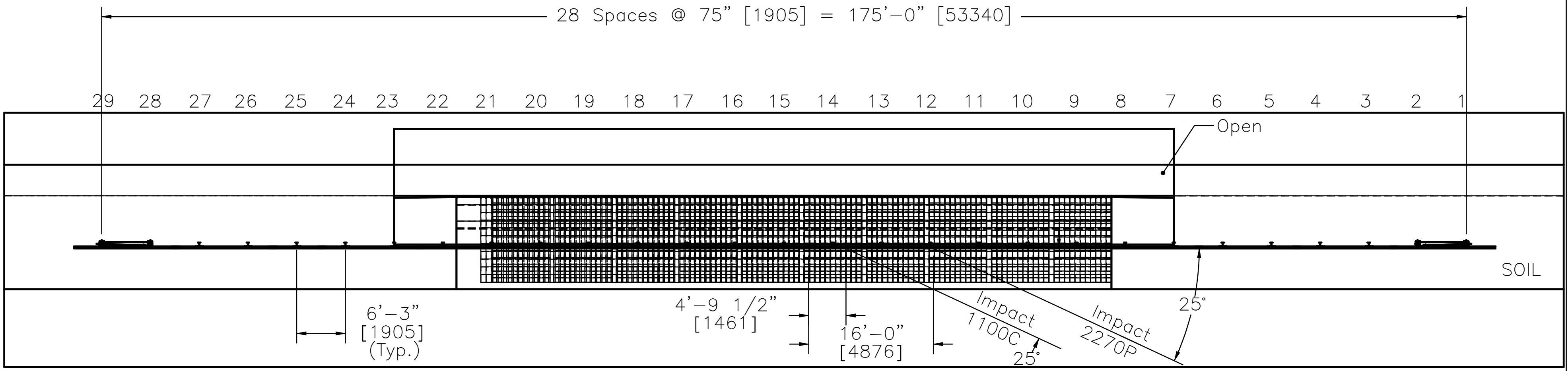
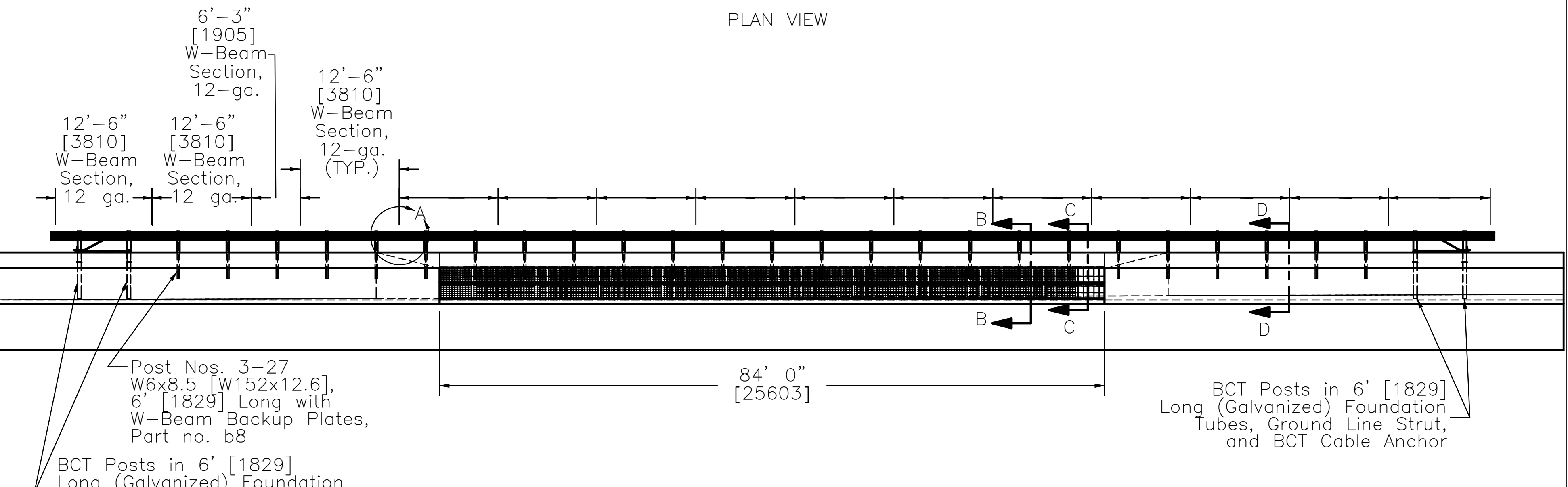


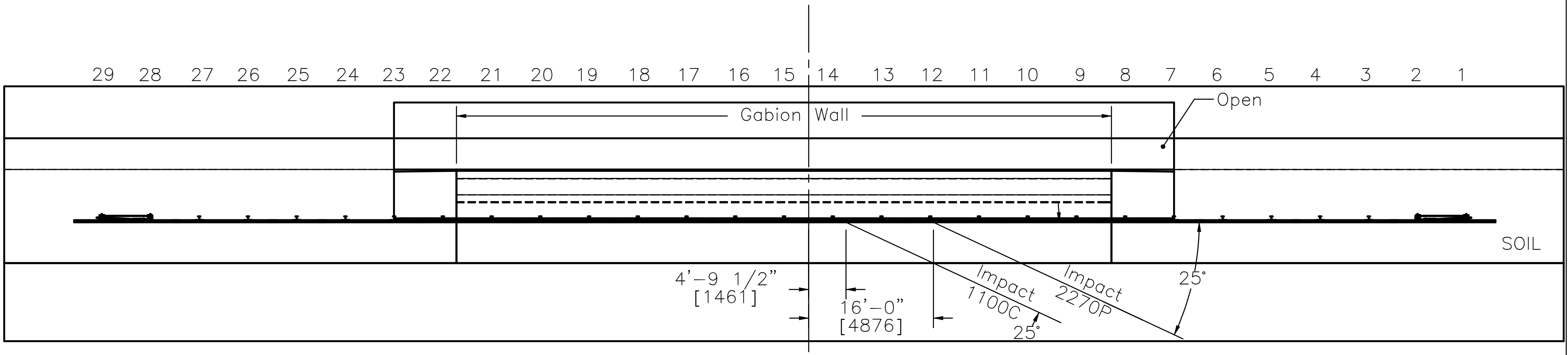
PLAN VIEW



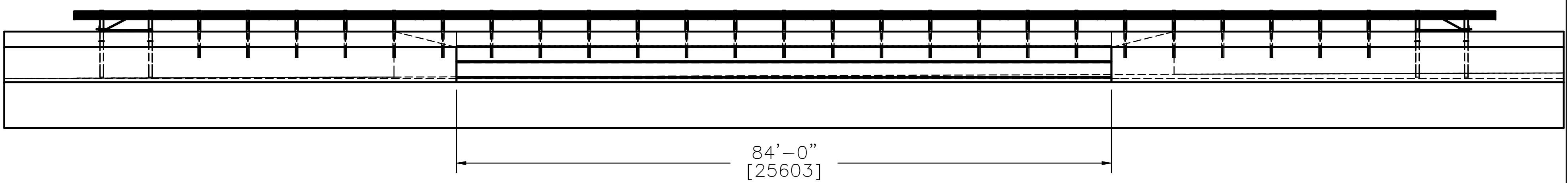
ELEVATION VIEW

Note: (1) Impact locations are measured from the centerline of the splice between post nos. 14 and 15. Impacts for the 1100C and 2270P crash tests are located 4'-9 1/2" [1461] and 16'-0" [4876] upstream of the centerline of the splice, respectively.

MwRSF Midwest Roadside Safety Facility	FHWA Gabion Wall Full-Scale Test Program System Layout	SHEET: 1 of 17 DATE: 9/30/2009 DRAWN BY: EAJ/RJT
	DWG. NAME. fhwa gabion wall_v16 | SCALE: 1:235 UNITS: In.[mm]	REV. BY: RKF/KAL



PLAN VIEW



ELEVATION VIEW

Notes: (1) Cap, backing, prongless, and standard mats are hidden to show impact locations for the 1100C and 2270P crash tests.

(2) The non-critical region has been determined to be the location between post nos. 3 through 8 and 22 through 27.

Midwest Roadside Safety Facility

FHWA Gabion Wall Full-Scale Test Program

System Layout

SHEET: 2 of 17

DATE: 9/30/2009

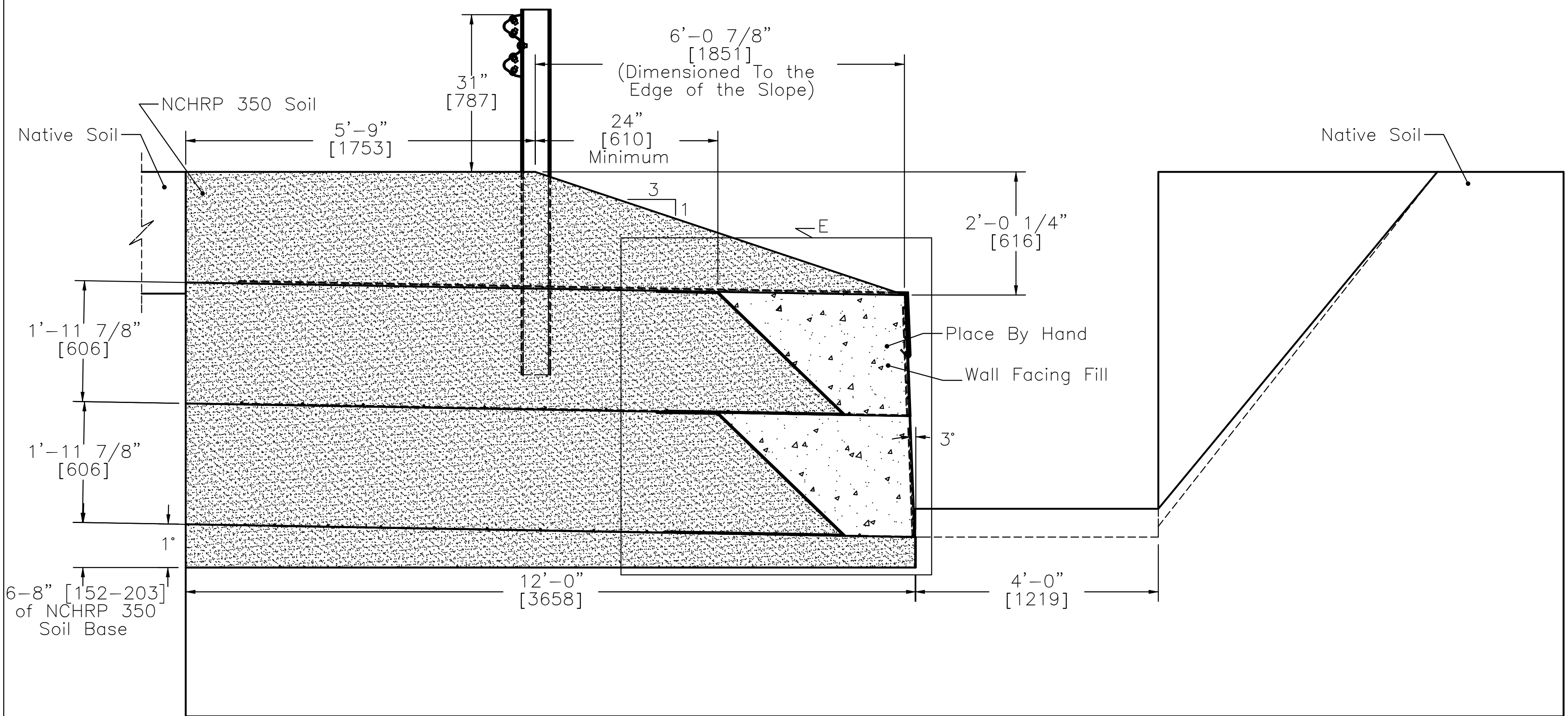
DRAWN BY: EAJ/RJT

DWG. NAME. fhwa gabion wall_v16

SCALE: 1:235

UNITS: In.[mm]

