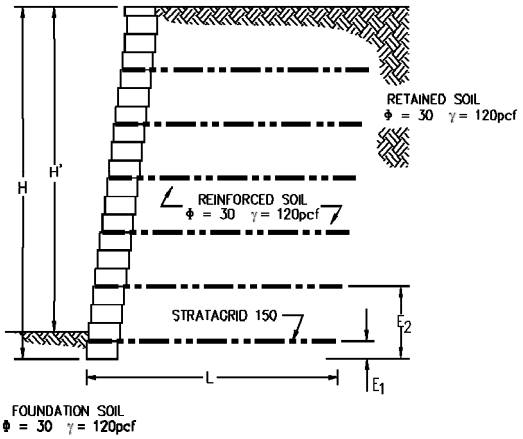
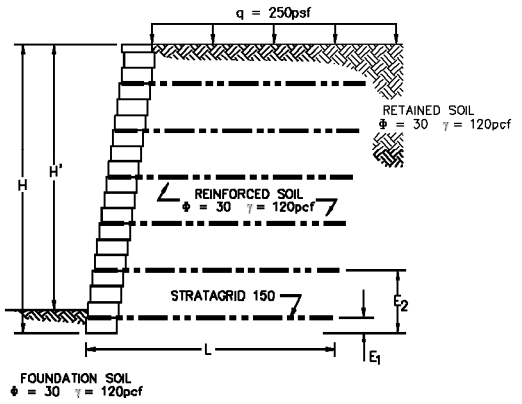
Nicolock's Alta Wall – Strata SG150 Geogrid Material Estimating Chart

CASE 1 with $\phi > 30^{\circ}$
NO SURCHARGE
NO SLOPE AT TOP OF WALL



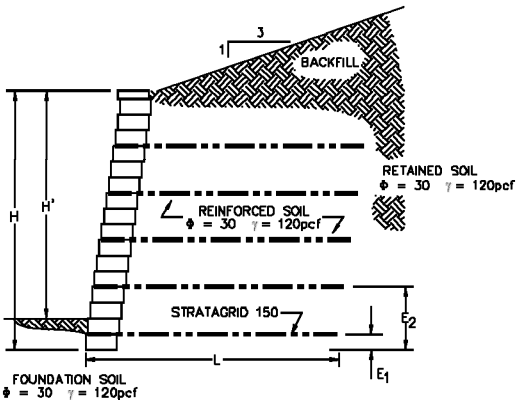
Exposed Height H', (ft)	Total Height H, (ft)	No. of Alta Wall Courses	Grid Layers	Length L, (ft)	Layer Number Place Grid at Elevation E_i (ft) 1	2	3	4
2.3	2.8	5	-	-	-	-	-	-
2.8	3.3	6	2	4.0	0.5	2.0	-	-
3.3	3.8	7	2	4.0	0.5	2.0	-	-
3.8	4.3	8	3	4.0	0.5	2.0	3.0	-
4.3	4.8	9	3	5.0	0.5	2.0	3.5	-
4.8	5.3	10	3	5.0	0.5	2.0	3.5	-
5.3	5.8	11	4	5.0	0.5	2.0	3.5	4.5
5.8	6.3	12	4	6.0	0.5	2.0	3.5	4.5
6.3	6.8	13	4	6.0	0.5	2.0	3.5	5.0

CASE 2 with $\phi > 30^{\circ}$
SURCHARGE FROM ROADWAY OR PARKING
NO SLOPE AT TOP OF WALL



Exposed Height H', (ft)	Total Height H, (ft)	No. of Alta Wall Courses	Grid Layers	Length L, (ft)	Layer Number Place Grid at Elevation E_i (ft) 1	2	3	4
2.3	2.8	5	1	4.0	0.5	-	-	-
2.8	3.3	6	2	5.0	0.5	2.0	-	-
3.3	3.8	7	2	5.0	0.5	2.0	-	-
3.8	4.3	8	3	5.0	0.5	2.0	3.0	-
4.3	4.8	9	3	6.0	0.5	2.0	3.5	-
4.8	5.3	10	3	6.0	0.5	2.0	3.5	-
5.3	5.8	11	4	6.0	0.5	2.0	3.5	4.5
5.8	6.3	12	4	6.0	0.5	2.0	3.5	4.5
6.3	6.8	13	4	6.0	0.5	2.0	3.5	5.0

