
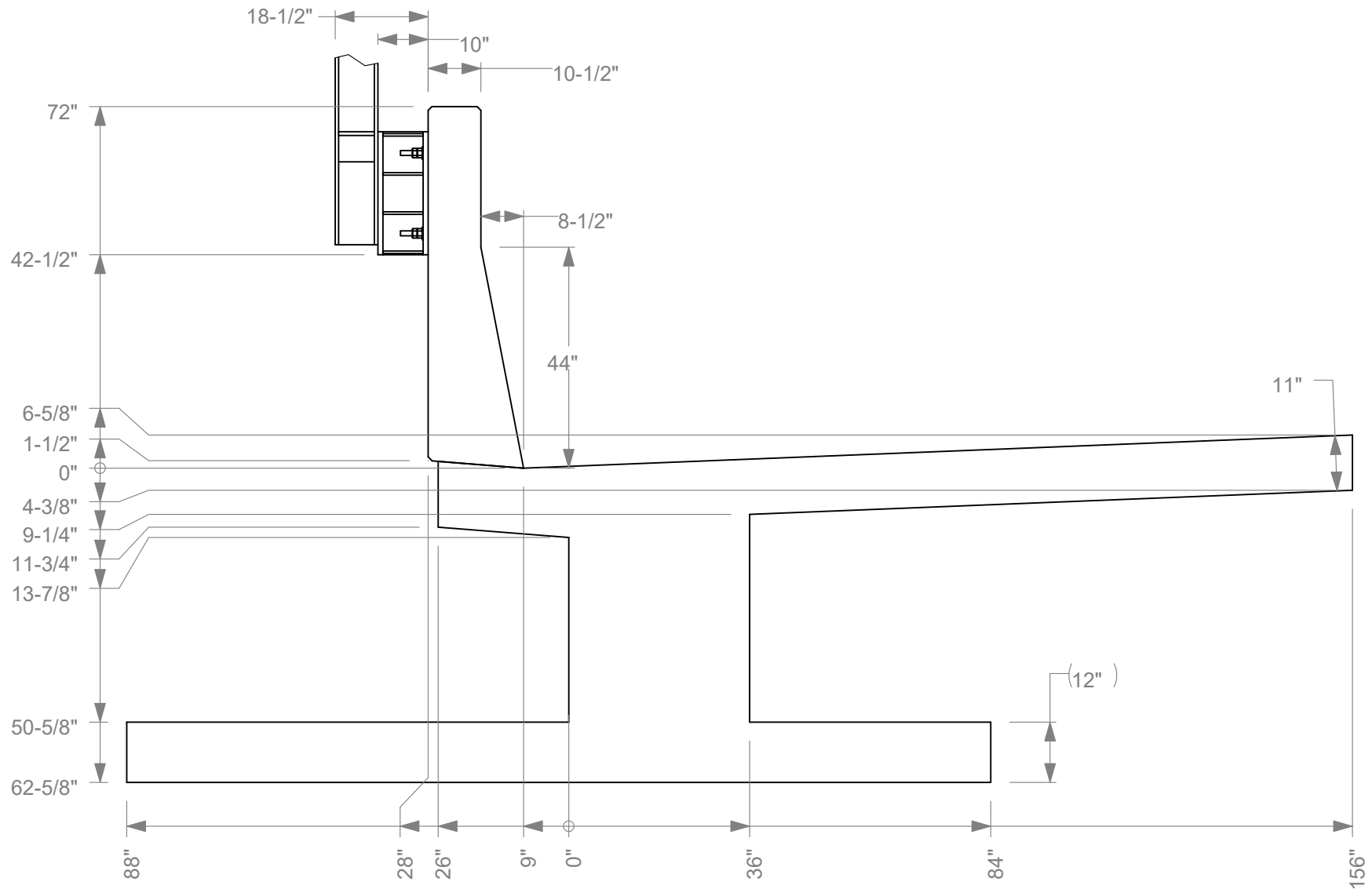


REINFORCEMENT BARS  
 REINFORCEMENT BARS, INCLUDING EPOXY-COATED REINFORCEMENT BARS, SHALL CONFORM TO THE REQUIREMENTS OF AASHTO M-31 (ASTM A706), GRADE 60, DEFORMED BARS.

CAST-IN-PLACE CONCRETE  
 ALL EXPOSED CONCRETE EDGES SHALL HAVE A 3/4" X 45° CHAMFER, EXCEPT WHERE SHOWN OTHERWISE.  
 ALL CONCRETE = 4,000 PSI

		Roadside Safety and Physical Security Division - Proving Ground	
Project #690900-ITG FShape and Single Slope			2019-08-22
Drawn by BLG	Scale 1:225	Sheet 1 of 35 Test Installation	



Single Slope  
End View



Roadside Safety and  
Physical Security Division -  
Proving Ground

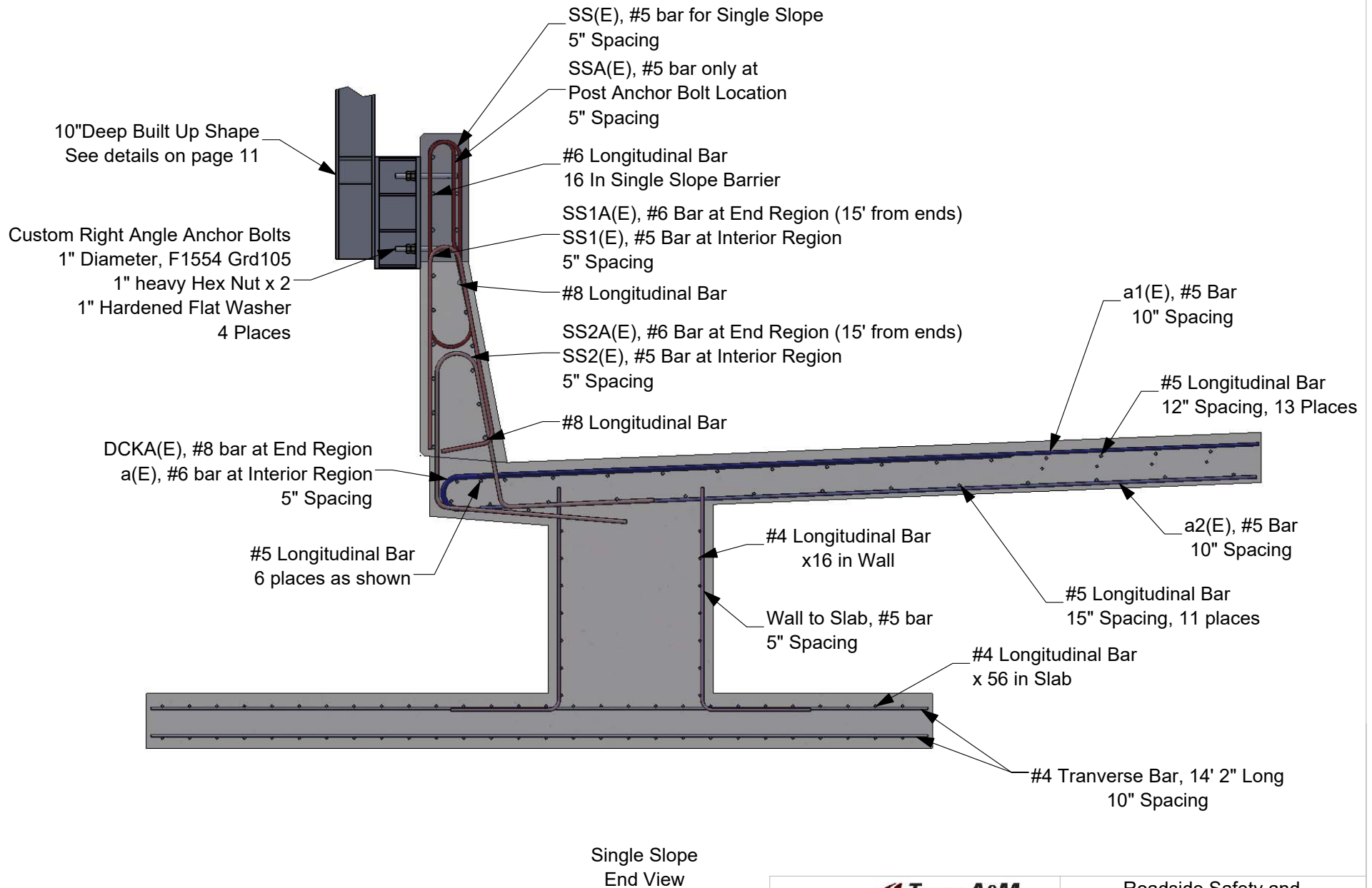
Project #690900-ITG FShape and Single Slope

2019-08-22

Drawn by BLG

Scale 1:30

Sheet 2 of 35 Single Slope End



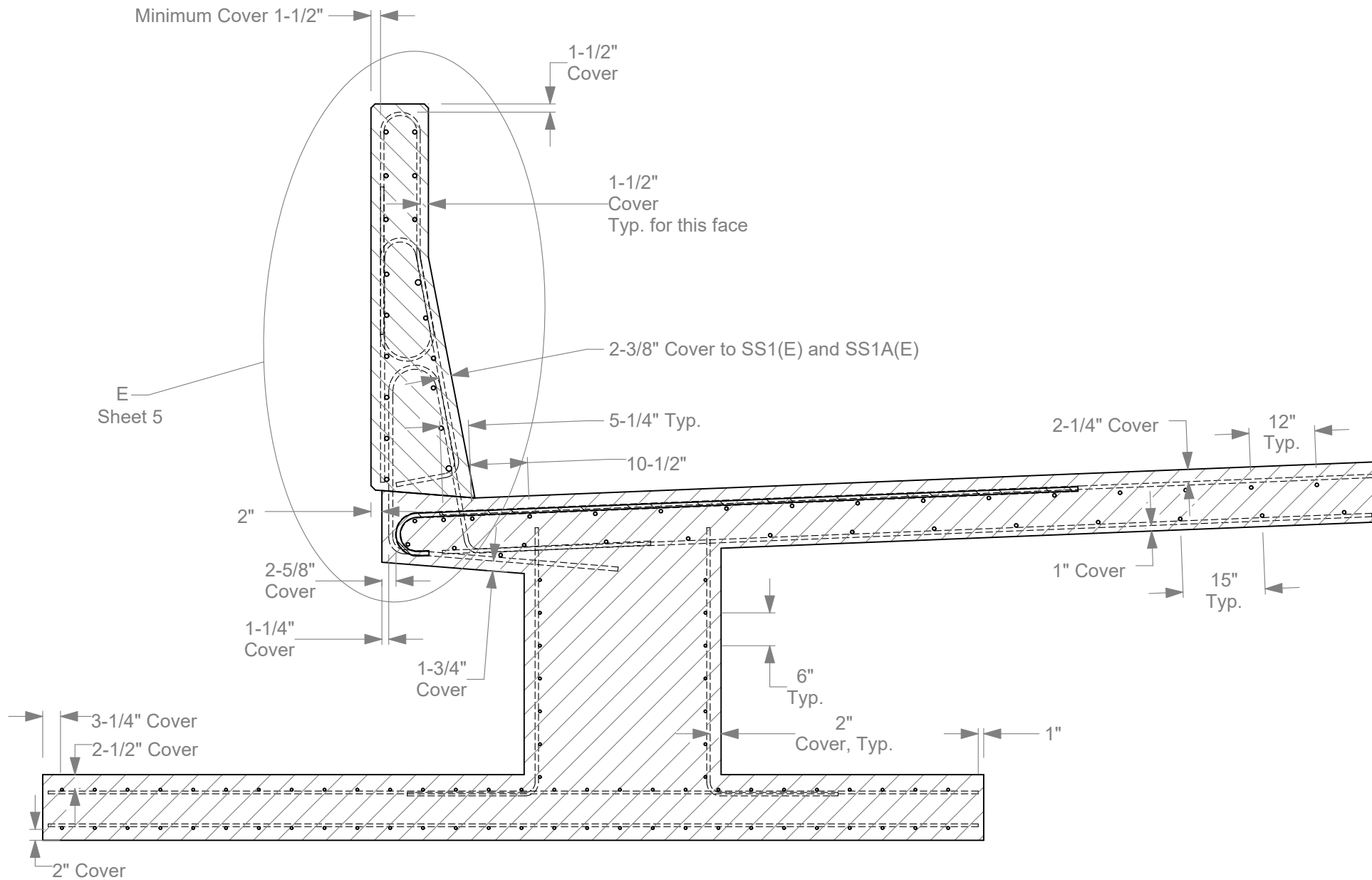
Single Slope  
End View

- 3a. All Rebar is 60 ksi rated
- 3b. All Epoxy Coated Rebar is designated with (E)



Roadside Safety and  
Physical Security Division -  
Proving Ground

Project #690900-ITG FShape and Single Slope		2019-08-22
Drawn by BLG	Scale 1:30	Sheet 3 of 35 Single Slope bar Callout



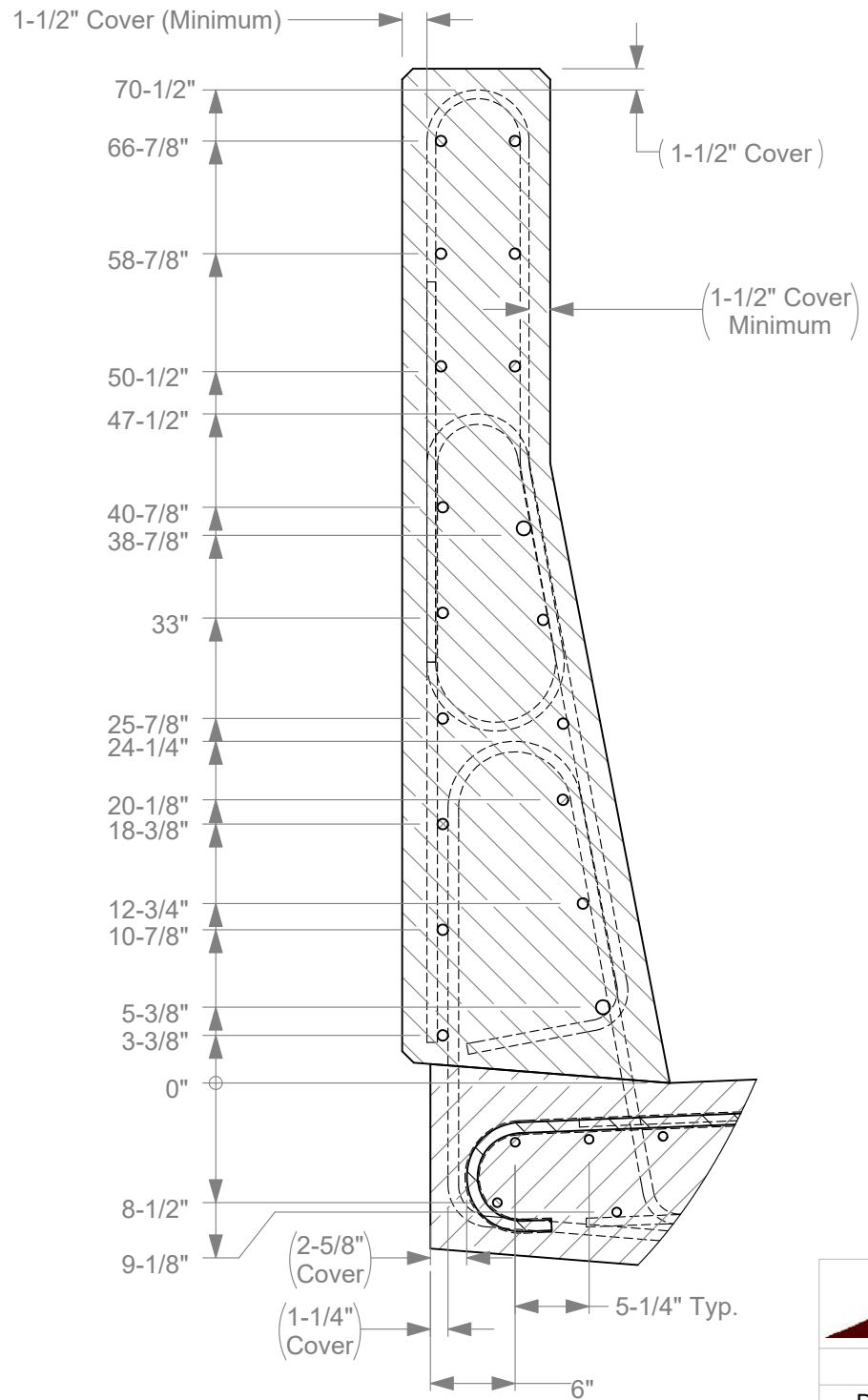
**Section A-A**  
**Single Slope**  
**Away from NAW Posts**



Roadside Safety and  
 Physical Security Division -  
 Proving Ground

- 4a.** All Rebar is 60 ksi rated
- 4b.** All Epoxy Coated Rebar is designated with (E)

Project #690900-ITG FShape and Single Slope		2019-08-22
Drawn by BLG	Scale 1:25	Sheet 4 of 35 Single Slope bar Locations



Detail E



Roadside Safety and  
Physical Security Division -  
Proving Ground

Project #690900-ITG FShape and Single Slope

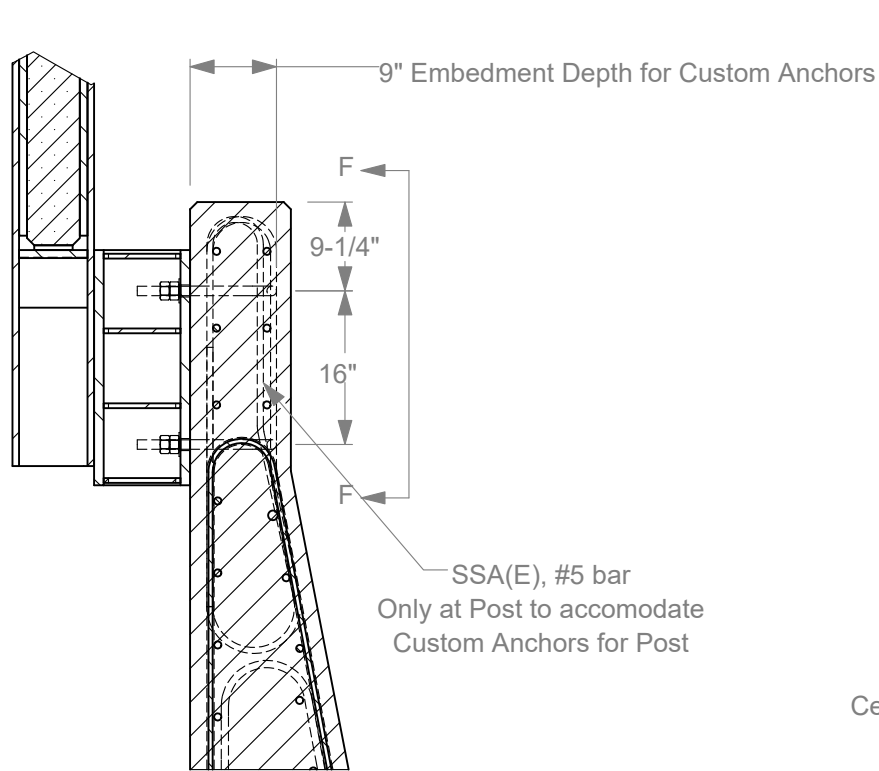
2019-08-22

Drawn by BLG

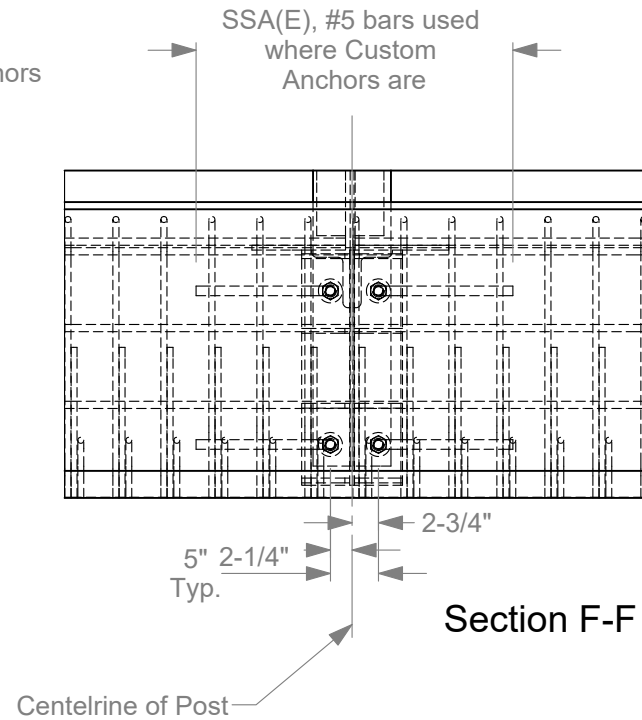
Scale 1:13

Sheet 5 of 35

Single Slope bar Locations 2



**Section B-B**  
Single Slope



- 6a.** All Rebar is 60 ksi rated
- 6b.** All Epoxy Coated Rebar is designated with (E)



