

- Notes: (1) Test shall be performed according to test designation no. 3-61 of MASH 2016 criteria.
 (2) Dig a trench approximately 3' wide and 6' long centered on each post to a depth approximately 1' below bottom of post. Backfill with compacted MASH soil.



Midwest Roadside Safety Facility

U-Channel Sign
 Test no. UCSS-1

Test Layout

DWG. NAME.
 UCSS-1_R7

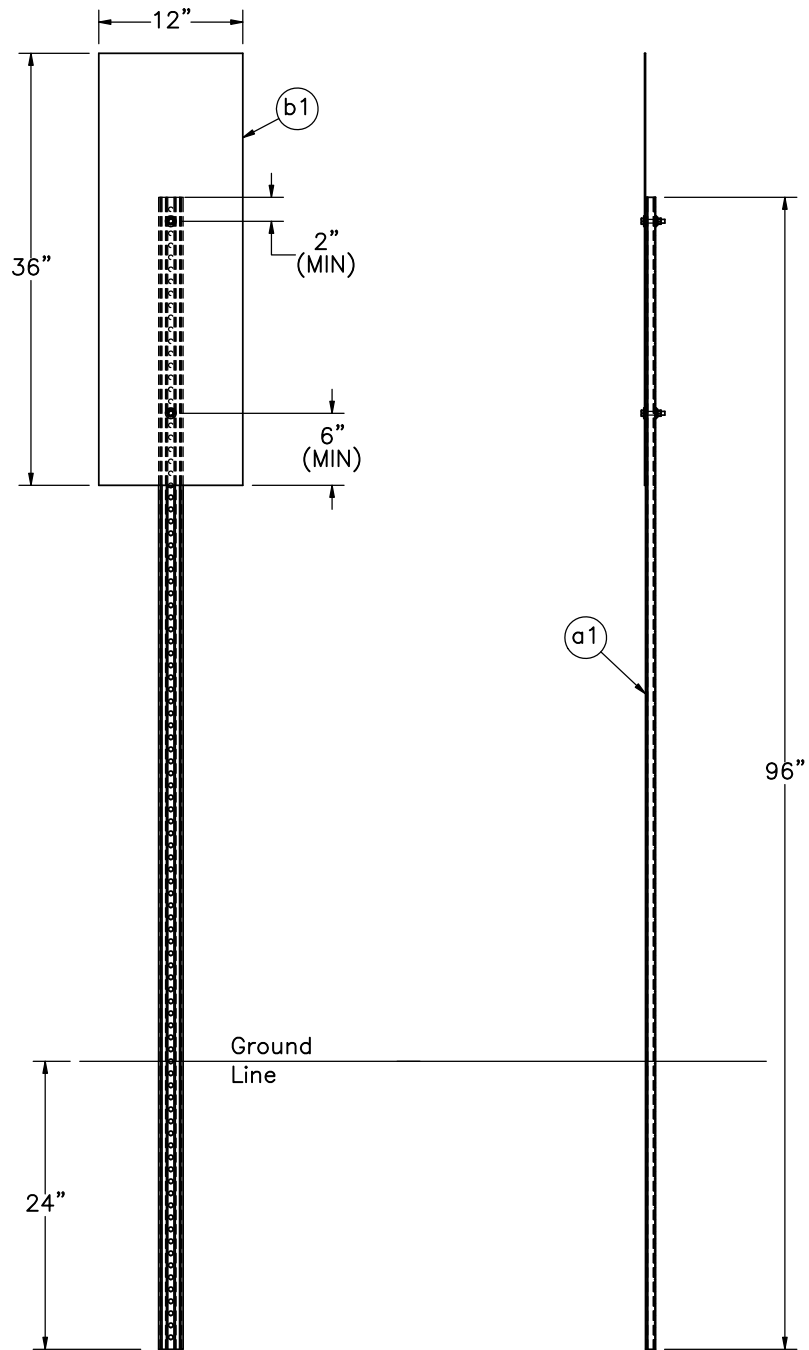
SCALE: 1:96
 UNITS: in.

SHEET:
 1 of 12

DATE:
 7/8/2020

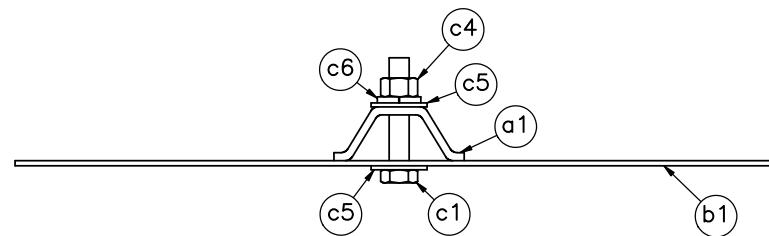
DRAWN BY:
 AEL/MB/
 GRL/JEK/JF

REV. BY:
 JEK/JDS/
 KAL



BACKSIDE VIEW

PROFILE VIEW



PLAN VIEW
SCALE 1:3



Midwest Roadside
Safety Facility

U-Channel Sign
Test no. UCSS-1

Sign Assembly 1

DWG. NAME.
UCSS-1_R7

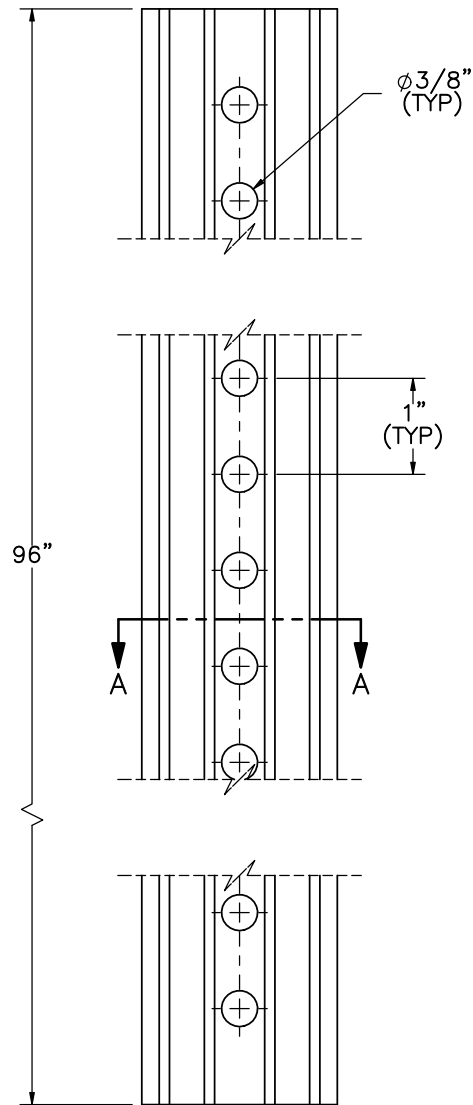
SCALE: 1:16
UNITS: in.

