

- Notes: (1) Test shall be performed according to test designation no. 3-11 of MASH.
 (2) The impact location is 51 3/16" [1,300] upstream of the joint between barrier nos. 8 and 9.
 (3) Use native soil fill under asphalt.
 (4) The ends of the barrier should be pulled until there is no slack in the joints.



Midwest Roadside
Safety Facility

WI PCB Anchorage Tie-
Down
Test No. WITD-3
System Layout

DWG. NAME.
WITD-3_R4

SCALE: 1:270
UNITS: in.[mm]

SHEET:
1 of 12

DATE:
3/24/2021

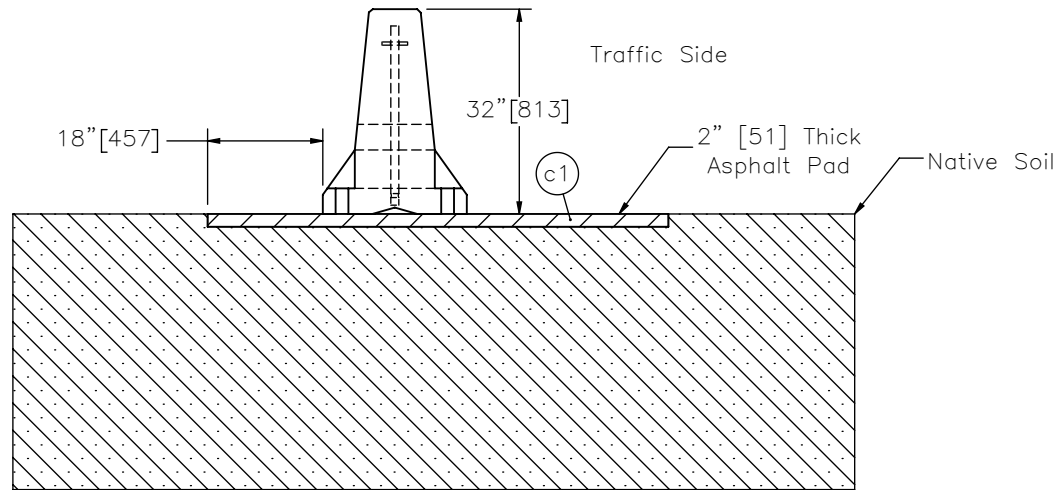
DRAWN BY:
RWB

REV. BY:
RWB

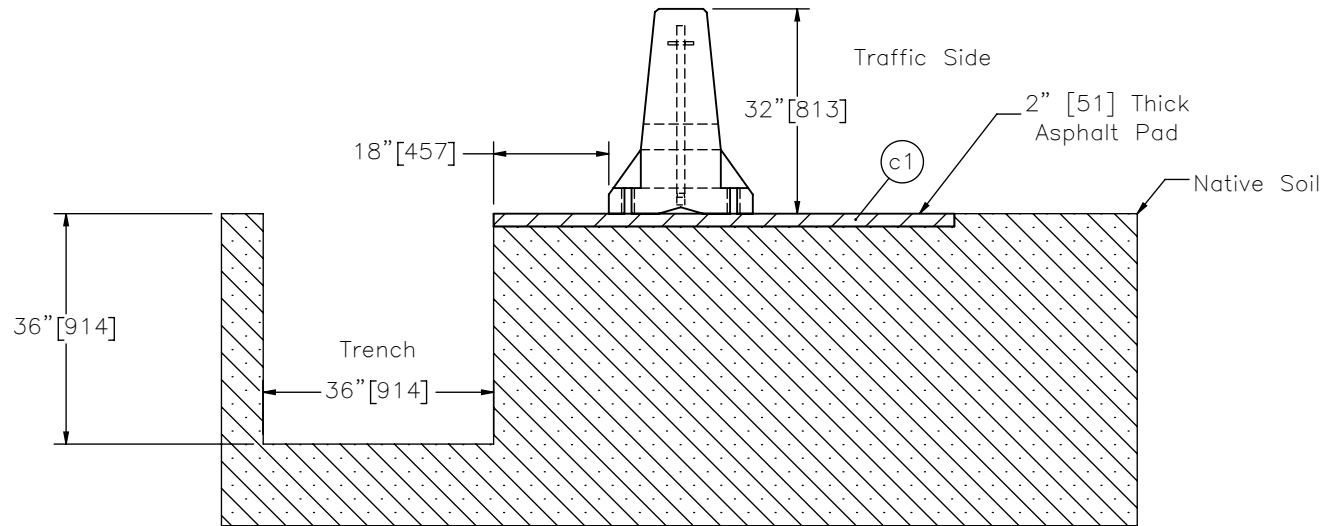


SCALE: 1:20
UNITS: in.[mm]

