

# Canadian Engineering Specifications

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*Silca Grate System*

*Province of Ontario*



Use the following Tables to determine deck component sizes. Perform the following steps:

1. Use Table 1 below to determine the required joist size based on the chosen paver thickness and the span (or length "L") of your deck joists – See Figure 1.
2. Determine the maximum support column spacing based on joist length and chosen beam size. Use the appropriate Table based on chosen paver thickness. The Tables are numbered from 3A to 7A for 0.75"(19mm), 1.25"(32mm), 2"(51mm), 2.5"(64mm), and 3"(76mm) pavers, in this order.
3. Determine the required footing type and size using Tables 3B to 7B based on your chosen paver thickness.

Note: For retro-fit applications, where ledgers attached to each face of existing joists are required to support the Silca grate, see Table 2 and Figure 2.

Table 1	Maximum Joist Span				
	Paver Thickness (Natural stone or Manufactured concrete)				
Joist Size	0.75" (19mm)	1.25" (32mm)	2" (51mm)	2.5" (64mm)	3" (76mm)
2x6 (38x140)	8'-11" (2725mm)	8'-9" (2675mm)	8'-3" (2525mm)	7'-11" (2425mm)	7'-8" (2350mm)
2x8 (38x184)	11'-3" (3450mm)	10'-8" (3275mm)	10'-1" (3075mm)	9'-8" (2950mm)	9'-4" (2850mm)
2x10 (38x235)	13'-9" (4200mm)	13'-1" (4000mm)	12'-3" (3750mm)	11'-10" (3625mm)	11'-5" (3500mm)
2x12 (38x286)	15'-10" (4850mm)	15'-2" (4625mm)	14'-3" (4350mm)	13'-9" (4200mm)	13'-3" (4050mm)

1. Joists are 16" (406mm) o/c spacing
2. Joists are SPF, Grade No.1/No.2, wet service.
3. Pavers or stone over Silca grate structural subfloor system. Grate dead load = 0.1 kN/m<sup>2</sup>
4. Live load = 1.9 kN/m<sup>2</sup>
5. Paver or stone dead loads based on material weight of 23.6 kN/m<sup>3</sup>.
6. Deflection criteria:  
Live Load = L/360  
Total Load = L/240
7. Joists may be cantilevered upto 12" (305mm).

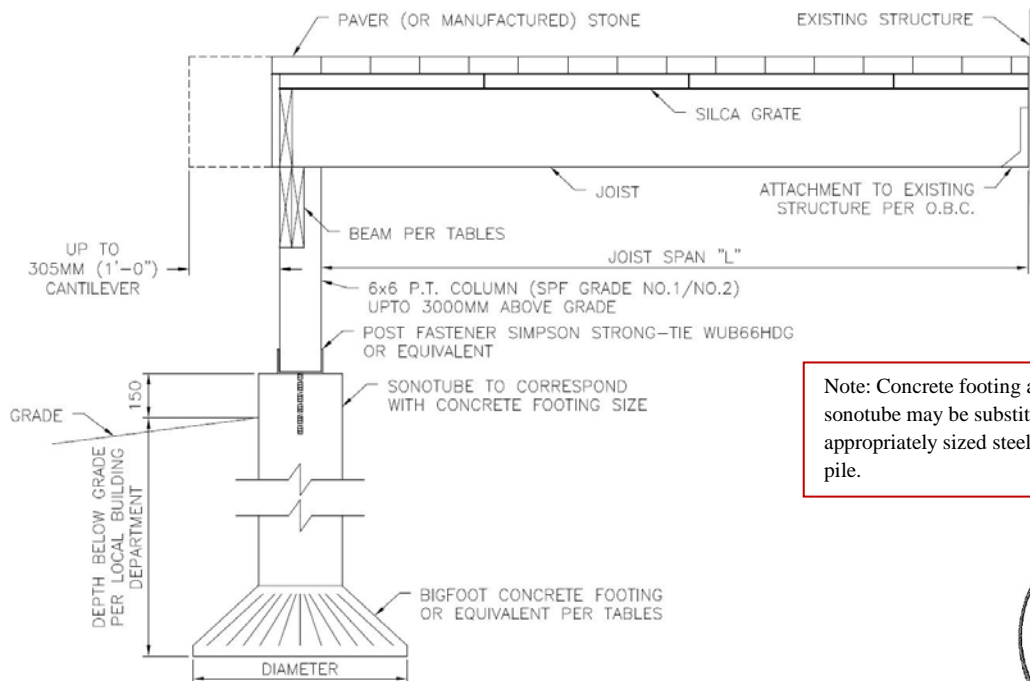


Figure 1

This information is provided as a guide. Conditions vary by location. Please consult the local building department for your project needs.

