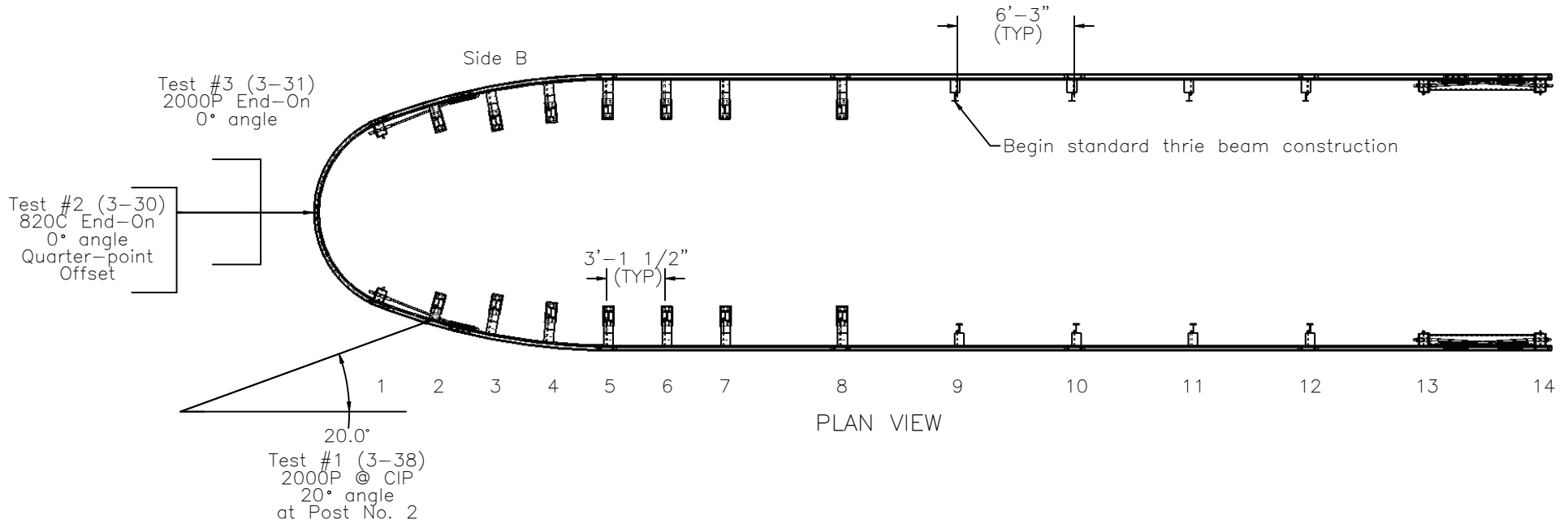
UNITS: Inches

SHEET:
14 of 15

DATE:
9/4/2009

DRAWN BY:
RJT/EAJ

REV. BY:
KAP/RKF/
SWA



Midwest Roadside
Safety Facility

Universal Breakaway
Steel Post for Thrie
Beam Bullnose Median
Barrier System

Impact Locations

DWG. NAME.
UBSP Bullnose_R8

SCALE: None
UNITS: Inches

SHEET:
15 of 15
DATE:
9/4/2009
DRAWN BY:
RJT/EAJ
REV. BY:
KAP/RKF/
SWA