Roadside Safety and  
Physical Security Division -  
Proving Ground

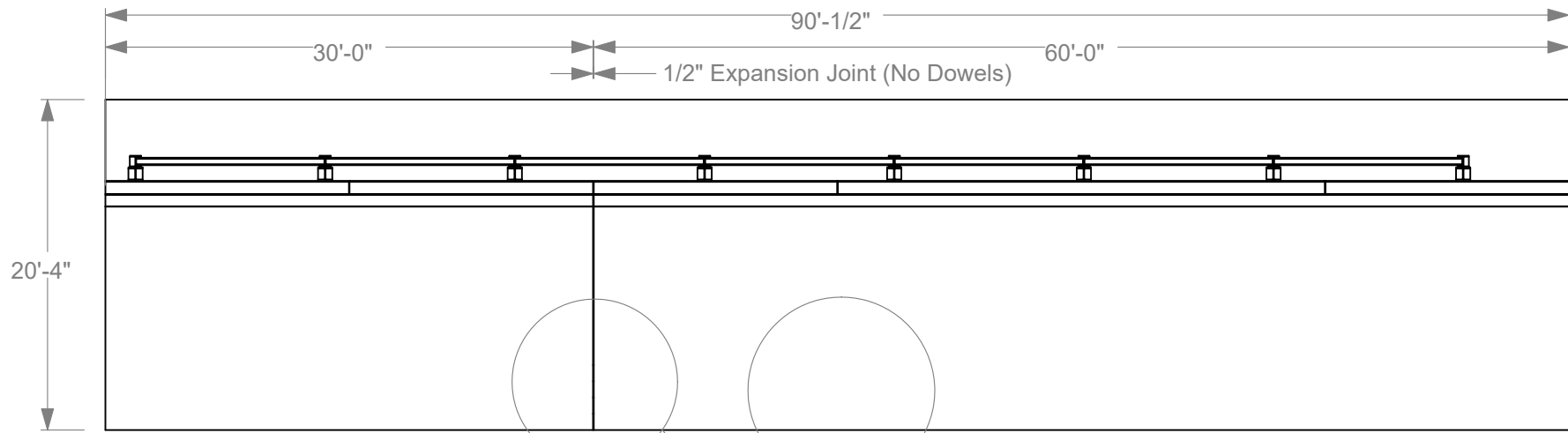
Project #690900-ITG FShape and Single Slope

2019-08-22

Drawn by BLG

Scale 1:20

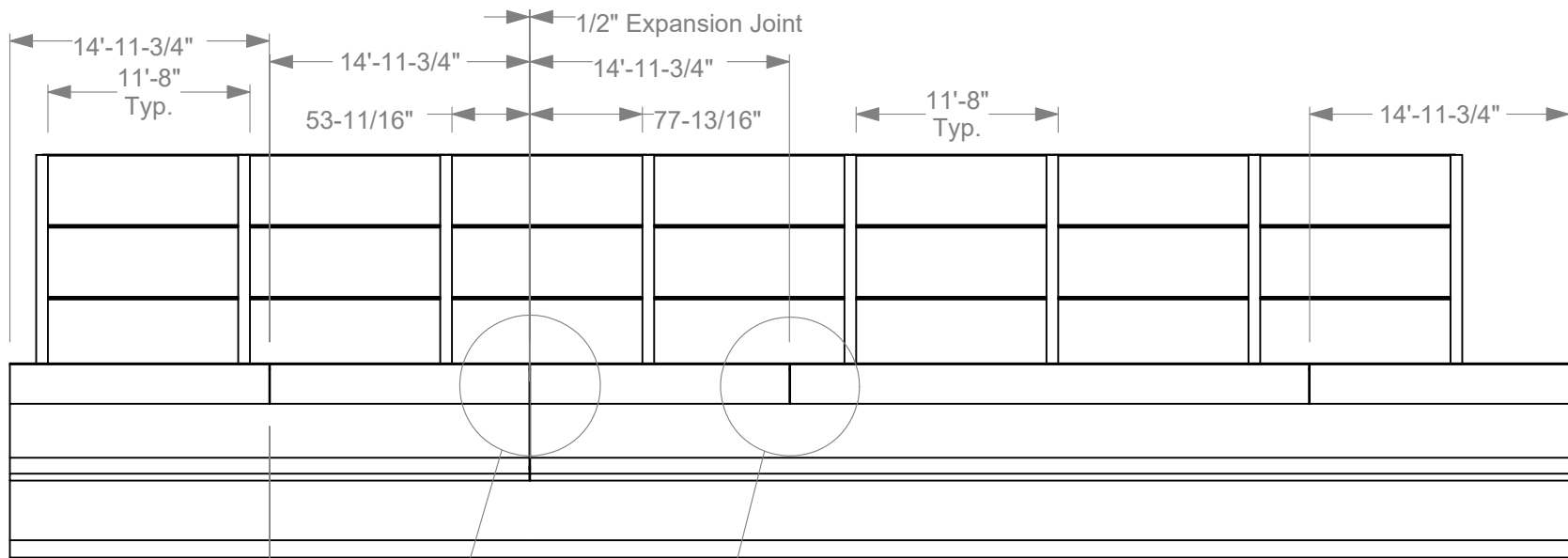
Sheet 6 of 35 Single Slope at Post



Single Slope Plan View

G  
Sheet 8

H  
Sheet 8



Single Slope Elevation View

1/2" Joint  
No rebar or Dowels  
3 places

I  
Sheet 9

J  
Sheet 9



Roadside Safety and  
Physical Security Division -  
Proving Ground

Project #690900-ITG FShape and Single Slope

2019-08-22

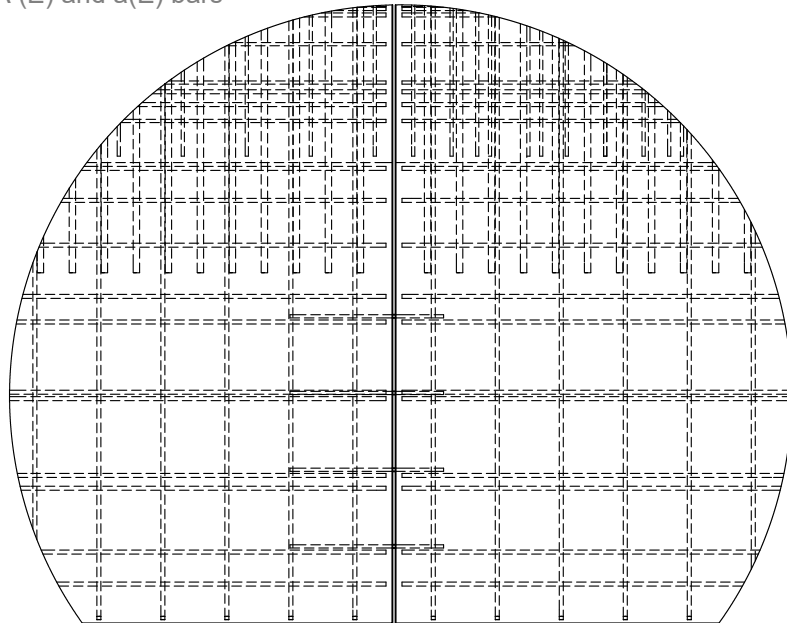
Drawn by BLG

Scale 1:125

Sheet 7 of 35 Single Slope Deck Views

**Detail G**  
Single Slope at  
Expansion Joint

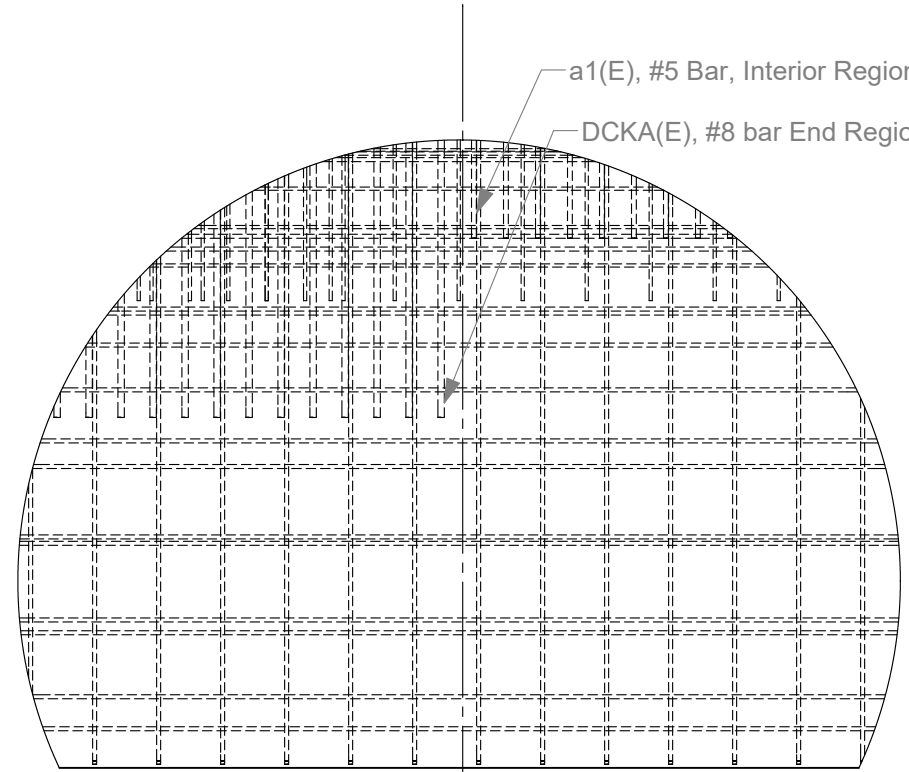
4-1/2" Cover to DCKA(E) bar  
5" Typ. for  
DCKA (E) and a(E) bars



10" Typ. for  
a1(E) and a2(E) bars  
5-5/8" Cover  
for a1(E) and a2(E) bars


**Detail H**  
Single Slope at  
End Region transition to Interior Region

a1(E), #5 Bar, Interior Region  
DCKA(E), #8 bar End Region



End Region stops 15' from ends  
Interior Region Starts 15' from ends

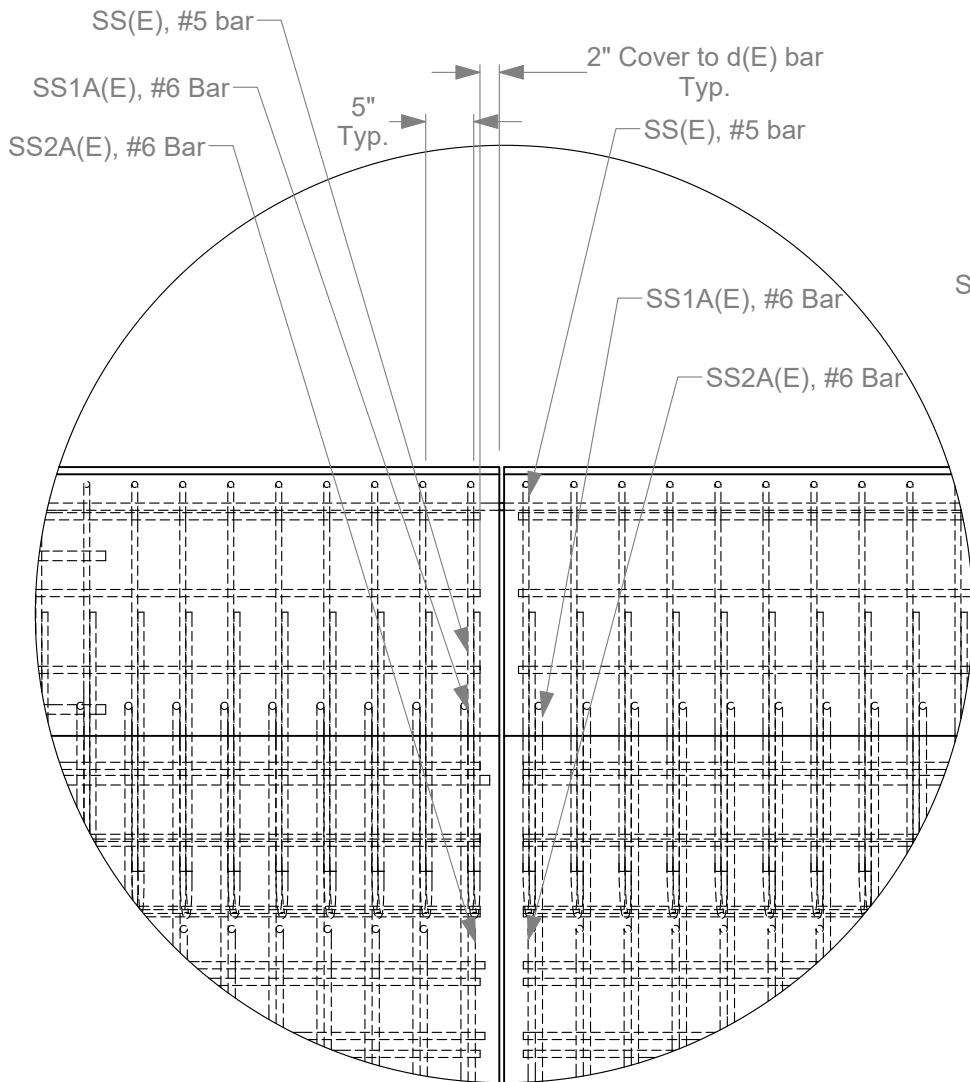
- 8a.** All Rebar is 60 ksi rated
- 8b.** All Epoxy Coated Rebar is designated with (E)

	Roadside Safety and Physical Security Division - Proving Ground	
	Project #690900-ITG FShape and Single Slope	2019-08-22
Drawn by BLG	Scale 1:30	Sheet 8 of 35 SS Deck Rebar Locations



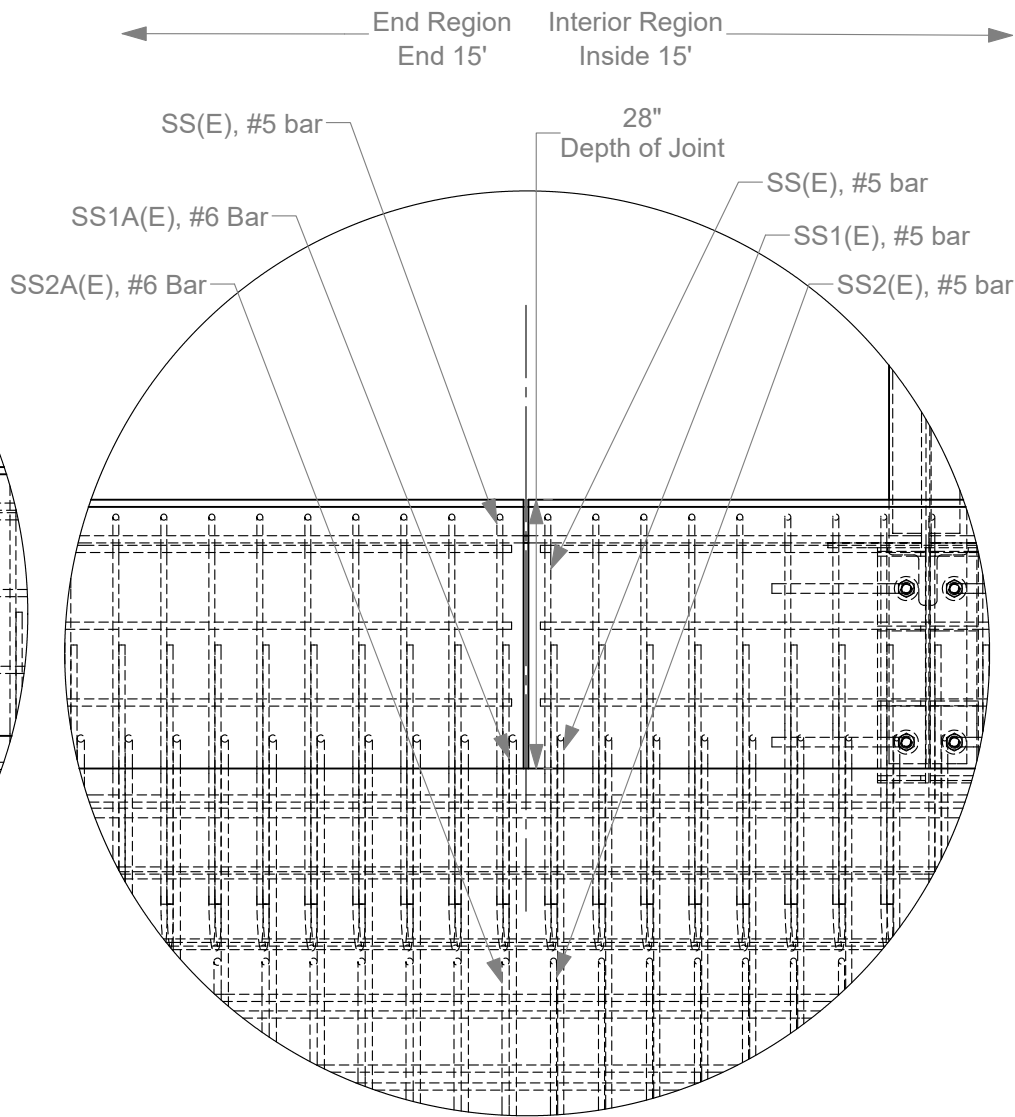
### Detail I

Single Slope barrier  
at Expansion Joint



### Detail J

Single Slope Barrier at  
end region to  
interior region transition



- 9a. All Rebar is 60 ksi rated
- 9b. All Epoxy Coated Rebar is designated with (E)



Roadside Safety and  
Physical Security Division -  
Proving Ground

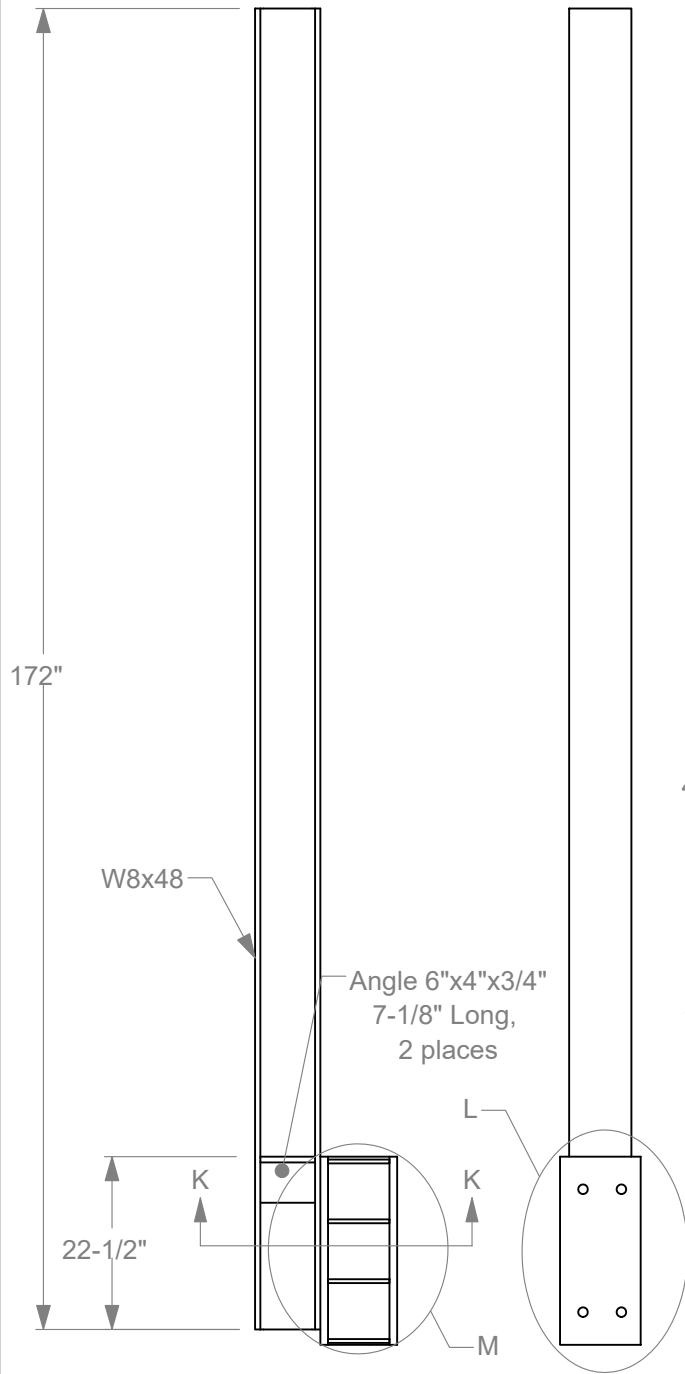
Project #690900-ITG FShape and Single Slope

