
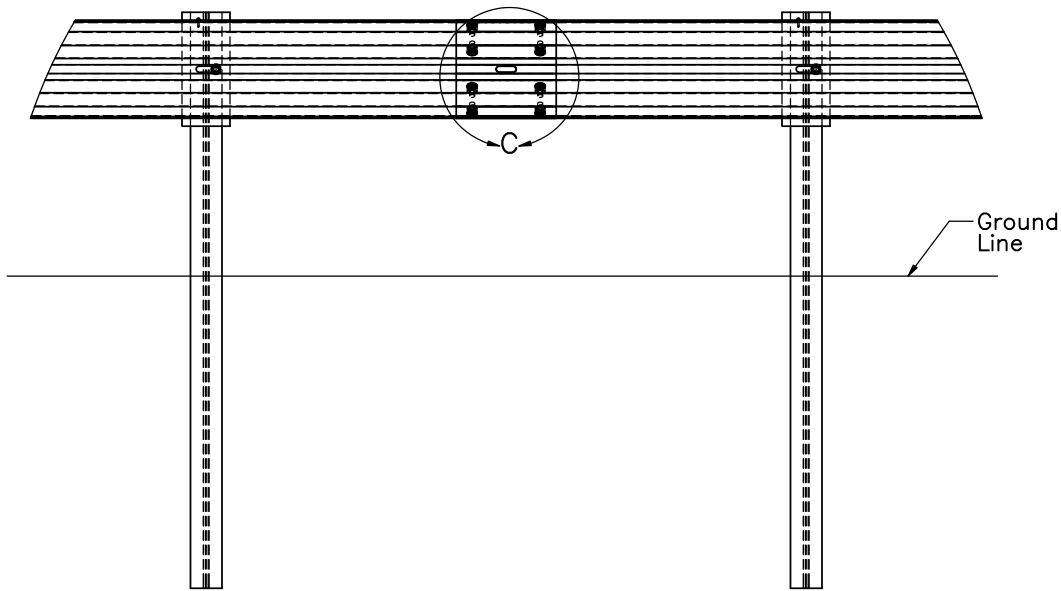


- Notes: (1) Impact location for the 1100C is the midspan of post nos. 27 and 28.
- (2) The BCT anchor posts are placed in ϕ 3' [914] holes.
- (3) Critical region located between post nos. 21 and 29.
- (4) A high-speed digital video camera shall be placed perpendicular to downstream anchor.
- (5) Vehicle is expected to gate through.
- (6) Avoid activating vehicle brakes in the first 100' [30480] downstream of post no. 29.
- (7) Allow for a minimum lateral clearance of 30' [9144] behind the system in the first 75' [22860] downstream of post no. 29.
- (8) Paint the downstream bearing plate and BCT cable two different colors.
- (9) Put marks on foundation tube bolts.

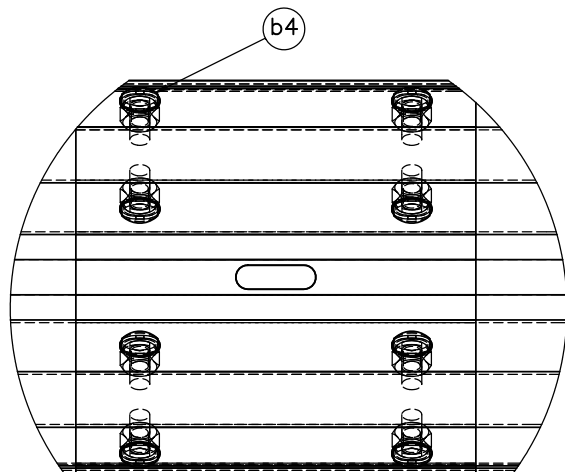
 Midwest Roadside Safety Facility	Wisconsin DOT Project MGS with Standard Downstream Anchorage System	SHEET: 1 of 11
	System Layout	DATE: 5/25/2012
DWG. NAME: DS-Anchorage-32in_R3	SCALE: 1:225 UNITS: in.[mm]	DRAWN BY: CWP
		REV. BY: KAL/RKF



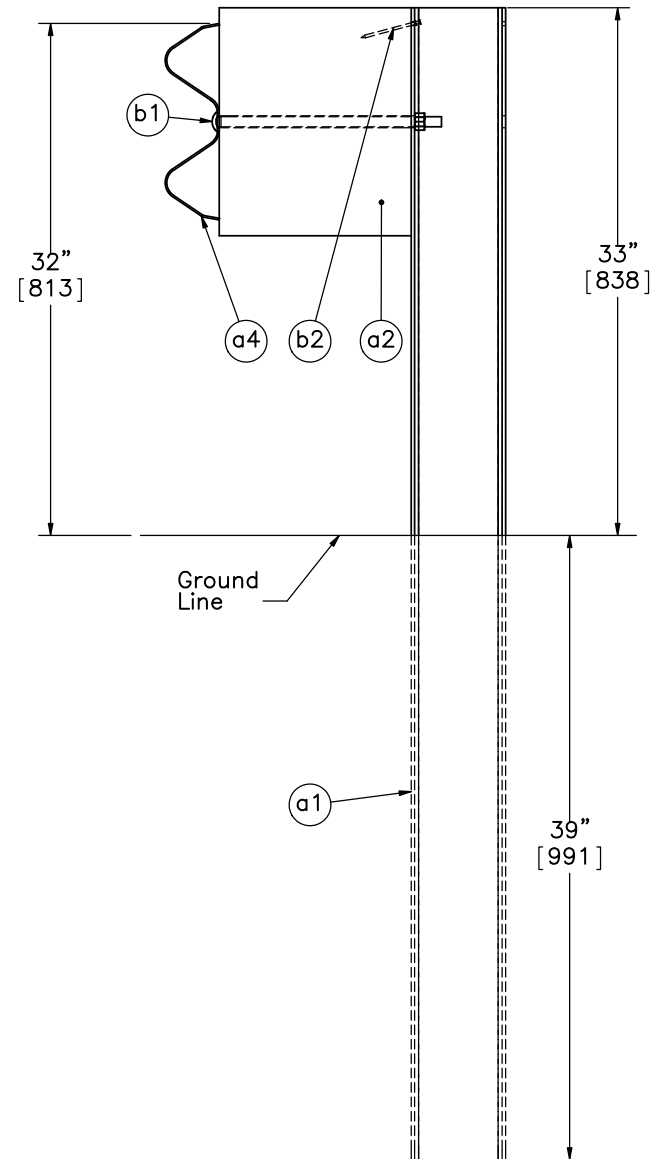
Post 23

DETAIL A

Post 22



DETAIL C
SCALE 1 : 6



SECTION B-B
SCALE 1 : 12



Midwest Roadside
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Wisconsin DOT Project
MGS with Standard
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System