REV. BY: RKF/KAL



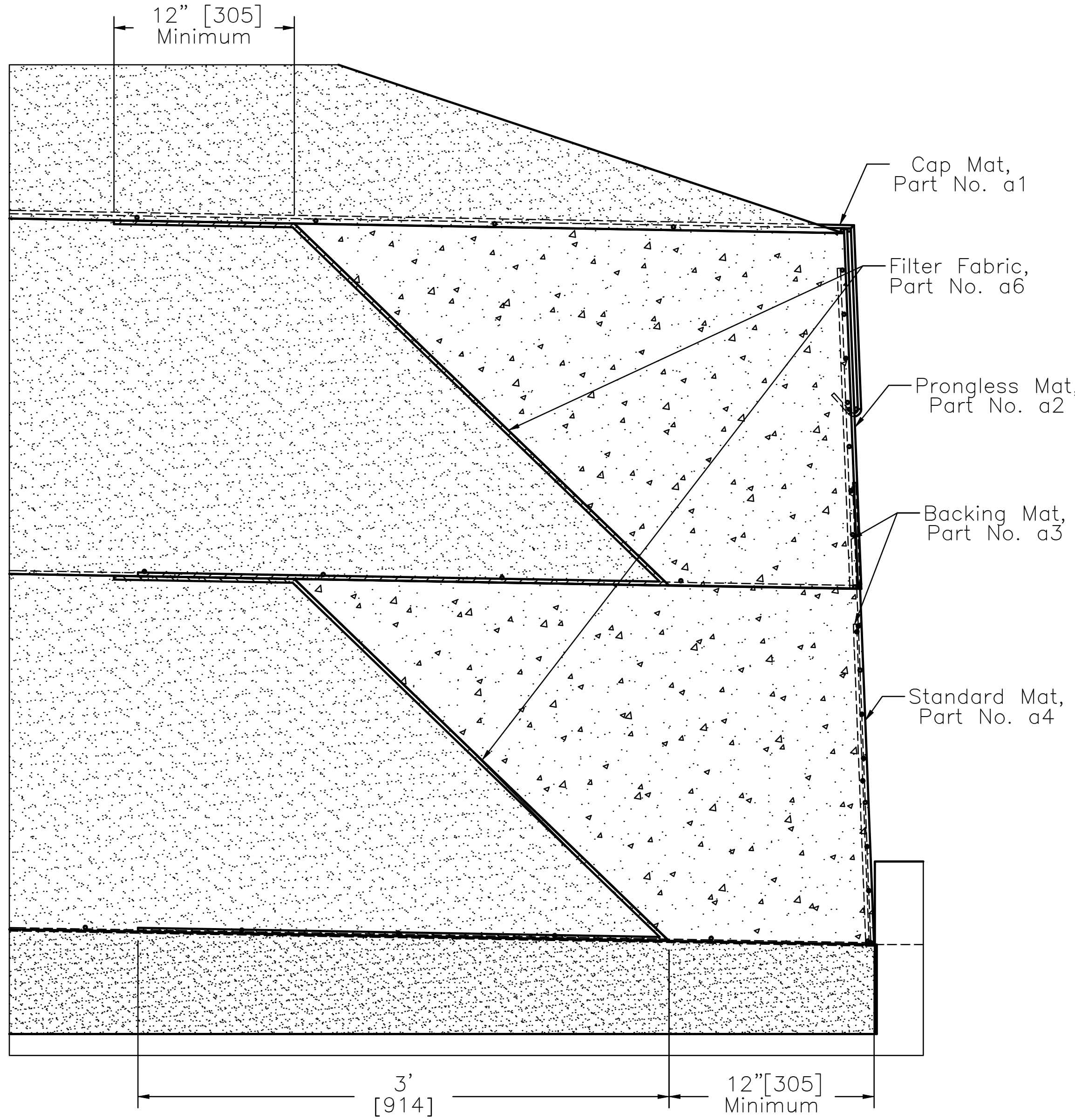
SECTION B-B

Notes: (1) Following the construction of the wire-faced, stone Gabion Wall, the steel guardrail posts are to be driven into the ground at the location of the slope break point.

(2) For steel posts not placed on the Gabion Wall but upstream and downstream to it, posts can be installed using the auger and backfill method or the driven method but placed into 2 ft [610] diameter holes with HE8 compacted fill when placed outside of the critical region.

(3) NCHRP 350 Soil or an other soil type conforming to FHWA standards in subsection 704.13(a) is to be used for the Select Wall Backfill.

Midwest Roadside Safety Facility	FHWA Gabion Wall Full-Scale Test Program Gabion Wall Details	SHEET: 3 of 17 DATE: 9/30/2009 DRAWN BY: EAJ/RJT
	DWG. NAME. fhwa gabion wall_v16 | SCALE: 1:30 UNITS: In.[mm]	REV. BY: RKF/KAL



DETAIL E

MwRSF

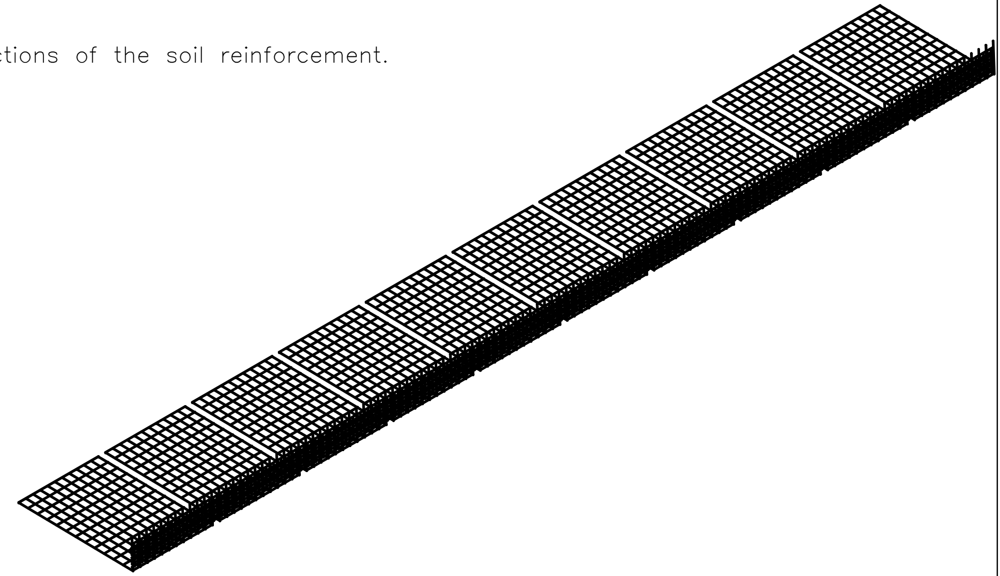
Midwest Roadside Safety Facility

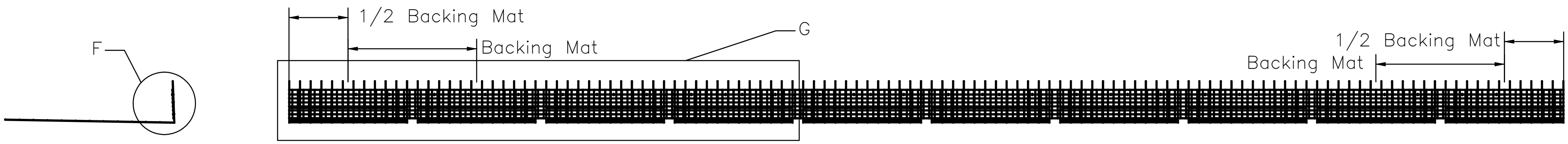
FHWA Gabion Wall Full-Scale Test Program

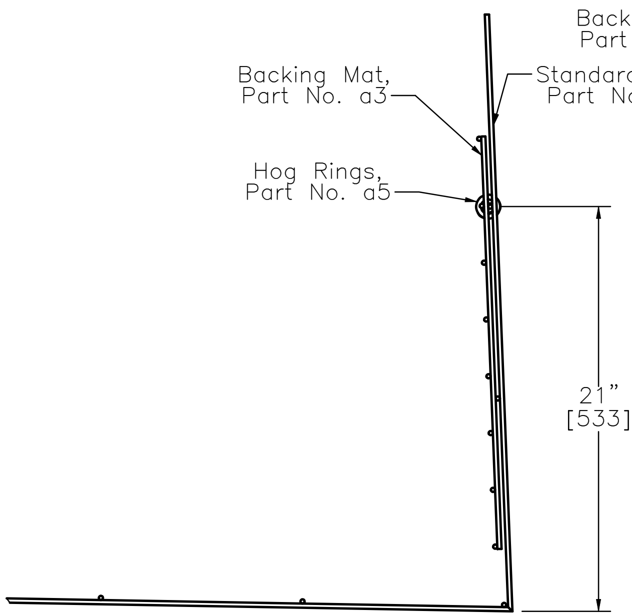
Soil Details

SHEET:	4 of 17
DATE:	9/30/2009
DRAWN BY:	EAJ/RJT
DWG. NAME.	fhwa gabion wall_v16
SCALE:	1:12
UNITS:	In.[mm]
REV. BY:	RKF/KAL

Note: (1) One backing mat will be cut in half and placed at the end sections of the soil reinforcement.



