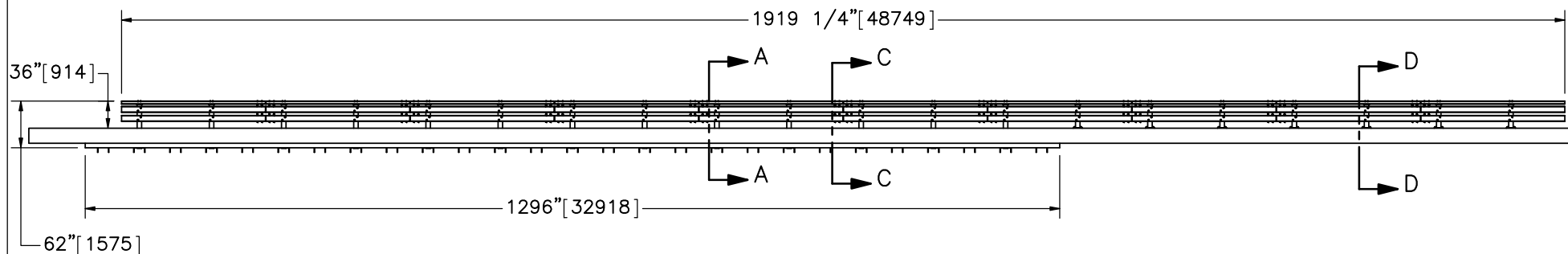


PLAN VIEW



ELEVATION VIEW

- Notes: (1) Test shall be performed according to test designation no. 4-11 using MASH 2016 criteria.
 (2) The impact location is 84" [2134] upstream from post no. 9.
 (3) Pickup truck (2270P) crash to simulate installation on a precast, reinforced concrete, box beam bridge deck with a 6" [152] thick concrete slab and a 3" [76] thick roadway overlay.



Midwest Roadside
Safety Facility

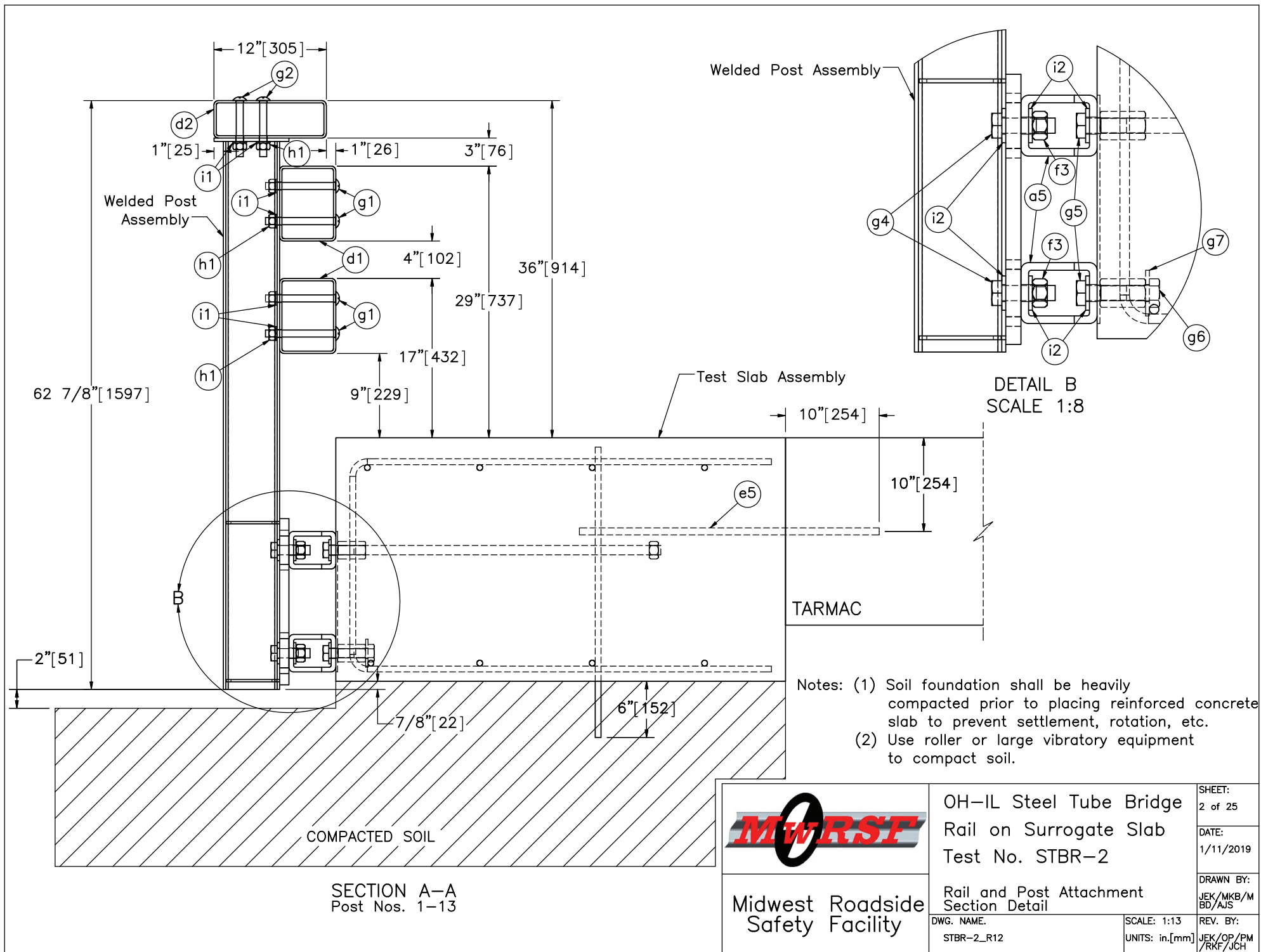
OH-IL Steel Tube Bridge
Rail on Surrogate Slab
Test No. STBR-2

System Layout

DWG. NAME.
STBR-2_R12

SCALE: 1:205
UNITS: in.[mm]

SHEET:
1 of 25
DATE:
1/11/2019
DRAWN BY:
JEK/MKB/M
BD/AJS
REV. BY:
JEK/OP/PM
/RKF/JCH



Midwest Roadside
Safety Facility

OH-IL Steel Tube Bridge
Rail on Surrogate Slab
Test No. STBR-2

Rail and Post Attachment
Section Detail

DWG. NAME:
STBR-2_R12

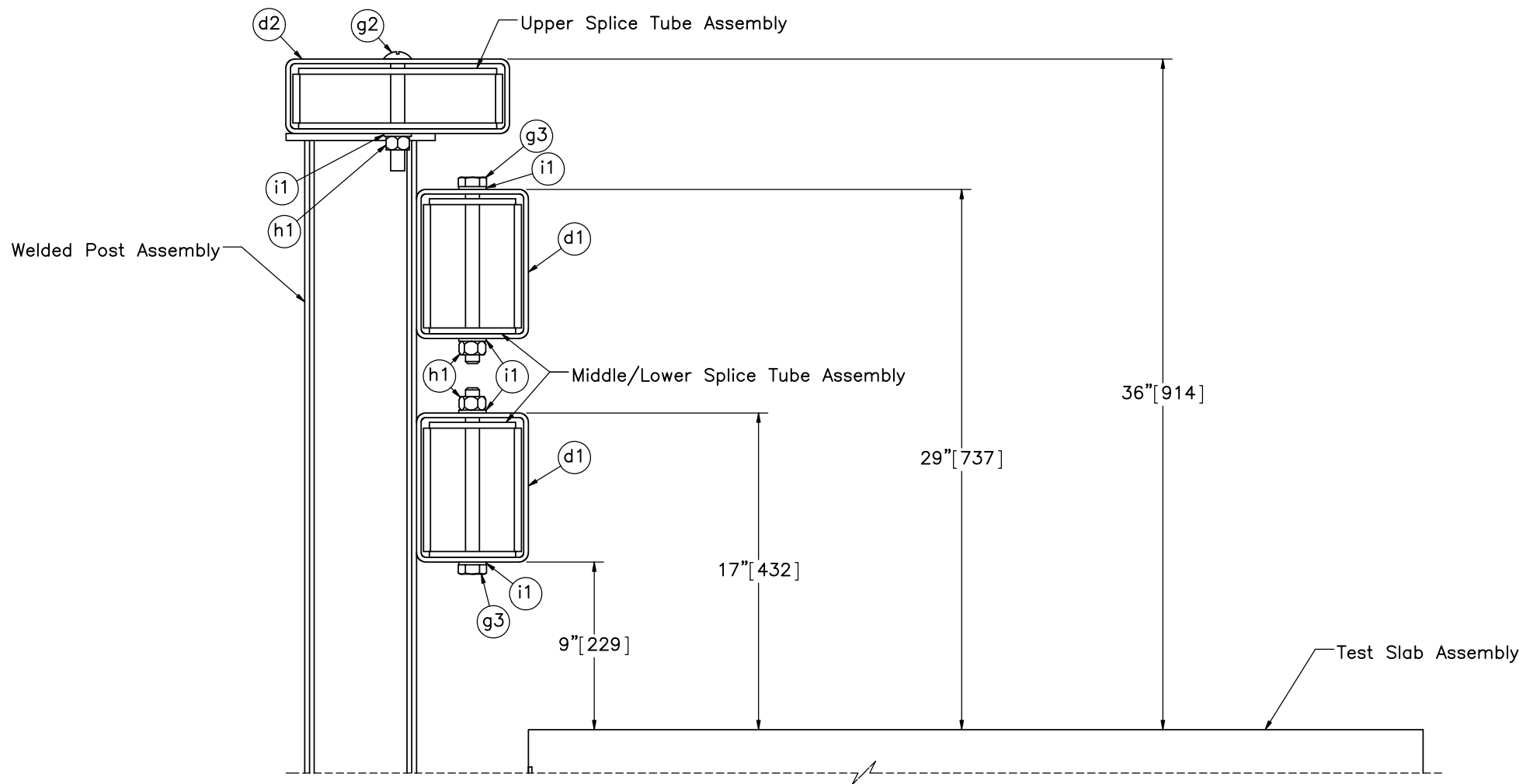
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UNITS: in.[mm]

SHEET:
2 of 25

DATE:
1/11/2019

DRAWN BY:
JEK/MKB/M
BD/AJS

REV. BY:
JEK/OP/PM
/RKF/JCH



Midwest Roadside
Safety Facility

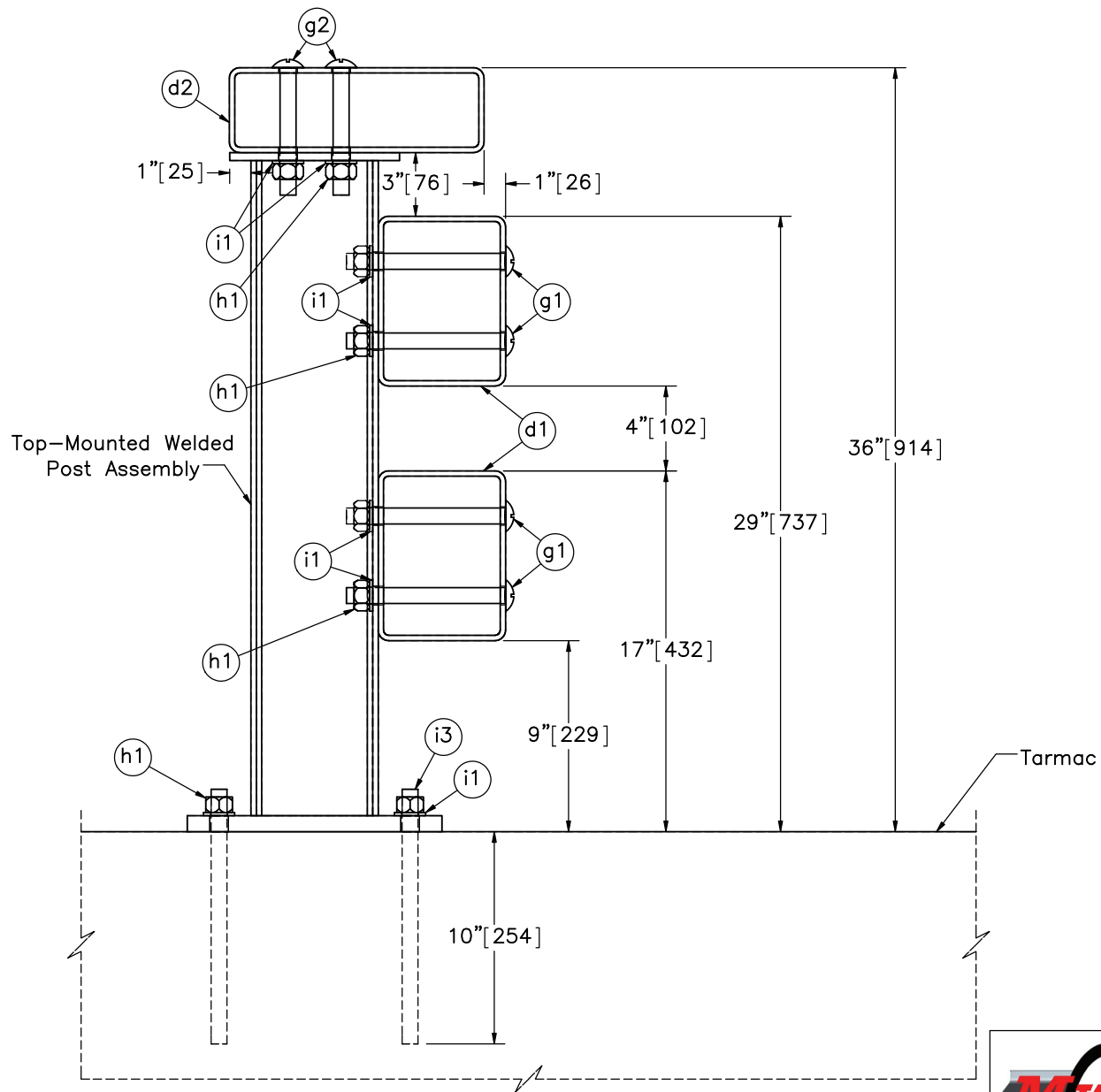
OH-IL Steel Tube Bridge
Rail on Surrogate Slab
Test No. STBR-2

