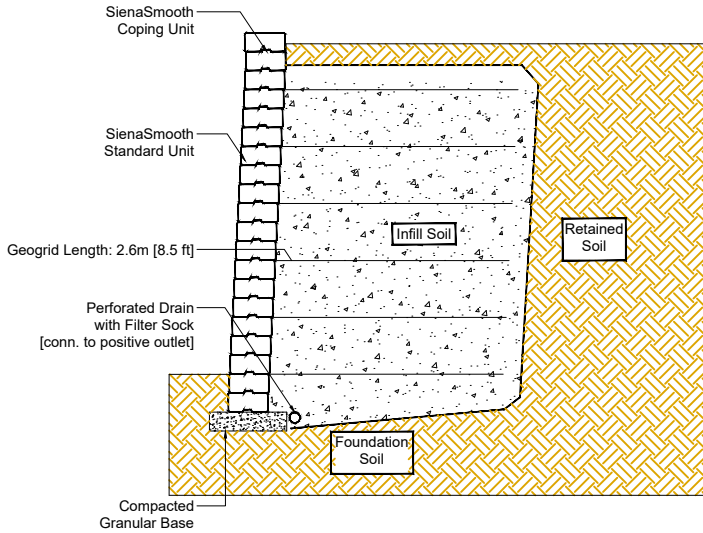


# SIENA SMOOTH<sup>®</sup>

## RETAINING WALL GEOGRID SECTION

REF: Siena Smooth\_Grid Reinforced\_Horizontal Load\_11.8ft\_3.6m

3600mm (11.80ft) Site: Horizontal - Clays Infill: Granular



### Design Specific Geometric Information

|  |                        |                                   |                    |
|--|------------------------|-----------------------------------|--------------------|
| Retaining Wall System                    | SienaSmooth w/ Geogrid | Geogrid Type and Manufacturer     | See Notes          |
| Maximum Height mm (in)                   | 3600 (141)             | Minimum Geogrid LTDS kN/m (lb/ft) | See Notes          |
| Maximum Slope Above Wall                 | Horizontal             | Maximum Slope Below Wall          | None               |
| Max. Surcharge Above Wall kPa (lb/sq.ft) | None                   | Depth of Embedment mm (in)        | 358 (14)           |
| Batter of Wall                           | 3 °                    | Compacted Base Dimension mm (in)  | 735 x 180 (29 x 7) |

### Design Specific Soil Information

|                                      | Soil Region  |   |   |  |  |
|--------------------------------------|--|---|---|--|--|
|                                      | Infill   | Retained  | Foundation  | Base   | Drainage   |
| Description (by USCS)                | GW<br>Well graded, free draining Granular            | CL<br>Inorganic Clays Low Plasticity                | CL<br>Inorganic Clays Low Plasticity                  | GW<br>Well graded, free draining Granular            | see infill   |
| Effective Internal Friction Angle    | 35 °   | 28 °  | 28 °  | 39 °   | NR   |
| Moist Unit Weight kN/cu.m (lb/cu.ft) | 22 (140)   | 20 (127)  | 20 (127)  | 22 (140)   | NR   |
| Effective Cohesion kPa (lb/sq.ft)    | NR   | NR  | NR  | NR   | NR   |
| Soil Notes                           | Placed in 150mm (6") lifts and compacted to 95% SPD. | Undisturbed dense soil or well compacted Eng. fill. | Allowable bearing cap. must exceed 150kPa (3125 psf). | Crushed Gravel (free draining) compacted to 98% SPD. | Gravel infill must be well graded, angular, free drain w/max. 8% fines |

NR - Not Required

#### Notes:

1. This design meets or exceeds the minimum factors of safety required by Risi Stone Systems based on the design parameters listed above. The analysis was performed as outlined in the National Concrete Masonry Association Design Manual for Segmental Retaining Walls, Third Edition. This is a typical, non site-specific Design.
2. No analysis of global stability, total or differential settlement, or seismic effects has been performed.
3. This design is only provided to illustrate the general arrangement of the SRW structure for preliminary costing and feasibility purposes only. This drawing is not for construction. A qualified Engineer must be retained to provide the Final Design prior to construction.
4. Structures such as handrails, guardrails, fences, terraces, and site conditions such as water applications, drainage and soil conditions, additional live and dead loads, etc., have significant effects on the wall design and have not been taken into account in this typical section. When accounted for in the Final Design, other conditions and elements may result in additional design measures (geogrid, drainage, etc) and cost.
5. For geogrid reinforced structures, a minimum Long Term Allowable Design Strength of 14 kN/m was assumed.

Contact your manufacturer or Risi Stone Systems for a list of approved geogrid reinforcements.



Engineering design by RisiStone Inc.

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