

# Footing Specifications

Use in conjunction with USP Adjustable Support Columns JP, T2JP series



**Table 1. Concrete Footing Recommendations, 20 MPa Concrete Strength**

Soil Bearing Capacity kPa (psf)	Max. Footing Capacity				Min. Footing Dimensions b x b x h	Rebar Specifications	
	Unfactored Load, P <sub>s</sub> (Working Stress Design)		Factored Load, P <sub>f</sub> (Limit States Design)			Qty & Size	Spacing, s
	kN	(lb)	kN	(lb)			
75 (1,570)	27.8	(6,270)	40.4	(9,090)	24" x 24" x 9"	2 - 10M	@ 18" E/W
	43.5	(9,790)	63.1	(14,200)	30" x 30" x 9"	3 - 10M 2 - 15M	@ 12" E/W @ 19.5" E/W
	62.7	(14,100)	90.9	(20,440)	36" x 36" x 9"	4 - 10M 2 - 15M	@ 10" E/W @ 19.5" E/W
	85.3	(19,190)	123.7	(27,820)	42" x 42" x 9"	5 - 10M 3 - 15M	@ 9" E/W @ 18" E/W
	111.4	(25,060)	161.6	(36,340)	48" x 48" x 9"	6 - 10M 3 - 15M	@ 8" E/W @ 19.5" E/W
	141.0	(31,720)	204.5	(45,990)	54" x 54" x 10"	7 - 10M 4 - 15M	@ 8" E/W @ 16" E/W
	174.1	(39,160)	252.5	(56,780)	60" x 60" x 11"	9 - 10M 5 - 15M	@ 6.5" E/W @ 13.5" E/W
	210.7	(47,380)	305.6	(68,710)	66" x 66" x 12"	11 - 10M 6 - 15M	@ 6" E/W @ 12" E/W
100 (2,090)	37.1	(8,350)	53.8	(12,110)	24" x 24" x 9"	2 - 10M	@ 18" E/W
	58.0	(13,050)	84.1	(18,930)	30" x 30" x 9"	3 - 10M 2 - 15M	@ 12" E/W @ 19.5" E/W
	83.6	(18,800)	121.2	(27,260)	36" x 36" x 9"	4 - 10M 3 - 15M	@ 10" E/W @ 15" E/W
	113.8	(25,580)	165.0	(37,100)	42" x 42" x 9"	5 - 10M 3 - 15M	@ 9" E/W @ 18" E/W
	148.6	(33,420)	215.5	(48,450)	48" x 48" x 10" 48" x 48" x 11"	7 - 10M 4 - 15M	@ 7" E/W @ 14" E/W
	188.1	(42,290)	272.7	(61,320)	54" x 54" x 12"	9 - 10M 5 - 15M	@ 6" E/W @ 12" E/W
125 (2,610)	46.4	(10,440)	67.3	(15,140)	24" x 24" x 9"	3 - 10M 2 - 15M	@ 9" E/W @ 18" E/W
	72.5	(16,320)	105.2	(23,660)	30" x 30" x 9"	4 - 10M 2 - 15M	@ 8" E/W @ 19.5" E/W
	104.5	(23,500)	151.5	(34,070)	36" x 36" x 9"	5 - 10M 3 - 15M	@ 7.5" E/W @ 15" E/W
	142.2	(31,980)	206.2	(46,370)	42" x 42" x 10"	6 - 10M 3 - 15M	@ 7" E/W @ 18" E/W
	185.8	(41,770)	269.4	(60,570)	48" x 48" x 11" 48" x 48" x 12"	7 - 10M 4 - 15M	@ 7" E/W @ 14" E/W
150 (3,130)	55.7	(12,530)	80.8	(18,170)	24" x 24" x 9"	3 - 10M 2 - 15M	@ 9" E/W @ 18" E/W
	87.0	(19,580)	126.2	(28,390)	30" x 30" x 9"	4 - 10M 3 - 15M	@ 8" E/W @ 12" E/W
	125.4	(28,200)	181.8	(40,880)	36" x 36" x 10"	5 - 10M 3 - 15M	@ 7.5" E/W @ 15" E/W
	170.7	(38,380)	247.5	(55,650)	42" x 42" x 11"	6 - 10M 3 - 15M	@ 7" E/W @ 18" E/W
300 (6,270)	222.9	(50,130)	323.3	(72,680)	48" x 48" x 12"	8 - 10M 4 - 15M	@ 6" E/W @ 14" E/W
	111.4	(25,060)	161.6	(36,340)	24" x 24" x 10"	4 - 10M 3 - 15M	@ 6" E/W @ 9" E/W
	174.1	(39,160)	252.5	(56,780)	30" x 30" x 11"	5 - 10M 4 - 15M	@ 6" E/W @ 8" E/W
	250.8	(56,390)	363.7	(81,770)	36" x 36" x 13"	6 - 10M 4 - 15M	@ 6" E/W @ 10" E/W

20 MPa concrete

**Notes:**

1. Footing design is in accordance with CAN/CSA A23.3, and meets or exceeds the prescriptive requirements of NBCC-2015 Part 9 and its provincial counterparts.
2. Soil bearing capacity and load(s) to be supported by the footing shall be verified by an engineer.
3. Concrete shall be normal Portland cement, Type 10 or Type 50 as required, slump +/- 75 mm (3"), entrained air 4-7%, maximum aggregate 20 mm (3/4") diameter, minimum strength of 20 MPa (2,900 psi) at 28 days.
4. Rebar shall be Grade 400, tied at all intersections, and placed in conformance with Figure 1.
5. Column shall be installed at the centre of the footing; eccentric loading reduces the footing capacity. Design is based on USP Support Column steel base plate sizes of 3.5" x 6" and 4.5" x 6".
6. Refer to Table 1 for footing size (b x b x h) and rebar spacing (s). Footing height (h) indicates the depth of footing below the column base plate. Rebar edge distance (e) and depth of concrete below rebar (c) shall be no less than 3".

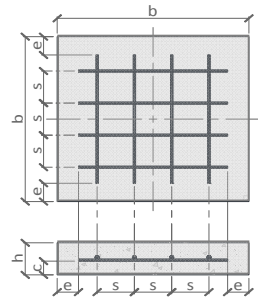
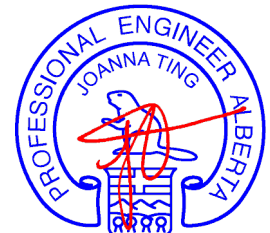


Figure 1. Rebar layout

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APEGA  
Permit No. P3837



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# Footing Specifications

Use in conjunction with USP Adjustable Support Columns JP, T2JP series



**Table 2. Concrete Footing Recommendations, 25 MPa Concrete Strength**

Soil Bearing Capacity kPa (psf)	Max. Footing Capacity				Min. Footing Dimensions b x b x h	Rebar Specifications	
	Unfactored Load, P <sub>s</sub> (Working Stress Design)		Factored Load, P <sub>f</sub> (Limit States Design)			Qty & Size	Spacing, s
	kN	(lb)	kN	(lb)			
75 (1,570)	27.8	(6,270)	40.4	(9,090)	24" x 24" x 9"	2 - 10M	@ 18" E/W
	43.5	(9,790)	63.1	(14,200)	30" x 30" x 9"	3 - 10M 2 - 15M	@ 12" E/W @ 19.5" E/W
	62.7	(14,100)	90.9	(20,440)	36" x 36" x 9"	4 - 10M 2 - 15M	@ 10" E/W @ 19.5" E/W
	85.3	(19,190)	123.7	(27,820)	42" x 42" x 9"	5 - 10M 3 - 15M	@ 9" E/W @ 18" E/W
	111.4	(25,060)	161.6	(36,340)	48" x 48" x 9"	6 - 10M 3 - 15M	@ 8" E/W @ 19.5" E/W
	141.0	(31,720)	204.5	(45,990)	54" x 54" x 10"	7 - 10M 4 - 15M	@ 8" E/W @ 16" E/W
	174.1	(39,160)	252.5	(56,780)	60" x 60" x 11"	9 - 10M 5 - 15M	@ 6.5" E/W @ 13.5" E/W
	210.7	(47,380)	305.6	(68,710)	66" x 66" x 12"	11 - 10M 6 - 15M	@ 6" E/W @ 12" E/W
100 (2,090)	37.1	(8,350)	53.8	(12,110)	24" x 24" x 9"	2 - 10M	@ 18" E/W
	58.0	(13,050)	84.1	(18,930)	30" x 30" x 9"	3 - 10M 2 - 15M	@ 12" E/W @ 19.5" E/W
	83.6	(18,800)	121.2	(27,260)	36" x 36" x 9"	4 - 10M 2 - 15M	@ 10" E/W @ 19.5" E/W
	113.8	(25,580)	165.0	(37,100)	42" x 42" x 9"	5 - 10M 3 - 15M	@ 9" E/W @ 18" E/W
	148.6	(33,420)	215.5	(48,450)	48" x 48" x 10"	7 - 10M 4 - 15M	@ 7" E/W @ 14" E/W
	188.1	(42,290)	272.7	(61,320)	54" x 54" x 11"	8 - 10M 4 - 15M	@ 6.5" E/W @ 16" E/W
125 (2,610)	46.4	(10,440)	67.3	(15,140)	24" x 24" x 9"	2 - 10M	@ 18" E/W
	72.5	(16,320)	105.2	(23,660)	30" x 30" x 9"	4 - 10M 2 - 15M	@ 8" E/W @ 19.5" E/W
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150 (3,130)	55.7	(12,530)	80.8	(18,170)	24" x 24" x 9"	2 - 10M	@ 18" E/W
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	170.7	(38,380)	247.5	(55,650)	42" x 42" x 11"	6 - 10M 3 - 15M	@ 7" E/W @ 18" E/W
	222.9	(50,130)	323.3	(72,680)	48" x 48" x 12"	8 - 10M 4 - 15M	@ 6" E/W @ 14" E/W
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25 MPa concrete

**Notes:**

1. Footing design is in accordance with CAN/CSA A23.3, and meets or exceeds the prescriptive requirements of NBCC-2015 Part 9 and its provincial counterparts.
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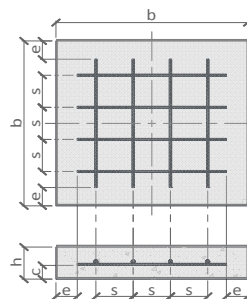


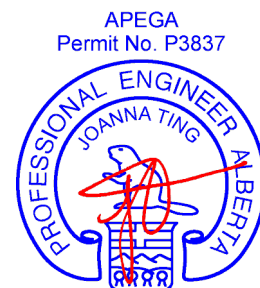
Figure 1. Rebar layout

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# Footing Specifications

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	Unfactored Load, P <sub>s</sub> (Working Stress Design)		Factored Load, P <sub>f</sub> (Limit States Design)			Qty & Size	Spacing, s
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20 MPa concrete

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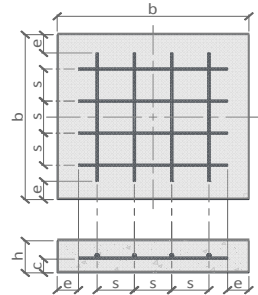


Figure 1. Rebar layout

Exp. Dec. 31, 2018



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5. Column shall be installed at the centre of the footing; eccentric loading reduces the footing capacity. Design is based on USP Support Column steel base plate sizes of 3.5" x 6" and 4.5" x 6".
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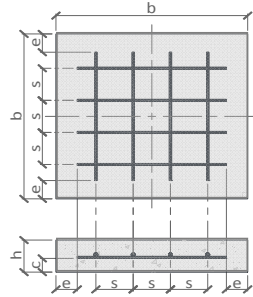


