This Sample Drawing illustrates the level of detail needed for crash test drawings.

**Plan View**
- Total concrete length: 148'-0"
- Total rail length (post to post): 144'-0"
- Existing concrete from 2012 test: 92'-0"
- New concrete: 56'-0"
- Follows edge of existing concrete.

**Elevation View**
- Nut, 7/8 heavy hex
- Typical x 4 at each post
- Washer, 7/8 SAE hardened

**Section A-A**
- Scale: 1:20
- (some dims rounded to nearest 1/8")

**Detail B**
- Scale: 1:20
- Typical each joint

1a. Tolerance on all fabricated parts is ±1/8" unless otherwise indicated.
Rail Parts List

<table>
<thead>
<tr>
<th>#</th>
<th>Part Name</th>
<th>Qty.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Post for 42&quot; Picket Rail</td>
<td>19</td>
</tr>
<tr>
<td>2</td>
<td>Picket Rail Panel, with slots</td>
<td>18</td>
</tr>
<tr>
<td>3</td>
<td>Rectangular Rail</td>
<td>8</td>
</tr>
<tr>
<td>4</td>
<td>Round Rail</td>
<td>4</td>
</tr>
<tr>
<td>5</td>
<td>Splice Section for Round Rail</td>
<td>3</td>
</tr>
<tr>
<td>6</td>
<td>Splice Section for Rectangular Rail</td>
<td>6</td>
</tr>
<tr>
<td>7</td>
<td>U-bolt for Picket Rail</td>
<td>57</td>
</tr>
<tr>
<td>8</td>
<td>Plate Washer for U-bolt</td>
<td>114</td>
</tr>
<tr>
<td>9</td>
<td>Washer, 1/2 SAE Hardened</td>
<td>216</td>
</tr>
<tr>
<td>10</td>
<td>Nut, 1/2 heavy hex</td>
<td>222</td>
</tr>
<tr>
<td>11</td>
<td>Bolt, 1/2&quot; x 1 1/2&quot; hex</td>
<td>108</td>
</tr>
<tr>
<td>12</td>
<td>Washer, 1/2 Lock</td>
<td>114</td>
</tr>
<tr>
<td>13</td>
<td>Washer, 7/8 SAE Hardened</td>
<td>76</td>
</tr>
<tr>
<td>14</td>
<td>Nut, 7/8 heavy hex</td>
<td>76</td>
</tr>
</tbody>
</table>

2a. Place Splice Sections with Pins on Field Side.

2b. Ø1/2" Bolts are ASTM A325. Ø7/8" Bolts are ASTM A449.
Post

Plan View

1/4 Typ
1-1/4" E
1/4 Typ

Detail E
Scale 1 : 5

Isometric View

1/2"

<table>
<thead>
<tr>
<th>#</th>
<th>Body Name</th>
<th>Description</th>
<th>Length</th>
<th>MATERIAL</th>
<th>Qty</th>
</tr>
</thead>
<tbody>
<tr>
<td>15</td>
<td>Base Plate</td>
<td>Plate, 12&quot; x 3/4&quot;</td>
<td>14&quot;</td>
<td>ASTM A572 Grade 50</td>
<td>1</td>
</tr>
<tr>
<td>16</td>
<td>Side Plate</td>
<td>Plate, 9&quot; x 3/4&quot;</td>
<td>31 1/4&quot;</td>
<td>ASTM A572 Grade 50</td>
<td>2</td>
</tr>
<tr>
<td>17</td>
<td>Rail Plate, Top</td>
<td>Plate, 2&quot; x 3/4&quot;</td>
<td>11 3/4&quot;</td>
<td>ASTM A36 Steel</td>
<td>1</td>
</tr>
<tr>
<td>18</td>
<td>Rail Plate, Bot and Mid</td>
<td>Plate, 2&quot; x 3/4&quot;</td>
<td>14&quot;</td>
<td>ASTM A36 Steel</td>
<td>2</td>
</tr>
<tr>
<td>19</td>
<td>Picket</td>
<td>Plate, 5/8&quot; x 5/8&quot;</td>
<td>27 3/4&quot;</td>
<td>ASTM A36 Steel</td>
<td>1</td>
</tr>
</tbody>
</table>
Post Parts
(See Table, previous sheet, for Picket details)

Base Plate
Plate, 12" x 3/4" x 14"
ASTM A572 Grade 50

Rail Plate, Top
Plate, 2" x 3/4" x 11 3/4"
ASTM A36 Steel

Rail Plate, Bot and Mid
Plate, 2" x 3/4" x 14"
ASTM A36 Steel

Side Plate
Plate, 9" x 3/4" x 31 1/4"
ASTM A572 Grade 50

Roadside Safety and Physical Security Division - Proving Ground

Texas A&M Transportation Institute

Project 490026-4 42" Picket Rail
2016-07-29
Drawn By GES Scale 1:5 Sheet 4 of 14 Post Parts
6a. Check Splice Sleeve for Rectangular Rail for loose fit in Rectangular Rail after fabrication is completed.
Rectangular Rail
HSS 6" x 2" x 1/4"
ASTM A500 Grade B

Plan View
(see 7a)

Elevation View

Section J-J
Scale 1 : 5

Detail K
Scale 1 : 10

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.
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

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

U-bolt for Picket Rail
Ø 1/2" ASTM A36 Steel
Scale 1:2

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

Isometric Views

B7 Threaded Rod, Ø7/8" x 11 1/2"
Typ x 4
(threads not shown for clarity)

Nut, 7/8 heavy hex
Typ x 4

Anchor Plate

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

Roadside Safety and Physical Security Division - Proving Ground

Texas A&M Transportation Institute

Project 490026-4  42" Picket Rail  2016-07-29

Drawn By GES  Scale 1:3  Sheet 9 of 14  Anchor Bolt Assembly
Z-bar (in pairs at each Post location)

1/2" longitudinal rebar, at 9" and as shown

Deck Stirrup at 6"

Top Transverse L at 6"

Section O-O
Scale 1:10

Previous Concrete

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.

10b. Concrete is TxDOT Class S (4000 psi). Chamfer edges of Deck and Curb 3/4" as shown.

5/8" longitudinal rebar, at 12" and as shown

Bottom Transverse L at 18"

Detail N
Scale 1:10

Roadside Safety and Physical Security Division - Proving Ground

Texas A&M Transportation Institute

Project 490026-4 42" Picket Rail

2016-07-29

Drawn By GES Scale 1:120 Sheet 10 of 14
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).
12a. Drill minimum 6" into existing concrete and secure Joint Bars with Hilti RE-500 epoxy, according to manufacturer's instructions. Space at 24".

Section S-S
(see sheet 10 for all other details for Region C)
13a. The numeral in the hexagon denotes the quantity needed for each Bar.
Rebar Details - 2

Rebar, #4 in new Wall

4

Joint Bar

19

Deck Stirrup
total length ≈44 7/8"

112

Z-bar
total length ≈30 1/16"

14

Moment Slab Transverse Bar

76

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