



Design Comparison Summary											
Description		Original Design				Innstruct Design				Innstruct/Orig.	Reduced
Concrete	Panel B (ft <sup>3</sup> /yd <sup>3</sup> )	336.3	ft <sup>3</sup>	12.5	yd <sup>3</sup>	231.9	ft <sup>3</sup>	8.6	yd <sup>3</sup>	69%	31%
	Panel N (ft <sup>3</sup> /yd <sup>3</sup> )	445.0	ft <sup>3</sup>	16.5	yd <sup>3</sup>	306.9	ft <sup>3</sup>	11.4	yd <sup>3</sup>		
	Panel G (ft <sup>3</sup> /yd <sup>3</sup> )	312.1	ft <sup>3</sup>	11.6	yd <sup>3</sup>	215.3	ft <sup>3</sup>	8.0	yd <sup>3</sup>		
	Total (ft <sup>3</sup> /yd <sup>3</sup> )	1093.4	ft <sup>3</sup>	40.5	yd <sup>3</sup>	754.1	ft <sup>3</sup>	27.9	yd <sup>3</sup>		
Additional Reinf.	Panel B (in <sup>3</sup> /lbs)	10805.1	in <sup>3</sup>	3063.9	lbs	2989.9	in <sup>3</sup>	847.8	lbs	28%	72%
	Panel N (in <sup>3</sup> /lbs)	6115.1	in <sup>3</sup>	1734.0	lbs	889.6	in <sup>3</sup>	252.3	lbs	15%	85%
	Panel G (in <sup>3</sup> /lbs)	8233.3	in <sup>3</sup>	2334.7	lbs	2553.6	in <sup>3</sup>	724.1	lbs	31%	69%
	Total (in <sup>3</sup> )	25153.5	in <sup>3</sup>	7132.6	lbs	6433.1	in <sup>3</sup>	1824.2	lbs	26%	74%

The comparison of concrete and mild reinforcing steel is completed for general comparison purposes only. Potential reductions in concrete and reinforcement will vary depending on the efficiency of the concrete tilt-up panel design, vertical and out of plane loading, height of panel, and architectural treatment. The comparisons presented herein do not include a slight increase in concrete required where EPS is removed at embed plates and for concrete edges at the sides and openings in the panels.



Panel B - Original Concrete Design Summary							
Description	Member	Geometry (ft)			Opening (ft <sup>2</sup> )	Volume (ft <sup>3</sup> )	Volume (yd <sup>3</sup> )
		Length	Height	Thickness	Total Openings		
Concrete	7-1/4"	20.00	32.83	0.604	100.00	336.28	12.45
	Total	Total Panel Concrete Volume (ft <sup>3</sup> or yd <sup>3</sup> ) Σ =				336.28	12.45

Panel B - Innstruct Concrete Design Summary			
Description	Member	Volume (ft <sup>3</sup> )	Volume (yd <sup>3</sup> )
Concrete	3" Ext.	139.15	5.15
	2" Int.	92.77	3.44
Σ =		231.92	8.59

