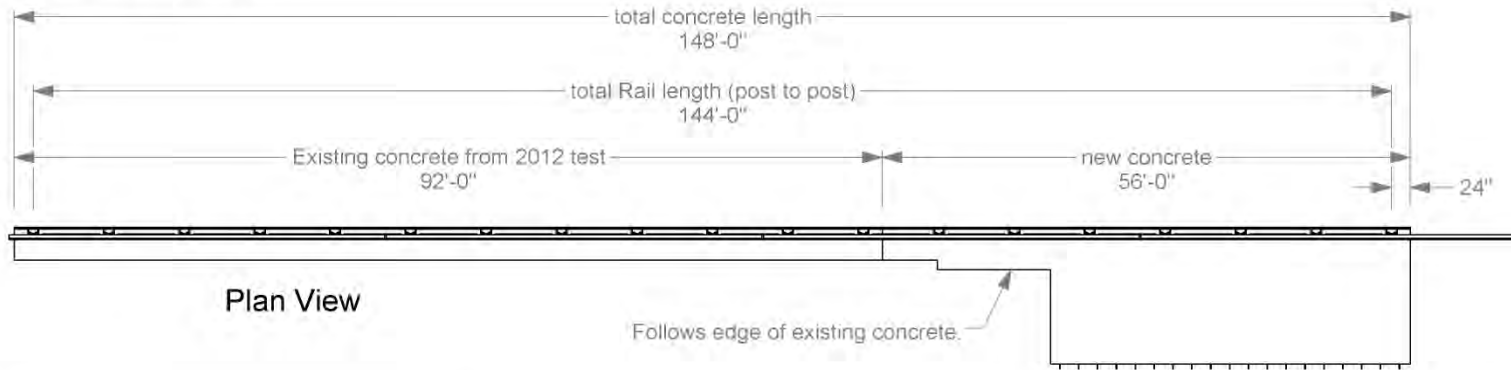
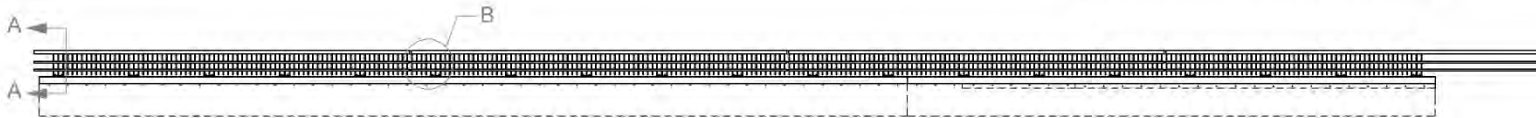


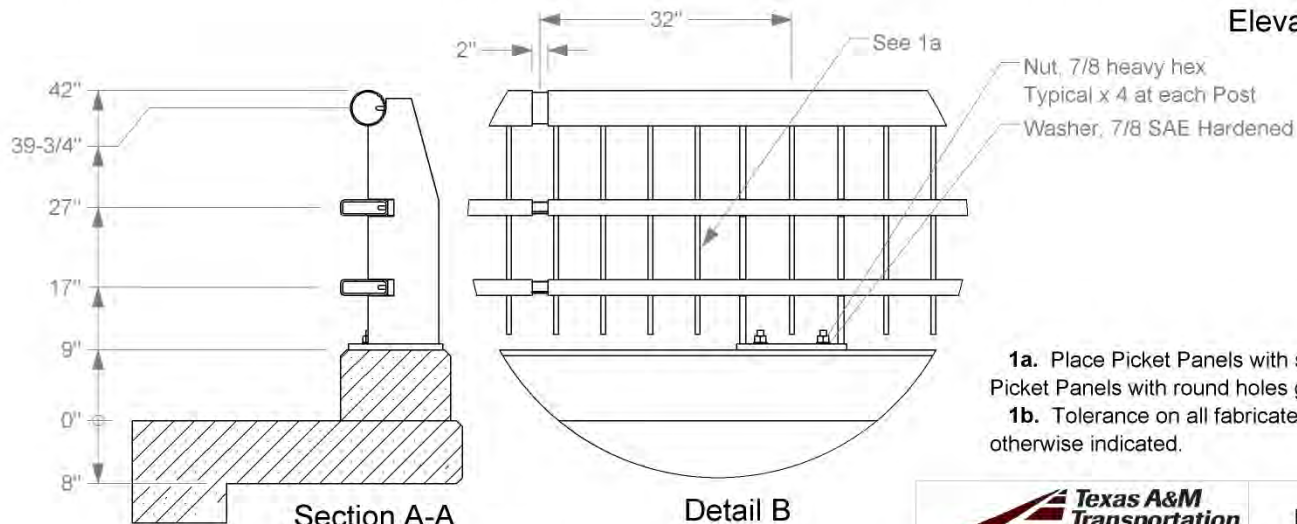
Test Installation



Plan View



Elevation View



Section A-A

Scale 1 : 20
(some dims rounded to nearest 1/8")

Detail B

Scale 1 : 20
Typical each joint

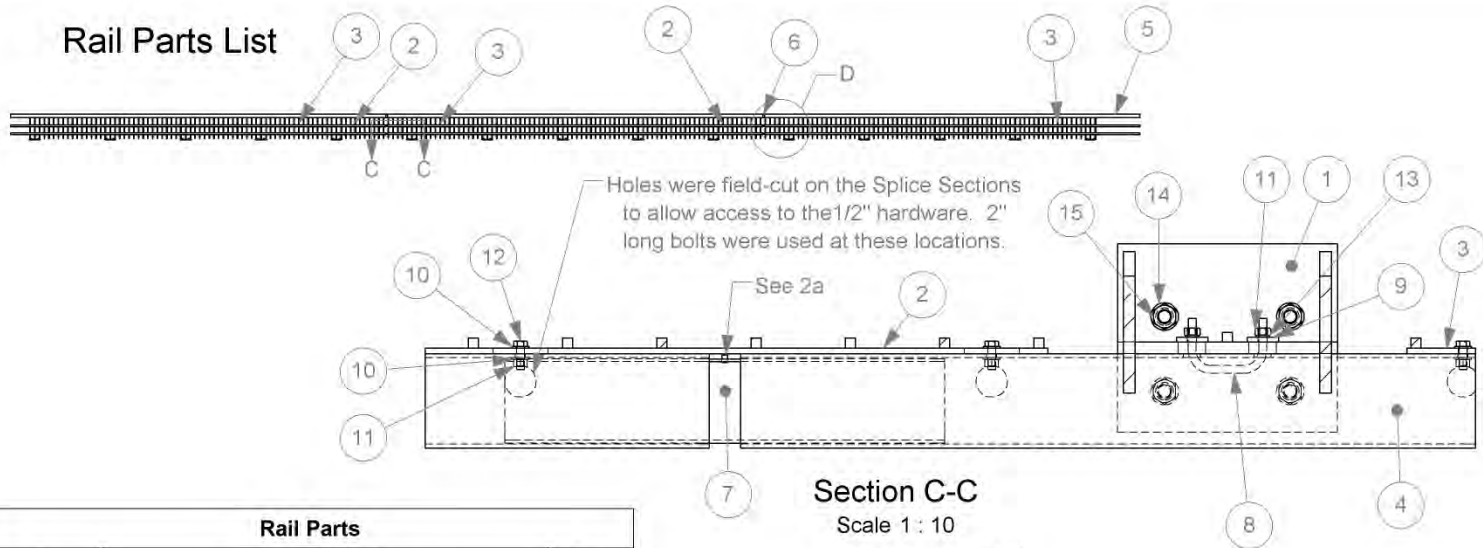
- 1a. Place Picket Panels with slots at Rail splice locations. Picket Panels with round holes go at all other locations.
- 1b. Tolerance on all fabricated parts is $\pm 1/8"$ unless otherwise indicated.



