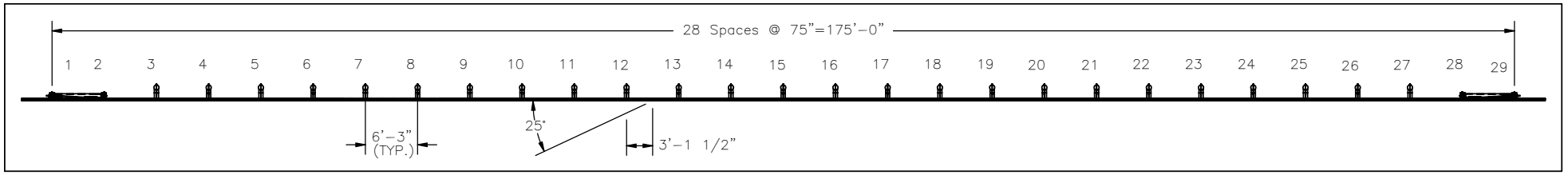
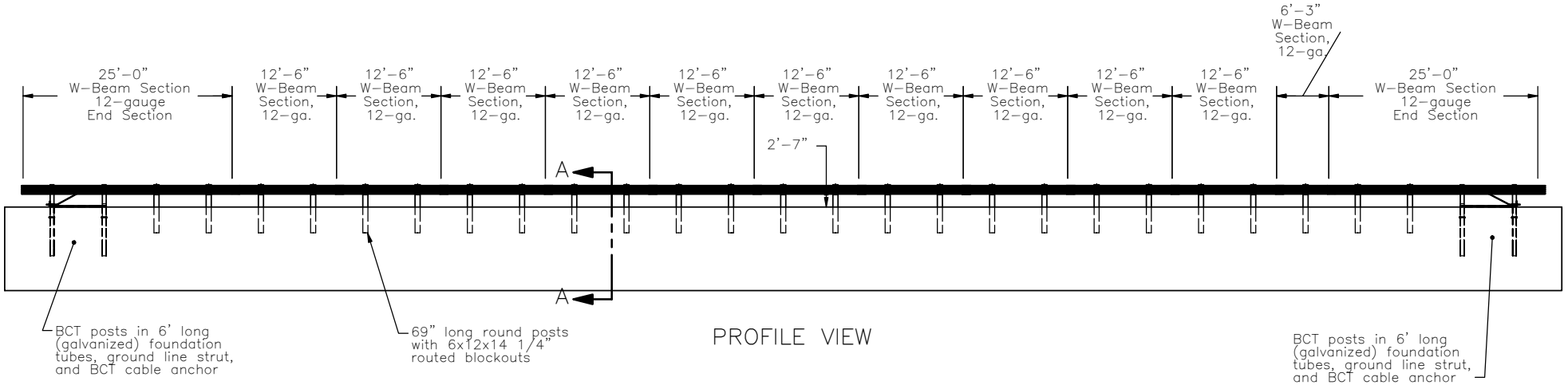