Post and Splice Details

DWG. NAME:
DS-Anchorage-32in_R3

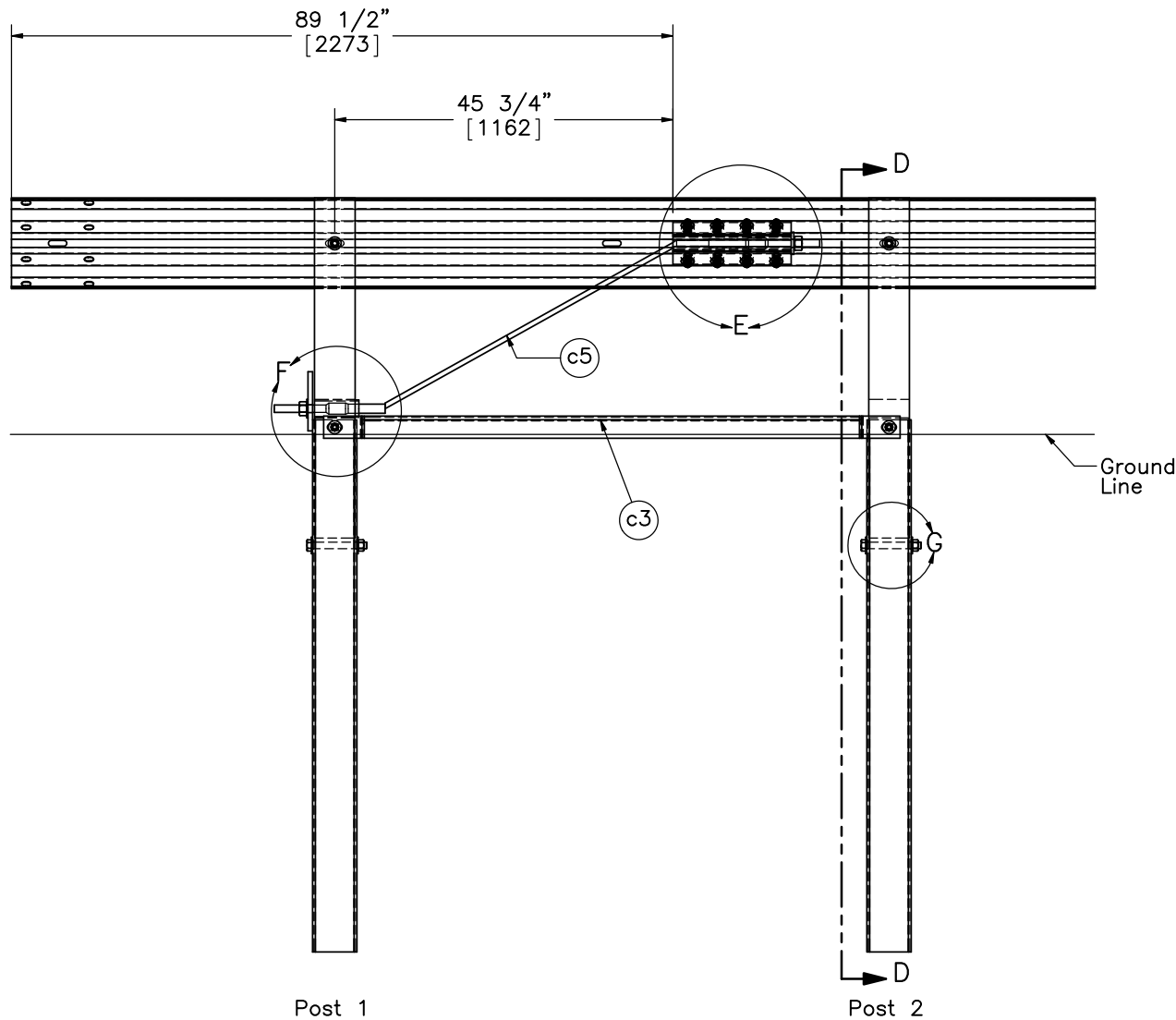
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SHEET:
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DATE:
5/25/2012

DRAWN BY:
CWP

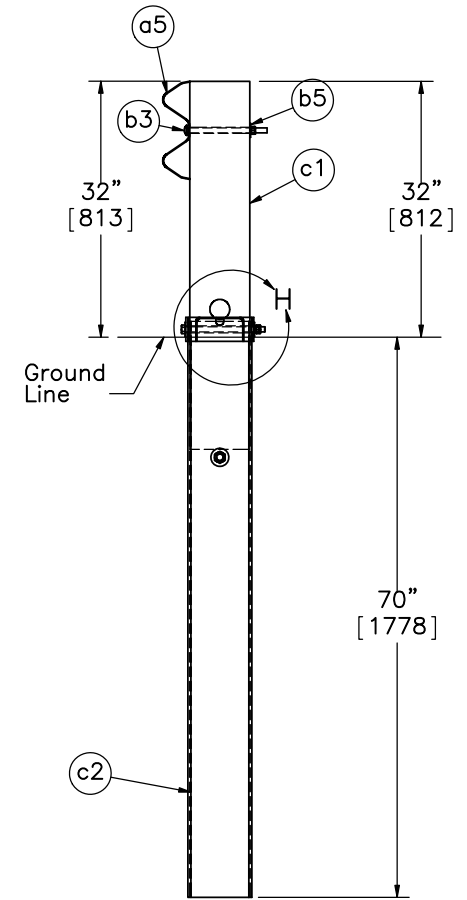
REV. BY:
KAL/RKF



Post 1

Post 2

Upstream End Section Detail



SECTION D-D

NOTE: Post bolt hole for each BCT post is raised 1 in. [25].



