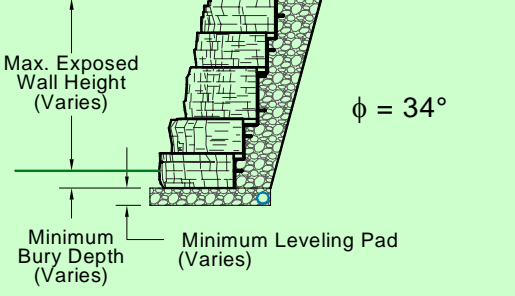
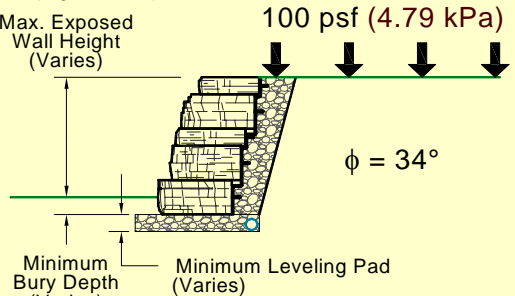
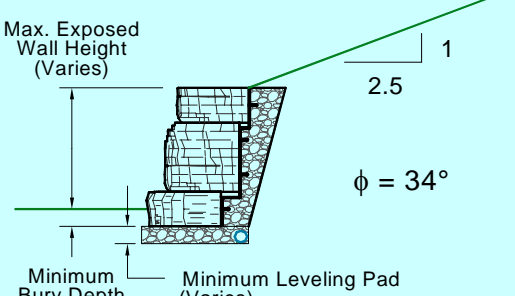


# ROSETTA® HARDSCAPES LLC - PRELIMINARY WALL HEIGHT GUIDE

Dense Well-Graded Sand, Sand and Gravel with an Internal Angle of Friction ( $\phi$ ) = 34°

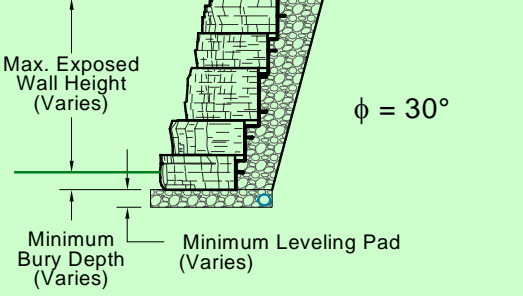
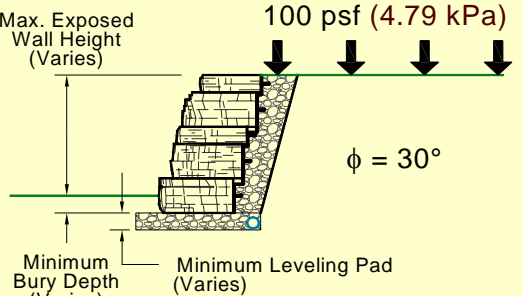
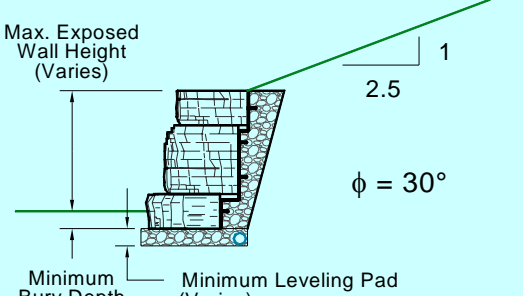
Wall Loading Condition	Design Height		Minimum Bury Depth		Minimum Leveling Pad		Max. Exposed Wall Height	
	ft	(m)	ft	(m)	ft	(m)	ft	(m)
<ul style="list-style-type: none"> <li>• NO BACKSLOPE</li> <li>• NO SURCHARGE</li> </ul>  <p><math>\phi = 34^\circ</math></p>	2.0	(0.61)	0.5	(0.15)	0.5	(0.15)	1.5	(0.46)
	3.0	(0.91)	0.5	(0.15)	0.5	(0.15)	2.5	(0.76)
	4.0	(1.22)	0.5	(0.15)	0.5	(0.15)	3.5	(1.07)
	5.0	(1.52)	0.5	(0.15)	0.5	(0.15)	4.5	(1.37)
	6.0	(1.83)	0.5	(0.15)	0.5	(0.15)	5.5	(1.68)
<ul style="list-style-type: none"> <li>• NO BACKSLOPE</li> <li>• 100 psf (4.79 kPa) LIVE LOAD SURCHARGE (Light Traffic)</li> </ul>  <p>100 psf (4.79 kPa)</p> <p><math>\phi = 34^\circ</math></p>	2.0	(0.61)	0.5	(0.15)	0.5	(0.15)	1.5	(0.46)
	3.0	(0.91)	0.5	(0.15)	0.5	(0.15)	2.5	(0.76)
	4.0	(1.22)	0.5	(0.15)	0.5	(0.15)	3.5	(1.07)
	5.0	(1.52)	0.5	(0.15)	0.5	(0.15)	4.5	(1.37)
	6.0	(1.83)	0.5	(0.15)	0.5	(0.15)	5.5	(1.68)
<ul style="list-style-type: none"> <li>• 1:2.5 (21.8°) BACKSLOPE</li> <li>• NO SURCHARGE</li> </ul>  <p>1 2.5</p> <p><math>\phi = 34^\circ</math></p>	2.0	(0.61)	0.5	(0.15)	0.5	(0.15)	1.5	(0.46)
	3.0	(0.91)	0.5	(0.15)	0.5	(0.15)	2.5	(0.76)
	4.0	(1.22)	0.5	(0.15)	0.5	(0.15)	3.5	(1.07)
	5.0	(1.52)	0.5	(0.15)	0.5	(0.15)	4.5	(1.37)
	6.0	(1.83)	0.5	(0.15)	0.5	(0.15)	5.5	(1.68)