PLAN VIEW



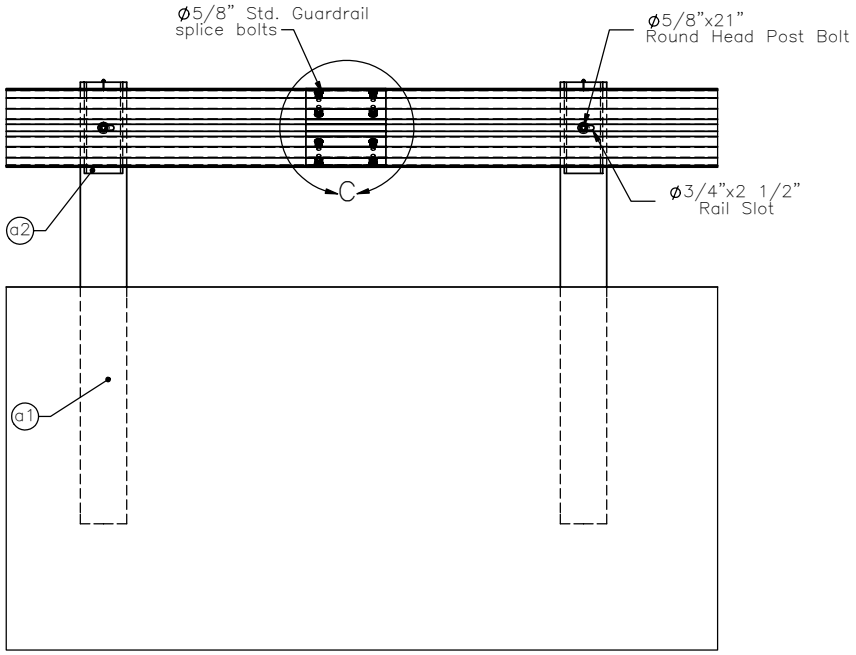
PROFILE VIEW

Midwest Roadside Safety Facility

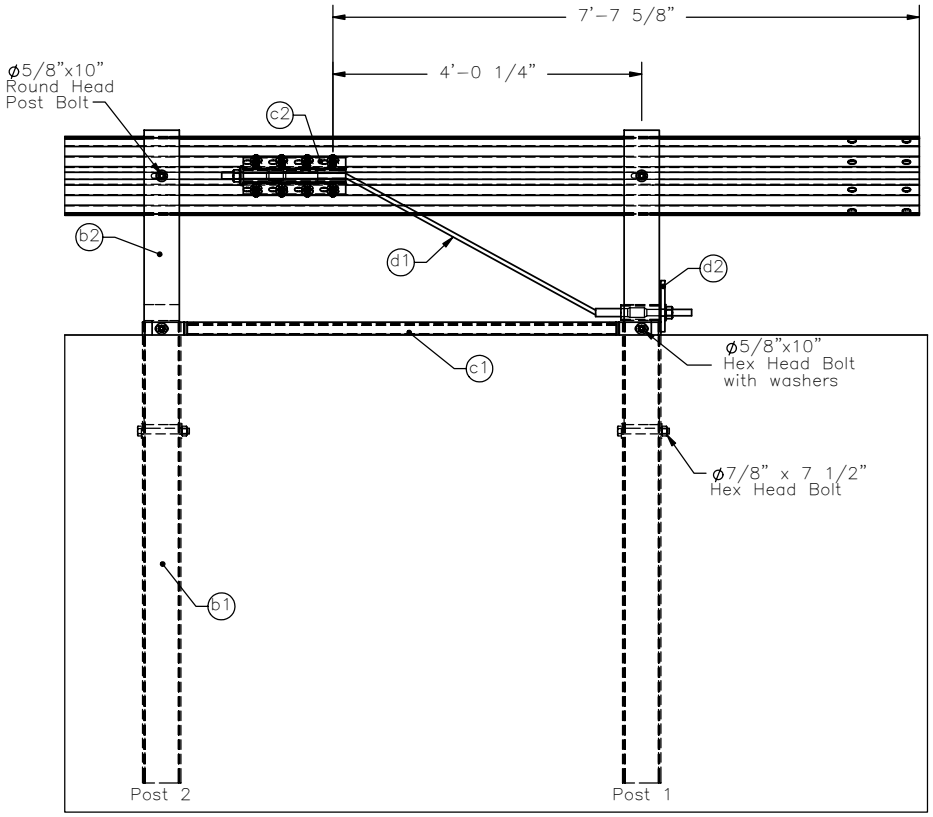
Round-Post MGS with Douglas Fir

System Layout

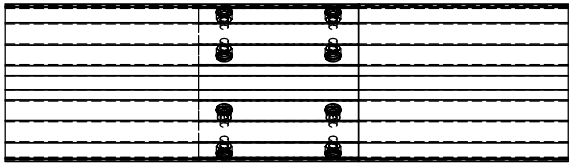
SHEET:	1 of 9
DATE:	06/08/2006
DRAWN BY:	GEP
REV. BY:	CME
DWG. NAME.	FPL_MGS_DF_R3
SCALE:	None
UNITS:	Inches