2019-08-22

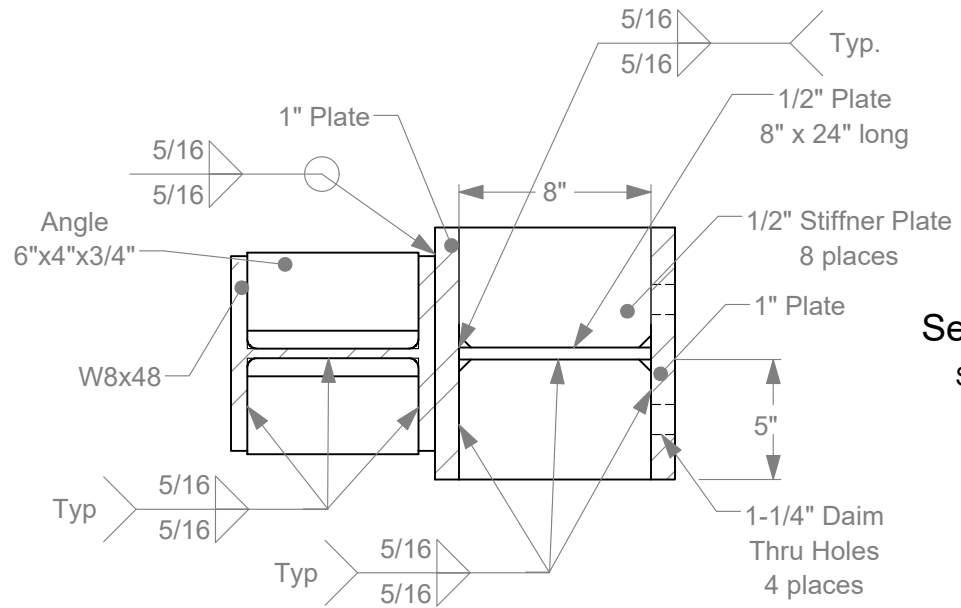
Drawn by BLG

Scale 1:20

Sheet 9 of 35 SS Barrier Rebar Locations

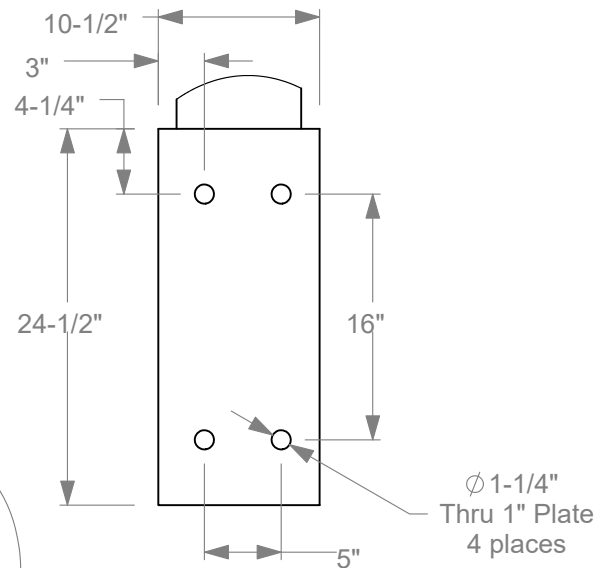


10a. All Steel plate, beams and angles shall be A36 (minimum 36 ksi yield) material



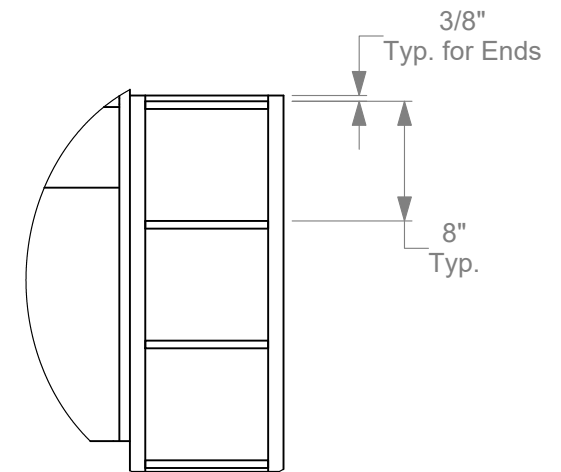
Section K-K

Scale 1 : 8



Detail L

Scale 2 : 25



Detail M

Scale 2 : 25



Roadside Safety and  
Physical Security Division -  
Proving Ground

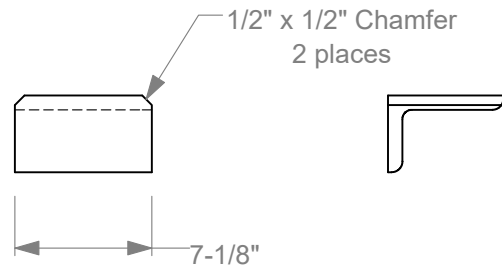
Project #690900-ITG FShape and Single Slope

2019-08-22

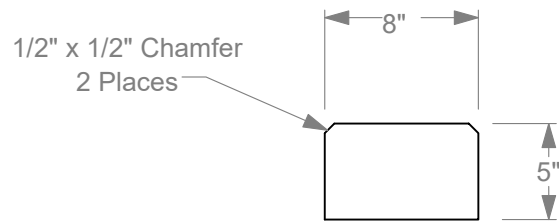
Drawn by BLG

Scale 1:25

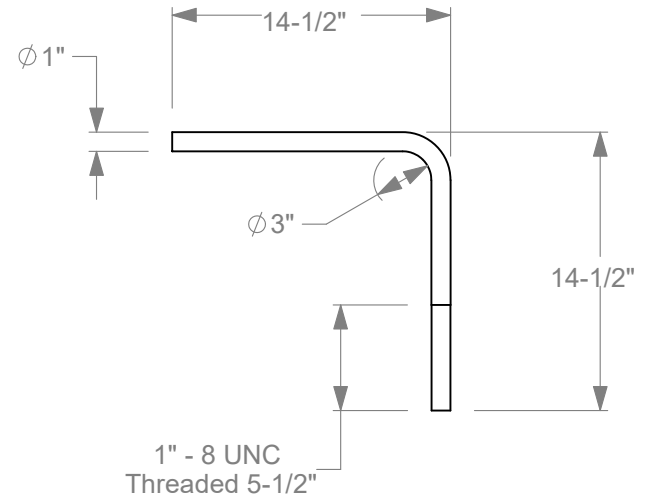
Sheet 10 of 35 SS NAW Post Details



Angle, 6"x4"x3/4"  
2 needed per post



Stiffner Plate, 1/2" thick  
8 needed per post



Custom Right Angle Anchor  
F1554 Grd 105  
4 needed per post

11a. All Steel plate, beams and angles shall be A36 (minimum 36 ksi yield) material



Roadside Safety and  
Physical Security Division -  
Proving Ground

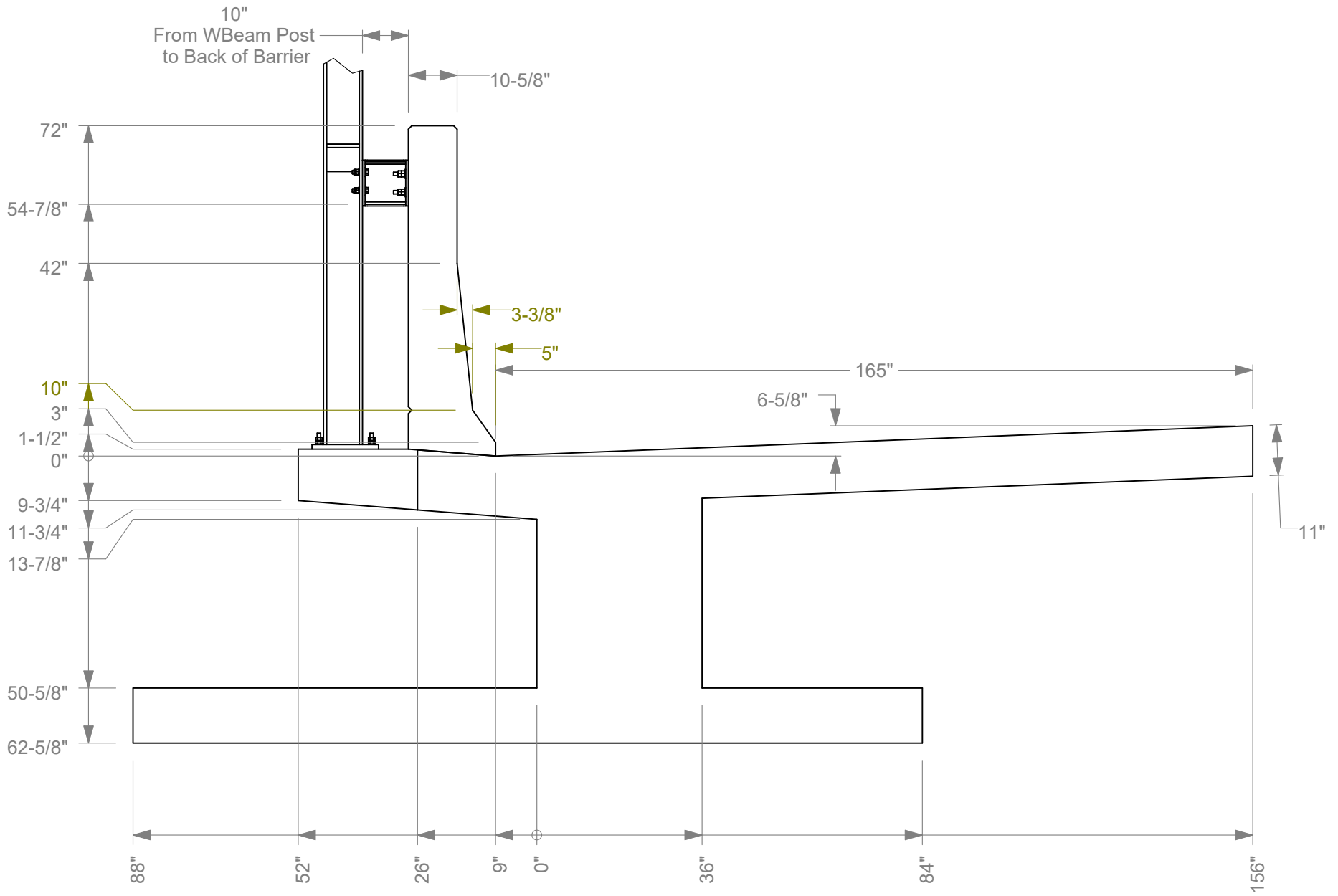
Project #690900-ITG FShape and Single Slope

2019-08-22

Drawn by BLG

Scale 1:10

Sheet 11 of 35 SS Post Build Up Details

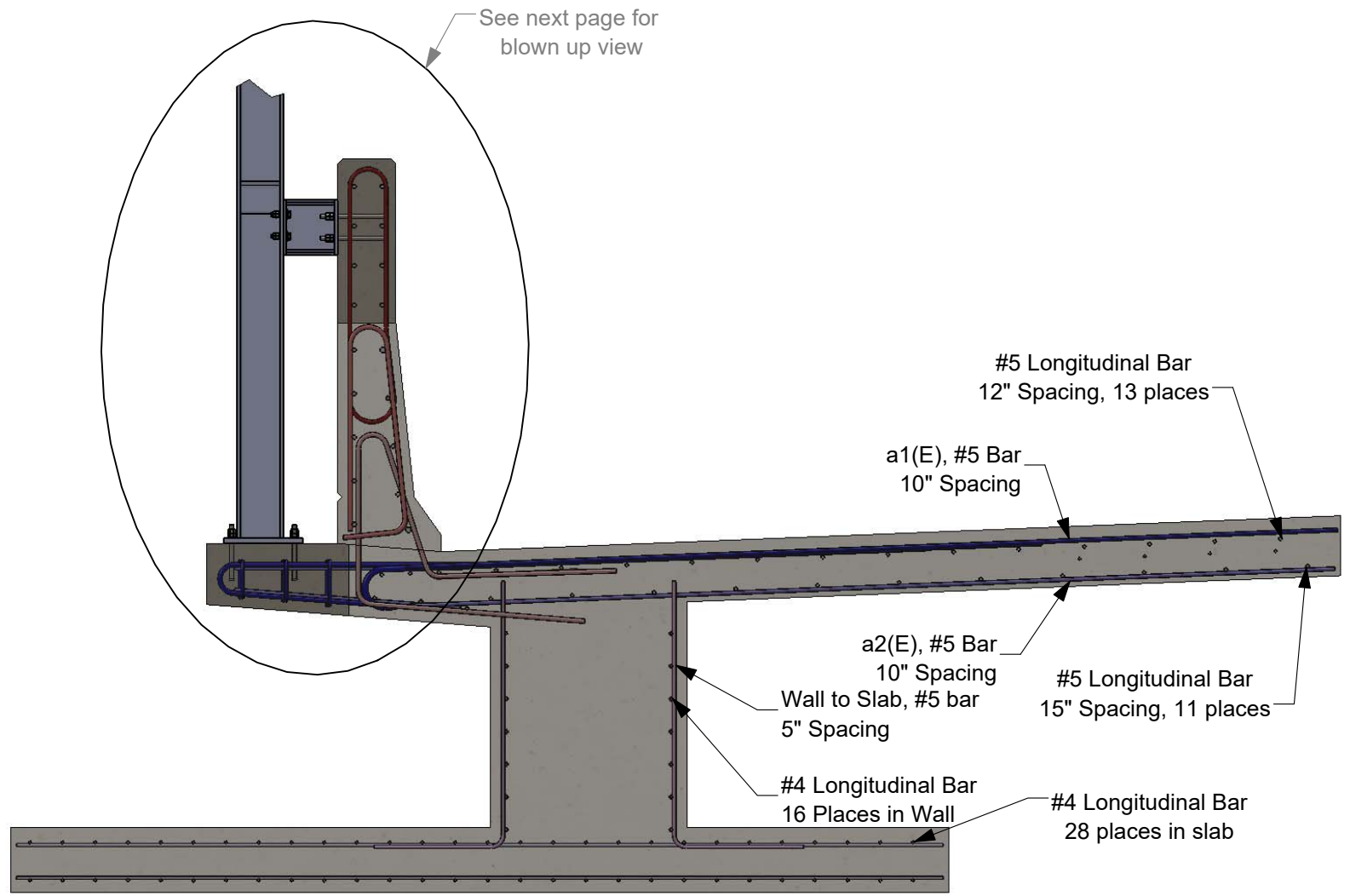


End View  
F-Shape



Roadside Safety and  
Physical Security Division -  
Proving Ground

Project #690900-ITG FShape and Single Slope		2019-08-22
Drawn by BLG	Scale 1:30	Sheet 12 of 35 FShape End View



End View  
F-Shape

13a. All Rebar is 60 ksi rated

13b. All Epoxy Coated Rebar is designated with (E)



Roadside Safety and  
Physical Security Division -  
Proving Ground

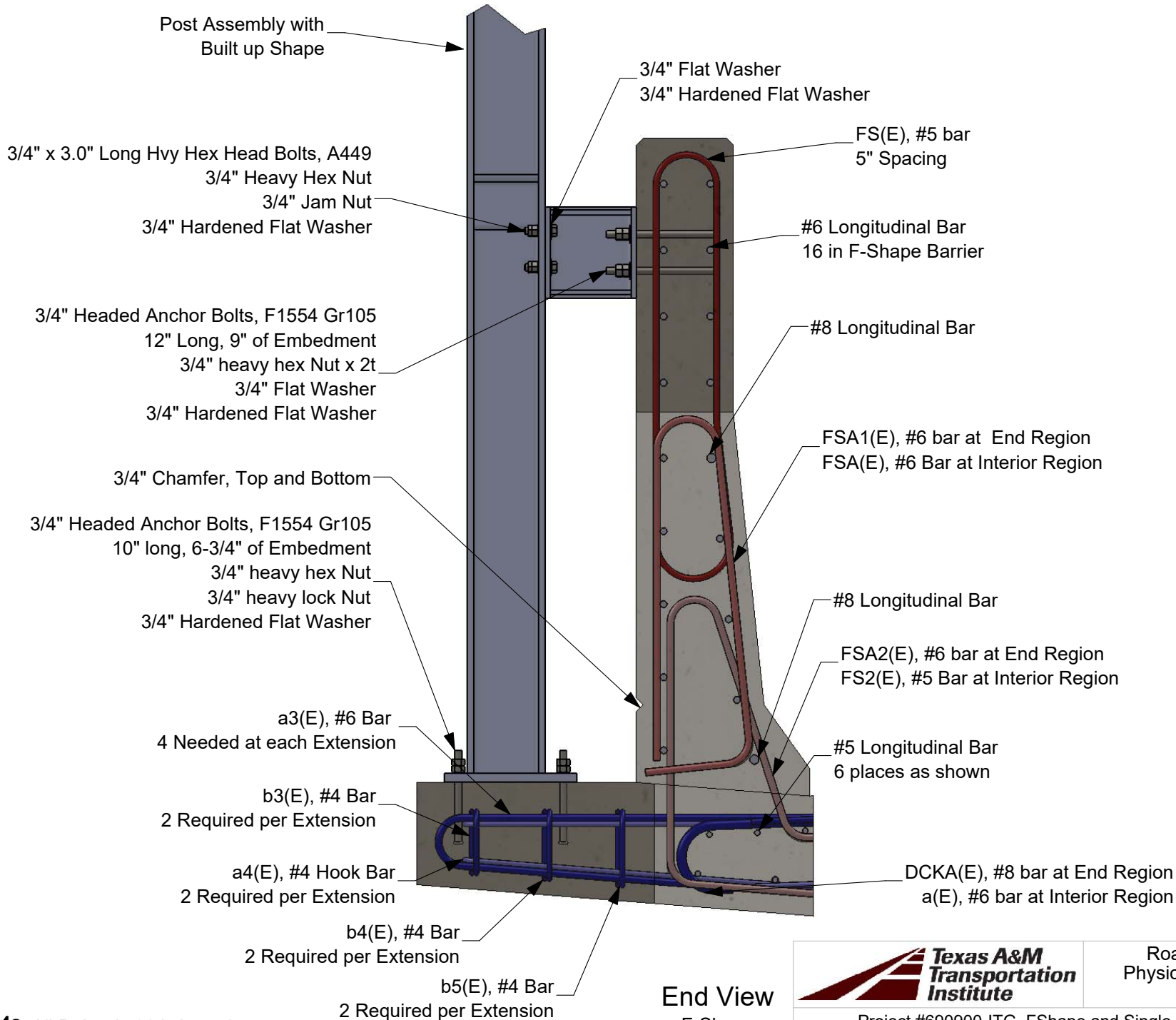
Project #690900-ITG FShape and Single Slope

