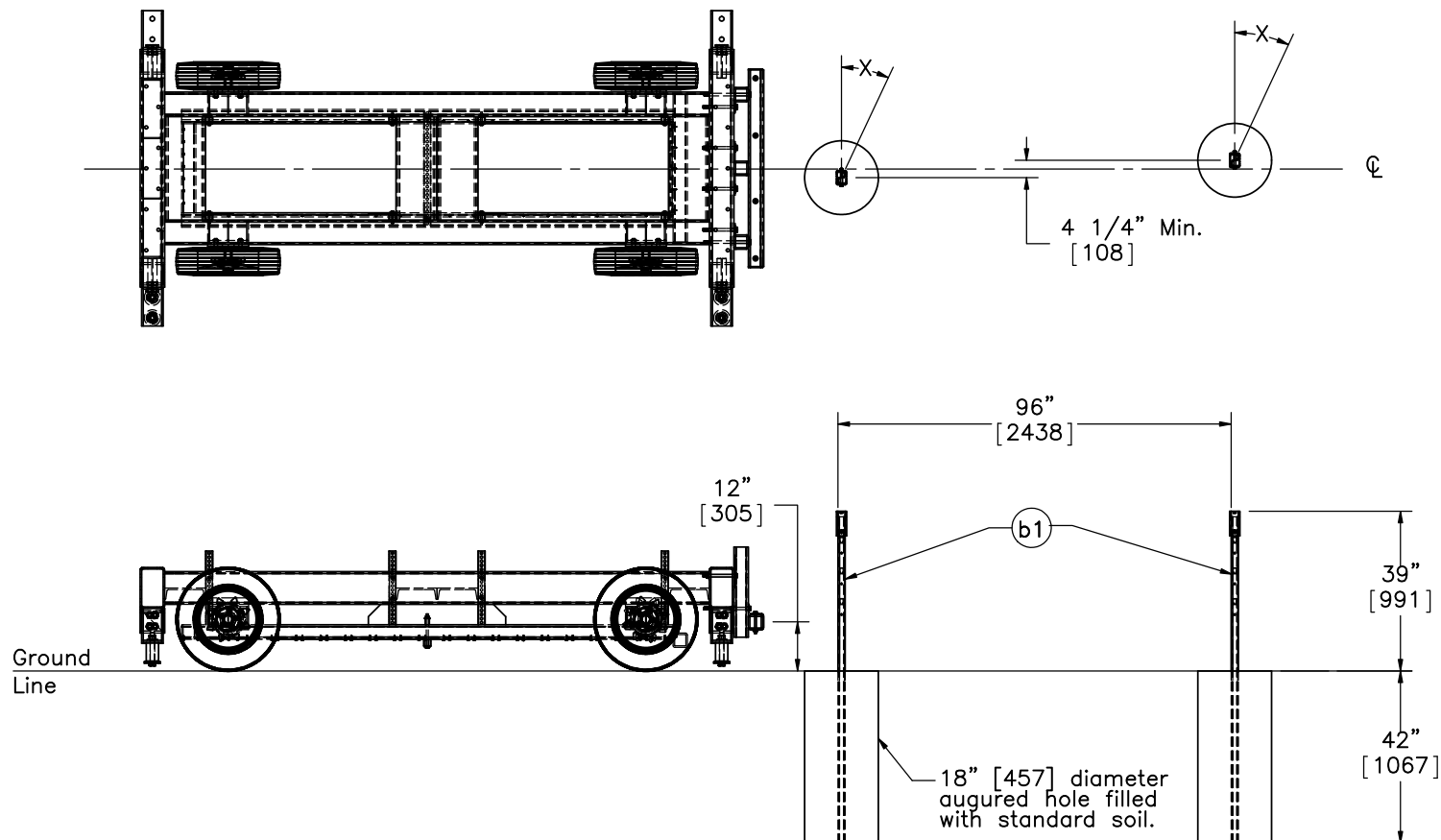


Test Name	Impact Height	Bogie No.	Estimated Bogie Weight (lb)	Bogie Speed (mph)	Post Orientation (degree) (X)*	Post Specimen
MWPFP-22	12" [305]	4 with floorpan	2400	25	0	b1

*0°=Weak Axis, 90°=Strong Axis



- Notes:
- (1) Posts to be offset minimum 4-1/4" [108].
 - (2) Additional camera positioned for a zoomed-in view of the base of the post (holes).
 - (3) For bogie detail see drawing Bogie4_Floorpan.