SHEET:
2 of 12

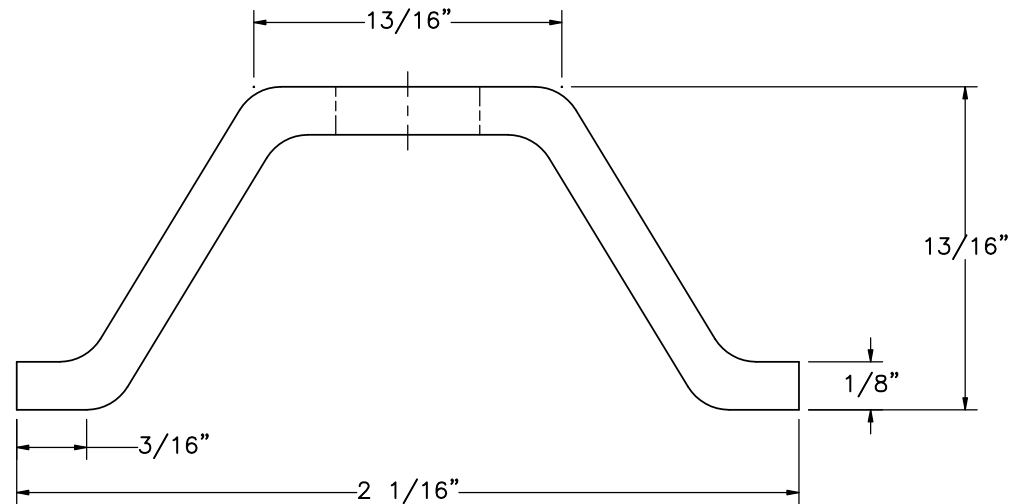
DATE:
7/8/2020

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KAL



Part a1



SECTION A-A
SCALE 2:1



Midwest Roadside
Safety Facility

U-Channel Sign
Test no. UCSS-1

1.12 lb/ft U-Channel Detail

DWG. NAME.
UCSS-1_R7

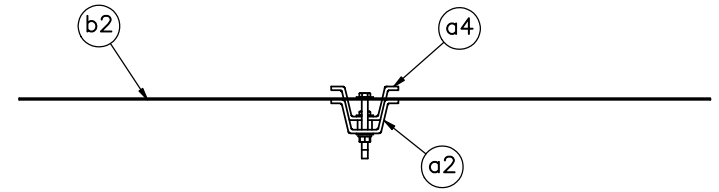
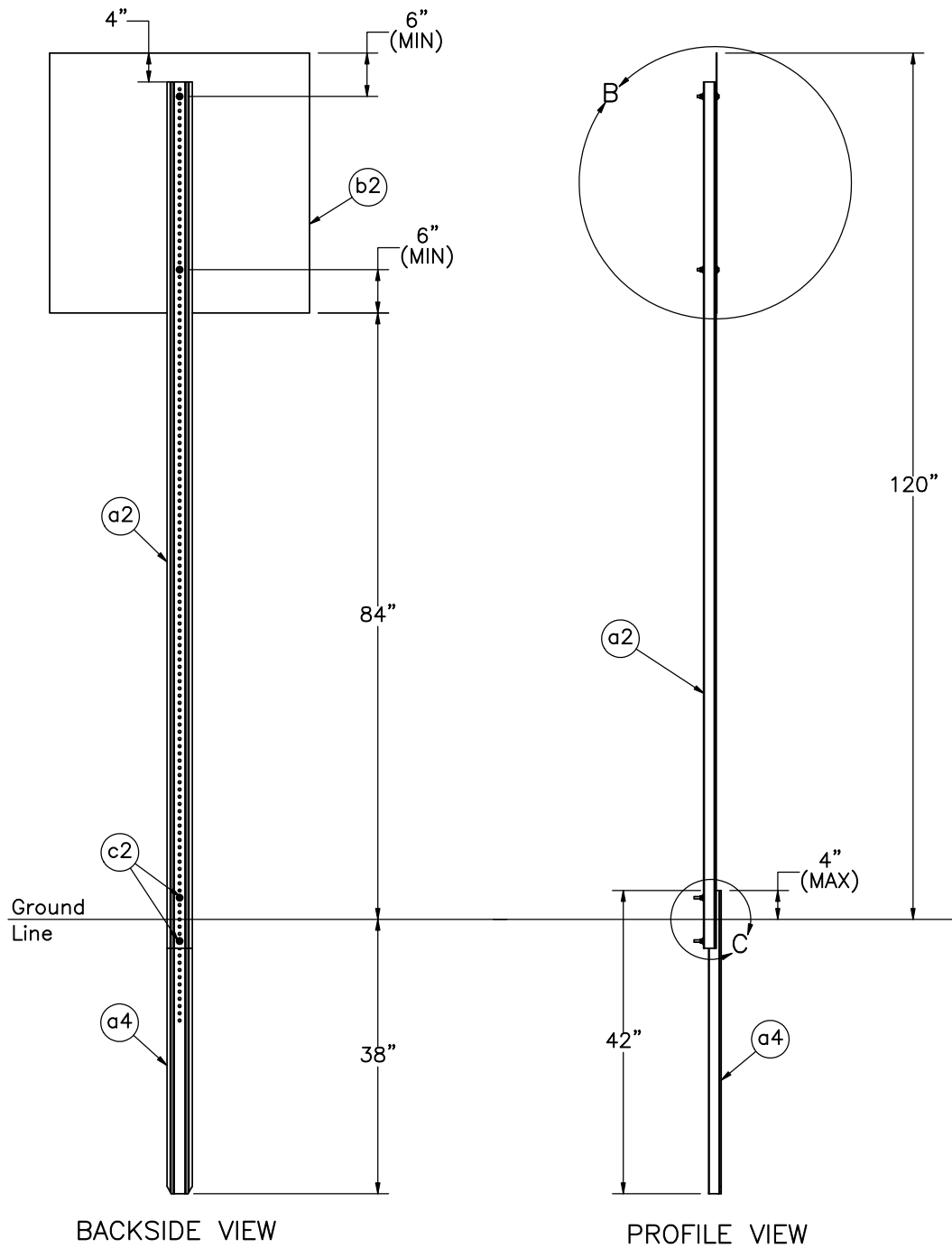
SCALE: 1:2
UNITS: in.