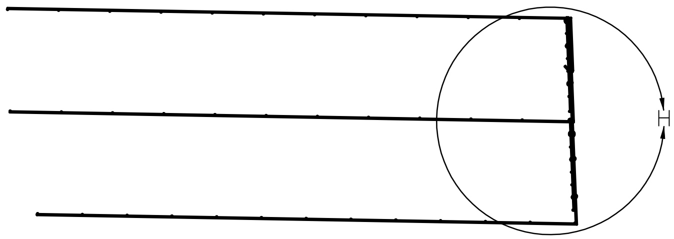


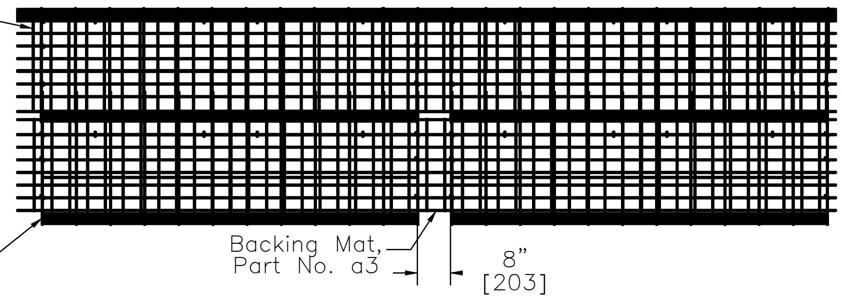


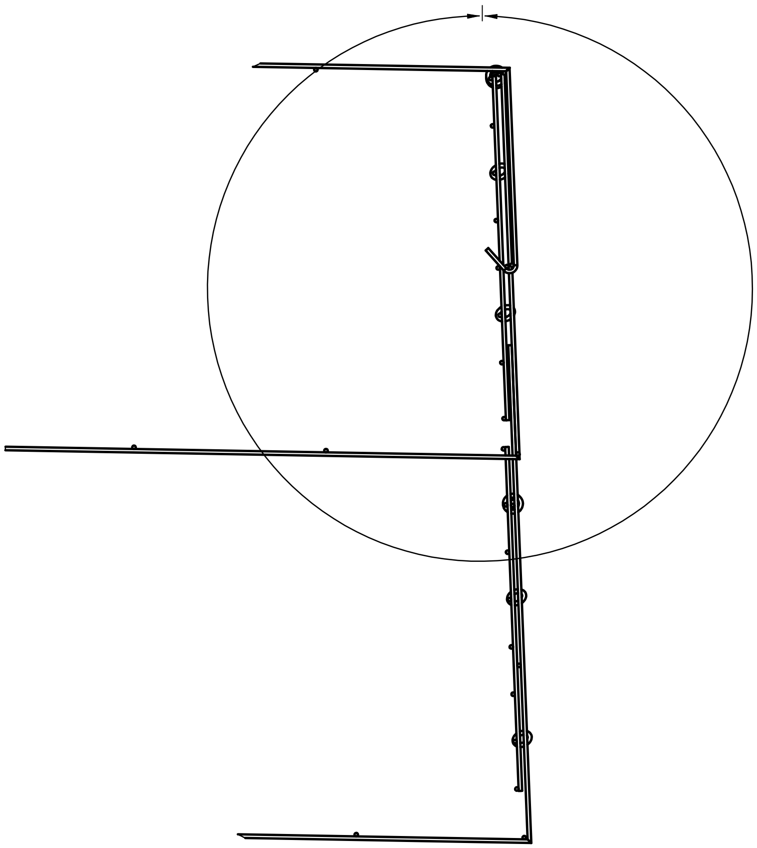
DETAIL F
SCALE 1 : 10

DETAIL G
SCALE 2 : 115

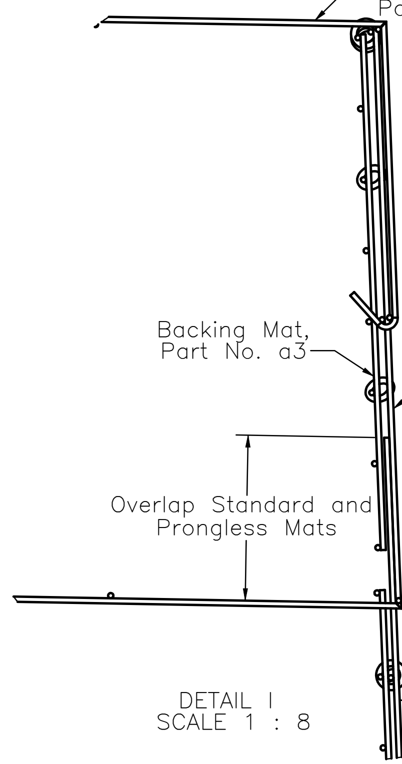
MwRSF Midwest Roadside Safety Facility	FHWA Gabion Wall Full-Scale Test Program Soil Reinforcement Placement and Spacing – First Lift	SHEET: 5 of 17 DATE: 9/30/2009 DRAWN BY: EAJ/RJT
	DWG. NAME. fhwa gabion wall_v16 — SCALE: 1:115, UNITS: In.[mm]	REV. BY: RKF/KAL







DETAIL H
SCALE 1 : 12



DETAIL I
SCALE 1 : 8

Note: (1) The soil cap is attached to the prongless mat by hooking one of the transverse wires on the prongless mat with the hooks on the end of the soil cap.

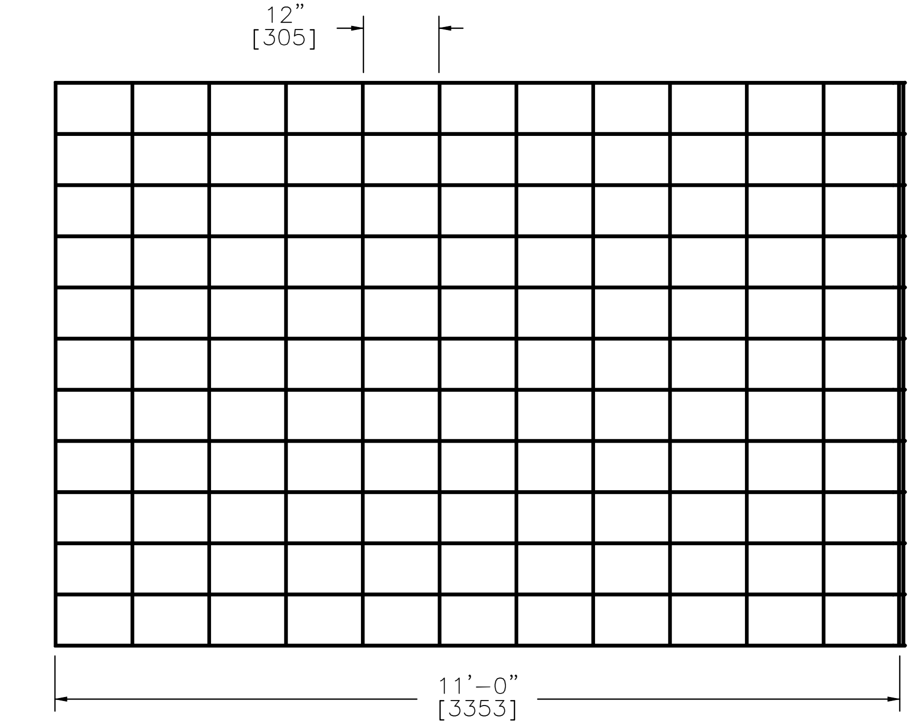
MwRSF

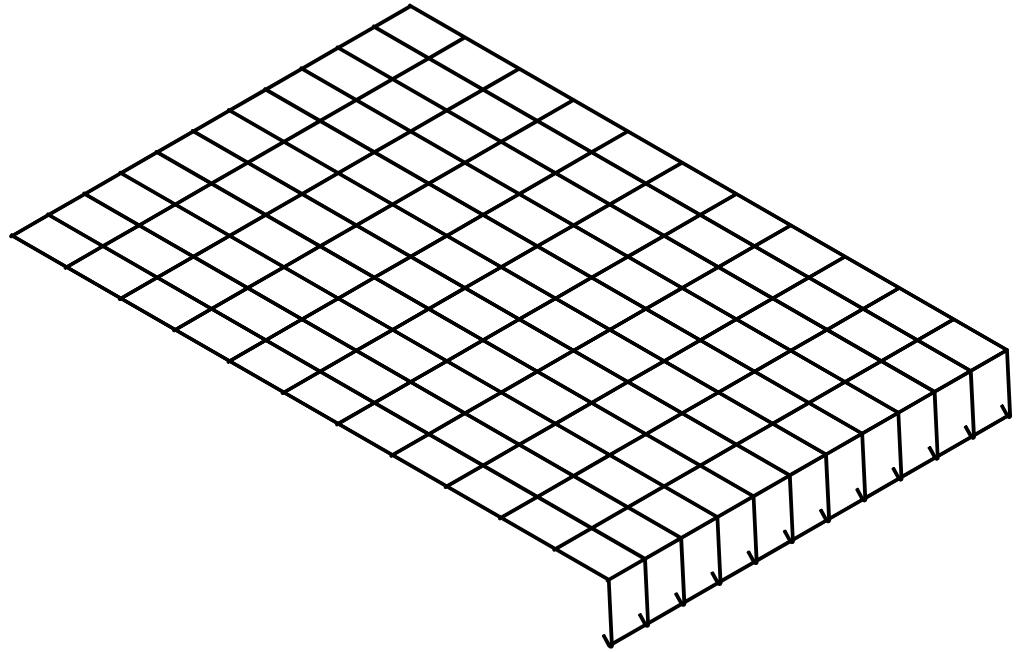
Midwest Roadside Safety Facility

FHWA Gabion Wall
Full–Scale Test Program

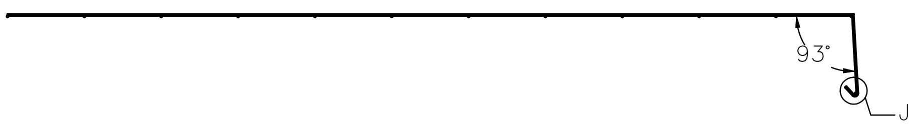
Gabion Wall Mat Assembly

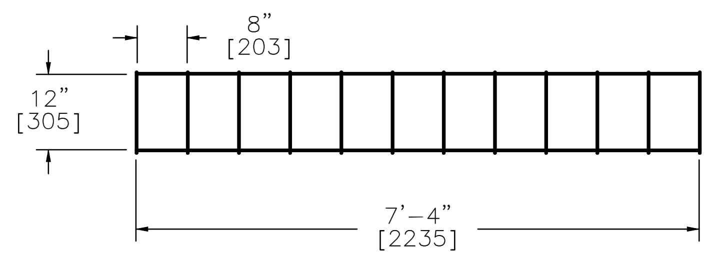
SHEET: 6 of 17	DATE: 9/30/2009	DRAWN BY: EAJ/RJT	REV. BY: RKF/KAL
DWG. NAME. fhwa gabion wall_v16	SCALE: 1:45	UNITS: In.[mm]	