Midwest Roadside
Safety Facility

Cable Post – Midwest
Weak Post

Test MWPFP-22 Layout

DWG. NAME.
Floor Pan Test 22 R12

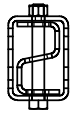
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SHEET:
1 of 6

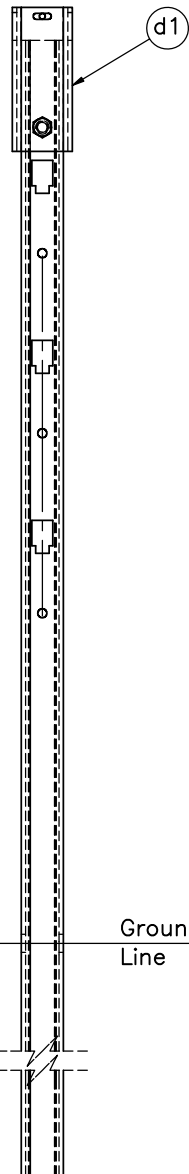
DATE:
2/28/2018

DRAWN BY:
TJD/MES/
DTM/JEK

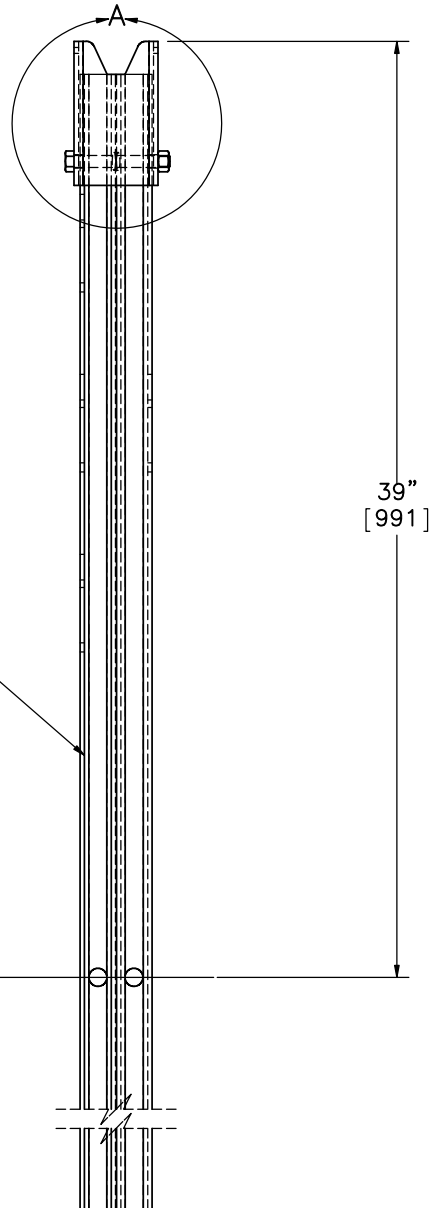
REV. BY:
KAL/RWB/R
KF/SKR/JC
H/MP



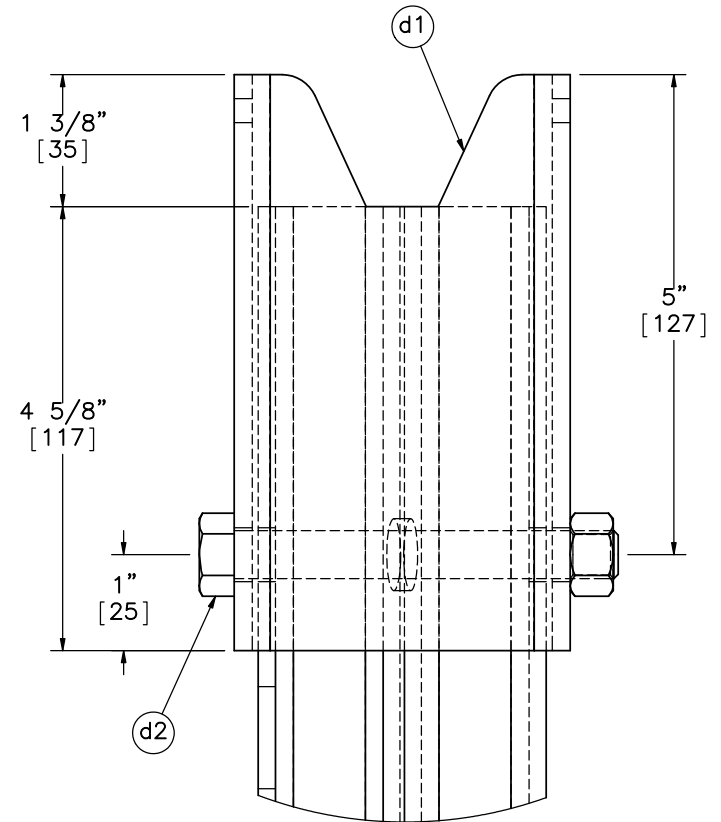
PLAN VIEW



ELEVATION VIEW



PROFILE VIEW



DETAIL A
SCALE 1 : 2



Midwest Roadside
Safety Facility

Cable Post – Midwest
Weak Post

MWP with Steel Cap and
Weakening Holes

DWG. NAME.
Floor Pan Test 22 R12

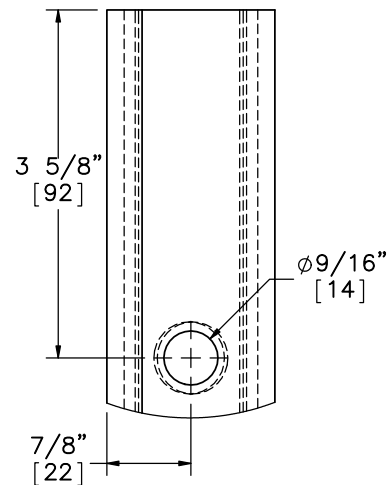
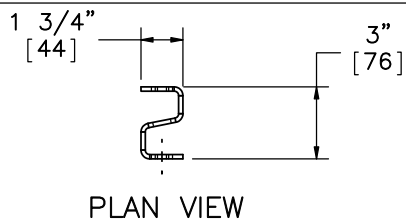
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SHEET:
2 of 6