**NOTES** The above chart was prepared by Rosetta® Hardscapes LLC for estimating and conceptual design purposes only. All information is believed to be true and accurate, however, Rosetta® Hardscapes LLC assumes no responsibility for the use of these design charts for actual construction. Determination of the suitability of each chart is the sole responsibility of the user. **Final designs for construction purposes must be performed by a registered Professional Engineer**, using the actual conditions of the proposed site.

1. Unit weight of 28°, 30°, 34° and 40° soils is assumed to be 120 pcf (18.9 kN/m<sup>3</sup>).
2. Minimum factors of safety are 1.5 for sliding, 1.5 for overturning and 2.0 for bearing capacity.
3. Designs are in general accordance with NCMA's *Design Manual for Segmental Retaining Walls (2nd ed.)*.
4. **Global stability has not been addressed in these charts.**
5. The wall design shall address both internal and external drainage and shall be evaluated by the Professional Engineer who is responsible for the final wall design.
6. Backfill material to be compacted to 95% standard proctor.
7. All Rosetta® Hardscapes LLC Wall System Specifications are to be followed.
8. Block sizes and placement shown for reference only. Individual Rosetta® Hardscapes blocks will vary with installation pattern.

# ROSETTA® HARDSCAPES LLC - PRELIMINARY WALL HEIGHT GUIDE

Silty Sand, Fine to Medium Sand with an Internal Angle of Friction ( $\phi$ ) = 30°