Figure 1. Rebar layout

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Oct. 31, 2016

# Footing Specifications

Use in conjunction with USP Adjustable Support Columns JP, T2JP series



**Table 1. Concrete Footing Recommendations, 20 MPa Concrete Strength**

Soil Bearing Capacity kPa (psf)	Max. Footing Capacity				Min. Footing Dimensions b x b x h	Rebar Specifications	
	Unfactored Load, P <sub>s</sub> (Working Stress Design)		Factored Load, P <sub>f</sub> (Limit States Design)			Qty & Size	Spacing, s
	kN	(lb)	kN	(lb)			
75 (1,570)	27.8	(6,270)	40.4	(9,090)	24" x 24" x 9"	2 - 10M	@ 18" E/W
	43.5	(9,790)	63.1	(14,200)	30" x 30" x 9"	3 - 10M 2 - 15M	@ 12" E/W @ 19.5" E/W
	62.7	(14,100)	90.9	(20,440)	36" x 36" x 9"	4 - 10M 2 - 15M	@ 10" E/W @ 19.5" E/W
	85.3	(19,190)	123.7	(27,820)	42" x 42" x 9"	5 - 10M 3 - 15M	@ 9" E/W @ 18" E/W
	111.4	(25,060)	161.6	(36,340)	48" x 48" x 9"	6 - 10M 3 - 15M	@ 8" E/W @ 19.5" E/W
	141.0	(31,720)	204.5	(45,990)	54" x 54" x 10"	7 - 10M 4 - 15M	@ 8" E/W @ 16" E/W
	174.1	(39,160)	252.5	(56,780)	60" x 60" x 11"	9 - 10M 5 - 15M	@ 6.5" E/W @ 13.5" E/W
	210.7	(47,380)	305.6	(68,710)	66" x 66" x 12"	11 - 10M 6 - 15M	@ 6" E/W @ 12" E/W
100 (2,090)	37.1	(8,350)	53.8	(12,110)	24" x 24" x 9"	2 - 10M	@ 18" E/W
	58.0	(13,050)	84.1	(18,930)	30" x 30" x 9"	3 - 10M 2 - 15M	@ 12" E/W @ 19.5" E/W
	83.6	(18,800)	121.2	(27,260)	36" x 36" x 9"	4 - 10M 3 - 15M	@ 10" E/W @ 15" E/W
	113.8	(25,580)	165.0	(37,100)	42" x 42" x 9"	5 - 10M 3 - 15M	@ 9" E/W @ 18" E/W
	148.6	(33,420)	215.5	(48,450)	48" x 48" x 10" 48" x 48" x 11"	7 - 10M 4 - 15M	@ 7" E/W @ 14" E/W
	188.1	(42,290)	272.7	(61,320)	54" x 54" x 12"	9 - 10M 5 - 15M	@ 6" E/W @ 12" E/W
125 (2,610)	46.4	(10,440)	67.3	(15,140)	24" x 24" x 9"	3 - 10M 2 - 15M	@ 9" E/W @ 18" E/W
	72.5	(16,320)	105.2	(23,660)	30" x 30" x 9"	4 - 10M 2 - 15M	@ 8" E/W @ 19.5" E/W
	104.5	(23,500)	151.5	(34,070)	36" x 36" x 9"	5 - 10M 3 - 15M	@ 7.5" E/W @ 15" E/W
	142.2	(31,980)	206.2	(46,370)	42" x 42" x 10"	6 - 10M 3 - 15M	@ 7" E/W @ 18" E/W
	185.8	(41,770)	269.4	(60,570)	48" x 48" x 11" 48" x 48" x 12"	7 - 10M 4 - 15M	@ 7" E/W @ 14" E/W
150 (3,130)	55.7	(12,530)	80.8	(18,170)	24" x 24" x 9"	3 - 10M 2 - 15M	@ 9" E/W @ 18" E/W
	87.0	(19,580)	126.2	(28,390)	30" x 30" x 9"	4 - 10M 3 - 15M	@ 8" E/W @ 12" E/W
	125.4	(28,200)	181.8	(40,880)	36" x 36" x 10"	5 - 10M 3 - 15M	@ 7.5" E/W @ 15" E/W
	170.7	(38,380)	247.5	(55,650)	42" x 42" x 11"	6 - 10M 3 - 15M	@ 7" E/W @ 18" E/W
300 (6,270)	222.9	(50,130)	323.3	(72,680)	48" x 48" x 12"	8 - 10M 4 - 15M	@ 6" E/W @ 14" E/W
	111.4	(25,060)	161.6	(36,340)	24" x 24" x 10"	4 - 10M 3 - 15M	@ 6" E/W @ 9" E/W
	174.1	(39,160)	252.5	(56,780)	30" x 30" x 11"	5 - 10M 4 - 15M	@ 6" E/W @ 8" E/W
	250.8	(56,390)	363.7	(81,770)	36" x 36" x 13"	6 - 10M 4 - 15M	@ 6" E/W @ 10" E/W

20 MPa concrete

**Notes:**

1. Footing design is in accordance with CAN/CSA A23.3, and meets or exceeds the prescriptive requirements of NBCC-2015 Part 9 and its provincial counterparts.
2. Soil bearing capacity and load(s) to be supported by the footing shall be verified by an engineer.
3. Concrete shall be normal Portland cement, Type 10 or Type 50 as required, slump +/- 75 mm (3"), entrained air 4-7%, maximum aggregate 20 mm (3/4") diameter, minimum strength of 20 MPa (2,900 psi) at 28 days.
4. Rebar shall be Grade 400, tied at all intersections, and placed in conformance with Figure 1.
5. Column shall be installed at the centre of the footing; eccentric loading reduces the footing capacity. Design is based on USP Support Column steel base plate sizes of 3.5" x 6" and 4.5" x 6".
6. Refer to Table 1 for footing size (b x b x h) and rebar spacing (s). Footing height (h) indicates the depth of footing below the column base plate. Rebar edge distance (e) and depth of concrete below rebar (c) shall be no less than 3".

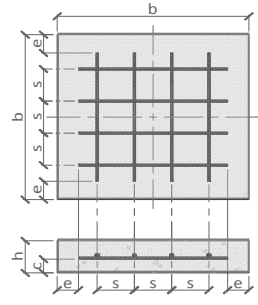


Figure 1. Rebar layout

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Oct. 31, 2016

# Footing Specifications

Use in conjunction with USP Adjustable Support Columns JP, T2JP series



**Table 2. Concrete Footing Recommendations, 25 MPa Concrete Strength**

Soil Bearing Capacity kPa (psf)	Max. Footing Capacity				Min. Footing Dimensions b x b x h	Rebar Specifications	
	Unfactored Load, P <sub>s</sub> (Working Stress Design)		Factored Load, P <sub>r</sub> (Limit States Design)			Qty & Size	Spacing, s
	kN	(lb)	kN	(lb)			
75 (1,570)	27.8	(6,270)	40.4	(9,090)	24" x 24" x 9"	2 - 10M	@ 18" E/W
	43.5	(9,790)	63.1	(14,200)	30" x 30" x 9"	3 - 10M 2 - 15M	@ 12" E/W @ 19.5" E/W
	62.7	(14,100)	90.9	(20,440)	36" x 36" x 9"	4 - 10M 2 - 15M	@ 10" E/W @ 19.5" E/W
	85.3	(19,190)	123.7	(27,820)	42" x 42" x 9"	5 - 10M 3 - 15M	@ 9" E/W @ 18" E/W
	111.4	(25,060)	161.6	(36,340)	48" x 48" x 9"	6 - 10M 3 - 15M	@ 8" E/W @ 19.5" E/W
	141.0	(31,720)	204.5	(45,990)	54" x 54" x 10"	7 - 10M 4 - 15M	@ 8" E/W @ 16" E/W
	174.1	(39,160)	252.5	(56,780)	60" x 60" x 11"	9 - 10M 5 - 15M	@ 6.5" E/W @ 13.5" E/W
	210.7	(47,380)	305.6	(68,710)	66" x 66" x 12"	11 - 10M 6 - 15M	@ 6" E/W @ 12" E/W
100 (2,090)	37.1	(8,350)	53.8	(12,110)	24" x 24" x 9"	2 - 10M	@ 18" E/W
	58.0	(13,050)	84.1	(18,930)	30" x 30" x 9"	3 - 10M 2 - 15M	@ 12" E/W @ 19.5" E/W
	83.6	(18,800)	121.2	(27,260)	36" x 36" x 9"	4 - 10M 2 - 15M	@ 10" E/W @ 19.5" E/W
	113.8	(25,580)	165.0	(37,100)	42" x 42" x 9"	5 - 10M 3 - 15M	@ 9" E/W @ 18" E/W
	148.6	(33,420)	215.5	(48,450)	48" x 48" x 10"	7 - 10M 4 - 15M	@ 7" E/W @ 14" E/W
	188.1	(42,290)	272.7	(61,320)	54" x 54" x 11"	8 - 10M 4 - 15M	@ 6.5" E/W @ 16" E/W
125 (2,610)	46.4	(10,440)	67.3	(15,140)	24" x 24" x 9"	2 - 10M	@ 18" E/W
	72.5	(16,320)	105.2	(23,660)	30" x 30" x 9"	4 - 10M 2 - 15M	@ 8" E/W @ 19.5" E/W
	104.5	(23,500)	151.5	(34,070)	36" x 36" x 9"	5 - 10M 3 - 15M	@ 7.5" E/W @ 15" E/W
	142.2	(31,980)	206.2	(46,370)	42" x 42" x 10"	6 - 10M 3 - 15M	@ 7" E/W @ 18" E/W
	185.8	(41,770)	269.4	(60,570)	48" x 48" x 11"	7 - 10M 4 - 15M	@ 7" E/W @ 14" E/W
150 (3,130)	55.7	(12,530)	80.8	(18,170)	24" x 24" x 9"	2 - 10M	@ 18" E/W
	87.0	(19,580)	126.2	(28,390)	30" x 30" x 9"	3 - 10M 2 - 15M	@ 12" E/W @ 19.5" E/W
	125.4	(28,200)	181.8	(40,880)	36" x 36" x 9"	5 - 10M 3 - 15M	@ 7.5" E/W @ 15" E/W
	170.7	(38,380)	247.5	(55,650)	42" x 42" x 11"	6 - 10M 3 - 15M	@ 7" E/W @ 18" E/W
300 (6,270)	222.9	(50,130)	323.3	(72,680)	48" x 48" x 12"	8 - 10M 4 - 15M	@ 6" E/W @ 14" E/W
	111.4	(25,060)	161.6	(36,340)	24" x 24" x 9"	4 - 10M 3 - 15M	@ 6" E/W @ 9" E/W
	174.1	(39,160)	252.5	(56,780)	30" x 30" x 11"	4 - 10M 3 - 15M	@ 8" E/W @ 12" E/W
300 (6,270)	250.8	(56,390)	363.7	(81,770)	36" x 36" x 12"	6 - 10M 4 - 15M	@ 6" E/W @ 10" E/W

25 MPa concrete

**Notes:**

1. Footing design is in accordance with CAN/CSA A23.3, and meets or exceeds the prescriptive requirements of NBCC-2015 Part 9 and its provincial counterparts.
2. Soil bearing capacity and load(s) to be supported by the footing shall be verified by an engineer.
3. Concrete shall be normal Portland cement, Type 10 or Type 50 as required, slump +/- 75 mm (3"), entrained air 4-7%, maximum aggregate 20 mm (3/4") diameter, minimum strength of 20 MPa (2,900 psi) at 28 days.
4. Rebar shall be Grade 400, tied at all intersections, and placed in conformance with Figure 1.
5. Column shall be installed at the centre of the footing; eccentric loading reduces the footing capacity. Design is based on USP Support Column steel base plate sizes of 3.5" x 6" and 4.5" x 6".
6. Refer to Table 2 for footing size (b x b x h) and rebar spacing (s). Footing height (h) indicates the depth of footing below the column base plate. Rebar edge distance (e) and depth of concrete below rebar (c) shall be no less than 3".

