Stonegate®

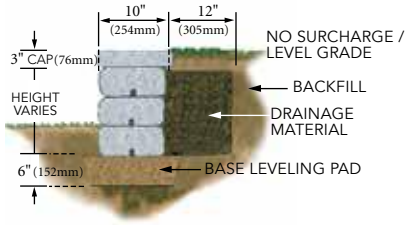
DESIGN CHARTS

Design Considerations

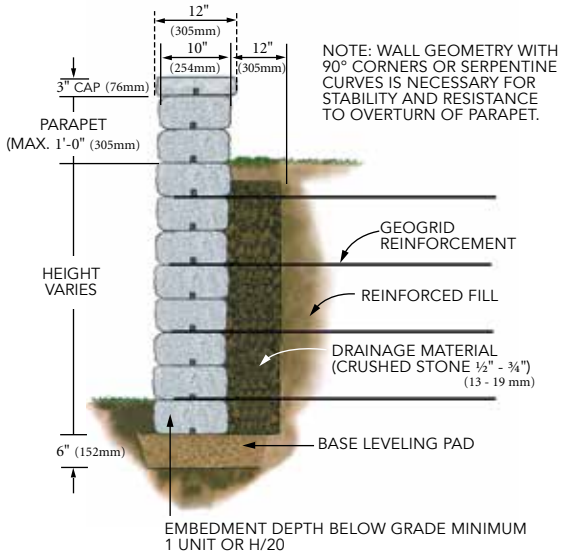
Design Assumptions

- Friction angle (PHI) for earth pressure calculations of geogrid reinforced walls is evaluated at 26°, 30° and 34° only. For other soil type analysis, refer to the KeyWall® PRO design software program or consult with a qualified engineer.
- Moist weight of the three soil types indicated is 120 lb./ft^3 (19kN/m^2).
- Sliding calculations use 6" (152mm) crushed stone leveling pad as compacted foundation material.
- All backfill materials are compacted to 95% Standard Proctor density.
- The term "vertical" is a wall built to a near vertical alignment having a slight positive setback (1°±).
- The information provided herein is for preliminary design use only. A qualified engineer should be consulted for design and analysis of structures. Keystone Retaining Wall Systems LLC assumes no liability for the improper use of this information.

Gravity Wall: Near Vertical Detail



Reinforced Wall: Near Vertical Detail



Design Notes

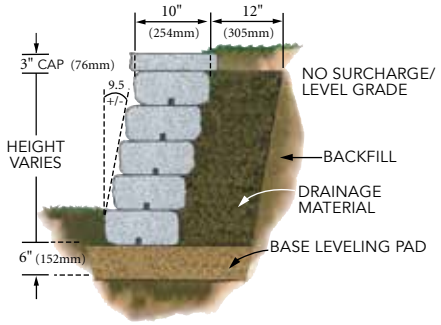
For low (non-structural) landscape retaining walls, Stonegate units can be constructed as a non-reinforced gravity wall as shown in the chart below. This chart is for retaining walls in the "near vertical" option.

GRAVITY WALLS (Maximum unreinforced wall height)				
MAXIMUM HEIGHT*	NEAR VERTICAL		9.5° +/- BATTER	
	LEVEL	3H:1V	LEVEL	3H:1V
SAND / GRAVEL PHI= 34°	2'-0" (0.6m)	1'-6" (0.45m)	3'-0" (0.9m)	2'-6" (0.75m)
SILTY SAND PHI = 30°	1'-6" (0.45m)	1'-6" (0.45m)	2'-6" (0.75m)	2'-0" (0.6m)
SILT / LEAN CLAY PHI = 26°	1'-6" (0.45m)	1'-0" (0.3m)	2'-0" (0.6m)	1'-6" (0.45m)

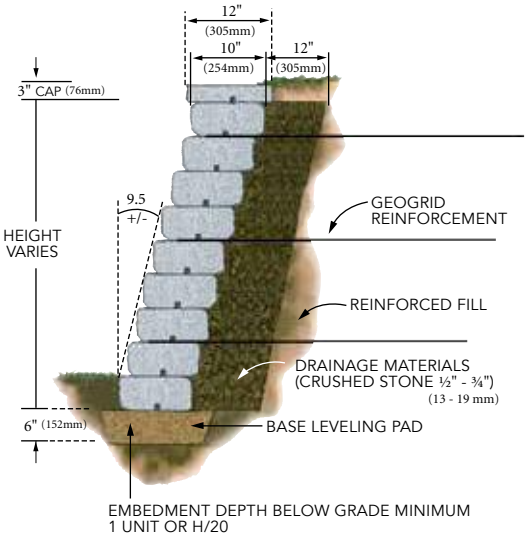
*Height does not include 3" (76mm) cap

Note: use pins and construction adhesive at low border/parapet walls.