SHEET:
3 of 12

DATE:
7/8/2020


DRAWN BY:
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GRL/JEK/JF

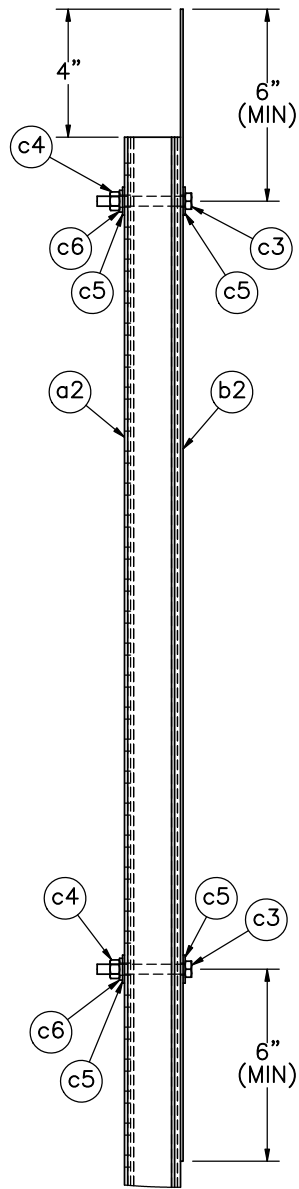
REV. BY:
JEK/JDS/
KAL



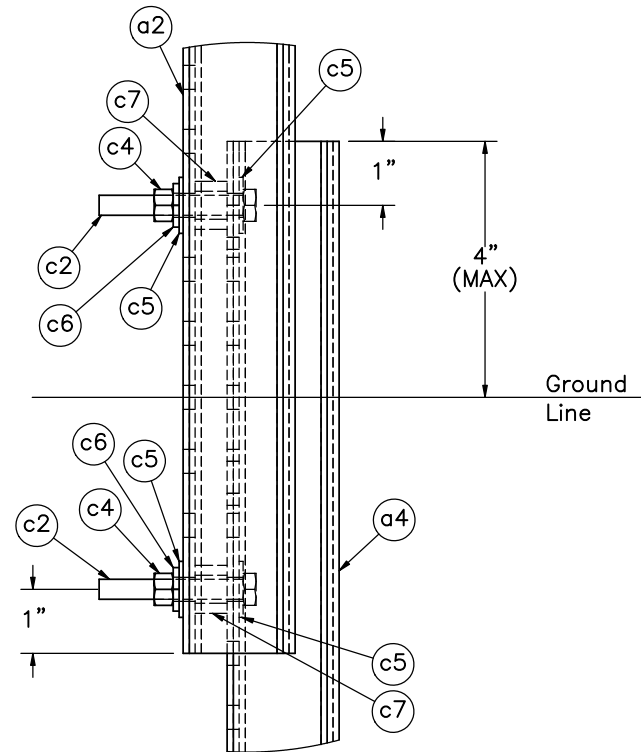
PLAN VIEW
SCALE 1:10

Note: (1) Part a4 may only stick above the ground a maximum of 4".

	U-Channel Sign Test no. UCSS-1	SHEET: 4 of 12	
	Midwest Roadside Safety Facility	Sign Assembly 2	DATE: 7/8/2020
DWG. NAME: UCSS-1_R7		SCALE: 1:24 UNITS: in.	DRAWN BY: AEL/MB/ GRL/JEK/JF
			REV. BY: JEK/JDS/ KAL