Splice Section Detail

DWG. NAME.
STBR-2_R12

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

SHEET:
3 of 25
DATE:
1/11/2019
DRAWN BY:
JEK/MKB/M
BD/AJS
REV. BY:
JEK/OP/PM
/RKF/JCH



SECTION D-D
Post Nos. 14-20



Midwest Roadside
Safety Facility

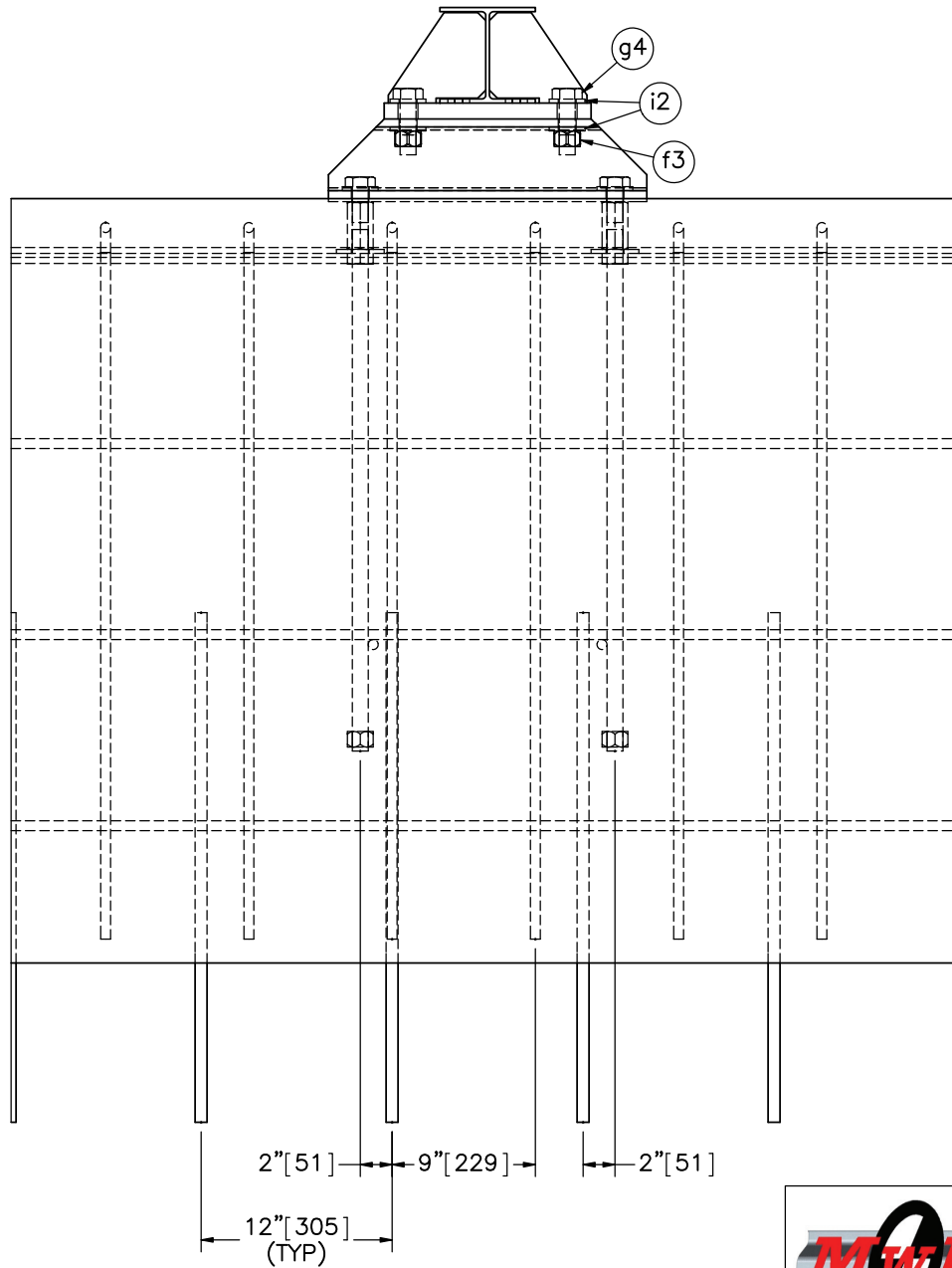
OH-IL Steel Tube Bridge
Rail on Surrogate Slab
Test No. STBR-2

Top-Mounted Post Section

DWG. NAME.
STBR-2_R12

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

SHEET:
4 of 25
DATE:
1/11/2019
DRAWN BY:
JEK/MKB/M
BD/AJS
REV. BY:
JEK/OP/PM
/RKF/JCH



DETAIL E

Note: (1) Rail components and hardware hidden for clarity.



Midwest Roadside
Safety Facility

OH-IL Steel Tube Bridge
Rail on Surrogate Slab
Test No. STBR-2

Lateral Reinforcement Detail

DWG. NAME.
STBR-2_R12

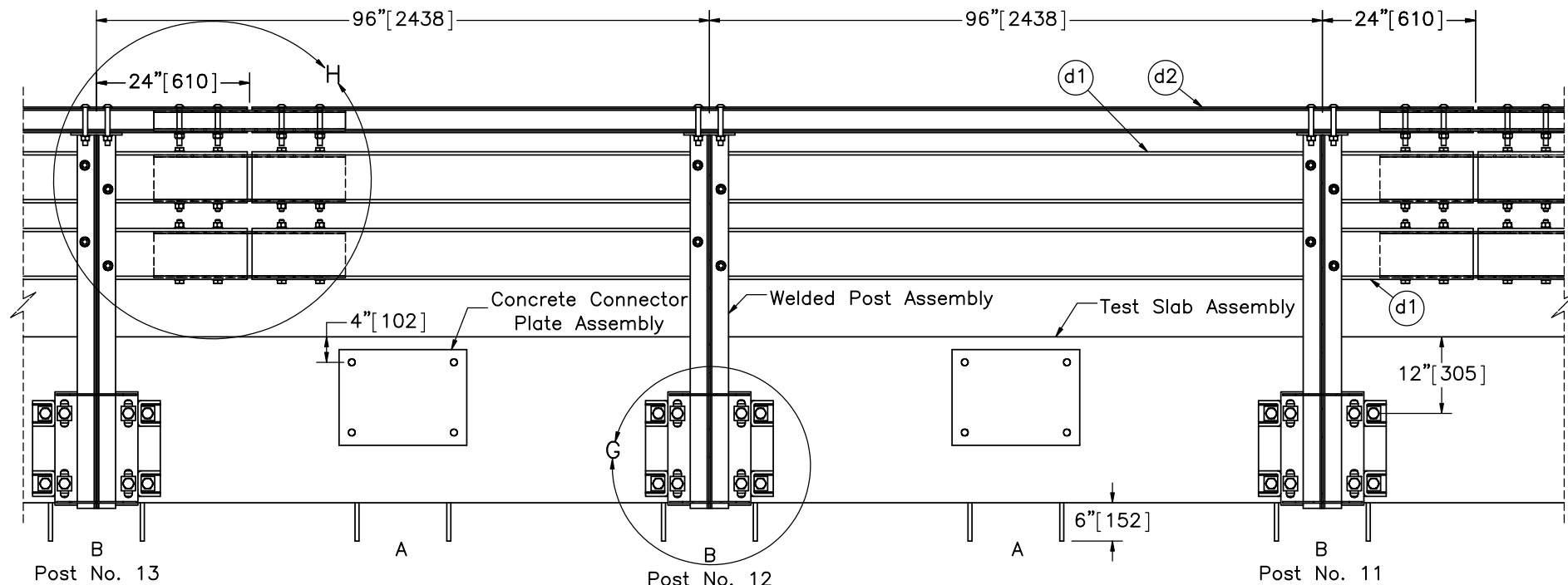
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SHEET:
5 of 25

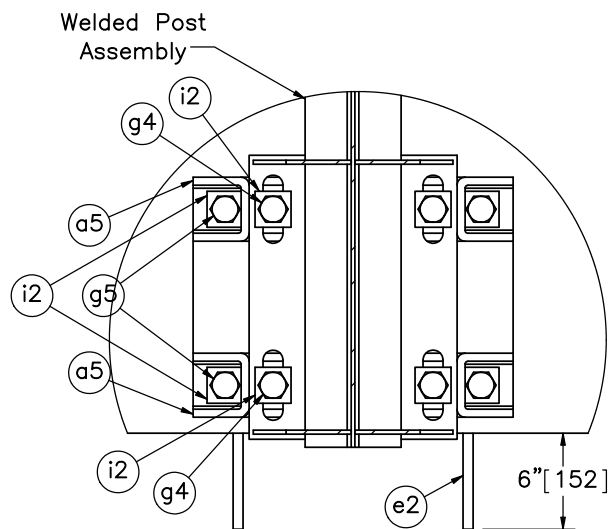
DATE:
1/11/2019

DRAWN BY:
JEK/MKB/M
BD/AJS

REV. BY:
JEK/OP/PM
/RKF/JCH



SECTION F-F
BACKSIDE VIEW



DETAIL G
SCALE 1:12

- Notes: (1) Location A used for 1100C small car tests.
(2) Location B used for 2270P pickup truck and 10000S tests.



Midwest Roadside
Safety Facility

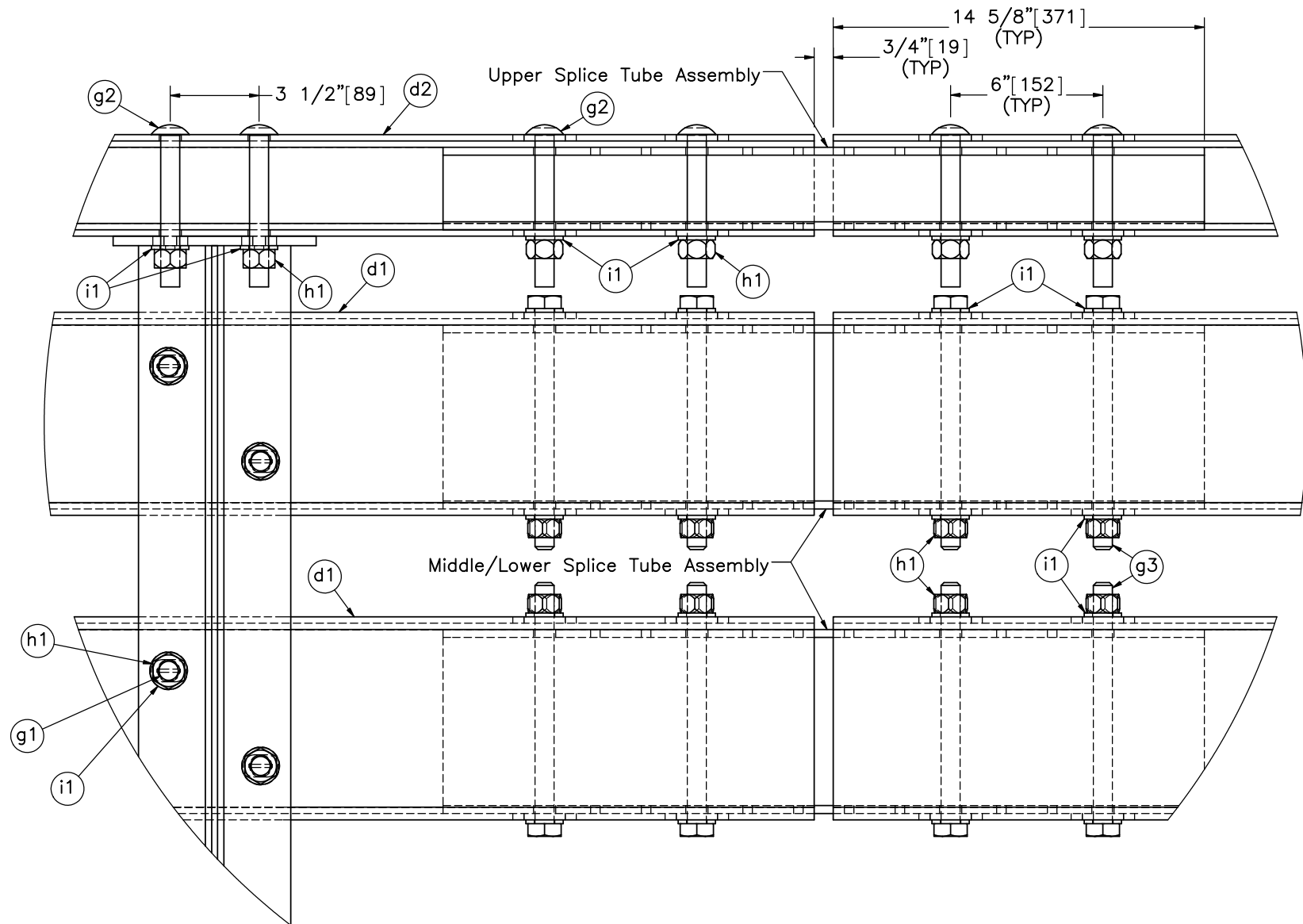
OH-IL Steel Tube Bridge
Rail on Surrogate Slab
Test No. STBR-2