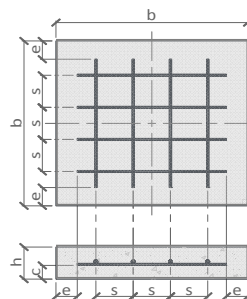


Figure 1. Rebar layout

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# Footing Specifications

Use in conjunction with USP Adjustable Support Columns JP, T2JP series



**Table 1. Concrete Footing Recommendations, 20 MPa Concrete Strength**

Soil Bearing Capacity kPa (psf)	Max. Footing Capacity				Min. Footing Dimensions b x b x h	Rebar Specifications	
	Unfactored Load, P <sub>s</sub> (Working Stress Design)		Factored Load, P <sub>f</sub> (Limit States Design)			Qty & Size	Spacing, s
	kN	(lb)	kN	(lb)			
75 (1,570)	27.8	(6,270)	40.4	(9,090)	24" x 24" x 9"	2 - 10M	@ 18" E/W
	43.5	(9,790)	63.1	(14,200)	30" x 30" x 9"	3 - 10M 2 - 15M	@ 12" E/W @ 19.5" E/W
	62.7	(14,100)	90.9	(20,440)	36" x 36" x 9"	4 - 10M 2 - 15M	@ 10" E/W @ 19.5" E/W
	85.3	(19,190)	123.7	(27,820)	42" x 42" x 9"	5 - 10M 3 - 15M	@ 9" E/W @ 18" E/W
	111.4	(25,060)	161.6	(36,340)	48" x 48" x 9"	6 - 10M 3 - 15M	@ 8" E/W @ 19.5" E/W
	141.0	(31,720)	204.5	(45,990)	54" x 54" x 10"	7 - 10M 4 - 15M	@ 8" E/W @ 16" E/W
	174.1	(39,160)	252.5	(56,780)	60" x 60" x 11"	9 - 10M 5 - 15M	@ 6.5" E/W @ 13.5" E/W
	210.7	(47,380)	305.6	(68,710)	66" x 66" x 12"	11 - 10M 6 - 15M	@ 6" E/W @ 12" E/W
100 (2,090)	37.1	(8,350)	53.8	(12,110)	24" x 24" x 9"	2 - 10M	@ 18" E/W
	58.0	(13,050)	84.1	(18,930)	30" x 30" x 9"	3 - 10M 2 - 15M	@ 12" E/W @ 19.5" E/W
	83.6	(18,800)	121.2	(27,260)	36" x 36" x 9"	4 - 10M 3 - 15M	@ 10" E/W @ 15" E/W
	113.8	(25,580)	165.0	(37,100)	42" x 42" x 9"	5 - 10M 3 - 15M	@ 9" E/W @ 18" E/W
	148.6	(33,420)	215.5	(48,450)	48" x 48" x 10" 48" x 48" x 11"	7 - 10M 4 - 15M	@ 7" E/W @ 14" E/W
	188.1	(42,290)	272.7	(61,320)	54" x 54" x 12"	9 - 10M 5 - 15M	@ 6" E/W @ 12" E/W
125 (2,610)	46.4	(10,440)	67.3	(15,140)	24" x 24" x 9"	3 - 10M 2 - 15M	@ 9" E/W @ 18" E/W
	72.5	(16,320)	105.2	(23,660)	30" x 30" x 9"	4 - 10M 2 - 15M	@ 8" E/W @ 19.5" E/W
	104.5	(23,500)	151.5	(34,070)	36" x 36" x 9"	5 - 10M 3 - 15M	@ 7.5" E/W @ 15" E/W
	142.2	(31,980)	206.2	(46,370)	42" x 42" x 10"	6 - 10M 3 - 15M	@ 7" E/W @ 18" E/W
	185.8	(41,770)	269.4	(60,570)	48" x 48" x 11" 48" x 48" x 12"	7 - 10M 4 - 15M	@ 7" E/W @ 14" E/W
150 (3,130)	55.7	(12,530)	80.8	(18,170)	24" x 24" x 9"	3 - 10M 2 - 15M	@ 9" E/W @ 18" E/W
	87.0	(19,580)	126.2	(28,390)	30" x 30" x 9"	4 - 10M 3 - 15M	@ 8" E/W @ 12" E/W
	125.4	(28,200)	181.8	(40,880)	36" x 36" x 10"	5 - 10M 3 - 15M	@ 7.5" E/W @ 15" E/W
	170.7	(38,380)	247.5	(55,650)	42" x 42" x 11"	6 - 10M 3 - 15M	@ 7" E/W @ 18" E/W
300 (6,270)	222.9	(50,130)	323.3	(72,680)	48" x 48" x 12"	8 - 10M 4 - 15M	@ 6" E/W @ 14" E/W
	111.4	(25,060)	161.6	(36,340)	24" x 24" x 10"	4 - 10M 3 - 15M	@ 6" E/W @ 9" E/W
	174.1	(39,160)	252.5	(56,780)	30" x 30" x 11"	5 - 10M 4 - 15M	@ 6" E/W @ 8" E/W
	250.8	(56,390)	363.7	(81,770)	36" x 36" x 13"	6 - 10M 4 - 15M	@ 6" E/W @ 10" E/W

20 MPa concrete

**Notes:**

1. Footing design is in accordance with CAN/CSA A23.3, and meets or exceeds the prescriptive requirements of NBCC-2015 Part 9 and its provincial counterparts.
2. Soil bearing capacity and load(s) to be supported by the footing shall be verified by an engineer.
3. Concrete shall be normal Portland cement, Type 10 or Type 50 as required, slump +/- 75 mm (3"), entrained air 4-7%, maximum aggregate 20 mm (3/4") diameter, minimum strength of 20 MPa (2,900 psi) at 28 days.
4. Rebar shall be Grade 400, tied at all intersections, and placed in conformance with Figure 1.
5. Column shall be installed at the centre of the footing; eccentric loading reduces the footing capacity. Design is based on USP Support Column steel base plate sizes of 3.5" x 6" and 4.5" x 6".
6. Refer to Table 1 for footing size (b x b x h) and rebar spacing (s). Footing height (h) indicates the depth of footing below the column base plate. Rebar edge distance (e) and depth of concrete below rebar (c) shall be no less than 3".

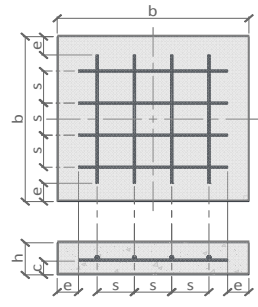
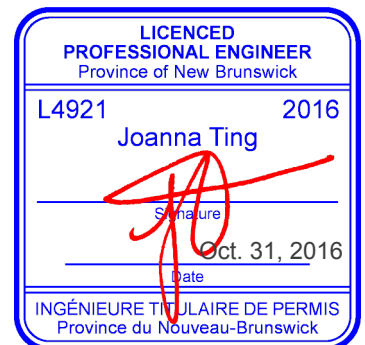


Figure 1. Rebar layout

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# Footing Specifications

Use in conjunction with USP Adjustable Support Columns JP, T2JP series



**Table 2. Concrete Footing Recommendations, 25 MPa Concrete Strength**

Soil Bearing Capacity kPa (psf)	Max. Footing Capacity				Min. Footing Dimensions b x b x h	Rebar Specifications	
	Unfactored Load, P <sub>s</sub> (Working Stress Design)		Factored Load, P <sub>r</sub> (Limit States Design)			Qty & Size	Spacing, s
	kN	(lb)	kN	(lb)			
75 (1,570)	27.8	(6,270)	40.4	(9,090)	24" x 24" x 9"	2 - 10M	@ 18" E/W
	43.5	(9,790)	63.1	(14,200)	30" x 30" x 9"	3 - 10M 2 - 15M	@ 12" E/W @ 19.5" E/W
	62.7	(14,100)	90.9	(20,440)	36" x 36" x 9"	4 - 10M 2 - 15M	@ 10" E/W @ 19.5" E/W
	85.3	(19,190)	123.7	(27,820)	42" x 42" x 9"	5 - 10M 3 - 15M	@ 9" E/W @ 18" E/W
	111.4	(25,060)	161.6	(36,340)	48" x 48" x 9"	6 - 10M 3 - 15M	@ 8" E/W @ 19.5" E/W
	141.0	(31,720)	204.5	(45,990)	54" x 54" x 10"	7 - 10M 4 - 15M	@ 8" E/W @ 16" E/W
	174.1	(39,160)	252.5	(56,780)	60" x 60" x 11"	9 - 10M 5 - 15M	@ 6.5" E/W @ 13.5" E/W
	210.7	(47,380)	305.6	(68,710)	66" x 66" x 12"	11 - 10M 6 - 15M	@ 6" E/W @ 12" E/W
100 (2,090)	37.1	(8,350)	53.8	(12,110)	24" x 24" x 9"	2 - 10M	@ 18" E/W
	58.0	(13,050)	84.1	(18,930)	30" x 30" x 9"	3 - 10M 2 - 15M	@ 12" E/W @ 19.5" E/W
	83.6	(18,800)	121.2	(27,260)	36" x 36" x 9"	4 - 10M 2 - 15M	@ 10" E/W @ 19.5" E/W
	113.8	(25,580)	165.0	(37,100)	42" x 42" x 9"	5 - 10M 3 - 15M	@ 9" E/W @ 18" E/W
	148.6	(33,420)	215.5	(48,450)	48" x 48" x 10"	7 - 10M 4 - 15M	@ 7" E/W @ 14" E/W
	188.1	(42,290)	272.7	(61,320)	54" x 54" x 11"	8 - 10M 4 - 15M	@ 6.5" E/W @ 16" E/W
125 (2,610)	46.4	(10,440)	67.3	(15,140)	24" x 24" x 9"	2 - 10M	@ 18" E/W
	72.5	(16,320)	105.2	(23,660)	30" x 30" x 9"	4 - 10M 2 - 15M	@ 8" E/W @ 19.5" E/W
	104.5	(23,500)	151.5	(34,070)	36" x 36" x 9"	5 - 10M 3 - 15M	@ 7.5" E/W @ 15" E/W
	142.2	(31,980)	206.2	(46,370)	42" x 42" x 10"	6 - 10M 3 - 15M	@ 7" E/W @ 18" E/W
	185.8	(41,770)	269.4	(60,570)	48" x 48" x 11"	7 - 10M 4 - 15M	@ 7" E/W @ 14" E/W
150 (3,130)	55.7	(12,530)	80.8	(18,170)	24" x 24" x 9"	2 - 10M	@ 18" E/W
	87.0	(19,580)	126.2	(28,390)	30" x 30" x 9"	3 - 10M 2 - 15M	@ 12" E/W @ 19.5" E/W
	125.4	(28,200)	181.8	(40,880)	36" x 36" x 9"	5 - 10M 3 - 15M	@ 7.5" E/W @ 15" E/W
	170.7	(38,380)	247.5	(55,650)	42" x 42" x 11"	6 - 10M 3 - 15M	@ 7" E/W @ 18" E/W
300 (6,270)	222.9	(50,130)	323.3	(72,680)	48" x 48" x 12"	8 - 10M 4 - 15M	@ 6" E/W @ 14" E/W
	111.4	(25,060)	161.6	(36,340)	24" x 24" x 9"	4 - 10M 3 - 15M	@ 6" E/W @ 9" E/W
	174.1	(39,160)	252.5	(56,780)	30" x 30" x 11"	4 - 10M 3 - 15M	@ 8" E/W @ 12" E/W
	250.8	(56,390)	363.7	(81,770)	36" x 36" x 12"	6 - 10M 4 - 15M	@ 6" E/W @ 10" E/W

25 MPa concrete

**Notes:**

1. Footing design is in accordance with CAN/CSA A23.3, and meets or exceeds the prescriptive requirements of NBCC-2015 Part 9 and its provincial counterparts.
2. Soil bearing capacity and load(s) to be supported by the footing shall be verified by an engineer.
3. Concrete shall be normal Portland cement, Type 10 or Type 50 as required, slump +/- 75 mm (3"), entrained air 4-7%, maximum aggregate 20 mm (3/4") diameter, minimum strength of 20 MPa (2,900 psi) at 28 days.
4. Rebar shall be Grade 400, tied at all intersections, and placed in conformance with Figure 1.
5. Column shall be installed at the centre of the footing; eccentric loading reduces the footing capacity. Design is based on USP Support Column steel base plate sizes of 3.5" x 6" and 4.5" x 6".
6. Refer to Table 2 for footing size (b x b x h) and rebar spacing (s). Footing height (h) indicates the depth of footing below the column base plate. Rebar edge distance (e) and depth of concrete below rebar (c) shall be no less than 3".