SPLICE DETAIL



END RAIL DETAIL



DETAIL C
SCALE 1 : 15

Midwest Roadside Safety Facility

Round-Post MGS

End Rail Detail
Splice Detail

SHEET: 2 of 9

DATE: 06/08/2006

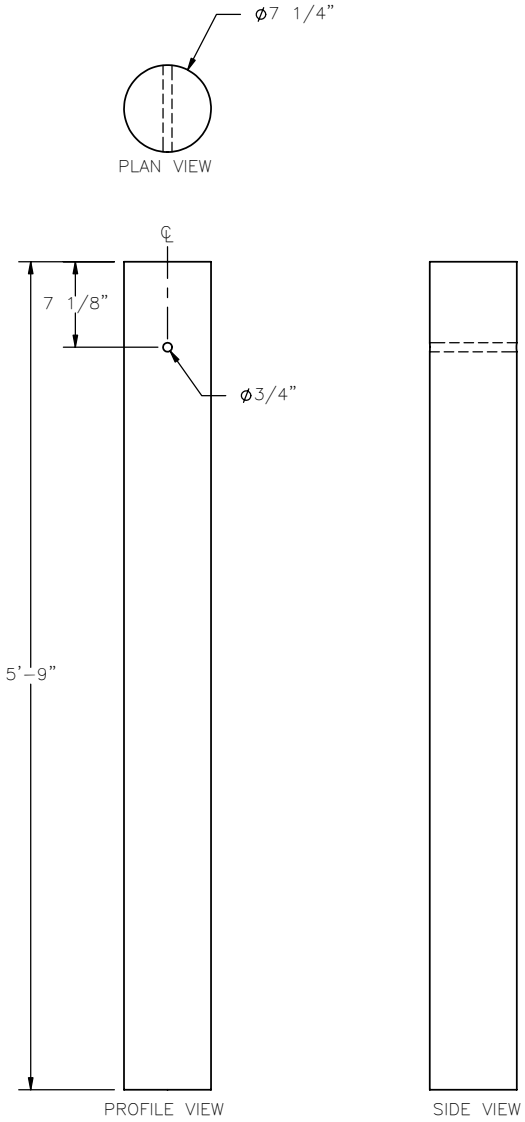
DRAWN BY: GEP

DWG. NAME. FPL_MGS_DF_R3

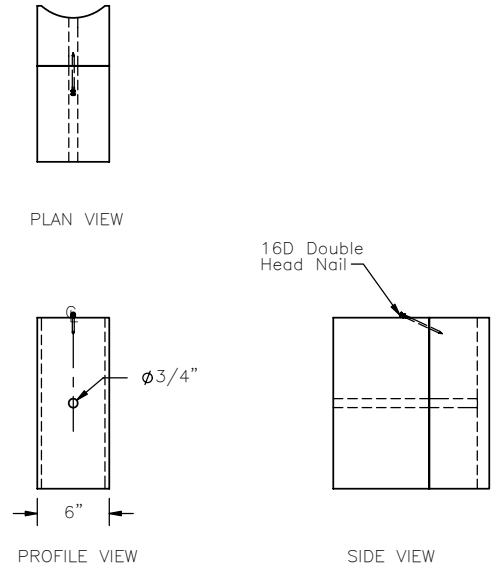
SCALE: None

UNITS: Inches

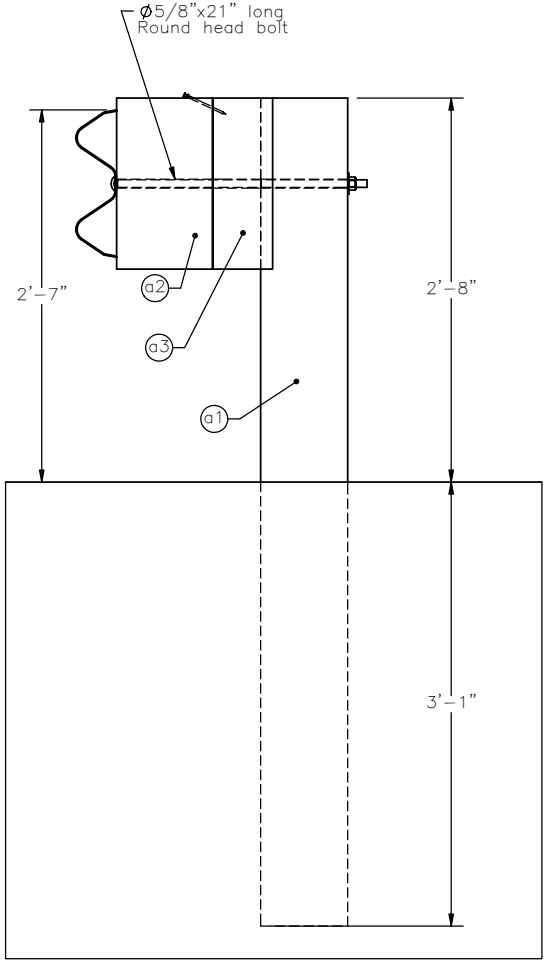
REV. BY: CME



Douglas Fir Round Post
Part a1

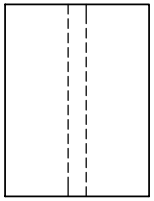


Douglas Fir Segmented Blockout
Part ??