Backside Section View

DWG. NAME.
STBR-2_R12

SCALE: 1:25
UNITS: in.[mm]

SHEET:
6 of 25
DATE:
1/11/2019
DRAWN BY:
JEK/MKB/M
BD/AJS
REV. BY:
JEK/OP/PM
/RKF/JCH



DETAIL H



Midwest Roadside
Safety Facility

OH-IL Steel Tube Bridge
Rail on Surrogate Slab
Test No. STBR-2

Splice Tube Details

DWG. NAME.
STBR-2_R12

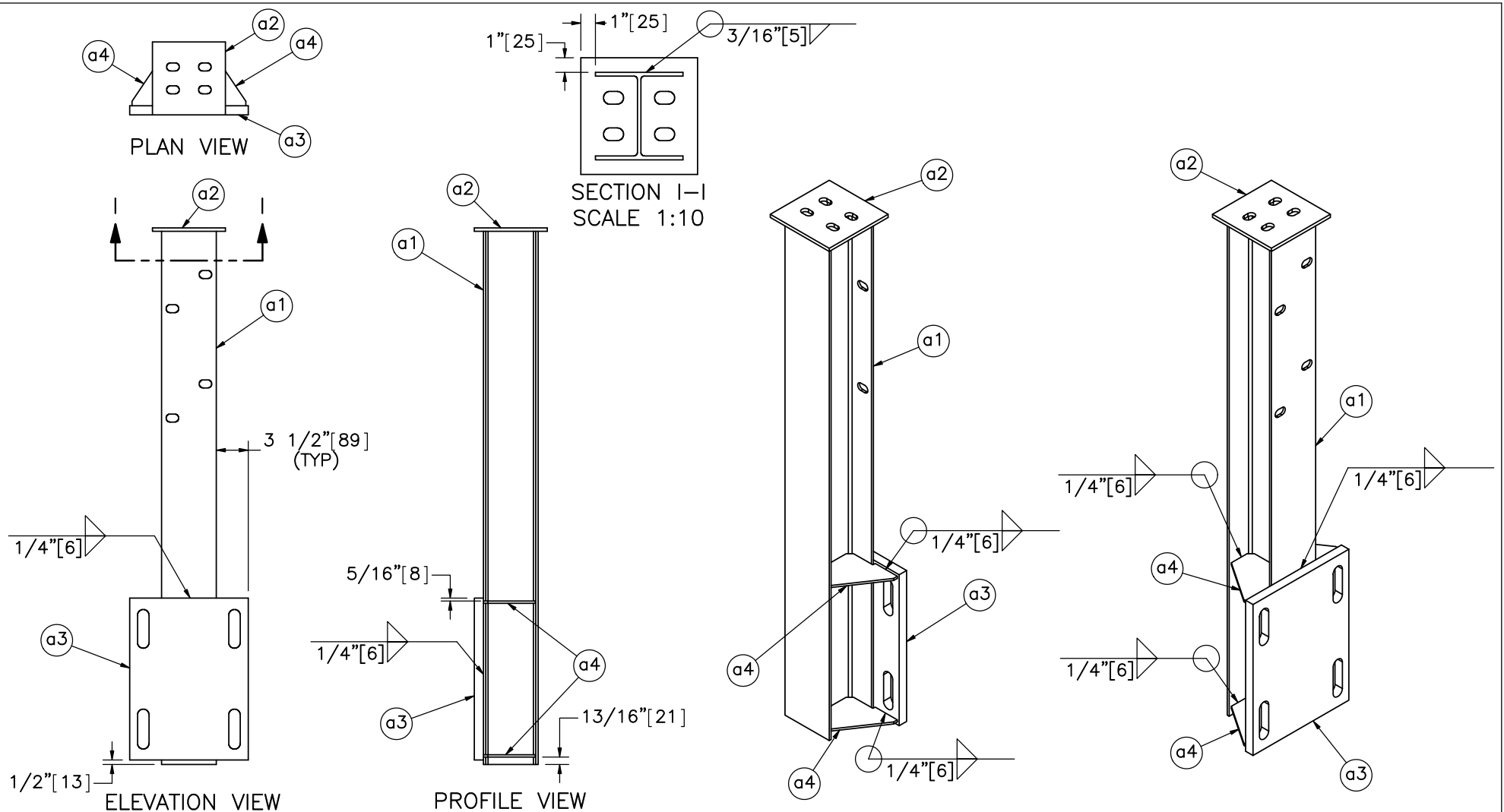
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SHEET:
7 of 25

DATE:
1/11/2019

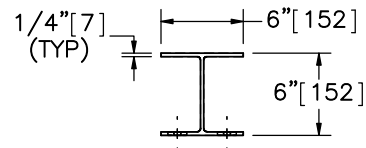
DRAWN BY:
JEK/MKB/M
BD/AJS

REV. BY:
JEK/OP/PM
/RKF/JCH

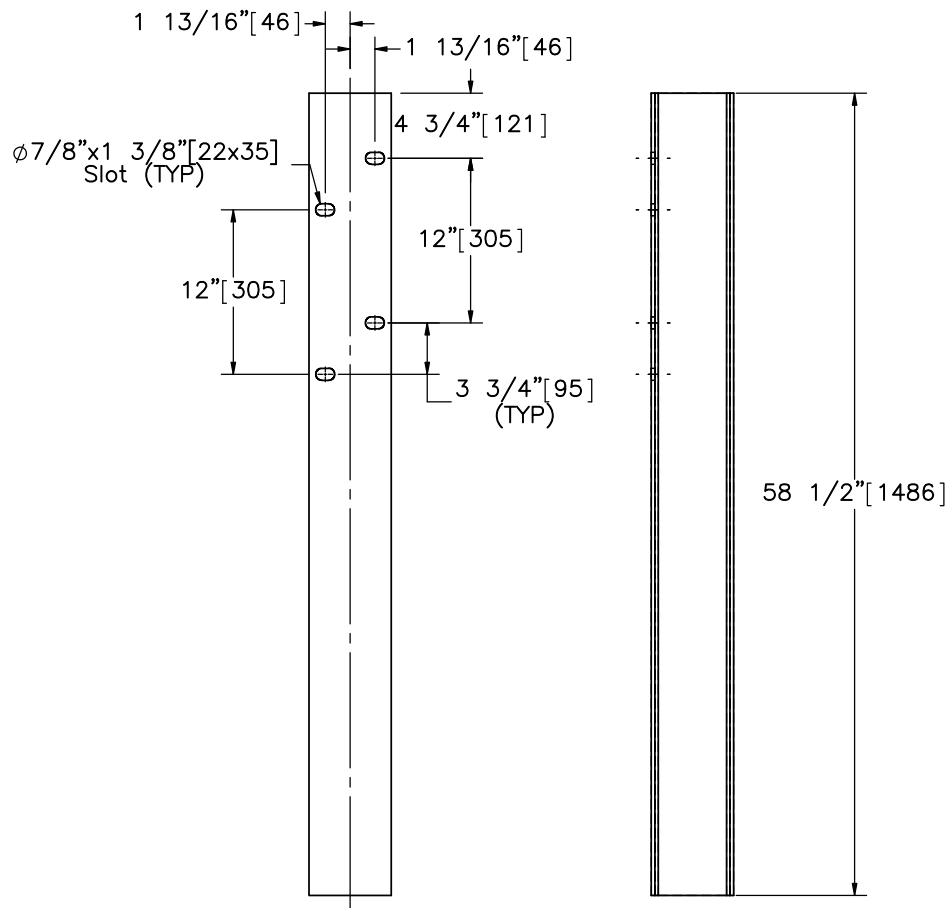


- Notes: (1) Gussets on both sides of post.
 (2) To prevent welds to end at edges of gussets, leave 5/16" [8] of base material beyond weld to edge of welded part.
 (3) Leave coped corners of gussets open for drainage. Do not fill with welds.

Item No.	QTY.	Description	Material Specification	Treatment Specification	 OH-IL Steel Tube Bridge Rail on Surrogate Slab Test No. STBR-2 Welded Post Assembly Details			SHEET: 8 of 25
-	13	Welded Post Assembly	-	ASTM A123				DATE: 1/11/2019
a1	1	W6x15 [W152x22], 58 1/2" [1,486] Long Post	ASTM A992	See Assembly	DWG. NAME: STBR-2_R12			DRAWN BY: JEK/MKB/M BD/AJS
a2	1	8"x8"x3/8" [203x203x10] Plate	ASTM A572 Gr. 50	See Assembly				REV. BY:
a3	1	13"x17 3/4"x1" [330x451x25] Post Plate with Slots for 1" [25] Bolts	ASTM A572 Gr. 50	See Assembly				JEK/OP/PM /RKF/JCH
a4	4	6 1/8"x5 11/16"x1/4" [156x144x6] Gusset Plate	ASTM A572 Gr. 50	See Assembly	SCALE: 1:16 UNITS: in./mm			



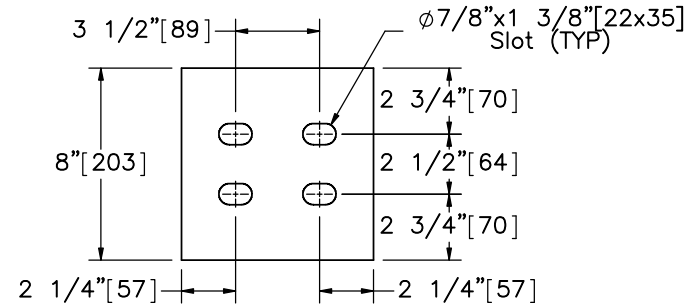
PLAN VIEW



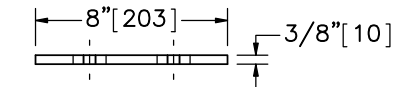
ELEVATION VIEW

PROFILE VIEW

Part a1
SCALE 1:14

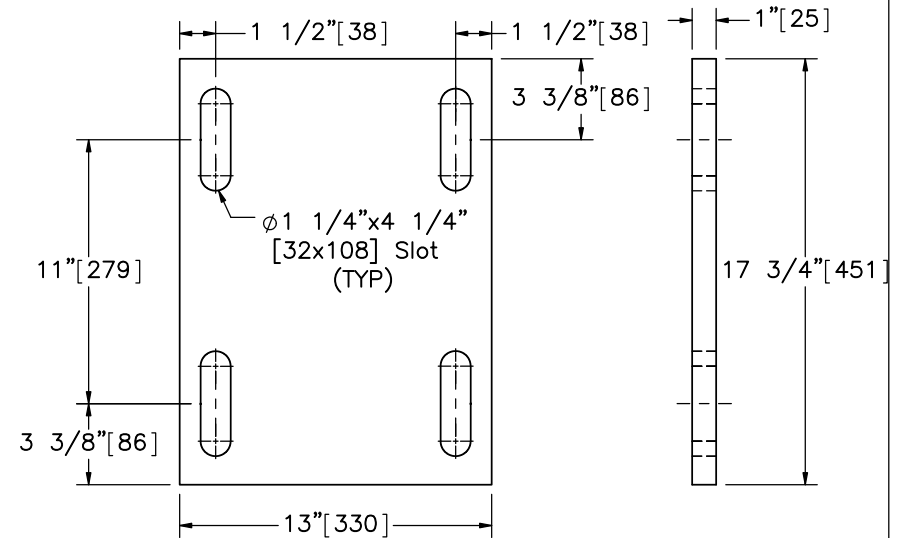


PLAN VIEW



ELEVATION VIEW

Part a2



ELEVATION VIEW

PROFILE VIEW

Part a3



Midwest Roadside
Safety Facility

OH-IL Steel Tube Bridge
Rail on Surrogate Slab
Test No. STBR-2

Post Components

DWG. NAME.
STBR-2_R12

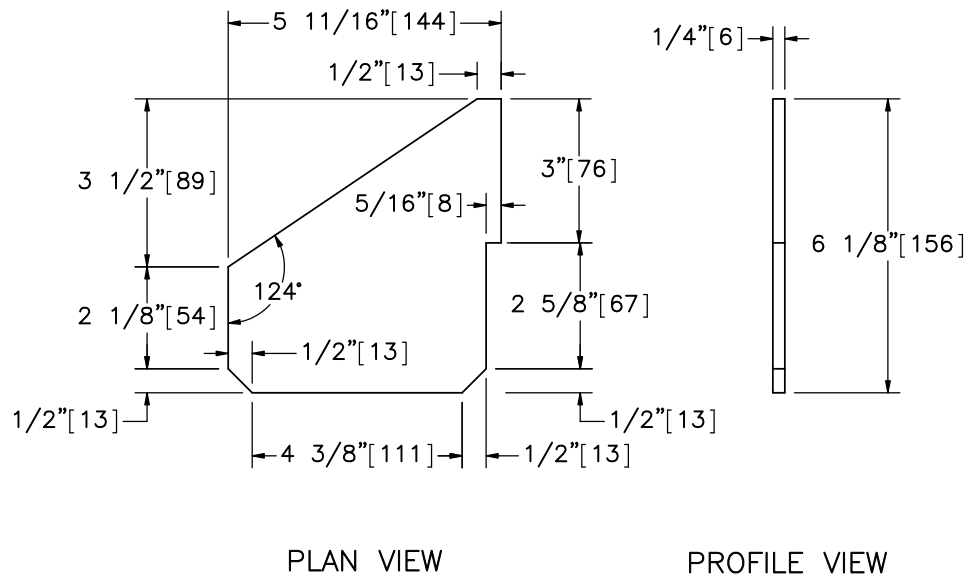
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UNITS: in.[mm]