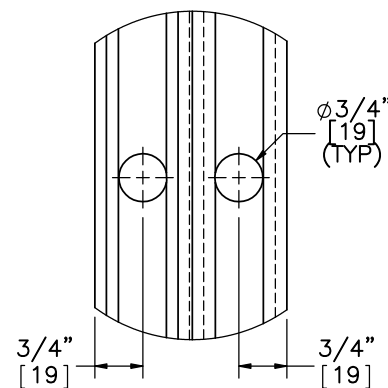
DATE:
2/28/2018

DRAWN BY:
TJD/MES/
DTM/JEK

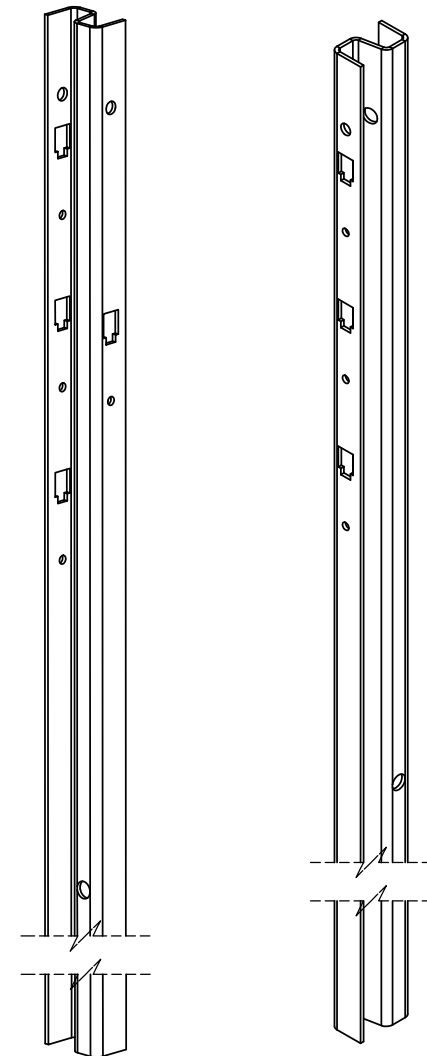
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KAL/RWB/R
KF/SKR/JC
H/MP