Midwest Roadside Safety Facility

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Upstream End Rail Details

DWG. NAME:
DS-Anchorage-32in_R3

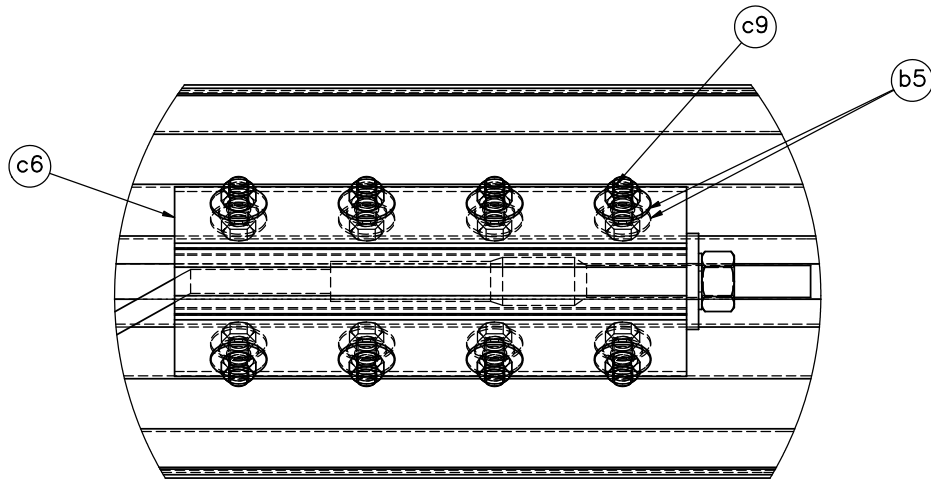
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SHEET:
3 of 11

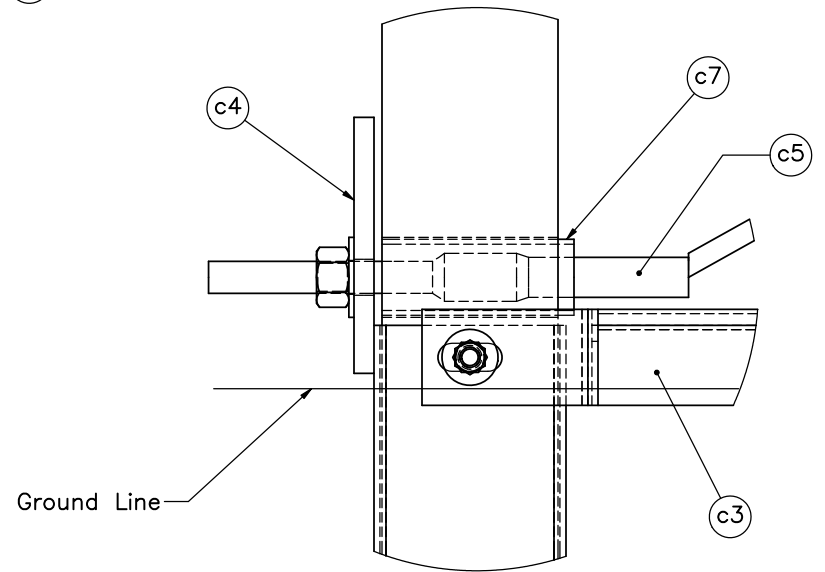
DATE:
5/25/2012

DRAWN BY:
CWP

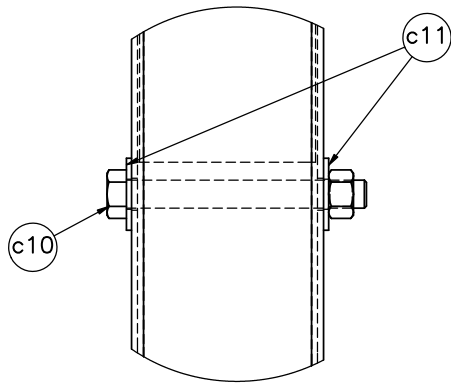
REV. BY:
KAL/RKF



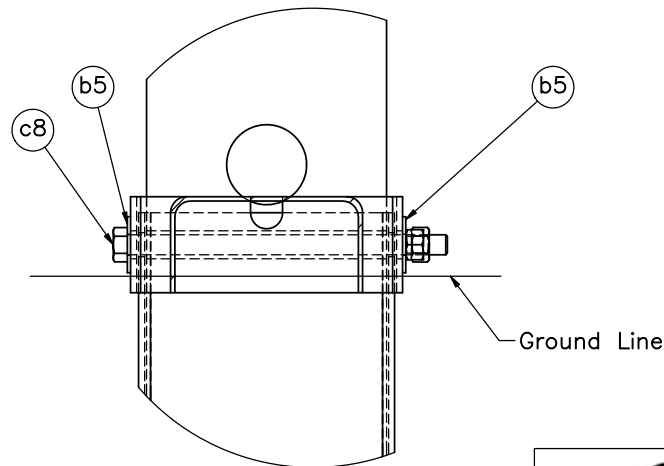
DETAIL E



DETAIL F



DETAIL G



DETAIL H



Midwest Roadside
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Wisconsin DOT Project
MGS with Standard
Downstream Anchorage
System