Screw spacing required to attach 2x4 support ledger to face of existing joists for **Retro-Fit Applications:**

Table 2	Paver Thickness (Natural stone or Manufactured concrete)				
	0.75" (19mm)	1.25" (32mm)	2" (51mm)	2.5" (64mm)	3" (76mm)
Screw Spacing	18" (450mm)	16" (400mm)	14" (350mm)	12" (300mm)	10" (250mm)

1. Use RSS Structural Screws 5/16"x2-3/4". Alternate location of screws when ledgers are back to back.
2. Joists are 16" (406mm) o/c spacing.
3. Joists and ledger are SPF, Grade No.1/No.2, wet service.
4. Pavers or stone over Silca grate structural subfloor system. Grate dead load = 0.1 kN/m<sup>2</sup>
5. Live load = 1.9 kN/m<sup>2</sup>
6. Paver or stone dead loads based on material weight of 23.6 kN/m<sup>3</sup>.
7. Deflection criteria:  
 Live Load = L/360  
 Total Load = L/240

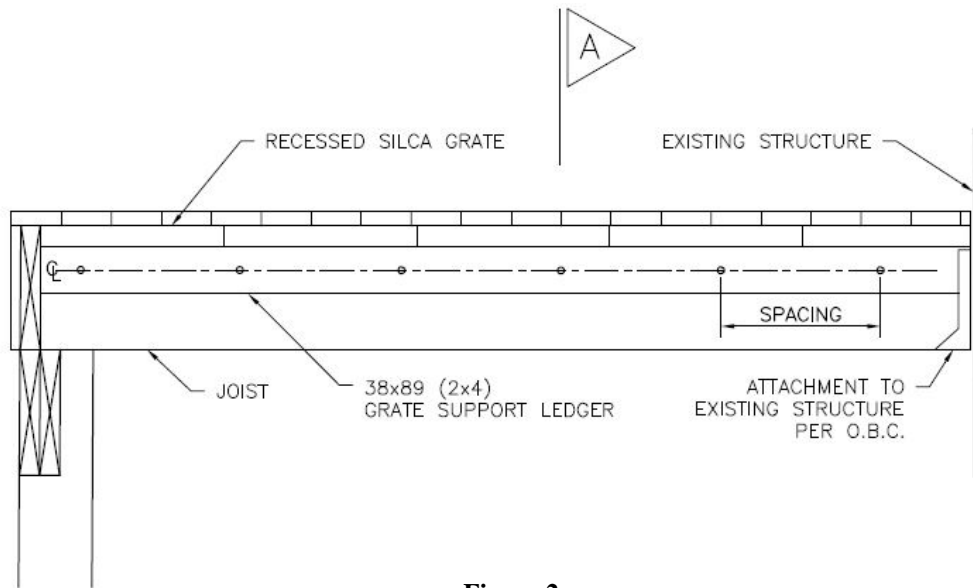


Figure 2

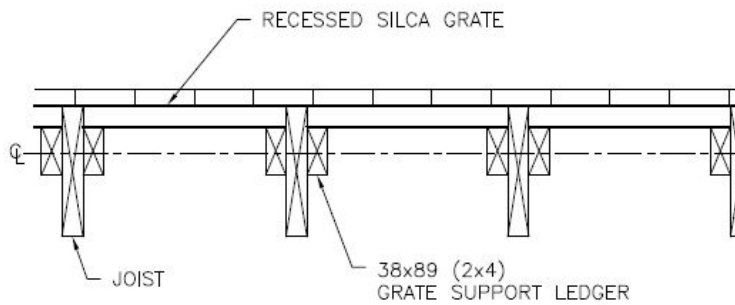


Figure 2: Section A



This information is provided as a guide. Conditions vary by location. Please consult the local building department for your project needs.  
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Table 3A	Maximum Column Spacing for 0.75" (19mm) Pavers						
	Joist Span						
Beam Size	6'-2"	8'-2"	10'-2"	12'-4"	14'-2"	16'-4"	18'-6"
	1850mm	2450mm	3050mm	3700mm	4250mm	4900mm	5550mm
2-2x6	7'-6"	6'-9"	6'-2"	5'-8"	5'-4"	5'-0"	4'-8"
2-38x140	2250mm	2025mm	1850mm	1700mm	1600mm	1500mm	1400mm
2-2x8	9'-2"	8'-2"	7'-6"	6'-11"	6'-6"	6'-0"	5'-4"
2-38x184	2750mm	2450mm	2250mm	2075mm	1950mm	1800mm	1600mm
2-2x10	11'-3"	10'-1"	9'-2"	8'-6"	7'-11"	7'-0"	6'-3"
2-38x235	3375mm	3025mm	2750mm	2550mm	2375mm	2100mm	1875mm
2-2x12	13'-1"	11'-8"	10'-8"	9'-10"	8'-10"	7'-9"	6'-11"
2-38x286	3925mm	3500mm	3200mm	2950mm	2650mm	2325mm	2075mm
3-2x6	9'-0"	8'-3"	7'-7"	6'-11"	6'-6"	6'-10"	5'-9"
3-38x140	2700mm	2475mm	2275mm	2075mm	1950mm	1825mm	1725mm
3-2x8	11'-3"	10'-1"	9'-2"	8'-6"	8'-0"	7'-6"	7'-1"
3-38x184	3375mm	3025mm	2750mm	2550mm	2400mm	2250mm	2125mm
3-2x10	11'-10"	11'-0"	10'-4"	9'-9"	9'-5"	9'-0"	8'-8"
3-38x235	3550mm	3300mm	3100mm	2925mm	2825mm	2700mm	2600mm
3-2x12	15'-1"	14'-1"	13'-1"	12'-1"	11'-4"	10'-8"	10'-1"
3-38x286	4525mm	4225mm	3925mm	3625mm	3400mm	3200mm	3025mm