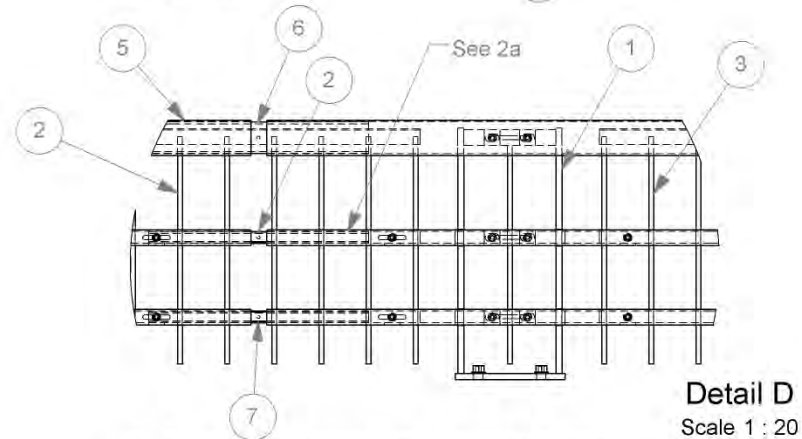
Roadside Safety and
Physical Security Division -
Proving Ground

Project 490026-4-3 42" Picket Rail 2016-07-20
Drawn By GES Scale:1:200 Sheet 1 of 14 Test Installation

Rail Parts List



Rail Parts		
#	Part Name	Qty.
1	Post for 42" Picket Rail	15
2	Picket Rail Panel, with slots	2
3	Picket Rail Panel, with holes	12
4	Rectangular Rail	6
5	Round Rail	3
6	Splice Section for Round Rail	2
7	Splice Section for Rectangular Rail	4
8	U-bolt for Picket Rail	45
9	Plate Washer for U-bolt	90
10	Washer, 1/2 SAE Hardened	168
11	Nut, 1/2 heavy hex	174
12	Bolt, 1/2" x 1 1/2" hex	84
13	Washer, 1/2 Lock	90
14	Washer, 7/8 SAE Hardened	60
15	Nut, 7/8 heavy hex	60



- 2a. Place Splice Sections with Pins on Field Side.
 2b. $\varnothing 1/2$ " Bolts are ASTM A325. $\varnothing 7/8$ " Bolts are ASTM A449.



Roadside Safety and
Physical Security Division -
Proving Ground

Project 490026-4 / 1-2 42" Picket Rail

2016-07-18

Drawn By GES

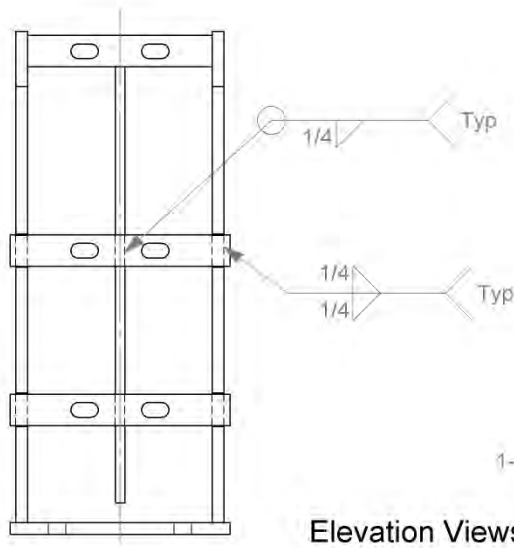
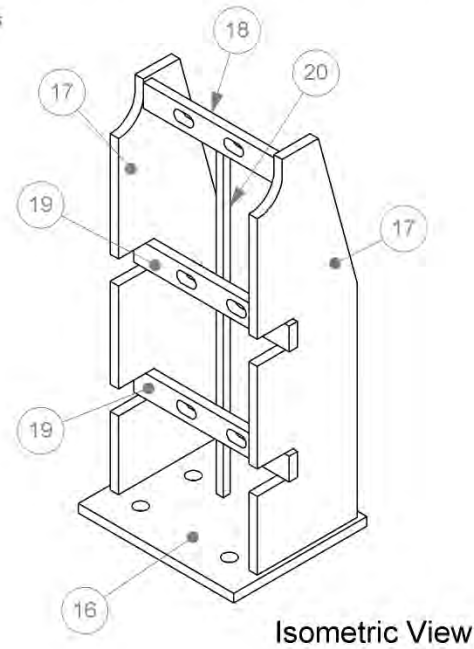
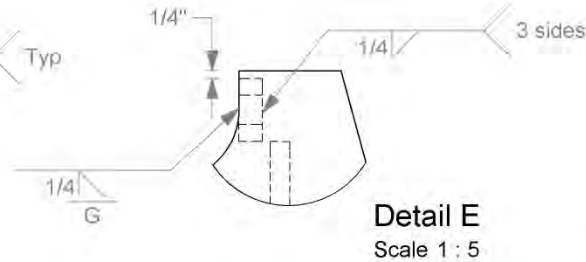
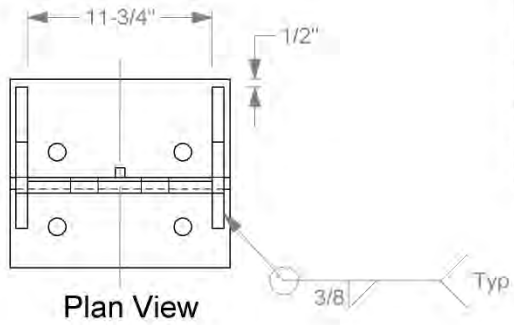
Scale: 1:200

Sheet 2 of 14

Rail Parts List

Post

Post Parts					
#	Body Name	Description	Length	MATERIAL	Qty
16	Base Plate	Plate, 12" x 3/4"	14"	ASTM A572 Grade 50	1
17	Side Plate	Plate, 9" x 3/4"	31 1/4"	ASTM A572 Grade 50	2
18	Rail Plate, Top	Plate, 2" x 3/4"	11 3/4"	ASTM A36 Steel	1
19	Rail Plate, Bot and Mid	Plate, 2" x 3/4"	14"	ASTM A36 Steel	2
20	Picket	Plate, 5/8" x 5/8"	27 3/4"	ASTM A36 Steel	1

