

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 = 18.80 kips
 1 bolts = 604.57 kN
 B bolts = 18.80 kips
 Base Plate Dia = 26.00 inches
 Allow Tensile Stress = F_t = 27.00 ksi
 Allow Shear Stress = F_v = 18.50 ksi

		Anchor Bolt Properties	
		Net Tensile Stress Area - A _s =	2.428 in ²
		Gross Area - A _g =	3.137 in ²

Reaction	Max. Axial	Min. Axial	Max. V	Min. V	AD Com.	AD Tens.	AD Shear	CSR	Baseplate Weld Information		
									Eq. 5-44	Post Bending Str. (ksi)	Post Axial Stress (ksi)
Left Support	4.1	3.76	0.00	0.00	0.38	0.38	0.00	0.00	0.00	0.18	0.18
Right Support	4.21	4.21	0.00	0.00	0.42	0.42	0.00	0.00	0.00	0.20	0.20
Left Support	2.83	2.83	24.83	3.52	5.70	-5.14	0.39	0.04	4.32	0.13	4.45
Right Support	3.17	3.17	21.88	5.29	5.09	-6.08	0.53	0.03	3.89	0.15	3.85
Left Support	2.83	2.83	37.24	2.72	8.41	-7.85	0.27	0.08	6.48	0.13	6.61
Right Support	3.17	3.17	29.82	3.37	7.68	-8.89	0.24	0.08	5.71	0.15	5.86
Left Support	3.81	3.81	12.41	2.13	3.09	-2.33	0.21	0.01	2.16	0.18	2.34
Right Support	4.36	4.36	10.84	2.83	2.83	-1.98	0.28	0.01	1.90	0.21	2.11
Left Support	3.81	3.81	18.62	1.34	4.45	-3.68	0.13	0.02	3.24	0.18	3.42
Right Support	4.36	4.36	16.61	1.73	4.69	-3.15	0.17	0.01	2.89	0.21	3.08
					8.41	-7.85	0.23	0.08			6.61

Baseplate weld design Not Applicable, see single post design below

S post = 89.01 in⁴
 A post = 21.21 in⁴
 Max. Weld Size = 0.4375 inches
 Min. Weld Size = 0.25 inches
 Force per inch of post edge = 3.30 kips per inch
 Weld Stress based on Max. Weld Size = 5.34 ksi Based on double weld (socket connection)
 Weld Stress based on Min. Weld Size = 8.25 ksi Based on double weld (socket connection)
 Weld Yield Strength = 70 ksi
 Allowable Weld Stress = 18.3 ksi
 Required weld size = 0.124 inches Based on double weld (socket connection)
 Design Weld Size = 8.25 inches
 Weld Length = 87.96 inches Based on double weld (socket connection)

Baseplate Thickness Not Applicable, see single post design below

Width of Baseplate section = 8.000 inches
 Thickness = 2.000 inches
 S_x = 5.33 in³
 Bolt spacing = 3.0 inches Measured along circumference of bolt circle
 Force per inch of post edge = 3.30 kips per inch
 Moment in Baseplate = 98.88 kip inches
 Bending Stress = 18.50 ksi
 Allowable Bending Stress = 37.50 ksi
 Capacity of 1/4" weld = 5.36 kips per inch
 Length of 1/4" horizontal weld required on each leg of each vertical stiffener = X = 3.13 inches