- Beams fully bear on notched 6x6 PT SPF, Grade No.1/No.2 posts, maximum column height is 3m (10'-0"). Splices must occur over support centerline.
- Beams are SPF Grade No.1/No.2, wet service.
- Pavers or stone over Silca grate structural subfloor system. Grate dead load = 0.1 kN/m<sup>2</sup>
- Live load = 1.9 kN/m<sup>2</sup>
- 0.75" (19mm) paver or stone dead load = 0.45 kN/m<sup>2</sup> (base on 23.6 kN/m<sup>3</sup>).
- Deflection criteria:  
Live Load = L/360  
Total Load = L/240

Table 3B:	Bigfoot Size or equivalent for 0.75" (19mm) Pavers						
	Joist Span						
Column Spacing	6'-2"	8'-2"	10'-2"	12'-4"	14'-2"	16'-4"	18'-6"
	1850mm	2450mm	3050mm	3700mm	4250mm	4900mm	5550mm
4'-2" 1250	BF 20	BF 20	BF 20	BF 20	BF 20	BF 24	BF 24
6'-2" 1850	BF 20	BF 20	BF 20	BF 24	BF 24	BF 24	BF 24
8'-2" 2450	BF 20	BF 24	BF 24	BF 24	BF 28	BF 28	BF 28
10'-2" 3050	BF 24	BF 24	BF 24	BF 28	BF 28	BF 28	BF 36
12'-4" 3700	BF 24	BF 24	BF 28	BF 28	BF 36	BF 36	BF 36
14'-2" 4250	BF 24	BF 28	BF 28	BF 36	BF 36	BF 36	BF 36
16'-4" 4900	BF 28	BF 28	BF 36	BF 36	BF 36	BF 36	BF 36

- Footings pad sizes are 508mm dia. (BF20), 610mm dia. (BF24), 711mm dia. (BF28), 914mm dia. (BF36).
- Corresponding sonotubes are 214mm dia. for BF20, 255mm dia. for BF24 and BF28, and 305mm dia. for BF36.
- Table base on assumed allowable soil bearing capacity of 75kPa.
- Concrete compressive strength greater than 20MPa.
- Pavers or stone over Silca grate structural subfloor system. Grate dead load = 0.1 kN/m<sup>2</sup>
- Live load = 1.9 kN/m<sup>2</sup>
- 0.75" (19mm) paver or stone dead load = 0.45 kN/m<sup>2</sup> (base on 23.6 kN/m<sup>3</sup>).
- Consult local building department for footing depth requirements.
- Concrete footing and sonotube may be substituted for appropriately sized steel helical pile.



This information is provided as a guide. Conditions vary by location. Please consult the local building department for your project needs.

Table 4A	Maximum Column Spacing for 1.25" (32mm) Pavers						
	Joist Span						
Beam Size	6'-2"	8'-2"	10'-2"	12'-4"	14'-2"	16'-4"	18'-6"
	1850mm	2450mm	3050mm	3700mm	4250mm	4900mm	5550mm
2-2x6	7'-2"	6'-5"	5'-10"	5'-5"	5'-1"	4'-9"	4'-3"
2-38x140	2150mm	1925mm	1750mm	1625mm	1525mm	1425mm	1275mm
2-2x8	8'-9"	7'-10"	7'-2"	6'-7"	6'-2"	5'-5"	4'-10"
2-38x184	2625mm	2350mm	2150mm	1975mm	1850mm	1625mm	1450mm
2-2x10	10'-9"	9'-7"	8'-9"	8'-1"	7'-2"	6'-4"	5'-8"
2-38x235	3225mm	2875mm	2625mm	2425mm	2150mm	1900mm	1700mm
2-2x12	12'-6"	11'-2"	10'-2"	9'-1"	8'-0"	7'-1"	6'-4"
2-38x286	3750mm	3350mm	3050mm	2725mm	2400mm	2125mm	1900mm
3-2x6	8'-8"	7'-11"	7'-2"	6'-7"	6'-3"	5'-10"	5'-6"
3-38x140	2600mm	2375mm	2150mm	1975mm	1875mm	1750mm	1650mm
3-2x8	10'-9"	9'-7"	8'-9"	8'-1"	7'-7"	7'-1"	6'-9"
3-38x184	3225mm	2875mm	2625mm	2425mm	2275mm	2125mm	2025mm
3-2x10	13'-2"	11'-9"	10'-9"	9'-11"	9'-4"	8'-9"	8'-3"
3-38x235	3950mm	3525mm	3225mm	2975mm	2800mm	2625mm	2475mm
3-2x12	15'-4"	13'-8"	12'-6"	11'-6"	10'-10"	10'-2"	9'-6"
3-38x286	4600mm	4100mm	3750mm	3450mm	3250mm	3050mm	2850mm

