STRUCTURAL CALCULATIONS

FOR

Discovery Lot #1 Retaining Wall

Lee's Summit, Missouri

Date:
December 30, 2024

GREGORY L. LINNEMAN - PE
MO LICENSE - 2005001013

PREPARED BY:

CROCKETT
ENGINEERING CONSULTANTS
1000 W Nifong Boulevard, Bldg 1 • Columbia, Missouri 65203

Geotech
Info

FOUNDATION DESIGN

Foundation design for the proposed structures must consider two factors. Foundations should be designed so that maximum possible stresses transmitted to foundation soils and rock will not exceed allowable bearing pressures as computed from reliable shear strength data on the soil and/or rock.

In addition, foundations should be sized and founded to limit the maximum anticipated total or differential movements to magnitudes which can be tolerated by the planned structural system. Construction factors such as the installation of foundation units, excavation and fill placement difficulties and surface and groundwater conditions must also be considered.

1. For buildings where footings are bearing entirely on properly compacted fill and or on moist, stiff residual clay, may use a maximum allowable soil bearing pressure of up to 2,500 psf assuming that the site is prepared as recommended in this report.

2. Footing excavations should be examined to verify bearing capacity before the soil is compacted and reinforcing steel is placed.

3. After the footing excavations are completed and inspected by a representative of the Geotechnical Engineer, the bottom of the footing excavation should be cleaned of all loose soil. After inspection and cleaning, the bottom of the footing excavation should be thoroughly compacted with a mechanical tamper prior to installing reinforcing steel.

4. The recommended bearing pressure listed above, based on following the recommendations made in this report, should provide a minimum factor of safety of approximately 3 against bearing capacity failure.

5. Minimum footing dimensions of 30 inches for spread footings and 18 inches for continuous footings should be used.

6. Exterior footings should be found a minimum of 36 inches or 3 feet below finished exterior grade to help ensure being below frost penetration.

7. All footing excavations should be flat or level and well cleaned of all loose, wet soil or rock prior to concreting.

8. We recommend the ultimate coefficient of sliding friction between concrete foundations and natural, stiff clay soils or properly compacted clay soils is 0.35. The ultimate passive pressure for depths lower than 3 feet is 250 pcf, equivalent fluid pressure. We recommend you neglect the passive pressure from shallower depths due to environmental effects.

9. Removal of groundwater accumulated in excavations should be required prior to placement of concrete.

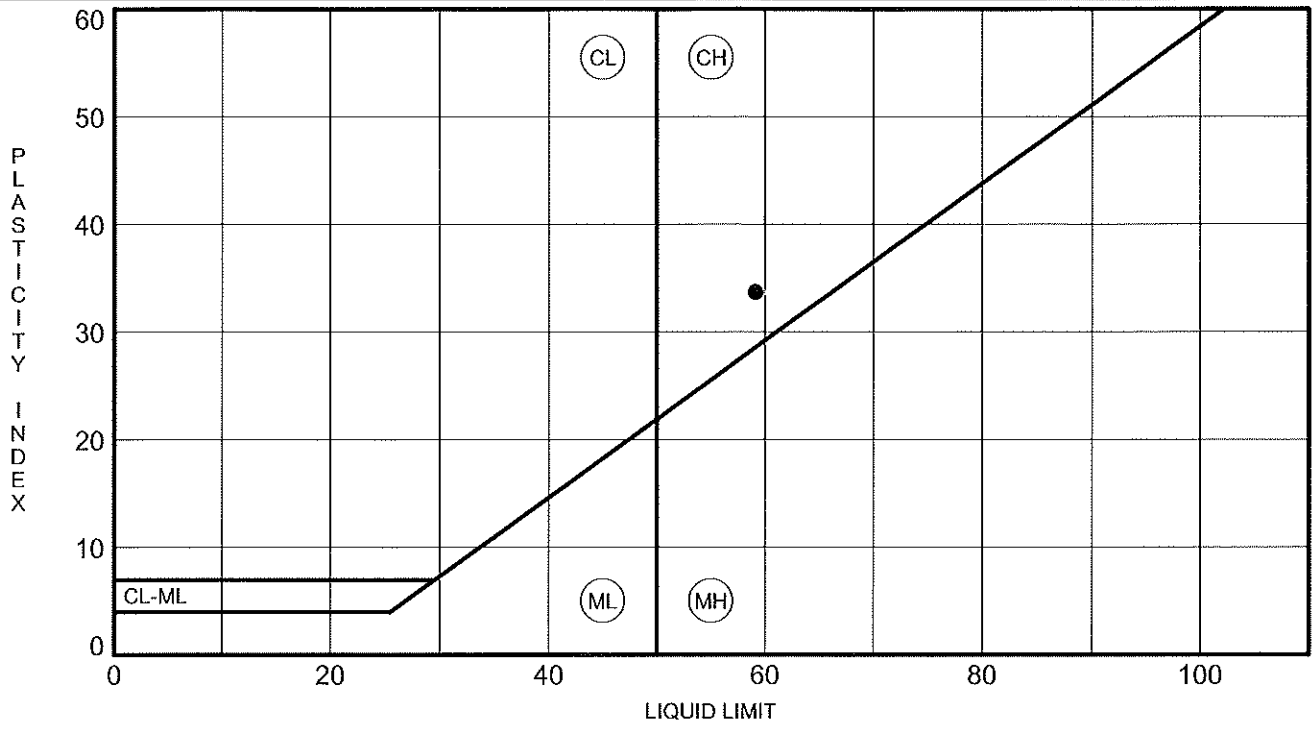
10. Careful inspection of excavations should be performed during construction to detect any unanticipated conditions such as voids, soft zones of soil, debris, filled mine prospect hole excavations, structures or other conditions that could affect the

OWN, Inc.
3213 S. West Bypass
Springfield, MO 65807
Telephone: 417-866-2741
Fax: 417-866-2778

ATTERBERG LIMITS' RESULTS

CLIENT INTRINSIC DEVELOPMENT **PROJECT NAME** THE VILLAGE AT DISCOVERY PARK REMAINING LOTS

PROJECT NUMBER 24SP30033 **PROJECT LOCATION** LEE'S SUMMIT, MO



	BOREHOLE	DEPTH	LL	PL	PI	Fines	Classification
●	B-39-1	3.5	59	25	34		

Cohesion and Friction Angle Correlations with Liquid Limit and Plasticity Index

Input data in yellow cells

Output in green cells

Soil: Fill

Liquid Limit	59
Plastic Limit	25
Plastic Index	34

	Undisturbed								Remolded	
	Das (vs. PI)		T&P (vs. PI)		R&G (vs. LL)		Average		R&G (vs. LL)	
	Mean	95%	Mean	95%	Mean	95%	Mean	95%	Mean	95%
Phi (degrees)	26.9	21.2	28.1	22.4	28.9	24.9	28.0	22.8	23.2	19.2
Cohesion (psf)	n/a	n/a	n/a	n/a	191	91	n/a	n/a	529	329

Soil: Native

Liquid Limit	59
Plastic Limit	25
Plastic Index	34

	Undisturbed								Remolded	
	Das (vs. PI)		T&P (vs. PI)		R&G (vs. LL)		Average		R&G (vs. LL)	
	Mean	95%	Mean	95%	Mean	95%	Mean	95%	Mean	95%
Phi (degrees)	26.9	21.2	28.1	22.4	28.9	24.9	28.0	22.8	23.2	19.2
Cohesion (psf)	n/a	n/a	n/a	n/a	191	91	n/a	n/a	529	329

Soil: Bldg 22 Fill

Liquid Limit	59
Plastic Limit	25
Plastic Index	34

	Undisturbed								Remolded	
	Das (vs. PI)		T&P (vs. PI)		R&G (vs. LL)		Average		R&G (vs. LL)	
	Mean	95%	Mean	95%	Mean	95%	Mean	95%	Mean	95%
Phi (degrees)	26.9	21.2	28.1	22.4	28.9	24.9	28.0	22.8	23.2	19.2
Cohesion (psf)	n/a	n/a	n/a	n/a	191	91	n/a	n/a	529	329

Calcs

SRWall (Version 4) Report

Project Identification

Project ID	:
Project Name	:
Owner	:
Client	:
Prepared By	:
Company	: **Crockett Engineering**
Address	:
Telephone	: **573-696-0218**
Section	:
Project File	:
Vendor Data File	: **VERSA-LOK.vdf**
Date and Time	: **12/30/2024 09:32:29**