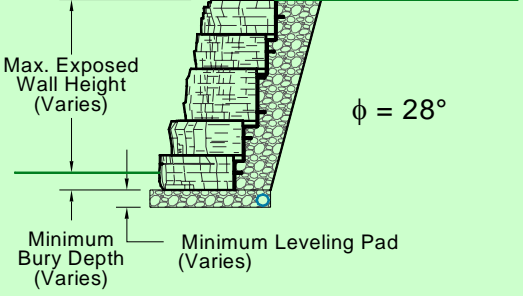
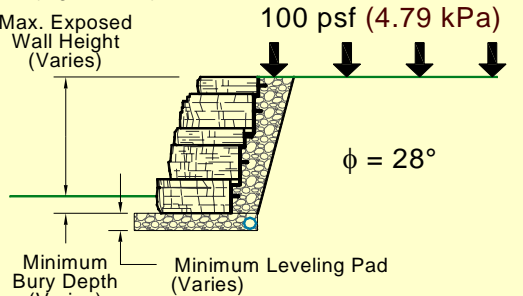
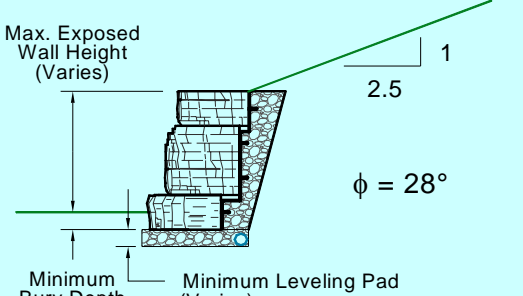
Wall Loading Condition	Design Height		Minimum Bury Depth		Minimum Leveling Pad		Max. Exposed Wall Height	
	ft	(m)	ft	(m)	ft	(m)	ft	(m)
<ul style="list-style-type: none"> <li>• NO BACKSLOPE</li> <li>• NO SURCHARGE</li> </ul>  <p><math>\phi = 30^\circ</math></p>	2.0	(0.61)	0.5	(0.15)	0.5	(0.15)	1.5	(0.46)
	3.0	(0.91)	0.5	(0.15)	0.5	(0.15)	2.5	(0.76)
	4.0	(1.22)	0.5	(0.15)	0.5	(0.15)	3.5	(1.07)
	5.0	(1.52)	0.5	(0.15)	0.5	(0.15)	4.5	(1.37)
	6.0	(1.83)	0.5	(0.15)	0.5	(0.15)	5.5	(1.68)
<ul style="list-style-type: none"> <li>• NO BACKSLOPE</li> <li>• 100 psf (4.79 kPa) LIVE LOAD SURCHARGE (Light Traffic)</li> </ul>  <p>100 psf (4.79 kPa)</p> <p><math>\phi = 30^\circ</math></p>	2.0	(0.61)	0.5	(0.15)	0.5	(0.15)	1.5	(0.46)
	3.0	(0.91)	0.5	(0.15)	0.5	(0.15)	2.5	(0.76)
	4.0	(1.22)	0.5	(0.15)	0.5	(0.15)	3.5	(1.07)
<ul style="list-style-type: none"> <li>• 1:2.5 (21.8°) BACKSLOPE</li> <li>• NO SURCHARGE</li> </ul>  <p>1 2.5</p> <p><math>\phi = 30^\circ</math></p>	2.0	(0.61)	0.5	(0.15)	0.5	(0.15)	1.5	(0.46)
	3.0	(0.91)	0.5	(0.15)	0.5	(0.15)	2.5	(0.76)
	4.0	(1.22)	0.5	(0.15)	0.5	(0.15)	3.5	(1.07)

**NOTES** The above chart was prepared by Rosetta® Hardscapes LLC for estimating and conceptual design purposes only. All information is believed to be true and accurate, however, Rosetta® Hardscapes LLC assumes no responsibility for the use of these design charts for actual construction. Determination of the suitability of each chart is the sole responsibility of the user. **Final designs for construction purposes must be performed by a registered Professional Engineer**, using the actual conditions of the proposed site.

1. Unit weight of 28°, 30°, 34° and 40° soils is assumed to be 120 pcf (18.9 kN/m<sup>3</sup>).
2. Minimum factors of safety are 1.5 for sliding, 1.5 for overturning and 2.0 for bearing capacity.
3. Designs are in general accordance with NCMA's *Design Manual for Segmental Retaining Walls (2nd ed.)*.
4. **Global stability has not been addressed in these charts.**
5. The wall design shall address both internal and external drainage and shall be evaluated by the Professional Engineer who is responsible for the final wall design.
6. Backfill material to be compacted to 95% standard proctor.
7. All Rosetta® Hardscapes LLC Wall System Specifications are to be followed.
8. Block sizes and placement shown for reference only. Individual Rosetta® Hardscapes blocks will vary with installation pattern.