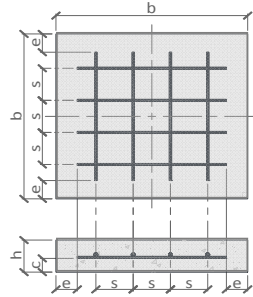


Figure 1. Rebar layout

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APEGNB  
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LICENCED  
PROFESSIONAL ENGINEER  
Province of New Brunswick

L4921 2016

Joanna Ting

Signature

Date

Oct. 31, 2016

INGÉNIEURE TITULAIRE DE PERMIS  
Province du Nouveau-Brunswick



# Footing Specifications

Use in conjunction with USP Adjustable Support Columns JP, T2JP series



**Table 1. Concrete Footing Recommendations, 20 MPa Concrete Strength**

Soil Bearing Capacity kPa (psf)	Max. Footing Capacity				Min. Footing Dimensions b x b x h	Rebar Specifications	
	Unfactored Load, P <sub>s</sub> (Working Stress Design)		Factored Load, P <sub>f</sub> (Limit States Design)			Qty & Size	Spacing, s
	kN	(lb)	kN	(lb)			
75 (1,570)	27.8	(6,270)	40.4	(9,090)	24" x 24" x 9"	2 - 10M	@ 18" E/W
	43.5	(9,790)	63.1	(14,200)	30" x 30" x 9"	3 - 10M 2 - 15M	@ 12" E/W @ 19.5" E/W
	62.7	(14,100)	90.9	(20,440)	36" x 36" x 9"	4 - 10M 2 - 15M	@ 10" E/W @ 19.5" E/W
	85.3	(19,190)	123.7	(27,820)	42" x 42" x 9"	5 - 10M 3 - 15M	@ 9" E/W @ 18" E/W
	111.4	(25,060)	161.6	(36,340)	48" x 48" x 9"	6 - 10M 3 - 15M	@ 8" E/W @ 19.5" E/W
	141.0	(31,720)	204.5	(45,990)	54" x 54" x 10"	7 - 10M 4 - 15M	@ 8" E/W @ 16" E/W
	174.1	(39,160)	252.5	(56,780)	60" x 60" x 11"	9 - 10M 5 - 15M	@ 6.5" E/W @ 13.5" E/W
	210.7	(47,380)	305.6	(68,710)	66" x 66" x 12"	11 - 10M 6 - 15M	@ 6" E/W @ 12" E/W
100 (2,090)	37.1	(8,350)	53.8	(12,110)	24" x 24" x 9"	2 - 10M	@ 18" E/W
	58.0	(13,050)	84.1	(18,930)	30" x 30" x 9"	3 - 10M 2 - 15M	@ 12" E/W @ 19.5" E/W
	83.6	(18,800)	121.2	(27,260)	36" x 36" x 9"	4 - 10M 3 - 15M	@ 10" E/W @ 15" E/W
	113.8	(25,580)	165.0	(37,100)	42" x 42" x 9"	5 - 10M 3 - 15M	@ 9" E/W @ 18" E/W
	148.6	(33,420)	215.5	(48,450)	48" x 48" x 10" 48" x 48" x 11"	7 - 10M 4 - 15M	@ 7" E/W @ 14" E/W
	188.1	(42,290)	272.7	(61,320)	54" x 54" x 12"	9 - 10M 5 - 15M	@ 6" E/W @ 12" E/W
125 (2,610)	46.4	(10,440)	67.3	(15,140)	24" x 24" x 9"	3 - 10M 2 - 15M	@ 9" E/W @ 18" E/W
	72.5	(16,320)	105.2	(23,660)	30" x 30" x 9"	4 - 10M 2 - 15M	@ 8" E/W @ 19.5" E/W
	104.5	(23,500)	151.5	(34,070)	36" x 36" x 9"	5 - 10M 3 - 15M	@ 7.5" E/W @ 15" E/W
	142.2	(31,980)	206.2	(46,370)	42" x 42" x 10"	6 - 10M 3 - 15M	@ 7" E/W @ 18" E/W
	185.8	(41,770)	269.4	(60,570)	48" x 48" x 11" 48" x 48" x 12"	7 - 10M 4 - 15M	@ 7" E/W @ 14" E/W
150 (3,130)	55.7	(12,530)	80.8	(18,170)	24" x 24" x 9"	3 - 10M 2 - 15M	@ 9" E/W @ 18" E/W
	87.0	(19,580)	126.2	(28,390)	30" x 30" x 9"	4 - 10M 3 - 15M	@ 8" E/W @ 12" E/W
	125.4	(28,200)	181.8	(40,880)	36" x 36" x 10"	5 - 10M 3 - 15M	@ 7.5" E/W @ 15" E/W
	170.7	(38,380)	247.5	(55,650)	42" x 42" x 11"	6 - 10M 3 - 15M	@ 7" E/W @ 18" E/W
300 (6,270)	222.9	(50,130)	323.3	(72,680)	48" x 48" x 12"	8 - 10M 4 - 15M	@ 6" E/W @ 14" E/W
	111.4	(25,060)	161.6	(36,340)	24" x 24" x 10"	4 - 10M 3 - 15M	@ 6" E/W @ 9" E/W
	174.1	(39,160)	252.5	(56,780)	30" x 30" x 11"	5 - 10M 4 - 15M	@ 6" E/W @ 8" E/W
	250.8	(56,390)	363.7	(81,770)	36" x 36" x 13"	6 - 10M 4 - 15M	@ 6" E/W @ 10" E/W

20 MPa concrete

**Notes:**

1. Footing design is in accordance with CAN/CSA A23.3, and meets or exceeds the prescriptive requirements of NBCC-2015 Part 9 and its provincial counterparts.
2. Soil bearing capacity and load(s) to be supported by the footing shall be verified by an engineer.
3. Concrete shall be normal Portland cement, Type 10 or Type 50 as required, slump +/- 75 mm (3"), entrained air 4-7%, maximum aggregate 20 mm (3/4") diameter, minimum strength of 20 MPa (2,900 psi) at 28 days.
4. Rebar shall be Grade 400, tied at all intersections, and placed in conformance with Figure 1.
5. Column shall be installed at the centre of the footing; eccentric loading reduces the footing capacity. Design is based on USP Support Column steel base plate sizes of 3.5" x 6" and 4.5" x 6".
6. Refer to Table 1 for footing size (b x b x h) and rebar spacing (s). Footing height (h) indicates the depth of footing below the column base plate. Rebar edge distance (e) and depth of concrete below rebar (c) shall be no less than 3".

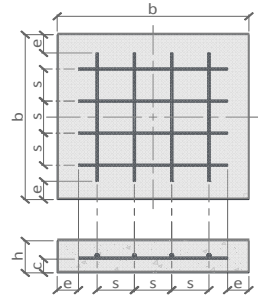


Figure 1. Rebar layout

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# Footing Specifications

Use in conjunction with USP Adjustable Support Columns JP, T2JP series



**Table 2. Concrete Footing Recommendations, 25 MPa Concrete Strength**

Soil Bearing Capacity kPa (psf)	Max. Footing Capacity				Min. Footing Dimensions b x b x h	Rebar Specifications	
	Unfactored Load, P <sub>s</sub> (Working Stress Design)		Factored Load, P <sub>f</sub> (Limit States Design)			Qty & Size	Spacing, s
	kN	(lb)	kN	(lb)			
75 (1,570)	27.8	(6,270)	40.4	(9,090)	24" x 24" x 9"	2 - 10M	@ 18" E/W
	43.5	(9,790)	63.1	(14,200)	30" x 30" x 9"	3 - 10M 2 - 15M	@ 12" E/W @ 19.5" E/W
	62.7	(14,100)	90.9	(20,440)	36" x 36" x 9"	4 - 10M 2 - 15M	@ 10" E/W @ 19.5" E/W
	85.3	(19,190)	123.7	(27,820)	42" x 42" x 9"	5 - 10M 3 - 15M	@ 9" E/W @ 18" E/W
	111.4	(25,060)	161.6	(36,340)	48" x 48" x 9"	6 - 10M 3 - 15M	@ 8" E/W @ 19.5" E/W
	141.0	(31,720)	204.5	(45,990)	54" x 54" x 10"	7 - 10M 4 - 15M	@ 8" E/W @ 16" E/W
	174.1	(39,160)	252.5	(56,780)	60" x 60" x 11"	9 - 10M 5 - 15M	@ 6.5" E/W @ 13.5" E/W
	210.7	(47,380)	305.6	(68,710)	66" x 66" x 12"	11 - 10M 6 - 15M	@ 6" E/W @ 12" E/W
100 (2,090)	37.1	(8,350)	53.8	(12,110)	24" x 24" x 9"	2 - 10M	@ 18" E/W
	58.0	(13,050)	84.1	(18,930)	30" x 30" x 9"	3 - 10M 2 - 15M	@ 12" E/W @ 19.5" E/W
	83.6	(18,800)	121.2	(27,260)	36" x 36" x 9"	4 - 10M 2 - 15M	@ 10" E/W @ 19.5" E/W
	113.8	(25,580)	165.0	(37,100)	42" x 42" x 9"	5 - 10M 3 - 15M	@ 9" E/W @ 18" E/W
	148.6	(33,420)	215.5	(48,450)	48" x 48" x 10"	7 - 10M 4 - 15M	@ 7" E/W @ 14" E/W
	188.1	(42,290)	272.7	(61,320)	54" x 54" x 11"	8 - 10M 4 - 15M	@ 6.5" E/W @ 16" E/W
125 (2,610)	46.4	(10,440)	67.3	(15,140)	24" x 24" x 9"	2 - 10M	@ 18" E/W
	72.5	(16,320)	105.2	(23,660)	30" x 30" x 9"	4 - 10M 2 - 15M	@ 8" E/W @ 19.5" E/W
	104.5	(23,500)	151.5	(34,070)	36" x 36" x 9"	5 - 10M 3 - 15M	@ 7.5" E/W @ 15" E/W
	142.2	(31,980)	206.2	(46,370)	42" x 42" x 10"	6 - 10M 3 - 15M	@ 7" E/W @ 18" E/W
	185.8	(41,770)	269.4	(60,570)	48" x 48" x 11"	7 - 10M 4 - 15M	@ 7" E/W @ 14" E/W
150 (3,130)	55.7	(12,530)	80.8	(18,170)	24" x 24" x 9"	2 - 10M	@ 18" E/W
	87.0	(19,580)	126.2	(28,390)	30" x 30" x 9"	3 - 10M 2 - 15M	@ 12" E/W @ 19.5" E/W
	125.4	(28,200)	181.8	(40,880)	36" x 36" x 9"	5 - 10M 3 - 15M	@ 7.5" E/W @ 15" E/W
	170.7	(38,380)	247.5	(55,650)	42" x 42" x 11"	6 - 10M 3 - 15M	@ 7" E/W @ 18" E/W
300 (6,270)	222.9	(50,130)	323.3	(72,680)	48" x 48" x 12"	8 - 10M 4 - 15M	@ 6" E/W @ 14" E/W
	111.4	(25,060)	161.6	(36,340)	24" x 24" x 9"	4 - 10M 3 - 15M	@ 6" E/W @ 9" E/W
	174.1	(39,160)	252.5	(56,780)	30" x 30" x 11"	4 - 10M 3 - 15M	@ 8" E/W @ 12" E/W
	250.8	(56,390)	363.7	(81,770)	36" x 36" x 12"	6 - 10M 4 - 15M	@ 6" E/W @ 10" E/W

25 MPa concrete

**Notes:**

1. Footing design is in accordance with CAN/CSA A23.3, and meets or exceeds the prescriptive requirements of NBCC-2015 Part 9 and its provincial counterparts.
2. Soil bearing capacity and load(s) to be supported by the footing shall be verified by an engineer.
3. Concrete shall be normal Portland cement, Type 10 or Type 50 as required, slump +/- 75 mm (3"), entrained air 4-7%, maximum aggregate 20 mm (3/4") diameter, minimum strength of 20 MPa (2,900 psi) at 28 days.
4. Rebar shall be Grade 400, tied at all intersections, and placed in conformance with Figure 1.
5. Column shall be installed at the centre of the footing; eccentric loading reduces the footing capacity. Design is based on USP Support Column steel base plate sizes of 3.5" x 6" and 4.5" x 6".
6. Refer to Table 2 for footing size (b x b x h) and rebar spacing (s). Footing height (h) indicates the depth of footing below the column base plate. Rebar edge distance (e) and depth of concrete below rebar (c) shall be no less than 3".

