# ROSETTA® HARDSCAPES LLC - PRELIMINARY WALL HEIGHT GUIDE

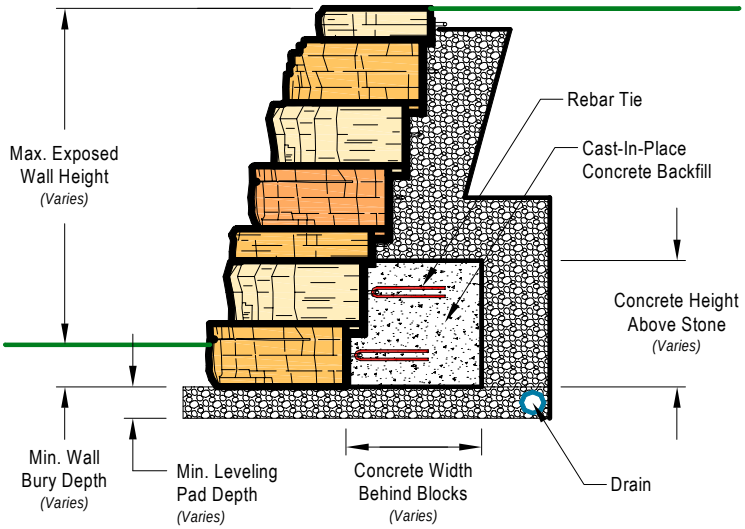
## GRAVITY WALL WITH POURED-IN-PLACE CONCRETE BACKFILL

### Dense Well-Graded Sand, Sand and Gravel with an Internal Angle of Friction (Φ) = 34°

| Wall Loading Condtion | Design Height ft | (m) | Minimum Wall Bury Depth ft | (m) | Minimum Leveling Pad Depth ft | (m) | Concrete Width Behind Blocks ft | (m) | Concrete Height Above Stone ft | (m) | Maximum Exposed Wall Height ft | (m) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| • NO BACKSLOPE<br>• NO SURCHARGE<br>ϕ = 34° | ≤ 6.5 | (1.98) | See Preliminary Gravity Charts | | | | | | | | | |
| | 7.0 | (2.13) | 0.5 | (0.15) | 0.5 | (0.15) | 1.0 | (0.30) | 1.0 | (0.30) | 6.5 | (1.98) |
| | 8.0 | (2.44) | 0.5 | (0.15) | 0.5 | (0.15) | 1.5 | (0.46) | 2.0 | (0.61) | 7.5 | (2.29) |
| | 9.0 | (2.74) | 0.5 | (0.15) | 0.5 | (0.15) | 2.0 | (0.61) | 3.0 | (0.91) | 8.5 | (2.59) |
| • NO BACKSLOPE<br>• 100 psf (4.79 kPa) LIVE LOAD SURCHARGE 100 psf (4.79 kPa)<br>ϕ = 34° | ≤ 5.5 | (1.68) | See Preliminary Gravity Charts | | | | | | | | | |
| | 6.0 | (1.83) | 0.5 | (0.15) | 0.5 | (0.15) | 1.0 | (0.30) | 1.0 | (0.30) | 5.5 | (1.68) |
| | 7.0 | (2.13) | 0.5 | (0.15) | 0.5 | (0.15) | 1.5 | (0.46) | 2.0 | (0.61) | 6.5 | (1.98) |
| | 8.0 | (2.44) | 0.5 | (0.15) | 0.5 | (0.15) | 2.0 | (0.61) | 3.0 | (0.91) | 7.5 | (2.29) |
| • NO BACKSLOPE<br>• 250 psf (11.96 kPa) LIVE LOAD SURCHARGE 250 psf (11.96 kPa)<br>ϕ = 34° | 4.0 | (1.22) | 0.5 | (0.15) | 0.5 | (0.15) | 1.0 | (0.30) | 1.0 | (0.30) | 3.5 | (1.07) |
| | 5.0 | (1.52) | 0.5 | (0.15) | 0.5 | (0.15) | 1.5 | (0.46) | 2.0 | (0.61) | 4.5 | (1.37) |
| | 6.0 | (1.83) | 0.5 | (0.15) | 0.5 | (0.15) | 2.0 | (0.61) | 3.0 | (0.91) | 5.5 | (1.68) |
| • 1:2.5 (21.8°) BACKSLOPE<br>• NO SURCHARGE<br>1 / 2.5<br>ϕ = 34° | ≤ 5.5 | (1.68) | See Preliminary Gravity Charts | | | | | | | | | |
| | 6.0 | (1.83) | 0.5 | (0.15) | 0.5 | (0.15) | 1.0 | (0.30) | 1.0 | (0.30) | 5.5 | (1.68) |
| | 7.0 | (2.13) | 0.5 | (0.15) | 0.5 | (0.15) | 1.5 | (0.46) | 2.0 | (0.61) | 6.5 | (1.98) |
| | 8.0 | (2.44) | 0.5 | (0.15) | 0.5 | (0.15) | 2.0 | (0.61) | 3.0 | (0.91) | 7.5 | (2.29) |