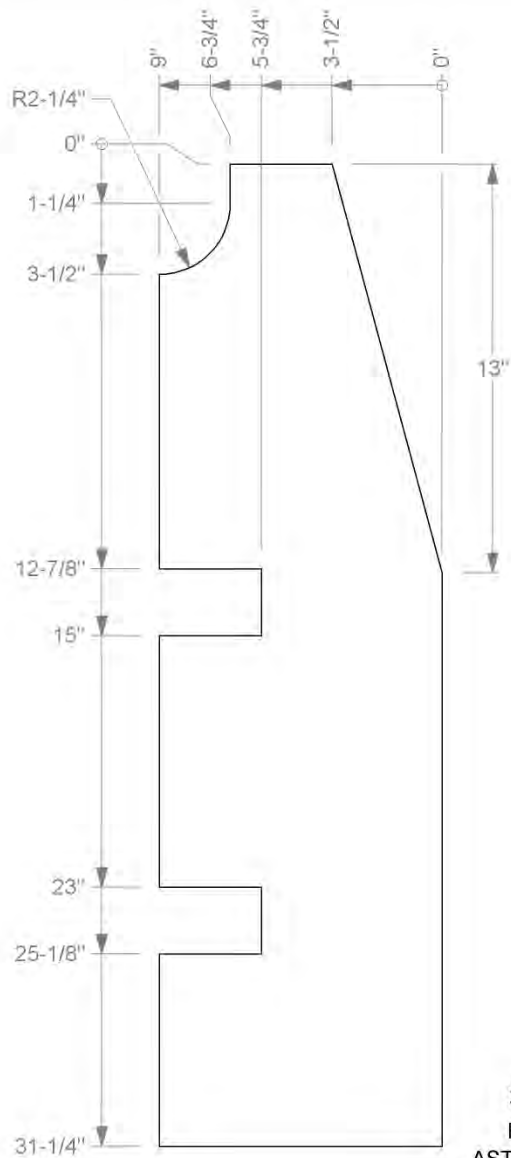


Roadside Safety and
Physical Security Division -
Proving Ground

Project 490026-4 / 1-2 42" Picket Rail

2016-07-18

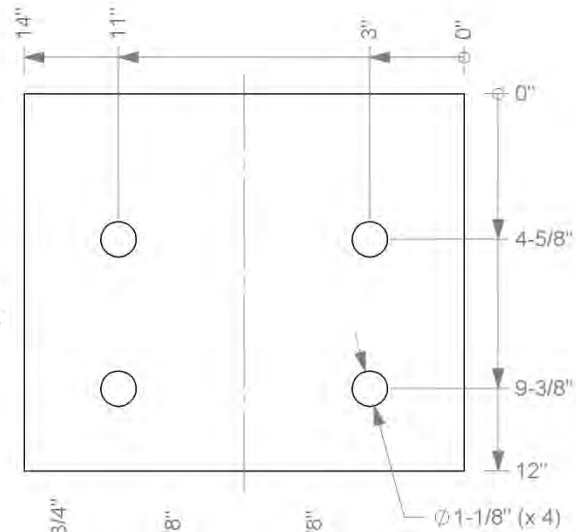
Drawn By GES Scale:1:500 Sheet 3 of 14 Post



Side Plate
Plate, 9" x 3/4"
ASTM A572 Grade 50

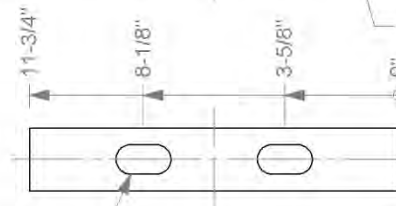
Post Parts
(See Table, previous sheet, for Picket details)

Base Plate
Plate, 12" x 3/4"
ASTM A572 Grade 50

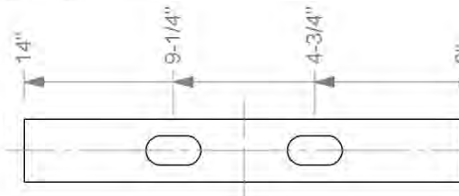


Rail Plate, Top
Plate, 2" x 3/4"
ASTM A36 Steel

Slots, 15/16" x 1-3/4"
Typical both Rail Plates



Rail Plate, Bot and Mid
Plate, 2" x 3/4"
ASTM A36 Steel

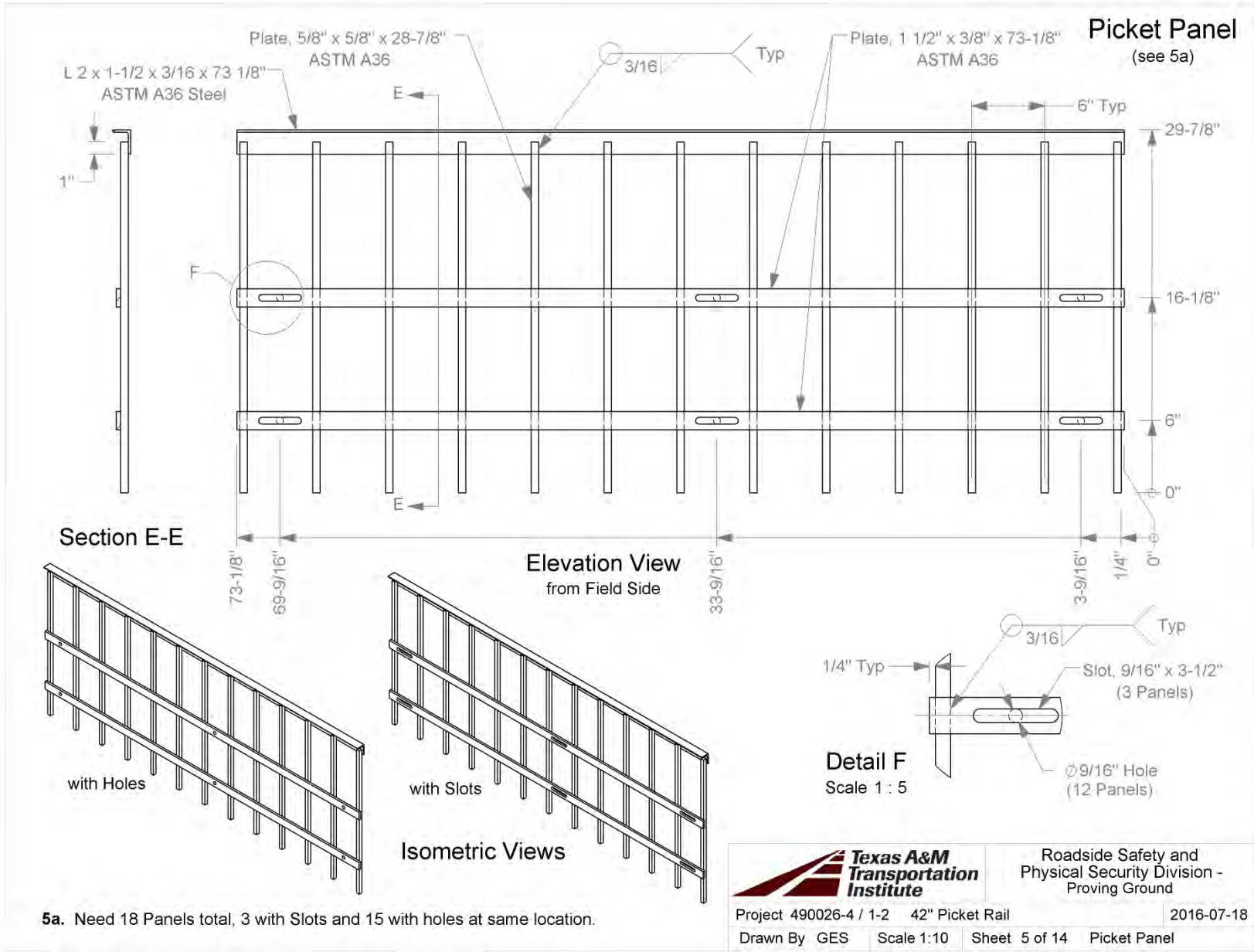


Roadside Safety and
Physical Security Division -
Proving Ground

Project 490026-4 / 1-2 42" Picket Rail

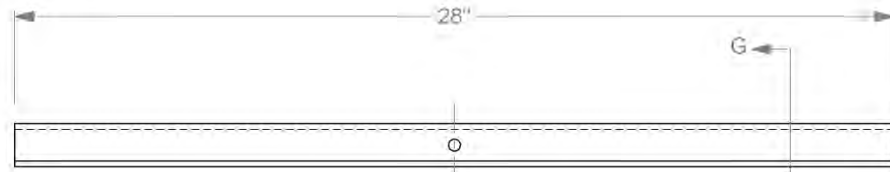
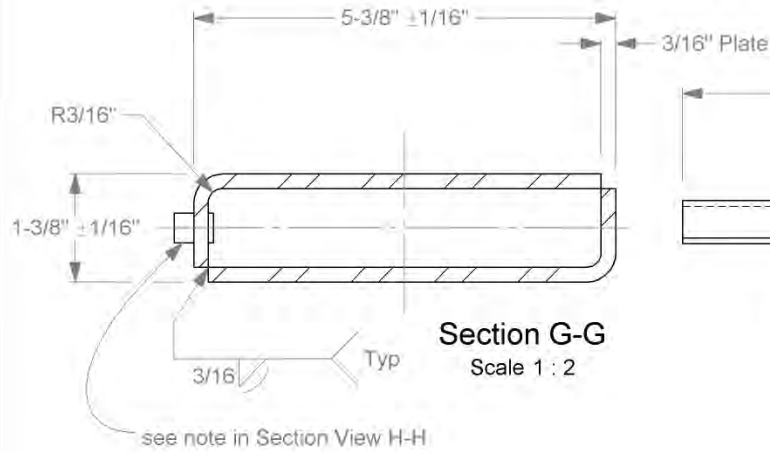
2016-07-18