Panel B - Original Reinforcement Summary													
Description & Dimensions			Longitudinal Reinforcement							Transverse Reinforcement			
Vertical Panel Reinforcement	Area	Width (in)	Layer	Total Bars	Bar Size	Diameter	Bar Area (in <sup>2</sup> )	Length (ft)	Volume (in <sup>3</sup> )	#3 at 8" Ties	Quantity	Length (in)	Volume (in <sup>3</sup> )
	L. Chord	36.00	Double	18	#5	0.625	0.310	32.41	2170.40	No	0	0.00	0.00
Openings	120.00	Single	10	#5	0.625	0.310	21.75	808.98	No	0	0.00	0.00	
Center	48.00	Double	24	#5	0.625	0.310	32.41	2893.86	No	0	0.00	0.00	
R. Chord	36.00	Double	18	#5	0.625	0.310	32.41	2170.40	No	0	0.00	0.00	
Σ = 20.00 ft			Σ =						8043.63	Σ = 0.00			
Description & Dimensions			Longitudinal Reinforcement							Transverse Reinforcement			
Horizontal Panel Reinforcement	Area	Height (in)	Layer	Total Bars	Bar Size	Diameter	Bar Area (in <sup>2</sup> )	Length (ft)	Volume (in <sup>3</sup> )	NA	Quantity	Length (in)	Volume (in <sup>3</sup> )
	Full Width	273.96	Single	21	#5	0.625	0.310	19.67	1536.36	No	0	0.00	0.00
	Openings	120.00	Single	10	#5	0.625	0.310	9.33	347.20	No	0	0.00	0.00
Bond Beams	0.00	Double	12	#5	0.625	0.310	19.67	877.92	No	0	0.00	0.00	
Σ = 32.83 ft			Σ =						2761.48	Σ = 0.00			
<p style="text-align: center;">                     Total Vertical Reinforcement Volume (in<sup>3</sup>) = 8043.63 in<sup>3</sup>                      + Total Horizontal Reinforcement Volume (in<sup>3</sup>) = 2761.48 in<sup>3</sup>  <hr/>                     Total Panel Reinforcement Volume (in<sup>3</sup>) Σ = 10805.11 in<sup>3</sup>                      Total Panel Reinforcement Weight (lbf) = 3063.9 lbf                 </p>													



Panel N - Original Concrete Design Summary							
Description	Member	Geometry (ft)			Opening (ft <sup>2</sup> )	Volume (ft <sup>3</sup> )	Volume (yd <sup>3</sup> )
		Length	Height	Thickness	Total Openings		
Concrete	7-1/4"	20.00	36.83	0.604	0.00	445.03	16.48
	Total	Total Panel Concrete Volume (ft <sup>3</sup> or yd <sup>3</sup> ) Σ =				445.03	16.48

Panel N - Instruct Concrete Design Summary			
Description	Member	Volume (ft <sup>3</sup> )	Volume (yd <sup>3</sup> )
Concrete	3" Ext.	184.15	6.82
	2" Int.	122.77	4.55
Σ =		306.92	11.37


Panel N - Original Reinforcement Summary													
Description & Dimensions			Longitudinal Reinforcement							Transverse Reinforcement			
Vertical Panel Reinforcement	Area	Width (in)	Layer	Total Bars	Bar Size	Diameter	Bar Area (in <sup>2</sup> )	Length (ft)	Volume (in <sup>3</sup> )	#3 at 8" Ties	Quantity	Length (in)	Volume (in <sup>3</sup> )
	L. Chord	4.00	Double	2	#5	0.625	0.310	36.41	270.92	No	0	0.00	0.00
Center	232.00	Single	19	#5	0.625	0.310	36.41	2573.69	No	0	0.00	0.00	
R. Chord	4.00	Double	2	#5	0.625	0.310	36.41	270.92	No	0	0.00	0.00	
Σ = 20.00 ft			Σ =						3115.52	Σ = 0.00			
Description & Dimensions			Longitudinal Reinforcement							Transverse Reinforcement			
Horizontal Panel Reinforcement	Area	Height (in)	Layer	Total Bars	Bar Size	Diameter	Bar Area (in <sup>2</sup> )	Length (ft)	Volume (in <sup>3</sup> )	NA	Quantity	Length (in)	Volume (in <sup>3</sup> )
	Full Width	437.96	Single	37	#5	0.625	0.310	19.67	2706.92	No	0	0.00	0.00
Bond Beams	4.00	Double	4	#5	0.625	0.310	19.67	292.64	No	0	0.00	0.00	
Σ = 36.83 ft			Σ =						2999.56	Σ = 0.00			
<p style="text-align: right;">Total Vertical Reinforcement Volume (in<sup>3</sup>) = 3115.52 in<sup>3</sup>                  + Total Horizontal Reinforcement Volume (in<sup>3</sup>) = 2999.56 in<sup>3</sup>  <hr/>                 Total Panel Reinforcement Volume (in<sup>3</sup>) Σ = 6115.08 in<sup>3</sup>                  Total Panel Reinforcement Weight (lbf) = 1734.0 lbf</p>													