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 120pcf (18.9 kN/m3).
2. Minimum factors of safety are 1.5 for sliding, 1.5 for overturning and 2.0 for bearing capacity.
3. Global stability has not been addressed in these charts.
4. 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.
5. Backfill material to be compacted to 95% standard proctor.
6. All Rosetta® Hardscapes LLC Wall System Specifications are to be followed.
7. Block sizes and placement shown for reference only. Individual Rosetta® Hardscapes blocks will vary with installation pattern.
8. Assumed concrete backfill minimum $f'_c$ = 2500 psi (17.2 MPa).
9. Rebar ties shall be placed over the 18 mm dia. steel hooks cast in the back of the Rosetta® Hardscapes blocks. Assumed ties = 18 in (45.7 cm) long #4 rebar bent into U-Shaped ties (each leg = 9 in. (22.9cm)).



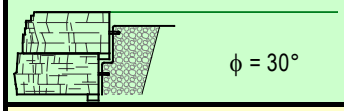
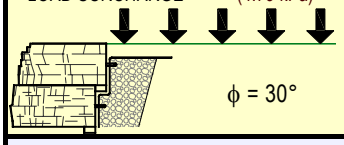
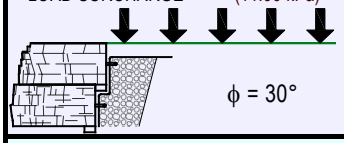
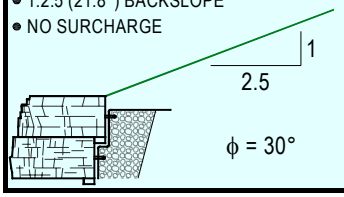