SHEET:
9 of 25

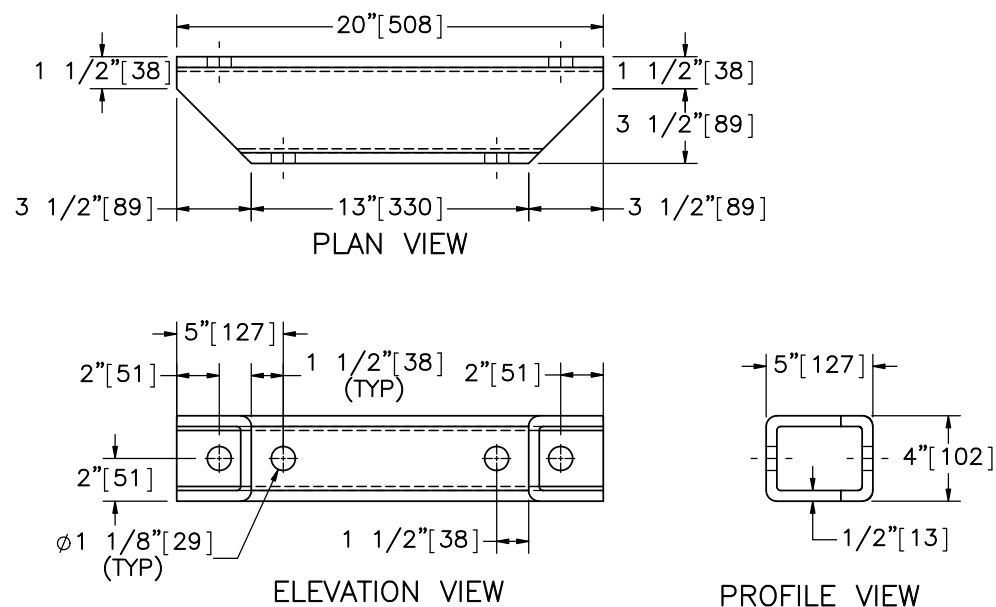
DATE:
1/11/2019

DRAWN BY:
JEK/MKB/M
BD/AJS

REV. BY:
JEK/OP/PM
/RKF/JCH



Part a4
SCALE 1:4



Part a5



Midwest Roadside
Safety Facility

OH-IL Steel Tube Bridge
Rail on Surrogate Slab
Test No. STBR-2

Post Components

DWG. NAME.
STBR-2_R12

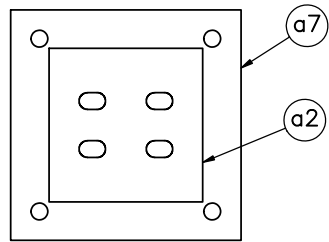
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UNITS: in.[mm]

SHEET:
10 of 25

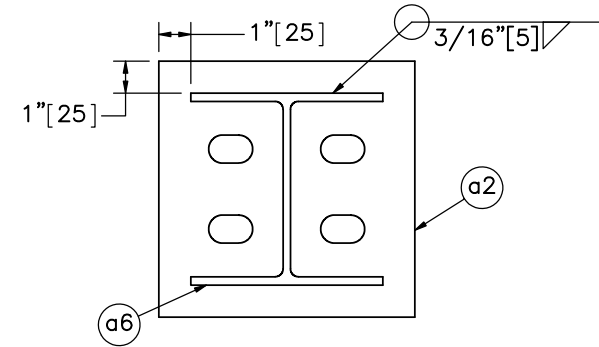
DATE:
1/11/2019

DRAWN BY:
JEK/MKB/M
BD/AJS

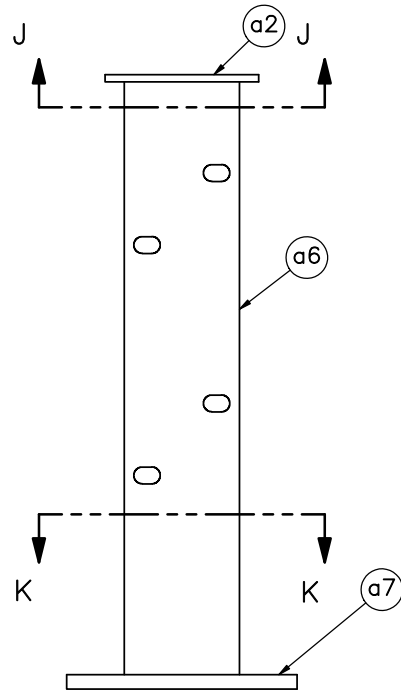
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JEK/OP/PM
/RKF/JCH



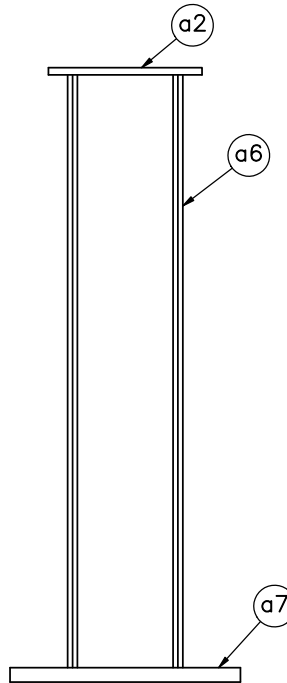
PLAN VIEW



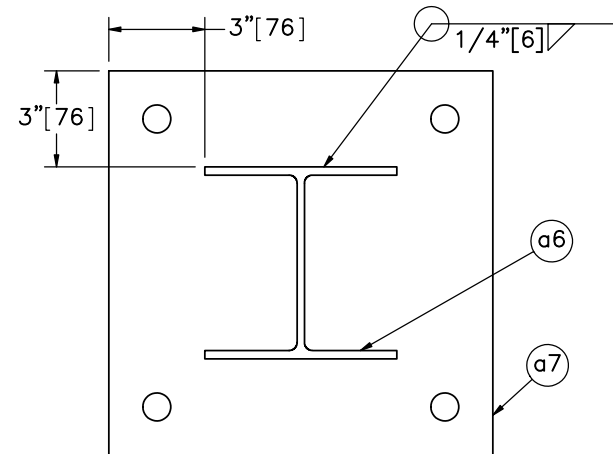
SECTION J-J
SCALE 1:6



ELEVATION VIEW



PROFILE VIEW



SECTION K-K
SCALE 1:6

Item No.	QTY.	Description	Material Specification	Treatment Specification
—	7	Top-Mounted Welded Post Assembly	—	ASTM A123
a2	1	8"x8"x3/8" [203x203x10] Plate	ASTM A572 Gr. 50	See Assembly
a6	1	W6x15 [W152x22], 30 7/8" [784] Long Post	ASTM A992	—
a7	1	12"x12"x3/4" [305x305x19] Plate	ASTM A572 Gr. 50	—



Midwest Roadside
Safety Facility

OH-IL Steel Tube Bridge
Rail on Surrogate Slab
Test No. STBR-2

Top-Mounted Welded Post
Assembly

DWG. NAME.
STBR-2_R12

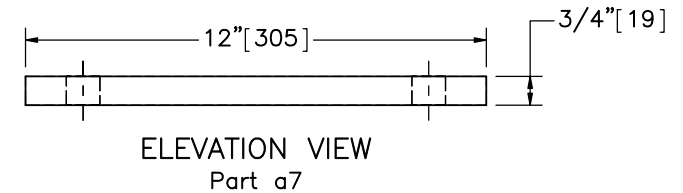
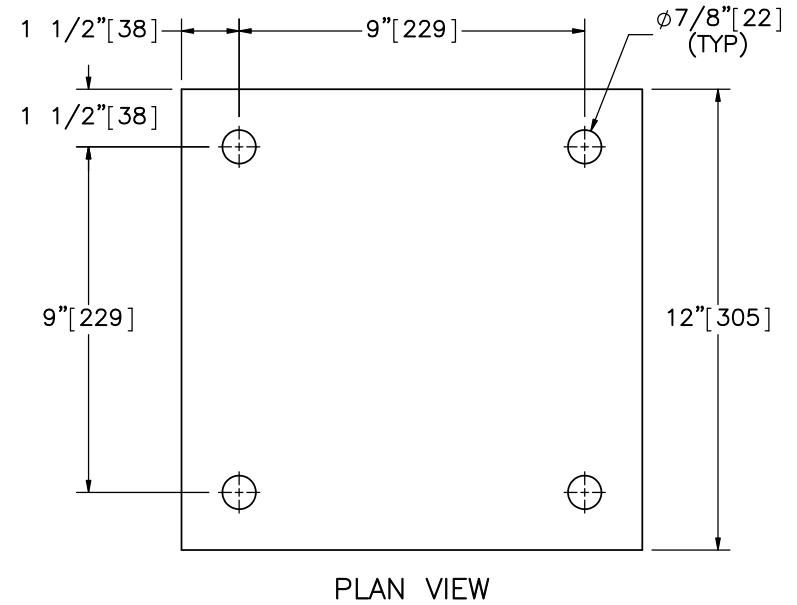
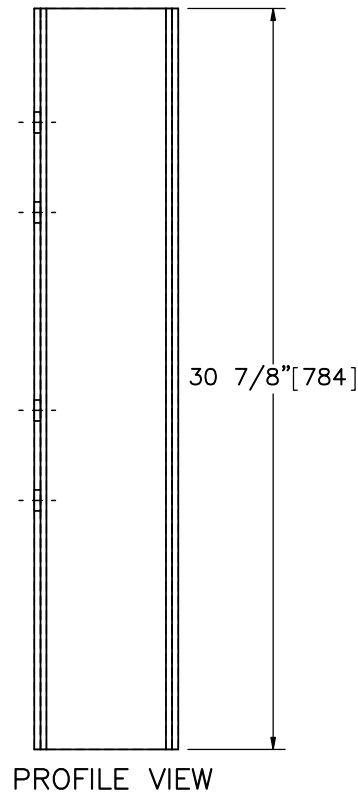
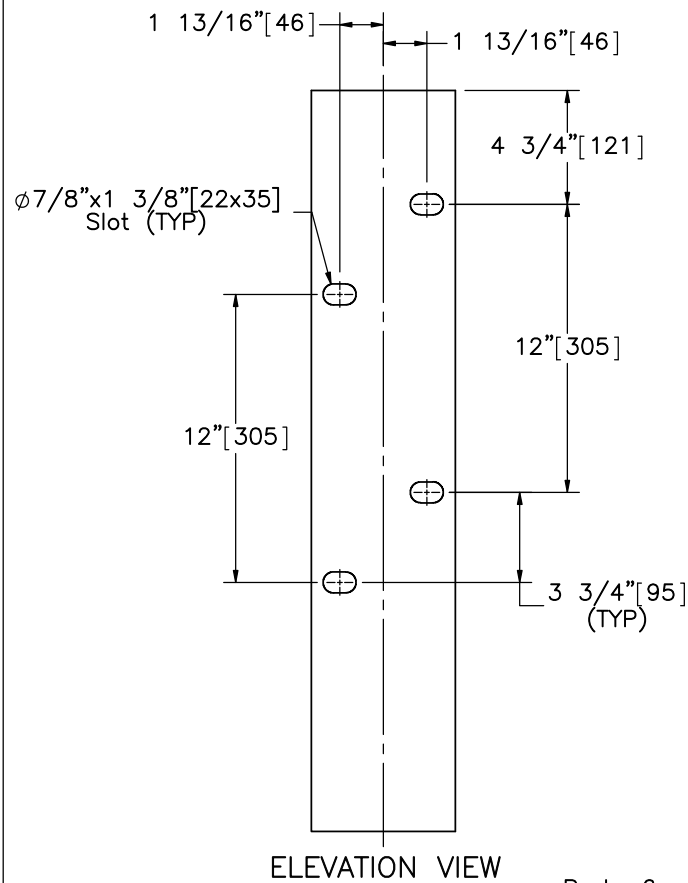
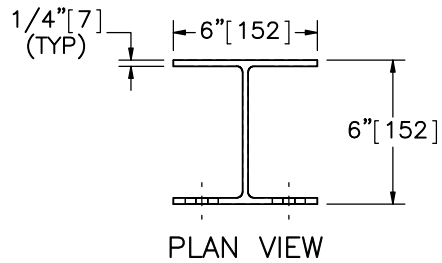
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UNITS: in.[mm]