- Beams fully bear on notched 6x6 PT SPF, Grade No.1/No.2 posts, maximum column height is 3m (10'-0"). Splices must occur over support centerline.
- Beams are SPF Grade No.1/No.2, wet service.
- Pavers or stone over Silca grate structural subfloor system. Grate dead load = 0.1 kN/m<sup>2</sup>
- Live load = 1.9 kN/m<sup>2</sup>
- 1.25" (32mm) paver or stone dead load = 0.75 kN/m<sup>2</sup> (base on 23.6 kN/m<sup>3</sup>).
- Deflection criteria:  
Live Load = L/360  
Total Load = L/240

Table 4B	Bigfoot Size or equivalent for 1.25" (32mm) Pavers						
	Joist Span						
Column Spacing	6'-2"	8'-2"	10'-2"	12'-4"	14'-2"	16'-4"	18'-6"
	1850mm	2450mm	3050mm	3700mm	4250mm	4900mm	5550mm
4'-2" 1250	BF 20	BF 20	BF 20	BF 20	BF 20	BF 24	BF 24
6'-2" 1850	BF 20	BF 20	BF 24	BF 24	BF 24	BF 24	BF 28
8'-2" 2450	BF 20	BF 24	BF 24	BF 24	BF 28	BF 28	BF 28
10'-2" 3050	BF 24	BF 24	BF 28	BF 28	BF 28	BF 36	BF 36
12'-4" 3700	BF 24	BF 28	BF 28	BF 36	BF 36	BF 36	BF 36
14'-2" 4250	BF 24	BF 28	BF 28	BF 36	BF 36	BF 36	BF 36
16'-4" 4900	BF 28	BF 28	BF 36	BF 36	BF 36	BF 36	***

- Footing pad sizes are 508mm dia. (BF20), 610mm dia. (BF24), 711mm dia. (BF28), 914mm dia. (BF36).
- Corresponding sonotubes are 214mm dia. for BF20, 255mm dia. for BF24 and BF28, and 305mm dia. for BF36.
- Table base on assumed allowable soil bearing capacity of 75kPa.
- Concrete compressive strength greater than 20MPa.
- Pavers or stone over Silca grate structural subfloor system. Grate dead load = 0.1 kN/m<sup>2</sup>
- Live load = 1.9 kN/m<sup>2</sup>
- 1.25" (32mm) paver or stone dead load = 0.75 kN/m<sup>2</sup> (base on 23.6 kN/m<sup>3</sup>).
- Consult local building department for footing depth requirements.
- Concrete footing and sonotube may be substituted for appropriately sized steel helical pile.
- \*\*\* Footing pad and column requires special engineering.



This information is provided as a guide. Conditions vary by location. Please consult the local building department for your project needs.