See Project Specific Design Drawings for Full Construction Details

*April 29, 2008*

# ROSETTA® HARDSCAPES LLC - PRELIMINARY WALL HEIGHT GUIDE

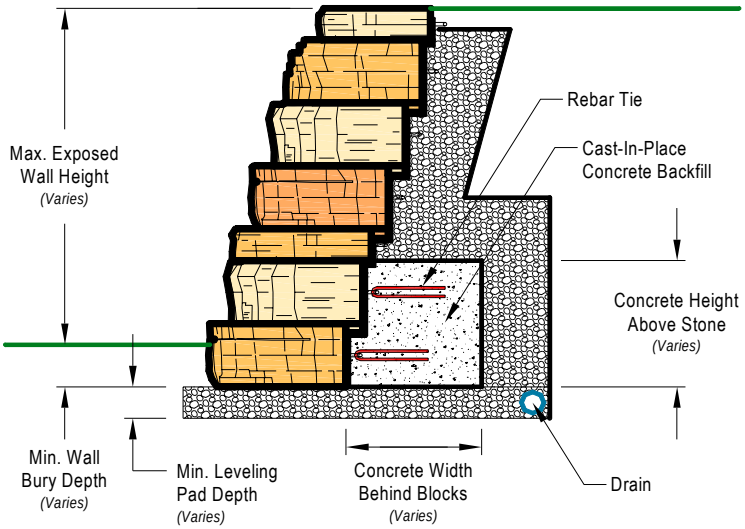
## GRAVITY WALL WITH POURED-IN-PLACE CONCRETE BACKFILL

### Silty Sand, Fine to Medium Sand with an Internal Angle of Friction (ϕ) = 30°

| *Wall Loading Condtion* | *Design Height* ft | (m) | *Minimum Wall Bury Depth* ft | (m) | *Minimum Leveling Pad Depth* ft | (m) | *Concrete Width Behind Blocks* ft | (m) | *Concrete Height Above Stone* ft | (m) | *Maximum Exposed Wall Height* ft | (m) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| • NO BACKSLOPE<br>• NO SURCHARGE<br>  | ≤ 6.0 | (1.83) | See Preliminary Gravity Charts | | | | | | | | | |
| | 7.0 | (2.13) | 0.5 | (0.15) | 0.5 | (0.15) | 1.5 | (0.46) | 1.0 | (0.30) | 6.5 | (1.98) |
| | 8.0 | (2.44) | 0.5 | (0.15) | 0.5 | (0.15) | 2.0 | (0.61) | 2.0 | (0.61) | 7.5 | (2.29) |
| | 9.0 | (2.74) | 0.5 | (0.15) | 0.5 | (0.15) | 2.5 | (0.76) | 3.0 | (0.91) | 8.5 | (2.59) |
| • NO BACKSLOPE<br>• 100 psf (4.79 kPa) LIVE LOAD SURCHARGE 100 psf (4.79 kPa)<br>  | ≤ 4.5 | (1.37) | See Preliminary Gravity Charts | | | | | | | | | |
| | 5.0 | (1.52) | 0.5 | (0.15) | 0.5 | (0.15) | 1.0 | (0.30) | 1.0 | (0.30) | 4.5 | (1.37) |
| | 6.0 | (1.83) | 0.5 | (0.15) | 0.5 | (0.15) | 1.5 | (0.46) | 2.0 | (0.61) | 5.5 | (1.68) |
| | 7.0 | (2.13) | 0.5 | (0.15) | 0.5 | (0.15) | 2.0 | (0.61) | 3.0 | (0.91) | 6.5 | (1.98) |
| • NO BACKSLOPE<br>• 250 psf (11.96 kPa) LIVE LOAD SURCHARGE 250 psf (11.96 kPa)<br>  | 4.0 | (1.22) | 0.5 | (0.15) | 0.5 | (0.15) | 1.5 | (0.46) | 1.0 | (0.30) | 3.5 | (1.07) |
| | 5.0 | (1.52) | 0.5 | (0.15) | 0.5 | (0.15) | 2.0 | (0.61) | 2.0 | (0.61) | 4.5 | (1.37) |
| | 6.0 | (1.83) | 0.5 | (0.15) | 0.5 | (0.15) | 2.5 | (0.76) | 3.0 | (0.91) | 5.5 | (1.68) |
| • 1:2.5 (21.8°) BACKSLOPE<br>• NO SURCHARGE<br>  | ≤ 4.5 | (1.37) | See Preliminary Gravity Charts | | | | | | | | | |
| | 5.0 | (1.52) | 0.5 | (0.15) | 0.5 | (0.15) | 1.5 | (0.46) | 1.0 | (0.30) | 4.5 | (1.37) |
| | 6.0 | (1.83) | 0.5 | (0.15) | 0.5 | (0.15) | 2.0 | (0.61) | 2.0 | (0.61) | 5.5 | (1.68) |
| | 7.0 | (2.13) | 0.5 | (0.15) | 0.5 | (0.15) | 2.5 | (0.76) | 3.0 | (0.91) | 6.5 | (1.98) |

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 120pcf (18.9 kN/m3).
2. Minimum factors of safety are 1.5 for sliding, 1.5 for overturning and 2.0 for bearing capacity.
3. Global stability has not been addressed in these charts.
4. 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.
5. Backfill material to be compacted to 95% standard proctor.
6. All Rosetta® Hardscapes LLC Wall System Specifications are to be followed.
7. Block sizes and placement shown for reference only. Individual Rosetta® Hardscapes blocks will vary with installation pattern.
8. Assumed concrete backfill minimum $f'_c$ = 2500 psi (17.2 MPa).
9. Rebar ties shall be placed over the 18 mm dia. steel hooks cast in the back of the Rosetta® Hardscapes blocks. Assumed ties = 18 in (45.7 cm) long #4 rebar bent into U-Shaped ties (each leg = 9 in. (22.9cm)).



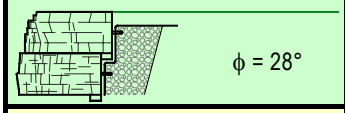
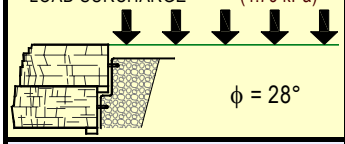
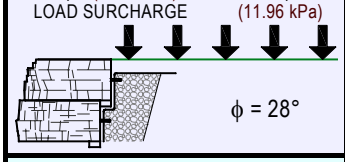
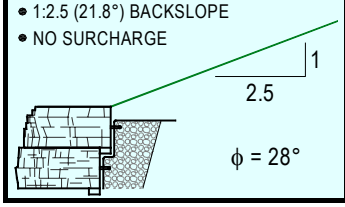