	REV. BY:
n]	RWB



SECTION B-B



SECTION C-C



Midwest Roadside
Safety Facility

WI PCB Anchorage Tie-
Down
Test No. WITD-3

System Profile

DWG. NAME.
WITD-3_R4

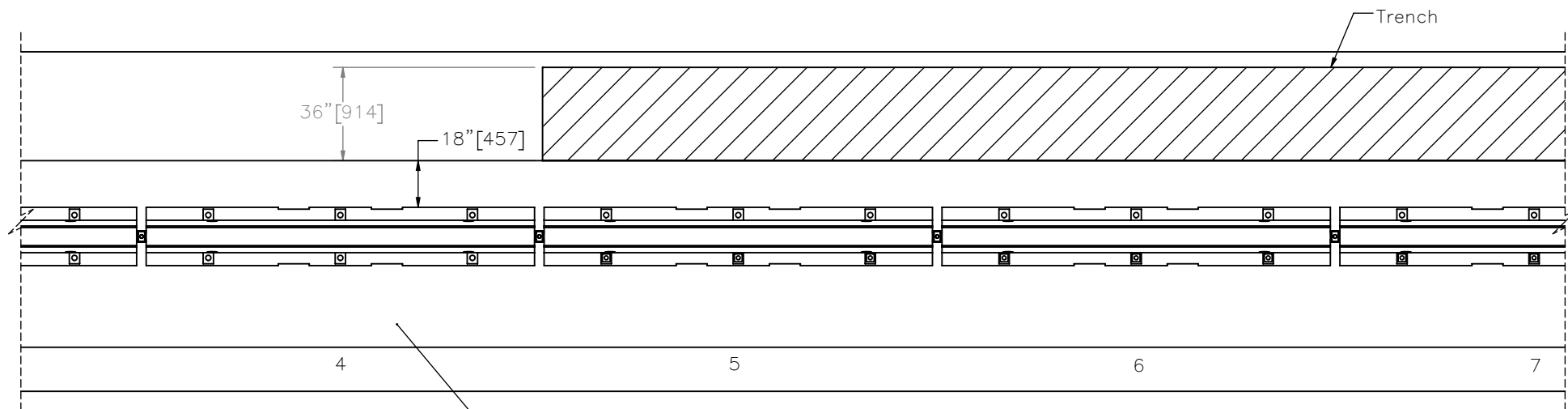
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UNITS: in.[mm]

SHEET:
3 of 12

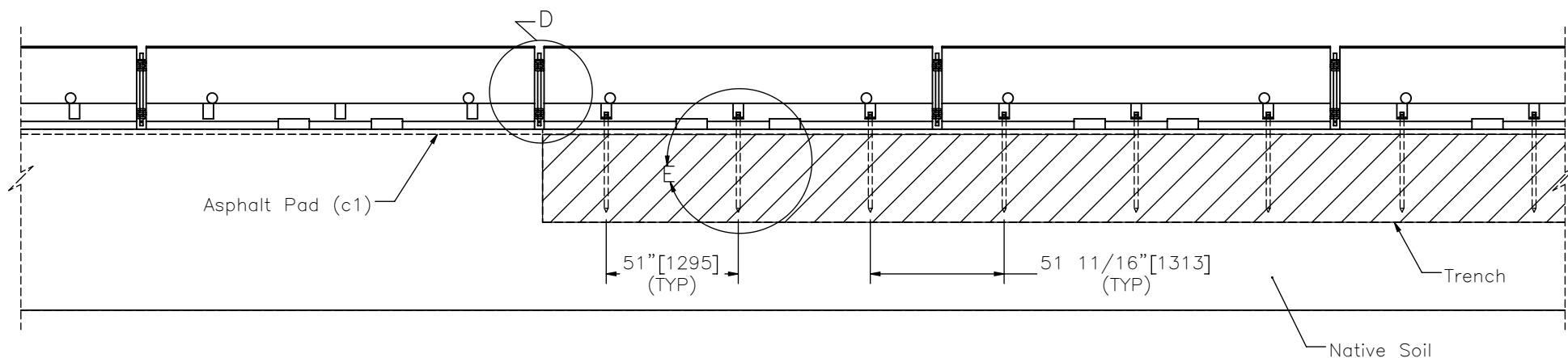
DATE:
3/24/2021

DRAWN BY:
RWB

REV. BY:
RWB



PLAN VIEW



ELEVATION VIEW

Note: (1) Barrier nos. 5–13 are anchored in all traffic-side bolt pockets.