Anchor Details

DWG. NAME:
DS-Anchorage-32in_R3

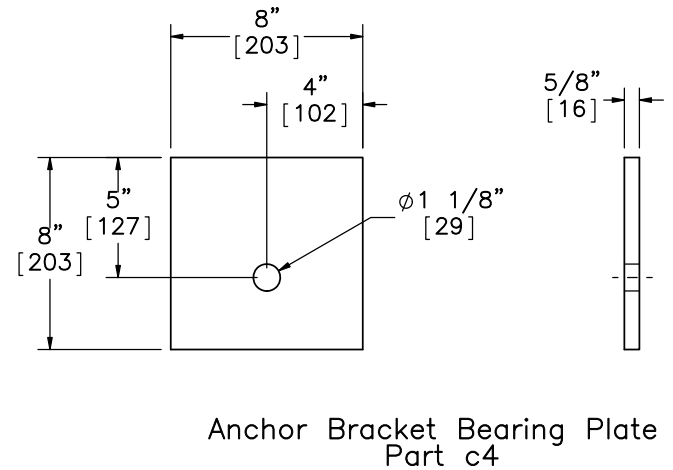
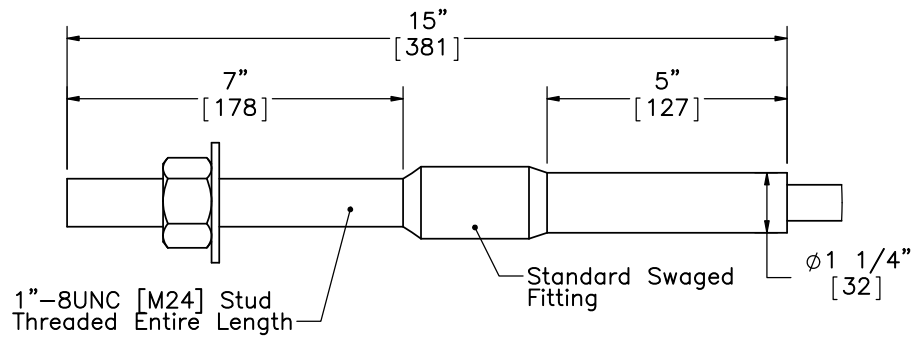
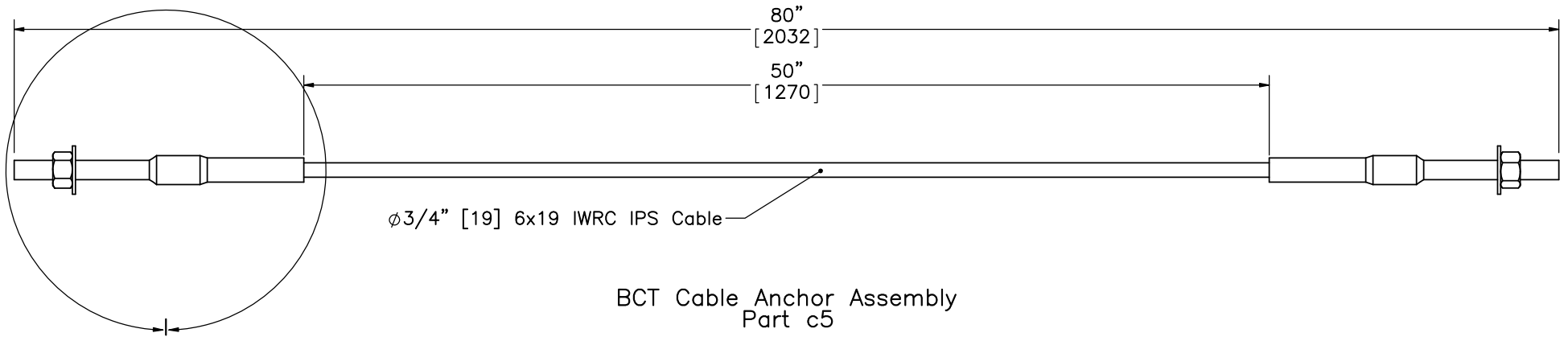
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Note: (1) 6x25 IWRC IPS meets the minimum breaking strength of 42.7 kips [190 kN] and may be substituted for the 6x19 IWRC IPS cables.



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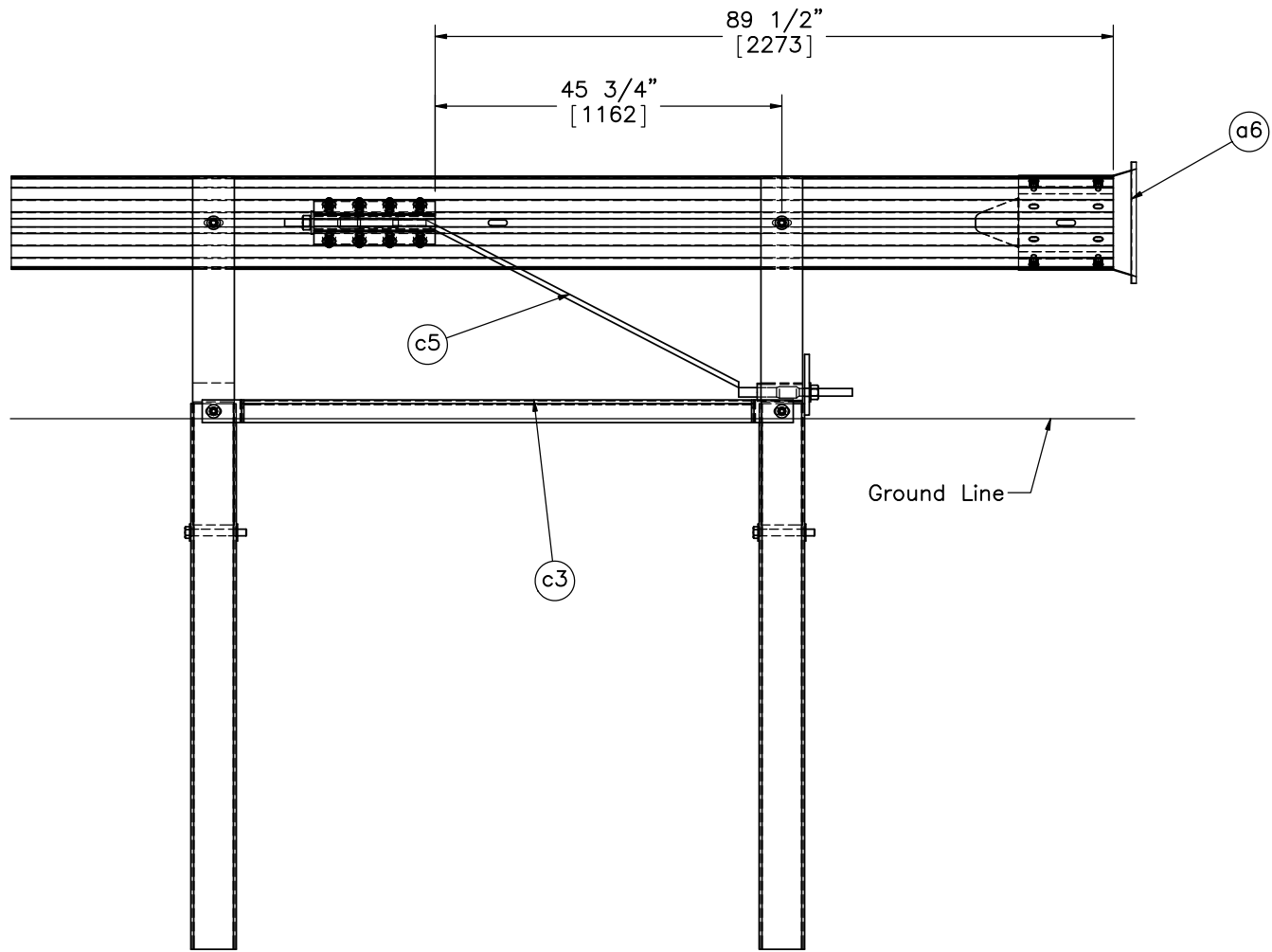
Wisconsin DOT Project
MGS with Standard
Downstream Anchorage
System
BCT Anchor Cable Assembly

DWG. NAME.
DS-Anchorage-32in_R3

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

SHEET:
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DATE:
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Post 28

Post 29

Downstream End Section Detail

NOTE: Post bolt hole for each BCT post is raised 1 in. [25].