Type of Structure	: **Reinforced Wall**

Wall Geometry

Design Wall Height(ft)	: **14.00**
Embedment Wall Height(ft)	: **0.67**
Exposed Wall Design Height(ft)	: **13.33**
Number of Segmental Wall Units	: **21**
Wall Inclination(degrees)	: **7.13**

Grades

Top Slope(degrees)	: **0.00**

Uniform Distributed Surcharge

Live Load Surcharge(Psf)	: **250.00**
Live Load Surcharge Setback(ft)	: **25.00**
Dead Load Surcharge(Psf)	: **0.00**

Soil Data

Soil Zone	Description	Cohesion (c) (psf)	Friction Angle(Φ) (degrees)	Unit Weight (γ)(pcf)
Reinforced Soil		N/A	34.00	125.00
Retained Soil		N/A	24.00	120.00
Leveling Pad Soil		N/A	40.00	35.00
Foundation Soil			24.00	120.00

Segmental Unit Data

Segmental Unit Name	: **Square Foot**
Cap Height (Inches)	: **3.62**
Unit Height (Hu)(Inches)	: **8.00**
Unit Width (Wu)(Inches)	: **12.00**
Unit Length (Inches)	: **18.00**
Setback (Inches)	: **1.00**
Weight (Infilled)(lb)	: **115.00**
Unit Weight (Infilled)(pcf)	: **115.00**
Center of Gravity(Inches)	: **6.00**

Geosynthetic Reinforcement Type and Number

Supplier	Product Name	Number
STRATA Global GeoSolutions	Stratagrid SG200	7
STRATA Global GeoSolutions	Stratagrid SG350	0
STRATA Global GeoSolutions	Stratagrid SG500	0
STRATA Global GeoSolutions	Stratagrid SG550	0
STRATA Global GeoSolutions	Stratagrid SG600	0

Geosynthetic Properties

Geosynthetic Product	Tult (lb/ft)	RFcr	RFd	RFid	LTDS (lb/ft)	Ci	Cds
Stratagrid SG200	3600.00	1.55	1.10	1.25	1689.15	0.90	0.90
Stratagrid SG350	5000.00	1.55	1.10	1.25	2346.04	0.90	0.90
Stratagrid SG500	6400.00	1.55	1.10	1.20	3128.05	0.90	0.90
Stratagrid SG550	8150.00	1.55	1.10	1.20	3983.38	0.90	0.90
Stratagrid SG600	9100.00	1.55	1.10	1.20	4447.70	0.90	0.90

Unit-Unit Interface Properties

Minimum Shear Capacity(lb/ft)	Shear Friction Angle	Maximum Shear Capacity (lb/ft)
1145.00	35.00	5350.00

Geosynthetic-SRW Unit Connection Strength properties

Geosynthetic Product	Minimum Conn. Capacity (lb/ft)	1st Inflection Point (lb/ft)		2nd Inflection Point (lb/ft)	
		Normal Load (lb/ft)	Connection Capacity (lb/ft)	Normal Load (lb/ft)	Max Connection Capacity(lb/ft)
Stratagrid SG200	710.00	600.00	965.00	1826.00	1485.00
Stratagrid SG350	1240.00	600.00	1401.00	3247.00	2110.00
Stratagrid SG500	1115.00	1200.00	1576.00	3887.00	2415.00
Stratagrid SG550	1240.00	800.00	1683.00	4258.00	3600.00
Stratagrid SG600	1650.00	1200.00	2159.00	5572.00	4015.00

Geosynthetic-SRW Unit Shear Strength properties

Geosynthetic Product	Minimum Shear Capacity(lb/ft)	Shear Friction Angle	Maximum Shear Capacity (lb/ft)
Stratagrid SG200	1145.00	35.00	5000.00
Stratagrid SG350	1145.00	35.00	5000.00
Stratagrid SG500	1145.00	34.00	5195.00
Stratagrid SG550	1145.00	34.00	5195.00
Stratagrid SG600	1145.00	34.00	5195.00

Vertical Components

Vertical Components of Earth Pressures Used : **No**

Cofficients of Earth Pressure and Failure Plane Orientation

Reinforcement Soil(Static)(Ka)	: **0.207**
Reinforcement Soil(Static)(Kah Horizontal Component)	: **0.199**
Internal Modified Back Slope(Bint)	: **0.000**
Orientation of failure plane from horizontal(degrees) for Internal Stability	: **55.631**
Retained Soil(Static)(Ka)	: **0.318**
Retained Soil(Static)(Kah Horizontal Component)	: **0.304**
External Modified Back Slope(Bext)	: **0.000**
Orientation of failure plane from horizontal(degrees) for External Stability	: **48.328**

Result of External Stability Static Analysis

	Calculated	Design Criteria
FOS Sliding	2.00	> 2.00
FOS Overturning	5.85	> 2.00
FOS Bearing Capacity	3.41	> 2.00
Base Reinforcement Length (L)(ft)	11.90	
Base Reinforcement Ratio (L/H)	0.85	> 0.60

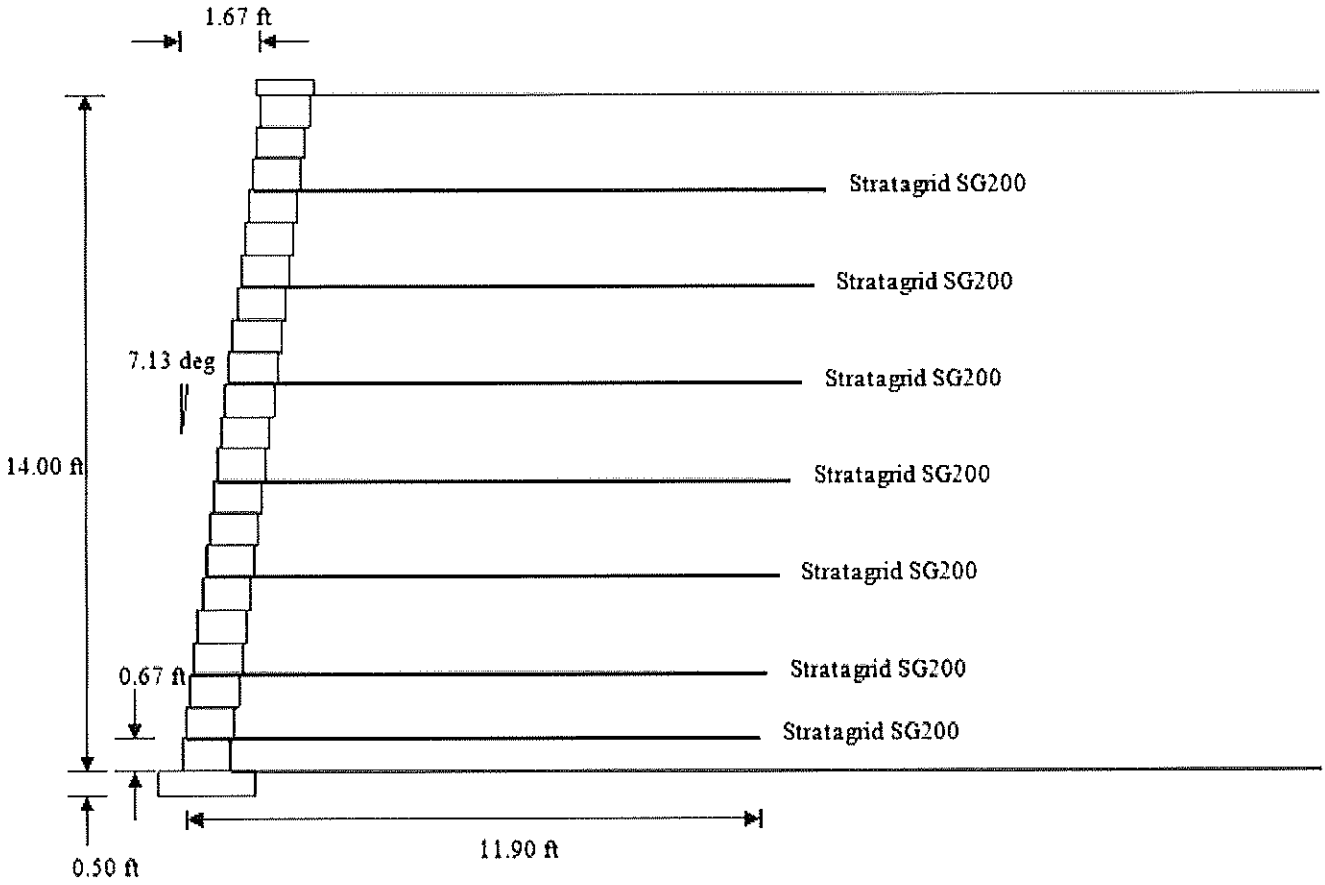
Results of Internal Stability Static Analysis

