Modular Block Retaining Wall Calculations

Caledonia Clubhouse
O'Fallon, MO

Prepared By:
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5393 Old Baumgartner Rd
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(314) 280-7748

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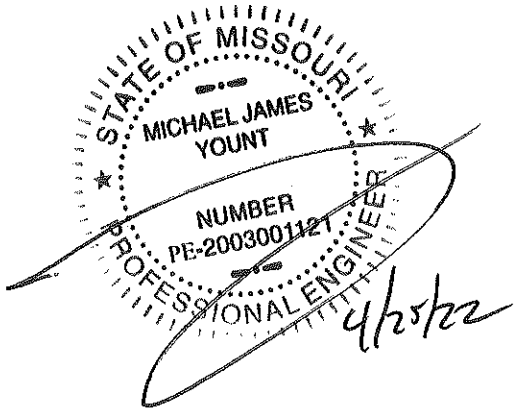


SRWall (Version 4) Report

Project Identification

Project ID	:
Project Name	:
Owner	:
Client	:
Prepared By	:
Company	: **Retaining Wall Solutions, inc.**
Address	: **5393 Old Baumgartner Rd, St. Louis, Mo. 63129**
Telephone	: **314-842-8200**
Section	:
Project File	: **aaa RWS Clean.prj**
Vendor Data File	: **GEOSTAR.vdf**
Date and Time	: **06/05/2019 15:30:48**

Type of Structure	: **Reinforced Wall**

Wall Geometry

Design Wall Height(ft)	: **5.33**
Embedment Wall Height(ft)	: **0.50**
Exposed Wall Design Height(ft)	: **4.83**
Number of Segmental Wall Units	: **8**
Wall Inclination(degrees)	: **7.13**

Grades

Top Slope(degrees)	: **0.00**

Uniform Distributed Surcharge

Live Load Surcharge(Psf)	: **0.00**
Dead Load Surcharge(Psf)	: **0.00**

Geosynthetic Properties

Geosynthetic Product	Tult (lb/ft)	RFcr	RFd	RFid	LTDS (lb/ft)	Ci	Cds
HP200	3373.00	1.55	1.10	1.25	1582.64	0.85	0.85
HP300	4650.00	1.55	1.10	1.25	2181.82	0.85	0.85
HP500	7952.00	1.55	1.10	1.25	3731.14	0.85	0.85
HP700	10688.00	1.55	1.10	1.25	5014.90	0.85	0.85

Unit-Unit Interface Properties

Minimum Shear Capacity(lb/ft)	Shear Friction Angle	Maximum Shear Capacity (lb/ft)
585.00	56.00	6000.00

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)
HP200	1055.00	1799.00	1633.00	1800.00	1634.00
HP300	1235.00	2999.00	2553.00	3000.00	2554.00
HP500	1530.00	4199.00	3899.00	4200.00	3900.00
HP700	2445.00	5999.00	4475.00	6000.00	4476.00

Geosynthetic-SRW Unit Shear Strength properties

Geosynthetic Product	Minimum Shear Capacity(lb/ft)	Shear Friction Angle	Maximum Shear Capacity (lb/ft)
HP200	585.00	56.00	6000.00
HP300	585.00	56.00	6000.00
HP500	585.00	56.00	6000.00
HP700	585.00	56.00	6000.00

Vertical Components

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

Result of External Stability Static Analysis

	Calculated	Design Criteria
FOS Sliding	3.48	> 1.50
FOS Overturning	5.84	> 2.00
FOS Bearing Capacity	12.30	> 2.00
Base Reinforcement Length (L)(ft)	4.00	
Base Reinforcement Ratio (L/H)	0.75	> 0.60