Drawn By GES Scale 1:5 Sheet 4 of 14 Post Parts

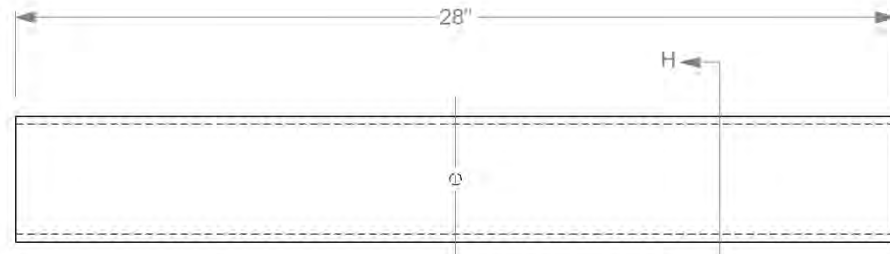
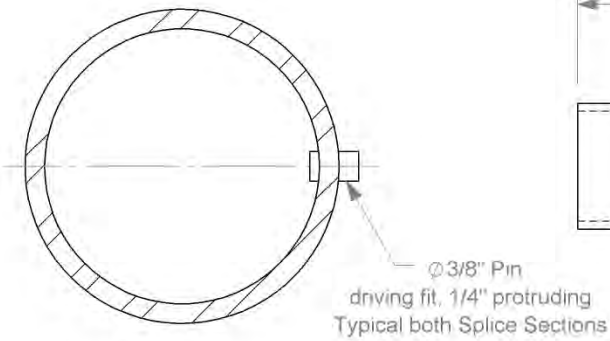


T:\11-ProjectFiles\490026-TxDOT\4 - 42 inch Picket Rail - Williams\4-2 Drafting\490026-4-2 Drawing

Splice Sections



Splice Section for Rectangular Rail
ASTM A36 Steel
(see 6a)



Splice Section for Round Rail
HSS Round 4" x 1/4" x 28"
ASTM A500 Grade B

6a. Check Splice Sleeve for Rectangular Rail for loose fit in Rectangular Rail after fabrication is completed.



Roadside Safety and
Physical Security Division -
Proving Ground

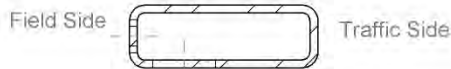
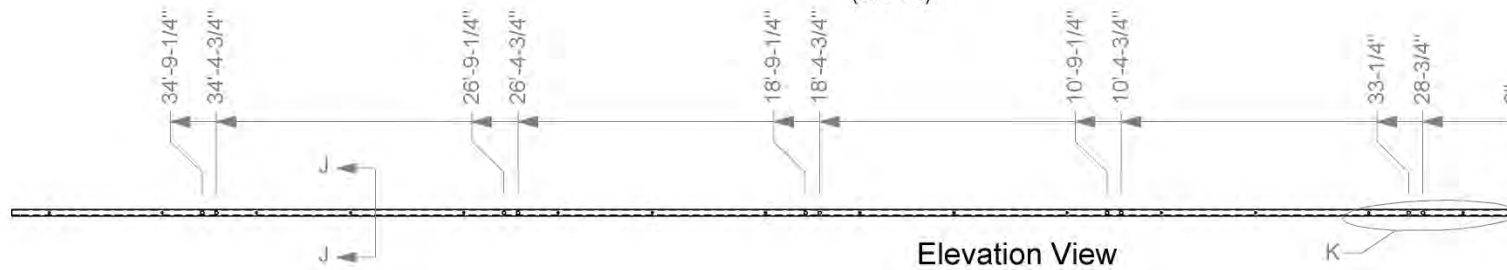
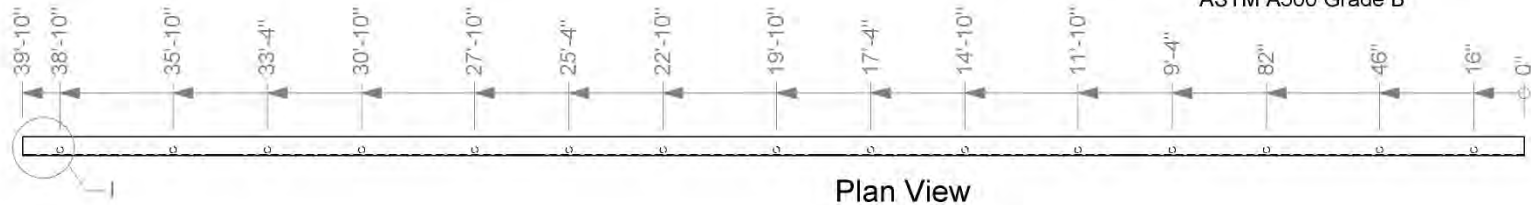
Project 490026-4 / 1-2 42" Picket Rail

2016-07-18

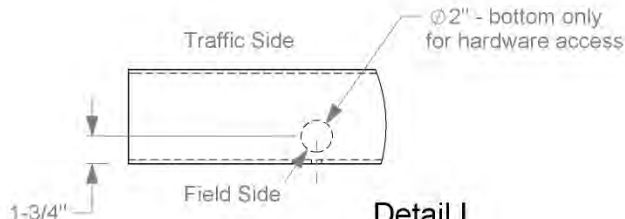
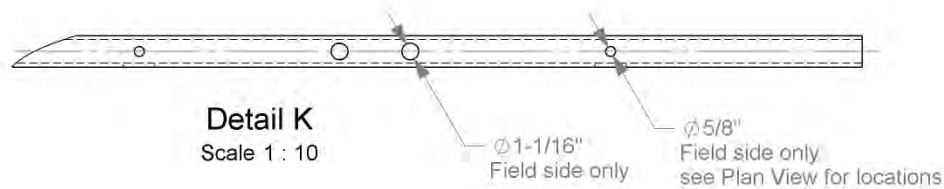
Drawn By GES Scale 1:5 Sheet 6 of 14 Splice Sections

Rectangular Rail

HSS 6" x 2" x 1/4"
ASTM A500 Grade B



Section J-J
Scale 1 : 5



Detail I
Scale 1 : 10

7a. Please note that the Plan View and Detail I are showing the Rail from the top. The holes are on bottom.