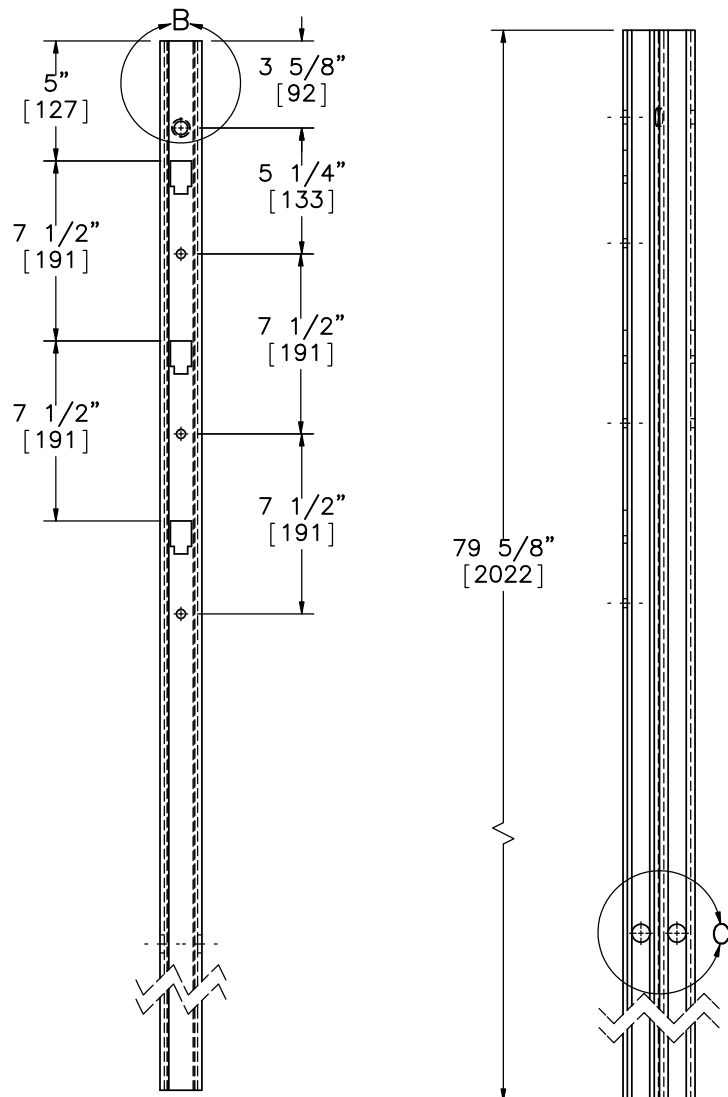
DETAIL B
SCALE 1 : 2



DETAIL C
SCALE 1 : 3



ISOMETRIC VIEW



ELEVATION VIEW

PROFILE VIEW

Part b1



Midwest Roadside
Safety Facility

Cable Post – Midwest