DETAIL B
SCALE 1:6



DETAIL C
SCALE 1:3



Midwest Roadside
Safety Facility

U-Channel Sign
Test no. UCSS-1

Sign Assembly 2 Splice Detail

DWG. NAME.
UCSS-1_R7

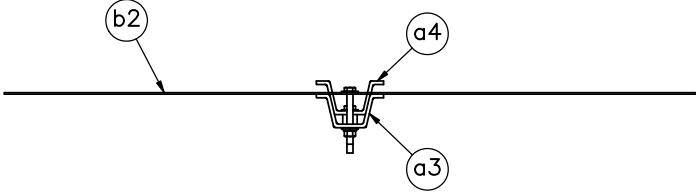
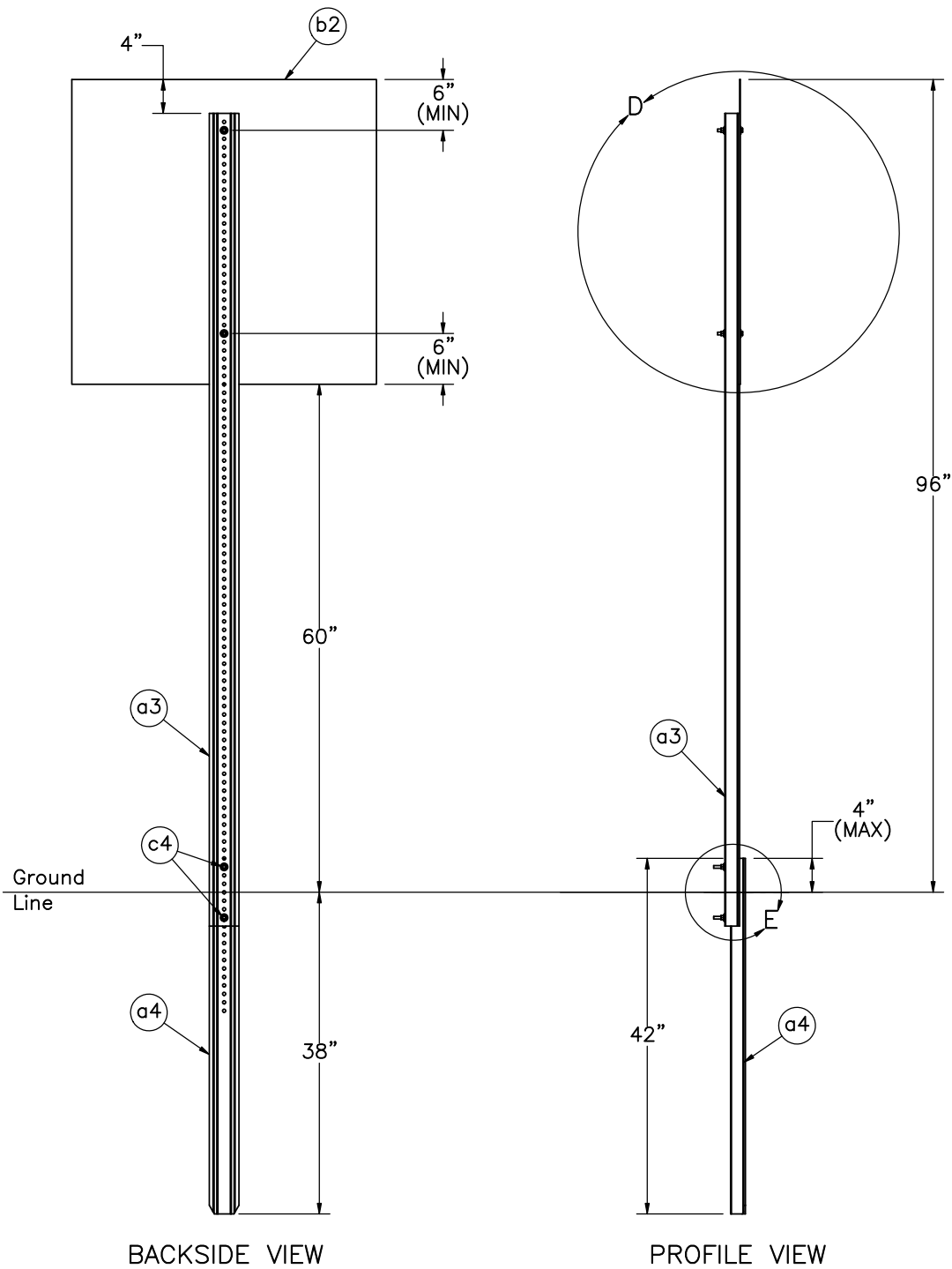
SCALE: 1:24
UNITS: in.

SHEET:
5 of 12

DATE:
7/8/2020

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JEK/JDS/
KAL



PLAN VIEW
SCALE 1:10

Note: (1) Part a4 may only stick above the ground a maximum of 4".



Midwest Roadside
Safety Facility

U-Channel Sign
Test no. UCSS-1

Sign Assembly 3

DWG. NAME:
UCSS-1_R7

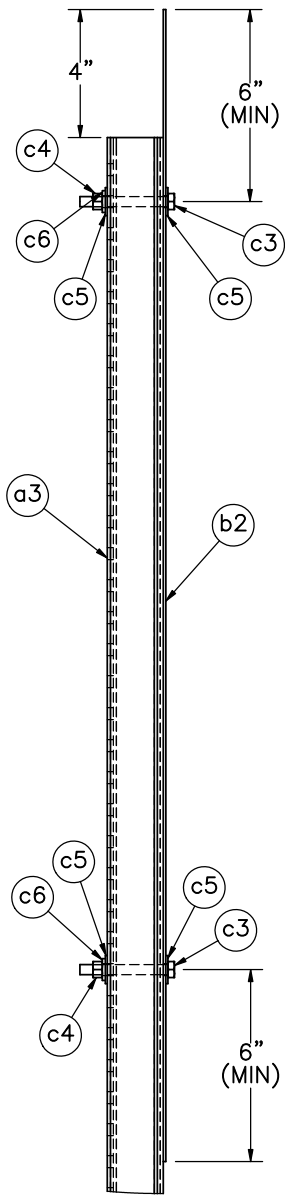
SCALE: 1:20
UNITS: in.