# ROSETTA® HARDSCAPES LLC - PRELIMINARY WALL HEIGHT GUIDE

Silty Sand, Clayey Sand with an Internal Angle of Friction ( $\phi$ ) = 28°

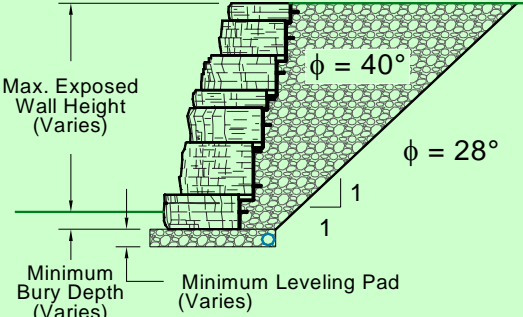
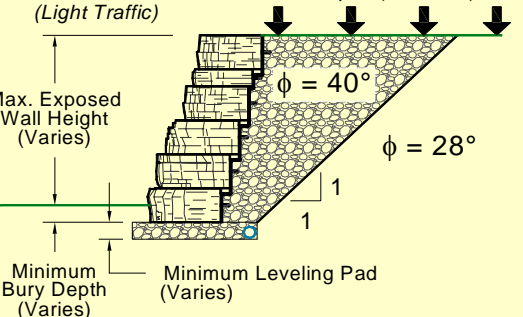
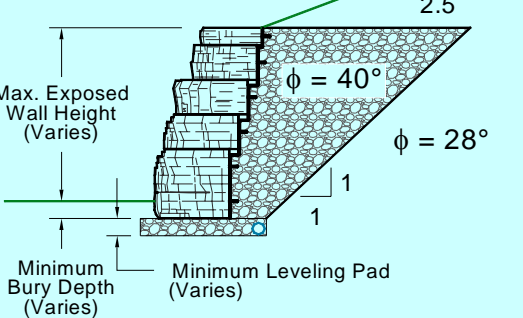
Wall Loading Condition	Design Height		Minimum Bury Depth		Minimum Leveling Pad		Max. Exposed Wall Height	
	ft	(m)	ft	(m)	ft	(m)	ft	(m)
<ul style="list-style-type: none"> <li>• NO BACKSLOPE</li> <li>• NO SURCHARGE</li> </ul> 	2.0	(0.61)	0.5	(0.15)	0.5	(0.15)	1.5	(0.46)
	3.0	(0.91)	0.5	(0.15)	0.5	(0.15)	2.5	(0.76)
	4.0	(1.22)	0.5	(0.15)	0.5	(0.15)	3.5	(1.07)
	5.0	(1.52)	0.5	(0.15)	0.5	(0.15)	4.5	(1.37)
<ul style="list-style-type: none"> <li>• NO BACKSLOPE</li> <li>• 100 psf (4.79 kPa) LIVE LOAD SURCHARGE (Light Traffic)</li> </ul> 	2.0	(0.61)	0.5	(0.15)	0.5	(0.15)	1.5	(0.46)
	3.0	(0.91)	0.5	(0.15)	0.5	(0.15)	2.5	(0.76)
	4.0	(1.22)	0.5	(0.15)	0.5	(0.15)	3.5	(1.07)
<ul style="list-style-type: none"> <li>• 1:2.5 (21.8°) BACKSLOPE</li> <li>• NO SURCHARGE</li> </ul> 	2.0	(0.61)	0.5	(0.15)	0.5	(0.15)	1.5	(0.46)
	3.0	(0.91)	0.5	(0.15)	0.5	(0.15)	2.5	(0.76)
	4.0	(1.22)	0.5	(0.15)	0.5	(0.15)	3.5	(1.07)

**NOTES** The above chart was prepared by Rosetta® Hardscapes LLC for estimating and conceptual design purposes only. All information is believed to be true and accurate, however, Rosetta® Hardscapes LLC assumes no responsibility for the use of these design charts for actual construction. Determination of the suitability of each chart is the sole responsibility of the user. **Final designs for construction purposes must be performed by a registered Professional Engineer**, using the actual conditions of the proposed site.