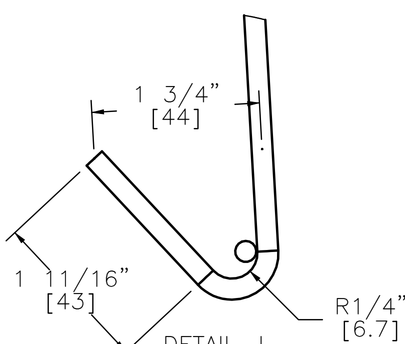


Soil Cap,
Part No. a1



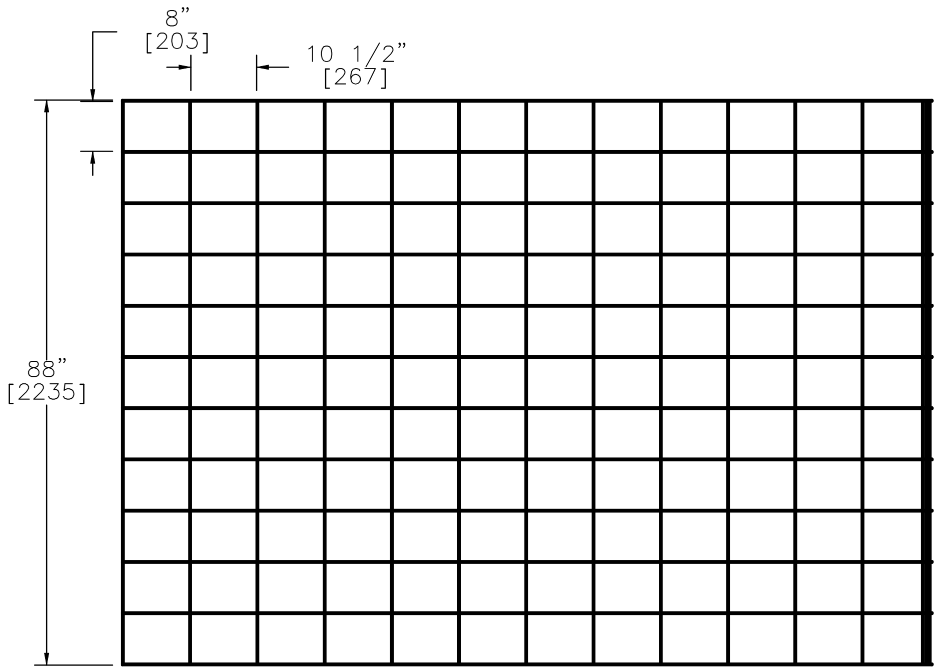


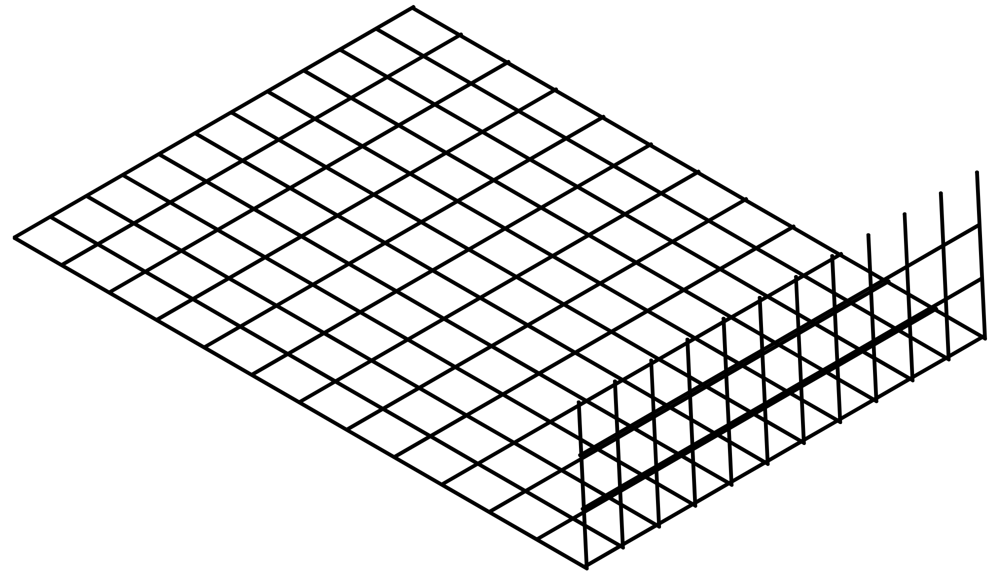
Notes: (1) All wire mesh is 7/32"[5.6] diameter.



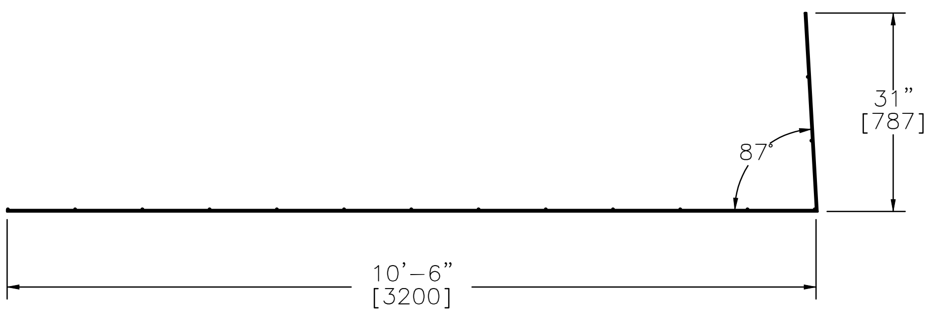
DETAIL J
SCALE 1 : 2

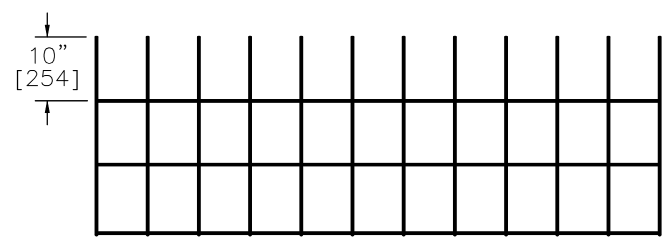
MwRSF	FHWA Gabion Wall Full-Scale Test Program	SHEET: 7 of 17
		DATE: 9/30/2009
Midwest Roadside Safety Facility	Soil Cap	DRAWN BY: EAJ/RJT
	DWG. NAME. fhwa gabion wall_v16 — SCALE: 1:30 UNITS: In.[mm]	REV. BY: RKF/KAL





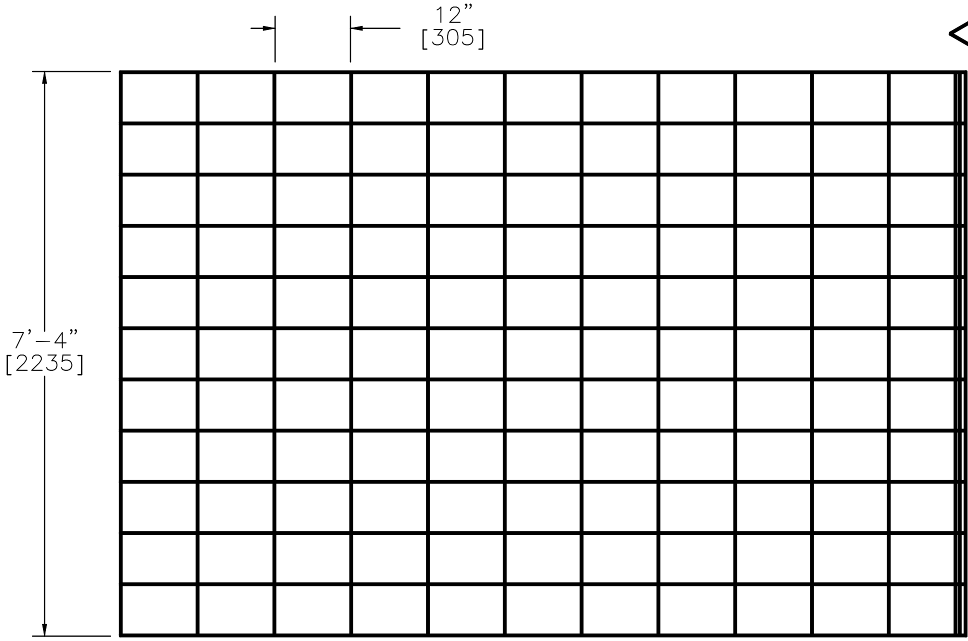
Standard Mat,
Part No. a4

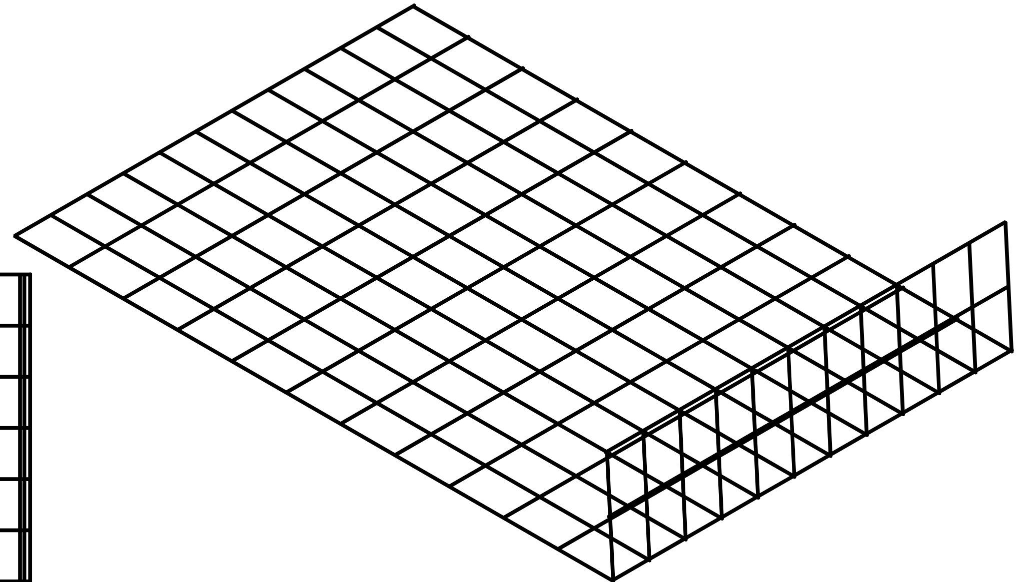




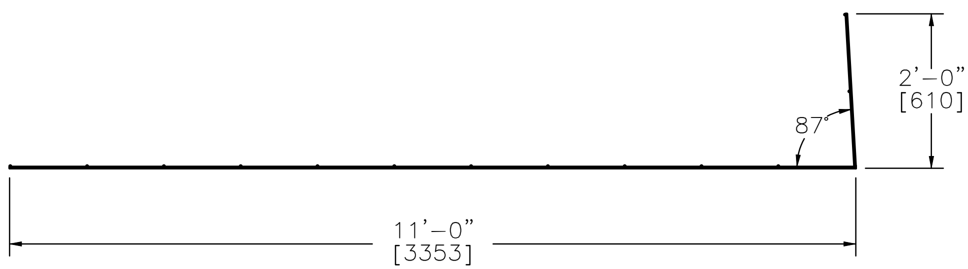
Notes: (1) All wire mesh is 7/32"[5.6] diameter.