SHEET:
6 of 12

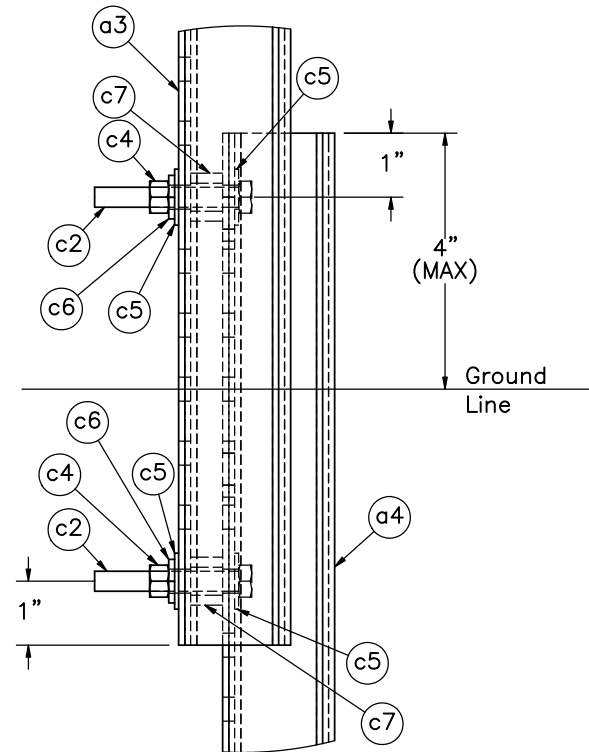
DATE:
7/8/2020

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KAL



DETAIL D
SCALE 1:6



DETAIL E
SCALE 1:3



Midwest Roadside
Safety Facility

U-Channel Sign
Test no. UCSS-1

Sign Assembly 3 Splice Detail

DWG. NAME.
UCSS-1_R7

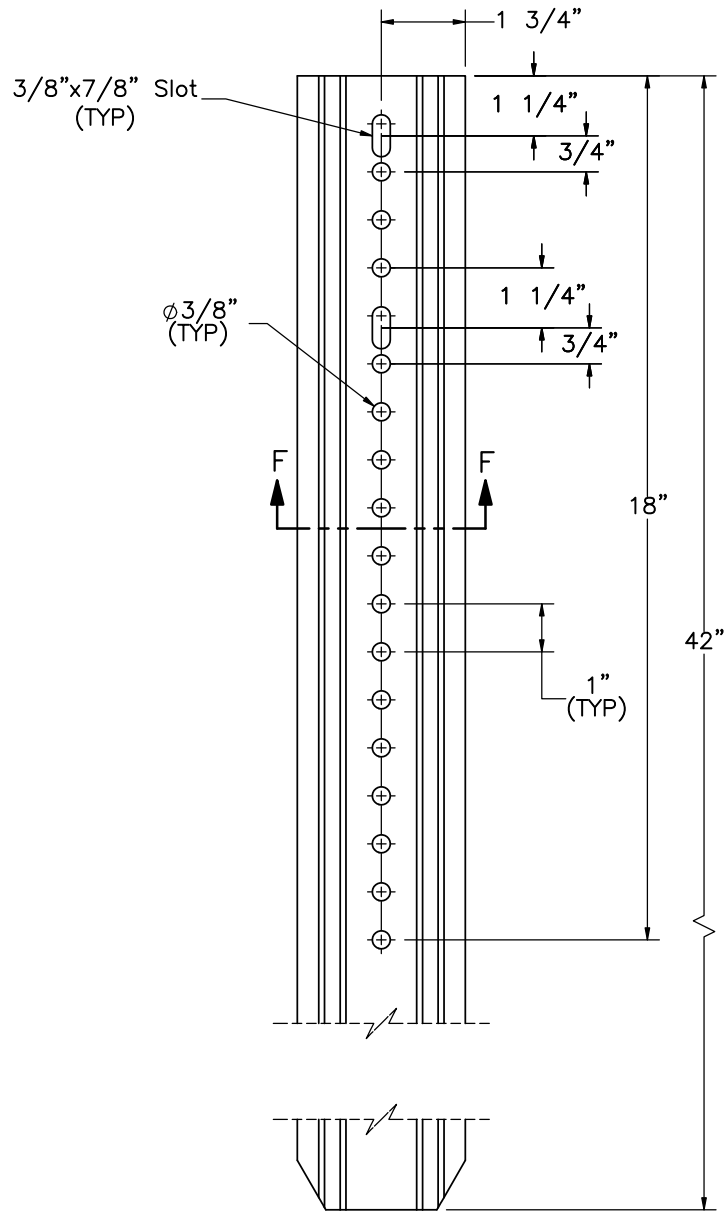
SCALE: 1:2
UNITS: in.

SHEET:
7 of 12

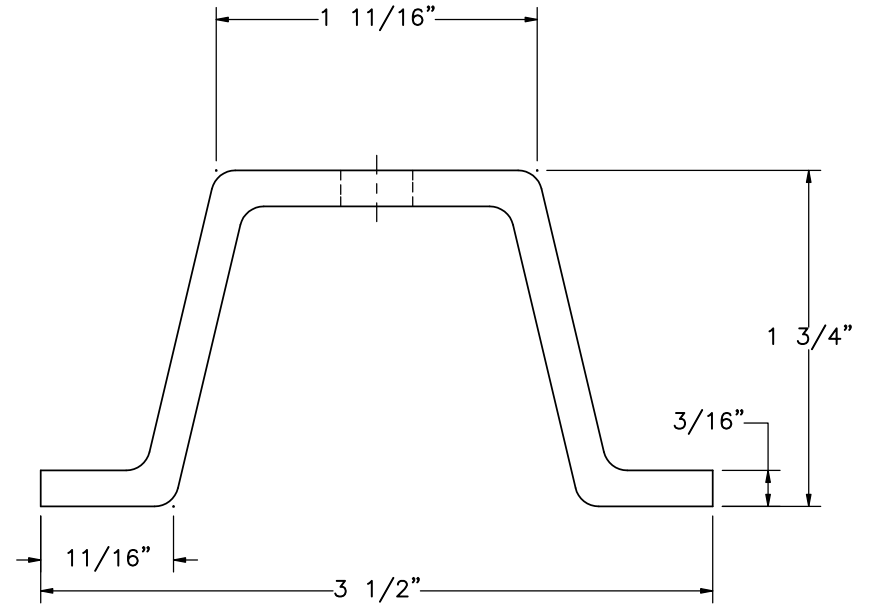
DATE:
7/8/2020

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AEL/MB/
GRL/JEK/JF

REV. BY:
JEK/JDS/
KAL



ELEVATION VIEW
Part a4



SECTION F-F
SCALE 1:1



Midwest Roadside
Safety Facility

U-Channel Sign
Test no. UCSS-1

4.00 lb/ft U-Channel Base
Post Detail

DWG. NAME:
UCSS-1_R7

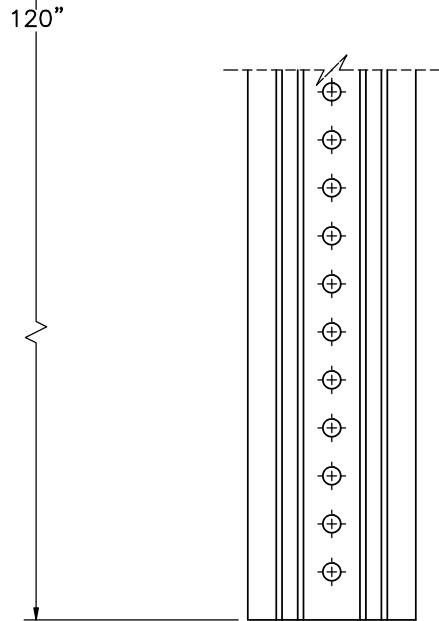
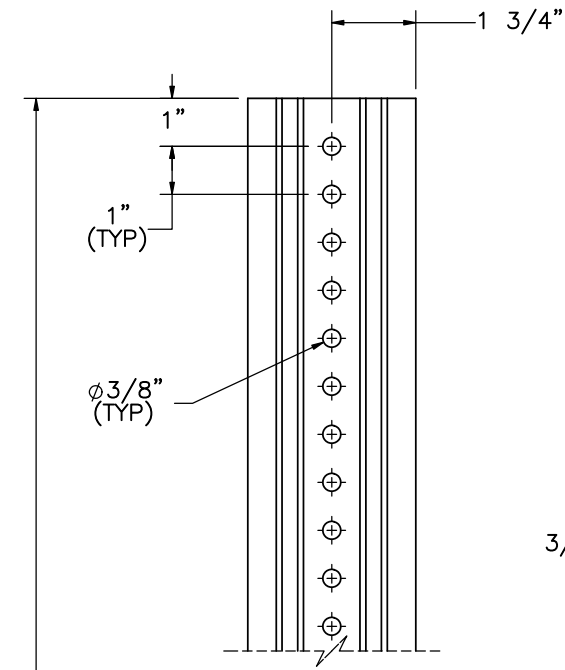
SCALE: 1:4
UNITS: in.