Panel G - Original Concrete Design Summary							
Description	Member	Geometry (ft)			Opening (ft <sup>2</sup> )	Volume (ft <sup>3</sup> )	Volume (yd <sup>3</sup> )
		Length	Height	Thickness	Total Openings		
Concrete	7-1/4"	20.00	34.83	0.604	180.00	312.11	11.56
	Total	Total Panel Concrete Volume (ft <sup>3</sup> or yd <sup>3</sup> ) Σ =				312.11	11.56

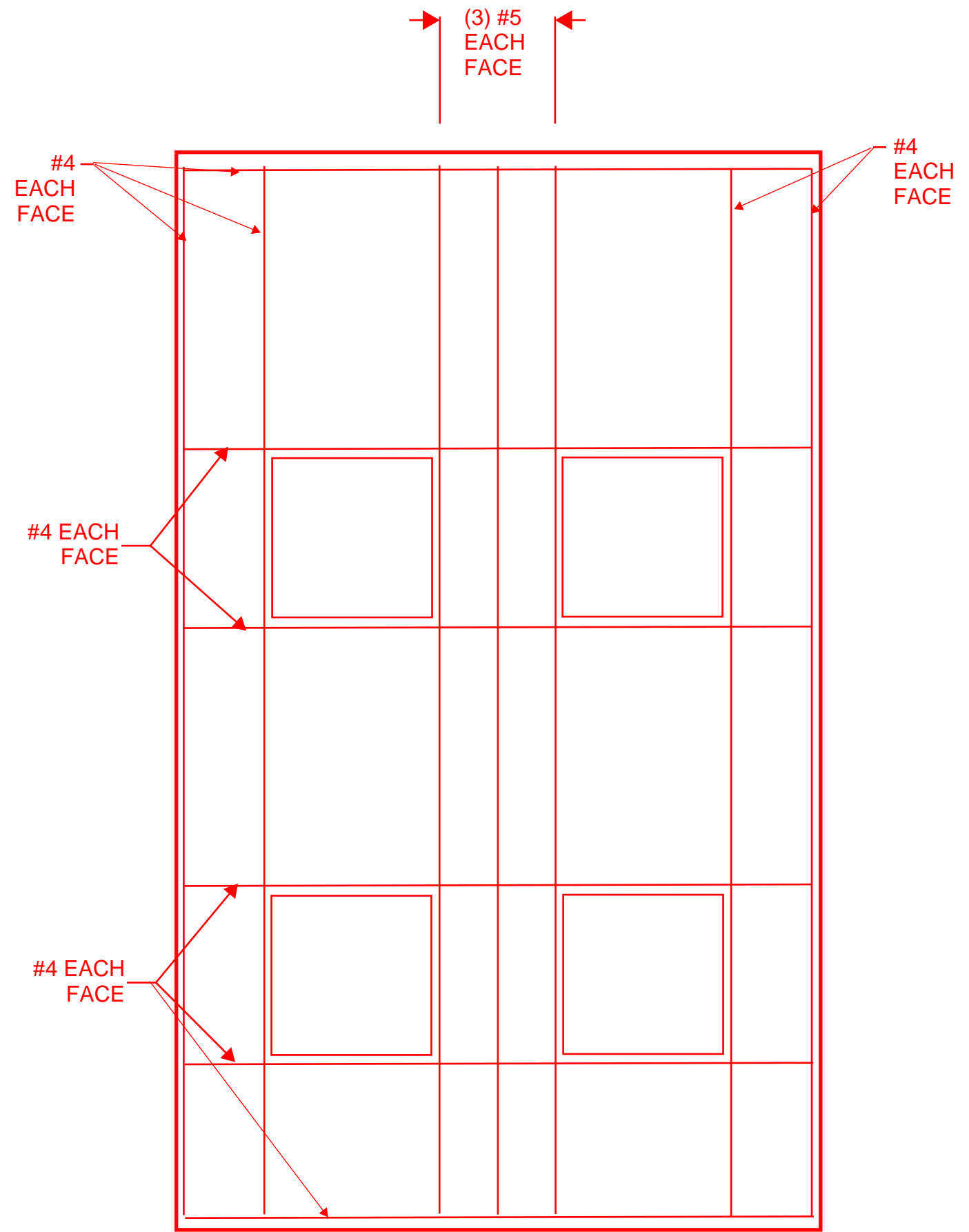
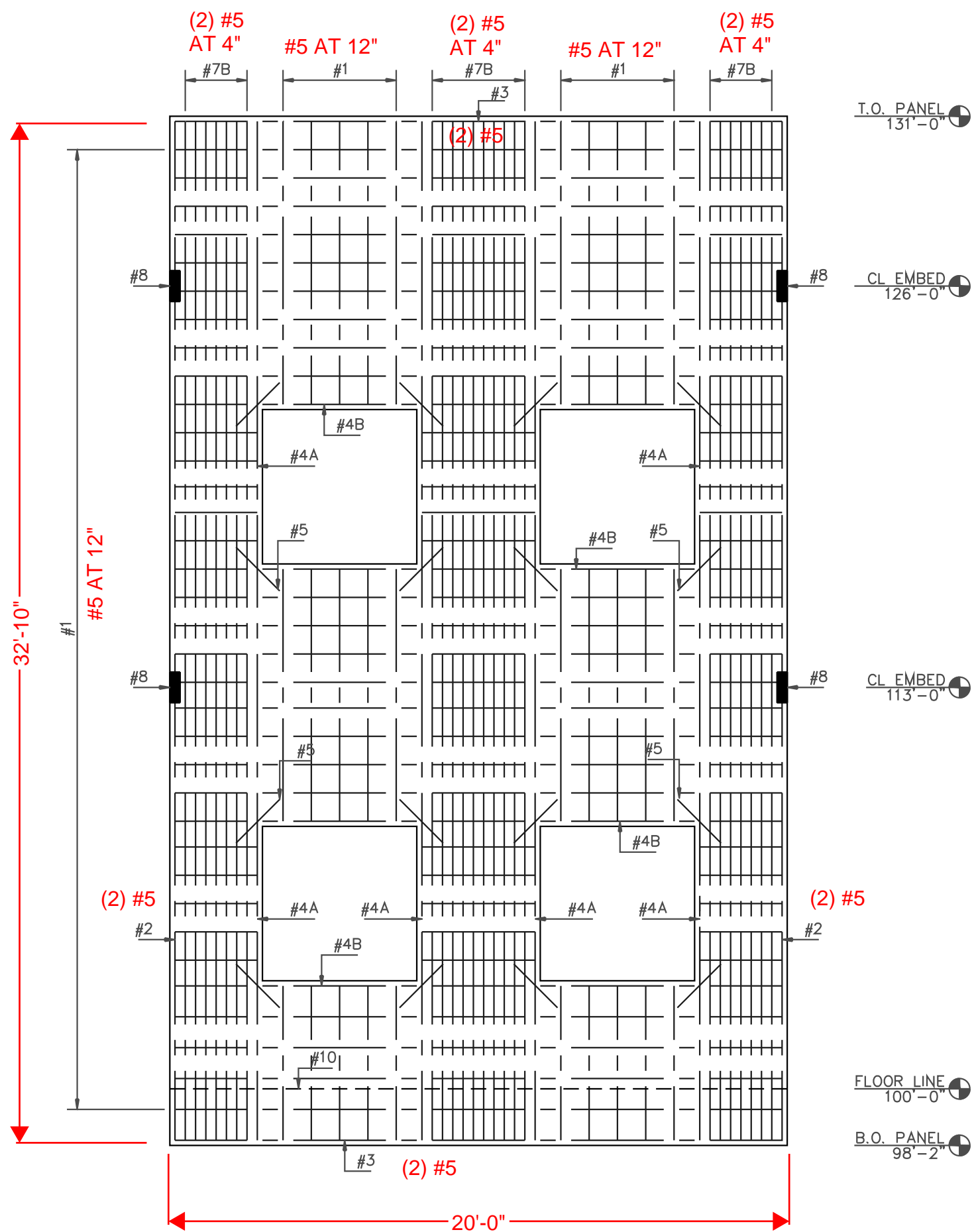
Panel G - Instruct Concrete Design Summary			
Description	Member	Volume (ft <sup>3</sup> )	Volume (yd <sup>3</sup> )
Concrete	3" Ext.	129.15	4.78
	2" Int.	86.10	3.19
	Σ =	215.25	7.97