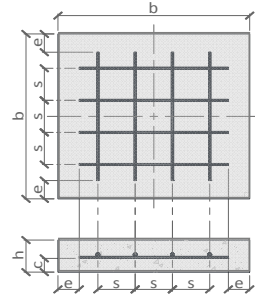


Figure 1. Rebar layout

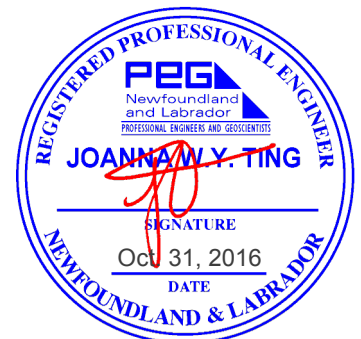
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# Footing Specifications

Use in conjunction with USP Adjustable Support Columns JP, T2JP series



**Table 1. Concrete Footing Recommendations, 20 MPa Concrete Strength**

Soil Bearing Capacity kPa (psf)	Max. Footing Capacity				Min. Footing Dimensions b x b x h	Rebar Specifications	
	Unfactored Load, P <sub>s</sub> (Working Stress Design)		Factored Load, P <sub>f</sub> (Limit States Design)			Qty & Size	Spacing, s
	kN	(lb)	kN	(lb)			
75 (1,570)	27.8	(6,270)	40.4	(9,090)	24" x 24" x 9"	2 - 10M	@ 18" E/W
	43.5	(9,790)	63.1	(14,200)	30" x 30" x 9"	3 - 10M 2 - 15M	@ 12" E/W @ 19.5" E/W
	62.7	(14,100)	90.9	(20,440)	36" x 36" x 9"	4 - 10M 2 - 15M	@ 10" E/W @ 19.5" E/W
	85.3	(19,190)	123.7	(27,820)	42" x 42" x 9"	5 - 10M 3 - 15M	@ 9" E/W @ 18" E/W
	111.4	(25,060)	161.6	(36,340)	48" x 48" x 9"	6 - 10M 3 - 15M	@ 8" E/W @ 19.5" E/W
	141.0	(31,720)	204.5	(45,990)	54" x 54" x 10"	7 - 10M 4 - 15M	@ 8" E/W @ 16" E/W
	174.1	(39,160)	252.5	(56,780)	60" x 60" x 11"	9 - 10M 5 - 15M	@ 6.5" E/W @ 13.5" E/W
	210.7	(47,380)	305.6	(68,710)	66" x 66" x 12"	11 - 10M 6 - 15M	@ 6" E/W @ 12" E/W
100 (2,090)	37.1	(8,350)	53.8	(12,110)	24" x 24" x 9"	2 - 10M	@ 18" E/W
	58.0	(13,050)	84.1	(18,930)	30" x 30" x 9"	3 - 10M 2 - 15M	@ 12" E/W @ 19.5" E/W
	83.6	(18,800)	121.2	(27,260)	36" x 36" x 9"	4 - 10M 3 - 15M	@ 10" E/W @ 15" E/W
	113.8	(25,580)	165.0	(37,100)	42" x 42" x 9"	5 - 10M 3 - 15M	@ 9" E/W @ 18" E/W
	148.6	(33,420)	215.5	(48,450)	48" x 48" x 10" 48" x 48" x 11"	7 - 10M 4 - 15M	@ 7" E/W @ 14" E/W
	188.1	(42,290)	272.7	(61,320)	54" x 54" x 12"	9 - 10M 5 - 15M	@ 6" E/W @ 12" E/W
125 (2,610)	46.4	(10,440)	67.3	(15,140)	24" x 24" x 9"	3 - 10M 2 - 15M	@ 9" E/W @ 18" E/W
	72.5	(16,320)	105.2	(23,660)	30" x 30" x 9"	4 - 10M 2 - 15M	@ 8" E/W @ 19.5" E/W
	104.5	(23,500)	151.5	(34,070)	36" x 36" x 9"	5 - 10M 3 - 15M	@ 7.5" E/W @ 15" E/W
	142.2	(31,980)	206.2	(46,370)	42" x 42" x 10"	6 - 10M 3 - 15M	@ 7" E/W @ 18" E/W
	185.8	(41,770)	269.4	(60,570)	48" x 48" x 11" 48" x 48" x 12"	7 - 10M 4 - 15M	@ 7" E/W @ 14" E/W
150 (3,130)	55.7	(12,530)	80.8	(18,170)	24" x 24" x 9"	3 - 10M 2 - 15M	@ 9" E/W @ 18" E/W
	87.0	(19,580)	126.2	(28,390)	30" x 30" x 9"	4 - 10M 3 - 15M	@ 8" E/W @ 12" E/W
	125.4	(28,200)	181.8	(40,880)	36" x 36" x 10"	5 - 10M 3 - 15M	@ 7.5" E/W @ 15" E/W
	170.7	(38,380)	247.5	(55,650)	42" x 42" x 11"	6 - 10M 3 - 15M	@ 7" E/W @ 18" E/W
300 (6,270)	222.9	(50,130)	323.3	(72,680)	48" x 48" x 12"	8 - 10M 4 - 15M	@ 6" E/W @ 14" E/W
	111.4	(25,060)	161.6	(36,340)	24" x 24" x 10"	4 - 10M 3 - 15M	@ 6" E/W @ 9" E/W
	174.1	(39,160)	252.5	(56,780)	30" x 30" x 11"	5 - 10M 4 - 15M	@ 6" E/W @ 8" E/W
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20 MPa concrete

**Notes:**

1. Footing design is in accordance with CAN/CSA A23.3, and meets or exceeds the prescriptive requirements of NBCC-2015 Part 9 and its provincial counterparts.
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5. Column shall be installed at the centre of the footing; eccentric loading reduces the footing capacity. Design is based on USP Support Column steel base plate sizes of 3.5" x 6" and 4.5" x 6".
6. Refer to Table 1 for footing size (b x b x h) and rebar spacing (s). Footing height (h) indicates the depth of footing below the column base plate. Rebar edge distance (e) and depth of concrete below rebar (c) shall be no less than 3".

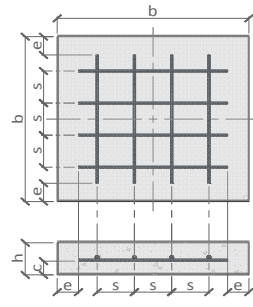


Figure 1. Rebar layout

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# Footing Specifications

Use in conjunction with USP Adjustable Support Columns JP, T2JP series



**Table 2. Concrete Footing Recommendations, 25 MPa Concrete Strength**

Soil Bearing Capacity kPa (psf)	Max. Footing Capacity				Min. Footing Dimensions b x b x h	Rebar Specifications	
	Unfactored Load, P <sub>s</sub> (Working Stress Design)		Factored Load, P <sub>f</sub> (Limit States Design)			Qty & Size	Spacing, s
	kN	(lb)	kN	(lb)			
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	43.5	(9,790)	63.1	(14,200)	30" x 30" x 9"	3 - 10M 2 - 15M	@ 12" E/W @ 19.5" E/W
	62.7	(14,100)	90.9	(20,440)	36" x 36" x 9"	4 - 10M 2 - 15M	@ 10" E/W @ 19.5" E/W
	85.3	(19,190)	123.7	(27,820)	42" x 42" x 9"	5 - 10M 3 - 15M	@ 9" E/W @ 18" E/W
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100 (2,090)	37.1	(8,350)	53.8	(12,110)	24" x 24" x 9"	2 - 10M	@ 18" E/W
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	113.8	(25,580)	165.0	(37,100)	42" x 42" x 9"	5 - 10M 3 - 15M	@ 9" E/W @ 18" E/W
	148.6	(33,420)	215.5	(48,450)	48" x 48" x 10"	7 - 10M 4 - 15M	@ 7" E/W @ 14" E/W
	188.1	(42,290)	272.7	(61,320)	54" x 54" x 11"	8 - 10M 4 - 15M	@ 6.5" E/W @ 16" E/W
125 (2,610)	46.4	(10,440)	67.3	(15,140)	24" x 24" x 9"	2 - 10M	@ 18" E/W
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	104.5	(23,500)	151.5	(34,070)	36" x 36" x 9"	5 - 10M 3 - 15M	@ 7.5" E/W @ 15" E/W
	142.2	(31,980)	206.2	(46,370)	42" x 42" x 10"	6 - 10M 3 - 15M	@ 7" E/W @ 18" E/W
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150 (3,130)	55.7	(12,530)	80.8	(18,170)	24" x 24" x 9"	2 - 10M	@ 18" E/W
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	170.7	(38,380)	247.5	(55,650)	42" x 42" x 11"	6 - 10M 3 - 15M	@ 7" E/W @ 18" E/W
	222.9	(50,130)	323.3	(72,680)	48" x 48" x 12"	8 - 10M 4 - 15M	@ 6" E/W @ 14" E/W
300 (6,270)	111.4	(25,060)	161.6	(36,340)	24" x 24" x 9"	4 - 10M 3 - 15M	@ 6" E/W @ 9" E/W
	174.1	(39,160)	252.5	(56,780)	30" x 30" x 11"	4 - 10M 3 - 15M	@ 8" E/W @ 12" E/W
	250.8	(56,390)	363.7	(81,770)	36" x 36" x 12"	6 - 10M 4 - 15M	@ 6" E/W @ 10" E/W

25 MPa concrete

**Notes:**

1. Footing design is in accordance with CAN/CSA A23.3, and meets or exceeds the prescriptive requirements of NBCC-2015 Part 9 and its provincial counterparts.
2. Soil bearing capacity and load(s) to be supported by the footing shall be verified by an engineer.
3. Concrete shall be normal Portland cement, Type 10 or Type 50 as required, slump +/- 75 mm (3"), entrained air 4-7%, maximum aggregate 20 mm (3/4") diameter, minimum strength of 20 MPa (2,900 psi) at 28 days.
4. Rebar shall be Grade 400, tied at all intersections, and placed in conformance with Figure 1.
5. Column shall be installed at the centre of the footing; eccentric loading reduces the footing capacity. Design is based on USP Support Column steel base plate sizes of 3.5" x 6" and 4.5" x 6".
6. Refer to Table 2 for footing size (b x b x h) and rebar spacing (s). Footing height (h) indicates the depth of footing below the column base plate. Rebar edge distance (e) and depth of concrete below rebar (c) shall be no less than 3".