Gravity Wall: Setback Detail 9.5°± Batter



Reinforced Wall: Setback Detail 9.5°± Batter

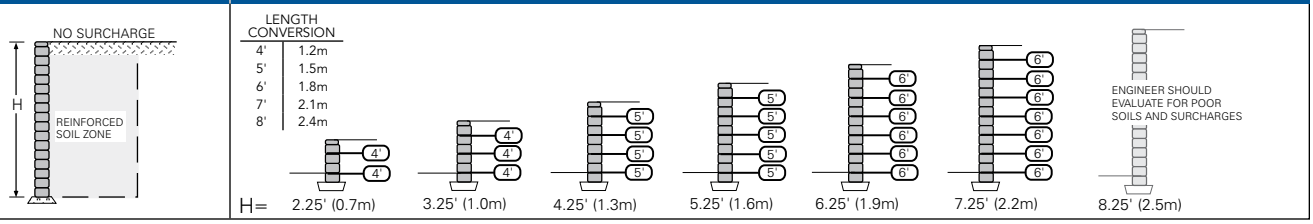


Design Charts

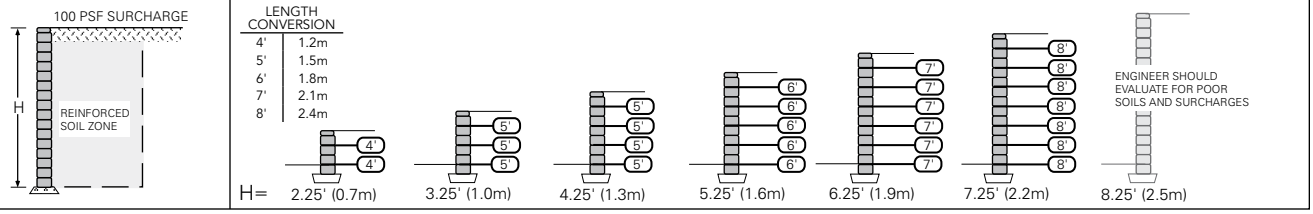
The following charts assume the use of a coated polyester geogrid with a minimum allowable design strength of:
LTDS = 750 plf (10.9 kN/m) or Tal = 500 plf (7.3 kN/m)

Silt/Lean Clay: ϕ=26°, γ=120 pcf (19kN/m³)

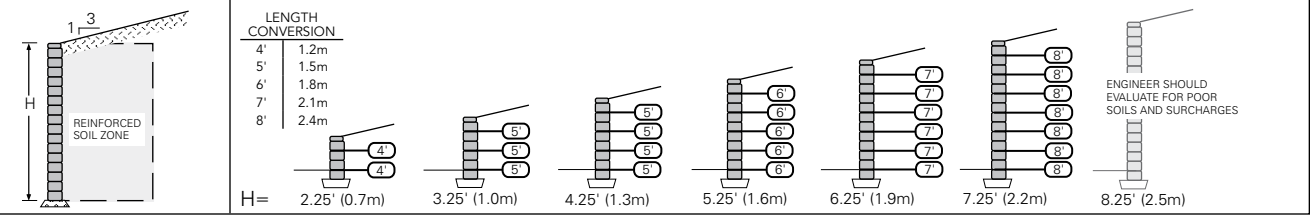
CASE 1 — REINFORCED WALLS (NEAR VERTICAL*)



CASE 2 — REINFORCED WALLS (NEAR VERTICAL*)

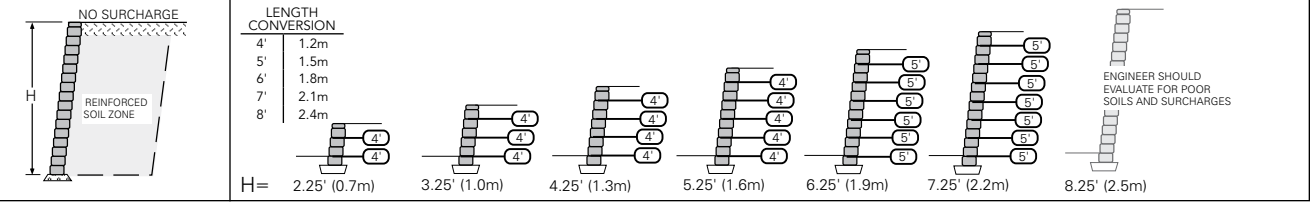


CASE 3 — REINFORCED WALLS (NEAR VERTICAL*)