Table 5A	Maximum Column Spacing for 2" (51mm) Pavers						
	Joist Span						
Beam Size	6'-2"	8'-2"	10'-2"	12'-4"	14'-2"	16'-4"	18'-6"
	1850mm	2450mm	3050mm	3700mm	4250mm	4900mm	5550mm
2-2x6	6'-9"	6'-0"	5'-6"	5'-1"	4'-9"	4'-3"	3'-9"
2-38x140	2025mm	1800mm	1650mm	1525mm	1425mm	1275mm	1125mm
2-2x8	8'-2"	7'-4"	6'-8"	6'-2"	5'-5"	4'-9"	4'-3"
2-38x184	2450mm	2200mm	2000mm	1850mm	1625mm	1425mm	1275mm
2-2x10	10'-1"	9'-0"	8'-3"	7'-2"	6'-4"	5'-7"	5'-0"
2-38x235	3025mm	2700mm	2475mm	2150mm	1900mm	1675mm	1500mm
2-2x12	11'-8"	10'-6"	9'-5"	8'-0"	7'-1"	6'-3"	5'-7"
2-38x286	3500mm	3150mm	2825mm	2400mm	2125mm	1875mm	1675mm
3-2x6	8'-3"	7'-5"	6'-9"	6'-3"	5'-10"	5'-6"	5'-2"
3-38x140	2475mm	2225mm	2025mm	1875mm	1750mm	1650mm	1550mm
3-2x8	10'-1"	9'-0"	8'-3"	7'-7"	7'-2"	6'-8"	6'-4"
3-38x184	3025mm	2700mm	2475mm	2275mm	2150mm	2000mm	1900mm
3-2x10	12'-4"	11'-1"	10'-1"	9'-4"	8'-9"	8'-3"	7'-7"
3-38x235	3700mm	3325mm	3025mm	2800mm	2625mm	2475mm	2275mm
3-2x12	14'-4"	12'-10"	11'-9"	10'-10"	10'-1"	9'-5"	8'-5"
3-38x286	4300mm	3850mm	3525mm	3250mm	3025mm	2825mm	2525mm

- Beams fully bear on notched 6x6 PT SPF, Grade No.1/No.2 posts, maximum column height is 3m (10'-0"). Splices must occur over support centerline.
- Beams are SPF Grade No.1/No.2, wet service.
- Pavers or stone over Silca grate structural subfloor system. Grate dead load = 0.1 kN/m<sup>2</sup>
- Live load = 1.9 kN/m<sup>2</sup>
- 2" (51mm) paver or stone dead load = 1.20 kN/m<sup>2</sup> (base on 23.6 kN/m<sup>3</sup>).
- Deflection criteria:  
Live Load = L/360  
Total Load = L/240

Table 5B	Bigfoot Size or equivalent for 2" (51mm) Pavers						
	Joist Span						
Column Spacing	6'-2"	8'-2"	10'-2"	12'-4"	14'-2"	16'-4"	18'-6"
	1850mm	2450mm	3050mm	3700mm	4250mm	4900mm	5550mm
4'-2" 1250	BF 20	BF 20	BF 20	BF 24	BF 24	BF 24	BF 24
6'-2" 1850	BF 20	BF 24	BF 24	BF 24	BF 24	BF 28	BF 28
8'-2" 2450	BF 24	BF 24	BF 24	BF 28	BF 28	BF 28	BF 36
10'-2" 3050	BF 24	BF 28	BF 28	BF 28	BF 36	BF 36	BF 36
12'-4" 3700	BF 24	BF 28	BF 28	BF 36	BF 36	BF 36	BF 36
14'-2" 4250	BF 28	BF 28	BF 36	BF 36	BF 36	BF 36	***
16'-4" 4900	BF 28	BF 36	BF 36	BF 36	BF 36	***	***

- Footing pad sizes are 508mm dia. (BF20), 610mm dia. (BF24), 711mm dia. (BF28), 914mm dia. (BF36).
- Corresponding sonotubes are 214mm dia. for BF20, 255mm dia. for BF24 and BF28, and 305mm dia. for BF36.
- Table base on assumed allowable soil bearing capacity of 75kPa.
- Concrete compressive strength greater than 20MPa.
- Pavers or stone over Silca grate structural subfloor system. Grate dead load = 0.1 kN/m<sup>2</sup>
- Live load = 1.9 kN/m<sup>2</sup>
- 2" (51mm) paver or stone dead load = 1.20 kN/m<sup>2</sup> (base on 23.6 kN/m<sup>3</sup>).
- Consult local building department for footing depth requirements.
- Concrete footing and sonotube may be substituted for appropriately sized steel helical pile.
- \*\*\* Footing pad and column requires special engineering.



This information is provided as a guide. Conditions vary by location. Please consult the local building department for your project needs.