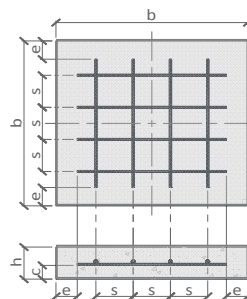


Figure 1. Rebar layout

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Oct. 31, 2016

# Footing Specifications

Use in conjunction with USP Adjustable Support Columns JP, T2JP series



**Table 1. Concrete Footing Recommendations, 20 MPa Concrete Strength**

Soil Bearing Capacity kPa (psf)	Max. Footing Capacity				Min. Footing Dimensions b x b x h	Rebar Specifications	
	Unfactored Load, P <sub>s</sub> (Working Stress Design)		Factored Load, P <sub>f</sub> (Limit States Design)			Qty & Size	Spacing, s
	kN	(lb)	kN	(lb)			
75 (1,570)	27.8	(6,270)	40.4	(9,090)	24" x 24" x 9"	2 - 10M	@ 18" E/W
	43.5	(9,790)	63.1	(14,200)	30" x 30" x 9"	3 - 10M 2 - 15M	@ 12" E/W @ 19.5" E/W
	62.7	(14,100)	90.9	(20,440)	36" x 36" x 9"	4 - 10M 2 - 15M	@ 10" E/W @ 19.5" E/W
	85.3	(19,190)	123.7	(27,820)	42" x 42" x 9"	5 - 10M 3 - 15M	@ 9" E/W @ 18" E/W
	111.4	(25,060)	161.6	(36,340)	48" x 48" x 9"	6 - 10M 3 - 15M	@ 8" E/W @ 19.5" E/W
	141.0	(31,720)	204.5	(45,990)	54" x 54" x 10"	7 - 10M 4 - 15M	@ 8" E/W @ 16" E/W
	174.1	(39,160)	252.5	(56,780)	60" x 60" x 11"	9 - 10M 5 - 15M	@ 6.5" E/W @ 13.5" E/W
	210.7	(47,380)	305.6	(68,710)	66" x 66" x 12"	11 - 10M 6 - 15M	@ 6" E/W @ 12" E/W
100 (2,090)	37.1	(8,350)	53.8	(12,110)	24" x 24" x 9"	2 - 10M	@ 18" E/W
	58.0	(13,050)	84.1	(18,930)	30" x 30" x 9"	3 - 10M 2 - 15M	@ 12" E/W @ 19.5" E/W
	83.6	(18,800)	121.2	(27,260)	36" x 36" x 9"	4 - 10M 3 - 15M	@ 10" E/W @ 15" E/W
	113.8	(25,580)	165.0	(37,100)	42" x 42" x 9"	5 - 10M 3 - 15M	@ 9" E/W @ 18" E/W
	148.6	(33,420)	215.5	(48,450)	48" x 48" x 10" 48" x 48" x 11"	7 - 10M 4 - 15M	@ 7" E/W @ 14" E/W
	188.1	(42,290)	272.7	(61,320)	54" x 54" x 12"	9 - 10M 5 - 15M	@ 6" E/W @ 12" E/W
125 (2,610)	46.4	(10,440)	67.3	(15,140)	24" x 24" x 9"	3 - 10M 2 - 15M	@ 9" E/W @ 18" E/W
	72.5	(16,320)	105.2	(23,660)	30" x 30" x 9"	4 - 10M 2 - 15M	@ 8" E/W @ 19.5" E/W
	104.5	(23,500)	151.5	(34,070)	36" x 36" x 9"	5 - 10M 3 - 15M	@ 7.5" E/W @ 15" E/W
	142.2	(31,980)	206.2	(46,370)	42" x 42" x 10"	6 - 10M 3 - 15M	@ 7" E/W @ 18" E/W
	185.8	(41,770)	269.4	(60,570)	48" x 48" x 11" 48" x 48" x 12"	7 - 10M 4 - 15M	@ 7" E/W @ 14" E/W
150 (3,130)	55.7	(12,530)	80.8	(18,170)	24" x 24" x 9"	3 - 10M 2 - 15M	@ 9" E/W @ 18" E/W
	87.0	(19,580)	126.2	(28,390)	30" x 30" x 9"	4 - 10M 3 - 15M	@ 8" E/W @ 12" E/W
	125.4	(28,200)	181.8	(40,880)	36" x 36" x 10"	5 - 10M 3 - 15M	@ 7.5" E/W @ 15" E/W
	170.7	(38,380)	247.5	(55,650)	42" x 42" x 11"	6 - 10M 3 - 15M	@ 7" E/W @ 18" E/W
300 (6,270)	222.9	(50,130)	323.3	(72,680)	48" x 48" x 12"	8 - 10M 4 - 15M	@ 6" E/W @ 14" E/W
	111.4	(25,060)	161.6	(36,340)	24" x 24" x 10"	4 - 10M 3 - 15M	@ 6" E/W @ 9" E/W
	174.1	(39,160)	252.5	(56,780)	30" x 30" x 11"	5 - 10M 4 - 15M	@ 6" E/W @ 8" E/W
	250.8	(56,390)	363.7	(81,770)	36" x 36" x 13"	6 - 10M 4 - 15M	@ 6" E/W @ 10" E/W

20 MPa concrete

**Notes:**

1. Footing design is in accordance with CAN/CSA A23.3, and meets or exceeds the prescriptive requirements of NBCC-2015 Part 9 and its provincial counterparts.
2. Soil bearing capacity and load(s) to be supported by the footing shall be verified by an engineer.
3. Concrete shall be normal Portland cement, Type 10 or Type 50 as required, slump +/- 75 mm (3"), entrained air 4-7%, maximum aggregate 20 mm (3/4") diameter, minimum strength of 20 MPa (2,900 psi) at 28 days.
4. Rebar shall be Grade 400, tied at all intersections, and placed in conformance with Figure 1.
5. Column shall be installed at the centre of the footing; eccentric loading reduces the footing capacity. Design is based on USP Support Column steel base plate sizes of 3.5" x 6" and 4.5" x 6".
6. Refer to Table 1 for footing size (b x b x h) and rebar spacing (s). Footing height (h) indicates the depth of footing below the column base plate. Rebar edge distance (e) and depth of concrete below rebar (c) shall be no less than 3".

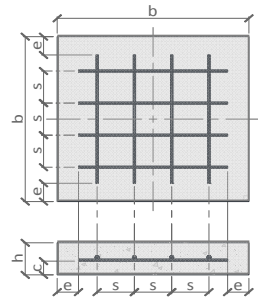


Figure 1. Rebar layout

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# Footing Specifications

Use in conjunction with USP Adjustable Support Columns JP, T2JP series



**Table 2. Concrete Footing Recommendations, 25 MPa Concrete Strength**

Soil Bearing Capacity kPa (psf)	Max. Footing Capacity				Min. Footing Dimensions b x b x h	Rebar Specifications	
	Unfactored Load, P <sub>s</sub> (Working Stress Design)		Factored Load, P <sub>r</sub> (Limit States Design)			Qty & Size	Spacing, s
	kN	(lb)	kN	(lb)			
75 (1,570)	27.8	(6,270)	40.4	(9,090)	24" x 24" x 9"	2 - 10M	@ 18" E/W
	43.5	(9,790)	63.1	(14,200)	30" x 30" x 9"	3 - 10M 2 - 15M	@ 12" E/W @ 19.5" E/W
	62.7	(14,100)	90.9	(20,440)	36" x 36" x 9"	4 - 10M 2 - 15M	@ 10" E/W @ 19.5" E/W
	85.3	(19,190)	123.7	(27,820)	42" x 42" x 9"	5 - 10M 3 - 15M	@ 9" E/W @ 18" E/W
	111.4	(25,060)	161.6	(36,340)	48" x 48" x 9"	6 - 10M 3 - 15M	@ 8" E/W @ 19.5" E/W
	141.0	(31,720)	204.5	(45,990)	54" x 54" x 10"	7 - 10M 4 - 15M	@ 8" E/W @ 16" E/W
	174.1	(39,160)	252.5	(56,780)	60" x 60" x 11"	9 - 10M 5 - 15M	@ 6.5" E/W @ 13.5" E/W
	210.7	(47,380)	305.6	(68,710)	66" x 66" x 12"	11 - 10M 6 - 15M	@ 6" E/W @ 12" E/W
100 (2,090)	37.1	(8,350)	53.8	(12,110)	24" x 24" x 9"	2 - 10M	@ 18" E/W
	58.0	(13,050)	84.1	(18,930)	30" x 30" x 9"	3 - 10M 2 - 15M	@ 12" E/W @ 19.5" E/W
	83.6	(18,800)	121.2	(27,260)	36" x 36" x 9"	4 - 10M 2 - 15M	@ 10" E/W @ 19.5" E/W
	113.8	(25,580)	165.0	(37,100)	42" x 42" x 9"	5 - 10M 3 - 15M	@ 9" E/W @ 18" E/W
	148.6	(33,420)	215.5	(48,450)	48" x 48" x 10"	7 - 10M 4 - 15M	@ 7" E/W @ 14" E/W
	188.1	(42,290)	272.7	(61,320)	54" x 54" x 11"	8 - 10M 4 - 15M	@ 6.5" E/W @ 16" E/W
125 (2,610)	46.4	(10,440)	67.3	(15,140)	24" x 24" x 9"	2 - 10M	@ 18" E/W
	72.5	(16,320)	105.2	(23,660)	30" x 30" x 9"	4 - 10M 2 - 15M	@ 8" E/W @ 19.5" E/W
	104.5	(23,500)	151.5	(34,070)	36" x 36" x 9"	5 - 10M 3 - 15M	@ 7.5" E/W @ 15" E/W
	142.2	(31,980)	206.2	(46,370)	42" x 42" x 10"	6 - 10M 3 - 15M	@ 7" E/W @ 18" E/W
	185.8	(41,770)	269.4	(60,570)	48" x 48" x 11"	7 - 10M 4 - 15M	@ 7" E/W @ 14" E/W
150 (3,130)	55.7	(12,530)	80.8	(18,170)	24" x 24" x 9"	2 - 10M	@ 18" E/W
	87.0	(19,580)	126.2	(28,390)	30" x 30" x 9"	3 - 10M 2 - 15M	@ 12" E/W @ 19.5" E/W
	125.4	(28,200)	181.8	(40,880)	36" x 36" x 9"	5 - 10M 3 - 15M	@ 7.5" E/W @ 15" E/W
	170.7	(38,380)	247.5	(55,650)	42" x 42" x 11"	6 - 10M 3 - 15M	@ 7" E/W @ 18" E/W
	222.9	(50,130)	323.3	(72,680)	48" x 48" x 12"	8 - 10M 4 - 15M	@ 6" E/W @ 14" E/W
300 (6,270)	111.4	(25,060)	161.6	(36,340)	24" x 24" x 9"	4 - 10M 3 - 15M	@ 6" E/W @ 9" E/W
	174.1	(39,160)	252.5	(56,780)	30" x 30" x 11"	4 - 10M 3 - 15M	@ 8" E/W @ 12" E/W
	250.8	(56,390)	363.7	(81,770)	36" x 36" x 12"	6 - 10M 4 - 15M	@ 6" E/W @ 10" E/W

25 MPa concrete

**Notes:**

1. Footing design is in accordance with CAN/CSA A23.3, and meets or exceeds the prescriptive requirements of NBCC-2015 Part 9 and its provincial counterparts.
2. Soil bearing capacity and load(s) to be supported by the footing shall be verified by an engineer.
3. Concrete shall be normal Portland cement, Type 10 or Type 50 as required, slump +/- 75 mm (3"), entrained air 4-7%, maximum aggregate 20 mm (3/4") diameter, minimum strength of 20 MPa (2,900 psi) at 28 days.
4. Rebar shall be Grade 400, tied at all intersections, and placed in conformance with Figure 1.
5. Column shall be installed at the centre of the footing; eccentric loading reduces the footing capacity. Design is based on USP Support Column steel base plate sizes of 3.5" x 6" and 4.5" x 6".
6. Refer to Table 2 for footing size (b x b x h) and rebar spacing (s). Footing height (h) indicates the depth of footing below the column base plate. Rebar edge distance (e) and depth of concrete below rebar (c) shall be no less than 3".