SHEET:
11 of 25

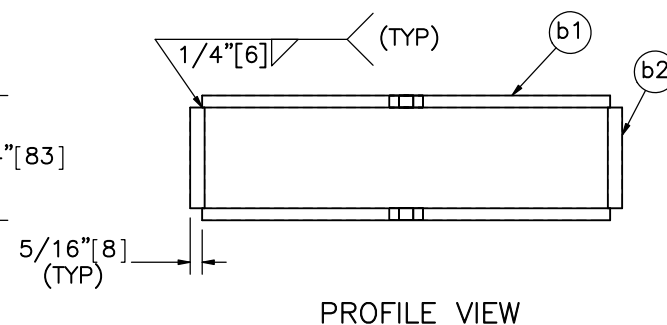
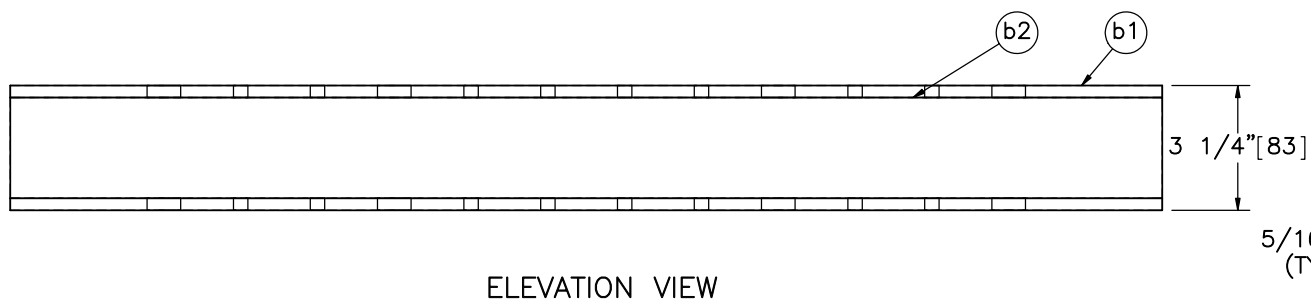
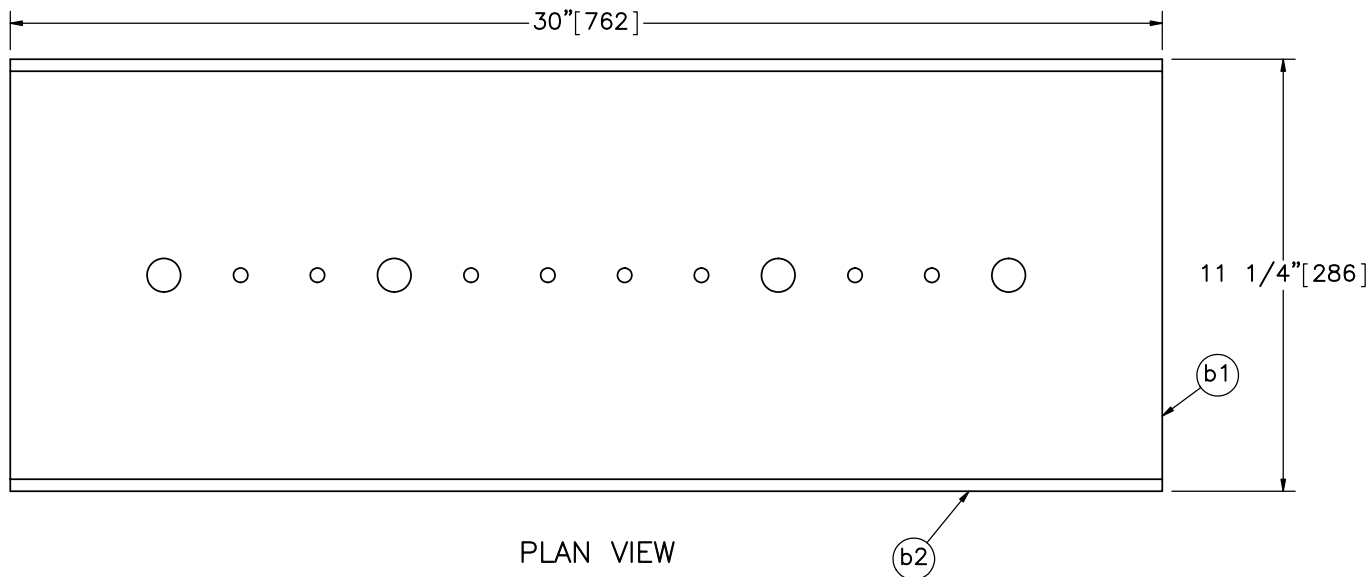
DATE:
1/11/2019

DRAWN BY:
JEK/MKB/M
BD/AJS

REV. BY:
JEK/OP/PM
/RKF/JCH



	OH-IL Steel Tube Bridge Rail on Surrogate Slab Test No. STBR-2		SHEET: 12 of 25
	Top-Mounted Post Components		DATE: 1/11/2019
Midwest Roadside Safety Facility	DWG. NAME: STBR-2_R12		DRAWN BY: JEK/MKB/M BD/AJS
	SCALE: 1:5 UNITS: in.[mm]		REV. BY: JEK/OP/PM /RKF/JCH



Note: (1) To help hold the shape of the splice assembly through the welding and galvanizing processes, it is recommended to use gussets or shim blocks.

Item No.	QTY.	Description	Material Specification	Treatment Specification
—	9	Upper Splice Tube Assembly — Option 1	—	ASTM A123
b1	2	30"x10 5/8"x5/16" [762x270x8] Plate	ASTM A572 Gr. 50	See Assembly
b2	2	30"x2 5/8"x3/8" [762x67x10] Plate	ASTM A572 Gr. 50	See Assembly



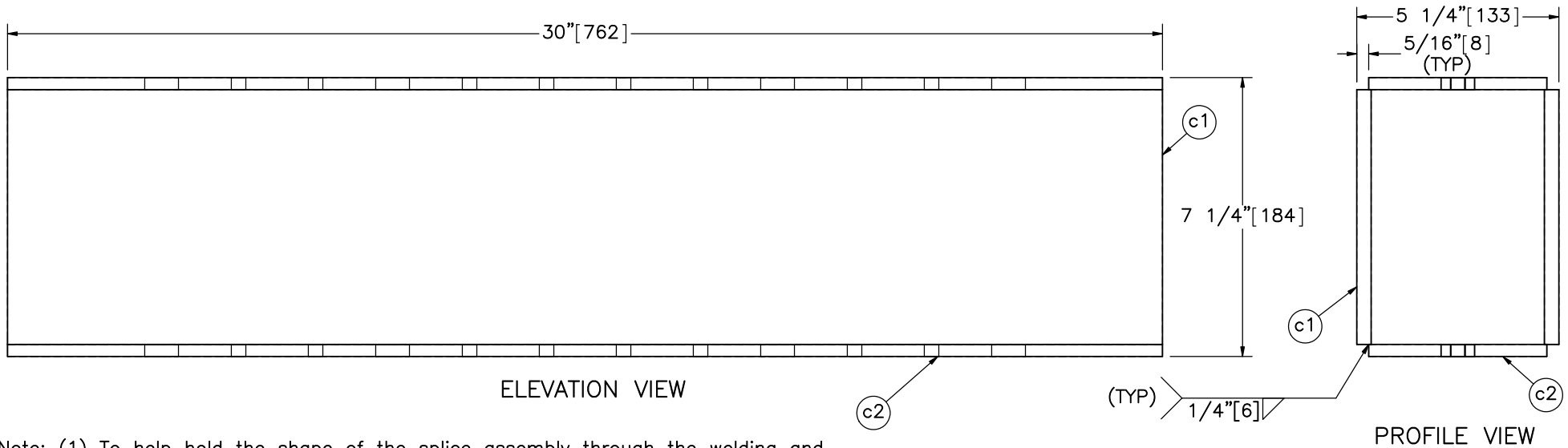
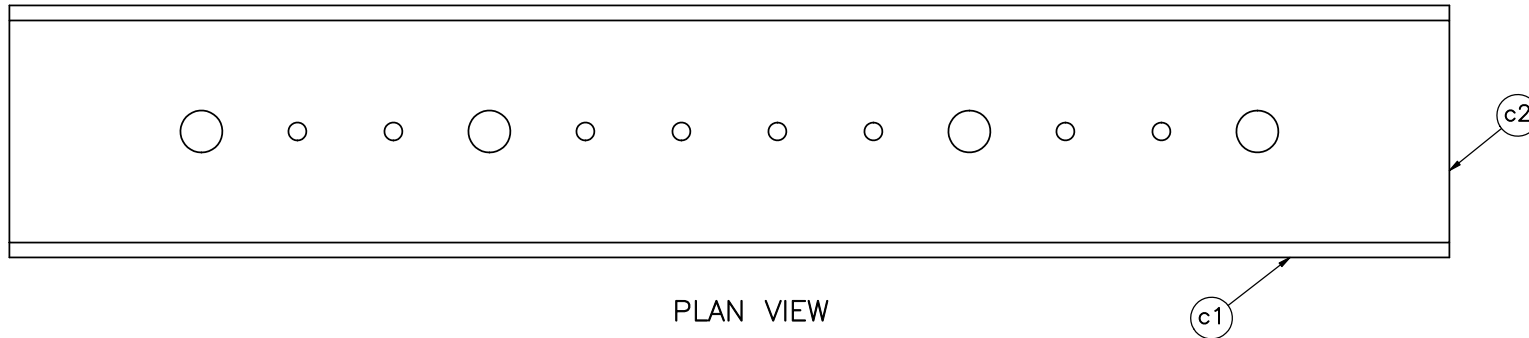
OH-IL Steel Tube Bridge
Rail on Surrogate Slab
Test No. STBR-2
Upper Splice Tube Assembly

DWG. NAME.
STBR-2_R12

SCALE: 1:5
UNITS: in.[mm]

SHEET:
13 of 25
DATE:
1/11/2019
DRAWN BY:
JEK/MKB/M
BD/AJS
REV. BY:
JEK/OP/PM
/RKF/JCH

	OH-IL Steel Tube Bridge Rail on Surrogate Slab Test No. STBR-2		SHEET: 14 of 25
	Upper Splice Tube Components		DATE: 1/11/2019
Midwest Roadside Safety Facility	DWG. NAME: STBR-2_R12	SCALE: 1:6 UNITS: in.[mm]	DRAWN BY: JEK/MKB/MBD/AJS REV. BY: JEK/OP/PM/RKF/JCH



Note: (1) To help hold the shape of the splice assembly through the welding and galvanizing processes, it is recommended to use gussets or shim blocks.

Item No.	QTY.	Description	Material Specification	Treatment Specification
—	18	Middle/Lower Splice Tube Assembly – Option 1	—	ASTM A123
c1	2	30"x6 5/8"x3/8" [762x168x10] Plate	ASTM A572 Gr. 50	See Assembly
c2	2	30"x4 5/8"x5/16" [762x117x8] Plate	ASTM A572 Gr. 50	See Assembly



OH-IL Steel Tube Bridge
Rail on Surrogate Slab
Test No. STBR-2

Middle/Lower Splice Tube
Assembly

DWG. NAME.
STBR-2_R12

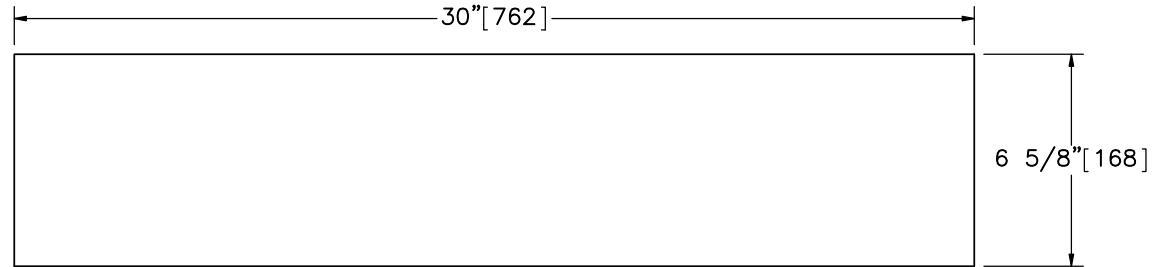
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SHEET:
15 of 25

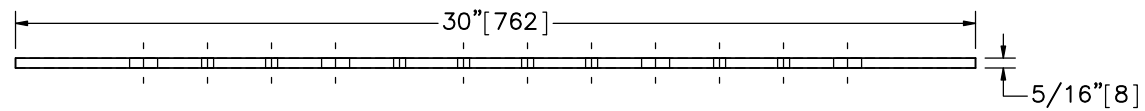
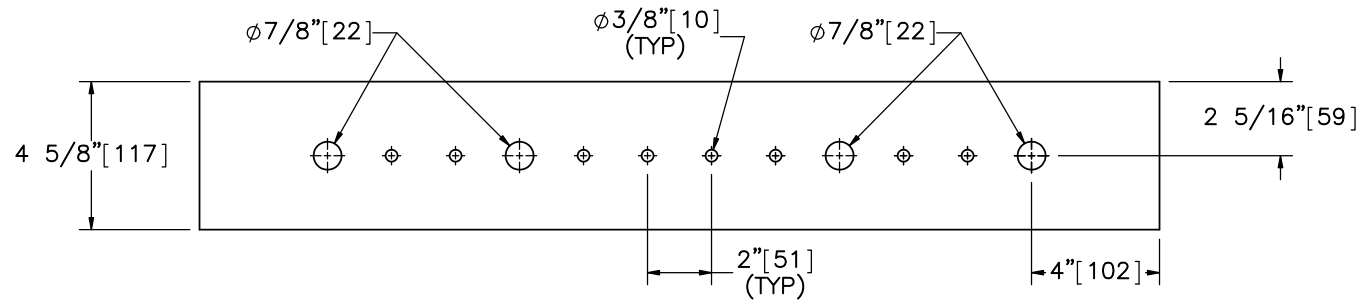
DATE:
1/11/2019