Roadside Safety and
Physical Security Division -
Proving Ground

Project 490026-4 / 1-2 42" Picket Rail

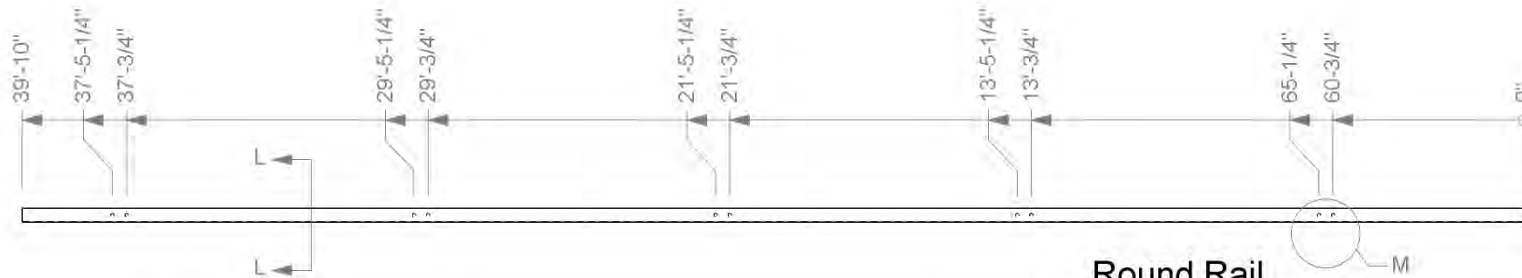
2016-07-18

Drawn By GES

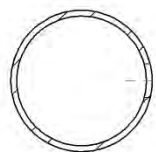
Scale 1:50

Sheet 7 of 14

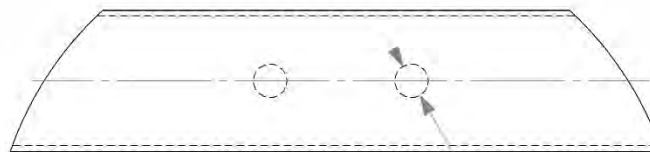
Rectangular Rail



Round Rail
 HSS Round 4 1/2" x 3/16"
 ASTM A500 Grade B
 Elevation View



Section L-L
 Scale 1 : 5



Detail M
 Scale 1 : 5

$\phi 1-1/16''$
 Field side only

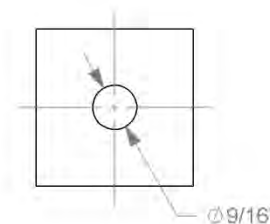
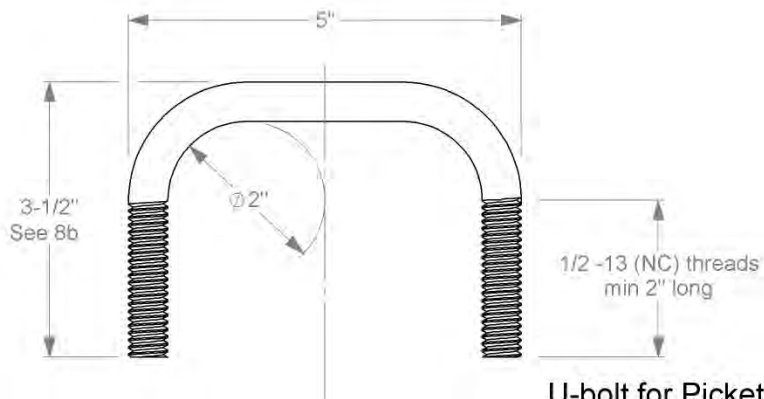


Plate Washer for U-bolt
 Plate, 2" x 5/16" x 2"
 ASTM A36 Steel
 Scale 1:2



U-bolt for Picket Rail
 $\phi 1/2''$ ASTM A36 Steel
 Scale 1:2

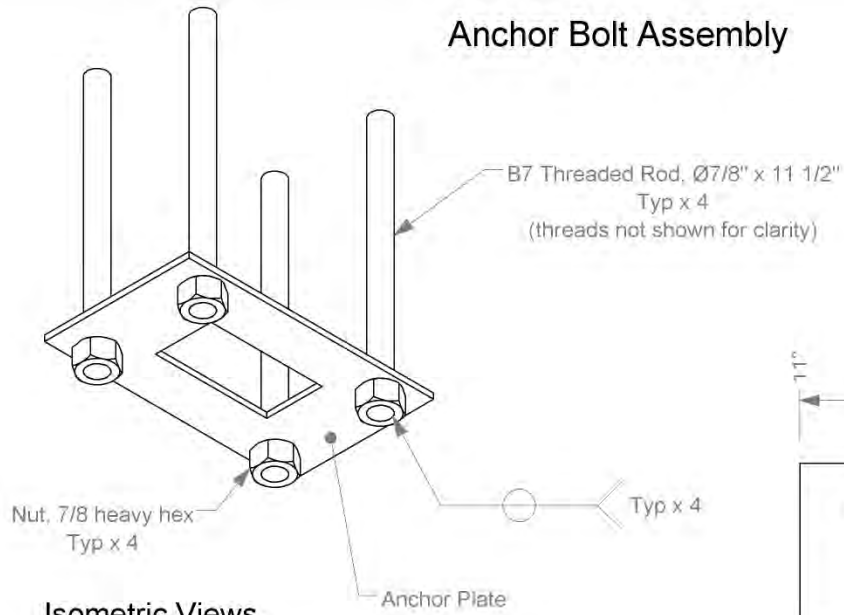
8a. Dimension is approximate. Rod is 10" long before bending.



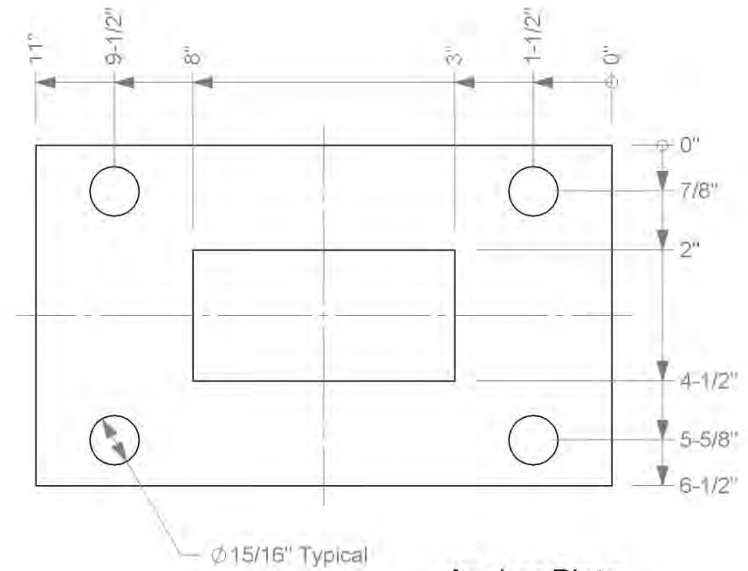
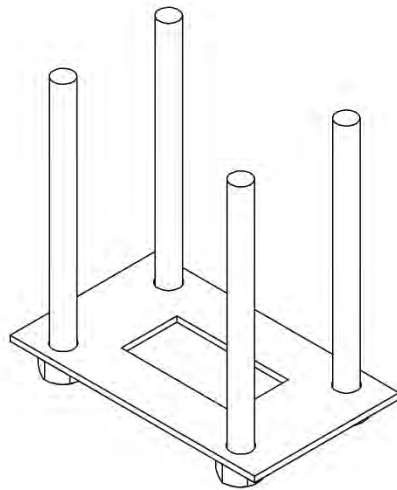
Roadside Safety and
 Physical Security Division -
 Proving Ground

Project 490026-4 / 1-2 42" Picket Rail 2016-07-18
 Drawn By GES Scale 1:50 Sheet 8 of 14 Round Rail, etc.