SRW Unit #	Geosynthetic Product	Elevation (ft)	Length (ft)	Anchor Length (ft)	FOS Overstress >=1.50	FOS Pullout >=1.50	FOS Slide >=1.50	Layer Spacing (ft) >=2.00
19	Stratagrid SG200	12.00	11.90	4.19	6.45	4.86	13.15	OK
16	Stratagrid SG200	10.00	11.90	5.31	5.65	10.78	8.01	OK
13	Stratagrid SG200	8.00	11.90	6.43	4.23	14.67	5.92	OK
10	Stratagrid SG200	6.00	11.90	7.55	3.39	18.37	4.73	OK
7	Stratagrid SG200	4.00	11.90	8.66	2.82	21.97	3.95	OK
4	Stratagrid SG200	2.00	11.90	9.78	2.94	31.02	3.40	OK
2	Stratagrid SG200	0.67	11.90	10.53	3.31	41.72	3.11	OK

Results of Facing Stability Static Analysis

SRW Unit #	Heel Elev (ft)	Geosynthetic Product	FOS Crest Toppling >=1.50	FOS Connection >=1.50
19	12.00	Stratagrid SG200	4.04	7.20
16	10.00	Stratagrid SG200		4.54
13	8.00	Stratagrid SG200		3.35
10	6.00	Stratagrid SG200		2.76
7	4.00	Stratagrid SG200		2.40
4	2.00	Stratagrid SG200		2.64
2	0.67	Stratagrid SG200		3.07

Wall Reinforcement Layout



Project Identification

Project ID	:
Project Name	:
Owner	:
Client	:
Prepared By	:
Company	: **Crockett Engineering**
Address	:
Telephone	: **573-696-0218**
Section	:
Vendor Data File	: **VERSA-LOK.vdf**
Project File	:
Date and Time	: **12/30/2024 09:32:29**

Static Results

Return to Reinforcer

Summary External Stability Internal Stability Facing Stability

Kae = 0.318 Bext = 0.000 Failure Plane Orientation = 48.328 degrees

	Calculated	Design Criteria
FOS Sliding	2.00	> 2.00
FOS Overturning	5.85	> 2.00
FOS Bearing Capacity	3.41	> 2.00
Base Reinforcement Length (L)(ft)	11.90	
Base Reinforcement Ratio (L/H)	0.85	> 0.60

	Calculated Values
Total Horizontal Force (lb/ft)	4641.86
Total Vertical Force (lb/ft)	20825.00
Sliding Resistance (lb/ft)	9271.89
Driving Moment (lb-ft/ft)	24146.19
Resisting Moment (lb-ft/ft)	141262.92
Bearing Capacity (psf)	7144.08
Base Eccentricity (e)(ft.)	0.33
Eccentricity Ratio (e/L-2e)	0.03
Maximum Bearing Pressure (psf)	2093.76

SRWall (Version 4) Report

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Type of Structure	: **Reinforced Wall**

Wall Geometry

Design Wall Height(ft)	: **12.00**
Embedment Wall Height(ft)	: **0.67**
Exposed Wall Design Height(ft)	: **11.33**
Number of Segmental Wall Units	: **18**
Wall Inclination(degrees)	: **7.13**

Grades

Top Slope(degrees)	: **0.00**

Uniform Distributed Surcharge

Live Load Surcharge(Psf)	: **250.00**
Live Load Surcharge Setback(ft)	: **25.00**
Dead Load Surcharge(Psf)	: **0.00**

Soil Data

Soil Zone	Description	Cohesion (c) (psf)	Friction Angle(Φ) (degrees)	Unit Weight (γ)(pcf)
Reinforced Soil		N/A	34.00	125.00
Retained Soil		N/A	24.00	120.00
Leveling Pad Soil		N/A	40.00	35.00
Foundation Soil			24.00	120.00

Segmental Unit Data

Segmental Unit Name	: **Square Foot**
Cap Height (Inches)	: **3.62**
Unit Height (Hu)(Inches)	: **8.00**
Unit Width (Wu)(Inches)	: **12.00**
Unit Length (Inches)	: **18.00**
Setback (Inches)	: **1.00**
Weight (Infilled)(lb)	: **115.00**
Unit Weight (Infilled)(pcf)	: **115.00**
Center of Gravity(Inches)	: **6.00**

Geosynthetic Reinforcement Type and Number

Supplier	Product Name	Number
STRATA Global GeoSolutions	Stratagrid SG200	5
STRATA Global GeoSolutions	Stratagrid SG350	0
STRATA Global GeoSolutions	Stratagrid SG500	0
STRATA Global GeoSolutions	Stratagrid SG550	0
STRATA Global GeoSolutions	Stratagrid SG600	0

Geosynthetic Properties

Geosynthetic Product	Tult (lb/ft)	RFcr	RFd	RFid	LTDS (lb/ft)	Ci	Cds
Stratagrid SG200	3600.00	1.55	1.10	1.25	1689.15	0.90	0.90
Stratagrid SG350	5000.00	1.55	1.10	1.25	2346.04	0.90	0.90
Stratagrid SG500	6400.00	1.55	1.10	1.20	3128.05	0.90	0.90
Stratagrid SG550	8150.00	1.55	1.10	1.20	3983.38	0.90	0.90
Stratagrid SG600	9100.00	1.55	1.10	1.20	4447.70	0.90	0.90

Unit-Unit Interface Properties

Minimum Shear Capacity(lb/ft)	Shear Friction Angle	Maximum Shear Capacity (lb/ft)
1145.00	35.00	5350.00

Geosynthetic-SRW Unit Connection Strength properties

Geosynthetic Product	Minimum Conn. Capacity (lb/ft)	1st Inflection Point (lb/ft)		2nd Inflection Point (lb/ft)	
		Normal Load (lb/ft)	Connection Capacity (lb/ft)	Normal Load (lb/ft)	Max Connection Capacity(lb/ft)
Stratagrid SG200	710.00	600.00	965.00	1826.00	1485.00
Stratagrid SG350	1240.00	600.00	1401.00	3247.00	2110.00
Stratagrid SG500	1115.00	1200.00	1576.00	3887.00	2415.00
Stratagrid SG550	1240.00	800.00	1683.00	4258.00	3600.00
Stratagrid SG600	1650.00	1200.00	2159.00	5572.00	4015.00

Geosynthetic-SRW Unit Shear Strength properties

Geosynthetic Product	Minimum Shear Capacity(lb/ft)	Shear Friction Angle	Maximum Shear Capacity (lb/ft)
Stratagrid SG200	1145.00	35.00	5000.00
Stratagrid SG350	1145.00	35.00	5000.00
Stratagrid SG500	1145.00	34.00	5195.00
Stratagrid SG550	1145.00	34.00	5195.00
Stratagrid SG600	1145.00	34.00	5195.00

Vertical Components

Vertical Components of Earth Pressures Used : **No**

Cofficients of Earth Pressure and Failure Plane Orientation

Reinforcement Soil(Static)(Ka)	: 0.207
Reinforcement Soil(Static)(Kah Horizontal Component)	: 0.199
Internal Modified Back Slope(Bint)	: 0.000
Orientation of failure plane from horizontal(degrees) for Internal Stability	: 55.631
Retained Soil(Static)(Ka)	: 0.318
Retained Soil(Static)(Kah Horizontal Component)	: 0.304
External Modified Back Slope(Bext)	: 0.000
Orientation of failure plane from horizontal(degrees) for External Stability	: 48.328

Result of External Stability Static Analysis

	Calculated	Design Criteria
FOS Sliding	2.00	> 2.00
FOS Overturning	5.98	> 2.00
FOS Bearing Capacity	3.52	> 2.00
Base Reinforcement Length (L)(ft)	10.60	
Base Reinforcement Ratio (L/H)	0.88	> 0.60