1. Unit weight of 28°, 30°, 34° and 40° soils is assumed to be 120 pcf (18.9 kN/m<sup>3</sup>).
2. Minimum factors of safety are 1.5 for sliding, 1.5 for overturning and 2.0 for bearing capacity.
3. Designs are in general accordance with NCMA's *Design Manual for Segmental Retaining Walls (2nd ed.)*.
4. **Global stability has not been addressed in these charts.**
5. The wall design shall address both internal and external drainage and shall be evaluated by the Professional Engineer who is responsible for the final wall design.
6. Backfill material to be compacted to 95% standard proctor.
7. All Rosetta® Hardscapes LLC Wall System Specifications are to be followed.
8. Block sizes and placement shown for reference only. Individual Rosetta® Hardscapes blocks will vary with installation pattern.

# ROSETTA® HARDSCAPES LLC - PRELIMINARY WALL HEIGHT GUIDE

Crushed Stone Backfill with  $(\phi) = 40^\circ$  Over Native Soil with  $(\phi) = 28^\circ$

Wall Loading Condition	Design Height		Minimum Bury Depth		Minimum Leveling Pad		Max. Exposed Wall Height	
	ft	(m)	ft	(m)	ft	(m)	ft	(m)
<ul style="list-style-type: none"> <li>• NO BACKSLOPE</li> <li>• NO SURCHARGE</li> </ul> 	2.0	(0.61)	0.5	(0.15)	0.5	(0.15)	1.5	(0.46)
	3.0	(0.91)	0.5	(0.15)	0.5	(0.15)	2.5	(0.76)
	4.0	(1.22)	0.5	(0.15)	0.5	(0.15)	3.5	(1.07)
	5.0	(1.52)	0.5	(0.15)	0.5	(0.15)	4.5	(1.37)
	6.0	(1.83)	0.5	(0.15)	0.5	(0.15)	5.5	(1.68)
	7.0	(2.13)	0.5	(0.15)	1.0	(0.30)	6.5	(1.98)
<ul style="list-style-type: none"> <li>• NO BACKSLOPE</li> <li>• 100 psf (4.79 kPa) LIVE LOAD SURCHARGE (Light Traffic)</li> </ul> 	2.0	(0.61)	0.5	(0.15)	0.5	(0.15)	1.5	(0.46)
	3.0	(0.91)	0.5	(0.15)	0.5	(0.15)	2.5	(0.76)
	4.0	(1.22)	0.5	(0.15)	0.5	(0.15)	3.5	(1.07)
	5.0	(1.52)	0.5	(0.15)	0.5	(0.15)	4.5	(1.37)
	6.0	(1.83)	0.5	(0.15)	1.0	(0.30)	5.5	(1.68)
<ul style="list-style-type: none"> <li>• 1:2.5 (21.8°) BACKSLOPE</li> <li>• NO SURCHARGE</li> </ul> 	2.0	(0.61)	0.5	(0.15)	0.5	(0.15)	1.5	(0.46)
	3.0	(0.91)	0.5	(0.15)	0.5	(0.15)	2.5	(0.76)
	4.0	(1.22)	0.5	(0.15)	0.5	(0.15)	3.5	(1.07)
	5.0	(1.52)	0.5	(0.15)	0.5	(0.15)	4.5	(1.37)
	6.0	(1.83)	0.75	(0.23)	0.5	(0.15)	5.25	(1.60)

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1. Unit weight of 28°, 30°, 34° and 40° soils is assumed to be 120 pcf (18.9 kN/m<sup>3</sup>).
2. Minimum factors of safety are 1.5 for sliding, 1.5 for overturning and 2.0 for bearing capacity.
3. Designs are in general accordance with NCMA's *Design Manual for Segmental Retaining Walls (2nd ed.)*.
4. **Global stability has not been addressed in these charts.**
5. The wall design shall address both internal and external drainage and shall be evaluated by the Professional Engineer who is responsible for the final wall design.
6. Backfill material to be compacted to 95% standard proctor.
7. All Rosetta® Hardscapes LLC Wall System Specifications are to be followed.
8. Block sizes and placement shown for reference only. Individual Rosetta® Hardscapes blocks will vary with installation pattern.