SHEET:
8 of 12

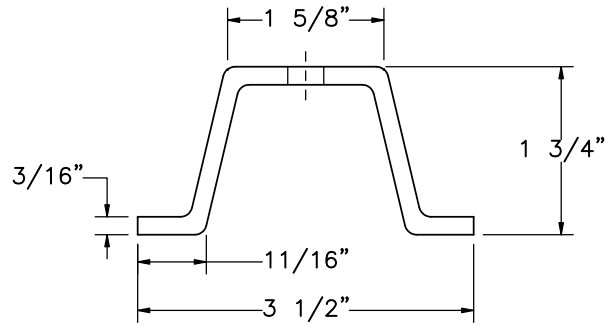
DATE:
7/8/2020

DRAWN BY:
AEL/MB/
GRL/JEK/JF

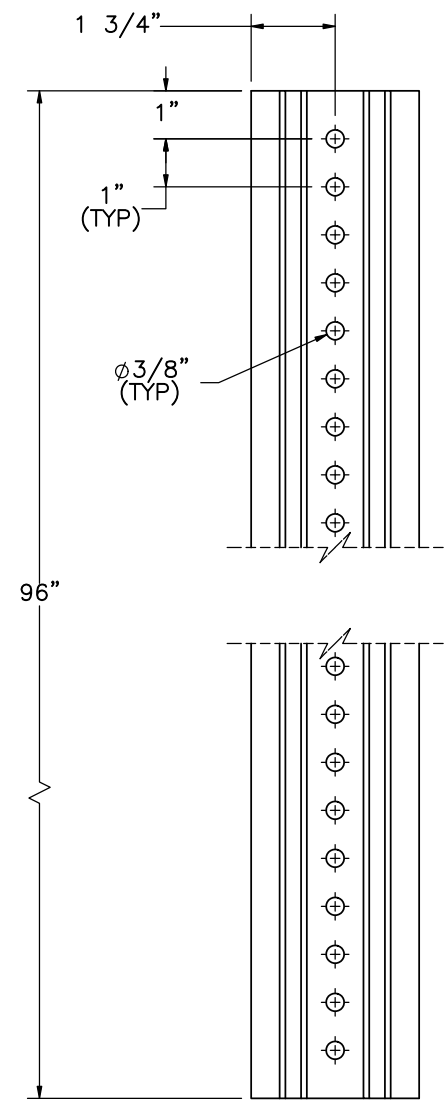
REV. BY:
JEK/JDS/
KAL




ELEVATION VIEW
Part a2

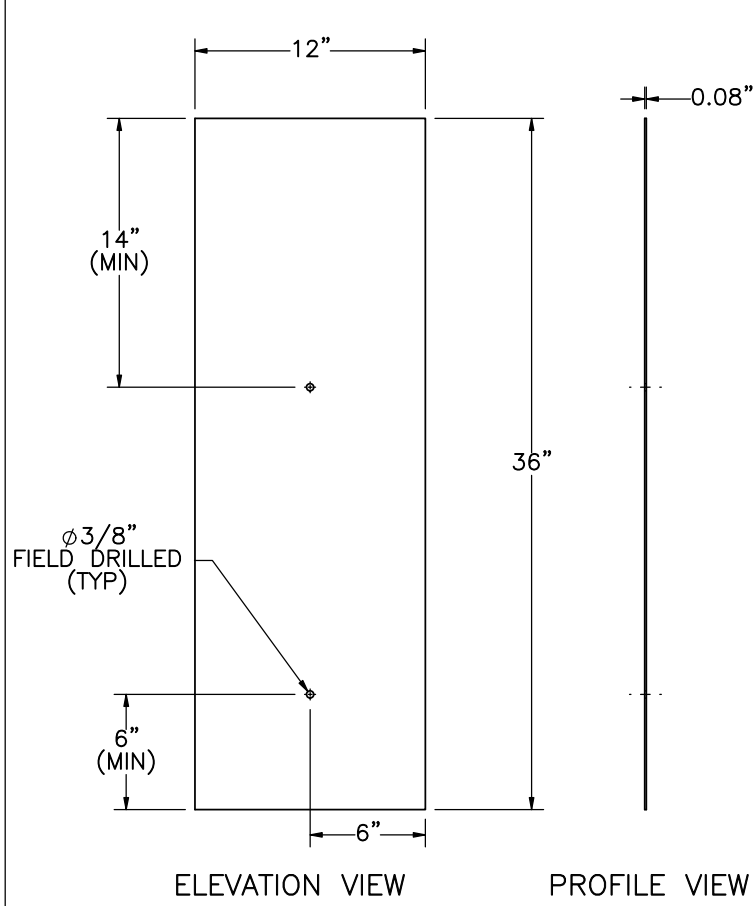


PLAN VIEW
SCALE 1:2
4.00 lb/ft Posts

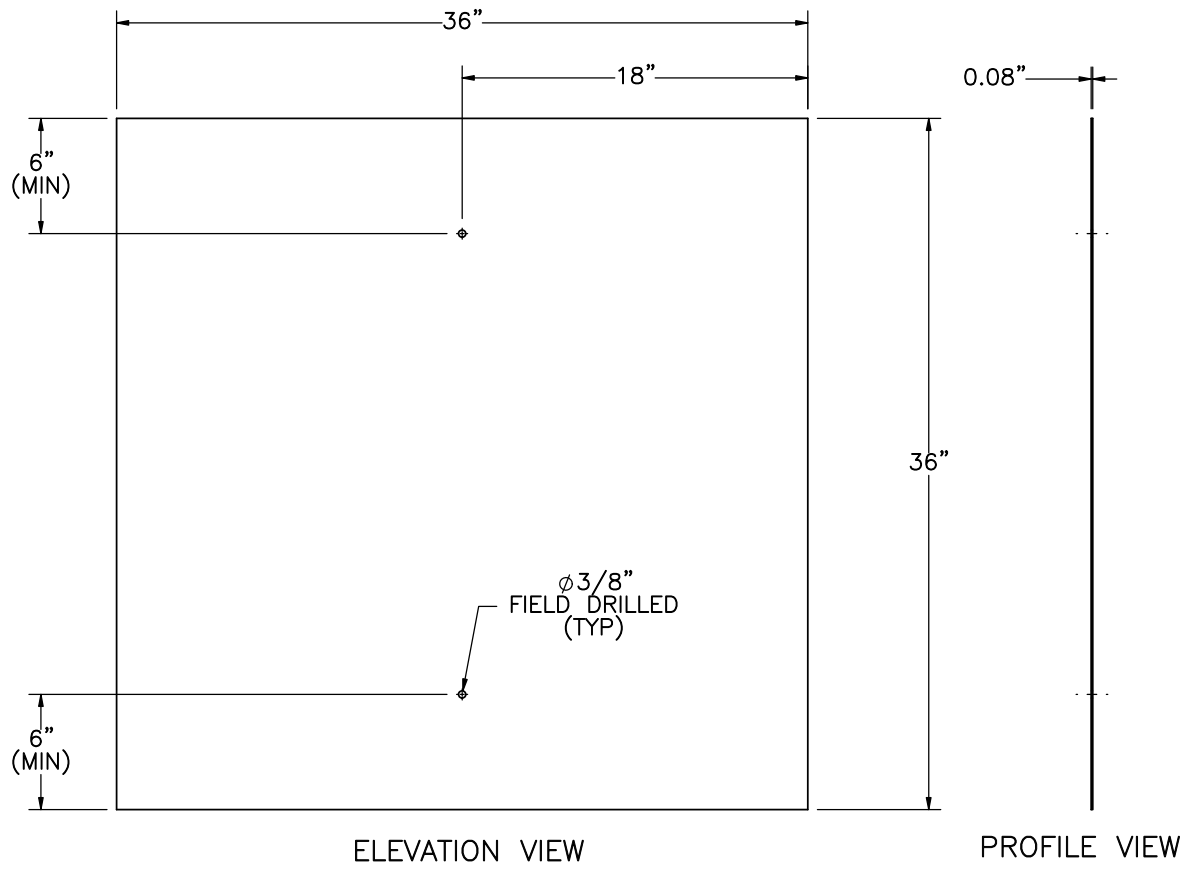


ELEVATION VIEW
Part a3


 Midwest Roadside Safety Facility	U-Channel Sign Test no. UCSS-1	SHEET: 9 of 12
	4.00 lb/ft U-Channel Sign Post Details	DATE: 7/8/2020
DWG. NAME: UCSS-1_R7	SCALE: 1:4 UNITS: in.	DRAWN BY: AEL/MB/ GRL/JEK/JF