Midwest Roadside
Safety Facility

WI PCB Anchorage Tie-
Down
Test No. WITD-3

Concrete Barrier Assembly

DWG. NAME.
WITD-3_R4

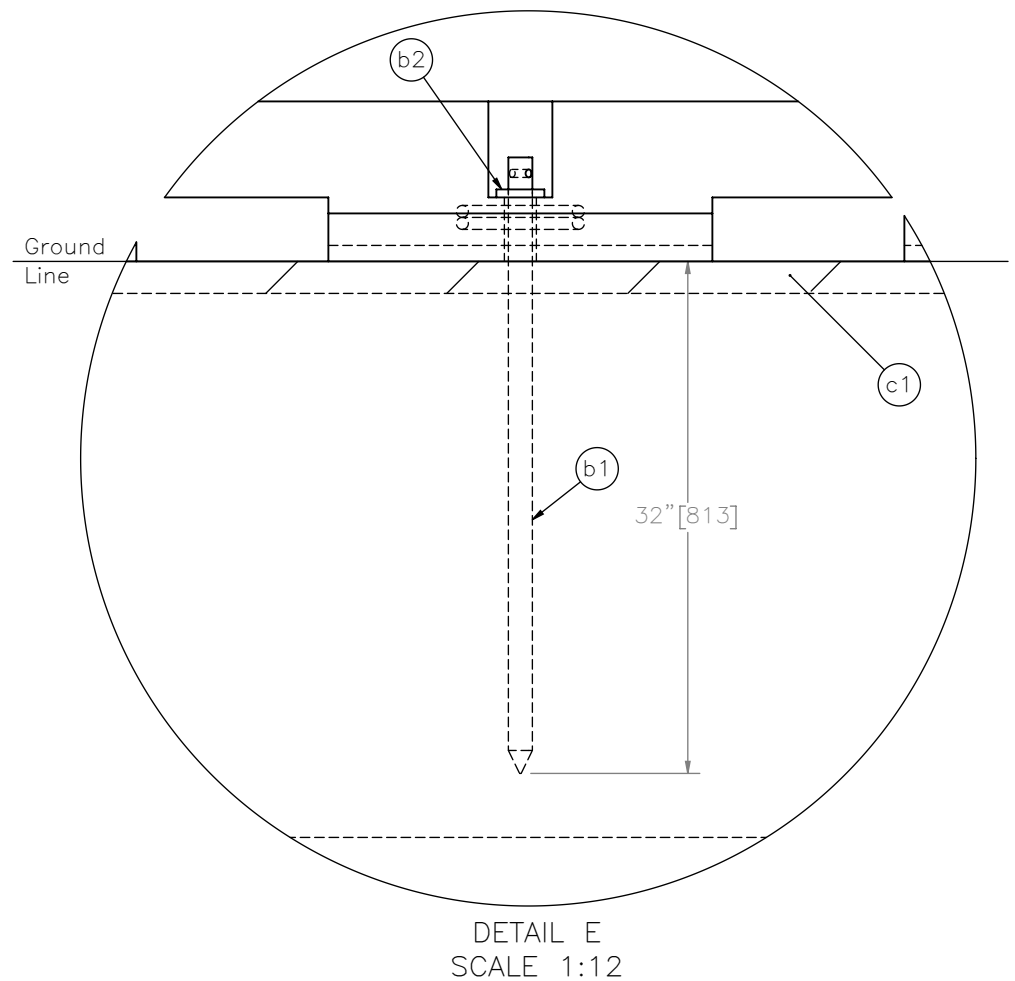
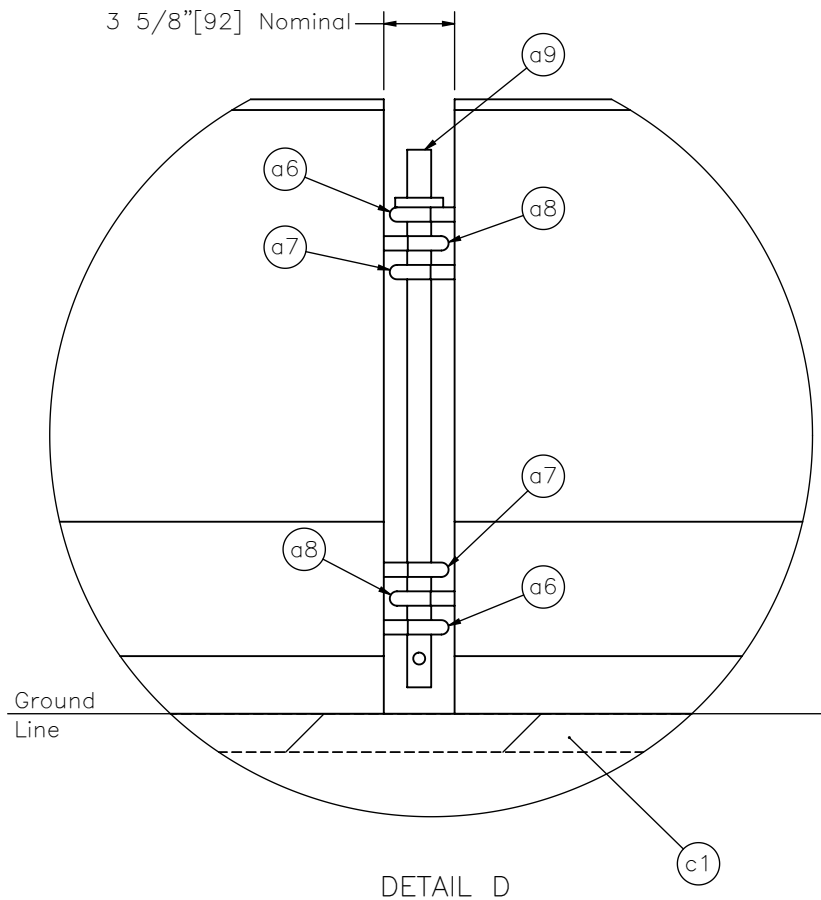
SCALE: 1:60
UNITS: in.[mm]

SHEET:
4 of 12

DATE:
3/24/2021

DRAWN BY:
RWB

REV. BY:
RWB



Note: (1) Barrier nos. 5–13 are anchored in all traffic-side bolt pockets.