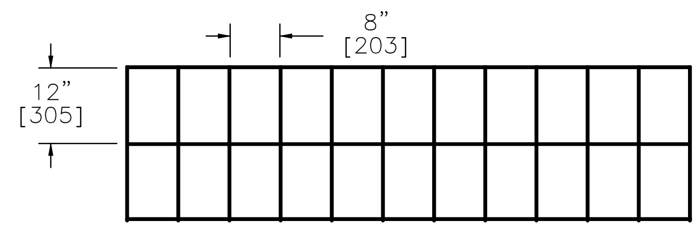
MwRSF	FHWA Gabion Wall Full-Scale Test Program	SHEET: 8 of 17
		DATE: 9/30/2009
Midwest Roadside Safety Facility	Standard Mat	DRAWN BY: EAJ/RJT
	DWG. NAME. fhwa gabion wall_v16 / SCALE: 1:30 UNITS: In.[mm]	REV. BY: RKF/KAL





Prongless Mat,
Part No. a2





Notes: (1) All wire mesh is 7/32"[5.6] diameter.

Midwest Roadside Safety Facility

FHWA Gabion Wall
Full-Scale Test Program

Prongless Mat

SHEET: 9 of 17

DATE: 9/30/2009

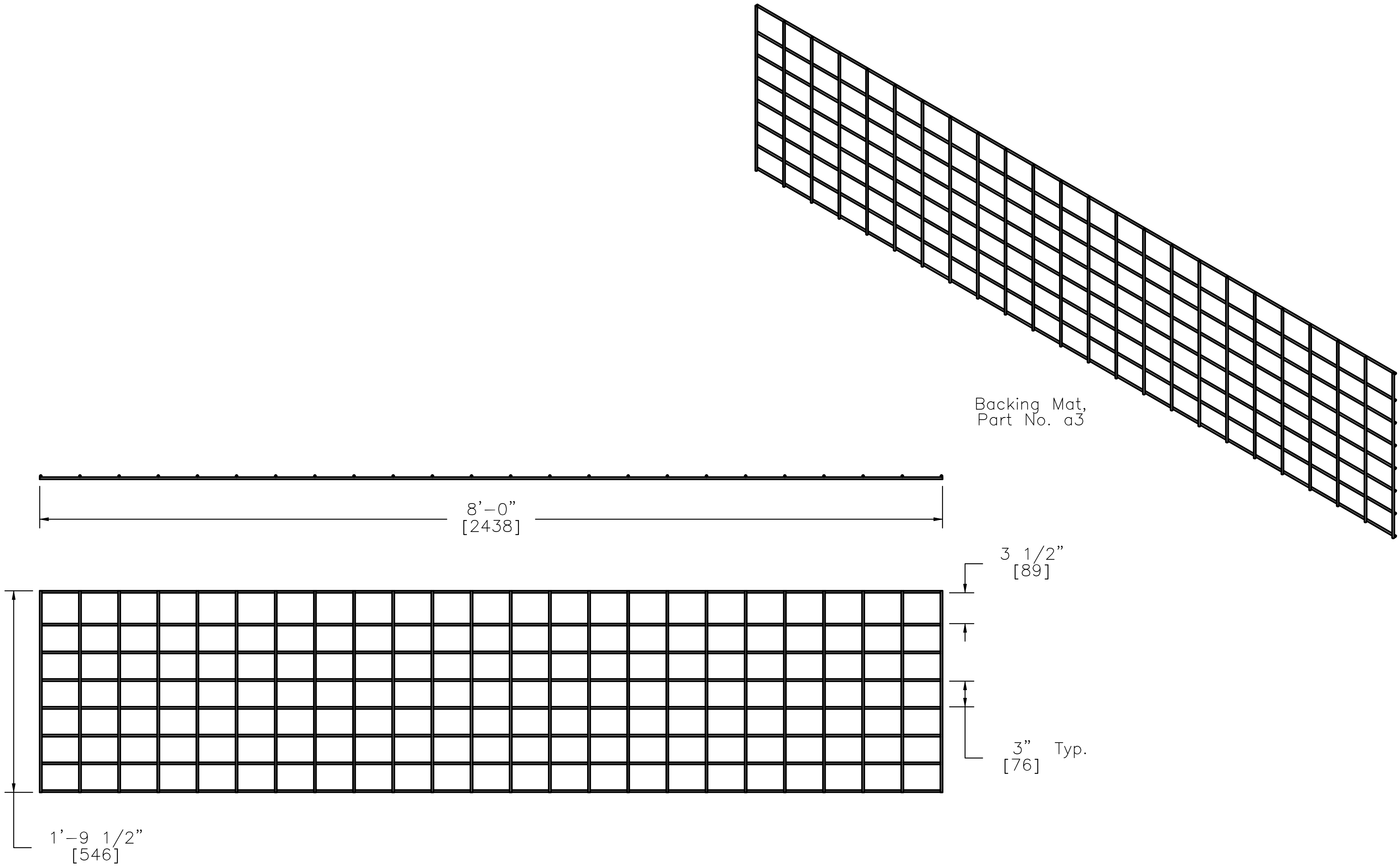
DRAWN BY: EAJ/RJT

DWG. NAME. fhwa gabion wall_v16

SCALE: 1:30

UNITS: In.[mm]

REV. BY: RKF/KAL



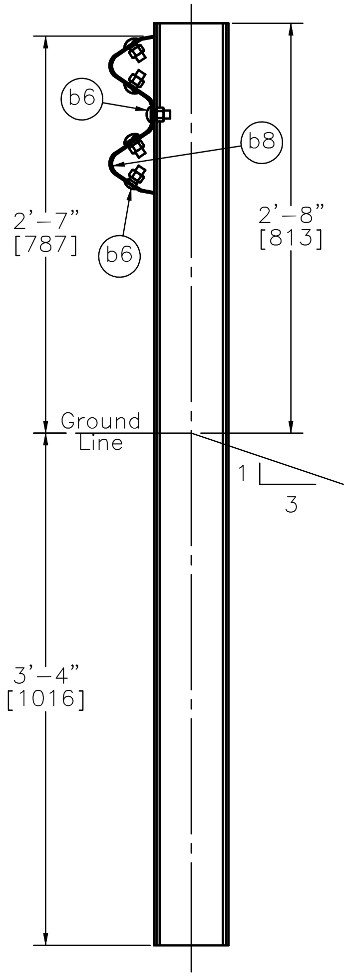
Notes: (1) All wire mesh is 7/32"[5.6] diameter.

Midwest Roadside Safety Facility

FHWA Gabion Wall
Full–Scale Test Program

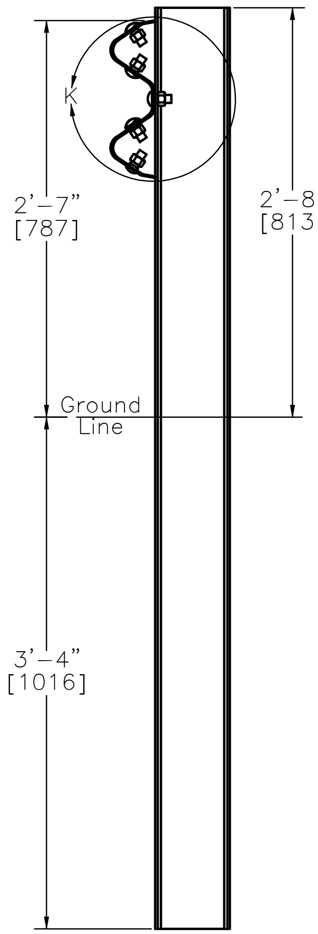
Backing Mat

SHEET:	10 of 17
DATE:	9/30/2009
DRAWN BY:	EAJ/RJT
REV. BY:	RKF/KAL
DWG. NAME.	fhwa gabion wall_v16
SCALE:	1:30
UNITS:	In.[mm]