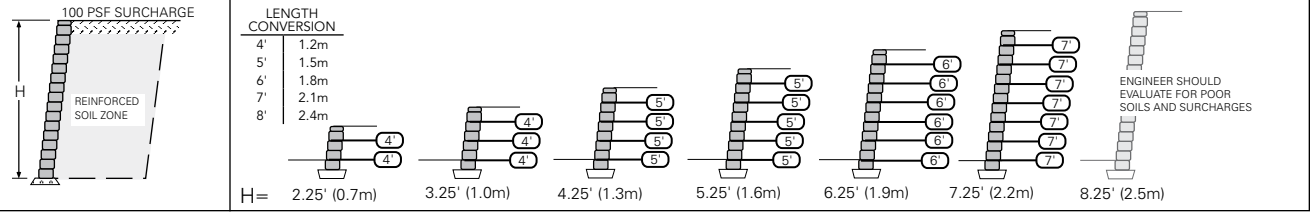


*FOR CONSTRUCTION OF NEAR VERTICAL BATTER (CENTER PIN HOLE), CONSTRUCT WITH POSITIVE BATTER BY TILTING UNITS BACK TOWARDS FILL ON LEVELING PAD. ELEVATION DROP ALONG THE 10"(254mm) WIDTH OF THE BLOCK TO BE 3/8"(10mm).

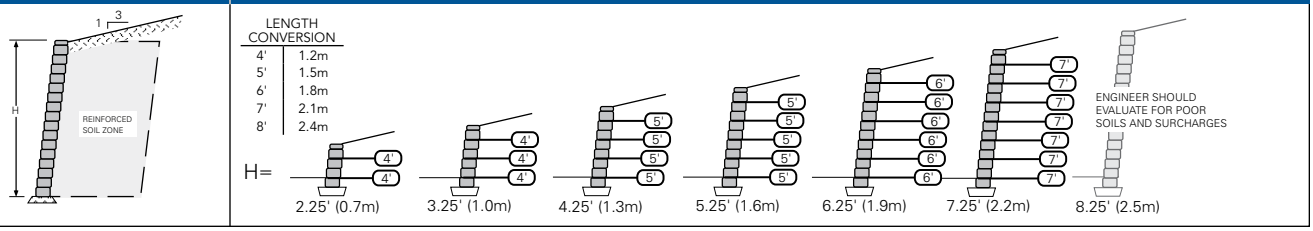
CASE 1 — REINFORCED WALLS - (9.5° ± SETBACK)



CASE 2 — REINFORCED WALLS (9.5° ± SETBACK)



CASE 3 — REINFORCED WALLS (9.5° ± SETBACK)



Design Charts

Silty Sand: ϕ=30°, γ=120 pcf (19kN/m³)

The following charts assume the use of a coated polyester geogrid with a minimum allowable design strength of:
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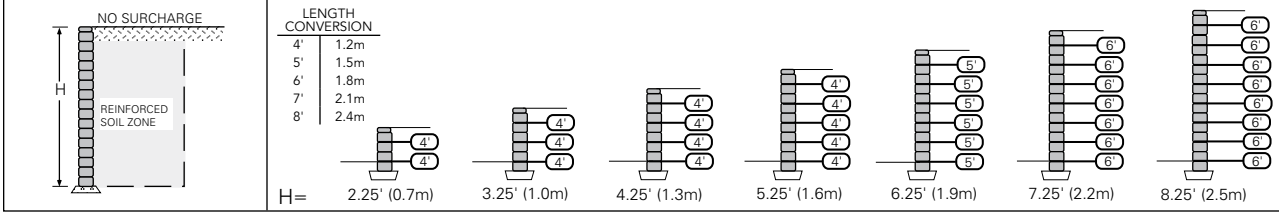
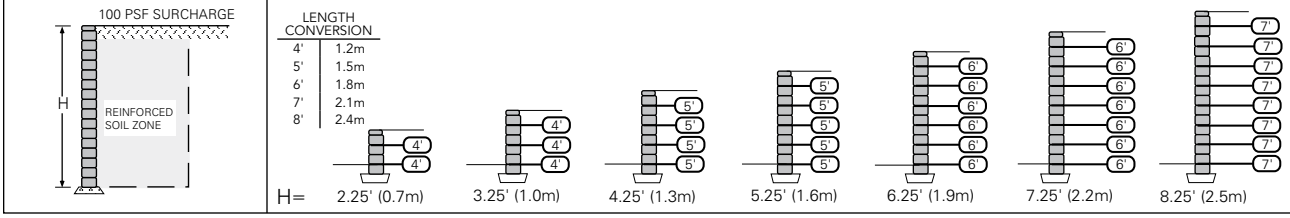