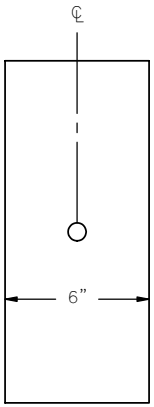


SECTION A–A

Midwest Roadside Safety Facility	Round–Post MGS Post 3–27 Detail	SHEET: 3 of 9 DATE: 06/08/2006 DRAWN BY: GEP
	DWG. NAME. FPL_MGS_DF_R3 SCALE: None UNITS: Inches	REV. BY: CME

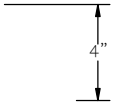


PLAN VIEW

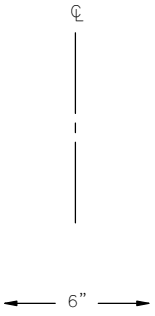


PROFILE VIEW

6x8x14.25" Blockout
Part a2



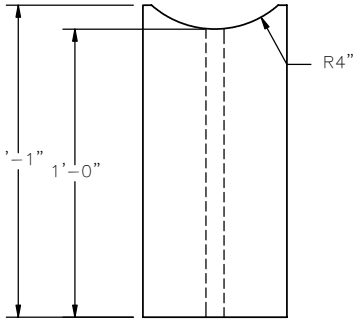
PLAN VIEW



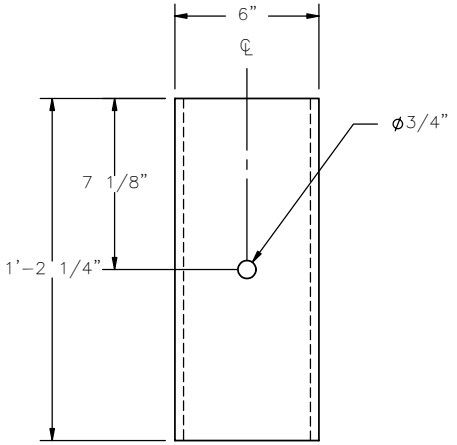
PROFILE VIEW

6x5x14.25" Blockout
Part a3

ISOMETRIC VIEW



PLAN VIEW



PROFILE VIEW

Optional Blockout