Anchor Bolt Assembly



Isometric Views



Anchor Plate
Plate, 6 1/2" x 1/4" x 11"
ASTM A36 Steel



Roadside Safety and
Physical Security Division -
Proving Ground

Project 490026-4 / 1-2 42" Picket Rail

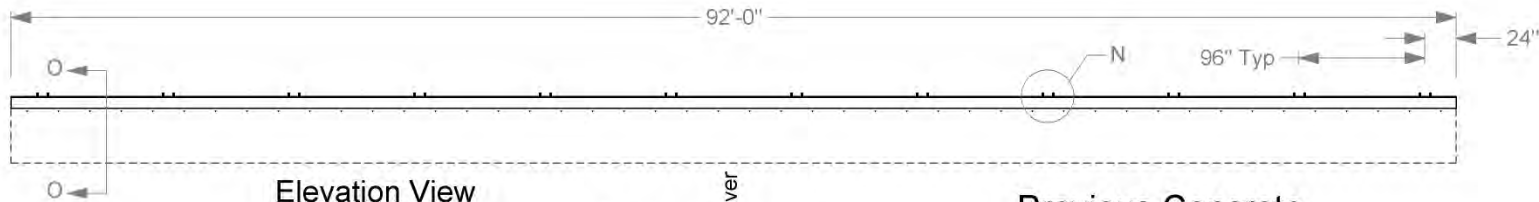
2016-07-18

Drawn By GES

Scale 1:3

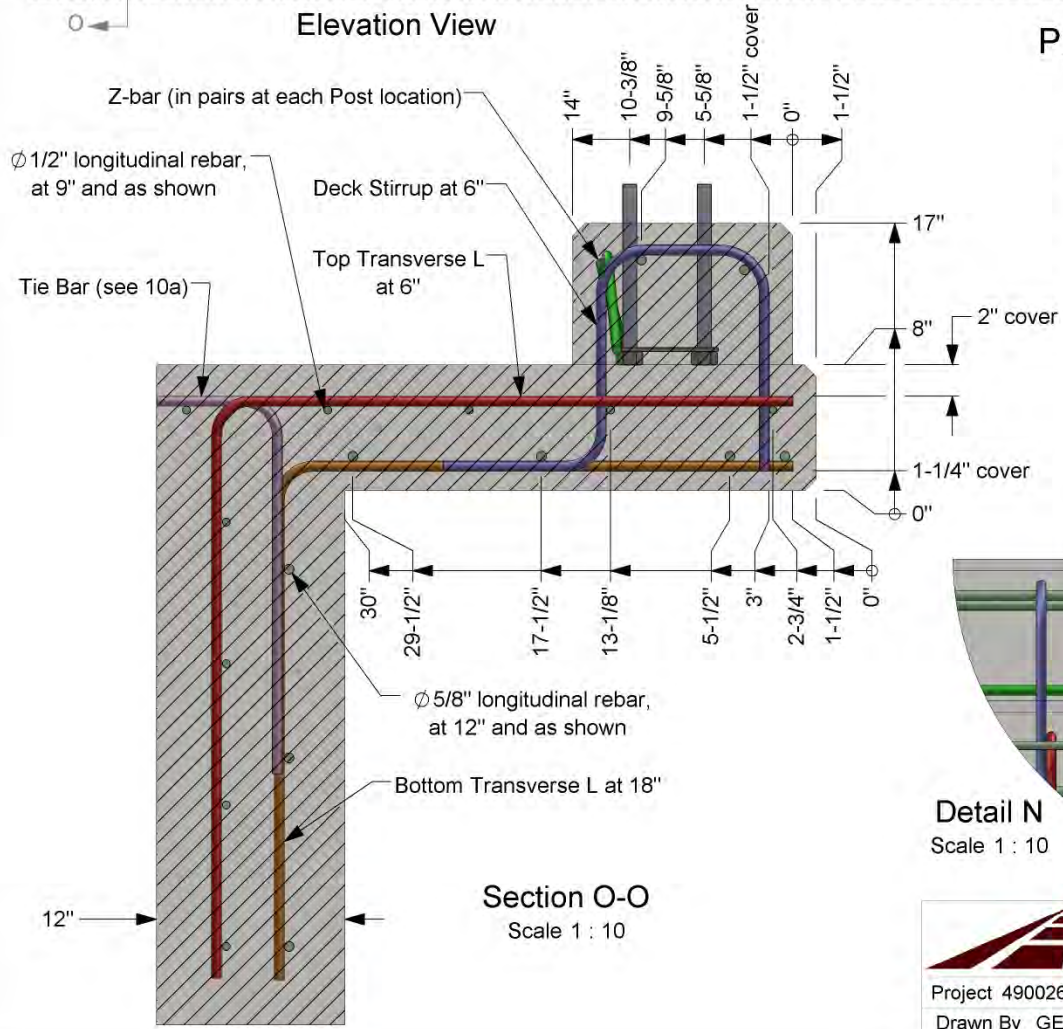
Sheet 9 of 14

Anchor Bolt Assembly



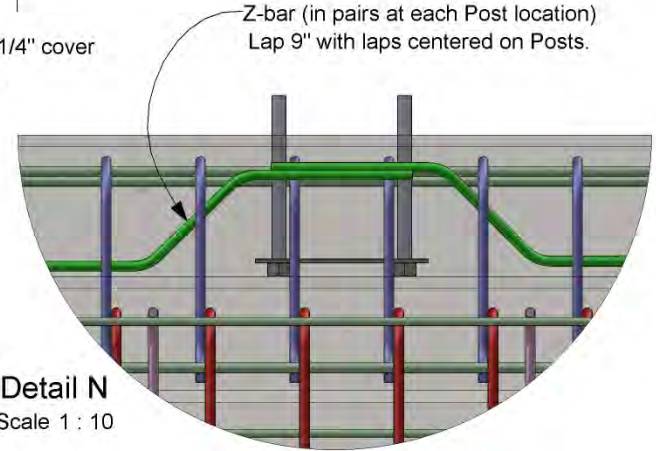
Elevation View

Previous Concrete



Section O-O
Scale 1 : 10

- 10a.** Tie Bars spaced at 24", and welded to existing rebar protruding from the runway (not shown here).
- 10b.** All Rebar is grade 60. Minimum lap distance is 17" for Ø1/2" bars and 21" for Ø5/8" bars.
- 10c.** Concrete is TxDOT Class S (4000 psi). Chamfer edges of Deck and Curb 3/4" as shown.