CASE 2 — REINFORCED WALLS (NEAR VERTICAL*)



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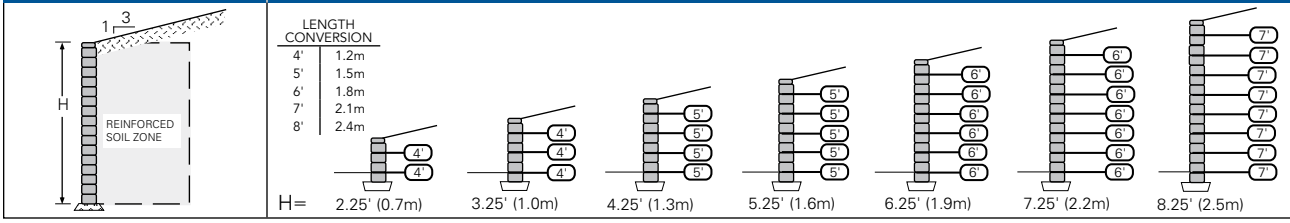

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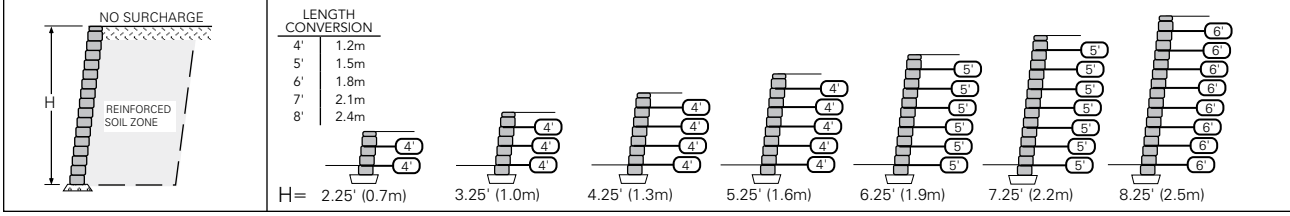
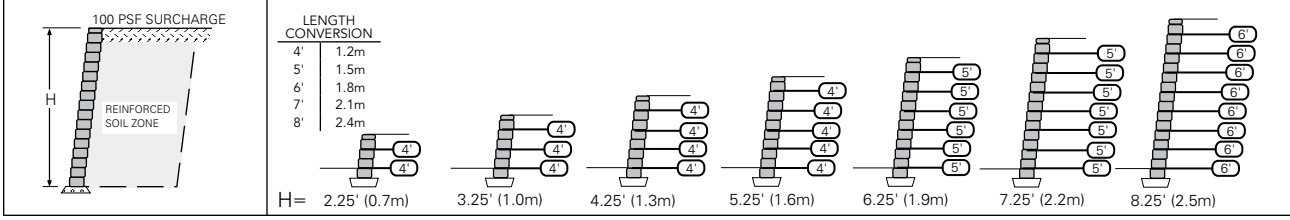


CASE 2 — REINFORCED WALLS (9.5° ± SETBACK)



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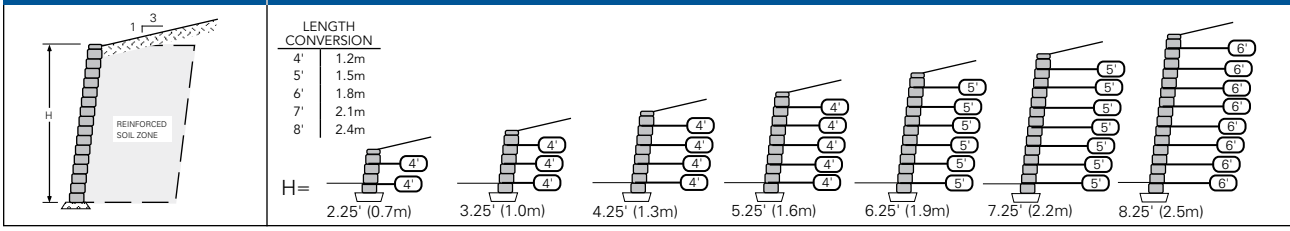