		REV. BY: JEK/JDS/ KAL

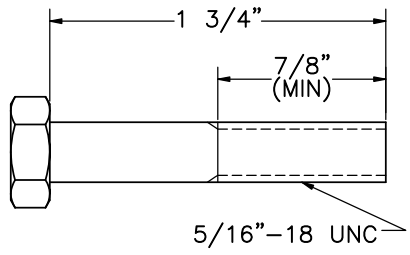


Part b1

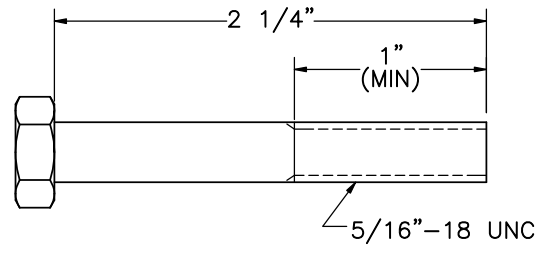


Part b2

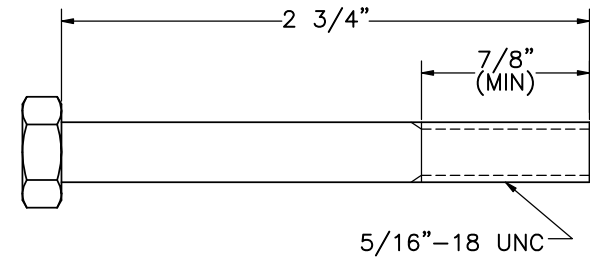
 Midwest Roadside Safety Facility	U-Channel Sign Test no. UCSS-1	SHEET: 10 of 12
	Sign Panel Details	DATE: 7/8/2020
DWG. NAME: UCSS-1_R7	SCALE: 1:10 UNITS: in.	DRAWN BY: AEL/MB/ GRL/JEK/JF
		REV. BY: JEK/JDS/ KAL



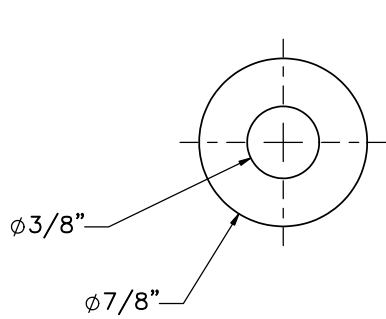
Part c1



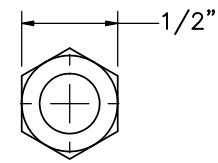
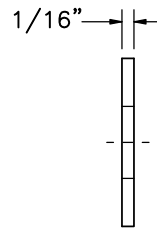
Part c2