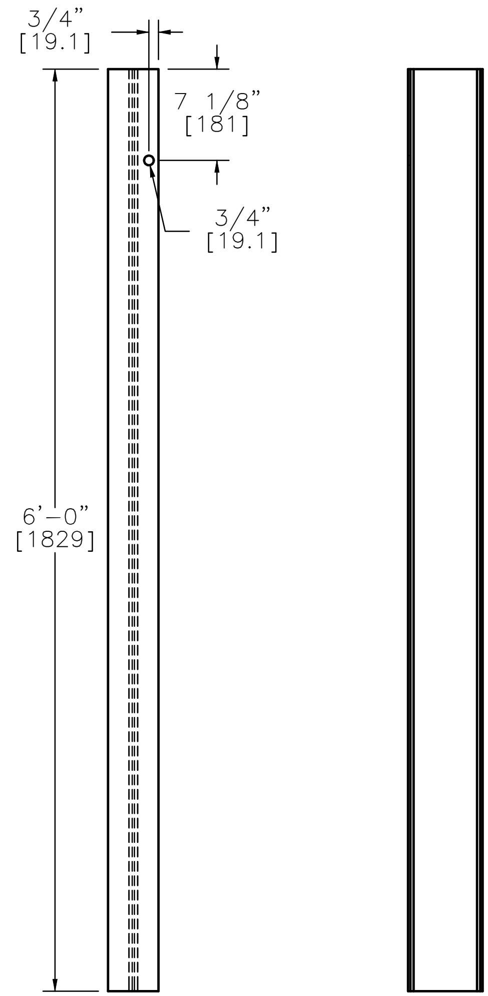
Post Nos. 7-23

SECTION C-C

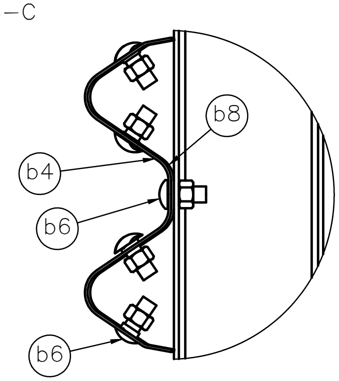


Post Nos. 3-6 and 24-27

SECTION D-D

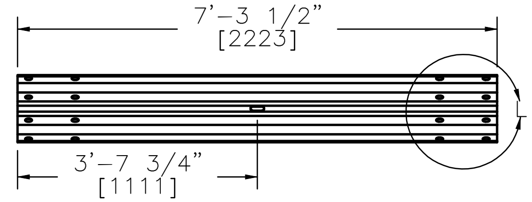


W6x8.5 [W152x12.6] Steel Post
Part b1

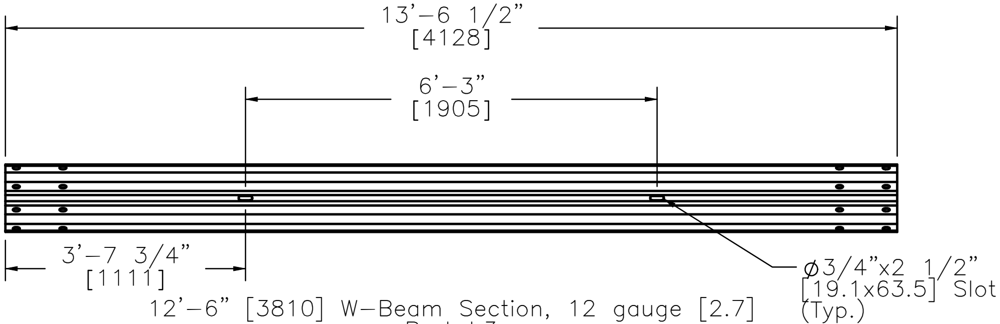


DETAIL K
SCALE 2 : 15

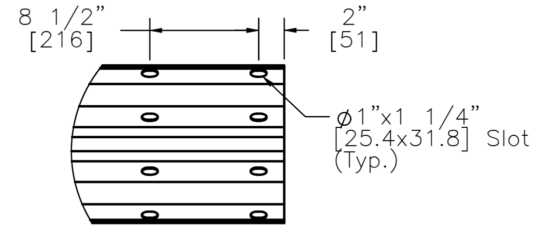
MwRSF	FHWA Gabion Wall Full-Scale Test Program	SHEET: 11 of 17
		DATE: 9/30/2009
Midwest Roadside Safety Facility	Post Details	DRAWN BY: EAJ/RJT
	DWG. NAME. fhwa gabion wall_v16 — SCALE: 1:15 UNITS: In.[mm]	REV. BY: RKF/KAL



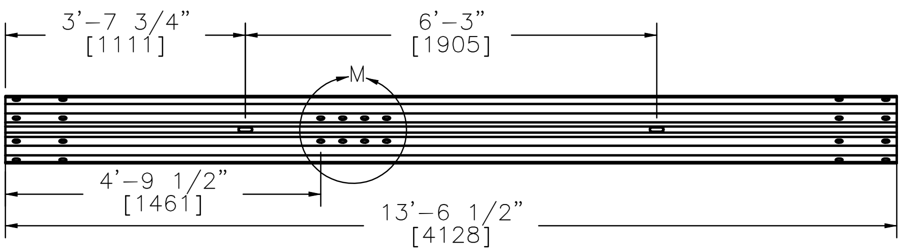
6'-3" [1905] W-Beam Section, 12 gauge [2.7]
Part b2



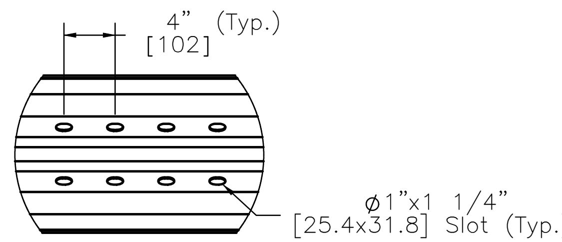
12'-6" [3810] W-Beam Section, 12 gauge [2.7]
Part b3



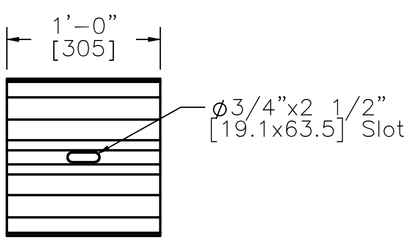
DETAIL L
SCALE 1 : 15



12'-6" [3810] W-Beam End Section, 12 gauge [2.7]
Part b4



DETAIL M
SCALE 1 : 15



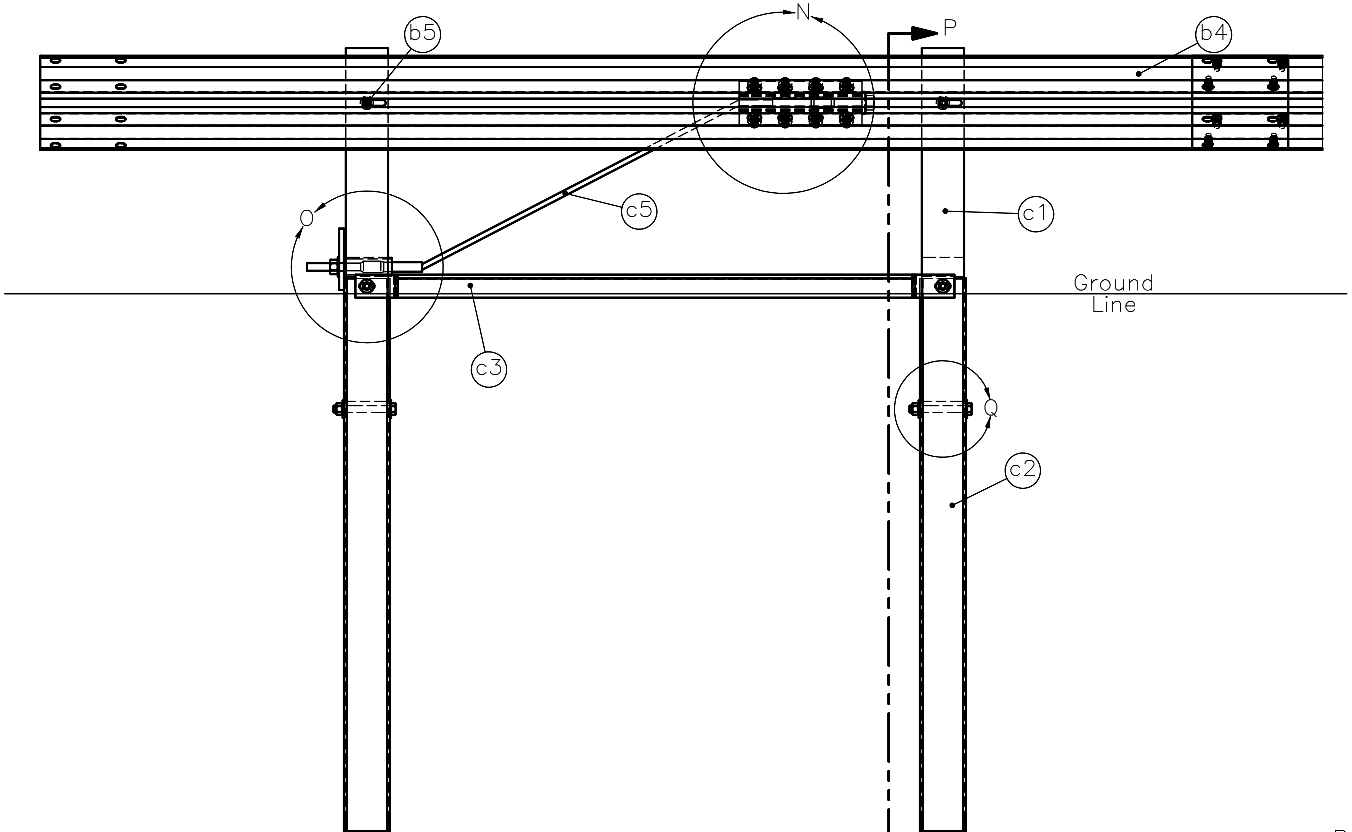
1'-0" [305] W-Beam Backup Plate, 12 gauge [2.7]
Part b8
SCALE 1:5

Midwest Roadside Safety Facility

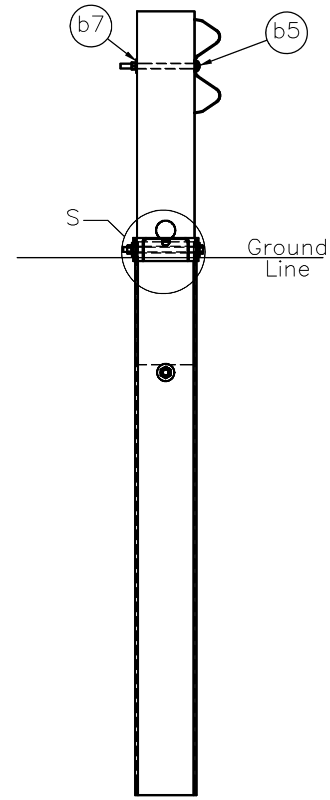
FHWA Gabion Wall Full-Scale Test Program

Rail Section Details

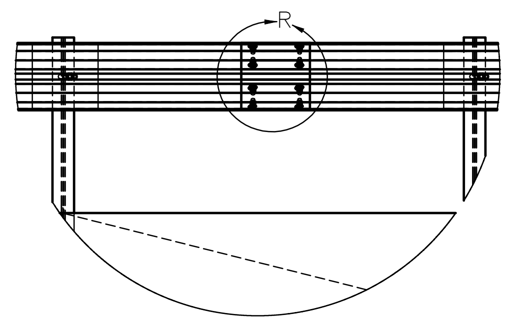
SHEET:	12 of 17
DATE:	9/30/2009
DRAWN BY:	EAJ/RJT
DWG. NAME.	fhwa gabion wall_v16
SCALE:	1:35
UNITS:	In.[mm]
REV. BY:	RKF/KAL