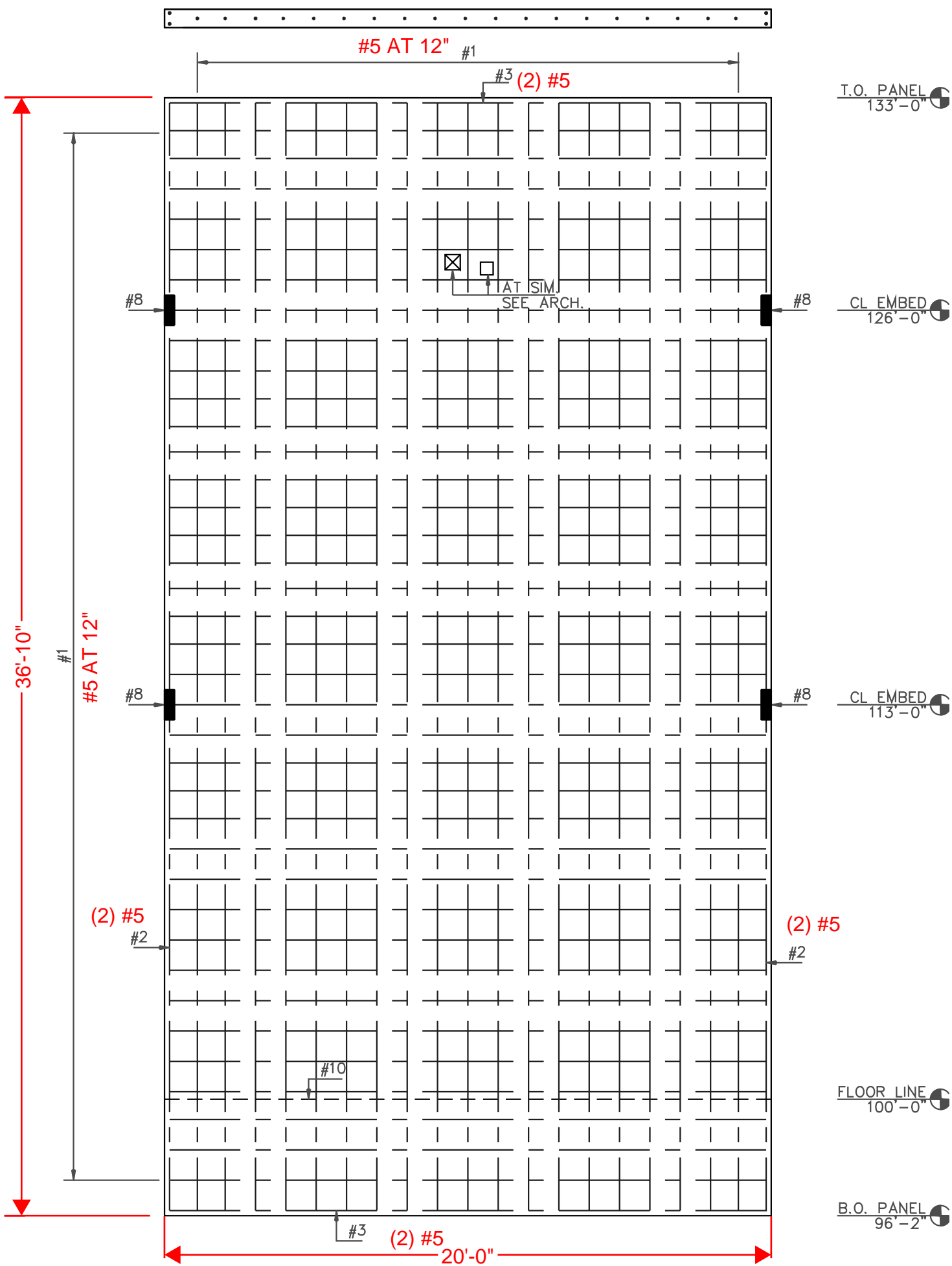
Panel G - Original Reinforcement Summary													
Description & Dimensions			Longitudinal Reinforcement							Transverse Reinforcement			
Vertical Panel Reinforcement	Area	Width (in)	Layer	Total Bars	Bar Size	Diameter	Bar Area (in <sup>2</sup> )	Length (ft)	Volume (in <sup>3</sup> )	#3 at 8" Ties	Quantity	Length (in)	Volume (in <sup>3</sup> )
	L. Chord	60.00	Double	22	#5	0.625	0.310	34.41	2816.39	No	0	0.00	0.00
Openings	144.00	Single	13	#5	0.625	0.310	23.75	1148.39	No	0	0.00	0.00	
R. Chord	36.00	Double	14	#5	0.625	0.310	34.41	1792.25	No	0	0.00	0.00	
Σ =		20.00	ft						Σ =	5757.02	Σ = 0.00		
Description & Dimensions			Longitudinal Reinforcement							Transverse Reinforcement			
Horizontal Panel Reinforcement	Area	Height (in)	Layer	Total Bars	Bar Size	Diameter	Bar Area (in <sup>2</sup> )	Length (ft)	Volume (in <sup>3</sup> )	NA	Quantity	Length (in)	Volume (in <sup>3</sup> )
	Full Width	297.96	Single	16	#5	0.625	0.310	19.67	1170.56	No	0	0.00	0.00
	Openings	120.00	Single	15	#5	0.625	0.310	7.67	427.80	No	0	0.00	0.00
Bond Beams	0.00	Double	12	#5	0.625	0.310	19.67	877.92	No	0	0.00	0.00	
Σ =		34.83	ft						Σ =	2476.28	Σ = 0.00		
<p style="text-align: center;">                     Total Vertical Reinforcement Volume (in<sup>3</sup>) = 5757.02 in<sup>3</sup>                      + Total Horizontal Reinforcement Volume (in<sup>3</sup>) = 2476.28 in<sup>3</sup>  <hr/>                     Total Panel Reinforcement Volume (in<sup>3</sup>) Σ = 8233.30 in<sup>3</sup>                      Total Panel Reinforcement Weight (lbf) = 2334.7 lbf                 </p>													