Midwest Roadside Safety Facility

Round-Post MGS

Segmented Blockout Details and Blockout Option

SHEET: 4 of 9

DATE: 06/08/2006

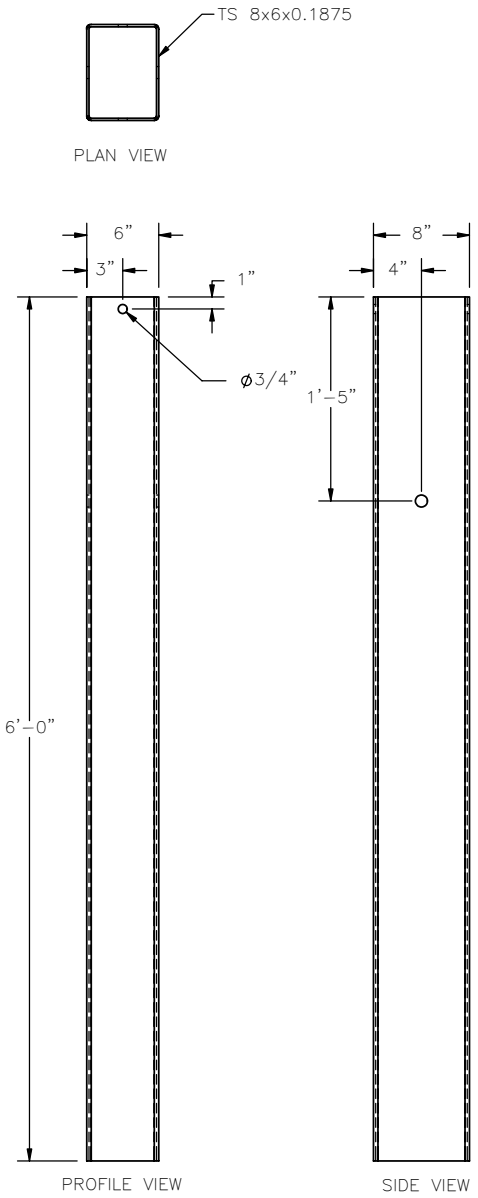
DRAWN BY: GEP

DWG. NAME. FPL_MGS_DF_R3

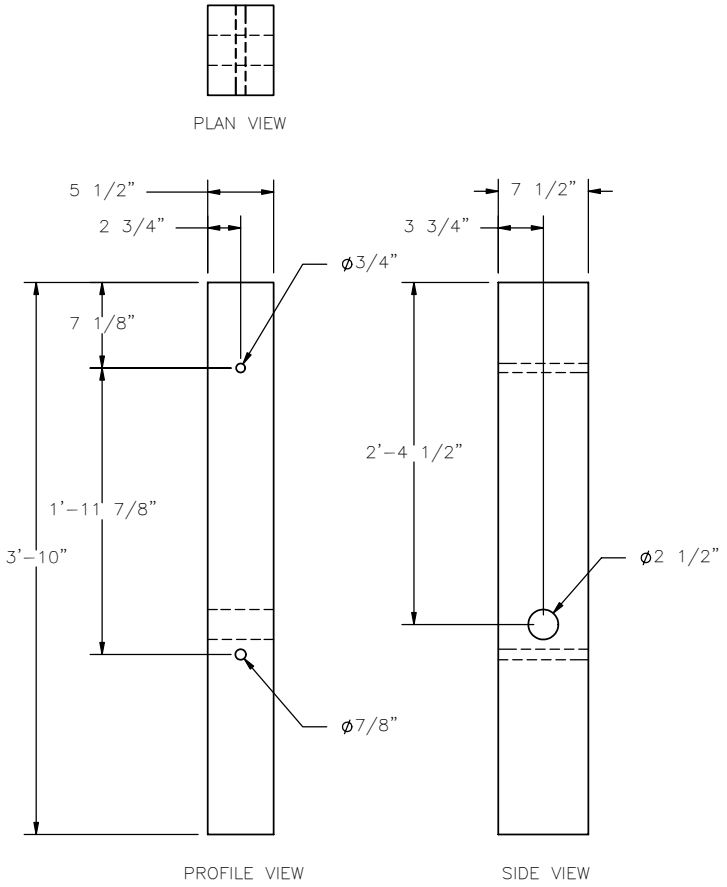
SCALE: None

UNITS: Inches

REV. BY: CME



Foundation Tube
Part b1



BCT (MGS) Timber Post
Part b2

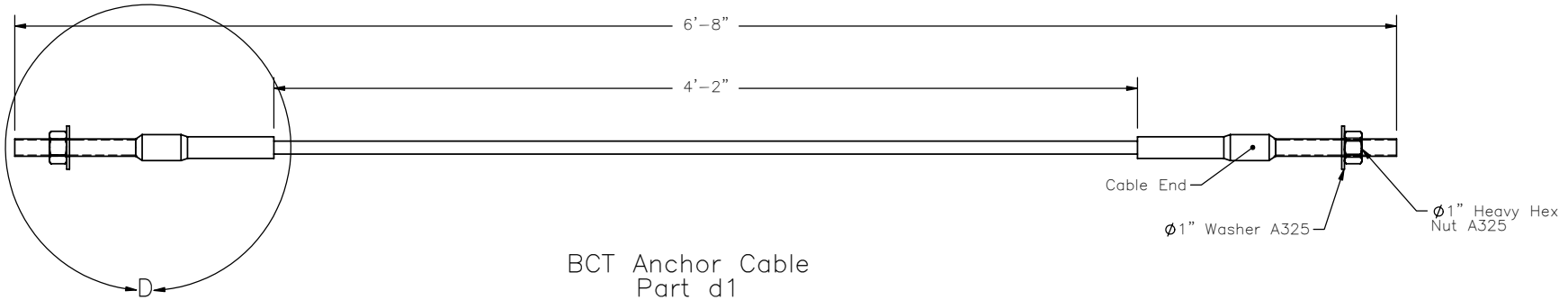
Post Number	Post Reference Number
3	906
4	904
5	909
6	908
7	907
8	923
9	931
10	902
11	919
12	914
13	934
14	921
15	930
16	920
17	926
18	905
19	918
20	912
21	910
22	925
23	932
24	928
25	935
26	922
27	915