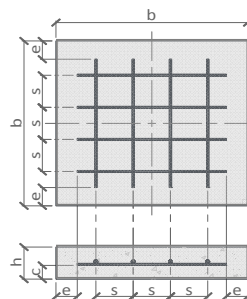


Figure 1. Rebar layout

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Oct. 31, 2016

# Footing Specifications

Use in conjunction with USP Adjustable Support Columns JP, T2JP series



**Table 1. Concrete Footing Recommendations, 20 MPa Concrete Strength**

Soil Bearing Capacity kPa (psf)	Max. Footing Capacity				Min. Footing Dimensions b x b x h	Rebar Specifications	
	Unfactored Load, P <sub>s</sub> (Working Stress Design)		Factored Load, P <sub>f</sub> (Limit States Design)			Qty & Size	Spacing, s
	kN	(lb)	kN	(lb)			
75 (1,570)	27.8	(6,270)	40.4	(9,090)	24" x 24" x 9"	2 - 10M	@ 18" E/W
	43.5	(9,790)	63.1	(14,200)	30" x 30" x 9"	3 - 10M 2 - 15M	@ 12" E/W @ 19.5" E/W
	62.7	(14,100)	90.9	(20,440)	36" x 36" x 9"	4 - 10M 2 - 15M	@ 10" E/W @ 19.5" E/W
	85.3	(19,190)	123.7	(27,820)	42" x 42" x 9"	5 - 10M 3 - 15M	@ 9" E/W @ 18" E/W
	111.4	(25,060)	161.6	(36,340)	48" x 48" x 9"	6 - 10M 3 - 15M	@ 8" E/W @ 19.5" E/W
	141.0	(31,720)	204.5	(45,990)	54" x 54" x 10"	7 - 10M 4 - 15M	@ 8" E/W @ 16" E/W
	174.1	(39,160)	252.5	(56,780)	60" x 60" x 11"	9 - 10M 5 - 15M	@ 6.5" E/W @ 13.5" E/W
	210.7	(47,380)	305.6	(68,710)	66" x 66" x 12"	11 - 10M 6 - 15M	@ 6" E/W @ 12" E/W
100 (2,090)	37.1	(8,350)	53.8	(12,110)	24" x 24" x 9"	2 - 10M	@ 18" E/W
	58.0	(13,050)	84.1	(18,930)	30" x 30" x 9"	3 - 10M 2 - 15M	@ 12" E/W @ 19.5" E/W
	83.6	(18,800)	121.2	(27,260)	36" x 36" x 9"	4 - 10M 3 - 15M	@ 10" E/W @ 15" E/W
	113.8	(25,580)	165.0	(37,100)	42" x 42" x 9"	5 - 10M 3 - 15M	@ 9" E/W @ 18" E/W
	148.6	(33,420)	215.5	(48,450)	48" x 48" x 10" 48" x 48" x 11"	7 - 10M 4 - 15M	@ 7" E/W @ 14" E/W
	188.1	(42,290)	272.7	(61,320)	54" x 54" x 12"	9 - 10M 5 - 15M	@ 6" E/W @ 12" E/W
125 (2,610)	46.4	(10,440)	67.3	(15,140)	24" x 24" x 9"	3 - 10M 2 - 15M	@ 9" E/W @ 18" E/W
	72.5	(16,320)	105.2	(23,660)	30" x 30" x 9"	4 - 10M 2 - 15M	@ 8" E/W @ 19.5" E/W
	104.5	(23,500)	151.5	(34,070)	36" x 36" x 9"	5 - 10M 3 - 15M	@ 7.5" E/W @ 15" E/W
	142.2	(31,980)	206.2	(46,370)	42" x 42" x 10"	6 - 10M 3 - 15M	@ 7" E/W @ 18" E/W
	185.8	(41,770)	269.4	(60,570)	48" x 48" x 11" 48" x 48" x 12"	7 - 10M 4 - 15M	@ 7" E/W @ 14" E/W
150 (3,130)	55.7	(12,530)	80.8	(18,170)	24" x 24" x 9"	3 - 10M 2 - 15M	@ 9" E/W @ 18" E/W
	87.0	(19,580)	126.2	(28,390)	30" x 30" x 9"	4 - 10M 3 - 15M	@ 8" E/W @ 12" E/W
	125.4	(28,200)	181.8	(40,880)	36" x 36" x 10"	5 - 10M 3 - 15M	@ 7.5" E/W @ 15" E/W
	170.7	(38,380)	247.5	(55,650)	42" x 42" x 11"	6 - 10M 3 - 15M	@ 7" E/W @ 18" E/W
300 (6,270)	222.9	(50,130)	323.3	(72,680)	48" x 48" x 12"	8 - 10M 4 - 15M	@ 6" E/W @ 14" E/W
	111.4	(25,060)	161.6	(36,340)	24" x 24" x 10"	4 - 10M 3 - 15M	@ 6" E/W @ 9" E/W
	174.1	(39,160)	252.5	(56,780)	30" x 30" x 11"	5 - 10M 4 - 15M	@ 6" E/W @ 8" E/W
	250.8	(56,390)	363.7	(81,770)	36" x 36" x 13"	6 - 10M 4 - 15M	@ 6" E/W @ 10" E/W

20 MPa concrete

**Notes:**

1. Footing design is in accordance with CAN/CSA A23.3, and meets or exceeds the prescriptive requirements of NBCC-2015 Part 9 and its provincial counterparts.
2. Soil bearing capacity and load(s) to be supported by the footing shall be verified by an engineer.
3. Concrete shall be normal Portland cement, Type 10 or Type 50 as required, slump +/- 75 mm (3"), entrained air 4-7%, maximum aggregate 20 mm (3/4") diameter, minimum strength of 20 MPa (2,900 psi) at 28 days.
4. Rebar shall be Grade 400, tied at all intersections, and placed in conformance with Figure 1.
5. Column shall be installed at the centre of the footing; eccentric loading reduces the footing capacity. Design is based on USP Support Column steel base plate sizes of 3.5" x 6" and 4.5" x 6".
6. Refer to Table 1 for footing size (b x b x h) and rebar spacing (s). Footing height (h) indicates the depth of footing below the column base plate. Rebar edge distance (e) and depth of concrete below rebar (c) shall be no less than 3".

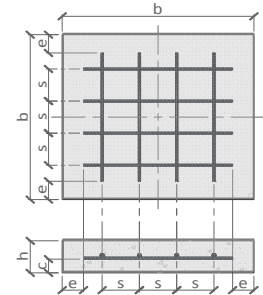


Figure 1. Rebar layout

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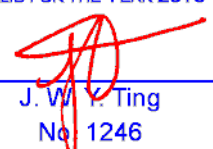


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PRINCE EDWARD ISLAND  
VALID FOR THE YEAR 2016

  
J. W. Y. Ting  
No. 1246

DATE: Oct. 31, 2016

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# Footing Specifications

Use in conjunction with USP Adjustable Support Columns JP, T2JP series



**Table 2. Concrete Footing Recommendations, 25 MPa Concrete Strength**

Soil Bearing Capacity kPa (psf)	Max. Footing Capacity				Min. Footing Dimensions b x b x h	Rebar Specifications	
	Unfactored Load, P <sub>s</sub> (Working Stress Design)		Factored Load, P <sub>r</sub> (Limit States Design)			Qty & Size	Spacing, s
	kN	(lb)	kN	(lb)			
75 (1,570)	27.8	(6,270)	40.4	(9,090)	24" x 24" x 9"	2 - 10M	@ 18" E/W
	43.5	(9,790)	63.1	(14,200)	30" x 30" x 9"	3 - 10M 2 - 15M	@ 12" E/W @ 19.5" E/W
	62.7	(14,100)	90.9	(20,440)	36" x 36" x 9"	4 - 10M 2 - 15M	@ 10" E/W @ 19.5" E/W
	85.3	(19,190)	123.7	(27,820)	42" x 42" x 9"	5 - 10M 3 - 15M	@ 9" E/W @ 18" E/W
	111.4	(25,060)	161.6	(36,340)	48" x 48" x 9"	6 - 10M 3 - 15M	@ 8" E/W @ 19.5" E/W
	141.0	(31,720)	204.5	(45,990)	54" x 54" x 10"	7 - 10M 4 - 15M	@ 8" E/W @ 16" E/W
	174.1	(39,160)	252.5	(56,780)	60" x 60" x 11"	9 - 10M 5 - 15M	@ 6.5" E/W @ 13.5" E/W
	210.7	(47,380)	305.6	(68,710)	66" x 66" x 12"	11 - 10M 6 - 15M	@ 6" E/W @ 12" E/W
100 (2,090)	37.1	(8,350)	53.8	(12,110)	24" x 24" x 9"	2 - 10M	@ 18" E/W
	58.0	(13,050)	84.1	(18,930)	30" x 30" x 9"	3 - 10M 2 - 15M	@ 12" E/W @ 19.5" E/W
	83.6	(18,800)	121.2	(27,260)	36" x 36" x 9"	4 - 10M 2 - 15M	@ 10" E/W @ 19.5" E/W
	113.8	(25,580)	165.0	(37,100)	42" x 42" x 9"	5 - 10M 3 - 15M	@ 9" E/W @ 18" E/W
	148.6	(33,420)	215.5	(48,450)	48" x 48" x 10"	7 - 10M 4 - 15M	@ 7" E/W @ 14" E/W
	188.1	(42,290)	272.7	(61,320)	54" x 54" x 11"	8 - 10M 4 - 15M	@ 6.5" E/W @ 16" E/W
125 (2,610)	46.4	(10,440)	67.3	(15,140)	24" x 24" x 9"	2 - 10M	@ 18" E/W
	72.5	(16,320)	105.2	(23,660)	30" x 30" x 9"	4 - 10M 2 - 15M	@ 8" E/W @ 19.5" E/W
	104.5	(23,500)	151.5	(34,070)	36" x 36" x 9"	5 - 10M 3 - 15M	@ 7.5" E/W @ 15" E/W
	142.2	(31,980)	206.2	(46,370)	42" x 42" x 10"	6 - 10M 3 - 15M	@ 7" E/W @ 18" E/W
	185.8	(41,770)	269.4	(60,570)	48" x 48" x 11"	7 - 10M 4 - 15M	@ 7" E/W @ 14" E/W
150 (3,130)	55.7	(12,530)	80.8	(18,170)	24" x 24" x 9"	2 - 10M	@ 18" E/W
	87.0	(19,580)	126.2	(28,390)	30" x 30" x 9"	3 - 10M 2 - 15M	@ 12" E/W @ 19.5" E/W
	125.4	(28,200)	181.8	(40,880)	36" x 36" x 9"	5 - 10M 3 - 15M	@ 7.5" E/W @ 15" E/W
	170.7	(38,380)	247.5	(55,650)	42" x 42" x 11"	6 - 10M 3 - 15M	@ 7" E/W @ 18" E/W
300 (6,270)	222.9	(50,130)	323.3	(72,680)	48" x 48" x 12"	8 - 10M 4 - 15M	@ 6" E/W @ 14" E/W
	111.4	(25,060)	161.6	(36,340)	24" x 24" x 9"	4 - 10M 3 - 15M	@ 6" E/W @ 9" E/W
	174.1	(39,160)	252.5	(56,780)	30" x 30" x 11"	4 - 10M 3 - 15M	@ 8" E/W @ 12" E/W
300 (6,270)	250.8	(56,390)	363.7	(81,770)	36" x 36" x 12"	6 - 10M 4 - 15M	@ 6" E/W @ 10" E/W

25 MPa concrete

**Notes:**

1. Footing design is in accordance with CAN/CSA A23.3, and meets or exceeds the prescriptive requirements of NBCC-2015 Part 9 and its provincial counterparts.
2. Soil bearing capacity and load(s) to be supported by the footing shall be verified by an engineer.
3. Concrete shall be normal Portland cement, Type 10 or Type 50 as required, slump +/- 75 mm (3"), entrained air 4-7%, maximum aggregate 20 mm (3/4") diameter, minimum strength of 20 MPa (2,900 psi) at 28 days.
4. Rebar shall be Grade 400, tied at all intersections, and placed in conformance with Figure 1.
5. Column shall be installed at the centre of the footing; eccentric loading reduces the footing capacity. Design is based on USP Support Column steel base plate sizes of 3.5" x 6" and 4.5" x 6".
6. Refer to Table 2 for footing size (b x b x h) and rebar spacing (s). Footing height (h) indicates the depth of footing below the column base plate. Rebar edge distance (e) and depth of concrete below rebar (c) shall be no less than 3".