2019-08-22

Drawn by BLG

Scale 1:30

Sheet 13 of 35 FShape bar Callout



**14a.** All Rebar is 60 ksi rated

**14b.** All Epoxy Coated Rebar is designated with (E)

**End View**  
F-Shape



Roadside Safety and  
Physical Security Division -  
Proving Ground

Project #690900-ITG FShape and Single Slope

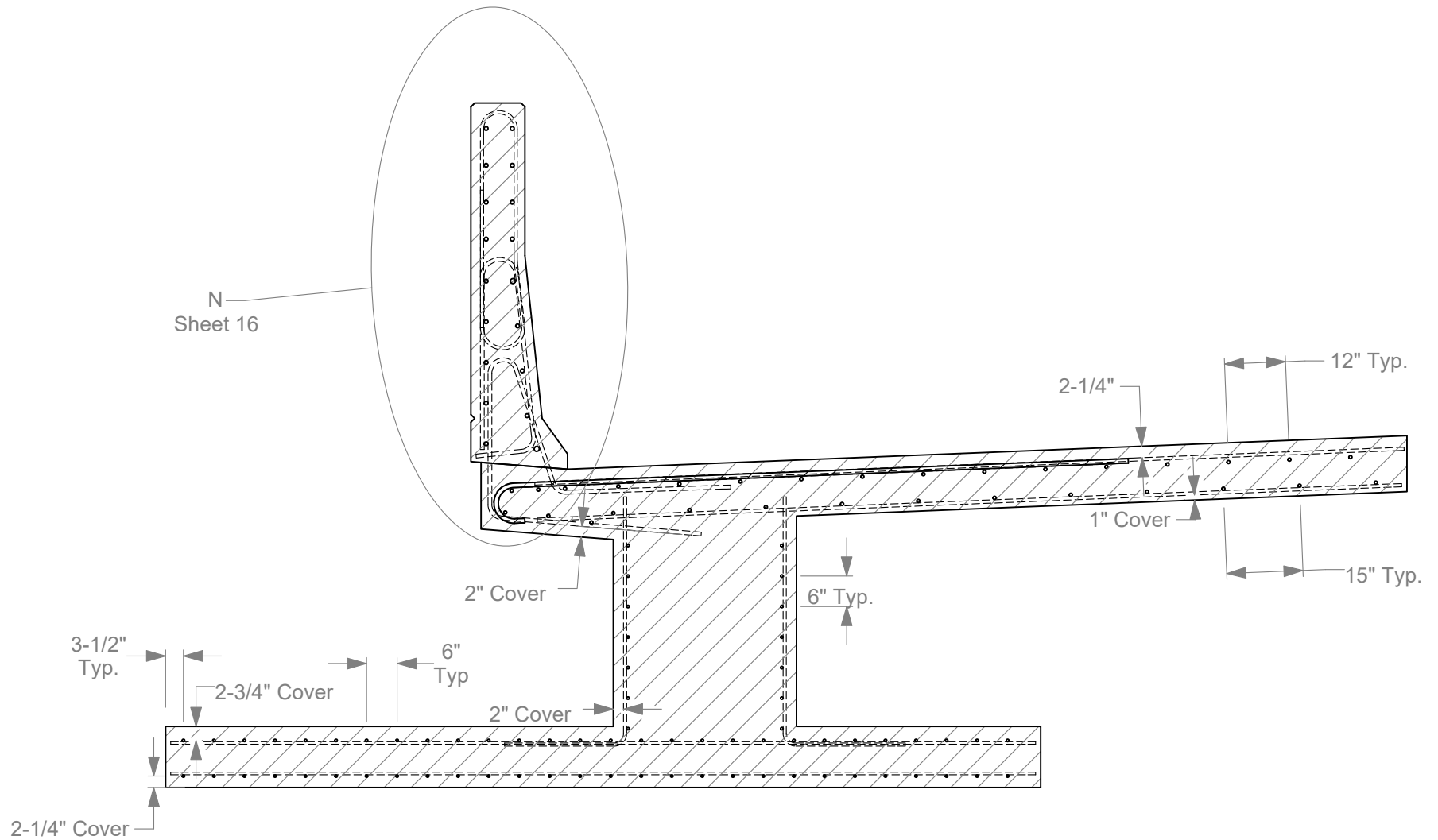
2019-08-22

Drawn by BLG

Scale 1:15

Sheet 14 of 35 FShape bar Callout, 2

N  
Sheet 16



Section C-C  
F-Shape at Extension

15a. All Rebar is 60 ksi rated

15b. All Epoxy Coated Rebar is designated with (E)



Roadside Safety and  
Physical Security Division -  
Proving Ground

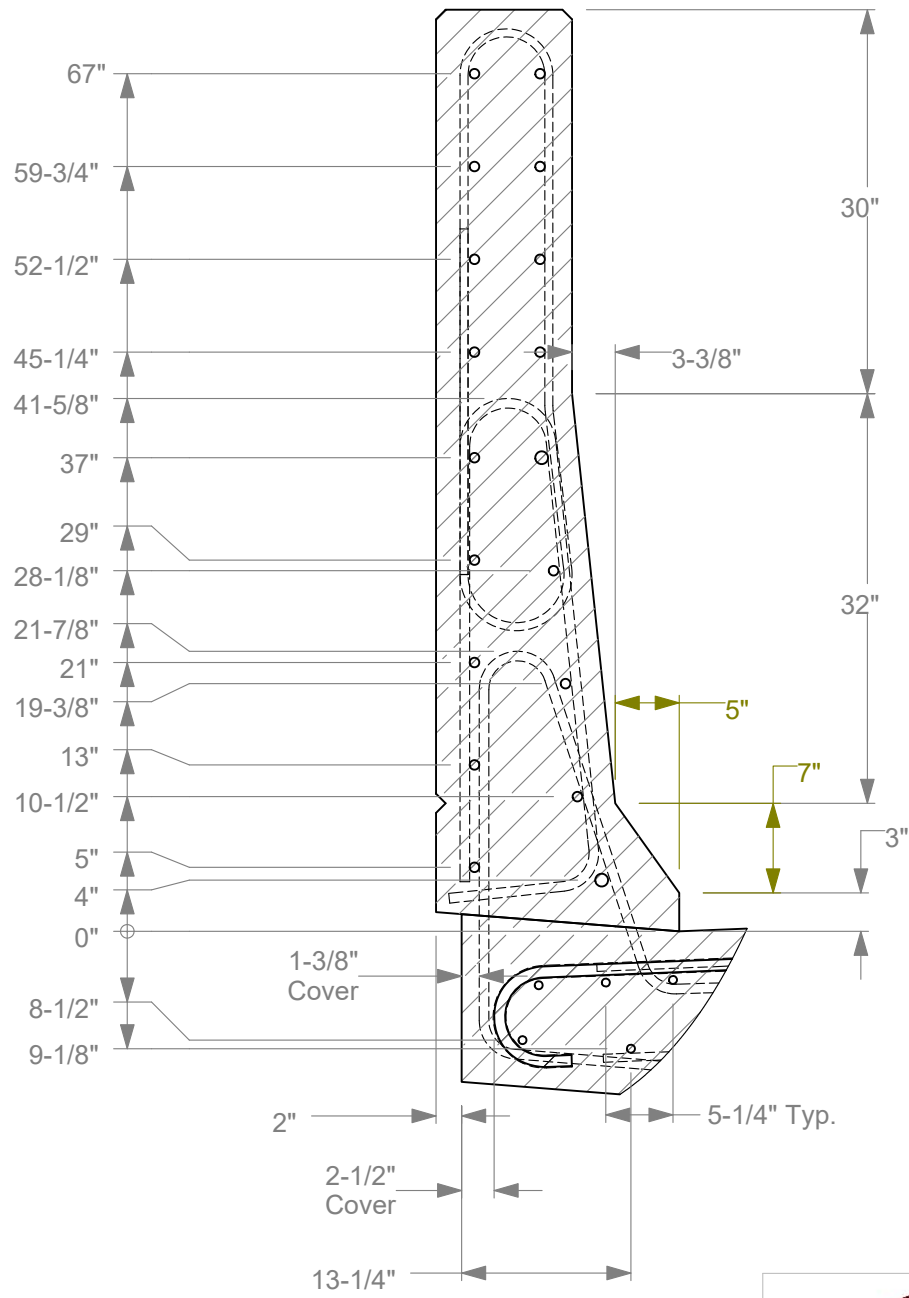
Project #690900-ITG FShape and Single Slope

2019-08-22

Drawn by BLG


Scale 1:30

Sheet 15 of 35 FShape bar Location



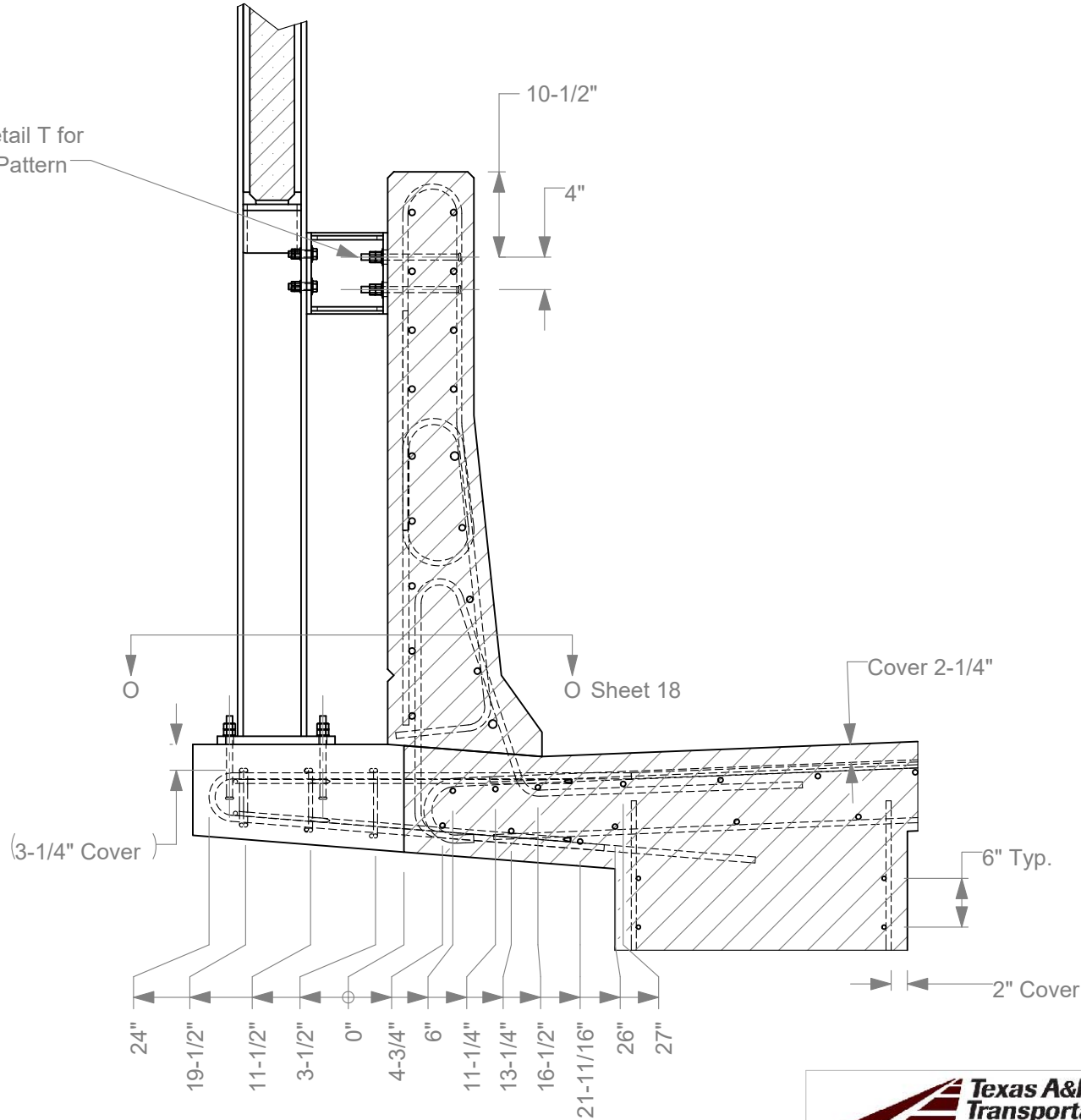
Detail N  
Scale 1 : 15

**16a.** All Rebar is 60 ksi rated  
**16b.** All Epoxy Coated Rebar is designated with (E)

		Roadside Safety and Physical Security Division - Proving Ground	
Project #690900-ITG FShape and Single Slope		2019-08-22	
Drawn by BLG	Scale 1:30	Sheet 16 of 35 FShape bar Location, 2	



See Detail T for Bolt Pattern



Section D-D

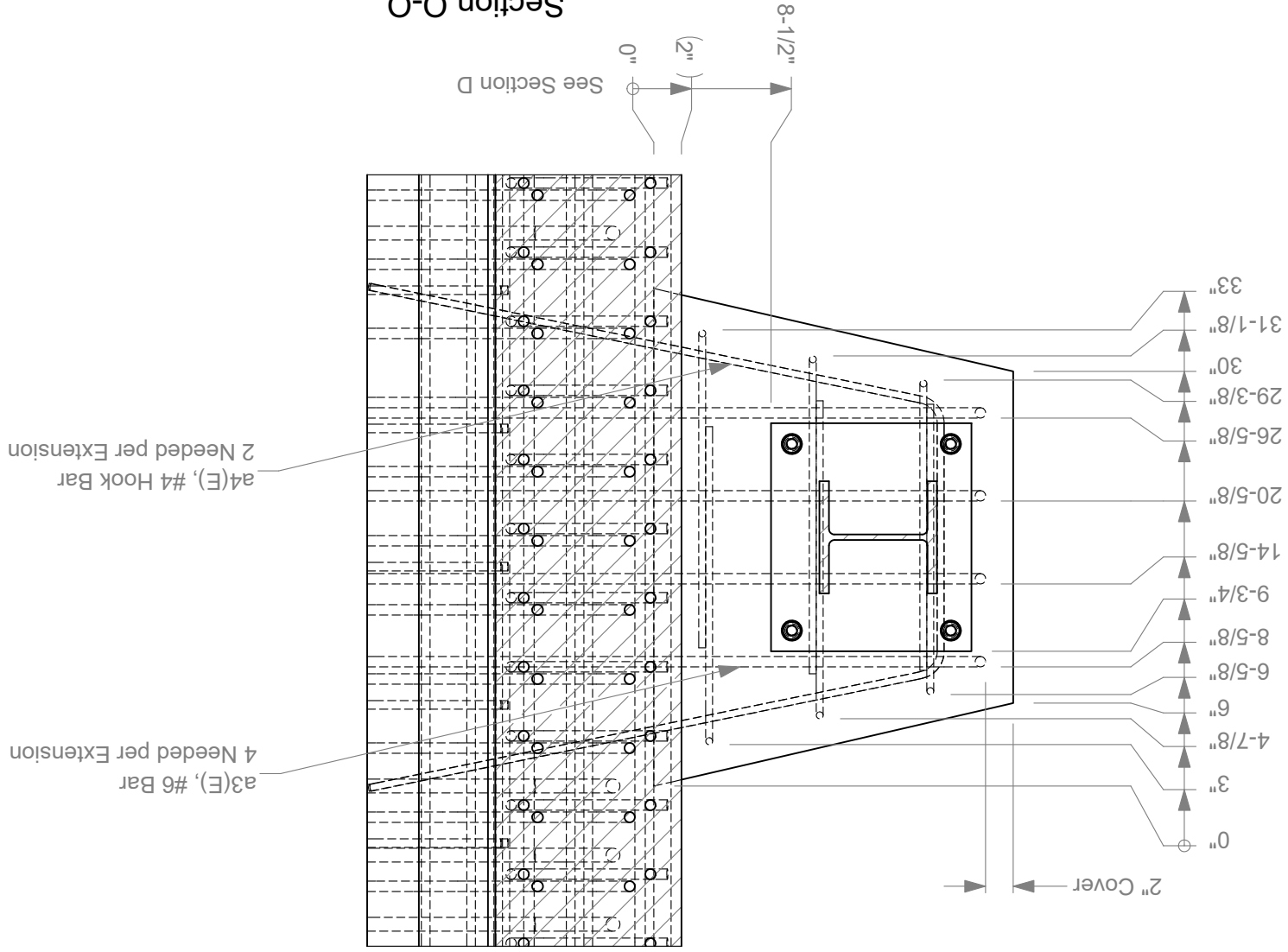
- 17a. All Rebar is 60 ksi rated
- 17b. All Epoxy Coated Rebar is designated with (E)




Roadside Safety and Physical Security Division - Proving Ground

Project #690900-ITG FShape and Single Slope		2019-08-22
Drawn by BLG	Scale 1:20	Sheet 17 of 35 FShape Ext. Rebar Loc.

Section O-O



See Section D

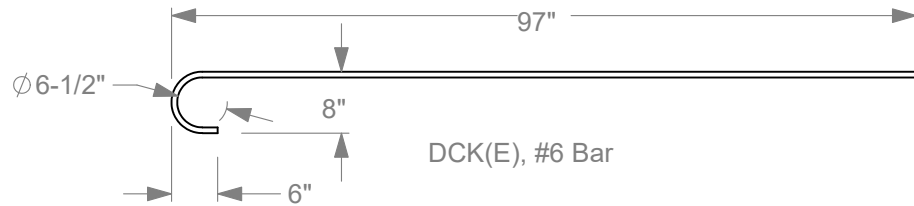
 <p>Texas A&amp;M Transportation Institute</p>	<p>Roadside Safety and Physical Security Division - Proving Ground</p>	<p>Project #690900-TTG FShape and Single Slope 2019-08-22</p>	<p>Drawn by BLG Scale 1:12</p>	<p>Sheet 18 of 35 FShape Extension Detail</p>
	<p>D:\Accreditation-17025-2017\IEIR-000 Project Files\690900\ITG - Illinois Tollway GEC - Akram\Drafting\Bridge Deck models\2019-08-22\690900-ITG, Bridge Deck Sir</p>			



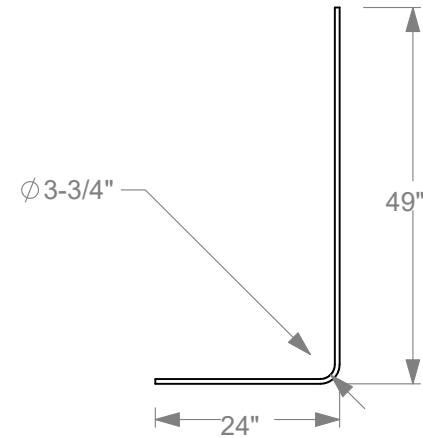
a1(E), #5 Bar



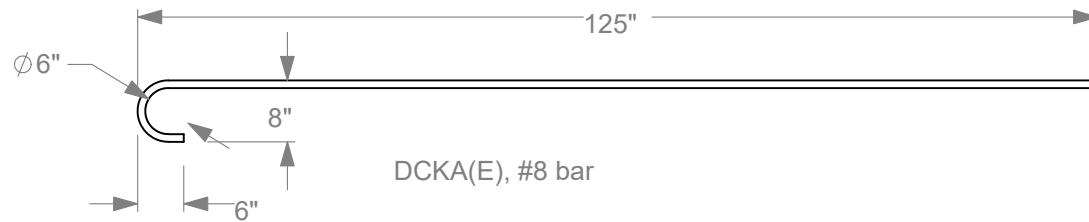
a2(E), #5 Bar



DCK(E), #6 Bar



Wall to Slab, #5 bar



DCKA(E), #8 bar

19a. All Rebar is 60 ksi rated

19b. All Epoxy Coated Rebar is designated with (E)



Roadside Safety and  
Physical Security Division -  
Proving Ground

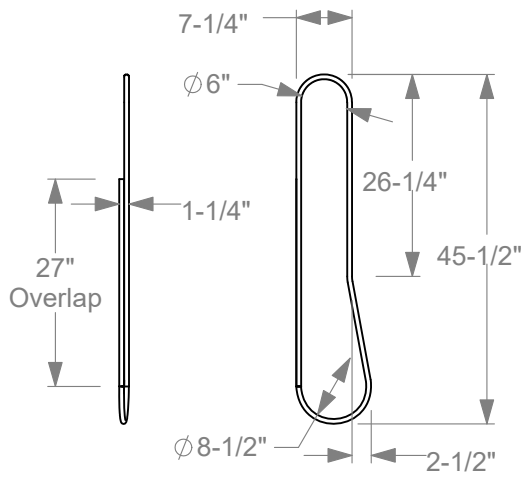
Project #690900-ITG FShape and Single Slope