Table 6A	Maximum Column Spacing for 2.5" (64mm) Pavers						
	Joist Span						
Beam Size	6'-2"	8'-2"	10'-2"	12'-4"	14'-2"	16'-4"	18'-6"
	1850mm	2450mm	3050mm	3700mm	4250mm	4900mm	5550mm
2-2x6	6'-6"	5'-9"	5'-3"	4'-10"	4'-5"	3'-11"	3'-6"
2-38x140	1950mm	1725mm	1575mm	1450mm	1325mm	1175mm	1050mm
2-2x8	7'-11"	7'-1"	6'-5"	5'-8"	5'-0"	4'-5"	3'-11"
2-38x184	2375mm	2125mm	1925mm	1700mm	1500mm	1325mm	1175mm
2-2x10	9'-8"	8'-8"	7'-10"	6'-8"	5'-11"	5'-2"	4'-8"
2-38x235	2900mm	2600mm	2350mm	2000mm	1775mm	1550mm	1400mm
2-2x12	11'-3"	10'-1"	8'-9"	7'-5"	6'-7"	5'-9"	5'-2"
2-38x286	3375mm	3025mm	2625mm	2225mm	1975mm	1725mm	1550mm
3-2x6	7'-11"	7'-1"	6'-6"	6'-0"	5'-8"	5'-3"	5'-0"
3-38x140	2375mm	2125mm	1950mm	1800mm	1700mm	1575mm	1500mm
3-2x8	9'-8"	8'-8"	7'-11"	7'-4"	6'-10"	6'-5"	6'-0"
3-38x184	2900mm	2600mm	2375mm	2200mm	2050mm	1925mm	1800mm
3-2x10	11'-11"	10'-8"	9'-9"	8'-11"	8'-5"	7'-10"	7'-0"
3-38x235	3575mm	3200mm	2925mm	2675mm	2525mm	2350mm	2100mm
3-2x12	13'-10"	12'-5"	11'-4"	10'-5"	9'-10"	8'-8"	7'-9"
3-38x286	4150mm	3725mm	3400mm	3125mm	2950mm	2600mm	2325mm

- Beams fully bear on notched 6x6 PT SPF, Grade No.1/No.2 posts, maximum column height is 3m (10'-0"). Splices must occur over support centerline.
- Beams are SPF Grade No.1/No.2, wet service.
- Pavers or stone over Silca grate structural subfloor system. Grate dead load = 0.1 kN/m<sup>2</sup>
- Live load = 1.9 kN/m<sup>2</sup>
- 2.5" (64mm) paver or stone dead load = 1.50 kN/m<sup>2</sup> (base on 23.6 kN/m<sup>3</sup>).
- Deflection criteria:  
Live Load = L/360  
Total Load = L/240

Table 6B	Bigfoot Size or equivalent for 2.5" (64mm) Pavers						
	Joist Span						
Column Spacing	6'-2"	8'-2"	10'-2"	12'-4"	14'-2"	16'-4"	18'-6"
	1850mm	2450mm	3050mm	3700mm	4250mm	4900mm	5550mm
4'-2" 1250	BF 20	BF 20	BF 20	BF 24	BF 24	BF 24	BF 24
6'-2" 1850	BF 20	BF 24	BF 24	BF 24	BF 28	BF 28	BF 28
8'-2" 2450	BF 24	BF 24	BF 28	BF 28	BF 28	BF 36	BF 36
10'-2" 3050	BF 24	BF 28	BF 28	BF 36	BF 36	BF 36	BF 36
12'-4" 3700	BF 28	BF 28	BF 36	BF 36	BF 36	BF 36	***
14'-2" 4250	BF 28	BF 36	BF 36	BF 36	BF 36	***	***
16'-4" 4900	BF 28	BF 36	BF 36	BF 36	***	***	***

- Footing pad sizes are 508mm dia. (BF20), 610mm dia. (BF24), 711mm dia. (BF28), 914mm dia. (BF36).
- Corresponding sonotubes are 214mm dia. for BF20, 255mm dia. for BF24 and BF28, and 305mm dia. for BF36.
- Table base on assumed allowable soil bearing capacity of 75kPa.
- Concrete compressive strength greater than 20MPa.
- Pavers or stone over Silca grate structural subfloor system. Grate dead load = 0.1 kN/m<sup>2</sup>
- Live load = 1.9 kN/m<sup>2</sup>
- 2.5" (64mm) paver or stone dead load = 1.50 kN/m<sup>2</sup> (base on 23.6 kN/m<sup>3</sup>).
- Consult local building department for footing depth requirements.
- Concrete footing and sonotube may be substituted for appropriately sized steel helical pile.
- \*\*\* Footing pad and column requires special engineering.



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Table 7A	Maximum Column Spacing for 3" (76mm) Pavers						
	Joist Span						
Beam Size	6'-2"	8'-2"	10'-2"	12'-4"	14'-2"	16'-4"	18'-6"
	1850mm	2450mm	3050mm	3700mm	4250mm	4900mm	5550mm
2-2x6	6'-3"	5'-7"	5'-1"	4'-8"	4'-2"	3'-8"	3'-3"
2-38x140	1875mm	1675mm	1525mm	1400mm	1250mm	1100mm	975mm
2-2x8	7'-7"	6'-10"	6'-3"	5'-3"	4'-8"	4'-1"	3'-8"
2-38x184	2275mm	2050mm	1875mm	1575mm	1400mm	1225mm	1100mm
2-2x10	9'-4"	8'-4"	7'-4"	6'-2"	5'-6"	4'-10"	4'-4"
2-38x235	2800mm	2500mm	2200mm	1850mm	1650mm	1450mm	1300mm
2-2x12	10'-10"	9'-9"	8'-2"	6'-11"	6'-1"	5'-4"	4'-9"
2-38x286	3250mm	2925mm	2450mm	2075mm	1825mm	1600mm	1425mm
3-2x6	7'-8"	6'-10"	6'-3"	5'-9"	5'-5"	5'-1"	4'-10"
3-38x140	2300mm	2050mm	1875mm	1725mm	1625mm	1525mm	1450mm
3-2x8	9'-4"	8'-5"	7'-8"	7'-0"	6'-7"	6'-3"	5'-7"
3-38x184	2800mm	2525mm	2300mm	2100mm	1975mm	1875mm	1675mm
3-2x10	11'-6"	10'-3"	9'-5"	8'-8"	8'-2"	7'-4"	6'-6"
3-38x235	3450mm	3075mm	2825mm	2600mm	2450mm	2200mm	1950mm
3-2x12	13'-4"	11'-11"	10'-11"	10'-1"	9'-2"	8'-1"	7'-3"
3-38x286	4000mm	3575mm	3275mm	3025mm	2750mm	2425mm	2175mm