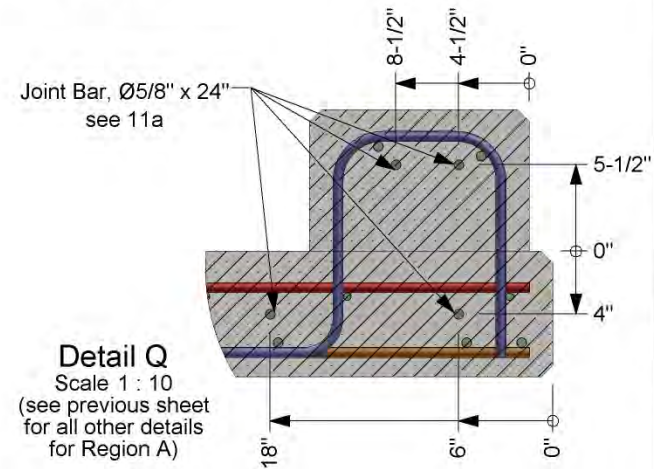
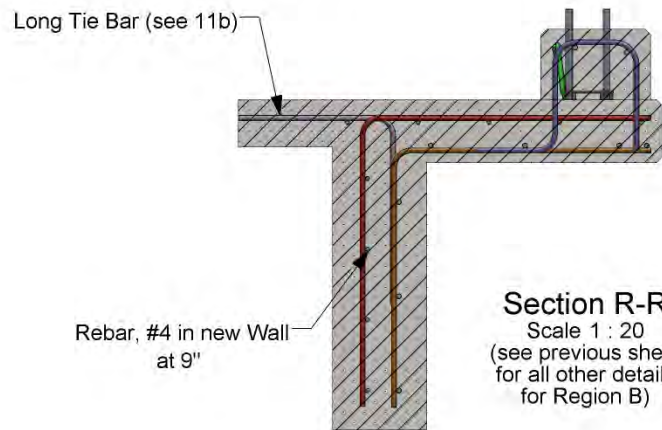
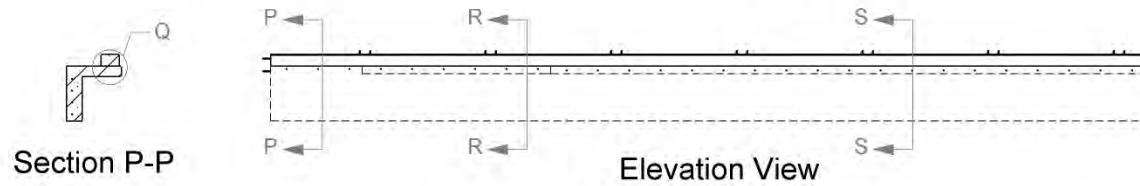
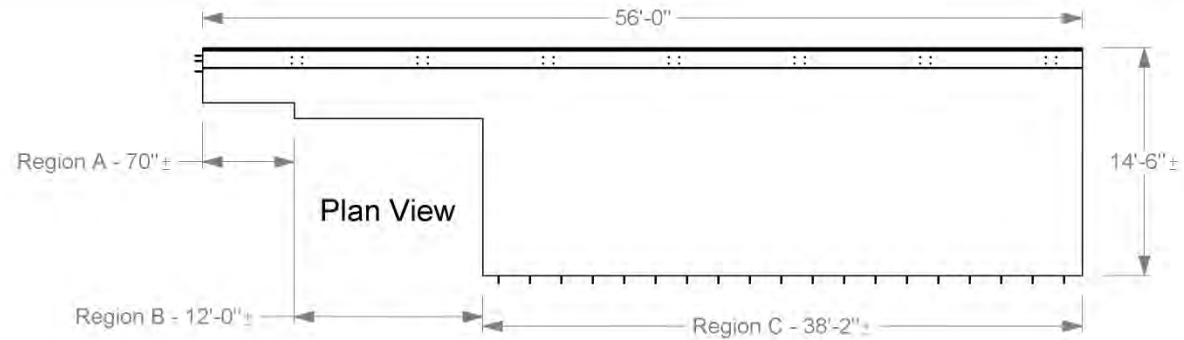


Detail N
Scale 1 : 10

	Roadside Safety and Physical Security Division - Proving Ground	
	Project 490026-4 / 1-2 42" Picket Rail	2016-07-18
Drawn By GES	Scale: 1:120	Sheet 10 of 14 Previous Concrete

T:\11-ProjectFiles\490026-TxDOT\1-4 - 42 inch Picket Rail - Williams\4-2 Drafting\490026-4-2 Drawing

New Concrete



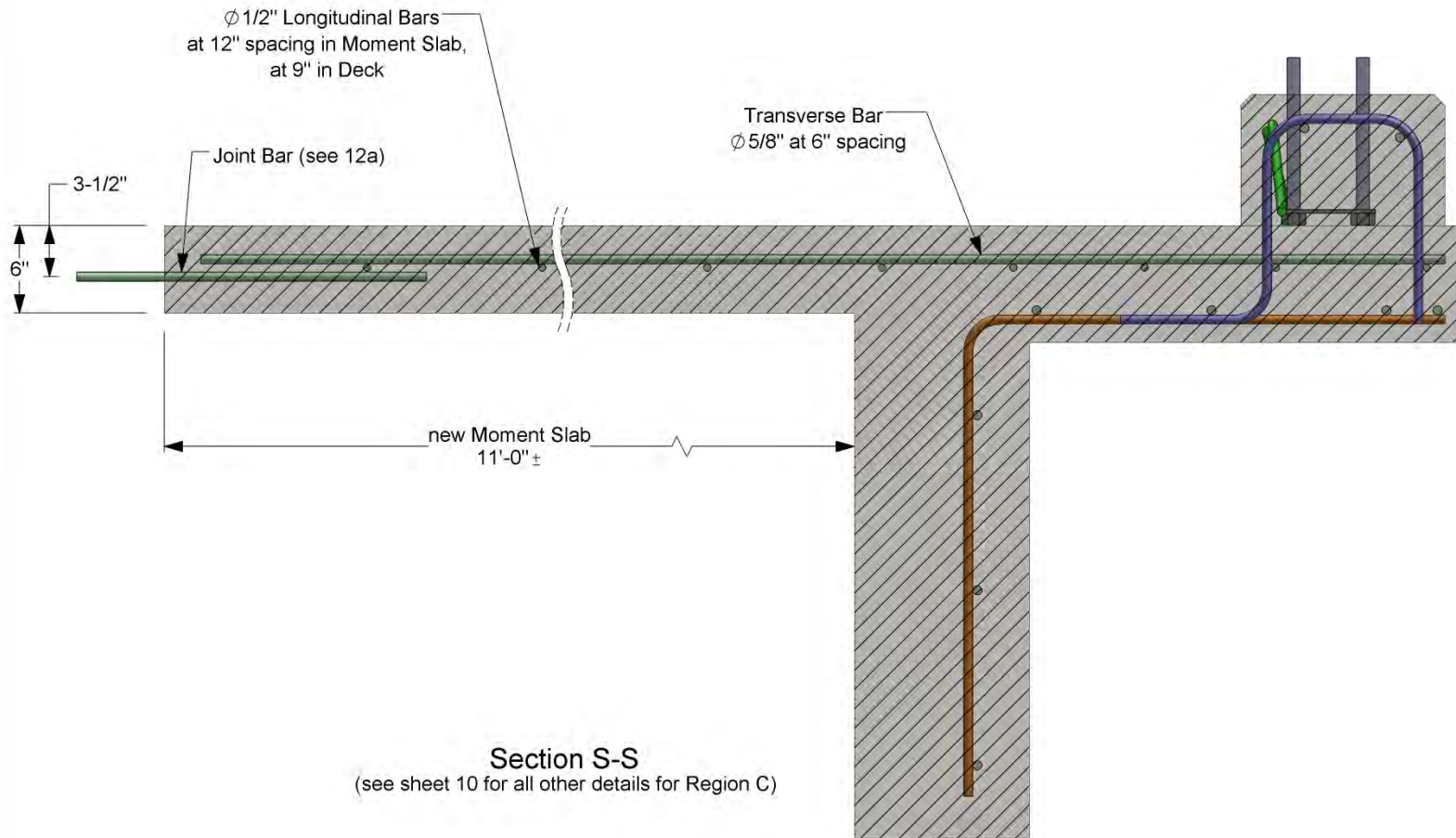
11a. Drill minimum 6" into existing concrete and secure Joint Bars with Hilti RE-500 epoxy, according to manufacturer's instructions.

11b. Long Tie Bars spaced at 24" and welded to existing rebar protruding from the runway (not shown here).



Roadside Safety and Physical Security Division - Proving Ground

Project 490026-4 / 1-2 42" Picket Rail 2016-07-18
 Drawn By GES Scale: 1:20 Sheet 11 of 14 New Concrete



12a. Drill minimum 6" into existing concrete and secure Joint Bars with Hilti RE-500 epoxy, according to manufacturer's instructions. Space at 24".