2019-08-22

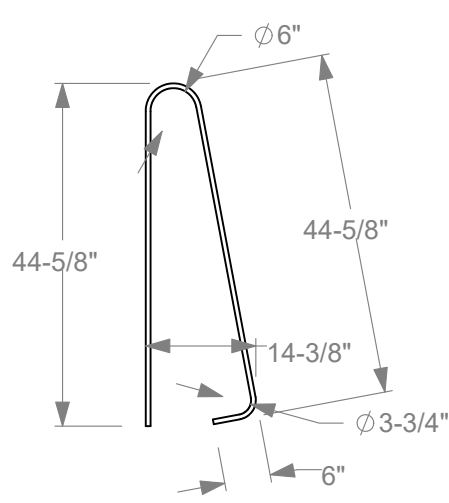
Drawn by BLG

Scale 1:25

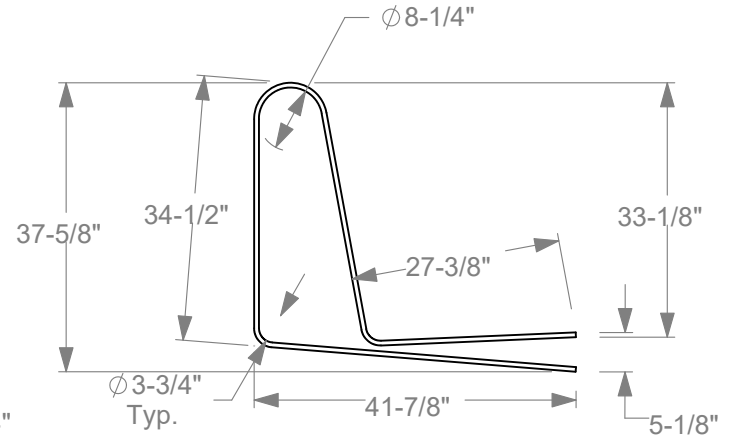
Sheet 19 of 35 Deck Rebar Details



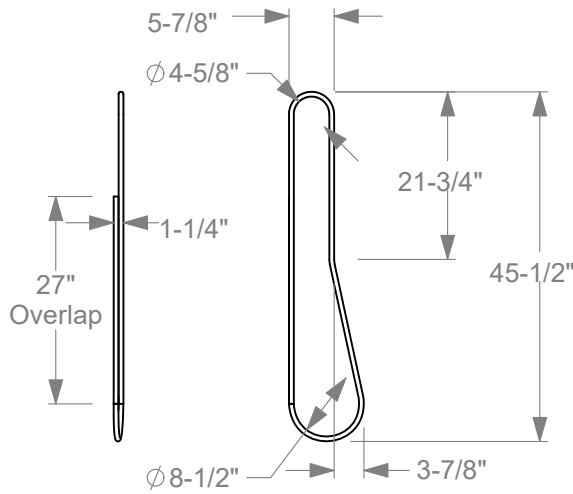
SS(E), #5 bar



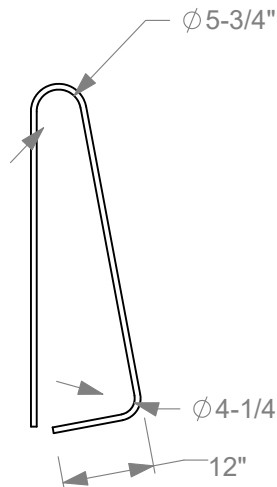
SS1(E), #5 bar  
Interiors



SS2(E), #5 bar  
Interiors

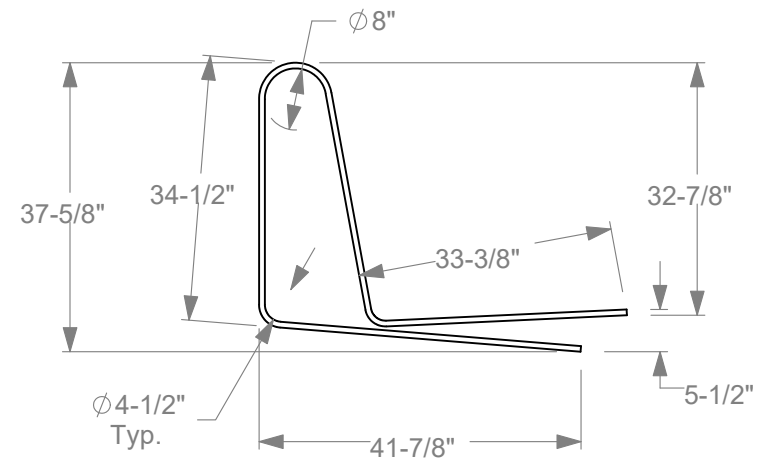


SSA(E), #5 bar



SS1A(E), #6 Bar  
Ends

Only difference is  
Rebar size and dimensions shown



SS2A(E), #6 Bar  
Ends

- 20a. All Rebar is 60 ksi rated
- 20b. All Epoxy Coated Rebar is designated with (E)



Roadside Safety and  
Physical Security Division -  
Proving Ground

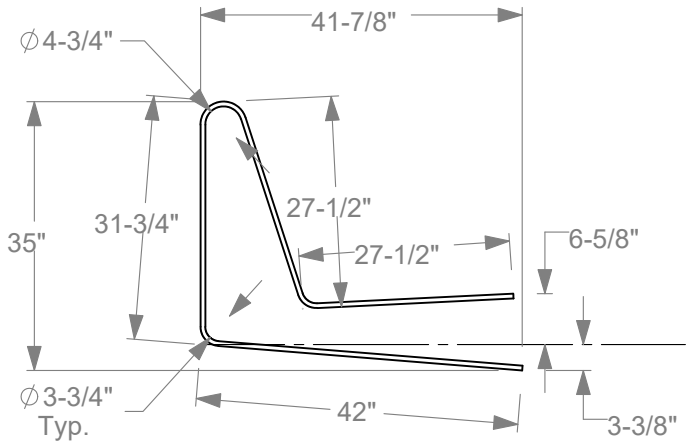
Project #690900-ITG FShape and Single Slope

2019-08-22

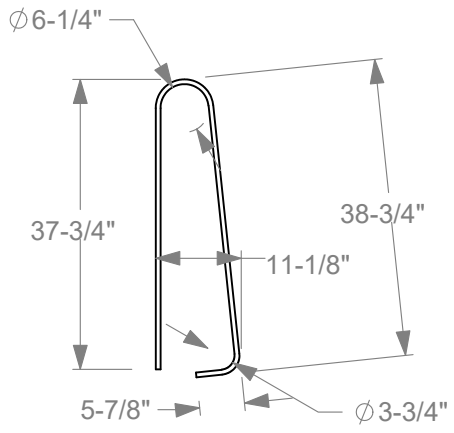
Drawn by BLG

Scale 1:25

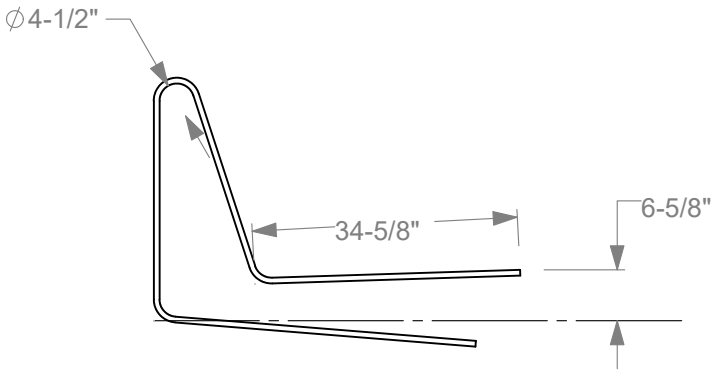
Sheet 20 of 35 Single Slope Rebar



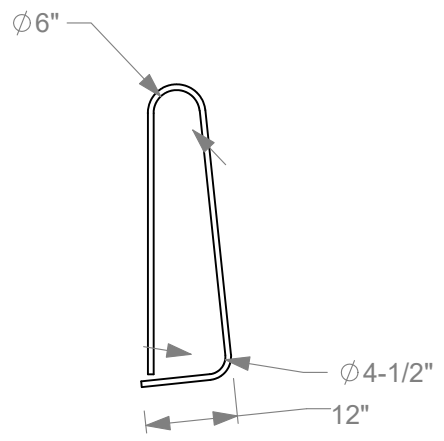
FS2(E), #5 bar  
Interior for F-Shape



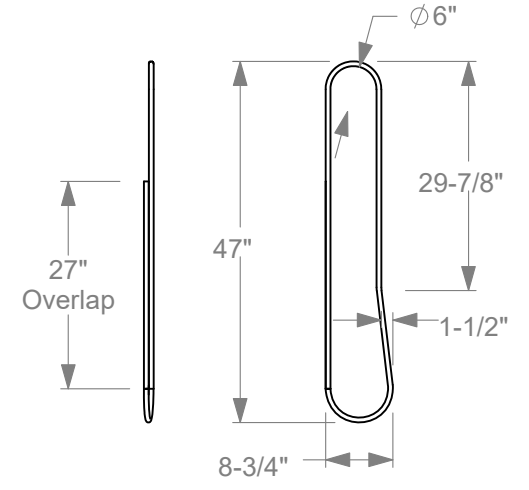
FS1(E), #6 bar  
Interior for F-Shape



FSA2(E), #6 bar  
for F-Shape, Ends  
All other Dimensions similar to FS2(E) above




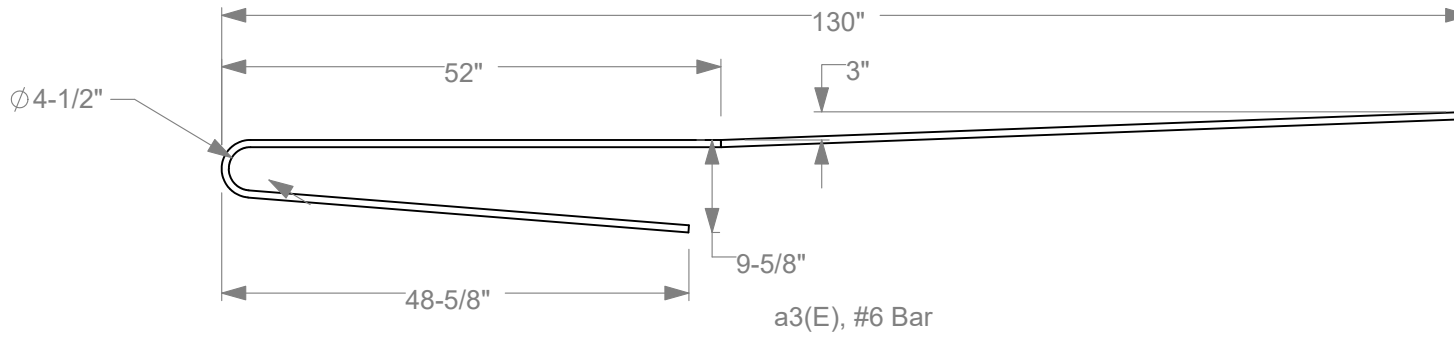
FSA1(E), #6 bar  
For F-Shape, Ends  
All other Dimensions similar to FS1(E) above



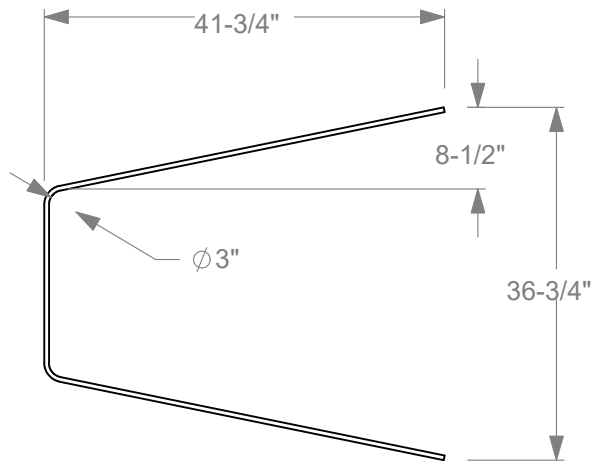
FS(E), #5 bar  
for F-Shape

21a. All Rebar is 60 ksi rated  
21b. All Epoxy Coated Rebar is designated with (E)

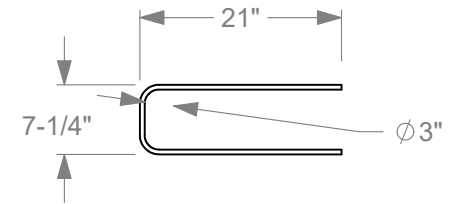
	Roadside Safety and Physical Security Division - Proving Ground	
	Project #690900-ITG FShape and Single Slope	2019-08-22
Drawn by BLG	Scale 1:25	Sheet 21 of 35 FShape Rebar



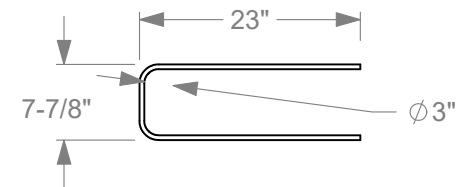
a3(E), #6 Bar



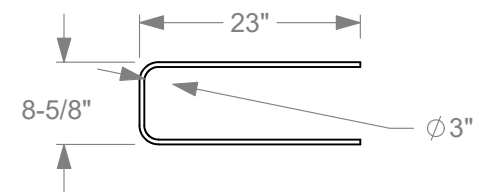
a4(E), #4 Hook Bar



b3(E), #4 Bar



b4(E), #4 Bar



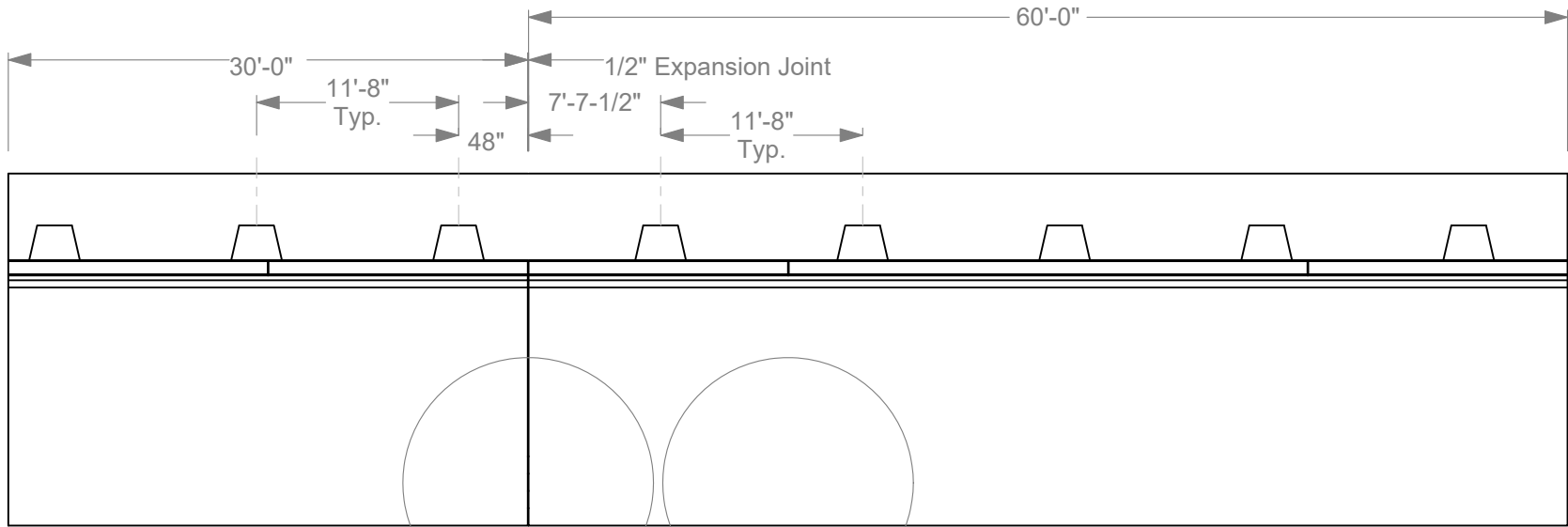
b5(E), #4 Bar

22a. All Rebar is 60 ksi rated  
 22b. All Epoxy Coated Rebar is designated with (E)



Roadside Safety and Physical Security Division - Proving Ground

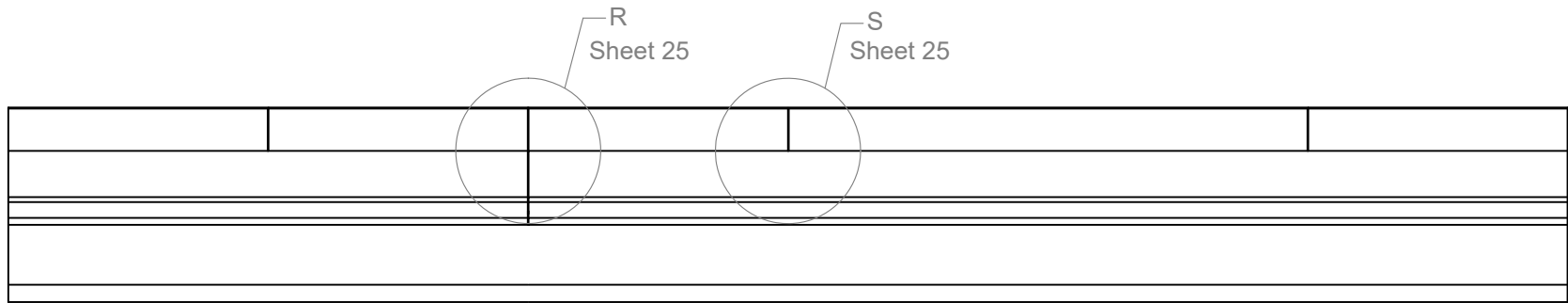
Project #690900-ITG FShape and Single Slope		2019-08-22
Drawn by BLG	Scale 1:20	Sheet 22 of 35 FShape Extension Rebar



F-Shape Deck Plan View

P  
Sheet 24

Q  
Sheet 24



F-Shape Deck Elevation View



Roadside Safety and  
Physical Security Division -  
Proving Ground

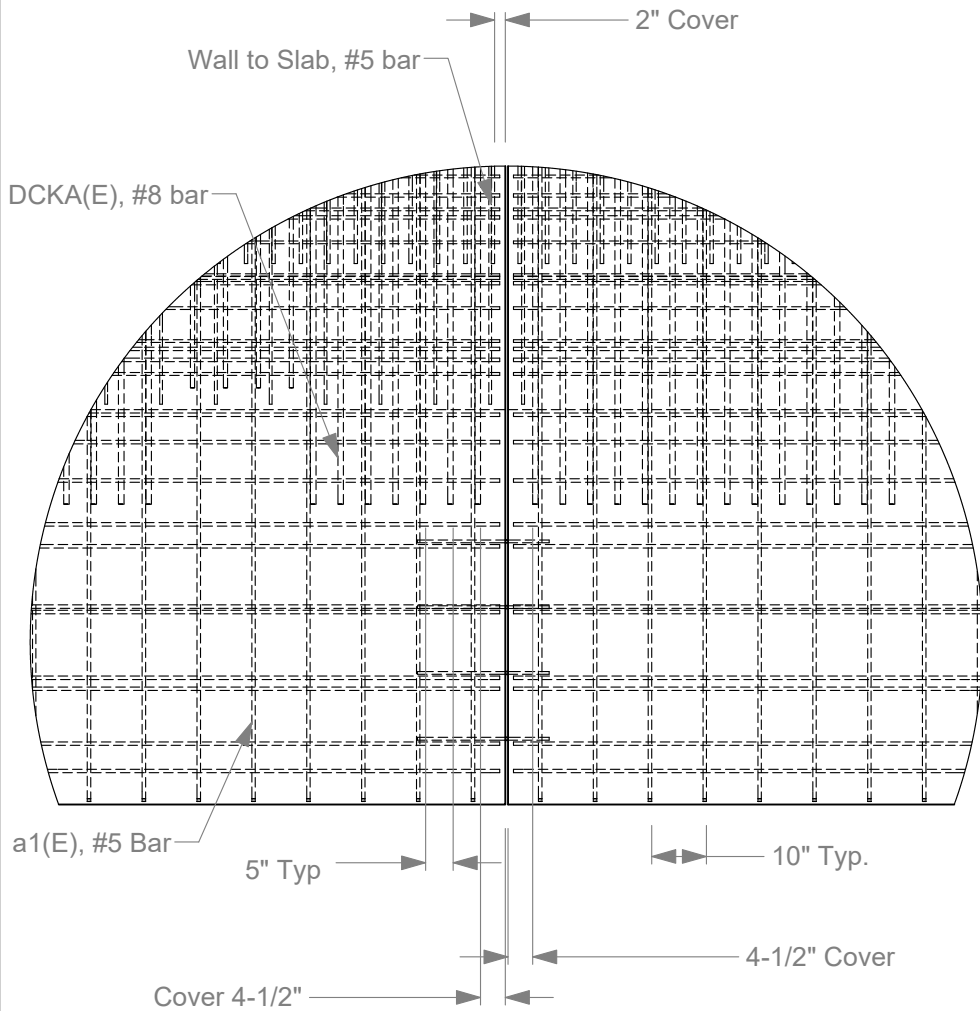
Project #690900-ITG FShape and Single Slope