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Downstream Anchorage
System

Downstream End Rail Details

DWG. NAME:
DS-Anchorage-32in_R3

SCALE: 1:24
UNITS: in.[mm]

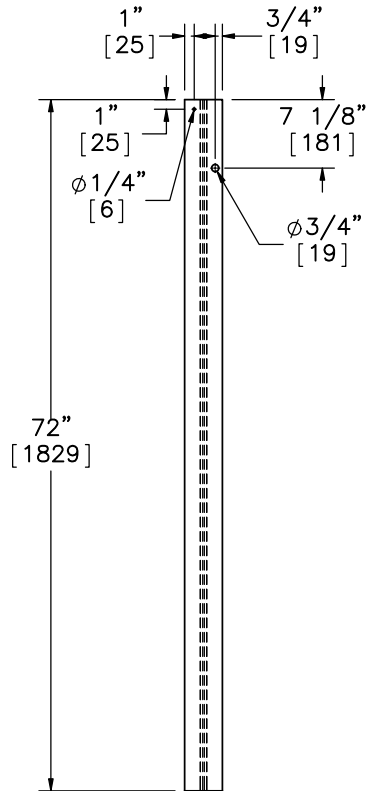
SHEET:
6 of 11

DATE:
5/25/2012

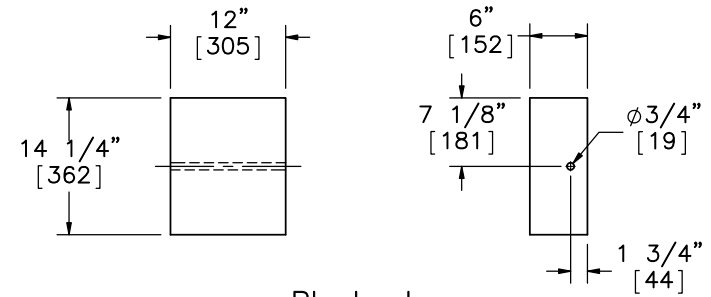
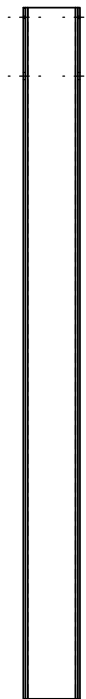
DRAWN BY:
CWP

REV. BY:
KAL/RKF

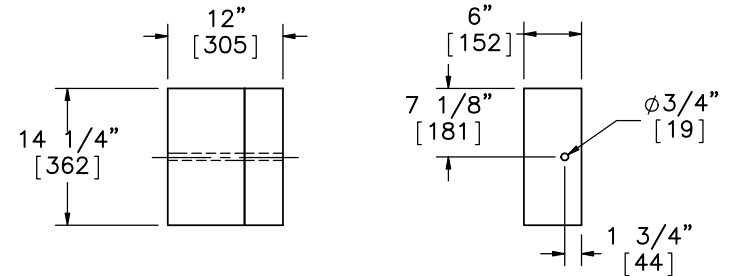
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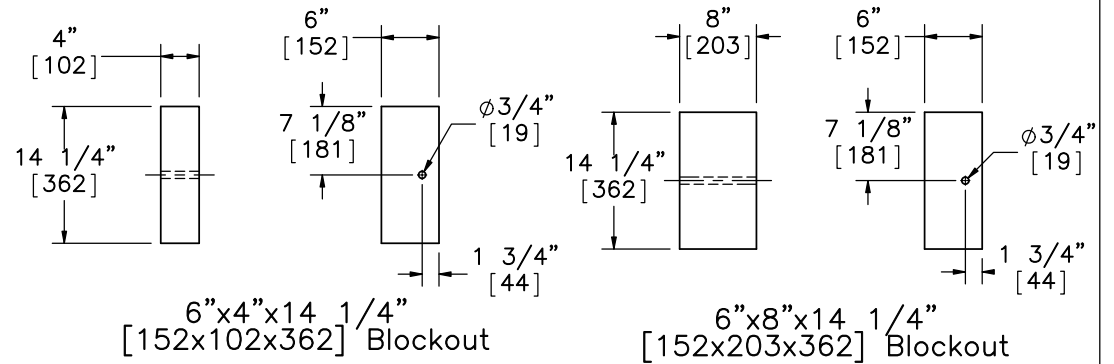
Line Post
Part a1



Blockout
Part a2



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



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Downstream Anchorage
System

Post Nos. 3-27 Details

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DS-Anchorage-32in_R3

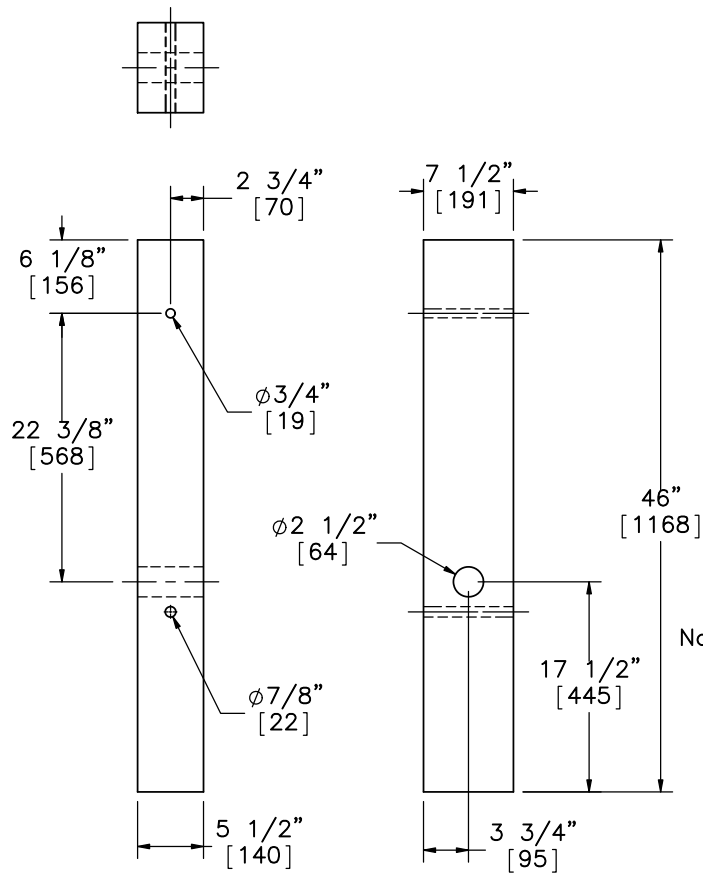
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SHEET:
7 of 11