Weak Post

MWP with Weakening Holes
Details

DWG. NAME.
Floor Pan Test 22 R12

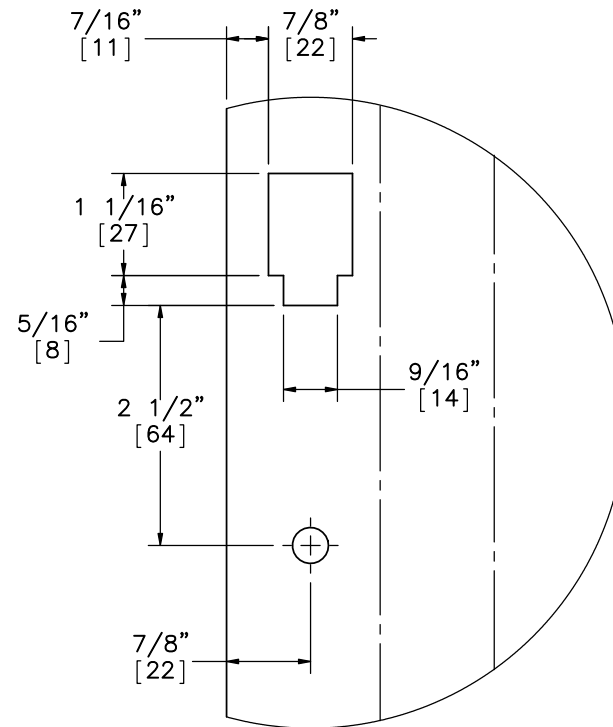
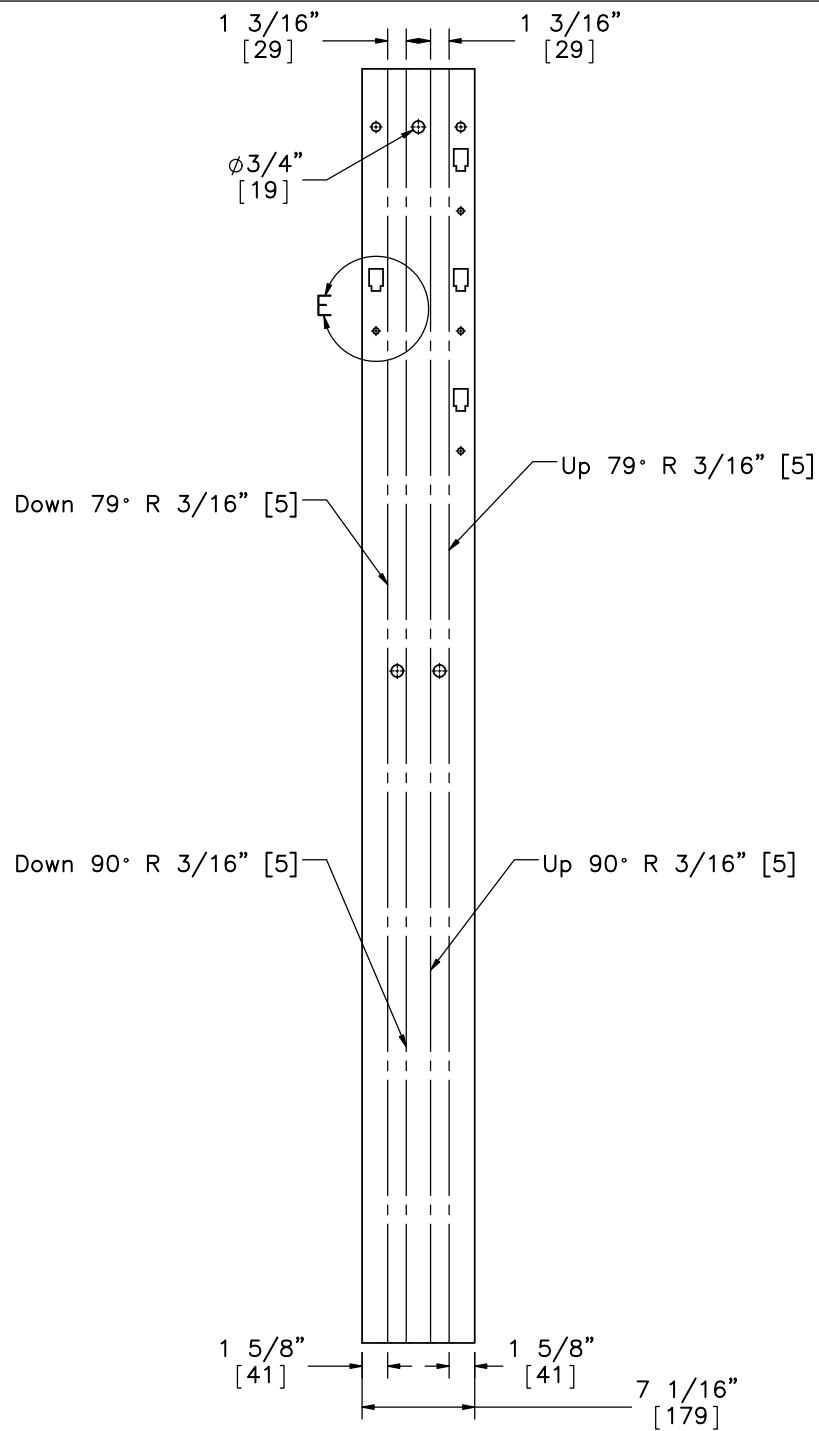
SCALE: 1:8
UNITS: in.[mm]