2019-08-22

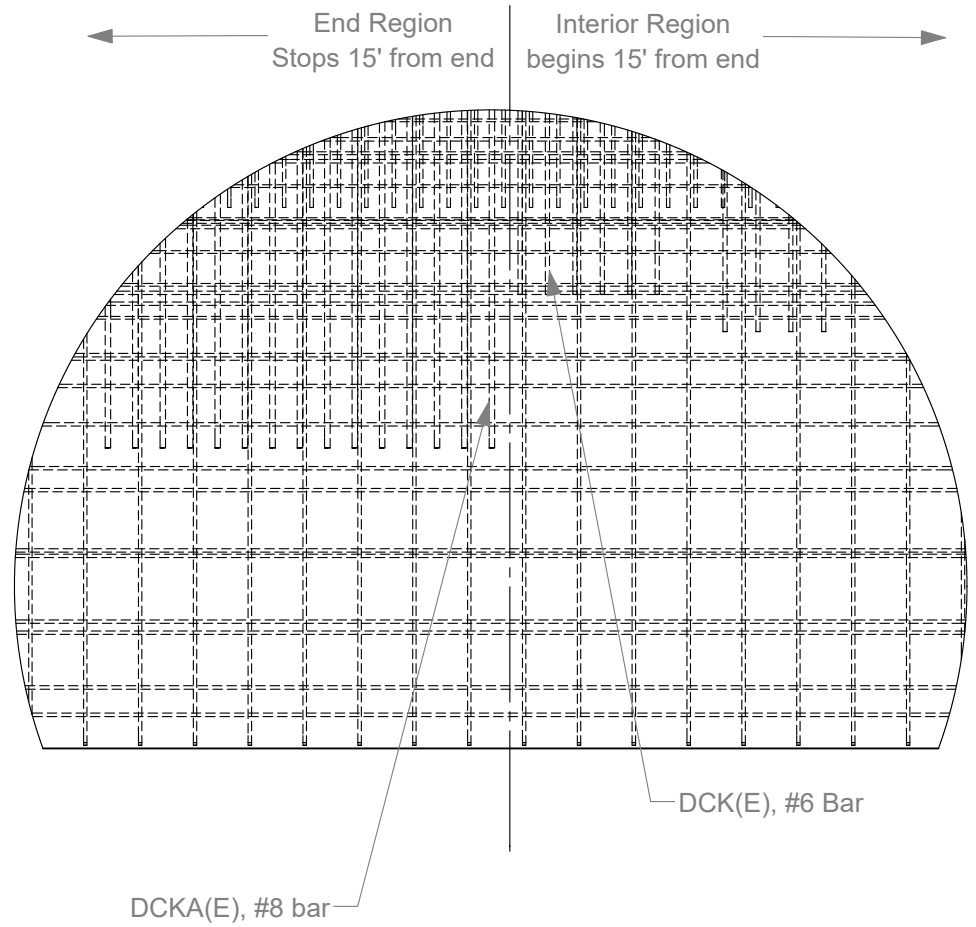
Drawn by BLG

Scale 1:125

Sheet 23 of 35 FShape Deck Views



**Detail P**  
Deck Expansion Joint



**Detail Q**  
Deck End to Interior Region  
Transition

**24a.** All Rebar is 60 ksi rated

**24b.** All Epoxy Coated Rebar is designated with (E)



Roadside Safety and  
Physical Security Division -  
Proving Ground

Project #690900-ITG FShape and Single Slope

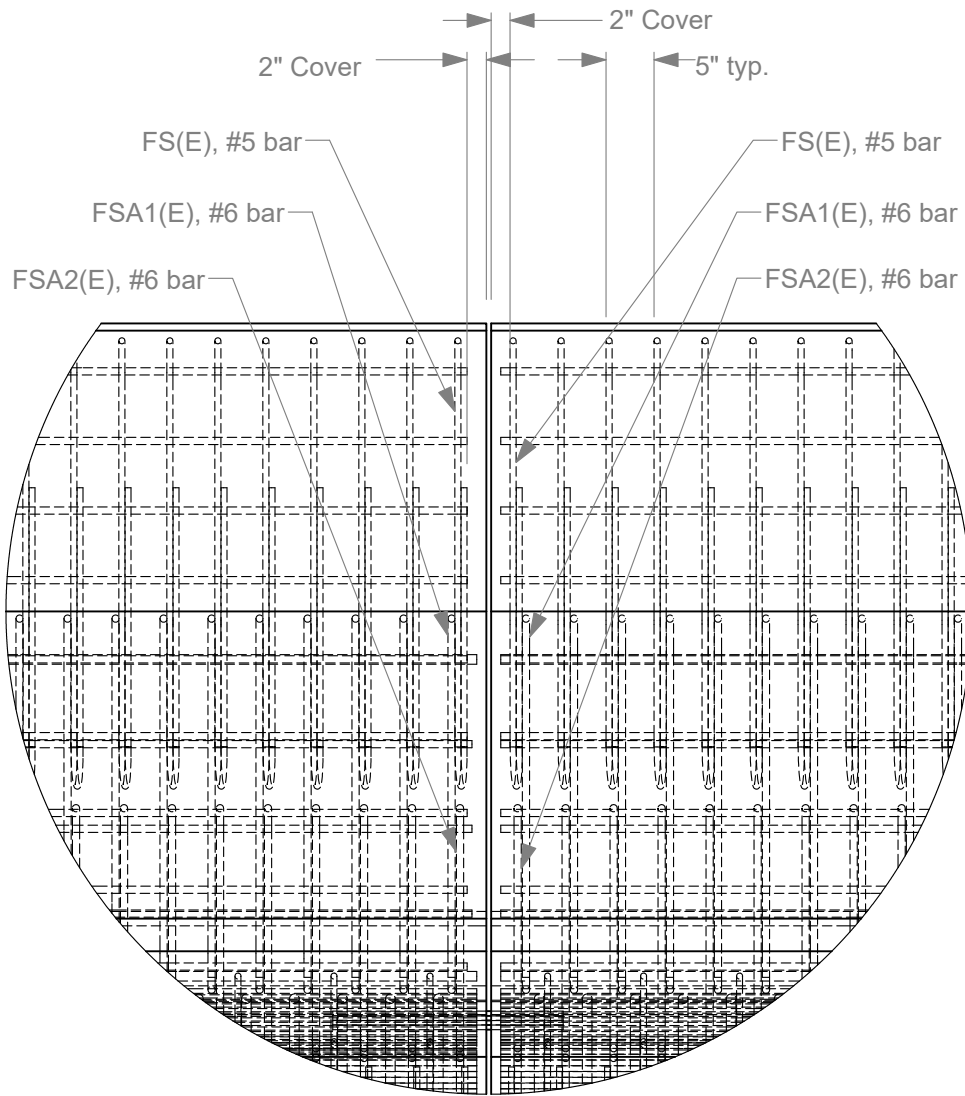
2019-08-22

Drawn by BLG

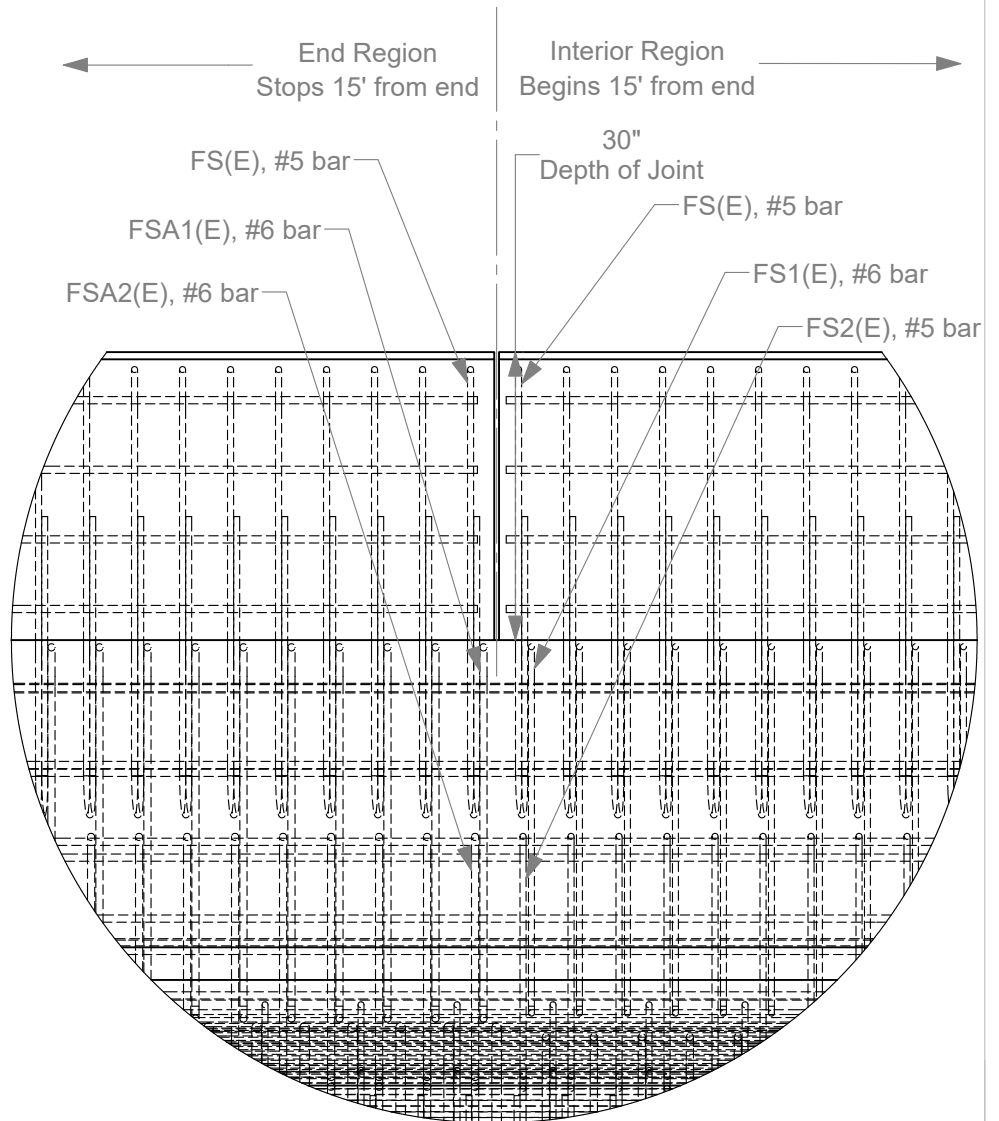
Scale 1:35

Sheet 24 of 35 FShape Deck Detail





**Detail R**  
Barrier at Expansion Joint



**Detail S**  
Barrier End to Interior Region  
Transition

**25a.** All Rebar is 60 ksi rated

**25b.** All Epoxy Coated Rebar is designated with (E)



Roadside Safety and  
Physical Security Division -  
Proving Ground

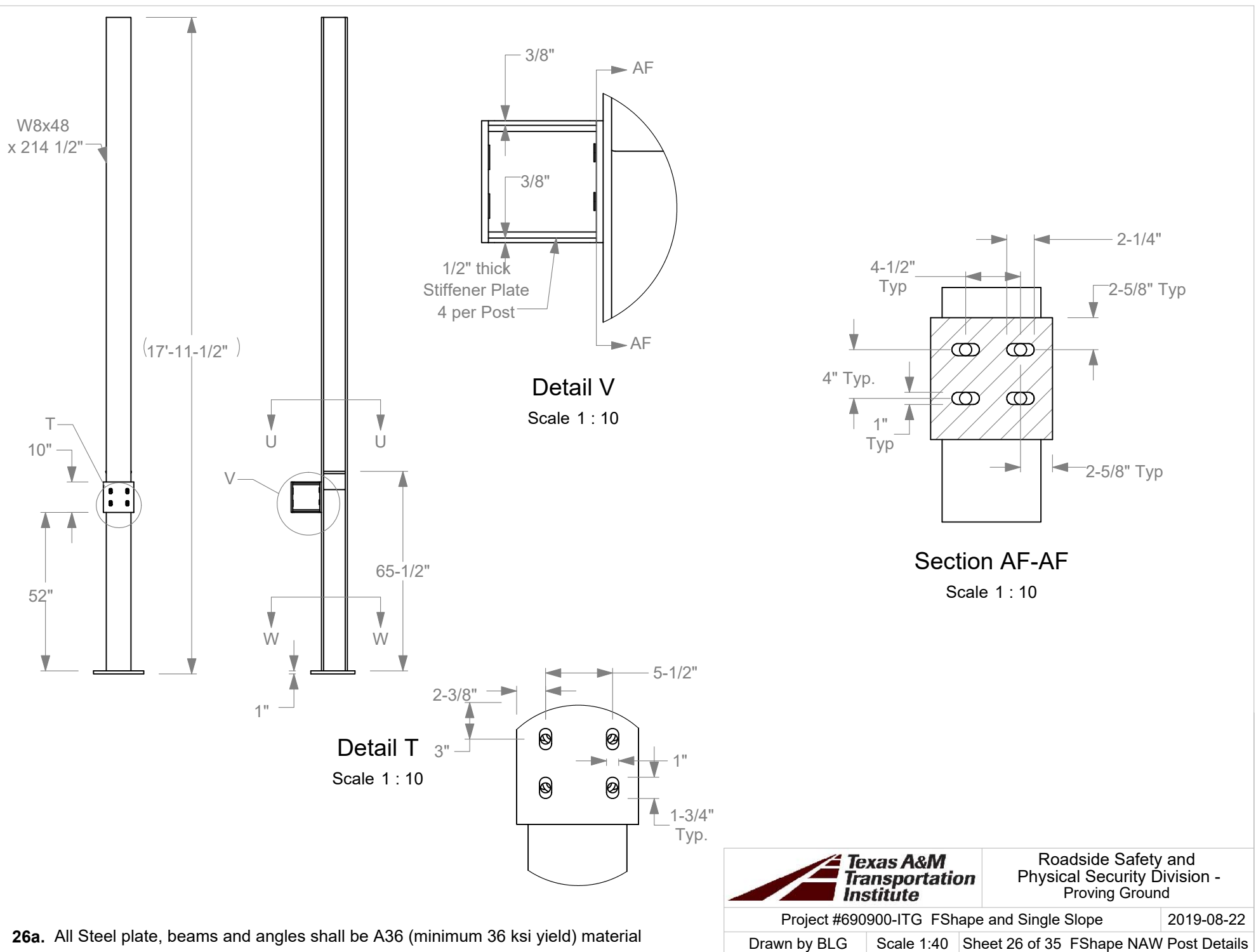
Project #690900-ITG FShape and Single Slope

2019-08-22

Drawn by BLG

Scale 1:20

Sheet 25 of 35 FShape Barrier Detail

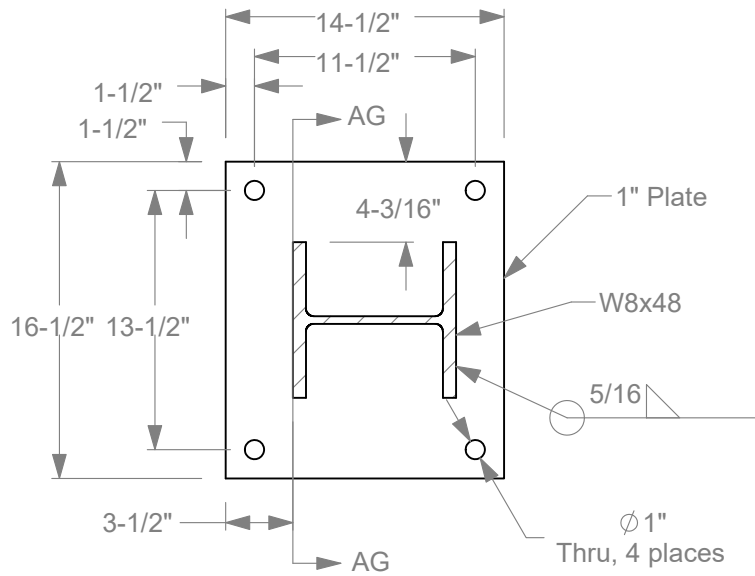


**26a.** All Steel plate, beams and angles shall be A36 (minimum 36 ksi yield) material



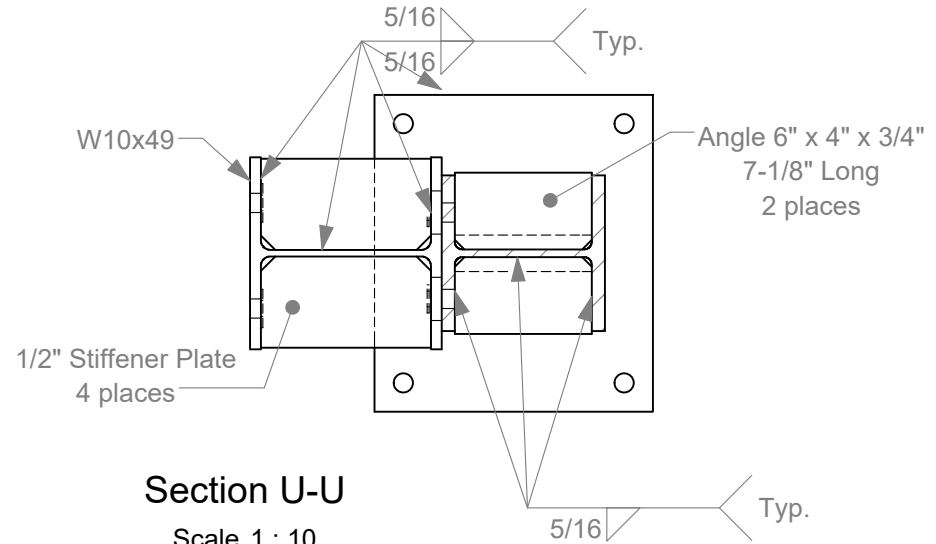
Roadside Safety and Physical Security Division - Proving Ground

Project #690900-ITG FShape and Single Slope		2019-08-22
Drawn by BLG	Scale 1:40	Sheet 26 of 35 FShape NAW Post Details



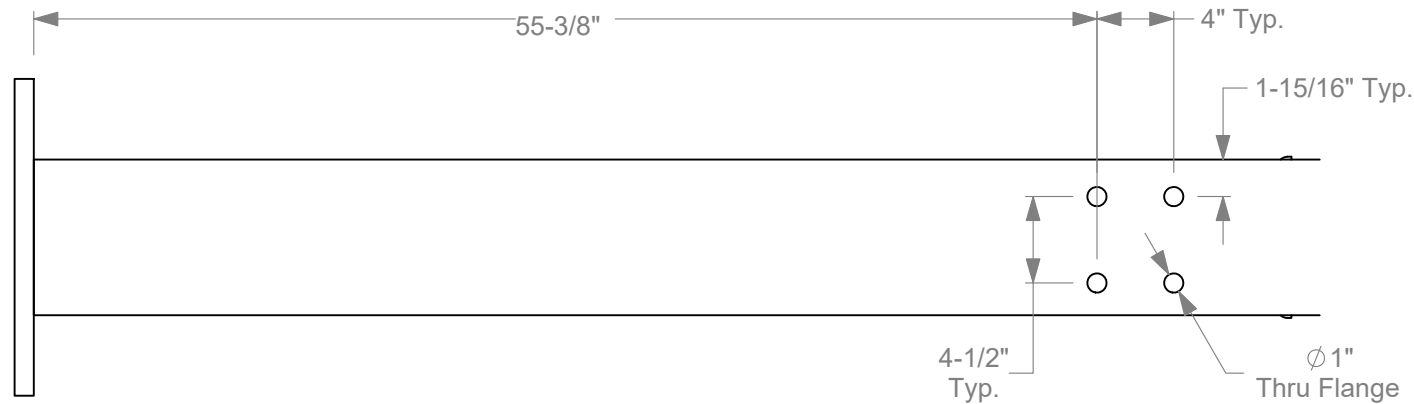
**Section W-W**

Scale 1 : 10



**Section U-U**

Scale 1 : 10



**Section AG-AG**

Scale 1 : 10



Roadside Safety and Physical Security Division - Proving Ground

Project #690900-ITG FShape and Single Slope

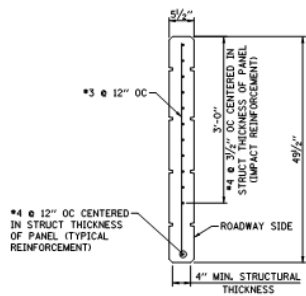
2019-08-22

Drawn by BLG

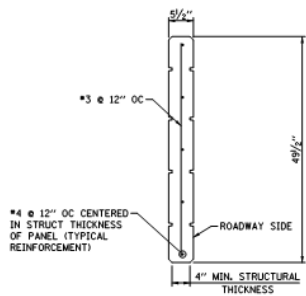
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Sheet 27 of 35 FShape NAW Post 2

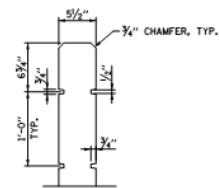
**27a.** All Steel plate, beams and angles shall be A36 (minimum 36 ksi yield) material



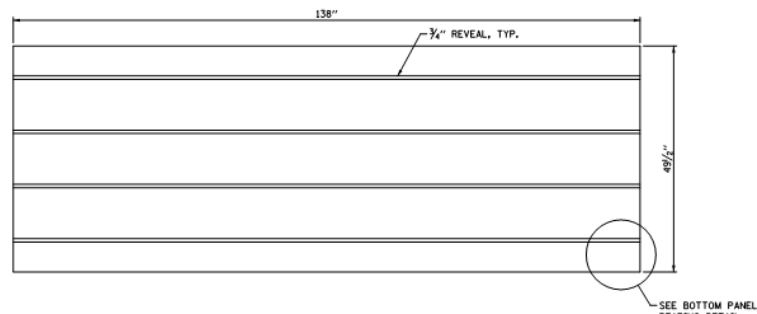
TOP PANEL



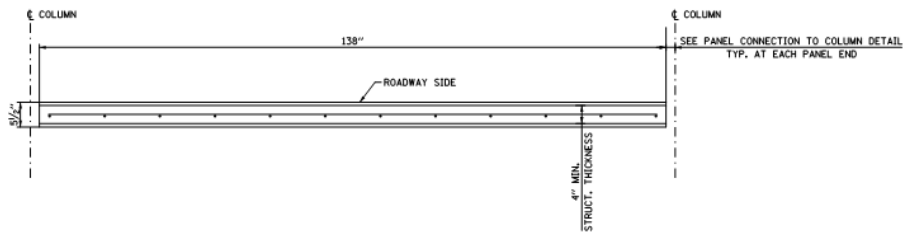
BOTTOM AND CENTER PANEL



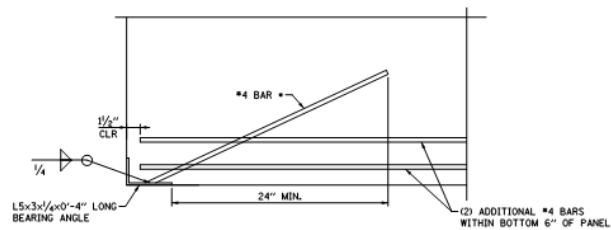
REVEAL DETAIL



TYPICAL NOISE WALL PANEL DETAIL

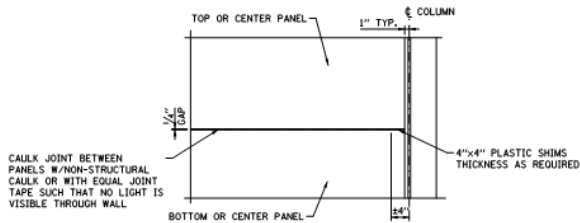


TYPICAL PLAN VIEW THRU NOISE ABATEMENT WALL

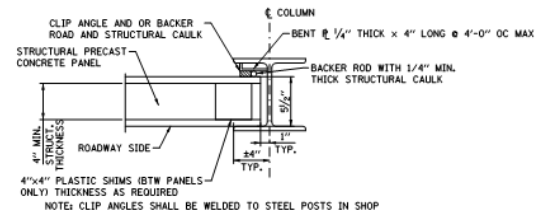


BOTTOM PANEL BEARING DETAIL

\* E70 ELECTRODES ARE NOT PERMITTED FOR GRADE 60 REINFORCEMENT. REFER TO AWS D1.1 TABLE 3.1 - PREQUALIFIED BASE METAL-FILLER MATERIAL COMBINATIONS FOR MATCHING STRENGTH AND AWS D1.4 TABLE 5.1 MATCHING FILLER METAL REQUIREMENTS. USE E90 ELECTRODES FOR ASTM A615 REBAR.