DRAWN BY:
JEK/MKB/M
BD/AJS

REV. BY:
JEK/OP/PM
/RKF/JCH



Part c1



Part c2



Midwest Roadside
Safety Facility

OH-IL Steel Tube Bridge
Rail on Surrogate Slab
Test No. STBR-2

Middle/Lower Splice Tube
Components

DWG. NAME:
STBR-2_R12

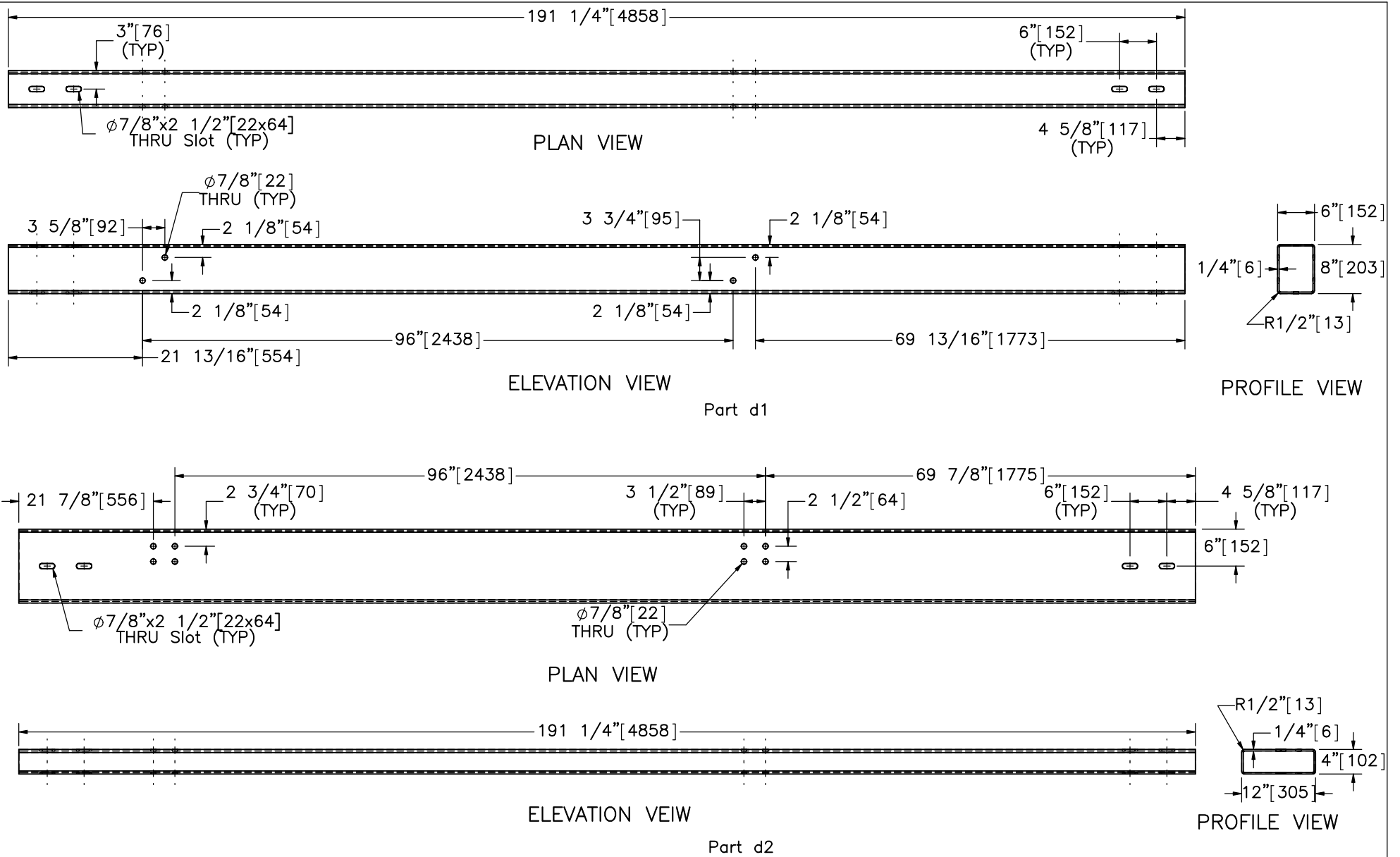
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SHEET:
16 of 25

DATE:
1/11/2019

DRAWN BY:
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BD/AJS

REV. BY:
JEK/OP/PM
/RKF/JCH



Midwest Roadside
Safety Facility

OH-IL Steel Tube Bridge
Rail on Surrogate Slab
Test No. STBR-2

Rail Components

DWG. NAME.
STBR-2_R12

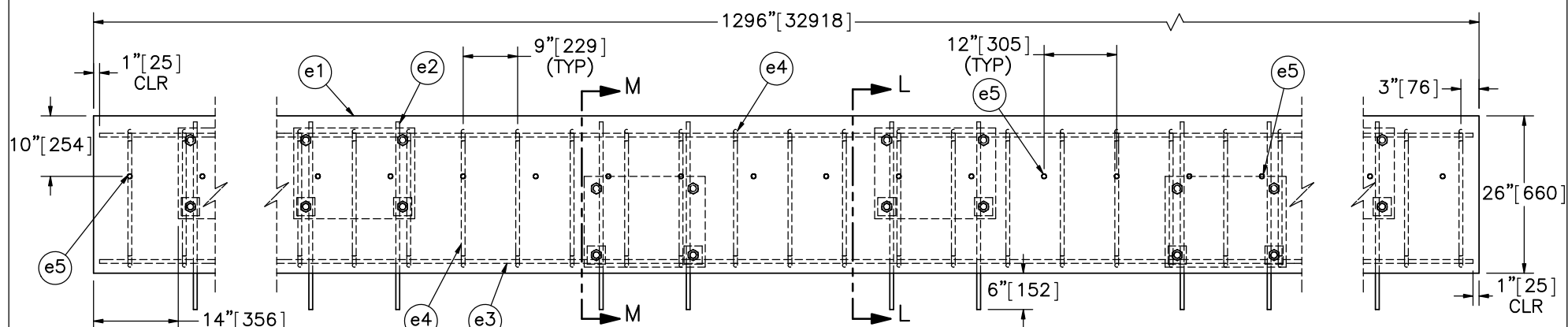
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SHEET:
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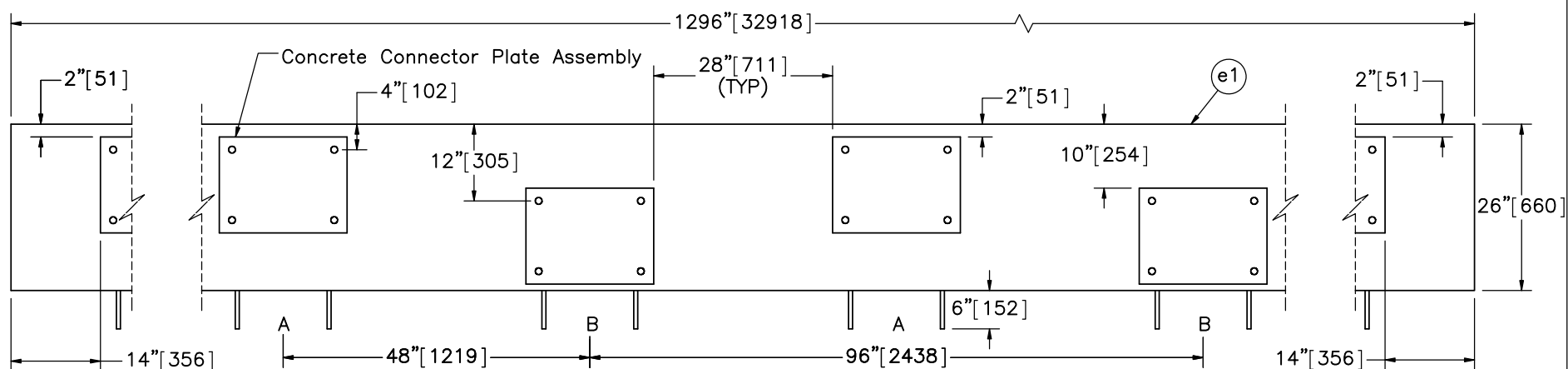
DATE:
1/11/2019

DRAWN BY:
JEK/MKB/M
BD/AJS

REV. BY:
JEK/OP/PM
/RKF/JCH



ELEVATION VIEW



BACKSIDE VIEW

- Notes: (1) Place vertical bar (part no. e2) driven 6" [152] into ground tangent to the threaded rods (part no. f4) at the attachment locations. For support of f4 rods during casting only.
 (2) Location A used for 1100C small car tests.
 (3) Location B used for 2270P pickup truck and 10000S SUT tests.
 (4) Internal reinforcement not shown on backside view.



Midwest Roadside
Safety Facility

OH-IL Steel Tube Bridge
Rail on Surrogate Slab
Test No. STBR-2

Test Slab Assembly Details

DWG. NAME.
STBR-2_R12

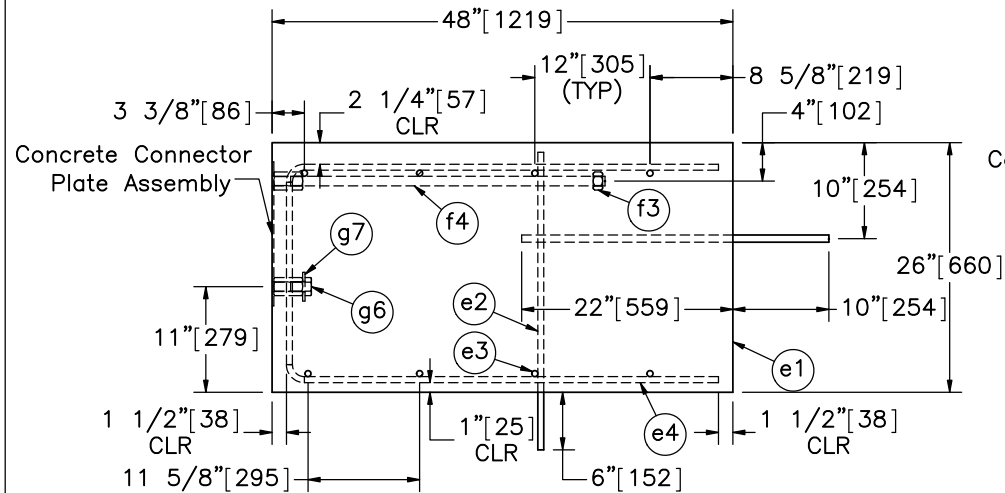
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UNITS: in.[mm]

SHEET:
18 of 25

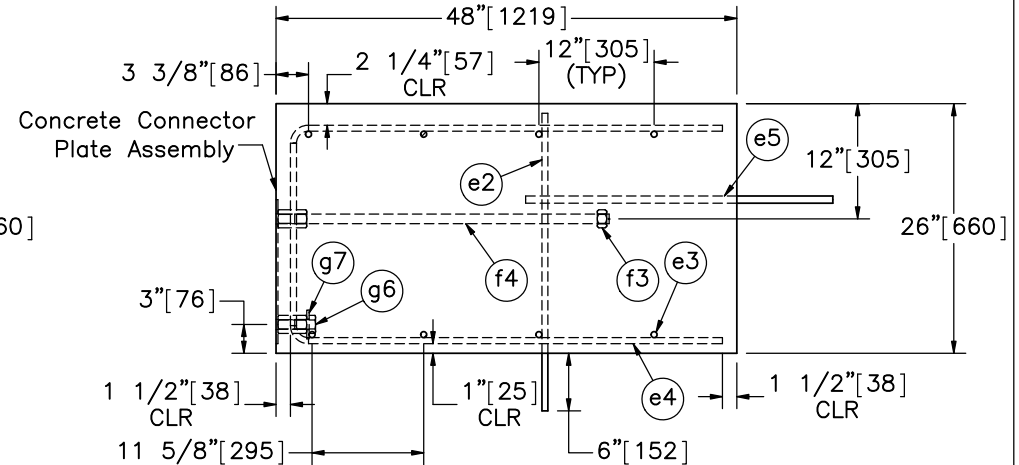
DATE:
1/11/2019

DRAWN BY:
JEK/MKB/M
BD/AJS

REV. BY:
JEK/OP/PM
RKF/JCH



SECTION L-L
LOCATION A ATTACHMENT



SECTION M-M
LOCATION B ATTACHMENT

Item No.	QTY.	Description	Material Specification	Treatment Specification
—	1	Test Slab Assembly	—	—
e1	1	Concrete	Min. $f'_c = 4,000$ psi [27.6 MPa]	—
e2	54	#5 [16] Bar, 31" [787] Long	ASTM A615 Gr. 60	Epoxy-Coated (ASTM A775 or ASTM A934)
e3	8	#5 [16] Bar, 1,294" [32,868] Long	ASTM A615 Gr. 60	Epoxy-Coated (ASTM A775 or ASTM A934)
e4	144	#5 [16] Bar, 110 3/16" [2,799] Long Unbent	ASTM A615 Gr. 60	Epoxy-Coated (ASTM A775 or ASTM A934)
e5	108	#6 [19] Bar, 32" [813] Long	ASTM A615 Gr. 60	Epoxy-Coated (ASTM A775 or ASTM A934)
—	27	Concrete Connector Plate Assembly	—	ASTM A123
f3	54	1"—8 UNC [M24x3] Heavy Hex Nut	ASTM A563DH	ASTM A153 or B695 Class 55 or F2329
f4	54	1"—8 UNC [M24x3], 32 3/4" [832] Long Fully Threaded Anchor Rod	ASTM F1554 Gr. 105	ASTM A153 or B695 Class 55 or F2329
g6	54	1"—8 UNC [M24x3], 1 1/2" [38] Long Hex Head Bolt	ASTM A449	ASTM A153 or B695 Class 55 or F2329
g7	54	3"x3"x1/4" [76x76x6] Plate	ASTM A36	ASTM A123

- Notes: (1) Location A used for 1100C small car tests.
(2) Location B used for 2270P pickup truck and 10000 SUT tests.
(3) Place vertical bar (part no. e2) driven 6" [152] into ground tangent to the threaded rods (part no. f4) at the attachment locations. For support during casting.
(4) Part f4 is threaded 1 1/4" [32] into part f2 (coupling nut) on Concrete Connector Plate Assembly.