Midwest Roadside
Safety Facility

WI PCB Anchorage Tie-
Down
Test No. WITD-3

Connection and Anchorage
Details

DWG. NAME.
WITD-3_R4

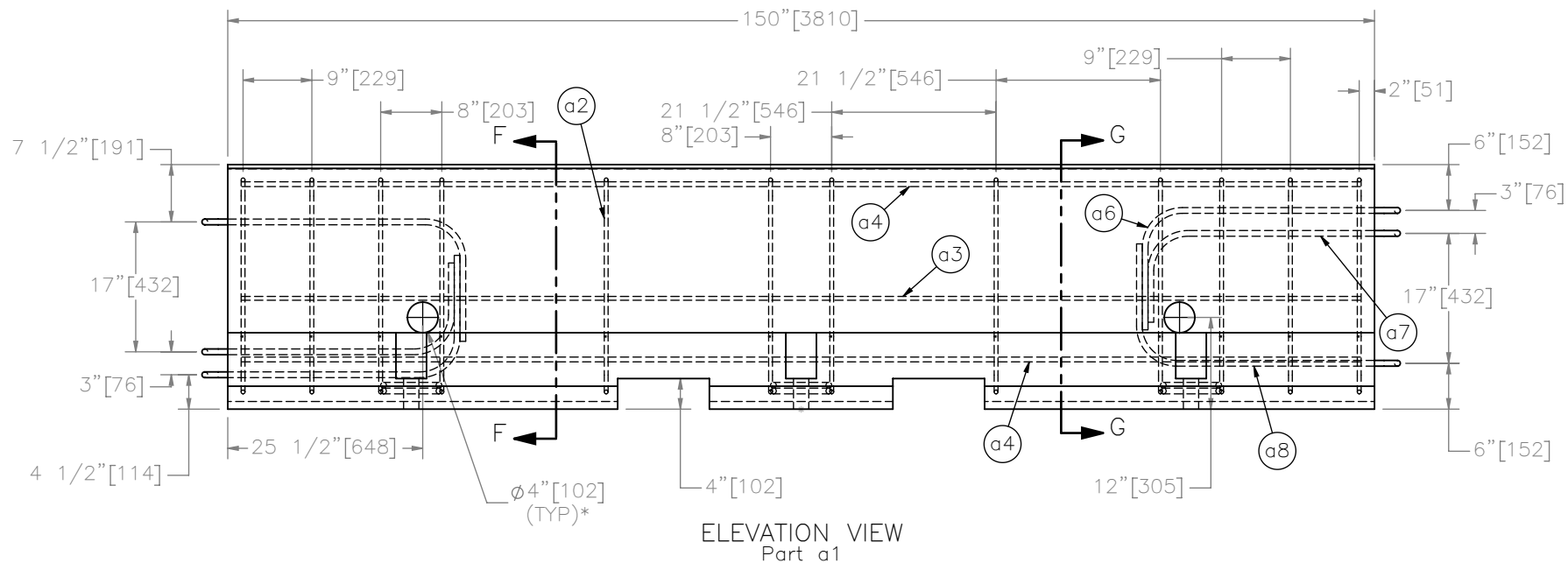
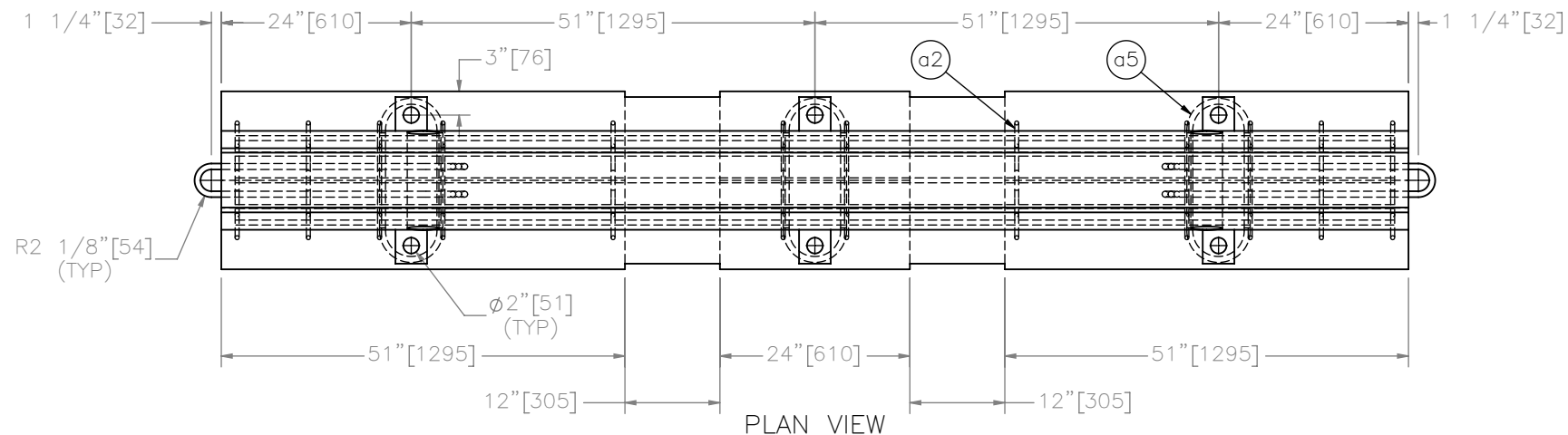
SCALE: 1:10
UNITS: in.[mm]

SHEET:
5 of 12

DATE:
3/24/2021

DRAWN BY:
RWB

REV. BY:
RWB



*Hole in tested barrier 1/2" [25] smaller than design.