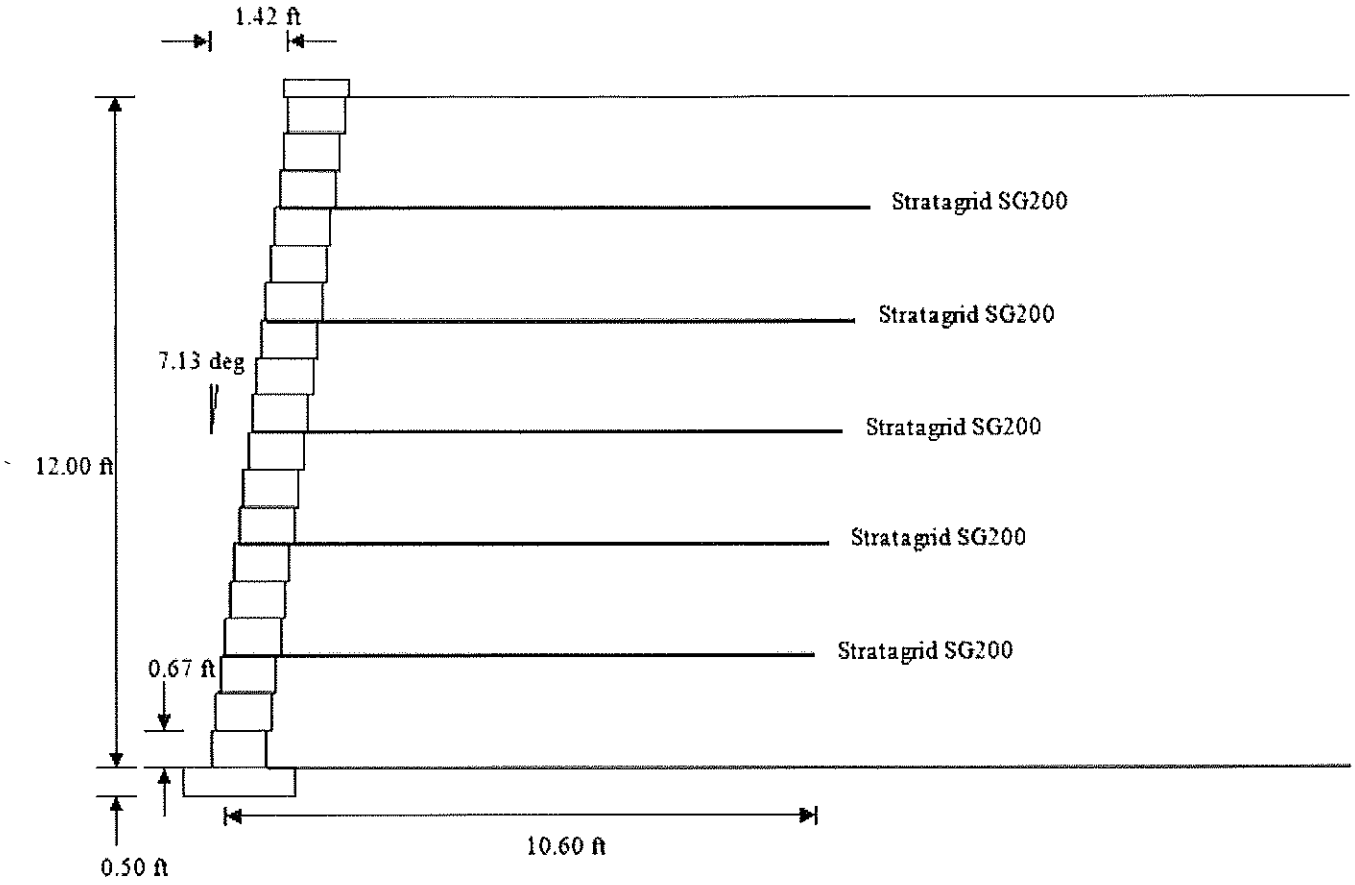
Results of Internal Stability Static Analysis

SRW Unit #	Geosynthetic Product	Elevation (ft)	Length (ft)	Anchor Length (ft)	FOS Overstress >=1.50	FOS Pullout >=1.50	FOS Slide >=1.50	Layer Spacing (ft) >=2.00
16	Stratagrid SG200	10.00	10.60	4.01	6.45	4.65	12.27	OK
13	Stratagrid SG200	8.00	10.60	5.13	5.65	10.41	7.35	OK
10	Stratagrid SG200	6.00	10.60	6.25	4.23	14.26	5.39	OK
7	Stratagrid SG200	4.00	10.60	7.36	3.39	17.93	4.29	OK
4	Stratagrid SG200	2.00	10.60	8.48	1.81	13.77	3.57	OK

Results of Facing Stability Static Analysis

SRW Unit #	Heel Elev (ft)	Geosynthetic Product	FOS Crest Toppling >=1.50	FOS Connection >=1.50
16	10.00	Stratagrid SG200	4.04	7.20
13	8.00	Stratagrid SG200		4.54
10	6.00	Stratagrid SG200		3.35
7	4.00	Stratagrid SG200		2.76
4	2.00	Stratagrid SG200		1.53

Wall Reinforcement Layout



Project Identification

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SRWall (Version 4) Report

Project Identification

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Section	:
Project File	:
Vendor Data File	: **VERSA-LOK.vdf**
Date and Time	: **12/30/2024 09:32:29**

Type of Structure	: **Reinforced Wall**

Wall Geometry

Design Wall Height(ft)	: **10.00**
Embedment Wall Height(ft)	: **0.67**
Exposed Wall Design Height(ft)	: **9.33**
Number of Segmental Wall Units	: **15**
Wall Inclination(degrees)	: **7.13**

Grades

Top Slope(degrees)	: **0.00**

Uniform Distributed Surcharge

Live Load Surcharge(Psf)	: **250.00**
Live Load Surcharge Setback(ft)	: **25.00**
Dead Load Surcharge(Psf)	: **0.00**

Soil Data

Soil Zone	Description	Cohesion (c) (psf)	Friction Angle(Φ) (degrees)	Unit Weight (γ)(pcf)
Reinforced Soil		N/A	34.00	125.00
Retained Soil		N/A	24.00	120.00
Leveling Pad Soil		N/A	40.00	35.00
Foundation Soil			24.00	120.00

Segmental Unit Data

Segmental Unit Name	: Square Foot
Cap Height (Inches)	: 3.62
Unit Height (Hu)(Inches)	: 8.00
Unit Width (Wu)(Inches)	: 12.00
Unit Length (Inches)	: 18.00
Setback (Inches)	: 1.00
Weight (Infilled)(lb)	: 115.00
Unit Weight (Infilled)(pcf)	: 115.00
Center of Gravity(Inches)	: 6.00

Geosynthetic Reinforcement Type and Number

Supplier	Product Name	Number
STRATA Global GeoSolutions	Stratagrid SG200	4
STRATA Global GeoSolutions	Stratagrid SG350	0
STRATA Global GeoSolutions	Stratagrid SG500	0
STRATA Global GeoSolutions	Stratagrid SG550	0
STRATA Global GeoSolutions	Stratagrid SG600	0

Geosynthetic Properties

Geosynthetic Product	Tult (lb/ft)	RFcr	RFd	RFid	LTDS (lb/ft)	Ci	Cds
Stratagrid SG200	3600.00	1.55	1.10	1.25	1689.15	0.90	0.90
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Stratagrid SG600	9100.00	1.55	1.10	1.20	4447.70	0.90	0.90

Unit-Unit Interface Properties

Minimum Shear Capacity(lb/ft)	Shear Friction Angle	Maximum Shear Capacity (lb/ft)
1145.00	35.00	5350.00

Geosynthetic-SRW Unit Connection Strength properties

Geosynthetic Product	Minimum Conn. Capacity (lb/ft)	1st Inflection Point (lb/ft)		2nd Inflection Point (lb/ft)	
		Normal Load (lb/ft)	Connection Capacity (lb/ft)	Normal Load (lb/ft)	Max Connection Capacity(lb/ft)
Stratagrid SG200	710.00	600.00	965.00	1826.00	1485.00
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Geosynthetic-SRW Unit Shear Strength properties

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Stratagrid SG350	1145.00	35.00	5000.00
Stratagrid SG500	1145.00	34.00	5195.00
Stratagrid SG550	1145.00	34.00	5195.00
Stratagrid SG600	1145.00	34.00	5195.00

Vertical Components

Vertical Components of Earth Pressures Used : **No**

Cofficients of Earth Pressure and Failure Plane Orientation

Reinforcement Soil(Static)(Ka)	: **0.207**
Reinforcement Soil(Static)(Kah Horizontal Component)	: **0.199**
Internal Modified Back Slope(Bint)	: **0.000**
Orientation of failure plane from horizontal(degrees) for Internal Stability	: **55.631**
Retained Soil(Static)(Ka)	: **0.318**
Retained Soil(Static)(Kah Horizontal Component)	: **0.304**
External Modified Back Slope(Bext)	: **0.000**
Orientation of failure plane from horizontal(degrees) for External Stability	: **48.328**