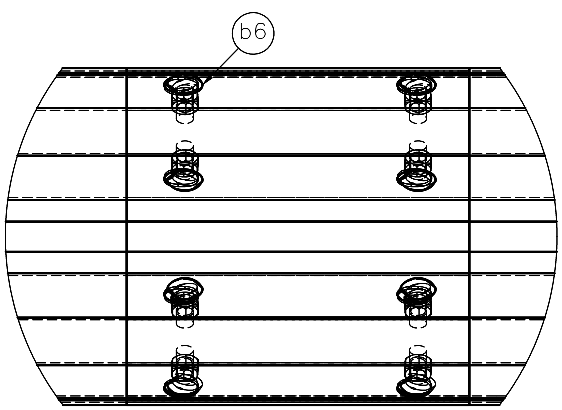
End Section



SECTION P–P
SCALE 1 : 25



DETAIL A
SCALE 1 : 35



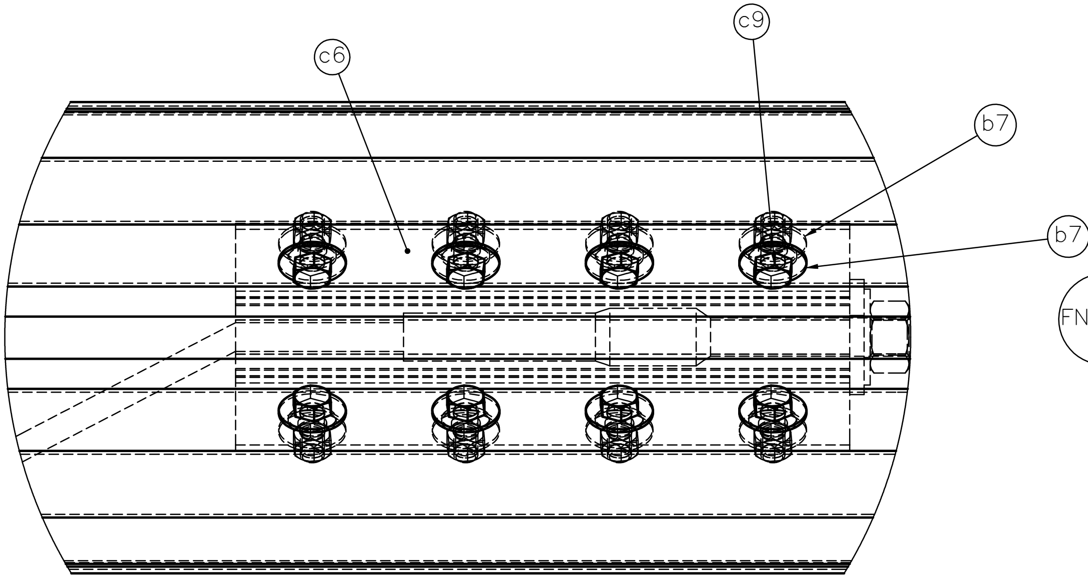
DETAIL R
SCALE 1 : 7

Midwest Roadside Safety Facility

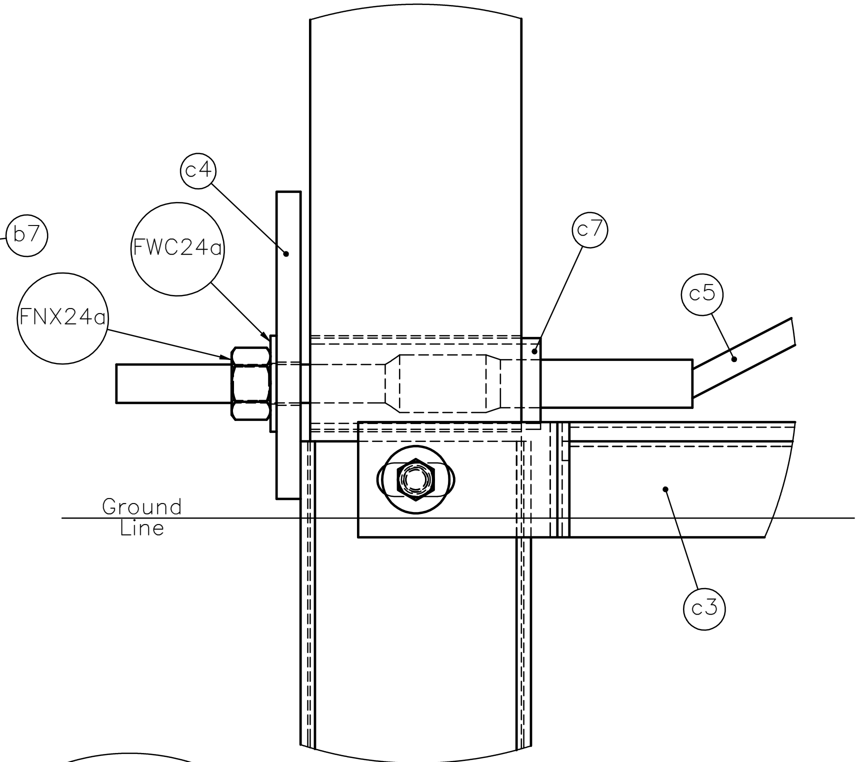
FHWA Gabion Wall
Full–Scale Test Program

Foundation Details

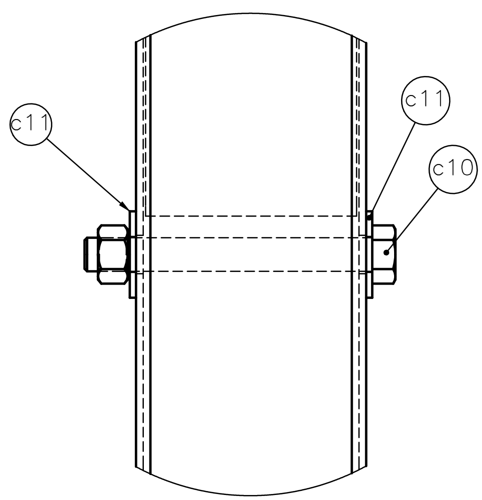
SHEET:	13 of 17	
DATE:	9/30/2009	
DRAWN BY:	EAJ/RJT	
DWG. NAME.	fhwa gabion wall_v16	
SCALE: 1:25	UNITS: In.[mm]	
REV. BY:	RKF/KAL	



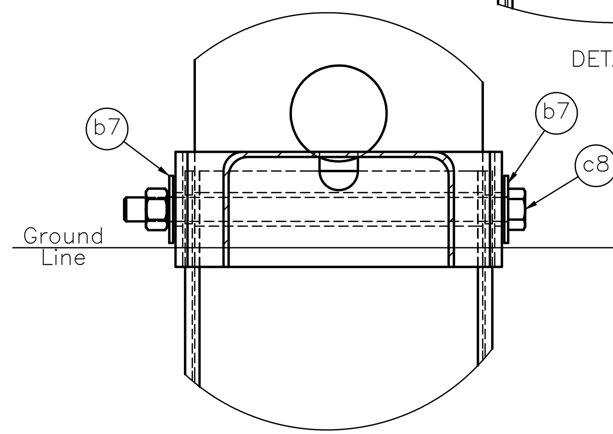
DETAIL N



DETAIL O

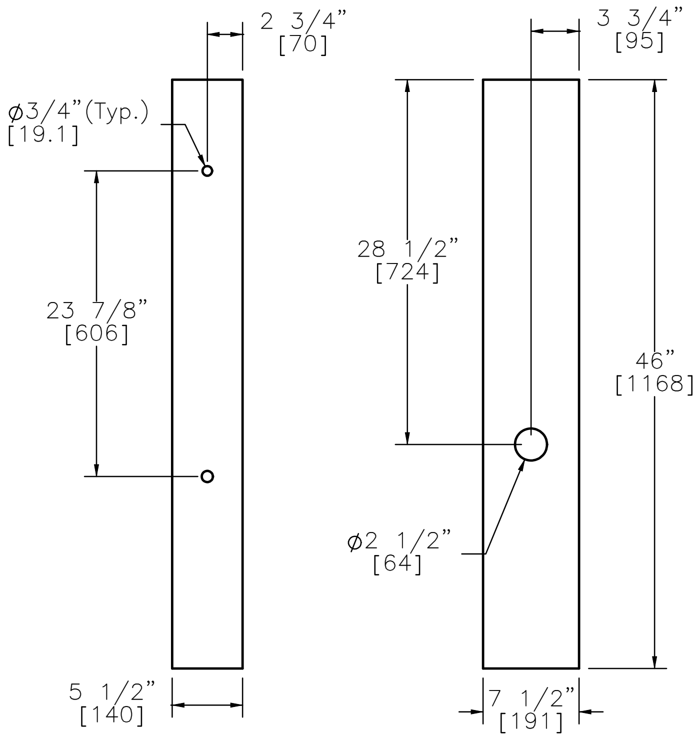


DETAIL Q

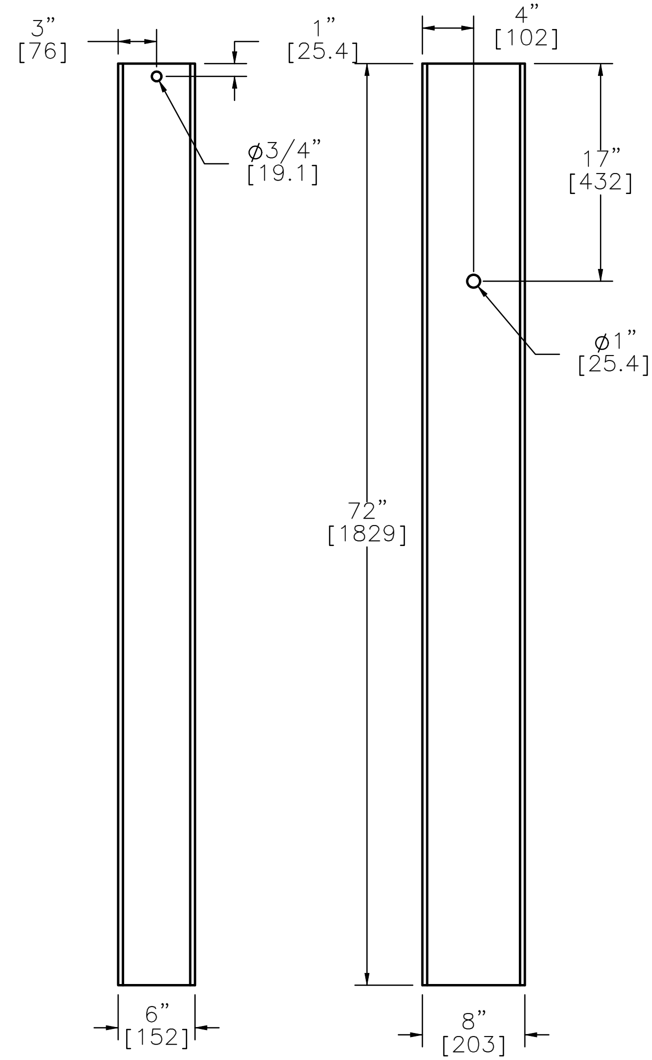


DETAIL S

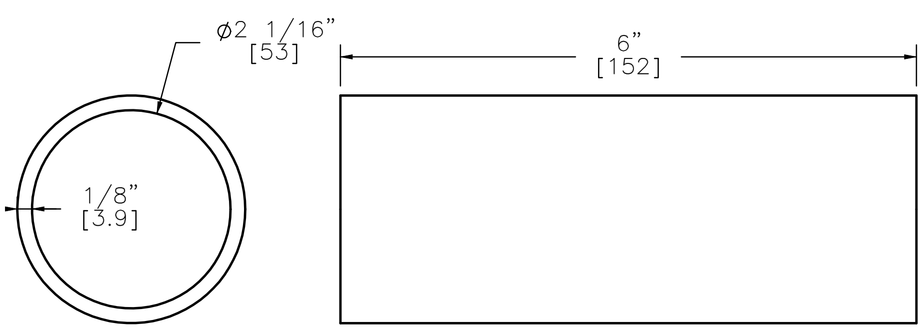
MwRSF Midwest Roadside Safety Facility	FHWA Gabion Wall Full–Scale Test Program Foundation Details	SHEET: 14 of 17
		DATE: 9/30/2009
		DRAWN BY: EAJ/RJT
	DWG. NAME. fhwa gabion wall_v16 / SCALE: 1:5 UNITS: In.[mm]	REV. BY: RKF/KAL