See Project Specific Design Drawings for Full Construction Details

*April 29, 2008*

# ROSETTA® HARDSCAPES LLC - PRELIMINARY WALL HEIGHT GUIDE

## GRAVITY WALL WITH POURED-IN-PLACE CONCRETE BACKFILL

### Silty Sand, Clayey Sand with an Internal Angle of Friction (Φ) = 28°

| *Wall Loading Condtion* | *Design Height* ft | (m) | *Minimum Wall Bury Depth* ft | (m) | *Minimum Leveling Pad Depth* ft | (m) | *Concrete Width Behind Blocks* ft | (m) | *Concrete Height Above Stone* ft | (m) | *Maximum Exposed Wall Height* ft | (m) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| • NO BACKSLOPE<br>• NO SURCHARGE<br>  | ≤ 5.5 | (1.68) | See Preliminary Gravity Charts | | | | | | | | | |
| | 6.0 | (1.83) | 0.5 | (0.15) | 0.5 | (0.15) | 1.5 | (0.46) | 1.0 | (0.30) | 5.5 | (1.68) |
| | 7.0 | (2.13) | 0.5 | (0.15) | 0.5 | (0.15) | 2.0 | (0.61) | 2.0 | (0.61) | 6.5 | (1.98) |
| | 8.0 | (2.44) | 0.5 | (0.15) | 0.5 | (0.15) | 2.5 | (0.76) | 3.0 | (0.91) | 7.5 | (2.29) |
| • NO BACKSLOPE<br>• 100 psf (4.79 kPa) LIVE LOAD SURCHARGE<br>  | ≤ 4.0 | (1.22) | See Preliminary Gravity Charts | | | | | | | | | |
| | 5.0 | (1.52) | 0.5 | (0.15) | 0.5 | (0.15) | 1.5 | (0.46) | 1.0 | (0.30) | 4.5 | (1.37) |
| | 6.0 | (1.83) | 0.5 | (0.15) | 0.5 | (0.15) | 2.0 | (0.61) | 2.0 | (0.61) | 5.5 | (1.68) |
| | 7.0 | (2.13) | 0.5 | (0.15) | 0.5 | (0.15) | 2.5 | (0.76) | 3.0 | (0.91) | 6.5 | (1.98) |
| • NO BACKSLOPE<br>• 250 psf (11.96 kPa) LIVE LOAD SURCHARGE<br>  | 4.0 | (1.22) | 0.5 | (0.15) | 0.5 | (0.15) | 2.0 | (0.61) | 1.0 | (0.30) | 3.5 | (1.07) |
| | 5.0 | (1.52) | 0.5 | (0.15) | 0.5 | (0.15) | 2.5 | (0.76) | 2.0 | (0.61) | 4.5 | (1.37) |
| | 6.0 | (1.83) | 0.5 | (0.15) | 0.5 | (0.15) | 3.0 | (0.91) | 3.0 | (0.91) | 5.5 | (1.68) |
| • 1:2.5 (21.8°) BACKSLOPE<br>• NO SURCHARGE<br>  | ≤ 4.0 | (1.22) | See Preliminary Gravity Charts | | | | | | | | | |
| | 5.0 | (1.52) | 0.5 | (0.15) | 0.5 | (0.15) | 2.5 | (0.76) | 1.0 | (0.30) | 4.5 | (1.37) |
| | 6.0 | (1.83) | 0.5 | (0.15) | 0.5 | (0.15) | 3.0 | (0.91) | 2.0 | (0.61) | 5.5 | (1.68) |
| | 7.0 | (2.13) | 0.5 | (0.15) | 0.5 | (0.15) | 4.0 | (1.22) | 3.0 | (0.91) | 6.5 | (1.98) |

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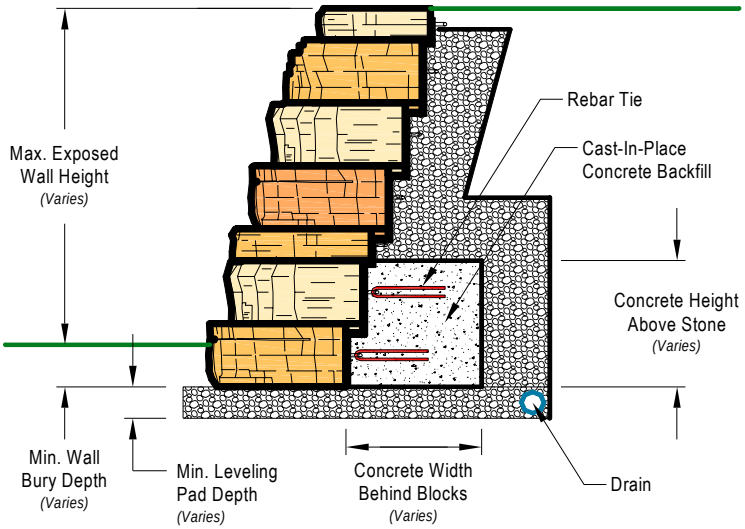


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*April 29, 2008*