Result of External Stability Static Analysis

	Calculated	Design Criteria
FOS Sliding	2.00	> 2.00
FOS Overturning	6.15	> 2.00
FOS Bearing Capacity	3.67	> 2.00
Base Reinforcement Length (L)(ft)	9.30	
Base Reinforcement Ratio (L/H)	0.93	> 0.60

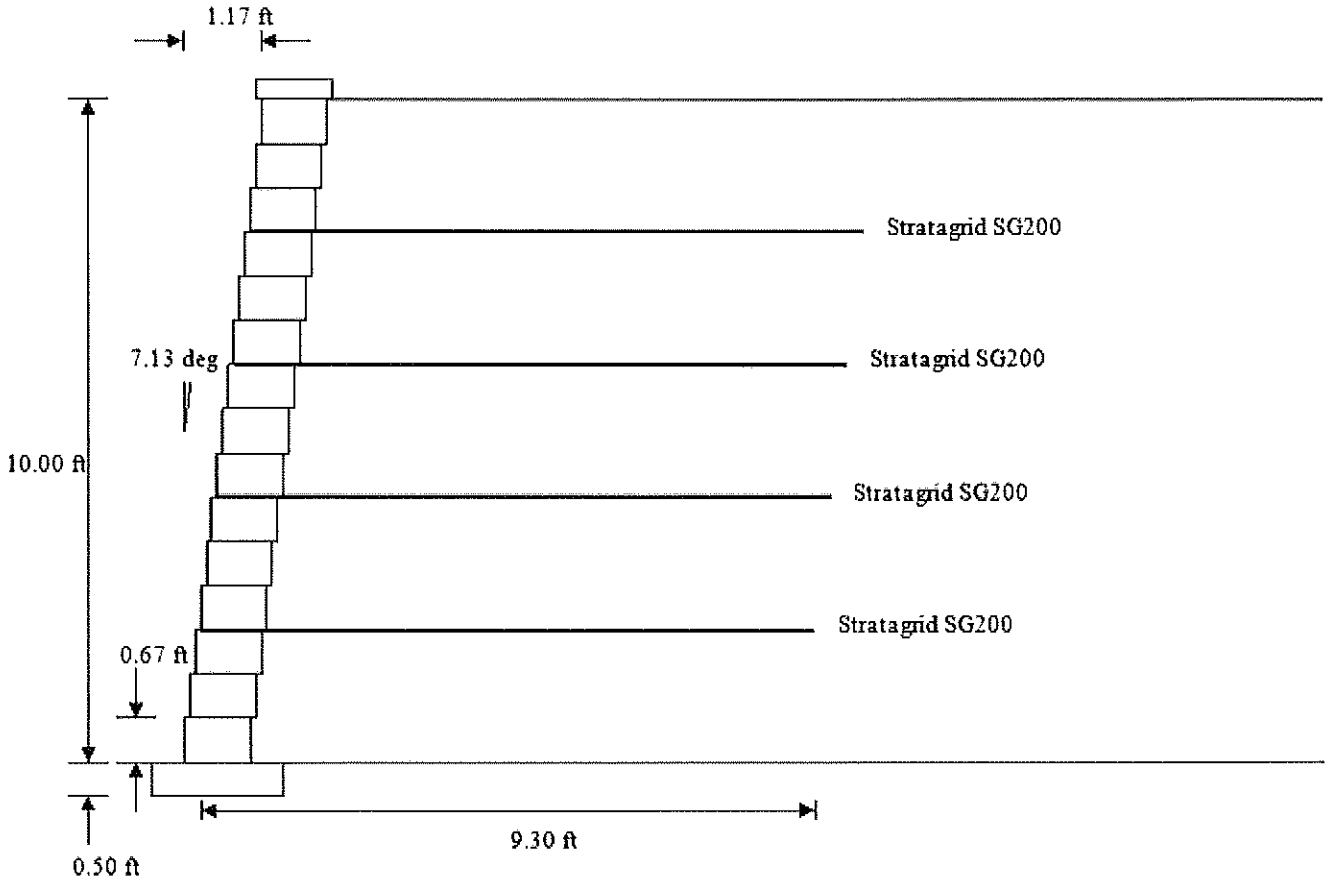
Results of Internal Stability Static Analysis

SRW Unit #	Geosynthetic Product	Elevation (ft)	Length (ft)	Anchor Length (ft)	FOS Overstress >=1.50	FOS Pullout >=1.50	FOS Slide >=1.50	Layer Spacing (ft) >=2.00
13	Stratagrid SG200	8.00	9.30	3.83	6.45	4.44	11.40	OK
10	Stratagrid SG200	6.00	9.30	4.95	5.65	10.04	6.69	OK
7	Stratagrid SG200	4.00	9.30	6.06	4.23	13.84	4.86	OK
4	Stratagrid SG200	2.00	9.30	7.18	2.15	11.10	3.84	OK

Results of Facing Stability Static Analysis

SRW Unit #	Heel Elev (ft)	Geosynthetic Product	FOS Crest Toppling >=1.50	FOS Connection >=1.50
13	8.00	Stratagrid SG200	4.04	7.20
10	6.00	Stratagrid SG200		4.54
7	4.00	Stratagrid SG200		3.35
4	2.00	Stratagrid SG200		1.73

Wall Reinforcement Layout



Project Identification

Project ID	:
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Company	: **Crockett Engineering**
Address	:
Telephone	: **573-696-0218**
Section	:
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SRWall (Version 4) Report

Project Identification

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Type of Structure	: **Reinforced Wall**

Wall Geometry

Design Wall Height(ft)	: **8.00**
Embedment Wall Height(ft)	: **0.67**
Exposed Wall Design Height(ft)	: **7.33**
Number of Segmental Wall Units	: **12**
Wall Inclination(degrees)	: **7.13**

Grades

Top Slope(degrees)	: **0.00**

Uniform Distributed Surcharge

Live Load Surcharge(Psf)	: **250.00**
Live Load Surcharge Setback(ft)	: **25.00**
Dead Load Surcharge(Psf)	: **0.00**

Soil Data

Soil Zone	Description	Cohesion (c) (psf)	Friction Angle(Φ) (degrees)	Unit Weight (γ)(pcf)
Reinforced Soil		N/A	34.00	125.00
Retained Soil		N/A	24.00	120.00
Leveling Pad Soil		N/A	40.00	35.00
Foundation Soil			24.00	120.00

Segmental Unit Data

Segmental Unit Name	: **Square Foot**
Cap Height (Inches)	: **3.62**
Unit Height (Hu)(Inches)	: **8.00**
Unit Width (Wu)(Inches)	: **12.00**
Unit Length (Inches)	: **18.00**
Setback (Inches)	: **1.00**
Weight (Infilled)(lb)	: **115.00**
Unit Weight (Infilled)(pcf)	: **115.00**
Center of Gravity(Inches)	: **6.00**

Geosynthetic Reinforcement Type and Number

Supplier	Product Name	Number
STRATA Global GeoSolutions	Stratagrid SG200	3
STRATA Global GeoSolutions	Stratagrid SG350	0
STRATA Global GeoSolutions	Stratagrid SG500	0
STRATA Global GeoSolutions	Stratagrid SG550	0
STRATA Global GeoSolutions	Stratagrid SG600	0

Geosynthetic Properties

Geosynthetic Product	Tult (lb/ft)	RFcr	RFd	RFid	LTDS (lb/ft)	Ci	Cds
Stratagrid SG200	3600.00	1.55	1.10	1.25	1689.15	0.90	0.90
Stratagrid SG350	5000.00	1.55	1.10	1.25	2346.04	0.90	0.90
Stratagrid SG500	6400.00	1.55	1.10	1.20	3128.05	0.90	0.90
Stratagrid SG550	8150.00	1.55	1.10	1.20	3983.38	0.90	0.90
Stratagrid SG600	9100.00	1.55	1.10	1.20	4447.70	0.90	0.90

Unit-Unit Interface Properties

Minimum Shear Capacity(lb/ft)	Shear Friction Angle	Maximum Shear Capacity (lb/ft)
1145.00	35.00	5350.00

Geosynthetic-SRW Unit Connection Strength properties

Geosynthetic Product	Minimum Conn. Capacity (lb/ft)	1st Inflection Point (lb/ft)		2nd Inflection Point (lb/ft)	
		Normal Load (lb/ft)	Connection Capacity (lb/ft)	Normal Load (lb/ft)	Max Connection Capacity(lb/ft)
Stratagrid SG200	710.00	600.00	965.00	1826.00	1485.00
Stratagrid SG350	1240.00	600.00	1401.00	3247.00	2110.00
Stratagrid SG500	1115.00	1200.00	1576.00	3887.00	2415.00
Stratagrid SG550	1240.00	800.00	1683.00	4258.00	3600.00
Stratagrid SG600	1650.00	1200.00	2159.00	5572.00	4015.00