Midwest Roadside Safety Facility

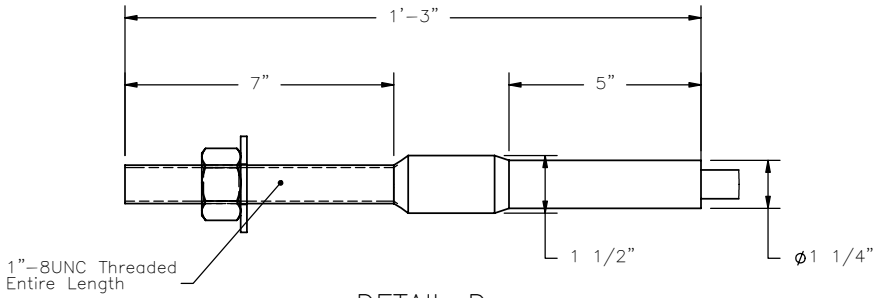
Round–Post MGS

BCT Timber Posts &
Foundation Tube Detail

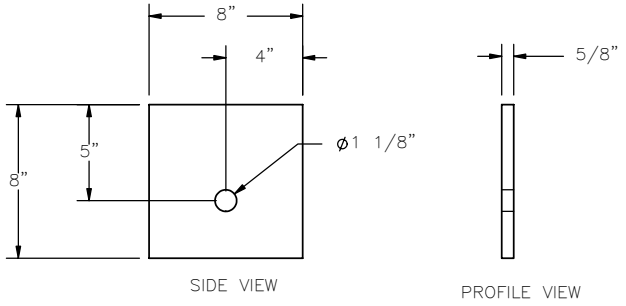
SHEET: 5 of 9
DATE: 06/08/2006
DRAWN BY: GEP
REV. BY: CME
DWG. NAME. FPL_MGS_DF_R3
SCALE: None
UNITS: Inches



BCT Anchor Cable
Part d1

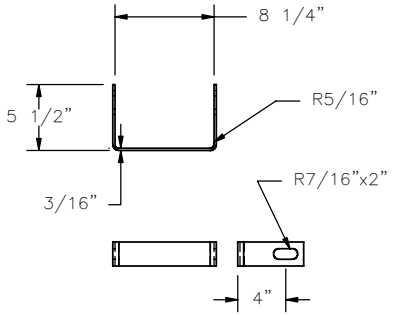


DETAIL D
SCALE 1 : 5

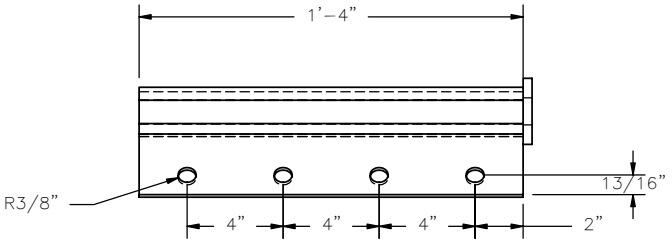


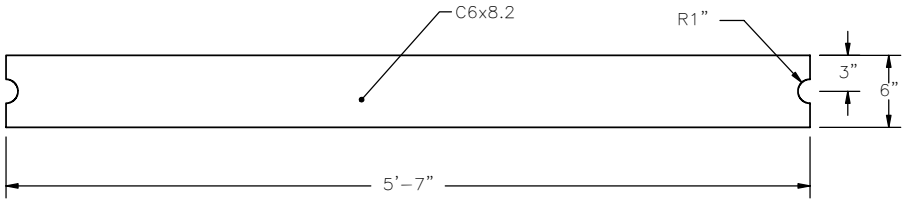
Anchor Cable
Bearing Plate
Part d2

Midwest Roadside Safety Facility	Round-Post MGS BCT Anchor Cable Detail	SHEET: 6 of 9 DATE: 06/08/2006 DRAWN BY: GEP
	DWG. NAME. FPL_MGS_DF_R3 SCALE: None UNITS: Inches	REV. BY: CME