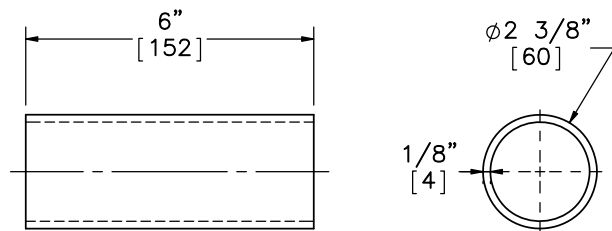
DATE:
5/25/2012

DRAWN BY:
CWP

REV. BY:
KAL/RKF

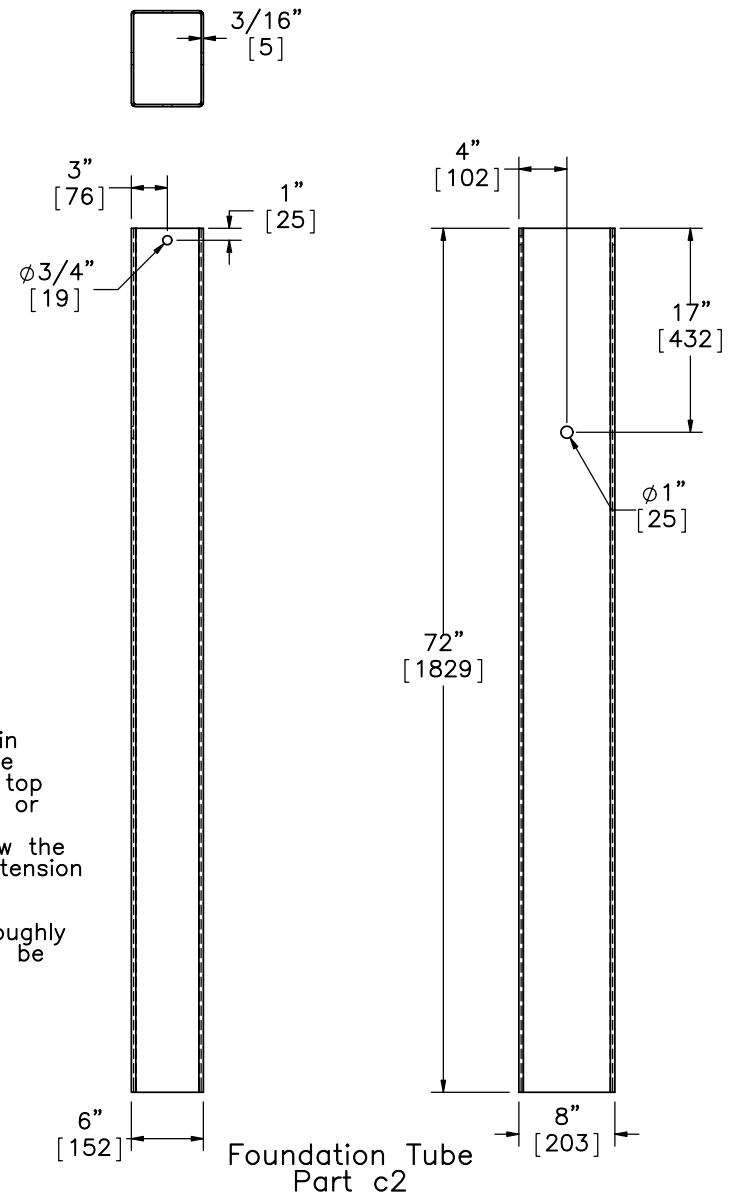


BCT MGS Timber Post
Part c1



BCT Post Sleeve
Part c7
SCALE 1:4

- Notes: (1) The BCT post shall be manufactured from Southern Yellow Pine, Grade No. 1 or better and contain no wane, knots, checks, or splits within 12 [305] above or below the ground line (i.e., relative to top of the steel foundation tube or breakaway hole) as well as within 3 [76] above or below the post bolt hole on both the tension and compression sides.
- (2) The BCT post shall be thoroughly inspected and determined to be of the highest quality.



Foundation Tube
Part c2



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Wisconsin DOT Project
MGS with Standard
Downstream Anchorage
System

BCT Timber Post &
Foundation Tube Details

DWG. NAME:
DS-Anchorage-32in_R3

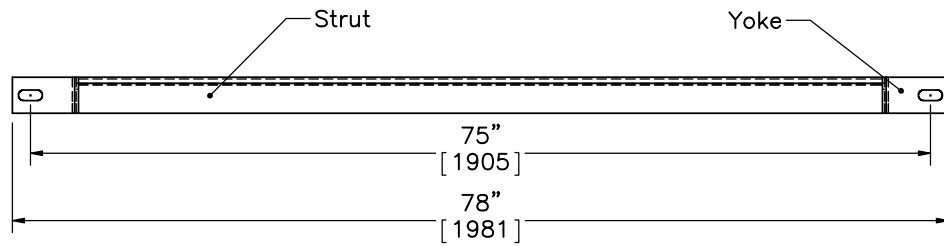
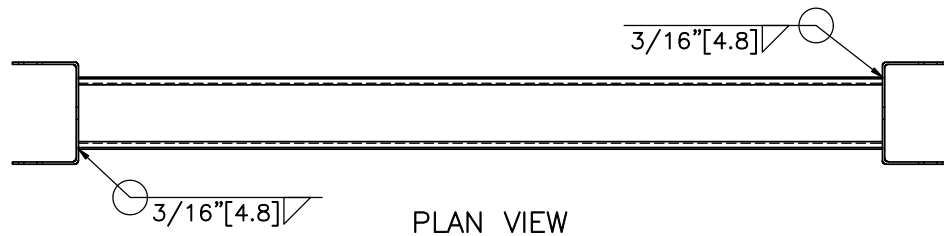
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UNITS: in.[mm]