Geosynthetic-SRW Unit Shear Strength properties

Geosynthetic Product	Minimum Shear Capacity(lb/ft)	Shear Friction Angle	Maximum Shear Capacity (lb/ft)
Stratagrid SG200	1145.00	35.00	5000.00
Stratagrid SG350	1145.00	35.00	5000.00
Stratagrid SG500	1145.00	34.00	5195.00
Stratagrid SG550	1145.00	34.00	5195.00
Stratagrid SG600	1145.00	34.00	5195.00

Vertical Components

Vertical Components of Earth Pressures Used : **No**

Cofficients of Earth Pressure and Failure Plane Orientation

Reinforcement Soil(Static)(Ka)	: 0.207
Reinforcement Soil(Static)(Kah Horizontal Component)	: 0.199
Internal Modified Back Slope(Bint)	: 0.000
Orientation of failure plane from horizontal(degrees) for Internal Stability	: 55.631
Retained Soil(Static)(Ka)	: 0.318
Retained Soil(Static)(Kah Horizontal Component)	: 0.304
External Modified Back Slope(Bext)	: 0.000
Orientation of failure plane from horizontal(degrees) for External Stability	: 48.328

Result of External Stability Static Analysis

	Calculated	Design Criteria
FOS Sliding	2.01	> 2.00
FOS Overturning	6.43	> 2.00
FOS Bearing Capacity	3.89	> 2.00
Base Reinforcement Length (L)(ft)	8.00	
Base Reinforcement Ratio (L/H)	1.00	> 0.60

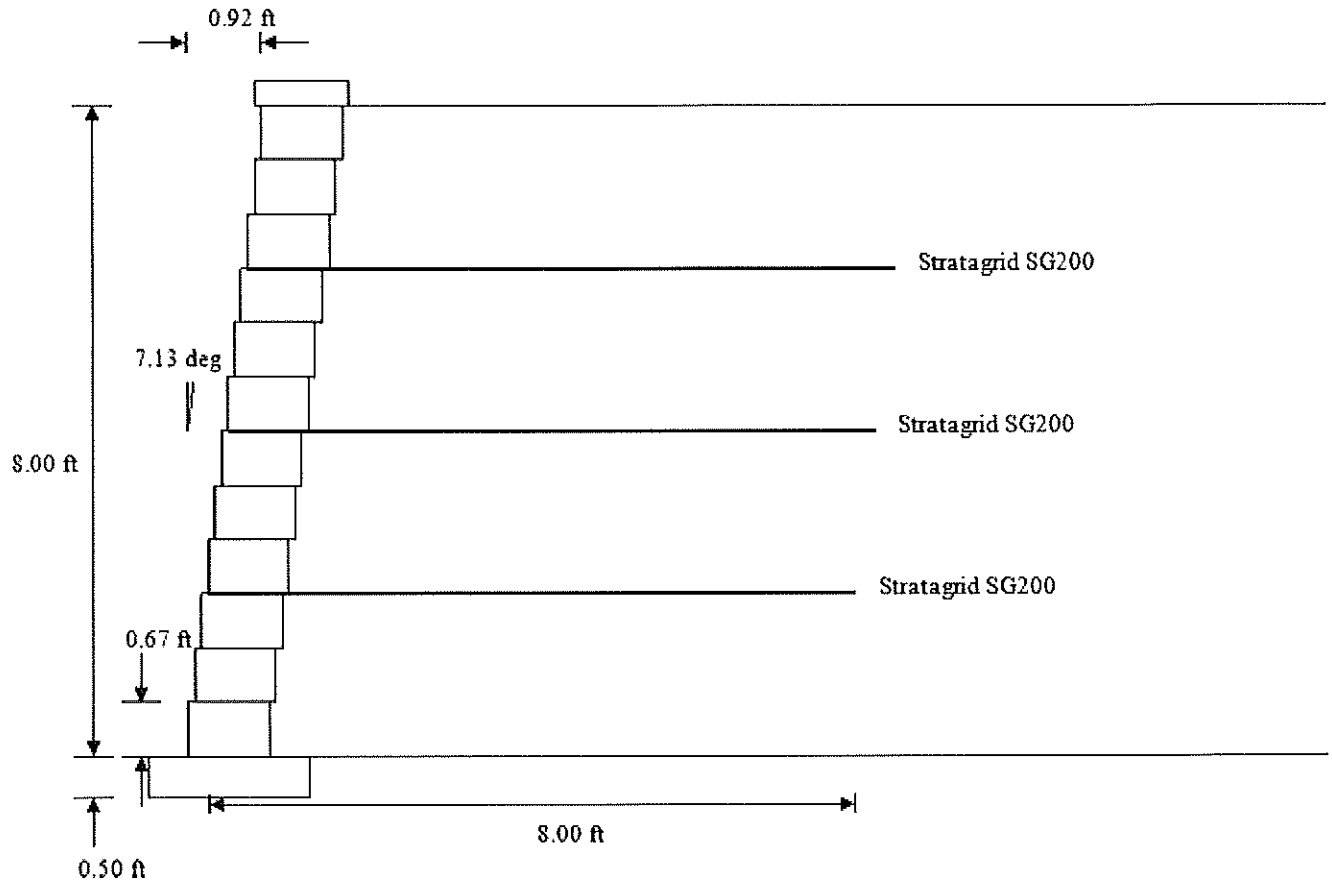
Results of Internal Stability Static Analysis

SRW Unit #	Geosynthetic Product	Elevation (ft)	Length (ft)	Anchor Length (ft)	FOS Overstress >=1.50	FOS Pullout >=1.50	FOS Slide >=1.50	Layer Spacing (ft) >=2.00
10	Stratagrid SG200	6.00	8.00	3.65	6.45	4.23	10.52	OK
7	Stratagrid SG200	4.00	8.00	4.76	5.65	9.67	6.02	OK
4	Stratagrid SG200	2.00	8.00	5.88	2.66	8.42	4.33	OK

Results of Facing Stability Static Analysis

SRW Unit #	Heel Elev (ft)	Geosynthetic Product	FOS Crest Toppling >=1.50	FOS Connection >=1.50
10	6.00	Stratagrid SG200	4.04	7.20
7	4.00	Stratagrid SG200		4.54
4	2.00	Stratagrid SG200		2.06

Wall Reinforcement Layout



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SRWall (Version 4) Report

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Type of Structure	: **Reinforced Wall**

Wall Geometry

Design Wall Height(ft)	: **6.00**
Embedment Wall Height(ft)	: **0.67**
Exposed Wall Design Height(ft)	: **5.33**
Number of Segmental Wall Units	: **9**
Wall Inclination(degrees)	: **7.13**

Grades

Top Slope(degrees)	: **0.00**

Uniform Distributed Surcharge

Live Load Surcharge(Psf)	: **250.00**
Live Load Surcharge Setback(ft)	: **25.00**
Dead Load Surcharge(Psf)	: **0.00**

Soil Data

Soil Zone	Description	Cohesion (c) (psf)	Friction Angle(Φ) (degrees)	Unit Weight (γ)(pcf)
Reinforced Soil		N/A	34.00	125.00
Retained Soil		N/A	24.00	120.00
Leveling Pad Soil		N/A	40.00	35.00
Foundation Soil			24.00	120.00

Segmental Unit Data

Segmental Unit Name	: Square Foot
Cap Height (Inches)	: 3.62
Unit Height (Hu)(Inches)	: 8.00
Unit Width (Wu)(Inches)	: 12.00
Unit Length (Inches)	: 18.00
Setback (Inches)	: 1.00
Weight (Infilled)(lb)	: 115.00
Unit Weight (Infilled)(pcf)	: 115.00
Center of Gravity(Inches)	: 6.00

Geosynthetic Reinforcement Type and Number

Supplier	Product Name	Number
STRATA Global GeoSolutions	Stratagrid SG200	2
STRATA Global GeoSolutions	Stratagrid SG350	0
STRATA Global GeoSolutions	Stratagrid SG500	0
STRATA Global GeoSolutions	Stratagrid SG550	0
STRATA Global GeoSolutions	Stratagrid SG600	0