Midwest Roadside
Safety Facility

WI PCB Anchorage Tie-
Down
Test No. WITD-3

Portable Concrete Barrier
Details

DWG. NAME.
WITD-3_R4

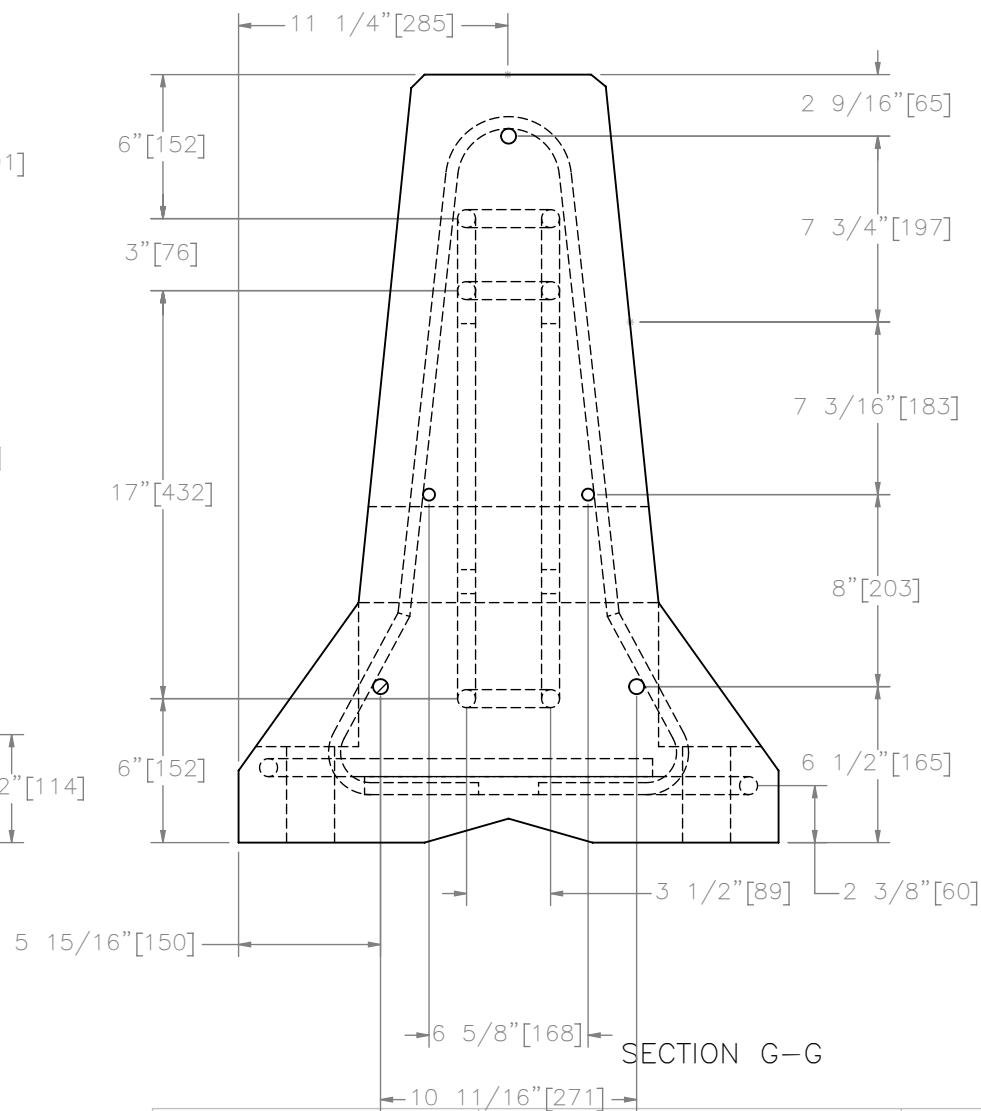
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SHEET:
6 of 12