- Beams fully bear on notched 6x6 PT SPF, Grade No.1/No.2 posts, maximum column height is 3m (10'-0"). Splices must occur over support centerline.
- Beams are SPF Grade No.1/No.2, wet service.
- Pavers or stone over Silca grate structural subfloor system. Grate dead load = 0.1 kN/m<sup>2</sup>
- Live load = 1.9 kN/m<sup>2</sup>
- 3" (76mm) paver or stone dead load = 1.80 kN/m<sup>2</sup> (base on 23.6 kN/m<sup>3</sup>).
- Deflection criteria:  
Live Load = L/360  
Total Load = L/240

Table 7B	Bigfoot Size or equivalent for 3" (76mm) Pavers						
	Joist Span						
Column Spacing	6'-2"	8'-2"	10'-2"	12'-4"	14'-2"	16'-4"	18'-6"
	1850mm	2450mm	3050mm	3700mm	4250mm	4900mm	5550mm
4'-2" 1250	BF 20	BF 20	BF 24	BF 24	BF 24	BF 24	BF 24
6'-2" 1850	BF 24	BF 24	BF 24	BF 28	BF 28	BF 28	BF 28
8'-2" 2450	BF 24	BF 24	BF 28	BF 28	BF 36	BF 36	BF 36
10'-2" 3050	BF 24	BF 28	BF 28	BF 36	BF 36	BF 36	BF 36
12'-4" 3700	BF 28	BF 28	BF 36	BF 36	BF 36	BF 36	***
14'-2" 4250	BF 28	BF 36	BF 36	BF 36	BF 36	***	***
16'-4" 4900	BF 36	BF 36	BF 36	***	***	***	***

- Footings pad sizes are 508mm dia. (BF20), 610mm dia. (BF24), 711mm dia. (BF28), 914mm dia. (BF36).
- Corresponding sonotubes are 214mm dia. for BF20, 255mm dia. for BF24 and BF28, and 305mm dia. for BF36.
- Table base on assumed allowable soil bearing capacity of 75kPa.
- Concrete compressive strength greater than 20MPa.
- Pavers or stone over Silca grate structural subfloor system. Grate dead load = 0.1 kN/m<sup>2</sup>
- Live load = 1.9 kN/m<sup>2</sup>
- 3" (76mm) paver or stone dead load = 1.80 kN/m<sup>2</sup> (base on 23.6 kN/m<sup>3</sup>).
- Consult local building department for footing depth requirements.
- Concrete footing and sonotube may be substituted for appropriately sized steel helical pile.**
- \*\*\* Footing pad and column requires special engineering.



This information is provided as a guide. Conditions vary by location. Please consult the local building department for your project needs.