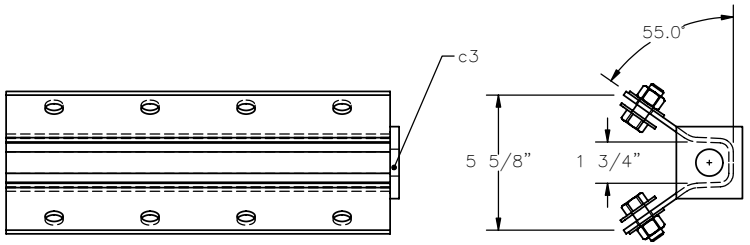


Yoke Detail

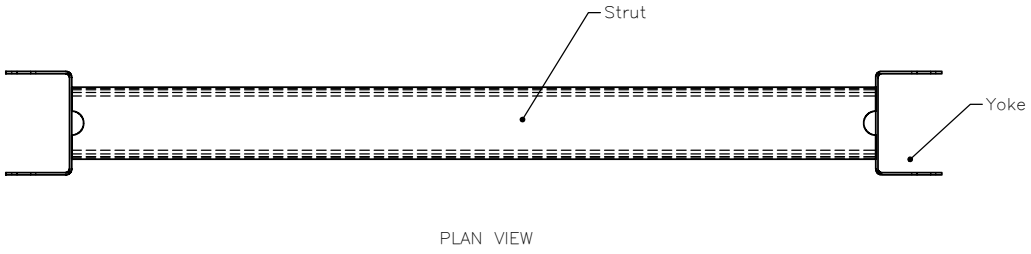




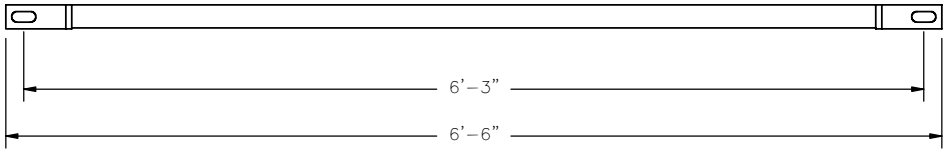
Strut Detail



Anchor Bracket
Part c2

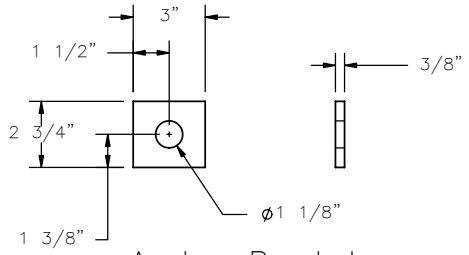


PLAN VIEW



PROFILE VIEW

Ground Strut
Part c1



Anchor Bracket
Bearing Plate
Part c3

Midwest Roadside Safety Facility

Round-Post MGS

Ground Strut & Anchor Bracket Details

SHEET: 7 of 9

DATE: 06/08/2006

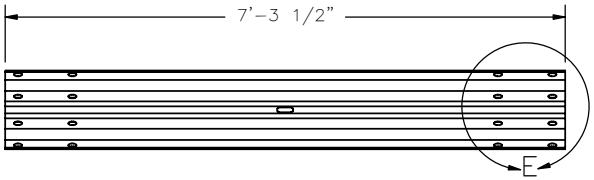
DRAWN BY: GEP

DWG. NAME. FPL_MGS_DF_R3

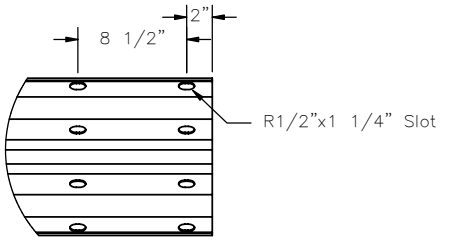
SCALE: None

UNITS: Inches

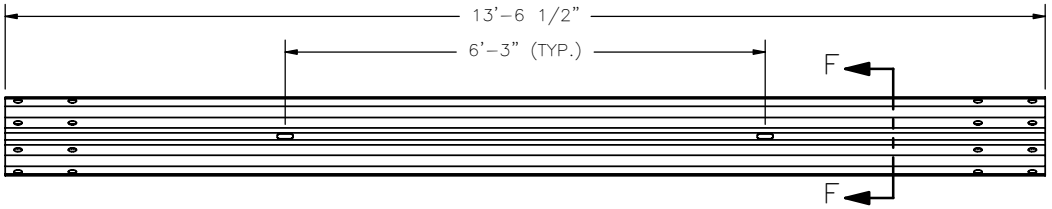
REV. BY: CME



6'-3" W-Beam Section, 12 gauge

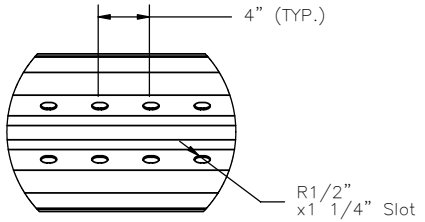


DETAIL E
SCALE 1 : 15

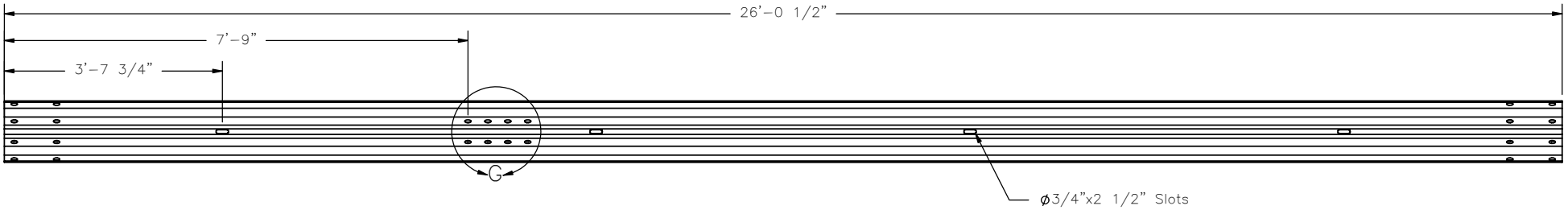


12'-6" W-Beam Section, 12 gauge

SECTION F-F



DETAIL G
SCALE 1 : 15



25' W-Beam Section, 12 gauge, End Section

Midwest Roadside Safety Facility	Round-Post MGS Rail Section Details	SHEET: 8 of 9 DATE: 06/08/2006 DRAWN BY: GEP
	DWG. NAME. FPL_MGS_DF_R3 SCALE: None UNITS: Inches	REV. BY: CME