DATE:
3/24/2021

DRAWN BY:
RWB

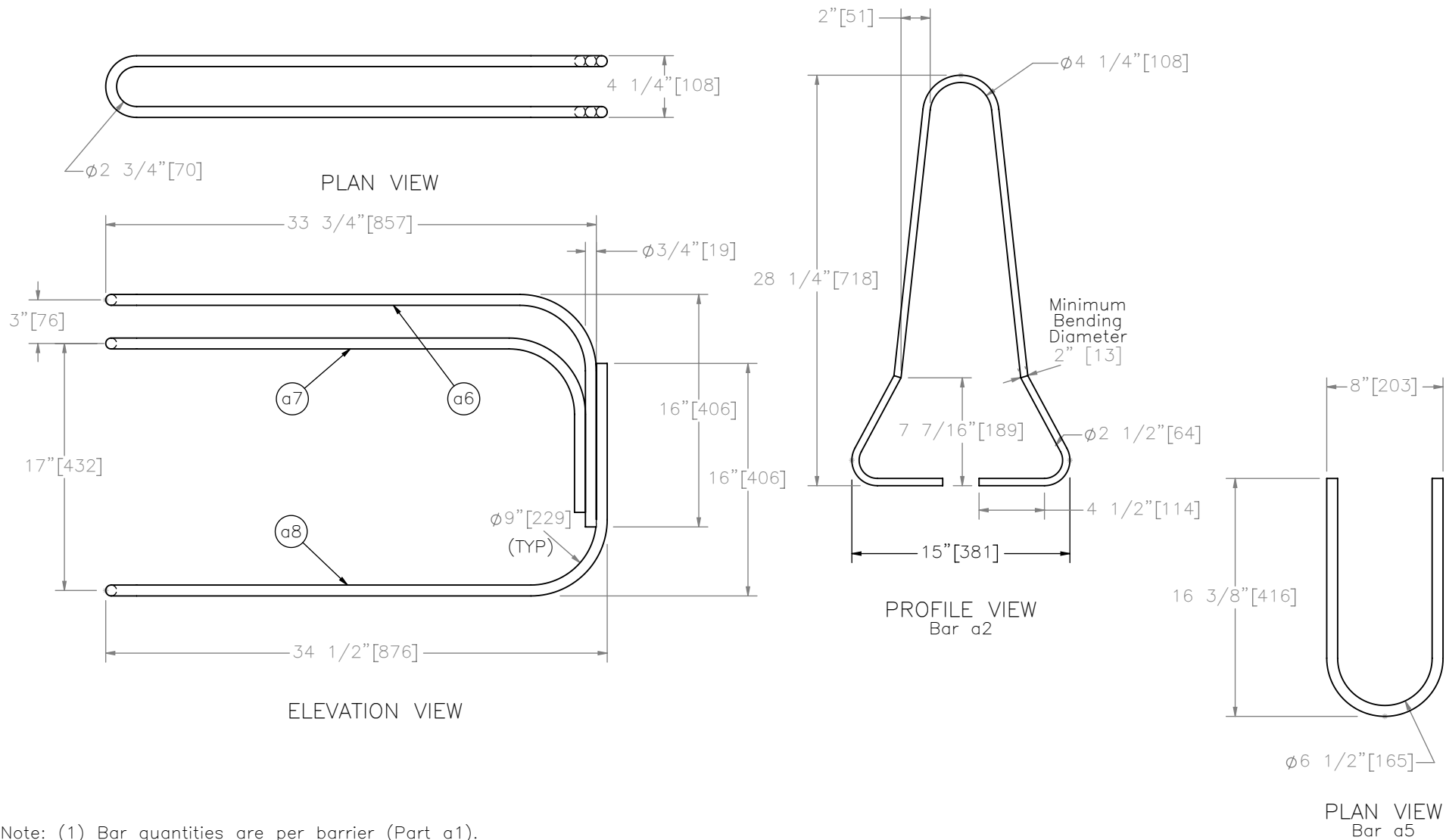
REV. BY:
RWB

Midwest Roadside
Safety Facility

Portable Concrete Barrier Details

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

	REV. BY:
n]	RWB



Note: (1) Bar quantities are per barrier (Part a1).

Bill of Bars				
Bar	QTY	Size	Total Length	Material
a2	12	#4	72"[1829]	A615 Gr.60
a3	2	#4	146"[3708]	A615 Gr.60
a4	3	#5	146"[3708]	A615 Gr.60
a5	6	#6	35"[889]	A615 Gr.60
a6	2	#6	101"[2565]	A709 Gr.70 or A706 Gr.60
a7	2	#6	91"[2311]	A709 Gr.70 or A706 Gr.60
a8	2	#6	102"[2591]	A709 Gr.70 or A706 Gr.60