	A	B	C	D	E	F	G	H	I	J	K	L
1												
2												
3												
4	<b>Panel B, N, and G - Instruct Panel Additional Reinforcement Summary</b>											
5												
6												
7												
8												
9												
14												
15												
16												
17												
18												
19												
20												

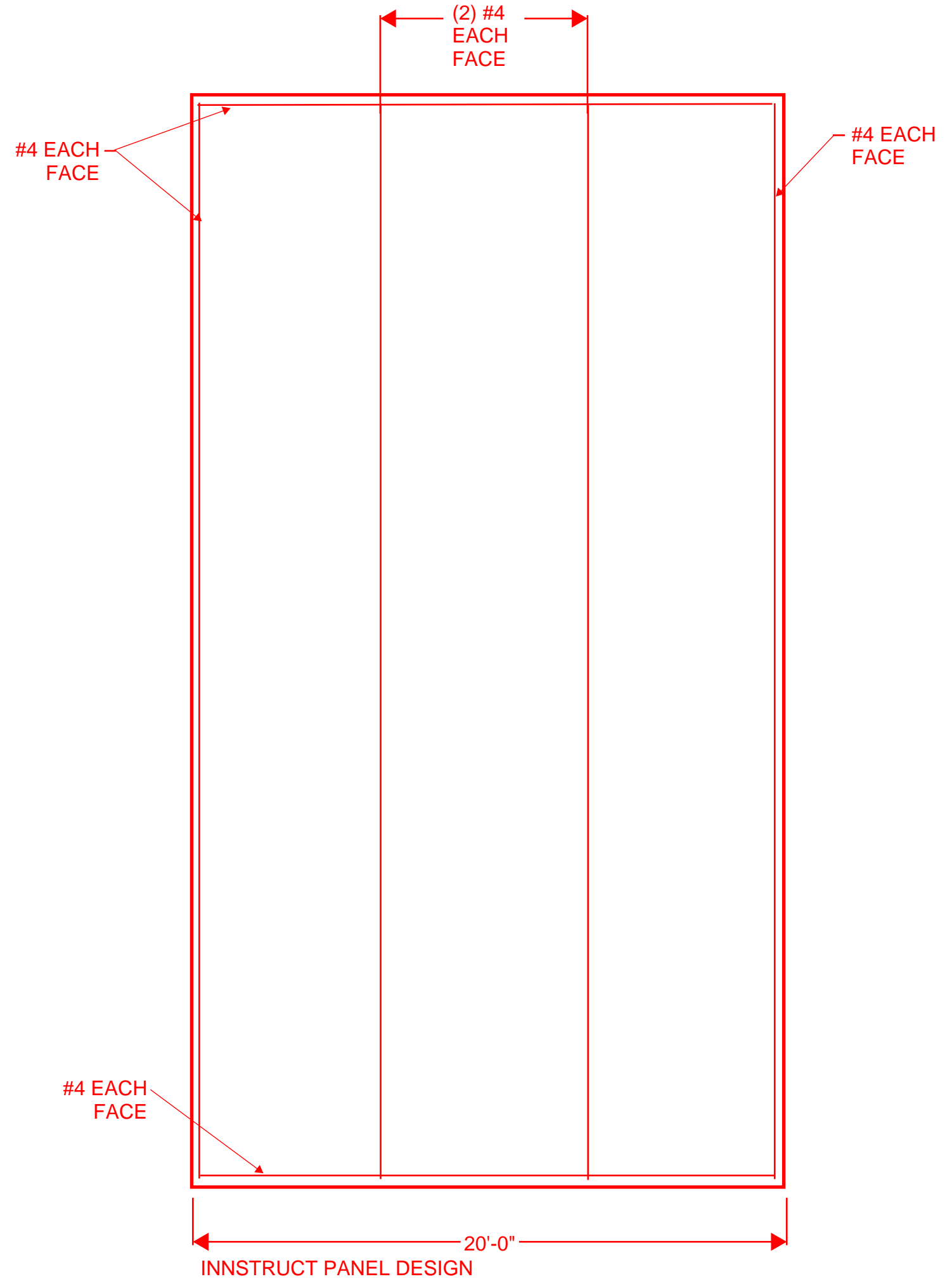
  

	Description	Total Bars	Bar Size	Diameter	Bar Area (in <sup>2</sup> )	Length (ft)	Volume (in <sup>3</sup> )	
B	Left	4	#4	0.500	0.200	32.50	311.97	2989.90 in <sup>3</sup>
	Center	6	#5	0.625	0.310	32.50	725.33	847.8 lbf
	Right	4	#4	0.500	0.200	32.50	311.97	
	Horiz. Bars	12	#4	0.500	0.200	19.67	566.40	
N	Vert. Bars	8	#4	0.500	0.200	36.50	700.74	889.57 in <sup>3</sup>
	Horiz. Bars	4	#4	0.500	0.200	19.67	188.83	252.3 lbf
G	Left	14	#4	0.500	0.200	34.50	1159.20	
	Right	10	#4	0.500	0.200	34.50	828.00	2553.60 in <sup>3</sup>
	Horiz. Bars	12	#4	0.500	0.200	19.67	566.40	724.1 lbf





CONCRETE TILT-UP PANEL



INNSTRUCT PANEL DESIGN