Guardrail Post Grading Criteria

General

All posts shall meet the current quality requirements of the American National Standards Institute (ANSI) 05.1, "Wood Poles" except as supplemented herein:

Manufacture:

All posts shall be smooth shaved by machine. No "ringing" of the posts, as caused by improperly adjusted peeling machine, is permitted. All outer and inner bark shall be removed during the shaving process. All knots and knobs shall be trimmed smooth and flush with the surface of the posts. The guardrail posts will be a minimum of 1.75 m (69 in.) long. The use of peeler cores is prohibited.

Ground–line:

The ground–line, for the purpose of applying these restrictions of ANSI 05.1 that reference the ground–line, shall be defined as being located 914 mm (36 in.) from the butt end of each post.

Size:

The size of the posts shall be classified based on their diameter at the ground–line and their length and will be species specific. The ground–line diameter shall be specified by diameter in 6 mm (¼ in.) breaks. The length shall be specified in 300 mm (1 ft) breaks. Dimension shall apply to fully seasoned posts. When measured between their extreme ends, the post shall be no shorter than the specified lengths but may be up to 75 mm (3 in.) longer.

Scars:

Scars are permitted in the middle third as defined in ANSI 05.1 provided that the depth of the trimmed scar is not more than (1 in.).

Shape and Straightness:

All timber posts shall be nominally round in cross section. A straight line drawn from the centerline of the top to the center of the butt of any post shall not deviate from the centerline of the post more than 32 mm (1¼ in.) at any point. Posts shall be free from reverse bends.

Splits and Shakes:

Splits or ring shakes are not permitted in the top two thirds of the post. Splits not to exceed the diameter in length are permitted in the bottom third of the post. A single shake is permitted in the bottom third, provided it is not wider than one–half the butt diameter.

Decay:

Allowed in knots only.

Holes:

Pin holes 1 mm (1/16 in.) or less are not restricted.

Slope of Grain:

1 in 10.

Compression Wood:

Not allowed, in the outer 25 mm (1 in.) or if exceeding ¼ of the radius.

Timber Spacers:

When timber spacers are required, the timber species shall be the same as those furnished for the timber posts. The size and hole location shall be as shown on the plans, with a tolerance of 6 mm (¼ in.), Spacers shall be of medium grain, at least four (4) rings per inch on one end, and free from splits, shakes, compression wood or decay in any form. Individual knots, knot clusters or knots in the same cross section of a face are permitted, provided they are sound or firm, and are limited in cumulative width (when measured between lines parallel to the edges) to no more than one–half the width of the face. Wane or the absence of wood is limited to one–third of the face on no more than 10 percent of the lot. Slope of grain deviation is limited to one in six. The material may be rough sawn or surfaced, full size, hit or miss, with a tolerance of 6 mm (¼ in.) for all dimensions.

Treatment:

Treating – American Wood–Preservers' Association (AWPA) – Book of Standards (BOS) U1–05 use category system UCS: user specification for treated wood; commodity specification B; Posts; Wood for Highway Construction must be met using the methods outlined in AWPA BOS T1–05 Section 8.2.

Each post treated shall have a minimum sapwood depth of 19 mm (¾ in.) as determined by examination of the tops and butts of each post. Material that has been air dried or kiln dried shall be inspected for moisture content in accordance with AWPA standard M2 prior to treatment. Tests of representative pieces shall be conducted. The lot shall be considered acceptable when the average moisture content does not exceed 25 percent. Pieces exceeding 29 percent moisture content shall be rejected and removed from the lot.

Species Specific Criteria

Douglas Fir:

Knot diameter for posts of Douglas Fir shall not exceed 51 mm (2 in.). Ring density for the species shall be at least 6 rings–per–inch as measured over a 76 mm (3 in.) distance. The diameter of the Douglas Fir posts shall be 184 mm (7¼ in.) at the ground line with a upper limit of 203 mm (8 in.).

Midwest Roadside Safety Facility

Round–Post MGS

Grading Specifications

SHEET: 9 of 9

DATE: 06/08/2006

DRAWN BY: GEP

DWG. NAME. FPL_MGS_DF_R3

SCALE: None

UNITS: Inches

REV. BY: CME