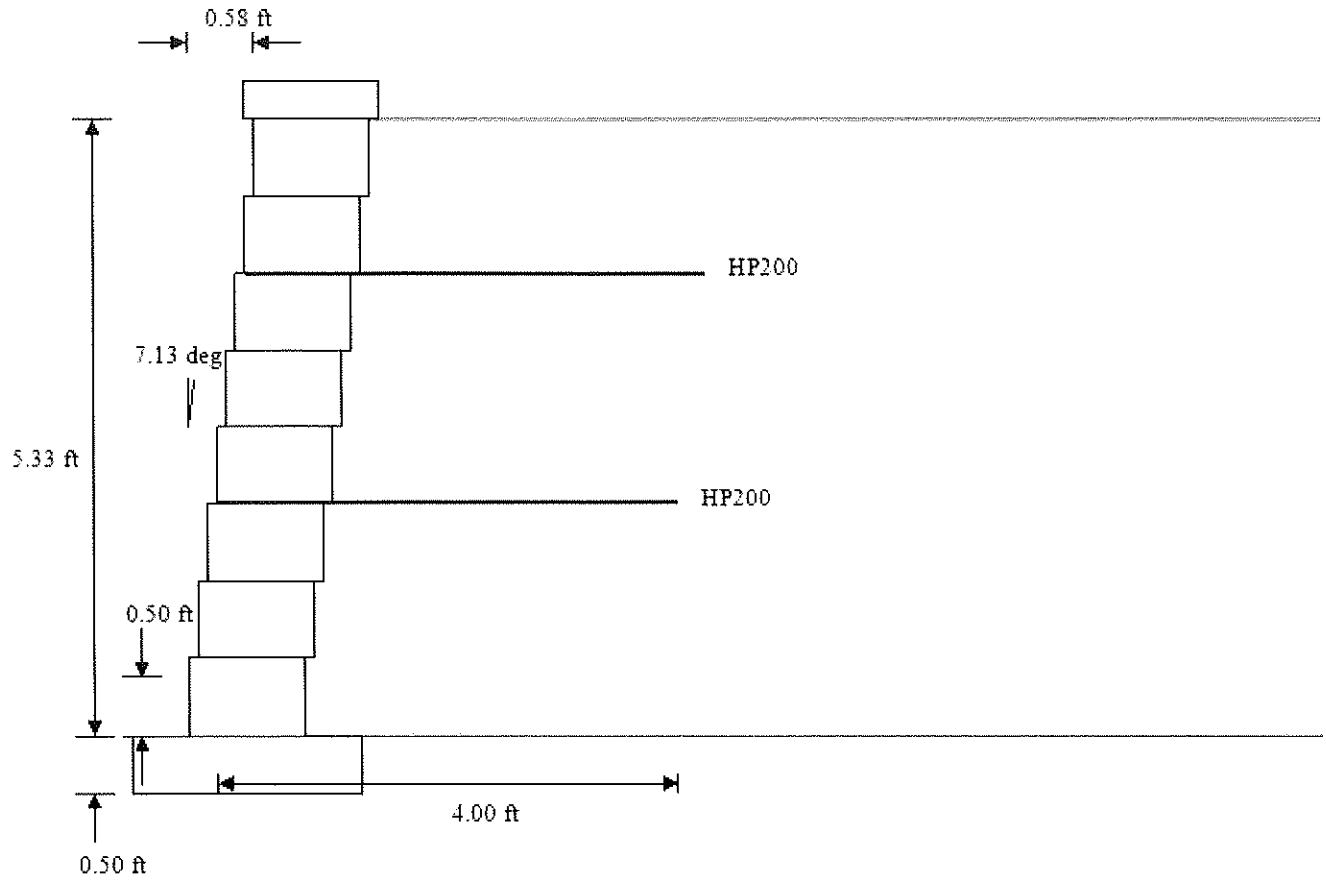
Detailed Result of External Stability Analysis

	Calculated
Total Horizontal Force (lb/ft)	471.02
Total Vertical Force (lb/ft)	2133.33
Sliding Resistance (lb/ft)	1640.50
Driving Moment (lb-ft/ft)	837.37
Resisting Moment (lb-ft/ft)	4888.89
Bearing Capacity (psf)	6906.99
Base Eccentricity (e)(ft.)	0.10
Eccentricity Ratio (e/L-2e)	0.03
Maximum Bearing Pressure (psf)	561.65

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	HP200	4.00	4.00	1.11	39.85	5.32	37.62	OK
4	HP200	2.00	4.00	2.05	9.43	5.82	10.28	OK

Wall Reinforcement Layout



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