CASE 3 with $\phi > 30^{\circ}$
NO SURCHARGE
3:1 MAX SLOPE AT TOP OF WALL



Exposed Height H', (ft)	Total Height H, (ft)	No. of Alta Wall Courses	Grid Layers	Length L, (ft)	Layer Number Place Grid at Elevation E_i (ft) 1	2	3	4
2.3	2.8	5	1	4.0	0.5	-	-	-
2.8	3.3	6	2	4.0	0.5	2.0	-	-
3.3	3.8	7	2	4.0	0.5	2.0	-	-
3.8	4.3	8	3	5.0	0.5	2.0	3.0	-
4.3	4.8	9	3	5.0	0.5	2.0	3.5	-
4.8	5.3	10	3	5.0	0.5	2.0	3.5	-
5.3	5.8	11	4	6.0	0.5	2.0	3.5	4.5
5.8	6.3	12	4	6.0	0.5	2.0	3.5	5.0
6.3	6.8	13	4	6.0	0.5	2.0	3.5	5.0

Notes:

1. Information presented in this chart is to be used for estimating purposes. Final design should be performed by a Professional Engineer qualified in both geotechnical engineering and segmental retaining wall design.

2. This estimating chart is applicable to sites where soil conditions meet the following minimum criteria: Angle of Internal Friction, $\phi > 30^{\circ}$ and moist unit weight, $\gamma < 120$pcf. Typical for silty sands, poorly graded sands, and well grade fine to medium sands meeting the following USCS classifications: **SM, SP, or SW.**

3. Estimating charts prepared for use with Nicolock Alta Wall block system and Strata System's type Stratagrid 150 reinforcing geogrids. Grids MUST extend to the front face of the block.

4. Definitions:
H' = exposed height, in feet
H = total height, in feet
L = length of Stratagrid 150 required, in feet
ϕ = angle of internal friction, degrees
γ = moist unit weight, pounds per cubic foot
E_i = elevation of grid layer from bottom of wall, in feet

5. These charts do not reflect any provisions for global stability or other analyses, which may be related to site-specific conditions including relief of excess hydrostatic pressures due to groundwater or springs. All these conditions should be checked and evaluated as appropriate, using site-specific soil and subsurface conditions, as well as any special loading criteria.

6. Design Minimum Factors of Safety: 1.5 for reinforcement pullout, 1.5 for external sliding, 2.0 for overturning, and 2.0 for bearing.

7. All walls shall be supported on an aggregate foundation and shall have adequate drainage provisions in accordance with Nicolock standard specifications and NCMA guidelines.

8. To the best of our knowledge, the information presented in this estimating chart is complete and accurate. However, Nicolock cannot assume any liability or accept any responsibility for the accuracy or completeness of this information. Further, Nicolock cannot assume any liability for damages arising from claims in which construction proceeded without final design drawings prepared by a Professional Engineer registered in the State of construction specializing in both geotechnical engineering and segmental retaining wall design.

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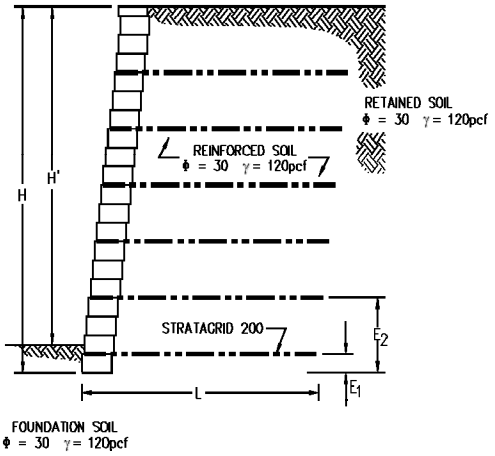
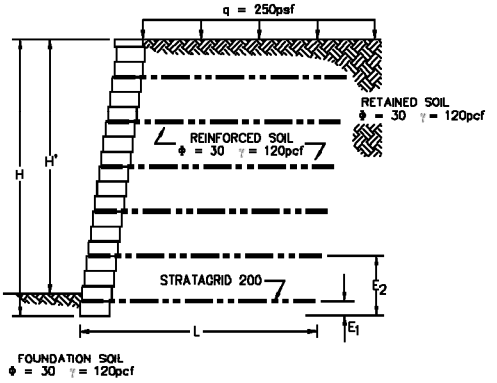
Nicolock's Alta Wall - Strata SG200 Geogrid Material Estimating Chart