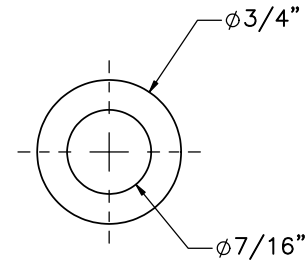
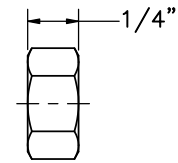
Part c3



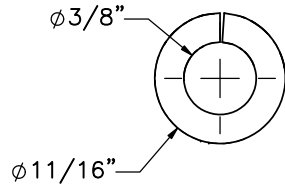
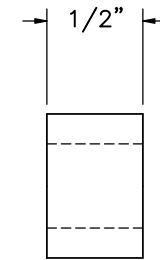
Part c5



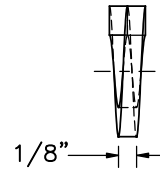
Part c4



Part c7



Part c6



Midwest Roadside
Safety Facility

U-Channel Sign
Test no. UCSS-1

Hardware

DWG. NAME.
UCSS-1_R7

SCALE: 1:1
UNITS: in.

SHEET:
11 of 12

DATE:
7/8/2020

DRAWN BY:
AEL/MB/
GRL/JEK/JF

REV. BY:
JEK/JDS/
KAL

Item No.	QTY.	Description	Material Specification	Treatment Specification	Hardware Guide
a1	1	1.12 lb/ft U-Channel Sign Post, 96" Long	ASTM A499 Gr. 60 Min. Yield = 80 ksi	ASTM A123	-
a2	1	4.00 lb/ft U-Channel Sign Post, 120" Long	ASTM A499 Gr. 60 Min. Yield = 60 ksi	ASTM A123	-
a3	1	4.00 lb/ft U-Channel Sign Post, 96" Long	ASTM A499 Gr. 60 Min. Yield = 60 ksi	ASTM A123	-
a4	2	4.00 lb/ft U-Channel Sign Post, 42" Long	ASTM A499 Gr. 60 Min. Yield = 60 ksi	ASTM A123	-
b1	1	36"x12"x0.08" Sign with Reflective Sheeting	Aluminum Alloy 5052 or Similar	-	-
b2	2	36"x36"x0.08" Sign with Reflective Sheeting	Aluminum Alloy 5052 or Similar	-	-
c1	2	5/16"-18 UNC, 1 3/4" Long Hex Bolt	SAE J429 Gr. 5 or 9	Fe/Zn 3AN per ASTM F1941	FBX08b
c2	4	5/16"-18 UNC, 2 1/4" Long Hex Bolt	SAE J429 Gr. 9	Zinc-Plated	-
c3	4	5/16"-18 UNC , 2 3/4" Long Hex Bolt	SAE J429 Gr. 5 or 9	Fe/ZN 3AN per ASTM F1941	FBX08b
c4	10	5/16"-18 UNC Heavy Hex Nut	SAE J995 Gr. 5 or 9	Fe/Zn 3AN per ASTM F1941	FNX08b
c5	20	5/16" Dia. Plain Round Washer	Low Carbon Steel	Fe/Zn 3AN per ASTM F1941	FWC08a
c6	10	3/8" Dia. Lock Washer	Low Carbon Steel	Fe/Zn 3AN per ASTM F1941	-
c7	4	1/2" Thick Spacer with 7/16" Hole	-	-	-



Midwest Roadside
Safety Facility

U-Channel Sign
Test no. UCSS-1

Bill of Materials

DWG. NAME.
UCSS-1_R7

SCALE: None
UNITS: in.

SHEET:
12 of 12
DATE:
7/8/2020
DRAWN BY:
AEL/MB/
GRL/JEK/JF
REV. BY:
JEK/JDS/
KAL

REV.	DATE OF ISSUE	Page	NATURE OF CHANGES	REVIEWER	REVISED BY
0	9/17/2018	-	Original Drawing.	-	AEL
1	9/17/2018	1	Updated test name.	JEK	AEL
		4	Added typical field drill note to part b1		
			Annotation edit: part b1 thickness changed to decimal inches		
			Part edit: c1 thread length		
			Part edit: c2 interior dia., exterior dia, and thickness		
		BOM	Doubled all quantities to reflect test setup		
			Description edits: parts a1, c1		
			Material edits: parts a1, c1		
Treatment edits: parts c1, c2					
		HWG edit: part c1			
2	9/19/2018	-	Pages 4-10 added.	JS	AEL/GRL
		1	Test layout modified.		
		11	Parts c3-7 added.		
		BOM	Parts a2-4, b2, c3-c7 added.		
3	9/20/2018	-	A lot of cosmetic changes throughout, otherwise unmentioned. Sheet title edits throughout.	JDS/KAL	JEK
		1	Excavation circles removed. Note 2 edit.		
		8	Part a4 edits.		
		10	Scale edit/correction.		
		11	Part c6 lock washer display change.		
		BOM	Description: a2-4, b1-2, c3-4. Mtrl: a1-4, b2, c1-2, c4, c7. Treat: c2-3, c7. HWG: c3-4.		
4	9/25/2018	BOM	Description: a1. Mtrl: a2-4.	JDS	JEK
5	3/4/2019	-	Test layout had correct sign assembly layout and order, but Sign Assembly 2 & 3 were detailed through drawing in incorrect order. (i.e. Sign 2 was called out as Sign 3 and vice versa) This has been corrected. Just swapped sheets 4&5 with sheets 6&7 and changed description of sheet to match changes.	JDS/JEK	MKB
6	6/11/2020	ALL	Replaced the lock washer with the plain washer for the base connection bolts	JDS	JRF

Rev	Date	By	Description	Appr	Rev
	5/11/2020	BOM	Removed "Franklin" from the description of parts a1 through a4		
7	8/14/2020	5	Added Lock washer c6 in between c4 and c5 on Detail C.	JDR	JRF
		7	Added Lock washer c6 in between c4 and c5 on Detail E.		
		11	Changed min thread length for c2 from 7/8" to 1", changed the thickness of c7 from 5/8" to 1/2", and changed the outer diameter of c6 from 1" to 3/4".		
		BOM	Edited descriptions to reflect the changes made.		