

**Baseplate Design - Double End Post Design**

**Anchor Bolt Analysis (4 bolt pattern, round baseplate)** Not Applicable, see single post design below

Bot Circle Dia = 22.00 inches  
 A bolts = 15.861 kg inches  
 I bolts = 899.01 in<sup>4</sup>  
 B bolts = 24.70 in<sup>3</sup>  
 Base Plate Dia = 22.00 inches  
 Allow Tensile Stress = Ft = 27.50 ksi  
 Allow Shear Stress = Fv = 16.50 ksi

Anchor Bolt Properties  
 Net Tensile Stress Area = At = 3.248 sq. inches  
 Gross Area = Ag = 3.976 sq. inches

Locations	Max. Axial lbs	Min. Axial lbs	Moment kip-ft	V kips	All Com.			CSR Eq. 5-24	Post		Max. Stress ksi
					Stress ksi	Stress ksi	Stress ksi		Bending (ksi, dia)	Axial (ksi, dia)	
Left Support	3.95	3.95	0.00	0.00	0.30	0.30	0.00	0.00	0.00	0.18	0.18
Right Support	3.72	3.72	-0.00	-0.00	0.29	0.29	0.00	0.00	0.00	0.18	0.18
Left Support	2.90	2.90	23.86	0.31	4.02	-3.59	0.41	0.02	4.11	0.14	4.25
Right Support	2.79	2.79	-23.87	-0.31	3.74	-3.31	0.44	0.01	3.81	0.13	3.94
Left Support	2.90	2.90	30.49	0.47	5.92	-5.49	0.27	0.04	6.17	0.14	6.31
Right Support	2.79	2.79	-30.47	-0.47	5.50	-5.07	0.22	0.03	5.75	0.13	5.88
Left Support	4.03	4.03	11.83	2.82	2.21	-1.59	0.22	0.00	2.06	0.19	2.25
Right Support	3.81	3.81	-11.86	-2.82	2.05	-1.47	0.18	0.00	1.91	0.18	2.08
Left Support	4.03	4.03	17.74	1.74	3.16	-2.54	0.13	0.01	3.09	0.19	3.28
Right Support	3.81	3.81	-18.44	-1.46	2.83	-2.25	0.11	0.01	2.85	0.18	3.04
					0.92	-0.63	0.41	0.04			0.31

**Baseplate weld design** Not Applicable, see single post design below

S post = 89.01 in<sup>4</sup>  
 A post = 21.21 in<sup>2</sup>  
 Max. Weld Size = 0.4375 inches  
 Min. Weld Size = 0.25 inches  
 Force per inch of post edge = 3.15 kips per inch  
 Weld Stress based on Max. Weld Size = 5.10 ksi Based on double weld (socket connection)  
 Weld Stress based on Min. Weld Size = 8.82 ksi Based on double weld (socket connection)  
 Weld Yield Strength = 70 ksi  
 Allowable Weld stress = 18.9 ksi  
 Required weld size = 0.118 inches  
 Design Weld Size = 8.25 inches Based on double weld (socket connection)  
 Weld Length = 87.56 inches Based on double weld (socket connection)

**Baseplate Thickness** Not Applicable, see single post design below

Width of Baseplate section = 9.000 inches  
 Thickness = 2.250 inches  
 Sx = 7.59 in<sup>3</sup>  
 Bolt spacing = X = 18.68 inches Measured along circumference of bolt circle  
 Force per inch of post edge = 3.15 kips per inch  
 Moment on Baseplate = 102.81 kip-inches  
 Bending Stress = 13.55 ksi  
 Allowable Bending Stress = 37.50 ksi  
 No vertical stiffeners needed  
 Capacity of 1/4" weld = 3.36 kips per inch  
 Length of 1/4" horizontal weld required on each leg of each vertical stiffener = X = 2.86 inches