CASE 1 with $\phi > 30^{\circ}$
NO SURCHARGE
NO SLOPE AT TOP OF WALL



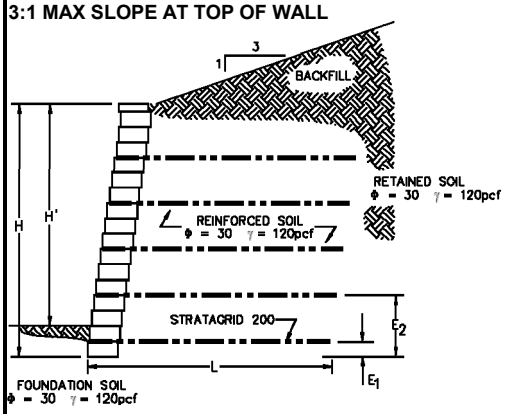
Exposed Height H', (ft)	Total Height H, (ft)	No. of Alta Wall Courses	Grid Layers	Length L, (ft)	Layer Number Place Grid at Elevation E_i (ft) 1	2	3	4	5	6	7	8
2.3	2.8	5	-	-	-	-	-	-	-	-	-	-
2.8	3.3	6	2	4.0	0.5	2.0	-	-	-	-	-	-
3.3	3.8	7	2	4.0	0.5	2.0	-	-	-	-	-	-
3.8	4.3	8	3	4.0	0.5	2.0	3.0	-	-	-	-	-
4.3	4.8	9	3	5.0	0.5	2.0	3.5	-	-	-	-	-
4.8	5.3	10	3	5.0	0.5	2.0	3.5	-	-	-	-	-
5.3	5.8	11	4	5.0	0.5	2.0	3.5	4.5	-	-	-	-
5.8	6.3	12	4	6.0	0.5	2.0	3.5	5.0	-	-	-	-
6.3	6.8	13	4	6.0	0.5	2.0	3.5	5.0	-	-	-	-
6.3	7.3	14	5	6.0	0.5	2.0	3.5	5.0	6.0	-	-	-
6.8	7.8	15	5	6.0	0.5	2.0	3.5	5.0	6.5	-	-	-
7.3	8.3	16	5	6.0	0.5	2.0	3.5	5.0	6.5	-	-	-
7.8	8.8	17	6	7.0	0.5	2.0	3.5	5.0	6.5	7.5	-	-
8.3	9.3	18	6	7.0	0.5	2.0	3.5	5.0	6.5	8.0	-	-
8.8	9.8	19	6	7.0	0.5	2.0	3.5	5.0	6.5	8.0	-	-
9.3	10.3	20	7	8.0	0.5	2.0	3.5	5.0	6.5	8.0	9.0	-
9.8	10.8	21	7	8.0	0.5	2.0	3.5	5.0	6.5	8.0	9.5	-
10.3	11.3	22	7	8.0	0.5	2.0	3.5	5.0	6.5	8.0	9.5	-
11.3	12.3	24	8	9.0	0.5	2.0	3.5	5.0	6.5	8.0	9.5	10.5

CASE 2 with $\phi > 30^{\circ}$
SURCHARGE FROM ROADWAY OR PARKING
NO SLOPE AT TOP OF WALL



Exposed Height H', (ft)	Total Height H, (ft)	No. of Alta Wall Courses	Grid Layers	Length L, (ft)	Layer Number Place Grid at Elevation E_i (ft) 1	2	3	4	5	6	7	8
2.3	2.8	5	2	4.0	0.5	-	-	-	-	-	-	-
2.8	3.3	6	2	5.0	0.5	2.0	-	-	-	-	-	-
3.3	3.8	7	2	5.0	0.5	2.0	-	-	-	-	-	-
3.8	4.3	8	3	5.0	0.5	2.0	3.0	-	-	-	-	-
4.3	4.8	9	3	6.0	0.5	2.0	3.5	-	-	-	-	-
4.8	5.3	10	3	6.0	0.5	2.0	3.5	-	-	-	-	-
5.3	5.8	11	4	6.0	0.5	2.0	3.5	4.5	-	-	-	-
5.8	6.3	12	4	6.0	0.5	2.0	3.5	5.0	-	-	-	-
6.3	6.8	13	4	6.0	0.5	2.0	3.5	5.0	-	-	-	-
6.3	7.3	14	5	7.0	0.5	2.0	3.5	5.0	6.0	-	-	-
6.8	7.8	15	5	7.0	0.5	2.0	3.5	5.0	6.5	-	-	-
7.3	8.3	16	5	7.0	0.5	2.0	3.5	5.0	6.5	-	-	-
7.8	8.8	17	6	7.5	0.5	2.0	3.5	5.0	6.5	7.5	-	-
8.3	9.3	18	6	8.0	0.5	2.0	3.5	5.0	6.5	8.0	-	-
8.8	9.8	19	6	8.0	0.5	2.0	3.5	5.0	6.5	8.0	-	-
9.3	10.3	20	7	9.0	0.5	2.0	3.5	5.0	6.5	8.0	9.0	-
9.8	10.8	21	7	9.0	0.5	2.0	3.5	5.0	6.5	8.0	9.5	-
10.3	11.3	22	7	9.0	0.5	2.0	3.5	5.0	6.5	8.0	9.5	-
11.3	12.3	24	8	10.0	0.5	2.0	3.5	5.0	6.5	8.0	9.5	11.0