HORIZONTAL JOINT DETAIL



PANEL CONNECTION TO COLUMN DETAIL

27A. ALL REBAR IS 60KSI RATED  
 27B. ALL REBAR IS EPOXY COATED  
 27C. CONCRETE CLASS "F" WITH COMPRESSIVE STRENGTH OF 4,000PSI MINIMUM

NOISE ABATEMENT  
 WALL DETAILS  
 BRIDGE DECK  
 SHEET 1 OF 1



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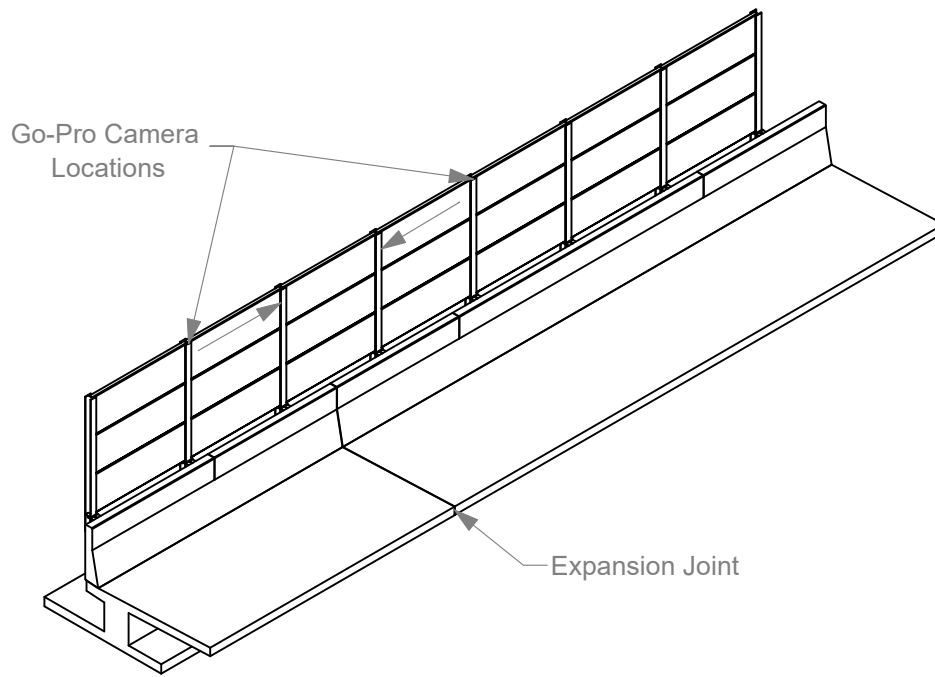
Project #690900-ITG FShape and Single Slope

2019-08-22

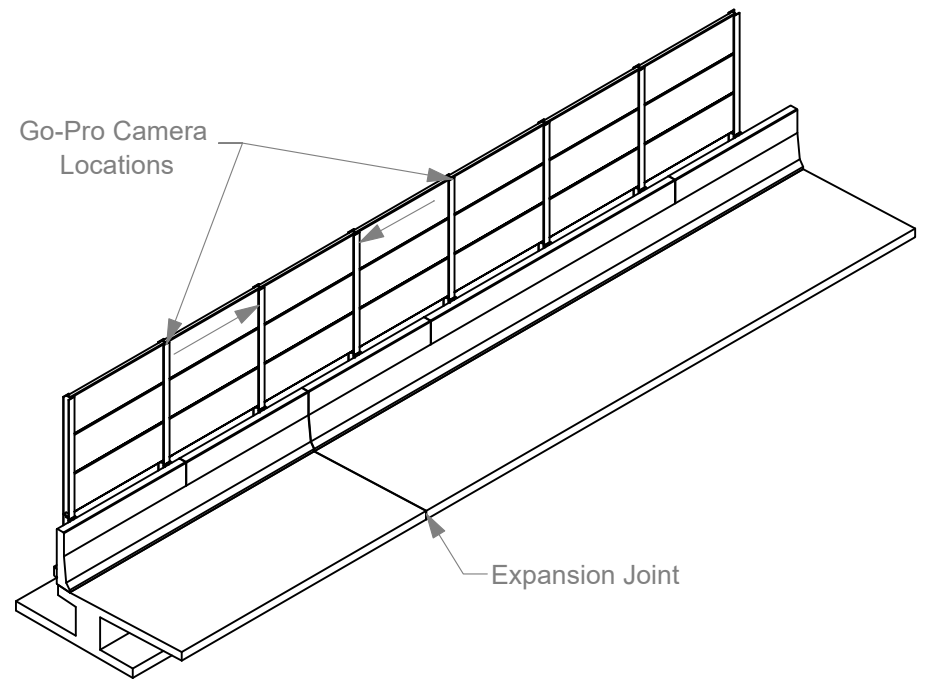
Drawn by BLG

Scale 1:25

Sheet 28 of 35 Noise Abatement Wall



Single Slope Barrier



F-Shape Barrier

Go-Pro Cameras:  
 Camera to be mounted on top of NAW post, facing  
 along the front of the NAW toward the impact zone near  
 the full joint in the barrier and deck



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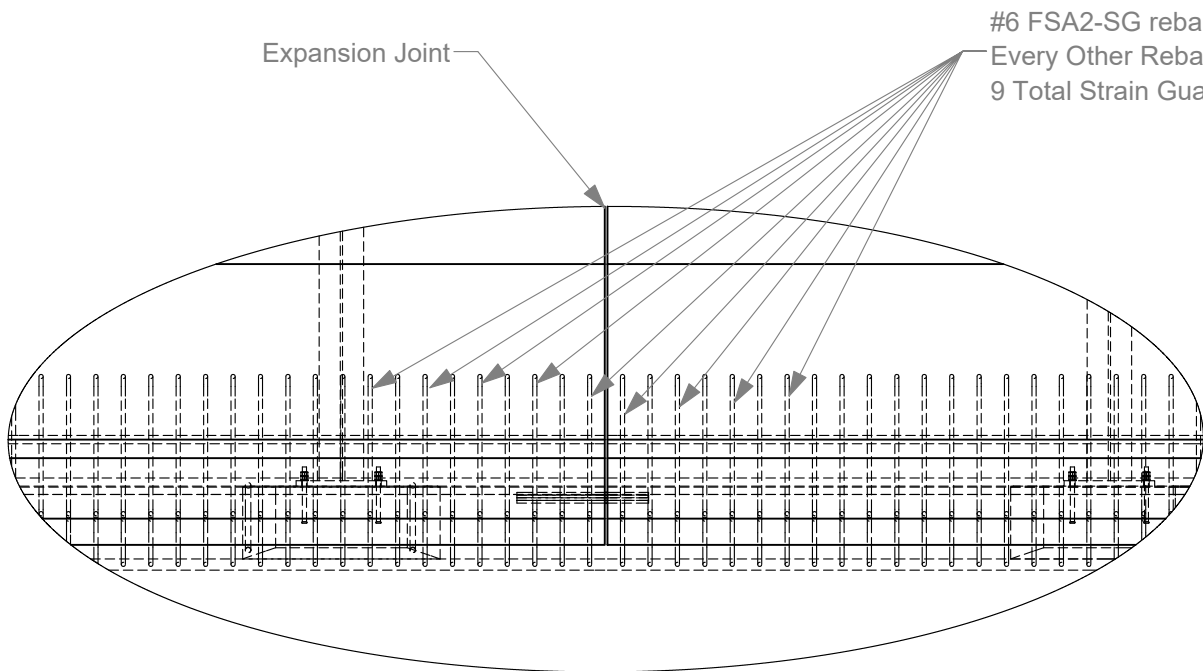
Project #690900-ITG FShape and Single Slope

2019-08-22

Drawn by BLG

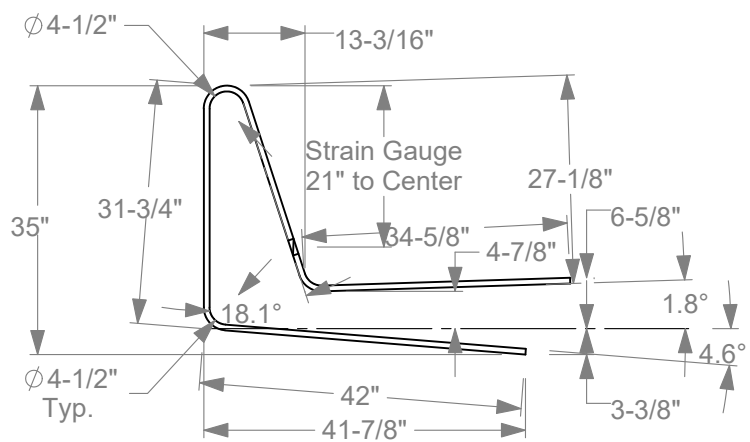
Scale 1:200

Sheet 29 of 35 Camera Location

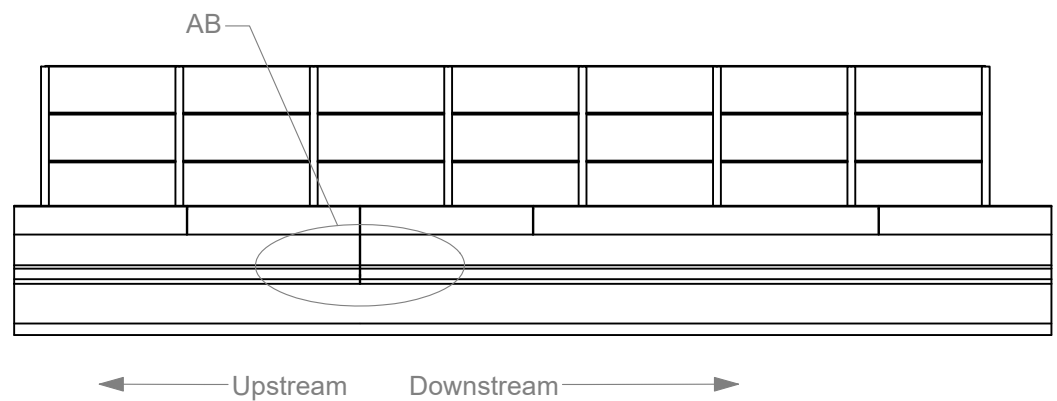


#6 FSA2-SG rebar for F-Shape  
 Every Other Rebar starting from Joint as shown below  
 9 Total Strain Guages needed

Detail AB  
 Scale 1 : 35




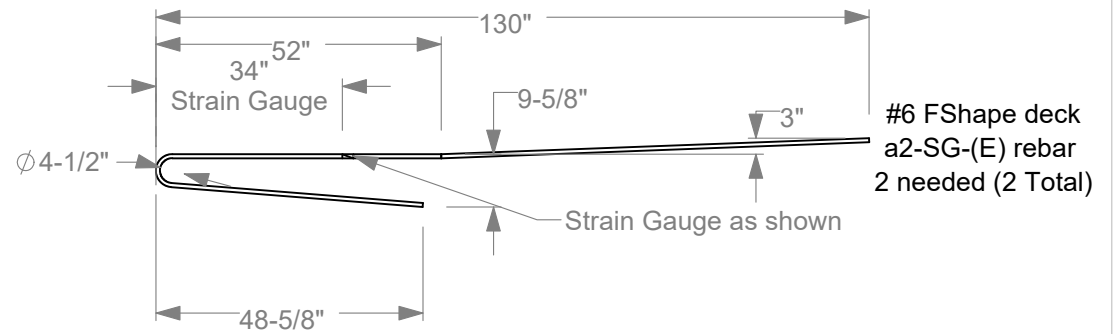
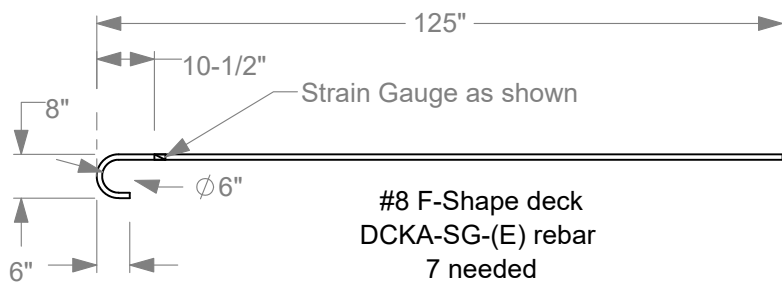
#6 F-Shape  
 FSA2-SG-(E)  
 9 Needed



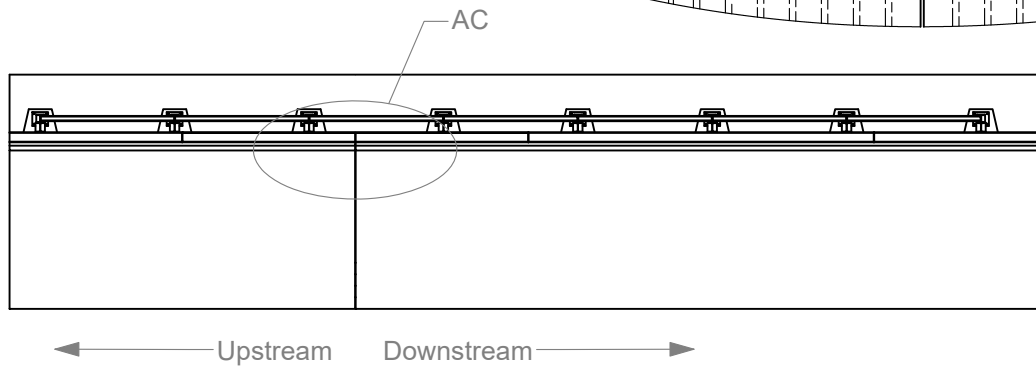
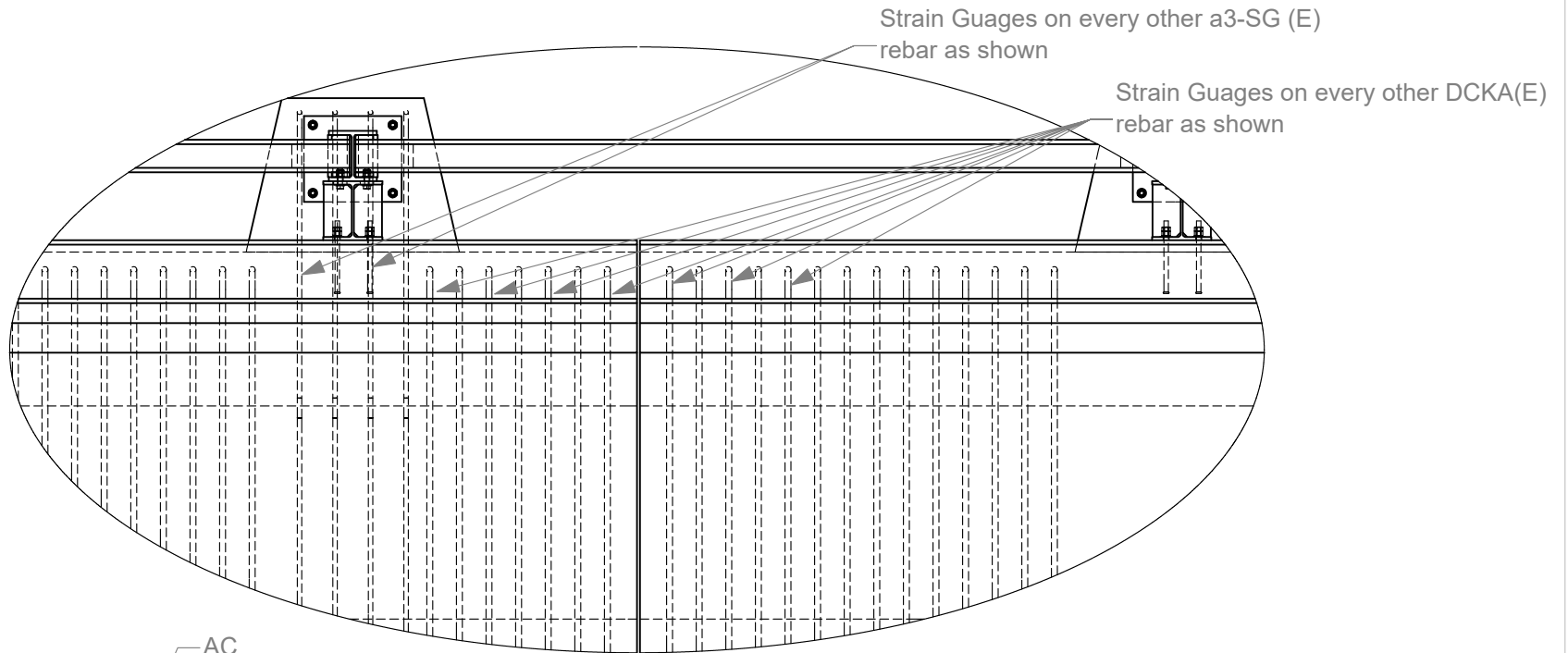
← Upstream      Downstream →

Elevation view of Fshape deck

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	Project #690900-ITG FShape and Single Slope	2019-08-22
Drawn by BLG	Scale 1:220	Sheet 30 of 35 Strain Gauges, FShape Barrier