Geosynthetic Properties

Geosynthetic Product	Tult (lb/ft)	RFcr	RFd	RFid	LTDS (lb/ft)	Ci	Cds
Stratagrid SG200	3600.00	1.55	1.10	1.25	1689.15	0.90	0.90
Stratagrid SG350	5000.00	1.55	1.10	1.25	2346.04	0.90	0.90
Stratagrid SG500	6400.00	1.55	1.10	1.20	3128.05	0.90	0.90
Stratagrid SG550	8150.00	1.55	1.10	1.20	3983.38	0.90	0.90
Stratagrid SG600	9100.00	1.55	1.10	1.20	4447.70	0.90	0.90

Unit-Unit Interface Properties

Minimum Shear Capacity(lb/ft)	Shear Friction Angle	Maximum Shear Capacity (lb/ft)
1145.00	35.00	5350.00

Geosynthetic-SRW Unit Connection Strength properties

Geosynthetic Product	Minimum Conn. Capacity (lb/ft)	1st Inflection Point (lb/ft)		2nd Inflection Point (lb/ft)	
		Normal Load (lb/ft)	Connection Capacity (lb/ft)	Normal Load (lb/ft)	Max Connection Capacity(lb/ft)
Stratagrid SG200	710.00	600.00	965.00	1826.00	1485.00
Stratagrid SG350	1240.00	600.00	1401.00	3247.00	2110.00
Stratagrid SG500	1115.00	1200.00	1576.00	3887.00	2415.00
Stratagrid SG550	1240.00	800.00	1683.00	4258.00	3600.00
Stratagrid SG600	1650.00	1200.00	2159.00	5572.00	4015.00

Geosynthetic-SRW Unit Shear Strength properties

Geosynthetic Product	Minimum Shear Capacity(lb/ft)	Shear Friction Angle	Maximum Shear Capacity (lb/ft)
Stratagrid SG200	1145.00	35.00	5000.00
Stratagrid SG350	1145.00	35.00	5000.00
Stratagrid SG500	1145.00	34.00	5195.00
Stratagrid SG550	1145.00	34.00	5195.00
Stratagrid SG600	1145.00	34.00	5195.00

Vertical Components

Vertical Components of Earth Pressures Used : **No**

Cofficients of Earth Pressure and Failure Plane Orientation

Reinforcement Soil(Static)(Ka)	: **0.207**
Reinforcement Soil(Static)(Kah Horizontal Component)	: **0.199**
Internal Modified Back Slope(Bint)	: **0.000**
Orientation of failure plane from horizontal(degrees) for Internal Stability	: **55.631**
Retained Soil(Static)(Ka)	: **0.318**
Retained Soil(Static)(Kah Horizontal Component)	: **0.304**
External Modified Back Slope(Bext)	: **0.000**
Orientation of failure plane from horizontal(degrees) for External Stability	: **48.328**

Result of External Stability Static Analysis

	Calculated	Design Criteria
FOS Sliding	2.01	> 2.00
FOS Overturning	6.90	> 2.00
FOS Bearing Capacity	4.24	> 2.00
Base Reinforcement Length (L)(ft)	6.70	
Base Reinforcement Ratio (L/H)	1.12	> 0.60

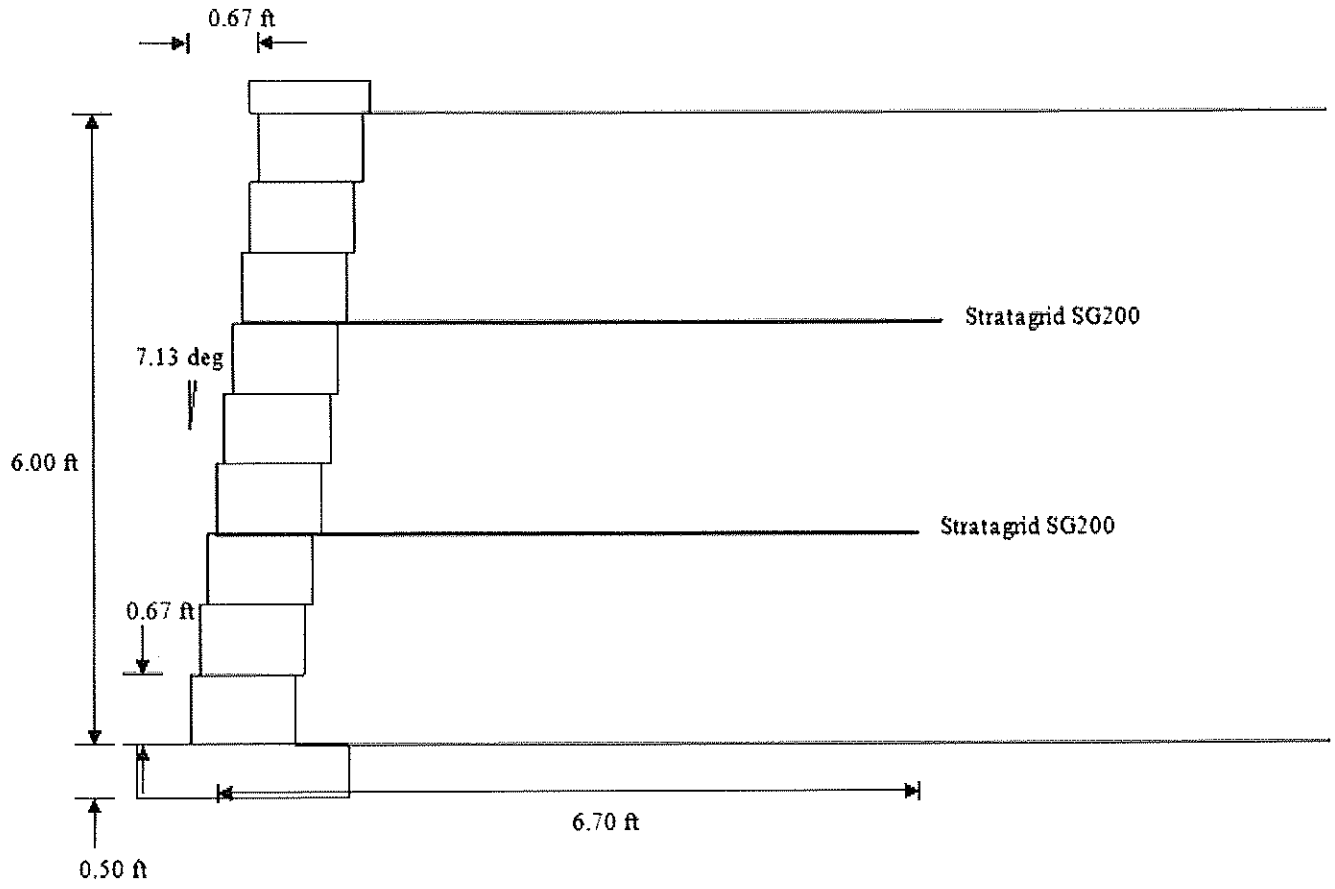
Results of Internal Stability Static Analysis

SRW Unit #	Geosynthetic Product	Elevation (ft)	Length (ft)	Anchor Length (ft)	FOS Overstress >=1.50	FOS Pullout >=1.50	FOS Slide >=1.50	Layer Spacing (ft) >=2.00
7	Stratagrid SG200	4.00	6.70	3.46	6.45	4.02	9.65	OK
4	Stratagrid SG200	2.00	6.70	4.58	3.47	5.72	5.36	OK

Results of Facing Stability Static Analysis

SRW Unit #	Heel Elev (ft)	Geosynthetic Product	FOS Crest Toppling >=1.50	FOS Connection >=1.50
7	4.00	Stratagrid SG200	4.04	7.20
4	2.00	Stratagrid SG200		2.69

Wall Reinforcement Layout



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SRWall (Version 4) Report

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Type of Structure	: **Reinforced Wall**

Wall Geometry

Design Wall Height(ft)	: **4.00**
Embedment Wall Height(ft)	: **0.67**
Exposed Wall Design Height(ft)	: **3.33**
Number of Segmental Wall Units	: **6**
Wall Inclination(degrees)	: **7.13**

Grades

Top Slope(degrees)	: **0.00**

Uniform Distributed Surcharge

Live Load Surcharge(Psf)	: **250.00**
Live Load Surcharge Setback(ft)	: **25.00**
Dead Load Surcharge(Psf)	: **0.00**

Soil Data

Soil Zone	Description	Cohesion (c) (psf)	Friction Angle(Φ) (degrees)	Unit Weight (γ)(pcf)
Reinforced Soil		N/A	34.00	125.00
Retained Soil		N/A	24.00	120.00
Leveling Pad Soil		N/A	40.00	35.00
Foundation Soil			24.00	120.00