Table 8A 8" [203mm] Joist Spacing		Snow Load Capacity for Silca Grate Deck System (kN/m <sup>2</sup> )								
		Joist Span								
Paver Thickness	Joist Size	7'-10" (2.4m)	8'-10" (2.7m)	9'-10" (3.0m)	10'-10" (3.3m)	11'-10" (3.6m)	12'-10" (3.9m)	13'-9" (4.2m)	14'-9" (4.5m)	15'-9" (4.8m)
0.75" (19mm)	2x8 (38x184)	9.6	9.6	9.0	7.2	5.9	4.9	4.1	3.4	*
	2x10 (38x235)	9.6	9.6	9.6	9.6	9.4	7.9	6.6	5.7	4.8
	2x12 (38x286)	9.6	9.6	9.6	9.6	9.6	9.6	9.3	7.9	6.9
1.25" (32mm)	2x8 (38x184)	9.6	9.6	8.6	6.9	5.5	4.5	3.7	3.0	*
	2x10 (38x235)	9.6	9.6	9.6	9.6	9.1	7.5	6.3	5.3	4.5
	2x12 (38x286)	9.6	9.6	9.6	9.6	9.6	9.6	8.9	7.6	6.5
2" (51mm)	2x8 (38x184)	9.6	9.6	8.0	6.3	5.0	4.0	3.1	*	*
	2x10 (38x235)	9.6	9.6	9.6	9.6	8.5	6.9	5.7	4.7	3.9
	2x12 (38x286)	9.6	9.6	9.6	9.6	9.6	9.6	8.3	7.0	5.9
2.5" (64mm)	2x8 (38x184)	9.6	9.6	7.7	5.9	4.6	3.6	*	*	*
	2x10 (38x235)	9.6	9.6	9.6	9.6	8.1	6.6	5.3	4.3	3.5
	2x12 (38x286)	9.6	9.6	9.6	9.6	9.6	9.6	8.0	6.6	5.5
3" (76mm)	2x8 (38x184)	9.6	9.6	7.3	5.6	4.2	*	*	*	*
	2x10 (38x235)	9.6	9.6	9.6	9.6	7.7	6.2	5.0	4.0	*
	2x12 (38x286)	9.6	9.6	9.6	9.6	9.6	9.2	7.6	6.3	5.2

- 9.6 kN/m<sup>2</sup> assumed as maximum snow load.
- Asterisk (\*) indicates span is greater than permitted for 1.9 kN/m<sup>2</sup> live load.
- Joists may be cantilevered up to 12" (305mm).
- Joists are SPF, Grade No.1/No.2, wet service.
- Joist spacing at 8" (203 mm) o.c. is shown for extra support and increased stability.
- Paver or stone over Silca grate structural subfloor system. Grate dead load = 0.1 kN/m<sup>2</sup>.
- Live load = 1.9 kN/m<sup>2</sup> (not simultaneous with snow load).
- Paver or stone dead loads based on material weight of 23.6 kN/m<sup>3</sup>.
- Deflection criteria:  
Live Load = L/360  
Total Load = L/240



Table 8B 16" [406mm] Joist Spacing		Snow Load Capacity for Silca Grate Deck System (kN/m <sup>2</sup> )								
		Joist Span (m)								
Paver Thickness	Joist Size	7'-10" (2.4m)	8'-10" (2.7m)	9'-10" (3.0m)	10'-10" (3.3m)	11'-10" (3.6m)	12'-10" (3.9m)	13'-9" (4.2m)	14'-9" (4.5m)	15'-9" (4.8m)
0.75" (19mm)	2x8 (38x184)	7.0	5.3	4.2	3.3	*	*	*	*	*
	2x10 (38x235)	9.6	8.4	6.7	5.4	4.4	3.6	*	*	*
	2x12 (38x286)	9.6	9.6	9.3	7.5	6.2	5.1	4.3	3.6	3.1
1.25" (32mm)	2x8 (38x184)	6.6	4.9	3.8	*	*	*	*	*	*
	2x10 (38x235)	9.6	8.1	6.3	5.0	4.0	3.2	*	*	*
	2x12 (38x286)	9.6	9.6	8.9	7.1	5.8	4.7	3.9	3.3	*
2" (51mm)	2x8 (38x184)	6.0	4.4	3.2	2.3	*	*	*	*	*
	2x10 (38x235)	9.6	7.5	5.7	4.4	3.4	*	*	*	*
	2x12 (38x286)	9.6	9.6	8.3	6.6	5.2	4.2	3.4	*	*
2.5" (64mm)	2x8 (38x184)	5.6	4.0	*	*	*	*	*	*	*
	2x10 (38x235)	9.6	7.1	5.4	4.0	3.1	*	*	*	*
	2x12 (38x286)	9.6	9.6	7.9	6.2	4.8	3.8	3.0	*	*
3" (76mm)	2x8 (38x184)	5.3	3.6	*	*	*	*	*	*	*
	2x10 (38x235)	9.2	6.8	5.0	3.7	*	*	*	*	*
	2x12 (38x286)	9.6	9.6	7.6	5.8	4.5	3.4	*	*	*

- 9.6 kN/m<sup>2</sup> assumed as maximum snow load.
- Asterisk (\*) indicates span is greater than permitted for 1.9 kN/m<sup>2</sup> live load.
- Joists may be cantilevered up to 12" (305mm).
- Joists are SPF, Grade No.1/No.2, wet service.
- Joist spacing at 8" (203 mm) o.c. is shown for extra support and increased stability.
- Paver or stone over Silca grate structural subfloor system. Grate dead load = 0.1 kN/m<sup>2</sup>.
- Live load = 1.9 kN/m<sup>2</sup> (not simultaneous with snow load).
- Paver or stone dead loads based on material weight of 23.6 kN/m<sup>3</sup>.
- Deflection criteria:  
Live Load = L/360  
Total Load = L/240