Roadside Safety and
 Physical Security Division -
 Proving Ground

Project 490026-4 / 1-2 42" Picket Rail

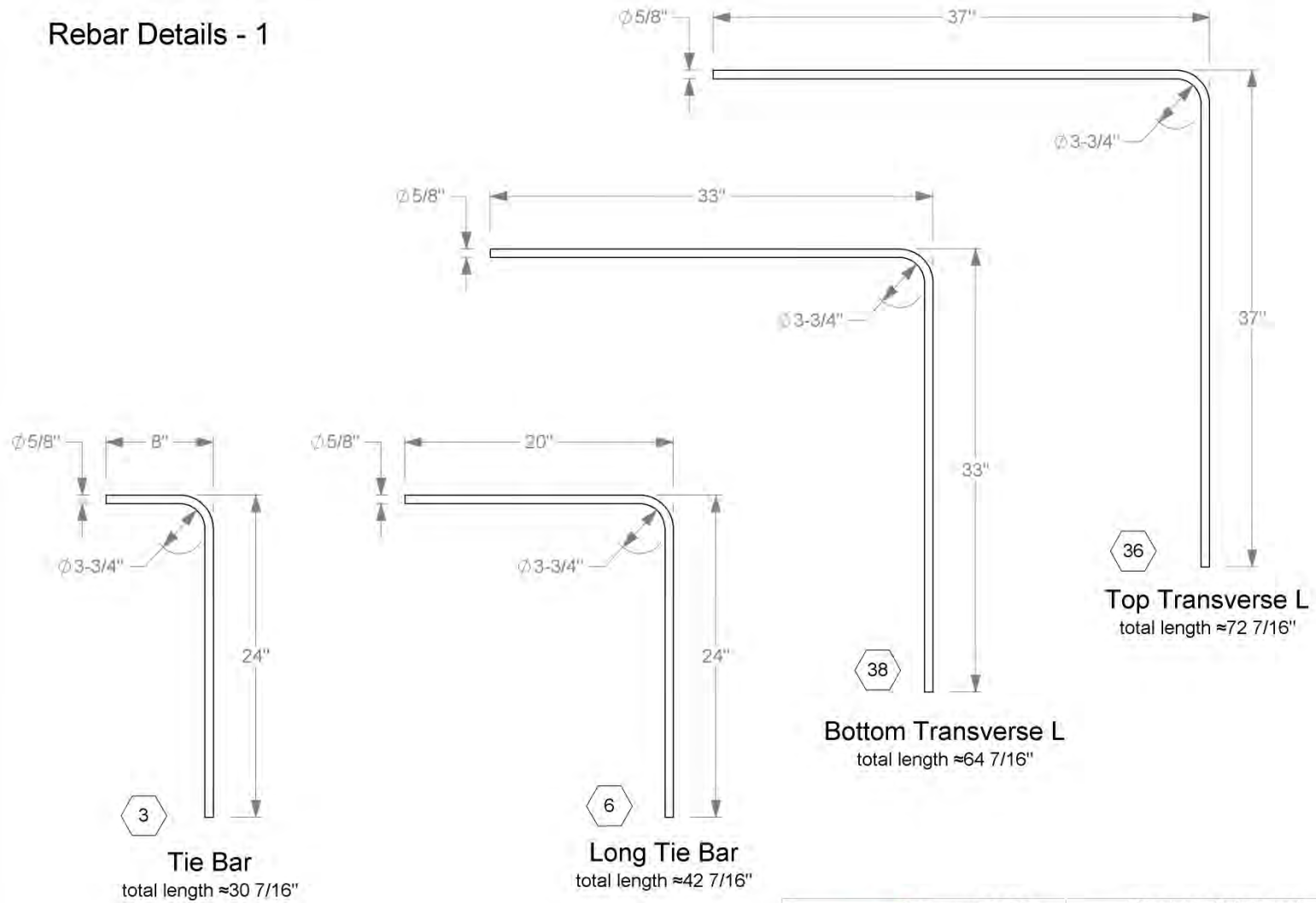
2016-07-18

Drawn By GES

Scale 1:10

Sheet 12 of 14 Section View

Rebar Details - 1



13a. The numeral in the hexagon denotes the quantity needed for each Bar.



Roadside Safety and Physical Security Division - Proving Ground

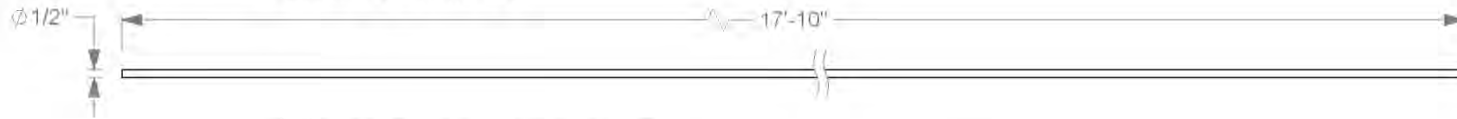
Project 490026-4 / 1-2 42" Picket Rail

2016-07-18

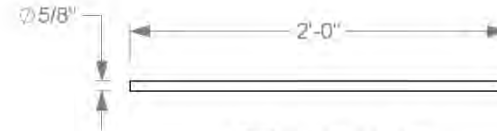
Drawn By GES Scale 1:10 Sheet 13 of 14 Rebar Details - 1

T:\11-ProjectFiles\490026-TxDOT\1-4 - 42 inch Picket Rail - Williams\4-2 Drafting\490026-4-2 Drawing

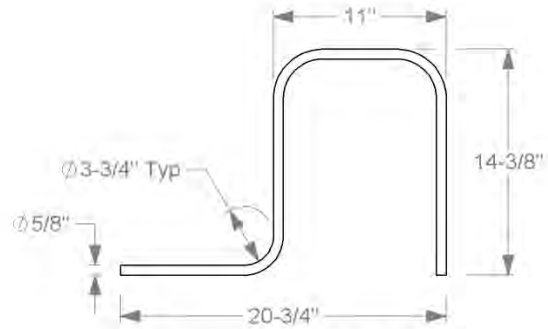
Rebar Details - 2



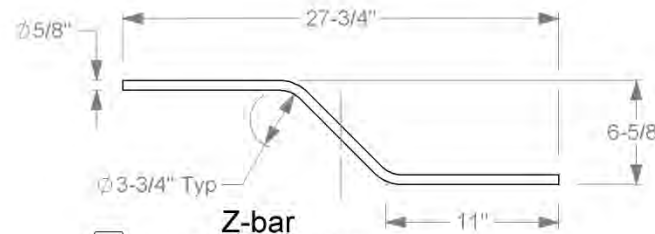
4 Rebar, #4 in new Wall



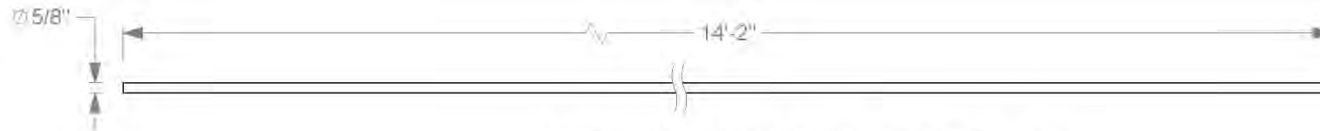
19 Joint Bar



112 Deck Stirrup
total length $\approx 44\ 7/8$ "



14 Z-bar
total length $\approx 30\ 1/16$ "



76 Moment Slab Transverse Bar

14a. The numeral in the hexagon denotes the quantity needed for each Bar.



Roadside Safety and
Physical Security Division -
Proving Ground

Project 490026-4 / 1-2 42" Picket Rail

2016-07-18

Drawn By GES

Scale 1:10

Sheet 14 of 14

Rebar Details - 2