SHEET:
3 of 6

DATE:
2/28/2018

DRAWN BY:
TJD/MES/
DTM/JEK

REV. BY:
KAL/RWB/
RKJ/SKR/
JCH/MP



DETAIL E
SCALE 1 : 2



Midwest Roadside
Safety Facility

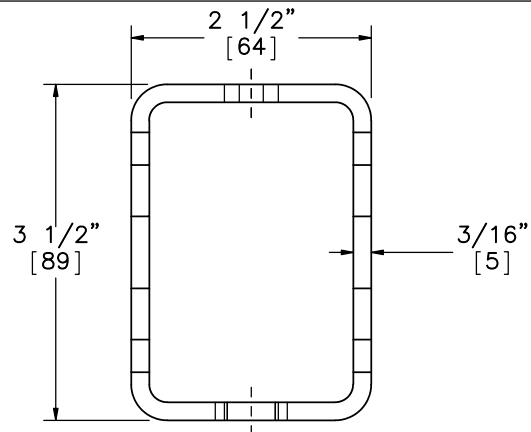
Cable Post – Midwest
Weak Post

MWP Flat Pattern Details

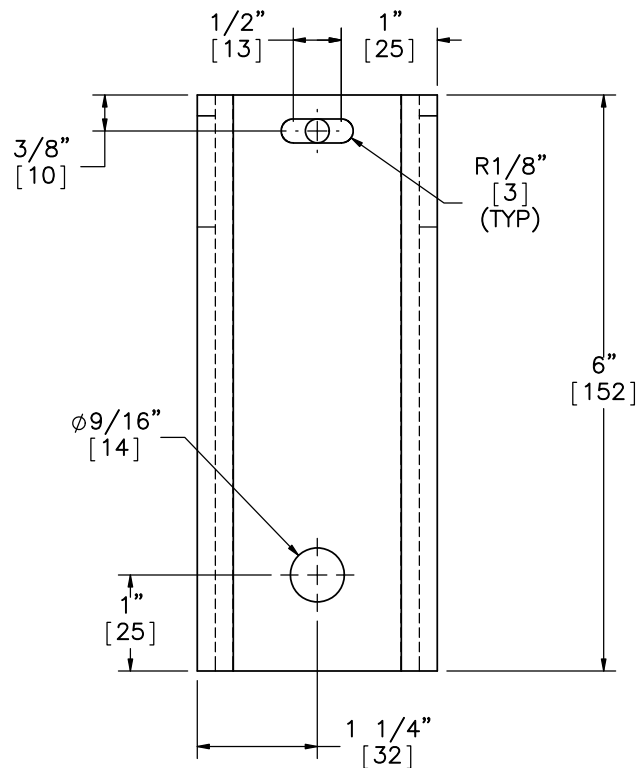
DWG. NAME.
Floor Pan Test 22 R12

SCALE: 1:12
UNITS: in./mm

SHEET:
4 of 6
DATE:
2/28/2018
DRAWN BY:
TJD/MES/
DTM/JEK
REV. BY:
KAL/RWB/
RKF/SKR/
JCH/MP

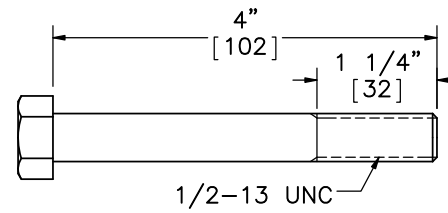


PLAN VIEW

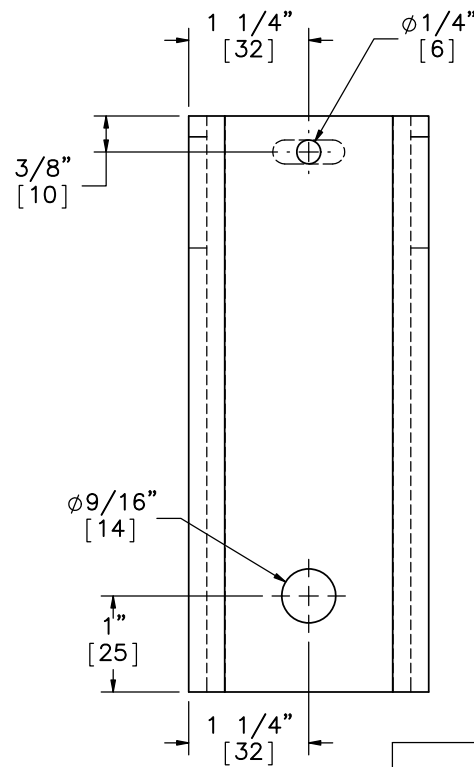
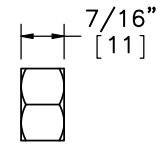


ELEVATION VIEW

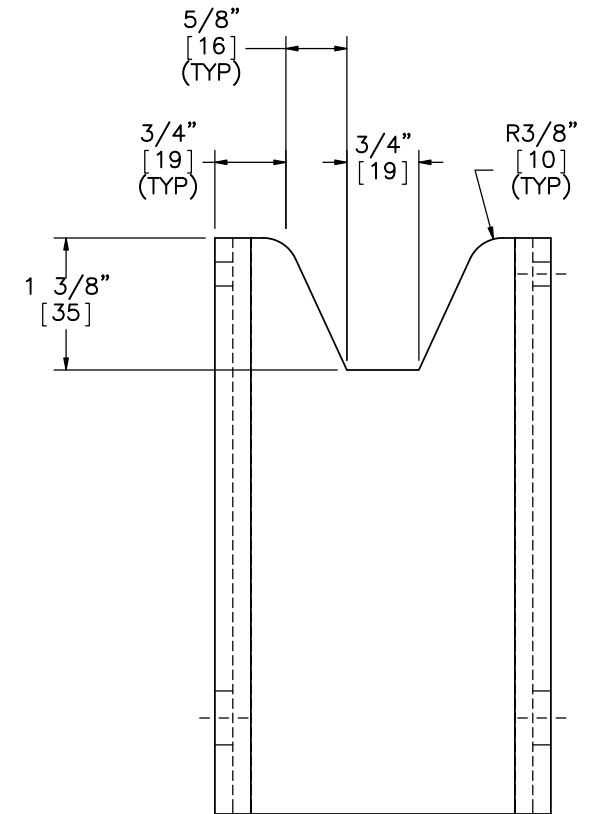
Part d1



Part d2



BACK VIEW



PROFILE VIEW



Midwest Roadside
Safety Facility

Cable Post – Midwest
Weak Post

Steel Cap Details

DWG. NAME.
Floor Pan Test 22 R12

SCALE: 1:2
UNITS: in.[mm]