Midwest Roadside
Safety Facility

WI PCB Anchorage Tie-
Down
Test No. WITD-3

Portable Concrete Barrier Rebar
Details

DWG. NAME.
WITD-3_R4

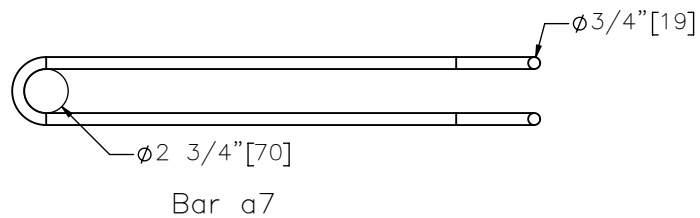
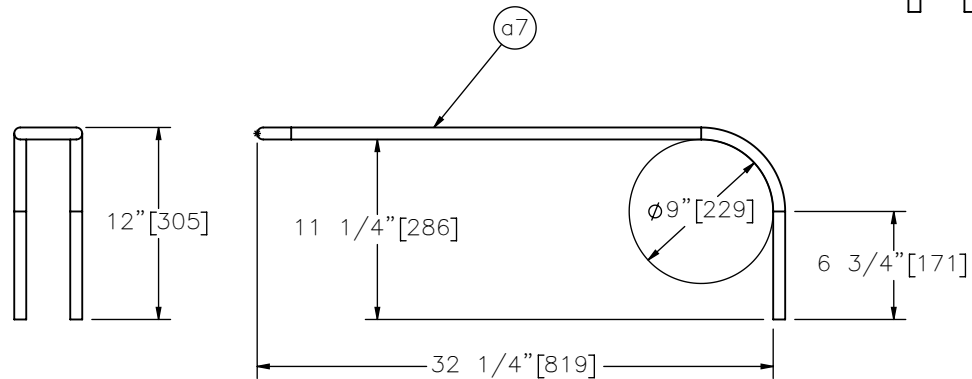
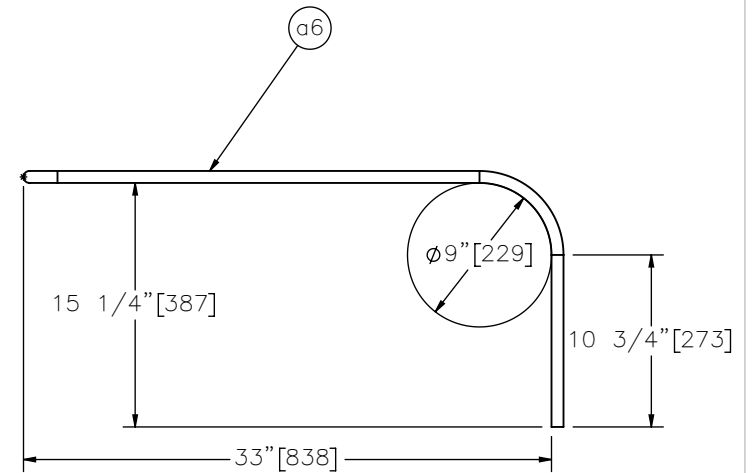
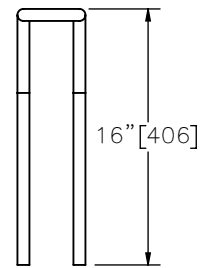
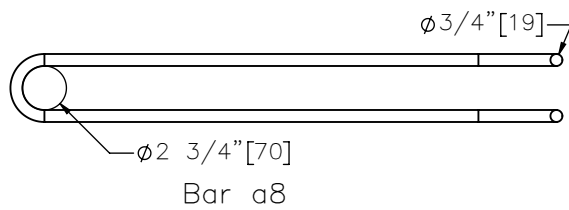
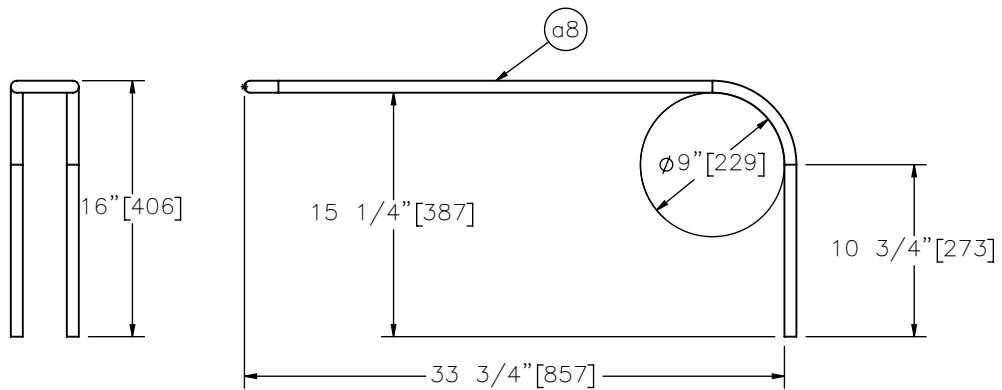
SCALE: 1:10
UNITS: in.[mm]

SHEET:
8 of 12

DATE:
3/24/2021

DRAWN BY:
RWB

REV. BY:
RWB



Midwest Roadside
Safety Facility

WI PCB Anchorage Tie-
Down
Test No. WITD-3

Portable Concrete Barrier Loop
Bar Details

DWG. NAME:
WITD-3_R4

SCALE: 1:12
UNITS: in.[mm]

SHEET:
9 of 12

DATE:
3/24/2021

DRAWN BY:
RWB

REV. BY:
RWB



WI PCB Anchorage Tie-
Down
Test No. WITD-3
Connector Pin Details

DWG. NAME.	WITD-3_R4
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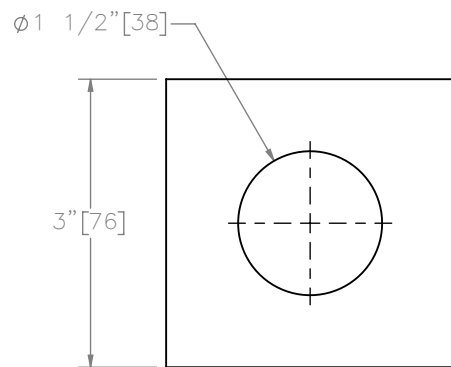
SCALE: 1:6	
UNITS: in.[mm]	