SHEET:
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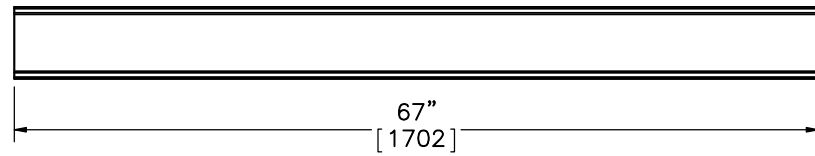
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5/25/2012

DRAWN BY:
CWP

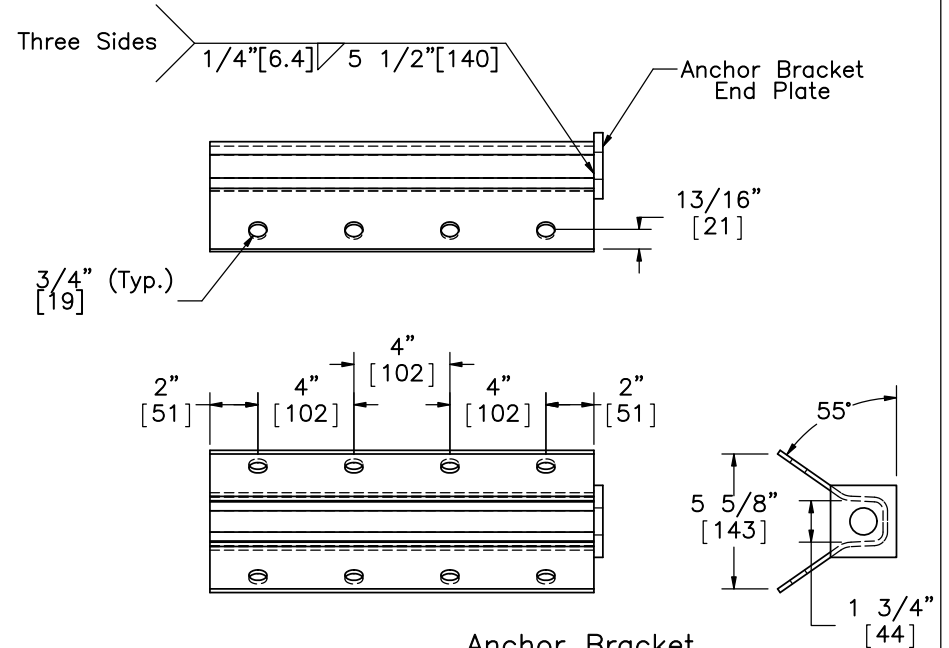
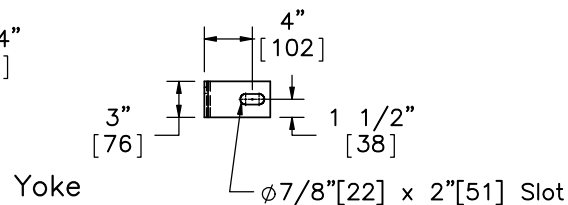
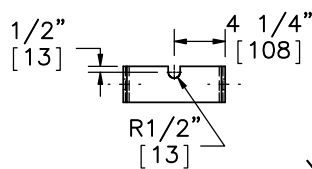
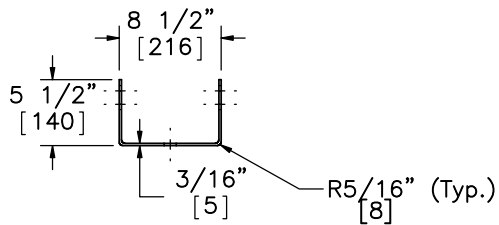
REV. BY:
KAL/RKF



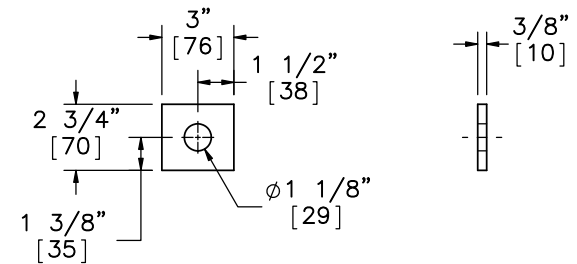
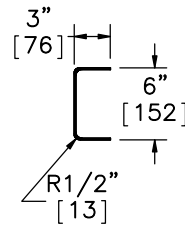
Strut and Yoke Assembly
Part c3



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



Anchor Bracket
(FPA01)
Part c6
SCALE 1:8



Anchor Bracket End Plate
SCALE 1:8



Midwest Roadside
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Wisconsin DOT Project
MGS with Standard
Downstream Anchorage
System

Ground Strut &
Anchor Bracket Details

DWG. NAME:
DS-Anchorage-32in_R3

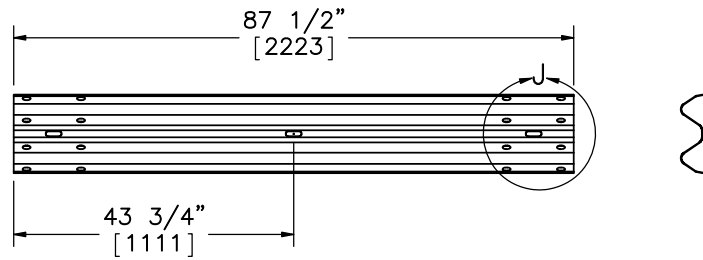
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SHEET:
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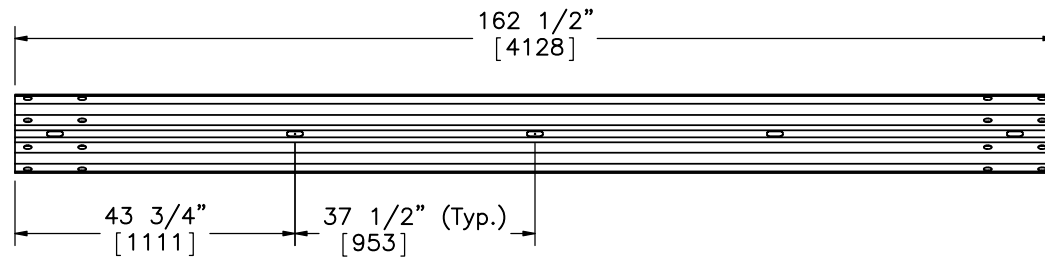
DATE:
5/25/2012