SHEET:
5 of 6
DATE:
2/28/2018
DRAWN BY:
TJD/MES/
DTM/JEK
REV. BY:
KAL/RWB/
RKF/SKR/
JCH/MP

Item No.	QTY.	Description	Material Specification
b1	2	3"x1-3/4"x7 Gauge [76x44x4.6] x 80" [2032] Long Bent Z-Section Post	Hot-Rolled ASTM A1011 HSLA Gr. 50
d1	2	3 1/2" [89] x 2 1/2" [64] x 3/16" [5] x 6" [152] Long Steel Tube	ASTM A500 Grade B or C Steel
d2	2	1/2" [13] Diameter UNC x 4" [102] Long Hex Head Bolt and Nut	Bolt ASTM A449 or ASTM A325/Nut ASTM A563 DH

	Cable Post – Midwest Weak Post		SHEET: 6 of 6
	Bill of Materials		DATE: 2/28/2018
	Midwest Roadside Safety Facility		DRAWN BY: TJD/MES/ DTM/JEK
	DWG. NAME: Floor Pan Test 22 R12	SCALE: None UNITS: in.[mm]	REV. BY: KAL/RWB/R KF/SKR/JC H/MP

REV.	DATE OF ISSUE	Page	NATURE OF CHANGES	REVIEWER	REVISED BY
0	2/24/2016		Drawing created from Floor Pan Test 18–21	KAL	TJD
1	2/24/2016	1	Updated table to reflect test being run. Removed callout to post b2. Added note 3. Removed pages 2–8 from the drawing.	KAL	TJD
		2	Updated dimensions in drawing views. Removed detail view F.		
		3	Added page to show post only detail.		
		4	Added hole and slot to steel cap.		
		5	Removed unnecessary parts from bill of materials.		
2	2/25/2016	1	Updated test in table. Corrected b1 callout. Fixed notes.	KAL	TJD
		2	Changed dimension of bolt hole to 1 in. Moved detail b to a new page. Deleted note.		
		3	Added profile and isometric views for clarity. Increased scale of drawings. Moved detail c to a new page.		
		4	Changed bolt size to half inch. Added backside detail of steel cap.		
		5	Updated bill of materials.		
3	2/25/2016	2	Added callouts to post and cap.	KAL	TJD
		5	Added dimension to back view of thru hole. Bolt now only shows cosmetic threads. Changed bolt hole size to 9/16".		
		6	Updated bill of materials.		
4	2/26/2016	1	Updated notes.	RKF/KAL/SKR	TJD
		2	Updated view of detail a. Corrected post hole dimensions.		
		3	Changed isometric view. Added dimensions to views.		
		4	Added new page with flat pattern view to show oversized hole in the center of the post.		
		5	Moved location of thru hole to center of cap. Added radius to cap.		
		6	Updated bill of materials.		
5	3/1/2016	1	Added minimum to post offset dimension.	RWB/KAL/JCH	TJD
		4	Added vertical dimension to hole in detail c.		
		6	Fixed dimensions in elevation view.		
		7	Fixed bolt spec in bill of materials.		
6	5/12/2016	1	Removed test MWFP–23 through MWFP–25 as they were not conducted with this post configuration.	KAL	TJD
		7	Bill of materials edit.		

7	5/13/2016	6	Dimension edit.	KAL	TJD
8	5/23/2016	1	Note edits.	KAL	TJD
		6	Changed 1/2 in. bolt to 3/8 in. bolt to reflect test.		
		7	Bill of materials edit.		
9	5/25/2016	–	Removed page 4.	KAL	TJD
		3	Moved detail views from page 4 to 3. Added isometric view. Changed sheet name.		
		4	Changed sheet name.		
		5	Changed sheet name.		
		6	Changed scale.		
10	8/5/2016	5	Changed bolt and nut size to half inch based on conversation with Karla and Shaun	KAL	MES
		6	Bill of materials edit.		
11	1/10/2017	2	Fixed ground line note location.	JEK	DTM
		3	Changed part no. font size.		
		5	Changed part no. font size.		
		6	Fixed post description in BOM.		
12	2/28/2018	1	Dim add.	MP	JEK