SHEET:
10 of 12

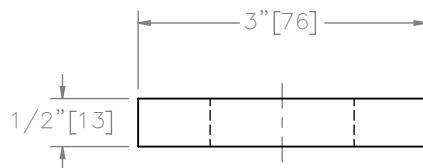
DATE:
3/24/2021

DRAWN BY:
RWB

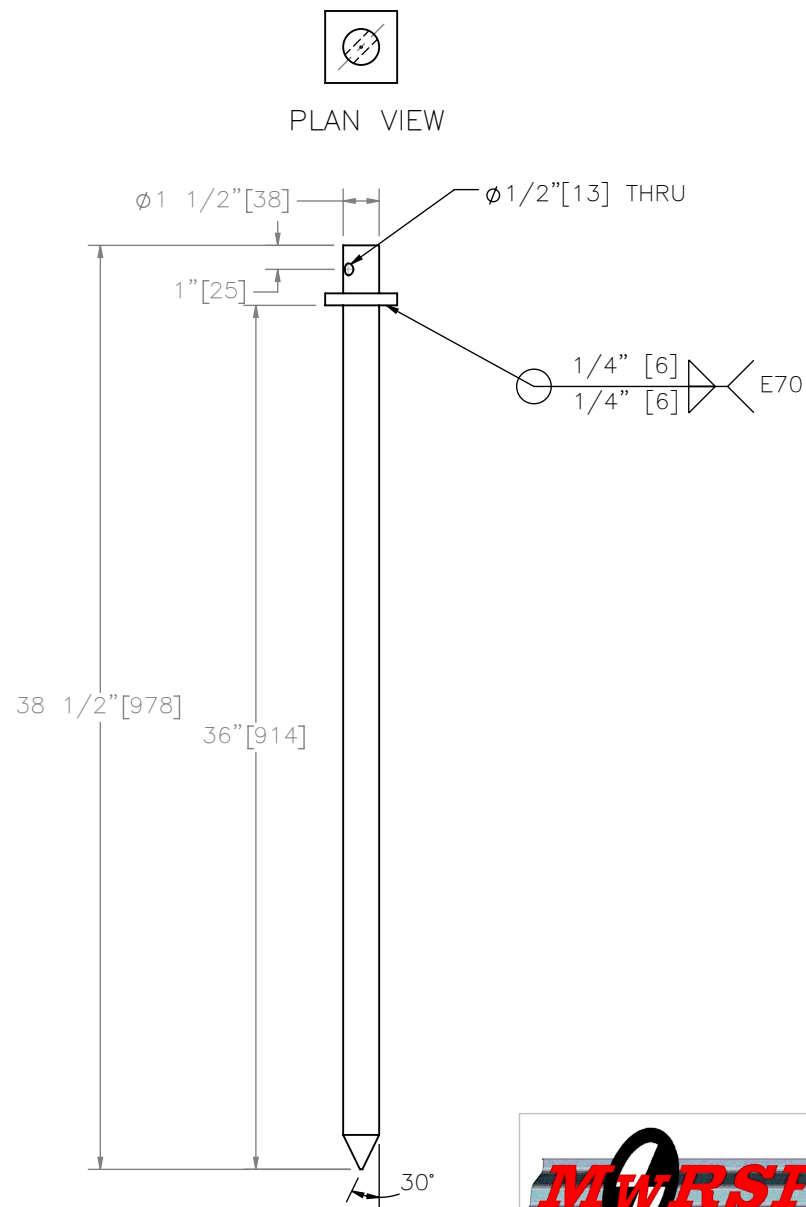
REV. BY:	
RWB	



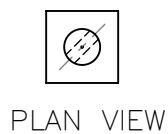
PLAN VIEW



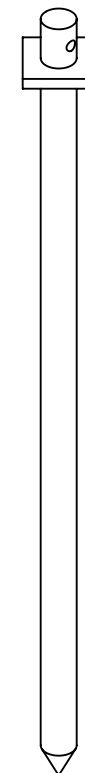
ELEVATION VIEW
SCALE 1:2
Part b2



ELEVATION VIEW
Part b1



PLAN VIEW



ISOMETRIC VIEW



Midwest Roadside
Safety Facility

WI PCB Anchorage Tie-
Down
Test No. WITD-3
Anchor Pin Details

DWG. NAME.
WITD-3_R4

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

SHEET:
11 of 12
DATE:
3/24/2021
DRAWN BY:
RWB
REV. BY:
RWB

Item No.	QTY.	Description	Material Specification	Galvanization Specification	Hardware Guide
a1	16	Portable Concrete Barrier	Min f'c = 5,000 psi [34.5 MPa]	—	SWC09
a2	192	1/2" [13] Dia., 72" [1829] Long Form Bar	ASTM A615 Gr. 60	—	SWC09*
a3	32	1/2" [13] Dia., 146" [3708] Long Longitudinal Bar	ASTM A615 Gr. 60	—	SWC09*
a4	48	5/8" [16] Dia., 146" [3708] Long Longitudinal Bar	ASTM A615 Gr. 60	—	SWC09*
a5	96	3/4" [19] Dia., 36" [914] Long Anchor Loop Bar	ASTM A615 Gr. 60	—	SWC09*
a6	32	3/4" [19] Dia., 101" [2565] Long Connection Loop Bar	ASTM A709 Gr. 70 or A706 Gr. 60	—	SWC09*
a7	32	3/4" [19] Dia., 91" [2311] Long Connection Loop Bar	ASTM A709 Gr. 70 or A706 Gr. 60	—	SWC09*
a8	32	3/4" [19] Dia., 102" [2591] Long Connection Loop Bar	ASTM A709 Gr. 70 or A706 Gr. 60	—	SWC09*
a9	15	1 1/4" [32] Dia., 28" [711] Long Connector Pin	ASTM A36	—	FMW02
b1	27	1 1/2" [38] Dia., 38 1/2" [978] Long Anchor Pin	ASTM A36	ASTM A123 ***	FRS01
b2	27	3"x3"x1/2" [76x76x13] Washer Plate	ASTM A36	ASTM A123 ***	FRS01**
c1	1	2400"x72"x2" [60,960x183x51] Asphalt Pad	NE SPR Mix with 64—34 Grade Binder	—	—

* Included in SWC09 hardware guide designation.

** Included in FRS01 hardware guide designation.

*** Component does not need to be galvanized for testing purposes.



Midwest Roadside
Safety Facility

WI PCB Anchorage Tie—
Down
Test No. WITD—3

Bill of Materials

DWG. NAME.
WITD—3_R4

SCALE: None
UNITS: in.[mm]

SHEET:
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DATE:
3/24/2021

DRAWN BY:
RWB

REV. BY:
RWB