DRAWN BY:
CWP

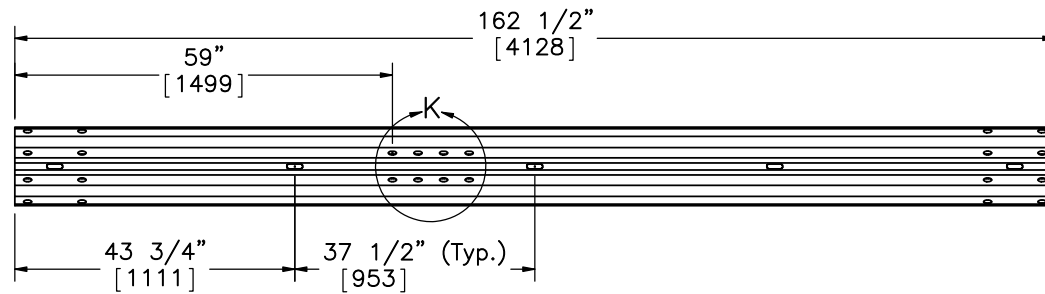
REV. BY:
KAL/RKF



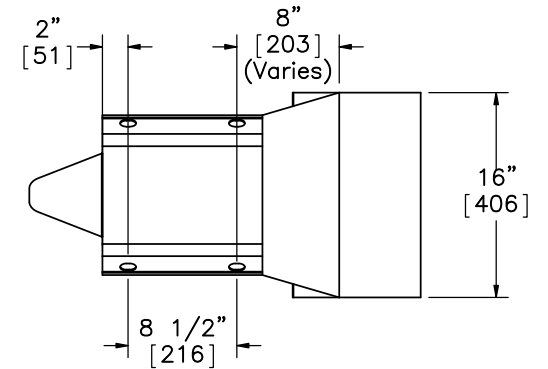
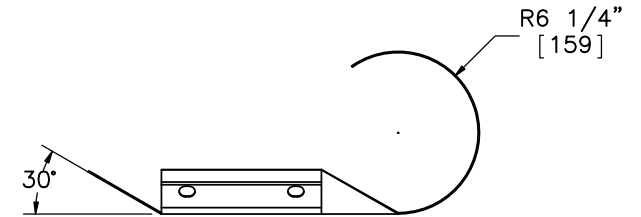
6'-3" [1905] W-Beam Section, 12 gauge [2.7]
Part a3



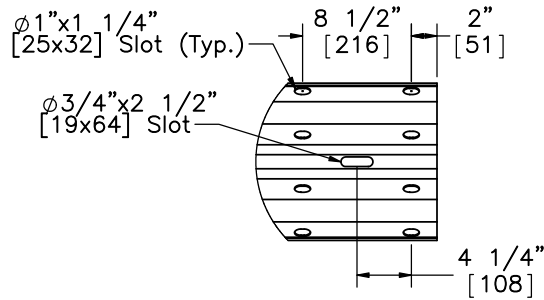
12'-6" [3810] W-Beam Section, 12 gauge [2.7]
Part a4



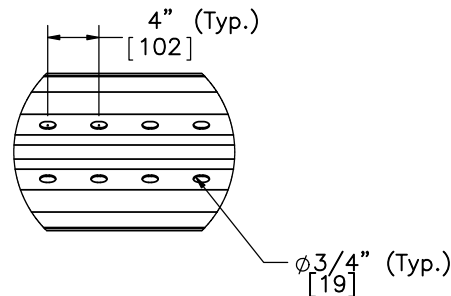
12'-6" [3810] W-Beam Section, 12 gauge [2.7], End Section
Part a5



W-Beam Rounded End Section
12 gauge [2.7]
Part a6
SCALE 1:15



DETAIL J
SCALE 1:15



DETAIL K
SCALE 1:15

Notes: (1) If rounded W-beam end section cannot be found locally, use a spoon end section.



Midwest Roadside
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MGS with Standard
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System

Rail Section Details

DWG. NAME:
DS-Anchorage-32in_R3

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

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DATE:
5/25/2012

DRAWN BY:
CWP

REV. BY:
KAL/RKF

ItemNo.	QTY.	Description	Material Specification	Hardware Guide
a1	25	W6x8.5 6' Long [W152x12.6 1829] Steel Post	ASTM A992 Min. 50 ksi [345 MPa] (W6x9 ASTM A36 Min. 36 ksi [248 MPa])	PWE06
a2	25	6x12x14 1/4" [152x305x362] Blockout	SYP Grade No. 1 or better	PDB10a-b
a3	1	6'-3" [1905] W-Beam MGS Section	12 gauge [2.7] AASHTO M180	RWM01a
a4	12	12'-6" [3810] W-Beam MGS Section	12 gauge [2.7] AASHTO M180	RWM04a
a5	2	12'-6" [3810] W-Beam MGS End Section	12 gauge [2.7] AASHTO M180	RWM14a
a6	1	W-Beam Rounded End Section	12 gauge [2.7] AASHTO M180	RWE03a
b1	25	5/8" Dia. x 14" Long [M16x356] Guardrail Bolt and Nut	Bolt ASTM A307, Nut ASTM A563A	FBB06
b2	25	16D Double Head Nail	-	-
b3	4	5/8" Dia. x 10" [M16x254] Long Guardrail Bolt and Nut	Bolt ASTM A307, Nut ASTM A563A	FBB03
b4	116	5/8" Dia. x 1 1/2" Long [M16x38] Guardrail Bolt and Nut	Bolt ASTM A307, Nut ASTM A563A	FBB01
b5	46	5/8" [16] Dia. Flat Washer	ASTM F844 or Grade 2 Steel	FWC16a
c1	4	BCT Timber Post - MGS Height	SYP Grade No. 1 or better (high quality)	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" [203x203x16] Anchor Bearing Plate	ASTM A36 Steel	FPB01
c5	2	BCT Anchor Cable Assembly	ø3/4" [19] 6x19 IWRC IPS Galvanized Wire Rope	FCA01
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	Bolt ASTM A307, Nut ASTM A563A	FBX16a
c9	16	5/8" Dia. x 1 1/2" Long [M16x38] Hex Head Bolt and Nut	Bolt ASTM A307, Nut ASTM A563A	FBX16a
c10	4	7/8" Dia. x 7 1/2" [M22x191] Long Hex Head Bolt and Nut	Bolt ASTM A307, Nut ASTM A563A	FBX22a
c11	8	7/8" [22] Dia. Flat Washer	SAE Grade 2	FWC22a



Midwest Roadside
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Wisconsin DOT Project
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System

Bill of Materials

DWG. NAME.
DS-Anchorage-32in_R3

SCALE: NONE
UNITS: in.[mm]

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5/25/2012
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