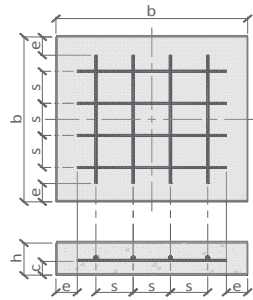


Figure 1. Rebar layout

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THE ASSOCIATION OF  
PROFESSIONAL ENGINEERS  
OF THE PROVINCE OF  
PRINCE EDWARD ISLAND  
VALID FOR THE YEAR 2016

*J. W. Y. Ting*  
J. W. Y. Ting  
No. 1246

DATE: Oct. 31, 2016

LICENSED  
PROFESSIONAL ENGINEER  
PROVINCE OF  
PRINCE EDWARD ISLAND



# Footing Specifications

Use in conjunction with USP Adjustable Support Columns JP, T2JP series



**Table 1. Concrete Footing Recommendations, 20 MPa Concrete Strength**

Soil Bearing Capacity kPa (psf)	Max. Footing Capacity				Min. Footing Dimensions b x b x h	Rebar Specifications	
	Unfactored Load, P <sub>s</sub> (Working Stress Design)		Factored Load, P <sub>f</sub> (Limit States Design)			Qty & Size	Spacing, s
	kN	(lb)	kN	(lb)			
75 (1,570)	27.8	(6,270)	40.4	(9,090)	24" x 24" x 9"	2 - 10M	@ 18" E/W
	43.5	(9,790)	63.1	(14,200)	30" x 30" x 9"	3 - 10M 2 - 15M	@ 12" E/W @ 19.5" E/W
	62.7	(14,100)	90.9	(20,440)	36" x 36" x 9"	4 - 10M 2 - 15M	@ 10" E/W @ 19.5" E/W
	85.3	(19,190)	123.7	(27,820)	42" x 42" x 9"	5 - 10M 3 - 15M	@ 9" E/W @ 18" E/W
	111.4	(25,060)	161.6	(36,340)	48" x 48" x 9"	6 - 10M 3 - 15M	@ 8" E/W @ 19.5" E/W
	141.0	(31,720)	204.5	(45,990)	54" x 54" x 10"	7 - 10M 4 - 15M	@ 8" E/W @ 16" E/W
	174.1	(39,160)	252.5	(56,780)	60" x 60" x 11"	9 - 10M 5 - 15M	@ 6.5" E/W @ 13.5" E/W
	210.7	(47,380)	305.6	(68,710)	66" x 66" x 12"	11 - 10M 6 - 15M	@ 6" E/W @ 12" E/W
100 (2,090)	37.1	(8,350)	53.8	(12,110)	24" x 24" x 9"	2 - 10M	@ 18" E/W
	58.0	(13,050)	84.1	(18,930)	30" x 30" x 9"	3 - 10M 2 - 15M	@ 12" E/W @ 19.5" E/W
	83.6	(18,800)	121.2	(27,260)	36" x 36" x 9"	4 - 10M 3 - 15M	@ 10" E/W @ 15" E/W
	113.8	(25,580)	165.0	(37,100)	42" x 42" x 9"	5 - 10M 3 - 15M	@ 9" E/W @ 18" E/W
	148.6	(33,420)	215.5	(48,450)	48" x 48" x 10" 48" x 48" x 11"	7 - 10M 4 - 15M	@ 7" E/W @ 14" E/W
	188.1	(42,290)	272.7	(61,320)	54" x 54" x 12"	9 - 10M 5 - 15M	@ 6" E/W @ 12" E/W
125 (2,610)	46.4	(10,440)	67.3	(15,140)	24" x 24" x 9"	3 - 10M 2 - 15M	@ 9" E/W @ 18" E/W
	72.5	(16,320)	105.2	(23,660)	30" x 30" x 9"	4 - 10M 2 - 15M	@ 8" E/W @ 19.5" E/W
	104.5	(23,500)	151.5	(34,070)	36" x 36" x 9"	5 - 10M 3 - 15M	@ 7.5" E/W @ 15" E/W
	142.2	(31,980)	206.2	(46,370)	42" x 42" x 10"	6 - 10M 3 - 15M	@ 7" E/W @ 18" E/W
	185.8	(41,770)	269.4	(60,570)	48" x 48" x 11" 48" x 48" x 12"	7 - 10M 4 - 15M	@ 7" E/W @ 14" E/W
150 (3,130)	55.7	(12,530)	80.8	(18,170)	24" x 24" x 9"	3 - 10M 2 - 15M	@ 9" E/W @ 18" E/W
	87.0	(19,580)	126.2	(28,390)	30" x 30" x 9"	4 - 10M 3 - 15M	@ 8" E/W @ 12" E/W
	125.4	(28,200)	181.8	(40,880)	36" x 36" x 10"	5 - 10M 3 - 15M	@ 7.5" E/W @ 15" E/W
	170.7	(38,380)	247.5	(55,650)	42" x 42" x 11"	6 - 10M 3 - 15M	@ 7" E/W @ 18" E/W
300 (6,270)	222.9	(50,130)	323.3	(72,680)	48" x 48" x 12"	8 - 10M 4 - 15M	@ 6" E/W @ 14" E/W
	111.4	(25,060)	161.6	(36,340)	24" x 24" x 10"	4 - 10M 3 - 15M	@ 6" E/W @ 9" E/W
	174.1	(39,160)	252.5	(56,780)	30" x 30" x 11"	5 - 10M 4 - 15M	@ 6" E/W @ 8" E/W
	250.8	(56,390)	363.7	(81,770)	36" x 36" x 13"	6 - 10M 4 - 15M	@ 6" E/W @ 10" E/W

20 MPa concrete

**Notes:**

1. Footing design is in accordance with CAN/CSA A23.3, and meets or exceeds the prescriptive requirements of NBCC-2015 Part 9 and its provincial counterparts.
2. Soil bearing capacity and load(s) to be supported by the footing shall be verified by an engineer.
3. Concrete shall be normal Portland cement, Type 10 or Type 50 as required, slump +/- 75 mm (3"), entrained air 4-7%, maximum aggregate 20 mm (3/4") diameter, minimum strength of 20 MPa (2,900 psi) at 28 days.
4. Rebar shall be Grade 400, tied at all intersections, and placed in conformance with Figure 1.
5. Column shall be installed at the centre of the footing; eccentric loading reduces the footing capacity. Design is based on USP Support Column steel base plate sizes of 3.5" x 6" and 4.5" x 6".
6. Refer to Table 1 for footing size (b x b x h) and rebar spacing (s). Footing height (h) indicates the depth of footing below the column base plate. Rebar edge distance (e) and depth of concrete below rebar (c) shall be no less than 3".

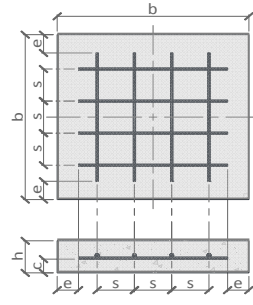
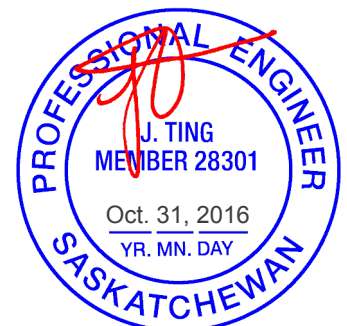


Figure 1. Rebar layout

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# Footing Specifications

Use in conjunction with USP Adjustable Support Columns JP, T2JP series



**Table 2. Concrete Footing Recommendations, 25 MPa Concrete Strength**

Soil Bearing Capacity kPa (psf)	Max. Footing Capacity				Min. Footing Dimensions b x b x h	Rebar Specifications	
	Unfactored Load, P <sub>s</sub> (Working Stress Design)		Factored Load, P <sub>r</sub> (Limit States Design)			Qty & Size	Spacing, s
	kN	(lb)	kN	(lb)			
75 (1,570)	27.8	(6,270)	40.4	(9,090)	24" x 24" x 9"	2 - 10M	@ 18" E/W
	43.5	(9,790)	63.1	(14,200)	30" x 30" x 9"	3 - 10M 2 - 15M	@ 12" E/W @ 19.5" E/W
	62.7	(14,100)	90.9	(20,440)	36" x 36" x 9"	4 - 10M 2 - 15M	@ 10" E/W @ 19.5" E/W
	85.3	(19,190)	123.7	(27,820)	42" x 42" x 9"	5 - 10M 3 - 15M	@ 9" E/W @ 18" E/W
	111.4	(25,060)	161.6	(36,340)	48" x 48" x 9"	6 - 10M 3 - 15M	@ 8" E/W @ 19.5" E/W
	141.0	(31,720)	204.5	(45,990)	54" x 54" x 10"	7 - 10M 4 - 15M	@ 8" E/W @ 16" E/W
	174.1	(39,160)	252.5	(56,780)	60" x 60" x 11"	9 - 10M 5 - 15M	@ 6.5" E/W @ 13.5" E/W
	210.7	(47,380)	305.6	(68,710)	66" x 66" x 12"	11 - 10M 6 - 15M	@ 6" E/W @ 12" E/W
100 (2,090)	37.1	(8,350)	53.8	(12,110)	24" x 24" x 9"	2 - 10M	@ 18" E/W
	58.0	(13,050)	84.1	(18,930)	30" x 30" x 9"	3 - 10M 2 - 15M	@ 12" E/W @ 19.5" E/W
	83.6	(18,800)	121.2	(27,260)	36" x 36" x 9"	4 - 10M 2 - 15M	@ 10" E/W @ 19.5" E/W
	113.8	(25,580)	165.0	(37,100)	42" x 42" x 9"	5 - 10M 3 - 15M	@ 9" E/W @ 18" E/W
	148.6	(33,420)	215.5	(48,450)	48" x 48" x 10"	7 - 10M 4 - 15M	@ 7" E/W @ 14" E/W
	188.1	(42,290)	272.7	(61,320)	54" x 54" x 11"	8 - 10M 4 - 15M	@ 6.5" E/W @ 16" E/W
125 (2,610)	46.4	(10,440)	67.3	(15,140)	24" x 24" x 9"	2 - 10M	@ 18" E/W
	72.5	(16,320)	105.2	(23,660)	30" x 30" x 9"	4 - 10M 2 - 15M	@ 8" E/W @ 19.5" E/W
	104.5	(23,500)	151.5	(34,070)	36" x 36" x 9"	5 - 10M 3 - 15M	@ 7.5" E/W @ 15" E/W
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	125.4	(28,200)	181.8	(40,880)	36" x 36" x 9"	5 - 10M 3 - 15M	@ 7.5" E/W @ 15" E/W
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	111.4	(25,060)	161.6	(36,340)	24" x 24" x 9"	4 - 10M 3 - 15M	@ 6" E/W @ 9" E/W
	174.1	(39,160)	252.5	(56,780)	30" x 30" x 11"	4 - 10M 3 - 15M	@ 8" E/W @ 12" E/W
	250.8	(56,390)	363.7	(81,770)	36" x 36" x 12"	6 - 10M 4 - 15M	@ 6" E/W @ 10" E/W

25 MPa concrete

**Notes:**

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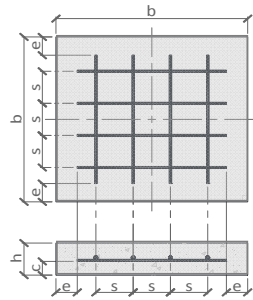


Figure 1. Rebar layout

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