Segmental Unit Data

Segmental Unit Name	: Square Foot
Cap Height (Inches)	: 3.62
Unit Height (Hu)(Inches)	: 8.00
Unit Width (Wu)(Inches)	: 12.00
Unit Length (Inches)	: 18.00
Setback (Inches)	: 1.00
Weight (Infilled)(lb)	: 115.00
Unit Weight (Infilled)(pcf)	: 115.00
Center of Gravity(Inches)	: 6.00

Geosynthetic Reinforcement Type and Number

Supplier	Product Name	Number
STRATA Global GeoSolutions	Stratagrid SG200	1
STRATA Global GeoSolutions	Stratagrid SG350	0
STRATA Global GeoSolutions	Stratagrid SG500	0
STRATA Global GeoSolutions	Stratagrid SG550	0
STRATA Global GeoSolutions	Stratagrid SG600	0

Geosynthetic Properties

Geosynthetic Product	Tult (lb/ft)	RFcr	RFd	RFid	LTDS (lb/ft)	Ci	Cds
Stratagrid SG200	3600.00	1.55	1.10	1.25	1689.15	0.90	0.90
Stratagrid SG350	5000.00	1.55	1.10	1.25	2346.04	0.90	0.90
Stratagrid SG500	6400.00	1.55	1.10	1.20	3128.05	0.90	0.90
Stratagrid SG550	8150.00	1.55	1.10	1.20	3983.38	0.90	0.90
Stratagrid SG600	9100.00	1.55	1.10	1.20	4447.70	0.90	0.90

Unit-Unit Interface Properties

Minimum Shear Capacity(lb/ft)	Shear Friction Angle	Maximum Shear Capacity (lb/ft)
1145.00	35.00	5350.00

Geosynthetic-SRW Unit Connection Strength properties

Geosynthetic Product	Minimum Conn. Capacity (lb/ft)	1st Inflection Point (lb/ft)		2nd Inflection Point (lb/ft)	
		Normal Load (lb/ft)	Connection Capacity (lb/ft)	Normal Load (lb/ft)	Max Connection Capacity(lb/ft)
Stratagrid SG200	710.00	600.00	965.00	1826.00	1485.00
Stratagrid SG350	1240.00	600.00	1401.00	3247.00	2110.00
Stratagrid SG500	1115.00	1200.00	1576.00	3887.00	2415.00
Stratagrid SG550	1240.00	800.00	1683.00	4258.00	3600.00
Stratagrid SG600	1650.00	1200.00	2159.00	5572.00	4015.00

Geosynthetic-SRW Unit Shear Strength properties

Geosynthetic Product	Minimum Shear Capacity(lb/ft)	Shear Friction Angle	Maximum Shear Capacity (lb/ft)
Stratagrid SG200	1145.00	35.00	5000.00
Stratagrid SG350	1145.00	35.00	5000.00
Stratagrid SG500	1145.00	34.00	5195.00
Stratagrid SG550	1145.00	34.00	5195.00
Stratagrid SG600	1145.00	34.00	5195.00

Vertical Components

Vertical Components of Earth Pressures Used : **No**

Cofficients of Earth Pressure and Failure Plane Orientation

Reinforcement Soil(Static)(Ka)	: **0.207**
Reinforcement Soil(Static)(Kah Horizontal Component)	: **0.199**
Internal Modified Back Slope(Bint)	: **0.000**
Orientation of failure plane from horizontal(degrees) for Internal Stability	: **55.631**
Retained Soil(Static)(Ka)	: **0.318**
Retained Soil(Static)(Kah Horizontal Component)	: **0.304**
External Modified Back Slope(Bext)	: **0.000**
Orientation of failure plane from horizontal(degrees) for External Stability	: **48.328**

Result of External Stability Static Analysis

	Calculated	Design Criteria
FOS Sliding	2.02	> 2.00
FOS Overturning	7.87	> 2.00
FOS Bearing Capacity	4.88	> 2.00
Base Reinforcement Length (L)(ft)	5.40	
Base Reinforcement Ratio (L/H)	1.35	> 0.60

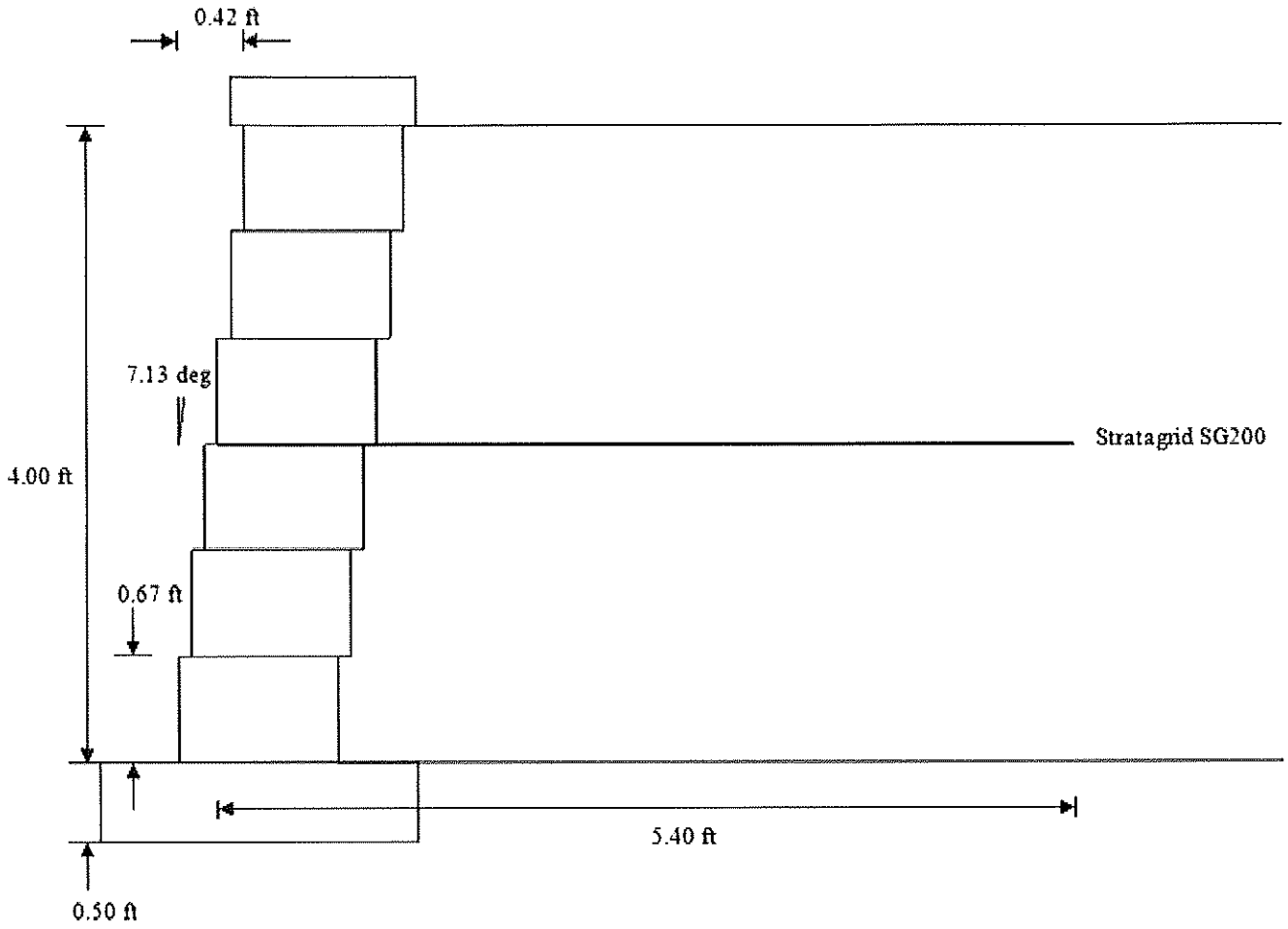
Results of Internal Stability Static Analysis

SRW Unit #	Geosynthetic Product	Elevation (ft)	Length (ft)	Anchor Length (ft)	FOS Overstress >=1.50	FOS Pullout >=1.50	FOS Slide >=1.50	Layer Spacing (ft) >=2.00
4	Stratagrid SG200	2.00	5.40	3.28	4.23	2.50	8.77	OK

Results of Facing Stability Static Analysis

SRW Unit #	Heel Elev (ft)	Geosynthetic Product	FOS Crest Toppling >=1.50	FOS Connection >=1.50
4	2.00	Stratagrid SG200	4.04	4.05

Wall Reinforcement Layout



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