CASE 3 with $\phi > 30^{\circ}$
NO SURCHARGE
3:1 MAX SLOPE AT TOP OF WALL



Exposed Height H', (ft)	Total Height H, (ft)	No. of Alta Wall Courses	Grid Layers	Length L, (ft)	Layer Number Place Grid at Elevation E_i (ft) 1	2	3	4	5	6	7	8
2.3	2.8	5	2	4.0	0.5	-	-	-	-	-	-	-
2.8	3.3	6	2	4.0	0.5	2.0	-	-	-	-	-	-
3.3	3.8	7	2	4.0	0.5	2.0	-	-	-	-	-	-
3.8	4.3	8	3	5.0	0.5	2.0	3.0	-	-	-	-	-
4.3	4.8	9	3	5.0	0.5	2.0	3.5	-	-	-	-	-
4.8	5.3	10	3	5.0	0.5	2.0	3.5	-	-	-	-	-
5.3	5.8	11	4	6.0	0.5	2.0	3.5	4.5	-	-	-	-
5.8	6.3	12	4	6.0	0.5	2.0	3.5	5.0	-	-	-	-
6.3	6.8	13	4	6.0	0.5	2.0	3.5	5.0	-	-	-	-
6.3	7.3	14	5	7.0	0.5	2.0	3.5	5.0	6.0	-	-	-
6.8	7.8	15	5	7.0	0.5	2.0	3.5	5.0	6.5	-	-	-
7.3	8.3	16	5	7.0	0.5	2.0	3.5	5.0	6.5	-	-	-
7.8	8.8	17	6	8.0	0.5	2.0	3.5	5.0	6.5	7.5	-	-
8.3	9.3	18	6	9.0	0.5	2.0	3.5	5.0	6.5	8.0	-	-
8.8	9.8	19	6	9.0	0.5	2.0	3.5	5.0	6.5	8.0	-	-
9.3	10.3	20	7	9.0	0.5	2.0	3.5	5.0	6.5	8.0	9.0	-
9.8	10.8	21	7	10.0	0.5	2.0	3.5	5.0	6.5	8.0	9.5	-
10.3	11.3	22	7	10.0	0.5	2.0	3.5	5.0	6.5	8.0	9.5	-
11.3	12.3	24	8	11.0	0.5	2.0	3.5	5.0	6.5	8.0	9.5	11.0

Notes:

1. Information presented in this chart is to be used for estimating purposes. Final design should be performed by a Professional Engineer qualified in both geotechnical engineering and segmental retaining wall design.

2. This estimating chart is applicable to sites where soil conditions meet the following minimum criteria: Angle of Internal Friction, $\phi > 30^{\circ}$ and moist unit weight, $\gamma < 120$pcf. Typical for silty sands, poorly graded sands, and well grade fine to medium sands meeting the following USCS classifications: **SM, SP, or SW.**

3. Estimating charts prepared for use with Nicolock Alta Wall block system and Strata System's type Stratagrid 200 reinforcing geogrids. Grids MUST extend to the front face of the block.

4. Definitions:
H' = exposed height, in feet
H = total height, in feet
L = length of Stratagrid 200 required, in feet
ϕ = angle of internal friction, degrees
γ = moist unit weight, pounds per cubic foot
E_i = elevation of grid layer from bottom of wall, in feet

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7. All walls shall be supported on an aggregate foundation and shall have adequate drainage provisions in accordance with Nicolock standard specifications and NCMA guidelines.

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