BCT Timber Post
(PDF01)
Part c1

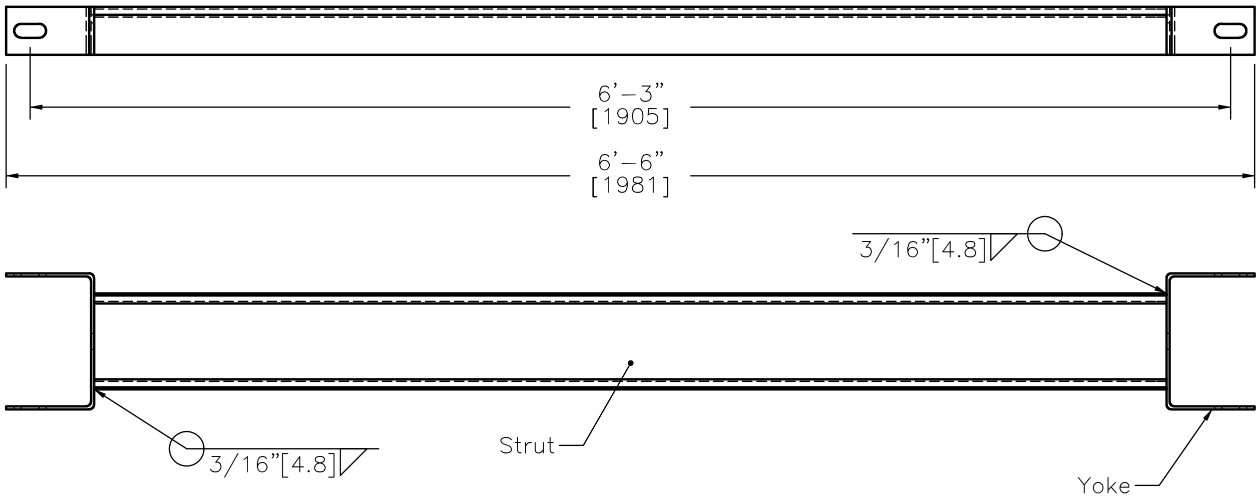


Foundation Tube
(PTE06)
Part c2

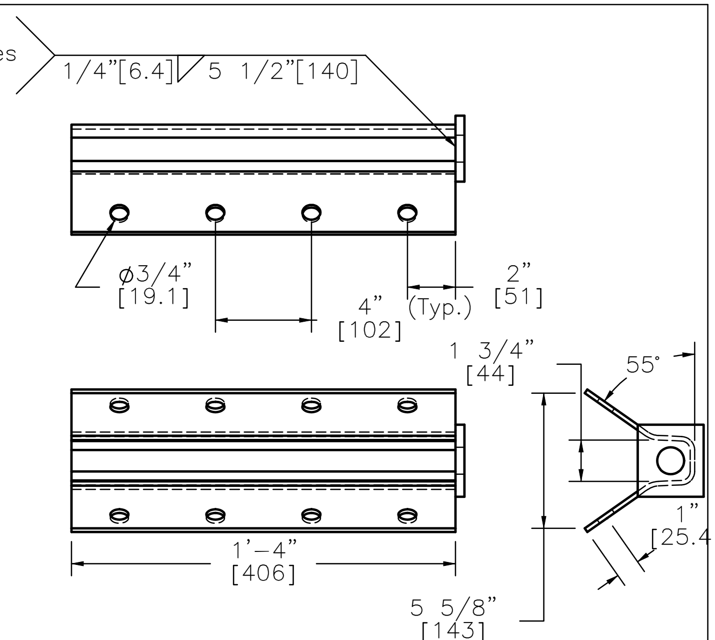


BCT Post Sleeve
(FMM02)
Part c8

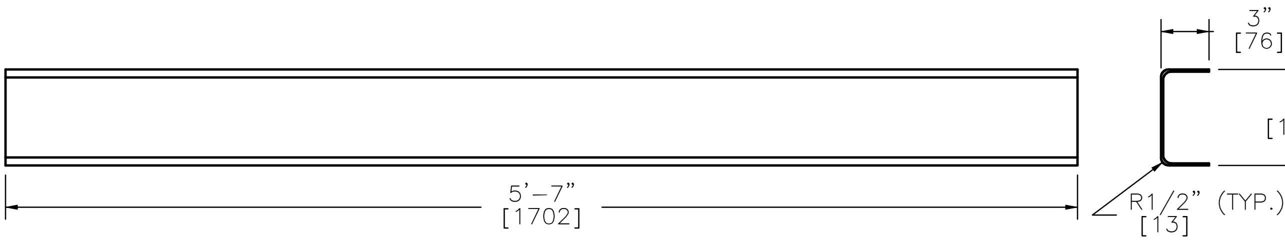
MwRSF	FHWA Gabion Wall Full-Scale Test Program	SHEET: 15 of 17
		DATE: 9/30/2009
	End Anchor Components Detail	DRAWN BY: EAJ/RJT
Midwest Roadside Safety Facility	DWG. NAME. fhwa gabion wall_v16 / SCALE: 1:15 UNITS: In.[mm]	REV. BY: RKF/KAL



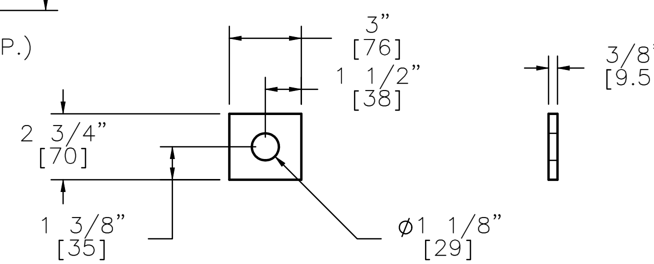
Strut and Yoke Assembly
Assembly c3



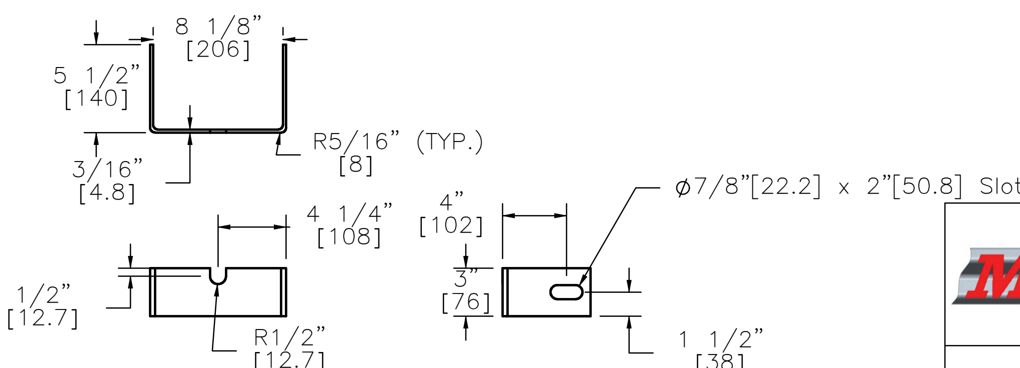
Anchor Bracket
(FPA01)
Assembly c6



Strut
6" x 3" [152.4 x 76.2] 10 Gauge



Anchor Bracket Bearing Plate



Yoke

Midwest Roadside Safety Facility	FHWA Gabion Wall Full-Scale Test Program	SHEET: 16 of 17
		DATE: 9/30/2009
	Strut and Yoke Assembly Detail	DRAWN BY: EAJ/RJT
	DWG. NAME. fhwa gabion wall_v16 / SCALE: 1:12 UNITS: In.[mm]	REV. BY: RKF/KAL

Item No.	QTY.	Description	Material Specifications and/or Grade	Vendor	Hardware Guide
–	–	Wall Facing Fill	Wall Face Aggregate, 4–6 in. Rock		–
a1	11	Cap Mat	8 x 12" Steel Mesh, 3 Gauge		–
a2	10	Prongless Mat	8 x 12" Steel Mesh, 3 Gauge		–
a3	20	Backing Mat	8 x 3" Steel Mesh, 3 Gauge		–
a4	10	Standard Mat	8 x 10" Steel Mesh, 3 Gauge		–
a5	180	Hog Rings	–		–
a6	–	Filter Fabric	–		–
b1	25	W6x8.5 x 6' long [W152x12.6, 2134 long] Steel Post	ASTM A36 [36 ksi] (W6x9 A992 [50 ksi])		–
b2	1	6'–3" [1905] W–Beam Section	12 ga. [2.7] AASHTO M180		RWM01a
b3	14	12'–6" [3810] W–Beam MGS Section	12 ga. [2.7] AASHTO M180		RWM04a
b4	2	12'–6" [3810] W–Beam MGS End Section	12 ga. [2.7] AASHTO M180		–
b5	4	5/8" [15.9] Dia. x 10" [254] long Guardrail Bolt and Nut	ASTM A307		FBB03
b6	137	5/8" [15.9] Dia. x 1 1/2" [38] Guardrail Bolt and Nut	ASTM A307		FBB01
b7	44	5/8" [15.9] Dia. Flat Washer	ASTM A153		FWC16a
b8	25	W–Beam Backup Plate	12 ga. [2.7] AASHTO M180		RWB01a
c1	4	BCT Timber Post – MGS Height	SYP Grade No. 1 or better		PDF01
c2	4	72" [1829] Foundation Tube	ASTM A53 Grade B		PTE06
c3	2	Strut and Yoke Assembly	ASTM A36 Steel Galvanized		–
c4	2	5x8x5/8" [127x203x15.9] Anchor Bearing Plate	ASTM A36 Steel		FPB01
c5	2	BCT Anchor Cable Assembly	ϕ0.75" 6x19 IWRC IPS Galvanized Wire Rope		FCA01–02
c6	2	Anchor Bracket Assembly	ASTM A36 Steel		FPA01
c7	2	2 3/8" [60] O.D. x 6" [152] Long BCT Post Sleeve	ASTM A53 Grade B Schedule 40		FMM02
c8	4	5/8" [15.9] Dia. x 10" [254] Long Hex Head Bolt and Nut	ASTM A307		FBX16a
c9	16	5/8" [15.9] Dia. x 1 1/2" [38] Long Hex Head Bolt and Nut	ASTM A307		FBX16a
c10	4	7/8" [22.2] Dia. x 7 1/2" [191] Long Hex Head Bolt and Nut	ASTM A307		FBX22a
c11	8	7/8" [22.2] Dia. Flat Washer	ASTM A153		FWC22a

Midwest Roadside Safety Facility

FHWA Gabion Wall Full–Scale Test Program

Bill of Materials

SHEET: 17 of 17

DATE: 9/30/2009

DRAWN BY: EAJ/RJT

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SCALE: None
UNITS: In.[mm]

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