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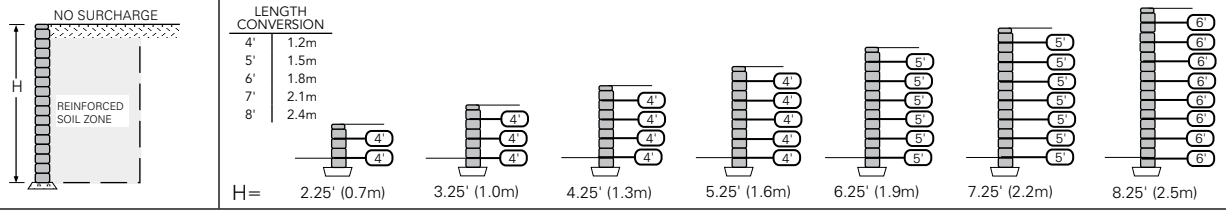

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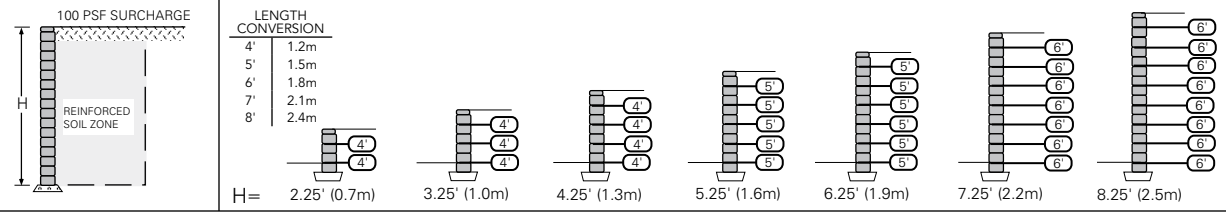

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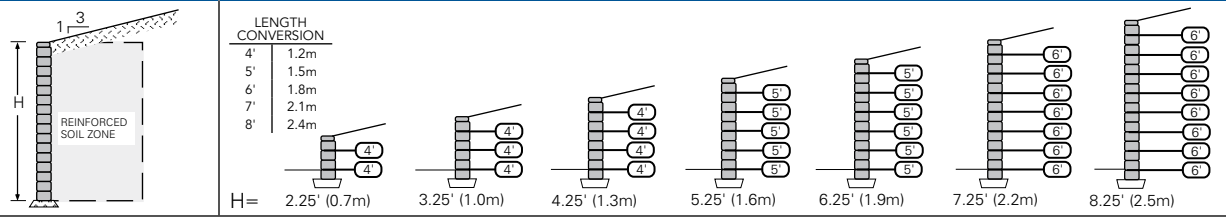

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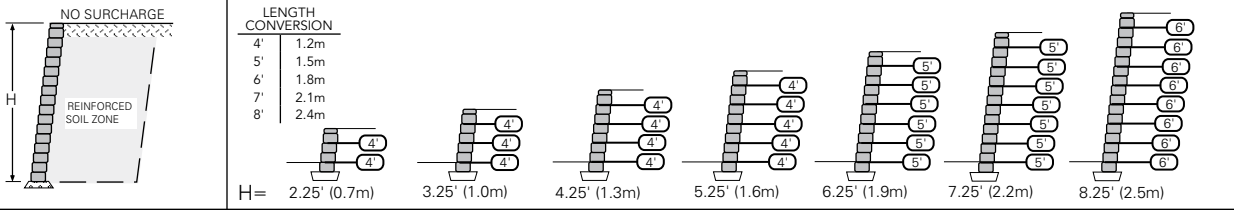

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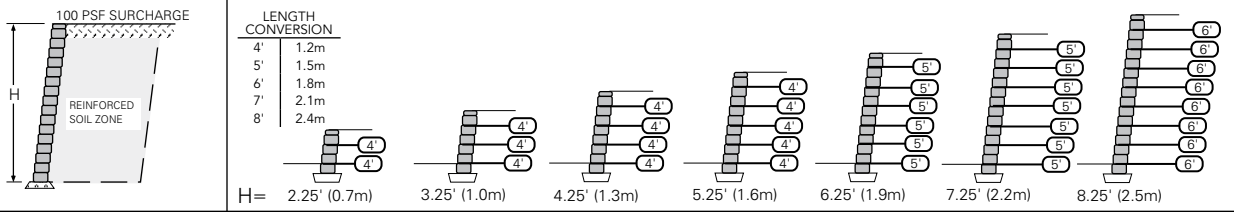

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