Midwest Roadside
Safety Facility

OH—IL Steel Tube Bridge
Rail on Surrogate Slab
Test No. STBR—2

Test Slab Assembly Details

DWG. NAME.
STBR—2_R12

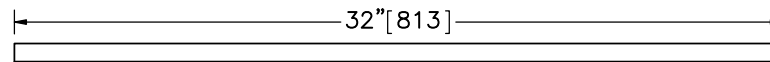
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SHEET:
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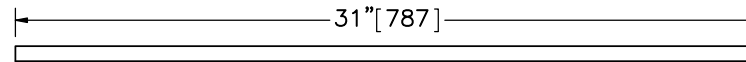
DATE:
1/11/2019

DRAWN BY:
JEK/MKB/M
BD/AJS

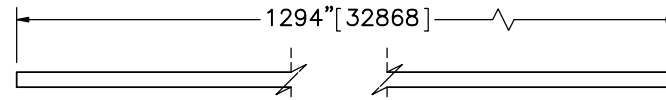
REV. BY:
JEK/OP/PM
/RKF/JCH



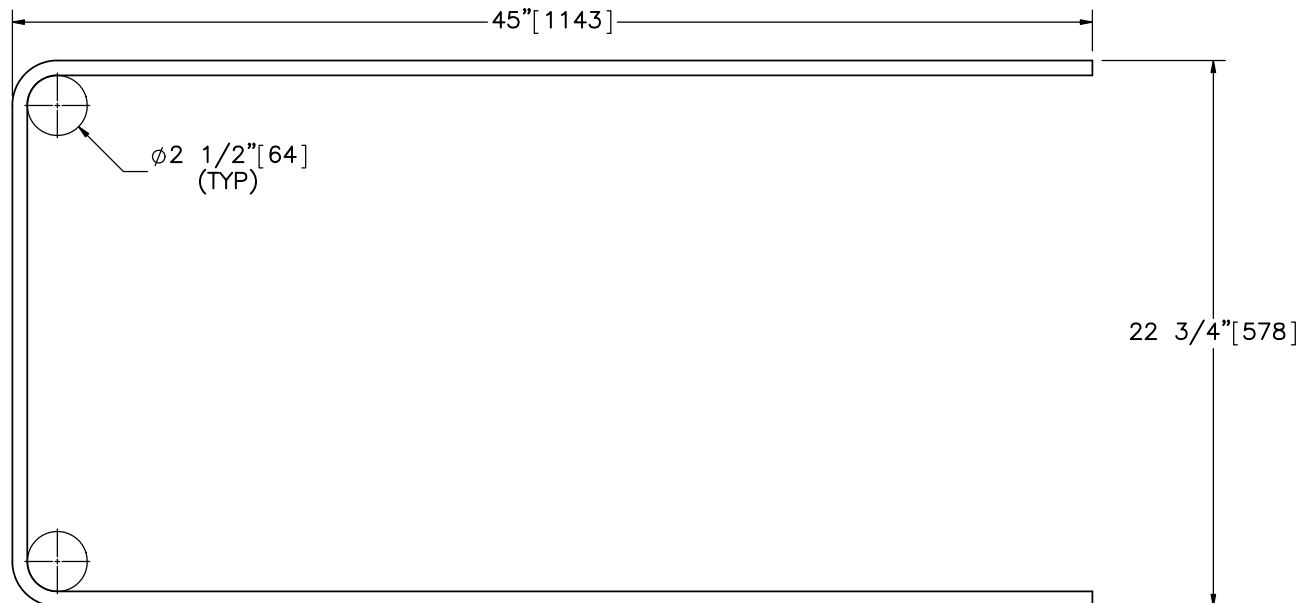
Part e5



Part e2



Part e3



Part e4

Note: (1) Minimum lap length for a #5 bar is 18" [457].

Bill of Bars

Bar	QTY.	Size	Total Unbent Length	Material Specification	Treatment Specification
e2	54	#5	31" [787]	ASTM A615 Gr. 60	Epoxy-Coated (ASTM A775 or ASTM A934)
e3	8	#5	1294" [32868]	ASTM A615 Gr. 60	Epoxy-Coated (ASTM A775 or ASTM A934)
e4	144	#5	110 3/16" [2799]	ASTM A615 Gr. 60	Epoxy-Coated (ASTM A775 or ASTM A934)
e5	108	#6	32" [813]	ASTM A615 Gr. 60	Epoxy-Coated (ASTM A775 or ASTM A934)



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Reinforcement Details

DWG. NAME.
STBR-2_R12

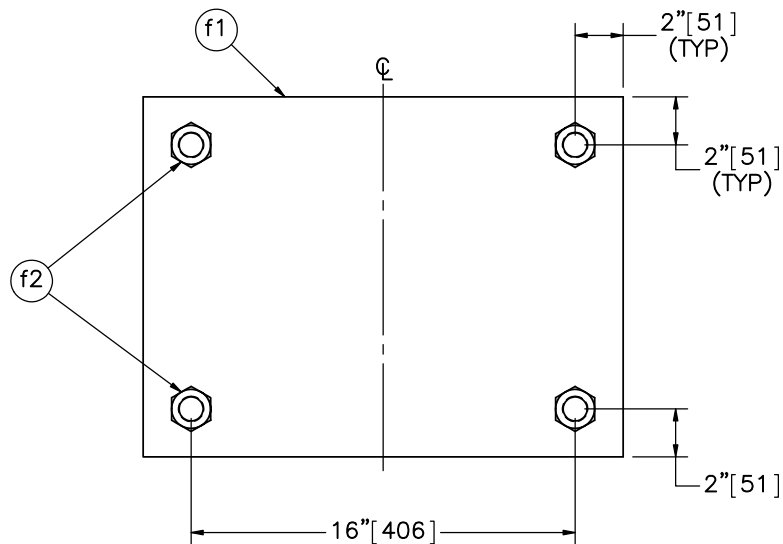
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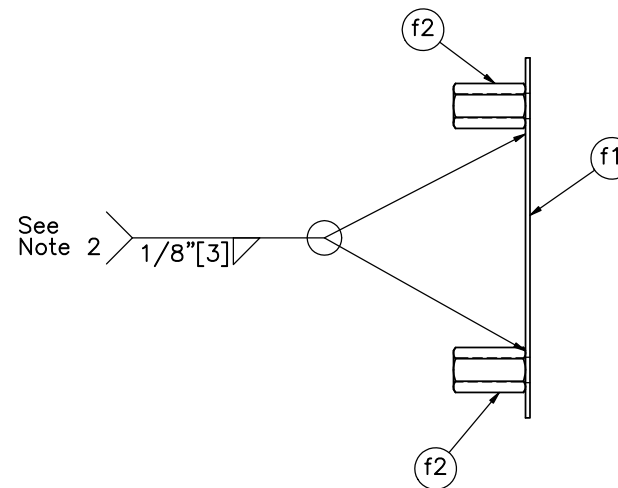
DATE:
1/11/2019

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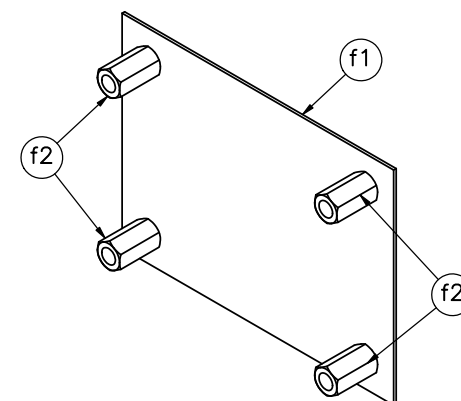
REV. BY:
JEK/OP/PM
/RKF/JCH



ELEVATION VIEW



PROFILE VIEW



ISOMETRIC VIEW

- Notes: (1) Connector plate assembly is symmetric along the centerline.
 (2) During casting, the nuts may be held in place by extending bolts through the formwork into the nuts, or by tack welding nuts to inside face of the plate. The welds are not structurally important.

Item No.	QTY.	Description	Material Specification	Treatment Specification	Hardware Guide
—	27	Concrete Connector Plate Assembly	—	ASTM A123	—
f1	1	20"x15"x3/16" [508x381x5] Steel Plate	ASTM A572 Gr. 50	See Assembly	—
f2	4	1"—8 UNC [M24x3] Heavy Hex Coupling Nut	ASTM A563DH	See Assembly	—



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Concrete Connector Plate
Assembly Details

DWG. NAME.
STBR—2_R12

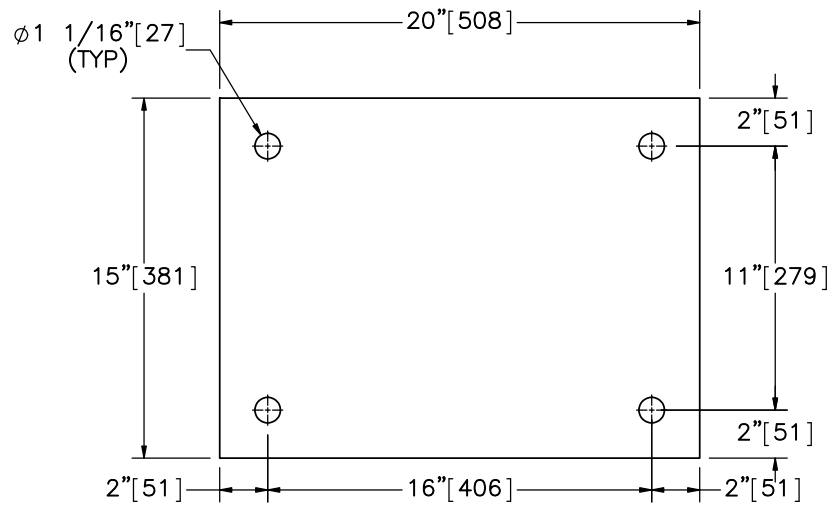
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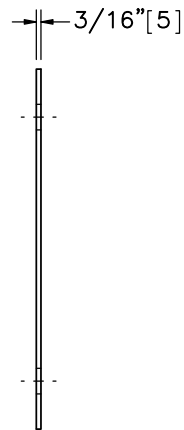
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BD/AJS

REV. BY:
JEK/OP/PM
/RKF/JCH

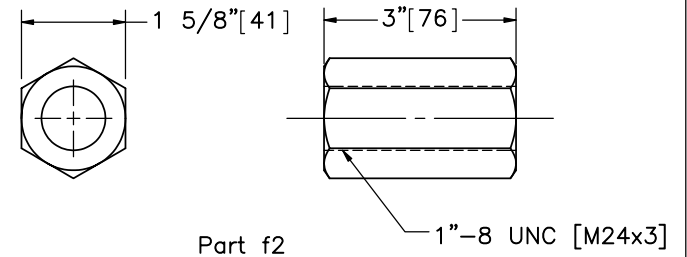


ELEVATION VIEW

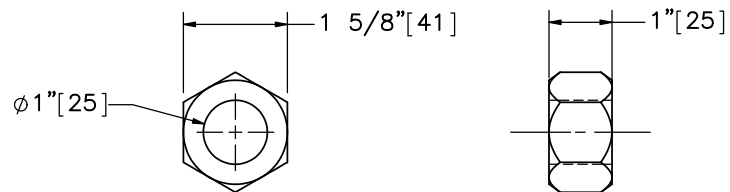
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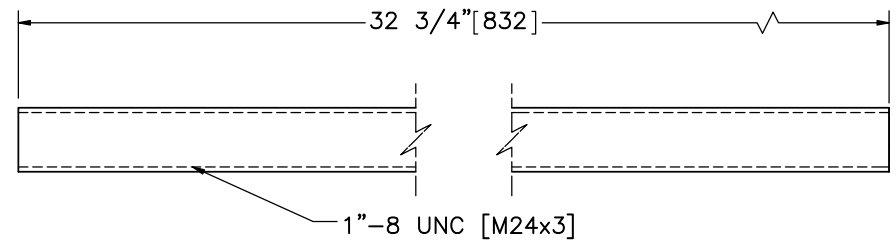
PROFILE VIEW