Detail AC  
Scale 1 : 30

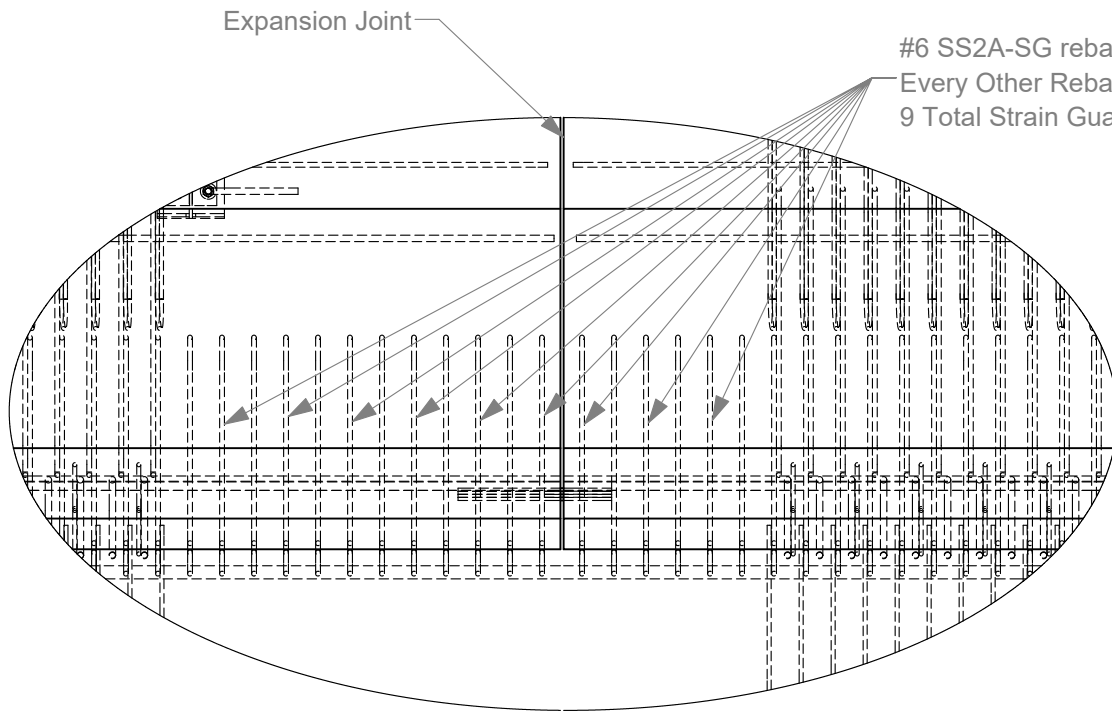


Plan view of Fshape deck

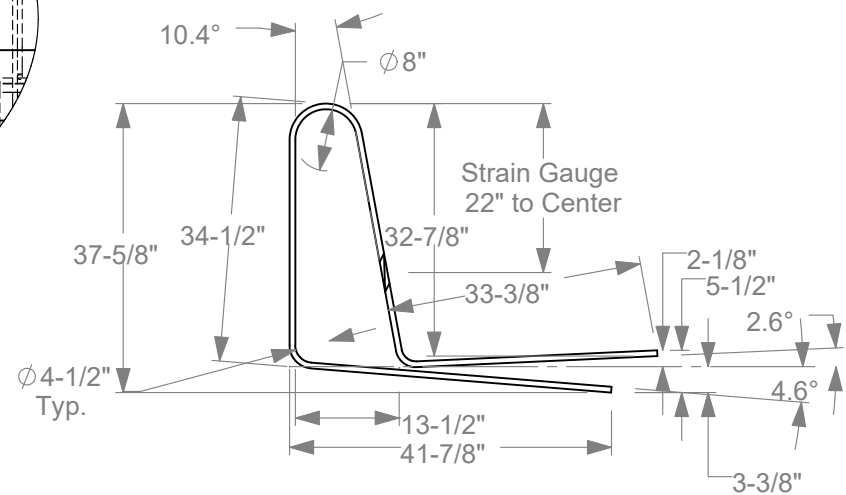


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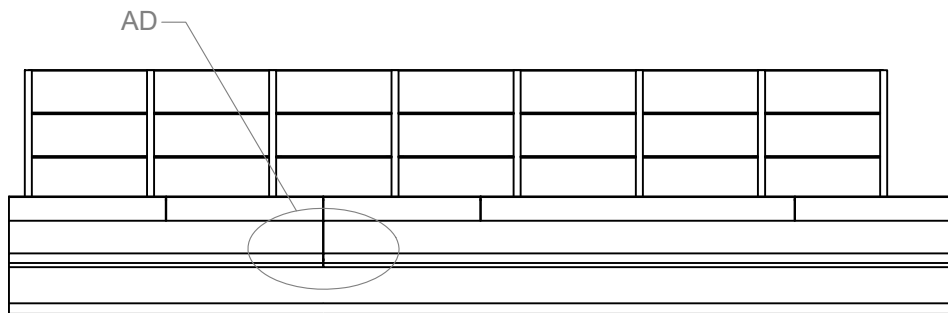
Project #690900-ITG FShape and Single Slope		2019-08-22
Drawn by BLG	Scale 1:250	Sheet 31 of 35 Strain Gauges, FShape Deck



Detail AD  
Scale 1 : 30



#6 Single Slope  
SS2A-SG(E)  
9 Needed



Elevation View of Single Slope



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Project #690900-ITG FShape and Single Slope

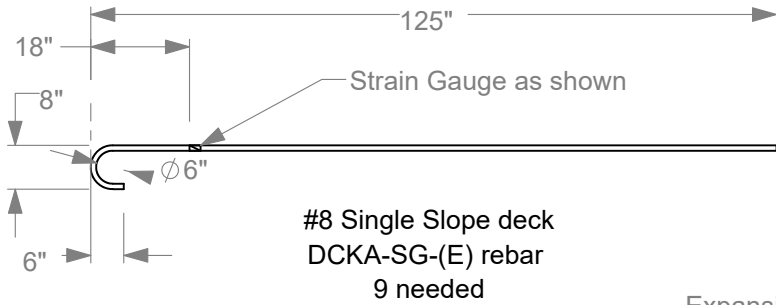
2019-08-22

Drawn by BLG

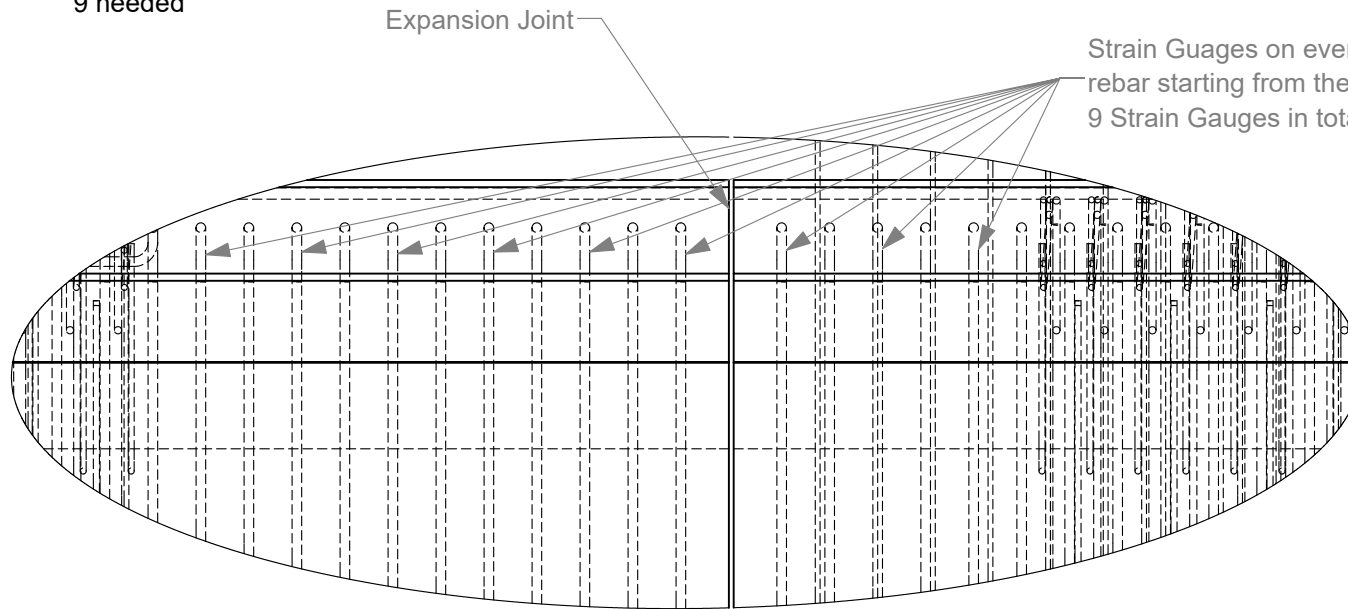
Scale 1:220

Sheet 32 of 35 Strain Gauges, SS Barrier





#8 Single Slope deck  
DCKA-SG-(E) rebar  
9 needed

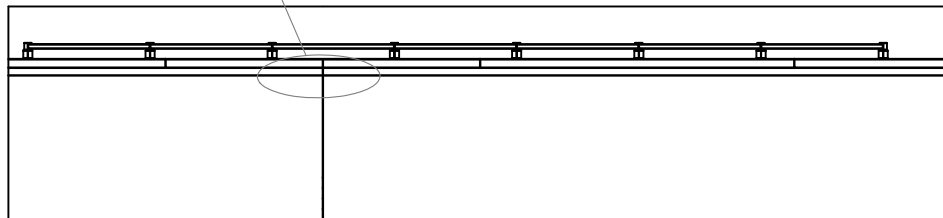


Strain Gauges on every other DCKA(E)  
rebar starting from the expansion Joint as shown  
9 Strain Gauges in total

### Detail AE

Scale 1 : 20

AE



← Upstream

Downstream →

Plan view of Single Slope deck



Roadside Safety and  
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Project #690900-ITG FShape and Single Slope

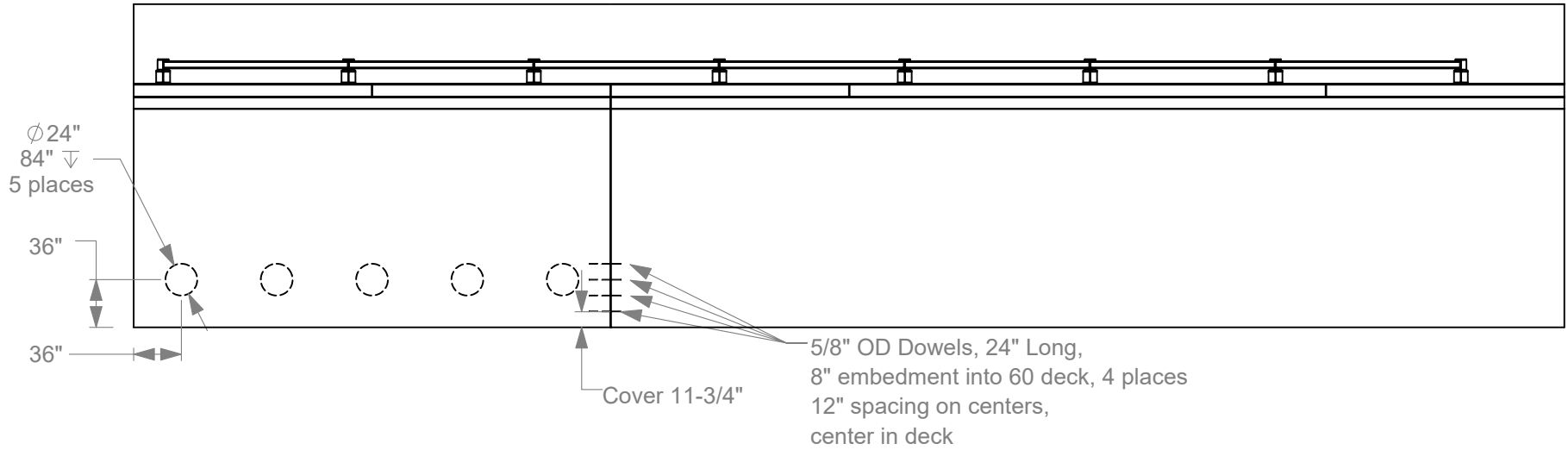
2019-08-22

Drawn by BLG

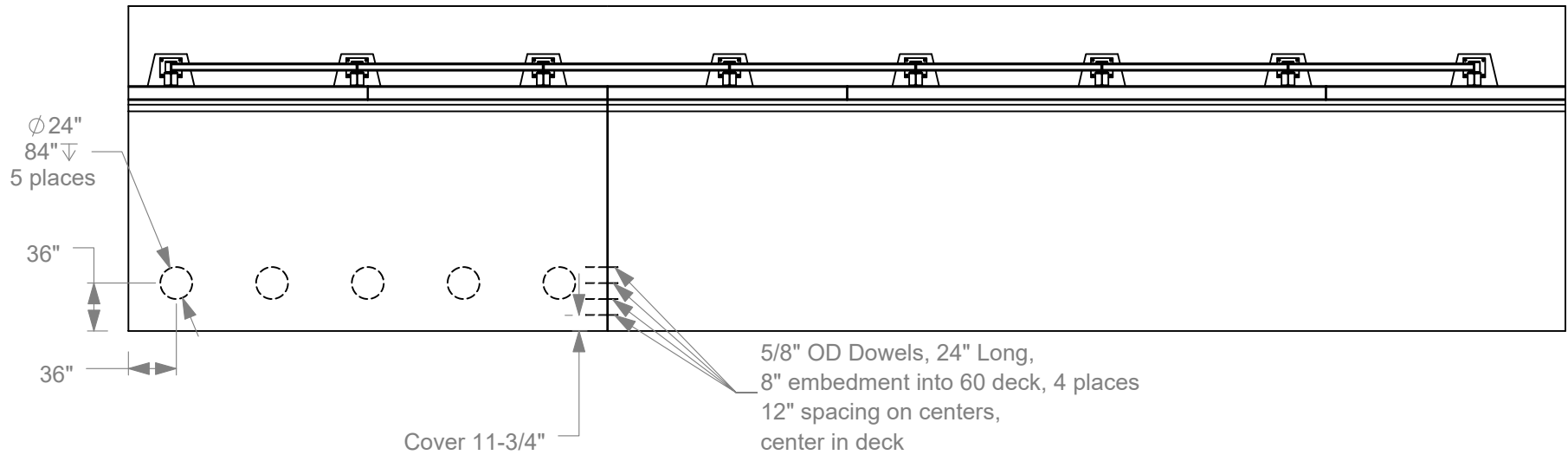
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Sheet 33 of 35 Strain Gauges, SS Deck

Single Slope Plan View



F-Shape Plan View



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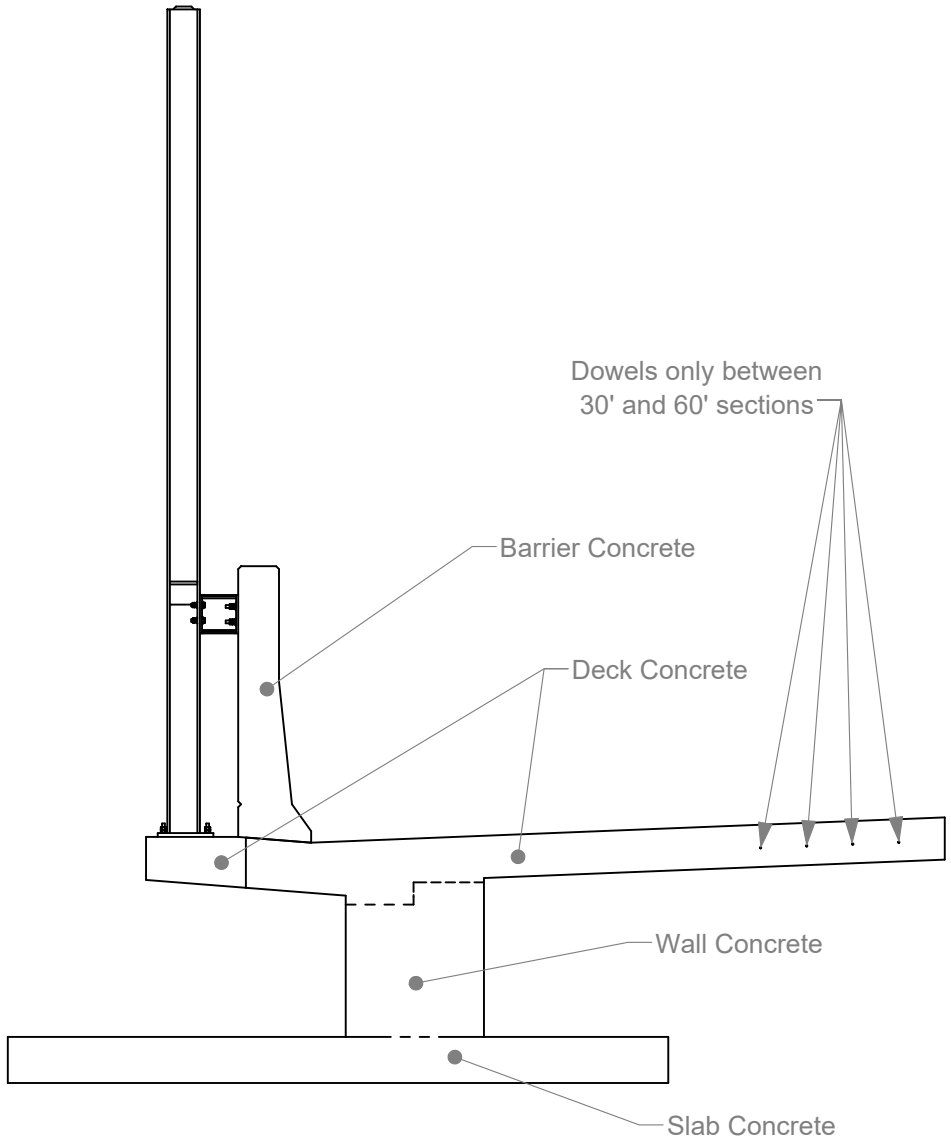
Project #690900-ITG FShape and Single Slope

2019-08-22

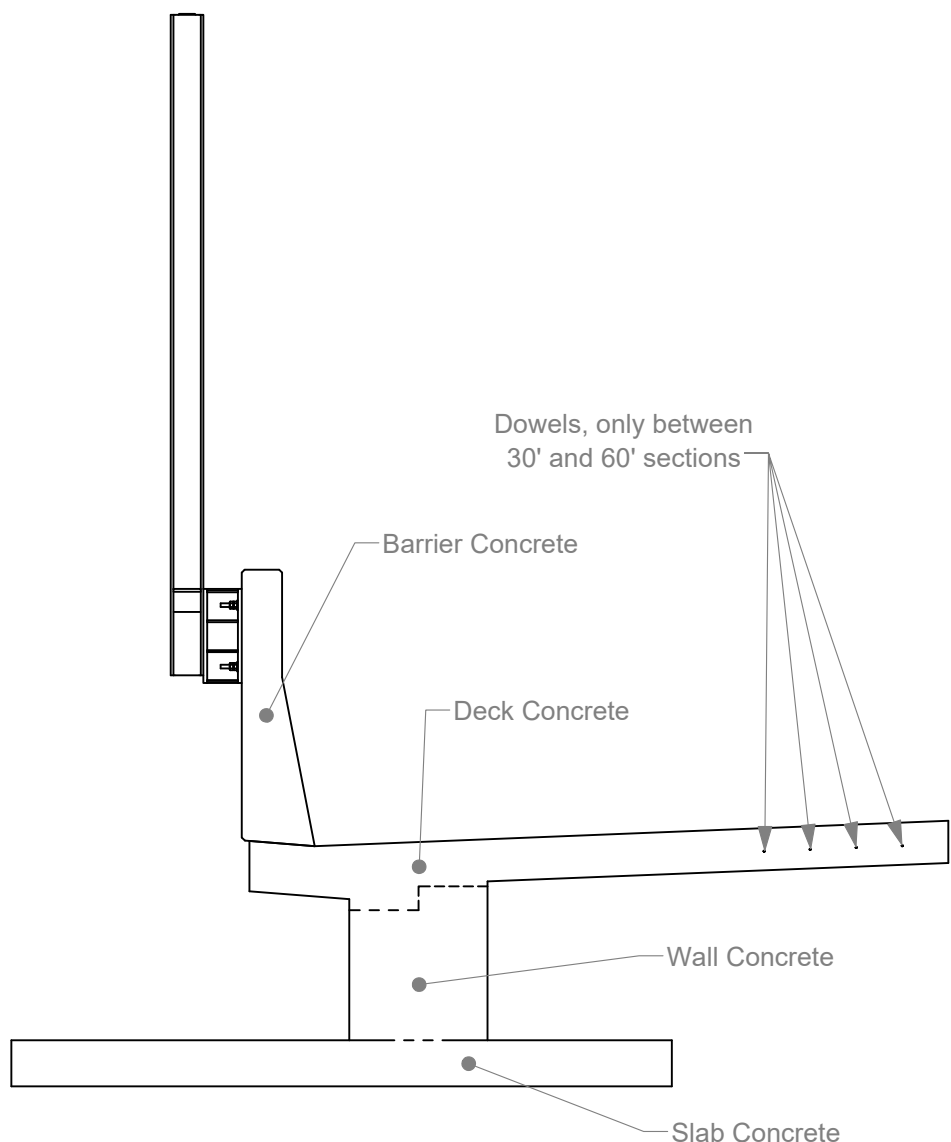
Drawn by BLG

Scale 1:250


Sheet 34 of 35 Deck Pile Locations



F-Shape End View



Single Slope End View

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	Project #690900-ITG FShape and Single Slope	2019-08-22
Drawn by BLG	Scale 1:250	Sheet 35 of 35 Concrete Location