Part f2



Part f3



Part f4



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Test Slab Components

DWG. NAME.
STBR-2_R12

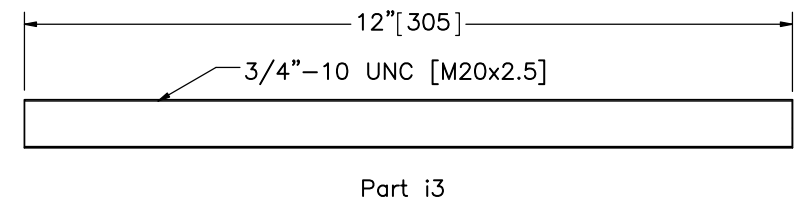
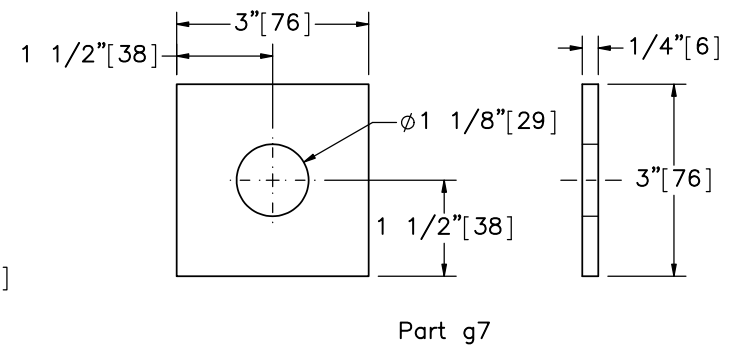
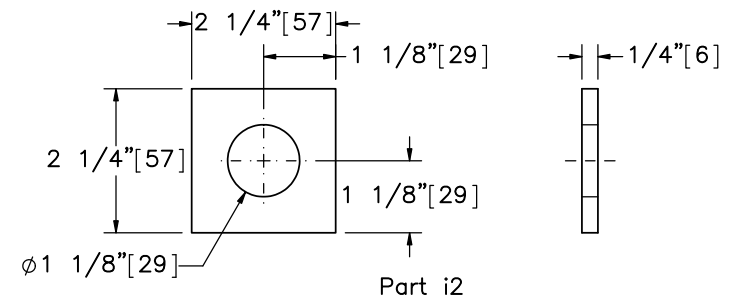
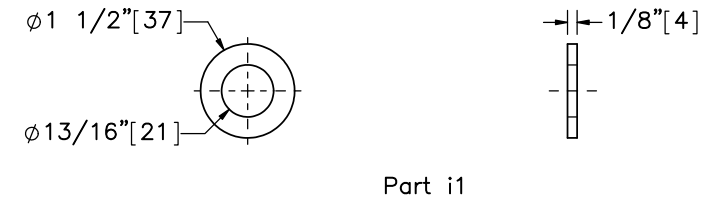
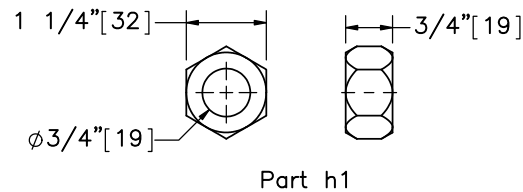
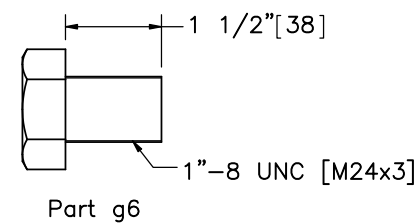
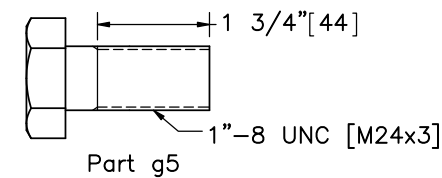
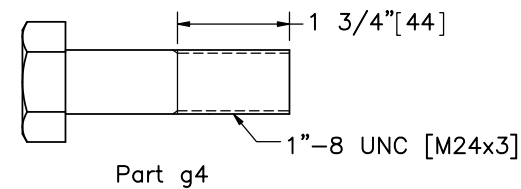
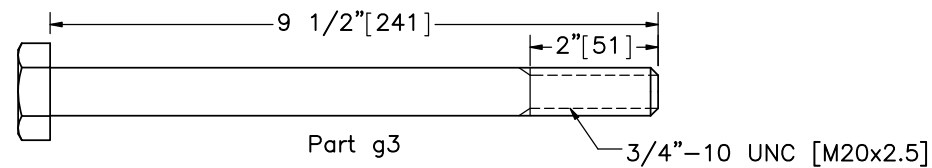
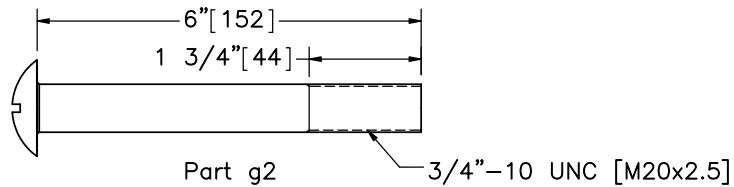
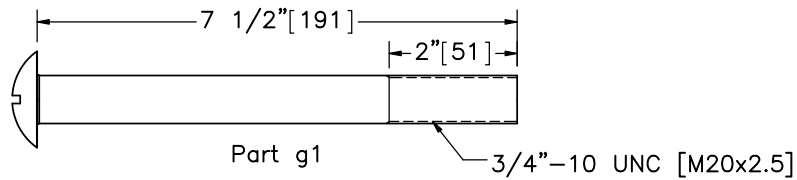
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UNITS: in.[mm]

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Notes: (1) Round head bolts may have a flat head key in center region or key shapes in the heads.



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Hardware

DWG. NAME.
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UNITS: in.[mm]

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Item No.	QTY.	Description	Material Specification	Treatment Specification	Hardware Guide
a1	13	W6x15 [W152x22], 58 1/2" [1,486] Long Post	ASTM A992	See Assembly	—
a2	20	8"x8"x3/8" [203x203x10] Plate	ASTM A572 Gr. 50	See Assembly	—
a3	13	13"x17 3/4"x1" [330x451x25] Post Plate with Slots for 1" [25] Bolts	ASTM A572 Gr. 50	See Assembly	—
a4	52	6 1/8"x5 11/16"x1/4" [156x144x6] Gusset Plate	ASTM A572 Gr. 50	See Assembly	—
a5	26	HSS 5"x4"x1/2" [127x102x13], 20" [508] Long with 1 1/8" [29] Holes	ASTM A500 Gr. C	ASTM A123	—
a6	7	W6x15 [W152x22], 30 7/8" [784] Long Post	ASTM A992	—	—
a7	7	12"x12"x3/4" [305x305x19] Plate	ASTM A572 Gr. 50	—	—
b1	18	30"x10 5/8"x5/16" [762x270x8] Plate	ASTM A572 Gr. 50	See Assembly	—
b2	18	30"x2 5/8"x3/8" [762x67x10] Plate	ASTM A572 Gr. 50	See Assembly	—
c1	36	30"x6 5/8"x3/8" [762x168x10] Plate	ASTM A572 Gr. 50	See Assembly	—
c2	36	30"x4 5/8"x5/16" [762x117x8] Plate	ASTM A572 Gr. 50	See Assembly	—
d1	20	HSS 8"x6"x1/4" [203x152x6], 191 1/4" [4,858] Long	ASTM A500 Gr. C	ASTM A123	—
d2	10	HSS 12"x4"x1/4" [305x102x6], 191 1/4" [4,858] Long	ASTM A500 Gr. C	ASTM A123	—
e1	1	Concrete	Min. f'c = 4,000 psi [27.6 MPa]	—	—
e2	54	#5 [16] Bar, 31" [787] Long	ASTM A615 Gr. 60	Epoxy-Coated (ASTM A775 or ASTM A934)	—
e3	8	#5 [16] Bar, 1,294" [32,868] Long	ASTM A615 Gr. 60	Epoxy-Coated (ASTM A775 or ASTM A934)	—
e4	144	#5 [16] Bar, 110 3/16" [2,799] Long Unbent	ASTM A615 Gr. 60	Epoxy-Coated (ASTM A775 or ASTM A934)	—
e5	108	#6 [19] Bar, 32" [813] Long	ASTM A615 Gr. 60	Epoxy-Coated (ASTM A775 or ASTM A934)	—
f1	27	20"x15"x3/16" [508x381x5] Steel Plate	ASTM A572 Gr. 50	ASTM A123	—
f2	108	1"—8 UNC [M24x3] Heavy Hex Coupling Nut	ASTM A563DH	See Assembly	—
f3	106	1"—8 UNC [M24x3] Heavy Hex Nut	ASTM A563DH	ASTM A153 or B695 Class 55 or F2329	FNX24b
f4	54	1"—8 UNC [M24x3], 32 3/4" [832] Long Fully Threaded Anchor Rod	ASTM F1554 Gr. 105	ASTM A153 or B695 Class 55 or F2329	FRR24b



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Bill of Materials

DWG. NAME.
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SCALE: None
UNITS: in.[mm]

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Item No.	QTY.	Description	Material Specification	Treatment Specification	Hardware Guide
g1	80	3/4"–10 UNC [M20x2.5], 7 1/2" [191] Long Round Head Bolt	ASTM A449	ASTM A153 or B695 Class 55 or F2329	FBX20b
g2	116	3/4"–10 UNC [M20x2.5], 6" [152] Long Round Head Bolt	ASTM A449	ASTM A153 or B695 Class 55 or F2329	FBX20b
g3	72	3/4"–10 UNC [M20x2.5], 9 1/2" [241] Long Heavy Hex Head Bolt	ASTM F3125 Gr. A325 Type 1	ASTM A153 or B695 Class 55 or F2329	FBX20b
g4	52	1"–8 UNC [M24x3], 3 1/2" [89] Long Heavy Hex Head Bolt	ASTM F3125 Gr. A325 Type 1	ASTM A153 or B695 Class 55 or F1136 Gr. 3 or F2329 or F2833 Gr. 1	FBX24b
g5	52	1"–8 UNC [M24x3], 2 1/4" [57] Long Heavy Hex Head Bolt	ASTM F3125 Gr. A325 Type 1	ASTM A153 or B695 Class 55 or F1136 Gr. 3 or F2329 or F2833 Gr. 1	FBX24b
g6	54	1"–8 UNC [M24x3], 1 1/2" [38] Long Hex Head Bolt	ASTM A449	ASTM A153 or B695 Class 55 or F2329	FBX24b
g7	54	3"x3"x1/4" [76x76x6] Plate	ASTM A36	ASTM A123	—
h1	296	3/4 –10 UNC [M20x2.5] Heavy Hex Nut	ASTM A563DH	ASTM A153 or B695 Class 55 or F2329	FNX20b
i1	368	3/4" [19] Dia. Hardened Flat Washer	ASTM F436	ASTM A153 or B695 Class 55 or F1136 Gr. 3 or F2329	FWC20b
i2	156	2 1/4"x2 1/4"x1/4" [57x57x6] Square Washer	ASTM A36	ASTM A123	—
i3	28	3/4"–10 UNC [M20x2.5], 12" [305] Long Threaded Rod	ASTM F1554 Gr. 36	ASTM A153 or B695 Class 55 or F2329	FRR20a



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Bill of Materials

DWG. NAME.
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UNITS: in.[mm]

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REV.	DATE OF ISSUE	Page	NATURE OF CHANGES	REVIEWER	REVISED BY
0	8/29/2018	–	Created from STBR-1_R7.	–	GRL
		1	Post nos. 15–16 switched to top mounted. Impact location added. Note edit.		
		2	Dimension edit.		
		5	Post numbers updated.		
		10	Sub assembly BOM description edit: a6–7.		
		11	Part a6 length and part a7 thickness edit.		
		20	Part d1 elevation view slot location edit.		
		21	Test slab length and height edit. Spacing between f4 edit.		
		22	Test slab depth edit.		
		23	Part f3 length edit. Part f4 length and height edit. Bill of bars description edit for parts f3–4. Parts f2–5 qty. edit.		
		25	Part g1 thickness edit.		
		BOM	Qty: a1, a3–7, e1–2, f2–5, g1–4, h5–h8, i1, i3–5. Description: a6–7, f3–4, g1.		
1	8/30/2018	–	Posts move from "A" to "B" location. Rail height edits. General shift throughout.	JEK	JEK
		2	Dim add. Post no. edit.		
		4	Post no. edit. Sheet title edit.		
		7	Table quantity edit.		
		8	Part a1 edit. Dim add. Dim shifts.		
		10	Table quantity edit.		
		11	Part a6 edit. Dim add. Dim shifts.		
		22	Dim adds. Table quantity edit.		
		23	Part f4 edit. Table edit (length).		
		24	Table quantity edit.		
		BOM	Qty: a1, a3–7, h5–6, i1, i3–5. Description: a1, a6, f4.		
2	8/30/2018	1	Impact location fix.	OP	JEK
3	9/21/2018	–	Nuts/bolts separated. Labels added for nuts throughout. Sheets removed: 16–19.	SKR/OP	JEK
		1	Note 1 correction.		
		2	Soil features added. View label edit.		
		6	Nominal gap edit.		
		7	Weld edits.		

3	9/21/2018	8	Part a1, a2 edits.	SKR/OP	JEK
		9	Dim adds.		
		11	Part a6 edit.		
		12	Dim edit.		
		13	Part b1 edits.		
		14	Dim edit.		
		15	Part c2 edits.		
		16	Parts d1, d2 edits.		
		17	Note 1 edit.		
		18	Assembly shift. Note 3, 4 edit.		
		19	Parts e2, e5 edits. Table edits.		
		20	Note 2 edit.		
		22	Rearranged for nuts. Labels, dims, views.		
		BOM	Asterisk removals, note removed. Nuts/bolts split. Removed: e1-2. New: h2. Change: i5 -> h1. Part # edits for series f-h. Qty: f3. Description: b1, c2, d1-2, e2, e5, g1-5. Mtrl: a7, g1-5.		
4	9/28/2018	-	Replaced Part(s): g3 with g2, h2 with h1, i2 with i1. Added detail sheet, notes added, hardware changes.	RKF/OP	MKB
		1	Note 3 added.		
		2	Compacted soil profile change, notes added.		
		5	New sheet added, new Detail E, corresponding detail views re-lettered.		
		8	Note edit.		
		14	Part b1 edits.		
		17	Part d2 edits.		
		23	General shift, Parts g3, h2, and i2 removed.		
		BOM	Removed Parts g3, h2, and i2. Corresponding item no. shift resulting. Material Spec: g3		
5	10/4/2018	-	Note edits, Hardware edits.	JEK	MKB
		1	Note edits to match test designation.		
		BOM	Material Spec: d1,d2		
6	10/11/2018	-	Test slab change, Note additions, Weld note changes.	RKF	MKB
		6/7	Showed splice tubes/plates as hidden lines in view.		
		8	Added note to reflect how welds should be done.		
		18	Dim add, Note add.		

6	10/11/2018	19	Part e2 change, resulting change in test slab assembly, note add.	RKF	MKB
		20	Part e2 change.		
		BOM	Description: d1,e2,f4 Material Spec: e1		
7	10/15/2018	2	Dim add.	JEK	MKB
		20	Bill of Bars edit.		
8	10/16/2018	8	Note 2 edited. Note 3 added.	PM	MBD
		8,13, 15,21	Treatment specification of components changed to "See Assembly"		
9	11/12/2018	9	Part a1, a2 edit.	OP/JCH	JEK
		12	Part a6 edit.		
		17	Part d1, d2 edit.		
		20	Table update (e2).		
		BOM	Description: e2. Treatment: e2-5.		
10	12/3/2018	20	Note added.	JCH	AJS
11	1/7/2019	13	Note add.	OP	JEK
		15	Note add.		
12	1/11/2019	13	Note edit	JEK	AJS
		15	Note edit		